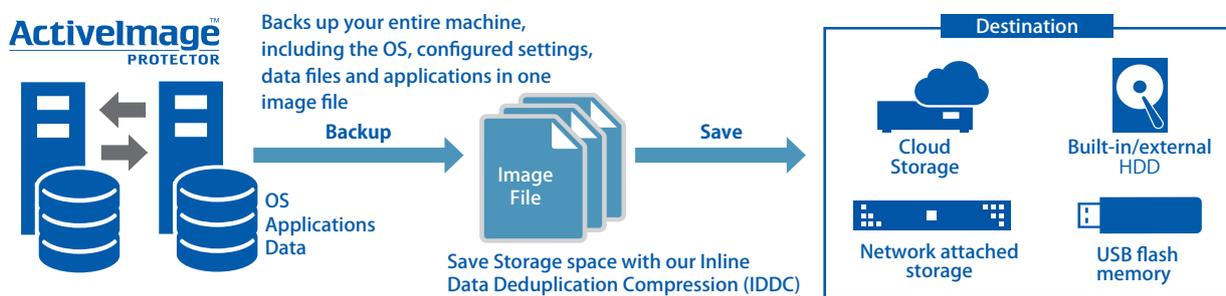


## What is ActiveImage Protector<sup>TM</sup> ?

### Backup Solution

ActiveImage Protector<sup>TM</sup> is an image based backup and recovery solution that supports a variety of physical and virtual Windows and Linux environments. ActiveImage Protector<sup>TM</sup> 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.



### Ensure full-state recovery

ActiveImage Protector<sup>TM</sup>, 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. ActiveImage Protector<sup>TM</sup> backs up your entire hard disk including the operating system in a single operation. In the event of a hardware failure of the backup source machine, the system can be restored to a different physical machine or a virtual machine. Immediate start-up of a virtual machine from a backup image file enables you to resume the server operation.

### Support for Cluster Environments

ActiveImage Protector<sup>TM</sup> Cluster Edition flexibly supports cluster environments such as Windows Server Failover Clustering. Upon installation, ActiveImage Protector<sup>TM</sup> identifies clustered volumes (specialized storage devices). The clustered volumes, including the system volume (mirrored volume), can be booted up without difficulty upon restoration. Quorum configuration in a clustered environment can be obtained and restored.

### Cluster Environment License

The Cluster Edition includes the same features as found in ActiveImage Protector<sup>TM</sup> Server Edition but for Clustered Environments. The Cluster Environment License is offered as a more practical licensing solution when you deploy a clustered environment.

## Backup Features

### Image file based backup

ActiImage 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

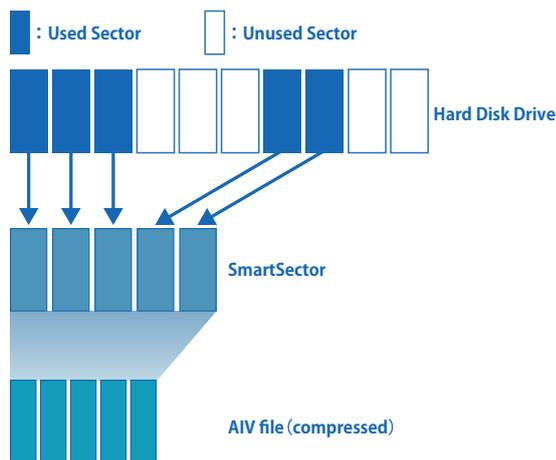
ActiImage Protector™ backs up your entire machine, including the OS, applications and data files, while the machine is active and running without stopping the services including database or open files using Microsoft's advanced VSS (Volume Shadow Copy Service) technology embedded in Windows servers to 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 Windows machines

ActiImage Protector™ may be booted from the product media to run in Windows PE. This enables 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 the failed system is convenient to examine the cause of the system failure.

### Faster and smaller backup with Smart Sector technology

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



### Encryption of Backup Images

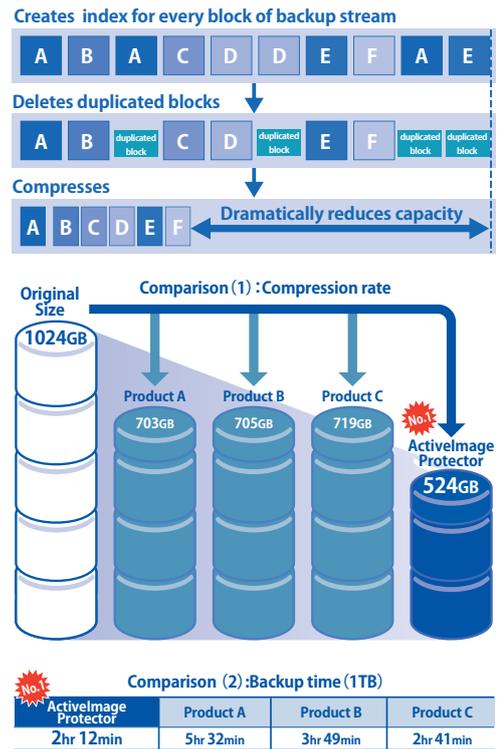
ActiImage Protector™ can create password-protected and encrypted backup images and supports up to 256 bit encryption.

