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## Linux (and RaspberryPi) PC-DC Server with Auto-connect Guide!

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**Petri152**

undertow

Posts: 31

#1 » Sat Sep 26, 2015 3:47 pm

QPOSTING.PHP?MODE=QUOTE&amp;F=3&amp;P=3704&amp;SID=DCD786A81ASCI

**Hello, Everyone!**

Earlier in the week I stumbled upon a video showing a Dreamcast PC-DC Server running on a RaspberryPi and a python script used to help bridge the connection. The uploader did not include instructions on how to use his software (however he did promise that he would as his software is a work in progress). I decided to make my own version of his software based off of his source code. His software uses a series of AT commands and PPP to connect the modem but mine uses PPP and the Mgetty method.

Here is the video I made to show off the software:

Dreamcast Linux/RaspberryPi PC-DC Auto-Connect Script |...



### *Instructions:*

If you already have a PC-DC Server that works using the Mgetty method, you can skip to Step 13

I will be using Ubuntu 15.04, everything will be done in a Terminal, however, if your machine is headless SSH will work just fine.

**Step 1:** Open a Terminal or SSH session.

**Step 2:** Install mgetty and ppp.

CODE: [SELECT ALL \(#\)](#)

```
sudo apt-get install mgetty ppp
```

**Step 3:** Erase the file /etc/ppp/options and then touch it.

CODE: [SELECT ALL \(#\)](#)

```
sudo rm /etc/ppp/options && sudo touch /etc/ppp/options
```

**Step 4:** Open elevated GNU Nano and point it to the file /etc/ppp/options

CODE: [SELECT ALL \(#\)](#)

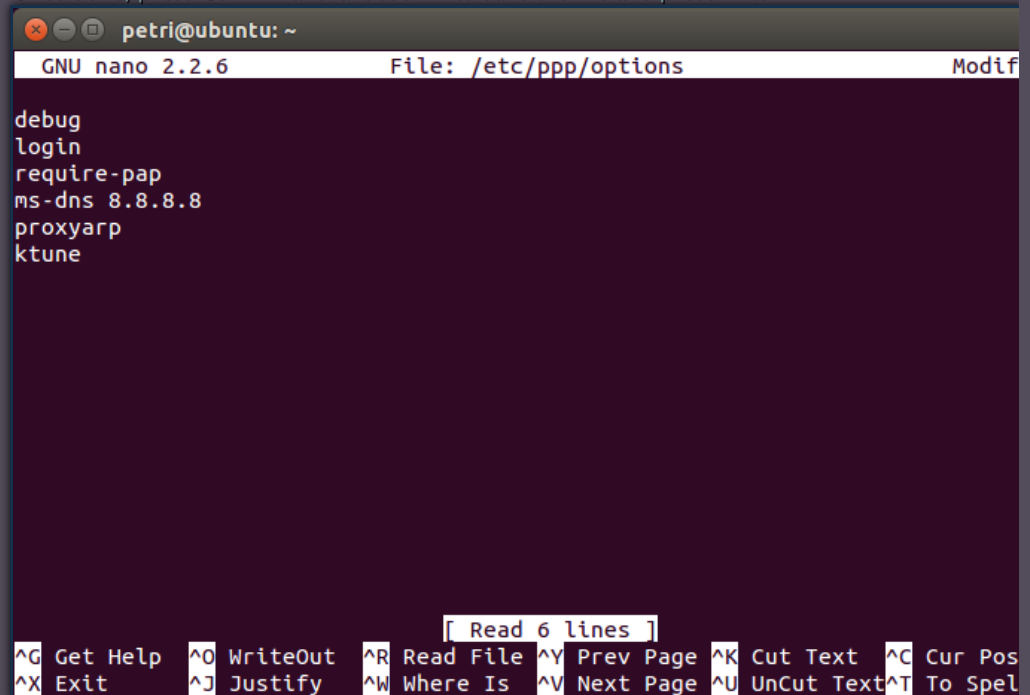
```
sudo nano /etc/ppp/options
```

**Step 5:** Paste in the following (the line "ms-dns 8.8.8.8" is asking for a DNS server IP and 8.8.8.8 is the Google DNS server, if you have something against Google or are running your own DNS just replace the "8.8.8.8" with whatever you want):

CODE: [SELECT ALL \(#\)](#)

```
debug
login
require-pap
ms-dns 8.8.8.8
proxyarp
ktune
```

Once done, press Ctrl + X and choose "Y" to save the file and press Enter.



```
petri@ubuntu: ~
GNU nano 2.2.6 File: /etc/ppp/options Modif

debug
login
require-pap
ms-dns 8.8.8.8
proxyarp
ktune

[ Read 6 lines ]
^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text   ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is   ^V Next Page  ^U UnCut Text ^T To Spel
```

