



Storage Lifecycle Management Solutions

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Paragon Snapshot Technologies

Data Sheet

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Many companies today find their backup and recovery process strained as data growth in enterprise IT environment continues to accelerate at exponential rates, while data-protection solutions have struggled to keep pace. Backup performance is crippled by the needs of up-to-date and online business applications. Restore performance continues to be slowed by the inability of many software products to retrieve data quickly and efficiently, thus forcing the market to look for a worthy alternative to traditional sector and file based backup methods.

What is Snapshot?

Snapshot implies making a copy of data at the point-in-time of initiating that copy to back it up without interrupting or impacting systems, as a traditional backup does, while still offering the ability to restore that data whenever needed. The essence is to take a stable image of data that keeps being updated. With a snapshot based disaster recovery solution, you can:

- Provide a new level of availability for applications that can never be offline;
- Forget about the need of a backup window;
- Open up flexible and advanced data protection methods for faster backup and recovery;
- Keep the disk space consumption to a minimum.

Paragon Snapshot Technologies





Paragon Snapshot for Mac OS X

Unlike Windows and Linux, none of snapshot technology has been available for Mac OS X by now. Paragon Software has once again proved to be a pioneer coming with a unique, open system, and completely stable point-in-time snapshot technology for Mac OS X. Based on a patented Paragon Shrinkable Snapshot Technology, the company has managed to deliver the utmost of reliability and functionality that can be available for a disaster recovery solution, ranging from a single file recovery up to complete protection of the whole system.

Paragon Snapshot ver. Traditional Backup for Mac OS X

Currently available backup solutions for Mac OS X involving file archiving has a number of drawbacks which can be easily solved by using the Paragon snapshot technology:

- **Inability to access files during backup.** Running applications usually require exclusive rights for processed files, thus preventing a backup program from copying them;
- **Much time needed for backup.** To ensure accessibility of files and the data integrity, a backup program requires suspension and/or termination of all running applications during a volume backup. For high-capacity disk systems, this could take hours.

	Traditional Backup	Paragon Snapshot for Mac OS X
Processing of “Locked” Files		
Integrity of Group of Files		
Processing Level	File-level	Sector-level From a snapshot however, you can make a backup either on a file- or sector-level.
System Restore Procedure	- Install Mac OS X (~40mins); - Configure the solution; - Rollback.	- Boot from CD; - Rollback.

Benefits at a Glance

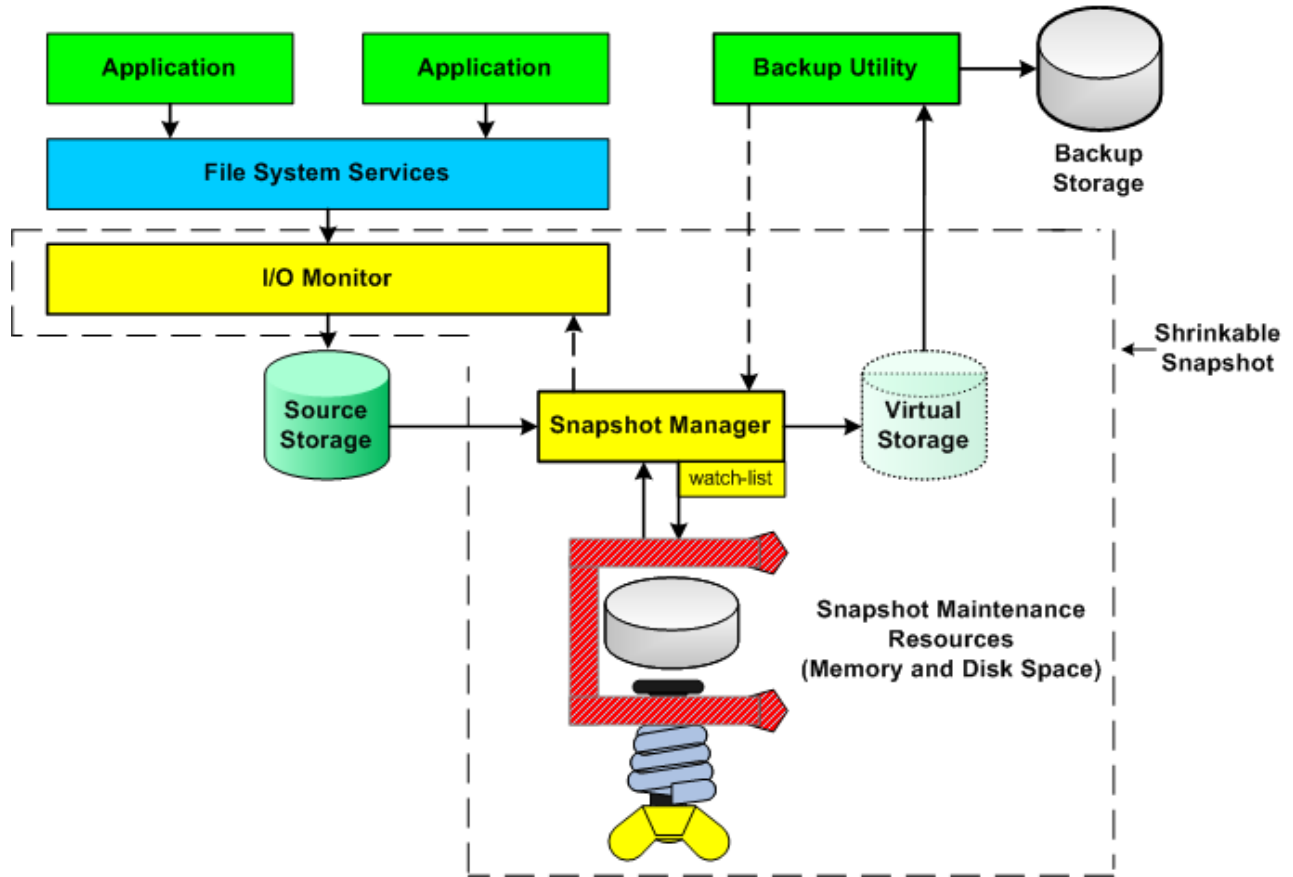
- No need of interrupting Mac OS X and on-line applications;
- Instant backup and recovery of individual files, directories or even the entire file system;
- No need of a backup window;
- Reduce storage and system administration costs;
- Completely unattended data protection.

