NX

Description

NX is an enterprise-class solution for secure remote desktop access. NX is developed by NoMachine The Desktop Virtualization Company provided by NoMachine free of charge.

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NX at the Advanced Photon Source

NX is used to remotely control APS Linux and Solaris workstations.

Supported Operating Systems

NX Client
–   Windows
–   Mac OS
–   Linux
–   Solaris

NX Server
–   Linux
–   Solaris

How NX Works at the APS

NX Client Off-Site

SSH   Firewall

apollo.aps.anl.gov
xgate.xor.aps.anl.gov

NX Client On-Site

SSH   Hosts with NX Server

Instructions for Linux, Solaris, and Mac Clients

1) Launch the NX Client with command: startnx

startnx - Starts an NX session

Usage: startnx [REMOTE_HOST] [--SESSION_TYPE] [WIDTH] [HEIGHT]

SESSION TYPES

--kde   K Desktop Environment

--gnome   GNU Object Model Environment

--cde   Common Desktop Environment

--shadow   Attach to the remote machine's running desktop environment

SPECIAL RESOLUTIONS
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fullscreen   Use entire screen on the client

available   Use all available desktop space on the client

remote   Use the remote machine's resolution

Examples:

startnx duck.aps.anl.gov --kde 1024 768

startnx duck.aps.anl.gov --kde fullscreen

Following the above examples, to start an NX session you must specify the name of the remote machine you want to connect to. You must also specify the session type.

Optionally, you may specify the width and height of the desktop for the NX session. The default width is 1024 and the height is 768 for a total resolution of 1024x768.

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```
Terminal                                           _ □ ✕
File   Edit   View   Terminal   Tabs   Help
bash-3.2$ startnx duck --kde 1024 768

Discovering Network...

Hostname: puffin.aps.anl.gov
IP: 164.54.51.42
    164.54.51
    164.54

Launching NX...

Session: duck.aps.anl.gov.nxs

Server host value="duck"
Server port value="22"
Session value="unix"
Desktop value="kde"
Resolution value="1024x768"

bash-3.2$ ▯
```
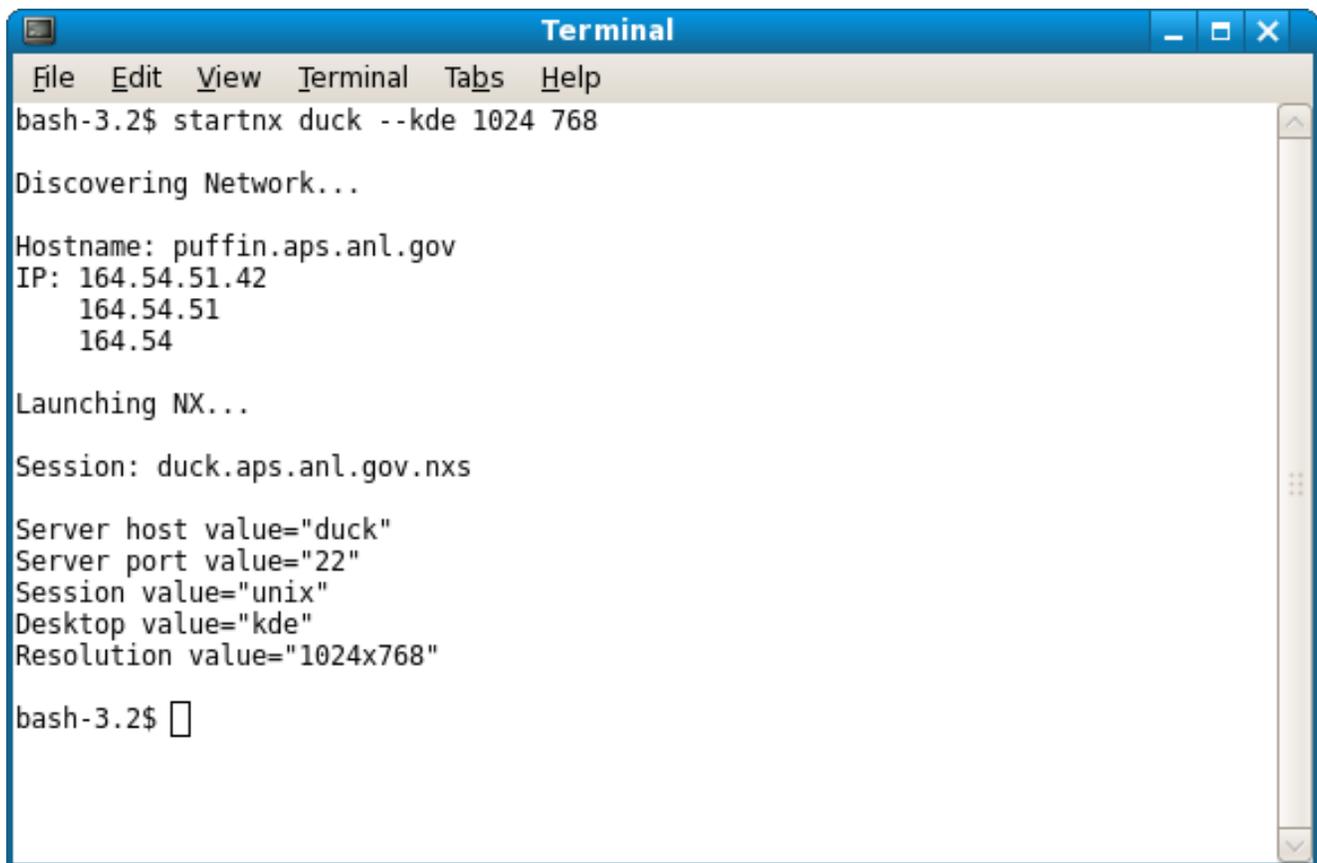
2) Type your username and password and click Login.

