

MEETING DATE 03/13/06

AGENDA ITEM Authorization to Purchase Network Storage Equipment from
Impex Technologies of Torrance CA

ATTACHMENTS

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SAN Comparisons
(Note Backup and Fabric Options Not Included in Pricing)

Impex Technologies

Unit Manufacturer Intel

SAN Purchase price \$32,989 19

Base unit max size 5 6TB (using 16x400GB drives 500GB max option (8TB))

Base unit quoted size 5 6 TB

1 Year of Maintenance +\$4,546 50

2 Years of Maintenance +\$9,093 00

3 Years of Maintenance +12,124 00

Cost to Exceed 5 6 TB \$21,839 44

Cost per TB over 5 6TB \$1,299 00/TB

New Maximum TB 11 2TB (using 16x400GB drives 500GB max option (8TB))

Each enclosure supports 16 drives The basic unit is the enclosure

Recommended NIC cards are iSCSI HBA cards at \$650/each

DataLink Networks

Unit Manufacturer Left Hand Networks

SAN Purchase price \$39 955 28

Base unit max size 2 0 TB raw per Network Storage Module (NSM)

Base unit quoted size 3 0 TB usable on 6 0 TB raw total space

1 Year of Maintenance +\$2,394 00

2 Years of Maintenance +\$8,537 00

3 Years of Maintenance +\$13,271 00

Cost to Exceed 3 0 TB \$0 (no additional enclosure needed)

Cost per TB over 3 0TB \$12,938 00/TB (1 0 usable on 2 0 raw per NSM)

New Maximum TB No limit

The basic unit is the NSM module

Standard maintenance is 5x9 for the 1st year Maintenance prices reflect an upgrade to 24x7 in the first year then standard maintenance after that

MTI Corporation

Unit Manufacturer EMC Clarion CX300i

SAN Purchase price \$55,185 00

Base unit max size 14 0 TB usable (using 300GB drives – 18TB raw)

Base unit quoted size 3 0 TB usable

1 Year of Maintenance included

2 Years of Maintenance included

3 Years Maintenance included

(1)

SAN Comparisons
(Note Backup and Fabric Options Not Included in Pricing)

Cost per TB over 3 0TB \$11,826 31/TB (estimated 5x300GB disks – MTI lists \$27,000/TB)
Cost to Exceed 14 0 TB \$35,000 (additional enclosure needed)
New Maximum TB 36TB

The basic unit is the enclosure

MPC Computer

Unit Manufacturer MPC DataFrame 140
SAN Purchase price \$75,369 19
Base unit max size 3 0 TB usable (using 3 enclosures and 4x4GB drives – 4 8TB raw)
Base unit quoted size 3 0 TB usable
1 Year of Maintenance included but Next Business Day, not 24x7x4
2 Years of Maintenance included but Next Business Day, not 24x7x4
3 Years of Maintenance \$6,495 for 24x7x4

Cost to Exceed 14 0 TB \$0 (each enclosure is 1 6TB raw)
Cost per TB over 3 0TB \$21,915 21/TB
New Maximum TB No limit

The basic unit is the enclosure module
Option for 5 years maintenance at \$7,794 00

Insight Investments

Unit Manufacturer NetApp FAS 3020
SAN Purchase price \$73,032 20
Base unit max size 16 0 TB usable
Base unit quoted size 3 0 TB usable
1 Year of Maintenance \$5,909 21
2 Years of Maintenance \$11 818 40
3 Years of Maintenance \$17 727 59

Cost to Exceed 14 0 TB \$40,637 05
Cost per TB over 3 0TB \$8 524 69/TB
New Maximum TB 32TB

The basic unit is the enclosure

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RFP Quick Reference Responses

Proposing Vendor	Datalink Networks	Insight Investments	MTI Corporation	MPC Computer	Impex Technologies	
	Amount	Amount	Amount	Amount	Amount	Units
SAN w/tax & shipping (+maint option)	\$39 955 28	\$73 032 20	\$55 185 00	\$75 369 07	\$32 989 19	\$dollars
1 Year of Maintenance	\$2 394 00	\$5 909 21	\$0 00	No add l chg*	\$4 546 50	\$dollars
2 Years of Maintenance option	\$8 537 00	\$11 818 40	\$0 00	No add l chg*	\$9 093 00	\$dollars
3 Years of Maintenance option	\$13 271 00	\$17 727 59	\$0 00	\$6 495 00	\$12 124 00	\$dollars
Basic yearly maintenance	\$7 650 00	\$14 900 46	\$5 500 00	Approx \$2 275	\$4 546 50	\$dollars
Maint % max increase/yr	15%	100% maximum	11%	0%	5%	% increase/year
Cost per +1TB usable	\$12 938 00	\$8 524 69	\$27 000 00	\$21 915 21	\$1 299 00	\$dollars
Max TB this unit	+NSM	16TB usable	14TB	1 6TB	5 6TB w/400GB drvs	TB Terabytes
To increase at Max TB	+NSM	\$40 637 05	\$35 000 00	\$21 915 21	\$21 839 44	\$dollars
New Max TB after increase	+NSM	32TB usable	36 TB	1 6TB	11 2TB w/400GB drvs	TB Terabytes
Recommended Backup	\$7 994 00	No Bid	N/A	\$65 745 64#	\$9 742 50	\$dollars
Recommended Backbone	\$3 980 00	No Bid	\$15 000 00	See doc%	\$3 139 25	\$dollars

