

Using VS Code and Jupyter Notebook at NSC

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1. Using VS Code at NSC

Using VS Code with Remote-SSH

Using VS Code via ThinLinc

Using VS Code Server via SSH Tunnel

2. Using Jupyter Notebook at NSC

Using Jupyter Notebook via ThinLinc

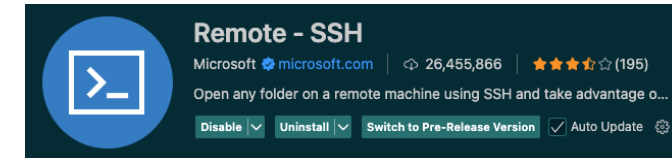
Using Jupyter Notebook via SSH Tunnel

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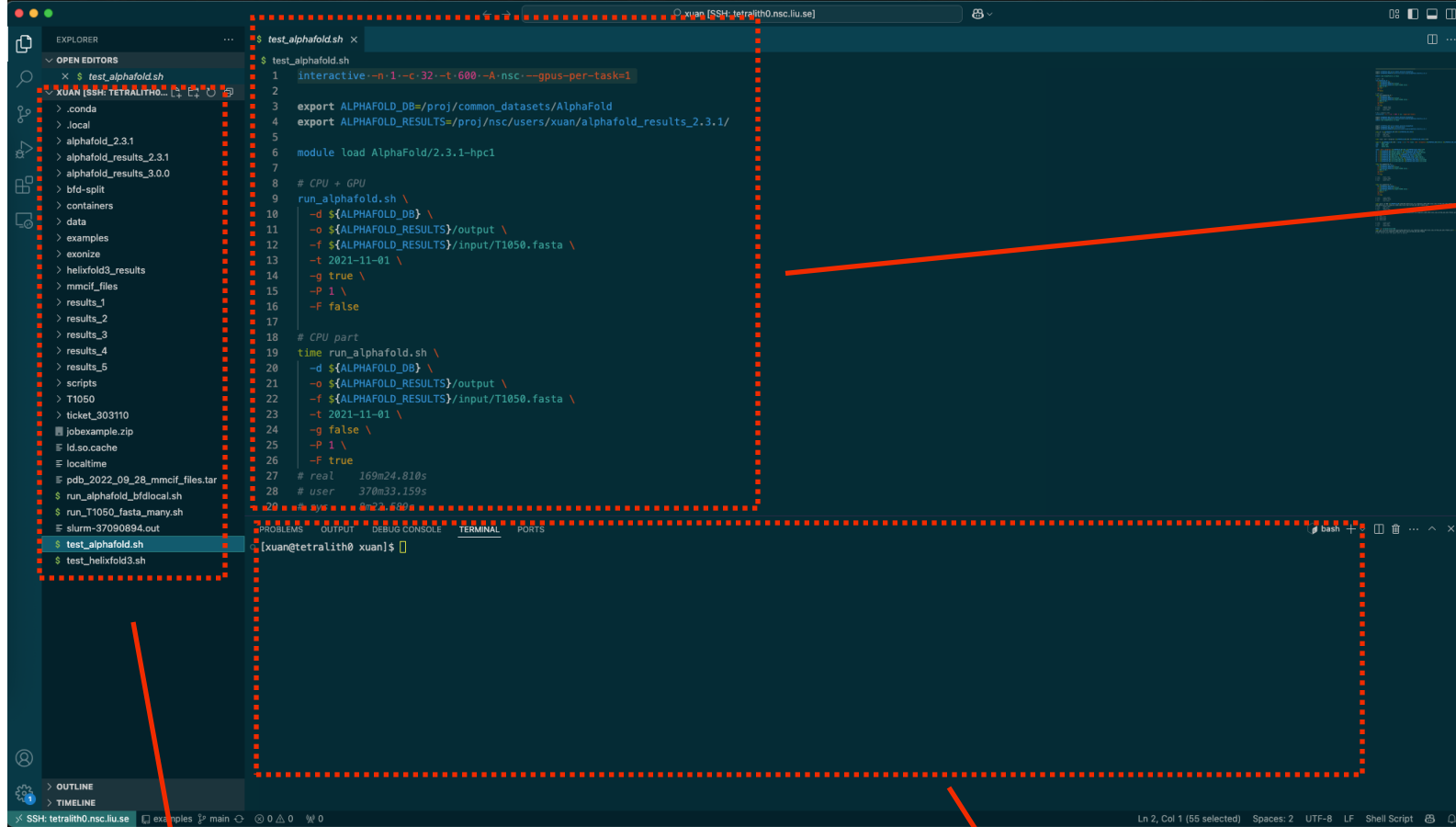
- Need to install **VS Code** on your local computer
- Need to install **Remote-SSH** extension in VS Code

