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# SLAC Site Report

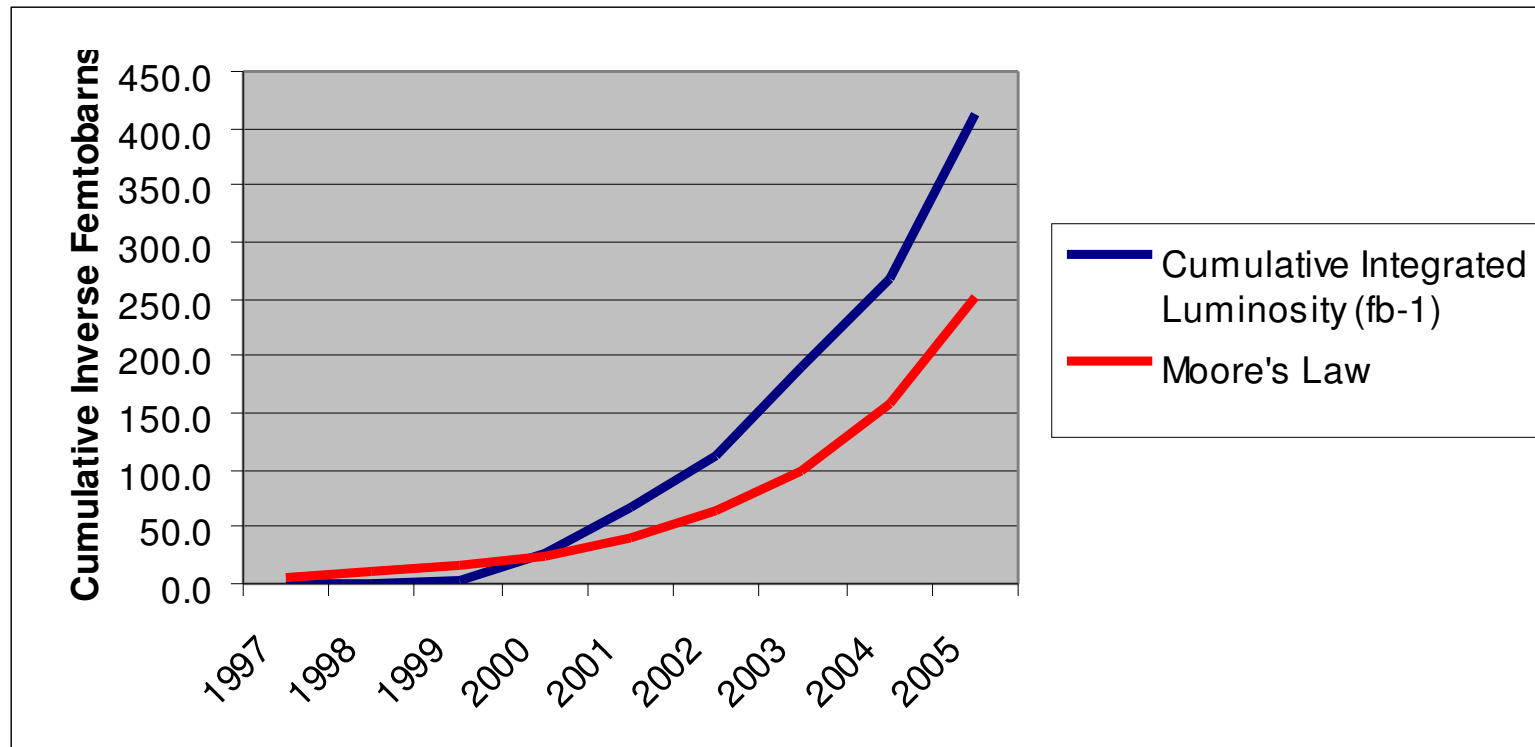
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# Experiment Status