*Next Business
Day not 24x7x4
#Duplicate SAN
%Use VLAN
5yr maintenance
\$7 794

Chosen Options

SAN w/tax & shipping (+maint option)	\$39 955 28	\$73 032 20	\$55 185 00	\$75 369 07	\$32 989 19
1 Year of Maintenance	\$2 394 00	\$5 909 21	\$0 00	No add l chg*	\$4 546 50
Recommended Backup	\$7 994 00	No Bid	N/A	\$65 745 64#	\$9 742 50
Total	\$50 343 28	\$78 941 41	\$55 185 00	\$141 114 07	\$47 278 19

Cost per +1 TB usable is the cost to add 1 TB of usable storage to the SAN DataLink MPC Insight and MTI require a new unit or hardware to go over 3TB

Max TB this unit is the maximum number of Terabytes that the proposed unit can hold before a significant enhancement is required

+NSM means each Terabyte requires a new Network Storage Module

To increase at Max TB is the cost to move over the **Max TB this unit** limit Typically it is a new module to hold disk drives

New Max TB after increase is the **new** maximum number of Terabytes the unit will hold before another significant enhancement is required

RFP Response Evaluation

Proposing Vendor	Datalink Networks	Insight Investments	MTI Corporation	MPC Computer	Impex Technologies
Proposer's SAN Hardware Brand	Lefthand Networks	NetApp FAS3020	EMC Clarion CX300i	MPC DataFRAME 140	Intel
SAN units must be self installing the devices must automatically initiate join the volume and begin striping data across all the SAN units automatically	Yes	Yes	No	Partial - User must add unit to cluster Once assigned rest is automatic	Yes
The SAN units must automatically and transparently perform load balancing across arrays of drives	Yes	Yes	No	Yes	Yes
The SAN must be fully support the latest current version of Microsoft Cluster Environment	Yes	Yes	Yes	Yes	Yes
SAN units must be compatible with industry standard hot swappable drives running at minimum of 7200 or 10 000 RPM	Yes	No - Must use NetApp disk drives in FAS3020	Yes	Partial Drives are warm swap Console power down drive and swap SAN stays up	Yes
Each SAN unit must have a minimum capacity of 1 TB All units must adhere to the iSCSI certification be ITEF certified and comply with Microsoft Logo qualification for SAN devices	Yes	Yes	Yes	Partial Version 6 3 (Dec/05) fully supports	Yes
All iSCSI SAN units must be able to be initialized by the Microsoft software iSCSI initiator TCP offload engine (TOE) cards or iSCSI HBA hardware initiators	Yes	Yes	Yes	Yes	Yes
The SAN units must not require vendor specific drivers to be loaded on servers to create volumes allocate drive space or communicate with the SAN devices	Yes	Yes	Yes	Yes	Yes
All SAN units must contain standard 100/1000 CAT 5 Ethernet adapters that connect to standard GB Ethernet switches	Yes	Yes 4 ports onboard	Yes	Yes	Yes
All units must mount in standard 19 racks in sliding rail kits designed to mount in 4 post square hole racks	Yes	Yes	Yes	Yes	Yes
SAN Manager Software					

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RFP Response Evaluation

Proposing Vendor	Datalink Networks	Insight Investments	MTI Corporation	MPC Computer	Impex Technologies
SAN devices must be controlled by storage manager software that will manage all SAN modules regardless of location from a central console	Yes	Yes	Yes	Yes	Yes
The SAN software must allow established shares to grow dynamically As a share reaches the set threshold the software should send an alert (email or page) and automatically expand the share to a new preset threshold	Yes	Yes	No	Yes	Yes
The SAN software should be capable of providing multiple levels of data redundancy via 0 2 or 3 way replication on a per volume basis	Yes	Yes	No	Yes	Yes
SAN software backup snapshots must be available on demand or be regularly scheduled The software must be able to configure when how often how many snapshots to keep and allow a volume or share be rolled back to a previous snapshot with a minimum of downtime	Yes	Yes	No	Yes	Yes
If the SAN is used to boot attached servers the management software must be able to make snapshots of the boot share to allow individual boot shares to be restored if changed or damaged	Yes	Yes	No	Yes utilizing appropriate TOE card	Yes
Restoring SAN Data					
The SAN software must allow backups to be made of the replicated and incremental snapshot data The SAN software must allow restores from the replicated or snapshot data to be done in one step Combining the replicated data with the incremental snapshots so that one restore can be done to restore individual user files and bring servers or drives back on line quickly	Yes	Yes	No	Yes	Yes
The software must allow IT staff to restore deleted files and sub-directories from the last snapshot on the SAN in real time	Yes	Yes	No	Yes	Yes

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