(<http://i.imgur.com/wSFqBh5.png>)

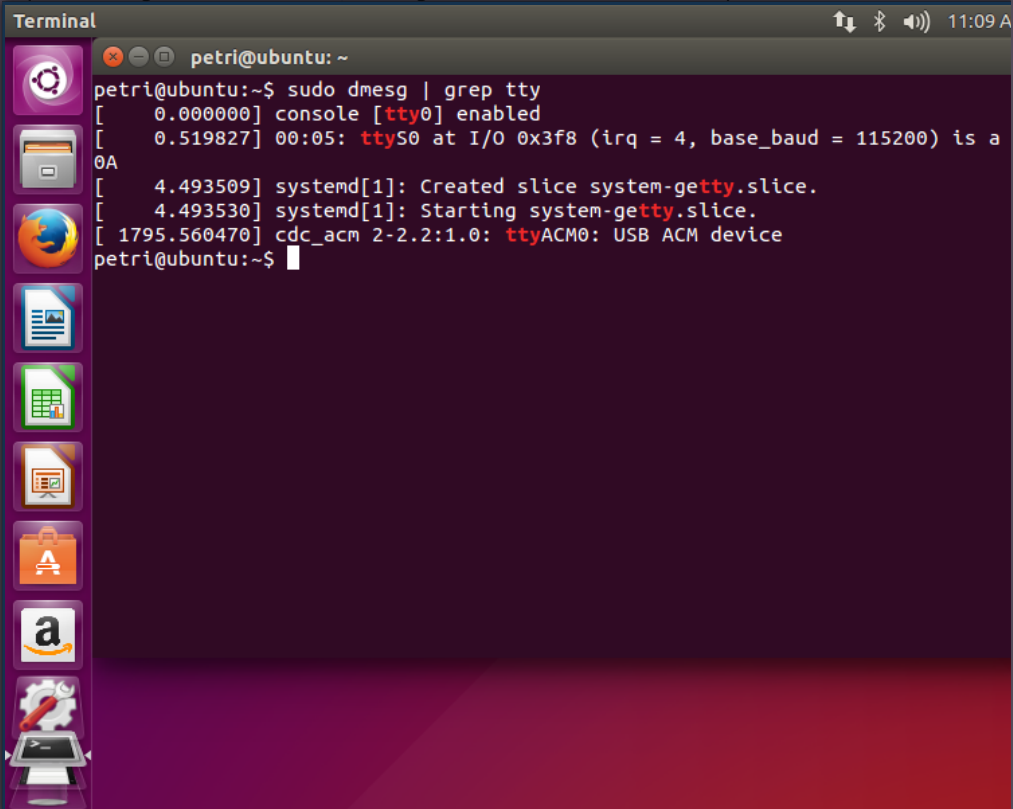
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```
sudo dmesg | grep tty
```

Your modem is usually the last line.

Write it down.

If you're using a USB modem there is a good chance that it will be "ttyACM0"



```
petri@ubuntu:~$ sudo dmesg | grep tty
[ 0.000000] console [tty0] enabled
[ 0.519827] 00:05: ttyS0 at I/O 0x3f8 (irq = 4, base_baud = 115200) is a
0A
[ 4.493509] systemd[1]: Created slice system-getty.slice.
[ 4.493530] systemd[1]: Starting system-getty.slice.
[ 1795.560470] cdc_acm 2-2.2:1.0: ttyACM0: USB ACM device
petri@ubuntu:~$
```

(<http://i.imgur.com/cYkkKp.png>)

Step 7: Run ifconfig and write down some numbers.

CODE: [SELECT ALL \(#\)](#)

```
sudo ifconfig
```

You will need to write down what you see under "inet addr:" and "Mask:" There is a good chance that your mask is 255.255.255.0

```

eth0 addr: fe80::20c:29ff:fe58:3d52/64 Scope:Link
inet6 addr: fd00:fc:8d35:bc32:e0e4:b922:6587:1b49/64 Scope:Global
inet6 addr: fd00:fc:8d35:bc32:20c:29ff:fe58:3d52/64 Scope:Global
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:2654 errors:0 dropped:0 overruns:0 frame:0
TX packets:1110 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:2294553 (2.2 MB) TX bytes:158568 (158.5 KB)

lo
Link encap:Local Loopback
inet addr:127.0.0.1 Mask:255.0.0.0
inet6 addr: ::1/128 Scope:Host
UP LOOPBACK RUNNING MTU:65536 Metric:1
RX packets:614 errors:0 dropped:0 overruns:0 frame:0
TX packets:614 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:64299 (64.2 KB) TX bytes:64299 (64.2 KB)

petri@ubuntu:~$ █

```

(<http://i.imgur.com/a7z6mac.png>)

**Step 8:** Remember the "tty\*\*\*#" value from earlier? Well, now we need it. We need to create a file called /etc/ppp/options.\*\*\* but you need to replace the "\*\*\*" with the value from Step 6, in my case and the case with most USB modems it would be:

CODE: [SELECT ALL \(#\)](#)

