

SC Annual User Meeting 2009:

20th Anniversary Celebration

10:10 -10:35	Jennifer Irish	"Hurricane Surge Response Functions"
10:35 – 11:00	Raffaele Montuoro	"Boosting Productivity with Advanced User Services"
11:10 – 11:35	Perla Balbuena	"Computational Catalysis and Electrocatalysis"
11:35 -12:00	Roland Allen	"Supercomputing Studies of Light-Matter Interactions in Materials and Molecules"
1:00-2:00	Lennart Johnsson	"HPC: Challenges, Opportunities and the Pain Ahead"
2:00-2:25	J.N. Reddy	"Computational Mechanics: A Powerful Scientific Methodology"
2:25-2:50	Renyi Zhang	"Numerical Simulations of Atmospheric Chemistry and its Impacts on Weather and Climate"
2:50-3:15	Tahir Cagin	"Characterization and Design of Materials for Engineering Applications"
3:15- 4:30	USER FORUM	

Faculty Steering Committee (reports to Provost)

Voting:

Lee Panetta, Chair, Atmospheric Sciences

Guy Almes, Telecommunications Academy

Wolfgang Bangerth, Mathematics

Tahir Cagin, Chemical Engineering

Pierce Cantrell, VP & Associate Provost for IT

Mike Hall, Chemistry

Lawrence Rauchwerger, Computer Science

Non-voting:

Spiros Vellas, Associate Director CIS (for Supercomputing)

Pete Marchbanks Jr., Interim Executive Director for CIS

Steve Johnson, Institute for Scientific Computing

Founder & Key Supporter

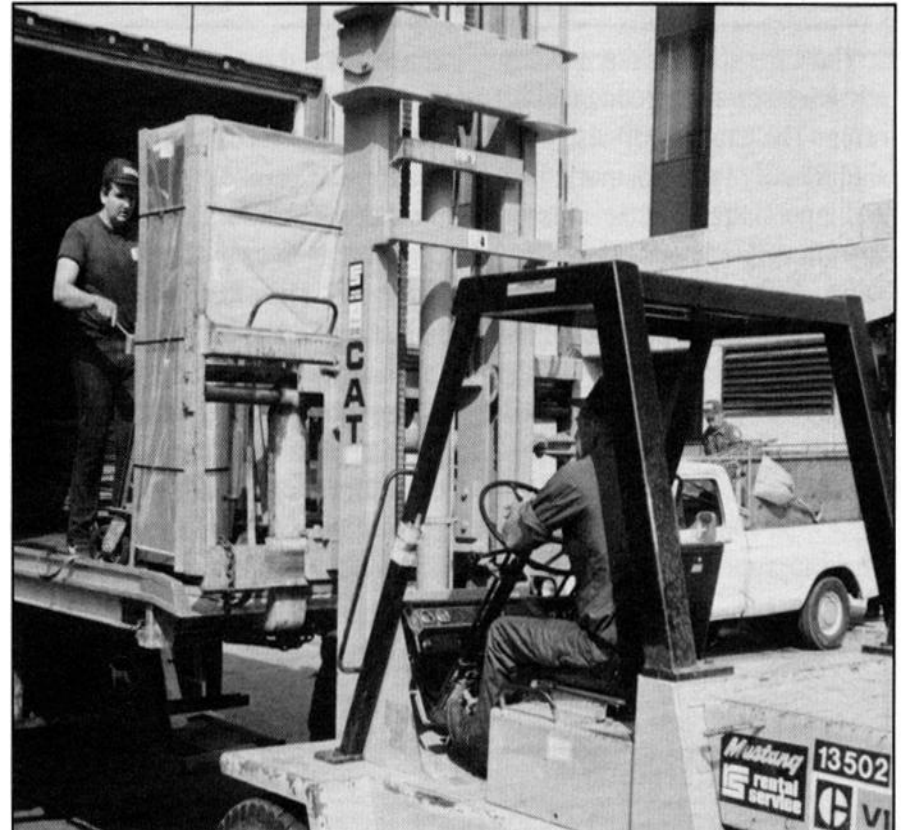
- 1986 Bahram Nassersharif (BN) becomes Assistant Professor of Nuclear Engineering
- 1987 Nassersharif wins NSF's Presidential Young Investigator (PYI) award
- 1988 Herb Richardson, Dean & Vice Chancellor of Engineering, supports BN's idea to set up the Supercomputing Facility and A&M to buy a Cray supercomputer
- 1988 BN becomes the facility's first director



