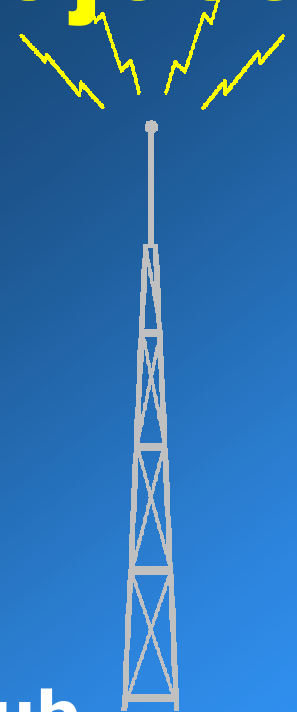
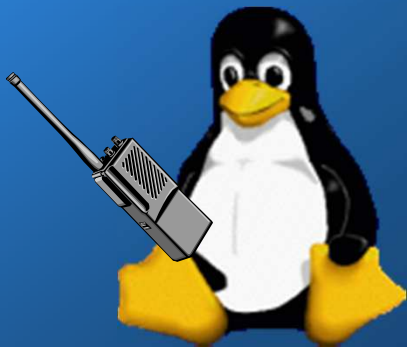


Internet Radio Linking Project (IRLP) +

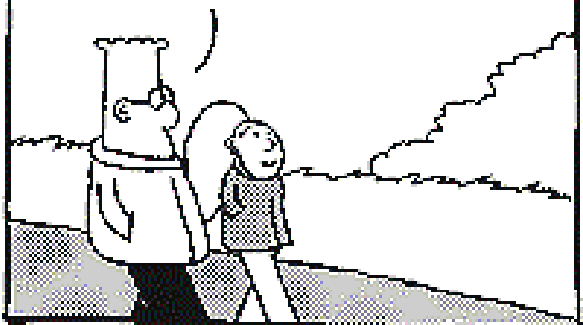


Presentation for the
Niagara Peninsula Amateur Radio Club

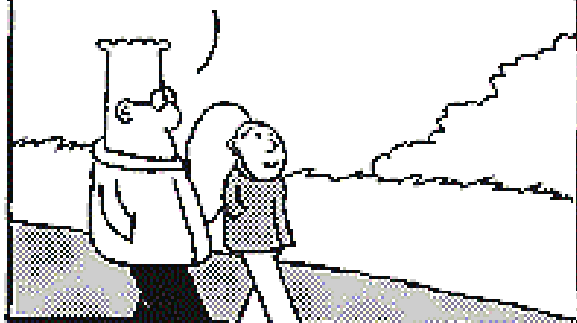
by John Lorenc/VA3WM Sep 13, 2018

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IF I LEFT ENGINEERING AND
BECAME A MANAGER WOULD
I BE AS SEXY AS I AM
NOW, LIZ?

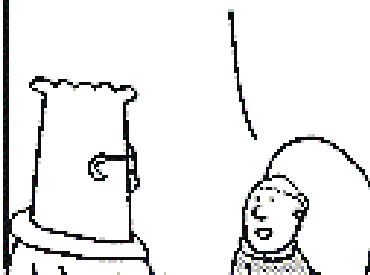


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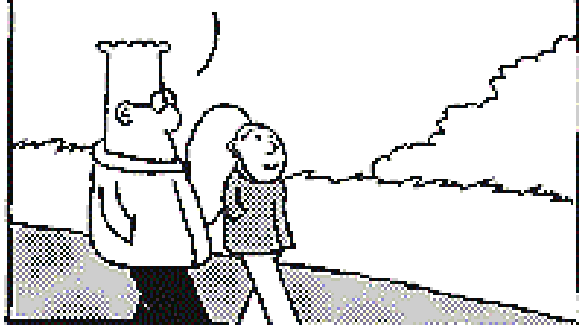
S. ALDRING
E-MAIL: SCOTT@DANKMAG.COM

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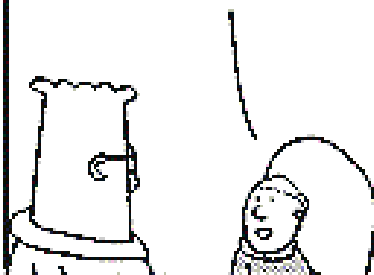
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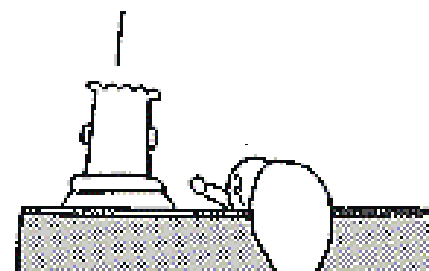