- BaBar 
  - Running until June, Start again in October
  - Establishing Tier-A centers
- Glast
  - Simulations and pre-flight data
- End Station
  - Neutron experiments taking data into MStore
- NLC
  - Beam tests taking data into Oracle
- Cosmology Institute
- Accelerator simulations

# BaBar Computing Needs



# Farm Expansion

- Current farm
  - 870 Sun Netra-t1 single CPU, 440MHz, Solaris 8
  - 512 VA-Linux 1220, dual CPU, 860MHz, RH6.2
- FY2002 expansion
  - Expect to purchase 512 nodes, dual CPU, 1.4GHz
  - Conducted extensive evaluation Jan-Apr
    - See Alf's talk
  - Hope to finish procurement by June



# VA Linux

- Observe reboots at rate of 2% per day
- Developed extensive monitoring and analysis
- Suspected causes:
  - ❑ Heat sinks
  - ❑ System mgmt bus
  - ❑ Memory config
  - ❑ Kernel APIC bug
  - ❑ BIOS
  - ❑ Power supplies



# Event monitoring

- Started collecting an event database:

Event log for 2002-04-15

Time	Host	Event	Reason	Downtime	Ct	Message
00:45:05	barb0008	boot	unknown	00:06:24	1	Linux version 2.2.19
00:36:00	bronco281	crash	ecache		1	WARNING: [AFT1] EDP
00:37:00	bronco281	boot	ecache	00:03:34	1	SunOS Release 5.8 Ver
03:29:11	barb0196	boot	unknown	00:06:31	1	Linux version 2.2.19
04:02:01	barb0241	boot	unknown	00:06:32	1	Linux version 2.2.19
05:57:51	barb0326	boot	unknown	00:06:51	1	Linux version 2.2.17
06:02:11	barb0393	boot	unknown	00:06:57	1	Linux version 2.2.19
09:42:19	bldlnx10	boot	unknown	00:01:45	1	Linux version 2.4.9
12:48:11	barb0431	boot	unknown	00:07:08	1	Linux version 2.2.19
15:28:51	kangadata0	boot	shutdown	00:03:20	1	SunOS Release 5.8 Ve
17:25:13	barb0321	boot	install	00:26:56	1	Linux version 2.2.19
18:02:11	barb0393	error	NMI		1	Dazed and confused...