```
sudo nano /etc/ppp/options.ttyACM0
```

Once we're in the file you need to enter some numbers. You need the IP address of the computer you're running this on, which we got from Step 7.

You also need to think of an IP address that is not being used on your network. A safe bet is usually the first 3 sets of digits from your computer IP address and 200 after it, for example: my computer's IP address is 192.168.0.25, so I would use 192.168.0.200 for the Dreamcast. You need the address that we got under "Mask:" in Step 7.

So once you get all of your numbers together it will be in this format:

computerIP:dreamcastIP

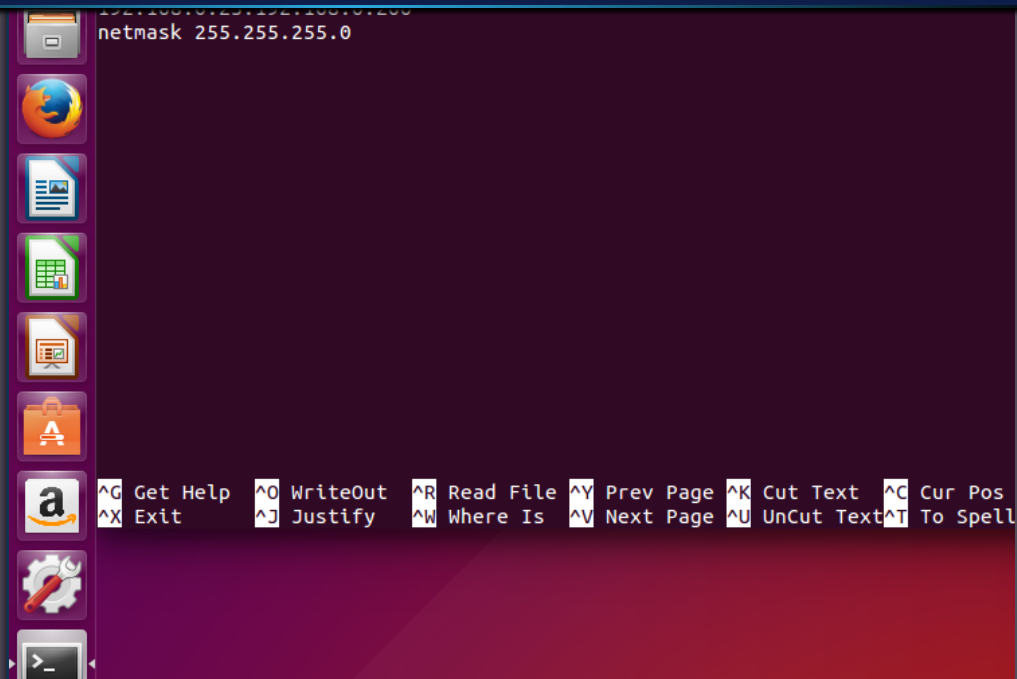
netmask Mask

So in my case it would be:

CODE: [SELECT ALL \(#\)](#)

```
192.168.0.25:192.168.0.200
netmask 255.255.255.0
```

Now save the file and close nano with Ctrl + X.



(<http://i.imgur.com/JTziKz4.png>)

**Step 9:** We need to open /etc/ppp/pap-secrets in nano and add a line.

CODE: [SELECT ALL \(#\)](#)

```
sudo nano /etc/ppp/pap-secrets
```

Once the file is open go all of the way to the bottom and add this line:

CODE: [SELECT ALL \(#\)](#)

