



# EtherDrive<sup>®</sup> RA20

## AoE RAID Appliance 1U

The Linux Storage People



### Summary

- RAID for EtherDrive Storage Blades
- Appears to the server as a shelf of up to 63 logical EtherDrive Storage Blades (similar to LUNs)
- RAID 0, 1, 5, 10, 50 and concatenation of any RAID sets
- Each logical blade can have multiple concatenated RAID arrays
- Shared spare disk pool to auto replace failed RAID disks
- Logical storage blades can be configured into any size
- Up to 63 logical storage blades
- Logical storage blades can be partitioned
- Up to 16 PetaBytes of Storage
- 1 GigaByte RAM cache
- Simple command line interface
- Two RA20s linked provides redundancy
- No RAID set config file required

### RAID for EtherDrive Storage

Coraid is proud to introduce EtherDrive RA20, the first in a family of high performance RAID controllers designed to work with EtherDrive Storage Blades, and a new way to add RAID to DNA storage. EtherDrive is Direct Network Attached (DNA) block storage. DNA provides an Ethernet interface for hard disk drives. With RA20, Ethernet can be used to create Storage Area Networks (SAN) without the complexity and expense of Fibre Channel technology. RA20 and EtherDrives use the Open protocol called ATA-over-Ethernet (AoE).

Servers using AoE can already access EtherDrive Storage Blades directly with or without RAID (with RAID software running on the server). But now, with RA20, the "RAID controller" function can be performed outside of the server and still have all the advantages of EtherDrive Storage Blades. RA20 is an AoE "target device" to the server and an AoE "initiator device" for EtherDrive Storage Blades. RA20 presents up to 63 "logical" EtherDrives to the servers. Logical blades are similar to LUNs. Logical blades can be configured into any size by combining EtherDrive Storage Blades into RAID sets and can be partitioned or used as a single volume of block storage.

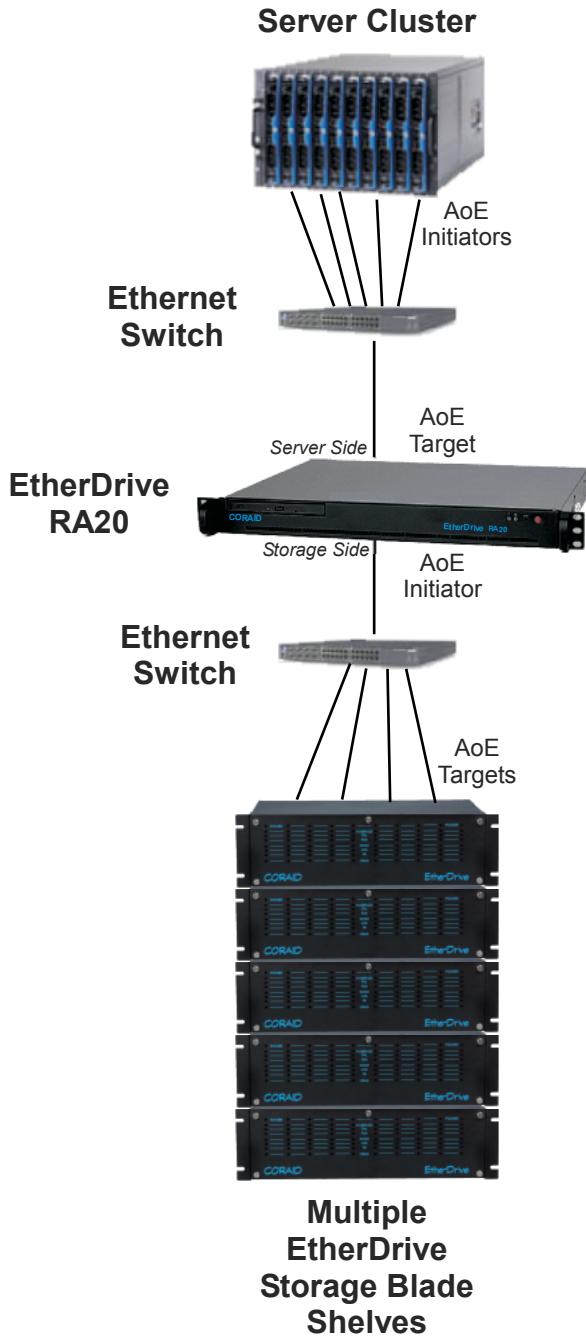
The RA20 unit is a 1U x 14" chassis with dual GigE ports. One of the GigE port connects via Ethernet to any number of servers using the AoE protocol. The second GigE port connects to an unlimited array of EtherDrive Storage Blades using Ethernet. It's simple to understand and simple to configure, and extremely flexible.

