

JNOS Operators Guide

by John Martin KF8KK

Introduction

Using a JNOS packet node can be either a rewarding or frustrating experience, your choice.

The JNOS software is capable of many amazing features, few of which are fully understood by those who use the systems on a casual basis.

My goal on these pages is to shed some light on some of the capabilities that JNOS can provide.

Because JNOS gives the system operator a rather wide latitude on how the system can be configured, some of the commands I will describe may not be available on the node you intend to use. In other cases the commands may be available but the system operator has modified their behavior somewhat.

```
J
Interface  Station  Time since send  Pkts sent
80M        KF8KK-3  0:00:39:58      33
Station   Time since heard Pkts rcvd : Station   Time since heard
d Pkts rcvd
KF8KK-4   0:00:39:58      11
Interface  Station  Time since send  Pkts sent
145.09    KF8KK-3  0:00:19:55      184
Station   Time since heard Pkts rcvd : Station   Time since heard
d Pkts rcvd
KC8TDK-7  0:00:04:45      97 : KF8KK-3   0:00:19:55
          125
W8COL     0:00:35:47      483 : KF8KK-4   0:00:39:58
          11
GRTR00   0:02:04:48      28 : KF8KK-15  0:02:04:51
          26
COLBBS   0:02:04:52      51 : W800H-10  0:07:57:12
          19
VE3SSM   0:11:47:20      26
Area: kf8kk Current msg# 0.
COLARC, GRTR, EMPIRE, 145.07, MAPLCL, MAPSYS, ?, A, B, C, CONV, D, E, F, H, I, I
H, IP, J, K, L, M, N, NR, O, P, PI, R, S, T, U, V, W, X, Z >
```

Please also understand that JNOS allows the system operator to create new command 'aliases', that are unique to that particular system.

These custom commands appear ahead of the standard commands in the 'alphabet soup' command prompt.

Custom commands created by a system operator are usually designed to provide an added convenience and functionality to the operators and are deserving of your attention.

This operators guide is meant to be a quick course in **USING** JNOS, not in setting up JNOS. It is also meant to be **QUICK** and will therefore not go into minute detail on all the features you may find in JNOS, or into some of the functions that are rare to find configured in a JNOS system.

The 'official' listing of the JNOS operators commands is an appendix at the bottom of the rather large JNOS.doc file (<http://www.legitimate.org/iook/packet/jnos/jnos.doc>). There is a highly abbreviated text file version called mbox-cmds.txt also available (<http://www.legitimate.org/iook/packet/jnos/mbox-cmds.txt>).

I've taken the JNOS Operators commands out of the larger official document and created two versions, at least one of which should be handy for you to use. Both <http://www.legitimate.org/iook/packet/jnos/jnos-ops-cmds1.pdf> or <http://www.legitimate.org/iook/packet/jnos/jnos-ops-cmds1.doc> contain a full listing of the available JNOS commands accessible to the users (if enabled by the system operator).

Logging In to the JNOS node

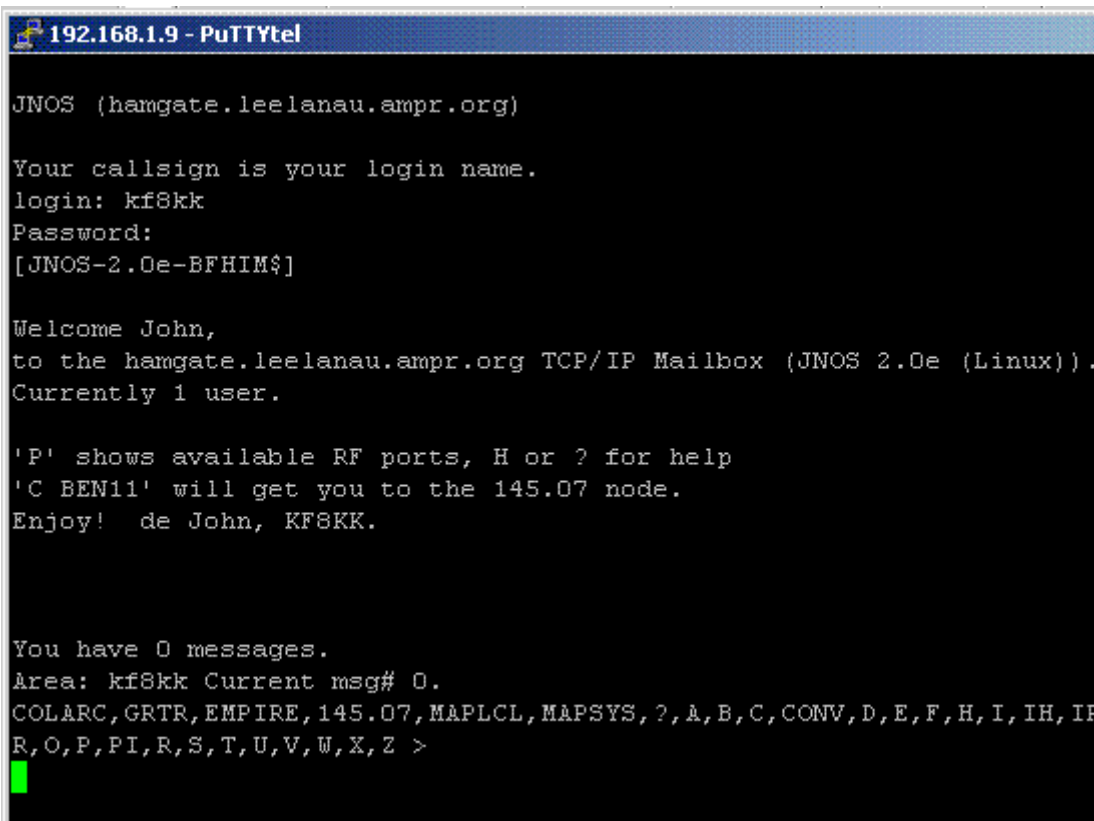
While most hams will connect to the JNOS system via their radios, some will connect via a Telnet session across the internet, or via the local keyboard at the JNOS system itself.