```
dream * dreamcast *
```

**Step 10:** Now we need to create a user account on the system for the dreamcast to use when accessing the Internet.

Run this command:

CODE: [SELECT ALL \(#\)](#)

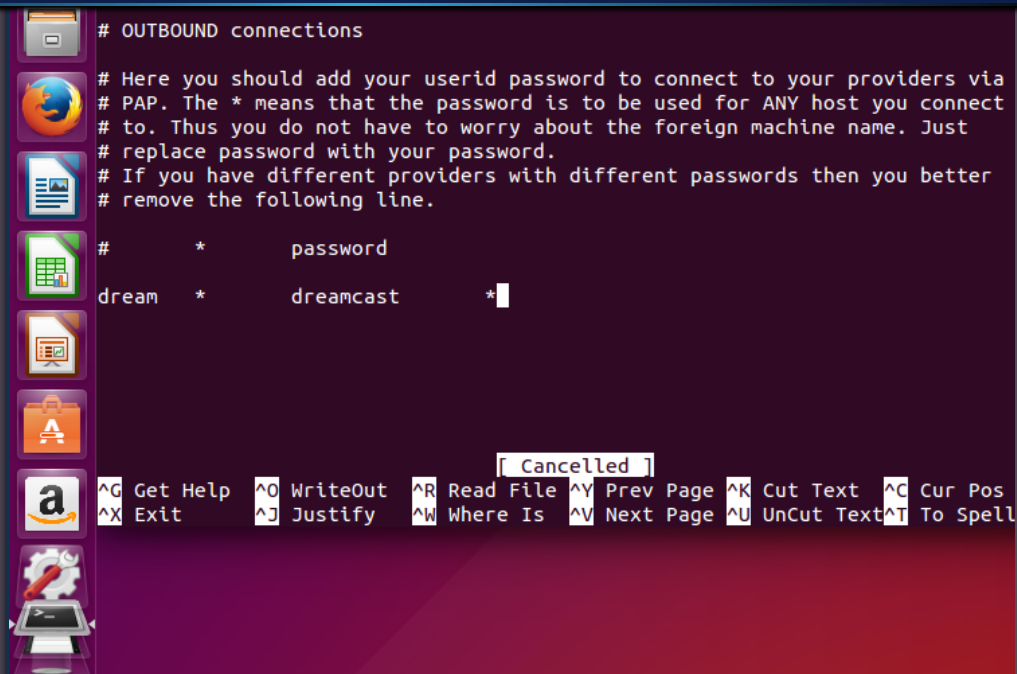
```
sudo useradd -G dialout,dip,users -c "Dreamcast user" -d /home/dream -g users -s /usr/sbin/pppd dream
```

and then run this:

CODE: [SELECT ALL \(#\)](#)

```
sudo passwd dream
```

and then enter "dreamcast" (without the quotes) when prompted.



(<http://i.imgur.com/rPdf180.png>).

**Step 11:** We need to replace /etc/mgetty/mgetty.config with our own so run this:

CODE: [SELECT ALL \(#\)](#)

```
sudo rm /etc/mgetty/mgetty.config && sudo touch /etc/mgetty/mgetty.config
```

Now open it in nano:

CODE: [SELECT ALL \(#\)](#)

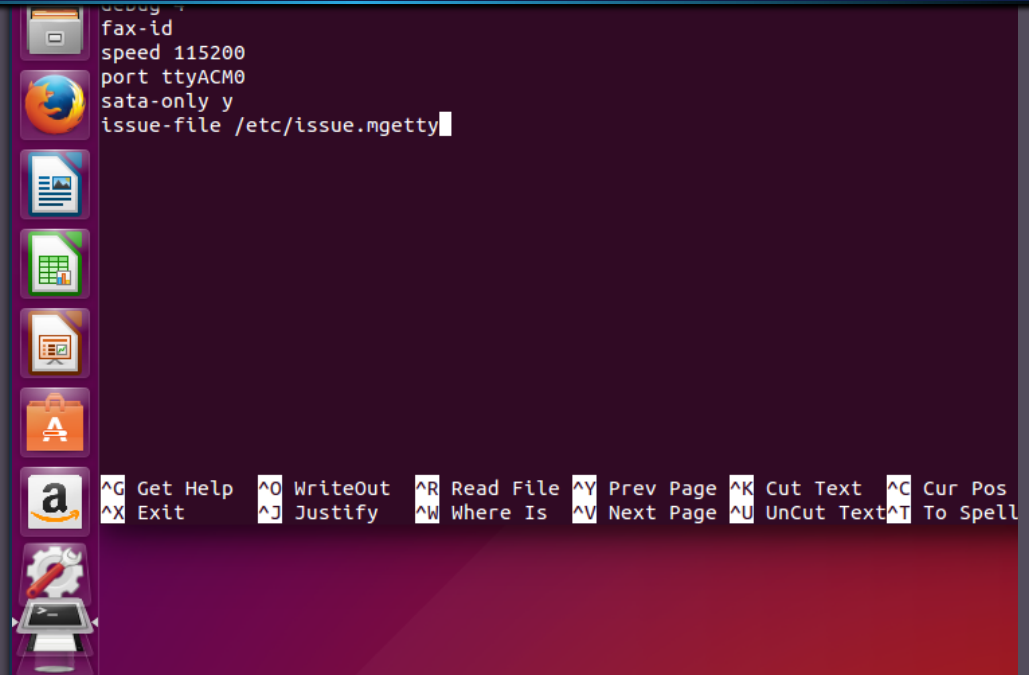
```
sudo nano /etc/mgetty/mgetty.config
```

and paste the following in (replace ttyACM0 with what we found in Step 6):

CODE: [SELECT ALL \(#\)](#)