### Bad Sector Skip

In the event of a corrupt or failing disk, ActiImage 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.



### 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. ActiImage 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

### Incremental Reconcile Feature (recurring incremental backup)

ActiImage Protector™'s Reconcile feature allows you to continue an incremental chain even if previous incremental files are lost or corrupted.

### USB SmartDetect™

Automatically detects when your USB backup disk is not connected and will prompt you to resume your backups once the disk is reconnected. Even when multiple USB hard disks are specified as the destination to save backup images, USB SmartDetect feature can be enabled.

### 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, if any, by using prepared script file.

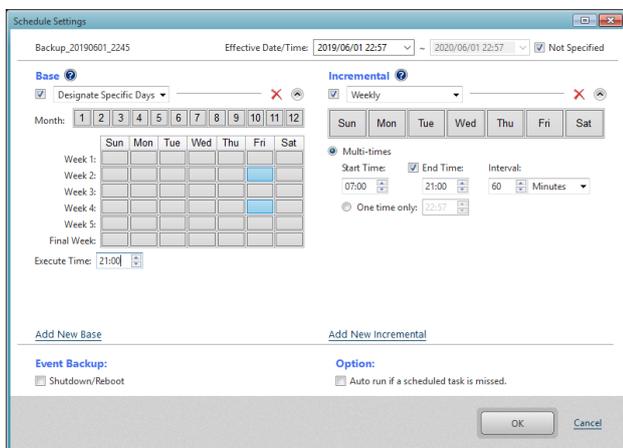
### A variety of Storage Media are supported

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. You are provided with the options including Retention Policy enabling to keep only pre-defined number of backup image generation sets for storage space saving, USB SmartDetect™ detecting disconnected USB backup disk and resume skipped backups once the disk is reconnected, etc.



### 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

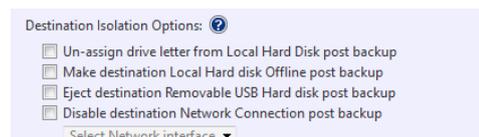
Replication and Consolidation tasks upon completion of a backup task or at a specified time.

### Automatic backup at shutdown

Due to time constraints you might have missed the timing of backing up your system though you recognized the need. ActiveImage Protector™ supports automatic backup when a machine is shutting down and you are leaving the office every day.

### Destination Isolation Option

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

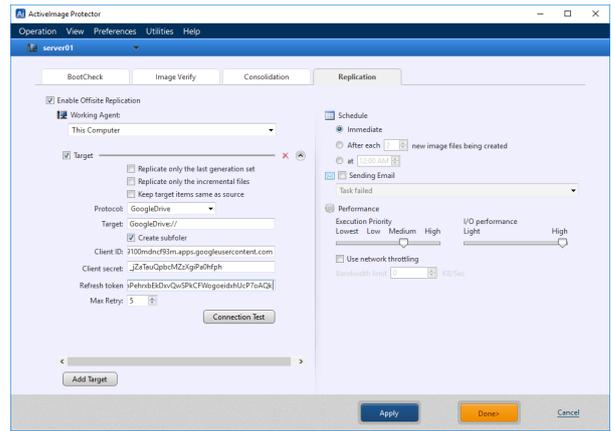


### Scripting

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)

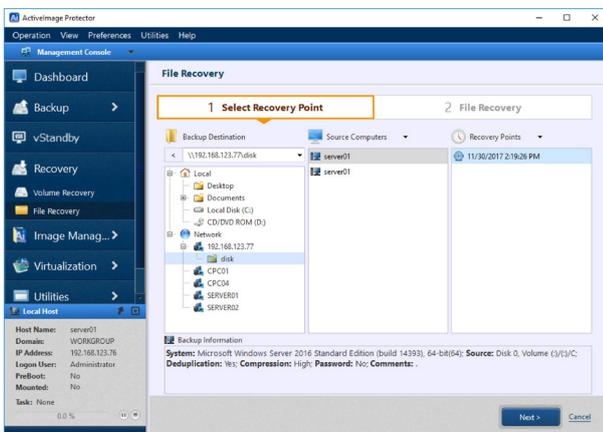
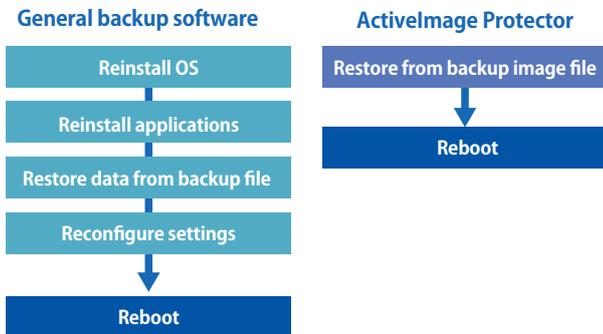
Replication target supports a local storage, a Network Shared folder, FTP, FTPS, SFTP, WebDAV, Amazon S3, Azure Storage, OneDrive, Google Drive, Dropbox.



