

Installing Virtual Coordinator on Ubuntu Linux 11.04 server

Document version 1.01

I. Preparing computer for installation

a. Check existing java version. Make sure that the version is at least 1.6.

```
$java -version
```

If not installed, the above command will not be recognized. Install Java while the computer is connected to the Internet:

```
$sudo apt-get install openjdk-6-jre-headless
```

b. Set a static IP to the computer.

```
$cd /etc/network/  
$sudo vi interfaces
```

TIP: Here, "vi" editor is used as the default editor for editing files. Refer man page of vi editor on how to use it.

look for line:

```
iface eth0 inet dhcp
```

replace it with

```
iface eth0 inet static  
address x.x.x.x  
netmask x.x.x.x  
gateway x.x.x.x
```

Save the file

TIP: If this installation is not a server and is on a desktop then use the "Network Tools" to set the IP address/Subnet Mask and Gateway.

c. Remove the dhcp client, which is running all the time. If you don't remove it, this dhcp client will keep getting a new dynamic IP address and overwrite the existing static IP address.

```
$sudo apt-remove isc-dhcp-client
```

Now restart the networking

```
$sudo /etc/init.d/networking restart
```

TIP: Always use sudo to execute root commands.

d. Check to see if the firewall is running.

```
$sudo ufw status
```

if the status is: **Status: active**

Then disable it:

```
$sudo ufw disable
```

If the status is: **Status: inactive**, then there is no need to disable it.

Enable port 50002/udp, 50006/tcp, 2000/tcp, 21/tcp, 80/tcp on the firewall. The port numbers are useful for various operations on the Virtual Coordinator. Port 50002/50006 is used for communication between the transmitter and the virtual coordinator for data and commands. Port 2000 is the command server. Port 21 is for firmware upgrade on transmitters. Port 80 is for the web server.

```
$sudo ufw allow 50002/udp
$sudo ufw allow 50006/tcp
$sudo ufw allow 2000/tcp
$sudo ufw allow 21/tcp
$sudo ufw allow 80/tcp
$sudo ufw enable
```

TIP: You can verify the rules that are present using the following commands

```
$sudo ufw status
```

II. Installing Wifi Virtual Coordinator

a. Copy and Unzip the tarball in a directory. Download the latest VC from Newport Electronics website or else copy it from the CD. If downloading from the web copy the downloaded tar file to "<USER_HOME>/Downloads" directory. If copying from the CD, first mount the CDROM. The usual CDROM directory is /media/cdrom. Once successfully mounted, change to the cdrom directory and copy the wifi_vc_v1_x.tar.gz to the ~/Downloads directory.

```
$sudo mount /media/cdrom
$cd /media/cdrom/Linux/
$cp wifi_vc_v1_x.tar.gz ~/Downloads
```

TIP: The latest virtual coordinator is usually at this URL. http://newportus.com/Software/wSeriesFWVC/VC_linux/wifi_vc_1_XX.tar.gz

Now untar the files.

```
cd ~/Downloads/
$tar -zxvf wifi_vc_v1_x.tar.gz
```

b. Copy the unzipped directory to /usr/bin/wifi_vc

```
$sudo cp -av wifi_vc /usr/bin
```

c. Create a link to the service scripts in the /etc/init.d directory.

```
$cd /etc/init.d/
$sudo ln -s /usr/bin/wifi_vc/virtualcoordinatorApp virtualcoordinatorApp
$sudo ln -s /usr/bin/wifi_vc/virtualcoordinatorWebServer virtualcoordinatorWebServer
$sudo ln -s /usr/bin/wifi_vc/ftpserver/bin/virtualcoordinatorFTP2 virtualcoordinatorFTP2
```

TIP: Once the links are created check to see if they are good or not. Doing a "ls -l" will list the actual paths for the link and the color should be blue for the links. If it is RED then the links are not created properly.

```
$cd /etc/init.d/
$ls -l
```

If the links are not created properly use the command "rm virtualcoordinator*" to delete them.

Enable the services to run at system reboot

d. Get to know the present system runlevel

```
$runlevel
```

It should say something like:

N 2

where 2 is the current system level.

e. Go the /etc/rcX.d where X is the runlevel we just got and create a symlink to the script.

```
$cd /etc/rcX.d
$sudo ln -s /etc/init.d/virtualcoordinatorApp S98virtualcoordinatorApp
$sudo ln -s /etc/init.d/virtualcoordinatorApp S97virtualcoordinatorWebServer
$sudo ln -s /etc/init.d/virtualcoordinatorApp S96virtualcoordinatorWebServer
```

Where the numbers 98,97 and 96 are unused TWO digits numbers of SXX names used in the directory.

f. Before starting the services, find out the actual path to the java run time environment.

```
$readlink -f `which java`
```

It should say something like:

```
/usr/lib/jvm/java-6-sun-1.6.0.26/jre/bin/java
```

Remove the **"/bin/java"** part(so in this case it is /usr/lib/jvm/java-6-sun-1.6.0.26/jre/). This is the actual **JAVA_HOME**.

