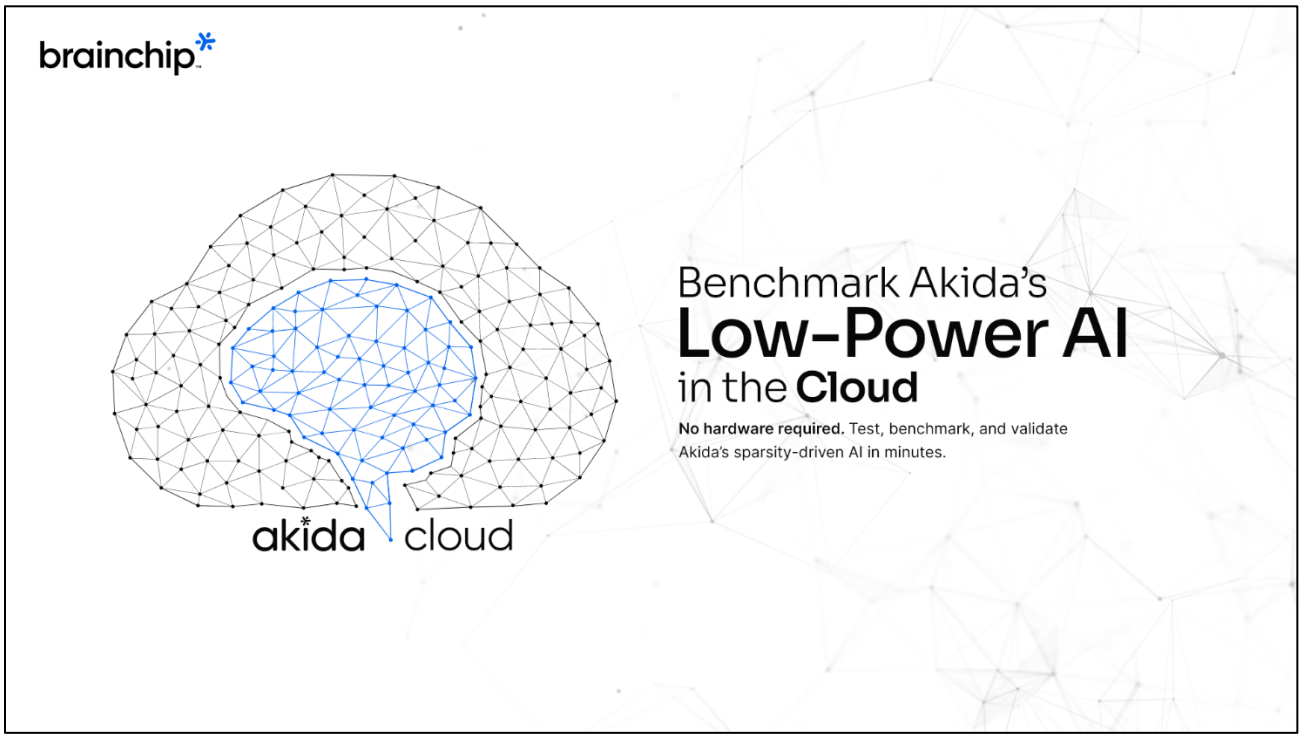
brainchip™
Developer Akida Cloud



Version 1.2 – August 1st , 2025



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1 INTRODUCTION

The Akida Cloud is a system that is specifically developed to facilitate remote access to hosted hardware implementations of Akida™ neuromorphic processors. The system can be used to load models and execute them with remotely sourced data streams for testing and evaluation of Brainchip's Akida technology. For access to Brainchip's latest versions of Akida, Akida Cloud leverages remote access to the Akida FPGA Platform. This Akida FPGA platform provides a versatile solution for assessing different Akida cores for performance, efficiency, and capabilities. This setup allows for rapid iteration and analysis, optimizing the technology and understanding its potential across various applications.

