

Instructions to log into the RedHawk machine

Step-by-step guide to login and clone the Git repository on RedHawk machine

Method 1:

Note: Following method gives the git-lfs space error. The git-lfs space is in RedHawk machine not on pslogin. Also, to clone repo on pslogin is not recommended.

- Step 1: How to do pslogin:
 - ssh to pslogin: "ssh `username@pslogin.slac.stanford.edu`"
 - After pslogin user can clone the git project repository in pslogin space (This space will be shared between pslogin and RedHawk machine)
- Step 2: How to ssh to RedHawk machine:
 - ssh to RedHawk from "pslogin": "ssh psstuart"
 - This step will connect the user with RedHawk machine
 - Once the user logs into RedHawk machine, the user can see the same project repository cloned during the first step.

Method 2:

- Step 1: ssh to pslogin: "ssh `username@pslogin.slac.stanford.edu`" or "ssh pslogin -Y"
- Step 2: ssh to RedHawk from "pslogin": "ssh psstuart"
 - This step will connect the user with RedHawk machine
- Step 3: Once the user logs into RedHawk machine, user can clone the git repo by typing following command.
 - git clone --recursive `git@github.com:slacslab/user_repo.git`

How to load the firmware programming files into RedHawk machine

- User cannot build the firmware on RedHawk machine because Vivado doesn't support the RedHawk machine distro.
- User can just build it on Ubuntu then use the python script to program the generated .MCS file. To do that pleaseAD follow following steps:
 - Step 1: Go to Ubuntu server and build the firmware. For more information on how to build the firmware of your project please follow the link given in [Related articles](#).
 - Step 2: Once the FPGA programming files are ready. Copy those files to RedHawk machine by using following command.
 - `scp -r /u/gu/adave/Project/snl-trans-FES/firmware/targets/SnlTransFesKcu1500/images pslogin:/cds/home/a/adave/Projects/snl-trans-FES/firmware/targets/SnlTransFesKcu1500`
 - Here the FPGA image files from rdsrv310 are being copied and pasted on RedHawk machine's mount-point dir.

How to reprogram the PCIe firmware via Rogue software

- Step 1: Go to software folder by typing following command.
 - `cd user_project/software`
- Step 2: To setup the rogue environment please follow the following command.
 - `pskube-minion03 ~$ bash`
`bash-4.2$ source ~ruckman/anaconda3/etc/profile.d/conda.sh`
`bash-4.2$ conda activate rogue_v5.15.3`
`(rogue_v5.15.3) bash-4.2$`
 - This will activate the conda rogue enviroment
- Step 3: Run the PCIe firmware update script
 - `$ python scripts/updatePcieFpga.py --path <PATH_TO_IMAGE_DIR>`

where <PATH_TO_IMAGE_DIR> is path to image directory (example: `../firmware/targets/SnlBesKcu1500/images/`)

Select image number when following message is shown:

The detailed instruction on installing Rogue with Anaconda can be found [here](#).

How to run the software

- Step 1: Go to software folder by typing following command.
 - `cd user_project/software`
- Step 2: To setup the rogue environment please follow the following command.
 - `pskube-minion03 ~$ bash`
`bash-4.2$ source ~ruckman/anaconda3/etc/profile.d/conda.sh`
`bash-4.2$ conda activate rogue_v5.15.3`
`(rogue_v5.15.3) bash-4.2$`
 - This will activate the conda rogue environment
- Step 3: open the scripts/devGui.py file and comment the default port number.

```
65     parser.add_argument(  
66         "--serverPort",  
67         type      = int,  
68         required  = False,  
69         #default  = 9099,  
70         help     = "Zeromq server port",  
71     )  
~~
```

- Step 4: Go back to the software folder and run the devGui script file.
 - `$ python scripts/devGui.py --guiType None --h5Path notebooks/TestDataCheck.h5`



Related articles

How to build firmware for the project: <https://github.com/slaclab/snl-bes-dev>

The detailed instruction on installing Rogue with Anaconda: <https://slaclab.github.io/rogue/installing/anaconda.html>

- [Instructions to log into the RedHawk machine](#)