



# Accelerating Remote X Display Operations

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## Accelerating Remote X Display

- Motivation for work: NERSC users reported poor performance for remotely displayed X11-based applications (e.g., Matlab, IDL, etc.).
- Performance problems due mostly to high network latency (*how long it takes for a packet of data to get from one site to another*) to remote sites.



## Technologies and Testing Methodology

- Several technologies were tested: ssh X11 forwarding, TightVNC, and NX.
- Testing involved multiple (local) machines and the NIST network simulator.
- Worked with the NERSC Network and Security Group to obtain estimates on bandwidth and round trip latencies between NERSC and remote sites.



## Evaluation Criteria & Results of Testing

- Criteria used: performance, security, licensing issues, platforms covered, and ease of use.
- VNC and NX perform similarly.
- NX is more convenient, easier to use.
- Testing of NX on davinci began in May 2008.
- Announced to NERSC users in August 2008.



## Today's Demo

- Locate the **NX How To** documentation on the NERSC Web site.
- Go to [www.nomachine.com](http://www.nomachine.com) to get the NX client.
- *I have already downloaded the NX client and the davinci.key file.*
- *I have already installed the NX client. Installation of the NX client is platform dependent.*
- Configure NX.
- Run NX.



## More Information

- Reminder: installation of the NX client is platform dependent.
- NX is installed only on davinci, but you can use ssh into other machines from an NX xterm window.
- Alternative: VNC is installed on davinci (link to “How To” page on NERSC Analytics: Visualization Web page)
- Problems or questions? Send email to [consult@nersc.gov](mailto:consult@nersc.gov).



# NERSC Analytics

[www.nersc.gov/nusers/analytics](http://www.nersc.gov/nusers/analytics)

Other analytics or  
visualization questions?

Contact:

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