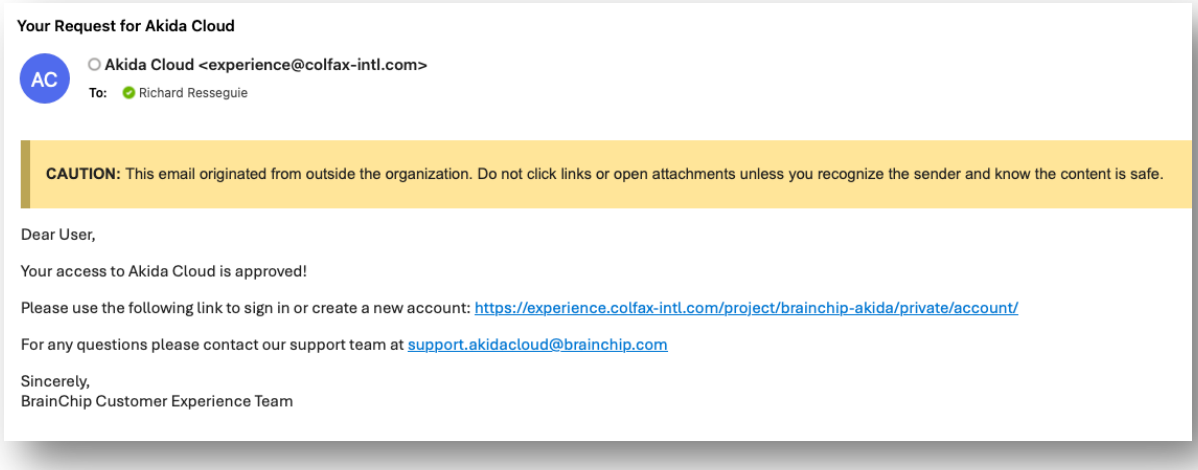
2 SYSTEM INFORMATION

The evaluation system consists of a PC server equipped with either a 2-node or 6-node FPGA card. The server runs the Ubuntu operating system and includes an Akida Conda environment pre-configured with numerous Akida example notebooks, accessible via Jupyter Lab. The FPGA card is programmed with Akida 2.0 bitstreams. Once logged in, the system is fully prepared for Akida testing and evaluation.



3 Admin Approves Access

3.1 User receives an automated email to create an account with Colfax



Your Request for Akida Cloud

AC

Akida Cloud <experience@colfax-intl.com>

To: Richard Resseguie

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear User,

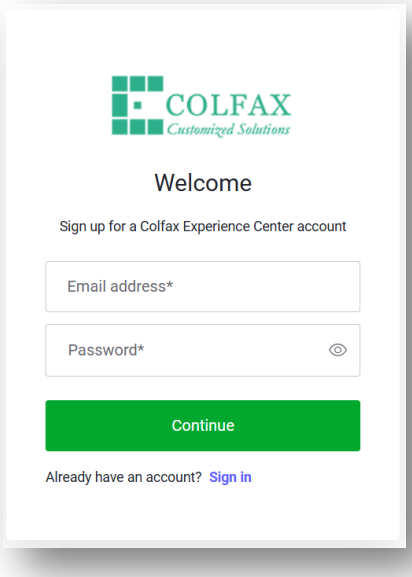
Your access to Akida Cloud is approved!

Please use the following link to sign in or create a new account: https://experience.colfax-intl.com/project/brainchip-akida/private/account/

For any questions please contact our support team at support.akidacloud@brainchip.com

Sincerely,
BrainChip Customer Experience Team

3.2 Create a Colfax account



COLFAX
Customized Solutions

Welcome

Sign up for a Colfax Experience Center account

Email address*

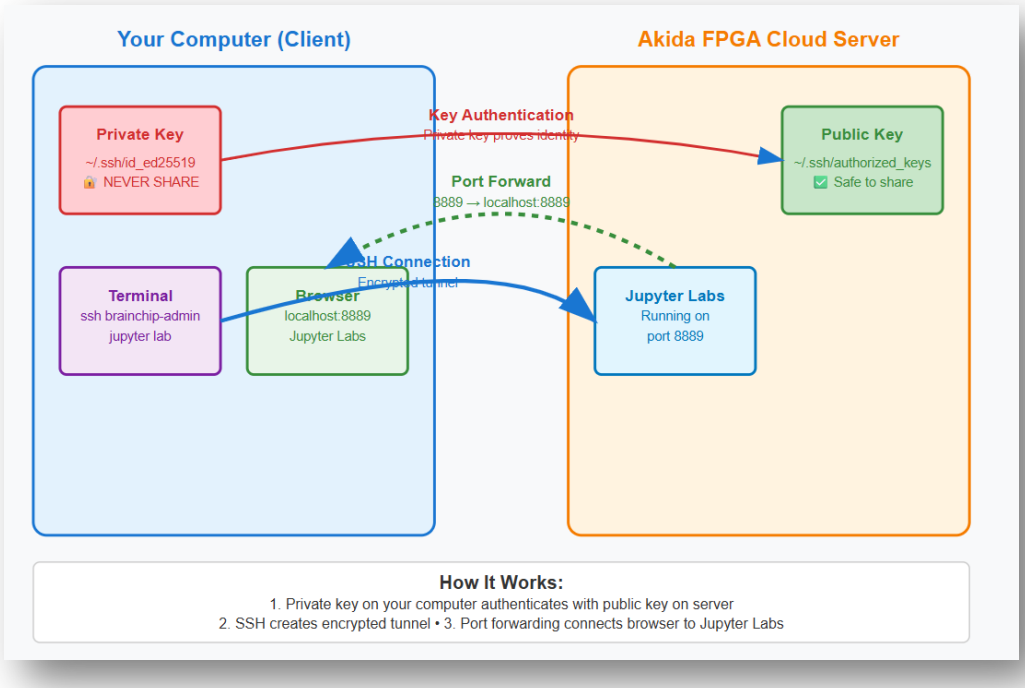
Password*

Continue

Already have an account? Sign in

3.3 CREATE AN SSH KEY AND INPUTS IT INTO THE PORTAL

SSH Keys Tutorial:
Connecting to Your Akida FPGA using Jupyter Notebooks



What Are SSH Keys?

Think of SSH keys like a digital lock and key system for computer servers. Instead of using a password (which can be guessed or stolen), SSH keys use a pair of mathematically linked files:

- **Private Key**: Your personal "key" that stays on your computer (never share this!)
- **Public Key**: A "lock" that goes on the server (safe to share)

When you connect, the server uses your public key to verify that you have the matching private key, proving that you're authorized to access the system.

Why Are SSH Keys Important?