Herb Richardson,
Dean & Vice Chancellor
of Engineering

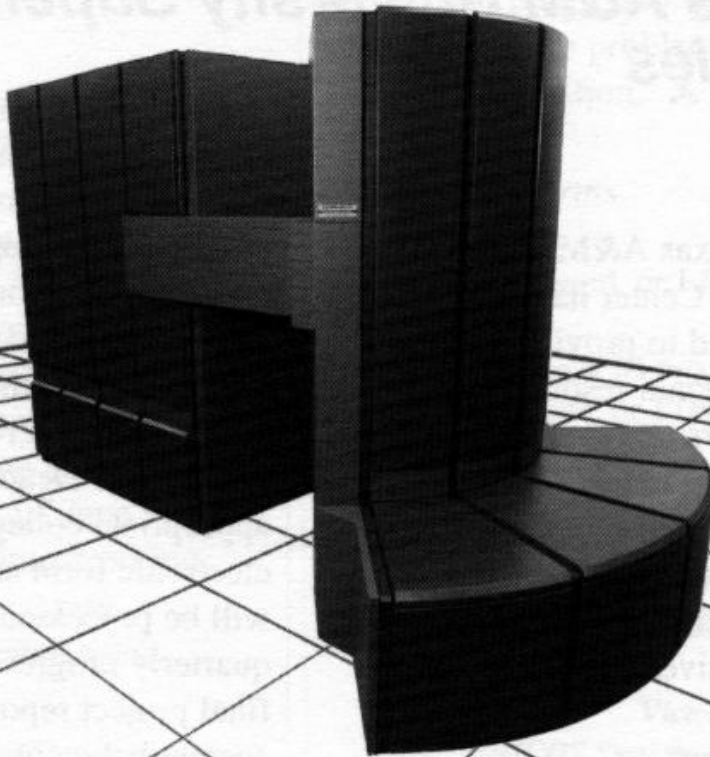
Cray Y-MP2/1 16 Delivery

- 1st Texas University to install a Cray Y-MP
- July 31, 1989



The Cray Y-MP arrives at Zachry Engineering Center.

The Cray Y-MP2/116



- 1 (out of 2) vector processor active only
- 16 MB of vector memory
- 8 64-word (64-bit) vector registers
- 6 nanosec clock
- Peak MFLOP/s 333

The Cray Y-MP2/116.

Early users

Allen
(Phys)