## 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. ActiImage 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.



### Fast Bare Metal Recovery

ActiImage 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 ActiImage Protector™'s GUI. Then, the NTFS streams information and 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 ActiImage Protector™'s Linux based boot environment (AIPBE) on DVD. AIPBE is built based on CentOS. This enable to recognize the latest device to use.

### Windows PE Based Recovery Environment

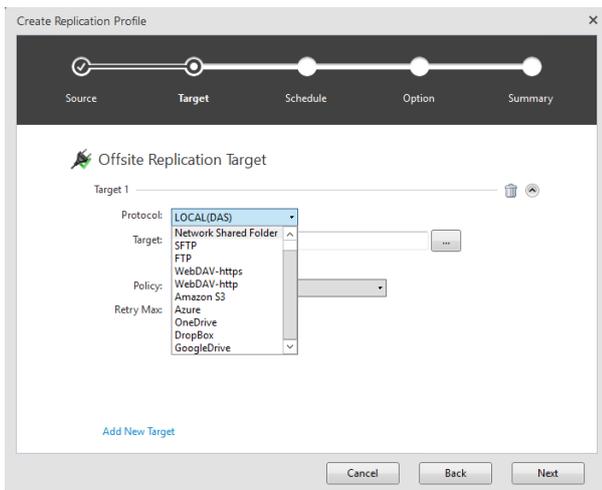
ActiImage Protector™ includes a Windows PE based boot environment builder that uses Windows AIK or ADK.

### Pre-Boot Recovery Environment

This feature creates a boot environment directly on your hard drive on a tablet PC that does not come with an optical media drive or USB port, allowing you to boot the recovery environment without the need of an external device or optical drive (not available for the free version of Hyper-V Server or Server Core).

### Boot from USB flash memory, USB hard disk drive, optical media or ISO file

ActiveImage Protector™ comes with boot environment builder for creating bootable media by selecting USB flash memory, USB hard disk, ISO image file or optical media as well as the product media. Boot Environment Builder allows you to add a specific device driver in the bootable media, if you use a hardware of which driver is not included in the product media. If your note PC does not come with an optical media drive, the use of bootable USB flash memory or USB hard disk drive offers bare metal recovery option. Bootable USB hard disk drive may provide you with a partition allocated for saving user data.



### Repair Boot Configuration

Recovery of BCD in MBR is supported on boot environment. In case that you failed to back up boot partition in the partition table, or that restored "C:" drive alone failed to boot up the system, the use of "Repair Boot Configuration" tool enables to restore 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. The minimum requirement is that there is enough space on the smaller drive to restore the amount of actual data of the original volume.

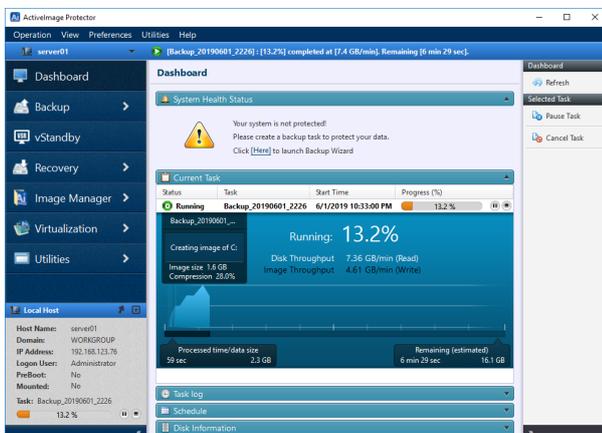
### Enlarge or reduce target volumes or partitions during recovery

NTFS volume may be restored to a volume in specified size larger or smaller than the source volume (NTFS volume only)

