

# Storage Industry Update

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## Review and Preview

### “Dead Technology” It Still Works

- Magnetic tape & optical media  
Still being used to compliment disk based data protection
- IBM & PCM Mainframes  
Some running Linux using FCP/SCSI
- ESCON – Shifting to FICON
- Fibre Channel  
IP and iSCSI were supposed to have killed FC years ago

### Delivering On Past Hype

- Storage virtualization  
Market place is shifting from want to have (discretionary) to need to have (required) status to address specific issues including data migration
- Disk based backup  
D2D, D2D2D, D2D2T
- 4Gb Fibre Channel
- IP Storage (iSCSI & NAS)
- Tiered storage
- Data/Storage classification
- ILM enabling technologies

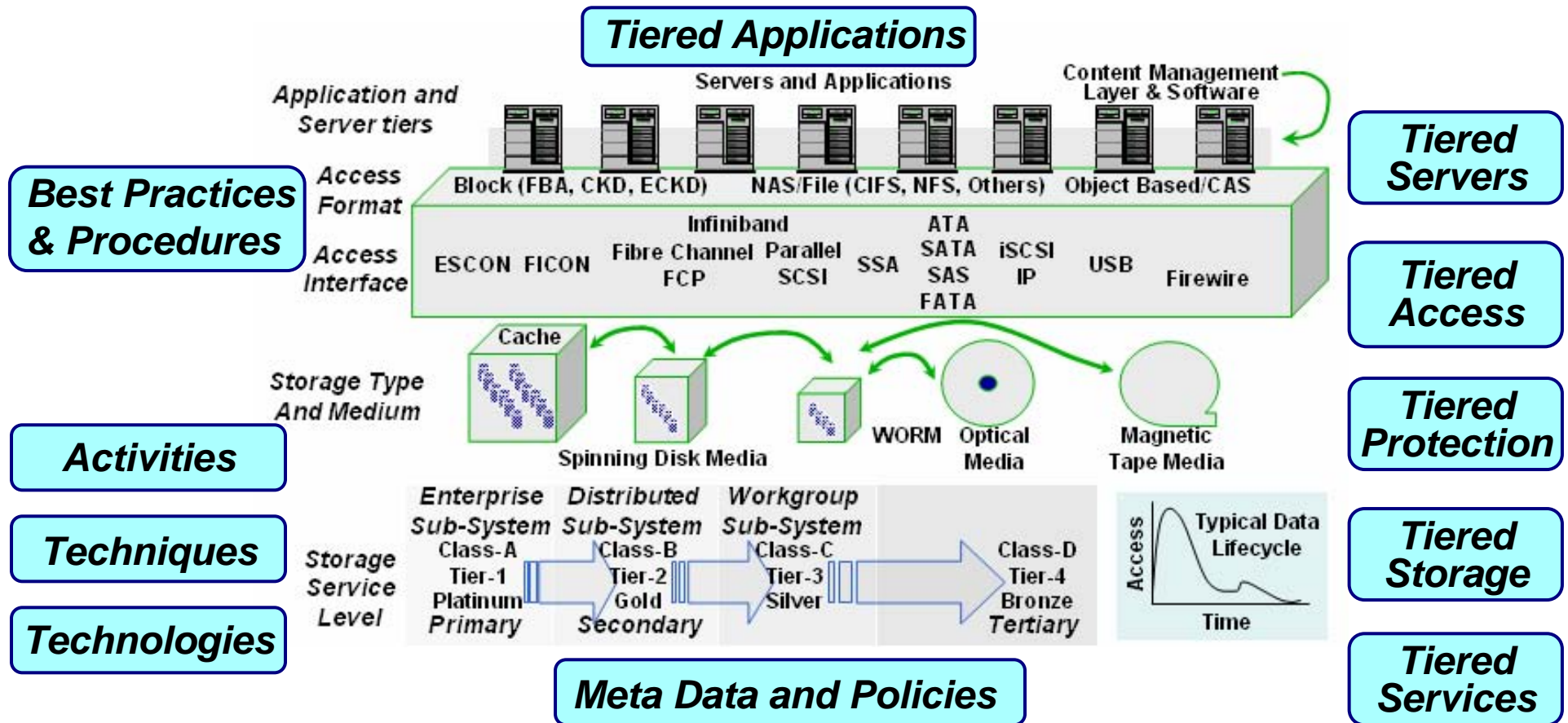
### Current and New Trends & Hype

- ILM still buzzword...
- New storage and device interfaces and devices, iSER/RDMA, SAS, 2.5" disks, 10Gb Ethernet
- Classification, Discovery
- Security & Encryption
- Block and File Virtualization
- Grids, cell based, global name space & global file systems
- Continuous data protection (CDP) & Wide Area File Services (WAFS)