Connecting via the radio is usually simple, you connect to JNOS just as you would any other node or BBS.

JNOS does, however, allow that various station **SSID's** (the #-# after the callsign) will cause you to enter the system differently.

Most JNOS implementations greet users with the basic JNOS BBS when they connect, and that is what will be described here.

Connecting to the operating side of JNOS from the actual JNOS computer is done simply by typing **'BBS'** at the JNOS command prompt.



```
192.168.1.9 - PuTTYtel
JNOS (hamgate.leelanau.ampr.org)
Your callsign is your login name.
login: kf8kk
Password:
[JNOS-2.0e-BFHIM$]
Welcome John,
to the hamgate.leelanau.ampr.org TCP/IP Mailbox (JNOS 2.0e (Linux)).
Currently 1 user.
'P' shows available RF ports, H or ? for help
'C BEN11' will get you to the 145.07 node.
Enjoy! de John, K8KKB.
You have 0 messages.
Area: kf8kk Current msg# 0.
COLARC, GRTR, EMPIRE, 145.07, MAPLCL, MAPSYS, ?, A, B, C, CONV, D, E, F, H, I, IH, IJ, IR, O, P, PI, R, S, T, U, V, W, X, Z >
```

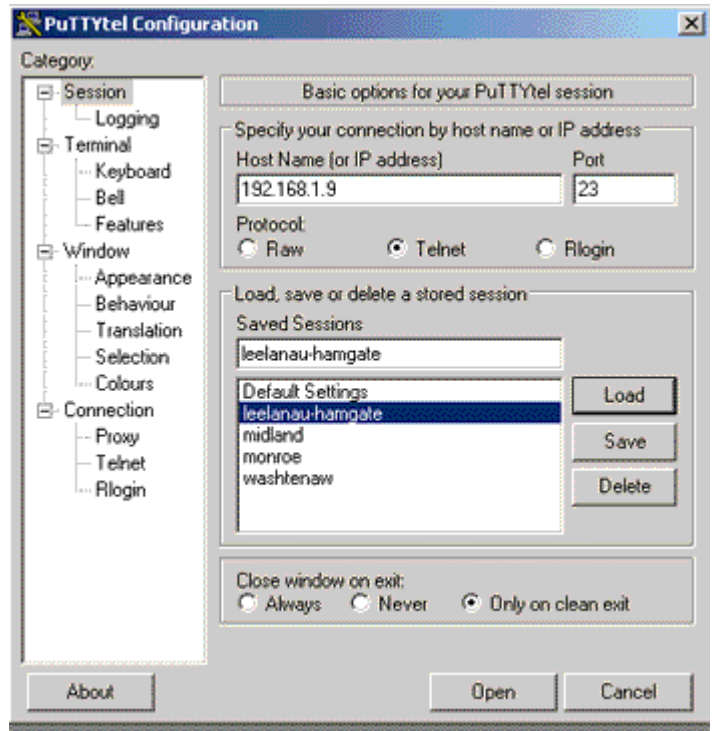
Connecting to the JNOS system via Telnet through the internet or across a LAN is not hard either, but there is a major caveat to be aware of.

While the actual **telnet connection to JNOS is simple**, just get to your command prompt and type **'telnet <url or IP of desired JNOS system>'** and in a moment the JNOS BBS login screen will appear. This is nice, and it's simple.

The problem is that for users of Microsoft Windows, the 'telnet.exe' program supplied with Windows has a few serious flaws that make it rather undesirable.

