Installation

For developers:

1. Install Eclipse CDR

2. Install JRE

3. Install UHD based on:

<https://kb.ettus.com/Building_and_Installing_the_USRP_Open-Source_Toolchain_(UHD_and_GNU_Radio)_on_Linux>

Use 3.9.7

4. Configure 1 Gbps interface (if needed)

sudo gedit /etc/network/interfaces

*Add:*

auto eno1

iface eno1 inet dhcp

gateway 192.168.2.254

auto eno2

iface eno2 inet static

address 192.168.10.3

netmask 255.255.255.0

#gateway 192.168.10.1

#dns-nameservers 8.8.4.4 8.8.8.8

auto enp5s0f3

iface enp5s0f3 inet static

address 192.168.40.3

netmask 255.255.255.0

mtu 9000

*Perform:*

sudo ip addr flush eno2

sudo systemctl restart networking.service

5. Increase UDP buffers

sudo sysctl -w net.core.wmem\_default=134217728

sudo sysctl -w net.core.rmem\_default=134217728  
sudo sysctl -w net.core.rmem\_max=134217728

sudo sysctl -w net.core.wmem\_max=134217728

sudo sysctl -w net.ipv4.udp\_mem='134217728 134217728 134217728'

sudo sysctl -w net.ipv4.udp\_rmem\_min=134217728

sudo sysctl -w net.ipv4.udp\_wmem\_min=134217728

6. Change Ethernet settings

sudo ethtool -G enp5s0f3 rx 4096 tx 4096

sudo ethtool -C enp5s0f3 adaptive-rx off adaptive-tx off rx-usecs 100 tx-usecs 0

~~Add to the file /etc/sysctl.conf:~~

~~net.core.rmem\_max=33554432~~

~~net.core.wmem\_max=33554432~~

~~Install VNC:~~

~~sudo cp /bin/ping /bin/usr/ping~~

~~s~~udo chmod +x+x+x /usr/bin/ping

Make x300 able to increase priority to process/thread

Add the following line to the file /etc/security/limits.conf:

@x300 - rtprio 99

FPGA burn

"/usr/local/bin/uhd\_image\_loader" --args="type=x300,addr=192.168.40.2" --fpga-path /home/x300/usrp\_x300\_fpga\_HG.bit

power cycle the USRP

7. Calibration

uhd\_cal\_rx\_iq\_balance

uhd\_cal\_tx\_iq\_balance

Tasks”

1. Calibration

2. ethtool

> ethtool -g

7. disable power-save – run in performance