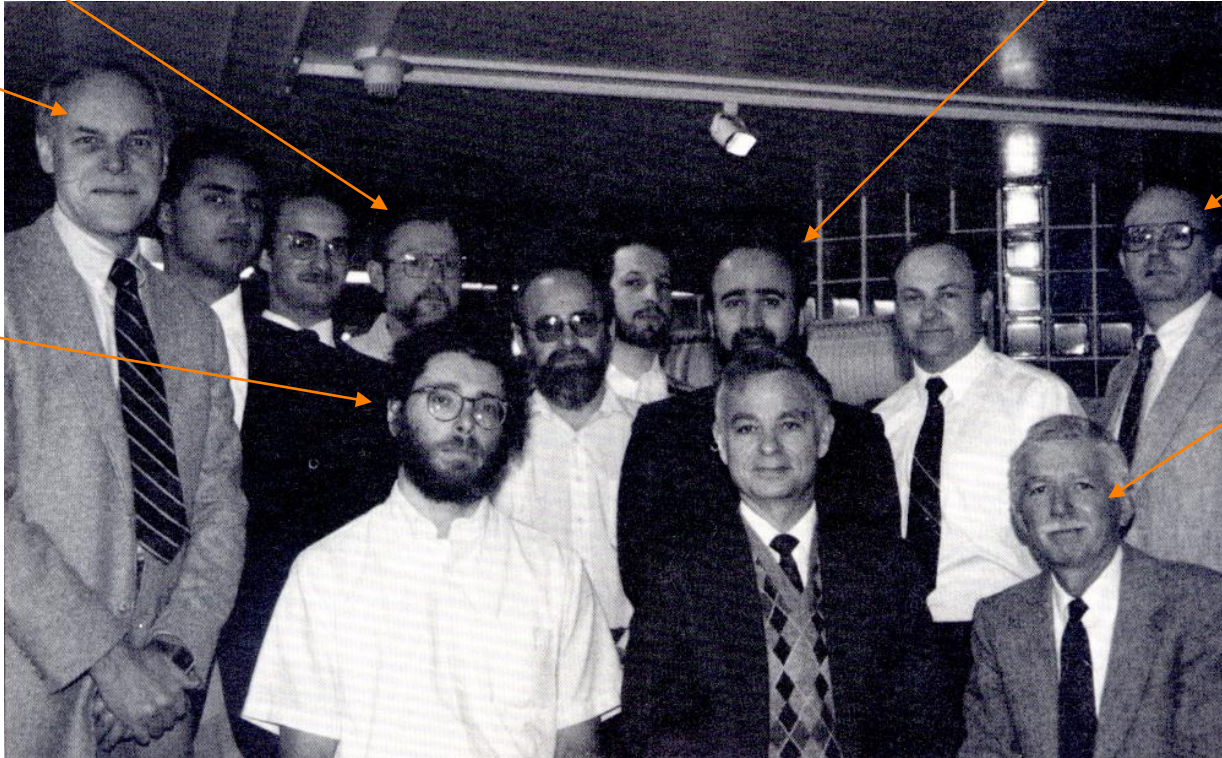
Nassersharif
(Nuclear)

Slattery
(Chem E)

Hall
(Chem)

Panetta
(Atmo)

North
(Atmo)

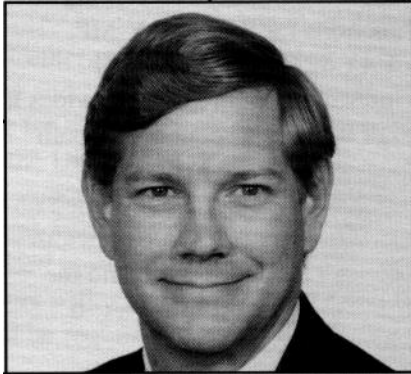


The original recipients of Cray Research Grants were (first row, left to right) R. Lee Panetta (Meteorology), Ralph White (Chemical Engineering), Gerald North (Meteorology), (second row, left to right) John C. Slattery (Chemical Engineering), Edward Mascorro (Civil Engineering), Photios Papados (Civil Engineering), Roland Allen (Physics), Jan Gryko (Physics), Gamal Akabani for John W. Poston (Nuclear Engineering), Bahram Nassersharif (Nuclear Engineering), Darrell Fannin (Rural Sociology), and Michael Hall (Chemistry).

