An Access to affordable Storage Area Network over Ethernet

- The birth of AoE enabler

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Outlines

- What is AoE all about?
- Advantages vs Disadvantages
- Our approaches and viewpoints
- Introducing AoE enabler
- Why AoE enabler
What is AoE

- ATA over Ethernet protocol
- A SAN technology
- Networked block storage
- CORAID is the pioneer of AoE
- World’s first SoC done by Layerwalker
- Utilized standard MAC header of IEEE 802.3 Ethernet frames
- No TCP/IP
- Native in Linux kernel 2.6.11 or later
How AoE works?

**Initiator MAC address**

**ATA commands over Ethernet packets by broadcasting**

**ATA commands end-to-end**

**Target MAC address**

**Local SATA drive**

**PC**

**AoE Storage unit**

**HDD**
Who wants AoE?

- Consumer/professional
  - AoE enabler + eSATA external hard drives
  - 50Mbps access performance
  - ease of use, like USB or 1394 drives

- SOHO/SMB
  - RAID over Ethernet
  - Shared storage for server pool
  - Shared storage for workstations
  - Nearline storage
Advantages of AoE

- H/W Cost
  - SATA HDD
  - SAN
- Infrastructure cost
  - Extra cost of GbE network is 0
- Efficiency of performance & easy config
  - No TCP/IP
  - Less complex of packets
Disadvantages of AoE

- Very limited H/W solutions available
  - Coraid EtherDrive
  - DIY a Linux machine
- High cost 3rd-party drivers
- Lack of affordable commercial SAN FS
  - Without SAN FS, write access is constrained to single use at a time to avoid conflict
- S/W, H/W Service providers are difficult to enter the market
  - Number of platforms in SMB segment is small
  - Few consumer applications
The current major problem is lack of choice
Embedded AoE storage means complex and expensive
Concept of AoE enabler

AoE enabler brings down the entrance barrier and brings up competition

Recomposition

Solution A

Solution B

Solution C

Value Added Design

New AoE solutions developing
Quick Installation
Roadmap of AoE enabler

- GbE SATA/eSATA
- Dual GbE SATA/eSATA
- GbE SATA RAID 0,1,3,5
- Dual GbE SATA RAID 0,1,3,5,6
- 10 GbE
- SATA RAID over Ethernet
AoE enabler

- Project code name: SEEDIQ internal, SEEDIQ external
- Function: converting a SATA HDD into a single port AoE storage
- Interface:
  - SATA or eSATA x1
  - Giga Ethernet x 1
- OS supporting: Linux, XP/Vista, Mac OS
SEEDIQ internal

- Compact size with a standard centronic bracket
- Giga Ethernet
- Compatible with SATA I and SATA II
- SATA RAID management tool over Ethernet is possible
- Quick implementation of AoE products by exist enclosures.
SEEDIQ external

- Compact fan-less metal housing
- Giga Ethernet
- Compatible with eSATA HDD or RAID
- SATA RAID management tool over Ethernet is possible
- Upgrade a DAS to an SAN unit in minimum cost
- Running an eSATA portable HDD with a notebook without eSATA port
Why AoE enabler?

- Time to market !!!
- Design Completeness
- Modularized subunit
- Compact and little impact to integration
- High quality of design and build
Why JWE?

- Friendly expert and maniac of AoE storage applications
- Engineering capabilities on H/W and S/W
- Quality management from design to production
- Manufacturing resource in Taiwan and China
Thanks

Thanks for your interested on AoE enabler

For more information, welcome to check our web site at http://www.jwe.com.tw or email to: aoe@jwe.com.tw