```
debug 4
fax-id
speed 115200
port ttyACM0
data-only y
issue-file /etc/issue.megetty
```

Now close nano and save the file with Ctrl + X.



(<http://i.imgur.com/G0r4zpl.png>).

#### Step 12: We're almost there!

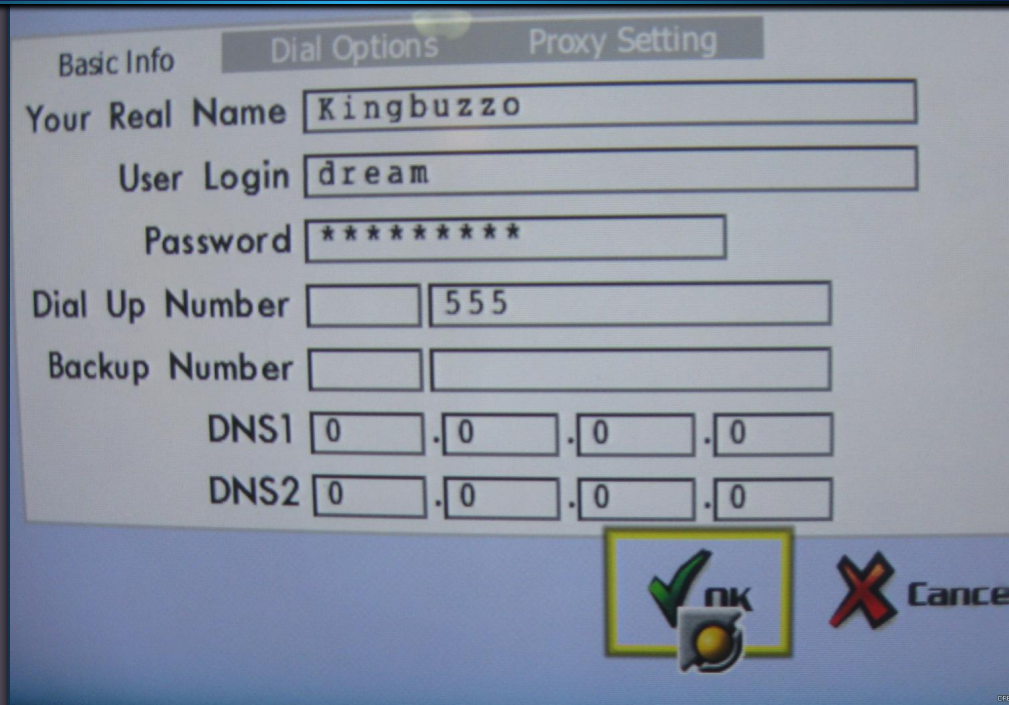
Fire up your Dreamcast with Planetweb 2.6 or dreamkey.

Go to Start -> Options -> Internet Connections

Configure the following:

“		”
Real Name:	Can be anything	
User Login:	dream	
Password:	dreamcast	
Dial Up Number:	555	
Backup number:	(leave blank)	
DNS1:	0.0.0.0	
DNS2:	0.0.0.0	



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The screenshot shows the 'Basic Info' tab of a dial-up configuration window. The fields are filled as follows:

- Your Real Name: Kingbuzzo
- User Login: dream
- Password: \*\*\*\*\*
- Dial Up Number: [ ] 555
- Backup Number: [ ] [ ]
- DNS1: 0 . 0 . 0 . 0
- DNS2: 0 . 0 . 0 . 0

At the bottom right, there are two buttons: a green checkmark button labeled 'OK' and a red 'X' button labeled 'Cancel'.

(<http://i.imgur.com/2KRv4bW.jpg>)

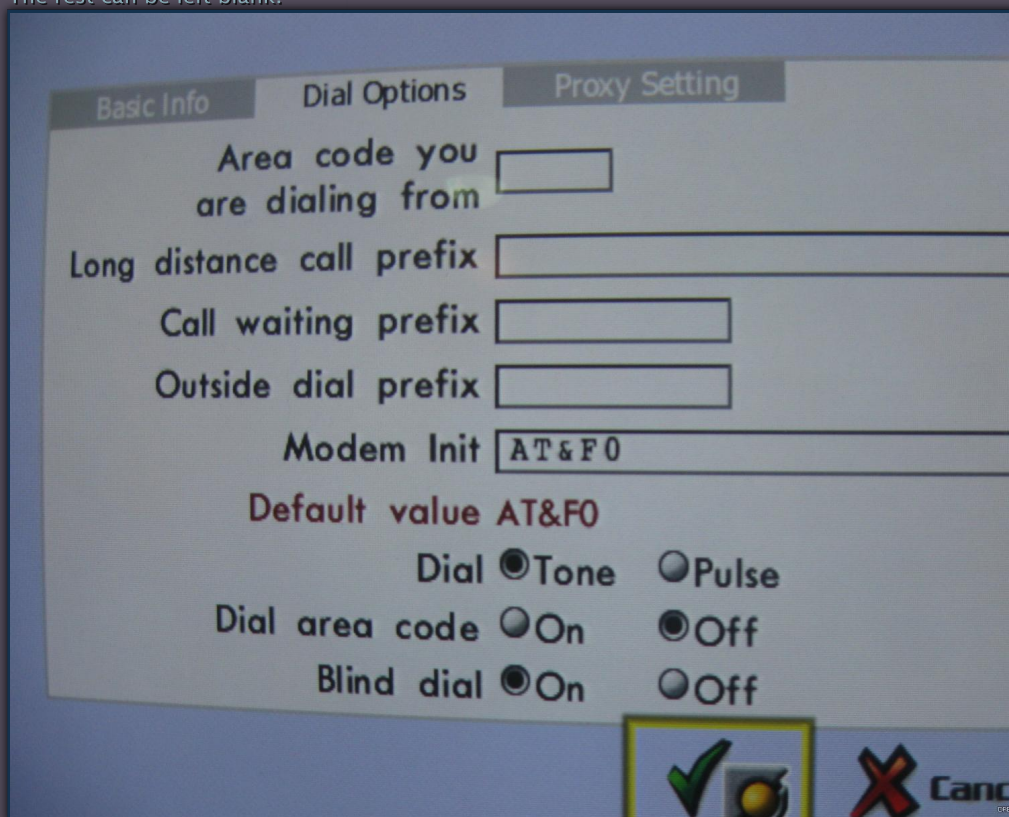
