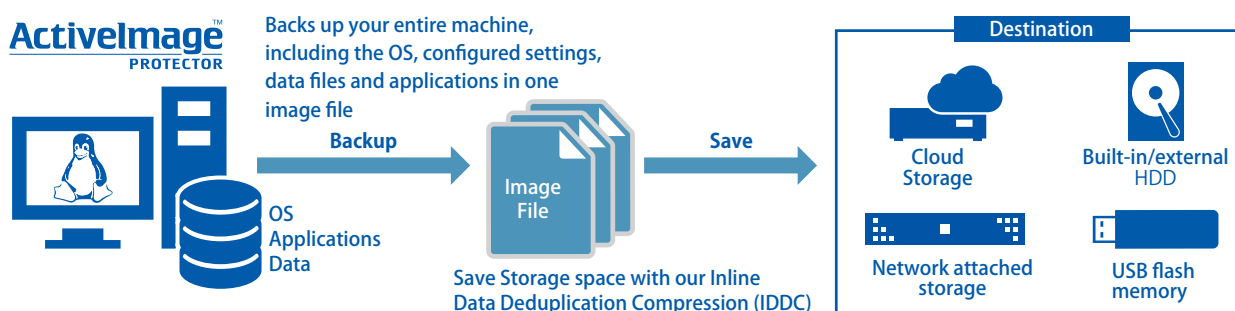# ActiveImage™ 2022
PROTECTOR
Linux

What is ActiveImage Protector™ ?

Backup Solution

ActiveImage Protector™ is an image based backup and recovery solution that supports a physical and virtual Linux environments. ActiveImage Protector™ uses the latest sector-based technology to back up your entire hard disk, including the operating system along with all your applications and data. The backups are saved to any available storage location, including local hard disk, USB memory, network storage such as NAS, etc. ActiveImage Protector™ Linux Edition supports collective backup / restore of disks configured with Linux Logical Volume Manager (LVM).
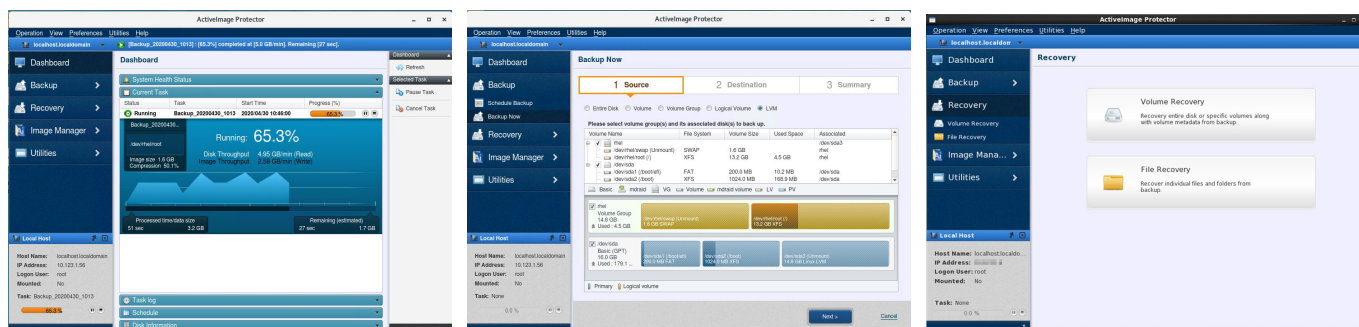
ActiveImage™
PROTECTOR

Backs up your entire machine, including the OS, configured settings, data files and applications in one image file

Backup

OS
Applications
Data

Image File

Save Storage space with our Inline Data Deduplication Compression (IDDC)

Save

Destination

Cloud Storage

Built-in/external HDD

Network attached storage

USB flash memory

Ensure full-state recovery

ActiveImage Protector™, a disaster recovery solution, is designed to provide "a fast and successful recovery", and is useful for disaster recovery.

Recently an increasing number of business institutions have introduced some sort of backup system offering a disaster recovery solution in the event of natural disaster or virus attack. On the other hand, many of them have experienced issues that "the system recovery never completed or took lengthy time" or "the restored system never boots up" in the event of a system failure which may lead to a business continuity crisis.

Powerful Graphical User Interface for Linux

A cross platform graphical user interface that supports both Windows and Linux (X Windows) platforms. The new GUI provides simple and easy access to ActiveImage Protector™'s features and settings across both platforms. CUI/CLI are supported.

Backup Features

Image file based backup

ActiveImage Protector™ backs up your entire machine, including the OS, configured settings, data files and applications in one image file. When disaster strikes, select a backup image to quickly restore for a fast and complete recovery.

## Hot-Imaging backup for live Linux machines

ActiveImage Protector™ backs up your entire machine, including the OS, applications and data files, while the machine is active and running without stopping the services including database or open files to ensure ultra-reliable backups. The hot-imaging backup is useful especially when backing up the system and the data frequently updated throughout the day and night on non-stop server.

Cold-Imaging for Linux machines

ActiveImage Protector™ may be booted from the product media to run. This enables to create a backup image of a clean static Linux server (immediately after installation of Linux OS). Cold-imaging backup saving the point-in-time state of the failed system is convenient to examine the cause of the system failure.

Faster and smaller backup with Smart Sector technology

ActiveImage Protector™'s Smart Sector technology only backs up the used sectors on a disk, resulting in faster backup and smaller backup files.

: Used Sector   : Unused Sector

Hard Disk Drive

SmartSector

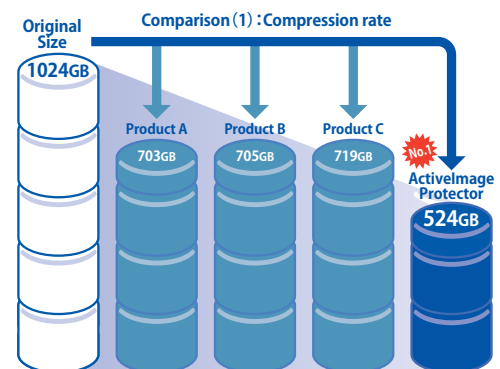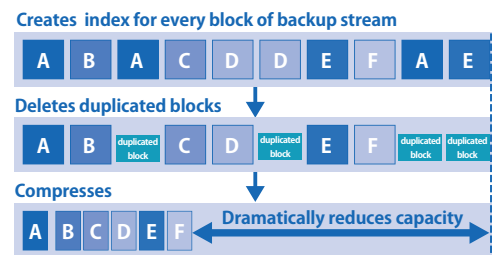AIV file（compressed）
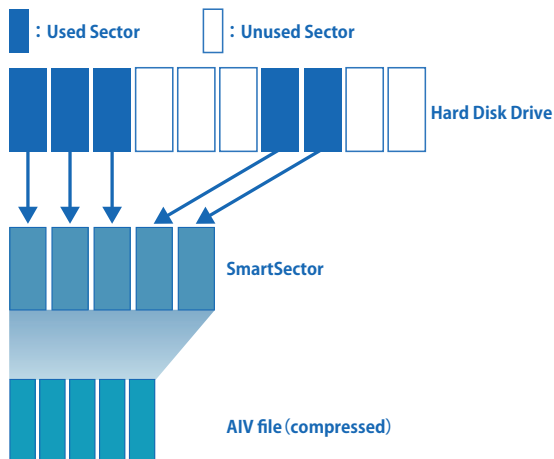
Encryption of Backup Images

ActiveImage Protector™ can create password-protected and encrypted backup images and supports up to 256 bit encryption.

Bad Sector Skip

In the event of a corrupt or failing disk, ActiveImage Protector™'s Bad Sector Skip function will ignore bad or unreadable sectors, allowing you to back up and recover data in the remaining good sectors.

