

Unofficial IRLP Manual

(Troubleshooting Guide)

NOTICE: This document contains information about IRLP codes, programming and other information not for general distribution. Please do not share.

This document is available to IRLP node owners at groups.yahoo.com/group/irlp/files as `unofficialmanual.rtf`, and is also available in pdf format courtesy of K9DC

Last modified September 26, 2003

Purpose:

To supplement the official IRLP resources with information shared by IRLP node owners on <http://groups.yahoo.com/group/irlp> concerning:

- IRLP software files and how the software works
- User-defined variables built into IRLP software
 - User-created custom scripts
- RF hardware and computer hardware used for IRLP
 - Computer tips
- Overview of themes or issues already discussed and/or beaten to death
 - References providing additional information

This isn't so much a manual as it is a collection of email messages from the owners discussion group, organized into topics. It definitely suffers because of this when compared to "real" manual in that it doesn't necessarily do a good job of introducing a topic, then presenting problems and their solutions. Certainly the arrangement and presentation could be better. But part of the reason for this is:

- Sometimes there is not agreement on what causes a problem and what fixes it, so there are multiple points of view.
- Many people want a fix and not a tutorial, but most of the problems encountered require troubleshooting multiple areas, resulting in "If A and B, then try 1 or 2 or 3; if C but not D, then 4 or 5." It is impossible to say "If problem is A, then do B", with keystroke by keystroke fixes.
- Many of the topics are interrelated, so you can't talk about X without bringing up Y and Z, which haven't been discussed yet. For example, audio problems can be due to aumix (software), soundcard problems (hardware), port forwarding, bad wiring, user error, etc.
- Very few people (I'm not one of them) have sufficient understanding to use the info available to write a "real manual".
- When a post to the group needs to be added, it's easier to add the info just by cutting and pasting if that's the way the manual is organized, instead of rewriting a section or several paragraphs if it were in a standard format.

Feel free to send me suggestions or comments, and contributions of new content are very welcome (this is a volunteer effort, after all). If you want to work on improving the manual, that would be great. Corrections or comments at odds with what has appeared on the owners group should first be posted to the owners group for peer review.

What I decided to include and exclude is subjective, and I have inserted personal commentary where I thought it helpful. I am positive this manual contains inconsistencies and errors, some of which just may be serious enough to harm your software or equipment (but hopefully not). Proceed with caution. You get what you pay for.

Credits

Thanks for helping with this unofficial manual:

Dave Cameron VE7LTD, Godfather for all nodes
Nate Duehr WY0X, REF2 and Node 399, Denver
Pete Illmayer VK2YX, node installer,
and

Everyone who has posted to <http://groups.yahoo.com/group/irlp>

Where to start

IRLP References

If you have a question or are trying to resolve a problem you should start looking for answers by first consulting the official IRLP pages:

<http://www.irlp.net/new-install/>
<http://www.irlp.net/faq-owners.html>

If your problem is not addressed in the official pages, try browsing through [this manual](#) (familiarizing yourself with the table of contents can be helpful) as well as:

- The searchable [archived owner messages](#) on <http://groups.yahoo.com/group/irlp>.
- You can learn a lot by reading through the [comment lines in IRLP software files](#).
- If you know the name of the linux file you're looking for, try reading the [man pages](#) by typing “man _____” at a linux command prompt.
- If you're trying to find a file on your computer, try “locate name_of_file”
- If you're looking for text in the IRLP files on your computer but don't know which file(s) it might be found in, search the contents of files in a directory using the [grep](#) command:

```
grep "mystery term" *
```

Linux Resources

You will not be able to administer a linux-based computer with only a Windows or Mac background. It's easier to do serious damage in linux [as user root] than it is in Windows. The small investment in a book on linux will pay for itself many times over in averted frustration. As

Pete VK2YX wrote, "No one in IRLP wants you to become an expert UNLESS you want to become one.. HOWEVER there are a few things you SHOULD learn before you throw your hands up in the air... I personally think we take for granted the amount of time we spent playing with DOS and understanding bits n pieces about Windows...to understand Linux, you need to have the same approach, it will come over time and not without making mistakes !!! The linux how-to's are absolutely SPLENDID. Bookmark the page !! Linux GURU's STILL refer to the how-to's."

- If you're not familiar with linux or unix, please get at least one introductory book published by O'Reilly, Que or IDG.
- VE1FSM recommends a Que publication called Using Linux -- ISBN 0-7897-1623-2, <http://www.quecorp.com>
- WY0X recommends "The Purple Book" -- actually called Unix System Administration Handbook by Evi Nemeth as an EXCELLENT Unix resource (and has been for many many years)... now covers differences between Linux, Sun Solaris, HP-UX, and BSD Unix as they come along in the chapters on various system administration topics. ISBN: 0130206016, Publisher: Prentice-Hall. Make sure you get the 3rd Edition, in the purple cover. Everyone used to call this book the "Red Book", after IBM's old system manuals and the color of the 2nd Ed. cover. It's not an inexpensive book... but if you're REALLY interested in having a great all-around Unix reference, this is it.
- KH6GMP says this is another excellent one for researching for Linux new guys: http://www.dsl.org/cookbook/cookbook_toc.html
- From Paul VE3SY: "since most mainstream Linux commands are used in Unix I found the very elementary book UNIX for DUMMIES to be invaluable as a starting point at navigating around the basic command line." However N4JDW found "Linux for Dummies" to be GUI-oriented, which wasn't helpful for IRLP nodes running the text (non-graphic) interface.
- I also recommend that you find a (local) Linux Users Group (LUG) and subscribe to their listserver. You will be amazed how much you can learn just by reading what other linux users are talking about. (<http://www.redhat.com/apps/community/LUG/#lug>)
- WE4B likes: <http://homepage.powerup.com.au/~squadron/linuxmanual.pdf>, <http://www.oreillynet.com/linux/cmd/>, <http://www.ctssn.com/> and <http://linux.ittoolbox.com/>
- IRLP "Tip of the Week" for new linux users: <http://tow.irlp.net>

The answers to most linux questions are thoroughly documented on the internet, so for the most part they won't be addressed again here. Also try searching for files, terms and topics on the internet at

- <http://www.google.com>
- <http://www.linux.org.au/LDP/>
- <http://gibsons.future.easyspace.com/LinuxGuide/>
- <http://www.linuxdoc.org>
- <http://www.unixguide.net/linux/linuxshortcuts.shtml>
- <http://www.simplythebest.net/info/linux.html>
- <http://www.linuxnewbie.org>
- <http://www.linux.org/docs/index.html>
- <http://www.linux.com/learn/>
- <http://rute.sourceforge.net/>

FYI should you need to go back to the installation files:

Self-install script:

<ftp://ftp.irlp.net/pub/install/irlp-install>

Most recent isos and MD5s: <http://megamirror.com/irlp/>

per VE3SY the RH 7.3 software is mirrored at:

Vancouver: http://server1.irlp.net:15427/IRLP_CD_3.05.iso

Toronto: http://server5.irlp.net:15427/IRLP_CD_3.05.iso

Sydney AU: ftp://redhat.irlp.net/pub/irlp/iso/IRLP_CD_3.05.iso

Sydney AU: http://megamirror.com/IRLP/IRLP_CD_3.05.iso

(if a more recent version has been released, use that number, e.g. 3.06, 3.07)

Still have Questions?

If you have already checked this document and the references it provides and have not resolved your problem, post your question to problems@irlp.net or <http://groups.yahoo.com/group/irlp>, and make sure to provide enough info to troubleshoot your problem (exact description of what you were doing when it happened, complete text of any error messages, anything you tried to fix the problem, etc.)

GL es 73, Jim WW4M

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1. IRLP and Linux files (the UPPER.CASE file definitions are originally from VE7LTD but may get my comments incorporated along the way - ww4m)

/home/irlp/local/

active

file is present when a connection is active and lists the node/reflector to which you are connected

calledip

file is present and lists the IP for node to which you placed a connection while the connection is still active. See also connectedip

connectedip

file is present and lists the IP when you receive an incoming call while the connection is still active. See also calledip

enable

file is present when the node is enabled (enabled at boot by default)

hosts

file lists IP addresses associated with nodes and reflectors, updated by irlp crons over ports 15426 and 15427. If for some reason your hosts file is not updating and you don't see these ports open when you run 'ps ax | grep mynetd', restart custom/rc.irlp as root. See also the IRLP setup information regarding open ports and routers.

If that's not the problem, check with your ISP to see if they are blocking port 80 update requests for your IP address. Here's a workaround:

From: David Cameron <DCameron@t...>

Date: Sat Dec 15, 2001 4:32pm

Subject: Re: Hosts file not updating on local machine.

I have a fix for this, but has not been fully tested yet. It is hard to identify the nodes that have proxies....

I have opened up a parallel web server on port 15427, and have changed the code to be "able" to pull from there instead. There will be a flag to help this....

This is what has to be done:

You MUST (as root) add the following to the /home/irlp/custom/environment file

```
export PORT80PROXY=YES
```

The code now looks like: (update script)

```
# Downloads the update file via http
if [ "$PORT80PROXY" = "YES" ] ; then
    lynx -source http://"$BACKUPSERVER":15427/hosts/hosts.update >
        "$RUN"/hosts
else
    lynx -source http://"$BACKUPSERVER"/hosts/hosts.update >
```

fi

Dave Cameron
VE7LTD

From: David Cameron
To: owners@irlp.net ; irlp@yahoogroups.com
Sent: Monday, September 16, 2002 4:40 PM
Subject: Changes to the server/client system.

There are going to be changes to the way your nodes will obtain the IP address of the nodes you call.

With the rapid growth of the system, this is step 1 in allowing massive expansion to well over 99 000 nodes (which is what I am aiming for).

The new system is called irlp_bind (BIND is the linux equivalent to Microslop DNS). This is a custom refined system which basically returns an IP address instantly when requested, instead of reading it from your local hosts file.

Here are the advantages:

1. If a node's IP is changing rapidly, the system can track it much faster by instead sending the update to 5 servers, and not to the whole system.
2. The hosts file will still exist... However, your node will only download it once it finds a discrepancy between the hosts file and what irlp_bind says. So if ALL the servers go down (not bloody likely), you will still have a valid hosts file to pick up IPs from.
3. There are 5 servers.. If one goes down, you just shift down the list. Nodes are assigned a "default" server based on their node number. If their default is down, the next is used.
4. It will shorten the time required for a new node to be recognized by other nodes.
5. There will no longer be that 20 seconds of silence if the node you are calling is not responding.... It will be only 5 seconds.

Now, this will do a couple semi-bad things:

1. It will require that a port (not standard to IRLP) must be opened OUTBOUND. Now this is only a problem for nodes behind severely restrictive firewalls. People running behind a linksys, or open to the net DO NOT have to change anything... This is NOT an inbound port, only outbound. This port is 15428.
2. It will increase the time between the "end of the last DTMF digit" and the "playing of the ID" by about a second. BUT... If the node you try and call is not there, you will know a LOT faster. It will still be about 5 times faster than echolink.... :)

/home/irlp/bin/

aux* software-controlled switches using MOSFET's. The commands are: aux1off aux1on
aux2off aux2on aux3off aux3on

coscheck

cosstate

COSSTATE is FALSE (equals 1) when there is a local signal being detected by the IRLP board (COS is high)

dial

dtmf - responsible for interpreting DTMFs received by the (link) radio. You can kill this process if you're having trouble w/ unauthorized people sending DTMF commands and your node won't hear commands any more but will still respond to keyboard commands and can still make and receive connections.

forcekey / forceunkey - see key / unkey

imike / imike_PCI - processes your audio going to other nodes/reflectors through speakfreely

--- Tony Langdon <tlangdon@a...> wrote:

> I have been playing with a script to kill imike thereby creating a
> listen only mode to the reflectors, etc.

>

> I found that using "killall imike" works like a dream. Now I need to
> know how to reinvok imike (there are a few settings) and I am not
> sure which to use. The work around I am using is to disconnect and
> reconnect, but I am sure I can do this using a script.

Here's where picking through the scripts and seeing how it all hangs together comes into play. I'll just lay in a few of the fundamentals, and leave the early hacking to you (I can do it, but it'd be at least 7-8 hours before I can start).

I have played a lot with both the system scripts and Speak Freely (both IRLP and non IRLP versions). The imike binary needs two critical pieces of information, which are:

IP address to connect to.
codec used by the connection.

As it turns out, both of these are available for you to use (because other scripts may need it, like sfswrapper).

The IP address lives in either

\$LOCAL/calledip (for outgoing calls) or
\$LOCAL/connectedip (for incoming calls).

The codec that is in use lives in \$LOCAL/codec.

As it turns out, the sfswrapper script performs a function very similar to what you want. The difference is it passes the variables to ispeaker, not imike. It should be a fairly simple thing to

make a copy of sfswrapper and then change it to call imike (since sfswrapper already does the `_exact_` variable handling we need, we only need to make it call imike, instead of ispeaker)

PS - I forgot to mention that there is a third piece of information, which is the port to connect to (this is due to the presence of super reflectors). I haven't yet ascertained exactly where this piece of info comes from, but a quick fish through the scripts should strike gold. sfswrapper should have that info too, as it needs it to tell ispeaker to listen on the right port.

[insert comment from VE7LTD:] DO NOT KILL IMIKE when connected to a reflector, or the reflector will stop sending packets to you after 60 seconds (I Think) Run it with the `-h` command, which puts it into "space bar" mode.

irlpd

irlp_answer

irlp_call

irlp_updated

irlp_update_client

irlp_update_server

ispeaker / ispeaker_PCI - handles incoming audio from other nodes/reflectors for speakfreely

key / unkey - cause your radio to key and unkey (ptt) -- invoked automatically by incoming signals from other nodes or reflectors, or can be executed from the console (keyboard). If you are running an ID script that plays an ID when your node is already keyed by IRLP activity, if the IRLP activity drops in the middle of your ID the ID will be interrupted. The forcekey command was created for use in these circumstances to keep your node keyed if activity drops (ptt is then brought down with the forceunkey command). From VE7LTD: " So, if you use forcekeys for anything, make DARN sure that there is a forceunkey to accompany it! Or else you will have smoldering plastic if your radio can not handle it."

From: Nate Duehr <nate@n...>

Date: Mon Sep 16, 2002 3:11 am

Subject: Re: [irlp] key vs forcekey

If forcekey is active, it will ignore unkey events, and will only unkey with a forceunkey. Unfortunately, as was pointed out long ago, sometimes what you need is a key "manager" to count up the number of key and unkey events and "do the right thing" not the forcekey which is just a "mash it down and don't let it up until I tell ya".

There is a PTT manager program in the Files area for this purpose if you need such a beast. It is not as robust as a I like because it can't track problem #2 below. But it's a great start if you don't want to "reinvent the wheel". It also has no CLUE about standard key and unkey events generated by the mainline IRLP software unless you do some REALLY nasty hacking on the IRLP code and then use the NOUPDATE feature.

Be cautious of any scripts that use forcekey for two reasons:

1. Duty-cycle of radio... if it sticks, will your radio survive while you drive to the site? This is

really true of ANY script you write, but forcekey can be darn confusing if you don't realize why the node is keyed and won't come "unkey"ed with the usual unkey command. You CAN see if the forcekey bit is set in "readinput".

2. The built in time-out timer on the PTT line... if you exceed four minutes of PTT operation, your node will autodisconnect (they also used to self-disable, but not any more). The new "Aux" lines on the IRLP v3.0 board or some other mechanism should be used to key longer than four minutes... or you can hack up a script with a timer to manage the key/unkey cycles... see the "tick-key" script and how it's implemented in the news playback scripts in the Files area.

Very very early in the implementation of forcekey, Dave found that some parallel port address spaces come up high and some low... causing some nodes with the brand-new (at the time) forcekey support to just come up and key down continuously the next time they were rebooted! YIKES!

A quick patch was released, to say the least.

(And no matter HOW much you love Dave's software/hardware... it is an example of why REALLY good system designers always have more than one way to turn that darn transmitter off if it goes into "stupid" mode. If you've never had a transmitter lock and not be able to control it remotely, even though you have a decent single level of control -- like IRLP -- on it, you haven't LIVED yet! BIG HUGE GRIN...)

Nate WY0X

mynetd

nc

pgp = "pretty good privacy" - pgp files have unique security signatures used to authenticate nodes (search for other instances of pgp throughout this document)

From: Terry Stewardson <va3lu@t...>

Date: Thu Aug 29, 2002 12:11 am

Subject: Re: [irlp] Re: New Node Install

> Hmm... ok. Well then I'm still curious as to why I had
> authentication failures last night but not today.

Once your node was installed there was a pgp file generated for your node and then your key was added to the master pgp file, stored on the irlp server AS this file is generally only downloaded to the nodes overnight in the file update routine, hence you had to wait for all the other nodes to get pgp key file updated before they could authenticate your node.

play

pttstate

PTTSTATE is FALSE (equals 1) when there is a transmit signal being sent from the IRLP board to your radio.

readinput

record
rsync

/home/irlp/scripts/

audiotest

plays a long 1000hz tone that can be used to set levels outbound from your IRLP node. Most nodes set this for 3.0-3.5 khz deviation. Once this is set, you can send the same tone (1000hz 3.5khz deviation) into the echo reflector. If it comes back higher, you know your sound card is already set to the right level OUT to your radio, so your level to the INTERNET is too high or too low, depending on what you see. GREAT way to really set the levels correctly on a node if you can beg, borrow, steal or otherwise use a service monitor. [See also Audio, aumix and audiotest]

CALL

The CALL script initiates a call to the remote end. The script ensures that it know the IP address of the remote station, and that the local node to IP list (HOSTS file) is up to date. Once the series of checks is completed, it initiates IRLP_CALL and sends the call request to the remote site.

CALL_TO_REFLECTOR

The CALL_TO_REFLECTOR script is used to call an idle node (not yours) to a reflector session. This script is run from DTMF and will work if your node is idle or connected to the reflector. IT IS NOT YET ENABLED (4/02)

CONNECT_TO_REFLECTOR

The CONNECT_TO_REFLECTOR script initiates a call to the reflector. The call is blind, and may not work if the reflector is down or disabled.

CONTROL

The CONTROL script is the heart of IRLP_CALL and IRLP_ANSWER. After authentication, all info sent to and from the node is done so through the CONTROL script. Control works with a FIFO (first in first out) system. All things sent to the FIFO appear as arguments to the control script on the remote station. The control script calls all other scripts depending on several conditions.

CUSTOM_WAVPLAY

functionally identical to the old wavplay. Use that in places where ... you need to play waves of varying bitrates.

DECODE

The DECODE file is run by the DTMF process with the DTMF code entered as the argument. The CUSTOM_DECODE file is run from within the DECODE script, and allows users to add their own personal DTMF controlled. These custom codes include the enable and disable codes.

DISABLE

The DISABLE script when run (via DTMF or by terminal operation) disables the IRLP node from all calls and DTMF decoding (except the code to enable the node).

DROPCALL

The DROPCALL script drops the TCP connection between two nodes.

Per WY0X: "kills off all IRLP applications, killing the call. Should not be called by hand. Use "end" instead which calls this as needed"

dtmfdial

keys your radio and sends DTMF sequences of your choice. Useful for macros and other things.

Dave Gingrich K9DC wrote:

You may want to make a copy of dtmfdial, and perform some surgery on it to speed up the digits. I found my controller would work fine if the tones were reduced in duration to 50ms with 50ms between digits. But the standard dtmfdial always works, just a little slow IMO. The timing is controlled by flags added to the 'dial' command in the script. For example to change it to 50ms/50ms

```
$BIN/dial --tone-time 50 --silent-time 50 "$1"
```

dtmfregen

used by the DTMF regeneration feature to locally play other users remote DTMF from the other side of an IRLP connection. Should not be called by hand.

ENABLE

The ENABLE script when run (via DTMF or by terminal operation) enables a disabled IRLP node. (IRLP nodes are enabled by default on reboot)

WY0X: used to enable the IRLP node. NOTE: There is another "enable" command built in to the bash shell. You have to DIRECTLY call this script with the full path or the ./ notation (i.e. cd /home/irlp/scripts; ./enable)

END

The END script is called from the DTMF script or is initiated from the remote end. The END script severs the TCP connection (using DROPCALL) and stops the IMIKE and ISPEAKER processes.

FAILURE

The FAILURE script handles all failures on the IRLP node. The failure script will also have an environment tag set for verbose or brief error messaging. Severe errors will be emailed to the node owners so they are aware of any problems.

WY0X: Also handles new Call Waiting feature, as failure is called when another node calls you and your node is busy. Shouldn't be run by hand.

fifoecho

helper script that creates a first-in first-out buffer. Used by other scripts.

find_best_server

Self explanatory - finds appropriate server for your node to use for IRLP updates

incrementcount

this script updates the /home/irlp/custom/callcounter which is a text file that shows how many calls your IRLP node has made or received. Just used for trivia, no useful purpose but fun to look at once in a while.

IPUPDATE

The IPUPDATE script, run from the crontab every 5 minutes, checks to make sure that the local IP address of your node is correct in the HOSTS file. If your node is behind a firewall, a connection is sent to the IRLP server to check your current IP. If your IP and the posted IP are different, an update is sent to the main IRLP server. [For more info on this process refer to VK3JED's post at groups.yahoo.com/group/irlp/message/1727]

IPUPDATE_CRON

Every 10 minutes, your node checks its IP address, and updates it if there has been a change, regardless of whether you use DHCP or have a static ip.

IRLP.CRONS

The IRLP.CRONS file contains all of the crontabs which run as user repeater. During an update, the crontabs are reset to the crontabs contained in the IRLP.CRONS file. The IRLP.CRONS file contains a set of crontabs (programs which are run automatically at a specified time) which are run as user repeater. These include STATUPDATE, UPDATE (files and hosts) and LOGROTATE. This list of crontabs updates automatically during the file update procedure.

IRLP_START, IRLP_STOP

This script, run as root, sets up all the permissions required and starts all the processes required to run IRLP. Its daughter script, IRLP_STOP, shuts down all of the IRLP processes.

IRLP_RESET

The IRLP_RESET script resets the conditions of all of the IRLP binaries and scripts to an idle and enabled condition. This script is run following an update or if there is a failure during a call.

irlpreset

symbolic link to above file because underscores are hard to type and hard to explain over the air or on the phone.

OFF

The OFF script terminates a connection and plays the "goodbye ID".
WY0X: internal script called to clean things up during call disconnects... also handles calling things like custom_off, etc. Shouldn't be called by hand typically.

ON

The ON script is run from the control script after receiving the necessary authentication. The script plays the ID and initiates the voice connection.

pulsecheck

one of the most important scripts in this directory. EVERY node owner should run this during node setup and any time the repeater configuration is changed. If you've never run this... do! And follow the prompts. Kerchunks your repeater and sees how high the "cover up" value in /home/irlp/custom/timing file value should be set to keep your node from pulsing when connected to other nodes and especially Reflectors.

pulsecheck_old

The old pulsecheck script which can be fooled a bit because it doesn't key up the repeater for a 5 second window before starting the test. Really slow processor machines can give unreasonably high values using the standard pulsecheck script at times, so if you think the value pulsecheck is reporting is too high, try this script and email an experienced "pulse killer" person (any Reflector owner... heh) for assistance. We'll be glad to help. [WY0X]

ROTATELOG

The ROTATELOG script rotates the messages file in the log directory. It saves the old log as messages.1, ..2, .3 etc.. up until .5 The 5 month old log is deleted.

SEND_WAVE_FILES

It allows you to [manually] send your audio files to the server. It makes sure that the files are the right format, and ensures that you only update YOUR node files. I am always worried about abuse :)

Basically you put the three node ID files on a floppy disk (or into the /tmp directory), put that disk in the node, and run (as root) /home/irlp/scripts/send_wave_files . As root, copy the three files into the /tmp directory, and execute.

SFSWRAPPER

Starts the ISPEAKER process. The wrapper ensures that the process is running when it is supposed to be running. This solves many possible lockup problems that have existed in the past with ISPEAKER.

WY0X: used to kill off a current voice stream to allow things like automated ID's, etc... to interrupt and then put the connection back to the previous stream. Shouldn't be run by hand. Used by a number of script writers to get control of the PTT line away from the ispeaker binary program when needed.

VE7LTD: Once run, if there is no one connected, it starts sfsrapper. This is big no-no, as sfsrapper, when started when there is no active, means that ispeaker is running without the -f flag (which determines the IP that is listens for packets from). This means that any old person with speak freely (linux, windows, whatever) can send audio out your transmitter. It also means a lot of the ID scripts will not function properly. For script writers... Make sure your scripts, when run, only leave imike and ispeaker laying around when the node is connected.

sfsrapper-modified

WY0X: an addition I requested for the work I'm doing on the Voice Mail script. A modified sfsrapper that does NOT unkey immediately when requested, but instead looks for "flag" files that can be set by other programs to "request" an unkey -- the calling program has to be able to WAIT for the unkey event. Helps deal with a problem I was running into where automated CW ID's were interrupting important sections of the Voice

Mail stuff I'm still figuring out. Script writers: CAREFUL... this script can be DANGEROUS in that you can get logic bugs where you never unkey... take it easy with this one. It's beta-quality ideas for sure right now...

STATUPDATE

The STATUPDATE script is run from the crontab as well as any time the status of your node changes. It contains information on the connect and enabled status of your node. Your node uses an outbound port 80 (http) message to the status server to update its status. Shouldn't be run by hand.

statupdate_cron

the one that runs from crontab. see statupdate

STATUS

The STATUS script is run from the MYNETD process running on port 15427. It is a dumb script which reads the current status of your node and outputs to the connecting station a text file containing information on the node.

UPDATE

The UPDATE script is run from the MYNETD process running on port 15426. It is a dumb script that takes no arguments, but syncs the filesystem with the server when run. Update is run following an IP update on any node, or file updates. [only works when there's no active IRLP connection]

WY0X: important script that handles getting automated software updates. Can be triggered by the IRLP admins for emergency updates or also runs automatically on a regular basis. Uses highly efficient rsync to get only changed files. Also has modes for the node owner to force file and host list updates. Run as "update files" to update your software and various files used by IRLP. Run as "update hosts" to update your list of hosts if you are having trouble calling another IRLP node and getting "node does not exist" errors. Normally this will take care of itself, but it's a good idea to run these if your node has been physically turned off for a long time.

VOICEMAIL

The VOICEMAIL script (FUTURE) will control all the features of the voicemail system.

WAVPLAY

The WAVPLAY script was written to accommodate the need to play several files back-to-back. It is a shell script that runs using the PLAY binary. It has a built-in path so it looks for files in the /home/irlp/audio directory. If you put a file called foo.wav in /home/irlp/audio/custom you would use "wavplay custom/foo". [requires that files be 8000 Hz and 8-bit mon]. See also "custom_wavplay"

/home/irlp/custom/

CUSTOM_DECODE

The CUSTOM_DECODE script is run from within the DECODE script. The custom codes in this file are not lost during an update. These custom codes include the enable and disable codes.

ENVIRONMENT

The ENVIRONMENT file sources all variables needed for IRLP to run. It is sourced by the boot up scripts, .profile, and by the IRLP_START and IRLP_STOP scripts. Without the proper variables set, IRLP will not run. The environment file can NOT be modified by user repeater, as it is run by root, and any commands placed within it may be executed as root.

TIMING

The TIMING file is a text file which contains two values used by IMIKE to send audio to the other nodes. The first value is the number of milliseconds after the COS is lost that IMIKE stops sending packets. If the value is too low, people may complain that the last word or two of your transmissions are being cut off. If it is too high, they may complain of squelch tail noise. The second value is the number of milliseconds IMIKE waits to start sending packets after receiving a COS signal. This value is used to minimize the effect of "ping ponging" of repeaters. The value should not be set too high, as the first second or so of your audio may be lost. Do not tamper with this file unless you know what you are doing.

TIMEOUTVALUE

The TIMEOUTVALUE is a text file containing the number of seconds YOUR node must be inactive before sending a timeout signal to the connected node. You have no control over the remote node's timeout values.

callcounter

callcounter is a file that has the aggregate number of connects to and from your node

core

custom.crons

file to which you add any modifications you would like included in the IRLP crons, which is incorporated when the IRLP cron runs 'update files' (or when you do it, and only when there is no active connection)

custom_decode

create your own DTMF strings linked to scripts so you can issue remote commands (by default includes DTMFs for enable and disable. Anything in this file is not subject to prefixes you may have implemented elsewhere in IRLP.

hosts

has the ip addresses for all nodes that are in the IRLP keyring + reflectors. It's a lookup table

rc.mixer

rc.irlp

file owned by root and which is run

check_Idrunning

custom script to check whether a script to ID the link radio is running in the background (if not, restarts it)

/home/irlp/audio/custom/

Some custom scripts reference custom wav files. Create this folder and put those wav files here.

/home/irlp/audio/

All of the files in the audio directory serve a purpose. They are all ID or error messages that can occur on the IRLP node. In the old days, all ID wav files were downloaded at the time the IRLP software was installed, but this has been changed to lessen the load on the IRLP servers. Now when you successfully connect to a node for the first time you will hear a digitized voice saying the number of the node you are calling. During your next overnight files update the personalized wav files for the nodes you contacted for the first time the previous day will be downloaded for the next time you connect to that node. See Dave's post #5131 for more details.

STN??ON.WAV

This is the ID you hear once you bring up a node. It plays locally on your node (not coming from the other node).

STN??OFF.WAV

This is the ID you hear once a node is brought down. It plays locally on your node (not coming from the other node).

STN??.WAV

No longer in use. This was the ID you heard if you try to bring up one node while connected to another. Now an IRLP script plays the digits of the other node's number.

***.WAV**

Each of the remaining files in the audio directory serve a purpose, and will not be described in detail.

Note: If you create or update new wav files for your station to be heard by other nodes you must submit them using the send_wav_files script, or (if the server isn't accepting them) as email attachments sent to installs@irlp.net, per the instructions in the After the Install document on www.irlp.net/new-install. IRLP servers do not automatically pick up modifications you make on your own node.

/home/irlp/noupdate/scripts/

In case you don't want any scripts to be updated, make the appropriate changes to the environment file and put backup copies of files you don't want updated here.

Files in the Other Directories of /HOME/IRLP/

ARPM

The ARPM directory (if it exists) contains the source code for AutoRPM, an automatic system file checker and updater which minimizes the possibility of compromise by keeping you file system up to date with the latest updates from RedHat. This option is only available to those who use RedHat 5.2. It can be installed under other distributions, but will not be supported by IRLP.

IRLP_PORT

The IRLP_PORT directory contains the IRLP_PORT driver to read and write from the parallel port without root access. The IRLP_PORT driver is kernel version specific, so a couple versions have been supplied

LOCAL

The LOCAL directory contains several files which are commonly accessed by the IRLP system. It is a volatile RAM drive, and does not store any info required after reboot. Files stored in the local directory include ID tag files (such as the enable, active, timeout tags) and the IRLP hosts lookup file.

