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# IPython Notebooks on Odyssey

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## IPython notebook

Extension of the IPython console to a web-based platform for shared code and documentation.

Pre-installed with Anaconda

`ipython notebook` starts a server on localhost: 8888 that can be viewed with a browser



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## IPython notebook on Odyssey

1. Pick a port and setup port forwarding
2. Load the appropriate python module  
*Setup a password (optional)*  
*Setup a certificate for https (optional)*
3. Launch the notebook server
4. View web page in a browser

*Screencast available at*

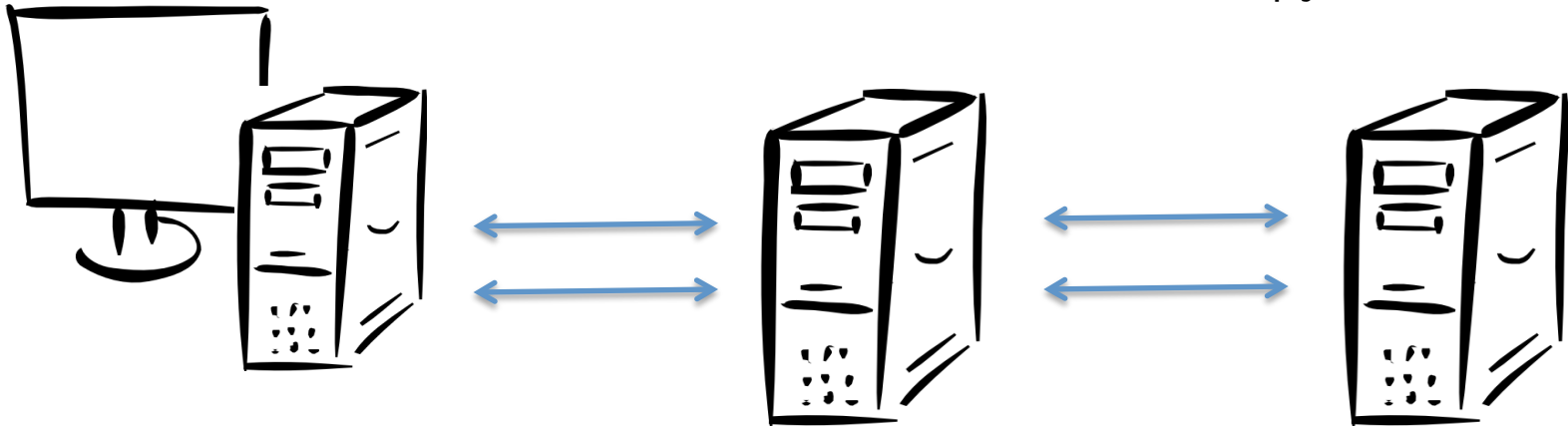
*<http://informatics.fas.harvard.edu/port-forwarding-on-odyssey-nodes/>*





# IPython notebook port forwarding

```
> srun --tunnel > ipython notebook
```



<http://localhost:8888>

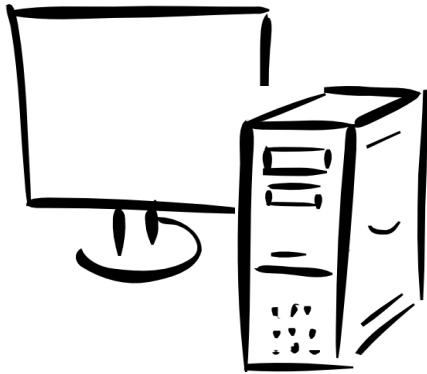
Submit  
Host  
(rclogin)

Compute  
Host



# IPython notebook port forwarding

```
> srun --tunnel > ipython notebook
```



NX Client



Submit  
Host  
(rcnx01)



Compute  
Host



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## Pick a port and setup port forwarding

IPython serves to port 8888 by default

Port conflicts can occur on shared systems like  
rcloginXX and rcnx01

--port option allows you to select other ports

```
ipython notebook --port 8899
```





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## Load the appropriate module

IPython is installed with the default Odyssey python

```
$ source new-modules.sh
```

```
$ module load python
```

```
$ which ipython
```

```
/n/sw/fasrcsw/apps/Core/Anaconda/1.9.2-fasrc01/x/  
bin/ipython
```





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## Setup a password (optional)

Create a profile

```
ipython profile create ajk
```

Generate a password hash using IPython's `passwd()` function

Set the hash to the `NotebookApp.password` config value.

```
In $HOME/.ipython/profile_ajk/ipython_notebook_config.py
c.NotebookApp.password = u'sha1:143b9c77...2d582a5e3d'
```







## Setup a password (optional)

The screenshot shows a Mozilla Firefox browser window titled "Make password - Mozilla Firefox". The address bar shows the URL `https://localhost:8888/notebooks/Make password`. The page title is "IP[y]: Notebook Make password" and there is a "Logout" button in the top right. The notebook interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Help) and a toolbar with various icons. The code cell contains the following Python code:

```
In [1]: from IPython.lib import passwd  
  
In [2]: passwd()  
Out[2]: 'sha1:14cf7fb200e0:e7d318e37a42ade093b9c771b382392d582a5e3d'  
  
In [ ]:
```



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## Setup a certificate (optional)

A self-signed certificate will allow you to use https and avoid passing your password in the clear

```
openssl req -x509 -nodes -days 365 -newkey  
rsa:1024 -keyout ipython.pem -out ipython.pem
```

```
ipython notebook certfile=ipython.pem
```





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## Launch the IPython notebook server

Load any additional modules, if needed, before you start the server

A self-signed certificate will allow you to use https and avoid passing your password in the clear

```
ipython --port=8899 --profile=ajk --  
certfile=ipython.pem notebook
```

