PPP / WvDial Guide
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v1.0, June 23, 2000

TABLE OF CONTENTS

1. Introduction

- 1.1 Copyright & Disclaimer
- 1.2 Requirements
- 1.3 Synopsis

2. WvDial

- 2.1 What is WvDial?
- 2.2 Get WvDial
- 2.3 Installation

3. Configuration

- 3.1 Detect Modem
- 3.2 Account Information
- 3.3 DNS Nameservers
- 3.4 Testing Connection

4. Finishing Up / Tweaking

- 4.1 Basic Security
- 4.2 Adding Multiple Accounts
- 4.3 Make Your Modem Silent
- 4.4 Send WvDial to the Background
- 4.5 Log WvDial's Output

5. Troubleshooting

- 5.1 Disconnection Right After Modem "Handshake"
- 5.2 What About PCI / WinModems?
- 5.3 My Modem Won't Respond!

6. Epilogue

- 6.1 Further Reading

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1. Introduction

1.1 Copyright & Disclaimer

This document is available for free, and, while I have done the best I can

to make it accurate and up to date, I take no responsibility for any problems you may encounter resulting from the use of this document.

1.2 Requirements

This document assumes that you've already successfully installed your favourite Linux distribution, and that you have physically installed your ISA hardware modem (NOT a WinModem) correctly. It is also required that you know your way around with basic commands (tar, cp, mv, rm, etc.), and that you know how to use a text editor (we use pico). This guide is based off of the configuration of an x86-based architecture (386/486/586/686).

1.3 Synopsis

The first question out of almost every new Linux user is, "How do I connect to the Internet?" Manually configuring a PPP script can be a daunting task, and can be downright confusing to some people. With the aid of the program WvDial, we can get you connected to the Internet within a matter of minutes, and it is by far the easiest way I've found to get connected.

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2. WvDial

2.1 What is WvDial?

WvDial is an "Intelligent PPP Dialer" that runs dialup networking for Linux without the use of chat scripts. WvDial is a very powerful program, yet it remains simple and easy to configure. It will automatically detect your modem and is compliant with almost all ISPs .

2.2 Get WvDial

WvDial is freely available in a few different forms including source, RPM, and DEB packages. Some major Linux distributions have also packaged the WvDial program into their releases, these include Debian and RedHat. So check to see if you already have it installed. For this document we will cover installation from RPM as well as from source.

For this example, please download the source file to /tmp/wvdial-1.41.tar.gz or the RPM to /tmp/wvdial-1.41-3.i386.rpm

Source for WvDial is available at:
http://www.linuxlookup.com/html/guides/wvdial-1.41.tar.gz

RPM for WvDial is available at:
http://www.linuxlookup.com/html/guides/wvdial-1.41-3.i386.rpm

2.3 Installation

Installation from RPM:

As user 'root' execute the following command to install the RPM:

```
rpm -Uvh /tmp/wvdial-1.41-3.i386.rpm
```

If you didn't receive any warning, the install should be complete, and you should be able to continue onto Section 3 and the configuration stage.

Installation from source:

We'll now move the source tarball (wvdial-1.41.tar.gz) from /tmp to our source archive directory, which is /usr/src. Execute the following:

```
mv /tmp/wvdial-1.41.tar.gz /usr/src/
```

Change directories into /usr/src/ (cd /usr/src) and execute the following command to decompress the source tarball:

```
tar zxvf wvdial-1.41.tar.gz
```

A new directory called /usr/src/wvdial-1.41/ has been created, and we need to change into it. We now need to compile and install the program. Execute the following commands:

```
make
make install
```

If you don't receive any errors you should have WvDial properly installed on your system.

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3. Configuration

3.1 Detect Modem

WvDial can automatically probe and configure the correct settings for most modems, and generates the appropriate configuration file. As user 'root' execute the following:

```
/usr/local/bin/wvdialconf /etc/wvdial.conf
```