LOG

The LOG directory keeps logs of every argument passed through control (except the 5 second timestamps) for later review. The size of the MESSAGES file can be very large, and should be deleted or rotated on a regular basis.

OSS

The OSS directory (if it exists) contains the commercial OSS package. There are packages available for both major kernel versions. The license file must be purchased before commercial OSS drivers will work (required for full duplex)

PATCHES

The PATCHES directory contains several patch scripts that are added to fix small problems with security and functionality after the node has been installed.

RUN

The RUN directory contains the run-time files used by IRLP. This includes the challenge and response strings used by PGP for authentication, and the FIFO used for communication.

/etc/rc.d/

rc.local -

owned by root, starts many services on boot-up, and modified during IRLP software installation to include a line that starts IRLP (/home/irlp/custom/rc.irlp)

/etc/hosts - is the lookup table for Linux

Make sure your file has the following on the first line so your machine can resolve its own address or you may have problems making/receiving calls to/from other nodes (substitute your own hostname for the callsign in the example):

```
127.0.0.1 W1AW localhost.localdomain localhost
```

2. Node Setup

2.1 Routers & Firewalls

From: ne1h@h...

Date: Wed Oct 31, 2001 9:17am

Subject: Re: Echo Reflector, but not Reflector #2

> I changed out the firmware and used the same settings. Once the change was
> made, I was able to connect to reflector #2 (and saw I was connected on the
> status page), but was unable to hear any audio (which I knew was present
> because I heard it on "Live 365").

As you guys are playing with firmware on the linksys boxes.... Please make sure you re-read the installation instructions and make sure you re-forward the ports that are required for the VOIP to function. Outgoing will function just fine having done no port forwarding, but incoming will not work until you forward the ports coming back from the reflector, etc to the IP address of the IRLP pc.

Hope this helps.

Alan

From: Tony Langdon <tlangdon@a...>

Date: Fri May 10, 2002 2:29am

Subject: RE: Cable Modem <> LinkSys Question

> My cable ISP, myeastern.com in Waterford, CT uses automatic
> assignment of IP
> addresses along with a router set to DHCP enabled.
>
> When I was trying to get my Linux box to see the Internet, I
> somehow lost my Internet connection.
>
> Since IRLP prefers using static IP's, I checked out the
> status in my LinkSys
> router and found the IP address. I set the router to use the address
> instead of having it assign an IP as it was shipped from the factory.

A router has two interfaces. In the typical Internet connection scenario, they are usually known as:

"WAN interface" - this is the interface that connects to your ISP.

"LAN interface" - This is the interface (generally Ethernet) that you connect to the hub in your LAN.

Now the discussion about static IP addresses for your Linux box concerns network attached to the LAN interface - in other words, it is largely independent of your ISP's connection requirements.

There are a couple of configurations that are possible. I'll discuss them in turn.

The most common scenario is where you have a connection where there is only one public (Internet accessible) IP address assigned. Most people running a LAN behind their Internet connection will fall into this category.

Normally, in this scenario, only the device (PC, router, whatever) which is physically attached to the Internet can access the Internet - the Internet doesn't know how to route to the LAN behind it. However, some clever people discovered a way to fiddle with the IP and port information as the packets passed through the router, so that all the PCs on the LAN can access the Internet. There are a couple of limitations, however, and the main one is that if there is an incoming connection, the router has no idea which machine to forward it to. The "port forwarding" function on the router is designed to resolve this situation. The administrator (that's you! :)) can tell the router to forward packets arriving on specific ports to a specified host (i.e. the IRLP box, in our case).

Now, so the router knows where to forward the packet to, our IRLP machine needs a fixed IP address, hence the constant recommendation to use a static IP address and forget DHCP on the IRLP machine. Look at an analogy - Imagine if the postman had to deliver your mail to a different house address each time you received a letter addressed to the same postal address?!?!)

In summary, for the single IP with NAT gateway scenario, the router's configuration should be as follows:

WAN interface - configure as per ISP's specifications (usually receives a dynamic IP address from the ISP).

LAN interface - Give it a static IP address from the "private" IP address ranges e.g. 192.168.1.1

Configure IRLP machine to a static IP address (e.g. in this scenario, 192.168.1.2).

Enable NAT (Network Address Translation) on the router

Forward the following ports to the IRLP machine's static IP address

2074-2093 UDP

15425-15427 TCP

And you should be set! :)

The above is by far the most common scenario.

Another scenario is where your ISP allocates multiple IP addresses. Usually, there is no router as such, just a "modem" (some sort of device to make the connection) connected to a hub, along with all your machines on the LAN.

In this case, the setup is much easier. Just configure your IRLP box to obtain one of the public

IPs by whatever means the ISP dictates (DHCP, PPPoE, whatever).

Similarly, if you have a public IP subnet allocated to you and you use a router, you only have to route your addresses to your LAN. In this instance, you can configure DHCP on your router's LAN interface and have all your machines use DHCP, as the router's not forwarding ports. You would also turn NAT off, since you have routeable IP addresses.

- > Anyway, will I be able to participate in IRLP with the
- > current configuration
- > of my internet ISP or am I going to have problems down the log??
- >
- > Sorry if anything I have said anything here that doesn't make
- > sense. I guess
- > in due time I will be an expert in Linux and IRLP.

I suspect you're confusing the LAN side of your router with the Internet side. The Internet side should grab an IP address from your ISP, the LAN side should be completely static.

From: Nate Duehr <nate@n...>
Date: Fri May 10, 2002 4:05am
Subject: RE: Cable Modem <> LinkSys Question

This [above] is a really good description Tony.

And as a side note, since I don't see it in here...

Tony mentioned that you should set up your LAN side address as static, and let your WAN side address do what it wants to per your ISP's normal setup.

Since your WAN side address (the Internet routable one) is constantly changing, other nodes have a hard time finding you -- the IRLP servers take care of this for you but your node has to do a little work to tell the IRLP servers where you are.

IRLP uses a few "tricks" of its own to keep track of your moving-target WAN-side address.

The main IRLP servers send out hostfile information to all of the nodes so they can find each other. There's a big list of node number to IP addresses in each node.

What the IRLP software on your node does is once you have your node up and running properly, your node connects to an IRLP server out on a nice solid static IP address every so often and that server "echos" the current IP address it sees your node coming from to the node. "You are at xxx.xxx.xxx.xxx"

Your node looks at the last host file it got from the servers. If the IP address it sees in that host file is different from the one the IRLP server just said "You are at xxx.xxx.xxx.xxx", the node says... "Oh no! I need to send them an update! That's not right!" It makes another authenticated connection to an IRLP server and says... "Hey bub! My IP address changed, here's the new one!"

Talk to you later!"

The IRLP server registers the new address and then a process starts that signals to all the other IRLP nodes (yep, ALL of them) "SUPPERTIME! COME AND GET IT! FRESH HOT NEW NODE HOST LIST!"

Then as the nodes hear the call to come get supper (the hosts file), they all come download it from the IRLP main server(s).

There's a small but measurable period of time between when your WAN side IP address changes and when all the other nodes know where you moved to. It takes your friend a while to call all the people you both know and tell them your mailing address changed.

So... as you can imagine:

1) This is fairly difficult to scale up. Dave's been working on some code to share this massive onslaught of hungry nodes who've heard the dinner bell and come running to the server for updates. Hopefully the added complexity won't break too many things as he works the bugs out.

2) There are nodes who's WAN side addresses just change far too often. The ISP in their "wisdom" (Ha.. NOT!) told their dynamic IP server (DHCP server) to force you to change IP addresses very often. This is to discourage "residential" users from running servers, which is what IRLP really is. Yes, your ISP considers home bandwidth users in most cases to be second-class citizens. Businesses do NOT have to deal with this stuff.

The reasons for this are many, but they are basically either not wanting home users running servers because of the security issues involved, or they're wanting to discourage bandwidth use. Misusing DHCP this way is inherently evil in my opinion.

So Dave does have some software that "squashes" the noise of nodes that change too often. If your node's IP address changes every 15 minutes (some do) your node is basically requesting the IRLP server to tell all the nodes worldwide to "COME AND GET IT" every fifteen minutes. This is obviously completely ludicrous and unnecessary and causes massive load on the server(s).

So if your node changes WAN side IP's often, you should be prepared mentally for a lot of other node owners to complain that they can't always call you and that they get a lot of "the call attempt has timed out" messages when they try to call you, while you never seem to have trouble calling them.

There are other reasons for this besides this, but this is a big one.

The best and ultimate solution is that IF YOU CAN get static IP's assigned from your ISP and the cost is not too high (I've heard prices as high as \$10/month per IP address! This is complete highway robbery!) node owners can consider ordering an extra IP address for their IRLP node.

My ISP charges me \$5/month for a block of eight IP addresses with five usable out of that eight. That's a dollar a month per IP address, and WELL WORTH it to me because I can still do the NAT trick for my desktop, laptop, wife's desktop, and other "end-user" machines so they only

use a single IP address. This leaves four others for IRLP nodes, web servers, mail servers, and other toys... and let's me use the Internet in the way it was INTENDED to be used... with a real routable IP address.

Of course, each machine on a public address must be properly protected, so these route through a firewall, etc...

The cost to your ISP is minimal on IP addresses, and yet they now consider them a "frill" they can charge to provide. NAT routers have spoiled them into thinking this way. If you have a choice on your high-speed transport as to which ISP to go to (out here, if we're on DSL there are a number of upstream ISP's we can use), it's always good to look at their policy toward "re-sale" of IP addresses. The ISP's run by people who've been around a while and aren't greedy will have reasonable pricing on the use of static IP's. And in the U.S. anyway, most of those are the mom-and-pop ISP's. The big boys are out for sheer numbers, the mom-and-pop's will provide services like static IP ranges cheaply to keep their customer base.

Nate

From: Dave Gingrich K9DC <gingrich2@d...>
Date: Fri May 10, 2002 10:01am
Subject: RE: Cable Modem <> LinkSys Question

At 02:03 5/10/2002 -0400, you wrote:

>Since IRLP prefers using static IP's, I checked out the status in my LinkSys
>router and found the IP address. I set the router to use the address
>instead of having it assign an IP as it was shipped from the factory.

I'll try a slightly shorter version than some of the other answers (no offense intended Tony/Nate)
:)

Strict IRLP Answer

A router used with a cable or DSL modem often needs to be a DHCP client ("obtain address automatically" on the WAN interface) to get a good IP address from the provider. At the same time, it CAN be a DHCP server to PCs on the private LAN side. However this is not so good for IRLP, because the port forwarding we configure in the router is NOT dynamic. If the LAN side IP address (of the IRLP computer) changes, the port forwarding configuration will not and thus IRLP will stop working.

Non-IRLP additional stuff

Why is this confusing? Because the router manufacturers' instructions tell you to set your PCs up to use DHCP. This is required during setup so you can find the router's internal web page to set it up. Once you get your router configured, you can then configure your PC with a static address.

You do not need to turn off the DHCP server function of your router to configure static addresses. Just configure the address on your PC and it will never ask for a dynamic address. The

Linksys comes preconfigured to hand out addresses between 192.168.1.100 and 192.168.1.200 (I think). It will be more convenient for you if you pick a static address outside of that range. But it must be on the same network, so the first three numbers in the IP address must be the same, just change the last one.

Further non-IRLP

How do you determine what IP information the router handed out?

Windows NT or 2000

At a command prompt type:

```
ipconfig /all
```

Windows 95/98

Start..Run.. winipcfg

Linux

type:

```
/sbin/ifconfig (for the IP address)
```

```
/sbin/route -n (look for the gateway)
```

The nameserver information will be in the file `/etc/resolv.conf`

2.2 Ports Required, in and out

IN

22 or 23 or ANY! TCP - SSH/TELNET (remote admin, could be on ANY TCP PORT)

2074 - 2093 UDP - IRLP Audio (requires bi-directional UDP)

15425, 15426, 15427 TCP - IRLP Control/Update Ports

OUT

NOTE: As long as the IP is allowed to go OUT on any port, none of these will be required

80 (http) for downloading updates

2074-2093 (irlp audio) for allowing audio packets OUT of network

873 or 8873 (rsync) for downloading updates

10000 (for IP determination)

15425,6,7 (for IRLP CONTROL)

2.3 Parallel Port

Per WY0X: Please make sure in your PC BIOS that your parallel port is set to "standard" or "compatible" mode, and not to ECP, EPP or bi-directional before continuing with the After Installation instructions.

2.4 Internet & IP configuration

From: Nate Duehr <nate@n...>

Date: Thu Nov 29, 2001 7:29pm
Subject: Re: Re: Non Static IP issues

Any node that is on so-called private address space (10.x.x.x, 192.x.x.x, 172.x.x.x -- kinda) from a provider needs to turn on this feature in the /home/irlp/custom/environment file -- Dave's notes explain it better than I can:

```
# If your machine is behind a firewall, put YES in the variable below. Also, if there
# is no way to determine your routable IP from an adapter, put YES. If not, put NO.
# NOTE: Much more besides this must be setup for behind-firewall use of IRLP
export CANT_RESOLVE_IP_LOCALLY=YES
```

You also need an entry for your machine's hostname in the /etc/hosts file and it has to match whatever hostname you gave your machine when you set up networking. What you called your machine can be edited in /etc/sysconfig/network -- there should be a line that reads something like...

```
HOSTNAME="callsign"
```

Or similar if you have a real domain name...

There may be other things that need to be done, but I can't remember them right now -- this should get you very close.

The installs@i... team can assist with all of this if you provide the login/IP information to remotely access your machine -- we can use the pieces of the IRLP installer program (or just do a new install while keeping the old cryptographic keys or whatever...) to get the new setup correct. The installer has code in it to deal with all of these items during an initial install to make our lives a little easier. (Then we can focus on balky sound cards, and other interesting things... heh.)

----- Original Message -----

From: "Iain Street" <iain.street@btinternet.com>
To: <irlp@irlp.net>
Sent: Tuesday, December 17, 2002 2:25 PM
Subject: [IRLP General] Node 5310 : Delay problem

> Hi guys,
> There is a minor problem on Node 5310 (Livingston, Scotland),
> which is that it appears to take about 90 seconds to make an incoming
> connection (ie from another node to 5310). This fault has been present since
> the node was fired up, but is not readily apparent from this end, except for
> the number of callers who seem to connect, make a CQ call, and immediately
> disconnect! From their point of view, they are connecting, making a call
> and waiting for a reply, hearing nothing and disconnecting.
>
> The symptoms are present with the echo reflector, where the first test call

> takes 90 seconds to come back, and after this the echo is back in less than
> 10 seconds. If further test calls are made before the 90 seconds have
> elapsed, then all the calls return one after the other, apparently as a
> continuous audio stream.

You are describing how our node USED to act - *Exactly!* We had originally left the DNS IPs blank and were experiencing the problems you mention (every one of them). Our solution was to configure the Linux box with the internet service provider's CORRECT DNS IP addresses. We also manually inputted the DNS IPs into the external cable router as well, just in case. Your best bet is to contact your ISP and confirm the DNS IP addresses (perhaps specific to your ISP or location within your ISP). If they say that you don't need them because their system is automatic, demand them. My provider gave me a hard time (I don't know why) when I requested them. When you do get the information, they may give you multiple DNS IPs. My ISP gave me a list of three DNS IPs, so I configured the router and the Linux box for all three.

John M. Kord, K6JMK

--- In irlp@yahoogroups.com, "Nate Duehr" <nate@n...> wrote:

This is the "classic" DNS problem. I think someone else already responded with the semi-graphical interface way to fix it, or you can also look at the good ol' text file that sets the DNS stuff for the machine (well, one of them, anyway...) ... /etc/resolv.conf

```
cat /etc/resolv.conf
```

Should show something like the following...

```
domain natetech.com
search natetech.com
nameserver 216.17.141.164
nameserver 216.17.141.165
```

The important entries in there are the "nameserver" ones. Make sure they match your ISP's published DNS server information.

What's happening is this:

The underlying SpeakFreely code tries to "log" every Voice-over-IP connection. It makes a "blocking" call to the DNS resolver or something similar (Dave never found it in the SpeakFreely code, as far as I know) and can't continue with the connection until the DNS request fails. DNS requests by nature take a very long time to fail, typically 30-180 seconds, depending on the OS and the configuration.

So typically when we hear about the "long-delay before audio" problems it points us to the DNS settings first. It could be something else, but DNS settings should be checked first.

Nate Duehr, nate@n... - WY0X

2.5 Dynamic IPs

IRLP can handle nodes using DHCP whose IP addresses do not remain constant. The software checks your IP address every 10 minutes and if it has changed, updates the IRLP servers (which in turn update the hosts files on nodes that aren't currently connected).

Some people using DHCP choose to register a domain with a company that will point people to their dynamic ip address. See the thread linked from message 825 at <http://groups.yahoo.com/group/irlp/message/825>

If your IP address changes too frequently (multiple times per day), the IRLP servers will become unhappy with you and will stop processing your change of IP address. Here's Dave's fix:

From: ve7ltd <DCameron@t...>
Date: Wed Mar 20, 2002 6:26pm
Subject: Possible fix for changing IPs

Here is a script I made that relies on an external program I run on one of the new IRLP servers.

It makes a TCP connection that never times out, because the letter k is sent every 2 minutes. I am hoping that this will keep the connection up. ICMP pings won't work, and http connections are often closed after use.

PLEASE ONLY NODES THAT ARE HAVING TROUBLES WITH IPs changing too often should use this. If you IP changes like once a month, DON'T use it... Only if it changes multiple times per day.

```
#!/bin/bash
while [ "1" = "1" ] ; do
  /home/irlp/bin/nc ve7rvn.irlp.net 20000 >/dev/null
done
```

OK, one more clarification...

DO NOT RUN IT IN THE BACKGROUND...

Unless someone can find a way that doesn't leave a bunch of child processes hanging.

Anyhow, it won't kill anything to play around a bit with it.

Dave Cameron
VE7LTD

2.6 IRLP servers

The primary IRLP server handles software updates pushed to the other servers (including the hosts file) as well as echo reflector, IRLP website, installs.irlp.net and the irlp.net mailing lists (but NOT the status pages, which are hosted by the REF2 computer).

On the rare occasion that the primary IRLP server goes down, the hosts file on each node will not update (usually happens every few minutes) and any nodes whose IP addresses have changed will not be able to receive calls until the hosts file is updated (you can't find someone if you don't know their address). Nodes with changed IP addresses will be still able to call out to nodes and reflectors whose addresses still match what is listed in the hosts file. If this happens to you and you're having trouble meeting people on skeds, try scheduling to meet them on a quiet reflector.

There are also sub-servers around the world that distribute the load of pushing software updates, downloading wav files, etc. to the nodes. They are

server1 – Vancouver, BC (ref9000)
server2 – western Canada
server3 – Indianapolis (ref9200)
server4 – Perth (ref9500)
server5 - Denver c/o Nate WY0X (ref9730)
server6 - Indianapolis c/o Dave Gingrich (ref9870)
server7 - Dallas c/o Jeff Alexander (ref9450)
server9 – ?

Your node finds the best server for it using the find_best_server script, but in the event that your server is experiencing problems, you can override that setting with the following: “export SERVER_OVERRIDE=server3” (or whatever). This will set your node temporarily to use server3 (unless you have this variable included in your environment file).

From: David Cameron <DCameron@t...>
Date: Sun Mar 10, 2002 5:10pm
Subject: Reducing server load

There is a major problem with server load so here is what is going to be done to fix the problem

- 1) The reflectors will do all IPupdates, file updates, etc... The load will be spread across ref910, 920, 950, and the current server as final backup (if needed)
- 2) 2) Each node will be assigned a home server, and will shift down the list if unavailable until one can be found.
- 3) 3) AUDIO FILES will not be sent out on install. When you make a call to a node for the first time, you will hear the "node number 1 0 0, link on". After the connection, it will check your default server for audio files, and updates if any. It will then download only the files of the nodes you have called. This will reduce a HUGE load of bandwidth, but still maintain the functionality. I will also add an argument to the IRLP update scripts that will allow owners to synch ALL of the files if they wish. The audio directory is now up to alomst 60 megs, so those on small drives will probably like this change. This also helps the dialup nodes from

having to be online for 1 hour before making their first call to avoid all the load of new audio files.

- 4) 4) All current nodes will be grandfathered into a new 4 digit IRLP coding scheme. They will all have a number 0 added to their node number. The calling of nodes will also change in that there will no longer be a zero or one added to call/disconnect. Instead, the node number will be used ONLY. For those that are worried about control being easily available, PREFIX YOUR NODE. The node owners will be responsible for changing the default off code (which I will set at 73). You can remove the 73 code and add your own in your custom_decode file. People who want no-timeout connections, we will have to devise a per-call code to be punched in or prefixed to disable the timeouts.

The rapid growth of the system has pushed this. The current server is running at 100% load most of the day, mainly due to nodes with rapidly changing IPs. There were a few nodes whose IP changed once every 10 minutes for most of the time I was on vacation.... This is way too much. This is usually caused by problems with the ISP, and we should be complaining to the ISPs that we are being cut off from being able to stream audio and download files without our IP changing right away.

These changes are being phased in slowly, and I will try to do it in a way that will not affect the operation of nodes and allow time for people to be educated. (IE no 4 digit nodes ending in 1 will be assigned right away)

Dave Cameron
VE7LTD

2.7 Caution! - ports, daemons, scans, Telnet / SSH, Danger w/ using root

New vulnerabilities occur daily. Keep your operating system (Red Hat) updated to avoid getting hacked by using some sort of automated updating software (apt-get, up2date, etc.). See section 3.5 of this manual. WW4M

From: David Cameron <DCameron@t...>
Date: Wed Oct 31, 2001 0:11pm
Subject: Hackability of Linux

> And if you haven't been running linux long.... Get ready to be
> hacked, it's not a matter of if, but more of when. I've been
> running it for over 5 years and I've been hacked or attempted more
> times that I want to think about.

This is not totally true. A properly installed and maintained linux computer is much more secure than an equivalent Windows 95/98/ME/2000 computer. There are a few services that are problematic, but if they are avoided or kept up to date, the chance of being hacked is minimal.

The services to avoid are:

- 1) FTP servers - wu-ftpd and others
- 2) DNS servers - bind

- 3) RPC (remote procedure call) services (portmap, rpc.mountd)
- 4) Network File Systems
- 5) Samba (windows/linux file sharing utility)

These are reasons why I specifically state to shut down several services as SOON as you install your node. It is very clearly shown in the install documents.

IRLP services are very simple in design, and are not prone to many of the "buffer overrun" errors that the above services are.

I have had linux boxes hacked, but that was before I learned about tools like autorpm.

These are the main reasons why I suggest staying with RedHat 6.2, as I have all the tools to maintain and update it to keep it as secure as possible.

Dave Cameron
VE7LTD

From: Tony Langdon <tlangdon@a...>
Date: Wed Oct 31, 2001 4:19pm
Subject: RE: Hackability of Linux

<snip>

Also I'd be wary of the following:

SMTP - especially Sendmail, though much improved, can still be a problem
IMAP/POP - IMAP has been another notorious service over the years.

And don't forget the often forgotten ones such as finger and tftp, which should never be enabled unless you really know what you're doing (and even then, think twice :)).

Telnet doesn't ever have to be open really. The install team is highly familiar with ssh and can use that if you have it set up instead. If you require assistance with your node later on after the install, having ssh open is a nice thing since the folks that help Dave troubleshoot things are all in different timezones and you never know when they might log into the machine to see if they can help you out. (Of course, we never log into machines without permission and you can always change your passwords afterward, depending on your level of paranoia.) [And yes, I'm aware that the install docs still say telnet should be open. It's a trade-off between simplicity and quickness of getting new nodes online...] [wy0x]

[To transfer files] You can use scp (secure copy) which is a file transfer program that rides over SSH. There are a few great Windows programs for doing scp copying of files.

But first, if you're not running SSH for accessing your node, check out PuTTY. It's a freeware Windows SSH client and the beta versions support SSH version 2, which is the standard the world is moving to -- most IRLP nodes are running SSHv1 right now, which has some "issues" I've had the non-joy of experiencing first-hand.

<http://www.chiark.greenend.org.uk/~sgtatham/putty/>

Scott also has "pscp" (PuTTY scp) command line software there at the PuTTY site, but most Windows-comfortable folks find WinSCP nicer to use since it has a more Windows Filemanager-like interface. Drag and drop, all that stuff...

<http://winscp.vse.cz/eng/>

[wy0x]

Using PuTTY is simple -- just run the program (no installation required).

To run in ssh2 mode, which is what we've got on the IRLP boxes now, you'll need to use the following settings, which you can save as a profile for future use:

- Connection
 - SSH
 - Protocol version: select #2
 - Encryption Cipher: move Blowfish to the top position
- Session:
 - Protocol: select SSH (port will auto change to 22)
 - Load/Save/Delete Session: enter a Session name in the box and click on Save

FYI I used to recommend TeraTerm with TTSSH for ssh connections from Windows computers, but TTSSH is not compatible with ssh2.

Jim WW4M

It's a good idea to use tcpwrappers to limit access to open ports to only those addresses that you specify. These are the /etc/hosts.allow and /etc/hosts.deny files. That way if you need to leave an insecure service running to receive requests (such as telnet), at least you can add a layer of security by limiting access. For more info search the internet for tcpwrappers.

A good source of information for securing your linux box is at:
<http://www.enteract.com/~lspitz/pubs.html>

[IRLP Owners] Security Audits - A good idea!

David Cameron DCameron@transtechinteractive.com

Thu, 3 Jan 2002 19:19:10 -0800

All IRLP owners should be aware of this command under Redhat

`rpm -Va`

This verifies all installed packages against their file lists, and reports and files that have been altered. The ones you want to pay attention to are the files with the "5" in the header. This is a list from a recent hack I found on a 5.2 box.

```
..5..... /bin/ls
..5..... /usr/bin/dir
..5..... /usr/bin/du
..5..... /usr/bin/vdir
SM5..... /bin/ps
.M5..... /usr/bin/top
.M5..... /usr/bin/pstree
```

There will be many other files shown. The only ones to REALLY worry about are where the BINARY files have changed... IE things in /bin, /usr/bin, /sbin, and /usr/sbin. The list above shows that I would not be able to detect the process running, list the files associated with it, etc... This hack came through an SSH vulnerability in older versions of Secure Shell... Funny, you install secure shell to secure the box and instead it gets hacked....

If you think you have been hacked, send me the output of

`rpm -Va`

and I will have a look.

[ssh update instructions following security exploit of ssh 2.9]

[IRLP Owners] New OpenSSH patch installed for use on IRLP nodes
David Cameron David Cameron" <dcameron@transtechinteractive.com>
Sat, 26 Jan 2002 17:55:18 -0800

Since there is a large push to update SSH, I have made a script to help you out. ALL NODE OWNERS should do this ASAP.

PLEASE READ CAREFULLY, or you may screw up your node...

- 1) You MUST be running an IRLP version 6.2 RedHat system. It will not work on 5.2, 7.0, 7.1 or 7.2. It will not work if you did not buy the 6.2 CD from me. The 6.2 is the only version fully supported at this time.
- 2) You MUST be running autoRPM (which is installed on most nodes at setup), as the openssl library must be up to date.

Here are the easiest steps to follow to get your system working with the newest version of OpenSSH.

1) Login as ROOT

2) Update your IRLP filesystem

```
su - repeater
/home/irlp/scripts/end
/home/irlp/scripts/update files
exit
```

3) Manually run autorpm by typing

```
autorpm
```

at the prompt. If you get the prompt back without anything being said, that is a good thing. If you have to wait a long time (more than 2 minutes), or get a bunch of errors spit out on the screen about dependancies, you have to follow the following website instructions:

http://www.irlp.net/09-owners/autorpm_depend.html and
http://www.irlp.net/09-owners/autorpm_fix.html

3) Assuming that it is working, and autorpm is returning no errors, then we will go and run the update script. At the prompt, type

```
/home/irlp/patches/upgradeSSH          (note the ALL-CAPITAL SSH)
```

This will run through a bunch of stuff... It will download the latest packages from my FTP site, and install them as needed.

That's it, I hope... :)

Dave Cameron

2.8 Soundcards / drivers (including OSS)

Note -- if you use a soundcard that is not 'IRLP-certified', one problem you may encounter is that it won't be able to do synth at the same time as PCM audio will be unable to play the sccw CW ID while simultaneously carrying the IRLP audio). -- WW4M

The ISA list that Dave had sent me included all of the cards submitted so here is the list from Dave. I received no info on PCI other than you will require the commercial OSS driver from <http://www.opensound.com>

Paul VE3SY

LIST SUPPLIED BY DAVE VE7LTD

ISA Sound Blaster VIBRA 16XV
CT4171
CT4170

ISA Sound Blaster 16 (SCSI)
CT1770
CT1779

ISA Sound Blaster 16 (IDE)
CT1730 (SB16 non CSP, Panasonic interface)
CT1740 (SB16 CSP, Panasonic interface)
CT1750 (SB16 MCD CSP, Panasonic, Mitsumi, Sony interface)
CT1770 (SB16 SCSI-2, CSP, SCSI-2 Interface)
CT1779 (SB16 SCSI-2, Non CSP, SCSI-2 Interface)
CT2230 (SB16 MCD CSP, Panasonic, Mitsumi, Sony interface)
CT2230C (SB16 CSP, Panasonic interface)
CT2239 (SB16 MCD Non CSP, Panasonic, Mitsumi, Sony interface)
CT2239C (SB16 MCD Non CSP, Panasonic)
CT2290 (SB16 IDE)
CT2291 (SB16 IDE)
CT2750 (Easy CD, External CD-ROM drive)
CT2770 (SB16 Value, No CSP, Panasonic interface)
CT2779 (SB16 Value, No CSP Panasonic interface)
CT2919 (SB16 No CSP IDE and Panasonic interface)

ISA Sound Blaster 32 (These should all work Full duplex)
CT3672
CT3671
CT3620
CT3606
CT3600

ISA Sound Blaster AWE 32 (These should all work Full Duplex)
CT3999
CT3991
CT3990
CT3980
CT3930
CT3900
CT3919
CT3910

```
CT3780 (SB AWE32 Value, no Wave Blaster header)
CT2760 (Creative/Panasonic Interface)
CT2760A (Creative/Panasonic Interface)
```

```
ISA Sound Blaster AWE 64
CT4380
CT4381
CT4500
CT4501
CT4502
CT4520
CT4390 (AWE 64 Gold)
CT4540 (AWE 64 Gold)
```

The AWE64 PnP Sound Card and Linux, submitted by Kevin, VE1KK.

This is my experience with trying to configure the AWE64 PnP Sound Card (CT4380) under RedHat 6.2 and the 2.2.14 kernel, for the IRLP, without knowing much about Linux.

