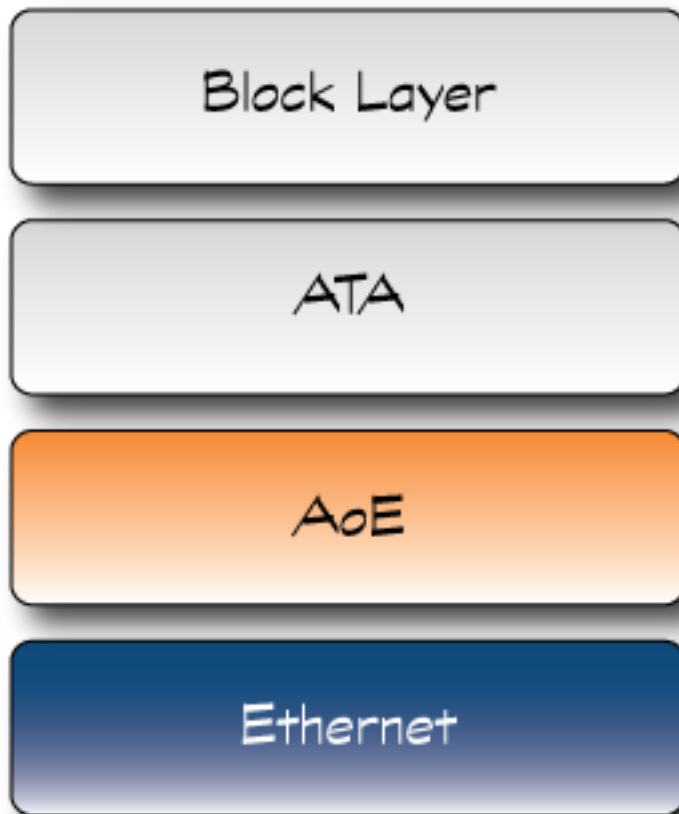


# AoE basics

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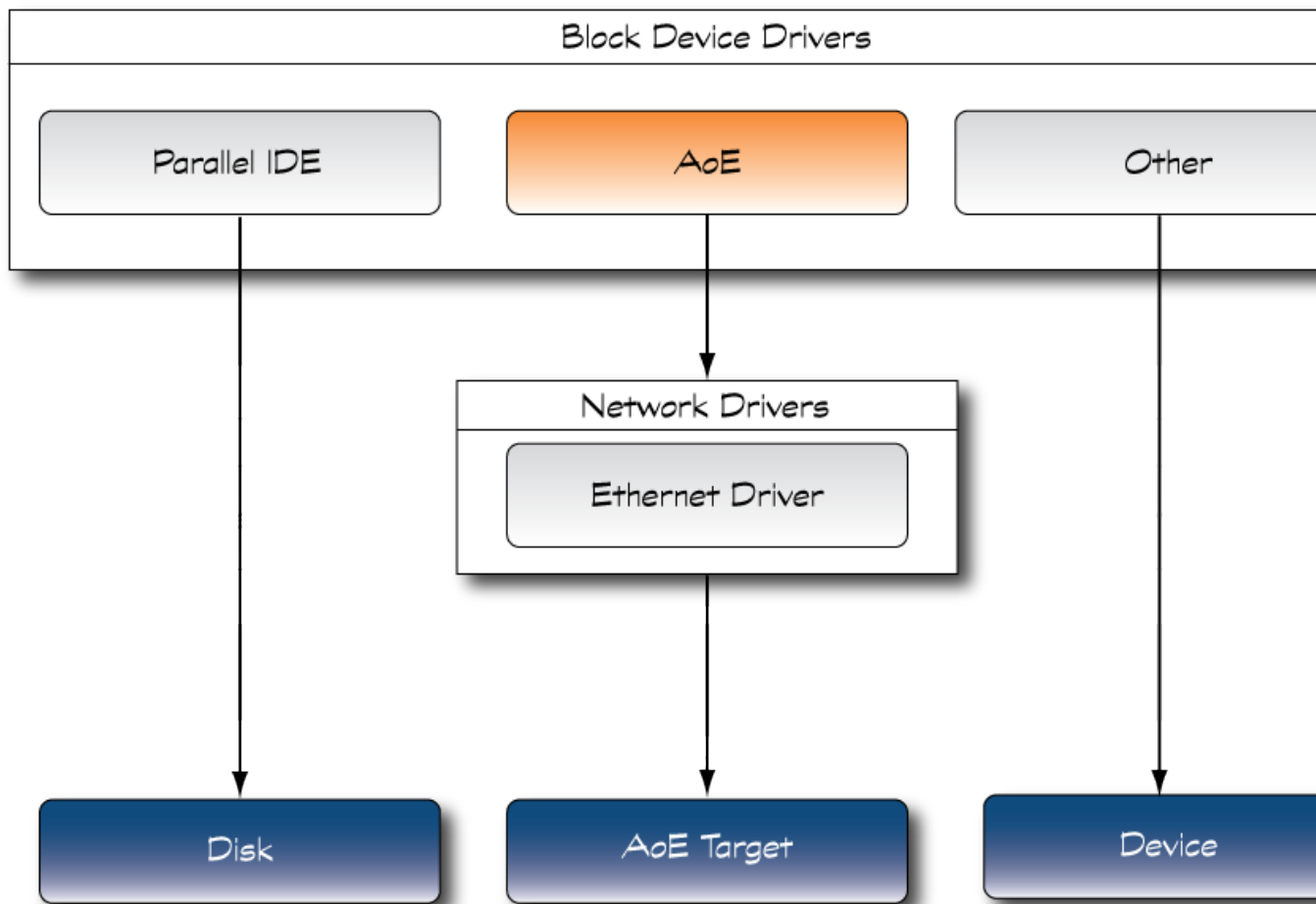