- **Security**: Much more secure than passwords - nearly impossible to crack
- **Convenience**: No need to type passwords repeatedly
- **Server Requirements**: Many cloud servers (like ours) require SSH keys for access

Setting Up SSH Keys

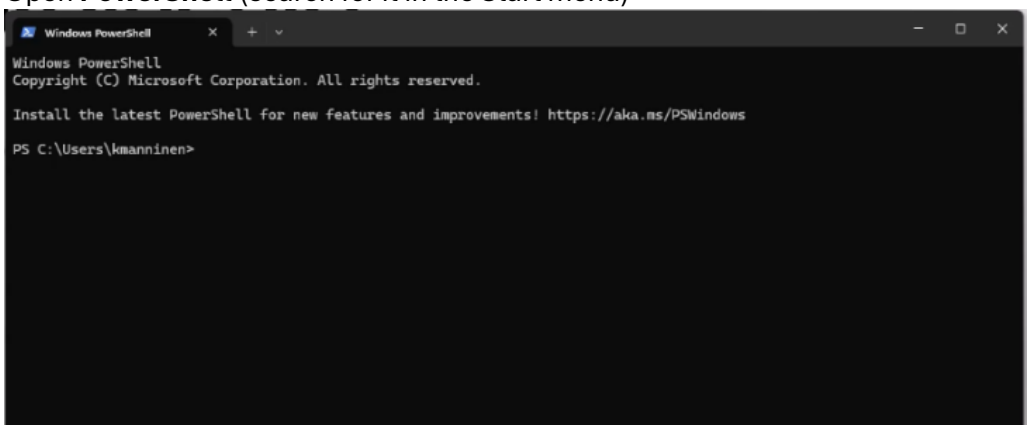
Step 1: Generate Your SSH Key Pair

On Mac:

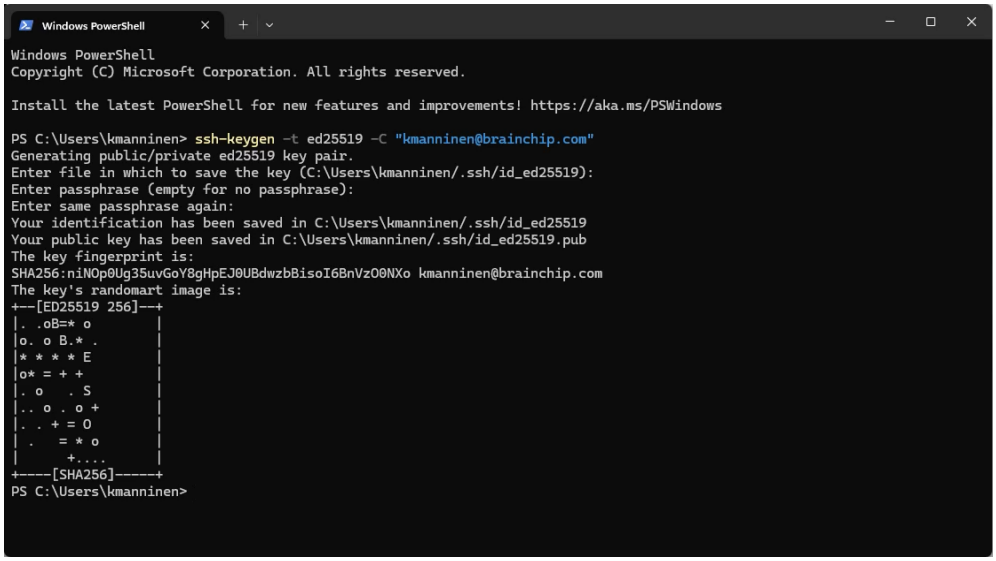
1. Open **Terminal** (found in Applications > Utilities)
2. Type: ssh-keygen -t ed25519 -C "your-email@company.com"
3. Press Enter to save in the default location (~/.ssh/id_ed25519)
4. Press Enter twice to skip setting a passphrase (or set one for extra security)

On Windows:

1. Open **PowerShell** (search for it in the Start menu)



2. Type: ssh-keygen -t ed25519 -C “your-email@company.com"
3. Press Enter to save in the default location
4. Press Enter twice to skip setting a passphrase



On Linux:

1. Open **Terminal** (Ctrl + Alt + T or search for "Terminal" in your applications)
2. Type: ssh-keygen -t ed25519 -C "your-email@company.com"
3. Press Enter to save in the default location (~/.ssh/id_ed25519)
4. Press Enter twice to skip setting a passphrase (or set one for extra security)

Step 2: Find Your Public Key

Your public key is now saved in a file. To view it:

