

AR (Automated Recognition) series GPU Mac for machine

learning

There are three AR computers. However, all of them are clones of AR3 (created on 2019/Jan/31). On the network, the names are changed to AR1, AR2, AR3.

Apple no longer supports NVIDIA's GPU board, and the latest version of the software is working in it. So, don't update the system.

To prevent wrong operations, access to the PC using SSH terminal and SFTP (file transfer).

Recommended softwares are:

SSH: Termius

SFTP: Filezilla

How to use Python: using jupyter notebook

1) Port forwarding with SSH software.

This is to display the Jupyter notebook screen that the AR series opens directly on your computer.

If the setting ^{*1} is completed, double-click to check the connection.

2) Open SSH terminal with SSH software.

Log in to AR_X machine. If the setting ^{*2} is completed, the jupyter notebook is automatically started in the specified directory. For AR1:

AR1-calc-on-MacPro:~ AR3\$ jupyter notebook --notebook-dir=/Volumes/Gspeed/AR1

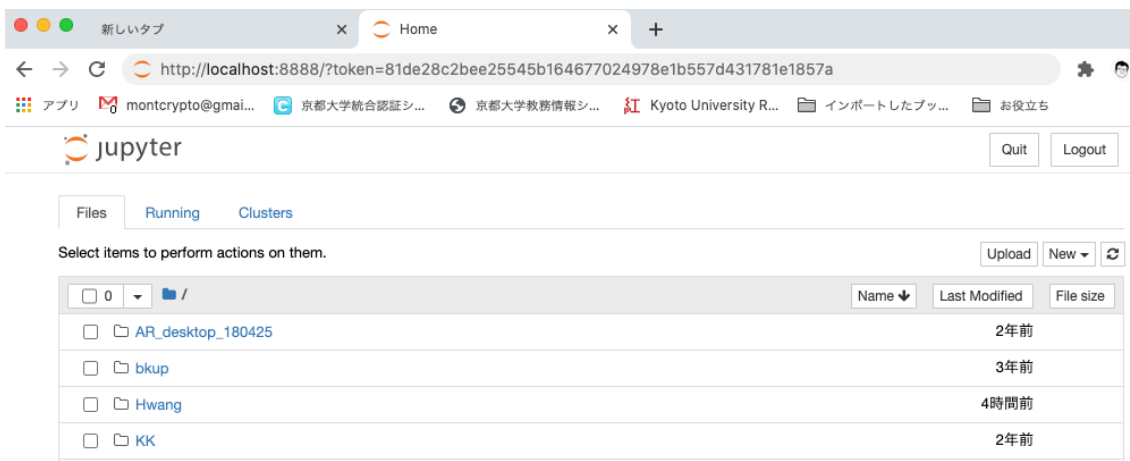
Server	Jupyter notebook start command
AR3	jupyter notebook --notebook-dir=/Volumes/G-SPEED3/AR3
AR2	jupyter notebook --notebook-dir=/Volumes/G-SPEED2/AR2
AR1	jupyter notebook --notebook-dir=/Volumes/Gspeed/AR1

Copy the line <http://localhost:8888/.....> that appears on the terminal.

```
Last login: Fri Aug 7 11:04:54 2020 from 10.226.109.49
AR1-calc-on-MacPro:~ AR3$
AR1-calc-on-MacPro:~ AR3$ jupyter notebook --notebook-dir=/Volumes/Gspeed/AR1
[I 11:10:53.077 NotebookApp] JupyterLab extension loaded from /Users/AR3/anaconda3/lib/python3.6/site-packages/jupyterlab
[I 11:10:53.077 NotebookApp] JupyterLab application directory is /Users/AR3/anaconda3/share/jupyter/lab
[I 11:10:53.078 NotebookApp] Serving notebooks from local directory: /Volumes/Gspeed/AR1
[I 11:10:53.079 NotebookApp] The Jupyter Notebook is running at:
[I 11:10:53.079 NotebookApp] http://localhost:8888/?token=81de28c2bee25545b164677024978e1b557d431781e1857a
[I 11:10:53.079 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 11:10:53.084 NotebookApp]

To access the notebook, open this file in a browser:
file:///Users/AR3/Library/Jupyter/runtime/nbserver-1134-open.html
Or copy and paste one of these URLs:
http://localhost:8888/?token=81de28c2bee25545b164677024978e1b557d431781e1857a
```

3) Open the browser on your computer and paste the command line you just copied into the address field to start.