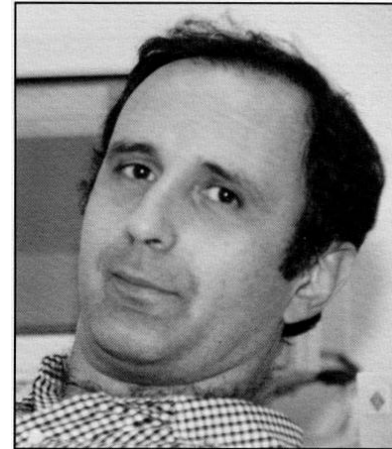
Early Uses

<u>Name</u>	<u>Department</u>	<u>Project Title</u>
Roland Allen	Physics	Theoretical Studies of Real Materials
Ping Chang	Oceanography	Ageostrophic Wave-mean Flow Interaction: Equatorial Layer Dynamics
Siu Chin	Physics	Hamiltonian Lattice Calculations & Microscopic Nuclear Many-Body Problems
Michael Hall	Chemistry	Theoretical Inorganic & Organometallic Chemistry
Yassin Hassan	Nuclear Engineering	Turbulence Modeling using the Finite Element Method
George Kattawar	Physics	A Theoretical Study for Obtaining the Speed of Sound, Temperature & Salinity Remotely in the Open Ocean by Brillouin & Raman Scattering
Robert Lucchese	Chemistry	Studies of Electron-Molecule Collisions
Bahram Nassersharif	Nuclear Engineering	Visual Neutron Particle Transport Using Cellular Automata
Gerald North	Meteorology & Oceanography	Application of Information Theory in Climate Predictability Using a General Circulation Model
Lee Panetta	Meteorology	Numerical Investigation of Jets in Quasi-Geostrophic Turbulence
Theodore Parish	Nuclear Engineering	A Fuel Scoping Program for Boiling Water Reactors
Paul Roschke	Civil Engineering	Failure Prediction of Thin Beryllium Sheets Used in Spacecraft Structures
John Slattery	Chemical Engineering	The Physics of Spreading Films
Ralf White	Chemical Engineering	Mathematical Modeling of Electrochemical Systems & Simulation of Batteries

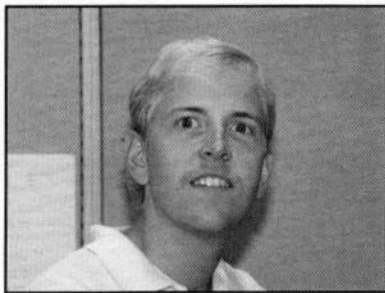
Original Staff



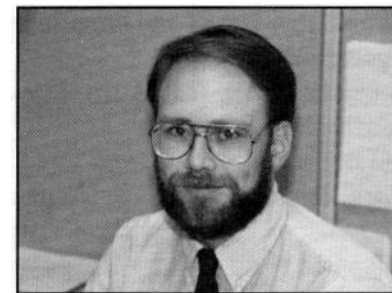
Michael Bolton
Manager



Spiros Vellas
Sr. Systems Analyst



Victor Hazlewood
UNICOS Systems Programmer



Don Curtis
UNICOS Systems Administrator

Current Supercomputer Facility Staff

Director:

Spiros Vellas

Admin Asst:

Greta Thomas

Analysts:

Francis Dang

Keith Jackson

Tae Sung Kim

Ping Luo

Xiangong Meng

Raffaele Montuoro

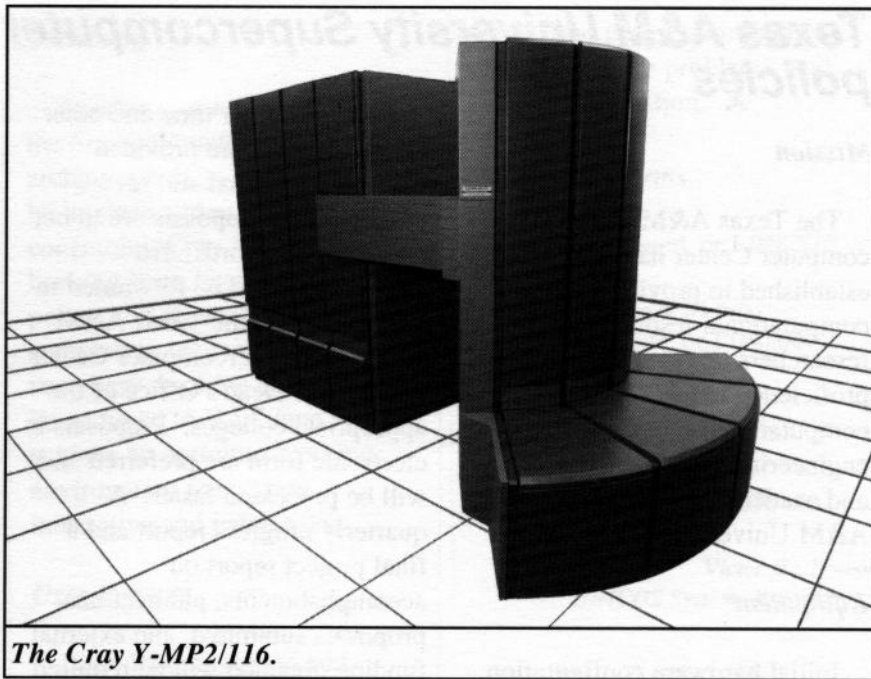
Michael Thomadakis

Gants (Help Desk):