```
                    NX                   _ ✕
  NOMACHINE
  Login      username
  Password   **********
  Session    somemachine.aps.anl.gov    ▼
             ☐ Login as a guest user
  _____
  Configure...          Login       Close
```
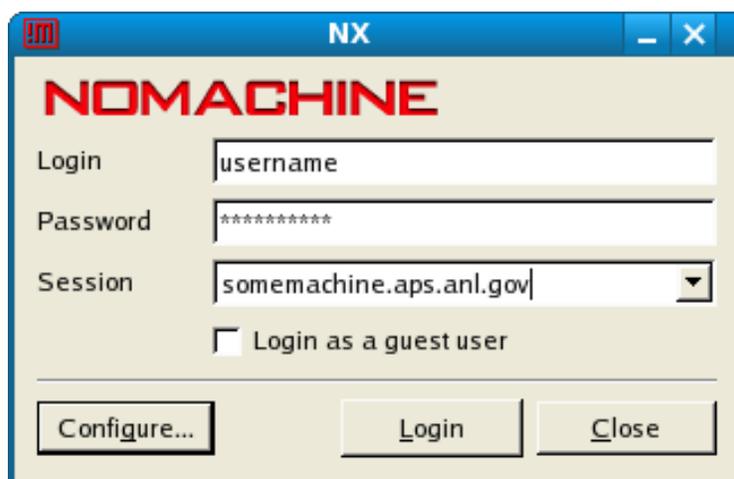
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Instructions for Windows Clients

NOTE: These instructions and screen shots are for the Tectia SSH client v6.0.2.84. Other versions of SSH will work, but screens will not match what it documented below. The Tectia SSH and NX clients need to be installed before attempting this procedure. **Also note that the SSH client is only needed when connecting to a remote host at the APS from an off-site computer or from external networks.**

In the procedure documented below you will create a "FreeNX on tin" profile, which will allow you to remotely connect to the system tin.aps.anl.gov via ssh to apollo tunneling X11 through SSH. You will need to substitute the remote host you need to connect to for tin.aps.anl.gov in the screens below.

1) Configure and launch SSH client
Select "Add Profile".
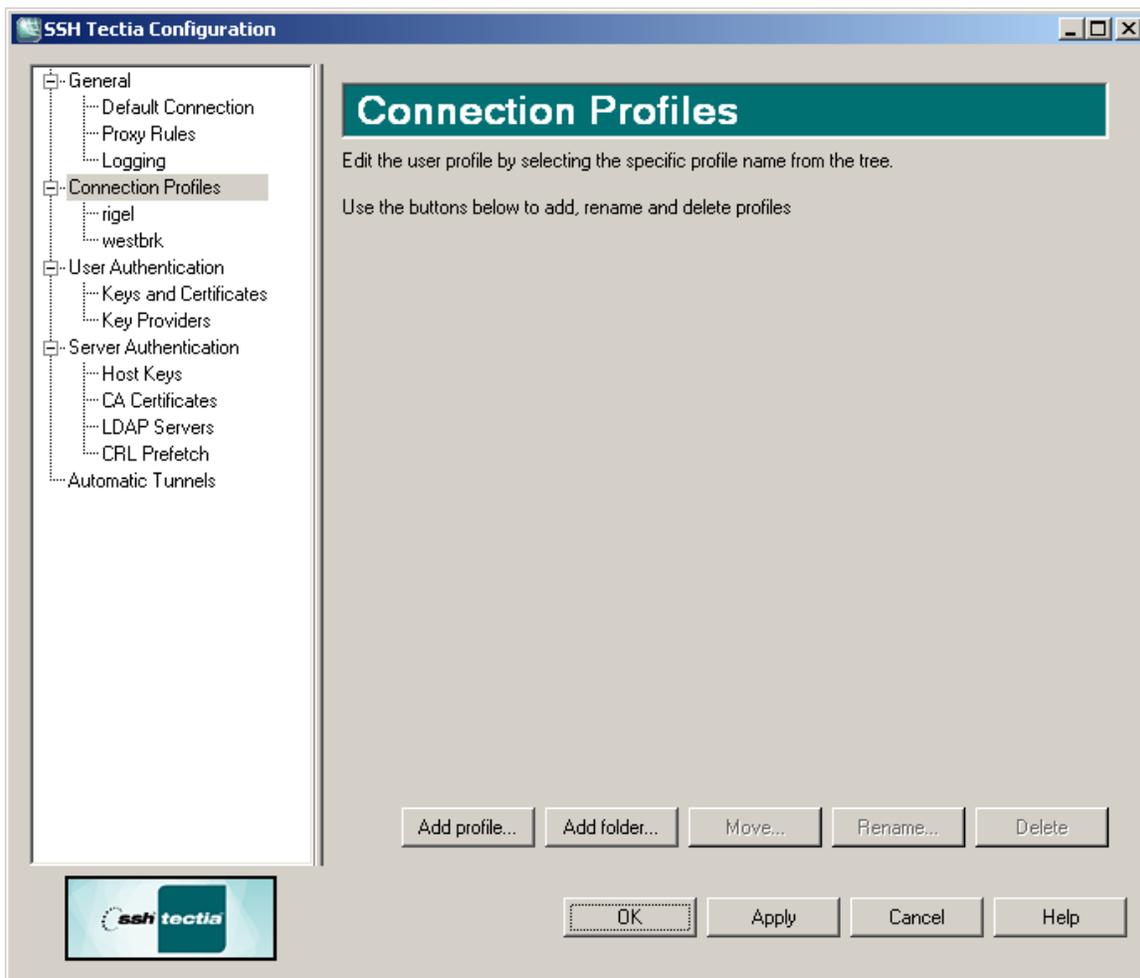
