IRLP FAQ Page

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IRLP - Keeping the Radio in Amateur Radio

This list is updated with good questions that are received on the questions mailing list. If the question you have is not listed below, please email us.

Q. How do I turn a link ON/OFF?

All links are activated and de-activated by using DTMF tones received by the IRLP radio/computer. You must contact your local node operator for access details. IRLP has no control over which pre-access code some nodes may choose to use to connect and disconnect.

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Q. I live in an area with an IRLP node. How do I get ON/OFF codes?

The node ID codes are now freely distributed. The standard codes are just the 4-digit node number to call a node, and "73" to disconnect. Some owners/clubs may charge a fee for codes to help support their club and to offset the cost of setting up and running the IRLP node. Please contact your local club to determine the need for membership and for the local IRLP link codes as some nodes require a prefix code similar to an auto patch access code. *Go to the status page and click on node number in your area. An email link to the node owner is provided.*

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Q. Do I need an IRLP board to use the IRLP?

No. All you need is a radio compatible with your local IRLP enabled node frequencies. An IRLP board and Linux software is ONLY required if you wish to establish your own node.

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Q.Does the IRLP software take care of ID'ing my station?

All IRLP nodes contain a software morse code identifier system. It is highly configurable, and you can adjust the pitch, speed, and interval of the ID. It meets the licensing authority regulations in every country.

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Q. What is IRLP an acronym for?

IRLP stands for the Internet Radio Linking Project.

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Q. What are the basic requirements for hosting a IRLP Node?

The most basic requirements are:

1. PC-based - 500+ MHz with 512MB or more RAM
   OR
   Pi-based - Raspberry Pi Model B, B+, or Pi2
2. a link radio
3. a permanent internet connection. DSL or Cable with a publicly routable IP. Dynamic or Static will both work

well.

Click here to see drawing of a typical node.

Q. What ports must be opened for an IRLP node

- 22 - SSH *(required only for any requested remote admin help)*
- 2074 through 2093 UDP - IRLP Audio (bi-directional **UDP**)
- 15425, 15426, 15427 IRLP Control/Update Ports - **TCP**

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Q. What are the minimum requirements of the computer?

The minimum required computer is a 300 MHz PII or better with 256 megs of RAM. The computer must have a sound card *(most PCI/USB sound cards work)*, video card, network card, and working parallel port on LPT1.

The system has also been made to work on a Raspberry Pi computer. See http://www.irlp.net/pi for more information.

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Q. What are the minimum requirements of the link radio?

Any type of link radio will do, as long as you can pull some type of COS (Carrier Operated Squelch) signal from it. We use several different types of link radios such as the Kenwood TK-805D UHF, Alinco mono-bander mobile. As well the old surplus GE Phoenix and Motorola GM300 M120 series synthesized radios are plug and play. In some situations, such as the Vancouver node, no link radio is used at all because the node is hooked directly to the repeater.

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Q. What is the minimum internet connection required?

A cable modem or xDSL work great. The connection MUST be able to sustain 40000 bps (4K/sec). No connections less than that will work with the IRLP.

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Q. Do I need a Static (fixed) IP address or a Hostname to install the IRLP on my system?

No. The system can be configured to operate on a Dynamic(variable) IP (DHCP). Static hostnames are beneficial but unnecessary as the IRLP system uses its own DNS to resolve IP addresses

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Q. What does the Internet Radio Linking Project hope to accomplish?

The purpose of the project is to bring amateur radio operators an inexpensive linking system as a way to talk to many other sites using

state-of-the-art-technology.

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Q. Who is responsible for IRLP?

David Cameron, VE7LTD, is originally responsible for the project roots. Dave and Michael Illingby, VE7TFD, set up the first two nodes to link between Vancouver and Vernon, BC. Dave is now assisted by many volunteers around the world.

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Q. What Operating System does the linking software run on?

The IRLP runs solely under the open source Debian (7 or newer) version of Linux. The software was designed in Linux to get away from the Windows operating system. We are never going back so don't ask :)

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Q. Why does IRLP only run on Linux, and is there a particular version of Linux preferred?

