USING BPQ32 FOR WINDOWS AS A KEYBOARD-LEVEL PACKET PROGRAM

Packet originally had its heyday back in the days of character-mode DOS, and the very early days of Microsoft Windows. As a result most of the freebie software to make and utilize AX.25 Packet is from that era. And not very easily usable of 2016 Windows computers....

There are of course packet software packages for both Windows and Mac and Linux platforms. MixW is a nice package for Windows computers that does both packet and virtually every other mode as well, replacing the free software FLDIGI....except that it has a price tag. If that doesn't bother you -- it's great software!

If you want free AX.25 packet software, then I recommend the following packages

comm goal	**free software**
Keyboard Level Packet:	BPQ32 for Windows http://www.cantab.net/users/john.wiseman/Downloads/LastestInstaller/
WINLINK email over Packet:	Winlink Express www.winlink.org
EMCOMM alternative packet software that can work with WINLINK:	OutpostPMM www.outpostpm.org

This article will only address the BPQ32 for Windows.

Installation

Standard windows installer system (may require you to tell some virus software that it is OK) -- default installation directory is:

C:\Program Files (x86)\BPQ32

which is fine. Data files may be stored at this location:

C:\bpq32

(but I have seen them installed under your “user” subdirectory as well --- carefully note where the data files are going to go, as you'll need to work on the configuration file at some point)

Configuration

Using Notepad, take the Generic BPQ32.cfg file at the end of this document, and edit it to

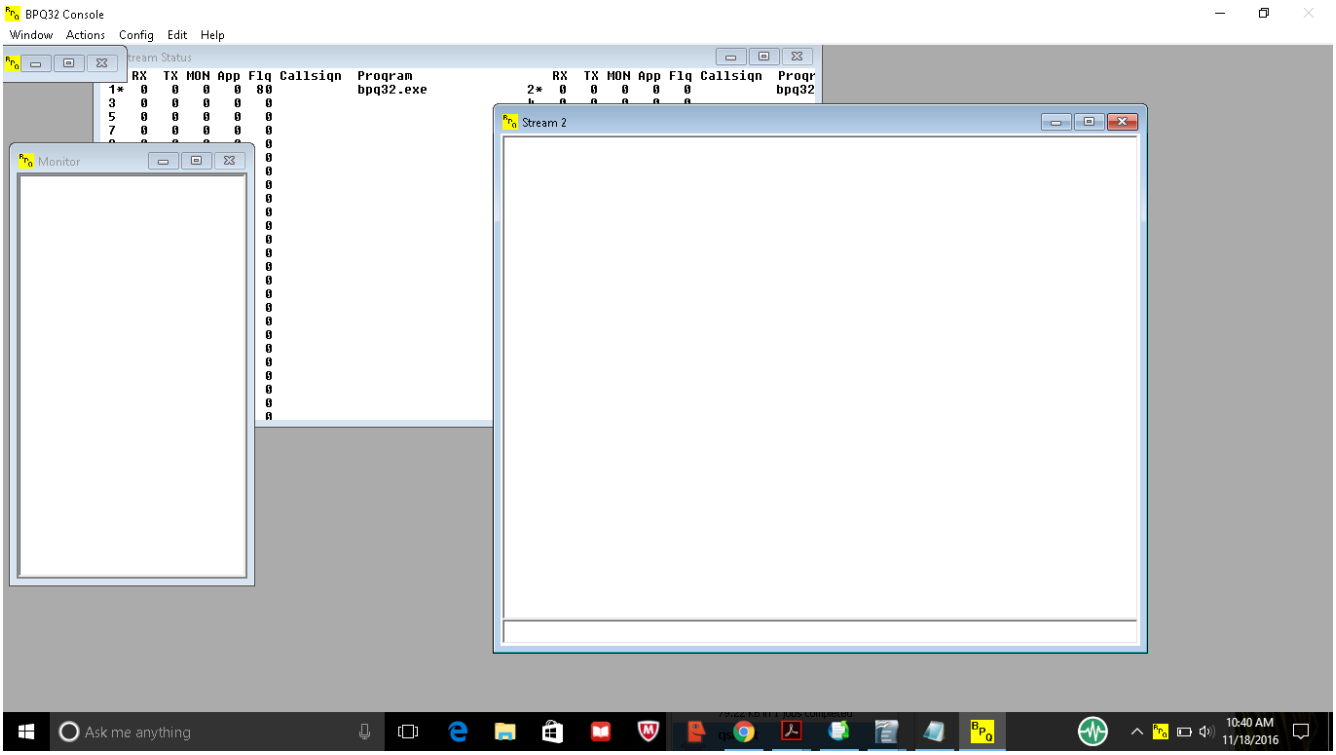
- replace CLLSGN with your amateur radio callsign (the correct SSID's are provided)
- replace PLACE with your city/state
- Choose a NODEALIAS of 5 or 6 characters.

