



# Internet and Internet-2 at STScI

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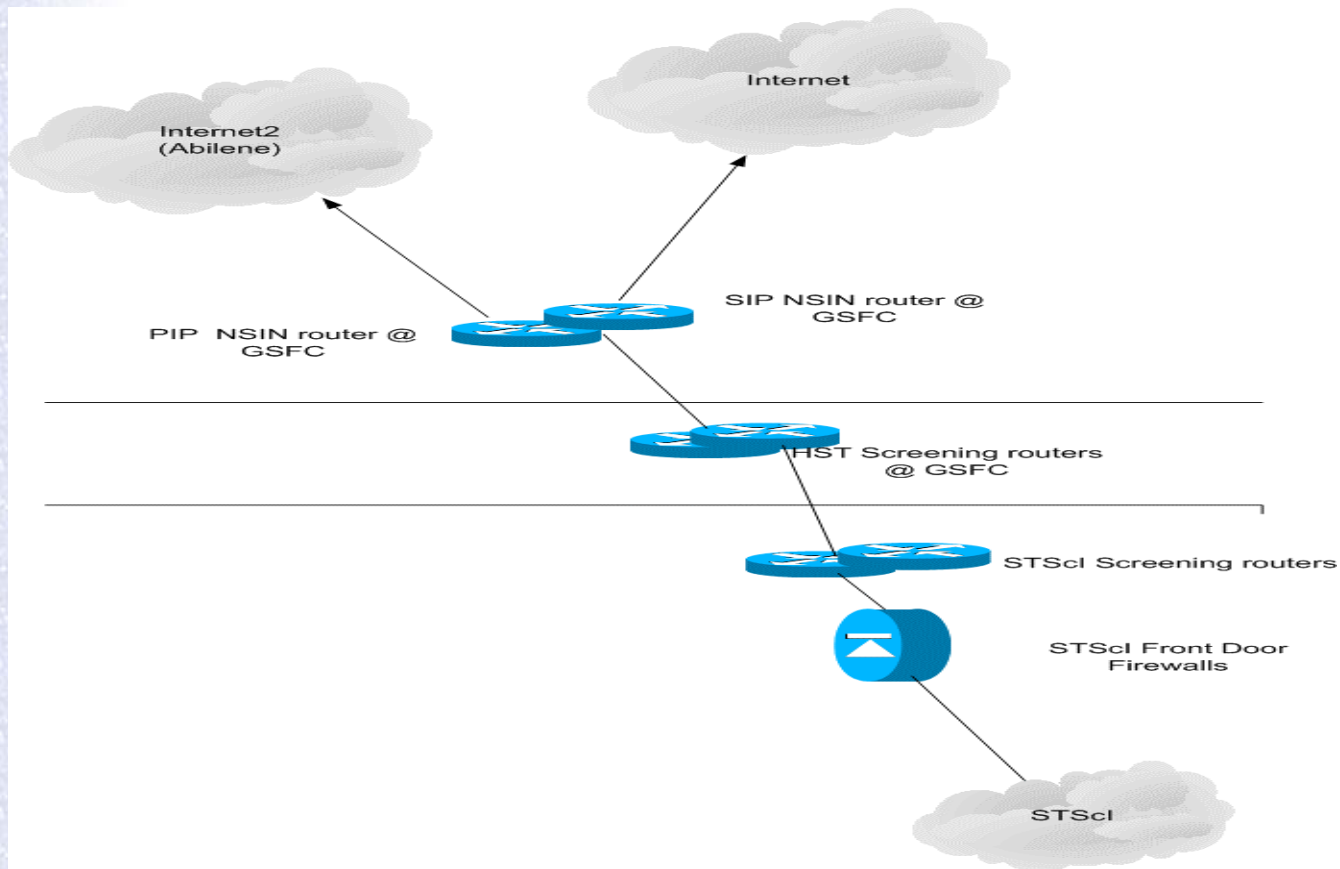
February 8, 2007

# STScI Internet Connectivity

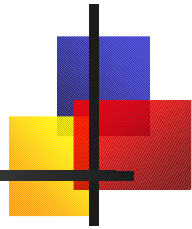


- STScI has 100 Mbps total Internet bandwidth (incoming and outgoing) available for use
  - 100 Mbps for Internet
  - 50 Mbps for Internet-2
  - Combined limited (by link to GSFC) to 100 Mbps
- Network configuration (see attached diagram)
  - STScI connected to HSTnet via 100 Mbps link (in Rm 128)
    - Traffic between STScI and GSFC routed via this link
  - Internet-2 is routed by NISN via UMD exchange and Maxgigapop to the Abilene backbone
  - Internet routed over commercial Internet providers

