User Services

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NAS User Services

- History of NAS

- NASA Advanced Supercomputing

- Numerical Aerospace Simulations

- Numerical Aerodynamics Simulations

NAS User Services

- Mission

  Develop, demonstrate, and deliver innovative,distributed heterogeneous computing capabilities to facilitate NASA projects and missions success.

- History

  The NAS division was founded in 1984, with the intent to provide high performance computing capabilities to all NASA centers and their collaborators to enable the USA aeronautic development to improve.The division's staff includes about 80 civil service employees and more than 140 contractor staff
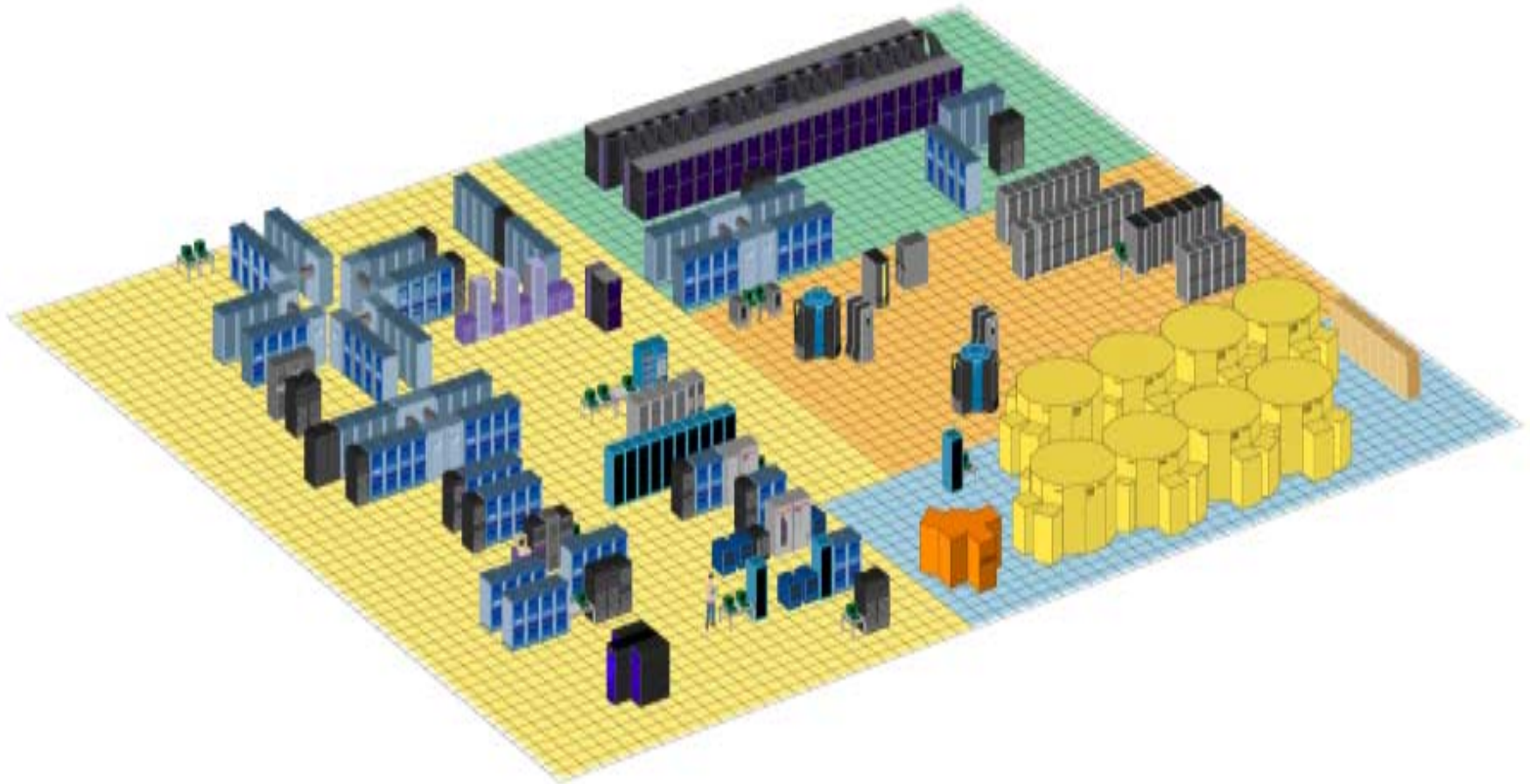
NAS User Services

- **Supports Users at other NASA Centers**

  - LRC, GRC, GSFC, MSFC, JSC, JPL, DAO

  - Some of our collaborators include: Argonne National Laboratories, DOD MSRC, US Army Corps of Engineers, NSF, NPACI, NCSA, LLNL, Univ. of Glaslow, Mass. Institute of Tech., Stanford Univ., Univ. of Tennessee.

