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ARCHITECTURE: Current/Future Vision

Grid, heterogeneous, autonomic, adaptive

JABBA

Ethernet 10/100/1000

Infiniband/Quadrix/10gE

THUNDERHEAD

10/100/1000 10gE Myrinet 2000

536 proc Xeon 2.64Ghz
1.2Tflop, 14Tb PVFS
Fedora, LTM GT3
Grid Compute

DOZER

14Tb PVFS
Fedora, GT3
Grid storage

MEDUSA

10/100/1000 Myrinet 1280

128 proc Athlon 1.4Ghz
Fedora, PVFS, LTM
Opteron/IB?, GT3
Grid
Compute/Graphics

22Tb Apple Xserve1.2Ghz G4
MacOS X, Lustre, GT3
Grid storage

gri
d

storage

ORKA

10/100 Myrinet 1280

32 proc PIII 700Mhz
FreeBSD, OpenPBS, GT3
Grid small compute

32 proc PIII 650Mhz
SUSE, Lustre, SGEE, GT3
Grid Portal/ Master

ENTER here➔

BABY BLUE

10/100 Myrinet 1280

TINK (mini)

Ethernet 10/100

Instrument

16-proc miniITX 1Ghz
FreeBSD, GT3
Grid minitx

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THUNDERHEAD

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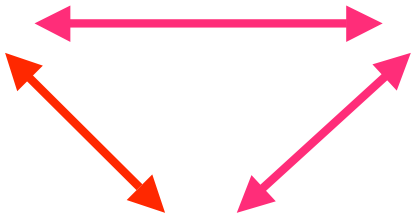
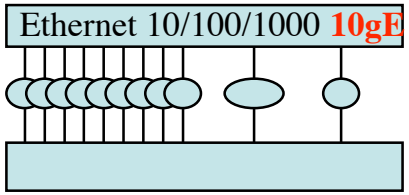
Grid Compute



SVS



GT3
Grid visualization

LIS

10/100/1000
10gE

208 Athlon
1.5Ghz RH7.3,
GT3
Grid Compute

AUTONOMIC: self-monitoring,self-configuration,self-optimization, self-healing,self-protection

ADAPTIVE HARDWARE: metamorphosizing chips, changeling network, low power bias

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GRID PORTAL Sampler

PACI HOTPAGE
GRID COMPUTING PORTAL

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Compute Systems
- DataStar (datastar)
- Power4/368 (copper)
- Compaq Cluster (lemieux)

Archival Systems
- HPSS (s-hpss)
- FAR (far)

PACI Compute and Archival Systems

Compute Systems

Site	Center	Type	Name	Status	Load	Running	Queued	Queues
UCSD	SDSC	IBM P655+/P690 HPC	datastar	↑	82%	16	73	
UIUC	NCSA	IBM Power4	copper	↑	92%	68	94	
CMU	PSC	Compaq Cluster	lemieux	↓	0%	0	0	

Archival Systems

Site	Center	Type	Name	Status
UCSD	SDSC	HPSS	s-hpss	↑
CMU	PSC	DMF	far	↑

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Updated: Nov 17, at 20:05:02

SDSC NCSA PSC
IBM 1760 HPSS S PWR4 368 LEMIEUX 3000 FAR

STATUS BAR LOCATION: Show in frame Pop-up Hide SORT BY: Organization Site Architecture Model

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Columbia Project: NASA/AMES

Based on SGI® NUMAflex™ architecture
20 SGI® Altix™ 3700 superclusters, each with 512 processors
Global shared memory across 512 processors

10,240 Intel Itanium® 2 processors
Current processor speed: 1.5 gigahertz
Current cache: 6 megabytes
1 terabyte of memory per 512 processors, with 20 terabytes total memory

Operating Environment
Linux® based operating system
PBS Pro™ job scheduler
Intel® Fortran/C/C++ compiler
SGI® ProPack™ 3.2 software

Interconnect
SGI® NUMAlink™
InfiniBand network
10 gigabit Ethernet
1 gigabit Ethernet

Storage
Online: 440 terabytes of Fibre Channel RAID storage
Archive storage capacity: 10 petabytes