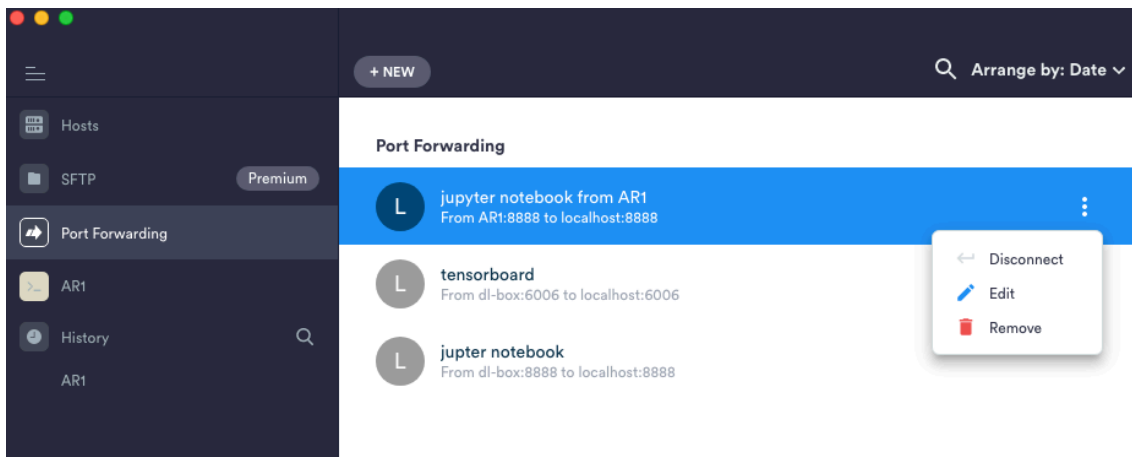
4) When the calculation is complete, make sure to return to the SSH terminal, press CTRL-C to display the prompt, and enter y (yes) to exit the notebook kernel.

```
Serving notebooks from local directory: /Volumes/Gspeed/AR1
0 active kernels
The Jupyter Notebook is running at:
http://localhost:8888/?token=81de28c2bee25545b164677024978e1b557d431781e1857a
Shutdown this notebook server (y/[n])? y
[C 11:14:47.123 NotebookApp] Shutdown confirmed
[I 11:14:47.124 NotebookApp] Shutting down 0 kernels
AR1-calc-on-MacPro:~ AR3$
```