2. Using Jupyter Notebook at NSC

Using Jupyter Notebook via ThinLinc

Using Jupyter Notebook via SSH Tunnel

Using VS Code with Remote-SSH: A Quick Demo



Your file editor window

Workflow:

1. Connect to Tetralith
2. Edit a file (coding)
3. Submit jobs in the built-in terminal

Your working directory on Tetralith

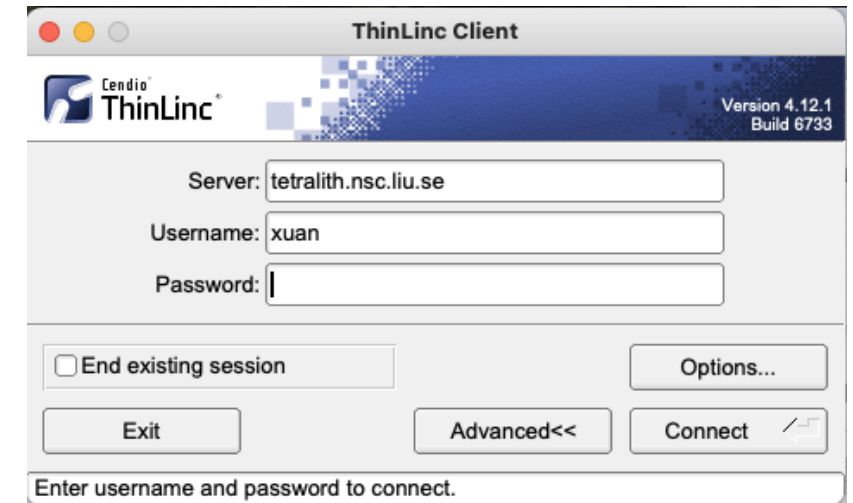
VS Code built-in terminal

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Workflow:

1. Connect to Tetralith via ThinLinc
2. Open a terminal
3. Launch VS Code / Jupyter Notebook

2. Using Jupyter Notebook at NSC

Using Jupyter Notebook via ThinLinc

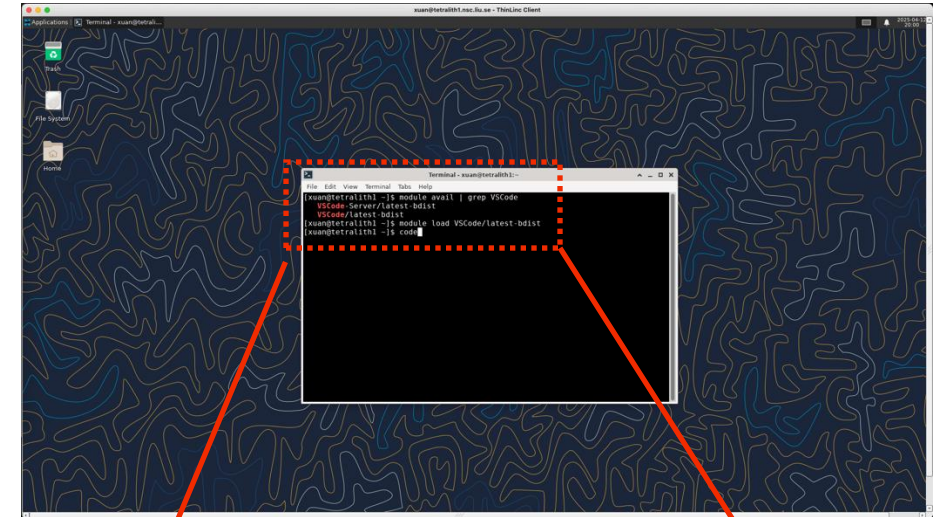
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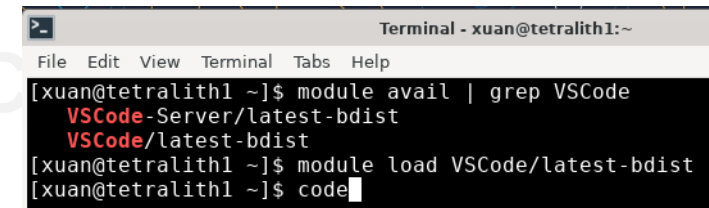
Using VS Code Server in via SSH Tunnel