Save storage space with IDDC

Our Inline Data Deduplication Compression (IDDC) feature eliminates duplicate data while simultaneously compressing it, resulting in a significant reduction in backup storage requirements. Backup using IDDC does not increase the overall backup processing time (according to our test results: 27 hours to backup 11.7 TB data). You do not need to purchase an optional tool or an expensive storage offering Deduplication feature. No special configuration settings or operation are required.

Creates index for every block of backup stream

A	B	A	C	D	D	E	F	A	E

Deletes duplicated blocks

A	B	duplicated block	C	D	duplicated block	E	F	duplicated block	duplicated block

Compresses

A	B	C	D	E	F

Dramatically reduces capacity

Comparison（1）：Compression rate

Original Size
1024GB

Product A	Product B	Product C	ActiveImage Protector
703GB	705GB	719GB	No.1 524GB

Comparison （2）：Backup time（1TB）

ActiveImage Protector No.1	Product A	Product B	Product C
2hr 12min	5hr 32min	3hr 49min	2hr 41min

Fast Incremental Backup

Fast and efficient incremental backup includes only sectors that have changed from the last backup. The incremental backup saves both process time and storage space. ActiveImage Protector™ includes the proprietary change tracking filter driver for the fast incremental backup. When restoring the system, you need to have the backup file set including the base backup image file and the associated incremental chain to the recovery point.

Base Backup

1st incremental file

2nd incremental file

3rd incremental file

Support for LVM Backup

Support for collective backup / restore of disks configured with Linux Logical Volume Manager (LVM) including XFS.

Command line execution support

Most of ActiveImage Protector™'s features can be used by specifying parameters for command line tool or with command file. ActiveImage Protector™'s CLI allows backups to be seamlessly administered by system management tools, if any, by using prepared script file.

A variety of Storage Media are supported

Save your backups to any available storage location, including NAS, SAN (fibre channel), USB, eSATA, network shared folders, etc.

Backup Options

Schedule backup

Backup tasks can be automatically executed according to the one-time, weekly or monthly schedule, or a specific day of a week in a specific month. Also, you can schedule the first baseline backup and recurring incremental backup tasks to run subsequently.

Image Retention Policy

The use of Retention Policy feature allows you to automatically delete the obsolete backup image set when the number of backup image sets reaches the preset limitation and reduce the storage space requirements. Retention Policy may be enabled to manage how many sets of base and incremental backup files to retain before deletion.

Flexible Multi-Scheduling Feature

Multiple schedules can be defined for individual backup tasks. For example, you can create a new full backup each month for an ongoing Weekly Schedule backup task.

Post-backup Process

Runs Replication and Consolidation tasks upon completion of a backup task or at a specified time.

Destination Isolation Option

Our new ImageIsolate™ technology reduces potential malware or ransomware attacks by disconnecting access to a backup storage drives after backups complete.

Scripting

Scripts can be implemented to run before and/or after snapshots are taken or after the backup image has been created. An example would be to execute a user-specified script to purge database cache before taking a snapshot and resume database after taking a snapshot (before starting a backup task), a script to copy / edit the created backup image file, etc. Scripts can be implemented respectively for a base backup and incremental backup tasks.

Cloud Storage Services are supported (Offsite Replication)

Replication target supports a local storage, a Network Shared folder, FTP, FTPS, SFTP, WebDAV, Amazon S3, Azure Storage, OneDrive, Google Drive, Dropbox.

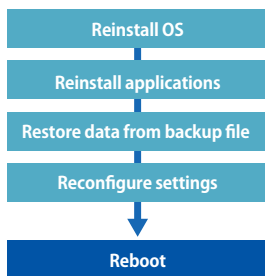
Live Backup of MySQL, Oracle database and KVM on Linux

ActiveImage Protector™ offers image-based backup of live MySQL, Oracle database and KVM without needing to shut down, ensuring consistency of data in the backup.
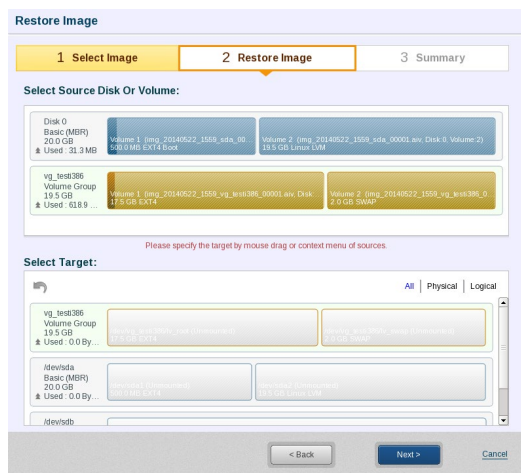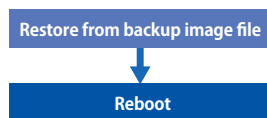
Restore Features

Fast and full-state recovery from disk image-based backup

In the event of a system failure due to hard disk failure. the traditional lengthy recovery process involved the reinstallation of OS and applications, data recovery, etc. ActiveImage Protector™ is a sector-based disk imaging backup/recovery solution and the built-in wizards guide you through every steps to perform required operations for recovery from the backup image file. Select the most up-to-date incremental backup file and your system is restored to the most updated state.

General backup software

| Reinstall OS |
| Reinstall applications |
| Restore data from backup file |
| Reconfigure settings |
| Reboot |

ActiveImage Protector

| Restore from backup image file |
| Reboot |

Fast Bare Metal Recovery

ActiveImage Protector™'s lightning-fast restore engine dramatically speeds up recovery time. Bare Metal Recovery provides capabilities for initializing and creating partitions on the bare metal disk.

File Recovery feature

In the event of system failure, as is often the case, you may only need specific files to restore in order to restart your duties. File Recovery feature allows you to restore a specific file or a folder from a backup image file on ActiveImage Protector™'s GUI. Then, access rights assigned to files, which Copy File feature of Mount Image often fails to recover, are inclusively restored.

Linux Based Recovery Environment

Perform faster disaster recovery and cold back-ups with ActiveImage Protector™'s Linux based boot environment (AIPBE) on DVD. AIPBE is built based on CentOS. This enable to recognize the latest device to use.

Operation

New GUI provides tools for efficient operations

New GUI provides dashboard window enabling real time monitoring of the status of tasks, logs, schedules and disk information. Backup/Restore wizards windows makes the software operation more intuitive.
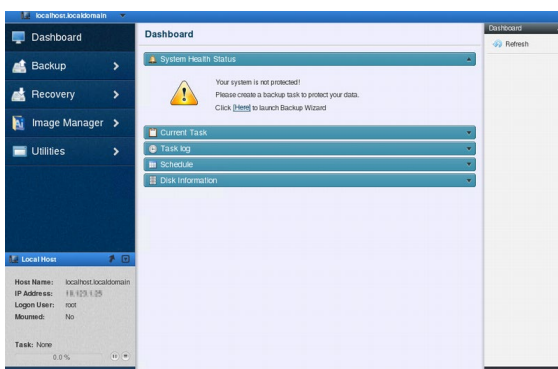
Remote File Explorer

Built with File Explorer for selecting files/folders. Remote File Explorer allows you to browse files and folders from your image files in network shared folders on remote clients just in the same manner as on local computer.
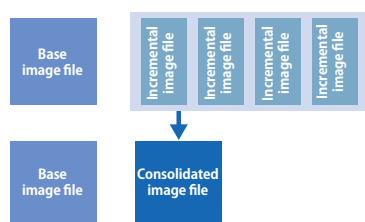
Image Management

Image Mount (Granular File and Folder Recovery)

ActiveImage Protector™ can quickly mount an image file as a drive, allowing you to extract any files or folders contained in the image file. When image file is mounted as a writable drive, the changes made on the drive will be saved as differential files.
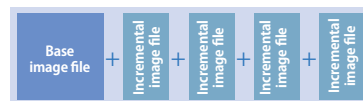
Consolidation of Backup Files

Consolidate incremental backups into a single incremental file to save storage space and for easier management.