# STScI Internet Connectivity



# What is Internet 2?

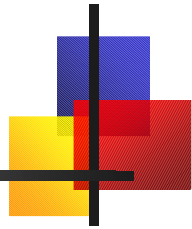


- Internet-2 is a not-for-profit consortium of 200+ universities (UCAID) working in partnership with industry and government to develop and deploy advanced network applications and technologies
- Participation in Internet-2 is open to any *university* that commits to providing on-campus facilities that will allow advanced applications development
- STScI has participated via NISN since 2004; any traffic destined for Internet-2 hosts should travel via that route
- How can you tell if traffic is being routed over Internet-2?
  - Use *traceroute* command
    - Local sites (JHU, UMD) will show routes over maxgigapop.net network
    - Remote sites will show routes over ucaid.net (Abilene)



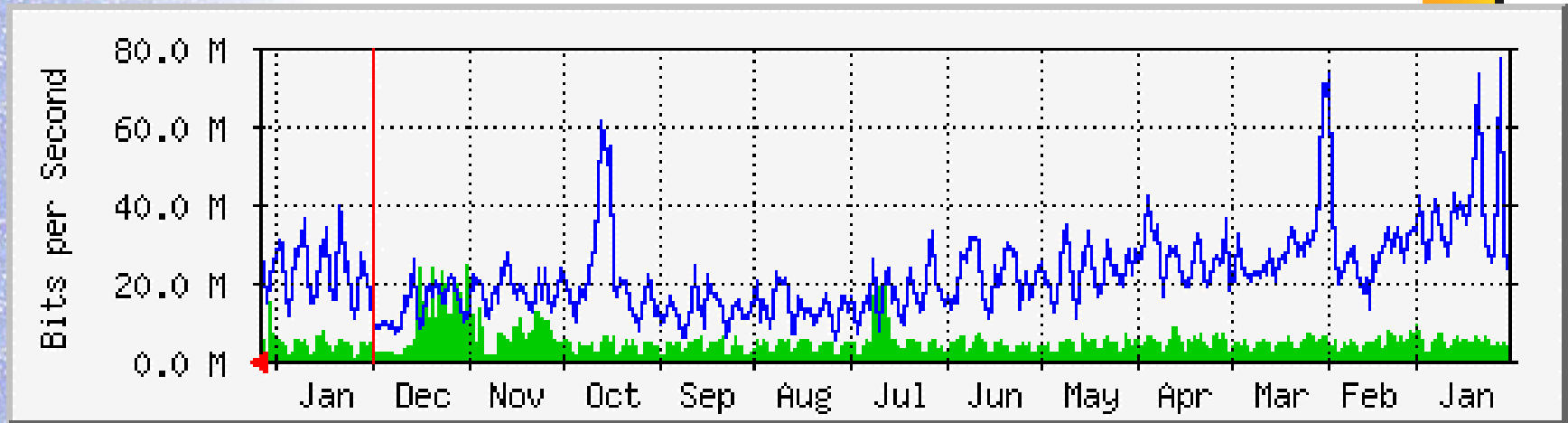
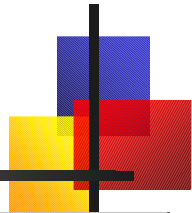
# Current Bandwidth Usage

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- Historically, OPO used 60% of STScI's available Internet bandwidth (through April 2006)
- Archive uses about 25%
- Usage April 2005 through April 2006
  - Average usage: 20Mbps or 20% available bandwidth
  - Exceeded 60% utilization 4 days
  - Exceeded 25% utilization 50 days
  - Maximum usage for 3 major OPO events (60+ hours)
- Moved OPO public sites to Mirror Image – May 2006
  - About 50-75% of OPO usage now goes to Mirror Image

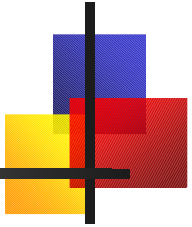
# Internet Usage: 2006



- Note that time runs from left to right (strip-chart style plot)
- Blue line is outgoing traffic from STScI
- Green is incoming traffic to STScI
- Capacity is 100 Mbps

## Future (near-term) growth

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- OPO bandwidth usage will continue to be hosted offsite
- Archive bandwidth usage will continue to grow
- Kepler comes online October 2008
- Other (HLA, etc.)
- Bandwidth needs should be met for foreseeable future but must continue to monitor usage and understand potential for growth