Best Practices for the SEAS Remote Desktop

System use limits / Best Practices for end-users

Functional goal of SEAS Remote Desktop

The SEAS Remote Desktop is persistent, graphical (GUI) based desktop environment for easy connectivity to central SEAS IRCS research and instructional computing resources. The main functional goal of this system is to allow SEAS users easily run both GUI and non-graphical applications without having to explicitly setup SSH keys, SSH tunneling, and Xwin application SW for X based connectivity.

The server (nx.seas.harvard.edu, aka puri.seas.harvard.edu) is designed to serve the whole SEAS research and teaching community. The users are expected to use the Desktop for light, short compute tasks, e.g. editing, code development, compilation, reading online docs, etc. It is not meant for production runs/simulations. The Desktop and SEAS IRCS compute environment is setup so that the users can easily connect to the dedicated HPC compute resources (wumpus, hpc, boggle, resonance etc) for all production work. In this workflow, the HPC server (e.g. wumpus) will run the application and do the heavy numerical work, and the Remote Desktop server provides the graphical processing frontend for the GUI based application (e.g. Matlab).

System limits for end-users

The following system limits are in place in order to best guarantee service availability to the whole SEAS community:

- User limits in ulimit (hard limits)
  - data, -d, 2GB
  - memory, -m, 2GB
  - stack, -s, unlimited
  - virtual memory, -v, 2GB
  - cputime, -t, 'unlimited' seconds

- CPU time limits for user level jobs, using autonice
  - 'nice -19' at 300 second mark (5 minutes), i.e. lowest possible priority
  - SIGKILL at 1800 second mark (30 minutes), i.e. the job will be killed by the system

- Remote Desktop persistence
  - Under normal circumstances the Remote Desktop sessions are persistent, and available 24/7 for extended periods of time (several weeks).
  - If the underlying server has to be rebooted or crashes for any reason, all Remote Desktop sessions will be lost, and all users need to restart with a new session.
    - The users are strongly encouraged to frequently save and backup any crucial sessions, e.g. save your text editor or Matlab GUI interface contents frequently.
  - Idle NX sessions are killed after 14 days of non-use (a session that has not been connected to or used in 14 days)
  - For maintenance and system security reasons the Remote Desktop will be rebooted quarterly. The reboot times will be announced at least two weeks in advance to the users of the Remote Desktop.

- Connectivity limits
  - End-users can connect to other SEAS IRCS servers without having to setup SSH keys. Currently wumpus, hpc, nikola, and resonance are available for direct connectivity from the SEAS Remote Desktop
  - End-users can not connect to the Remote Desktop directly using SSH (SSH based terminal connectivity), i.e. the Remote Desktop server (nx.seas.harvard.edu) is only available via using the properly configured NX SW.

If you have any questions or comments, please contact ircshelp@seas.harvard.edu.