Archive Backup Files

Use the archive (unification) feature to unify a full base image file and all associated incremental files into a single backup file.

Remote Management

Client management console for easy administration of backup agents

The use of Client management console enables to manage ActiveImage Protector™ agents installed on remote computers.

- You can monitor the status of remote agents over the network, start execution of backup tasks from console and establish connection to remote console.

- One-click offers execution of scheduled backup tasks on remote network computers.
- Free evaluation version of Actiphy software installed on remote network computers can be upgraded to a full product version from console.

Instant recovery solution

HyperBoot™ add-on to immediately boot backups images as virtual machines

Use our Windows-based add-on application, HyperBoot™ to boot ActiveImage Protector™ backup mage files as a fully functional virtual machine in only a few minutes in local and remote Microsoft Hyper-V, VMware ESXi, VMware Workstation Pro / Player, Oracle VirtualBox. HyperBoot™ serves as an interim replacement server to bridge the gap between disaster and recovery. Using VMware vMotion streamlines the recovery process by seamlessly migrating live virtual machines booted in vCenter to a hypervisor in a production environment.
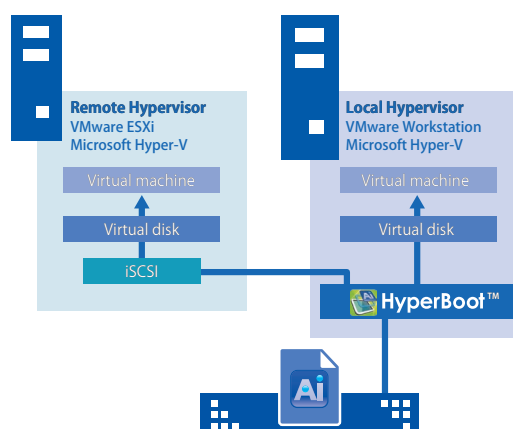
Others

Support for Smart Sector Backup of XFS system volume

ActiveImage Protector supports the smart sector backup of XFS system volume which is used on Red Hat Enterprise Linux and CentOS.

Support for the Latest uEFI Mother Boards

Backup and restore of GPT disks in a uEFI boot environment are supported, as are large capacity disks (2TB or larger). ActiveImage Protector's Linux boot environment (AIPBE) offers native support for uEFI.

Support for hardware RAID

Backup / recovery of hardware RAID is supported.

Email Notification

Email notification can be sent (using SSL/TSL) to an email address of your choice. Notifications include successfully completed backups, backup failure, or in the event that ActiveImage Protector encounters an error, a restart or failure. Email notification may be set to inform you of the summary of task execution and license status (expiration of the license period).

Central Management Console "ActiveVisor™"

ActiveVisor™ provides a centralized solution for managing and monitoring ActiveImage Protector™ clients. ActiveVisor™ collects data from remote clients (agent-based ActiveImage Protector™ and agentless HyperAgent™) over network, provides graphical and statistic presentation of the data, monitors the status of ActiveImage Protector™ clients / backup status / destination storage and deploys the backup task / schedule templates. ActiveVisor™ enables system administrators to manage and monitor ActiveImage Protector™ clients from any location, reducing the burdens on the system administrators.
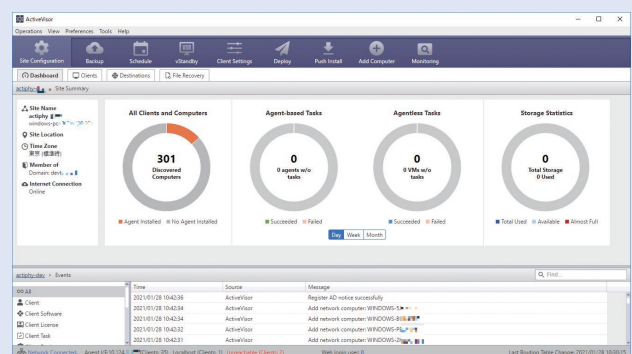
Actiphy, Inc. NCO Kanda-kon'yacho Building, 8 Kanda-kon'yacho, Chiyoda-ku, Tokyo 101-0035, Japan
Phone:+81-3-5256-0877   FAX:+81-3-5256-0878   https://www.actiphy.com   global-sales@actiphy.com

Actiphy

New System Protection Solution responding to the cloud computing era

1. Support for Object Storage

2. Support for Public Cloud Storage

3. Support for LTO Tape Devices

4. File / Folder Backup

5. Support for SFTP

6. Boot Environment Builder without the need

for installation of Windows ADK

7. Others

Actiphy

Saves the created backups directly to Object Storage

Backup Source

- Client PC
- Physical Server
- Virtual Server
  - VM VM VM
  - Hypervisor
- Cloud
  - VM VM VM
  - CLOUD

Traditional Method

Backup →

Primary

ImageCenter **LE**

Replication

Secondary Destination

CLOUD

Save backups directly in Object Storage

Direct Backup →

Primary Destination

CLOUD

Supported Object Storage

- ・ **Amazon AWS S3**
- ・ **Microsoft Azure Blob Storage**
- ・ **Object storages compatible with Amazon S3**

Actiphy

Flexible disaster recovery plan or disaster contingency planning using backups in the event of a server failure
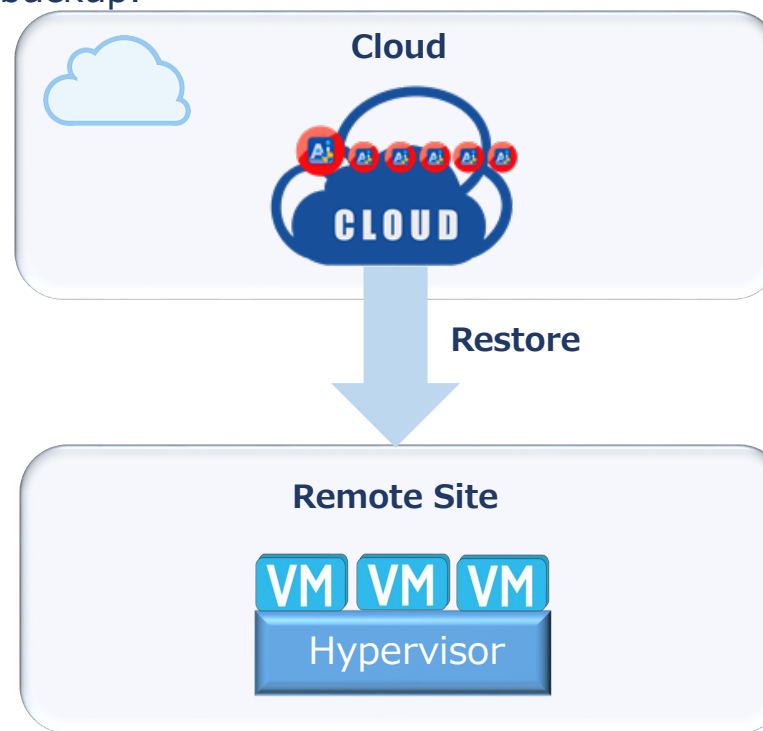
Restore to Local Site