On Mac:

```
cat ~/.ssh/id_ed25519.pub
```

On Windows:

```
cat ~/.ssh/id_ed25519.pub
```

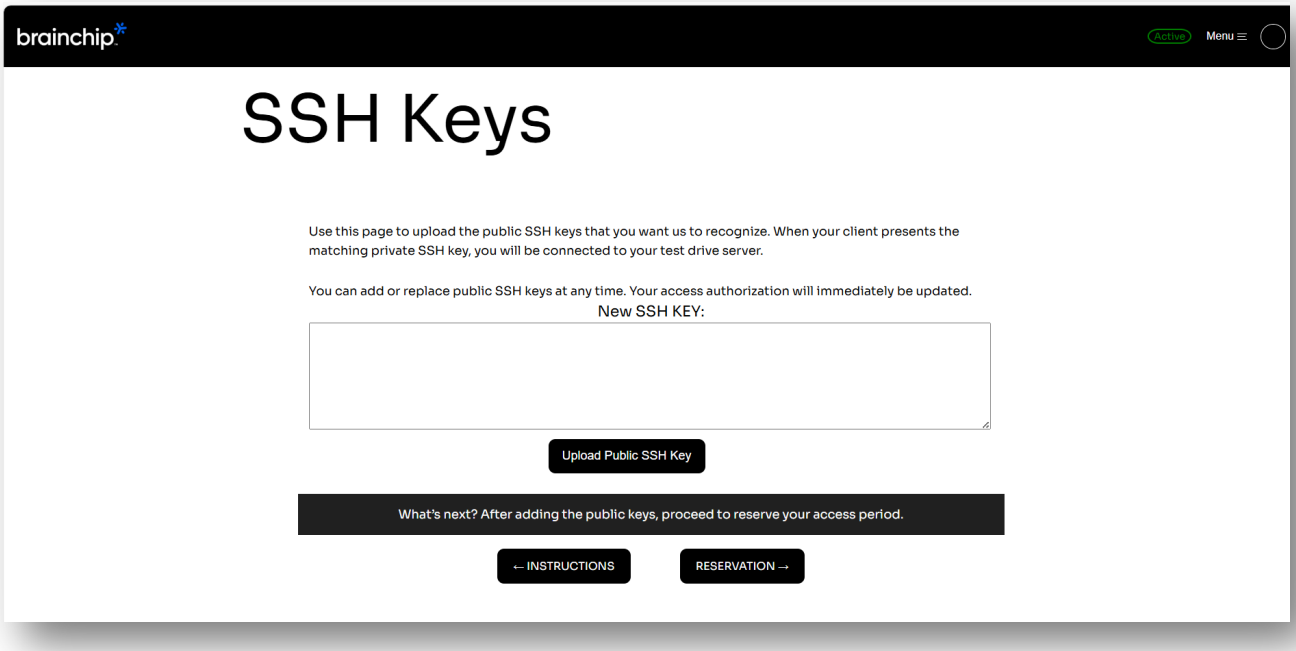
On Linux:

```
cat ~/.ssh/id_ed25519.pub
```

This will display a long string starting with ssh-ed25519. **Copy this entire string** - this is your public key.