Videsh Sadafal

Jie Meng

Cray Y-MP2/116 (1989)



1 cpu
16 MB memory
0.333 Gflops
\$5 M
\$400k/yr maint

— x 60 —>

Apple Macbook Pro (2008)

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

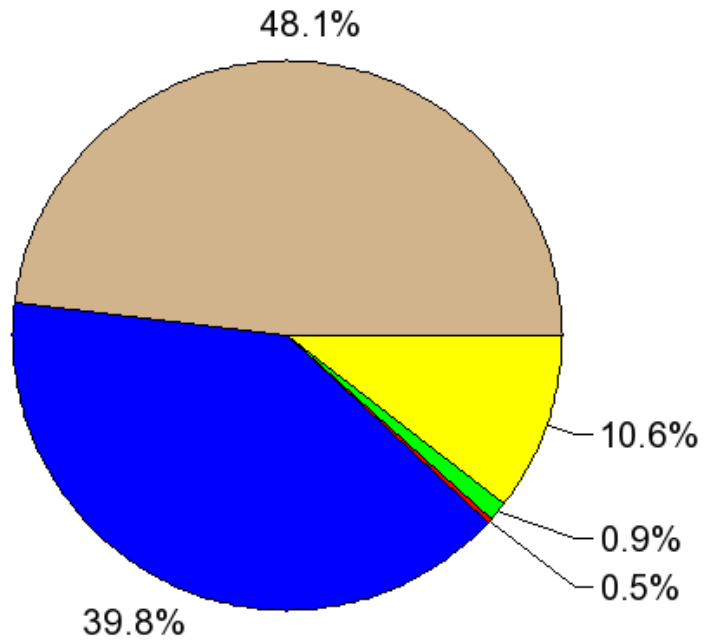
2 cpus
4 GB memory
20 Gflops
\$2 K
(+ 3 yr maint)

Supercomputer Facility hardware over the years

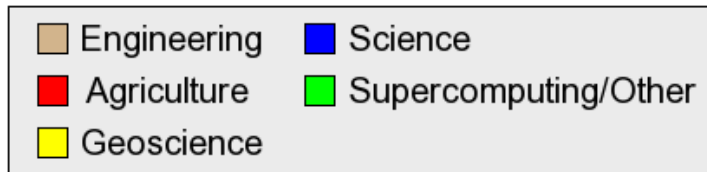
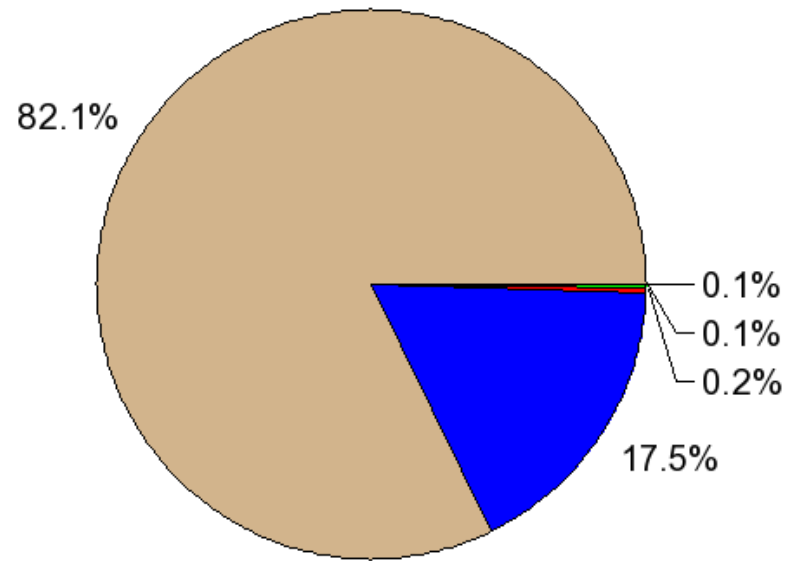
Cray Y-MP(1)	Vector	1 cpu	333 Mflops	\$5 M (1989)	
SGI Power Challenge	SMP	24 cpu			
Cray J90	Vector	16 cpu			
SGI Origin 2000	SMP	32 cpu			X 2000
SGI Origin 3200	SMP	64 cpu			
IBM p690 Regatta	SMP	32 cpu		(2002)	
SGI Altix 3700	SMP	128 cpu	0.665 Tflops	\$1.3 M (2004)	X 10
IBM p575+	Cluster	832 cpu	6.3 Tflops	\$ 2.5 M (2007)	X 50
??????????	Cluster	> 3000 ??	> 336 ?? Tflops	< \$ 2 M	