On my system the output looks something like this:

```
Scanning your serial ports for a modem.

Port Scan<*1>: Ignoring ttyS0 because /dev/mouse is a link to it.
ttyS1<*1>: ATQ0 V1 E1 -- OK
ttyS1<*1>: ATQ0 V1 E1 Z -- OK
ttyS1<*1>: ATQ0 V1 E1 S0=0 -- OK
ttyS1<*1>: ATQ0 V1 E1 S0=0 &C1 -- OK
ttyS1<*1>: ATQ0 V1 E1 S0=0 &C1 &D2 -- OK
```

```
    ttyS1<*1>: ATQ0 V1 E1 S0=0 &C1 &D2 S11=55 -- OK
    ttyS1<*1>: ATQ0 V1 E1 S0=0 &C1 &D2 S11=55 +FCLASS=0 -- OK
    ttyS1<*1>: Modem Identifier: ATI -- 56000
    ttyS1<*1>: Speed 2400: AT -- OK
    ttyS1<*1>: Speed 4800: AT -- OK
    ttyS1<*1>: Speed 9600: AT -- OK
    ttyS1<*1>: Speed 19200: AT -- OK
    ttyS1<*1>: Speed 38400: AT -- OK
    ttyS1<*1>: Speed 57600: AT -- OK
    ttyS1<*1>: Speed 115200: AT -- OK
    ttyS1<*1>: Max speed is 115200; that should be safe.
    ttyS1<*1>: ATQ0 V1 E1 S0=0 &C1 &D2 S11=55 +FCLASS=0 -- OK
    Port Scan<*1>: S3

    Found a modem on /dev/ttyS1.
    ttyS1<Info>: Speed 115200; init "ATQ0 V1 E1 S0=0 &C1 &D2 S11=55
+FCLASS=0"
```

If your modem is detected successfully, the proper settings should be put into the configuration file, which we will edit next.

3.2 Account Information

Now that we've gotten our modem configured we need to setup the information for your ISP account. Lets edit the configuration file:

```
    pico /etc/wvdial.conf
```

For now we really only need to edit these three lines:

```
    ; Phone = <Target Phone Number>
    ; Username = <Your Login Name>
    ; Password = <Your Password>
```

We need to remove the comment tags (the semi-colons) and fill in the appropriate information. An example of a completed configuration file is:

```
    [Dialer Defaults]
    Baud  = 115200
    Modem = /dev/ttyS1
    Init1 = ATZ
    Init2 = ATQ0 V1 E1 S0=0 &C1 &D2 S11=55 +FCLASS=0
    Phone = 555-5555
    Username = jonny5
    Password = mypassword
```

Fill in your correct ISP information and you're almost ready to connect. Do not worry about your passwords being in plain text. The file wvdial.conf is readable only by the user root.

3.3 DNS Nameservers

For Internet IP addresses to resolve, your computer has to be able to

connect to a DNS server at your Internet Service Provider. The IP addresses of these servers can be obtained from your previous Windows(r) settings, from your ISP in the service agreement or from the technical support people.

To configure DNS we must edit /etc/resolv.conf and add the correct settings. In this example, our ISP will be "myisp.com" and the DNS servers are 1.2.3.4 and 1.2.3.5. Execute the following command:

```
pico /etc/resolv.conf
```

Now add these lines, and change the information to coincide with your ISP's settings.

```
search myisp.com
nameserver 1.2.3.4
nameserver 1.2.3.5
```

Now hit CTRL+O to save and CTRL+X to exit. Now that configuration is complete, we're ready to try it out.

3.4 Testing Connection

Now that everything is installed & configured it's time to give it a try. Lets give it a whirl. As user root, execute:

```
/usr/local/bin/wvdial
```

Unlike a lot of PPP dialers/scripts, wvdial takes up an entire terminal window and only exits if you get a fatal error or if you quit/disconnect by pressing CTRL+C. If you would like it to run in the background without taking up an entire terminal window, we show you how in Section 4.

If you connect successfully without getting disconnected then CONGRATULATIONS! Try to surf the web or IRC to make sure everything's working properly. If you get disconnected unexpectedly make sure your password/login/phone number is correct in the configuration file. If that doesn't help, head over to Section 5 and do some troubleshooting.

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4. Finishing Up / Tweaking

4.1 Basic Security

Well, now that we've got connected to the Internet, we want to keep our Linux box safe and secure. We won't go very in depth into security here, that's for another guide, but we'll do our best to make your machine semi-secure.

First off we want to stop other people from remotely connecting to our computer. We need to add a line to /etc/hosts.deny to say who we want to deny access to. Execute the following:

```
echo "ALL:ALL" >> /etc/hosts.deny
```

Now, we still want to be able to use everything locally, so we need to allow all local users access. Execute the following:

```
echo "ALL:LOCAL" >> /etc/hosts.allow
```

This should at least hamper attempts of people if they try and break in, but it is by NO MEANS all the security you will need.