Paragon Shrinkable Snapshot

Shrinkable Snapshot is a Paragon patented technology that enables to reduce processor and memory resources required for supporting a snapshot during the backup operation. It's been introduced to lift the main disadvantage of a traditional snapshot – mandatory keeping of the snapshot contents until the backup operation is completed. Thus depending on the amount of the updated data, it may require additional storage space and system resources.

Paragon Shrinkable Snapshot enables to operatively exclude the already processed data from the snapshot space, thus shrinking the snapshot, thus significantly reducing expenses and computational overheads required for maintenance of a snapshot being backed up online.

Concept of Paragon Shrinkable Snapshot



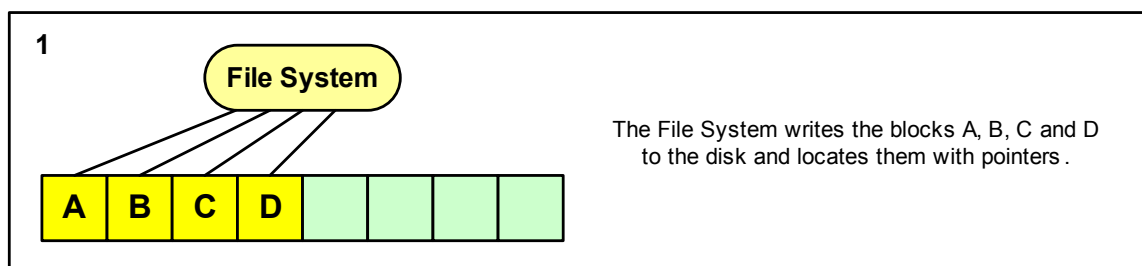
Benefits at a Glance

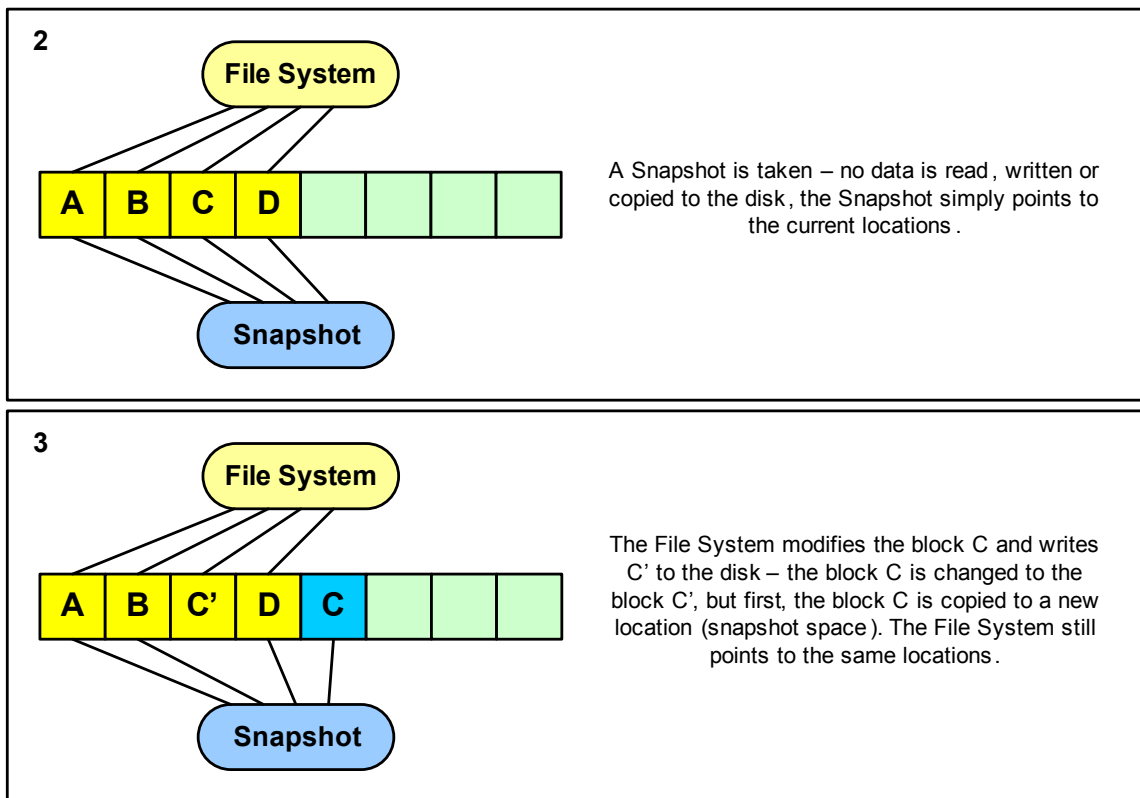
- Lower requirements to storage capacity;
- Files not required for backup can be excluded from processing after the snapshot creation;
- Online backup operation will require less resources and overheads.

Paragon Hot Backup

Paragon Hot Backup (Hot Processing) is a technology that enables to lock a partition for backup without interrupting Windows and other applications. It represents a classical “Copy-on-Write” snapshot technology. With this technology aboard, you can back up a Windows partition and all of your programs online.

Concept of Paragon Hot Backup Technology





Benefits at a Glance

- Flexibility to store current and snapshot data (the area in which snapshots are stored is clearly demarcated from the current data);
- Better managing of the snapshot space with no impact on the current data;
- Predictable amount of recovered space by deleting snapshots.

