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. **Obtain an SSH Client**: Before any login sessions can be initiated, a working SSH v2 client needs to be present on your local machine. For more information on SSH clients for these OS types and how to log in, select your OS from the links below:
   - Windows
   - Mac OS
2. **NetID+**: To ensure secure login sessions to HPC systems, users must enable NetID+ as 2-factor authentication is required.

3. **Access** to the HPC systems is through a bastion host (**ssh netid@hpc.arizona.edu**):

   ```
   Example:
   
   $ ssh 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-XXXX
   2. Phone call to XXX-XXX-XXXX
   3. SMS passcodes to XXX-XXX-XXXX (next code starts with: X)

   Passcode or option (1-3): <enter option>
   Success. Logging you in...
   Last login: Date from IP Address
   This is a bastion host used to access the rest of the environment.
   ```

   **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.
   ```
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:

```
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

**Screen Capture - Linux**

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
-----------------------------------------
Ocelote:                El Gato:
$ ocelote               $ elgato

[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/4PG2ry+/bgxGe144.
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 ~]$

[netid@]~$