## AoE Protocol

- Coraid EtherDrive products use the AoE protocol to connect disks to servers using Ethernet.
- ATA-over-Ethernet (AoE) is a thin protocol layer directly on top of Ethernet.
- ATA disk commands (ie. read disk sector x, write disk sector y) are

put directly into standard Ethernet frames using the AoE protocol.

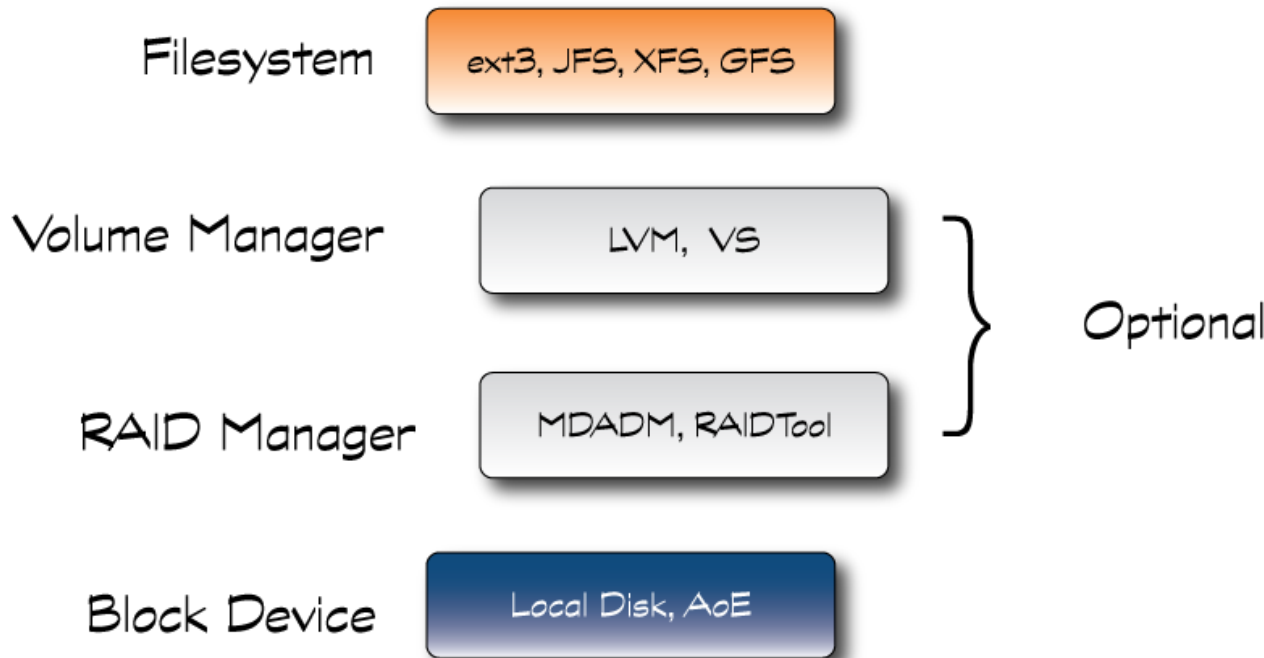
- AoE is a block storage protocol.
- AoE is a non-routed protocol, therefore does not require IP or TCP protocol layers. This eliminates unnecessary processing and makes network connection to disks simple.