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Name it "FreeNX on tin" and select "OK". The profile name is meant to be descriptive.

On the "Connection" tab,
Select "Specify host name" and enter apollo.aps.anl.gov
Select "Specify user name" and enter your username
Leave port number set to "22".
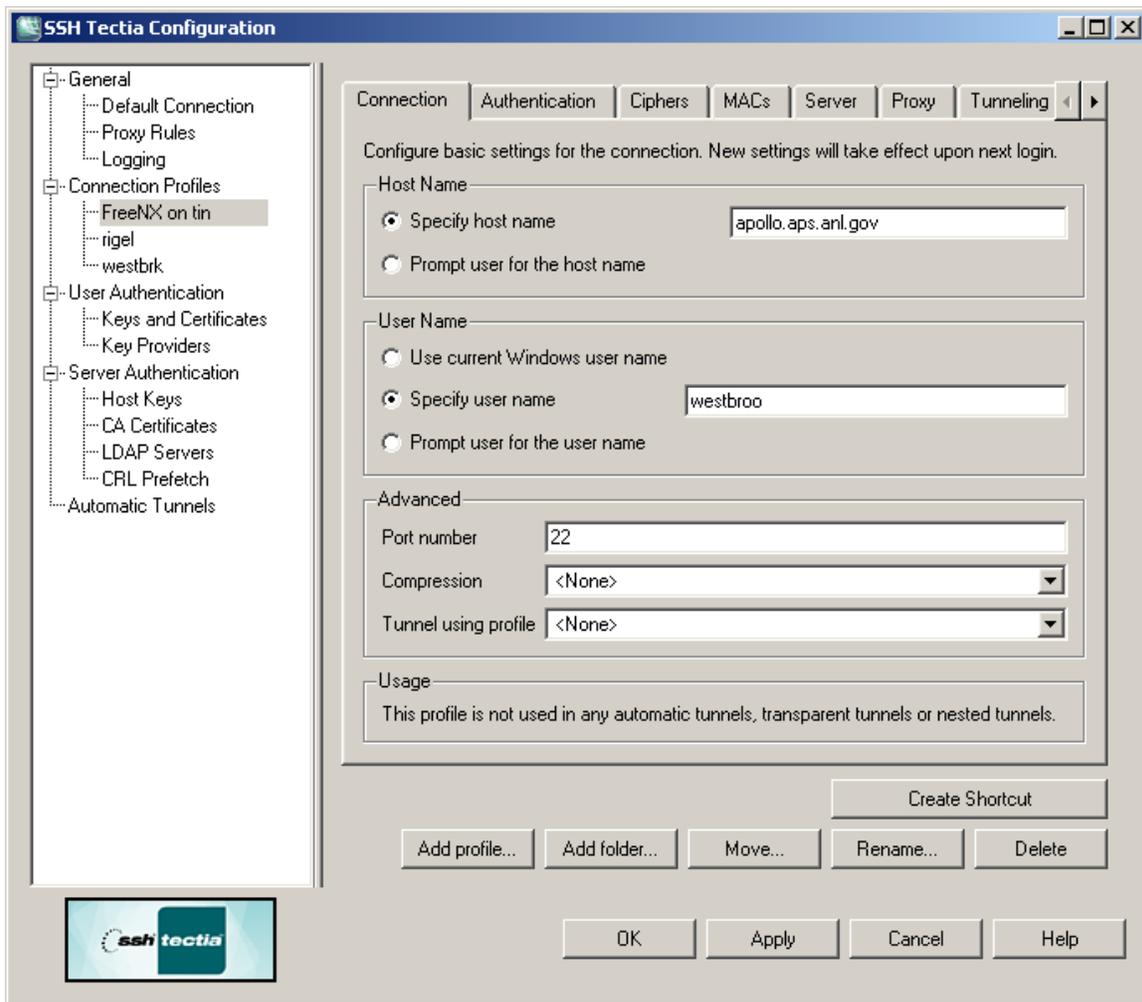
Select the "Tunneling" tab,
Under "Forwarding Options", de-select "Use Defaults" and select "Tunnel X11 connections".
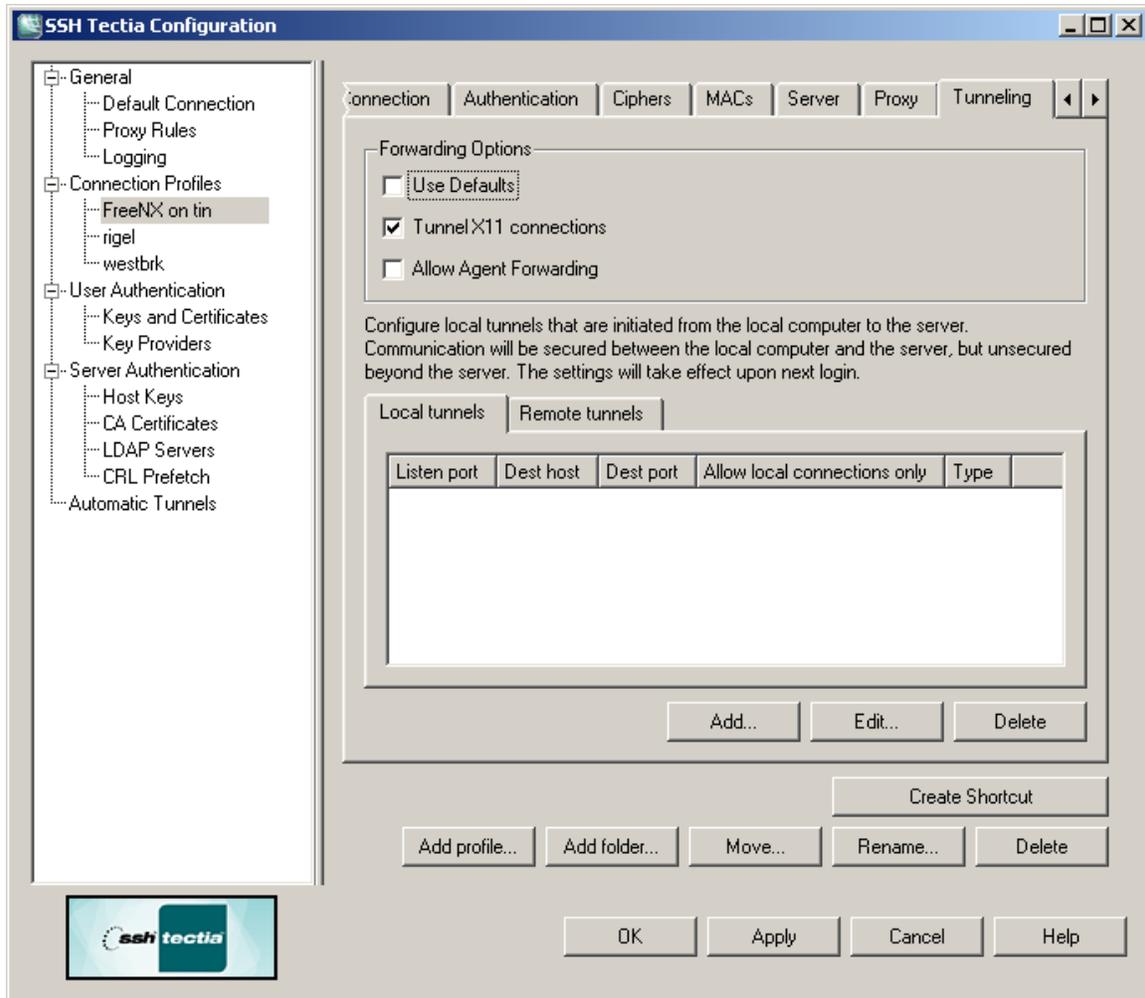
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Under "Local Tunnels", select "Add" and add the following local tunnel:
For Listen Port enter "9999"
For Destination host enter "tin.aps.anl.gov"
For Destination port enter "22"
Select "OK"
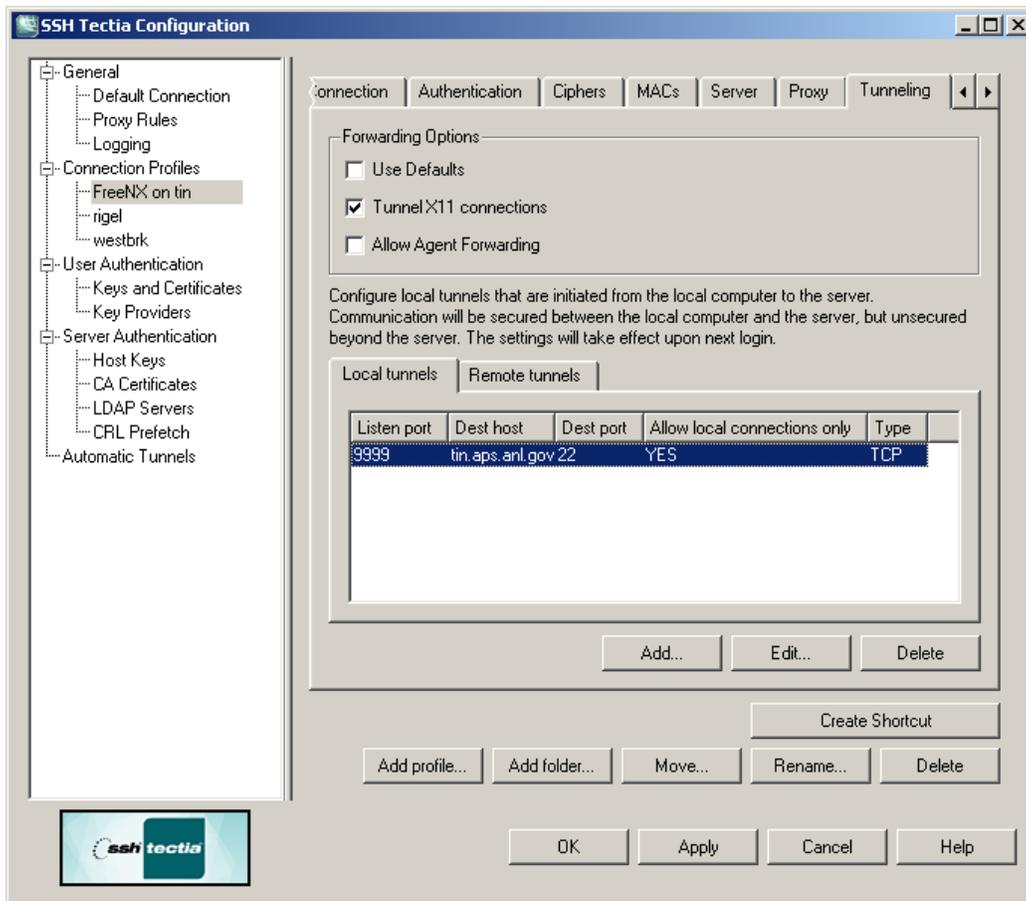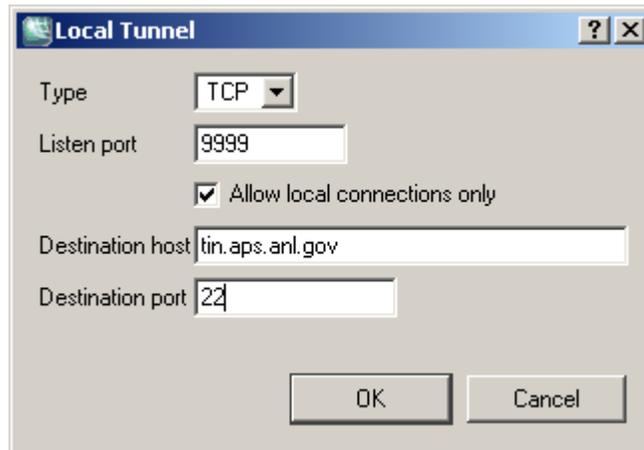
Select "Apply" to save these settings

Launch the ssh client and select the appropriate profile, in this case "FreeNX on tin"
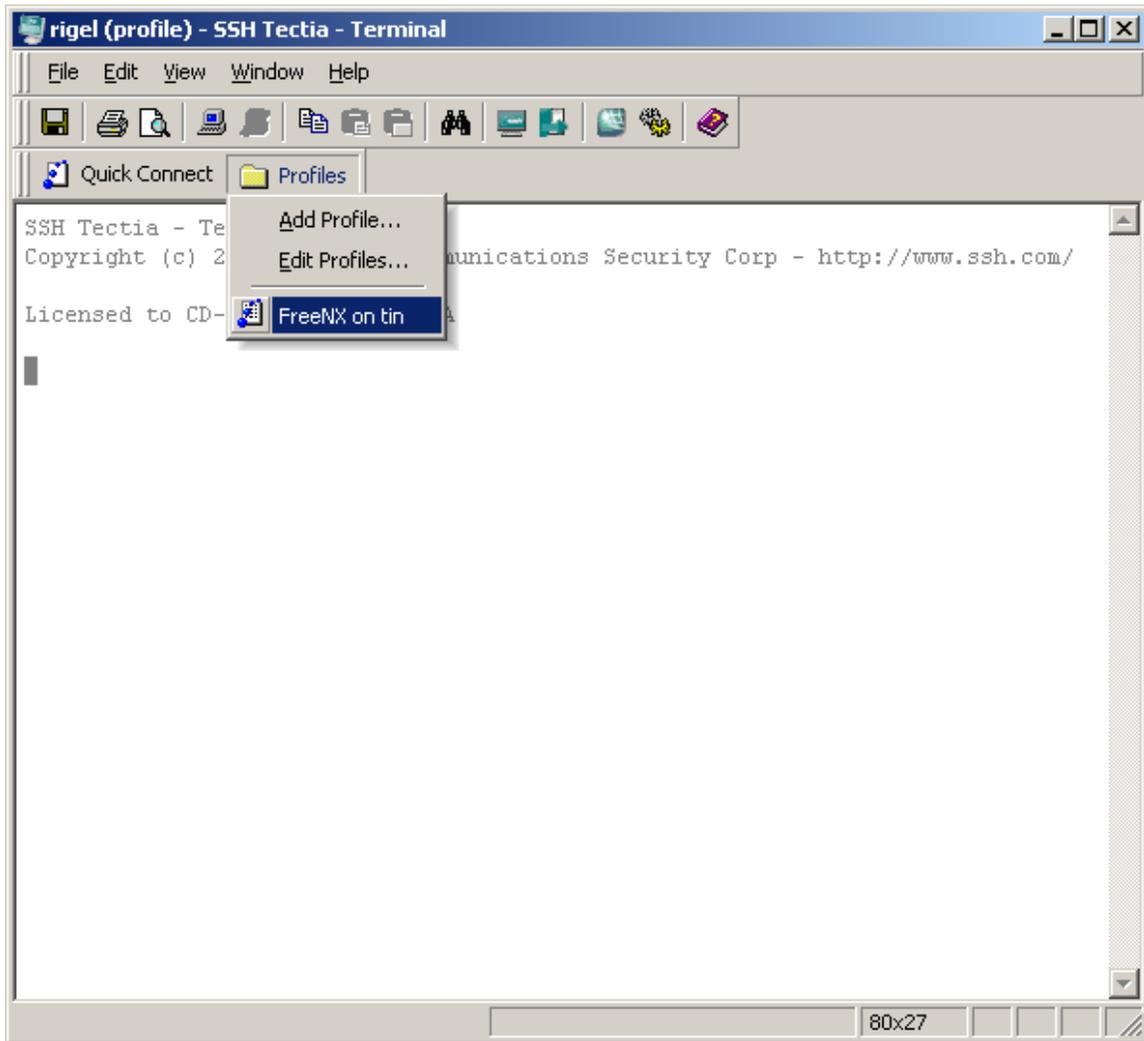
Enter your password

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You will now have established an SSH session with apollo.aps.anl.gov which is configured to forward X11 traffic from tin.aps.anl.gov.