In the event of a server failure, restore from the backup of physical / virtual machine saved in cloud storage.
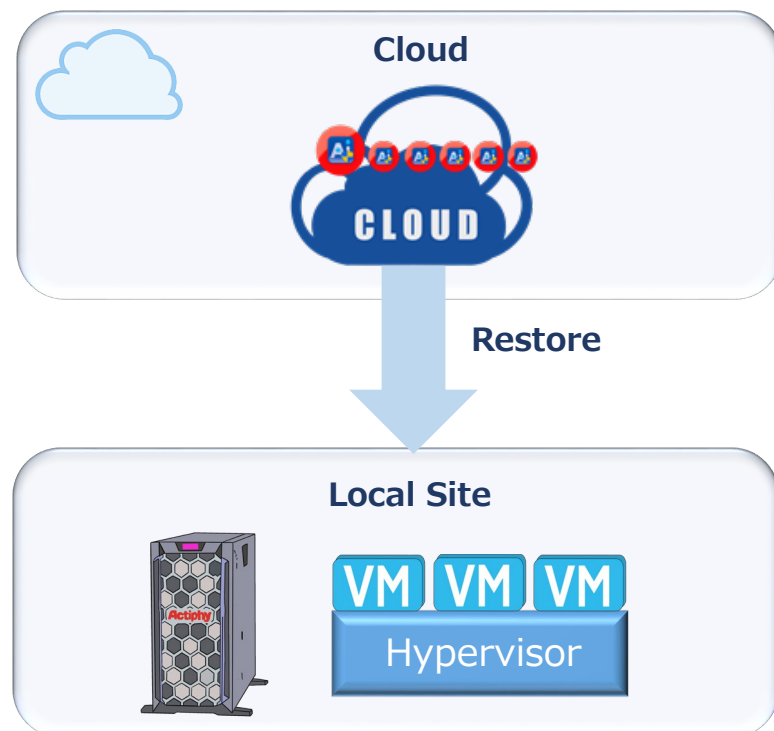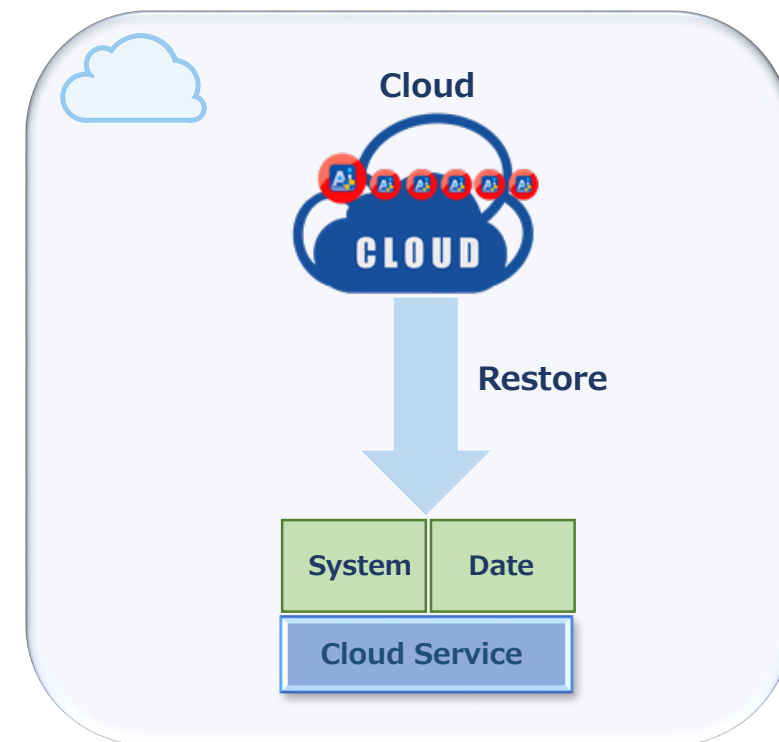
Restore to Remote Site

In the event of a disaster, temporarily run spare-wheel virtual server on remote site and restore the crashed system from backup.

Restore to Cloud Storage

In the event of a disaster, instantly start-up a standby virtual machine in cloud storage and restore the crashed system from backup.

ACtiphy

Support for the Virtual Machines configured on Amazon EC2, Microsoft Azure

Mostly the same operating procedures as backup of physical machines

Install ActiveImage Protector on virtual machines configured in cloud environment and perform disk imaging backup of the virtual machines by using mostly the same operating procedures as backup of physical machines. The created backup image files are saved in the same cloud region, directly to cloud storages e.g., Amazon AWS S3 and Microsoft Azure Blob Storage.
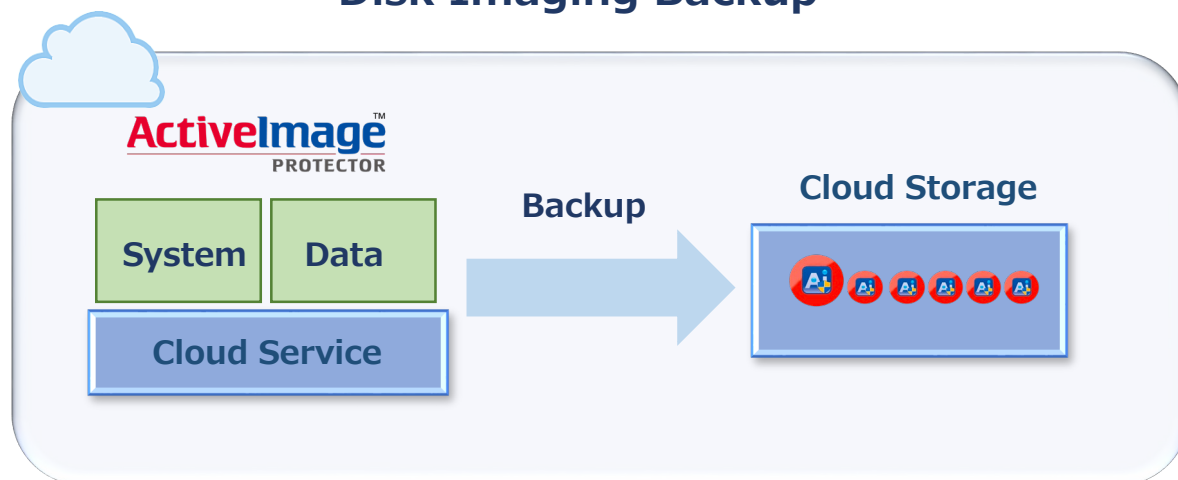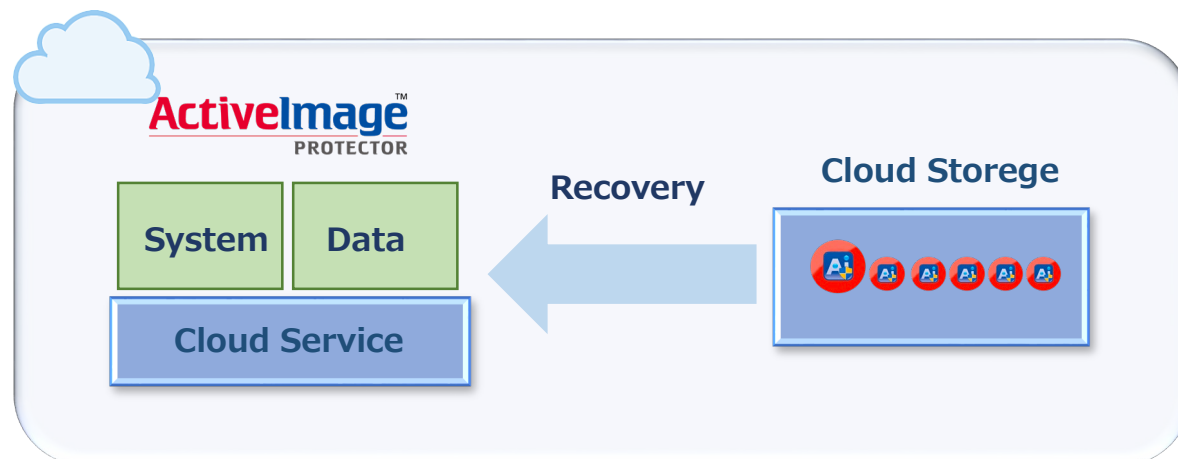
Restore a virtual machine

The virtual machines configured in cloud environment can be restored from backup without the need for any extra operating procedures.
ActiveImage Protector provides more flexible file / folder restore feature.