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# Storage Expansion

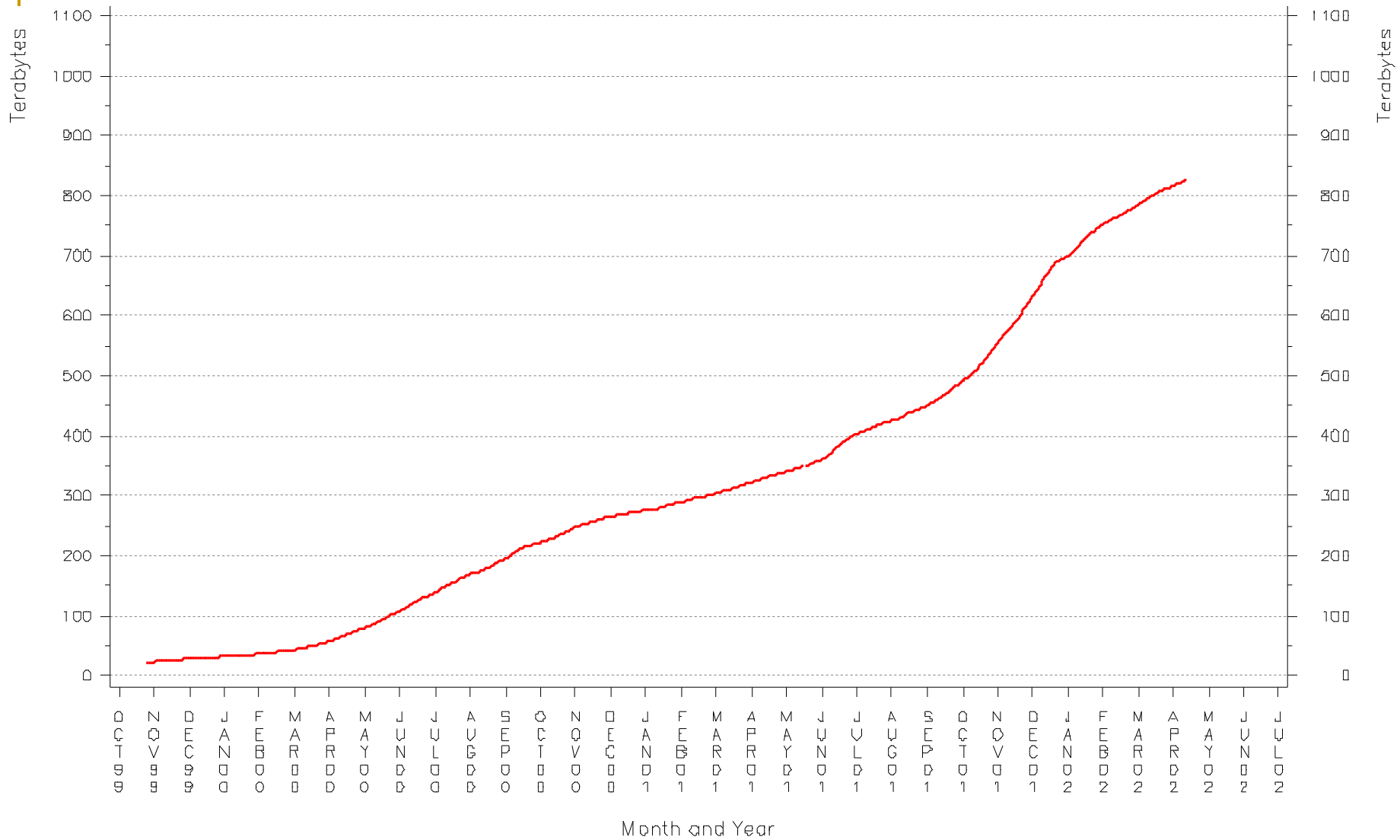
- Currently have 120TB of storage
- Going out for purchase of additional 72TB
- Target price of 1¢/MB
- Expecting to purchase Sun T3 arrays with 180GB disk
- Planning storage evaluation project this summer