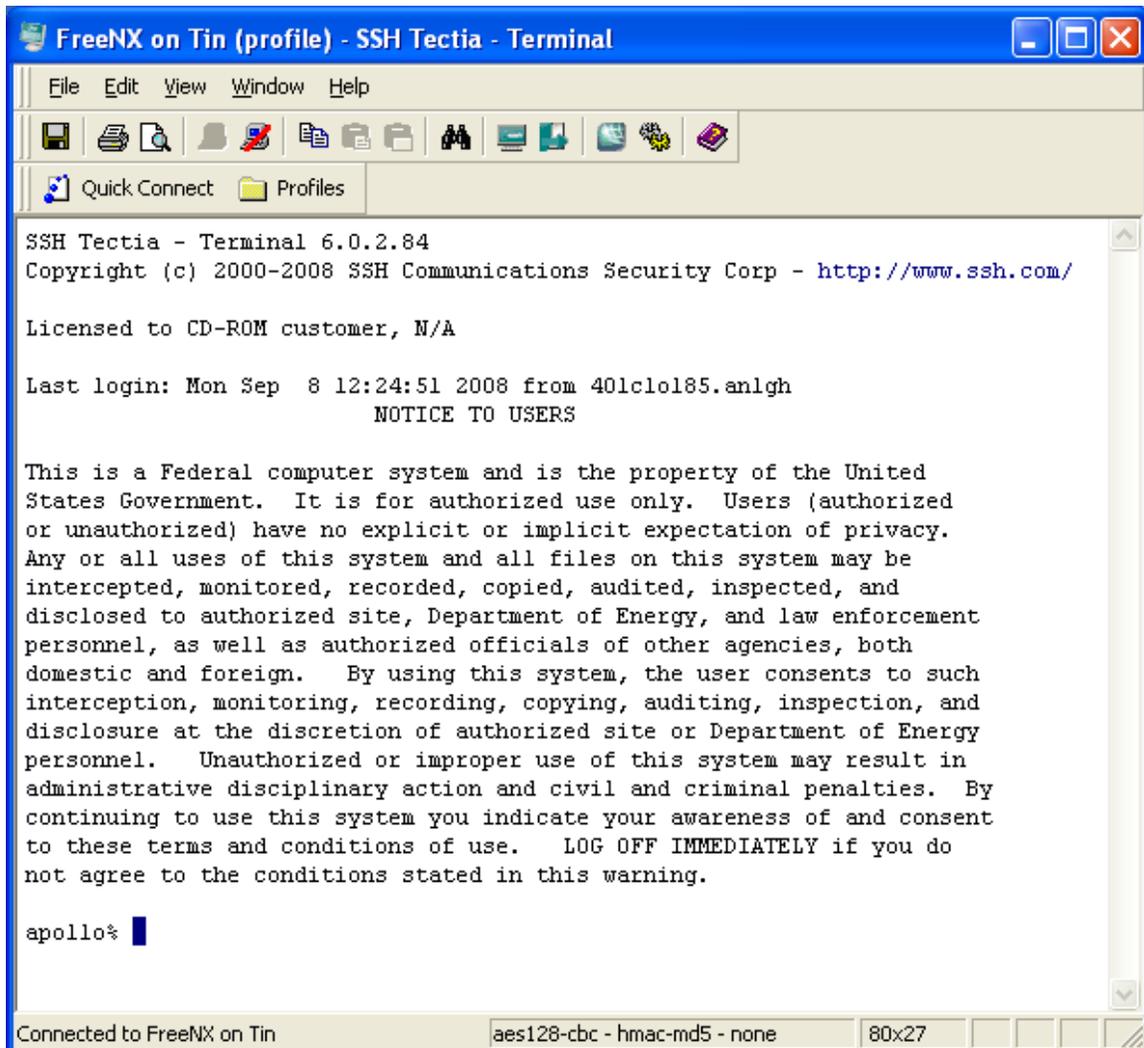
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2) Configure and launch NX

Once you have established the ssh session with apollo, launch the NX client and configure as follows:
Select "Next"
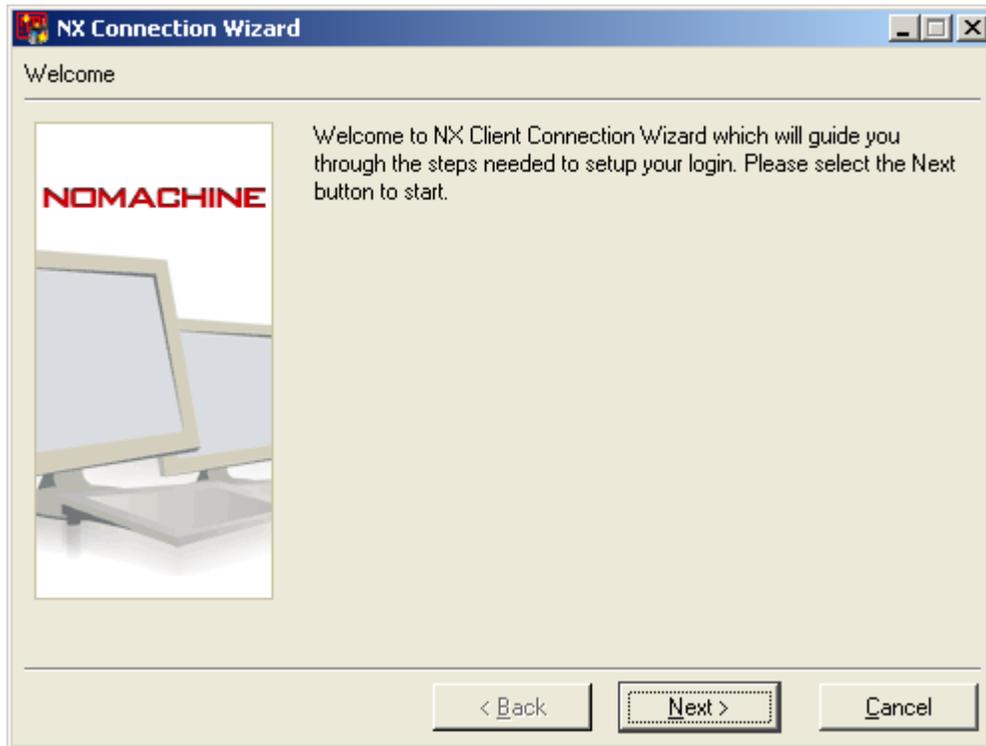
Enter a "Session" name, in our example: tin.aps.anl.gov. The session name is meant to be descriptive. Enter "Host" name as "localhost" and port "9999"

Select "Next"
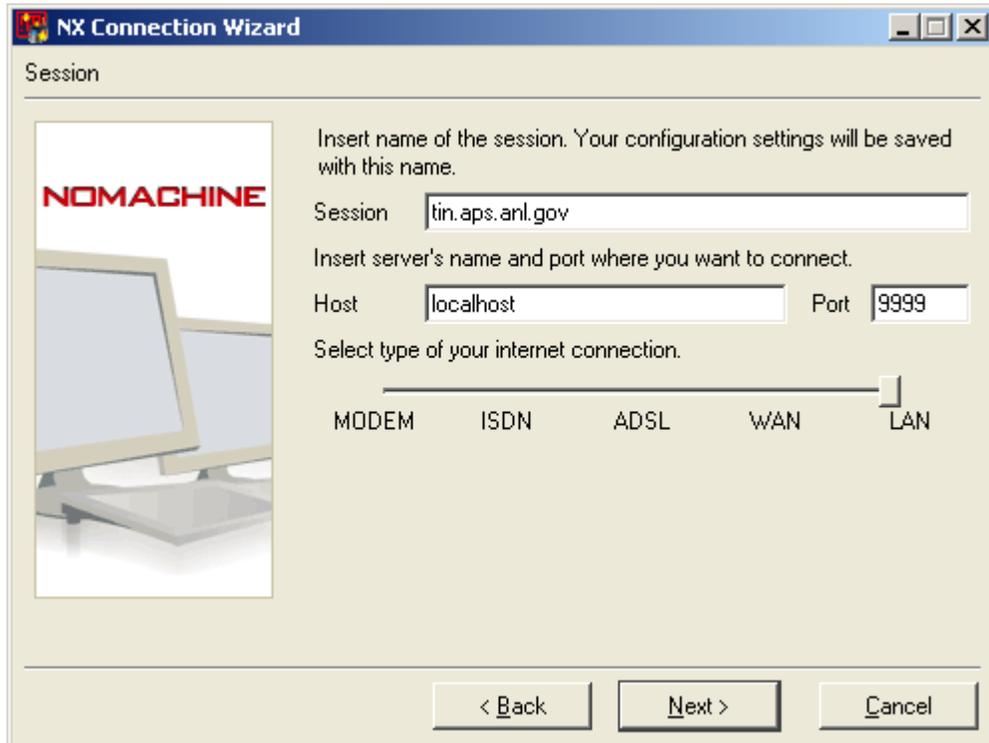
In the next screen, select the remote system's operating system, graphical desktop environment, and specify the graphics resolution. Select "Available Area" to use the entire screen.
Select "Next"
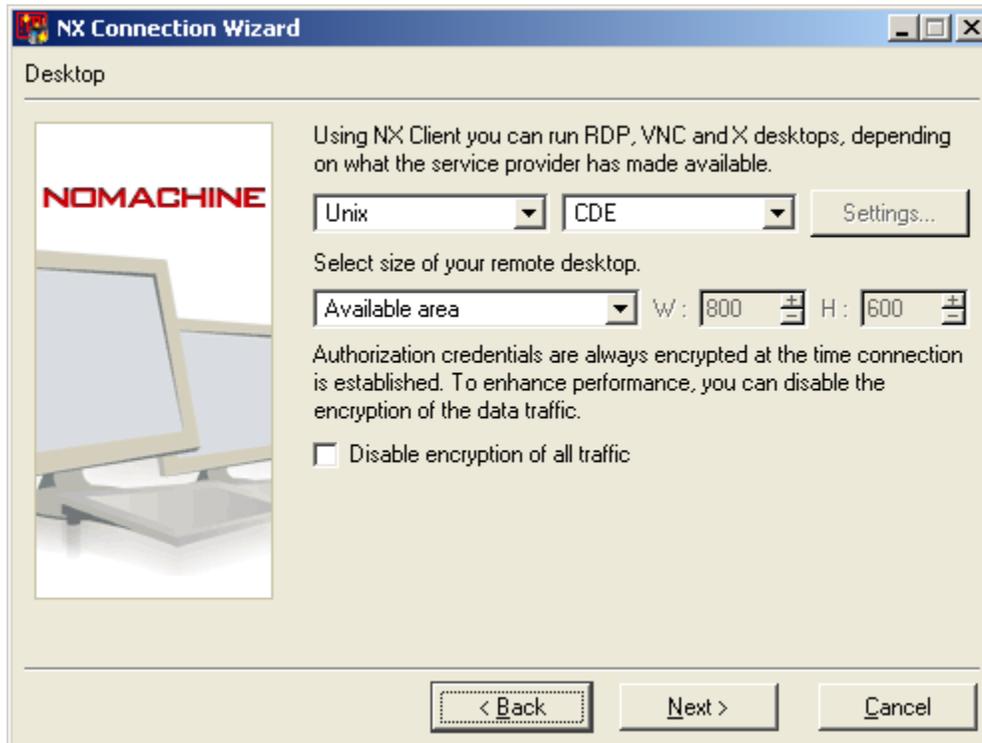
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Select "Create shortcut on desktop", if you prefer.
Select "Finish"

Once the configuration is saved, you will be presented with the NX login screen:
Enter your password and select "Login":

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The NX session will go through various stages:

Setting up environment
Connecting to localhost
Connected to localhost
Waiting authentication
Downloading session information