Cosmos Usage

Total Jobs



Total CPU Time

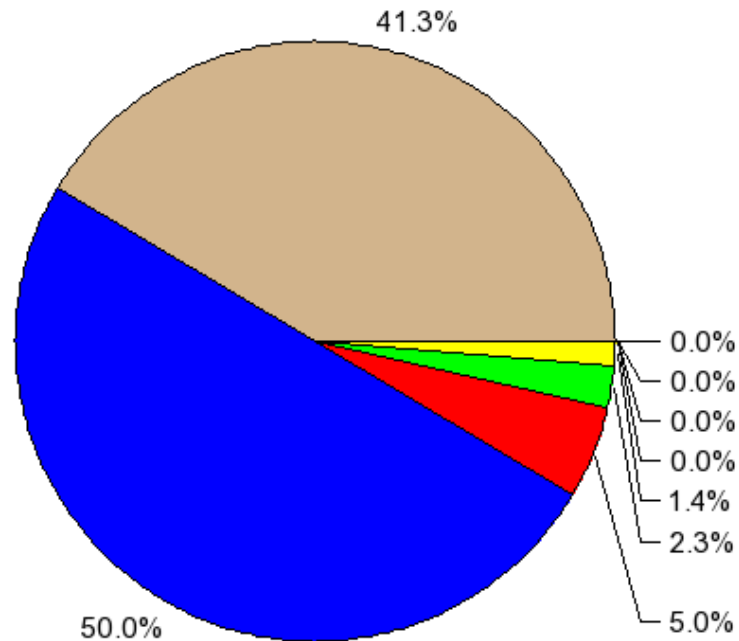


Batch Job Statistics by CPU Factor

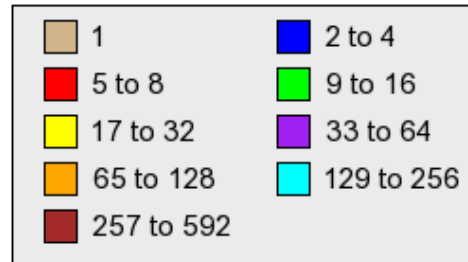
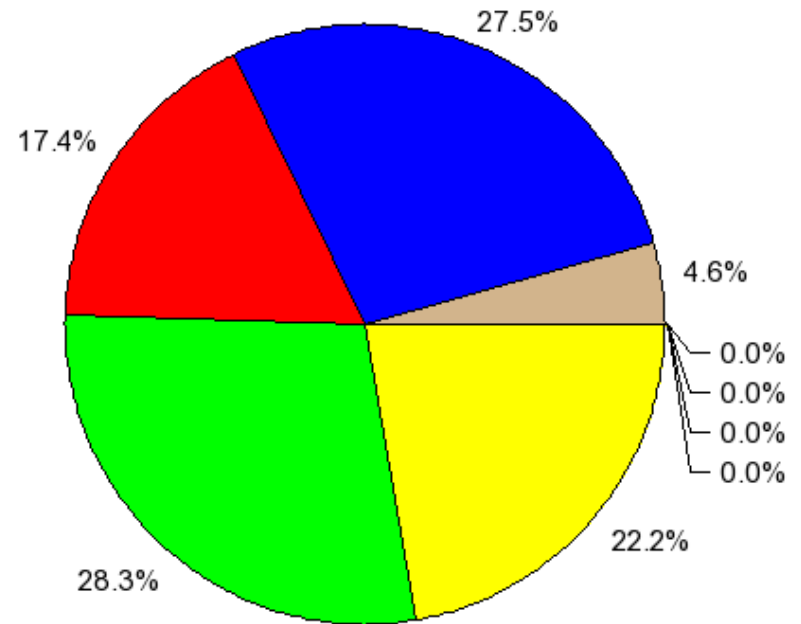
System: cosmos