Finally enter logout to finish.

```
AR1-calc-on-MacPro:~ AR3$ logout
```

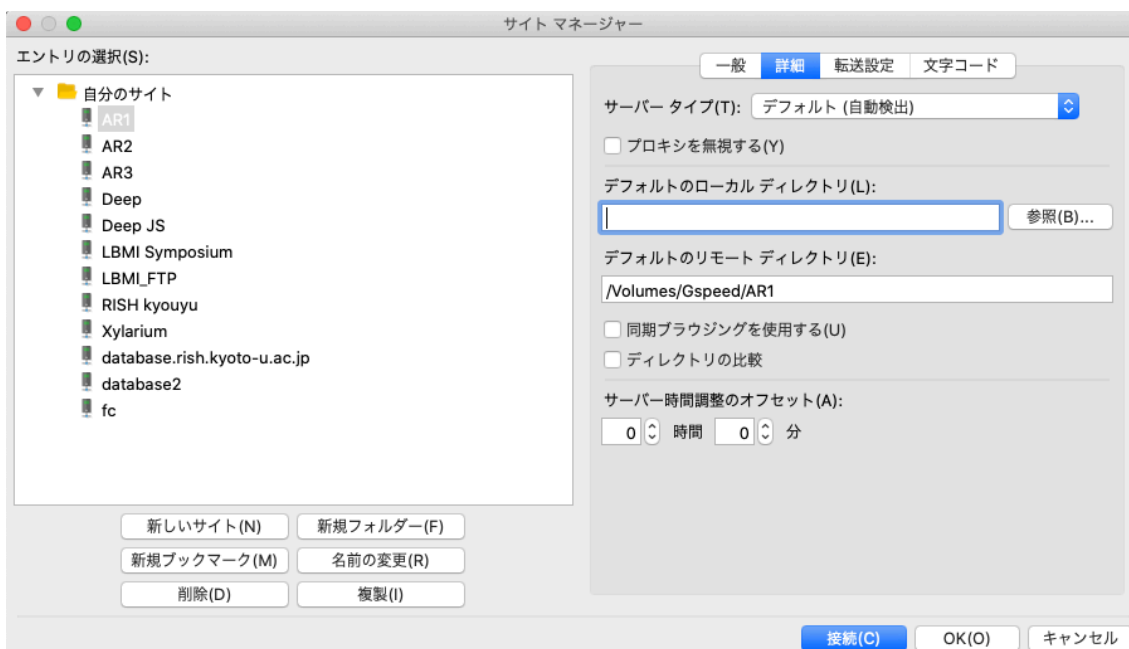
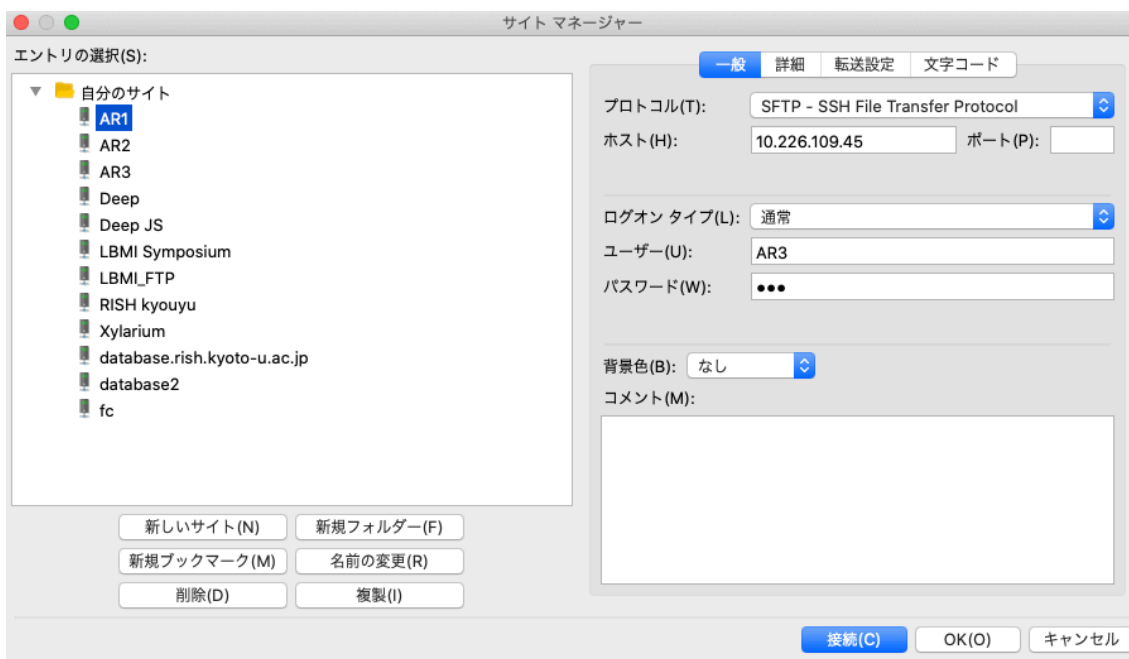
5) End Port Forwarding. Select Disconnect.



