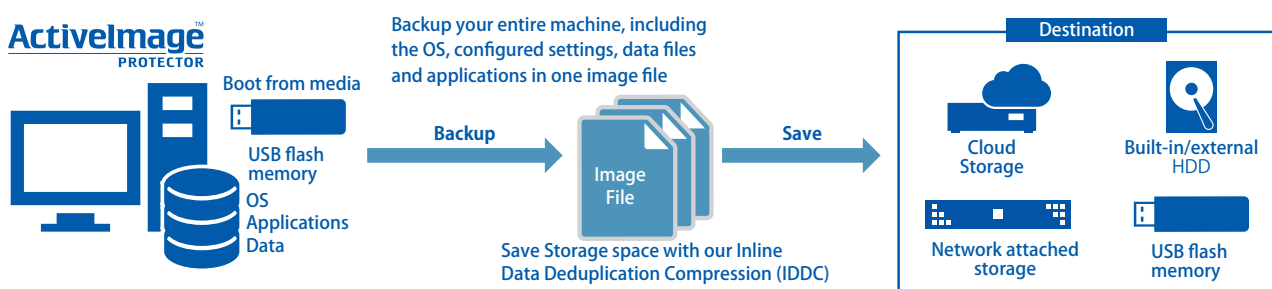# ActiveImage™
PROTECTOR

IT Pro Edition

What is ActiveImage Protector™ ?

Backup Solution

ActiveImage Protector™ IT Pro Edition is an image based backup solution designed for IT professionals who need to back up and install OS/ applications on a fairly frequent basis at the clients workplace.

ActiveImage Protector™ IT Pro Edition allows to back up the entire hard disk, including the operating system along with all your applications and data in one image file and save the backup file to a storage location, including local hard disk, USB memory, network storage such as NAS, etc.

ActiveImage™
PROTECTOR

Boot from media

USB flash memory

OS
Applications
Data

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

Backup

Image File

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

Save

Destination

Cloud Storage

Built-in/external HDD

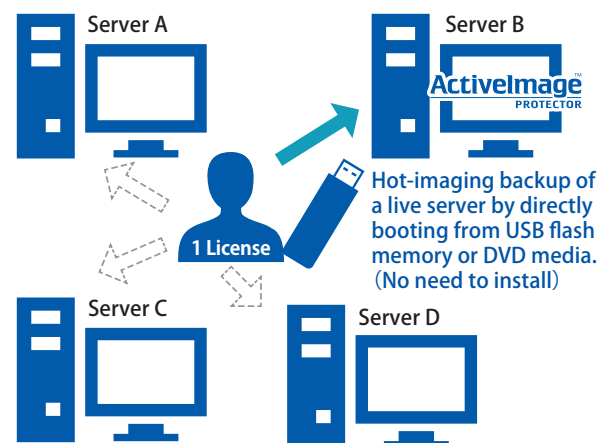Network attached storage

USB flash memory

No Installation Required

ActiveImage Protector™ IT Pro Edition enables you to take a hot backup of the live operating system in a clean state, including all applications and data; without installing any agent software on any system. All functions and features run directly from the ActiveImage Protector™ IT Pro media you created. For example, when doing system maintenance, you can take a hot backup of a live server which has not been regularly backed up for a long time, without shutting down the server; directly from the ActiveImage Protector™ IT Pro Edition on DVD or USB media. You do not need to run the risk of installing uncertified programs or device drivers in a production environment.

IT Pro Edition license conveniently designed for IT Professionals and offered at affordable price

IT Professionals visit a variety of client companies to back up and build up server infrastructure. One of the problems associated with this, is the cost of backup programs. In many cases you
must purchase one software license per machine, which can significantly increase costs.
To solve this problem, ActiveImage Protector™ IT Pro Edition is offered on a subscription basis; licensed per technician, allowing one technician to backup and restore an unlimited number of systems (server/desktop) on an unlimited number of machines for a period of one year. You can create IT Pro Edition Media to run the program from the media.-

※There is also a "migration license" that allows one designated technician to use an unspecified computer for "90 days" at a low price.

Server A

Server B

ActiveImage™
PROTECTOR

1 License

Hot-imaging backup of a live server by directly booting from USB flash memory or DVD media.
（No need to install）

Server C

Server D

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!