All new IRLP nodes are now being built for Debian Linux.

We run LINUX in general for the following reasons:

1) Windows applications are prone to crashing. Most IRLP node uptimes are measured in months or years, not days.

2) Linux uses the resources of the machine much better. To run the equivalent system under Windows, you would require a much more powerful machine.

3) The windows operating system cost money. Linux and Speak Freely are FREE.

4) There is no remote updating features under Windows that do not require a reboot. All IRLP and Linux updates are performed automatically each evening and never require restarting the computer.

5) Windows has no remote connections that are easily set up. All IRLP nodes can be remotely accessed via secure shell from any internet connected machine.

We have to update the software as updates become available, IRLP and Linux updates are performed automatically and never require a reboot. Windows lacks the features for smooth updating..

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Q. What is this about an IRLP Mailing List, and how do I get in on it? Is there a cost to join?

If you would like to join the list server and share your thought and ideas with the group, simply go to the IRLP Groups.io list at following URL https://groups.io/g/irlp/ There is no cost.

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Q. Can I link to my local repeater?

IRLP requires that there be NO courtesy tones, CWIDs or hang time be passed through on the system. This can easily be accomplished using CTCSS encoder on the repeater TX that follows the receiver COS.

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Q. Do I need a repeater or can I use a IRLP on simplex?

Simplex is perfectly OK however you must be aware of local regulations as some countries restrict VoIP operation to certain bands or frequencies. It is also highly recommended that Tone Coded Squelch be used especially on simplex nodes.

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Q. How many nodes can be joined at any one time?

This is one of the greatest advantages of the way IRLP functions. Each station, or node, has the ability to connect to another node directly, or by the way of a reflector, to several other nodes (virtually limitless).

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Q. What is a reflector?

A reflector can be seen as a digital repeater of sorts. It takes one digital bit stream in, and repeats that bitstream to all other connected sites making a digital "partyline".

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Q. What is required to establish a reflector?

You require a STATIC IP and since more than 4 connections would require more bandwidth than what is provided by DSL or Cable modem a full T1 or better would be required. All of the current reflectors utilize at minimum a full bi-directional T1 (1.54mb)

Each connection requires about 32 kb of "sustained" bandwidth

As for the machine any higher end Pentium II or better with 128 meg of RAM *(the more the better)* , a 10G HD and a NIC card will do. No sound card required.

All Reflectors utilize special software which is administered by Dave VE7LTD who you should contact for more details dcameron@irlp.net

Having said that we have so much surplus bandwidth and unused sub channels of existing reflectors we strongly urge you to contact a reflector operator and ask for a sub channel assignment.

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Q. If for example, Aukland NZ, is linked to Orlando FL, can we link our node elsewhere without interrupting or affecting the original QSO?

Most definitely. Without using reflectors, any two nodes can link together and converse without affecting the ability for other nodes to talk to each other.

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Q. If you can converse without reflectors, then why are they available?

Reflectors have been designed so that we can link three or more nodes together for a QSO. To date the record so far is over 200 nodes connected simultaneously.

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Q. How does the system work? Can it be explained step by step?

The system starts by receiving audio into a radio that has been modified to interface with a computer (using the IRLP interface board). When a signal is received by the radio, the COS state changes. This change is then sent to the interface board, which tells the computer that the COS line is active. This change is picked up by the IRLP software and the computer starts sending a packet stream containing the audio from the receiver.

This audio is picked up by the connected computer(s) and played out the sound card. The IRLP software detects the incoming packets and sends a PTT signal to the link radio. Hence the audio from one end is heard on the other.

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Q. How much does the board cost?

Because the board design is under constant improvement, this price is subject to change. Please see http://www.irlp.net/orderform.html for more information

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Q. What is the overall delay involved with the Internet?

The delay depends on how far the packets have to travel. When the IRLP nodes are fairly close together, the delay is usually less that 0.20 seconds. About the same as you experience when talking on a digital

cell phone.

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Enjoy IRLP and please "Pass the Word"

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