Transfer of data for calculation:

- 1) Connect to FileZilla. If you have done the setting ^{*3}, you can directly access the work directory of each AR, so please access your own directory there and create an appropriate directory etc. to save and delete data.

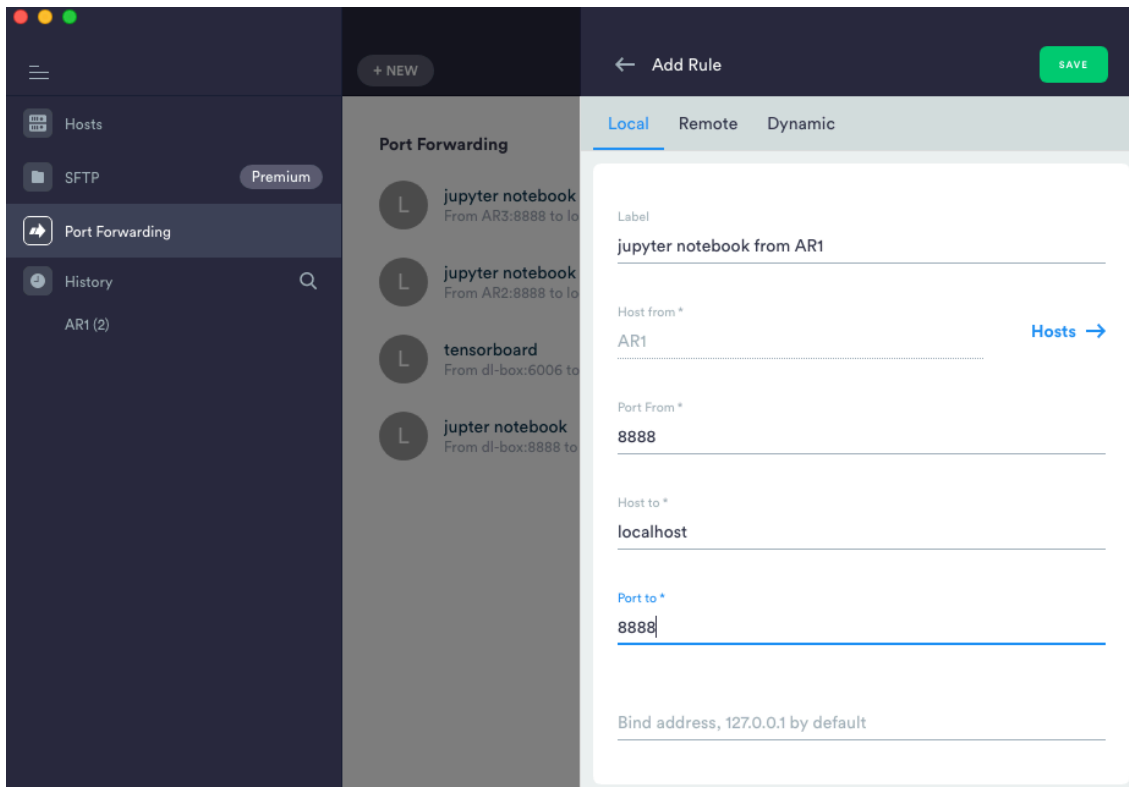
How to: <https://wiki.filezilla-project.org/Documentation>



Setting *1

This setting should be done after setting *2.