2. Using Jupyter Notebook at NSC

Using Jupyter Notebook via ThinLinc

Using Jupyter Notebook via SSH Tunnel

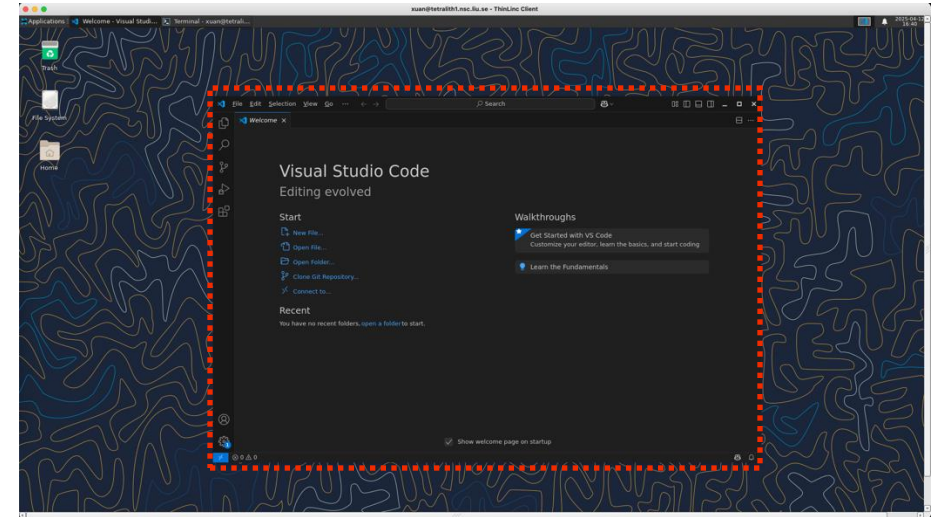


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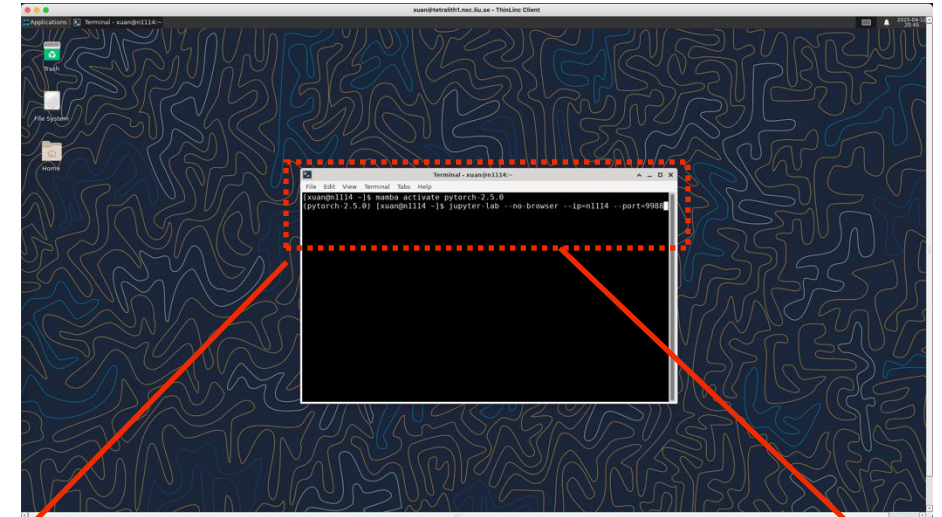
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2. Using Jupyter Notebook a

Using Jupyter Notebook via ThinLinc

Using Jupyter Notebook via SSH Tunnel

```
Terminal - xuan@n1114:~  
File Edit View Terminal Tabs Help  
[xuan@n1114 ~]$ mamba activate pytorch-2.5.0  
(pytorch-2.5.0) [xuan@n1114 ~]$ jupyter-lab --no-browser --ip=n1114 --port=9988
```

- Use the **--ip** flag to specify the hostname
- The **port 9988** is arbitrary. If it's already in use, try another (e.g., 9989, 9990, etc.).