The first time you connect to a specific remote host, you will asked whether you want to continue connecting. Select "Yes" to continue:

If there are no errors, you will be logged into the full graphics environment of the remote host, tin.aps.anl.gov in our example.
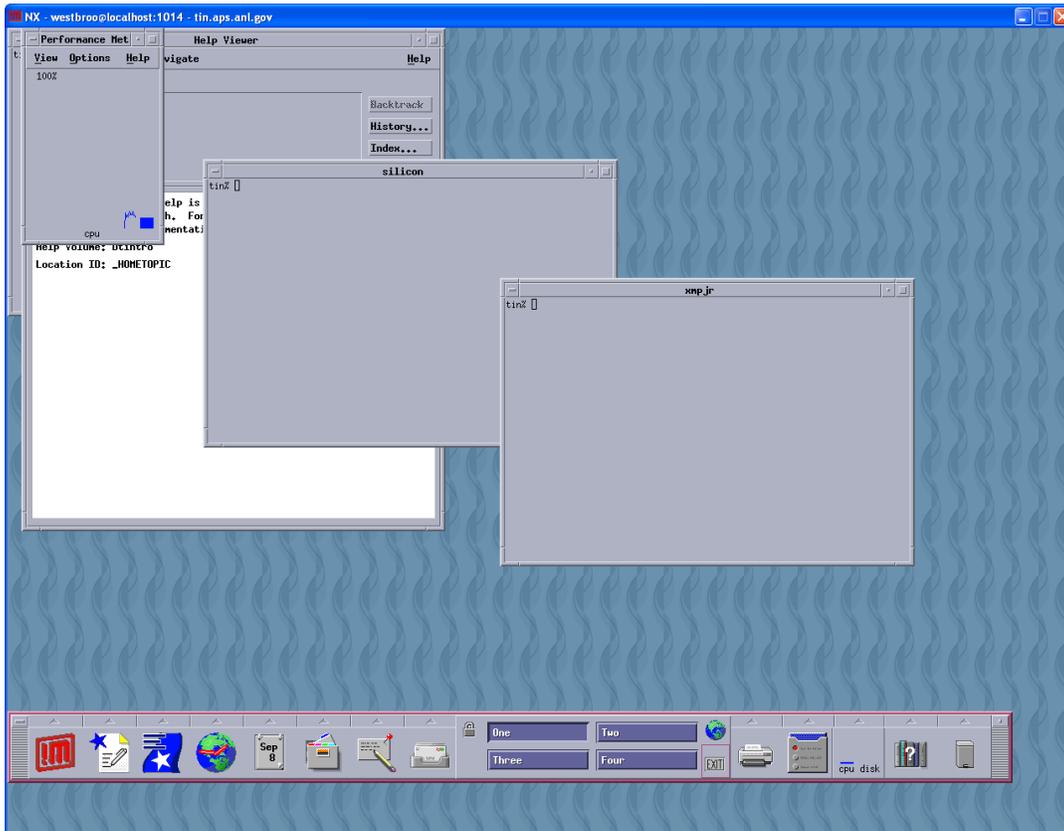
Instructions for using NX Connection Wizard

NOTE: Using the NX Connection Wizard is **NOT** necessary on **Linux, Solaris, and Mac clients** since "startnx" creates the session for you when connecting to the remote machine. These instructions have been included for reference if you happen to use the wizard.

1) **Linux and Solaris: Launch the NX Connection Wizard at shell prompt:**

nxclient -wizard

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Mac: Applications Folder on HD --> NX Connection Wizard.app
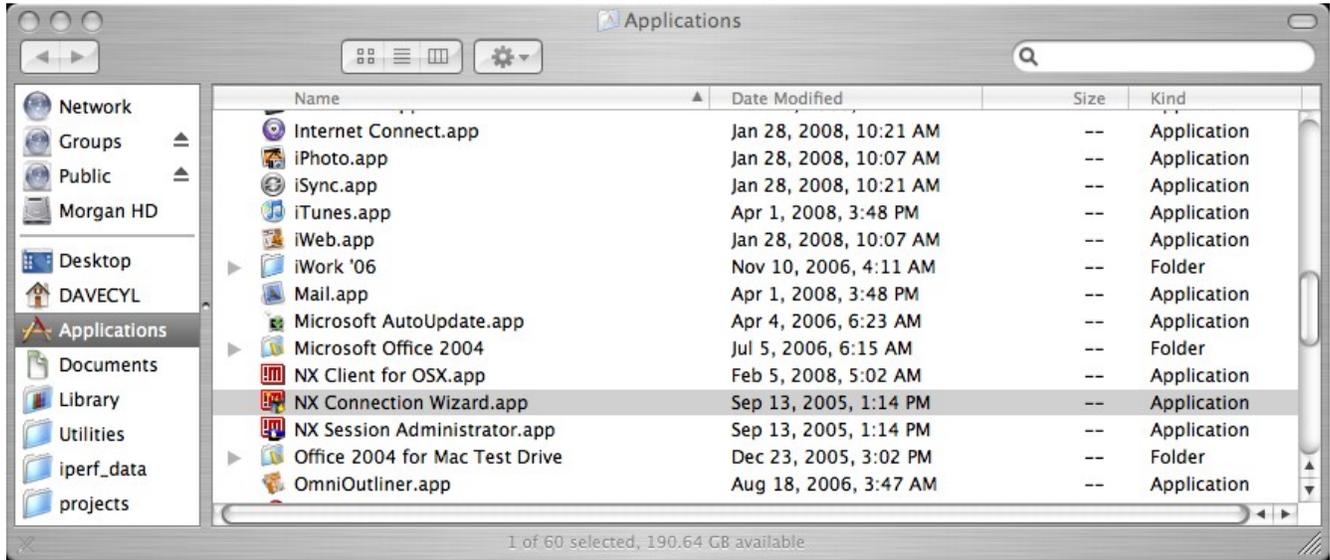
2) Type a name for the new NX session. The Session name should be the name of the remote machine you are trying to connect to.

3) Enter the Host name of the remote machine you want to connect to. Click Next.
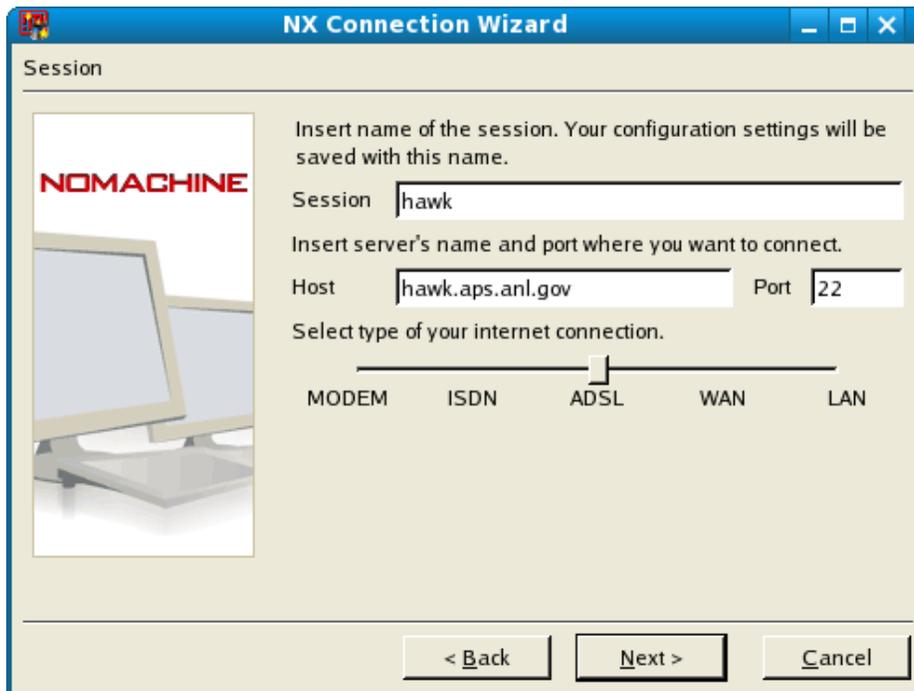
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4) Choose your desktop type.

