

# PACLINK-UNIX

BASIL GUNN N7NIX, JUNE 2017

[HTTPS://GITPITCH.COM/NWDIGITALRADIO/PACLINK-  
UNIX/](https://gitpitch.com/nwdigitalradio/palink-unix/)

# HISTORY

- First entry in SourceForge repository Nov 10, 2005

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## PATCHES

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# WHAT IS PACLINK-UNIX?

- UNIX client interface to the Winlink 2000 ham radio email system.
- Allows using any movemail, or imap email client to compose/send/receive Winlink messages.
- Supports 3 transports, AX.25, telnet, serial port (pactor III using SCS-PTC-IIpro).

## USE CASE

- RPi on all the time running RMS Gateway, ssh access, use console based mail client
- RPi used for other things, use screen & keyboard probably with console based mail client
- RPi used for other things, use mobile device mail client & web control for paclink-unix

# DEFINITIONS

- MUA - Mail User Agent is an 'email client program', the part you see and use to send and receive email.
- MTA - Mail Transfer Agent is anything between MUAs.
  - MTAs generally do the routing and transferring of email between hosts, ISPs, etc.
- Mime - Multipurpose Internet Mail Extension
- SMTP - Simple Mail Transfer Protocol - Internet standard for sending messages to an email server.



## HOW DOES IT WORK?

### SEND A MESSAGE

- Compose & address a Winlink message using your email client program
  - paclink-unix converts the regular email message into Winlink format.
  - Mail message files end up in outbox dir
- Use one of the paclink-unix transport methods to send the message.
- Winlink stores messages addressed to winlink.org & sends rest on to SMTP server.

## HOW DOES IT WORK? - CON'T

### RECEIVE A MESSAGE

- Using one of paclink-unix transport methods contact a Winlink CMS
  - Winlink checks for any messages waiting to be delivered for your callsign.
- Paclink-unix gets the messages & converts them into standard email messages
  - paclink-unix then hands message to your MTA
  - MTA deposits converted mail messages into your regular email inbox.

## HOW DOES IT WORK? - CON'T PROCESSES

- Converts messages to/from Mime and Winlink formats
- Encodes/Decodes B2 Forwarding protocol
- Encodes/Decodes lzuhf compression
- Communicates through AX.25, TCP sockets or serial port



# INSTALLATION - OVERVIEW

- Use either lite or regular compass image
  - paclink-unix does not require a window manager
- Use Install scripts then configure scripts
  - start here  
<https://github.com/nwdigitalradio/n7nix>
- Complete notes for a manual install on Dokuwiki
  - <http://bazaudi.com/plu/doku.php?id=start>

## INSTALLATION - CON'T

- Basic installation includes these packages:
  - paclink-unix
  - postfix (MTA)
  - mutt (MUA)

## INSTALLATION - CON'T

- Imap installation includes previous packages plus:
  - hostapd
  - dovecot
  - node.js

## CONFIGURATION FILES

- paclink-unix config file lives here:
  - */usr/local/etc/wl2k.conf*
- postfix config files live in this directory:
  - */etc/postfix*
- mutt config file lives here:
  - */home/<user>/.muttrc*

## CONFIGURATION REQUIREMENTS

- Call sign
- Real Name
- Winlink password
  - **Note:** If you do not have a Winlink password leave it blank.



## CONFIGURE WITH SCRIPT

- Core (direwolf, ax25) must be config'd first
- As root run core config from *n7nix/config* dir

```
cd n7nix/config  
./app_config.sh core
```

- As root run paclink-unix config
  - then reboot

```
cd n7nix/config  
./app_config.sh plu  
shutdown -r now
```

VERIFY INSTALL/CONFIG  
CHECK CORE CONFIG

```
cd  
cd bin  
./ax25-status
```

## VERIFY INSTALL/CONFIG - CON'T CREATE A WINLINK MAIL MESSAGE

- As user (pi) **NOT** root
  - Use mutt to compose message
- mutt spawns an editor,
  - set editor in */home/<user>/.muttrc*

VERIFY INSTALL/CONFIG - CON'T  
CREATE A WINLINK MAIL MESSAGE

- Address mail to yourself ie. **just your callsign**
  - mutt automatically appends winlink.org ie.  
n7nix@winlink.org
- After creating email in editor, exit editor & use mutt
  - 'y' to send
  - 'q' to Quit

VERIFY INSTALL/CONFIG - CONT'D

SEND WINLINK MAIL MESSAGE

- Now check outbox directory

```
ls -salt /usr/local/var/wl2k/outbox/
```

- If there is a new file then send it via telnet
  - This will connect to a CMS

```
wl2ktelnet
```

- Check outbox directory again



## VERIFY INSTALL/CONFIG - CONT'D

### RECEIVE WINLINK MAIL

- Open another console window & monitor email log file

```
tail -f /var/log/mail.log
```

- Run *wl2ktnet*
- Run Mutt again
  - Check that a new email message appears in your email client

# VERIFY INSTALL/CONFIG - CONT'D

## LOCATE AN RMS GATEWAY OR TWO

```
cd bin  
./gatewaylist.sh -m 35 -g cn85ax -s
```

```
./rmslist.sh 31 cn85ax
```

Callsign	Frequency	Distance
WA7VE-10	144960000	4
W7CLA-10	144960000	9
KD7IBA-10	144960000	14
N7XRD-10	145010000	26
W7CWY-10	145630000	31

VERIFY INSTALL/CONFIG - CONT'D  
SET UP SOME CONSOLE WINDOWS

- Open up a packet spy in a console window

```
sudo su  
listen -at
```

- Open another console window & watch the email log file

```
tail -f /var/log/mail.log
```

## VERIFY INSTALL/CONFIG - CONT'D

### USING YOUR RADIO

- As above create test message - look in outbox
- Connect to an RMS Gateway

```
wl2kax25 -c <RMS Gateway>  
wl2kax25 -c WA7VE-10
```

- Check outbox directory again

# WHERE TO GET HELP

- man pages
- Forums
- paclink-unix dokuwiki
- Google Fu



## MAN PAGES

- `wl2k.conf`
- `wl2kax25`
- `wl2kax25d` - under development
- `wl2kserial`
- `wl2ktelnet`

## FORUM

- <https://groups.yahoo.com/neo/groups/paclink-unix/info>

# INTERNET SITES INSTALLATION GUIDE

- <http://bazaudi.com/plu/>  
NW DIGITAL RADIO

<https://github.com/nwdigitalradio/paclink-unix>

<https://github.com/nwdigitalradio/n7nix/tree/master/plu>

THAT'S IT

- This presentation is a GitPitch & can be found here:

[HTTPS://GITPITCH.COM/NWDIGITALRADIO/PACLINK-  
UNIX/](https://gitpitch.com/nwdigitalradio/paclink-unix/)