

## HPC Manual

### *Connecting Matlab GUI to HPC Paramganga*

You can run MATLAB on an HPC system and use SSH tunnelling to interact with it from your local machine. The process is similar to running Jupyter Lab via SSH tunnelling. Here's a step-by-step guide on how to achieve this:

**1: Prepare MATLAB on HPC:** load a MATLAB module (module load MATLAB/20XXx) or activate an environment.

**2: Set Up SSH Tunneling:** To interact with MATLAB via SSH tunnelling, you'll need to create an SSH tunnel from your local machine to the HPC system.

Example SSH Tunnel Command:

Open a terminal on your local machine and run: `ssh -L 8888:localhost:8888  
your_username@your_hpc_address`

Replace *your\_username* with your HPC username and *your\_hpc\_address* with the address of your HPC system. This command forwards port 8888 on your local machine to port 8888 on the HPC system. You can choose a different port if 8888 is already in use.

**3: Start MATLAB on the HPC:** On the HPC system, start MATLAB.

For MATLAB GUI (X11 Forwarding):

1. Install X Server on Your Local Machine:
  - For Windows: Install an X server like Xming or VcXsrv.
  - For macOS: Install [XQuartz](#).
  - For Linux: Typically, an X server is already installed. *(I'm Using)*
2. SSH with X11 Forwarding:
  - a. In the Local system Terminal, type: `ssh -Y your_username@your_hpc_address`
  - b. Type: Matlab to open it

- c. To confirm or know system configuration use these commands (`cpuInfo`, `cpuCores`, `totalMemValue`, `freeMemValue`);
- 3. This should open the MATLAB GUI on your local machine via X11 forwarding.