a. In the left drop down list, choose Unix as the desktop type for a clean fresh desktop.

b. In the right drop down list, choose KDE or GNOME when connecting to Linux workstations or CDE when connecting to Solaris workstations.

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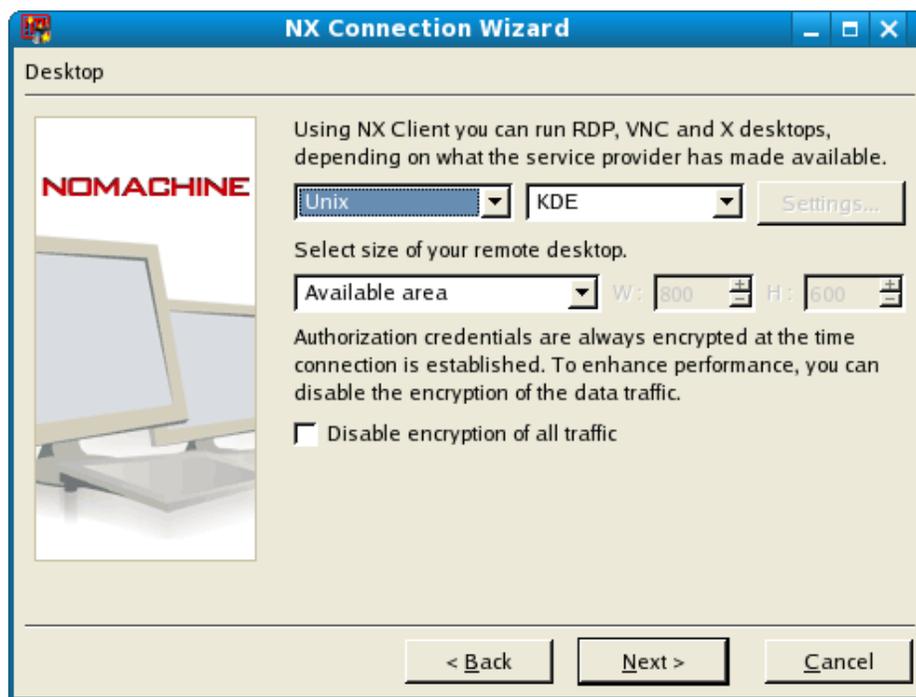
5) If you want to connect to a user session that is already running on the remote host, choose <u>Shadow</u> in the left drop down list. Click Next when you are finished choosing your desktop type.
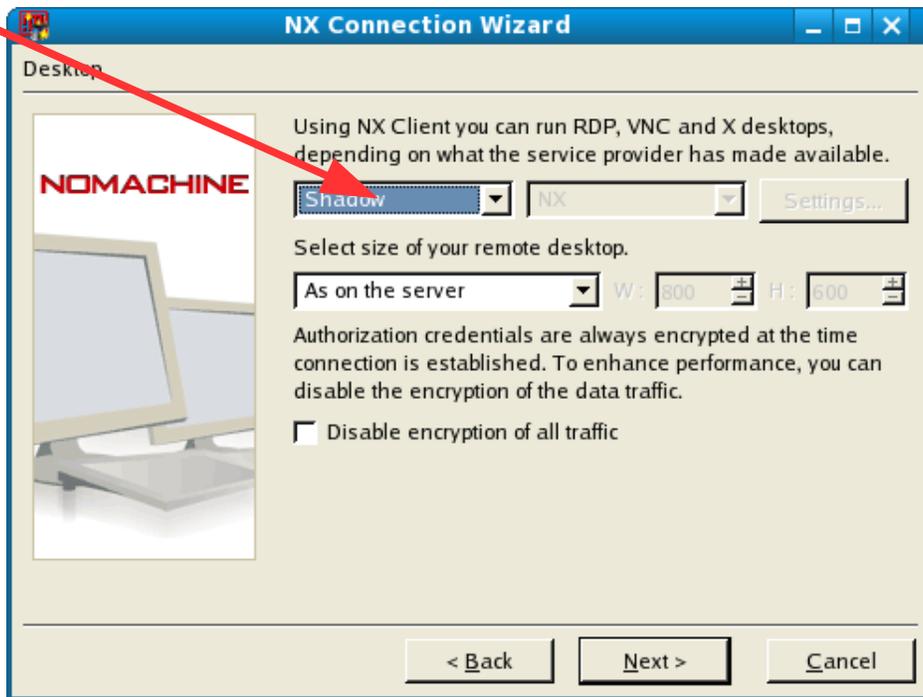
6) Now, make sure you uncheck "Create shortcut on desktop". You will need to launch NX with the provided APS NX script: startnx. Click Finish.

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7) The NX login prompt will appear on your screen. Click Close.
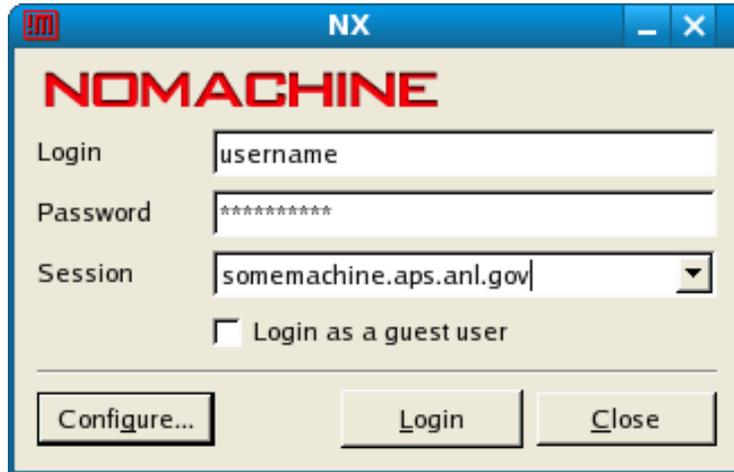
8) You may now connect to the session you just created by using the command:

startnx [REMOTE_HOST] [--SESSION_TYPE] [WIDTH] [HEIGHT]
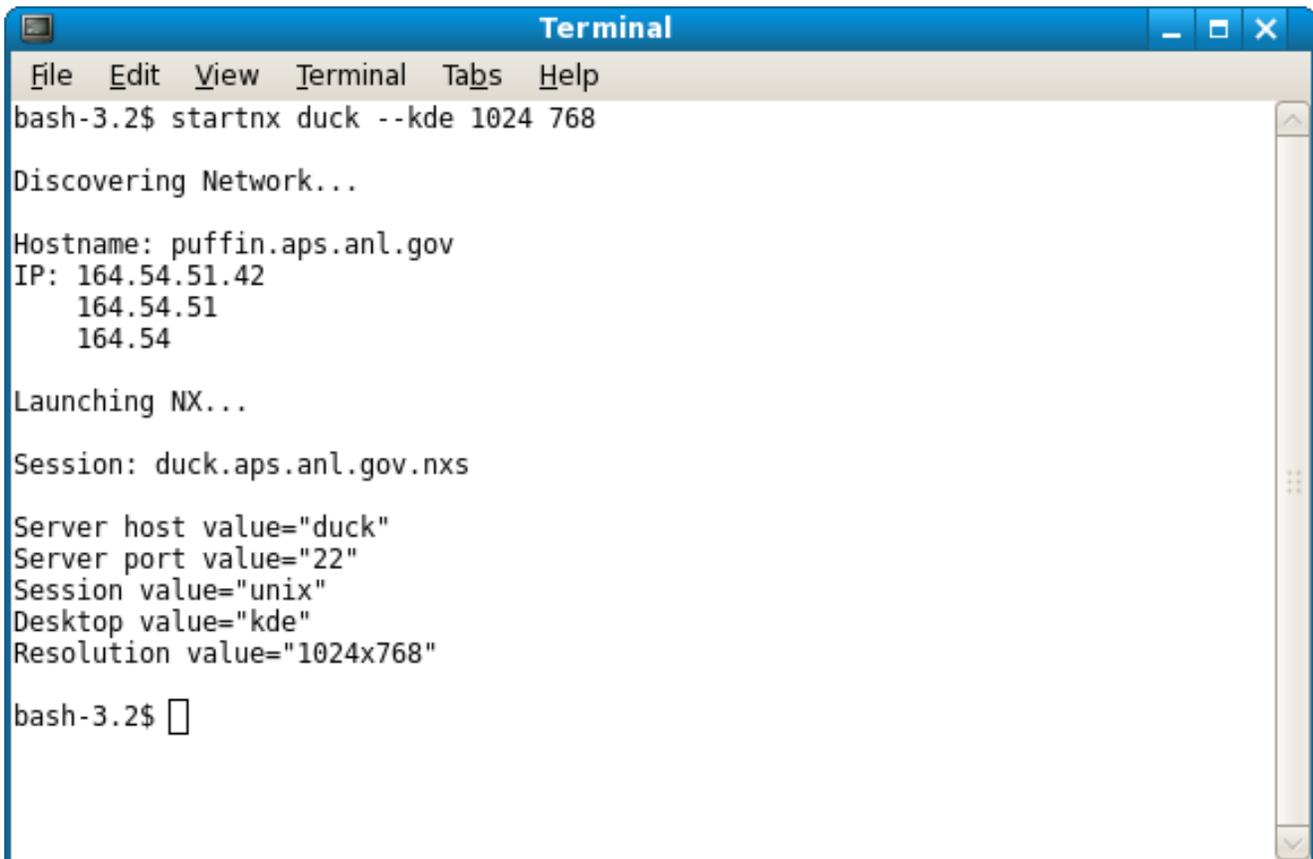
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Example NX session running:
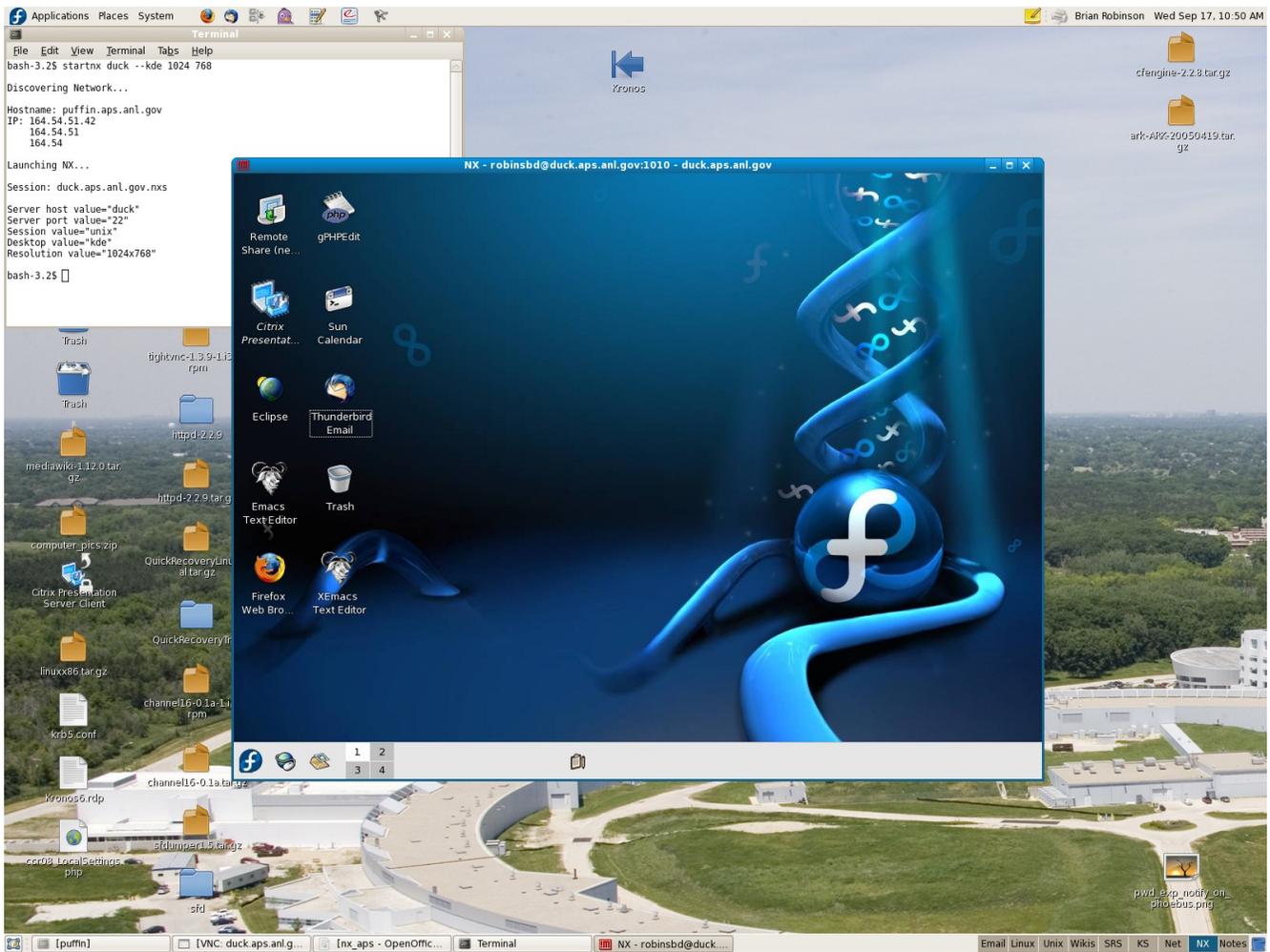
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<u>NX Panning</u>