- **Some of the resources available to our user community include:**

  - Chapman - A 1024-processor Origin 3000, shared memory single system image
  - Lomax - A 512-processor Origin 3000, shared memory single system image
  - Steger - A 128-processor Origin 2800, shared memory single system image
  - Hopper - A 64-processor Origin 2000, shared memory single system image
  - Bright - A Cray SV1ex with 32 500-megahertz vector processors
  - Lou - A 16 processor Origin 2000 with 3 gigabytes of main memory and 3.3 Terabytes of on-line disk storage
  - Bj kalnay dixon – 328 cpu Origin 2000 for DAO work

NAS Computer Facility

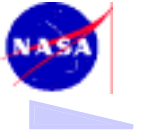# High-End Computing

Network Engineering

User Services

Primary mission: Support Users

- Help Desk – 24 X 7 User Support
  - Service Requests
  - Manage user accounts
  - Reset/Propagate passwords
  - Change File permissions
  - Archive / Restore user data
  - How do I __?   Where is__?   Why can/can't I __?
  - Why won't my job run?

User Services

Primary mission: Monitor Systems

- Help Desk Tools
  - Remedy -- 12802 tickets in 2001
  - Dlog – Operations Log – 4211 systems events
  - Scheduling Schema
  - Paging Schema
  - Control Schema

User Services

Primary mission: Monitor Systems

- LAMS
- MOTD
- Logit
- NAS System Status
- System Tools
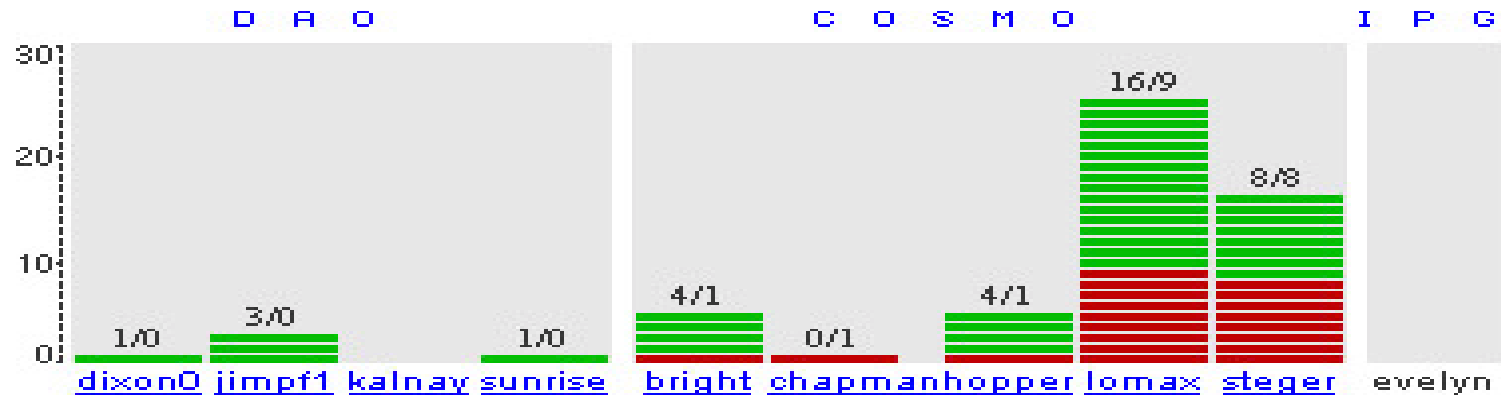- Supportfolio

User Services

- Monitoring
  - Check uptime and load
  - Check file systems
  - Check Critical Processes
  - Job status

- Problem Support
  - Create REMEDY ticket
  - Contact On Call Engineer
  - DLOG incident – systems metrics
  - Logit – notify affected users

Systems' Queue Status

http://www.nas.nasa.gov/cgi-bin/nas/status

System's Node Map

NAS System Utilization - Apr 28 14:30
lomax node map

User Services

- Crash Procedures
  - Restart machine – if possible
  - Create REMEDY ticket
  - Contact on call System Administrator
  - Contact Hardware engineer
  - Dlog incident – systems metrics
  - Logit – notifies affected users
- Backup Performed daily
  - Bacpac tool used
  - Xfsdump to mass storage

DMF Systems

- ## Lou − SGI 2400, 16p/8GB, 2.5 TB RAID
  - ### 500 TB media (dual copies)
    - /staff(140GB), /u1(540), /u2(540), /bkups(400), /hsp(260), /chuck(400), /scott(400)
  - ### 20 M files & directories & ~1600 users

- ## Helios1 − SGI 2400, 8p/2GB, 1.8 TB RAID
  - ### 275 TB media (dual copies)
    - /silo4(800GB), /silo5(540), /bkups(270), /chuck(115), /scott(115)
  - ### 3 M files & directories & ~160 users

DMF Systems

- Lou
  - Transports
    - 10 STK 9840 (5 local, 5 remote), Files - 1MB-100MB
    - 10 STK 9940 (5 local, 5 remote), Files - >100MB
    - 12 STK Redwood (6 local, 6 remote)
    - 13 STK 9490   (12 local, 1 remote)
  - 30 Day Average
    - Transport Writes 737.9 GB/day
    - Transport Reads 79.5 GB/day
    - Files Written – 5531/day
    - Files Read – 324/day

# DMF Systems

- Helios1
  - Transports
    - 10 STK 9840 (5 local, 5 remote), Files – 1MB-100MB
    - 10 STK 9940 (5 local, 5 remote), Files – >100MB
  - 30 Day Average
    - Transport Writes - 691.2 GB/day
    - Transport Reads - 100.5 GB/day
    - Files Written – 6234/day
    - Files Read - 900/day
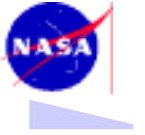
File & Data Profile

- LOU
    - File sizes less than 30 MB are 97% of the # files and total 10% of the data.
    - File sizes less than 1 MB are 86% of the # files and total 1.2 TB.