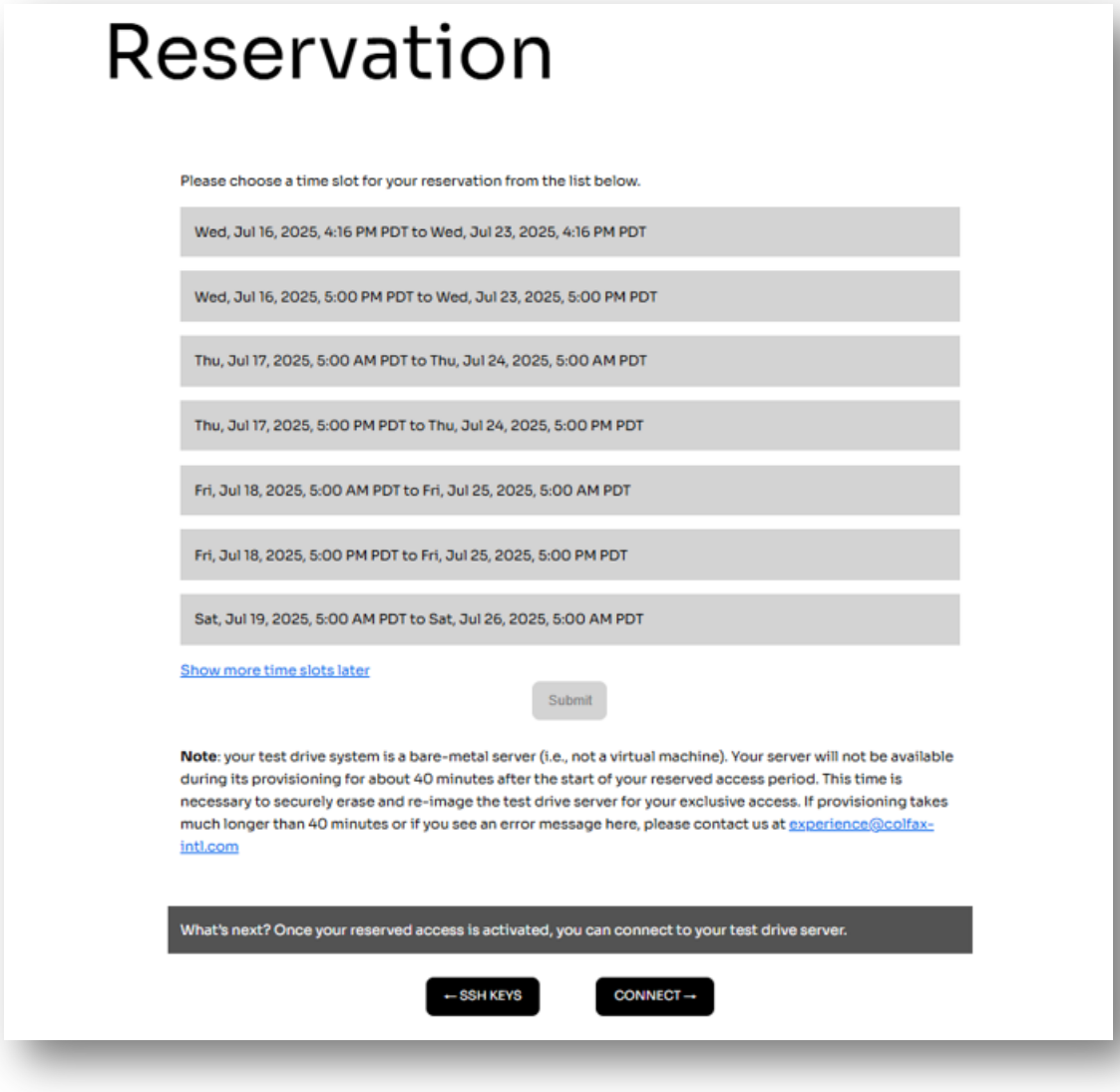
Step 3: Upload Your Public SSH Key

Paste the public SSH key in the New SSH Key text area in the Colfax Experience.





3.4 SELECTS THE DESIRED RESERVATION TIMESLOT



After submitting your reservation you will receive an email letting you know the reserved system is ready for evaluating Akida FPGA.

Note: All reservations are scheduled according to Pacific Standard Time (PST).

Note: You will receive a warning message indicating that your session will expire in 12 hours.

4 REMOTE INTO THE SYSTEM

Connect

Once your reserved access period has started, you can connect to the server by setting up the configuration in the ssh/**config** file.
You can edit the file *~/.ssh/config* (create one if it doesn't exist) and add the following to it.

```
Host akida-cloud
    StrictHostKeyChecking no
    UserKnownHostsFile=/dev/null
    User guest
    ProxyCommand ssh -T -p 807 guest@experience-access.colfax-intl.com
    IdentityFile ~/.ssh/id_ed25519
    #Jupyterlab
    LocalForward 7860 localhost:7860
    LocalForward 8888 localhost:8888
    LocalForward 4022 localhost:4000
```

Note: The "config" file should not have a file extension. If it does, it won't work—simply rename the file to remove the extension.

Note: The hostname "akida-cloud" is an example it's just a label you can use any name.

Note: The config file contents are the same for Windows , Linux or Mac.



5 EXECUTE AN EXAMPLE (X2GO + JUPYTER NOTEBOOK)

Connecting to the Jupyter Labs Server

Step 1: Set Up Your Local SSH Configuration

Create a configuration file to make connecting easier:

On Mac:

1. In **Terminal**, type: nano ~/.ssh/config
2. Copy and paste the configuration below
3. Press Ctrl + X, then Y, then Enter to save

On Windows:

1. In **PowerShell**, type: notepad $HOME\.ssh\config
2. Copy and paste the configuration below
3. Save the file

On Linux:

1. In **Terminal**, type: nano ~/.ssh/config
2. Copy and paste the configuration below
3. Press Ctrl + X, then Y, then Enter to save

Step 2: Connect to the Server

In your **Terminal** (Mac/Linux) or **PowerShell** (Windows), type:

```
ssh akida-cloud
```

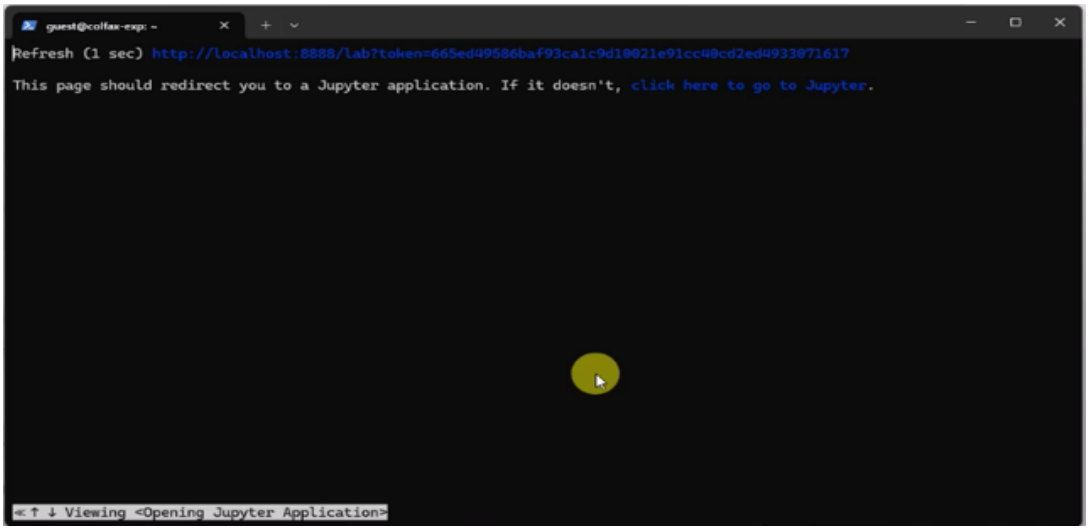
Keep this Terminal window open - it creates a "tunnel" to the server.