## Some Recent Announcements

- Many announcements have occurred with others just around the corner including at SNW...
- Some examples include among others...
- Adaptec – SNAP enhancements, SAS activity
- EMC – Insignia, DMX3 models, Rainfinity enhanced, Centera & Celera updates, others
- Engenio – InfiniBand Storage (late 2005 announced)
- HP – EVA 4Gb, iSCSI gateway, XP more cache, new VTLs, SW enhanced, Bought Outerbay
- IBM – Tivoli Express packaging SMB solutions and others
- NetApp – VTL support via their Alacritous acquisition, security via Decru
- Seagate – Perpendicular disk drive recoding
- Tacit – Entry level WAFS, Bought Mobility
- And many others....

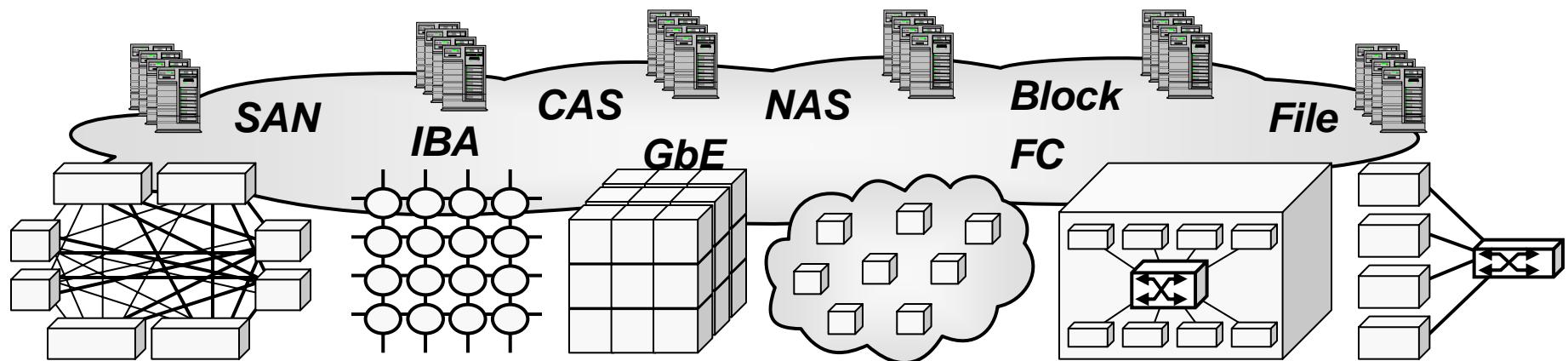
## Tiered IT Resources (Protection, Capacity, Performance)



Listen for : Context based classification, dynamic and self optimized storage

## Gridware or Cloudware?

- Grid services, utility offerings, grid based architectures and technology
- Premise is to provide utility like access (remember the storage utility model?)
- Server vendors leading the charge (pun intended) towards grids (servers / servers)
- Approaches include tightly or loosely coupled, peer architectures, RAIN, etc.
- Provide various services and functions across different nodes (cells)
- There are grid architectures, grid solutions, grid like behavior
- Not all applications lend themselves to compute or storage grids



## Storage Industry Summary and Recap

- Wide area file services (WAFS), application and bandwidth acceleration
- Continuous data protection – You decide if its snapshots or replication
- Data classification – Shift from file and data path to analysis to context based
- Self-optimization storage – Getting closer, some good “stories” exists...
- 10Gb Ethernet is on the way, host servers are shifting to PCI-Express
- SAS is starting to replace SCSI and being intermixed with SATA
- iSCSI gaining ground however Fibre Channel is still very much alive
- Recent announcements for hybrid NAS & iSCSI for bandwidth applications
- All vendors are rushing to SMB and mid-market with products
- Some tools/vendors to check out include Onaro, WysDM, Monosphere
- Security is gaining attention, look for more encryption to go into devices

# Questions

**Thank You**

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