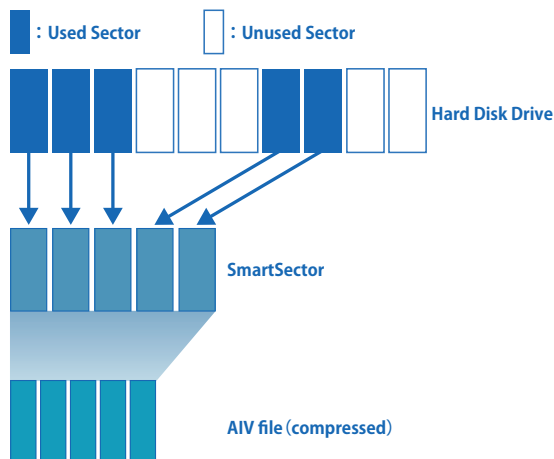## Hot-Imaging backup for live Windows machines

The ActiveImage Protector™ hot-imaging backup feature ultra-reliable backups while the machine is active and running. Our integration with Microsoft's advanced VSS (Volume Shadow Copy Service) technology embedded in Windows, means that we do not need to stop or interrupt any services or databases or open files when performing backups. Hot-imaging backup is especially useful when backing up mission-critical systems and non-stop servers where the data is constantly updated throughout the day and night.

Cold-Imaging for Windows machines

Boot up the machine from ActiveImage Protector™ IT Pro Edition media to create a backup image of a clean static Windows server or workstation (immediately after installation of Windows). Cold imaging backup, saving the point-in-time state of a failed system is convenient to examine the cause of the system failure. Faster and smaller backup with Smart Sector technology

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. 。
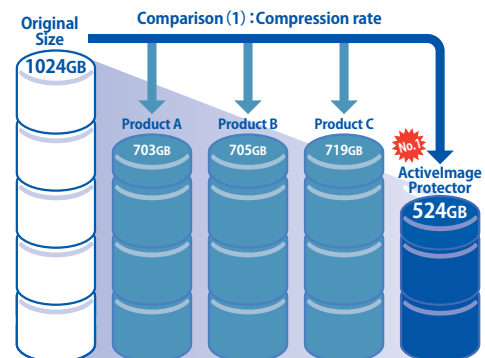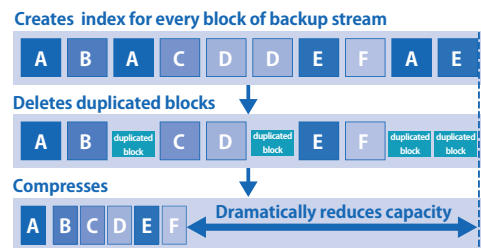
Bad Sector Skip

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.

You do not need to purchase an optional tool or an expensive storage array 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
703GB

Product B
705GB

Product C
719GB

No.1
ActiveImage Protector
524GB

	Comparison (2) : Backup time (1TB)		
No.1 ActiveImage Protector	Product A	Product B	Product C
2hr 12min	5hr 32min	3hr 49min	2hr 41min

Smart Sector backup of Linux Ext 2 / 3 / 4 from Windows

In a Windows / Linux multi-boot environment, AIP's Smart Sector Technology can back up both Linux (Ext 2, Ext 3 and Ext 4) and Windows partitions from Windows..

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, or by using a 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.
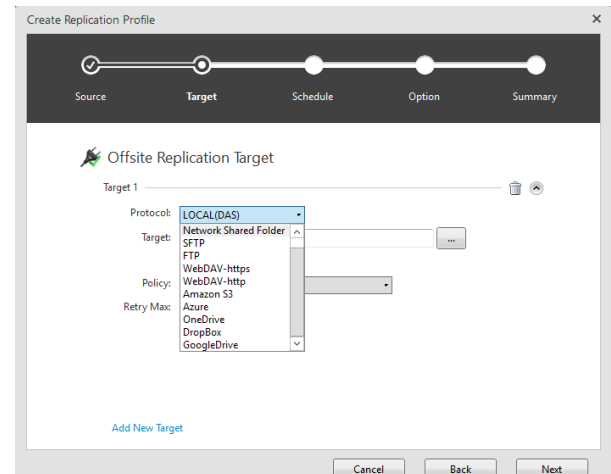
Backup Options

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 the snapshot (before starting a backup task), or a script to copy / edit the created backup image file, etc.