Date Range: 2008-09 to 2009-05

Total Jobs

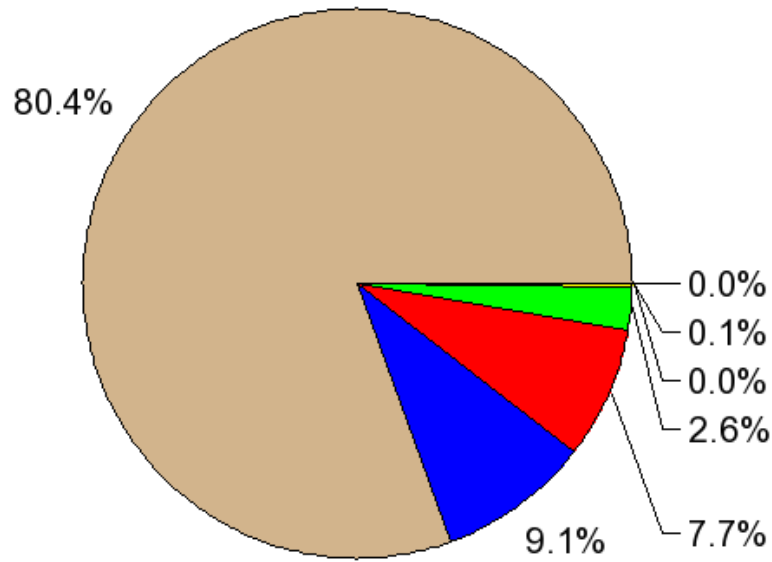


Total CPU Time

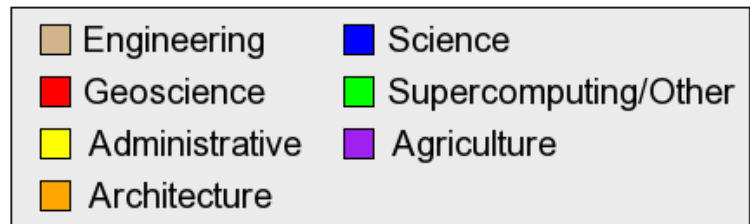
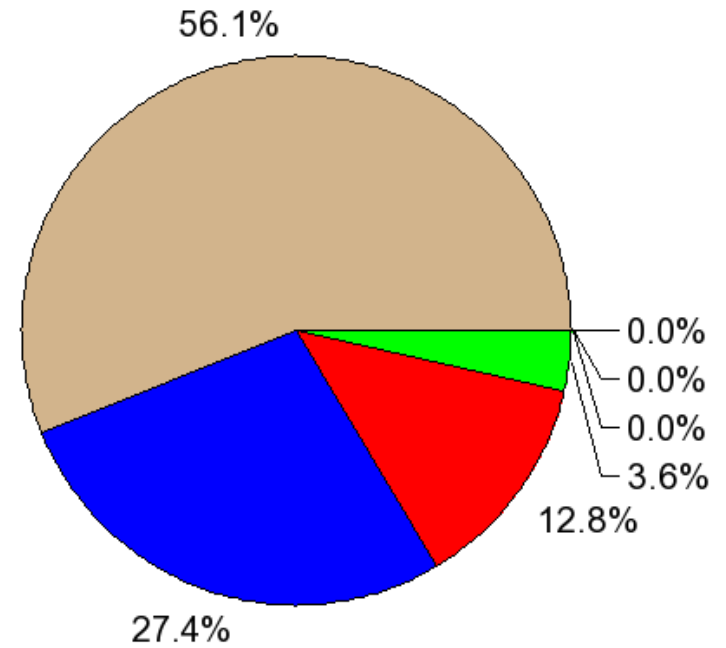