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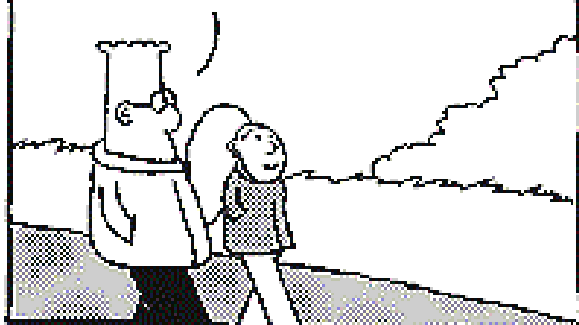
WHAT IF I GOT MY HAM RADIO LICENSE TO COMPENSATE FOR THE LOSS?



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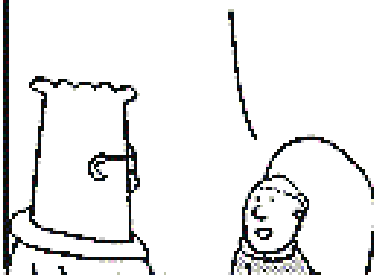
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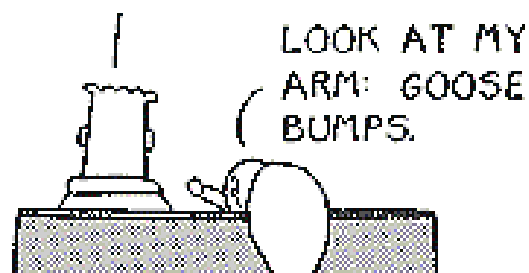


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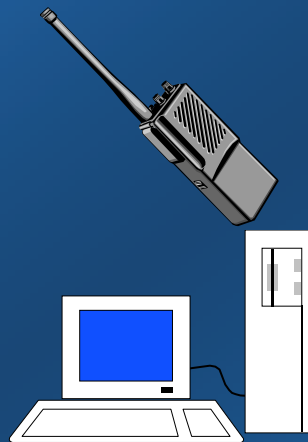
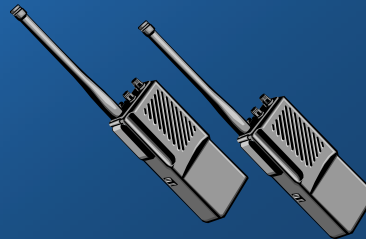


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Ham Radio - Internet Linking

Radio-only Access

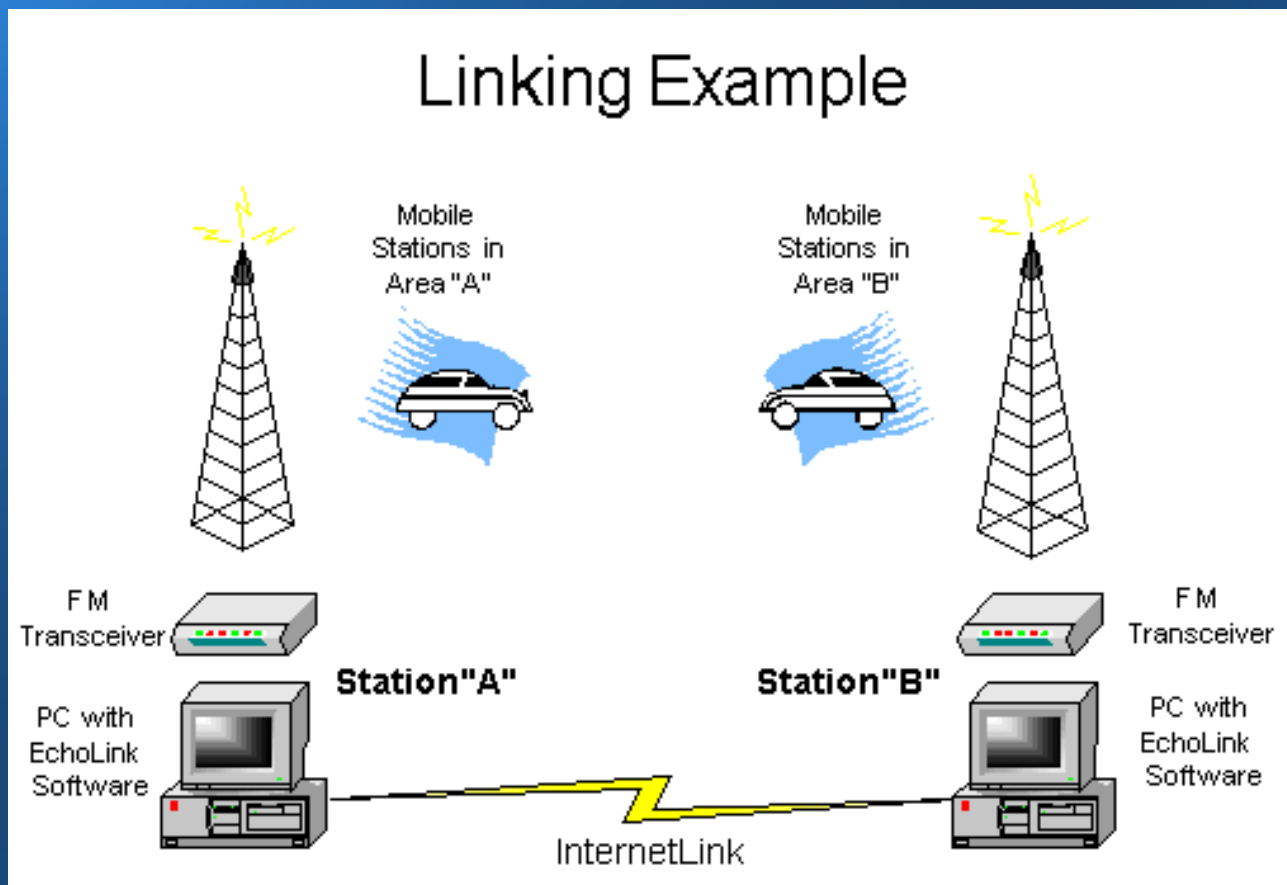
- IRLP (Linux)