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# HPSS and MStore

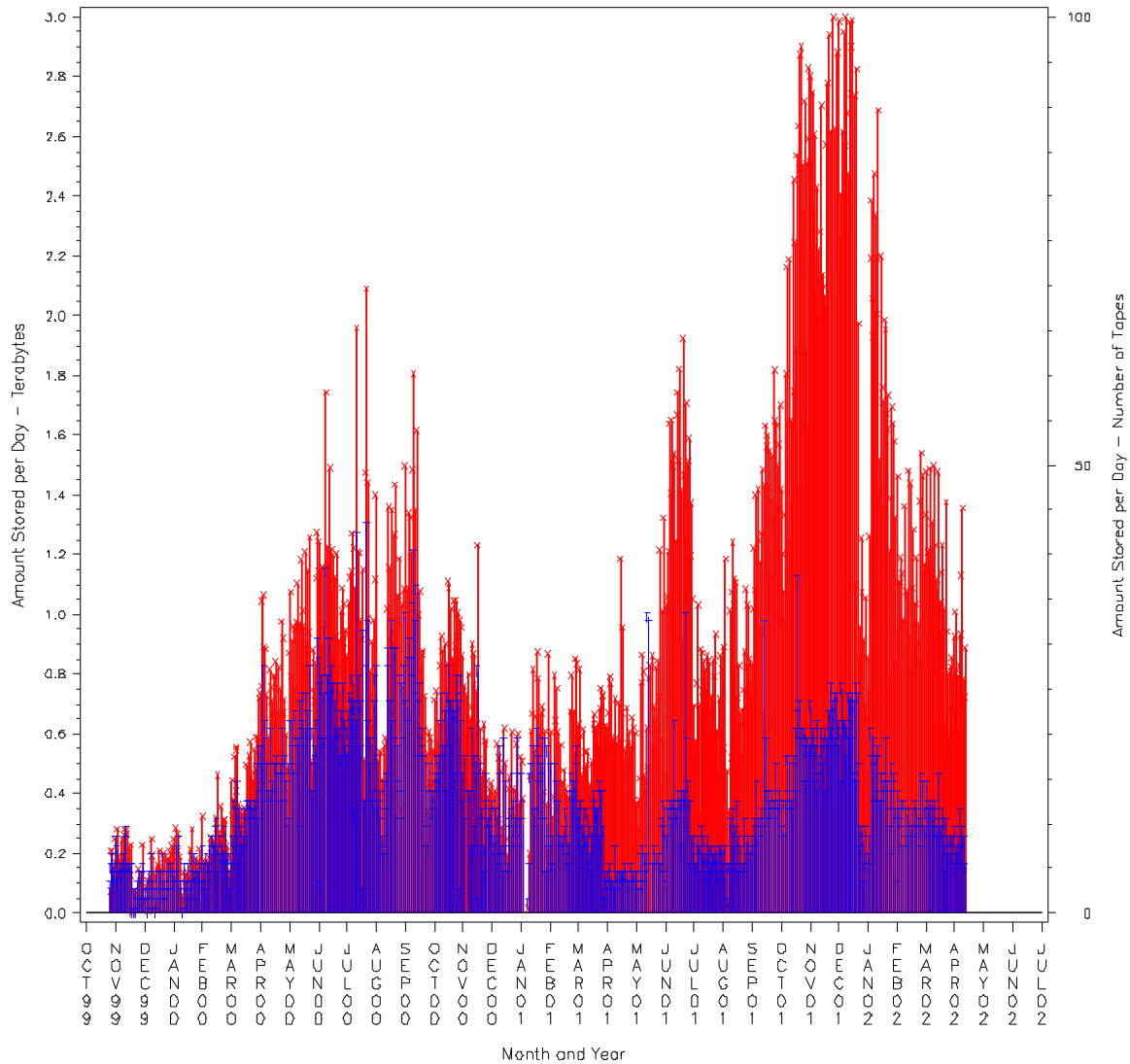
- Stored over 800TB 
- Rates up to 3TB per day 
- New all-Solaris HPSS instance created for general use
- MStore front end to present NFS interface plus easy staging commands for users