Select +NEW

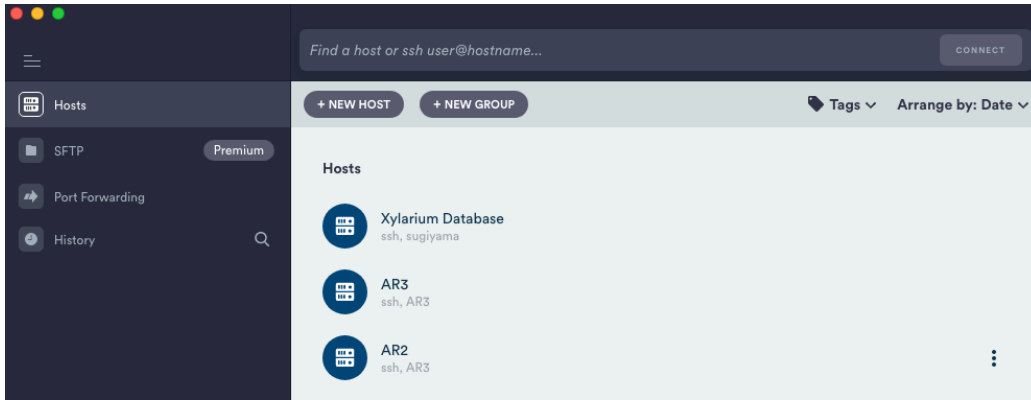


Objective: Open a port for AR1's jupyter notebook.

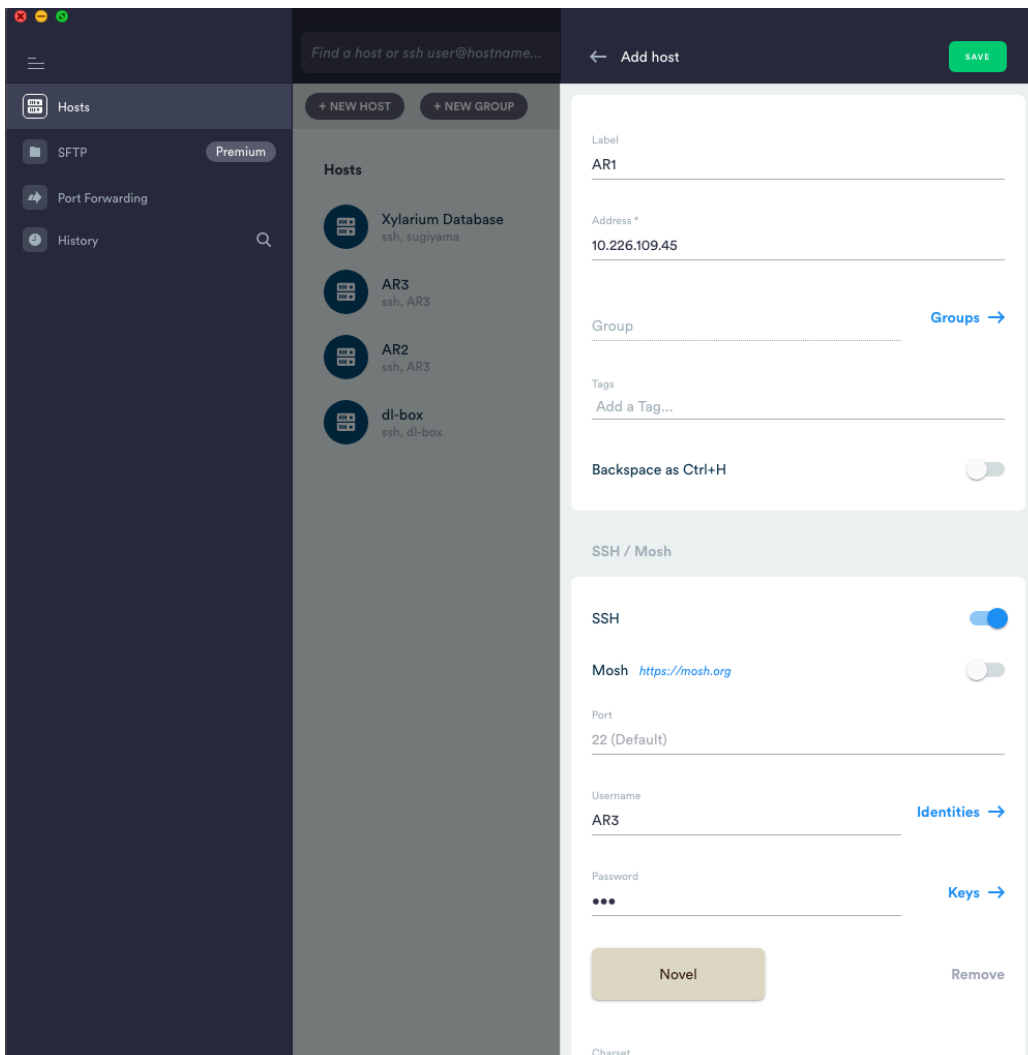
For the host, select AR1 and enter in order in the sense that 8888 will connect to 8888 on localhost. Finally save.