Save that file in your BPQ32 data directory (that you noted above) and check to make sure -- or fix -- that its name becomes exactly BPQ32.cfg The icon "View Configuration Folder" will take you right to the correct directory if you forgot it.

Using the Program

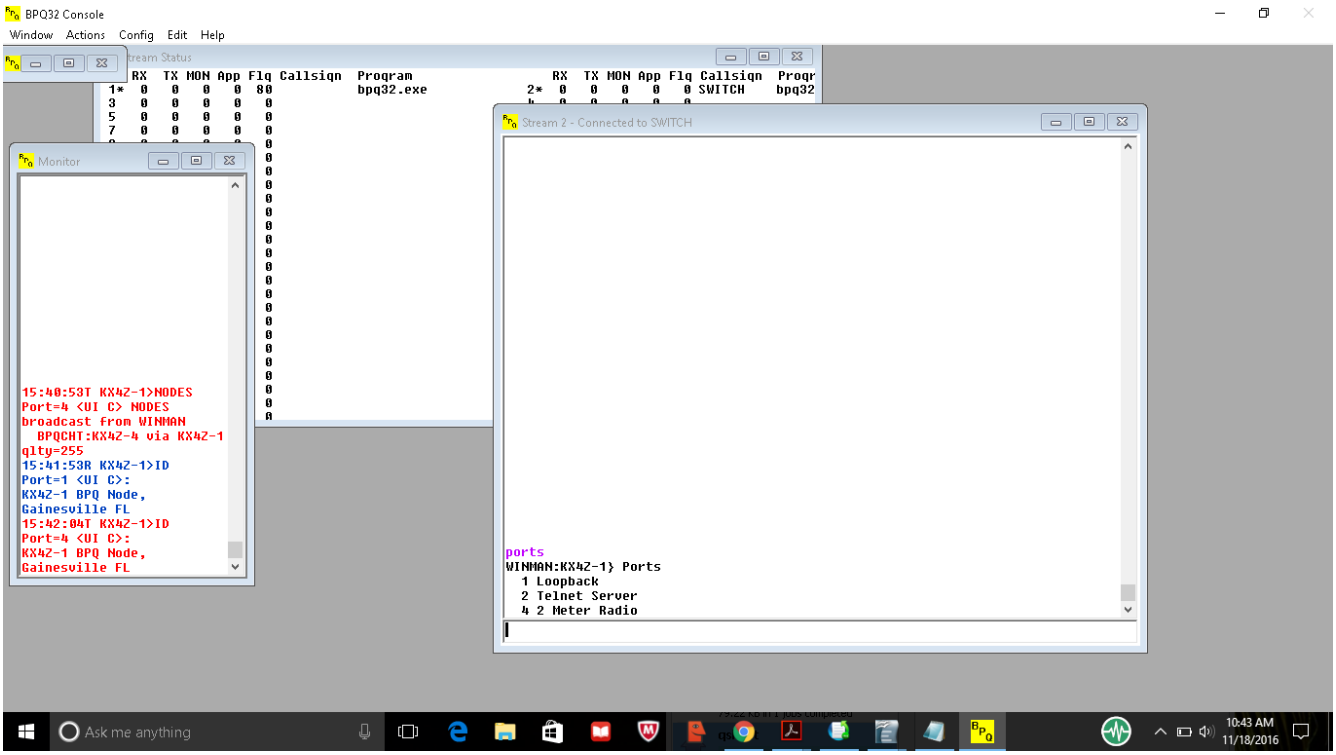
You must have UZ7HO Soundmodem installed and providing a TCP connection to port 8100 to correct work with the generic BPQ32.cfg file presented below. You don't have to be connected to an actually radio just to set this up -- you can be using your microphone / speaker of your laptop (and you can listen to the packet tones that way!). If you are using a different TNC than this set up, you will need to edit the BPQ32.cfg file appropriately, and this is beyond this document. Activate your soundmodem.exe file prior to executing the BPQ32 Console.