Cloud Storage Services are supported (Offsite Replication in ImageCenter™ LE)

The combined use of ImageCenter™ LE, ActiveImage Protector™ image management tool, provides Offsite Replication feature for replicating the backup image files to the replication targets including a Network Shared folder, FTP, FTPS, SFTP, WebDAV, Amazon S3, Azure Storage, OneDrive, Google Drive, Dropbox.
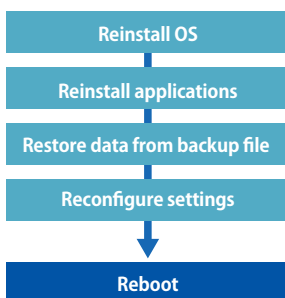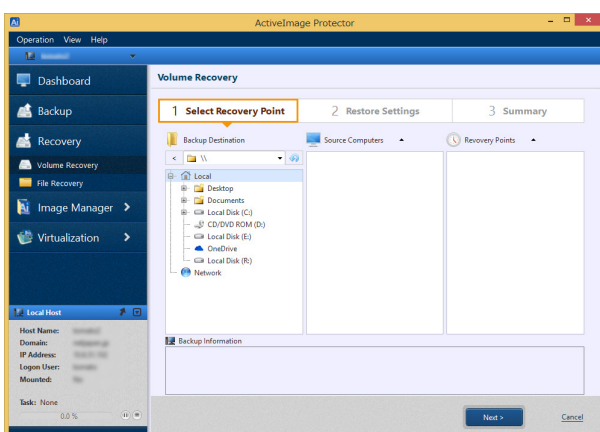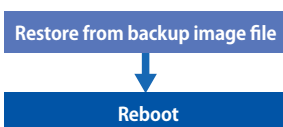
Restore Features

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 solution and the built-in wizard guides you through every step to perform all the required operations for recovery from an ActiveImage Protector™ sector-based backup image file.

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.
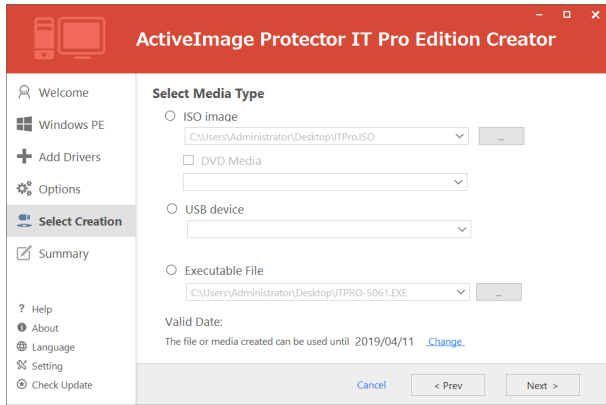
File Recovery feature

It is often necessary to recover lost, corrupted or accidentally deleted files and folders.

ActiveImage Protector™'s file/folder recovery feature allows you to quickly restore a specific file or a folder from a backup image using the ActiveImage Protector™ GUI. ActiveImage Protector™ also inclusively restores all previously assigned access rights to recovered files and folders.

IT Pro Edition Creator wizard for creating IT Pro Edition media

ActiveImage Protector™ IT Pro Edition includes Media Creator, guiding you through all the required steps to create your boot media. You can choose from multiple media types, i.e., USB flash memory, USB hard disk , ISO image, or optical media to create the boot environment. If a PC does not come with an optical media drive, the use of bootable USB flash memory or USB hard disk drive offers a bare metal recovery option. Bootable USB hard disk drive can provide you with a partition allocated for saving user data. In the event of a system failure on a server in which the latest RAID driver is installed, if the correct device driver is not included in the boot media, the device cannot be recognized and restored.

IT Pro Edition Creator solves this type of problem by enabling you to build the boot environment by with required device driver and configured settings for full-state recovery.

Architecture Intelligent Restore

A.I.R.* can restore virtual and physical machines from ActiveImage Protector™'s backup image files to different hardware. A.I.R. can also restore entire disks and/or selected volumes.

