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You are on the move and need to access some files from your office computer. Wouldn't it be nice to dial up your office server and download the files using FTP? You can do just that with a remote dial-in server running on your organization network. In this article, we'll explain how to configure a remote dial-in server in Red Hat Linux using the PPP protocol.

The first step is to install the modem. Plug in the modem serial cable into a spare serial port on your computer. A phone-line should also be connected to your modem. Start Linux and log in as root. You should remain logged in as root throughout the setup process. You should also start the X Windowing system.

Fire up glint, the X interface to the Red Hat Package Manager, and check whether mgetty and PPP packages are installed. mgetty can be found in the Networking/Utilities folder and PPP in the Networking/Daemons folder.

If these packages aren't installed on your system, mount the *PC Quest* CD in `/mnt/cdrom`. Once the CD is mounted, switch over to glint and click on the Available button. Glint should show you a list of available packages arranged in a series of folders. Double click on the Networking folder and then on the Daemons folder. Search for the PPP package, select it and click on the Install button. Glint should now install the PPP package.

Similarly, move to the Networking/Utilities folder, search for the mgetty package and install it.

Okay, now that both PPP and mgetty have been installed, the next step is to configure the two packages. Let's start with mgetty first. Mgetty is a replacement for the standard Unix getty, capable of handling serial connections. The getty process is responsible for the login prompt and getting the login name from the user. Open up the `/etc/inittab` file in your favorite text editor and add

```
V1:2345:respawn:/sbin/mgetty -s 115200 ttyS0
```

at the end. When Linux starts, the init process goes through this file, looking for processes to execute.

The option 2345 tells init to run the mgetty process in the multi-user run levels 2, 3, 4, and 5. The respawn option allows mgetty to restart every time it terminates.

Let's examine the parameters given to mgetty itself. The parameter "-s 115200" directs mgetty to use the serial port at the highest possible speed, 11,5200 bps. Remember that this is the speed at which the computer communicates with the modem. The modem usually talks to other modems at a lower speed. The last parameter, ttyS0 should be used if your modem is connected to the serial port, COM1. If your modem is on COM2, type ttyS1 instead.

Remember that mgetty will lock the modem for its own use. If you wish to use the server for dialing out, you'll have to terminate the mgetty process either manually or through some shell scripts.

Since we plan to use Windows Dialup Networking to connect, it makes sense to enable PAP authentication, that way users don't have to mess with stuff like dial-in scripts.

Edit the file `/etc/mgetty+sendfax/login.config`, and make sure that the line with `"/AutoPPP/"` is uncommented, remove the # mark in front of it, and edit it so that it looks like this:

```
/AutoPPP/ - - /etc/ppp/ppplogin
```

Save the file. Notice that this points to a file called `/etc/ppp/ppplogin`, we need to create this one. It's a small file that has the following contents:

```
#!/bin/sh  
mesg n  
tty -echo  
/usr/sbin/pppd silent auth -chap +pap login
```

Save the file and make it executable:

```
chmod +x /etc/ppp/ppplogin
```

Now create or update the /etc/ppp/options file:

```
-detach  
modem  
lock  
crtcts  
asynmap 0  
netmask 255.255.255.0  
proxyarp  
ms-dns
```

In the above replace with the IP address of your LAN DNS server. In our case, the machine 192.168.1.15 acts as our DNS, so we used:

```
ms-dns 192.168.1.15
```

Create another file /etc/ppp/options.ttyS0 and add the following to it:

:

```
For example, we used ws120.cmil.com:192.168.1.200
```

The hostname can be had by running the hostname command. You could also look into the /etc/HOSTNAME file. The second address is allocated to the remote system. Any unused IP address on your network should do.

Also remember to set PPPD as SUID root as it configures a network interface and manipulates kernel routing tables. All this requires special privileges. To do this, run the command:

```
# chmod +s /usr/sbin/pppd
```

Finally, let update the PAP authentication database. This is simple, we are going to validate users against the standard /etc/passwd, so all you need to do is edit the file /etc/ppp/pap-secrets, and add one line for every IP address you are going to allocate to a dial-in connection. In our setup, /etc/ppp/pap-secrets looks like this:

```
# Secrets for authentication using PAP  
# client server secret IP addresses  
* * "" 192.168.1.200
```

You might add more lines that are identical to the last one shown above, one for every IP address you l be using. That's it. Now run the command "init q" which will re-read the file /etc/inittab and start the required processes. Now, dial-in PPP should be up and running, you can check this on your modem, the DTR light will have come on.

To connect via PPP, dial in from any other system using dial up networking.

To connect from a Win 9x system, go to Dialup Networking in My Computer, select "Make a New Connection", enter some name (such as "Linux dialup"), make sure the correct modem is selected (and optionally configure it), and press Next. Do not select "bring up terminal after dialing" in the modem configuration, it's not required. Nor should you assign a dialup-script.

Enter the telephone number that is attached to your modem, press Next, and then finish the setup. Now right click the newly created connection, go to "Server Types" and disable "Log on to Network", NetBEUI and IPX/SPX Compatible, leaving only "TCP/IP" and "Enable Software Compression" ticked. Click on OK. That's it. Now to connect from the Win 9x machine, double click the new connection, enter your user ID and password (and optionally tell the system to remember your password), click on connect, and your Windows machine will dial into the Linux box, connect, establish PPP, and voila! You are on! Check it out by pointing your browser to your Linux box, you should see the Web pages stored there. Tell your mail client to send and receive mail via the Linux box, and that too works.

While reading this, you might feel that the setup is complex. Don't let this detailed article scare you away. We thought the same but the whole process took us a little less than five minutes, and was far easier than configuring a Win NT RAS server.

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