Step 3: Start Jupyter Labs

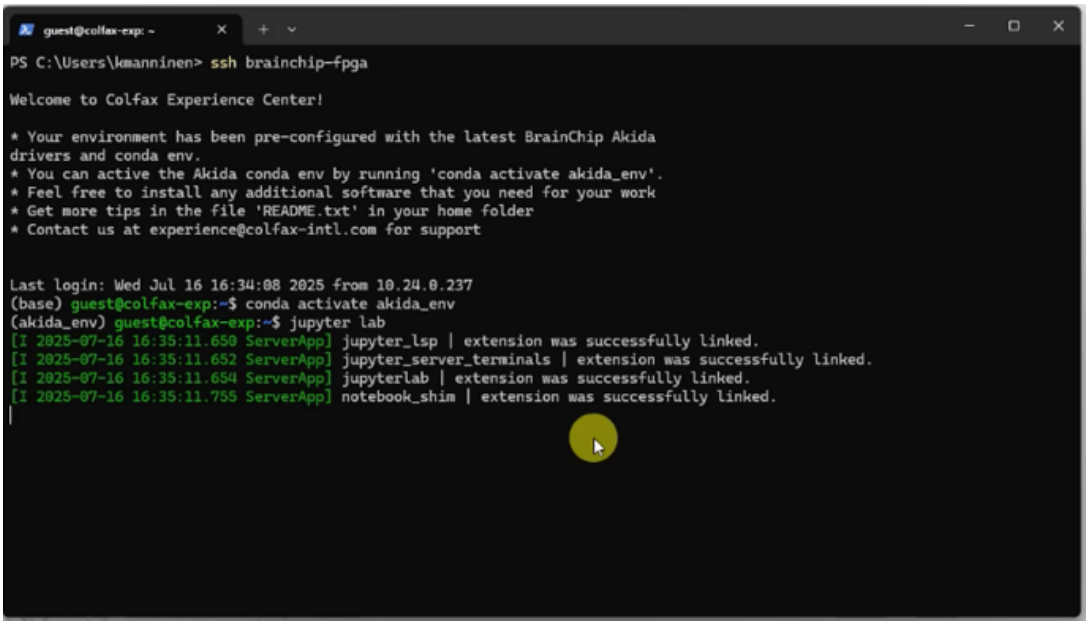
Once connected to the server, start jupyter lab by typing:

```
(akida_env) guest@colfax-exp:~$ jupyter lab
```

When the URL appears on the screen (in blue text), press **Ctrl + click** to open it. This will redirect you to your web browser and take you to the Jupyter Notebook page.

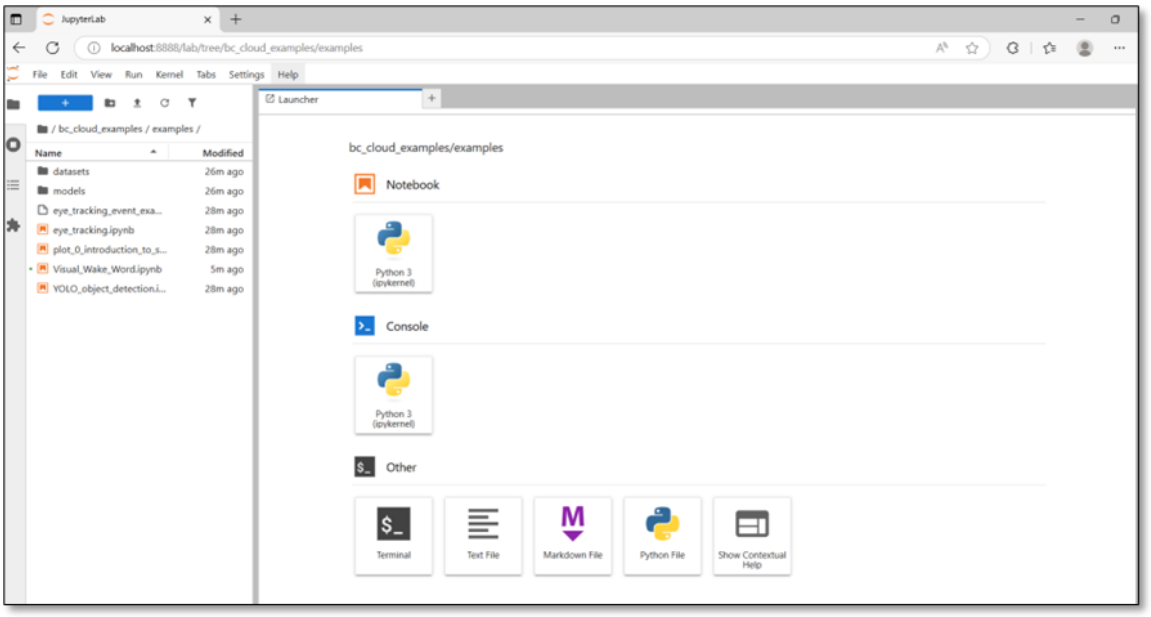


You should see some output indicating that Jupyter Labs is starting up. Keep this Terminal window open.