*A.I.R. (Architecture Intelligent Restore)
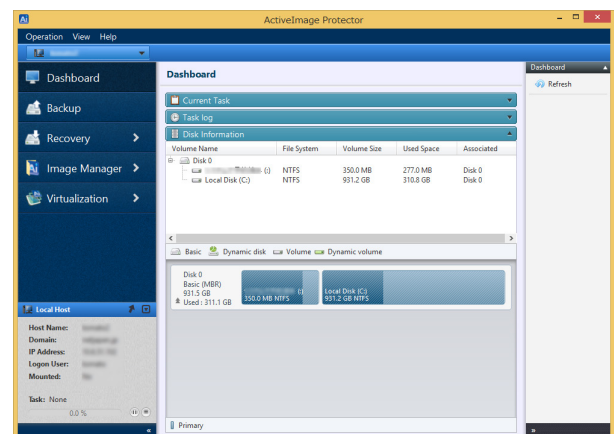
Repair Boot Configuration

Recovery of BCD in MBR is supported in the boot environment. In the event that you failed to back up the boot partition in the partition table, or that the restored "C:" drive alone failed to boot up the system, the use of the "Repair Boot Configuration" tool enables the BCD for the restored system to be bootable.

Shrink On the Fly

ActiveImage Protector™ provides Shrink on Restore for NTFS volumes. NTFS volumes can be restored to disk drives that are smaller than the original disk.

Enlarge or reduce target volumes or partitions during recovery

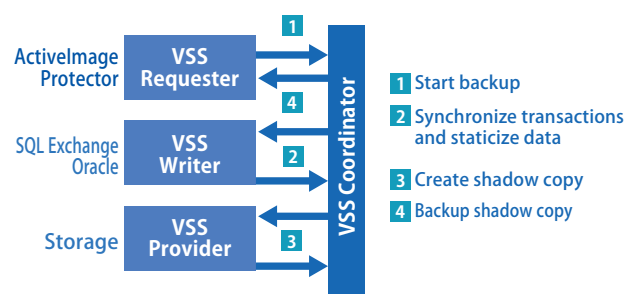NTFS volume may be restored to a volume in specified size larger or smaller than the orginal disk.

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 wizard 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.

Snapshot Driver

Standard Snapshot Driver (Volsnap)

ActiveImage Protector™ uses Microsoft's standard Volsnap snapshot driver. No additional drivers need to be installed.
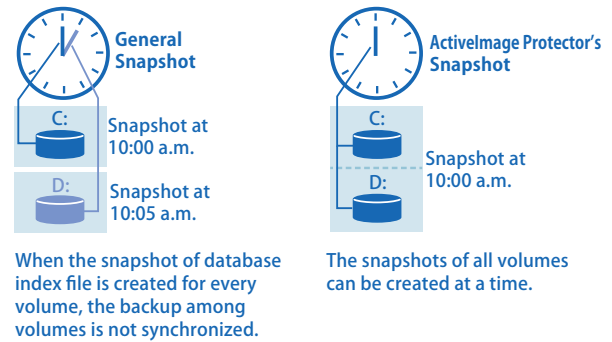
Backup of VSS-aware server applications

Create consistent backup of your VSS (Volume Shadow Copy Service)-aware server applications such as SQL Server, Exchange Server and Oracle.

1 Start backup
2 Synchronize transactions and staticize data
3 Create shadow copy
4 Backup shadow copy

Point-in-time multi-volume snapshots

ActiveImage Protector™ offers superior recoverability of databases spread across multiple volumes by taking a point-in-time snapshot of all volumes at the same time, thus ensuring consistency and recoverability. If database spanning across multiple volumes, backup by volume causes the inconsistency of the data in the backup images due to the difference in starting times between the backups. Restoring inconsistent backup images results in an inconsistent database. ActiveImage Protector™ solves this problem by taking a point-in-time snapshot of all the volumes.

General Snapshot

C: Snapshot at 10:00 a.m.

D: Snapshot at 10:05 a.m.

When the snapshot of database index file is created for every volume, the backup among volumes is not synchronized.

ActiveImage Protector's Snapshot

C:
D: Snapshot at 10:00 a.m.

The snapshots of all volumes can be created at a time.

Virtual Environment Support

Enhanced support for virtual environments (V2P, V2V & P2V)

ActiveImage Protector™ provides the virtualization from physical machines to virtual machines (Hyper-V, ESXi) or vice versa. The virtualization process includes the installation of the driver required for booting the virtual machine.

