Packet 101 – basic usage of EastNet
drafted by N1URO

Introduction:

The EastNet packet network covers/manages from Maine to Florida, and from the Mississippi River east to the Atlantic ocean. It was founded in the 1980s by Bob Anderson K2BJG/SK and fed a lot of information into the now defunct NorthEast Digital Association (NEDA). The two groups were a great marriage as both did many bench testing of various systems, protocols, and hardware before ever making a decision to change or upgrade.

EastNet has always been fortunate to have at least one of the following to assist in maintaining and growing the network: a routing engineer, a radio supplier/technician, and a program coder. While others follow, we lead and we have the most amount of services available within our network than any other system available.

Definitions:

Node - a point on the network consisting of 2 or more radios
BBS - Bulletin Board System, a form of message handling
ax.25 - The mandatory protocol set forth by the FCC
NetRom – A binary protocol encapsulated under ax.25
ROSE - A static route protocol, typically used in France.
IP - intenet protocol
Protocol – A method of carrying data within a data segment.
TNC - Terminal Node controller, like a modem for your radio
Amprnet – a /8 network reserved for amateur radio communications hosted at UCSD.edu
IP Coordinator – The person who assigns IP blocks within the Amprnet

Systems:

As of 2014, EastNet now uses a specific image based on the linux operating system that has the following packet servers:
axMail-FAX – an SMTP and Fax system*
LinFBB - Packet Bulletin board system
pc/FlexNet - an ax25 digi router
URONode - a full protocol router node*
TrivNetDB - a MySQL Database server**
*- developed by N1URO
**-debugged by N1URO

Other systems may be used with EastNet Network approval such as X-net or JNOS depending on how they're to be installed and configured.

Getting yourself started:

You'll need a specific cable from your TNC to your radio and from your pc to your TNC. Most of these cables you can build. Once you know everything is build, turn your TNC on and load your favorite terminal emulation program. PuTTY is one that may be used. HyperTerm is another if you have windows. MiniCom for Linux is suggested. You'll need to match your baud speed to that of your TNC or else you won't be able to communicate with it. Once properly set, you should see a "cmd:" prompt coming from your TNC. Each manufacturer has their own command set in their own TNC. Refer to your manufacturer's manual, most have a quick set list. These things you'll want to set asap and are basically similar on all TNC platforms:
mycall <callsign>
paclen 256

Some allow you to monitor the frequency to see who you can see and perhaps connect to. Your average packet frequencies are:
145.01
145.03
145.05
145.07
145.09

Tune to any of those frequencies and hopefully within 10 minutes you'll hear a station ID, or within 30 minutes you at least hear a beacon. There is no offset on packet. It's like being on 146.52. Once you hear a station, try to connect to it's -2 SSID. Ex: "C N1URO-2" If you get connected, you'll get a prompt and maybe a MOTD header prior to a prompt. FlexNet and URONode (on ax25 connections ONLY) will display a prompt that looks like: "=>"
H usually will bring up some form of help. We also use URONode, LinFBB, axMail-FAX as various services. There's more services available defined by SSID as well.
From my own -1 FlexNet node:
Basic commands are:

<A>rea destinations file	<C>onnect <desti>
<D>estinations list	<H>elp (more detailed command list)
<L>inks list	<M>ailBox (BBSURO:N1URO-4)
<Q>uit this node	

URONode basic commands: (Shortcut keys are in CAPS)
Commands:
?, Bye, Connect, Escape, Finger, Help, HOst, Info, INTerfaces
Jheard, JLong, Links, MSg, Nodes, Ping, Quit, Routes, SEssions
Status, Telnet, Users, Version, Who

axMail-FAX commands: (Shortcut keys are in CAPS)
Commands:
?, Autofwd, Bye, Cancel, Delete, Exit, Help, Info, Kill, List
Name, Quit, Read, Send, SFax, SReply, STatus, Unkill, Verbose

LinFBB basic commands:

List, Read, Send, Kill, Downloads

We run other services such as an MySQL database server, World-Wide converse, DX Clusters, Web servers, and more.

Node/Services basic usage:

pc/FlexNet:

A – we used to use this for a listing of all EastNet destinations, most are quite antiquated by now.
C – c <desti> lets you connect to another destination/node. Ex: C N1URO-2 from my FlexNet node would connect you to my URONode.
D – destinations list. This shows you who you can connect to with an acceptable SSID* range.
H – user help
L – Links listing. These are the direct neighbor nodes to the node you're connected to.
M – auto connect to the nearest Mailbox/BBS set forth by the sysop.
Q – quit this node. In some cases this will also return you to your TNC cmd: prompt.