Thankfully, there is a **freeware download called Putty**. It is available from the official Putty website on their downloads page at <http://www.putty.nl/download.html>

Download the 'puttytel.exe' file and put it somewhere convenient on your Windows PC and it runs flawlessly. It's not a large program and there is no official installation for it. Putty does a great job and it's much more convenient to use than the broken telnet program supplied with Windows.



Once you connect with the JNOS node you will get the **LOGIN** prompt. **At the login prompt, enter your callsign.**

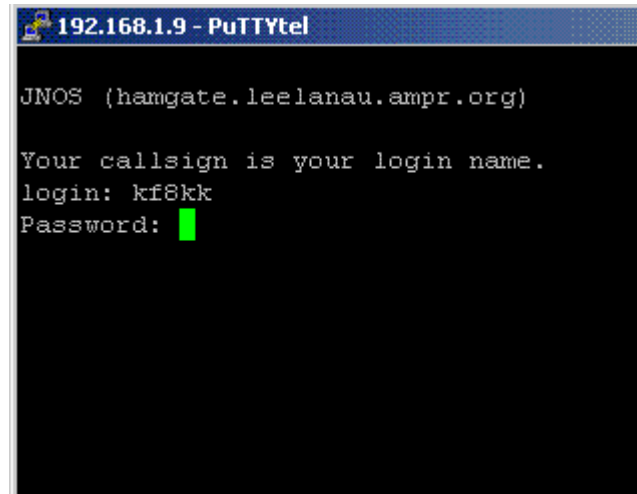
You **MUST** enter your **callsign** at this login prompt as it expects your callsign and uses what you enter as the source callsign should you connect to another system from within JNOS.

You will next be prompted for a password.

Pick a convenient password and enter it. JNOS is **NOT** by default a very secure system -- and some system operators are not up to speed on things like password security.

I would not recommend you using the same password for a JNOS account that you would use for online banking--FYI.

JNOS does not require you to change your password every month, or use 'strong passwords', so pick something easy to remember and keep in mind that not all JNOS systems are very secure.



Ports and Outbound Connections

Now that you've successfully logged into the JNOS node, you need to figure out what the system has to offer.

The **I** or **INFO** command should display a text file that the system operator created that describes what capabilities this JNOS system has to offer.

Hopefully, this file is accurate and not too large in size for the link you are using to connect (I can see that I need to update mine!).

```
R, O, P, PI, R, S, T, U, V, W, X, Z >
i
JNOS version 2.0e (Linux)
  This system runs WG7J/N5KNX's version of KA9Q's NOS.EXE, called JNOS
  It provides both 'regular' bbs services and some tcp/ip services.

  To get help, type 'H' , or 'A help' and read the messages.
  Local user messages are in the area 'users'

  For a brief list of all commands, type 'D mbox.hlp'.

Equipment:
  133 MHz Pentium, 10 gig harddisk, port on 431.9 MHz
  that speaks to the BENZO5 port on the Empire/GlenArbor
  wIDOK packet nodes.

  If you are interested in learning more or have questions
  regarding the use of the system, tcpip services etc...
  please send mail to 'kf8kk' or 'sysop'.

73 John, KF8KK
```

After you have read the **INFO** provided by the **I** command, you should issue the **P** command to get a readout of the available **PORTS**.

JNOS allows for the connection of many different **ports** for connecting into and out of the system.

Many JNOS systems are equipped with more than one radio port, and therefore are not just BBS's with an internet gateway, but actual RF crossband gateways too.

When you issue the **P** command it shows the available **AX.25** (that's 'packet radio' if you're new to this) ports that are connected to the JNOS node.

```
R, O, P, PI, R, S, T, U, V, W, X, Z >
p
Available AX.25 Ports:
RF      : Primary VHF packet (145.07MHz via 433.1MHz backbone)
80M     : Experimental 3.610MHz HF packet port
145.09  : interim backup-testing
Available HFDD Ports:

Area: kf8kk Current msg# 0.
COLARC, GRTR, EMPIRE, 145.07, MAPLCL, MAPSYS, ?, A, B, C, CONV, D, E, F, H, I
R, O, P, PI, R, S, T, U, V, W, X, Z >
```

Standard AX.25 connections:

You need to know the ports available in order to make an outbound packet connection.

If you just type 'C' for 'Connect' you will get some helpful hints as to how to properly format your connect request command.

```
R, O, P, P, I, R, S, T, U, V, W, X, Z >
c
Syntax:
'C <node>'          for NET/ROM connects
'C <port> <call>'   for AX.25 connects
'CONV [channel]'    to access conference bridge

Area: kf8kk Current msg# 0.
COLARC, GRTR, EMPIRE, 145.07, MAPLCL, MAPSYS, ?, A, B, C
R, O, P, P, I, R, S, T, U, V, W, X, Z >
```

For example, I will enter the command to connect via the 145.09 port to the **COLBBS** mailbox.