Virtual conversion utility

Virtual conversion utility is provided to convert a backup image file to virtual disk bootable as virtual machine. Conversion to the latest virtual disk format, VMware VMDK, Hyper-V VHD, VHDX is supported.

Virtualization Adapter

The driver for virtual machine can be injected into the current image file, which is saved as the differential file (.aix) of ActiveImage Protector™. The differential file may be restored to a virtual machine.

P2V conversion directly to virtual environments

P2V conversion supports Hyper-V or VMware vSphere as the target host to create the virtual machine attached with a converted virtual disk, enabling to immediately boot up the virtual machine.

P2V (physical to virtual) conversion directly from hard disk

P2V conversion feature supports direct conversion from a hard disk to a virtual disk bypassing P2V conversion from an image file which saves on processing time.

Support for P2V disk on Windows PE

Conversion from physical to virtual disk (conversion to virtual disk only) is supported in Windows PE-based boot environ
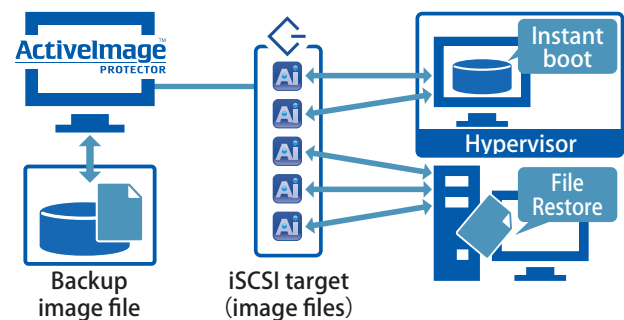
Image Management

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.
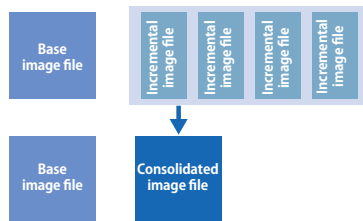
iSCSI Serves Backup Image Files as iSCSI Targets

ActiveImage Protector™ now utilizes iSCSI to serve backup images as iSCSI targets to any local or remote iSCSI initiator for mounting backup images as local disks.

Backup image file

iSCSI target (image files)

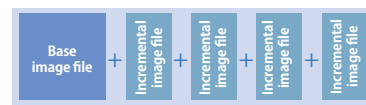Instant boot

Hypervisor

File Restore

Consolidation of Backup Files

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

Base image file

Incremental image file	Incremental image file	Incremental image file	Incremental image file

Base image file

Consolidated image file

Archive Backup Files

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

Base image file	+	Incremental image file	+	Incremental image file	+	Incremental image file	+	Incremental image file

Others

Supports the latest version OS, uEFI compatible motherboard

The latest versions of Windows OS and Windows Server OS are supported. Backup and recovery features support GPT disk in uEFI boot system.

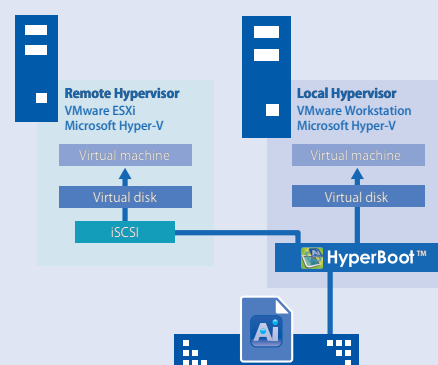## Supports the latest files systems

The latest file systems including ReFS (Resilient File System), CSVFS (Cluster Shared Volume File System), etc., and Storage Space, 4K sector disk are supported.

Support for hardware RAID

Backup / recovery of hardware RAID is supported.

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

Use our HyperBoot™ add-on to boot ActiveImage Protector™ backup image files as a fully functional virtual machines in only a few minutes in local and remote Microsoft Hyper-V, VMware ESXi, VMware Workstation Pro / Player, Oracle VirtualBox systems. 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.

Remote Hypervisor
VMware ESXi
Microsoft Hyper-V
Virtual machine
Virtual disk
iSCSI

Local Hypervisor
VMware Workstation
Microsoft Hyper-V
Virtual machine
Virtual disk

HyperBoot™

Ai

Actiphy

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