In your start listing of programs, you may be surprised to find about a dozen "BPQ" type files...the one that you need to double click is BPQ32 Console. This will bring up the following screens:



The one we are interested in is the Stream2 Screen that has a line-separated box at the bottom where we

can type. This is the same as being at the terminal of linbpq program running on a Raspberry Pi and connected to a radio via Direwolf & a soundcard. If your soundmodem is properly interfaced , you can type “ports” into the input box at the bottom and get a listing of your ports as shown here:



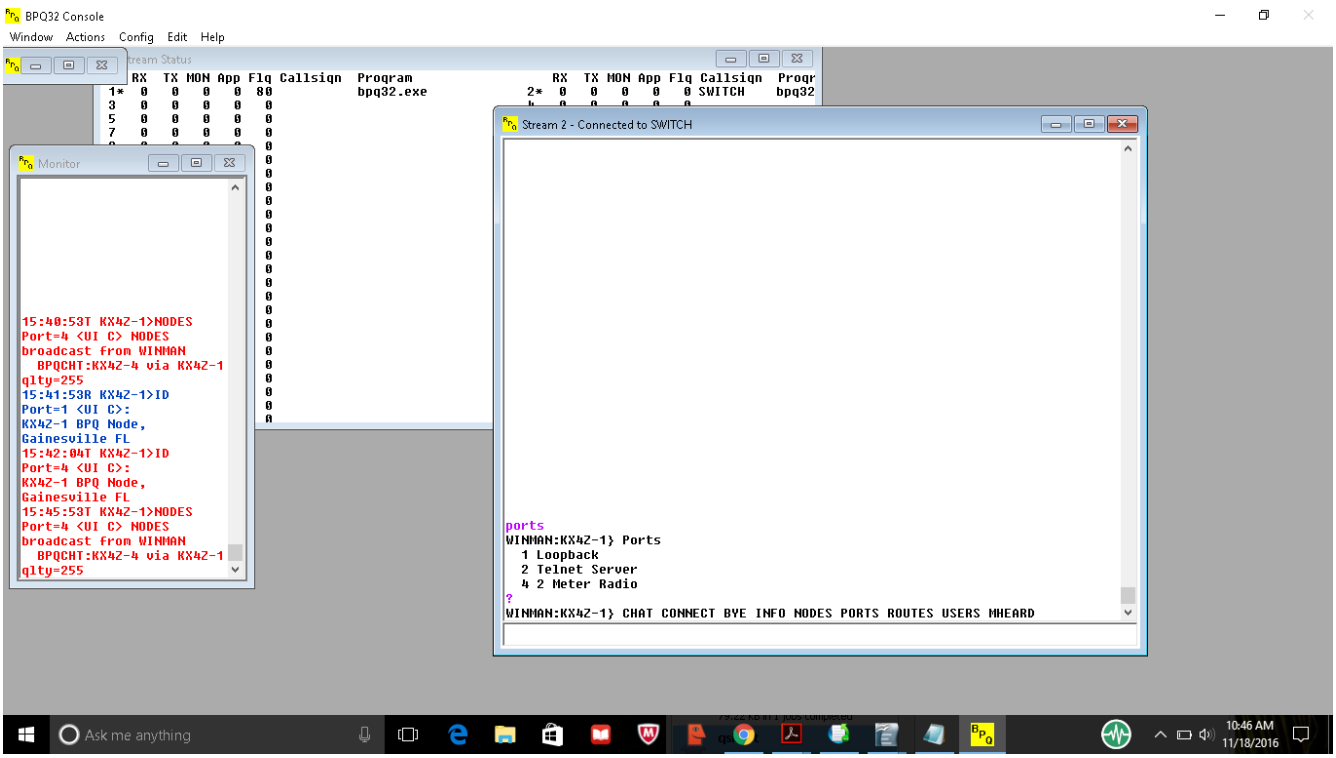
The monitor screen at the left will be showing packets going in and out (similar to what soundmodem.exe's screen will also be showing). Typing a “?” and carriage return will get the familiar list of commands: If you're using your laptop speaker/mic -- you can type C 4 W4AAA and get to hear the packet tones!

WHERE DID IT GO?

On my computer the BPQ32 program appears to function as a service, so if you minimize it rather than showing as an icon in the bar at the bottom of my computer screen, sometimes it gets hidden in the system tray (just like soundmodem.exe does) and I have to click on the small up arrow to get to the hidden icons of the system tray.