To make this connection I type the following:

C 145.09 colbbs

```
c 145.09 colbbs
Trying... The escape character is: CTRL-T
*** connected to COLBBS
[KPC3P-8.2-HM$]
79165 BYTES AVAILABLE
THERE ARE 14 MESSAGES NUMBERED 1971-3530
°°±² Welcome to Chain O'Lakes PBBS ±±°°
Please read Messages to "ALL"
ENTER COMMAND: B, J, K, L, R, S, or Help >
```

As you can see above, the connection was successful. If there was a problem and I needed to abort the connection, I could have typed the **CTRL-T** (hold down the 'control' key and hit T at the same time).

If I wanted to use a digipeater in the path I would issue the following command:

C 145.09 colbbs v grtr00

Whereas 'grtr00' is the digi.

```
c 145.09 colbbs v grtr00
Trying... The escape character is: CTRL-T
*** connected to COLBBS
[KPC3P-8.2-HM$]
79165 BYTES AVAILABLE
THERE ARE 14 MESSAGES NUMBERED 1971-3530
°°±² Welcome to Chain O'Lakes PBBS ±±°°
Please read Messages to "ALL"
ENTER COMMAND: B, J, K, L, R, S, or Help >
```

NetRom / TheNet connections:

In areas where **NetRom** is in use [TheNet X1j nodes function as NetRom] the connections are a bit easier to make in JNOS as you don't have to specify the port.

NetRom nodes exchange routing information amongst the nodes that allow the users to make connections without having to worry about the underlying network paths.

```
h
BEN00:W8BNZ-7      BEN11:WIOOK-7      BEN12:WIOOK-2
BENQMN:WIOOK-8
*** 4 nodes displayed
Area: kf8kk Current msg# 0.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,
D,E,F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
```

In the case of my JNOS system, issuing the '**N**' command for '**Nodes**' shows a short list of the available nodes I can connect through.

You can see there are four nodes shown. The node 'alias' is shown first, then a colon, then the callsign of the node.

```
D,E,F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
c ben11
Trying... The escape character is: CTRL-T
*** connected to BEN11:WIOOK-7
```

I know that the **BEN11** node is the main 145.07 node in the area and I can connect to it by issuing the simple command:
C BEN11

Ancillary Comment:

NetRom is a wonderful mode. '**BEN11**' is accessible as one of the ports on the three port node stack in Empire, MI. My JNOS system uses a 433.1mhz UHF transceiver to connect to the node via the '**BEN12**' port. Access to the **BENQMN**, **BEN11**, is via the internal wiring of the Empire node.

If I were to connect to the '**BEN00**' node in Benzonia,MI. The NetRom system would connect me automatically through **BEN12**, then to **BEN11** and then across 145.07 to **BEN00** which is about 20 miles south of the Empire node. All I would need to do is issue the '**C BEN00**' command and all the connections would be setup automatically for me.

When I issued the '**B**' command to the **BEN11** node I was returned to my '**KKBBS**' JNOS system.

Please note in the 'alphabet soup' line the word **EMPIRE** near the beginning.

```
b
BEN11:WIOOK-7) Goodbye.

*** reconnected to KKBBS:KF8KK-3

Area: kf8kk Current msg# 0.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,
D,E,F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
```

EMPIRE is a special '**alias**' command that will make the NetRom connection to the **BEN11** node. It's been added as an operator convenience.

If a user forgets the route to the primary local frequency of 145.07, or to **BEN11**, they can just type '**EMPIRE**' and the JNOS system will take them there.

Any commands shown BEFORE the '?' in the list are 'alias commands' created by the system operator for the convenience of the system users.

Packet Messages and Pmail

Sending and receiving packet mail in a JNOS system uses the typical commands that most other packet systems use.

Issuing the 'L' command will list all unread messages in **YOUR AREA**.

In JNOS 'AREA' is a subsection of the mailbox that can be viewed separately from other 'areas' in the mail system.

Each station gets their own area. Your 'AREA' will be named by your **callsign**.

If you want to see a listing of the various 'AREAS' available in the JNOS node, issue the 'A' or 'AF' command. 'AF' gives a bit more information than the simple 'A' command.

By separating messages into various areas, a user does not have to wade through long message listings for topics that might not be of interest.

Explore the various areas by issuing the command 'A <areaname>'

```
Area: kf8kk Current msg# 0.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,D,E,
F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
a
Current message area is: kf8kk

Available areas are:

kf8kk
ares      antennas repeaters gossip    dirt      gravel

Type AF to get description of areas.
AF <name> tells more about that area.

Area: kf8kk Current msg# 0.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,D,E,
F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
```

When you are done exploring the various areas available, you should return to your personal area with 'A <callsign>'.

As you would expect, the 'R' command followed by a message number will **READ** a message.