Even though it's a PnP card, it will apparently not run as such under this release of Linux. Possibly newer releases work better? The good news is that you do NOT have to re-compile the kernel, despite what many on-line documents might tell you. Whew! :)

I ran sndconfig, which detected the card properly and presumably configured it, informing me that it was creating new isapnp.conf and conf.modules files in the process.

isapnp.conf is a file that lists all the possible configuration options for all PnP devices on the ISA bus. Initially all the options are commented out, allowing the card to configure in PnP mode if it is able to do so. It has a section for every ISA card, and sub-sections for each logical device on the card, which are further divided into potential configuration options for that logical device.

The AWE64 has 4 logical devices - Audio, Game Port, Wavetable, and IDE.

After sndconfig saved the configuration files, it tried to play a sample WAV file. This resulted in an error in isapnp.conf, in the very first line of the file related to the soundcard, which, in my case, is "(CONFIGURE CTL009d/290117783 (LD 0)". Your numbers will vary, as the latter is the serial number of the card. Subsequent attempts at running sndconfig resulted in system lockups, something like Windows. :)

At that point, I started editing isapnp.conf, located in the /etc directory. Each card and logical device starts with a description, followed by options. Each set of options starts with, "Start dependent functions.....". I used the first set, or "preferred" options for each logical device. You must un-comment each INT, DMA, and IO reference in that option set, then scroll down to the end of the options for that logical device and un-comment the "(ACT Y)" line.

The Audio and Wavetable (Synthesizer) sections are the only ones used in the IRLP. You may choose to leave the Game and IDE sections as is, unless you're running a CD-ROM on the IDE controller, or anticipate using the Game Port.

After un-commenting the settings I thought I wanted, I saved the file and restarted, only to be

greeted with several boot errors, relating to MIDI, including "No AWE synth device is found". I won't try to replicate the rest of the errors here. However, I was able to play WAV files!

After reading a lot of obscure documents, including many that were "specifically" related to this sound card and Linux, I came across a note that the program used for generating isapnp.conf (isapnptools, for those who are interested) often fails to detect all 3 IO addresses required by the Wavetable device. A look at the Wavetable setup in my isapnp.conf indeed indicated only one IO address - IO 0 (SIZE 4) (BASE 0x0620)).

Further research indicated that the address section of the Wavetable logical device should look like this:

```
IO 0 (SIZE 4) (BASE 0x0620))
IO 1 (SIZE 4) (BASE 0x0A20))
IO 2 (SIZE 4) (BASE 0x0E20))
```

Some documents show these entries without the "(SIZE 4)". Format your entries to match what you have.

I added these entries, restarted, and the AWE64 initialized the required logical devices without an error!

If you have other cards listed in isapnp.conf, and they're working, leave those sections of the file as they are. Otherwise it's "usually" just a matter of trying the listed configurations until one works. At least that's how it's supposed to work. :)

Hopefully this is helpful to somebody.
Kevin, VE1KK.

From: Penn McClatchey <pmm@s...>
Date: Sat Sep 22, 2001 5:25pm
Subject: Sound Blaster Live!

Hi Everybody!

I've been trying to configure a new PC for Linux/IRLP today, and I've made fairly good progress. I haven't made it to IRLP yet for this box so this is just a Linux question.

I'm hung up on the SoundCard. I'm trying to use a PCI Sound Blaster Live! I've tried playing .au and .wav files and while noise comes out of the speaker it is distorted and essentially unintelligible.

I'm no Linux expert, but I've tried several things to no avail. I'm not finding anything helpful in the HOWTO or Google searches. Can anyone be kind enough to give me some troubleshooting tips?

Many thanks,

Penn, K4PE
Node 455

From: Chad Starling <chad@v...>
Date: Sat Sep 22, 2001 7:52pm
Subject: Re: Sound Blaster Live!

as far as i know you need a registered sound device driver from OSS
www.opensound.com i think is the site.

From: "ve7ltd" <dcameron@i...>
Date: Wed Sep 25, 2002 1:46 pm
Subject: Re: Linux kernel mixup?

RedHat never released a kernel-headers package for their 2.2.17-14 kernel. [If the OSS drivers are not working with your 2.2.17 kernel,] I would suggest a kernel upgrade, or use an older version of OSS.

OSS has changed the way they support kernels, and have problems with their handling of IRLP audio... I am working with Dev to work on these problems, including support for our new kernel 2.4.18-10.

I have to do some testing on it to ensure it will work.

I have some old OSS files that will install your sound card on 2.2.17-14, which you can d/l from

<http://irlp.net/irlpv2.0/Oss.tgz>

Dave

From: Nate Duehr <nate@n...>
Date: Wed Jan 16, 2002 3:46am

The audio amplification added on the mic inputs of many sound cards really adds a lot of distortion to the audio, in my OPINION. I try to wire radios to the LINE input if at all possible and the levels are high enough coming from the radio. I think it sounds better.

Some sound cards have on board amplifiers on the LINE input that can be controlled via aumix. If you see "IGain" settings in aumix your card has this. I try to run this amplification as low as possible.

Another useful device available at any Radio Shack is a 1:1 audio transformer to isolate the IRLP

board from your radio. Works well.

Nate WY0X

Date: Fri, 11 Oct 2002 07:03:34 -0000
From: "ve7ltd" <dcameron@irlp.net>
Subject: OSS woes... ALSA anyone?

[in reply to why ISA soundcards work out of the box w/ IRLP and OSS drivers are required for PCI soundcards]

The problem here is as follows:

- 1) OSS kernel drivers (free) do not provide a way for mu-law compressed (unix) audio to be decoded. ISA sound boards have this built on-board.
- 2) The only way to do this in the past, was to install the commercial OSS drivers, which fixed the problem, as there was a software converter built in.
- 3) Recently OSS started releasing ALL of its packages with the virtual mixer option on by default... well guess what! The virtual mixer does not support mu-law data, and therefore it is broke on both, even when used in conjunction with an ISA board.
- 4) The recent OSS communication I have states that they have fixed it, yet they do not have support for the new kernel that IRLP uses... big surprise there... Even worse, they dropped support for the OLD kernel (used in 6.2)
- 5) About two years ago, I came out with a SpeakFreely solution (well the makers did, not me) and it was as follows: Covert the audio on the fly. So I thought, GREAT, a working solution for ALL SOUND BOARDS... wrong, they caused ISA boards to crap out. So I added a PCI_FIX flag. Well it was later found that the imike_PCI binary would cause reflectors to crash... So I tried to get rid of the PCI versions, but an uproar about how people's nodes worked fine until I screwed them up..... So I hardcoded a fix that dumps the bad packets from the reflector.

So in conclusion, PCI cards, running with the OSS commercial drivers, with the virtual mixer option turned off (I don't know how to do this, somewhere in options.cfg), properly compiled for your kernel, will work. If not, try adding

```
export PCI_FIX=YES
```

to your /home/irlp/custom/environment file.

Dave Cameron
VE7LTD

PCI info provided by other owners ...

From: David Smith [mailto:dsmith@mypchelp.com]

I am using the Sound Blaster Live 5.1 Value PCI card. Albeit a little pricey for an irlp node, it was something I already had in the machine (I didn't build a machine for irlp, I used what I had)

I am using RH 7.2, which found it automagically. I had to install the alsa drivers to get it to work properly, but I continue using aumix to adjust the audio levels.

I also had to put an inline resistor and pot on the line going from radio audio out to the sound card in (Yaesu FT2600). I could get the system to work without the resistor, but I had to use IGAIN for the audio to come through, and with that set to "1" (from 0 to 100 if you look at the aumix file) the audio was wayyyy too hot. Anyway with a several k resistor and a 1k pot I was able to fine tune the audio to a level which puts the igain adjustment in the center, allowing adjustment.

From: "Alan Bowker" <abowker@bowkera.com>

I have had recent success using a trade name Sound Blaster 132 [128?]. The SNDCONFIG information returned is the Ensoniq ES1371, AudioPCI-97 The only configuration required was the "export PCI_FIX=YES" statement in the environment file.

The improvement in audio quality going from a ISA SB16 to SB132 is phenomenal and quite noticeable over the air. Node 8410 is vanilla IRLP with a Yaesu FT-1500 with Randy's cable. Line level connections in and out SB card.

I have one other node I support, (3020) that I upgraded a week later than 8410. I'll get its configuration and send it along under separate cover.

It is my belief that the sound cards should exist in an environment of non-shared interrupts and IRQ. Perhaps some operators may not realize this importance.

From: "Joseph LaFerla" <ve8jl@laferla.ca>

The Yellowknife node 1600 uses a PCI 128 soundcard and the commercial OSS drivers. Without the commercial drivers, it was impossible to get the card to work. With the drivers, it worked "out fo the box".

From: Michael H Brooke <mhbroke@shaw.ca>

I am using a Soundblaster 16 PCI card (I don't have the CT number at the moment and am unwilling to poke into the machine to find out unless you absolutely have to have it!!!) It is working fine on node 1870, but I had a terrible time getting it to work. The solution was very simple but let me tell you what I did. I read the comments on the discussion group and downloaded the commercial OSS - and paid for the license. It took a little while to get the sound

card recognized by the program (RH 7.3) but it eventually worked well WITH AUDIO CD discs etc. It was a whole different matter on the node. The sound was garbled and I got overrun and underrun messages. I played with it for days and got nowhere. Eventually I completely removed the commercial OSS and went to the driver on the IRLP disc. It initially sounded garbled, but fiddling the audiomix cleared it up and I have had a lot of comments from people complimenting me on the audio now. The secret was to run the PCM slider in the aumix program back to about 15 (the 9th + mark from the left). Everything else is set where other people have said they set theirs. Increasing the PCM gain causes hash and distorts the signal.

From: Douglas Cole <n7bfs@qwest.net>

I am using a Sound Blaster 16-PCI (it said this one the box), with the OSS commercial drivers, the sound card is probed as a PCI-128 card under OSS. It shows up under /sbin/lspci as 00:0a.0 Multimedia audio controller: Ensoniq 5880 AudioPCI (rev 02)

I am using RedHat 7.3, and I have tried the Redhat drivers and the OSS drivers, both give similar results, which means that throughout any particular connection my node will stop re-transmitting incoming packets even though I can see the packets coming in on the network connection, all I have to do is restart ispeaker and everything takes off again until the next time (which can sometimes be 10 times in 10 minutes) so to say the least this is not working well for me.

I have also tried three different cards of the same type so I am pretty sure that the SB-16PCI card itself is ok. Anyway, hope that helps, and I hope we can find a fix for these pci cards, I know my IRLP experience has gone downhill since I changed to PCI...

From: "Steve Agee" <n5zua@earthlink.net>

I'm using the Soundblaster 16 PCI as purchased at Best Buy in my 3 nodes. No funky maneuvering was required, but when the Redhat 7.3 Install / configuration takes place, it detects it as an "Ensoniq" type card & the install software correctly invokes the PCIFIX=YES in the environment file.

From: "Jennings" <swjennings@attbi.com>

I am using a Creative Sound Blaster 16 PCI. My on-board soundcard absolutely would NOT WORK. So I had to buy the card. No problems from then on out!

From: Ryan Butler <rbutler@adiis.net>

I had intended to get this information to you when you solicited it earlier, but I didn't have access to the machine to get the pertinent information when I saw the mail, then forgot about it.

Node 3162 is using: 00:0a.0 Multimedia audio controller: Ensoniq ES1371 [AudioPCI-97] (rev07)

stock oss free drivers in the kernel

“PCI_FIX=yes” works fine.

2.9 Audio and aumix: hardware and software

See also **Routers**, as audio stuttering and other audio problems can be caused by router problems.

From: Peter Illmayer <pete@j...>
Date: Thu Mar 7, 2002 4:36am
Subject: Techtip #1 - Hostname wont resolve

Hi ALL

With the number of calls for help to problems@i..., its probably oportune to put an e-mail or two together to help users overcome common problems

1) Your node receives audio but no one can hear you and you try the echo reflector and you hear nothing in return. This assumes that port forwarding IS working ie: ports 2074, 2075 are forwarded using UDP

This is a classic problem of the IRLP host not being able to resolve its hostname. If you change the hostname of your system, PLEASE pay attention. Speakfreely has a unique requirement that it must know who it is. By this I mean you MUST have an entry in the /etc/hosts file for your node. The Hosts file has ip addresses and names of hosts that you would generally use on your own internal lan.

For example, here is the prompt for REF5:

```
[root@r... /root]#
```

When I ping the word reflector, here is the response

```
[root@r... /root]# ping reflector  
PING reflector (127.0.0.1) from 127.0.0.1: 56(84) bytes of data.  
64 bytes from reflector (127.0.0.1): icmp_seq=0 ttl=255 time=230 usec
```

This is because I have the host defined in the /etc/hosts file. If I ping reflector and it's not in the hosts file, it will do a DNS lookup on the internet and guess what, it won't find it. Let's have a look at the hosts file:

```
[root@r... /etc]# more hosts  
127.0.0.1    reflector
```

Now the ip address 127.0.0.1 is not a real internet ip address, it is actually assigned to the loopback adapter. To checkout the adapters in your machine and the corresponding IP addresses, as root just type ifconfig

Here is what we have on our reflector5:

```
[root@r... /etc]# ifconfig
eth0  Link encap:Ethernet HWaddr 00:50:04:78:A7:C2
      inet addr:203.194.26.234 Bcast:203.194.26.239
Mask:255.255.255.248
      UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
      RX packets:24935297 errors:0 dropped:0 overruns:0 frame:0
      TX packets:53583568 errors:0 dropped:0 overruns:0 carrier:1548
      collisions:7506 txqueuelen:100
      Interrupt:11 Base address:0xec00

lo    Link encap:Local Loopback
      inet addr:127.0.0.1 Mask:255.0.0.0
      UP LOOPBACK RUNNING MTU:3924 Metric:1
      RX packets:5727562 errors:0 dropped:0 overruns:0 frame:0
      TX packets:5727562 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:0
```

if you have a static IP address, you could also assign it to the eth0 adapter, ie: 203.194.26.234 but this is fraught with danger as if the ip address ever changes, your node will break and then you will have to remember back as to what happened !

Now this problem can manifest itself in many ways. If the host cannot resolve its own hostname, the ispeaker process will crash. To test this, simply log on as root and type
/home/irlp/bin/ispeaker

If you get a segmentation fault, here is your answer. Also, if you look at the running tasks ie: ps aux and see more than one copy of sfswrapper running, this is also a pointer to the same problem.

Fix the hostname issue and then kill all of the copies of sfswrapper, this can be done simply by logging on as repeater and typing killall sfswrapper This should kill all copies. Restart irlp by typing (as user root)

```
/etc/rc.d/rc.local
```

I hope this makes sense and you get some use out of this

Regards..pete..vk2yx

From: Peter Illmayer <pete@j...>
Date: Thu Mar 7, 2002 4:47am

Subject: Tectip #2 - AUDIO DEVICES NOT SET CORRECTLY

Ever seen this message, what the hell does it mean ?? What it means is that the audio mixer, audio device permissions have been reset to default.

If your having problems, you may notice it when you run aumix. You may also get it when trying to enable your node. A node with incorrect mixer / audio device permissions cannot enable itself.. When starting your node, the node keeps disabling itself, this could be the answer..

Now it could be that as root, you can run aumix but as user repeater, you get this message, same problem. The device permissions have been reset.

This has happened on a number of occasions and we believe that it is due to autorm updating a package that defaults the mixer permissions. Funny thing is, it has only happened on a few nodes so the problem is not widespread but can be difficult to detect. We thought it was limited to rh7.2, not sure yet. IF YOU'VE NEVER HAD THIS PROBLEM, YOU DON'T NEED TO DO ANYTHING

Fixing it is relatively simple and can be found in your IRLP install script.

```
echo -n "Changing permissions of sound card device files in /dev ..."
chmod 660 /dev/mixer* /dev/dsp* /dev/audio*
chown root.sys /dev/mixer* /dev/dsp* /dev/audio*
```

This is straight out of Dave's install script. To run it, simply log on as root and cut-n-paste this to the command line. If your getting this problem every time you reboot the box, just add it to the /etc/rc.d/rc.local file

The bottom of your rc.local file should then look like this:

```
echo -n "Changing permissions of sound card device files in /dev ..."
chmod 660 /dev/mixer* /dev/dsp* /dev/audio*
chown root.sys /dev/mixer* /dev/dsp* /dev/audio*
# THIS LINE ADDED FOR THE IRLP SYSTEM
/home/irlp/custom/rc.irlp
```

I hope this is usefull and helps you better understand your IRLP node..

Happy hacking !!

Pete..vk2yx IRLP Installer

From: Kent B. Johnson <w7aor@h...>
Date: Sat Aug 25, 2001 2:53am
Subject: Re: [IRLP Owners] Re: Lost Audio

I am sure I don't know all there is to know about aumix and would like the group to share more of their understanding with me. If there is a "aumix 101" I would like to see it. I get by, but there

is more for me to know.

It seems that there are interactions between controls in aumix that are not equal. For Example: Igain and line together control output to the IRLP, but it seems one unit of "line" has more effect than one unit of "Igain". Why are both controls needed? Well, after changing the sound card, studying and re-studying my hand drawn schematics of all the home built logic, and the testing and re-testing of all the components I finally found the problem, a stupid little capacitor gone bad. It is amazing how something so small can allude you when you really want to find it. I have not figured out why the darn thing went bad only that it did. I will have to work on that tomorrow. So, the node is back up and running although I need to put it back together and check the audio levels. Thanks for the suggestions.

--- In irlp@yahoogroups.com, Tom VA7TA <va7ta@r...> wrote:
Greetings Folks: Thanks again for all the help!

As an attempt to stabilize the audio mixer slider settings I implemented the symbolic pointer files recommended in paragraph 2.9 of 'The Unofficial IRLP Manual'. This solved our transmit audio path problem as long as we originated the call. If an incoming connect was made shortly after the IRLP had recently been used it also worked OK. However we found we still had loss of transmit audio path in the event of an incoming connect after the system had been idle for a while.

In our case I found that the root of the problem is that the sound driver modules are installed in the '(autoclean)' mode which I understand means that they are removed from memory by the kernel daemon 'kerneld' after they have been idle for about a half hour. If the node is subsequently accessed by a local station entering a valid DTMF tone sequence then the drivers are re-installed by 'kerneld', aumix settings are properly loaded and all works well.

However if there was an IRLP incoming connect from the IRLP network after the driver modules had been removed from memory then the 'aumixrc' settings were not being loaded when 'kerneld' re-installed the drive modules. This resulted in the interruption of our IRLP TX audio path as the 'line' input reverted to the 'P' (playback?) mode as opposed to the required 'R' (record?) mode.

I also found when I accessed the node via the SSH port after the driver modules had been removed that the settings would revert back to default. If I used the 'L' command they would load properly from 'aumixrc' and pop back to normal.

After doing some research I ran across a solution described within 'The Linux Sound Howto' version 1.22 by Jeff Tranter in paragraph 6.31. Markus Gutschke, who deserves credit for the solution, recommended a 'post-install' statement be added to the '/etc/conf.modules' to force the sound drivers to load the stored mixer settings each time the sound driver modules get reloaded. I added the following line after the pre-existing 'options sb' line to our '/etc/conf.modules' file :

```
options sb io=0x220 irq=5 dma=1 dma16=5 mpu_io=0x330  
post-install sound /usr/bin/aumix -L
```

It has been confirmed that this has solved the 'aumix' revert-to-default problem for node 1160. Because of the timing involved we believe that this situation may also be associated with the 'noise burst on initial connection' problem described earlier. We had previously noticed that we only seemed to encounter the noise burst problem after the system had been idle for a while. After several days and several tests we are pleased to say that we have not been able to make the 'noise burst on initial connection' problem re-occur.

We cannot be sure that the 'aumix' revert-to-default can solely be blamed for the noise burst problem as in the process of troubleshooting we installed an older CT17xx series sound card and ended up running the standard OSS/free driver module set that (as I believe) is distributed as part of the Redhat Linux package. Could the problem be associated with the combination of the CT2900 and (autoclean) mode driver installation ???

Anyone else that has been experiencing this 'noise burst on initial connection' problem may wish to check with the ' /sbin/lsmmod ' command to see if the sound modules indicate the '(autoclean)' option. If your drivers are installed with the '(autoclean)' option you may wish to try adding the 'post-install.....' line as shown above. It stabilized the slider settings for us!

Feedback from any other node owners who decide try the 'post-install.....' fix could provide helpful clarification.

73 & Enjoy!
Tom, VA7TA

From: T. Glen Haggard <glen@k...>
Date: Fri Aug 24, 2001 2:55pm
Subject: Lost Audio

I have suddenly lost my audio to the outside world. I have traced the audio through the link radio and into the computer, it is all there. The computer even accepts all of the DTMF commands so it receiving the audio but, it is not sending the audio to the world. When I connect to the echo reflector I only get a carrier back from it with no audio. I also noticed that I am getting a kick back or key up from the other nodes and echo reflector. This key up is not a pulse back but I did run the pulse back script to make sure. Any ideas?

Glen KK7IH

From: Chris Morgan <Chris.Morgan@S...>
Date: Fri Aug 24, 2001 3:43pm
Subject: Re: Lost Audio

aumix ++++++O+++++ Volume

```

          ++++++O+++++ Bass
Quit      ++++++O+++++ Trebl
Load     PO+++++ Synth
Save      ++++++O+++++ Pcm
Keys      O+++++ Spkr
Mute     R+++++O+++++ Line
Only     PO+++++ Mic
Undo     RO+++++ CD
          O+++++ Mix
          ++++++O+++++ IGain
          ++++++O+++++ OGain
          0                Level                100

```

Make sure [as root] your line is set to R for record, I have seen where it changes on its own. If it keeps setting it back to P the try setting it to R and then reboot the P.C with ... shutdown -r now

73 Chris VE5BAR

Here are sample aumix settings used by node #426:

```

v 90
b 80
t 80
s 0 P
w (pcm) 90
p (spk) 0
l 90 R
m 0 P
cd 0 P
x (mix) 50
i 85
o 90

```

I have several times encountered problems with the settings changing after I had gone through all of the established procedures including saving the settings. Try killing all IRLP processes first, then make the aumix changes and save the settings, and then restart IRLP (/home/irlp/custom/rc.irlp).

Do all of the following as root:

1. Find the processes with the command

```
ps ax | grep irlp
```

and for each process kill with the command

```
kill -9 PID_number_here
```

2. Run

```
ln -fs /etc/aumixrc /root/.aumixrc
ln -fs /etc/aumixrc /home/irlp/.aumixrc
```

so that all of the aumix setting files link back to the master in /etc (only needs to be done once).

3. After setting the levels in aumix save everything using the command 'aumix -S'. (I don't use the interactive interface -- instead I make changes at the command line -- type aumix -h for help.)

4. Make sure ownership of /dev/aud* /dev/dsp* and /dev/mix* is root/sys (chown root.sys) and privileges are rw-rw---- (chmod 660)

5. Restart irlp:

```
/home/irlp/custom/rc.irlp
```

73, Jim WW4M
Raleigh, NC

From: Chris Morgan <Chris.Morgan@S...>
Date: Mon Dec 17, 2001 5:36pm
Subject: Re: Re: Aumix help

After upgrading the Kernel on one of the nodes I look after we had a problem where the aumix setting kept going back to the default values. I am not sure if this is causing you any problems but I thought it worth mentioning.

If you look in your /etc/cron.d directory you may see a file called kmod. [This is a cron job that resets the mixer settings. When we install IRLP, we run a script in /home/irlp/patches/, I think its remove_kmod. --vk2yx]

In that file you have ...

```
[root@C... cron.d]# more kmod
# rmmod -a is a two-hand sweep module cleaner
*/10 * * * * root /sbin/rmmod -as
```

If you see this, remark the line out so it looks like this.

```
[root@C... cron.d]# more kmod
# rmmod -a is a two-hand sweep module cleaner
# */10 * * * * root /sbin/rmmod -as
```

Then you have to run /etc/rc.d/init.d/crond restart

From: Nima Gharavi <Nima@N...>
Date: Fri Aug 24, 2001 2:55pm
Subject: Re: Lost Audio

Chris,

Maybe I'm not thinking straight.... but that would affect his audio out, wouldn't it? Sounds like he's saying he can't hear audio in from other internet nodes. Possibly also audio might not be leaving his box either, I suppose... but he did say he can tell other nodes key up, but no audio with them. Hrmmmm....

This is probably way too far-fetched, but might be the case since you know audio is getting to your box from your link radio. How do you have you internet access setup for the IRLP box? Are you going through an IP Masq or NAT device? If so, it might be blocking audio packets. I'm probably wrong on this, but I'm gonna guess the COS is maintained through the TCP link, and if so, that would explain why you get a carrier, but no audio. The reason I assume this is because after I set up my node but before I enabled IP masq to forward packets back to the node, these symptoms are exactly what I faced.

-Nima

From: Ted Maczulat <tmaczulat@h...>
Date: Fri Aug 24, 2001 5:44pm
Subject: Re: Lost Audio

I got these instructions from Dave Cameron when we encountered the same problem.

Ted

>The proper instructions on how to set the settings are in the "What to do after the
> install" document at [www.irlp.net/new-install]
>You have to use the command (as user root)
>
>aumix -S after you exit aumix's graphical mode.

Here is what you need to do [to prevent the aumix settings to keep reverting to default]. Two lines will ensure that it will work

```
ln -fs /etc/aumixrc /root/.aumixrc
ln -fs /etc/aumixrc /home/irlp/.aumixrc
(NOTE THE ETC IS AUMIXRC and the home directories are DOT_AUMIXRC)
```

This sets the users root and repeater that when root writes aumix -S, then repeater reads the same file when they type aumix -L.

One thing to keep in mind: User repeater can not run aumix -S.

I think the problem comes from those who adjust their mixers before the install. By default aumix writes the \$HOMEDIR/.aumixrc. If the file exists, then the install script which runs the ln

-s command can not make the link, hence the reason for the ln -fs (force, symbolic).

Dave Cameron
VE7LTD

re: intermittent audio / hardware failure
From: "Steve Stearns" <sstearn376@earthlink.net>

In the interest in helping you with your work load, and other owners with their debugging, I wrote up the recent problem-resolution information. Whether this belongs in the unofficial manual or in some other searchable place for obscure problem/resolution stories I don't know. I do think we should all encourage the node owners to write up problem resolution reports (not you guys..., but you could supplement them if you had the time) and put them in a searchable file. This is especially important for the obscure problems (which, in my experience, are still helpful to remember down the road and most likely to be forgotten). The more we grow, the more important it is to make it easier to figure stuff out... I started this debugging knowing nothing about the IRLP setup as it was all done by my son.

Problem Resolution Report by ABOKB for node 539 submitted 19Sept02

Symptoms (a.k.a. obvious erroneous behavior):

Previously working node became intermittent. When in failing state, would not respond to DTMF tones and there was no receive audio getting through the computer. There was no perceived correlation between changes between working and failing states and any external stimulus (such as rebooting, power cycling changing aumix settings, wiggling the cable etc).

Tests and Initial Debugging Observations (a.k.a. non-obvious observable behavior)

- Monitored sound card speaker port while in failing state and observed solid receive audio. Also measured the signal at the line In connector, while the link radio was receiving a DTMF 1 from the other radio at 500mV p-p.
- Observed Behavior of aumix while in failed state and keying and unkeying other (i.e. not the link) radio and observed that the "R" would shift from "Line" to "CD" whenever the radio was keyed and would remain like this until the radio was unkeyed. No change in aumix state was observed when sending DTMF (via other radio) to link radio.
- Observed that in failed state that upon starting readinput a DTMF C usually appeared immediately. Normal COS Active, COS inactive, PTT Active etc signal were apparent but no additional DTMF signals would be indicated regardless of them being sent from the other radio.
- Observed in a log file (I don't know which one as my son found this one) frequent regular decodes of DTMF C.
- Observed that the captured data from /dev/dsp would stop each time a the other radio was keyed and not start again until the radio was unkeyed but that /dev/audio would not stop under the same conditions.

Seemingly relevant third party information (i.e. what I received from the web, other owners and installers)

- DTMF decoding and Audio processing are completely independent (not necessarily as I found out)
- The IRLP software commands the sound card to switch to the CD input during DTMF decoding

to mute the DTMF signals

-DTMF C appears to be the erroneous decode of choice when the DTMF signal is not getting to the IRLP card

Inferences and associated confirmation tests

-I inferred that the receive audio signal was not being interpreted consistently by the IRLP card and the Audio card, I removed the cable to the radio and tested it for continuity and shorts while subjecting it to vibration. It tested fine.

-I inferred that, in the failing state, that given that the IRLP software intends to make changes to the state of the audio card upon receipt of COS and/or DTMF that there was either a problem in the drivers for the audio card, the audio card itself or in the DTMF decoding process. I removed and inspected the audio card with no problems observed. Upon reinstallation, however, the node worked fine for a relatively long stretch (10 minutes?)

-I inferred that the IRLP software was interpreting that a DTMF decode was always in process, but that the DTMF decoder was never successfully doing a decode (at this point we had not found the log file and readinput never indicated more than the very first DTMF C). To test this, I killed the DTMF process and observed that the audio was restored. At this point we also found the log full of DTMF decodes from which I inferred that somewhere in the set of processes that decode DTMF and eventually results in readinput reporting them, duplicate DTMFs can be discarded (as they were in a the log file but were not being reported by readinput)

-I inferred that we had a problem with DTMF decoding, we pulled and inspected the IRLP card and observed signs of rough handling (by my 13 year old son, no doubt, who actually did the whole install). A chipped ceramic disc cap in-circuit tested ok and the crystal, who's case could be wiggled relative to the leads, was replaced.

The problem has not recurred since.

Cheers, Steve.

From: Nate Duehr <nate@n...>
Date: Mon Dec 10, 2001 2:37am
Subject: Re: Help - Node 444 having strange problems

On Mon, 2001-12-10 at 00:10, Tony Langdon, VK3JED wrote:
> At 11:56 PM 9/12/2001 -0700, you wrote:

Maybe not if you got file permissions messed up in the directory.

> If you use Linuxconf, this can happen. Apparently, linuxconf changes the
> permissions of the audio device to what it thinks is right. :)

Oh damn it. I've seen it do that.

Let me just reiterate publicly...

I HATE LINUXCONF!!!

Ok, that's off my chest.

It works. I won't gripe about that. It's an ok tool when a machine is brand new to get it up and running, but eventually you find that editing the files in /etc/sysconfig/network-scripts and the /etc/sysconfig/network file directly are a hell of a lot easier on RedHat, and you forget all about Linuxconf.

Just a rant... Linuxconf is trying to "do the right thing" by putting permissions it thinks you messed up back the way it thinks they should be but for IRLP it shouldn't do that. It breaks IRLP.

Hmm... there's a thought. I just came up with an idea for a patch to the install script to keep this from happening. I'll forward it to Dave. Cooool.