Edit the "/etc/init.d/virtualcoordinatorApp", "/etc/init.d/virtualcoordinatorFTP2" file and enter this path where it says **JAVA_HOME**:

```
$cd /etc/init.d/  
$sudo vi virtualcoordinatorApp  
$sudo vi virtualcoordinatorFTP2
```

The actual content of the file should look like this:

```
# Set this to your Java installation  
JAVA_HOME=
```

After making the change the content should look like this:

```
# Set this to your Java installation  
JAVA_HOME=/usr/lib/jvm/java-6-sun-1.6.0.26/jre/
```

Start the Application server service with this command.

```
$sudo /etc/init.d/virtualcoordinatorApp start
```

You should see a message:

```
Starting VirtualCoordinator started PID=xYz  
- where xYz is some number that the system \  
will assign for the PID(Process ID).
```

g. Start the Web server service with this command:

```
$sudo /etc/init.d/virtualcoordinatorWebServer start
```

You should see a message:

```
2011-06-01 10:56:12.695:INFO::Deployment monitor /usr/bin/wifi_vc/contexts at interval 5  
2011-06-01 10:56:12.707:INFO::Deployable added: /usr/bin/wifi_vc/contexts/test.xml  
2011-06-01 10:56:13.175:INFO::Deployable added: /usr/bin/wifi_vc/contexts/resources.xml  
2011-06-01 10:56:13.184:INFO::Deployment monitor /usr/bin/wifi_vc/webapps at interval 5  
2011-06-01 10:56:13.185:INFO::Deployable added: /usr/bin/wifi_vc/webapps/examples  
2011-06-01 10:56:13.327:INFO::Deployable added: /usr/bin/wifi_vc/webapps/.svn  
2011-06-01 10:56:13.387:INFO::Started SelectChannel Connector@0.0.0.0:80
```

which means the web server is started.

h. The FTP server is only used when firmware upgrade is used. Start the FTP server service with this command:

```
$sudo /etc/init.d/virtualcoordinatorFTP2 start
```

You should see a message:

```
Starting VirtualCoordinator started PID=xYz
```

- where xYz is some number that the system will assign for the PID(Process ID).

The wifi virtual coordinator is installed

III. To Stop the services

a. Stop the Application service:

```
$sudo /etc/init.d/virtualcoordinatorApp stop
```

You should see a message:

```
Stopping VirtualCoordinator stopped PID=xyz
```

which means the service is stopped.

b. Stop the Web server service:

```
$sudo /etc/init.d/virtualcoordinatorWebServer stop
```

You should see a message:

```
2011-06-01 09:55:03.679:INFO::Graceful shutdown SelectChannelConnector@0.0.0.0:80
2011-06-01 09:55:03.687:INFO::Graceful shutdown WebApplicationContext@11ef443@11ef443/,
file:/usr/bin/wifi_vc/webapps/examples/
2011-06-01 09:55:03.687:INFO::Graceful shutdown
ContextHandler@1367e28@1367e28/resources,file:/usr/bin/wifi_vc/resources
2011-06-01 09:55:03.687:INFO::Graceful shutdown WebApplicationContext@94af2f@94af2f/examples,
file:/usr/bin/wifi_vc/webapps/examples/,/usr/bin/wifi_vc/webapps/examples
2011-06-01 09:55:03.687:INFO::Graceful shutdown WebApplicationContext@1797795@1797795/.svn,
file:/usr/bin/wifi_vc/webapps/.svn/,/usr/bin/wifi_vc/webapps/.svn
```

which means the service is gracefully shutdown.

c. Stop the ftp server service:

```
1. sudo /etc/init.d/virtualcoordinatorFTP2 stop
```

You should see a message:

```
Stopping VirtualCoordinator stopped PID=xyz
```

which means the service is stopped.

IV. Disabling services run at system reboot

a. Get to know the present system runlevel

```
$runlevel
```

It should say something like: N 2 where 2 is the current system level.

b. Go the /etc/rcX.d where X is the runlevel we just got and rename the symlink to the script.

```
$cd /etc/rcX.d
$mv S98virtualcoordinatorApp K98virtualcoordinatorApp
$mv S97virtualcoordinatorWebServer K97virtualcoordinatorWebServer
$mv S96virtualcoordinatorFTP2 K96virtualcoordinatorFTP2
```

V. To uninstall wifi virtual coordinator

a. Stop the services:

```
$sudo /etc/init.d/virtualcoordinatorApp stop
$sudo /etc/init.d/virtualcoordinatorWebserver stop
$sudo /etc/init.d/virtualcoordinatorFTP2 stop
```

b. Remove the links we created.

```
$sudo rm /etc/rcX.d/S98virtualcoordinatorApp
$sudo rm /etc/rcX.d/S97virtualcoordinatorWebServer
$sudo rm /etc/rcX.d/S96virtualcoordinatorFTP2
$sudo rm /etc/init.d/virtualcoordinatorApp
$sudo rm /etc/init.d/virtualcoordinatorWebServer
$sudo rm /etc/init.d/virtualcoordinatorFTP2
```

c. Make a backup of the settings and recorded data.

```
$sudo cp -av /usr/bin/wifi_vc/Sys /tmp/Sys
$sudo rm -rf /usr/bin/wifi_vc
$sudo mkdir -p /usr/bin/wifi_vc/
$sudo cp -av /tmp/Sys /usr/bin/wifi_vc/Sys
```

VI. To re-install wifi virtual coordinator

- a.** Unzip the tarball.

```
$tar -zxvf wifi_vc_v1_00g.tar.gz
```

- b.** Copy the unzipped directory to /usr/bin/wifi_vc

```
$sudo cp -av wifi_vc /usr/bin
```

The wifi virtual coordinator is installed.