Flash Data Retention

Contrary to popular belief, information stored in Flash Memory is not preserved indefinitely. This is a characteristic of NAND Flash technology that those deploying Enterprise Flash Storage Systems must understand for proper system administration and management.

Given the data retention characteristics of Flash used in storage systems, the system must be powered on and operating normally for the data is to persist for an extended period of time. Flash Storage systems will automatically refresh data even if not written to or modified. Using a Flash based storage system as backup and then turning it off is not best practice. Flash based storage systems consume far less energy than rotating mechanical media so leaving it powered on is a viable option even in the most energy constrained data centers.

The FlashSystem 840 can be safely powered down for up to 90 days in temperatures up to 40 degrees C. When the system is first installed at the customer site, it automatically reformats all the Flash. If, after installation, the system has been powered off longer than 7 days, the system will automatically start a patent pending deep scrub and refresh process. This will put the system back into optimal condition without customer intervention. The 840 also employs several powerful methods for recovering data in situations that exceed the conditions above (powered off for more than 90 days or stored in temperatures over 40 degrees C) and every possible effort is made to recover any lost data.

Figure 1. Flash based storage system