In your area, the 'K' command followed by a message number will delete a message. You might think that 'D' would make more sense, but it's being used for file downloads-- 'K' for 'KILL' the message is how JNOS likes to think of it.

Please note in the image to the right that the 'L' command used near the top just showed the 1 'new' message in the ARES area.

To show **ALL** the messages (new and old) I needed to issue the 'LA' [that's short for LIST ALL] command.

It is best for you to get used to issuing 'LA' so that you don't miss viewing a message by mistake.

```
1
Mail area: ares
2 messages - 1 new

St. # TO FROM DATE SIZE SUBJECT
> N 2 ares n8nco Dec 18 499 this is a test

Area: ares Current msg# 2.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,D,E,
F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
la
Mail area: ares
2 messages - 1 new

St. # TO FROM DATE SIZE SUBJECT
Y 1 ares kf8kk Dec 6 333 Info

> N 2 ares n8nco Dec 18 499 this is a test

Area: ares Current msg# 2.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,D,E,
F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
```

If you get lost in JNOS and need some help, there is plenty available for you!

Just typing the question mark '?' at the command prompt will get you a quick listing of commands that are commonly used. This is a handy hint should you forget a commonly used command.

Below is a listing that you get with the 'H' or 'HELP' command. This is more detailed and allows you to get specific assistance on all the subcommands available for the respective commands.

```
,V,W,X,Z >
?
Aliases: COLARC GRTR EMPIRE 145.07 MAPLCL MAPSYS
Mail : Area Kill List Read Send Verbose
Gateway: Connect Escape Nodes NRroute Ports Ping Telnet
File : Download Upload What Zap
General: ?-Help Bye CONVERS Finger Help Info IHeard
        IProute Jheard Mbox Operator Xpert

Area: kf8kk Current msg# 0.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,D,E,
F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
```

```
,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
h
For a brief listing of all commands, type ?
To get help for a specific command, enter 'h command',
The following commands have help descriptions available for them:

alias      area      bye      connect  convers  download
escape     finger   help     iheard   info     iproute
jheard     kill     list     mboxuser nodes     nroutes
operator   ping     ports    query    read     register
send       telnet   upload   verbose  what     xpert
zap

Area: kf8kk Current msg# 0.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,D,E,
F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
```

Sending packet mail via JNOS is just the same as with any other packet mail system.

Sadly, we must realize that we're not reliving the packet heyday of the 80's where BBS message forwarding was ubiquitous and countrywide.

If the other ham was local to this JNOS system you could send the mail by issuing the 'S' command followed by the guys callsign.

Not all JNOS systems are setup to forward mail. The capability is there in JNOS, it's just that the ham networks have become defunct in many areas.

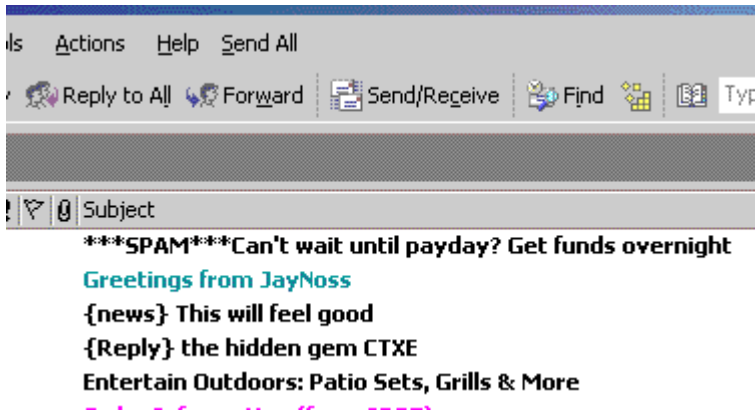
On the plus side, **JNOS can send internet email** if the JNOS node is connected to the internet. JNOS implements SMTP mail just fine and sending internet email is a no-brainer for JNOS.

```
F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
s kf8kk@iiook.org
Subject:
Greetings from JayNoss
Enter message. End with /EX or ^Z in first column (^A aborts):
Hello,
I'm not sure if I'm talking to me, myself, or I.
Oh well... I guess it's me... it cannot be I.
73 me!
/ex
Msg queued
Area: ares Current msg# 2.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,D,E,
F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T,U,V,W,X,Z >
```

In the above image I sent an email to my internet email address. After ending the message with the 'lex' it asked me if I wanted to send it, and then I hit a 'Y' and then the system responded with 'Msg queued'. The JNOS system will send this message out on the internet within the next couple of minutes.