1. Using VS Code at NSC

Using VS Code with Remote-SSH

Using VS Code via ThinLinc

Using VS Code Server via SSH Tunnel

```
Terminal - xuan@n1114:~
File Edit View Terminal Tabs Help
[I 2025-04-12 20:45:22.548 ServerApp] Jupyter Server 2.15.0 is running at:
[I 2025-04-12 20:45:22.548 ServerApp] http://n1114:9988/lab?token=8a458d00872e2c0b0657c85cb0604fc65b6c9ca5d9549c52
[I 2025-04-12 20:45:22.548 ServerApp] http://127.0.0.1:9988/lab?token=8a458d00872e2c0b0657c85cb0604fc65b6c9ca5d9549c52
[I 2025-04-12 20:45:22.548 ServerApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 2025-04-12 20:45:22.552 ServerApp]

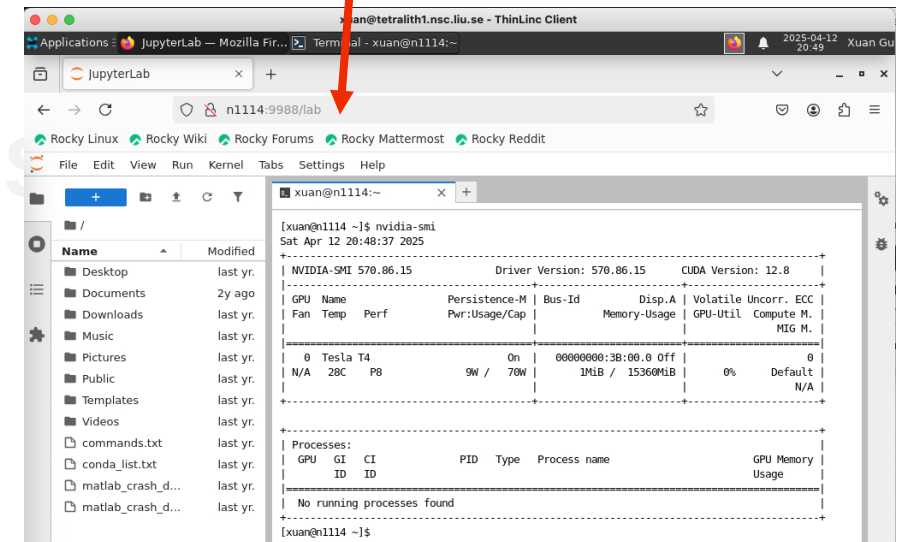
To access the server, open this file in a browser:
file:///home/xuan/.local/share/jupyter/runtime/jpserver-1325519-open.html

Or copy and paste one of these URLs:
http://n1114:9988/lab?token=8a458d00872e2c0b0657c85cb0604fc65b6c9ca5d9549c52
http://127.0.0.1:9988/lab?token=8a458d00872e2c0b0657c85cb0604fc65b6c9ca5d9549c52
[I 2025-04-12 20:45:22.570 ServerApp] Skipped non-installed server(s): bash-language-server, dockerfile-language-server-nodejs, javascript-typescript-languageserver, jedi-language-server, julia-language-server, pyright, python-language-server, python-lsp-server, r-languageserver, sql-language-server, texlab, typescript-language-server, unified-language-server, vscode-css-languageserver-bin, vscode-html-languageserver-bin, vscode-json-languageserver-bin, yaml-language-server
```

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Using Jupyter Notebook via ThinLinc