PC -or- Radio Access:

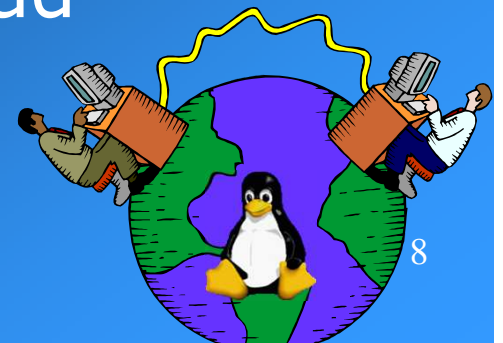
- eQSO (Windows)
- iLink (Windows)
- WIRES (Windows)
- EchoLink (Windows, Mac or Linux)
- D-Star

Internet Radio Linking Overview



The Internet Radio Linking Project (IRLP)

- Uses the Internet to link distant radio sites
- Gives global coverage to normally localized VHF and UHF frequencies
- Enables minimally equipped stations to communicate globally
- Allows end user control of links via their radio's DTMF (Touchtone) keypad



The Internet Radio Linking Project (IRLP)

Created by Dave Cameron VE7LTD of Vancouver, BC

Dave was frustrated with the unreliable operation of Windows-based IPhone and turned to Linux.

IPhone and other systems use VOX.
IRLP uses COS.

IRLP is radio-access only.

Some IRLP Network Details

512-bit bi-directional PGP authentication ensures connections only with other IRLP nodes.

Redundant servers support IRLP-BIND (DHCP isn't a problem) as well as download of pgp key rings, software updates, and station ID wavfiles.

IRLP accepts commands from keyboard or via DTMF (dual tone multi frequency, i.e. "Touchtones")

IRLP Admin



- Regulations prohibit unlicensed people using amateur frequencies.
- IRLP links are accessible only on amateur radio frequencies within range of a node. No direct Internet access.
- OpenSSH (Putty) used for remote administration.
- Linux packages updated automatically (up2date, autorpm, apt).
- Cron jobs to automate functions



IRLP Advantages

- User Flexibility - Custom Scripts
 - Accessible only by radio
 - Security
 - Stability of linux OS
 - Superior audio; COS (not VOX)
- Cost: Linux is free, will run on old PCs
- Continues to function if servers fail

Two ways to make contacts

Point-to-Point

and

Reflectors

(like chat rooms -- multiple nodes connected together, hearing audio from one node at a time)



IRLP Reflectors



- Enable multiple nodes to link together into a network – number limited only by bandwidth.
- Running a reflector requires bandwidth (32 kbps per connected node) to handle the multiple data streams. Most reflectors are hosted by ISPs (like Inflow) who often donate the bandwidth.





EchoLink

- Jonathan Taylor, K1RFD, won the Dayton Hamvention's Special Achievement award, 2003, for writing and developing EchoLink and EchoStation.
- EchoLink software is available for Windows, Macintosh OS/X and Linux, free of charge.