Again, I must bear sad news--- inbound email from the internet is rarely enabled in JNOS. This is due to the spam issues that it would cause. JNOS itself will handle mail just as well as any other mail server -- but **few JNOS machines are setup for inbound email.**

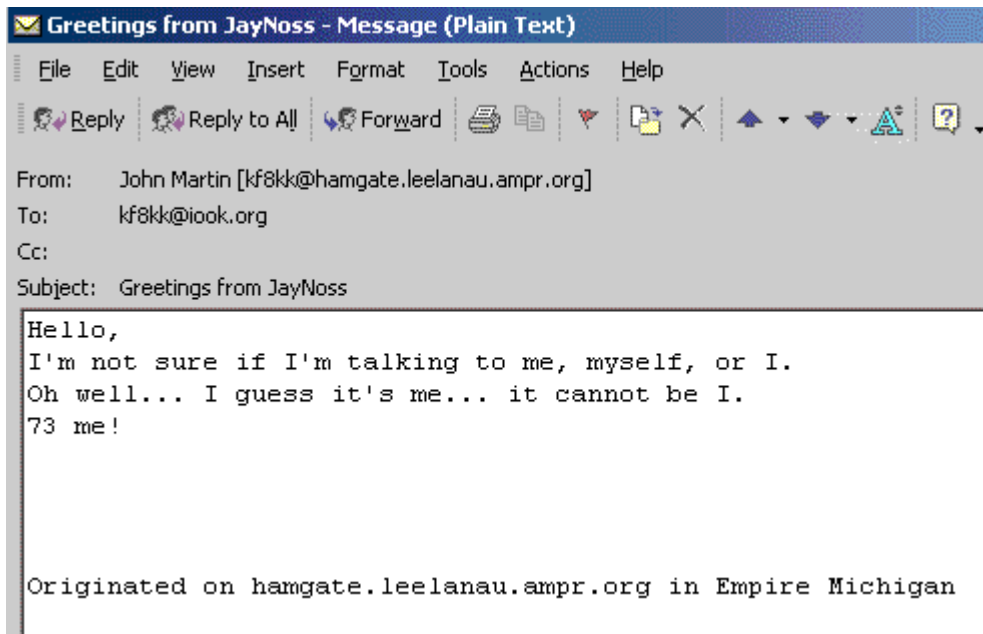
As you can see, the JNOS outbound email appeared moments later in my Microsoft Outlook regular email client [I have emails sorted with colors depending on the particulars of the address-- that's why it's in teal and not black].



The actual message showed up just like any other message.

As you can see, the hostname of the JNOS hamgate appears in the 'from' header. If the recipient just hit **'REPLY'** to this their email would be bounced back as there's no public access allowed for inbound internet email at 'hamgate.leelanau.ampr.org'.

The line at the bottom starting with 'Originated...!' is part of a signature line that can be optionally configured into JNOS nodes by the system operator.



Converse and Telnet

One of the more useful functions often found in JNOS nodes is the Converse mode.

Converse allows multiple JNOS users to talk amongst each other, whether the users are all logged into a particular JNOS node, or if they are logged into a remote JNOS node that is linked into the conference.

You can look at the converse mode as the ham equivalent of a multi-room chat server.

In '**CONV**' you can select a '**CHANNEL**' to use and converse with other hams in that '**CHANNEL**' just as people do on any of the common internet chat systems (instant messaging, etc).

In Michigan, the ARPSC JNOS nodes are setup to link their converse modes to a statewide converse server.

This allows multi-user conversations to take place statewide. It has been determined that the numbered county designator for the county a node is in determines the default 'channel' users from that node use.

This is especially handy should there be an event in a particular county as officials from across the state will know what 'channel' to convene on in order to provide support for a particular county. It also allows for individual counties to organize their efforts without being disturbed by similar traffic from other counties if the event encompassed more than one county.

To enter converse, issue the '**CONV**' command.

As you can see from the listing in the above photo, the converse mode has it's own commands.

/who lets you know who else is on converse. It does show users on all channels on the linked servers.

/L will show any linked servers. Washtenaw is the main converse hub in Michigan.

/chan shows a listing of just a few of the available channels. There are something like 36,000 channels available. This listing is created locally as a convenience to the users. *As a 'thanks' to my friend Craig N8KMY I assigned him his very own converse channel #1002-- isn't that nice!*

/chan <chnl #> will change your station to using a different channel.

/b exits the converse mode.

```
R,O,P,P,I,R,S,I,U,V,W,X,Z >
conv
Conference @ LEELANAU Type /HELP for help.
Welcome to the KF8KK-6 converse node near Empire MI.
/? Print this help.
/CHANNEL [n] Switch to channel n, or show avail chnls.
/EXIT Terminate convers session (same as /bye).
/HELP help info (same as /?).
/INV user Invite user to join channel.
/LINKS [L] List all conns to other hosts. L - long fmt
/MSG user text Send a private message to user.
/NAME call [chan#] Log in as user "call" per ftpusers
/PERSONAL text Set or show personal text (QTH, etc).
/SOUNDS y|n Turn bell on or off.
/VERBOSE y|n verbose mode
/WHO [L|name|@host] List users and their info.
```

```
/w
*** Tue May 30 22:01:48 2006
Channel Users
45(Leelanau) kf8kk
***
/l
*** Tue May 30 22:02:24 2006
Host State Software Since
WASHTENAW Connected JNOS2.0a May 28
***
/ch
*** You are on channel 45 (Leelanau).
Channel names:
45 Leelanau
10 Benzie
5 Antrim
28 Grand Traverse
40 Kalkaska
51 Manistee
83 Wexford
100 Gossip
101 DX
1001 IOOK
1002 KMY Channel
***
```

Telnet via JNOS

JNOS provides a full Telnet client that allows you to telnet to other computers across the internet.