Nate WY0X

>Tony -- can you briefly describe the symptoms of "ispeaker vegetation" so I
>can post it and your 'fix' in the manual? I tried searching the list
>messages, but the search function doesn't go back that far.

Incoming audio stops suddenly and PTT drops (sometimes never even gets started). After that point, no further incoming audio can be received (effectively, the connection becomes "one-way:). Normally disconnecting and reconnecting restores incoming audio.

If it is the infamous "ispeaker vegetation" problem, there is no fix... It is worse in GSM mode than ADPCM, so sticking to ADPCM-only connections where possible usually mitigates the problem.

The incoming audio can be brought back by doing the following (as repeater)

```
killall ispeaker  
sfswrapper
```

These commands could be put into a script to be activated remotely via DTMF. Here's my "revive" script.

```
#!/bin/bash  
#. /home/irlp/custom/environment  
killall ispeaker  
if [ -f "$LOCAL"/codec ] ; then $SCRIPT/sfswrapper ; fi
```

73 de Tony, VK3JED

<http://vkradio.com>

If your node plays your wavfiles s-l-o-w-l-y they are probably not recorded at 8-bit 8 khz mono. They might play back okay using the old wavplay command (now called custom_wavplay), but you should re-record them at the proper settings. (Any stock IRLP scripts that you modify from wavplay to custom_wavplay will be overwritten at the next update.)

2.9.5 Making Your Audio Sound Good

-----Original Message-----

From: nate [mailto:nate]On Behalf Of Nate Duehr
Sent: March 2, 2002 5:07 AM
To: pe1hgz@arrl.net
Subject: Re: FW: Is 0dB audio level defined on IRLP?

There's a program called "audiotest" that will play a pre-recorded sound file that you can use to set audio levels roughly out of the node. It has a tone that I set for 3.5 khz of deviation (my 0db point, yours is 3.0, either would work) and Dave's voice saying "This is Victor Echo Seven Lima Tango Delta with an audio test -- audio test 1 2 3 -- this is VE7LTD with an audio test."

To get audio JUST right... you have to go a little further...

Assuming you have the outbound audio from the node set right, and your repeater is set to pass user audio exactly as received when swept with various tones (well, real-world we all know it's hard to get this exactly right, but very close is good)...

Next you move to the Echo Reflector. This is a digital Reflector that will send back what you're sending exactly as sent.

Since you have a known audio file setting already set OUTBOUND from your node, if you inject a 1000 hz, 3.5khz tone into your repeater it will follow this path...

Line In on sound card... Echo Reflector... Speaker Out on sound card.

Now... since you've ALREADY set the Speaker Out from the sound card to a known "good" level... if you change the Line In level as you send a tone, you'll see that the audio coming BACK from the Echo Reflector will change in how much it deviates your repeater also. You can get it to where a 3.5 (oh... I keep forgetting you like 3.0 as a midpoint... you can use that too) khz deviation 1000 hz tone (or other frequencies if you like -- you can test the dynamic range of your sound card indirectly this way, but I didn't bother) to set the INPUT level to your IRLP node. So using this "relative" test gets things pretty darn close.

Now... for almost every IRLP node out there, if the owners could do just this one thing, the levels would all be VERY close to correct. However... I found ONE small glitch in testing my simplex node and wanted to be ultra picky. The response curves for the mixer are not linear for Input and Output on my particular sound card. So I had everything set up using the technique above but things still sounded a little off when listening from another node subjectively. So I started playing.

And what I found was that if I recorded a WAV file directly off the sound card of the one using the manual command, "record xxx.wav" and then played it back, the tone was quieter than back

from the echo reflector.

I got to thinking about it and realized that there are audio amps in both sides of the sound card, in and out, and then realized that a cheap PC sound card is not going to have a linear response curve on the mixer "sliders" like an industrial quality mixer board... the op amp driving the outbound audio was amplifying the audio a bit more and I was set a little too low on outbound audio... so how did I find the "sweet spot"?

A lot of tweaking. Grin!

I went back to sending tones into the node, but this time recorded them "live" off the air JUST into the node. I got outbound and inbound equal there, THEN moved to the Echo Reflector. And to make ALL THREE match, the "audiotest" file, the locally recorded file, and live returns from the echo reflector, I had to keep sliding Line In up one notch, Speaker Out down a notch.

On SOME sound cards (like mine) there is also a control for "Igain" which is "Input Gain" and controls an amp in the Line In circuit... so that had to be moved around notch by notch also until it all lined up. It took about an hour and a half on node 399.

In general, the "quick" method at the top works to get everyone very very close to accurate, and only sound card errors get passed after that. If you do that "easy" method and then listen to your self on Live365 and ONLY move the Line In slider in the mixer program after that to make your audio match other nodes, you'll sound great on the network. I usually recommend that if you have to move the Line In slider TOO far then there's either an audio level problem coming out of the radio that needs to be adjusted or the Igain slider is way off to one side or another, but I have also seen nodes that sound BEAUTIFUL with both Igain and Line In maximized all the way to the right, and because their audio is low coming from the radio but very spectrally pure and clean, they sound great.

One other thought... if you're going for really BEAUTIFUL sounding audio, you may wish to build an RLC circuit with an op amp, a resistor and a cap to roll off CTCSS tones, and two of them... one for each direction. My node still doesn't have this, but very little of my 103.5 hz PL tone seems to leak through, a byproduct of where I'm pulling the audio from in the radio, it's already rolled off a bit. Some nodes pass a full .6khz CTCSS tone out to the network and you can hear it on Live365 with a good set of speakers because that's a 100% digital stream from the Reflector to their servers.

In some cases, Paul has helped some node owners with various noises getting into their audio lines by recommending 600 ohm 1:1 audio transformers between the IRLP board and the radio also... this seems to work well, but one node owner reported that the one he used messed up his low-end audio response... so good test gear is a must if you're going for absolutely gorgeous audio.

And if you do take the time to do it right, you'll be appalled by some of the node audio from some of the nodes. GRIN. Not everyone does this, and some folks outright don't understand how to do it anyway. The "Plug and Play" folks tend to ignore this type of stuff because they've never built repeaters before... oh well.

And this stuff is all stuff I learned by doing -- the first IRLP node in Denver (node 335) we

fought and fought and fought to get the IRLP sounding like a local user. The repeater builders that built the machine understood fully how to make their repeaters have beautiful flat audio -- you switch from the input frequency to the output and you can't really tell the user is going through a repeater unless they overdeviate and force it into clipping. The machine sounded GREAT... but the IRLP node sounded tinny and gross.

After finding that we'd forgotten to de-emphasize the audio at one stage where it should have been de-emphasized coming from a link radio's discriminator circuit... now it sounded MUCH better, but audio levels were not quite right. So we played around with two different service monitors listening off the air and three technical folks all conferring on a quiet UHF repeater (the 335 node is VHF) while feeding different tones and doing other things... and we slowly figured it all out.

I owe a lot of thanks to Glenn WNOEHE, Kent N0PSR, Bob N0TI, and Doug K2AD for teaching me the proper way to sweep this gear to get it sounding as good as it does!

Nate WY0X
IRLP Installer and Audio Geek

From: Paul Cassel <paul@v...>
Date: Mon Aug 20, 2001 2:33pm
Subject: Re: Audio setup - not trying to start WWIII :)

While the echo reflector is a great tool it sometimes does not appear to resolve some level issues. What you may wish to try is connect to REF 2 and monitor the Live365 feed that I stream from one of our nodes here in Kitchener. Listen to how users on your node sound relative to other nodes that you feel have great audio. Or if you are close enough to another node switch between your repeater and the other node repeater and set your Line In level until the two sound equal.

As long as you have your TX audio from the Linux box to your repeater sounding great the above is an easy way to be your own critic. I have a Cushman Service Monitor however I prefer to use the above method as its all about what you sound like compared to what the IFR, CUSHMAN say :-)

Speaking of WWIII I am treading into a mine field to bring this topic up here but as far as I'm concerned the best sounding node audio is from nodes using speaker audio through an 8 > 600 ohm transformer into the Line-In on the SB.

FLAK JACKET ON!

BTW for those not aware of the Live365 feed goto www.kwarc.org/listen/ for details.

Enjoy
Paul VE3SY
open nodes 241 and 242
Kitchener, Ontario

From: Randy Neals <rneals@s...>
Date: Mon Aug 20, 2001 3:52pm
Subject: Re: Audio setup - not trying to start WWIII :)

Hi Paul,

Your audio configuration with a matching transformer from Speaker-Out to Line-In would ensure proper impedance matching and thus proper operation of the pre-emp/de-emp circuitry in the radio.

I had a concern about impedance with the IRLP instruction that suggest bridging the stereo audio in and out on the SB card in the PC.

What was the previous configuration that you compared the audio too, and do you think the difference could be impedance matching, or picking off audio prior to de-emphasis. (Some radios have de-emphasis in the audio amplifications stage.

Randy, VE3RWN
Bethany, Ontario

From: <ne1h@h...>
Date: Mon Aug 20, 2001 0:45pm
Subject: Audio setup - not trying to start WWIII :)

So, I have been pulling my hair out trying to get my audio levels set correctly. I decided to get scientific about it and maybe that is where I should have stopped.

Here is what I have done so far.

- a) I play the audiotest file and with a service monitor connected to my link radio, I setup for 4khz of deviation
- b) Then I connect to the echo reflector and adjust RX (input) levels on the soundcard with a 3khz deviation 1khz note tone, so that I get 3khz of deviation back from the reflector.
- c) I then checked the 1khz - 4khz of deviation in 1khz steps and it was pretty linear.

So, this morning, I connected to a node and they said my levels to them were low and their levels to me were really HOT.

So I give up. Someone give me a foolproof baseline method???

The way, this really should be done is as follows.

- a) play audiotest and adjust for 4khz
- b) get someone to do the same on their end of a link

c) generate a 1khz tone, 3khz dev signal on my end of the link and I'll adjust my input to the soundcard until you have 3khz of deviation on the other end
d) now they do the same while I tell them what the deviation is

That's how you get a real scientific approach. Course you should do it for ever 1khz of deviation up to 5 and you should really do it for ever 500hz of tone from 500hz - 3.5khz.

The system should be linear and it should reproduce somewhat linear results (it is a lossy compression schema, so it will never be prefect)

But I don't want to go there now, I want to get something that sounds reasonable for now....

Any help or process solicited,
Alan

From: Thom Forbes <forbes@o...>
Date: Mon Aug 20, 2001 9:52pm
Subject: Audio Levels

So simple I overlooked it. If you are sourcing your repeater audio from the SPEAKER OUTPUT of the link radio, don't forget that the radios' volume control will affect you IRLP "uplink" audio levels. Sometimes just bumping this control "accidentally" will result in overdriving the sound card input.

73
Thom - KI2N
Node #423

From: T. Glen Haggard <glen@k...>
Date: Mon Aug 20, 2001 9:55pm
Subject: Re: Audio Levels

This is only true if you are using speaker audio.

Glen KK7IH

From: FredList <fredlist@s...>
Date: Mon Aug 20, 2001 2:46pm
Subject: Re: Audio setup - not trying to start WWII :)

I spent years trying to solve the same problem as you, stop pulling your hair out. Here is the basic problem. HAM RADIO IS NOT COMMERCIAL RADIO there are too many variables outside of your control things like the repeater you are sending audio to may be a piece of junk,

the repeater you are receiving audio from may have got the audio before de-emphasis, other repeaters are not set up properly, and are very probably have non-linear discriminators, hams do not keep their radios setup properly, and why should they when the manufactures ship them that way. Hams not in the business couldn't tell if a signal was proper if it hit them in the head. I ran a test one time, in checking out 30 some radios on the cushman on club night, I found that all Alnico radios new out of the box were running in excess of 7 khz of deviation. If you have your repeater set at a max of 5 khz like you should, and the audio gain to produce the proper deviation then anyone who is over deviated will sound compressed. If you have your transmitter to allow 10 khz of deviation, then anyone with 7 khz will be loud while anyone with 5 kHz will sound soft. It is a problem where you are RIGHT, but there are so many people wrong it is the old "tail wagging the dog" syndrome. I came to the conclusion that hams are responsible for controlling the deviation of their radio, and the repeater operator is NOT responsible for correcting their problem, Here is how I set up my repeaters to make my life easier. Set the max deviation wide open. With any radio talk into it and set the average deviation of the repeater with the input audio to match the average deviation of the input radio a touch tone works nicely. If you want to get really technical, inject a 1 khz tone, look up the bessler function of that frequency, and increase the audio until the repeater power drops to zero. At this point you have done everything you can do to insure that your are faithfully reproducing the junk or quality coming to the input of the radio. Do the same thing via the echo reflector.

20 years ago if you told someone that they were over deviated they would have solved the problem, however during the last 10 years there are so many appliance operators out there with radios that were wrong from the factory, its like standing front row of a 250 db rock concert and yelling FIRE, several of the closest people will leave but most will keep dancing to the same tune that is being played. The only people who can fix this problem is the FCC (or the authority having jurisdiction) and they can't its like the old CB days. Your life will be simpler if you adopt the philosophy that you are not responsible for fixing their problem, you are NOT the deviation cop. If they are over deviation on your input where ever the audio came from, it is their fault for driving your repeater out of limits not yours. I am in the process of bring up a node here in Orlando I am going to take the philosophy of telling the operator of the other node when their audio is really objectionable, if they don't make attempts to resolve it they will simply go on the lockout list. Life is too short to solve "world hunger"

So now that I have solved the deviation problems of the world, who can help me with a problem. I am trying to bring up pair of Standard mobile GX radios up for linking, I have the software to program the radios, but don't have the programming cable. Can anyone out there give me the pin out.. HELP please.. FWIW..

Fred wd8kni, Orlando Fl.

From: Tony Langdon, VK3JED <vk3jed@o...>
Date: Mon Aug 20, 2001 3:39pm
Subject: Re: Audio setup - not trying to start WWIII :)

>Your audio configuration with a mtching transformer from Speaker-Out to
>Line-In would ensure proper imedance matching and thus proper opeation of
>the pre-emp/de-emp circuitry in the radio.

I would say "that depends". Sure, if the input to the radio is directly into a passive filter, or other circuit which is critical with regards to impedance matching, this is correct. However, a lot of active circuitry isn't that critical, as long as the source impedance is within a broad range. Voltage amplifiers typically require impedances of less than a particular (usually high) value, and they're happy. Current input stages need a high impedance source, again, often not critical.

However, that said, impedance matching is still a good idea.

>I had a concern about impedance with teh IRLP instruction that suggest
>bridging the stereo audio in and out on the SB carf in the PC.

With the input, I did that, to make the audio available on both channels. As I am driving it with a signal of a few hundred ohms source impedance, the matching should be fairly close, and the audio at a distant node sounds nice. :) With the output, I used the left channel only. I don't like tying two low impedance outputs together. That could lead to silicon smoke. :)

> What was the previous configuration that you compared the audio too, and
> do you think the difference could be impedance matching, or picking off
> audio prior to de-emphasis. (Some radios have de-emphasis in the audio
> amplifications stage.

This is important. The digital characteristics dictate that 'flat' audio (i.e. post de-emphasis) should be used into the SB. This is also the IRLP standard.

The reason for flat audio is that pre-emphasis is used on circuits that have a noise characteristic which rises with frequency, such as an FM channel. It is also used sometimes where signals have low energy in the high frequency spectrum. However, the digital systems have a flat audio response, and there is a significant amount of energy up to 3 kHz, so de-emphasis is not appropriate and may degrade the signal. In addition, CODECs are designed for a particular type of input signal (i.e. voice), which has a characteristic frequency spectrum. Using pre-emphasis on this sort of circuit may cause malfunction of the CODEC, which could be heard as undesirable artefacts on the audio.

From: Nate Duehr <nate@n...>
Date: Tue May 7, 2002 11:27pm
Subject: RE: Audio level question

On Tue, 2002-05-07 at 22:01, Tony Langdon wrote:

Okay quick question, what is the expected Devation
level for the test tone
which is on the wav file where Dave is stating he is testing?

>
> Depends on your setup, but I found in my experience, the level is set when
> the tone is set so that the deviation is at the peak deviation you want for
> your system.
>

- > IOW, if you're using +/- 5 kHz as you peak deviation, that's what the
- > deviation should be when the tone is playing. (careful, limiters can
- > sometimes play havoc with measurements here, you may need slightly less
- > deviation than 5kHz).
- >
- > If you're using a dedicated link, with good S/N ratio, you may want to use a
- > lower deviation (say +/- 3.5 kHz) to minimise audio distortion that the link
- > may introduce.

Eeeeeeeek! NO!

Look at the waveform... Dave's voice peaks are HIGHER than that test tone (even though it doesn't sound that way to the human ear).

That tone should be set no higher than 3.5 khz on a 5.0 khz max deviation system!!!

Dave's voice goes quite a bit higher than that in the graphical view of that audio file!

Also, there are some calibrated tones and notes in the files area from someone here that posted them, can't remember who, that will let you "sweep" your system a bit to see if higher pitched and lower pitched tones come out about the same.

But the real problems are in setting the OUTBOUND audio... most folks don't understand that to TRULY do it right, you need to get the node response equal locally first, and this REQUIRES that you record LOCALLY before using the echo reflector.

Repeater first... 3.0 khz in = 3.0 khz out.

Node next, 3.0 khz out from test file.

THEN node... RECORD 3.0 khz tone from off air. PLAY BACK tone and get that 3.0 khz.

ONLY THEN can you truly go to the echo reflector and KNOW that your system is flat and move the outbound audio slider for LINE IN... and then you'll find that on most sound cards, the response is NOT LINEAR... so you'll have to disconnect, retweak BOTH OUT AND IN up or down a tad and go again to echo... wash, rinse, repeat...

This is a total pain to describe on a e-mail... but the echo reflector is not perfect...

Because... you MIGHT have so much amplification in your outbound audio to your local repeater that you SOUND okay coming back, but you're NOT sending enough audio out to the Net for us to really hear you. This is why getting the response locally "flat" (as in what goes in is what comes out -- not audio response) is important in here and it's NOT documented nor is there an easy way to do it.

What Kent was talking about here was to get a node as damn close to perfect as we could, then take an extra IRLP board and feed the audio out of it into a measurement circuit and create some way for nodes to connect to it and SEE LIVE their "Internet Deviation"... but we haven't even gotten close to starting that project yet...

So to really really really get it perfect... go read my notes in the Unofficial Owners FAQ and take

measurements...

Nate WY0X

--- In irlp@yahoogroups.com, Randy Hammock <rhammock@w...> wrote:
> I'm using an ICOM IC-2720 dual band radio with IRLP interfaced into
> the packet port.(Node 3199 is a simplex node, so I'm on 440 rather
> than 2M. Maybe someday...) I've had no complaints about the audio so
> far. However I'm new to IRLP, so maybe there is a better way to
> setup the audio?

We discussed a standard method of setting audio at the [2003] node owners convention. While this information has not been officially released, I have put together a web page based in the information discussed. The URL to my page is: <http://irlp.kc6hur.net/audiolevelsPM.html>

The page could probably use some more work but will get you started.

Randy Hammock KC6HUR

--- In irlp@yahoogroups.com, "Lu Vencl" <ka4eps@a...> wrote:
Most of you should have already received notice, but I have finally uploaded the power point presentation to the files section of this group. Sorry for the delay, but I had lots of catching up to do at work. A copy can also be downloaded from <http://www.ka4eps.com> Click on the files link on the left. I will also place a PDF version for those that may not have PowerPoint. Also, in the next few days, look for the entire 2003 Las Vegas IRLP convention on that same link page. It will be in media player format. This will allow you to hear the convention over your PC speakers. In this presentation, you will learn of a standardization of audio Levels that if everyone will exercise, will promote a better sounding IRLP network. If you have any questions, please let me know.

73

Lu Vencl KA4EPS

--- In irlp@yahoogroups.com, Randy Hammock <rhammock@w...> wrote:
> I doubt if it's the stock kernel driver problem. Some nodes use the MIC
> input, that's where the AGC is VERY noticeable. If they rebalance the
> impedances and using the line-in/line-out, things sound MUCH nice

If you look in Lu's presentaion and on my web site, you will see that AGC is only on the MIC IN and no other input. On my web site, I have the a fair description of the Sound Blaster card and it's audio routing paths. There is even a PDF copy of the Programmers Manual so you can see what features can be found on the Sound Blaster. (I'm afraid that my information relates mostly to the Sound Blaster 16 series of cards.) There is a page which is still being worked on that will eventually explain just how adustable the levels are. These pages are being updated on a daily basis as I learn more about the Sound Blaster.

<http://irlp.kc6hur.net>

Randy Hammock KC6HUR

2.10 Wav files, software-generated

From: Cary Honeywell <caryh@h...>

Date: Thu Dec 6, 2001 0:47am

This is the site I use.

<http://www.bell-labs.com/project/tts/voices.html>

From: VK5UJ - Joseph Burford <joe@v...>

Date: Tue Jan 15, 2002 1:59pm

http://www.naturalvoices.att.com/demos/int_us_m.html#us_interactive

--- In irlp@y..., "Jim Black" <kb5kzs@c...> wrote:

Might try <http://www.speechworks.com> This site will let you record from their demo and save to your machine. It sounds about better than any of the others I have tried. Thanks to Paul K5GLH for the link in the first place.

From: Marcus Xenakis <marcus@x...>

Date: Wed Nov 13, 2002 8:42am

Subject: Re: URL for voice msgs

> [regarding synthesized speech] Thanks Dave, will give it a whirl. I tried the microphone,
> but was told that the format was not what was needed. Will try again

You may select the proper format in the recording program. You may also convert it using the "sox" program on your node. Use "man sox" for details and read my reply to your email for more information.

73's, Marcus

2.11 Echo Reflector & Live365

FYI If you don't hear your own transmissions coming back from the Echo Reflector, there's something wrong with your port forwarding or your host name resolution on the machine for

your own IP address. The Echo Reflector uses no authentication, so everyone should be able to connect regardless of whether their pgp key is on the server.

2.12 Parrot Repeaters

A parrot (or simplex) repeater is as the name suggests, a repeater that uses store and forward techniques to relay a signal. Parrot repeaters start by waiting for a signal. Once a signal is detected, it starts recording the audio. When the incoming carrier drops, the recorded audio is played back over the air. This allows the range of the station to be extended without requiring a duplex pair. The resulting QSO is a bit stilted and clumsy though. [vk3jed]

See groups.yahoo.com/group/irlp/files or contact VK3JED re: scripts he has written for IRLP to enable parrot operation.

2.13 Simplex Nodes

The coordination and use of simplex frequencies for IRLP has been a topic of much discussion on the yahoo owners group because of the interference it can cause for other regular users of simplex frequencies and because 2 stations might not hear each other but try to work the local node at the same time. Please search the list archives for 'simplex node' or 'suggested channels'. -
- ww4m

From: <rmackay@i...>
Date: Mon Sep 3, 2001 7:12pm
Subject: Node on Special Channel

Sorry for the cross-post but I was off the list for awhile.

(In response to a query about IRLP nodes on Simplex channels)

Yes Chris, as A Freq Coordinator for many years I can say that ANY Fixed-Service installation should be properly coordinated. After all the node, especially when left connected to a Reflector, generates a lot of traffic on that channel.

In my opinion a node should not be on a calling freq like 146.52 nor 446.00. Instead, I suggest we work out an international "NODE" channel for simplex nodes, just like ARPS etc., which would comply with ARRL band plan standards. The segments 145.50-145.80 mhz and 445.00-447.00 would be ideal (except around 446.00). Alternately, lesser used "Simplex" channels could be used by local option such as 146.49 or 146.58 or the 15khz splinters, if properly coordinated.

73 - Ron VE1AIC
Node #203 VE1CRA
MARCAN Freq. Coordinator

From: Ron <rmackay@i...>

Date: Wed Sep 5, 2001 8:26pm
Subject: Re: Node on Special Channel

After a number of discussions on the IRLP general list I wish to propose some options for those wondering about 2M channel selection for simplex IRLP nodes. For UHF links there should be plenty of channels available in the normal repeater/linking/experimental segments. Please consult with your local Freq. Coordinator.

For 2M Simplex nodes the following have been suggested as workable within most band plans. These are certainly more appropriate than 146.52/55/58 or other established FM voice channels.

144.950, 144.970 (Depending on Packet activity)
147.420, 147.480, 147.540 (Also depending on packet or Simplex FM use)

Your Freq Coordinator probably has never heard of IRLP so its important to help them out with reasonable suggestions.

Since this list is archived, new NodeOps may wish to take advantage of such suggestions along with other great hints and tips to be found in the files.

73 - Ron VE1AIC
NopeOp 203 VE1CRA
MARCAN Freq Coordinator

2.14 Duplex Control -- mods to the IRLP board

From: <rmackay@i...>
Date: Sun Aug 26, 2001 2:53pm
Subject: Re: IRLP Duplex Control - D1

Thanks Ed and all who replied directly as well.

YES Diode D1 has been added to version 2.01 boards. From looking at the circuit, the diode D1 is between the PTT LED and the base of the COS control transistor which disables any COS control during TX. Clipping the diode enables full-duplex control. This appears to work fine now although I hear a few more clicks at the end between transmissions. Probably a good idea to check for pulsebacks again.

For anyone interested in this mod, I have uploaded pictures of the interface board in the PHOTOS section.

73 - Ron VE1AIC

From: Nate Duehr <nate@n...>
Date: Fri Dec 7, 2001 8:16pm
Subject: Re: Re: [IRLP General] version 2.0 board

Hi Brandon,

The diode modification mentioned is only useful if you have a full-duplex radio link to your node from your repeater/radio. If your radio can receive at the same time as it's transmitting the diode modification can be done with any sound card that supports full-duplex operation (not all do) so you can key up over your node and control it even while it's transmitting. [*Cutting the diode will allow you to send the disconnect to the node while the your TX is keyed by the remote node, however the command will not execute until the remote node drops your PTT. - wa2dci*]

Typically this is done by wiring the IRLP node directly to a link port on a repeater controller (say port #2) that you can do full-duplex links on. Then you program your controller to always accept port #1 (the repeater) input as the input for port #1 transmit (the repeater) and port #2 transmit (the audio to the IRLP board) before other inputs.

There are other ways to do this as well... but you probably get the idea. Some of the nodes in the IRLP system have full-duplex link ports on their repeaters and do other neat things like "listen only" modes where the users of the repeater can turn on and off the transmit lines from the repeater controller to the IRLP board, even if IRLP is linked somewhere (like REF920).

Nate WY0X

From: Nate Duehr <nate@n...>
Date: Sat Feb 23, 2002 8:34am
Subject: Re: Re: [IRLP General] Quick Keying

On Sat, Feb 23, 2002 at 08:31:57AM -0500, Charles Scott wrote:

- > For those of us with full duplex nodes (directly connected to our
- > repeater) is there any reason we can't just enter the codes and drop the
- > reflector when someone else is talking? Am I correct that it will not
- > interfere with the transmission from the reflector?

You are correct. If the talking person on the Reflector unkeys while you're still keyed, we'll hear the briefest blip of your node (unless you have a prefix code that could sink the Titanic in sheer size and weight) at worst... more likely your node will already be in DTMF muting so we'll just hear a brief completely silent kerchunk.

2.15 DTMF decoding

Note -- the DTMF board will not decode the letter D properly, however it will do the numbers and A, B, C, * and # just fine. When scripting, represent * with S ('Star') and # with P ('Pound').

From: Tony Langdon, VK3JED <vk3jed@o...>
Date: Sun Sep 30, 2001 5:30am

Subject: Re: DTMF Decode and Sound Card Input Selector Problems

At 08:42 30/09/2001 +0000, you wrote:

>I'm hoping somebody else might have experienced these two same
>problems, or can head me in the right direction to trouble-shoot my
>new node (IRLP install was two weeks ago).
>
>Problem #1 - DTMF decode not working properly. The yellow LED on the
>IRLP board indicates a decode, but I'm unable to make the DTMF
>commands work. When I go to the "readinput" mode and generate DTMF
>with my portable I will only see two or three indications of DTMF
>occur, even though I've gone through all 16 buttons, and the digits
>that are displayed aren't the buttons that I pushed. Sometimes when I
>start "readinput", it will immediately show a DTMF digit decode, even
>though I haven't generated any tones.

I had a similar problem with my node. It turned out to be a dud printer port. Here's a couple of things to try:

1. Go into the PC's BIOS and set the printer port to use standard (SPP) mode, no bidirectional stuff.
2. Failing that, grab an old printer card (seems the older, the better), and try running the IRLP board off that.

Solution #2 was what fixed my problem, after fruitless fiddling with the BIOS settings. An old external (from an XT!) printer port did the trick.

>COS and PTT ARE working, and I am able to connect to other nodes
>using the keyboard. I swapped out the IRLP board with another board
>(and cable) and continued to have the same problem. Both boards work
>fine with the same radio on another IRLP computer (I would assume
>that would indicate that the wiring and audio levels are correct).
>I've rotated through all the LPT settings in the BIOS with no success
>(PTT and COS didn't work with other settings). The parallel DB25
>connector is PCB mounted, so there's no ribbon cable issues.

OK, that's the same symptoms I had.

>Problem #2 - Sometimes... The record input toggles from "input"
>to "CD" whenever COS is active. Usually from a clean boot the audio
>functions normally, but when I start "Aumix" I'm then unable to send
>audio. While viewing the Aumix screen I see the red "R" transition
>from "input" to "CD" upon COS, then transition back to "input" when
>the COS goes inactive.

This is related to the false DTMF indication. Again, I'd try a printer port card from a junked XT.

Good luck with it.

73 de Tony, VK3JED
<http://www.qsl.net/vk3jed>---

On 12/21/01 3:25 PM, "Cary Honeywell" <ve3ev@y...> wrote:

> I am getting a string of DTMF = C entries in the log. Anyone know
> what is happening here?

From: Eric J. Goforth <eric@2...>
Date: Fri Dec 21, 2001 7:43pm
Subject: Re: Dumb DTMF code

I get these now and then too, but I know why it happens... I forget the term now, but what happens is that the human voice can occasion create the tone of DTMF press. In fact, we have a sweet YL operator here that does it so often that she is constantly having to repeat herself because our LC3 controller mutes DTMF tones. Whenever she laughs, she send out A's C's and a few others to the controller and in turn our IRLP computer, hence the odd occurances of DTMF in our logs..

From: Cary Honeywell <caryh@h...>
Date: Fri Dec 21, 2001 10:05pm
Subject: Re: Dumb DTMF code

It was far simpler than I thought. The plug from the radio to the IRLP card was loose!

From: Christopher (Chris) W. Boone <cboone@e...>
Date: Sat Dec 22, 2001 2:15pm
Subject: Re: Dumb DTMF code (A SUGGESTION!)

Its called falsing....AND there is a cure for it in some cases.. DTMF decoders DO NOT like HOT levels....when in doubt, TURN THEM down into the DTMF decoder.....