Disk Imaging Backup

ActiveImage™ PROTECTOR

| System | Data |

Cloud Service

Backup →

Cloud Storage

Entirely restore the virtual machine from backup

ActiveImage™ PROTECTOR

| System | Data |

Cloud Service

← Recovery

Cloud Storege

Backup and Disaster Recovery Solution Provider offers in-house developed New Backup / Restore Feature supporting virtual machines configured in Cloud Storage

Newly in-house developed Restore feature supporting virtual machines configured in cloud storage

The backup image file located in the cloud storage can be restored to a virtual machine configured in the cloud environment, using the same operating procedures as restoring a workstation or server in an on-site environment.

1. "ActiveImage Protector Appliance Image", shared virtual machine image is located in the respective regions in cloud environment.

2. Internal processing of Cloud Restore

(1) Temporarily boot up "**Restore Appliance" from "Appliance Image"**.

(2) "**Restore Appliance**" creates virtual disk from backup.

(3) Disconnect the virtual disk connected to the restore target virtual machine.

(4) Connect the created virtual disk.

(5) Delete the disconnected virtual disk. Otherwise, you can keep the disk.

(6) End the temporarily running "**Restore Appliance**".

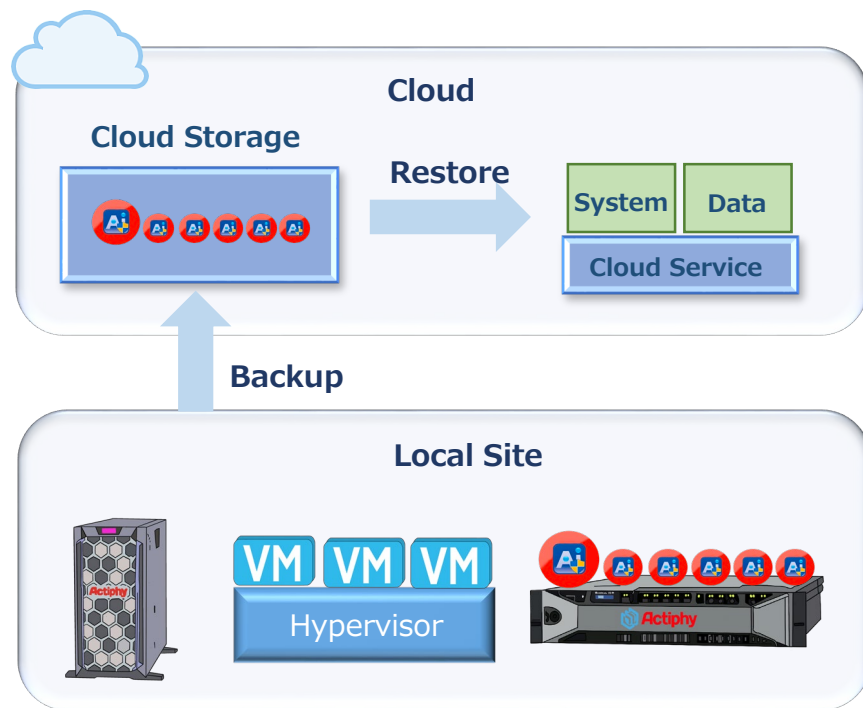**Internal processing of Cloud Restore**

Actiphy
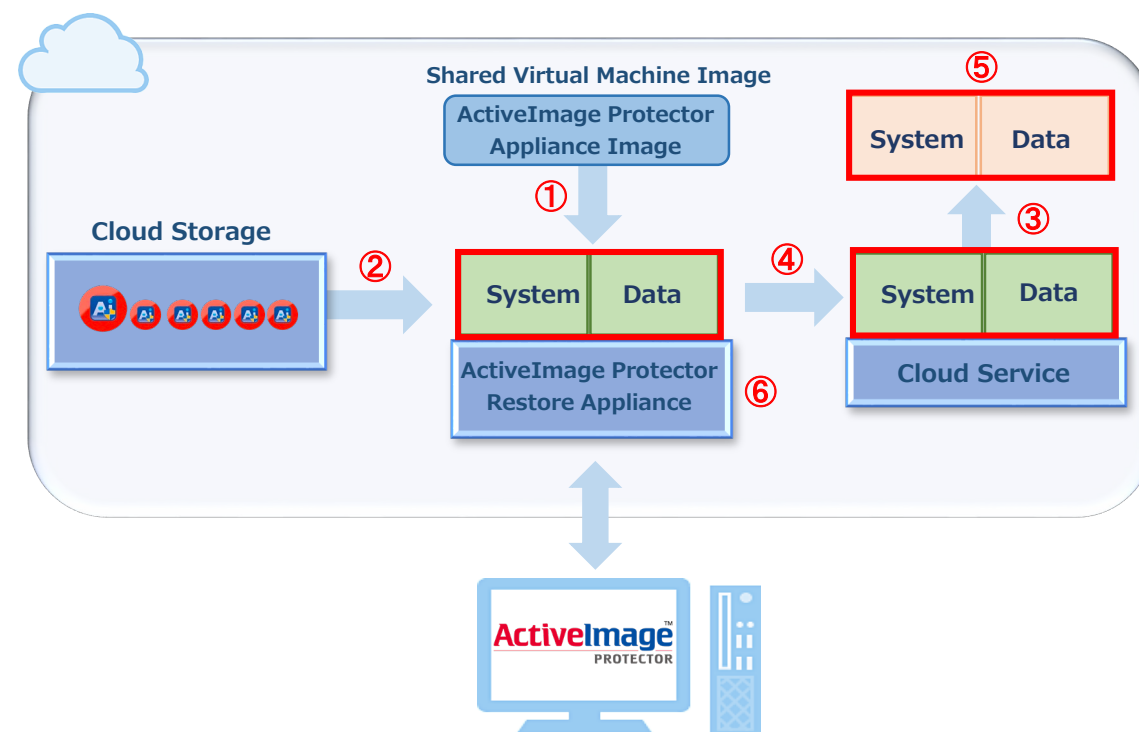
Flexible restore from backups to different sites

