

Manual for Setting Up Radiotftp

Server setup:

1. Connect to the machine via serial terminal.
2. Type in ``remountrw`` to remount the file system as writable.
3. Connect one side of the ethernet cable to eth1 (middle port), and the other side to your computer.
4. Type in ``ifconfig eth1 192.168.1.1 up``.
5. Open a terminal in your computer and type in ``sudo ifconfig eth0 192.168.1.2 up``.
6. Open an ssh connection to the Alix machine by typing ``ssh root@192.168.1.1``
7. The password should be ``hades12``. If it's not, then it is ``voyage``.
8. Connect the Bim2A with usb serial (FTDI cable). Check that it is connected and learn the device name from ``dmesg``. Let's say that the device name is ``/dev/ttyUSBA``.
9. Change directory to the folder where you want your ``sensors.dat`` file. For the javascript plotters to be able to plot and show the data on the webserver, this folder should be ``/var/www``.
10. Run the radiotftp application by typing ``radiotftp /dev/ttyUSBA &``. When you see the ``hello radio world!`` line, everything should be fine.

Remote client setup:

11. Connect to the machine via serial terminal.
12. Type in ``remountrw`` to remount the file system as writable.
13. Connect one side of the ethernet cable to eth1 (middle port), and the other side to your computer.
14. Type in ``ifconfig eth1 192.168.1.1 up``.
15. Open a terminal in your computer and type in ``sudo ifconfig eth0 192.168.1.2 up``.
16. Open an ssh connection to the Alix machine by typing ``ssh root@192.168.1.1``
17. The password should be ``hades12``. If it's not, then it is ``voyage``.
18. Connect the Bim2A with usb serial (FTDI cable). Check that it is connected and learn the device name from ``dmesg``. Let's say that the device name is ``/dev/ttyUSBA``.

19. Connect the sink mote with usb serial (FTDI cable). Check that it is connected, and learn the device name from ``dmesg``. Let's say that the device name is ``/dev/ttyUSB2``.

20. Open the file ``/root/wsn-uplink/tty_talk/sendItAway.sh`` with a text editor.

Example `sendItAway.sh` file:

```
#!/bin/bash
radiotftp -fsensors.dat -dst255.255.255.255 /dev/ttyUSB2 appendline $@
#echo $@ >> echo.txt
```

21. Change the device name to ``/dev/ttyUSBA``. Save and exit. This sets the device for Bim2A. You do not need to change other settings, and you shouldn't. ``-f`` specifies the remote file name and ``-dst`` specifies the destination address. It works well with broadcast address if there is only one client. If there is more than one client then the ``-dst`` should be set to the server's IPv6 address. But those settings are not mentioned here, so it's still better to use the broadcast address.

22. Now you are ready to run ``sensd``. Just type in ``sensd /dev/ttyUSB2`` WITHOUT any file parameter. If you type in a file parameter with ``-f`` `sensd` will NOT send the data through radio.

23. `Sensd` buffers the incoming packets and then sends them together. So, wait for a minute or so to see some output on the other side.

24. When transactions begin you should see the log of incoming data on the screen (eg. ACKs, timeouts, discards etc.). If every packet seems to be discarded, then there is a problem with radio (probably interference or too much power). Try changing the locations of the Bim2A boards. Discards do not happen without a reason, they only happen when CRC checksums do not match.