From: Nate Duehr <nate@n...>
Date: Sun Sep 30, 2001 3:08pm
Subject: Re: DTMF Decode and Sound Card Input Selector Problems

Hi Mike,

The DTMF detector drives different pins of the parallel port. You may want to figure out the pattern and see if you're seeing anything at the parallel port on all the pins when you enter

DTMF. A breakout box for the parallel port DB25 would make this quite a bit easier to "debug", especially one with LED's on it for line status.

The DTMF problem could also be caused by having the parallel port in the wrong mode in the BIOS. Try changing your parallel port to the different modes your BIOS provides, starting with the simple ones and moving towards the fancier two-way ones. Dave's parallel port driver may be getting confused by a strange parallel port mode.

Also make sure in your BIOS that the base I/O address for your parallel port reported in the BIOS is the same as the base address you have set in the environment file.

The record input changing from one line to another is actually a feature. It's the muting for DTMF. Does it ever move when you DON'T have DTMF detected? The node switches from your normal input line to CD to mute DTMF as it comes in.

From: Penn McClatchey <pmm@s...>
Date: Sat Oct 6, 2001 1:26pm
Subject: dtmf decoder software seems to have stopped working

Here's a little halloween come early. My dtmf decoder seems to have stopped working. Here are recent entries from /log/messages

> Sat, 6 Oct 2001 21:06:38 -0400 DTMF = 1319131S1
Should be "12920" (12920 is a custom decode I set up.)

> Sat, 6 Oct 2001 21:07:00 -0400 DTMF = 1515171S1
Should be "4560"

> Sat, 6 Oct 2001 21:10:16 -0400 Node Enabled
Here, I rebooted, thinking something was bad wrong.

> Sat, 6 Oct 2001 21:11:31 -0400 DTMF = 1319131S1
Tried "12920" again.

> Sat, 6 Oct 2001 21:12:21 -0400 DTMF = 1919191S1
Tried "9990" The node did not send any audio to the xmitter in response to these commands.

As recently as last night my node was successfully decoding. We appear to be available for incoming connections and took one about an hour ago.

Anyone have any idea what the problem might be?

Thanks in advance.
Penn K4PE
Node 455

From: Richard Paul Merrell <k6jxy@h...>
Date: Sat Oct 6, 2001 1:36pm
Subject: Re: dtmf decoder software seems to have stopped working

Check your audio connection. Make sure to run the script as user repeater type in readinput. It will display everything that comes across. It's probably your audio connection. If the receiver is off frequency or anything is changed at all it won't decode right. In any event, I know where you are coming from I had to pick a different audio point for my decoder.

Paul

From: Tony Langdon, VK3JED <vk3jed@o...>
Date: Wed Jan 9, 2002 5:27am
Subject: Remote DTMF enable and disable commands.

There has been the odd time where I'd like to be able to enable and disable the DTMF command processing on a node by remote control (re-enabling DTMF when it's disabled? Sound like a neat trick? :)). Read on. :)

The system relies on some careful modification to the custom_decode script (and the fact it's a script is why this works here), as well as two simple custom scripts and two WAV files.

I have uploaded the scripts and WAV files into the files area.

The mods to the custom_decode script are as follows:

Place these lines as the _first_ commands in the file (more information below).

```
if [ "$1" = "1200S" ] ; then "$CUSTOM"/dtmfon ; exit 1 ; fi  
if [ -f $LOCAL/nodtmf ] ; then exit 1 ; fi  
if [ "$1" = "1200P" ] ; then "$CUSTOM"/dtmfoff ; exit 1 ; fi
```

How it works: The first line contains the command used to enable the DTMF commands. In this case, this is the only command that will work when DTMF is disabled.

The second line is the secret. If the \$LOCAL/nodtmf file exists, the custom_decode script exits with "1" status, which tells the IRLP system to stop processing DTMF commands, which effectively disables the DTMF commands.

Any other commands needed while in disabled mode should be placed above the line that checks for the nodtmf file.

2.16 Dialup connections (GSM), using

FYI the GSM codec causes problems when dialup nodes connect to reflectors. Reflector

connections from dialup nodes are allowed only on channels 8 and 9 of superreflectors (which run special software to enable GSM connections).

For additional info try searching the list archives for 'GSM'.

From: Tony Langdon <tlangdon@a...>
Date: Sun Sep 30, 2001 4:43pm
Subject: RE: Running a node on dialup

- > I have a friend in Trinidad that is about to set up a node but only has access to dialup.
- >
- > Has anyone set up a node with a modem installed in the
- > irlp pc and had it dial the provider for a gsm connection?

I have run GSM. It's not the greatest. The big problem with GSM is that the CODEC gets confused if there's too many buffer underruns, and the audio starts echoing. The big problem with this is that the audio then takes longer to play back, which confuses both the users and the nodes themselves. I don't know if the extra buffering that Dave was going to configure into the GSM nodes has helped this situation any.

GSM will work well, if you can get the node onto an ISP with a strong backbone link, and keep the modem exclusive to IRLP traffic.

- > If you have experience with setting up such a dialler
- > system, and could be of assistance to Jeffery Gibson,
- > 9Y4AT, I am sure he would really appreciate it.

It's the same as setting up any other IRLP node, except that you need to install PPP, instead of an extra Ethernet card. There are now scripted and GUI systems to make PPP installation simple for Red Hat 6.2.

From: Nate Duehr <nate@n...>
Date: Wed Feb 13, 2002 2:29am
Subject: Re: Reflectors and GSM

On Tue, Feb 12, 2002 at 05:15:05PM -0500, Penn McClatchey wrote:

- > Do you know if there's a way to switch the
- > configuration of a node from APDCM to GCM on the fly and
- > start connecting using dial-up?
- >
- > Then, the next problem, can a Reflector handle both kinds of
- > connections? In the beginning of this 2001, APDCM was
- > required to connect to a Reflector. Is that still the case?

1. Change the codec in /home/irlp/custom/environment, reboot/restart the node software.

2. Set up a PPP connection dialout from the node using standard stuff.
3. Check to see that the machine's hostname is resolving properly or add it to /etc/hosts

That's about it... but I'd definitely PRACTICE this before trying it in an emergency scenario.

GSM is still "banned" from Reflectors* [*see below-ww4m*], but it's more of a day-to-day operational problem than anything... the GSM codec on Linux freaks out under packet loss and loops, locking up all other nodes connected to the Reflector for a long time unless your packet loss goes away...

But... in a time of A TRUE EMERGENCY... I'd say, do what you need to do. You may find that certain Reflectors may have GSM nodes physically blocked and you'd need to reach a Reflector operator to remove the block.... so in other words... a test ahead of time on a quiet Reflector with the permission of the Ref owner is probably in order.

Just like any good emergency communications plan, it needs to be put into practice BEFORE you need it to work out kinks, etc.

* - note from ww4m: as of September 2002 GSM is accepted on reflectors 900 and 961.

From: Tony Langdon <tlangdon@a...>
Date: Mon May 13, 2002 5:56pm
Subject: RE: [IRLP General] set up for a dial up node

> I will have access to a DSL connection in a month or so but I want
> to make sure that the node will work ok 1st
>
> so I want to set her up on a dial up modem (I have a 33.6 ext right
> now for testing)

2 points:

1. make sure you have the line

```
export DEFAULTCODEC=GSM
```

in your /home/irlp/custom/environment file

2. Set up your PPP connection as per Red Hat methods Not sure if I used linuxconf or one of the other tools to get started. Being on broadband wherever I go, I rarely configure a modem these days, and my Linux box is preconfigured.

A good feature is you can have your modem connection as backup - once you have broadband, leave the PPP interface configured, but turn off the "activate interface on boot" facility. If you ever need to go back to dialup, you just need to edit your environment file and then issue "ifup ppp0".

That's how I do demos on dialup on my node.

2.17 Tone Squelch

[IRLP Owners] Eliminating squelch crunches

David Cameron DCameron@transtechinteractive.com
Thu, 24 Jan 2002 15:42:23 -0800

There are some guys out there running open squelch with PL.... This is not a good idea, as it makes a large crunch after each keyup. But if you have no options, you can try lowering the FIRST number in the timing file.

This number is a value of how long it waits AFTER the COS is lost to stop sending packets. This has the ability to completely remove such tails. It also has the ability to "chop off" the last few syllables... Almost like it is thinking in the future....

Anyhow, the default value is 200ms, but you may want to try to lower that if you are getting complaints of crunchy squelch tails.

From: Randy Hammock <rhammock@s...>
Date: Mon Jan 7, 2002 7:02pm
Subject: PL Stripping

Here's a question:

How many nodes are stripping the PL off their audio before sending it out over the net?

I ask this, because the audio coming in from the net is so good, that many times, we experience problems with the PL decoder on the Rx side of our IRLP link getting faised off because it sees two tones instead of one. This has been the cause of some mysterious audio cut-offs for us. A node will connect to us but as soon as they transmit to us, we hear one syllable of speech then the link drops as the PL decoder get confused.

Audio from TX W/ Rx w/
IRLP with ----->Link---->Link----->Repeater
PL PL PL
^
|
Sees Tx Link PL and IRLP Audio w/ PL

The proper thing to do would be to either put a high-pass or notch filter in your Send audio lines, stripping the PL before it gets to the net.

Randy KC6HUR

Node 334 WR6JPL

2.18 AUX Outputs on v.3 IRLP boards

--- In irlp@yahoogroups.com, "ve7ltd" <dcaeron@i...> wrote:

The three outputs are active LOW. They can sink several amps of current, so beware. DO NOT sink more than about 500mA though.

I use the AUX1 output to control the PTT on my repeater controller software, then the PTT can be controlled independent of the IRLP PTT.

The choices are endless.

I even wired one up to make coffee for me, as part of the linux-coffee-howto.

I have used it to set power levels, make frequency agile remotes, etc. I have these uniden radios where if you drag one pin low, it goes to channel 1. Every time you drag another pin low it goes up one channel. That way you ALWAYS know what channel you are on.. Using up/down is not always the best idea, because you could get lost.

There are programs called

```
/home/irlp/bin/aux1on  
/home/irlp/bin/aux1off  
/home/irlp/bin/aux2on  
/home/irlp/bin/aux2off  
/home/irlp/bin/aux3on  
/home/irlp/bin/aux4off
```

Dave Cameron
VE7LTD

--- In irlp@yahoogroups.com, "David Cameron" <dcaeron@i...> wrote:

>> I use the AUX1 output to control the PTT on my repeater controller

>> software, then the PTT can be controlled independent of the IRLP PTT.

>

> By or'ing the IRLP PTT and an aux port for PTT, the current PTT problems

> with id'ers could be solved. Maybe time to upgrade to a v3.0 board...

Don't even need to OR... Just tie the two together, they are protected.

This point was brought forward when the boards came out. All Plug and Playcables sent out after the design of version 3.0 offer this feature as well. AUX 1 and PTT both control the radio PTT.

Dave

3. Node Administration

3.1 Basic linux functions

From: Tony Langdon <tlangdon@a...>
Date: Mon Oct 22, 2001 8:04pm
Subject: RE: New feature idea / more thoughts

> What is the proper way to shut down the Linux computer with IRLP on it?
> "/sbin/shutdown now" ?

This will shut down the machine in an orderly fashion [Ctrl-Alt-Del will also force a graceful reboot -- ww4m]. The only other thing I do is make sure there are no active IRLP connections open.

Read the UPS How-To. It's on www.linux.org, follow the Documentation, Linux Documentation Project and How-To links.

Disconnect all IRLP connections, then `/sbin/shutdown -h now`.

> I have been self sustaining with my computers for many years but feel like
> I'm from a different planet as I read the discussions on here. Are you
> able to suggest a reading source, sufficiently basic, for me to try to begin learning?

There's a few introductory documents on the www.linux.org site, which are a good starting point for Linux in general.

From: John Maguire <w1cdo@s...>
Date: Tue Oct 23, 2001 0:03am
Subject: RE: New feature idea / more thoughts

Tony,

I just spent an hour on the Linux Lessons linked from <http://www.linux.org>. A humble beginning for me.

Thank you for the point. By the way the author's humorous writing style makes it fun . . .

John

3.2 Cron and crontab

Cron files are used to schedule jobs for execution on a predetermined timetable (called a crontab). Each user can have its own crontab. IRLP node owners are concerned about the root cron files (for such things as setting/ syncing the system time), IRLP cron files (set up during the IRLP install), and IRLP custom/custom.crons files created by the node owner.

Note: you can not run a command from cron if it relies on the IRLP environment settings -- for that you'd have to use cron to run a little script that first sets the environment and THEN calls the command:

"The BASH shell when run interactively has an environment variable called PATH that keeps a path (like DOS) of places to look for program names you've typed to run. When run non-interactively (like from cron) it does not pick up this PATH variable from your .bash_rc file in your home directory, therefore you must specify full paths. Also, anything that user "repeater" is able to execute can be done from custom_crons -- but if it's something that user root has to do, it's not easy to do. (It can be done, but it's messy and it's generally not a good idea to give permissions out to "repeater" via things like the sudo command, as it creates security holes.)" [wy0x]

The root crontab for Raleigh node #426 looks like this (displayed with the 'crontab -l' command):

```
# DO NOT EDIT THIS FILE - edit the master and reinstall.
# (crontab.tmp installed on Thu Nov 15 16:25:31 2001)
# (Cron version -- $Id: crontab.c,v 2.13 1994/01/17 03:20:37 vixie Exp $)
SHELL=/bin/bash
PATH=/sbin:/bin:/usr/sbin:/usr/bin
MAILTO=root
HOME=/

# run-parts
0 1 * * * rdate -s time.ncsu.edu > /dev/null 2>&1
1 1 * * * hwclock --systohc >/dev/null 2>&1
01 * * * * root run-parts /etc/cron.hourly
02 4 * * * root run-parts /etc/cron.daily
22 4 * * 0 root run-parts /etc/cron.weekly
42 4 1 * * root run-parts /etc/cron.monthly
```

The first line syncs the system clock to an outside reference at 0100 every day, and the second line syncs the hardware clock to the system clock at 0101 every day. The other lines execute jobs listed in other files/ directories at various times to take care of system administration.

The default IRLP crontab for Raleigh #426 looks like this:

```
# DO NOT EDIT THIS FILE - edit the master and reinstall.
# (/home/irlp/run/crons.temp installed on Sat Nov 24 02:59:46 2001)
# (Cron version -- $Id: crontab.c,v 2.13 1994/01/17 03:20:37 vixie Exp $)
0 0 1 * * (/home/irlp/scripts/rotatelog > /dev/null 2>&1)
0 3 * * * (/home/irlp/scripts/update files > /dev/null 2>&1)
*/10 * * * * (/home/irlp/scripts/ipupdate_cron > /dev/null 2>&1)
*/3 * * * * (/home/irlp/scripts/statupdate_cron > /dev/null 2>&1)
```

The first line runs at midnight on the first day of each month and executes a program that renames the IRLP log files. The second line executes at 3am every morning and causes the IRLP files to be updated from the IRLP servers, plus it updates the portion of the IRLP cron (not shown) from the custom.crons file. The last 2 files upload node information to the IRLP servers.

The custom.crons file is created by the node owner and gets appended to the IRLP crontab. The Raleigh node #426 custom.crons file looks like this:

```
53 23 * * * (/home/irlp/custom/EOD_cron >/dev/null 2>&1) &
03 0 * * * /bin/rm -f /home/irlp/local/enable >/dev/null 2>&1
58 4 * * * /usr/bin/killall checklinkID
0 6 * * * (/home/irlp/custom/BOD_cron >/dev/null 2>&1) &
```

The first line begins a program that shuts down the node connections and disables the node at 23:53 each day, and the second line disables the node a few minutes later. Line 3 kills any instance of the program that IDs our link radio at 4:58 am each day, and the last line starts a program that re-enables the node, starts the link ID program, and establishes a connection to a reflector at 0600 each morning. The custom.crons file is appended to the rest of the IRLP cron when the update command runs; if you want to append it before then, run the command 'update files' as user repeater and with no connection active.

Except for the custom.crons file you should not edit cron files directly. Instead use the crontab command to edit -- or copy the file under a new name, edit it using a text editor, and then use it to update the cron file using crontab.

For more information, see the man pages (manual) for crontab by typing 'man crontab'

From: Nate Duehr <nate@n...>
Date: Wed Sep 5, 2001 5:47pm
Subject: Re: Tip on Cron jobs for user "repeater"

Cron jobs don't access the shell the same way as shells launched from the login binary or ssh (which also both act differently), so you definitely need to check -- as in with all software -- that the system environment is how you expected it to be at run-time. Nice detective work if you're fairly new to shell programming to figure that one out.

Dave's scripts have some good generic ways to check the environment and other settings are correct he's slowly added in as various "real world" things have happened and environment stuff has been goofed up. You can pretty much chop and paste his checks right into your own custom scripts as needed, being careful to look for hardcoded things that are in different relative locations, etc.

You may also want to look into some of the startup scripts in the /etc/rc.d/ directory -- many of the startup scripts for a Unix/Linux machine need to do some similar setup of environments. And if you poke around long enough you'll find /etc/profile/ and /etc/bashrc are system-wide ways (on RedHat) to manipulate the default shells. If you dig even further you'll find that those are loaded from other shell scripts launched by init at boot-time/change of runlevel.

Have fun...

Nate N0NTZ

From: <dcameron@i...>
Date: Fri Sep 14, 2001 8:00pm
Subject: Re: Grrrr.... yawn! cron job help needed

>Unfortunately, it appears that the only solution to keep the folks on
>my end happy is to disable the node at night (sleeping hours 2300-

>0700). I would like to know if anyone could provide me with the
>necessary syntax to set up an off/on cron job that looks at the system
>clock?

You need to remove the file /home/irlp/local/enable which is what all the scripts look at to determine if the site is enabled or disabled.

You need to edit (and possibly create) the file custom.crons as user repeater. Log in as root and type

```
su - repeater  
pico /home/irlp/custom/custom.crons
```

Inside, put the following two lines:

```
00 23 * * * rm -f /home/irlp/local/enable  
00 07 * * * touch /home/irlp/local/enable
```

then run

```
/home/irlp/scripts/update files
```

This will add the crontab to the user repeater's crontabs. Keep in mind that this will mean that YOU will not be able to make outbound calls either.

After the update has been run, check the crontabs by typing

```
crontab -l
```

You should see:

```
# DO NOT EDIT THIS FILE - edit the master and reinstall.  
# (/home/irlp/scripts/irlp.crons installed on Fri Sep 14 03:00:05 2001)  
# (Cron version -- $Id: crontab.c,v 2.13 1994/01/17 03:20:37 vixie Exp $)  
0 0 1 * * (/home/irlp/scripts/rotatelog > /dev/null 2>&1)  
0 3 * * * (/home/irlp/scripts/update files > /dev/null 2>&1)  
*/10 * * * * (/home/irlp/scripts/ipupdate_cron > /dev/null 2>&1)  
*/3 * * * * (/home/irlp/scripts/statupdate_cron > /dev/null 2>&1)  
00 23 * * * rm -f /home/irlp/local/enable  
00 07 * * * touch /home/irlp/local/enable
```

Dave Cameron
VE7LTD

From: Ed Yoho <edyoho@h...>
Date: Sat Sep 15, 2001 3:38pm
Subject: Re: FW: Re: Grrrr.... yawn! cron job help needed

I am using the following to disable my node at 11:00 pm PST and re-enable at 06:00 am PST. This method allows you to manually re-enable during the night if needed.

```
add file "/home/irlp/custom/custom.crons"
```

```
0 06 * * * (su - -c /home/irlp/scripts/disable repeater > /dev/null 2>&1)
0 13 * * * (su - -c /home/irlp/scripts/enable repeater > /dev/null 2>&1)
update files
```

Ed Yoho
WA6RQD
node 315

From: <ne1h@h...>
Date: Mon Sep 17, 2001 4:53pm
Subject: Re: Grrrr.... yawn! cron job help needed

A good effort for any node owner is to go read through Dave scripts. There is a world of information there.

If you look at Dave's original comments at the top of this section, you'll see that he said to add or create the file custom.crons in the \$CUSTOM directory. If you then look at the update script, you'll see that there is an update procedure that runs every so often that updates the crontab file for repeater and appends the commands in custom.cron to it and the reloads it.

If you type crontab -l as user root, you'll see what you current have in your crontab. You can do man 5 crontab to find out how to manipulate the file directly, but I would caution against it.

Dave updates many things when the update process runs and if you are not careful, some of your script will be over written with default ones. If you stick to putting your custom files in the \$CUSTOM directory and the \$AUDIO/custom directory (or any other directory you may create) you will be fine. Just remember with wavplay, it defaults to the \$AUDIO directory to find it's wave file. So if you want to get to the custom directory under it. Just do a wavplay custom/filename or a wavplay \$AUDIO/custom/filename (without .wav on the end).

Hope this helps. Scan the scripts directory and enjoy, there is a ton of stuff that can be augmented and still protected from update, just be careful and if new to linux, backup the original file first with a cp <filename> <filename>.bak (obviously with the <filename> replaced with the real name of the file).

One other tip, you can always press the tab key and it will do command or filename completion. So if you have a file called NE1H-Alan, you could type NE<press the tabkey> and it will complete the name. If it doesn't, it's usually because it's not in the dir you are, or there are more than one. If you press the tab again, you'll get the listing of them.

Have fun, but be careful. I don't want to have to start including a disclaimer in my hacking instructions :).

Alan

Here's one of many websites with tutorials on the cron program out there..

<http://perlcoders.com/main/crontab.html>

3.3 Backups

See the the backup script(s) at <http://groups.yahoo.com/group/irlp/files>
FYI backups must be run as user root.

Date: Mon, 30 Dec 2002 07:49:13 -0000
From: "ve7ltd <dcameron@irlp.net>" <dcameron@irlp.net>
Subject: Re: IRLP and posible tar problem?

Heres a tip (not of the week, but a tip none the less)

The ONLY files you need to backup on your node, that make your node different from any other, is the following

/home/irlp/custom/environment
/home/irlp/.pgp/secring.pgp

If you back up those two files, if you do a complete rebuild under 7.3, install the node under some flase node number (be sure to explain in the DATA fields you have to enter during the install that this key should be thrown away!!), and once done, replace the two (above) files on your newly generated IRLP node, and voila!

This will be the heart of this fancy backup script I will generate someday.... someday.... someday....

Of course any customizations will be lost in the above, but if you TAR up the custom directory, you should be good, as that is where they are supposed to be right?

Dave Cameron

From: Tony Langdon, VK3JED <vk3jed@o...>
Date: Wed Aug 29, 2001 7:44am
Subject: Re: Node Backup

At 11:07 29/08/2001 +0000, you wrote:

>After storms and numerous power outages yesterday, it became apparent
>that I have no file backup for my Linux box. Although Linux appears to
>be very resilient, and came back almost without issue, it make me
>wonder what the rest of the IRLP node owners are doing.

>
>Please understand that I am a Novice at Linux and need step by step
>instructions to make things work???.
>
>What is the recommended backup for IRLP If any??

Well, if you have Ghost, you can clone the whole hard drive (need a very recent version to be able to clone to different sized disks). Or follow the instructions in the HDD Upgrade HowTo.

The IRLP node stuff is almost all contained in /home/irlp, you can do 'tar -zcvf backup.tar /home/irlp' regularly, especially if you have lots of custom stuff. At the very least, backup the /home/irlp/custom directory.

Another school of thought is that once mastered, reinstalling Linux is simple (30 mins), IRLP takes another 15 or so, and you're back. However, if you have any customised scripts, they should be backed up (the tar method above is ideal for this).

73 de Tony, VK3JED
<http://www.qsl.net/vk3jed>

From: Terry Stewardson <va3lu@t...>
Date: Wed Aug 29, 2001 8:51am
Subject: Re: Node Backup

Hi Rich..what i do here is run 'tar -zcf /tmp/irlp.tgz /etc /home/irlp /root' this will produce a irlp.tgz file in your tmp dir. I then ssh from one of my windows computers to irlp linux box and copy file to another computer for safe keeping..This has made a backup of all the files in etc dir as well as root and home/irlp dirs...In case of major hardrive failure you use CD to reload linux and then untar your backup to it

Terry
VA3LU

From: <rmackay@i...>
Date: Wed Aug 29, 2001 9:41am
Subject: Re: Node Backup

Excellent idea Terry, I have added the "v" for verbose as it takes awhile to tar all those files and I like to see what its doing. MY tar file is about 24MB and took just over a minute to run on a P233.

```
# /sbin/backupirlp
echo "Backup etc, irlp & root"
tar -zvcf /home/backup/irlp.tgz /etc /home/irlp /root
echo "Backup complete."
ls /home/backup/irlp.tgz -l
```

BTW I would also suggest a cheap UPS to ride out the power-bumps, which cause more grief to the system than power outages.

73 - Ron VE1AIC

From: <rmackay@i...>
Date: Wed Aug 29, 2001 9:55am
Subject: Re: Node Backup

Having been a fan of Ghost for many years I was excited with the new 2001 version of Ghost which makes images of Linux systems a breeze. Here's what I do, and it works with most operating systems. Down the system you want to image. Stick in a spare hard drive, formatted with DOS or Win95/98 to hold the image. A drive of 500MB to 2GB is fine.

Boot the PC using the DOS diskette created from Ghost install. Run Ghost and create the a disk image of the system drive and place it on the spare drive. My Linux image was about 200MB and took about 15mins.

You can then take the spare drive off and copy the file to a machine that has a CD burner or just keep the image on the drive like I do which has images for a number of machines.

To recover from a drive or system crash just reverse the process from the Ghost boot diskette and spare drive or CD with the image. Again about 15mins and you're back in business!

73 - Ron

From: Corey Dean KF3DY <kf3dy@r...>
Date: Wed Aug 29, 2001 11:06am
Subject: Re: Re: Node Backup

I used the tar command here also, but did it a little different.... Same results

```
tar cf - /home/irlp | gzip -9 > irlp.tgz
```

So many ways to do the same thing!!!

From: Ron VE1AIC <rmackay@i...>
Date: Wed Oct 3, 2001 8:58pm
Subject: Modified BackupIRLP script

Awhile back we were kicking around a short script to backup IRLP files on your node. It was ok but the tar file was getting to be almost 16MB and most of that was from stnxxx.wav files which don't change much and aren't critical anyway. I found the "--exclude" switch in the tar command and used it to backup all of the /home/irlp files except the audio folder. Here is the script:

```
# /sbin/backupirlp  
echo "Backup IRLP, etc & root"  
tar -zvcf /home/backup/irlp.tgz /etc /home/irlp /root --exclude  
/home/irlp/audio
```

```
echo "Backup Complete."  
ls /home/backup/irlp.tgz -l
```

I run "/sbin/backupirlp" every few days, (manually) as root and ssh-ftp it up to my Windows workstation for safe keeping. Sure I could put the script in the cron job but I want to leave something for the operator to do.

73 - Ron VE1AIC

3.4 Error messages -- see also Log (/home/irlp/log/messages)

FYI VE3SY has The Owners FAQ page now has a list of current error codes

From: Nate Duehr <nate@n...>
Date: Mon Jan 28, 2002 9:45am
Subject: Re: Help Error 25

Error 25 is almost always related to a problem authenticating your connections via PGP. Your key is either invalid, or your node is having massive port forwarding problems and hasn't been able to stay updated with the IRLP main servers.

Try as user repeater, by hand so you can see if there are errors...

```
ipupdate  
update files  
update hosts
```

In that order, and let us know if you get any errors and whether you're still getting the 25 error. If so, it may not be fixable locally and an installer may have to look at your node. If it gets that far, you can e-mail installs@i... -- Pete and I are bravely trying to keep up with the flood there right now of nodes with bad port forwarding, and general installation requests.

Nate WY0X

[has also occurred when hard drive is out of space - ww4m]

From: Tony Langdon <tlangdon@a...>
Date: Mon Jan 28, 2002 6:40pm
Subject: RE: Help Error 25

A common cause of Error 25 is a full disk. I've had that myself, and Matt's problem was the same. A little housekeeping fixed it in both cases. :-)

Run df and if it says one or more partitions are 100% full, there's the source of your problem. :-)

"The Call Attempt Has Timed Out. The Connection Has Been Lost" - if you're getting this

message every 10 minutes with no active connections, your node is having problems connecting to the IRLP file server for file updates (same server for echo reflector and IRLP website but NOT the status pages). Either the server is down, the connection is down, or your pgp key doesn't match and you can't authenticate properly.

3.5 Automatic RPM Updates (autorpm/ARPM, up2date, apt-get)

FYI apt-get appears to be the automatic update mechanism of choice for IRLP node owners. The following may be a little bit dated. See also <http://groups.yahoo.com/group/irlp/files/apt-get/> - ww4m

From: Geoff Gatward <geoff.gatward@o...>
Date: Tue Oct 29, 2002 6:38am
Subject: New auto RPM update method available for IRLP

Folks,

As Peter VK2YX has mentioned, Pete and I have set up a RedHat mirror dedicated to the IRLP network. The mirror works in conjunction with a set of scripts for the APT-GET package.

For those that don't know, apt stands for Automatic Package Transfer, and is the method Debian Linux uses for auto package upgrades. The version we are using works with RedHat RPM files instead of debian DEB files.

This was done as a solution of automatic RPM upgrades on nodes, especially the 7.3 nodes that don't like autorpm. I believe that Dave is looking to include these scripts as standard in the IRLP distribution from 3.02 onwards, and may push this down as a patch to existing nodes.

For now, the tarball and rpms containing the new upgrade scripts are located at:
<ftp://redhat.irlp.net/pub/irlp/apt/>

But I already run autorpm or up2date!

If you are currently running autorpm, you have the option of uninstalling it and replacing it with apt-get, or you can leave your system the way it is, if you are happy with the way it works now.

If you do uninstall autorpm, you may see the following errors.

```
error: removal of /etc/cron.daily/autorpm failed: No such file or directory
```

Don't worry, these are not a problem and can be ignored:

Also, if you use RedHat's up2date system, you also have the choice to disable it. Obviously if you have a paid subscription to up2date, don't blow it away!

(If you choose not to disable your existing program, you will NOT be able to install this one)

- Check the /etc/aliases file if e-mail is required and check that somebody actually gets root's mail. Below is an extract from my /etc/aliases file (Remember to run newaliases if you change it)

```
# Person who should get root's mail
root:      vk2xjg@q...
apt_log:   root
```

- Check /etc/crontab and make sure random time is suitable. If you do not wish to check for updates daily, place a number between 0 and 7 where the last * is located. 0 is Sunday, 1 is Monday etc... (Restart cron "/etc/rc.d/init.d/crond restart" if you change crontab)

Example from my /etc/crontab, runs apt_upgrade at 01:50 Daily

```
# Line added for APT-GET (Daily)
50 1 * * * root /usr/local/sbin/apt_upgrade >/dev/null 2>&1
#
# Line added for APT-GET (Fridays Only)
#50 1 * * 5 root /usr/local/sbin/apt_upgrade >/dev/null 2>&1
```

It Didn't work!