On the Dial Options page set up this:

“

Modem Init: AT&F0  
Dial area code: Off  
Blind Dial: On

”

The rest can be left blank.

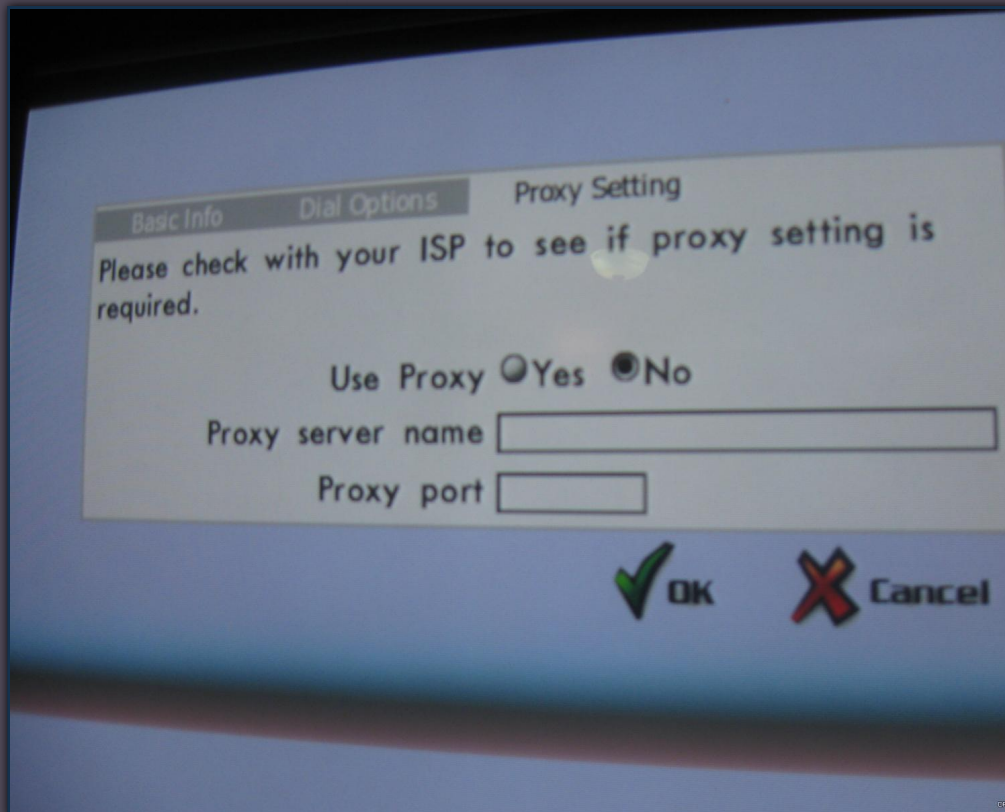


The screenshot shows the 'Dial Options' tab of a dial-up configuration window. The fields and options are as follows:

- Area code you are dialing from: [ ]
- Long distance call prefix: [ ]
- Call waiting prefix: [ ]
- Outside dial prefix: [ ]
- Modem Init: AT&F0
- Default value AT&F0
- Dial: ☒ Tone ☐ Pulse
- Dial area code: ☐ On ☒ Off
- Blind dial: ☒ On ☐ Off

At the bottom right, there are two buttons: a green checkmark button labeled 'OK' and a red 'X' button labeled 'Cancel'.





(<http://i.imgur.com/81UfMSQ.jpg>)

**Step 13:** Now we can try it out!

Download the python script attached to this post (or from this mirror: <https://www.mediafire.com/?aieciq47ws1y67> (<https://www.mediafire.com/?aieciq47ws1y67>)) and put it somewhere you can remember on your PC-DC Server. I put it in my home folder. Change directory to where it is using cd.

**CODE:** [SELECT ALL \(#\)](#)