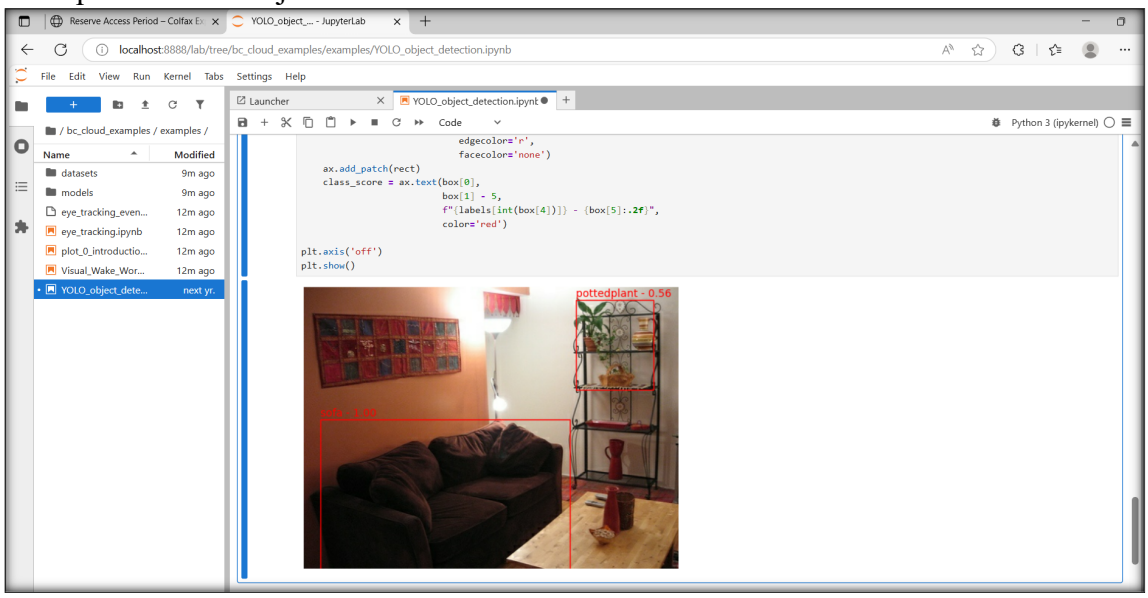


Step 4: Access Jupyter Labs

You should now see the Jupyter Labs interface!
To find the examples: Click on > bc_cloud_examples > examples
To run an example from the list on the left, simply click it and the notebook will open.