There may be some small issues with these scripts (especially on 6.2 nodes), since not all scenarios of existing packages could be tested. If you come up against a brick wall while running these scripts, please post your experiences to the list. We can help sort the problem out, and if needed modify the install script to avoid them in future.

Good luck!
Geoff VK2XJG
Nodes 6290 / 6050 / 9500

Autoprpm is a program available for all linux users, not just IRLP nodes owners and it automates updates of RedHat RPM packages. Packages are regularly found to have bugs or need security patches. Dave's not-so-subtle recommendation to run something like AutoRPM by having the installer script install it is a way to keep the IRLP network machines much more secure as a whole. AutoRPM e-mails the root user with information about what it did when it ran, and it runs from cron, regularly. Other methods of doing this are running "up2date", the pay service from Redhat, or other RPM update tools -- the main key is to keep the machine updated with the latest patches from Red Hat for the Operating System. Kinda like visiting windowsupdate.microsoft.com regularly with your Windows machines. [wy0x]

If AutoRPM is not installed by the IRLP installers, install it as root with the command /home/irlp/arpm/arpm-install .

Check out the IRLP web site under Resolving AutoRPM Dependencies: <http://www.irlp.net/09-owners/frame.html>

If you get a message in root's mailbox every week, with a subject to do with crontabs, saying

```
"Failed Dependancies"
```

you are having failed dependancies from the autorpm (automated RPM updater package).

To fix this problem, we have to determine

- What packages (RPMs) are having dependency issues
- Where these packages can be found
- How they can be installed

WARNING: This process can be very tedious, but it is very important as updates are made to fix existing problems, some of which are security related.

Here are the steps: (all must be done as user ROOT)

1) Find the package that has the missing dependencies. The failed RPMs from autoRPM are saved in the /usr/src/updates directory.

Common failed packages and their dependencies

package	dependencies
pine	openldap, openssl, krb5
rpm	db3
openssh	openssl, openldap
various	krb5

2) Try to update the package, and determine the dependency failing. We use "rpm -Uvh" to do this:

Example:

```
[root@k6ub updates]# ls
rpm-4.0.2-6x.i386.rpm
rpm-devel-4.0.2-6x.i386.rpm
rpm-build-4.0.2-6x.i386.rpm

[root@k6ub updates]# rpm -Uvh rpm-4.0.2-6x.i386.rpm
error: failed dependencies:
libdb-3.1.so is needed by rpm-4.0.2-6x
rpm = 3.0.5 is needed by rpm-build-3.0.5-9.6x
rpm = 3.0.5 is needed by rpm-devel-3.0.5-9.6x
```

This example shows that the package libdb-3.1 (db3) is required to satisfy this dependency (rpm version 4.0.2-6). The second and third errors can be deceiving, these state that the older version of RPM is required for some of its dependant packages (we'll worry about this in the final install step).

3) Locate the package names of the failed dependencies. Go to the Red Hat ERRATA Site:

<http://www.redhat.com/support/errata/>

Choose your version of Red Hat, and have a look for your dependency. For example, I am looking for db3 under Red Hat 6.2, from the example above. I find it at the bottom of the list for Red Hat 6.2, and I see that the package is called:

```
db3-3.1.17-5.i386.rpm
```

There may be multiple files. Write them ALL down.

4) FTP to the update site to download the dependency. To do this we should go to our update site. The particular mirror site you use is not important, but knowing the directory under that mirror site is. The site and the directory for your autorpm is located in the `/etc/autorpm.conf` file. Setting this hostname and directory is covered in another document. For example, my `autorpm.conf` file is set as:

```
ftp ("ftp.yvis.net:/pub/linux/redhat/updates/6.2/en/os/i386")
```

To download the package, we use the FTP program (installed on all IRLP computers). As root, type in the following commands: (do not type things in brackets)

```
cd /tmp (changes to the temp directory)
```

```
ftp ftp.yvis.net (replace the hostname with the one you use)
username : anonymous , password : guest@
```

```
cd /pub/linux/redhat/updates/6.2/en/os/i386 (replace with the path you use)
```

```
bin (set binary mode for transfers)
```

```
get db3-3.1.17-5.i386.rpm (gets our db3 file)
```

```
OR
```

```
mget *db3* (will get ALL files that have db3 in their name)
```

Once all have been downloaded, type "bye" to exit back to the prompt.

5) Install our new dependencies. We do this by trying to put all of the updates together and install them with the command:

```
rpm -Uvh *.rpm
```

If you get another dependency error go back to step 2 to satisfy that dependency. (This is the tedious part) If an RPM is successfully installed, remove it (`rm db3-3.1.17-5.i386.rpm`).

6) Try to install the original package. If the dependency is satisfied, try to install the original failed package again. The failed RPMs from autoRPM are saved in the `/usr/src/updates` directory.

```
cd /usr/src/updates
rpm -Uvh *.rpm
```

If you get another dependency error go back to step 2 to satisfy that dependency.

7) Clear the autorpm cache, and run it manually. This will verify that all is OK.

```
rm -f /var/spool/autorpm/*
rm -f /usr/src/updates/*
autorpm & (puts it in the background)
```

Wait about 5 minutes, and look in root's email inbox for any new errors.

That's it. Most dependency errors are simple, but some are a lot more complex. Since Red Hat does not use a very efficient database of packages, this task is made a lot tougher. If you are still having trouble with a tricky dependency issue, just email the owners list and ask others. I am sure that they have had the same problems.

Dave Cameron

Official Problem Resolution Document
Date July 4th, 2001

If you get the message in root's email EVERY week, with a subject to with crontabs, that says:

"Can't get FTP file listing"

This means that your autoRPM (automated RPM update script) system can not FTP to the site defined for updates. There are several reasons why this may occur:

- The directory is set incorrectly (most common)
- The site is always busy, and does not accept many connections
- The site was down at the time autoRPM was run

This should be repaired, as the updates help maintain security in your IRLP computers. To repair this, we must repair the ftp server entry in the /etc/autorpm.conf. To edit the file type

```
pico -w /etc/autorpm.conf
(the -w ensures the lines won't wrap and add carriage returns)
```

In the first few lines of the file, the FTP site is defined.

```
---EXAMPLE---
# This is the site you connect to
ftp ("ftp.yvis.net:/pub/linux/redhat/updates/6.2/en/os/i386")
---END EXAMPLE---
```

The problem arises that the folder "/pub/linux/redhat/updates/6.2/en/os/i386" does not exist on

the host ftp.yvis.net.

To fix the problem, we must make sure a valid host and path are used in the configuration file. The easiest way to do this is to find a host from the list of mirrors, verify the path, and enter it in the configuration file.

The steps are as follows:

- 1) Go to the Redhat Mirrors site <http://www.redhat.com/download/mirror.html>.
- 2) Look through the middle column (Titled UPDATES) for a site nearest you.
- 3) Click on a site near you. You may have to wait a few moments for the directory to come up. It may come up as an error: just choose another.

Some ones known to work well:

ftp.yvis.org

ftp.tux.org

ftp.crc.ca

sunsite.ualberta.ca

- 4) Once the directory list comes up, click on your version of Red Hat. If it doesn't exist on this site, goto step 3 and try another site.
- 5) Make sure that the folder contains an en/os/i386 directory structure, and that files exist in the i386 directory. (click on en, then os, then i386)
- 6) Try to download one of the larger files (kernel packs are large). If the file download is painfully slow, return to step 3 to find another mirror.
- 7) Change the settings in the /etc/autorpm.conf file to reflect your new found update site.

IMPORTANT: The format of the string is very important!

IMPORTANT: All of the text must appear on one line (no carriage returns)

NOTE: Open and close brackets, the colon, the quotes, AND the open "squiggle bracket".

NOTE: MAKE SURE that the version is set to your version of Red Hat. If it is not, you can seriously harm your system.

```
ftp ("sitename.org:/pub/linuxdirectory/updates/VERSION/en/os/i386")
```

Sometimes the mirrors change the directories they use to access the update sites. These can change as frequently as each month. They should all mirror the Red Hat site, but it is best to check the format to ensure the autoRPM is pointing to the right directory.

From: Nate Duehr <nate@n...>

Date: Sun Dec 2, 2001 7:32pm

Subject: Re: Kernel version update????

- > The Redhat 6.2 running here in node 112 is using a 2.2.17 kernel. I
- > found snooping around that Redhat has a 2.2.19-6.2-12 RPM available.
- > Is there any pressing need to update the kernel?

There is one "local exploit" in the 2.2.17 kernel that is difficult to take advantage of. It requires a local login to the system, so if you're using SSH and good passwords and have all unnecessary services turned off on your node's Internet connection, no problems.

2.2.19 supposedly also has slightly better memory management but for the purposes of IRLP on old slow machines, it's not worth the upgrade.

Also Red Hat's kernel packages change back some permissions on devices that the IRLP installation software sets for IRLP and then your node will generally not work correctly until you or one of the installers repairs the permissions, so it's generally not worth the upgrade to a new kernel unless you have some new hardware that the older ones can't deal with.

I'm a geek and upgrade everything all the time and break stuff all the time, but I am aware of numerous production Linux systems making a living on the 2.0.36 kernel versions still -- if that's any consolation.

--- In irlp@yahoogroups.com, Dave Gingrich K9DC <gingrich2@d...> wrote:

On Monday, Mar 24, 2003, at 22:30 EST, wa2zpx@j... wrote:

- > Dave,
- > Are either one of these built into the 3.05 iso??

Not sure about apt-get, but up2date, the Redhat solution is built into to all Redhat systems, or at least the capability for it. 'up2date' is comand-line command for updating your Linux installation if you have subscribed to the service. It normally is a pay-for update solution (US\$60 per year per machine) but you can run one machine for free in the demo mode indefinitely if you complete their periodic survey forms. The demo service does not have the full automation available, and it can be unavailable during periods of high demand.

To register, log in to your machine as root and type: `rhn_register`. Or visit <http://rhn.redhat.com/>

It is quite slick, and the free service will probably be adequate for most node owners.

[Do not construe this as any kind of a recommendation, just an opinion, yours may vary]

Dave K9DC, stn4730, Ref9200

3.6 Noupdate option

How to prevent the updating/ overwriting of user-modified IRLP scripts:

From: Warren A Merkel <kd4zdd@a...>
Date: Tue Oct 9, 2001 10:29am
Subject: Re: Re: remote file updates

I see you have already been cautioned about modifying things in /scripts.

> Sometimes there are valid reasons for modifying scripts

The best way to handle this is to allow Dave's built-in scripting to put back your "changed scripts" for you. As you know, Dave's update script does a rsync to update anything he wants in the irlp directories--effectively overwriting any changes you make in the /scripts directory. Here is the good news...

Take a look at the bottom of the update script and find this section:

#For sites that can not take an update of sfmike and sfspeaker, we'll rewrite those

```
if [ "$NOUPDATE" = "YES" ] ; then
cp -R -f $IRLPDIR/noupdate/* $IRLPDIR
fi
```

This is a copy files command that recurses a special directory for any files and copies them "up" to your current IRLP directory.

Actually, you can use this functionality to put back anything you want to save in the whole IRLP tree--not just the imike or ispeaker binaries. First modify your /custom/environment to enable it.

Find the existing line that says:

```
export NOUPDATE=NO
```

and change it to

```
export NOUPDATE=YES
```

(don't forget to bounce your box or run /home/irlp/custom/rc.irlp as root for the environment changes to take effect)

Now, make a directory under /home/irlp/ called "noupdate" from that directory, make a duplicate tree of existing folders you want to preserve after each update pass. ie. /scripts or /audio.

it will look like this

```
/irlp/noupdate/scripts/
/irlp/noupdate/audio/
```

Place your "edited" scripts in the proper place under the nouupdate tree and they will automatically be copied back for you by Dave's existing update script. No Crons needed.

Warren, KD4Z

From: <dcameron@i...>
Date: Tue Oct 9, 2001 6:38pm
Subject: Re: remote file updates

Just as an addition, I would like to add that some obvious error that will benefit some and not detriment anyone can easily be added to the scripts (such as the hook for custom_on and _off scripts were).

If you are having a problem with one thing, like the failure scripts, we can have it call the failure_off script for example. The whole idea of using scripting that is mirrored is that all nodes are set to a standard, and problems can easily be diagnosed.

The purpose of the nouupdate addons were for people who had to run separate binaries or scripts for whatever reason. This was a temporary fix until something could be changed/fixd in the standard distribution to fix the problem. A perfect example is the fact that the "play" binary I ship did not work with RedHat 7.x, so I statically compiled it and voila! Some of the old redhat7 boxes may still require a fix.

So, the moral of the message: Look carefully if the fix can be made in customized scripts. If it can not, ask for a "poke" into the IRLP to make the scripts work.

Dave Cameron
VE7LTD

--- In irlp@yahoogroups.com, "ve7ltd" <dcameron@i...> wrote:
Without using NOUPDATE flag:

```
#Check for a custom include/exclude list (Daniel Ayers ZL2UTV 3/31/03)
if [ -f "$CUSTOM"/update-file-list ] ; then
    UPDATEFILELIST=`cat "$CUSTOM"/update-file-list`
else
    UPDATEFILELIST=""
fi

if [ "$OPTION10" = "YES" ] || [ "$RSYNC8873" = "YES" ] ; then
    $BIN/rsync --timeout=120 --port=8873 $UPDATEFILELIST --
exclude=stn*.wav -Wazv $SERVERIP::irlp $IRLPDIR
else
    $BIN/rsync --timeout=120 -Wazv $UPDATEFILELIST --exclude=stn*.wav
```

```
$SERVERIP::irlp $IRLPDIR  
fi
```

I have added some code suggested to me about a year ago... It allows for a list of files to exclude from the update, so the bandwidth is not wasted by downloading and overwriting them all the time.

The file must be called /home/irlp/custom/update-file-list and must have the format of (one per line)

```
--exclude=0.wav  
--exclude=1.wav  
--exclude=2.wav  
--exclude=3.wav
```

I have not documented this in any way yet, as it is a new feature so far.

Dave Cameron
VE7LTD

3.7 Time (system and hardware clocks)

The system time and CMOS time can be adjusted only with root command prompt or from the root crons.

```
Subject:    Re: [IRLP Owners] VE3SY's Settime script  
Date:      Tue, 13 Nov 2001 14:47:32 GMT  
From:      caryh@home.com  
To:        "Cary Honeywell" <caryh@home.com>, <Owners@irlp.net>
```

```
> /usr/bin/rdate -s tick.usask.ca >/dev/null 2>&1  
> /usr/sbin/hwclock --systohc >/dev/null 2>&1
```

Paul:

The first line sets the system time. It has two messages being sent to the screen: the normal message and an error message. The first one pipes the message to never-neverland. (null) the second one does the same by substituting the string /dev/null with &1. (that way you don't have to type the whole thing again.

The second line does the same thing with the hardware clock setting it from the system clock. Substitute a known timeserver, ie NASA or something like it, until you find one that reacts. It would be great if IRLP had its own timeserver so that everyone could sync from the same tap. I'd do it but all the ports on my LinkSys are taken and besides having 200 to 300 time syncs per hour would blow away my ISP.

If you are actually seeing an error message then the substitution isn't taking place.

If the message says No such file or directory, then it isn't finding settime in the cron.daily directory, or one of the executables, rdate or hwclock, can't be found where you are pointing. Do a "find / -name rdate" and see where it is or where it isn't. Do the same for hwclock.

- Cary -

From: ne1h@h...
Date: Fri Nov 16, 2001 7:15am
Subject: Re: clock setup

> Can someone let me know if the CMOS clock is set to our local time or UTC ??

If you are the owner, and you have access to a telnet console, you can check.

first look at "date", it will provide you back the current time/date environment that is in use.

If you look at /var/log/dmesg (you'll probably have to pipe it to more with dmesg | more), you can see how linux reads your bios clock and what basic time environment linux is using.

Alan

See also NTP: <http://www.eecis.udel.edu/~ntp/ntpfaq/NTP-a-faq.htm>, xntp, ntp, rdate, and crontab . You might also want to search the internet for timeservers closer to your QTH

3.8 Timeout Timers

- PTT/COR

Timeout timers are hardcoded in the program. Push to Talk (link radio rx from IRLP) is set for 5 minutes. COR (link radio rx locally) is set for 4 minutes. COR Timeout used to disable the node, and require the use of the Node enable command, or a rc.irlp (but no longer the case). PTT timeout will drop the node from the connection but will leave the node enabled.

I have added a fix to the COR detection (for timeout purposes) to all nodes. Now the timeout timer is reset only if a keyup lasts MORE than a second. It used to be instant, so any flash of the GREEN cos light would cause the timeout timer to reset. This is a problem on nodes which have a very small hangtime which just makes the light flicker. Therefore nodes that have a small "pulse" will NOW be able to timeout. (where they would not before)

HOWEVER, those of you who just key up quickly to keep the system from timing out will have to key up a little longer (over 1 second).

This will fix nodes which have the following when they run readinput, connected to the reflector, and NOT sending packets from your node.

PTT ACTIVE
PTT INACTIVE
COS ACTIVE
COS INACTIVE
PTT ACTIVE
PTT INACTIVE
COS ACTIVE
COS INACTIVE

Dave Cameron
VE7LTD

From: "ve7ltd <dcameron@i...>" <dcameron@i...>
Date: Thu Jan 9, 2003 11:15 am
Subject: Re: Timeout, where is it set?

Everytime DTMF is started, it reads that value and uses it for the timeout. If you want to set the timeout on a per call basis, you will have to change that value, and kill and restart the DTMF binary.

Have a look at how the connect_to_reflector script does it with the REFLECTOR_TIMEOUT variable in the environment file.

From: Nate Duehr <nate@n...>
Date: Wed Dec 4, 2002 0:51am
Subject: RE: ptt timeout

>> How do I disable the PTT timeout? I am broadcasting the Amateur
>> Radio Newslines on my frequency using the playnews script for IRLP.
>> My system does not finish the broadcast as it shuts down the
>> transmitter after 5 minutes of keydown. Any ideas? I didnt find
>> anything in the manual or the message archive
>
> Should be something there, there are a few things to try:
>
> 1. forcekey (does this work for this use?)

forcekey does work... at least on node 3990. ;-)

That's what I'm using in my news playback scripts.

Just have to be careful that the radio can really handle the 100% duty-cycle without turning into a pile of molten metal... fans are good, but they do fail eventually...

Be careful with forcekey.

Also be aware that some of the IRLP code uses forceunkey in certain scripts -- if your node does certain things, a forceunkey will be called.

Specifically ANYTHING that calls the wavplay script can interrupt your forcekey, which is HIGHLY annoying.

Example... you're playing Newsline, you've touched the active file so you can't receive calls but you have CALL_WAITING enabled, CALL_WAITING calls wavplay and there's a forcekey and forceunkey in there... so it'll unkey.

I handle this by actually fully DISABLING the node when playing news. My custom_decode calls a script that disables the node, announces that it's starting a news playback, plays the news, thanks the listener, and re-enables the node.

- Reflector Timeouts

There will be a line in the /home/irlp/custom/environment (which must be edited as root) which says

```
export REFLECT_TIMEOUT_VALUE=1200
```

This sets the timeout value ... to 1200 [seconds] during reflector sessions

So to fix this [so it never times out - reflector owners prefer you not do this], set the value to 0 and restart the irlp [as root] by running `/etc/rc.d/rc.local`

Dave Cameron
VE7LTD

To temporarily change the reflector timeout value to 0 (no timeout) on a connection by connection basis, remove (or rename) the /home/irlp/local/timeout file. The file will be automatically restored when your reflector connection is terminated or, if you do not establish a reflector connection first, when you next restart custom/rc.irlp. - ww4m

-----Original Message-----

> I need help please.

> I tried to raise the time in the file /home/irlp/custom/timeout. I put 4800 in the first line, I save
> this, I go out of pico and I type
> /etc/rc.d/rc.local "enter"
> I reboot and the no activities time out stay 20 minutes. When I go back to see the file all I see
> is 1200 in the first line and the other lines disappears??

Michel, there is a patch I recently put in there to allow people to put timeout on reflectors.

There will be a line in the /home/irlp/custom/environment (which must be edited as root) which says export REFLECT_TIMEOUT_VALUE=1200 (THIS IS A NEW DEFAULT ON ALL NEW NODES)

This sets the timeout value temporarily to 1200 during reflector sessions, and then back to the OLD value once you drop the link.

So to fix this, set the value to 0 and restart the irlp by running /etc/rc.d/rc.local

Dave Cameron
VE7LTD

- Node-to-Node Timeouts

Timeout value found in the file /home/irlp/custom/timeoutvalue -- works opposite of the reflector timeout -- if you want no timeout you set it very very high, otherwise 0 [zero] causes it to timeout immediately.

From: Tony Langdon <tlangdon@a...>
Date: Wed Jul 25, 2001 8:38pm
Subject: RE: What am I doing wrong?

> I want to extend my timeout value on inactivity.
>
> I've edited the timeoutvalue file in the custom directory to include
> the value 10800 (3hours).
>
> I then directly connect to a sister node and the system always times
> out in 4-6 mins. What have I done wrong.

Nothing, from what I can see, but both ends maintain a timeout timer, and if the other end's timer is set to (say) 5 minutes, AND, there is no local activity on that end of the link, it will initiate the disconnection from your node.

Note: If you connect using 2 as the last digit instead of 0 (e.g. 1002), the connection will never timeout. [another note 10/02 -- no-timeouts using xxx2 has been disabled with the implementation of 4-digit node numbering -- ww4m]

--- In irlp@y..., Nate Duehr <nate@n...> wrote:

Seeing the other notes, you can also create your own custom_decode entry to keep timeouts from happening on a call to anything...

For example, to call REF9100 without a timeout by having your users hit "1#" on their keypads... the script in custom_decode would read something like:

```
if [ "$1" = "1P" ] ; then
  "$SCRIPT"/call_to_reflector ref9100 notimeout;
  exit 1;
fi
```

Looking at the call_to_reflector code, it seems to support this, but I haven't tested to see if it actually does not timeout. It does connect just fine.

Nate WY0X

3.9 Log (/home/irlp/log/messages) and error messages

This file records all connects, disconnects, error messages, DTMFs decoded, node enable/disable commands, etc. Each month another script renames the existing log/messages filenames (i.e., the most current log is renamed to messages.1, the previous log is renamed from messages.1 to messages.2, etc.).

FYI you can use the linux 'tail' command to look at the last few lines of the file, and 'tail -f messages' will display the last ___ lines of the file and show new lines as they are added, until the command is terminated (Ctrl-C).

Log file error messages:

- busy local** Means your local node is busy when someone tried to call
- timeout loop** Means the software missed two consecutive "keepalive" TCP packets, and assumes the link is lost
- siggen** Rare, happens only when a PGP signature could not be generated (file locks, or missing PGP key)
- link1 auth** Fails (timeout) while trying to authenticate your node using the pgp keys
- timeout call** Fails the 15 second timeout allowed for a call to complete
- link loop** Fails an internal timer used in the system -- one reason is heavy packet loss determination. See also Error 35, below.

timeout answer Same as timeout call, but when you are on the answer end.

IP detected is invalid means that the IRLP server was unreachable at the time of that attempt. It happens. No problem unless it's happening all the time.

pttlock Ends your connection when the node or reflector to which you're connected is keyed too long -- saves your radios from burning out at 100% duty cycle.

cos lock something had your COS tied up for more than the 4 minute timeout period. When that happens, it disconnects you from wherever you were connected, rather than tie up the world.

auth When a call is made, authentication completes, but fails.

Subject: Fwd: Re: [irlp] Error 35
Date: Thu, 02 Jan 2003 15:23:25 -0000

--- In irlp@yahoogroups.com, Nate Duehr <nate@n...> wrote:
The "error 35" over the air is quite rare.

However "link loop" is more common. It's a built in detector of situations where two nodes call each other simultaneously... to avoid a race condition.

It also is triggered in states where one node thinks it's still connected and the other is calling it again, and thinks it was disconnected.

There are a few ways this can happen. Hard to explain, but the system did what it was "supposed" to do... it thought something was screwy with that second connection and dropped it... clearing down BOTH sides by doing so and getting everyone back "in synch" as far as what state the two nodes were in.

<snip>

Nate WY0X

Date: Thu, 02 Jan 2003 15:15:22 -0000

--- In irlp@yahoogroups.com, Dave Gingrich K9DC <gingrich2@d...> wrote:

"Call attempt timed out" messages mean exactly that. Your node could not connect to the foreign node for some unknown reason. Perhaps it was powered off, or some network failure. Impossible to determine (at least after the fact anyway).

Authentication to the reflectors is just as authoritative and required, but is handled in an indirect fashion to reduce the load on the reflectors. Rather than authenticating directly with each reflector, your node authenticates with just one of the central servers. The central servers then send a list of all the authenticated nodes to each reflector. The reflectors then allow access only

to nodes on the "pre-authenticated" list, rather than having to authenticate each connection.

Nodes, on the other hand DO pgp authenticate each connection. But they are only sent the authentication keyring once per day during the 0300 update files process. So when a node is brand new, they may be able to access the reflectors immediately, but none to node connects will fail until the target node receives a copy of the keyring, hopefully overnight.

Dave Gingrich, K9DC

Here's an error you might see in mail sent to root as an error reported by a cron job:

Timeout at /usr/lib/perl5/site_perl/Net/FTP.pm line 693

This happens when autorpm is unable to reach the domain and path specified for rpm downloads in the autorpm.conf file. If it happens once in a while it's not a problem. If it persists, confirm the domain and path work by doing an anonymous ftp to the site and cd to the specified directory, or comment out that line and enter a new line with a different Red Hat mirror site (<http://www.redhat.com/download/mirror.html>).

From: Valentino Sarro <ve6szz@r...>

Date: Sun Aug 19, 2001 1:42pm

Subject: Node maintenance

There was a question concerning "deleting" log files etc.. on the node machine.

The answers received thus far only mentioned the general Linux logs located in /var/log, however there are also logs that are maintained for Node operation as well. Dave's programming includes a built in log-rotation so you don't have to go "maintaining" anything.

Tino, VE6SZR

3.10 Lockouts (blocking calls to/from nodes/reflectors)

If you wish to lock a particular node from logging into your node, you can add that node to your lockout list. Be aware that a lockout will not let you call or be called from a particular node or reflector.

The node will be informed that they are locked out if they try to call. If the node is called from your end, the caller will also get a polite "This node is locked out".

This method should be used as a last resort, as it is not in the spirit of IRLP to lock out a node without reason. Nodes found locking out all nodes but a precious few will be asked to remove themselves from the IRLP general system and be added to a private system.

Lockouts are enabled by

1) Creating a file called `lockout_list` in the `/home/irlp/custom` directory
(Using `pico`, you can type `pico /home/irlp/custom/lockout_list`)

2) Nodes or reflectors in this list will not be accessible to or from this node. The format is as follows:

Nodes=`stnXXX` (where `XXX` is the node ID number)

Reflectors=`refXXX` (where `XXX` is the reflector ID number)

e.g If you wanted to lock out Vancouver and Vernon, you would have a file which looks like this: (EACH ONE ON THE LIST SHOULD BE SEPARATED BY A CARRIAGE RETURN)

```
stn100
stn426
ref920
```

That's it. I will not be a mediator for locked out nodes, or any hardships between node owners. I don't want lockouts or reasons that a particular node is locked out talked about on the owners or general lists. We do not want a mob effect against one owner (as we saw before).

Just for your information, this lockout has always existed, I just have never had a request for it until now.

So folks, tread lightly!

Dave Cameron
VE7LTD

From: Nate Duehr <nate@n...>
Date: Fri Oct 11, 2002 9:20pm

Also if you have a node that you know can't be on Reflectors due to CW ID's or whatever, as I have... you can use the special keyword "ALLREF" in your `lockout_list` file to block calls to all Reflectors.

3.11 Custom Prefix for Access Code

From: David Cameron <DCameron@t...>
Date: Tue Oct 30, 2001 11:35am
Subject: RE: Custom Prefix on/off codes

> Does anyone have the information on setting up a custom prefix digits for
> the linkon and linkoff codes ???
>
> I know very little about Linux, but am up to the challenge !!

As root edit the

/home/irlp/custom/environment file

In that file is a line which says:

```
#export DTMFPREFIX=123
```

remove the # and add your prefix. Be warned: the digits are as follows:

```
0123456789SPABC
```

```
*=S
```

```
#=P
```

ABC - all caps.

So to add a prefix of "*#B", the line would read:

```
export DTMFPREFIX=SPB
```

Dave Cameron

VE7LTD

From: Nate Duehr <nate@n...>

Date: Sun Nov 18, 2001 7:34pm

Subject: Re: Custom Prefix on/off codes

Remember "D" is not available due to hardware limitations, letters must be defined in capital letters, and * and # are S and P respectively, do not put * or # in your config file as they mean something else to your node scripts entirely.... D can never work. There's no pins left on the parallel port for decoding it (note: it's the only DTMF "digit" that can't be used by IRLP for anything).

Nate WY0X

--- In irlp@yahoogleroups.com, "Marcus Xenakis" <marcus@x> wrote:

Here's an exmaple [of implementing personalized access codes] for three users with a 3 digit prefix.

```
declare DTMFCODE=$1
eval `echo $DTMFCODE | awk '{
    print "PREFIX="substr($DTMFCODE,1,3);
    print "SUFFIX="substr($DTMFCODE,4)}``
```

```

declare JOE="P17"
declare SAM="P32"
declare PAUL="3S6"

if [ $PREFIX = $JOE -o $PREFIX = $SAM -o $PREFIX = $PAUL ] ; then

    # Individual Nodes
    eval `echo $SUFFIX | awk '{print "ISREF="substr($DTMF_CODE,1,1)}'`
    if [ "$ISREF" = "9" ] ; then
        echo "Override reflector" $SUFFIX "-" $ISREF
        "$SCRIPT"/connect_to_reflector "ref"$SUFFIX
        exit 1
    else
        echo "Override node" $SUFFIX "-" $ISREF
        "$SCRIPT"/call "stn"$SUFFIX
        exit 1
    fi
else
    exit 1
fi

```

You would add this in `custom_decode` after any control codes that you want to work such as the node enable and disable codes. Note the exit is an "exit 1". The example could be a bit cleaner but this was pulled from code that works in 6.2.

> I'd like to figure out a way to not limit myself to a number of
> users, although right now the list is very small.
>

You could create a user file that has the "userode" one per line. Then grep the file by \$PREFIX and if it exists proceed.

73
Marcus WA2DCI

4. Custom Scripts

4.1 Notes on using custom scripts

Many node owners have created a large number of scripts to perform a wide variety of functions. This manual won't attempt to keep track of all of them because they are constantly being modified and new ones are always being written. Look through the files section of the owner's group and read through them to see what's available and how they work.