Paragon Sandbox

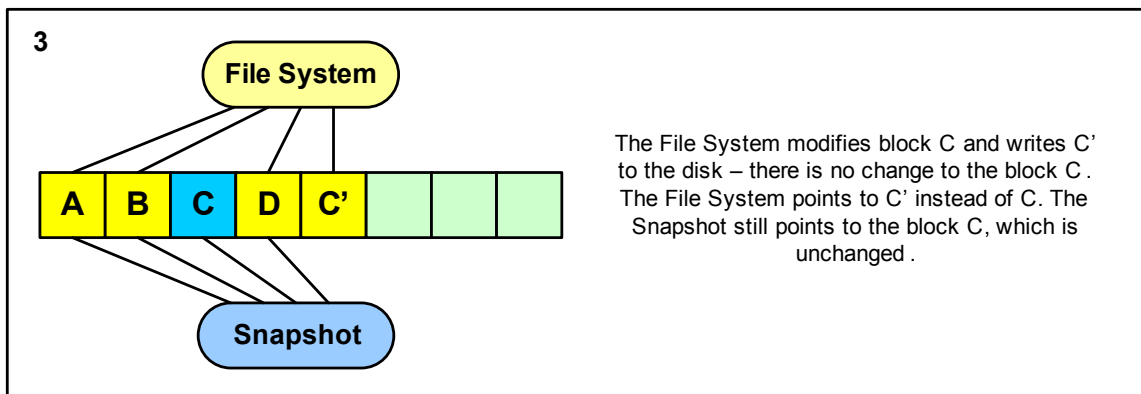
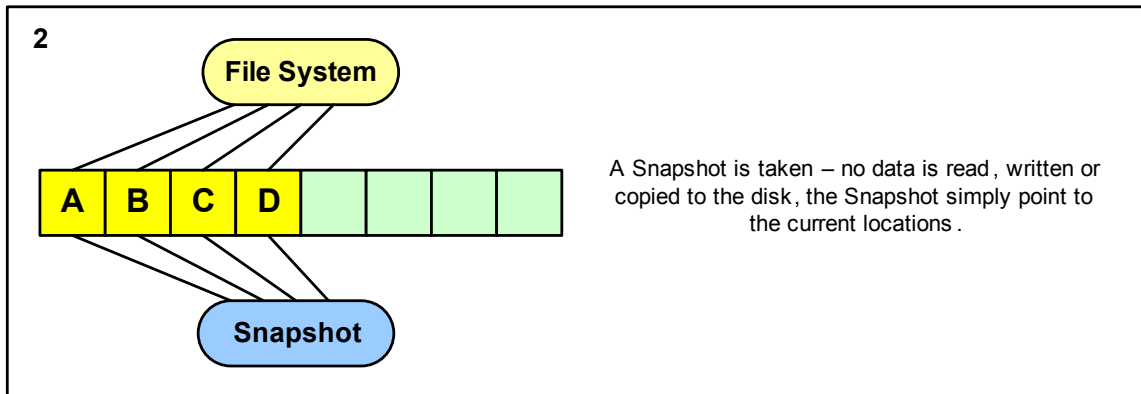
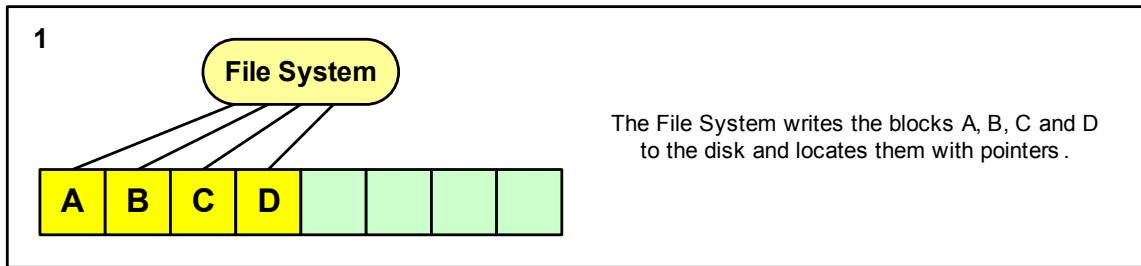
Paragon Sandbox is a technology that allows instantly reverting contents of a partition back to the original state after any destructive change. The technology puts the processed volume in a state when all changes are made only virtually, thus keeping the original data of the volume intact. When deciding to leave this state, you've got the option either to discard all changes (original data will remain intact) or apply them (all changes will be transferred from temporary storage to the physical volume).

Paragon Sandbox is designed to provide a simple and reliable way of protecting user's system and data against undesirable harmful changes and enables:

- Instant rollback to a predefined state;
- Safe software installations and updates testing;
- Bulletproof protection against naughty kids.

Unlike Paragon Hot Backup, Paragon Sandbox employs a different approach to protecting updated data after it has been taken - it preserves the old data in its old location while redirecting the updated to a new location.

Concept of Paragon SandBox



Thus, it changes physical addresses of the processed data, so all subsequent write operations on the volume data will be saved at new locations, while keeping the original state of data completely intact.

Benefits at a Glance

- Superior performance regardless of the current state of Sandbox (active or not active);
- Superior space utilization (uninitialized locations can be tracked and not redirected);
- Deletions and rollbacks are instantaneous.

Paragon Snapshot SDK

Developed and maintained by our in-house experts, Paragon Snapshot SDK delivers:

➤ **High performance**

Paragon Snapshot SDK can help achieve an unprecedented high level of performance for your solutions.

➤ **Rock-solid reliability**

After accomplishing a lot of testing with different configurations, solutions based on Paragon Snapshot SDK have proved to be 100% reliable.

➤ **Low system requirements**

Thanks to a highly optimized source code, solutions based on Paragon Snapshot SDK will in no way overload your system.

➤ **Flexible and easy-to-use API to minimize your development costs**

Paragon Snapshot SDK is cross-platform, so it can be processed with various compilers, like Microsoft VC++, Borland, Watcom, GNU C, and Intel.

➤ **Proven and dependable support**

All Paragon SDK licenses provide a life developer support. Besides, you will get updates on a regular basis completely for free.

You can now have the option to use Paragon Snapshot SDK to build your own disaster recovery solutions.