You are **NOT** limited to JNOS computers-- you can telnet to any computer that accepts telnet connections.

Telnet provides a handy method to make a connection to other packet hamgates across the world.

It is via this telnet capability that a station can enter the JNOS node via the radio in one part of the state, telnet across the internet to another JNOS node elsewhere, and then come back out on the radio in that distant location.

In the image above where I'm connecting to the *HamGate.Washtenaw.AMPR.org* via telnet, I am greeted by a normal JNOS login screen. Once I am connected I can use all the JNOS commands on the Washtenaw system.

```
telnet hamgate.washtenaw.ampr.org
Trying... The escape character is: CTRL-T
*** connected to 44.102.1.1:telnet

JNOS (HamGate.Washtenaw.AMPR.org)

For login (callsign) & your name for password.

login: kf8kk
Password: █
```

```
[JNOS-2.0a-BFHIM$]

Welcome kf8kk,
to the HamGate.Washtenaw.AMPR.org TCP/IP Mailbox (JNOS 2.0a (
6)).
Currently 1 user.

***** Welcome to the WB8TKL-3/-4 BBS & TCP/IP "HamGate" ***
        Located in Ypsilanti, Michigan
        ! This is not a full service BBS ! (yet)

You have 0 messages.
Area: kf8kk Current msg# 0.
?, A, B, C, CONV, D, E, F, H, I, IH, IP, J, K, L, M, O, P, PI, R, S, T, U, V, W, X, Z >
p
Available ports:
145.76 : 145.76MHz AX.25/IP Local Access port

Area: kf8kk Current msg# 0.
?, A, B, C, CONV, D, E, F, H, I, IH, IP, J, K, L, M, O, P, PI, R, S, T, U, V, W, X, Z >
```

As you can see from this image, the look of the **Washtenaw** JNOS system is very much like that of **Leelanau**.

I issued the **'P'** for **'PORTS'** command and find that a **145.76** port is available.

You will note there is no **'N'** command, the **'N'** command is only available if the **NetRom** function is available on that node. **Once you get setup on JNOS you should send an email to Jay TKL and tell him he's missing out on all the NetRom action! [but please don't tell him I suggested you write him -- he'll have my head].**

You can see the result of issuing the **'J'** for **'J-HEARD'** command that allows you to see what stations were heard by the system. You will note Ulrich, DH0GHU on the heard list. Ulrich certainly didn't enter the system via 145.76mhz, but he was able to telnet into the system via the internet and access our packet system from Germany.

```
?, A, B, C, CONV, D, E, F, H, I, IH, IP, J, K, L, M, O, P, PI, R, S, T, U, V, W, X, Z >
J
Interface Station Time since send Pkts sent
145.76 WB8TKL-4 0:00:01:59 8957
Station Time since heard Pkts rcvd : Station Time since heard Pkts rcvd
N8EOC-3 0:00:00:02 909 : W8SWL 0:00:00:23 133
Y K8BE-4 0:00:01:48 1423 : WB8TKL-4 0:00:01:59 8791
Y W8EOC 0:00:02:23 1614 : W8EOC-3 0:00:03:06 528
Y W8EOC-4 0:00:06:02 2176 : W8DWL 0:00:07:36 128
5 WB8TKL-3 0:00:15:01 148 : N8MWD 0:00:18:02 157
5 K8DTX 0:00:27:02 436 : N8EOC 0:00:42:41 63
5 N8EOC-10 0:00:59:52 113 : N8KUP-5 0:01:18:38 67
5 WC8EOC-4 0:10:20:19 1 : WC8EOC 0:10:24:48 18
5 N8XTN-8 0:19:18:01 2 : MAYVIL 0:19:28:37 25
5 K8BKZ-4 0:21:27:28 2 : K8DTX-2 0:21:44:31 1
5 DH0GHU-15 1:09:00:21 13 : N8EOC-1 2:20:42:44 55
5 Area: kf8kk Current msg# 0.
?, A, B, C, CONV, D, E, F, H, I, IH, IP, J, K, L, M, O, P, PI, R, S, T, U, V, W, X, Z >
```

Downloads & Special Stuff

JNOS also allows you to download files and upload files to the hard drive of the JNOS server.