Setting *2

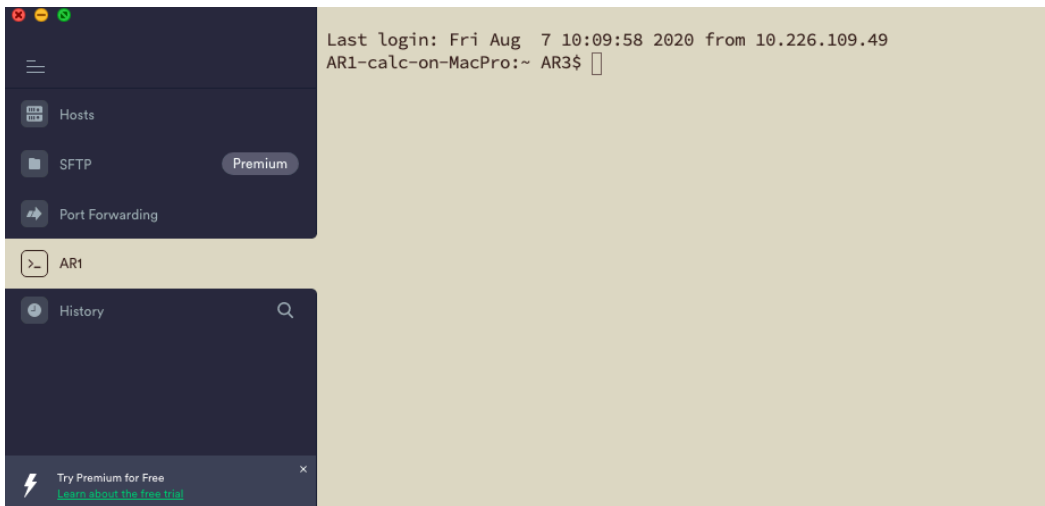
Select +NEW HOST and set AR1



Enter the server name, IP address, Username and Password to save (save button in the upper right).



When you start the newly created AR1 server,



You will be automatically logged in and will be prompted with a command line.

As required information below

Server	IP address
AR3	10:226:109:47
AR2	10:226:109:46
AR1	10:226:109:45

Username: AR3, Password: AR3

Setting *3

Filezilla settings

How to: <https://wiki.filezilla-project.org/Documentation>

- 1) Choose a new host setting for SFTP.
- 2) Login with Username: AR3, Password: AR3.
- 3) The remote directory is as follows.

Server	IP address	FTP remote directory
AR3	10:226:109:47	/Volumes/G-SPEED2/AR3
AR2	10:226:109:46	/Volumes/G-SPEED2/AR2
AR1	10:226:109:45	/Volumes/Gspeed/AR1

Other: When operating from using a VPN:

You need administrator's permission to access the Tree Cell Biology VLAN [Ikev2-1.kuins.kyoto-u.ac.jp](https://1.kuins.kyoto-u.ac.jp), so please contact Dr. Awano.