Custom IRLP scripts should be installed in the `/home/irlp/custom` directory, and any custom audio files should be put in `/home/irlp/audio/custom` (except for custom macro audio files, which go in `/home/irlp/audio/macros`). Non IRLP programs (such as `sccw`) can be installed anywhere you want, but people usually put them somewhere under `/usr`. IRLP script files should be owned by user `repeater` and the permissions should be set at least to read and execute. The following commands will take care of this if you have a permissions problem (for more information type `'man chown'` or `'man chmod'` or consult a linux reference book or the internet):

```
chown repeater.repeater name_of_file
chmod 750 name_of_file
```

Note: be careful when downloading/ copying/ transferring scripts and other files from an MS file system including NT Servers serving webpages to a UNIX filesystem, as there is a big difference with Line endings... MS - CR/LF, UNIX - LF only. Watch for inappropriate wraps on long lines (you can use the command 'pico -w' to edit and avoid auto-wrapping, or to correct use 'pico -w' and change a keystroke, then save, or use 'cat msfile | tr -d '\r' > linuxfile').

Zippping files using the tar command is a handy way to avoid the problems mentioned in the preceeding paragraph, and it also maintains file ownerships and permissions. If the file or files have been zipped (*.gz or *.tgz), they can be extracted (unzipped) as follows (for more information, type 'man tar'):

```
tar -xzvf name_of_file
```

When troubleshooting any script, run it from the command prompt so you can see the error messages on the screen (something you wouldn't see if you launched it from another file or a crontab). If a script with audio files runs without errors but is silent, try playing the audio files from the command prompt. The most common causes of problems are file location (proper paths), ownership and permissions. (If you are running a CW ID script, your soundcard must be compatible and you must hear the midi files when you run sndconfig.)

From: Tony Langdon <tlangdon@a...>
Date: Thu Oct 17, 2002 1:45 am
Subject: RE: [irlp] Commands available

> Okay, here are some real basic questions:
> 1) What is the custom_decode file. I'm not asking what it does, but
> rather what type of file is it? Is it a script file?

It's a bash shell script (shell script which runs under the bash (/bin/bash) shell).

> 2) Where do I find out what commands I can use within this type of file?

man bash, or any bash reference book. You can also call on any available unix command, such as grep, awk, sed and others.

From: Tony Langdon <tlangdon@a...>
Date: Sun Dec 16, 2001 9:59pm
Subject: RE: ID script errors (and fixinf "Windowsitis").

> I'm also getting errors when running the ID script from
> /home/irlp/custom:

```
>
> : command not found
```

Did you happen to edit it, or open it [or even save it] at some stage under Windows and then copy it to Linux? It seems to have symptoms of "Windowsitis". :) The problem is that the end of line conventions are different for Windows and Linux. The pico text editor seems to fix up wonky line endings automatically, if a file has been altered.

To fix, open the script in pico, with the following command:

```
pico -w ID
```

The -w is important, as it turns off (mostly) pico's wrapping feature.

Make a minor change (like inserting a blank line will do, or a single '#' on a new line). Then hit CTRL-X and enter 'y' when asked to save the file and accept the default filename.

If the problem was corruption by a DOS/Windows text editor, it will now have been fixed.

From <http://www.linuxlookup.com/html/totw/2000/december.html>:

One final use is to delete specific characters, such as those nasty carriage returns that show up when you have to look at an file from an MS-DOS/Windows system - you know, that make all those ugly "^M" characters show up in your files:

```
cat msfile | tr -d '\r' > linuxfile
```

From: Nate Duehr <nate@n...>
Date: Wed Oct 30, 2002 3:25 pm
Subject: RE: [irlp] uploadin files from remote computer

<snip>... TextPad is a great shareware editor (and there are LOTS of others) that I like for editing Unix files on Windows... it has the correct options under "Save As" to save text files created under Windows to Unix format, and vice-versa, and if you open a Unix style text file, it won't trash it, it will save it in the correct format, unlike NotePad, which comes with Windows... it assumes the world revolves around Windows/DOS...

Nate WY0X

See also **Cron and crontab** for information on using crontabs to execute scripts automatically

4.2 Link Radio IDs

There are a number of ways to meet legal requirements for sending IDs across IRLP link radios. A few nodes use external custom hardware to generate IDs. Several scripts are available at groups.yahoo.com/group/irlp/files that cause the node computer to send either a computer-generated CW ID or recorded wav file to play across the link - when these play the node does not receive audio or send it across the internet. If you run PL (CTCSS) on your link frequency and are technically inclined, you can figure out how to wire the link radio to run a different PL when the link ID is playing so it does not air across your repeater. (Note: at least in the U.S., a repeater will not meet the legal requirements for ID simply by retransmitting an ID received via a link.)

See also **Reflectors - IDs**

4.3 Custom On/Off Macros using wavfiles

Prior to the implementation of 4-digit node numbering you could play DTMF tones prerecorded in wav file format to send commands to your repeater controller when a connection was started or ended. This option is now deprecated. Instead you can use the custom_on/off scripts (below) and write a script that will play a wav file or generate DTMF tones.

4.4 Custom On/Off Scripts (non-wavfile)

From: ve7ltd <dcameron@i...>
Date: Sat Oct 12, 2002 4:27am
Subject: Re: Custom On/Off Macros

1) They must be named as follows:

```
/home/irlp/custom/custom_on  
/home/irlp/custom/custom_off
```

2) They should be owned/grouped as repeater

```
chown repeater.repeater /home/irlp/custom/custom_on  
chown repeater.repeater /home/irlp/custom/custom_off
```

3) They must be executable by repeater

```
chmod 755 /home/irlp/custom/custom_on  
chmod 755 /home/irlp/custom/custom_off
```

4) The environment variables in the environment file must be

- \$CUSTOM_ON must be set to YES
- \$CUSTOM_OFF must be set to YES

The script is written as follows:

```
if [ "$CUSTOM_ON" = "YES" ] ; then
```

```
-- If the environment flag is set
if [ -f "$CUSTOM"/custom_on ] ; then
  -- and the file custom_on exists
  "$CUSTOM"/custom_on "$1" "$2" "$3" "$4"
  -- run custom_on with all the arguments sent to the script
fi
fi
```

Dave Cameron
VE7LTD

From: <ne1h@h...>
Date: Sat Aug 11, 2001 11:44pm
Subject: custom_on and custom_off

Here are the basics for doing the custom_on and _off scripts.

- a) create the scripts in the custom directory
- b) edit the environment file
- c) make sure you have "export CUSTOM_ON=YES" and "export CUSTOM_OFF=YES" in that file (you'll have to be root to edit this file)
- d) save the file and exit from root
- e) run the command "/home/irlp/custom/rc.irlp" [corrected by ww4m] to reload the environment with the changes

There you have it.

For a test, I wrote the following two script files.

CUSTOM_ON file -----

```
#!/bin/bash
# This is the custom on file.
dtmfdial 123
exit 0
```

CUSTOM_OFF file -----

```
#!/bin/bash
# This is the custom on file.
dtmfdial 321
exit 0
```

It worked like a change, played the dtmf and then announced on the on, and announced and played the dtmf on the off.

[If you use the dtmfdial script, you can issues commands from the script that will generate dtmf sequences. This this valid strings could contain "1234567890ABCSP" there is no "D" and the S is star and the P is pound. So a command dtmfdial 123ABC, would generate the dtmf sequence

123ABC out the radio.]

Hope this helps. BTW, what I did was copy the custom_decode script to custom_on and custom_off, then edit, that way you maintain the correct permissions and execution rights.

Alan

I was the guy that asked Dave to add the "custom_on" and "custom_off" hooks into the on and off scripts so I guess I'll explain them a bit.

Basically I wanted to play a wav file before the connection is made. Dave added the hook into the scripts for everybody so all you need to do is add a couple of lines to the /custom/environment script to make them run.

They are:

```
export CUSTOM_ON=YES
export CUSTOM_OFF=YES
```

Add these to your current /custom/environment script. Then, as ROOT, run this to restart your node. (or restart your box)

```
/home/irlp/custom/rc.irlp
```

For the "custom_on" script (you make that yourself) I have this:

```
#!/bin/bash
/home/irlp/custom/local_play on
/home/irlp/custom/mail_me "$1" "$2" "$3" "$4"
```

The first line calls another script (I wrote) that actually plays multiple wavs in a round robin fashion, each time the node comes up "connected" The second line calls a script that emails me with the connection information including node name and location.

So, you need to make the /custom/custom_on script do what you want it to do..one or more things..however be aware that the connection will wait until your script finishes so don't play something very long!

Your custom_on script could look like this:

```
#!/bin/bash
/home/irlp/scripts/wavplay mywavfile
```

With a custom_off script of:

```
#!/bin/bash
/home/irlp/scripts/wavplay stn640
```

it will play your node's ID file immediately after a connection is dropped.

Be sure to make the custom_on and custom_off scripts (and all other files in your custom directory) "executable" with

```
chmod 750 "$IRLPDIR"/custom
```

Andy, I don't know if this message will bounce from this mail account or not so if you don't see this on the yahoo list, please forward it for the benefit of the rest of the node owners.

Warren KD4Z
node 451 owner (living near node 450 however)

4.5 Time Announcements

From: Chad Starling <chad@v...>
Date: Wed Sep 19, 2001 10:26am
Subject: Re: Speaktime script and COSSTATE

OK paul i found that the changes i sent you were not enough information so i decided to post the entire script file for id_time what this script does is id's then plays time as i also noticed with some testing is that the script has to be running from the custom DIR.. attached is the script also is pasted into the email here are the changes below with information.

[see Custom Scripts - Other, yahoo group email message #511 or the files directory for more info -- ww4m]

4.6 DTMF regeneration

Note -- the DTMF board will not decode the letter D properly but will regenerate the letter D just fine. There are no problems with the numbers and A, B, C, * and # -- when scripting, represent * with S ('Star') and # with P ('Pound').

If you are connected to a reflector, it will just MUTE dtmf tones (no regen)

If you are connected to a node, and the node has the REGEN feature enabled, they will hear a short "first" tone followed by dead air while you type in the DTMF code. Then their TX will drop and rekey, then play perfectly regenerated DTMF tones straight from the sound card.

Nodes without the feature enabled will not hear anything (but the muted silence while the node punches tones).

To enable this feature (the REGEN), add the following line to your /home/irlp/custom/environment file: (as root)

```
export DTMF_REGENERATION=YES
```

and reset your node (as root) by running `/home/irlp/custom/rc.irlp`

NOTES:

This will only regenerate tones of length 2 digits or more.

This will NOT regenerate any tones which are IRLP control codes (on codes, off codes, disable, enable, etc.)

There still may be some bugs in the system.. PLEASE be patient.

How the DTMF mute (and REGEN) works:

- 1) When the process "DTMF" is started, the active recording device(s) are read into memory.
- 2) When the DTMF decoder chip decodes a tone (other than D), the DTMF process on the computer recognizes it.
- 3) When a DTMF tone is detected, it changes the recording device from what it WAS to the CD
- 4) It stays that way for 1 second after the tone has stopped being pressed.
- 5) To unmute, it just returns the recording device to what it was in step (1).
- 6) If the number of tones is greater than 1, the mute time is increased to 2 seconds. This ensures that accidental triggers in voice are not muting people.

ALSO, you are all thinking... what if the DTMF process is killed during a mute: (very rare)
- you'd think it would then read the recording device wrong when it was restarted... Well no, because the mixer is reloaded before the DTMF process is started.

Now the regen works like this:

- DTMF sends all tone sequences it reads to the decode program
- The decode program determines if
 - 1) The code is a valid IRLP code
 - 2) Less than length 1
 - 3) Something you have customized in as a code.
 - 4) A link is up to a node (not a reflector)
- If the sequence is NOT one of the above, it sends it to the remote side.
- The remote side determines if the DTMF_REGENERATION bit is bet, and drops the link for a second, unkeys for a second, keys, waits a second, sends the tones, unkeys, resets the link.
- If the bit is not set up, it just ignores it.

Dave Cameron

From: Bill Gade <bgade@s...>
Date: Sun Aug 12, 2001 11:37pm
Subject: More Timing & DTMF Questions

On our new node, Flin Flon #175, there seems to be something timing out the system. After about two minutes, the node transmits a buzzing kind of beep and drops out. It doesn't always do this but it is fairly constant. I have looked through the timeout values but I don't see anything that would be causing it.

Our second problem with that node is it's refusal to decode DTMF tones. Generally, if we turn the computer off for a few hours, it will decode for half an hour and then stop. Otherwise it just

doesn't decode. The yellow valid digit light does not light but there is audio to the board. I suspect that perhaps a solder joint is bad and after it gets warm it stops? Would anything else cause this?

I welcome you comments...

Bill Gade
VE4WO

From: Bret Mills <bmills@e...>
Date: Sun Aug 12, 2001 11:54pm
Subject: Re: More Timing & DTMF Questions

DTMF Decoding requires a GOOD printer port on the Computer. I had a similar experience and had to install a OLD ISA based I/O card and everything worked 100% using the parallel port on the ISA card. As far as your time out problem, Does the Radio on your IRLP have it's own Time Out timer? just a thought.

Bret
WX7Y
Node 327

From: <pete@j...>
Date: Wed Aug 15, 2001 11:11pm
Subject: Re: More Timing & DTMF Questions

Bill

If the yellow light doesnt flicker with the DTMF tones, I'd suspect the audio getting to the IRLP board is below standard. the MT8870 is one of the best dtmf chips on the market and is VERY rock solid.

I'm involved with a few nodes in VK and have found that its the quality of the link radio and the antenna you put on it. I have moved VK2RBM to a friends house with a better antenna than mine, and DTMF is 100% solid.

When you say drop out, what does that mean ?

- 1) Lack of audio
- 2) It drops the internet speakfreely link ie: imike and ispeaker processes not running ?
- 3) If the amber light flashes with DTMF, check what the pc sees with "readinput". Its in the IRLP documentation.
- 4) When you say buzzing, does the radio actually key up ie: PTT activates" and you hear a noise ?

To better track this down, I need a little more specific information..

73's Pete..vk2yx

From: Paul Cassel <paul@v...>
Date: Fri Aug 17, 2001 10:07pm
Subject: Re: New Node op Q

If you're not sure what node you are connected to just dial ANY off code xxx1 and the active link will drop.

From: <rmackay@i...>
Date: Fri Aug 31, 2001 9:53am
Subject: Re: New file uploaded to irlp

Thanks to NE1H, I have installed the check_irlp in my custom folder and added this line to my custom_decode file:

```
if [ "$1" = "A" ] ; then "$CUSTOM"/check_irlp ; exit 1 ; fi
```

Any user can hit the "A" DTMF key and get the connected status message. Perhaps we can create a standard status command.

I picked "A" because its easy and benign..although I just found a user who could not get the ABCD keys to work so perhaps another number, like "0" would be better. Maybe "0" sames as the LITZ system except not a LONG zero.

73 - Ron VE1AIC

From: Ron <rmackay@i...>
Date: Wed Sep 5, 2001 9:13pm
Subject: Re: check_irlp script

Hey Alan I really enjoyed your check_irlp script. However, I found some people kept punching the codes again when they got no response..ie the node was not connected. So I added an 'else' section to play the "linkoff" wav when not connected.. I might record a better message sometime later but that will do for now.

73 - Ron VE1AIC

```
if [ -f "$LOCAL"/active ]; then  
CONNECTED=`cat "$LOCAL"/active`  
echo Your node is already connected to $CONNECTED  
killall ispeaker >&/dev/null 2>&1  
killall ispeaker_PCI >&/dev/null 2>&1  
killall sfswrapper >&/dev/null 2>&1  
"$SCRIPT"/wavplay connected "$CONNECTED"
```

```
"$SCRIPT"/sfswrapper
exit 1
else
killall ispeaker >&/dev/null 2>&1
killall ispeaker_PCI >&/dev/null 2>&1
killall sfswrapper >&/dev/null 2>&1
"$SCRIPT"/wavplay linkoff
"$SCRIPT"/sfswrapper
exit 1
fi
```

4.7 Call Waiting

Will notify you when another node is trying to connect to yours while a connection is already active so you can call them back when you finish the current call (not "Call Waiting" in the familiar sense that you can put one call on hold while you answer the other). This was originally a script written by one of the owners, but it was so popular that it was made a standard part of IRLP. Just insert the following lines into your environment file:

```
#-----
```

```
# Set to yes to Enable notifications for inbound calls while the node is busy,
export CALL_WAITING=YES
```

```
# Set to YES to be told the station number of the inbound call.
# example: "Inbound call from node number xxx"
# Set to NO to hear the node owners recorded info.
# Example: node xxx located someplace ... etc
export CALL_WAITING_NUMBER=YES
```

```
# set Delay between notifications from a node continuously calling, in seconds
# must to greater than 120
export CALL_WAITING_DELAY=120
```

```
# -----
```

For more information about this and custom scripts to enable you to dial back the last node that tried to reach yours, see the list archives and files sections.

4.8 Custom Scripts - other

Also see the repositories at:

<http://groups.yahoo.com/group/irlp/files/>
<http://vo1hhr.irlp.net/custom.html>

```
-----
```

From: <ne1h@h...>
Date: Sat Sep 8, 2001 10:07pm
Subject: Any interest??

Well, in my continuing quest for fun things to do with IRLP. I've thought of a who bunch that would include TTS (Text To Speech). I've had this running on one of my linux boxes at one time, but I may have to dig it back up.

If I do I thought I'd see if anyone else was interested.

It's called festival and there are some pretty good Phenom based voices for it. All in the public domain.

One nice thing is that you can have a text file run through it and saved as a wave file.

So, for example, if you had a weather station connector or better wanted to capture the local forecast. You could run it through festival. TTS to wave it and that could happen based upon a cron job every few hours or minutes. Then you could have an entry in the "custom_decode" script file that would play it out the IRLP node. Obviously only a local feature, but and interesting one non-the-less.

I may go dig it back up, if anyone is interested, let me know and I'll post the hows and wherefores here :). Course, I guess I have to ask if this is the right place to post that kind of stuff....

Let me know,
Alan

From: <ne1h@h...>
Date: Sun Sep 9, 2001 10:41am
Subject: Follow up on TTS software for linux

Ok, I've now got Festival running. It was pretty easy but there are a few quirks that I've got to iron out.

If you are interested in playing with this, **AND ARE LINUX EXPERIENCED**. The link is www.festvox.org. Basically get everything in the download directory, untar them all. Gmake and Build the spechtools first, then same for festival (following the installation instructions).

Once you are there and have the "test" run and passing. You can easily test is on your irlp box with the following but this is where the quirk comes in. Looks like Dave changes the permissions on the /dev/dsp device and that means you can only run these tests as usr root or repeater.

go to the "examples" directory

```
type key  
type ./saytime  
type unkey
```

There you have it, in it's best computer generated accent, you just said the current time over your

node. The other file to play with will be the text2wave file. It will take text in, convert it to speech and save the file as a wav file, then you can use playwav to play it without having to worry about key and unkey.

Have fun and I'll continue working on easier instructions for those not so linux savvy.

Alan

From: <g.cook@s...>
Date: Wed Sep 12, 2001 0:57pm
Subject: technical query regarding bash script syntax

Hi all,

Does anyone know how to write a wildcard character in a script file. By this I mean, say all DTMF tones beginning with 9 cause a wav file to be played then something like

```
... if [ "$1" = "9 (wildard representing any 3 characters)" ] ;  
then ...
```

I've tried one * and three ? as wildcards, but no joy...

Thanks,

Greg G4CUI, Nodes 510 and 515.

From: Charles Scott <cscott@g...>
Date: Thu Sep 13, 2001 8:20am
Subject: Re: technical query regarding bash script syntax

Greg:

I hate regular expressions, but they do have their place. Here's a code example using a "regular expression" that may help.

```
while [ TRUE ]  
do  
  
    echo -n "Enter numbers: "  
    read STUFF  
  
    if echo $STUFF | grep -Eq "^9[0-9]{3}$"  
    then  
        echo "Match"  
    else  
        echo "No Match"  
    fi  
  
done
```

You can paste this into a file and change the permissions to make it executable, then play with it to see how it works. The important line is the ...echo...| grep... line. It echos the value of \$STUFF (which in your case could be \$1) and pipes it to grep. The E option tells grep to interpret the next string as an extended regular expression (see "man perlre" or a good text on regular expressions). The "q" option tells grep not to output the matching text (you could instead use "> /dev/null" at the end of the line if desired). The regular expression "^9[0-9]{3}\$" does the following...

^ Match the beginning of the string
9 The first character must be a "9"
[0-9] The next characters must be digits from 0 to 9
{3} The prior match ([0-9]) must match exactly 3 times
\$ Match the end of the string

The entire command is evaluated and the result is used as the argument to the "if" command. If there's a match, then the if is true, else it's false. The following is an example of running this script. As you can see, it requires 4 numbers that start with 9 or it doesn't match.

```
Enter numbers: 9123
Match
Enter numbers: 91234
No Match
Enter numbers: 912
No Match
Enter numbers: 1234
No Match
Enter numbers: 9xyz
No Match
```

Hope this helps.

Chuck - N8DNX

From: <dcameron@i...>
Date: Wed Sep 12, 2001 1:17pm
Subject: Re: technical query regarding bash script syntax

A script like this will strip the first character

```
#!/bin/bash

eval `echo $1 | awk '//{print "FIRST_DIGIT="substr($1,1,1)}'`;
echo $FIRST_DIGIT
```

This sets the value of FIRST_DIGIT to the first digit of the number passed to the script and echoes it to the screen.

```
./scriptname 123 returns 1
./scriptname test returns t
```

You can then do comparisons on the variable FIRST_DIGIT.

```
if [ "$FIRST_DIGIT" = "9" ] ; then
echo "First digit starts with 9!"
else
echo "First digit is not a 9... darn!"
fi
```

The substr (although I don't know exactly how it works) is,

arg 1 : string being processed

arg 2 : number of digits to return

arg 3 : position of digit(s) in string

another handy awk command in length(\$1) which returns an integer value of the length of a variable \$1.

The following command will return the LAST digit.

```
eval `echo $1 | awk '///{print "LAST_DIGIT="substr($1,1,length($1))}'`;
echo $LAST_DIGIT
```

These commands are heavily used in the decode scripts to peel prefixes, nodeIDs and action numbers (1 or 0) from the decoded string.

Dave Cameron

VE7LTD

From: Chad Starling <chad@v...>

Date: Wed Sep 19, 2001 10:26am

Subject: Re: Speaktime script and COSSTATE

OK paul i found that the changes i sent you were not enough information so i decided to post the entire script file for id_time what this script does is id's then plays time as i also noticed with some testing is that the script has to be running from the custom DIR.. attached is the script also is pasted into the email here are the changes below with information..

```
#!/bin/bash

# Make sure we are user repeater!!!

if [ `~/usr/bin/whoami` != "repeater" ] ; then
echo This program must be run as user REPEATER!
exit 1
fi

. /home/irlp/custom/environment

# Make sure we have sourced the environment file

if [ "$RUN_ENV" != "TRUE" ] ; then
echo "You must source the environment file first. Do this by running:"
echo ". /home/irlp/custom/environment"
```

```

exit 1
fi

if [ -f $LOCAL/active ] ; then exit 0 ; fi

if [ "$#" = "0" ] ; then exit 1; fi

$BIN/coscheck
$BIN/key
usleep 900000

cd /home/irlp/custom <<<< MAKE SURE THIS LINE EXISTS OR IT WON'T WORK

$BIN/play $AUDIO/$1.wav <<<< from command line or cron id_time stnXXX

./saytime
$BIN/unkey
exit 0

```

Notice I am using PLAY instead of wavplay also you can reverse the play and saytime if you want it to say time then id etc. but make sure the CD dir exists before the play... hope this helps paul.. for some reason if this script is not executed from the custom dir it does not check COS that i noticed.. and when the script goes off you can test it by keying up your repeater or sending COS to the irlp node and the script should wait till you unkey before it id's

5. Reflectors

FYI reflector connections ALWAYS succeed. There is no handshake. You ALWAYS will hear "Welcome to IRLP Reflector 2", but this does not mean you're actually connected.

5.1 Reflectors - Pulsing

afterinstallv2.htm says: "A PULSEBACK is caused by a digital packet(s) being sent from your node without a valid COS signal. They are most often caused by hangtime settings on your repeater?. They can also be caused by the receiver itself. If the receiver sends a COS signal to the IRLP board after the radio has just unkeyed, a PULSEBACK has occurred."

There is a slight delay between when an incoming IRLP signal unkeys and an IRLP repeater unkeys. If an IRLP node could receive immediately upon dropping an incoming signal, because of the delay the node's own repeater would immediately key the node and retransmit to other connected nodes. The second value in the custom/timing file is the setting (in milliseconds) that an IRLP node is blocked from keying after it drops an incoming signal. If the value is too low (short) the node begins receiving before the repeater signal has dropped and the node pulses all other nodes to which it is connected.

Example. Node 000 is connected to REF2 and is pulsing. When an incoming signal from the reflector drops, the node stops transmitting but immediately hears the end of its own repeater transmission and transmits a kerchunk across the reflector. If two or more nodes are kerchunking they can key each other and tie up all other connected nodes.

Follow the instructions in the install webpages to configure your node so it doesn't pulse. You may well have to use a value higher than that recommended by the pulsecheck script (which should be run when not connected). The node settings must be reset for any change to the timing file to take effect. Either restart (as root) custom/rc.irlp, or (per WY0X) use the irlp_restart command.

Nodes that pulse will be locked out of reflectors until their problem is fixed. This is not done to be mean but as a matter of practicality. When a node is locked out of a reflector an email message will be generated automatically to alert the node owner of the problem.

From: Ted Maczulat <tmaczulat@h...>
Date: Fri Aug 17, 2001 1:14pm
Subject: Re: pulseback

In some radios the PTT circuitry causes a voltage to be applied to the squelch circuits to "Force Mute" the receiver when the radio is transmitting. When this "Force Mute" voltage is removed when the transmitter unkeys the squelch circuitry sometimes glitches open for a few milliseconds. This can cause a COS pulse and the computer generates a pulseback. In other radios the PTT circuitry actually powers off some of the receiver squelch and audio circuitry when the radio is transmitting. This can cause a COS pulse when the receiver circuits a powered back up when the radio is unkeyed.

Give me a call on Node 112 if you would like to chat about this.
Hope this helps. good luck

Ted Maczulat, VE7TFM
NodeOp IRLP Node 112

From: Nate Duehr <nate@n...>
Date: Fri Aug 17, 2001 3:28pm
Subject: Re: pulseback

The "irlp_reset" script can also be used to reload settings, I believe. If you're logged in as user repeater (make sure you become religious about this, being logged in as root can cause various problems with the node software saving things with wrong permissions, etc...) it should be in your path.

From: <ww4m@i...>
Date: Wed Oct 17, 2001 10:10am
Subject: Re: pulseback

> Folks, PLEASE run pulsecheck as repeater and set your settings to what
> it recommends. Please please please.

This doesn't always work. When we brought up Raleigh #426 in August we ran pulsecheck and it told us the setting should be 150. But when we made our first connection to REF2 we were told we were causing problems, should have run pulsecheck, and would we please get off the reflector. #426 was our brand new baby, and someone was telling us it was ugly! We set the timing to 500 and it's been fine since then.

From: Paul Cassel VE3SY <paul@v...>
Date: Wed Oct 17, 2001 1:38pm
Subject: Re: Re: pulseback

One thing that can effect the values for the PulseBack check is a change in squelch settings on the repeater (making is looser thus slightly longer) or running the PulseBack check direct with the link radio rather than through the repeater. Each of these items will effect the length of time required for the timing file.

When trouble shooting pulseback issues on several nodes over the past week both of these items surfaced.

73 Paul VE3SY

5.2 Reflectors - IDs, Courtesy Tones and Hangtimes

CW and voice IDs, courtesy tones and hang time from node repeaters are not permitted on reflectors -- nodes should be configured so they are not passed through the node (IDs are okay when they occur behind someone talking on your node). Nodes using link radios usually use PL (CTCSS) squelch on the link radio and putting PL on the repeater output only when COS is present (no PL on during courtesy tones, IDs and hangtime). Nodes that are connected directly to repeater controllers have more options.

Besides being annoying, the biggest problem with IDs is that every time they play (in the U.S. at least once every ten minutes when active), they key up every node connected to the reflector at the exclusion of all other signals. Remember - on the reflectors the first signal received blocks all others, unlike repeaters where IDs can mix with signals from other users.

The ideal node is configured so that repeater hangtime does not keep its IRLP connection keyed. At present, any hangtime under 100 ms is generally considered acceptable. Problems can arise with longer hangtimes because local users may think that they have allowed the IRLP signal to drop when it hasn't, leading to the inability of other nodes to join the QSO and ultimately causing the node with long hangtime to timeout its IRLP connection.

Most node owners have put a great deal of effort into getting their nodes functioning properly to meet reflector requirements. If you connect your node to a reflector and you have not properly configured your node, expect someone to bring it to your attention promptly (and perhaps bluntly).

5.3 Reflectors - Blocks / Lockouts

If a node causes interference to the normal functioning of a reflector (locked COS, pulsing, people playing music, etc.) the reflector control ops may temporarily block that node from the reflector. When the block is implemented an email message will automatically be sent to the contact address on file for that node, usually with a comment about the reason for the block. When a block is in place the node will appear to connect as normal but will hear no audio and will not be heard on the reflector.

Blocks are usually removed after a short period of time, unless the problem is because the node needs to be reconfigured to resolve the problem. If your node has been blocked and the problem has been resolved, send a message to problems@irlp.net and request that the block be removed.

From: "Paul Cassel" <paul@ve3sy.com>
To: <xxxxxxxxxxxxxx>, "IRLP Notification System" <problems@irlp.net>
Subject: RE: node xxx is blocked from Western Reflector - Las Vegas
Date: Sat, 7 Sep 2002 16:31:45 -0400

Hi xxx

We have all had our nodes blocked at one time from all of the mainstream reflectors. Even Dave VE7LTD has been blocked.

You must remember that when interference is occurring from one node and there are 10-15 repeaters connected the offending node is now creating interference on all repeaters. The method used ALWAYS emails the node op BEFORE the block even takes place. The node cannot be blocked until a confirmation that the message has been sent is received back to the reflector control op.

Reflector cops (yes I'm one) will look for a control operator and if non is heard we will block the node and the system generates the automatic email along with a brief reason why with words separated with _underscores.

Please do not feel centered out. It happens to all of us. What more can I say?

Paul VE3SY
IRLP volunteer

5.4 Superreflectors

In the beginning, reflectors had just one channel to connect to per IP/machine (using ports 2074 in and 2075 out), but this arrangement left most of the available bandwidth on each machine unused most of the time. Superreflector software was introduced in early 2002 to enable up to 10 pairs of ports (2074-2093) numbered 0 through 9 to be used on reflectors running the superreflector software. Ports 8 and 9 use the GSM codec so nodes using with slower dialup

connections can use them (dialup nodes are blocked from using normal reflector ports because of problems with GSM).

