System Access

Overview

From November 8 2016 the bastion host path will be **required** for access. It is shown on the diagram below with "ssh netid@hpc.arizona.edu"
Login Procedure

As simple as...

1. **Access** to the HPC systems is through a bastion host (ssh netid@hpc.arizona.edu).
   Review the screen capture below.
2. **NetID+** To ensure secure login sessions to HPC systems 2-factor authentication is required, so users must enable NetID+.
3. **SSH**. Before any login sessions can be initiated, a working SSH v2 client needs to be present on your local machine.

More Detail
1. **Access.** The Bastion host will get you access to all of the HPC clusters. From November 8 2016 you will no longer be able to use "ssh netid@login.hpc.arizona.edu" or "ssh netid@elgato-login.hpc.arizona.edu". You will be required to use the bastion host to access all HPC systems.

2. **NetID+.** If you try to log in and get a continuous prompt of "password" and nothing else, you are probably not registered for NetID+. If you leave out the netid@ then it may default to your workstation username, which is not valid.

Many graphical interface applications (CyberDuck, WinSCP, etc) do not properly display the DUO second factor menu properly, or do not display the menu at all, so this makes it difficult (impossible?) for the first time user to understand what is needed to login to UA HPC with NetID+.

3. **SSH.** For information on SSH clients for these OS types and how to login select your OS from the links below.

   - Windows
   - Mac OS
   - Linux

FAQ - I am having trouble with ...

- I try to connect through SSH but am unable to login. I am getting permission denied message
  You need an HPC account - go to account.arizona.edu. Once you’ve done that you should just need to wait about 15 minutes before you can log in. If your instructor hasn’t already added you to their group you’ll need to wait for that as well.

- My HPC account is set up but I can’t log in - incorrect password
  You need to wait about 15 minutes after your account is approved for the account to be available
  You must enroll in NetId. Depending on the application you use to log in, you may not get the typical NetID+/DUO menu of options, or an error message indicating this is your problem

- I can log in but I have no /home directory
  If you just created your hpc account you need to wait about 15 minutes before you can log into it.

- I can log in but have no /home on gatekeeper
  "gatekeeper" is used to access the login nodes for the HPC clusters. No work is done from here. Don’t set up your ssh keys here. Follow the instructions on the screen to choose the HPC cluster that you would like to connect to. The flow chart on this page shows the role of gatekeeper.

- I can log in but I have no /extra directory
  /extra will be created automatically but it takes a while to show up - about an hour

- Common commands like qsub do not work
  Perhaps your shell is not set to Bash. Ocelote will require this. The command "uchsh" will set your shell.
  If you already had an other account before getting an HPC account that profile will carry over. A brand new account will default to the bash shell
X11 Forwarding

The key to make forwarding work successfully is to include the -X at each login step.

On a Mac, if you get a blank response to "echo $DISPLAY, you might need this line in your .ssh/config file: ForwardX11Trusted yes

This is a simple example with quick tests:

```bash
laptop prompt$ ssh -X netid@hpc.arizona.edu
Password:
Duo two-factor login for netid
Enter a passcode or select one of the following options:

1. Duo Push to XXX-XXX-8969
2. Phone call to XXX-XXX-8969
3. Phone call to XXX-XXX-0502
4. SMS passcodes to XXX-XXX-8969

Passcode or option (1-4): 1
Success. Logging you in...
Last login: Fri Nov  4 08:13:11 2016 from dhcp-135-102.uits.arizona.edu
This is a bastion host used to access the rest of the environment.

Shortcut commands to access each resource
-----------------------------------------
Ocelote:                El Gato:
$ ocelote               $ elgato
[netid@gatekeeper ~]$ echo $DISPLAY
localhost:13.0

[netid@gatekeeper ~]$ ssh -X elgato-login  # or "elgato -X"
Last login: Fri Nov  4 08:13:50 2016 from gatekeeper.hpc.arizona.edu

[netid@elgato-login ~]$ echo $DISPLAY
localhost:18.0

[netid@elgato-login ~]$ xterm &
[1] 28196
```
Bastion Host Access:

~ > ssh <insert NetID>@hpc.arizona.edu
Password:
Duo two-factor login for netid

Enter a passcode or select one of the following options:

1. Duo Push to XXX-XXX-3614
2. Phone call to XXX-XXX-3614
3. SMS passcodes to XXX-XXX-3614 (next code starts with: 1)

Passcode or option (1-3):
Success. Logging you in...
Creating home directory for <NetID>.

Last login: Fri Nov 4 11:01:16 2016 from dhcp-135-102.uits.arizona.edu
This is a bastion host used to access the rest of the environment.

Shortcut commands to access each resource
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Ocelote:                El Gato:                Cluster(ICE)/HTC/SMP:
$ ocelote               $ elgato                $ ice

[netid@gatekeeper ~]$ ocelote
The authenticity of host 'login.ocelote.hpc.arizona.edu (10.140.117.12)' can't be established.
RSA key fingerprint is SHA256:ScBFga9u0zINt8b/4PGZry+/bqxGe144.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'login.ocelote.hpc.arizona.edu,128.196.131.12' (RSA) to the list of known hosts.
Last login: Mon May 9 08:51:31 2016 from frost.hpc.arizona.edu

[netid@login2 ~]$