{Created by Lois White, SCS, lwhite@SLAC.Stanford.EDU}

HPSS Amount Stored per Day  
 Full Tapes, Partially full Tapes, Terabytes



--- Full Tapes --- Terabytes

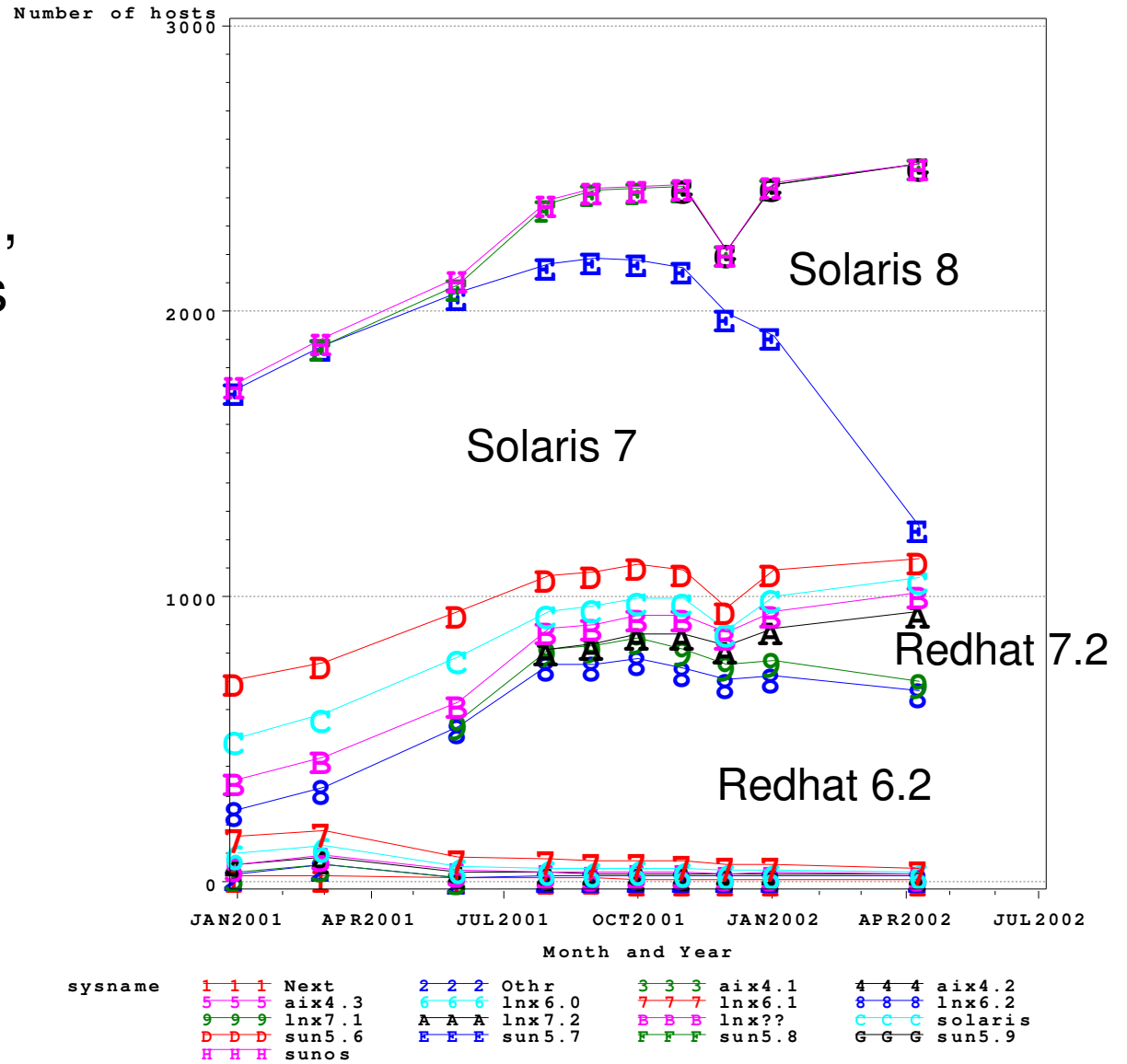
(Created by Lois White, SCS, lwhite@SLAC.Stanford.EDU)

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# OS Status

- Linux
  - BaBar still on RedHat 6.2, about to move to 7.2
  - RedHat 7.2 target for new farm, with the 2.4.18 kernel (2.4.9 has VM problems)
- Solaris
  - Getting rid of Solaris 2.6
  - Almost all Solaris 2.7 is gone
  - Solaris 2.8 is production version
  - Solaris 2.9 is in beta test

# Total number of managed systems, including desktops



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# AFS Status


- Transarc AFS 3.6p5 on servers
  - Most recent release had performance fixes for volumes with hundreds of clients
- OpenAFS 1.2.3 on all Linux clients and Solaris 9
- Generally stable
- Seeing kernel deadlock on SMP linux machines
- Planning on testing OpenAFS servers