Per VE7LTD: MAKE SURE that you have ports 2074 through 2093 UDP forwarded through your router.

From: Dave Gingrich K9DC <gingrich2@d...>
Date: Sun Oct 13, 2002 9:14pm
Subject: Re: super reflectors and channels

At 18:30 10/13/2002 +0000, Luther wrote:
>It's been a while since I saw information on super-reflectors. How
>exactly do they work...

Just like the regular reflector, except the last digit may be 0 - 9.
0 = the "main" channel
1 - 9 are subchannels (temporarily, 1 is not available, due to xxx1 being the former disconnect code.)

Currently the top two channels (8 & 9) on the multichannel reflectors are set for the low bandwidth GSM codec, so dial-up connected nodes may use them too.

>How many channels are there on a super-reflector?
So far all are equipped with 10

>Who are super-reflectors?
9000
9100
9200
9210
9250
9300
9500
9600
[9700 - ww4m]

Reflectors 9310, 9400, 9610 and 9700 are not equipped for multichannel operation

>When you go to the status pages how do you tell which channel a
>station is connected to on the super-reflector?

Right now you can't. Nodes will show up connected to the main reflector regardless of what subchannel they are using. Also of note, if you dial a node that is connected to a reflector, the busy message returned does not include channel information. The status page, including channel ops are a task yet to be completed.

>Also what was the original purpose of channels?

Additional channel capacity for special operations without additional reflectors, also to make multiple GSM reflectors available.

>Is there anything special I need to do to be able to use the subchannels?

Yes. To use the subchannels, you must ensure that UDP ports 2074 through 2093 are allowed into your node. If you are using a router and port forwarding, UDP 2074 - 2093 must all be forwarded. This has been in the documentation for a while, but nodes more than six months old may have been installed when the docs only referred to 2074 - 2075.

>When should I use a subchannel as opposed to the main channel?

Basically, whenever you want. IRLP guidelines suggest that long winded QSOs between two nodes be taken off the reflector to a node to node connection, leaving the reflector relatively clear for operation as a calling channel. If that long winded QSO involves more than two nodes, moving to a reflector subchannel would be in order. Right now, of course we really can't tell which subchannels are in use, so beware of dropping into another QSO.

>Are there any declared special purposes for any of the channels?

I can only speak for 9200, as each reflector operator can set their own use policy. But on 9200, there are not yet any declared purposes, but that could change.

If you would like to schedule a special operation on 9200, simply contact me and ask. With subchannels available, it is a lot easier to say yes knowing that normal traffic can continue. If an emergency occurs (local or otherwise) and pre-arrangement is not possible, then pick a sub-channel and get underway. As soon as possible, send a note to me about the operation.

Dave K9DC, Ref9200

From: Vic N3IO <vic@n...>
Date: Mon Oct 14, 2002 3:39pm
Subject: Super Reflector Six Channel Guidelines

Super Reflector Six Channel Guidelines

Channel 9 - Emergency / Safety / Priority

Channel 7, 8 - (Scheduled Use Only)
Classroom / Seminar Activity & Scheduled Wide Area Nets

Channel 5, 6 - (Net Open)
CanWarn / SkyWarn Nets & Other Regional Nets
Any other UN-scheduled "NET" type activity

Channel 1, 2, 3, 4 - (Open) Rag Chew

Channel 0 - (Main) - Calling and Brief QSOs

From: "w7aor" <w7aor@h...>
Date: Tue Nov 19, 2002 5:15 pm
Subject: Current Uses Of W7AOR Western Refelctor 925X

Current Uses Of The W7AOR Western Reflector 925X

- 9250 Calling and QSO, Weekly AMSAT Beginners Net Wednesday 7 P.M. PST
- 9251 Calling and QSO
- 9252 Calling and QSO
- 9253 California Special Activities and Emergency Services. Nightly Orange County Night Owl Trivia Net 11 P.M PST. Ham Radio Newcomers Net Friday 7 P.M. PST. Visitors welcome to both nets.
- 9254 Hawaii-Pacific Rim Linking, Special Activities and Emergency Services Hawaii Au Au Net Friday 9 P.M. PST. Visitors welcome
- 9255 Arizona Linking, Special Activities and Emergency Services. Visitors welcome
- 9256 Utah Linking, Special Activities and Emergency Services, Sinbad Desert Radio Club Net Tuesday 8 P.M. MST. Visitors welcome
- 9257 Nevada Linking, Special Activities and Emergency Services
- 9258 GSM
- 9259 GSM

=====

The above is offered to the owners for comment BEFORE implementation

I am often asked
WHY do we need all those reflectors.?.
How do we find each other?

I hope that we can use our new capacity in a constructive way...

Maybe a designated channel or channels can be designated(forced) GSM for bandwidth conservation for HIGH LOAD global nets and emergency use..

We now have room for multi-node rag chews!
We now have room for unscheduled nets and QSOs that grow into NET proportions.

Comments?
Questions?
Flame away!

Vic N3IO / VO1VET

From: Dent, Mike <m.dent@l...>
Date: Mon Oct 14, 2002 3:53pm
Subject: RE: Scandinavian mixed with English channel hangout?

> -----Original Message-----
> From: sm6tky@m... [mailto:sm6tky@m...]
>
> IRLP nodes in Scandinavia are growing,
> and we are missing a hangout, there we can meet and so on..
>
> Is there a reflector out there who are willing to let us into a channel
> With mixed Scandinavia (prefered) and English (offcores) language?
>
> 73 de Morgan, sm6tky #8000

Morgan, yeah no worries.

Try the UK reflector, 970, channel 8, 9708. How does that sound for now?

73
Mike
g6phf
www.g6phf.co.uk node 5280 ref 970

5.5 Reflectors - Other

Reflector owners set their own policies regarding acceptable and unacceptable behavior on the reflectors. Nets on a reflector without prior approval of the Reflector manager are highly frowned on and will no doubt be quickly challenged by someone. A roundtable can sometimes be construed as a net so be somewhat careful if a group gets too large as it tends to monopolize the reflector. Anyone wishing to schedule an organized event on a reflector should contact the reflector's owner in advance to first obtain permission.

At present REF2 is the busiest reflector, and the reflector owner has said that outside of scheduled nets, it is inappropriate for anyone to assume the role of Net Control even when a large number of stations are trying to use the reflector. Chaos can be avoided without resorting to a Net Control by using the preferred method of operation, as followed by experienced HF operators, in which participants stay aware of the other stations 'on frequency' and establish an informal rotation. Each station should allow a pause for others to join before they key up, and should designate which station is next in order before they unkey.

Reflector owners would like everyone to remember that when REF2 gets busy, other reflectors are underutilized and nodes are free to put them to good use.

Some reflectors owners have published guidelines and net schedules for their reflector and each subchannel. WA2DCI is keeping track of these guidelines -- browse to

http://wa2dci.com/node_detail.php, enter the reflector number (e.g. 9250) for the node ID and submit to view the guidelines.

See also **Operating Procedures** and **JOTA**

6. Procedure & paper shuffling

6.1 Email lists -- keeping informed

There are several IRLP lists already established, and everyone is welcome to start a new one if they see a need for it. Owners should subscribe to the following three lists if they expect to stay informed on IRLP. Subscription to these lists is configurable - you can choose to receive all messages via email, just a daily digest of compiled messages, or no email messages (you can browse them on the internet instead).

owners@irlp.net - moderated by VE7LTD and closed except to posts to owners required for administration of IRLP nodes and the IRLP system

irlp@irlp.net - a general list for owners and nonowners, not for discussion of technical details or information not appropriate for nonowners. Not moderated, but if you post a message with multiple recipients in the address line, the anti-spam filters will hold your mail for approval by a list administrator

<http://groups.yahoo.com/group/irlp> - for IRLP node owners, the appropriate forum for discussion of items of a technical nature and the place to upload files for use by other owners. Administered by NOPSR but not moderated. You'll need to register with Yahoo to join, but you do not need to be a Yahoo member and IRLP folks have not reported receiving any increase in spam after registering with Yahoo to join.

VE3SY started a group dedicated to kids on IRLP (groups.yahoo.com/group/irlp4kids), and I believe there's a group for IRLP in southern California and another for using IRLP technology to improve ham radio communications with the ISS and space shuttle.

A few guidelines:

- Don't post html-formatted messages**, which can cause problems for list subscribers who don't use html-compliant email software and for some browsers when people want to reply because the formatted messages do not appear as quoted text in the reply message.
- If you want to reply to an individual, **reply directly** and not via the entire list.
- Trim quoted material** in replies if it gets lengthy or is not needed. I have actually seen a message with 15(!) separate taglines at the end.
- When you sign a message, please **include your callsign and node ID/location** so other node owners can recognize you on the air.
- Search the list archives** before posting a message to see if it has already been discussed and answered.
- Make sure the **subject line** matches the content of your post. If you're replying to a thread and the topic has changed, please change the subject line.

-Attachments to messages posted to the yahoo group list will be automatically stripped. Consider instead whether whatever you want to attach should be uploaded to the group's files folder or should be included inline with the message.

Keep posts on-topic, and if you reply to an off-topic post, please do it privately and not to the list. We want to foster discussion of everything relevant to IRLP, although probably no two people on the lists will agree where the line between relevance and irrelevance lies. When posting please keep this in mind, so that the folks who don't want to be bothered with marginally relevant or non-IRLP posts aren't tempted to unsubscribe. Of course they can always use the Delete key, but it's also proper netiquette to keep posts to a group on-topic.

And finally, if you are running Windows and especially if you are using MS Internet Explorer or Outlook, please use **antivirus software** and update it regularly. There are many people on these lists, and considerate list subscribers will be conscientious in their efforts to spare other list subscribers from receiving infected messages. -- ww4m

Note from the moderator of the yahoo owners list:

From: Kent Roberts <kent@f...>

Date: Fri Feb 8, 2002 9:20pm

Subject: From the list moderator - Yahoo Group List Changes - Please Read

I think we as a group need to make some changes to this list. There were over 1000 message last month, thats over 30 a day!

It seems there are alot of people that are tired of the debates that are going on every week, it seems like a new issue, about something... Or even a repeat of the previous months debate.

and I Like most people don't want to join any more IRLP distrubtion lists, as I can't even keep up now, which I am sure is the case with alot of other folks.

SO.....

First and Foremost.

NO more posting about node owner practices. This includes Public/Private nodes/repeater systems. IF YOU HAVE A PROBLEM WITH A NODE OWNER's OPERATION, SEND THEM AN EMAIL, and keep it off this list. We all have ideas on how we should run our nodes, or interpet the REGS differently, and since the users CANT read these, there is no point in posting it here. It belongs on the users irlp list. As the control operator, we have to decide what is best for us.

Lets get back to more of what this list was for....

IRLP...

Tech stuff...

Issues that will affect the IRLP community.

Linux.

New Ideas to improve the IRLP community.

Security information.
techie stuff.
Radio problems.
Questions.
nets

Getting off the soap box...
Kent

1) FIND YOUR LIST PASSWORD

- go to <http://irlp.net/mailman/listinfo/owners>
- Where it says "To change your subscription (set options like digest and delivery modes, get a reminder of your password, or unsubscribe from Owners), enter your subscription email address:" enter your email address (e.g. va3ir@rac.ca)
- Where it says: "Click this button to have your password emailed to your list delivery address", click the button.
- Wait a minute, the password will come to you.

2) GO TO THE ARCHIVES

- go back to <http://irlp.net/mailman/listinfo/owners>
- At the top, under "About Owners" click on the link for the "Owners Archives".
- Enter your email address AND your recently found password.
- Select the current month, and click on "DATE".
- The email you are looking for will be titled: "[IRLP Owners] IRLP Monthly Password Update Richard Whittaker". It will be dated the first of this month.

Dave Cameron

Instructions on how to remove yourself from the IRLP GENERAL or IRLP OWNERS list:

- 1) Go to the mailman website <http://irlp.net/mailman/listinfo>
- 2) Choose the list you want to remove yourself from.
- 3) In the "subscribers" section (bottom of the page) in the box saying "To change your subscription (set options like digest and ..." enter your email address that the mail is being sent to. **MAKE SURE YOU ENTER THE EMAIL ADDRESS THAT THE MAIL IS BEING SENT TO.**
- 4) If you do NOT have your list password (which is mailed to you every month), click on the "EMAIL MY PASSWORD TO ME".
- 5) Enter your list password in the "Unsubscribing from" field and click Unsubscribe!

Thats it!

Dave Cameron

From: Kent Roberts <kent@f...>
Date: Sun Dec 9, 2001 11:39pm
Subject: Re: Node Co-Owners being denied Yahoo Group membership

Both myself, Nate- W0XY, N1EH, and Dave VE7LTD, are all moderators, just for info.

The reason people are getting denied, is that the information requested when they subscribed to the list, is not being received . Upon subscribing, yahoogroups sends out a pre-written email with a few questions, asking everything from who they are to how they work with the IRLP project...

Some of these users that are being denied access, because the responses have not arrived after 2-3 weeks, and the pending list gets out of hand. I think waiting a week or two is more than plenty for this info.

Nate and I usually take care of the membership list. We allow co-owners/operators access, ONLY if the actual owner sends the request, with the information about the user (make sure they include node number and yahoo profile name or email address).

We are not trying to be a pain, but this is the only way we can verify that the users on the list are owners. That's something we try very hard to do, because at times there are issues with nodes, node security, and other "owner-only" information discussed on the list.

If there are other issues, you can email me or Nate directly.

Kent

From: Nate Duehr <nate@n...>
Date: Mon Dec 10, 2001 2:25am
Subject: Re: Node Co-Owners being denied Yahoo Group membership

Kent may have already answered this, but I'll take a poke at what I'm doing...

1. Person sends e-mail to IRLP list to get membership.
2. List sends back canned text message asking for certain information.
3. If we hear back relatively quickly (I REALLY love when the person immediately answers the information in the attachment) then the approval goes through without a hitch.

OR 3. Non-node owners who we can't verify through the status.irlp.net pages don't get access until the node owner on the status page sends us a confirming e-mail. (how else are we to know who the other four guys that help you work on your node are unless you put something

somewhere that tells us...? I'm not going to spend more than about 30 seconds on it. I read over 100 e-mail messages a day right now.)

4. If we don't hear anything from someone who sent a request to join, we assume they were a non-owner IRLP user (hey, we didn't hear anything for three or four days) and we click REJECT on their name in the list after a few days so the list doesn't get so big we can't find anyone on it.

When we do this that canned message Paul quoted below gets sent by Yahoo.

... and the most important part...

Mistakes happen.

If you know of someone who SHOULD be on the mailing list and you're a node owner already on the list, you can send us an e-mail at irlp-owners@yahoogroups.com (in this case "owners" stands for the list owners... an unfortunate side-effect of the name of the list being "irlp" instead of "irlpowners" .. in which case it would irlpowners-owners heh...) and just tell us their e-mail address and we can type it into a browser and it's done... they're on the list whether they wanted it or not...

... which some would also complain about and find rude too. :-)

So just try again if we screwed up. We're human and we're trying to "do the right thing".

Nate WY0X

6.2 Access Codes

Whether IRLP access codes for all nodes should be publicized and accessible to everyone is a VERY hot topic and the subject of a long-running debate. Everyone has his/her own opinion. Current policy is not to mention access codes on the air (mentioning node numbers is okay) and not to encourage people on other nodes to attempt to make their own connections without first obtaining the permission of the local node owner.

Each node owner is free to determine whether access to his/her node is limited or open to the general public. Owners may further limit local access implementing a custom prefix to the access code. (Node owners can also block access to/from specific nodes or reflectors by listing those nodes/reflectors in the custom/lockout_list file.)

Here is a short volley sampled from the Yahoo list. If you want to see more on this topic, just search the list archives for codes, public, open, protocol, etc. Every node owner faces a unique set of circumstances that influence his/her decision re: user access. Before you post on this topic, read the previous posts and seriously consider whether you are contributing something new or only adding gas to the fire.

From: T. Glen Haggard <glen@k...>

Date: Sun Sep 16, 2001 7:47pm

Subject: Codes

Apparently, not all of the node owners understand that the IRLP codes have not been made public. Only the code numbers have been made public, not the connect or disconnect codes. Most node owners also have a local prefix that can only be obtained by the local node owner or club. These are not public information either.

One of my local control operators defused a situation last night while a couple of local hams were talking to a node owner on the IRLP system (The name or call of the node owner is not relative and will not be mentioned). This node owner apparently has miss-understood what is public knowledge and what is not. One of the two local hams in the conversation has IRLP privileges through the local club and the other did not but plans to join the club so that he may obtain the codes. The node owner convinced the local hams that these code were all public now and can be freely given out. So, the local ham with the IRLP privileges was planning to give them to the other local ham. Please understand that not all amateur radio operators have a full bucket upstairs. Fortunately, my control operator was able to defuse the situation and explained to the fellows that the codes were not public and that only the node numbers were.

I understand that many of you do not want or need people to join a club or pay you any money to help with the up keep of your system but that is not the case here. The IRLP is just one part of our system and it cost me personally a great deal of money to keep everything running. The membership fees that people pay here are divided between the club and I which helps a great deal with up keep of the system which I entirely own and also helps with the many functions that the club sponsors each year. This allows the members and non-members to have even more fun in amateur radio. I know that there are many nodes that are used in the same way as this one.

Please, do not give out the codes or try to convince somebody that they are public. I really hate changing my prefix all the time and would rather keep it the way it is for awhile if I can. For those of you who do not like the idea of control operators, here is one example of why I have three.

Glen KK7IH

Owner of the NV7RM repeater system and node #333 Reno Nevada

From: Paul Cassel VE3SY <paul@v...>

Date: Sun Sep 16, 2001 8:48pm

Subject: Re: [IRLP General] Codes

Hi Glen:

I would not make the blanket statement that MOST nodes use a prefix. I suggest the majority do not and hope I am not proven wrong.

In my humble opinion, making the codes public was a bad idea as it effectively made the IRLP

network a closed system to roamers in areas where node ops in their wisdom felt they could not manage the users.

Our directors here in the Kitchener-Waterloo club not only voted to keep our node open but recently also removed the annual subscription premium for our autopatch AND opened the phone patch to all users members or not. Star ON - Octothorp OFF.

Our club's move in this direction of openness has led to the most dramatic increase in membership our club has ever seen. Before IRLP our membership was static year after year in the 150 -160 area. As of 3 weeks ago we were at 185 and now that our patch is included with membership we just broke the 200 mark last week. And if we included the members in the 60 days arrears column we are at 212 members.

Treat people like adults and they will reward you with loyalty.

Something to think about.

Paul VE3SY
Kitchener-Waterloo Ontario
home of open nodes 241 and 242
and open phone patches on VE3KSR and VE3RCK

www.kwarc.org

From: Jim Price WW4M <ww4m@i...>
Date: Wed Oct 17, 2001 0:18am
Subject: sharing codes on the air

We don't tell folks to try out autopatch codes on unfamiliar repeaters, and the same should be true for IRLP. It would certainly be rude for someone who does not know a repeater's user policies, even one that has a prefix, to attempt to send commands without obtaining permission. So why should some folks presume it's okay to give codes over the air and encourage people to use them?

Whether or not a majority support it, I think a significant number want to limit control to their nodes. It's not that inconvenient to discuss them off-the-air or at least off-IRLP.

Jim WW4M
Raleigh, NC

6.3 Operating Procedures

Reminder - the official guide to operating procedures is located at <http://www.irlp.net/03-background/guide.html>, and another excellent guide is available from VE3SY on the KWARC site at <http://www.kwarc.org/irlp/>.

From: Marshall Oldham <ke6pcv@c...>
Date: Wed Sep 12, 2001 8:01pm

Node owners Please, Please, Please, Please educate your users that when they are making a connection via IRLP from your node to another IRLP node that once the connection is made they need to wait and LISTEN for 15-30 seconds to make sure that they are not breaking into the middle of an on going QSO.

I know that these two issues seem so basic for most of us but I have heard these two things happening numerous times in the last 2 weeks on our node here in Los Angeles.

Sorry to the 97% of node owners that are doing things correctly that have to read this message.

73
Marshall - ke6pcv
Calnet Repeater Group
Los Angeles Node 365

From: <ne1h@h...>
Date: Thu Sep 13, 2001 11:03am
Subject: Re: Sending CW ID's into IRLP

Can I also offer and maybe it was covered in the points below.

PLEASE OH, PLEASE OH, PLEASE. Make sure your users understand that they *HAVE* to pause between transmissions..... OR Control Ops, please extend the time between COR drop and Courtesy tone. It gets very frustrating when your node is connected to a reflector and you can't disconnect it. On a simplex Link, you need time to turn the transmitter back into a receiver and capture the link back to the node radio.

I can't tell you how many times, I've got stuck with this one.

If node owners would simply reset the courtesy tone timer, this would fix the problem or the local repeater would time out and then that would fix it as well.

My .02
Alan

From: Paul Cassel <paul@v...>
Date: Wed Nov 21, 2001 5:02pm
Subject: IRLP GUIDELINES UPDATED

Greetings all.

As this new medium of communications grows we identify new quirks that need some mention on the Operational Guidelines.

The update includes items on

- * Operating in a round-table (multiple stations)
- * Calling a DX station after the sign
- * Breaking into a QSO
- * Nets on Reflectors

Feel free to use these on your own web site or news letter all I ask is credit to the Kitchener-Waterloo ARC be provided.

Thanks and if anyone has any suggested additions or changes please contact me directly at paul@v...
Enjoy IRLP

73 de Paul VE3SY nodes 241 and 242

6.4 Status Pages

The status page shows only those nodes whose owners have already submitted node information to database@irlp.net AND met security requirements:

Status page terms:

- DOWN - cannot be reached by IRLP servers (turned off, behind firewall, etc.)
- OFFLINE - node responding to IRLP servers but a) disabled using disable command, or b) cannot enable due to audio permission problems, etc.
- IDLE - node enabled ready to receive a connection (or, in the case of reflectors, it means they are functioning properly and ready to receive connections)

And the numbers on the status page defined by its author Kent N0PSR:

Down: Total: ALL IRLP Nodes entered in the database. Public and Private.
Active: Number of current calls in place
Idle: Number of Nodes not doing anything, available to call or make calls
Number of nodes that have not checked into the status page for over 1 hour.
Offline: Number of nodes that the node owner has place the node offline.

And all the nodes that don't check in after 5 days, don't show anywhere, but are part of the Total number.

Your node uses an outbound port 80 (http) message to the status server to update its status.

Keep in mind that the status just reflects the info it is given. If a node drops a dialup connection, for instance, and doesn't announce that it is idle, or if a packet is lost, then it can take a while for things to sync up again.

Official IRLP sites:

Summary Status Page: <http://status.irlp.net>, <http://status.irlp.net/summarypage.html>

Status of all nodes: <http://status.irlp.net/statuspage.html>

Tab delimited (smaller file) with all node info: <http://status.irlp.net/nohtmlstatus.txt>

Custom Status Page: <http://status.irlp.net/IRLPCustom.php3>

Latency page: <http://status.irlp.net/IRLPLatency.php>

Self-update page: <http://status.irlp.net/updatenode> (or if your node requires a proxy connection to connect to a web site, <http://status.irlp.net:15427/updatenode>). You must do this using a web browser (or text-only 'lynx') from the same IP address as your node computer.

The latency is measured from Reflector 2, Indianapolis. To look at the route from your node you can use the traceroute command.

```
root@x...> traceroute refl.irlp.net
```

A node listing may show no latency stats if it is behind a firewall or router that blocks required ports.

Unofficial related websites:

List formatted for cellphone, status page sorted by connection, and other good utilities:

<http://wa2dci.com>

For Palm Pilots: <http://groups.yahoo.com/group/irlp/files/IRLP%20Node%20List/IRLP.csv>

Reflector status page: http://irlp.g4eid.co.uk/status/all_reflectors.html

Global node maps: <http://maps.irlp.net>

K0BXX's Flash map of current IRLP connections worldwide: <http://amps-net.com/irlp.html>

```
--- In irlp@yahoogroups.com, "ve7ltd <dcameron@i...>"  
<dcameron@i...> wrote:
```

```
--- In irlp@yahoogroups.com, Adi Linden <adiy@a...> wrote:  
> Just wondering about the status.irlp.net page. It shows node 2590 as down  
> for 2 days. The node was taken down 2 days ago but it's been up for at  
> least 24 hours and is working fine...
```

Well a few things to check

- 1) Is your nodeID set as stn259 in your environment file?*
- 2) Is crond running (probably your issue)?
- 3) Is there a repeater cron set to run every 15 mins for statupdate?

Dave Cameron

* nodes originally assigned 3-digit node numbers should NOT change their 3-digit node number in their environment file because it will break things - ww4m

--- In irlp@yahoogroups.com, Nate Duehr <nate@n...> wrote:

S.L. Herman wrote:

- > Actually wondering if there might be another problem as Node 8200 is
- > also being shown as DOWN when it is not. I did a reboot of the Node
- > (rc.irlp) and then its status records correctly for a while, however
- > it then later is listed as DOWN again.

Is port 80 outbound allowed at your firewall/router? Is there a proxy or "transparent proxy" (many ISP's have started adding these stupid things) between you and status.irlp.net?

What happens if you log in as user repeater and run /home/irlp/scripts/statupdate_cron by hand? Any errors? Does your node status change shortly thereafter on the status page?

Oh another "dumb question"... is your browser caching old information for the status page? Just wondering on that one... it can happen...

Nate WY0X

From: "ve7ltd <dcameron@i...>" <dcameron@i...>
Date: Sat Jan 4, 2003 5:29 am
Subject: Re: status.irlp.net shows working node as down

--- In irlp@yahoogroups.com, K7USJ Steve Herman <cq@g...> wrote:

- > Yep, that was my mistake. Port 10k works fine, but
- > can't figure out why after 15 mins. system will show
- > the node as DOWN:

You guys must be getting errors from cron for some reason.

The cron runs every 20 minutes, and the file it runs is statupdate_cron

Try this.

```
Log in as root and type
su - repeater
./scripts/statupdate_cron
```

Then go to the status page, list ALL nodes, click on YOUR node's callsign, and then look at the Last heard from Node: stat... It should be the current time.

Then let it sit for a while. That should never increase ABOVE about 40 minutes if the cron is running right.

If this does not lead you to a solution, then have a look at /var/log/cron and see if there is an error returned?!

I have seen instances where crond was running, but it only ran root crons for some reason.

From: Nate Duehr <nate@n...>
Date: Tue Oct 2, 2001 4:27pm
Subject: Re: Ghost Nodes

> In QSO this morning someone mentioned the term "ghost nodes", probably in
> reference to nodes under construction or for whatever reason are not showing
> in the status page. I noticed that the hosts table has almost 30 such nodes
> that are not showing in the status page.
> I tried a few and some appear to be actual nodes some working, some
> disabled, others I could ping but not response to an IRLP connection.
> I was just curious if these are all new nodes or did "ghost" refer to some
> dead ones too?
> BTW an example of two that are active is Node 396 K6MF San Jose CA and node
> 391 WB6DAO Los Angeles CA.
> These nodes have wav files in my audio folder date 03/2001 so they aren't
> that new.

Some nodes have either chosen not to be listed and/or forgot to send the information to either
installs@i... or database@i...

Nate N0NTZ

From: Mike Barnett <n6jvh@e...>
Date: Wed Oct 24, 2001 1:47am
Subject: Viewing status.irlp.net page on node screen

I've been finding it handy to run status.irlp.net via Lynx on my node screen, so I can see which
nodes are connected to reflectors, or to each other. Having the status page in text mode isn't a
problem, but every time the page refreshes (interrupt 15 to be exact), the Lynx application closes.

So the questions are:

- Is there anyway to prevent the refresh from closing Lynx?

From: David Cameron <DCameron@t...>
Date: Wed Oct 24, 2001 1:38pm
Subject: RE: Lynx - interrupt 15

AHHHH!

I know what the problem is.....

The lynx process is being killed by an IRLP script which updates the IRLP IP address file. Run it as any user other than repeater and all will be OK.

How do you identify the latest additions to the status page?

Subject: RE: latest addition to the status page
Date: Fri, 7 Dec 2001 09:27:40 -0800
From: David Cameron <DCameron@transtechinteractive.com>
To: "Jim Price WW4M" <jimprice@ipass.net>, database@irlp.net

OK, here is the easiest way:

<http://status.irlp.net/IRLPNodes.php3?function=1&nodeid=289>

Change the 289 to something else (higher). This will show the detail of ANY node and the number (289) is the number of when it was added to the database.

That way you can see the cronological order of node adding.

From: "Kent Roberts" <kent@f...>
Date: Sun Nov 3, 2002 10:58 pm
Subject: ATTENTION!!! Nodes being removed from Stats Page.

<snip>

If your node is down more than 5 days in a row, the system will remove your node from the status page. Once your system, checks back into IRLP. it should reappear back on the status page.

The script that does this runs once a day, It will send an email to the node owner on file and one to the problems group, saying your node has been removed because it has not checked in.

Sorry to do this, but it looks really bad seeing DOWN all over the status page and all requests go unanswered.

6.5 Global Node Maps

Linked from <http://maps.irlp.net>

The global node maps are compiled manually by WW4M, who tries to catch new nodes as they appear on the status page. Owners should send corrections or updated information to WW4M.

6.6 Autopatch

Please disable your autopatch when an IRLP connection is active. The IRLP is international, and autopatches (as well as third party traffic) are illegal in some areas. Not to mention it can be very confusing to people who don't know what's going on if both connections are active at the same time (especially so on reflectors).

6.7 Nets, JOTA and other special events on IRLP

IRLP has been used for JOTA (the Scout's Jamboree On The Air event), both node-to-node and on one or more of the quieter reflectors. I believe all of the participants considered it a great success, however there were concerns about many of the participants needing control ops with more experience using IRLP. Search the archives for JOTA for more information.

IRLP nets page: <http://groups.yahoo.com/group/irlpnets> and/or <http://ve7rjt.dnsq.org/irlpnet.htm>

6.8 Simulcasts

A number of people have found different ways to automate the download of audio files from the internet and playback on their nodes. One big problem to overcome is the hard-coded timeout feature that will cause your connection to drop if you are keyed up for longer than 4 minutes. Please search the list archives for additional information or discuss the matter with other owners who have done it.

6.9 Presentations & Materials

A number of people have prepared materials for group presentations or for publication. They have been uploaded for use by other node owners to <http://groups.yahoo.com/group/irlp/files/> and <http://groups.yahoo.com/group/irlp/database/>. Ron VE1AIC maintains an "updated MySQL/PHP database at <http://ve1cra.no-ip.com> ... you are welcome to use it to print node lists by NodeID, Freq, Callsign, City, or Prov/State as well as limit the list to Canadian, US, International or ALL nodes." You can also try searching on google.com for something like 'irlp node list'.