Restore backups of physical/virtual machines on local site to virtual machines configured on cloud environment
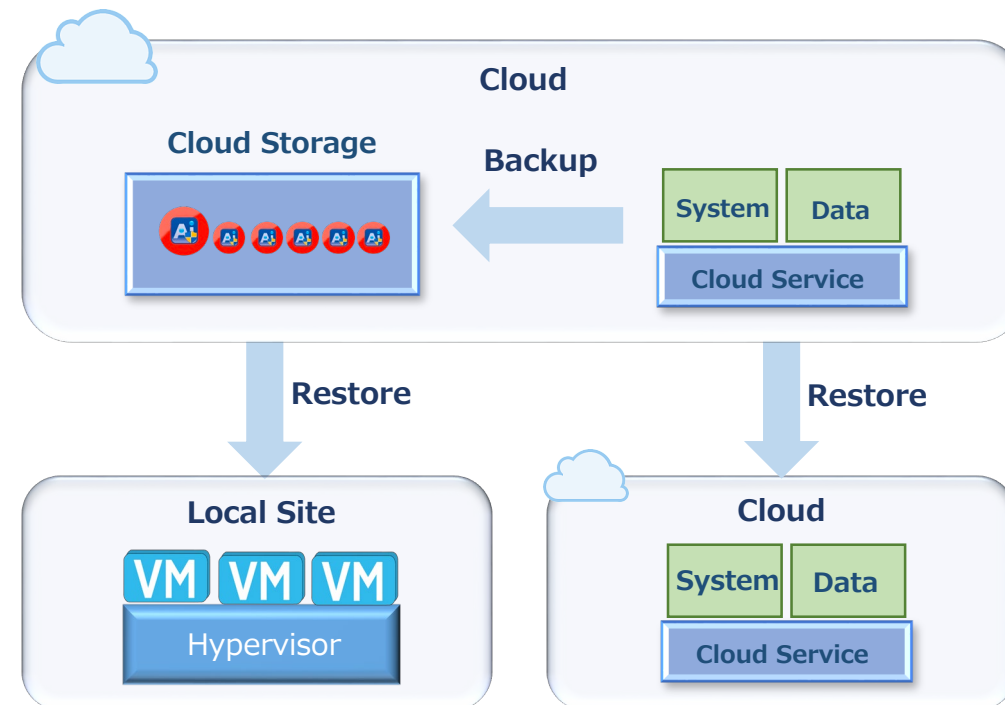
Restore from backups of physical / virtual machines on local site that are saved in cloud storage to virtual machines configured on cloud environment.

Cloud

Cloud Storage

Restore

System	Data
Cloud Service	

Backup

Local Site

| **VM** | **VM** | **VM** |

Hypervisor

Actiphy

* When migrating to cloud environment, you need to have ActiveImage Protector Cloud License.

Migration from backups to on-site environment

Restore and migrate the virtual machine using backups saved in cloud storage to virtual machine on local site or different cloud environment.

Cloud

Cloud Storage   **Backup**

System	Data
Cloud Service	

Restore   **Restore**

Local Site   **Cloud**

| **VM** | **VM** | **VM** |

Hypervisor

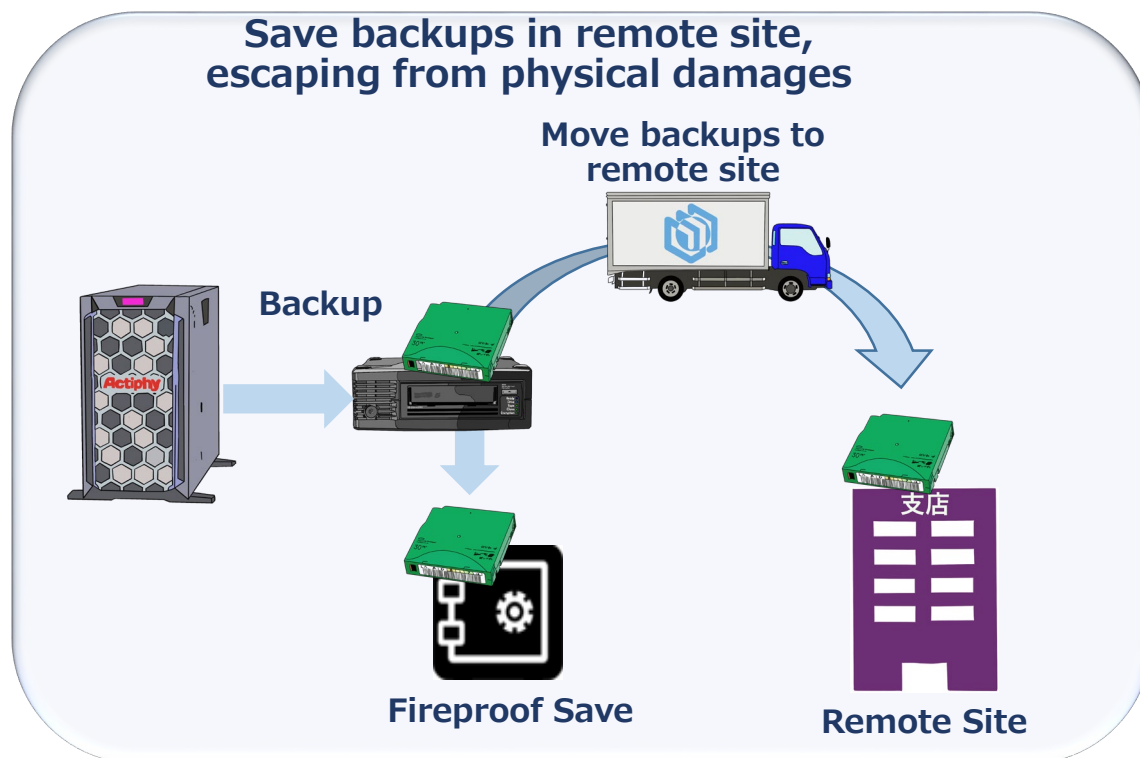| System	Data
Cloud Service	

* When migrating to on-site environment, you need to have ActiveImage Protector license for on-site environment

* When migrating to cloud environment, you need to have ActiveImage Protector Cloud License.

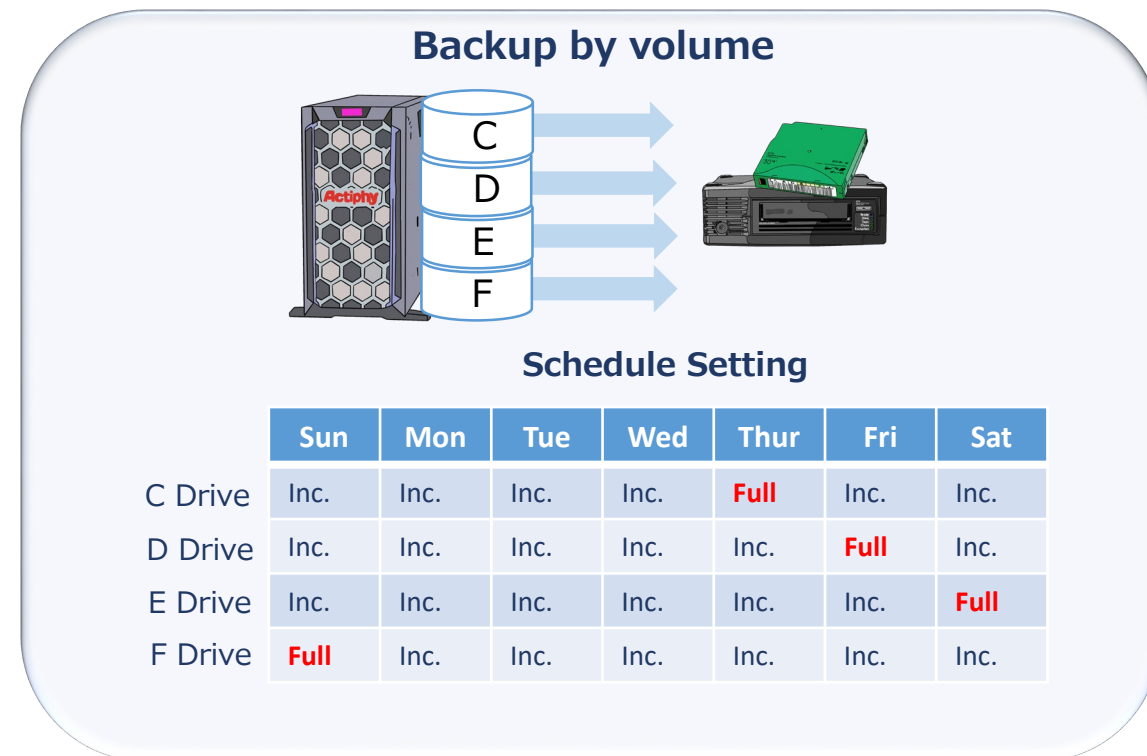## LTO Tape Device suited for backing up large data volumes

LTO Tape-based backup provides security benefits

Backups can be directly saved in LTO Tape. Tape-based backup provides security benefits by saving the backup tapes in fireproof save or remote site.

