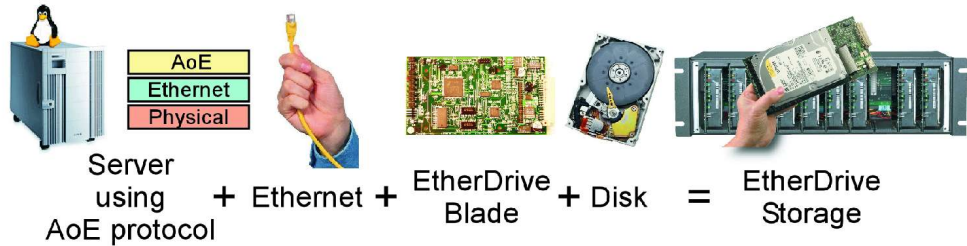


Plan-Net designs and operates cost-effective OpenSource and Linux-based storage solutions

Plan-Net has been asked by a new customer to design, install, host, and maintain an expendable 1 TeraByte storage solution, that is remotely replicated, with daily backup and full redundancy, accessible by systems including Unix and Windows, at an affordable price. After comparison with traditional solutions (NAS, Fiber Channel SAN, ...), Plan-Net has chosen to design an elegantly simple, scalable solution using EtherDrive Storage Blade from Coraid Inc (<http://coraid.com>).

Coraid provides a unique, very cost-effective, AoE (ATA over Ethernet) SAN solution: Etherdrive. It is implemented in a 3-unit rackable chassis containing up to ten hot-pluggable storage blades, each one containing a hard disk. The blades are connected to the servers by a simple Ethernet connection. Using EtherDrive storage, there is no need of expensive Fiber Channel switches, or special interfaces on each server.

It doesn't require to learn any new technology. The standard Gigabit Ethernet cards already available on the servers and standard Ethernet networking is all what is needed. Natively supported by the last Linux kernel (2.6.11), but also by Solaris and BSD with GPL'ed drivers, EtherDrive storage blades are viewed by the servers as if they were directly attached disks. Linux gives the choice to configure the EtherDrive blades into any RAID set combination needed, and exports the storage to Unix and Windows hosts through NFS and Samba. The use of RAID5 with hot-spare blades and sharable journalized file system such as JFS will exceed the customer reliability and availability specifications.



With largest available hard disks, a single chassis can provide up to 4 TeraBytes. Multiple chassis can be aggregated with Ethernet up to a capacity of 16 PetaBytes (16,000,000 Gigabytes !) per server. The remote replication will be performed automatically through free-software VPN, OpenVPN (<http://openvpn.net>) using RSYNC (<http://samba.anu.edu.au/rsync>). RSYNC is a very efficient free software replication tool that only transfers modified parts of files between two file systems. Its measured efficiency is up to 2000 times the one of plain file transfer solutions. This way, the replication will be done through an Internet-implemented VPN, instead of an expensive dedicated leased line. Backup is provided by the free software tool DAR (<http://sourceforge.net/projects/dar>). The backup files will not

be replicated, so a RAID5 with 4 EtherDrive blades will be set up at the main site (1.2 TB usable capacity) and 2 EtherDrive blades in mirror RAID1 configuration at the remote location. The solution will be installed, managed, maintained by Plan-Net's highly skilled technical team. The total storage solution (hardware + software) costs:

2 Etherdrive chassis + 6 blades	= 2.760 \$	= 2.111 €	(1 USD ≈ 0,765 EUR)
4 + 2 IDE HD (400 GB)	= 6 x 300 €	= 1.800 €	
Ethernet connectivity		= 250 €	
Software licenses		= 0 €	
Total:		4.161 € H.T.	

Equivalent solutions providing the required functionalities, using NAS or Fiber Channel SAN architectures, where quoted between 15.000 € and 105.000 € by traditional vendors.

Plan-Net has no allegiance to any vendor, and selects proprietary software and hardware products in system designs when these are the best for its customers. In most cases, an elegantly simple solution using free/OpenSource software, clever new hardware like EtherDrive storage blades and Plan-Net open-minded expertise gives the customers great value at a low cost. These are the reasons why customers come back to Plan-Net with repeat business.

Plan-Net Network Services (<http://plan-net.lu>) is a Luxembourgish IT design and service company. Plan-Net provides independent technological advice and solutions based on new innovative technologies, such as free software (<http://www.fsf.org/philosophy/free-sw.html>), OpenSource (<http://opensource.org/docs/definition.php>) and GNU/Linux platforms (<http://www.linux.org>).