



Radix Reload – Theory of Operation

During installation, Reload stores the current sectors index' data (HDD sectors map) as the “**Baseline snapshot**” and loads it into the **Radix Pointer** – an alternative index module. The Radix Pointer is buffering between the OS and the HDD and controlling the HDD sectors at block level. The OS now “sees” the Radix Pointer (Radix' HDD map) instead of the HDD sectors index (the real sectors map).

During operation, Reload constantly monitors the data flow and records all data entries. New data is written in free sectors. Unprotected data is erased normally.

Reload take periodical **snapshots** the Radix Pointer's content. Related sectors are locked and protected.

When protected data is being deleted, related sectors are only become invisible (by the OS) but remain protected at the block level. The data remains secured and ready for instant recovery.

When Reload snapshots are deleted, all related sectors are unlocked, except sectors protected and by other valid snapshots. All elated data is permanently erased.

When **Reload restore** command is being executed, for example, in case of system failure – the snapshot selected for restore is instantly reloaded and the OS now “sees” a new sectors map – the pre-failure clean state.

What is the actual size of a snapshot?

A snapshot is a map of the HDD sectors, reflecting the HDD's state at the time snapshot was saves. While the actual size of a snapshot is less than 0.1% of the original size of the space occupied by the protected HDD sectors - protected sectors are often linked to files that are protected by several different snapshots at the same time. For example, a file named pricelist.xcl created on January 1, 2007 and protected by snapshot #1 taken on 1/1/07 and again by snapshot #2 taken on 15/1/07. When deleting the pricelist.xcl file and snapshot #1, Windows will no longer see the pricelist.xcl, nevertheless, the space taken by the file is not cleared until snapshot #2 is deleted.

Sectors occupying protected files will be freed only after all related “guardian” snapshots are deleted and the Reload Defrag is being executed, automatically every PC restart or manually on-demand.