EchoLink Operation

- Nodes, Links, Repeaters!
 - Each connected station has a unique station ID called a “node number” that is assigned automatically.
 - There are several different node types:
 - Users: Stations that are using a personal computer.
 - Links: Stations with computers running EchoLink interfaced to a radio transceiver. These stations are designated by their callsign followed by “-L”.
 - **Repeaters: Stations with computers running EchoLink interfaced to an FM repeater through a repeater controller or via remote transceiver. These stations are designated with their station callsign followed by “-R”**
 - Conferences: Special interest “chat rooms”

EchoIRLP

The Integrated Dual Node

- Tony Langdon/VK3JED operated first EchoIRLP node in Australia, 1998
- Uses one machine and interface to allow connectivity to both systems.
- Lockouts between IRLP and EchoLink to prevent unintentional cross links.
- Uses tbd (theBridge) as a local gateway between IRLP controlling the hardware and the EchoLink network.

More Info

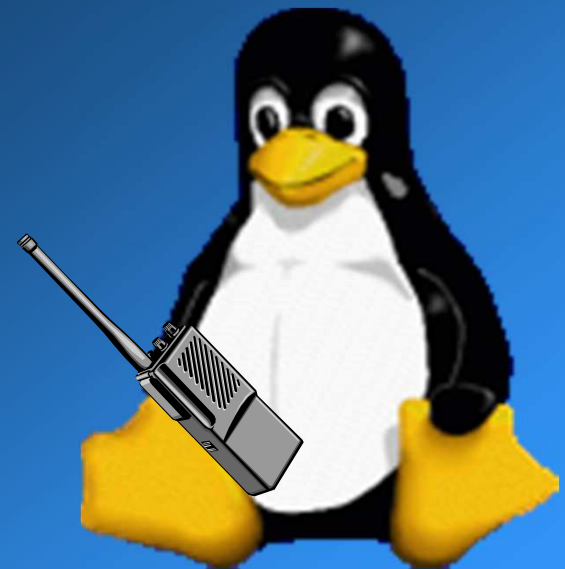
- **IRLP in General**

- www.irlp.net

- irlp@groups.io

- **EchoLink**

- www.echolink.org



How do I use it?

From the VE3WCD 2 m Repeater

DTMF	Function	Node Listings and Status
X X X X	Connects to IRLP Node XXXX	http://status.irlp.net/
# X X X X	Connects to EchoLink Node XXXX	http://www.echolink.org/links.jsp
7 3	Disconnects	

Operation

- IRLP 2248, EchoLink 956160 VE3WCD-R
- Listen, Listen, Listen to ensure repeater is not in use
- Assuming the repeater is clear; identify yourself and state your intention to use the EchoIRLP link , such as 'VA3WM for the Link'
- Most nodes are open for anyone to connect to and their node address code can be found at <http://status.irlp.net/statuspage.html> and <http://www.echolink.org/>
- PTT and enter DTMF IRLP / Echolink node number (prefixing EchoLink with #)
- Disconnect with DTMF 73 – no # required for EchoLink
- Echo test with reflector 9999 or #9999
- Note that inactivity time out is 20 minutes, but please 73 when done
- Only 1 EchoIRLP connection at a time is allowed
- Repeater RF QSO's have priority and preclude EchoIRLP connections

Error Messages

- **"The node you are calling is not responding, please try again later"**
This is caused by a loss of Internet connectivity to one end of the call attempt.
- **"Beep Error - The call attempt has timed out, the connection has been lost"**
This error occurs when a node is OFF-LINE. Some nodes such as in the UK use dial-up connections and then, only for short periods. Also there may be temporary net or node problems.
- **"The connection has been lost"**
If the Internet connection drops, this error message will be heard.
- **"The node you are calling is currently connected to callsign."**
If the node you are calling is already connected to another node or reflector, you will hear this message.
- **"The node you are calling is being used locally."**
If the node you are calling has local activity on the repeater or frequency, you will hear this message. Try calling again in a minute or so.
- **"<busy signal>"**
The node you are calling is not connected to another node or reflector; however, the repeater or frequency is in use locally or the IRLP node hardware is being used for some other function (e.g. Voice-mail, playing Newline, etc.).

Some nets

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			11:00 am Cross Canada IRLP net – IRLP 9013			
8:00 pm Procom Net – IRLP 9055 Also on Allstar connected VA3WAJ		8:00 pm East Coast Reflector IRLP Tech Net – IRLP 9050		8:00 pm Procom Net – IRLP 9055 Also on Allstar connected VA3WAJ	8:00 pm VK6BQQ Tech Net hosted by Reg Bagshaw / VK6BQQ – Echolink 9229 *Techlink*	

Thank You

Questions/help: repeaterchair@nparc.on.ca

<http://www.nparc.on.ca/index.php/about-nparc/15-nparc/nparc-infrastructure/infrastructure-info/158-repeater-irlp-and-echolink>