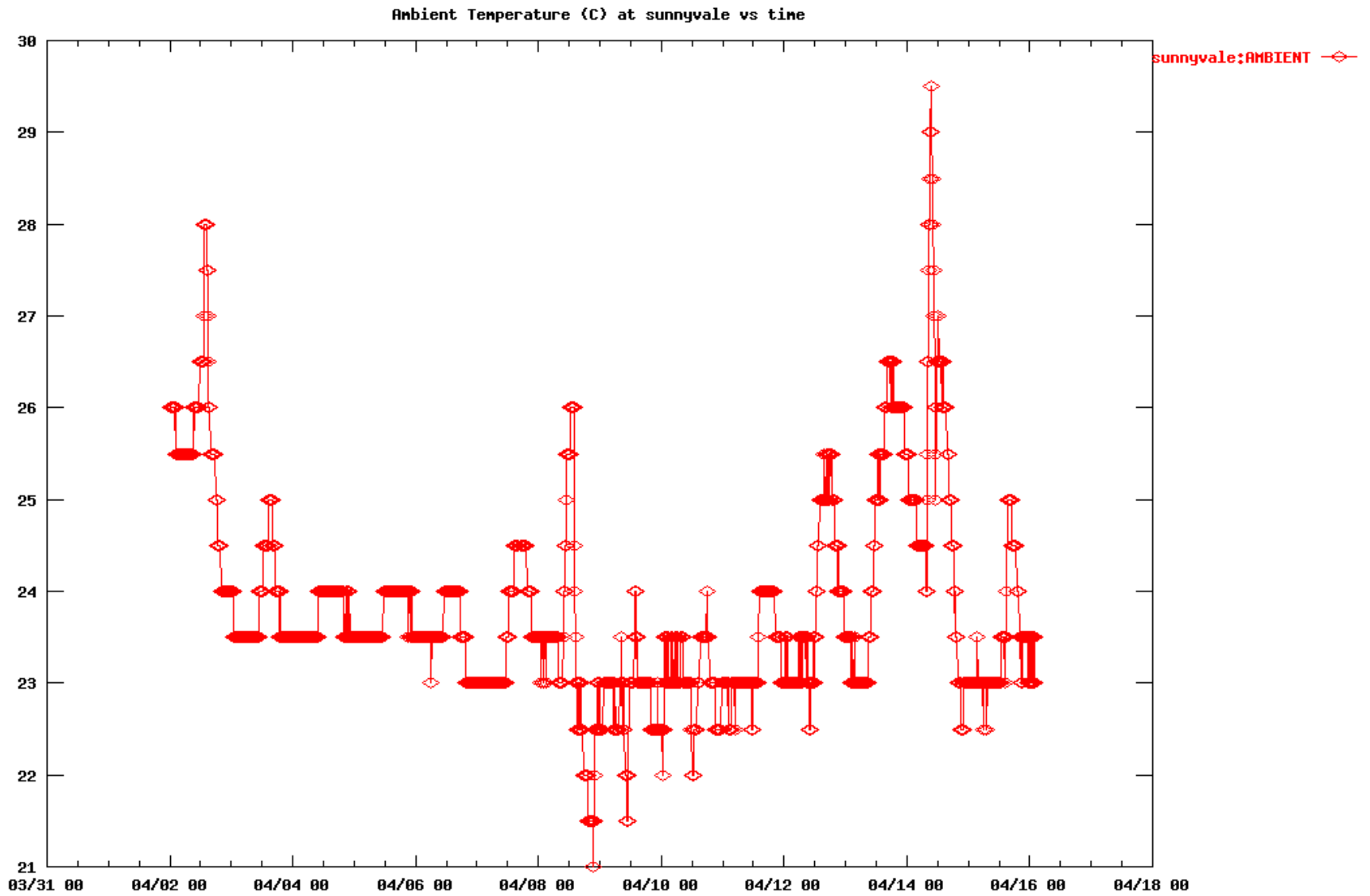
# LSF

- Beta testing release 5.0 beta 3.
- New scheduler seems to do better job of managing large queues, fair shares
- SLAC has reported a number of bugs in beta 1 & 2, Platform has fixed
- One remaining problem of master batch daemon intermittently crashing
- Seems to need a bigger master machine than anticipated