- Helios1
    - File sizes less than 50 MB are 90% of the # files and total 10% of the data.
    - File sizes less than 1 MB are 53% of the # files and total 186 GB.
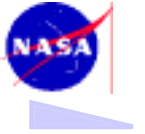
Tape Silo

Further Contact

- http://www.nas.nasa.gov
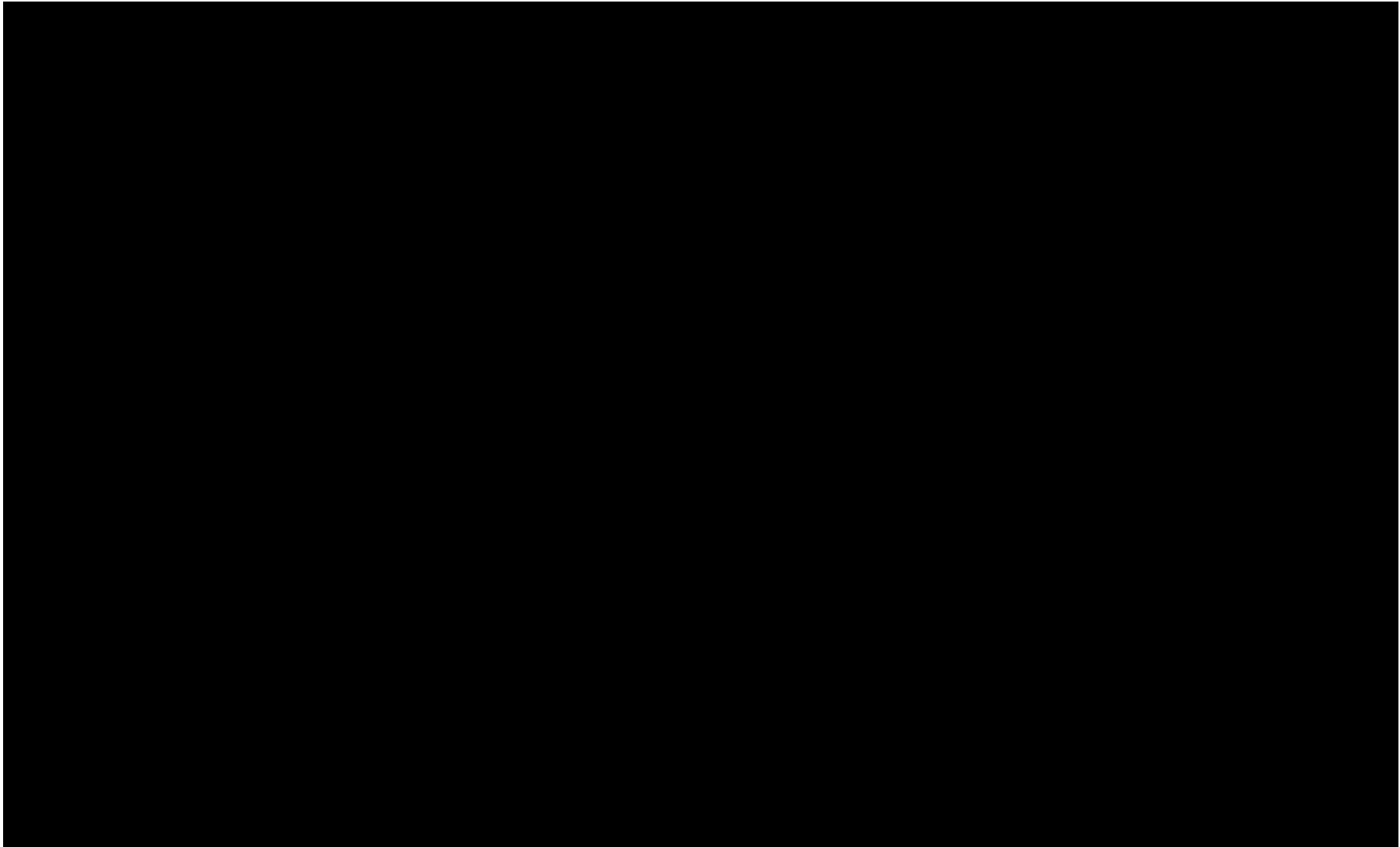
- support@nas.nasa.gov

- 1 800 331 USER (8737)

- 650 604 4444

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