Using Jupyter Notebook via SSH Tunnel

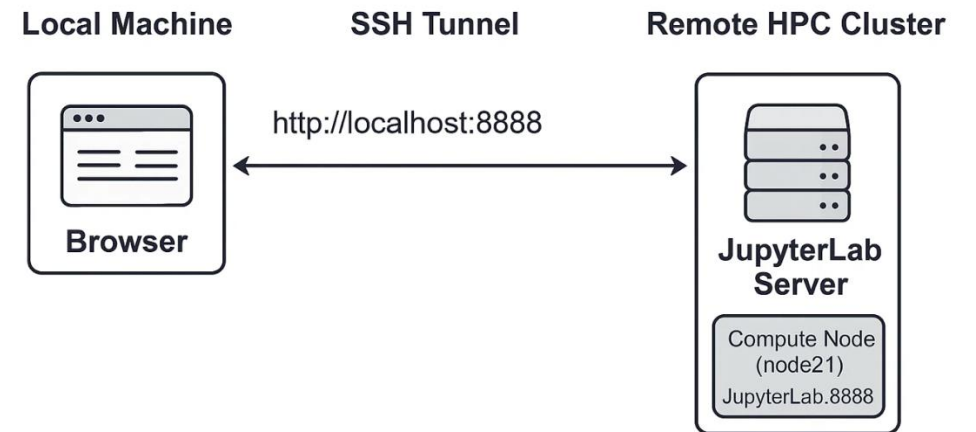


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2. Using Jupyter Notebook at

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1. Using VS Code at NSC

Using VS Code with Remote-SSH

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Workflow:

1. Connect to Tetralith from your local terminal
2. Start VS Code / Jupyter Notebook on Tetralith

2. Using Jupyter Notebook at NSC

Using Jupyter Notebook via ThinLinc

Using Jupyter Notebook via SSH Tunnel

```
gotetralith0
[xuan@n185 ~]$ module load VSCode-Server/latest-bdist
[xuan@n185 ~]$ code-server --bind-addr n185:9988 .
[2025-04-12T21:01:50.097Z] info code-server 4.99.0 53722c53619727600
5f68a7fb174d9ab15afc63b
[2025-04-12T21:01:50.098Z] info Using user-data-dir /home/xuan/.local
share/code-server
[2025-04-12T21:01:50.115Z] info Using config file /home/xuan/.config
/code-server/config.yaml
[2025-04-12T21:01:50.115Z] info HTTP server listening on http://10.2
4.1.85:9988/
[2025-04-12T21:01:50.115Z] info - Authentication is enabled
[2025-04-12T21:01:50.115Z] info - Using password from /home/xuan
.config/code-server/config.yaml
[2025-04-12T21:01:50.115Z] info - Not serving HTTPS
[2025-04-12T21:01:50.115Z] info Session server listening on /home/xu
an/.local/share/code-server/code-server-ipc.sock
```

1. Using VS Code at NSC

Using VS Code with Remote-SSH

Using VS Code via ThinLinc

Using VS Code Server via SSH Tunnel

Workflow:

1. Connect to Tetralith from your local terminal
2. Start VS Code / Jupyter Notebook on Tetralith
3. Establish SSH tunnel from your local computer

2. Using Jupyter Notebook at NSC

Using Jupyter Notebook via ThinLinc

Using Jupyter Notebook via SSH Tunnel

```
ssh -N -L localhost:9988:n185:9988 xuan@tetralith1.nsc.liu.se  
(xuan@tetralith1.nsc.liu.se) Verification code:
```

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Workflow:

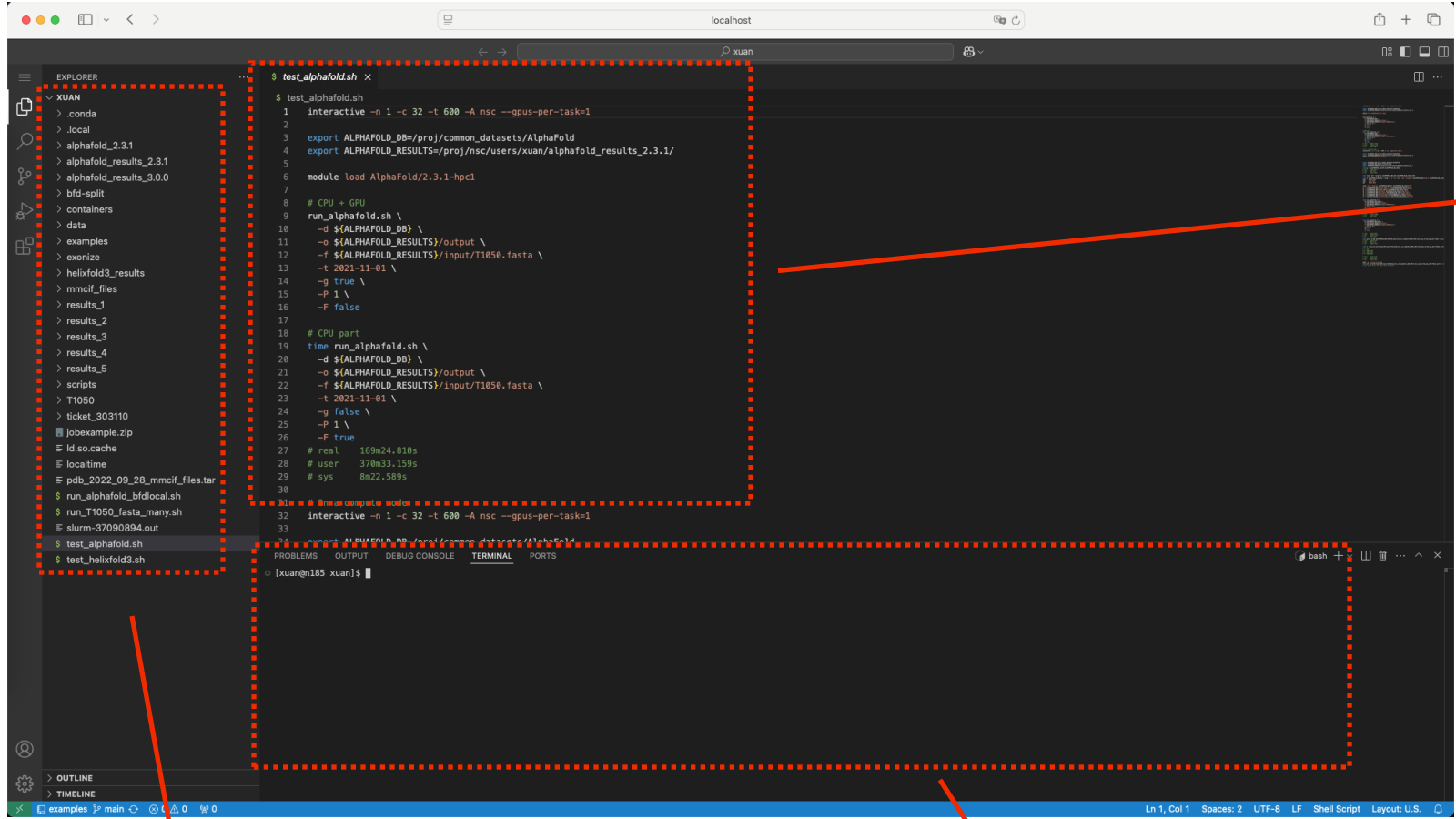
1. Connect to Tetralith from your local terminal
2. Start VS Code / Jupyter Notebook on Tetralith
3. Establish SSH tunnel from local computer
4. Open your local browser and connect

```
http://localhost:9988
```

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Your working directory on Tetralith

VS Code built-in terminal

VS Code Server in local browser

- Using VS Code with Remote-SSH
 - You only connect to **login nodes**
- Using VS Code Server via SSH Tunnel
 - You can directly connect to **compute nodes**
 - Use cases:
 - Real-time debugging on a compute node
 - Running Jupyter Notebooks in VS Code on a compute node

User Support: Create a Ticket in SUPR (supr.naiss.se)



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SUPR - Swedish User and Project Repository

SUPR is the NAISS database used to keep track of persons, projects, project proposals and more. To use most SUPR functions you need to be logged in.



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Login with Password



Login with Client Certificate

Thanks for listening!