Save backups in remote site, escaping from physical damages

Move backups to remote site

Backup

Fireproof Save

Remote Site

Backup by volume when taking full backup of large-volume data

When taking full backup of large-volume data, it takes lengthy process time. Solving the problem, the backup source may be split to take backups by volume.

Backup by volume

Schedule Setting

	Sun	Mon	Tue	Wed	Thur	Fri	Sat
C Drive	Inc.	Inc.	Inc.	Inc.	**Full**	Inc.	Inc.
D Drive	Inc.	Inc.	Inc.	Inc.	Inc.	**Full**	Inc.
E Drive	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	**Full**
F Drive	**Full**	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.

New File / Folder Backup

Only changed blocks are backed up in incremental backup

ActiveImage Protector's New File Backup feature does not simply make a copy of a file but detects the changes made in the file, so incremental backup of the changed blocks is created. As a result, backup storage requirements and backup time are significantly reduced.
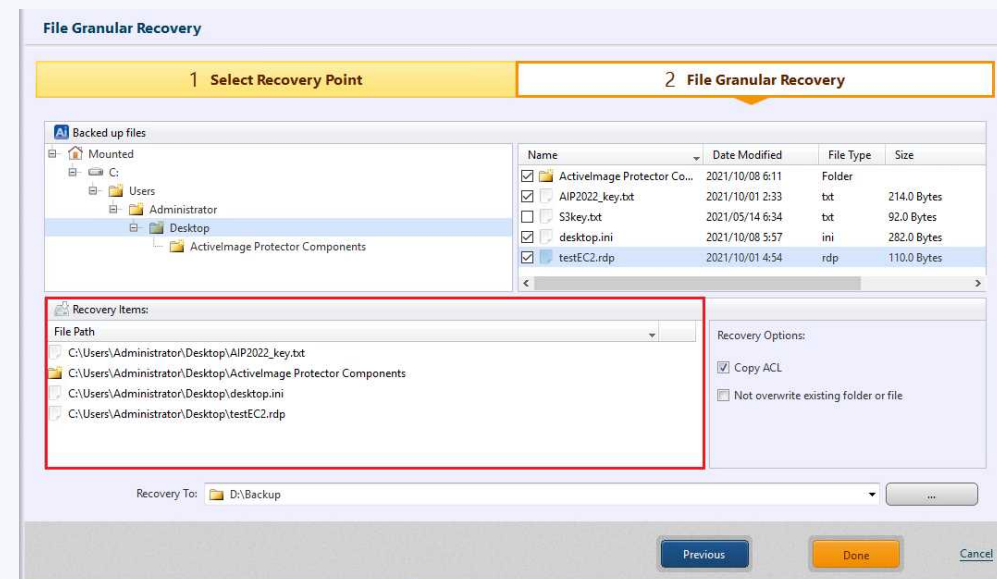
ActiveImage Protector provides New File Backup (Incremental Backup)

Backs up changed blocks
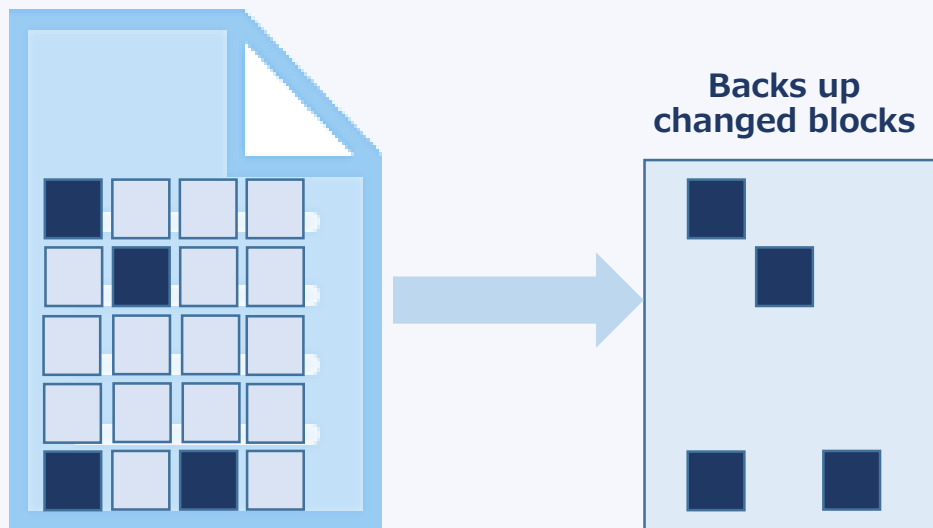
Restore File / Folder

Select a backup and restore a file or a folder including permission information including access right and stream information.

Select File / Folder to restore

Actiphy

Specify secure SFTP server as the destination storage for saving backups
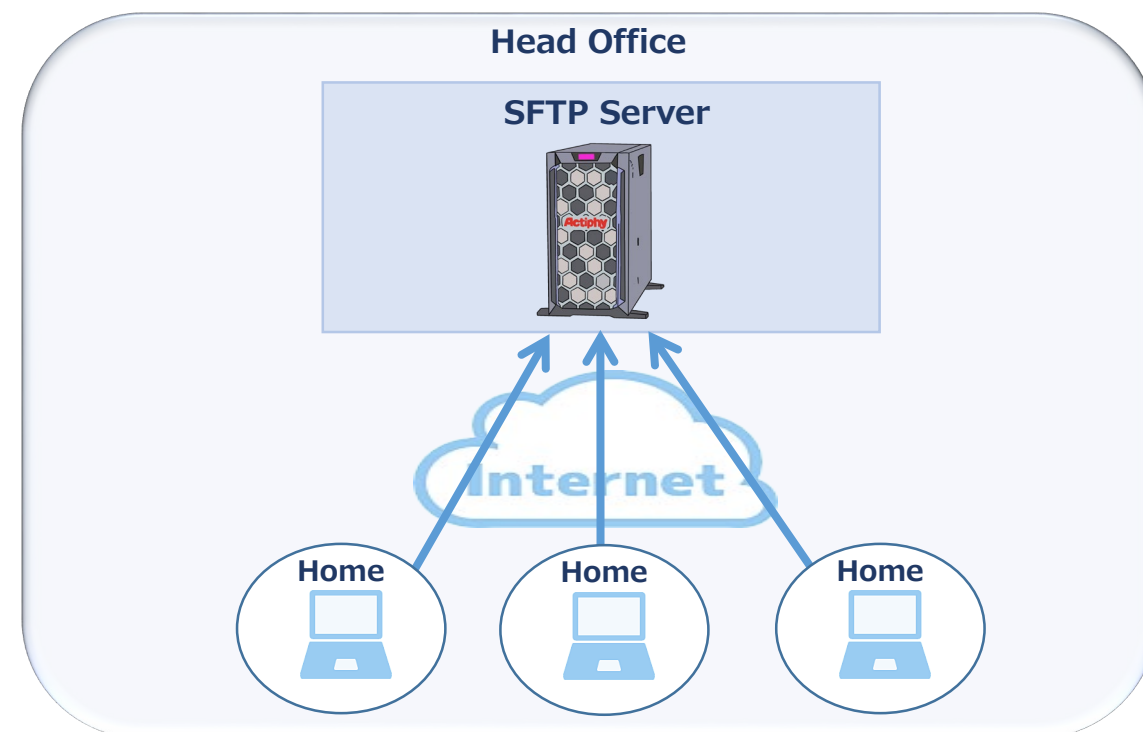
Support SFTP server as backup destination