Hydra Usage

Total Jobs



Total CPU Time

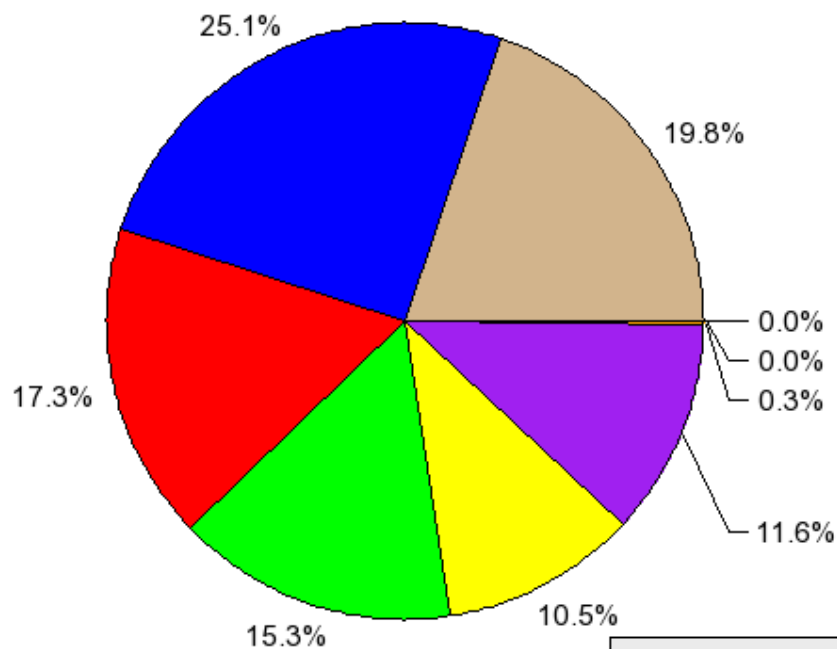


Batch Job Statistics by CPU Factor

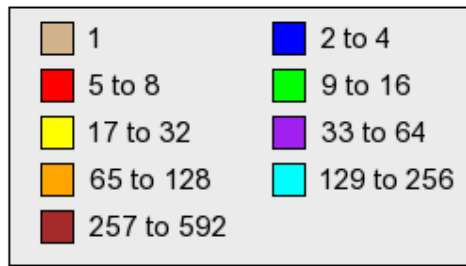
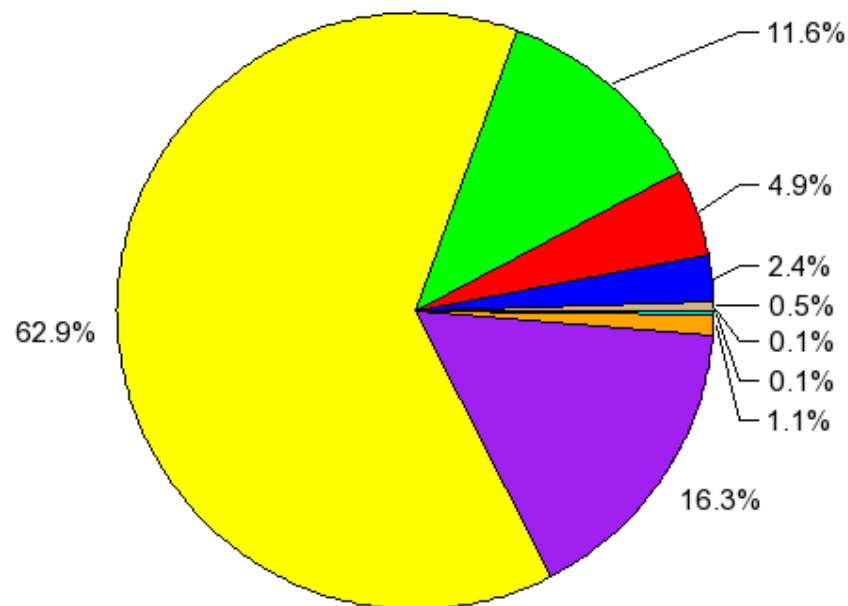
System: hydra

Date Range: 2008-09 to 2009-05

Total Jobs



Total CPU Time



Monthly Batch Statistics for Hydra

