

How to cleanly power down or restart a Coraid SR appliance

Objective

Sometimes administrators think that they can simply press the power button and Coraid's storage devices will power off cleanly. This is not true. This document will explain the simple steps to power down or restart a Coraid storage device without inflicting data corruption or degrading RAID configurations.

Solution

1. Unmount!

If you are going to be powering down the Coraid SR, make sure to unmount devices that are currently mounted by any AoE initiators. An AoE initiator is a server that has mounted and is using the LUNs exported from the SR. By unmounting the devices from the server you will ensure that you are not disconnecting a storage array which is still being used.

2. “Clean” vs. “Dirty” state of the drives

When a drive is read or written, the SR marks the disk as dirty until a halt or reboot marks them as clean. As such they will consequently be marked dirty if there is a power outage or if they are powered off incorrectly. When the SR is rebooted, one of the startup steps is to re-evaluate any disks that are not marked clean, to make sure that the disk parity is correct; if the parity is incorrect the SR will recalculate the parity and correct the issue. When the disk status is updated it is updated on all of the disks. If one disk doesn't get updated its timestamp becomes obsolete, therefore it won't be used to create any LUNs in the future. That means either all the (usable) disks are clean or not. There won't be a situation where only a subset of the usable disks in a LUN are clean.

3. What 'halt' does

At the SR console or within a [Coraid Ethernet Console \(cec\)](#) session, the *halt* command will stop all disk I/O, flush all of the buffers and mark all LUNs as clean. The only option from here is to either press enter to reboot or to manually power off the machine.

```
SR shelf 1> halt
System halted. Hit enter to reboot:
```

4. What a reboot does

A reboot will mark all LUNs as clean, power off the system, and boot up all of Coraid's system services starting from BIOS through Plan 9's boot sequence.

```
SR shelf 1> reboot
Rebooting system. Please stand by ...
```

Conclusion

Only the two described ways of powering down your Coraid SR (*halt* or *reboot*) will prevent possible data corruption and/or drive failure under normal circumstances.

More information

Please see section 2.7 of the [SR software user manual](#) for additional info on *halt*, *reboot*, and other SR commands. If you have any questions or comments let us know at support@coraid.com.

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