LinFBB basic commands:
S(B|P|T) – Send a message. SB would be to send a public bulletin, SP would send to a specific person, ST would send NTS traffic.
K #### - Kill message number ##### or if personal and you've read all your mail, KM to "kill mine". You can NOT kill bulletins.
L or LL # - List all mail or ListLast # number of mail messages both personal and public.
R #### - Read message number ##### or to read all your mail, RM.

URONode basic commands:
? - bring up the command list, show me what I can do.
Bye/EXit/Quit – disconnect from the node.
Connect – connect to a remote node or destination
Destinations – display a listing of any FlexNet destinations this node may have.
Escape – show/set/disable an escape sequence. Default is CTL+T
Finger – request information on an entity@ip.add.re.ss or hostname
Help <command> - Bring up full detailed help on a command.
Host – view hostname information on an IP host, if ampr.org based usually only the prefix is requred such as "n1uro" vs. "n1uro.ampr.org"
Info – sysop designated information about his node/services/location/etc.
INTerfaces – technically correct term for the often misused "ports". Display of interfaces is shown.
Jheard/JLong – J displays the last 20 heard. JL displays the entire list stored on the system which may be very large. Not ideal for HF users.
Links – Static routes set forth by the sysop.
Msg – send an "instant" message to a user on the node. SSID is required if exits.
Nodes – display a listing of all NetRom based nodes
Ping <host|ip> - send a single packet to a remote IP address. Often used to see if the remote is up.
Routes – Show directly connected NetRom nodes we route with. Similar to L in FlexNet.
Sessions – sessions connected to or through this node. Some may be pass through to another node.
Status – uptime and system status info.
Telnet – Use the telnet protocol to establish a remote connection. Note: if the remote asks for a password, it will NOT BE SECURE.
Users – who's on this node at the moment this command is issued.
Version – Software version information.
Who – Who was on the node and how they connected.

AxMail-FAX basic commands:
? - See the command list, show me what I can do.
Autofwd – Set/unset an autoforward of my mail to another mailbox.
Bye/Exit/Quit – logout of axMail-FAX.
Cancel – Any killed mail will not be deleted from your mailbox, and you will be logged out.
Delete|Kill ##- Delete or Kill message number ##
Help <command> - Display detailed information on a command.
Info – display information about axMail-FAX.
List – list my mail.
Name – Sets/reset your name in your mail header.
Read # - read message number #
Send – send an SMTP based mail. It walks you through everything.
Sfax – send a fax. A cover sheet will be automagically created for you.
SReply – send a reply to the message you last read.
STatus – shows you the current status of your mailbox.
Unkill – if you accidentally killed a message, you may reverse this using Unkill.
Verbose # – Read message # and do not suppress the message headers, useful in debugging.

One cool thing about axMail-FAX is when you send a fax, you receive two confirmations. One of the confirmations is acceptance of the requested fax, and the second is details of the communications. Ex:
Confirmation 1:

From: axMail-FAX <fax@asterisk.n1uro.ampr.org>
To: Brian <n1uro@w4mlb.ampr.org>
Subject: Fax confirmation
Date: Fri, 10 Feb 2017 10:05:40 -0500 (EST)

Dear sender,

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The message was accepted for fax delivery.

Fax number(s): 8609063722,,3
Date: Friday, February 10 2017, at 10:05:40


Confirmation 2:
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From: HylaFAX Agent <fax@asterisk.n1uro.ampr.org>
To: n1uro@w4mlb.ampr.org
Subject: facsimile job 169 to n1uro (8609063722,,3) completed
Date: Fri, 10 Feb 2017 10:06:34 -0500 (EST)

Your job to 8609063722,,3 was completed successfully.

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            Pages: 2
         Receiver: <UNSPECIFIED>
          Quality: 196
       Page Width: 209 (mm)
      Page Length: 296
      Signal Rate: 14400 bit/s
      Data Format: 2-D MR
 Remote Equipment: unknown
   Remote Station:
          Dialogs: 1 (exchanges with remote device)
            Calls: 1 (total phone calls placed)
            Modem: any
   Submitted From: asterisk.n1uro.ampr.org
            JobID: 169
          GroupID: 169
           CommID: c000000382

Processing time was 0:52.
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