Example - YOLO Object Detection

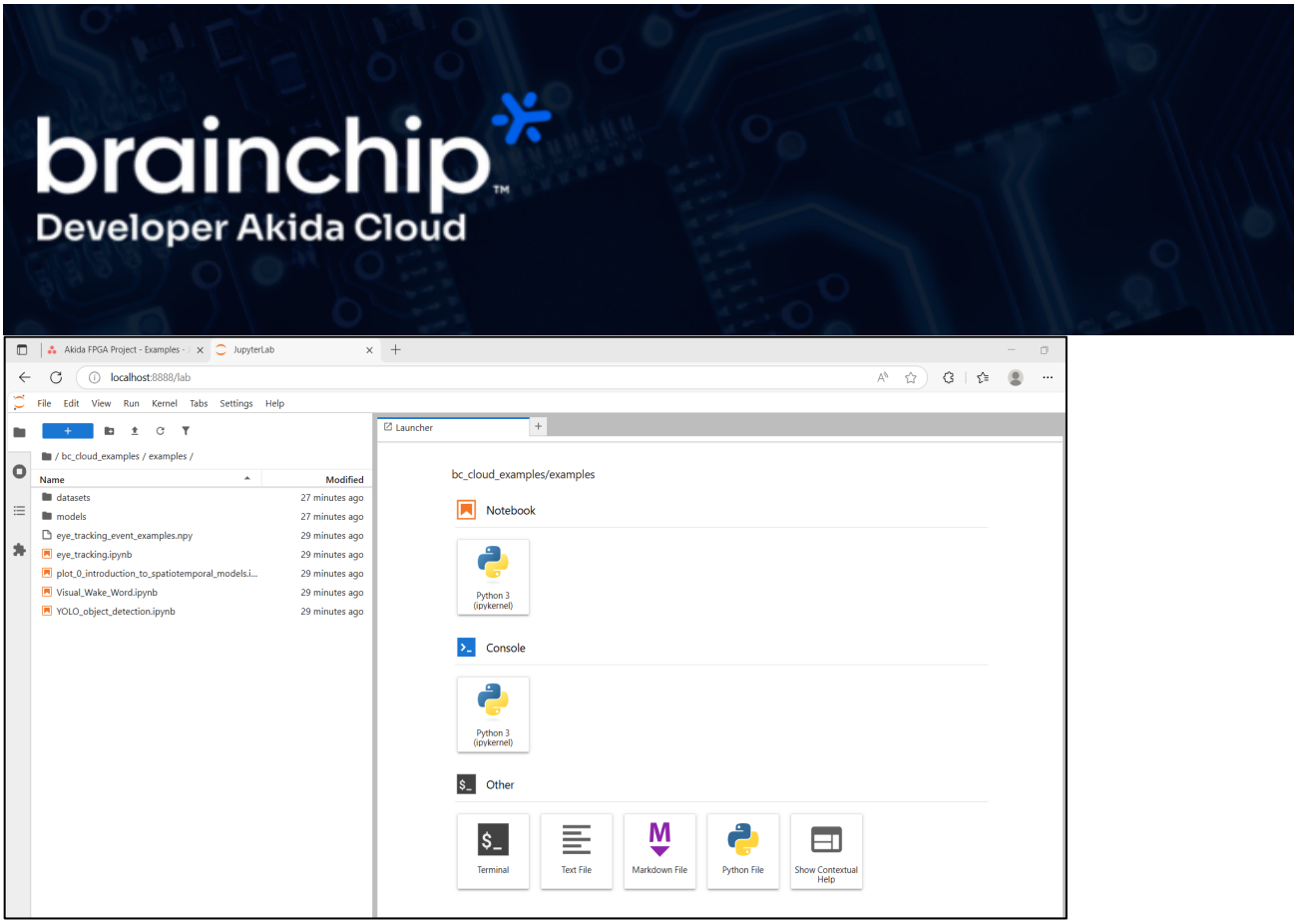


Note: When you are finished running an example, run the following commands or reset the **Kernel** to free up the akida FPGA H/W for the next example.

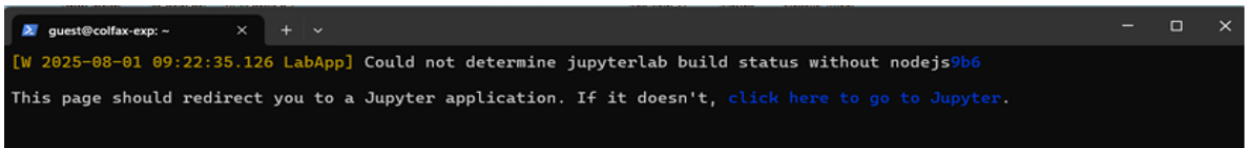
```
import os
exit(0)
```

Suggested session exit:

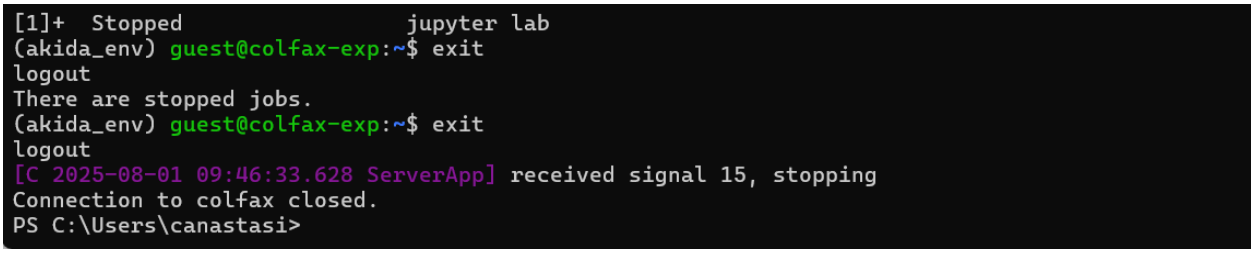
- Close jupyter lab click "x" on the tool bar.



- Ctrl-Z to exit this screen



- Enter > exit

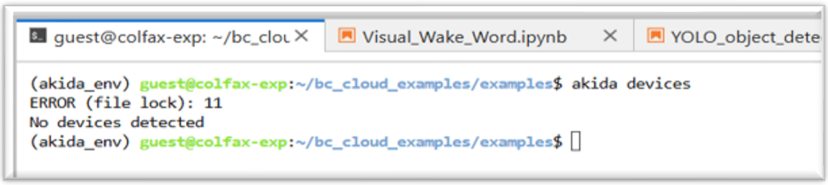


6 TROUBLESHOOTING TIPS

- **Permission denied**: Your public key may not be added to the server yet
- **Connection refused**: Make sure the SSH connection (Step 5) is active
- **Can't find ssh-keygen**: On older Windows versions, you may need to install OpenSSH or use PuTTY instead
- **If you try to log in remotely outside of your reserved timeslot you will get this error:** guest@experience-access.colfax-intl.com: Permission denied
    - (publickey).Connection closed by UNKNOWN port 65535

- If you experience ERROR (file lock):11 below reset the Kernel or run the following commands in in a jupyter notebook cell.

```
import os
exit(0)
```



7 IMPORTANT NOTES

- Never share your private key (the file without .pub)
- Keep your SSH connection open while using Jupyter Labs
- If you close the Terminal/PowerShell window, you'll need to reconnect with:

ssh akida-cloud or the Host label in the config file

- After a session ends, you may see the messages below when attempting to log in. These messages are unrelated to Akida Cloud—they are generated by the local machine's operating system when trying to SSH into an instance that no longer exists.

(akida_env) guest@colfax-exp:~$ channel 7: open failed: connect failed: Connection refused
channel 7: open failed: connect failed: Connection refused
channel 7: open failed: connect failed: Connection refused
channel 7: open failed: connect failed: Connection refused

8 PORTAL INFORMATION

- Access
  - How long will you have access to login?
    It depends on the allotted time when making the reservation, but usually you will have access during the 1-day free trial, or the 1-week paid access.
  - What happens after your access expires or ends?

You will no longer have access, and you will receive an email stating the session has ended.

- Reservation duration
  - 1-day free trial
  - 1-week of paid access
  - For longer durations or ownership of the platform contact sales@brainchip.com