ActiveImage Protector 2022 supports the SFTP protocol enabling secure data communication. Backups are directly saved in a server supporting SFTP protocol. Deployment of a server supporting SFTP in a remote on-site environment enables to save the backup image files directly to the server, without worrying about the cost of public cloud.
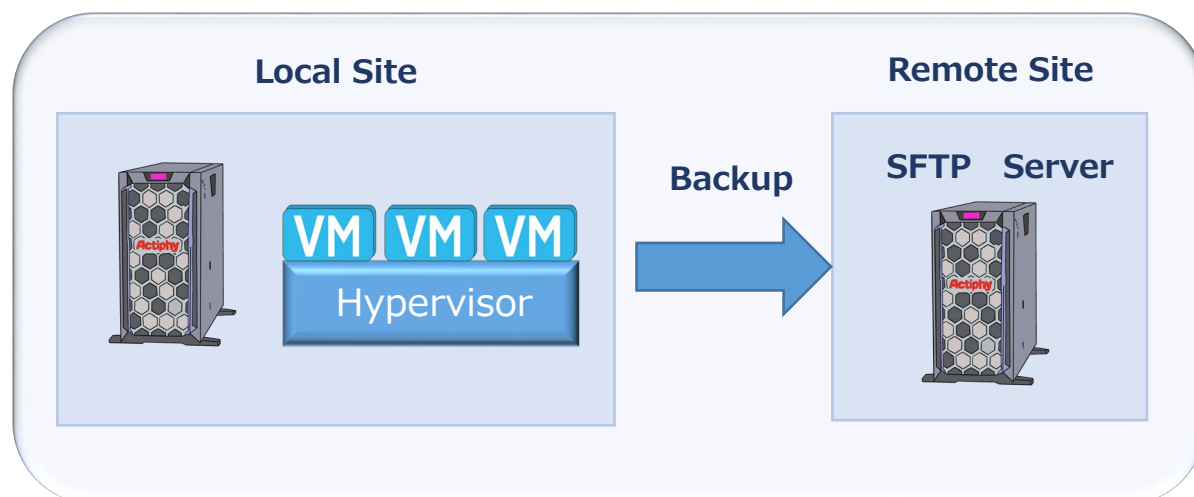
Save backups of employees' home workstations in SFTP server

In the event of a system failure of an employee's home workstation, you may have to provide an alternate PC. Regularly scheduled backup of the home workstation by using ActiveImage Protector enables to restore the entire system and data.

Local Site

Remote Site

VM VM VM
Hypervisor

Backup

SFTP   Server

Head Office

SFTP Server

Internet

Home   **Home**   **Home**

Boot Environment Builder without the need for installation of Windows ADK / Disk-to-Disk Copy

Actiphy

Improve the convenience for system recovery and reduce operating time

Boot Environment Builder without the need for installation of Windows ADK

When using Windows-based boot environment builder, installation of Windows ADK or Windows PE is not required. The boot environment can be built based on Windows RE (recovery environment).

The drivers are automatically detected. Select the required driver to install, which improves the convenience of system recovery and reduces operating time for system engineers.

Disk-to-Disk Copy

Disk-to-Disk Copy feature is now added back to offer greater flexibility and support migration of data from a hard disk to SSD, upgrading to a large-capacity disk, etc. Disk-to-disk Copy feature allows you to select the entire disk or a specific volume to copy, or copy in enlarged size. Data volumes from different disks can be flexibly combined using disk-to-disk copy for a new single disk.

Windows-based Boot Environment Builder

Select Windows RE

Select Device Driver

Choose a tool

Specify a tool to create at Boot Environment.

○ Windows RE
  Use the Windows RE that is installed on this computer.

○ Windows Assessment and Deployment Kit (ADK)
  Use the Windows ADK provided by Microsoft.

  Please select...

Add device drivers

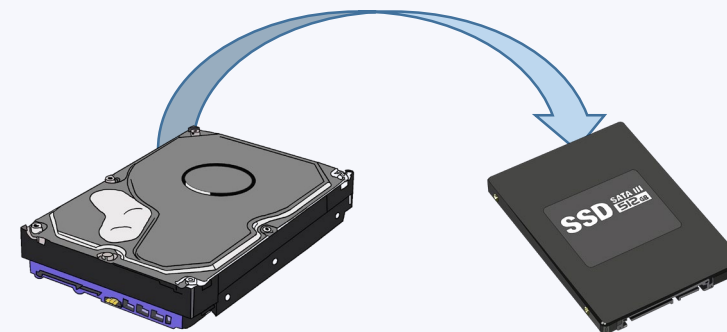Specify any network and/or storage device driver(s) with the driver's media to include in the image.

Manufacturer	Device Name
▼ 🖧 Network Adapters	
☐ VMware, Inc.	vmxnet3 ethernet adapter
☐ Intel Corporation	Intel(R) 82574L Gigabit Network Connection
▼ 🖴 Storage Adapters	
☐ LSI	LSI Adapter, SAS 3000 series, 8-port with 1068
☐ Standard NVM Express Controller	Standard NVM Express Controller
▶ 🖴 Tape Drives	
▶ 🖧 Others Drivers	

Disk-to-Disk Copy

Migration of data from a hard disk to SSD

ActiveImage Protector 2022 product lineup tailored to your system environments

Physical Environment

Windows Server License

➢ **ActiveImage Protector 2022 Server**

Linux Server License

➢ **ActiveImage Protector 2022 Linux**

Windows Client License

➢ **ActiveImage Protector 2022 Desktop**

Virtual Environment

On-site environment License

➢ **ActiveImage Protector 2022 Virtual**

Public Cloud License

➢ **ActiveImage Protector 2022 Cloud** **NEW**

Virtual Environment License (ex. KVM in on-site environment)

➢ **ActiveImage Protector 2022 Server vPack** **NEW**

Cluster Environment

Microsoft MSCS/MSFC License

➢ **ActivImage Protector 2022 Custer**

IT Professional (* 1)

➢ **ActiveImage Protector 2022 IT Pro**

Collaboration (* 1)

➢ **ActiveImage Protector 2022 CLUSTERPRO**
➢ **ActiveImage Protector 2022 plus CLUSTERPRO X**
➢ **ActiveImage Protector 2022 Express5800/ft Server**
➢ **ActiveImage Protector 2022 Express5800/ft Virtual**
➢ **ActiveImage Protector 2022 Server RDX**
➢ **ActiveImage Protector 2022 Linux RDX**

＊1 : To be released at reasonable timing.

Actiphy

- Amazon S3, Microsoft Azure, object storages compatible with Amazon S3 are supported as the backup destination cloud storage.

- Backup/restore feature supports virtual machines configured on Amazon EC2, Microsoft Azure

- Supports LTO tape device as the backup destination storage

- File / Folder Backup

- SFTP protocol is supported. Deployment of a server supporting SFTP enables to save the backup image files directly to the server.

- Annual, three-year, five-year subscription licenses are now available.

- Boot Environment Builder without the need for installation of Windows ADK

- Windows Server 2022, Windows 11 are supported.

For your inquiry, please contact:
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E-mail: global-sales@actiphy.com
Phone: +81-3-5256-0877

Actiphy
株式会社 アクティファイ

www.actiphy.com