## AoE Driver

- An AoE protocol driver in the host operating system provides the initiator function for the host to access storage connected to an Ethernet port.
- The AoE driver bridges the operating systems block device driver interface to the hosts Ethernet driver. This allows  
the host to use a standard Ethernet NIC.
- AoE target devices (ie. EtherDrive disk storage appliances) connect via standard Ethernet.
- AoE can work with any OS. An AoE driver is inside the main Linux kernel. Drivers are available for Linux, FreeBSD, Solaris and Windows and VMWare.

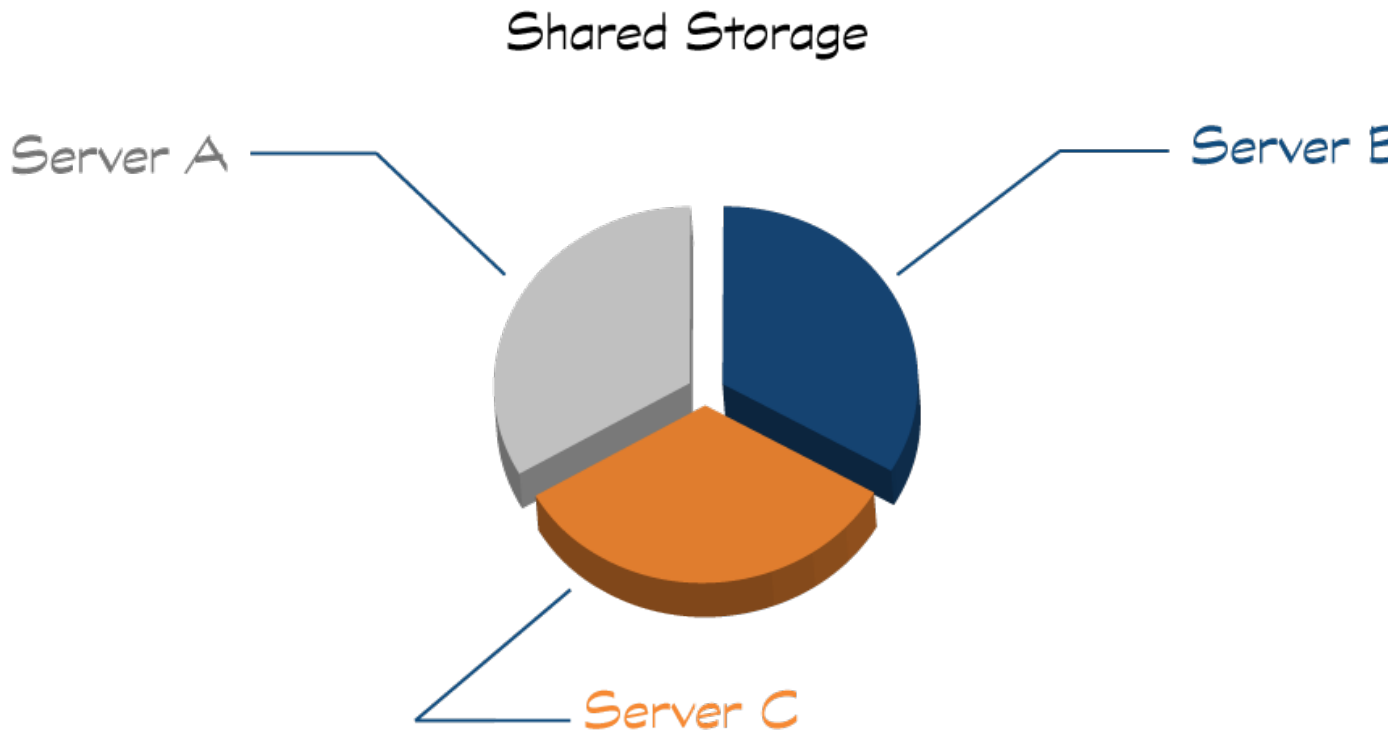
# Storage Stack Anatomy



AoE is block storage

- AoE target devices are just like local disks. They can be used like a normal hard disk drive, but since they are network connected, the disk can be shared with any network connected host.