## 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.

## Snapshot Driver

### Standard Snapshot Driver (Volsnap)

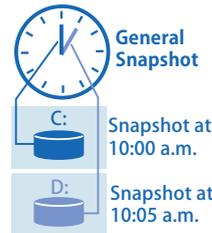
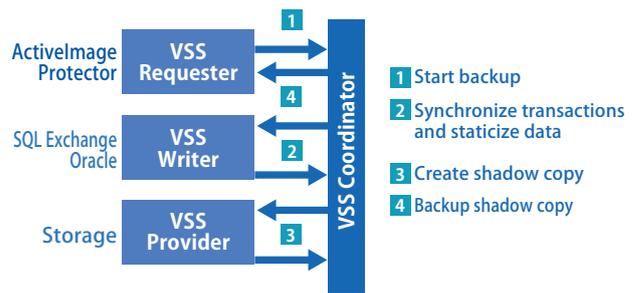
ActiImage Protector™ uses Microsoft's standard Volsnap snapshot driver. No additional drivers need to be installed.

### Backup of VSS-aware server applications

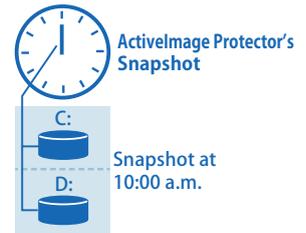
Create consistent backup of your VSS (Volume Shadow Copy Service)-aware server applications such as SQL Server, Exchange Server and Oracle.

### Point-in-time multi-volume snapshots

ActiImage 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. ActiImage Protector™ solves this problem by taking a point-in-time snapshot of all the volumes.



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



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

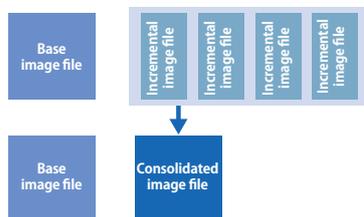
## Image Management

### Image Explorer

Installed as a Windows Explorer extension, Image Explorer allows you to browse and copy files and folders from ActiImage Protector™ image file without requiring a full image mount, saving your time and system resources. This will allow you to restore individual files or folder.

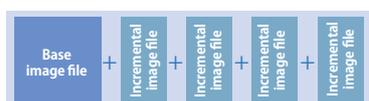
### Consolidation of Backup Files

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.

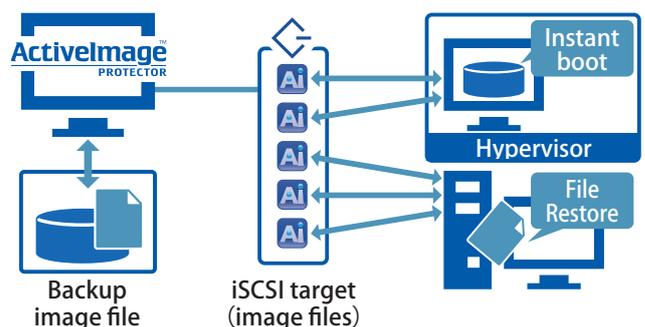


### Image Mount (Granular File and Folder Recovery)

ActiImage 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

ActiImage 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; not only providing a method to recover files and folders from a backup, but provides immediate booting of a backup image attached to a virtual machine on hypervisor. Additionally, using VMware vMotion streamlines the recovery process by seamlessly migrating live virtual machines booted from the iSCSI disk to a hypervisor in a production environment.



## Remote Management

### Push install for easy backup agent distribution

Push Install feature is designed to install ActiveImage Protector™ agents and console on remote computers over a network. Using the built-in Network Discovery feature, you can discover target computers and enter the product key for the selected installation package. You can also get a list of computers from Windows Active Directory or push install the programs to remote multiple computers.

### 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 Actiphys software installed on remote network computers can be upgraded to a full product version from console.

## 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.

### Monitor task log entries in Windows Event Log Viewer

Every task events are now recorded in the Windows event log to provide better integration into the Windows Management Interface for a more unified experience.

### Enhanced License Management Feature

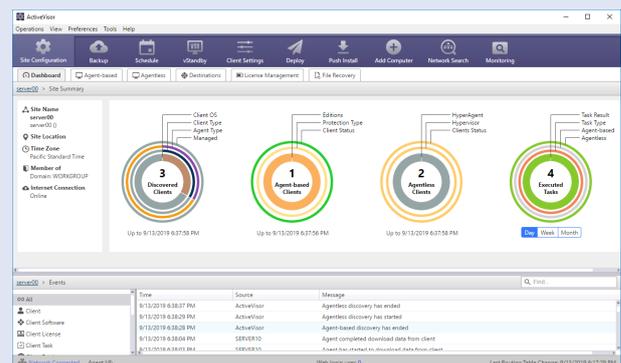
Supports ActiveVisor™'s license management. With no internet communication the enhanced license management feature allows the software activation, reviewing license information, the software update, etc.

### 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 AIP 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.





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