```
cd /put/directory/here/
```

We need to make it executable:

**CODE:** [SELECT ALL \(#\)](#)

```
chmod +x dreampi2.py
```

Now the way it is set up is that the default modem is ttyACM0, if your modem is different you need to nano into dreampi2.py

**CODE:** [SELECT ALL \(#\)](#)

```
nano dreampi2.py
```

and change the line

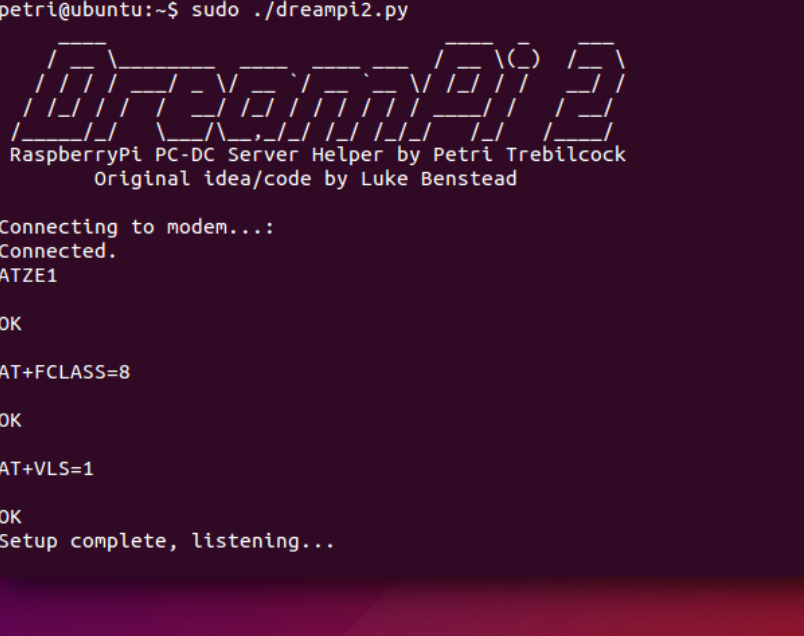
```
MODEM_DEVICE = "ttyACM0"
```

to whatever your modem is (Step 6):

```
MODEM_DEVICE = "modem_goes_here"
```

CODE: SELECT ALL (#)

CODE: SELECT ALL (#)



Terminal

petri@ubuntu: ~