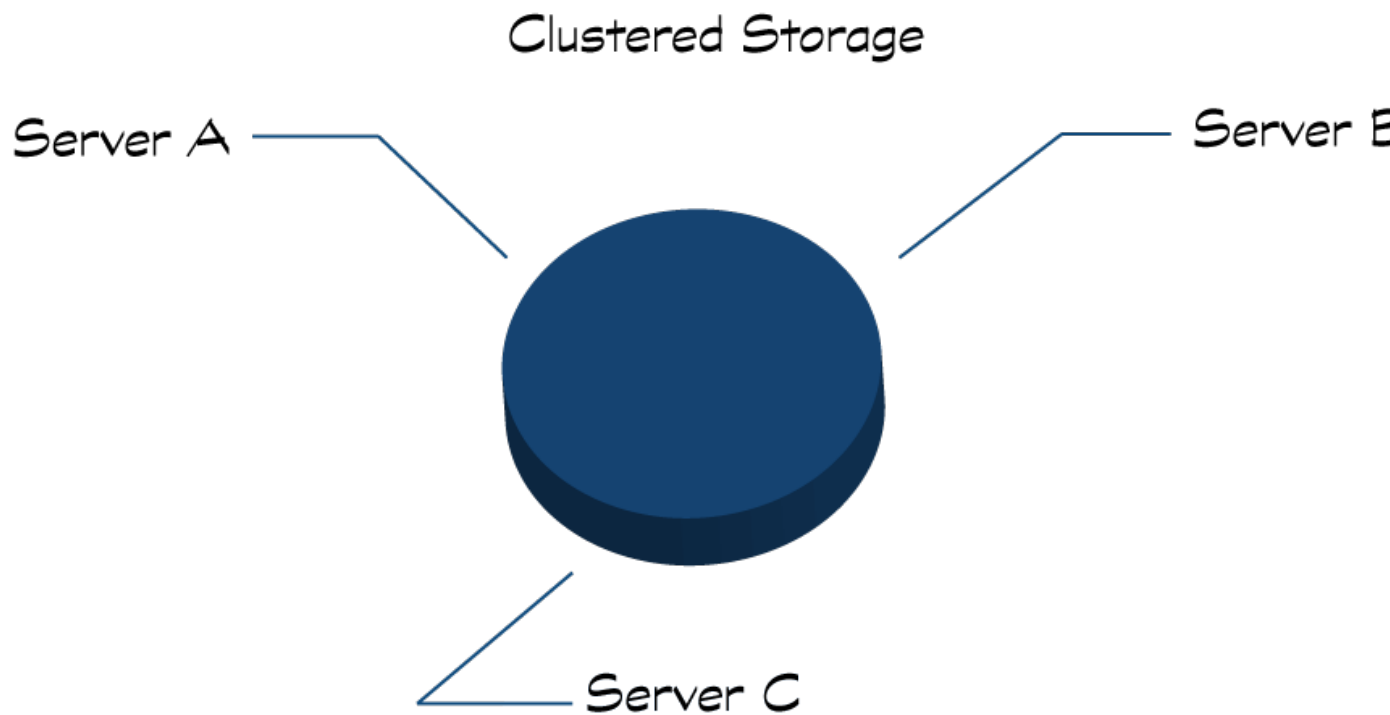
- AoE target devices can be partitioned like a normal disk, and supports any filesystem like a normal disk.



### Shared storage

- As with any block storage device, the host operating system can also create RAID sets from AoE devices.

- The AoE block devices can be managed with storage virtualization tools like logical volume managers and other volume management tools.



### Clustered shared storage

- AoE devices naturally work with disk-to-disk backup software and virtual tape library software systems designed to work with hard disk drives.

- AoE devices work with any filesystem or as directly accessed disks as is required by database applications.
- Each partition can be accessed by a separate server or application.
- Each partition can have its own unique filesystem (ie. EXT3, JFS, XFS, Reiser, NTFS, etc.).