4.2 Adding Multiple Accounts

The question that is often asked is, "What if I use more than on ISP?" Well, the folks who made WvDial understand and have made it quite easy to use more and one Internet provider . The default provider information is placed under the "[Dialer Defaults]" heading, for our second provider we will create a "[Dialer ISP2]" heading. The values in the default information will still be used unless it is replaced in this second heading. We only need to change 3 stings of information for our second provider and the rest can stay the same. Add these lines to the bottom of /etc/wvdial.conf with the appropriate information:

```
[Dialer ISP2]
Phone = 577-4455
Username = jon5
Password = mypassword
```

Now that everything setup, we connect using this account. Execute:

```
/usr/local/bin/wvdial ISP2
```

4.3 Make Your Modem Silent

Well, it's 3am and you just got disconnected from the Internet and everyone except you is sleeping. You WANT to reconnect, but you don't want to wake up the entire house with the sound of the modem's handshake. We have your answer right here. As in the above section, we need to create another heading for our "quite" mode. Add the following lines to /etc/wvdial.conf:

```
[Dialer quiet]
Init3 = ATM0
```

To use WvDial and your default account in quiet mode, execute the following:

```
/usr/local/bin/wvdial quiet
```

Perhaps you want to use your second Internet provider. To do so, execute the following:

```
/usr/local/bin/wvdial ISP2 quiet
```

This should keep the rest of the house happily sleeping while you surf through the night. =)

4.4 Send WvDial to the Background

"I don't want to have WvDial using up one of my precious terminals!" This was also one of my first statements, and a problem that can also be easily remedied. We are going to make a few little shell scripts to make things easier for us. These scripts need to be made as user root.

Use pico and make the following files and save them under the appropriate filenames.

This is what we will use instead of the "wvdial" command to connect:

Filename:

```
/sbin/ppp-on
```

Contents:

```
#!/bin/sh
PATH=/usr/local/bin:/bin:/usr/bin
wvdial $* >/dev/null 2>&1 &
```

This is what we will use to disconnect:

Filename:

```
/sbin/ppp-off
```

Contents:

```
#!/bin/sh
PATH=/usr/local/bin:/bin:/usr/bin
echo -n "Disconnecting... "
killall wvdial
sleep 2
echo -e "\a\c"
echo "Complete!"
```

Now we just need to set the correct permissions for these files. Execute the following commands:

```
chmod 700 /sbin/ppp-on
chmod 700 /sbin/ppp-off
```

To connect to the Internet we can now simply run the command "ppp-on" and "ppp-off" to disconnect. If you want to use other options like "quiet" mode or perhaps another Internet provider you can simply add the option. For example:

```
ppp-on quiet
```

4.5 Log WvDial's Output

Well, now that you've sent WvDial to the background you want to make sure everything's going ok behind the scenes. Lets setup some logging that will log the current session, and what we would have normally seen in the terminal window. First we will create the log file by executing the following:

```
touch /var/log/wvdial.log
```

Now we need to setup the appropriate permissions, run:

```
chmod 600 /var/log/wvdial.log
```

Now, we need to edit the file "ppp-on" which we created in Section 4.4 so that logging will take place.

Use pico to change the line that is currently "wvdial $* >/dev/null 2>&1 &" to the following:

```
wvdial $* >/var/log/wvdial.log 2>&1 &
```

Now CTRL+O to save and CTRL+X to quit. Logging should be setup properly now, so lets test it out. Try watching your logs while you connect with the following command:

```
ppp-on | tail -f /var/log/wvdial.log
```

You should be able to watch all of the things that are happening and any errors that occur. To stop watching these logs hit CTRL+X.

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5. Troubleshooting

5.1 Disconnection Right After Modem "Handshake"

This is a common problem of AT&T users (me included). The problem is when you go through the process of getting connected, the "handshake", your login and password are accepted and everything seems great. Then "click", you get disconnected for no apparent reason. In most cases this can be easily remedied.

Some ISP's have a weird way of connecting, and actually give you a login prompt but only work if you start PPP rather than logging in. To get this to work we need to stop WvDial from trying to interpret these prompts. Add the following line under the correct heading in your /etc/wvdial.conf file:

```
Stupid mode = 1
```

Save, and try connecting again. This should deal with it.

5.2 What About PCI / WinModems?

WinModems are almost explicitly not supported by Linux with the exception of a very few who have had drivers produced for them. See http://www.linmodems.org for more information on using WinModems in Linux.

A lot of PCI modems are also WinModems. Those PCI modems that are not WinModems are very tricky to get working, if you can get them to work at all. They are far beyond the scope of this guide.

5.3 My Modem Won't Respond!

First of all, make sure you don't have a WinModem. You can check this with the model # at the manufacturer's website or on the product's box.

You might also have a Plug-n-Play enabled modem that will require the use of tools such as "isapnptools". This is beyond the scope of this guide.

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6. Epilogue

6.1 Further Reading

This guide only covers a small area of information in an attempt to get you started. Here are some resources for further reading which we recommend after you get connected:

WvDial Resources:

- WvDial Website (http://www.worldvisions.ca/wvdial/)
- WvDial F.A.Q. (http://home.earthlink.net/~dsb3/wvdial/wvfaq.html)

Guides:

- LinuxLookup Security Guide
- LinuxLookup Firewall Guide/Script

All of these guides can be found at:
http://www.linuxlookup.com/html/main/guides.html