```
petri@ubuntu:~$ sudo ./dreampi2.py
```

RaspberryPi PC-DC Server Helper by Petri Trebilcock  
Original idea/code by Luke Benstead

Connecting to modem...:  
Connected.  
ATZE1  
OK  
AT+FCLASS=8  
OK  
AT+VLS=1  
OK  
Setup complete, listening...

Attached to this post!

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-Petri

## ATTACHMENTS

[dreampi2.zip \(./download/file.php?id=2455&sid=dcd786a8d05cd24ce9530be7ec6a058e\)](#)*DreamPi2 Version 1*

(1.55 KiB) Downloaded 312 times

#2 » Sun Sep 27, 2015 1:18 am

Reserved for future use.

**Petri152**

undertow

Posts: 31

#3 » Sun Sep 27, 2015 8:30 am

Hi!

I'm glad you've found my code useful! I was wondering though if you could call your version something else? I'm still working on the Dreampi software and when I release it things will get confusing 😊

I haven't had a chance to look at your code yet, but I was wondering what the advantage of using mgetty was?

**kazade**

Developer

Posts: 231

#4 » Sun Sep 27, 2015 12:15 pm

No real advantage to it except that it is the most popular method to set up a PC-DC server and the script would integrate nicely with most people's setups. Also, I'll look into changing the name, it'll take a day or two though.

**Petri152**

undertow

Posts: 31

#5 » Thu Oct 01, 2015 5:33 am

Very cool to see this project working. Is there any way to have the script autorun on bootup, basically making a self contained device?

**Nico0020**

Power Stone

Posts: 594

#6 » Thu Oct 01, 2015 12:09 pm



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Posts: 1228

So far I have win98 dc pc vm, ubuntu 10.4 dc pc vm, (working on a windows nashville one)

Here is a question...

What if we simply modify the python script with:  
the string for our modem ex:(ttyS0)

Then we run py2exe and build a windows executable.

Is this even something that could work?

What limitations in windows would need to fixed in order for the exe to work properly?

Are there libraries we can add to windows to allow support for this modified version?

What about building a similar script that can run in a windows environment?

There has to be similar functions and or modifications that could be made to allow this to work.

Even if it is convoluted and would require multiple scripts, modifications etc.

I'm not a fanboy of one particular OS.

I like MAC OSX 10.1-10.7, Windows (\*\*Not 8 or 10), Ubuntu Linux, iOS, Android.

There are so many OSes to choose from.

They all have their own unique purposes.

But, lets be honest here...

The majority of computers run Windows.

The majority of software is for Windows.

(Yes, there are 3rd party apps, open source stuffs, etc..)

But, you eventually hit a wall and realize that you have to run windows for certain applications, software, games, etc.

There is a huge gap with specific software not existing in any other platform except windows.


**ABOhiccups**

rebel

Posts: 16

#7 » Tue Aug 02, 2016 10:15 am

I'm using Manjaro (based of Arch Linux).

I enter this command.

 CODE: [SELECT ALL \(#\)](#)

```
sudo useradd -G dialout,dip,users -c "Dreamcast user" -d /home/dream -g users -s /usr/sbin/pppd dream
```

I get this.

 CODE: [SELECT ALL \(#\)](#)

```
useradd: group 'dialout' does not exist
useradd: group 'dip' does not exist
```

EDIT: In order to get this command to work on Arch Linux / Manjaro. Enter the following commands.

 CODE: [SELECT ALL \(#\)](#)

```
sudo groupadd dialout
```

 CODE: [SELECT ALL \(#\)](#)

```
sudo groupadd dip
```

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CODE: SELECT ALL (#)

su

Then enter this command.

CODE: SELECT ALL (#)

nano /etc/sudoers

#8 » Tue Aug 16, 2016 6:26 pm

Edit: NVM, I've figured it out.



**blatz42**

rebel

Posts: 17

#9 » Mon Sep 26, 2016 7:05 pm

I recommend Linux Lite 2.0 32-Bit in order for this to work.



**ABOhiccups**

rebel

Posts: 16

#10 » Wed Oct 12, 2016 6:15 pm

Thank you for providing the script. I have tried methods to get mgetty to auto answer the line but no technique that I tried worked. It is nice that the script is able to automatically answer the line with my setup.



**Ryochan7**

Teriaaaaa

Posts: 91

There are a couple of problems that keep the script from being Python 3 compatible but I usually use Python 2.7.x anyway.

Edit: I tweaked the script and made a custom version. Some changes in commands, bug fixes for responses, and Python 3 compatibility. <https://bitbucket.org/Ryochan7/dreampi2-custom> (<https://bitbucket.org/Ryochan7/dreampi2-custom>)

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by **scarface\_one** » Wed Dec 23, 2020 5:07 pm » in Online

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1933

by **scarface\_one** Thu Dec 24, 2020 11:38 am



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by **GameBreaker64** » Thu Feb 25, 2021 9:07 am » in Online

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1043

by **GameBreaker64** Thu Feb 25, 2021 9:07 am



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by **MasoElCaveman** » Fri Feb 19, 2021 4:17 am » in Online

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1392

by **MasoElCaveman** Sat Feb 20, 2021 4:03 pm

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