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# Infrastructure

- Power
  - Building's 800 MW supply almost exhausted
  - Pulling in 400 MW secondary feed
  - Plans for new 1.5 MW substation
- Cooling 
  - Site chillers barely keeping building cool
  - Currently replacing main chiller
  - Plans for more free-standing chillers on the floor
- Raised floor replacement
  - Required for seismic reasons
  - First section of two-year project completed



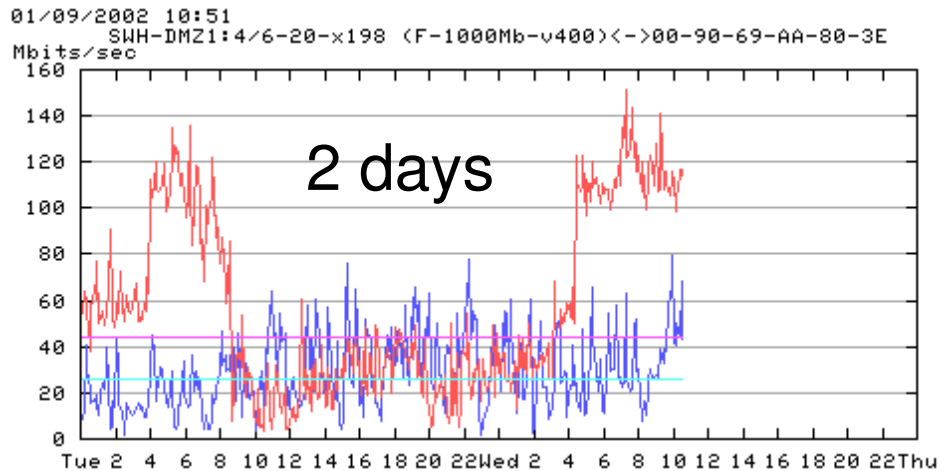


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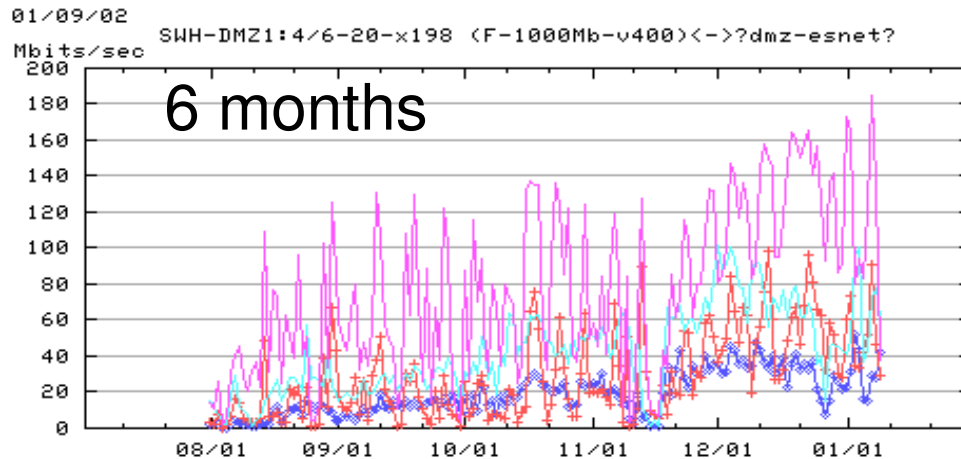
# Security Review

- Recently conducted a peer review of SLAC's security plan and practices
- Generally high marks for
  - Central maintenance of systems
  - Elimination of clear-text protocols
  - Aggressive spam and virus blocking
  - Clear security zones and policies
  - Involvement and support of user community
- Recommended
  - Stateful firewall
  - Regular vulnerability scans
  - Investigate strong authentication methods

# SLAC External Traffic



SLAC-ESNet traffic is now greater than the traffic for any other ESNet site



AND SLAC puts a similar amount of traffic on to Internet 2