The **'W'** command gives you a listing of what is available on the hard drive. Below is a listing from the **'W'** command on my JNOS system. It shows a typical directory with 15 files.

```
w
AMPR-subnets-by-county.jpg  296,870 21:59  5/10/06  JNOS-MAN.TXT  326,296  1:24 12/15/05
amprnet-ip-addr.txt          320 21:59  5/10/06  jdoc111.asc   335,501  1:20 12/15/05
jdoc_asc.zip                 111,297  1:20 12/15/05  jdocw6.zip    278,217  1:20 12/15/05
jnos.doc                     871,936  1:20 12/15/05  lclmap.txt~   2,505 21:55  5/10/06
lclmap.txt                   2,477 21:55  5/10/06  mailbox.doc   24,374  1:20 12/15/05
maplcl.txt                   2,477 23:20  5/28/06  mapsys.txt    1,998 23:20  5/28/06
mboxcmds.txt                 6,378  1:20 12/15/05  sysmap.txt~   2,115 21:51  5/10/06
sysmap.txt                   1,998 21:51  5/10/06
15 files. 3,707,617,280 bytes free. Disk size 4,079,448,064 bytes.
Area: kf8kk Current msg# 0.
COLARC,GRTR,EMPIRE,145.07,MAPLCL,MAPSYS,?,A,B,C,CONV,D,E,F,H,I,IH,IP,J,K,L,M,N,NR,O,P,PI,R,S,T
Z >
```

The **'D'** command for **'DOWNLOAD'** will send to your screen the desired file as a text file. This is fine for the text files, but for the 'zip' files shown you will need a 'uudecoder' to convert the files back to 'zip' format.

Before you use this function via the radio be sure to make note of the file sizes so that you don't attempt to download a large file that will tie up the packet channel for a week.

As you remember, any commands on the command line before the **'?'** are **'Alias'** commands placed there by the system operator for the users convenience. In Northern MI (**ARPSC D7**) it is our local standard to provide information on the local packet nodes within reach of a particular system. I have implemented these as the **'MAPLCL'** and **'MAPSYS'** commands.

MAPLCL is an alias command that calls up the **'maplcl.txt'** file on the hard drive. Users just have to type **'MAPLCL'** and the textual map of the local packet nodes will appear on their screen as shown here.

```
maplcl
BENZIE MAP 145.07 5/10/06-KF8KK@IOOK.ORG
A = BEN00 W8BNZ-7 (THENET)
B = BEN11 W100K-7 (THENET)
  GATEWAY TO 145.76 -> BENQMN
  GATEWAY TO HAMGATE.LEELANAU ->KKBBS
  GATEWAY TO 145.09 via KKBBS
C = GRTR00 ON 145.09 VIA KKBBS
D = MAN100 W28N-7 (JNOS HAMGATE)
E = KAL A8SZV (KA-NODE)
F = BENE0C W8BNZ-6 BENZIE-EOC (MFJ)
G = K8SKY-7 MAN101 (KA-NODE)
```

'MAPSYS' is yet another of those convenient 'alias' commands and calls up the 'mapsys.txt' file from the hard drive.

The **MAPSYS** file is more technical than graphical and gives a depiction of the local area packet nodes from a different perspective. An abbreviated image of the MAPSYS file is below.

```
mapsys
THIS SYSTEM:

hamgate.leelanau KKBBS
kf8kk-3 : call
kdbbs : node
kf8kk-4 : jnosBBS
44.102.152.1 : ip
1 mi E empire apt / 1 mi S M72 & 1mi E Co Rd 6 : loc
44.52.4556 : lat | 85.02.4332 : lon
15w @ 20' 433.1mhz / 40w @ 20' 145.09 / jnos2.04linux : stn
5mi : range
via ben11/12/qmm or COLARC : path

-----
NEARBY PRI:

Empire Node 145.07 (multiFreq)
wi0ok-7 : call
ben11 : node THENET
kdbbs : jnosBBS
44.102.152.23 : ip
1mi N M72 @ CO Rd 675 5mi S Glen Lake 4mi N Empire Apt : loc
44.52.4556 : lat | 85.02.4332 : lon
60w @ 100' TheNet X1J4 multiport : stn
40mi : range
c BEN11 : path
co-located benqmm/145.76, ben12/433.1rpt, 444.725 voice : notes

Benzonia 145.07
w8bnz-7 : call
BEN00 : node THENET
44.102.150.20: ip
US31 2mi N Beulah : loc
44.52.3000 : lat | 85.02.3223 : lon
40w @ 40' TheNetX1j : stn
```

While there are more commands that JNOS provides, I hope those that I've described can get you off to a good start and are not overly confusing. Packet operating is not intuitive and that means that for normal people it's not easy to get accustomed to.

Good luck and enjoy packet -- the internet in slow motion!

73 KF8KK