### Unlimited Storage

Each RA20 unit can create a single or multiple RAID sets with EtherDrive Storage Blades. Thousands of disks can be access by one RA20 unit.

### Simple to Understand, Simple to Manage

The simplicity of RA20 makes it easy to manage, because it's easy to understand. A simple command line interface is used to discover blades and create RAID sets. Since EtherDrive Storage Blades are identified by their shelf and slot number (as well as their MAC address), its easy to physically locate any member of a RAID set, and simple to create a RAID set. RA20 can stripe Blades in any order or location. RA20 supports RAID 0, 1, 5, 10 or concatenation of RAID sets. A shared pool of spare EtherDrive Storage Blades is used to automatically backup any failed member of a RAID set. It 's that simple.



## Flexible Configuration

From the server side, RA20 appears as a set of up to 63 logical EtherDrive Storage Blades. Each logical blade can be a single RAID set or multiple RAID sets. You can now design the RAID set sizes required for your applications performance and reliability needs. Each logical blade can then be mounted by a server (or multiple servers) and use any file system. Logical blades can be up to 16 PetaBytes. Logical blades are similar to LUNs and can be partitioned.

On the storage side, RA20 is a flexible RAID controller managing the access to an unlimited size array of EtherDrive Storage Blades, configured into many many RAID sets.

Logical blades make scalable, shared RAID sets possible for Linux file systems like GFS.

## Flexible Redundancy

RA20 units can be "linked" to provide automatic fail-over for the entire RAID controller function. Coupled with a system design that utilizes multiple Ethernet switches and data paths between the servers and the EtherDrive Storage Blade shelves, an extremely high availability system can be assembled at a very low cost. And its simple to understand.

## Performance You Want

RA20 has 1 GigaByte of cache memory and it aggressively uses the cache to optimize the server connection response time. This can greatly reduce storage system latency. Each RA20 unit provides full GigE port bandwidth for block storage access to/from the servers and to/from the storage array. This means that read/write access to your storage array can be > 60 MBytes/sec. Higher performance RA40 models are also available from Coraid.

RA20 is a purpose built appliance designed to provide another way for servers to access EtherDrive Storage Blades when RAID is desired.

RA20 boots from FLASH which enables easy software updates and provides reliable disaster recovery. User defined RAID set configuration is stored on each EtherDrive Storage Blade. When RA20 boots it auto configures itself to the users last settings by recovering the configuration information from each EtherDrive blade. No operator intervention required. That makes RA20 simple to use.



# EtherDrive<sup>®</sup> RA20

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Single RA20 unit



Redundant (auto fail-over) RA20 units

## Specifications

LAN Ports (1 for host/servers, 1 for storage)	Dual Gigabit Ethernet (10/100/1000) RJ-45
Control Interface	RS-232 or KVM, command line interface
Cache Memory	1 GigaByte RAM
Performance	> 60 IOPS, 110MB/sec with jumbo frames
Boot Media	FLASH disk
RAID Types Supported (usable in any combination)	RAID 0 (striping) RAID 1 (mirroring) RAID 5 (striping with parity) RAID10 (striping with mirror) Concatenated RAID sets & linear
Logical Blades per RA20	up to 63 (63 MAC addresses on the server side)
Number of RAID sets possible	Unlimited
Hot standby spare EtherDrive Blades	Shared pool size user defined
Number of Hosts (servers)	Unlimited
Number of EtherDrive Storage Blades	983,040 disks of networked storage
Power Supply	115/230VAC auto select, 50/60Hz
Power Consumption	200 Watts
Dimensions	1.75 x 17 x 14 inches
Operating Temp	50 -104 degrees F (10 - 40 degrees C)
Relative Humidity	20% to 80%(non-condensing)
Warranty	36 Months
Host/server Operating System	AoE is in the Linux 2.6.11+ kernel, drivers for earlier Linux kernels are available from Coraid, Drivers are also available for FreeBSD, Solaris Apple OS X and Windows.

For more information on how you can use RA20, call us at 877- 548-7200 or email us at [info@coraid.com](mailto:info@coraid.com). Please visit us at our web site [www.coraid.com](http://www.coraid.com) .