The panning feature in NX can be used when the remote display on the server machine is running at a higher resolution than the display on the local client machine. For example, if the NX server is running a resolution of 1920x1200 and the local NX client machine is running 1440x900, the difference in the two resolutions will form a virtual space on the client machine that can be easily panned.

To activate the panning feature, press the following key combination once:

ctrl + alt + r

To pan the virtual space, do the following:

Hold **ctrl + alt** while at the same time press and hold the **Left** mouse button. **Drag** the mouse to move around the virtual space.

Note About FreeNX

ROME, Italy, July 11th, 2007 - A number of reports and blog entries exist on the Internet making the claim that NX is difficult to install and configure. Other reviews claim that the sotware is not available for certain Linux distributions where it is indeed officially supported by NoMachine, or that it doesn't work as expected in certain environments. NoMachine would like to emphasize the fact that these reports refer to the installation of FreeNX and NOT NoMachine NX, as the authors seem to imply. NoMachine NX and FreeNX are not the same software and, although FreeNX relies on the open-source components designed and developed by NoMachine, NoMachine does not endorse or control in any way the evolution of FreeNX.

NoMachine also points out that, although FreeNX aims to stay compatible with NoMachine NX, it has notable differences in the underlying operations, in the configuration and in the placing of the files. Lack of continuous development by the FreeNX community has also caused intermittent incompatibilities between the NoMachine NX Client and some versions of FreeNX. The impossibility of the FreeNX users to upgrade the client, has forced NoMachine to keep available versions of the software that have been naturally replaced with more sophisticated and bug-free versions, causing further headaches to our busy support personnel. We therefore invite our users to cleanly uninstall any FreeNX component before installing NoMachine NX and to verify that they are using NoMachine NX Server and not FreeNX before submitting their inquiries to NoMachine, as it would appear that the two are being easily and confusingly compared.

The NoMachine Team