HOW DO I TURN IT OFF

Instead of having a X - close control at the upper right hand of its window (the way most all other Windows programs allow you to kill them) BPQ32 grays that out, and instead provides a MENU item: **Window | Close all BPQ32 Programs.**



From this point, if your soundmodem is correct configured and your radio works, you should be able to Connect to any available packet node, find Routes, etc. You should be able to enter Chat / Talk features and communicate with other users.

----------GENERIC BPQ32.cfg FILE----------

```
;  REPLACE CLLSGN with your callsign without ssid
;  replace PLACE with your city
;  Be sure to mark someone as SYSOP
;  Put in something (6 characters max) as your NODEALIAS
;
;

NODECALL=CLLSGN-1               ; Node callsign
NODEALIAS=XXXXX         ; Node alias (6 characters max)
IDMSG:                          ; UI broadcast text from NODECALL to fixed dest ID
CLLSGN-1 BPQ Node, PLACE
***                             ; Denotes end of IDMSG text
BTEXT:                          ; UI broadcast text from BCALL to destination UNPROTO=
CLLSGN-1 BPQ Node, PLACE
***                             ; Denotes end of BTEXT text
INFOMSG:                ; The INFO command text follows:
BPQ Node- Commands require Port Number.
Port 4 is radio output.
```

```
***                             ; Denotes end of INFOMSG text
CTEXT:                          ; The CTEXT text follows:
Welcome to CLLSGN-1  BPQ Node.
WINMAN:CLLSGN-1} CONNECT BYE INFO NODES ROUTES PORTS USERS MHEARD
***                     ; Denotes end of CTEXT text
FULL_CTEXT=0            ; 0=send CTEXT to L2 connects to NODEALIAS only
                                ; 1=send CTEXT to all connectees

; Network System Parameters:
OBSINIT=6               ; Initial obsolescence set when a node is included
                                ; in a received nodes broadcast. This value is then
                                ; decremented by 1 every NODESINTERVAL.
OBSMIN=4                ; When the obsolescence of a node falls below this
                                ; value that node's information is not included in
                                ; a subsequent nodes broadcast.
NODESINTERVAL=10        ; Nodes broadcast interval in minutes
IDINTERVAL=5            ; 'IDMSG' UI broadcast interval in minutes, 0=OFF
BTINTERVAL=5            ; The BTEXT broadcast interval in minutes, 0=OFF
L3TIMETOLIVE=25         ; Max L3 hops
L4RETRIES=3                     ; Level 4 retry count
L4TIMEOUT=60            ; Level 4 timeout in seconds s/b > FRACK x RETRIES
L4DELAY=10              ; Level 4 delayed ack timer in seconds
L4WINDOW=4                      ; Level 4 window size
MAXLINKS=63                     ; Max level 2 links
MAXNODES=512            ; Max nodes in nodes table
MAXROUTES=64            ; Max adjacent nodes
MAXCIRCUITS=128         ; Max L4 circuits
MINQUAL=90                      ; Minimum quality to add to nodes table
; INP3 Routing is experimental.  The two parms which follow will be ignored
; unless activated in the ROUTES: section.
MAXHOPS=4               ; INP3 hop limit to add to tables
MAXRTT=90               ; INP3 max RTT in seconds

; TNC default parameters:
PACLEN=128              ; Max packet size (236 max for net/rom)
                        ; 236 is suitable for reliable and fast connections, such
                        ; as AX/IP/UDP or a dedicated 9600 RF Link
                        ; 120 is suitable for a typical shared VHF packet radio connection
                        ; PACLEN is defined for each port individually in the ports sections
TRANSDELAY=1            ; Transparent node send delay in seconds

; Level 2 Parameters:
; T1 (FRACK), T2 (RESPTIME) and N2 (RETRIES) are now in the PORTS section
T3=120                          ; Link validation timer in seconds
IDLETIME=720            ; Idle link shutdown timer in seconds

; Configuration Options:
AUTOSAVE=1                      ; Saves BPQNODES.dat upon program exit
BBS=0                   ; 1 = BBS support included, 0 = No BBS support
```

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NODE=1                          ; Include switch support
HIDENODES=1                     ; If set to 1, nodes beginning with a #
                                ; require a 'N *' command to be displayed.
/*
The *** LINKED command is intended for use by gateway software, and concern
has been expressed that it could be misused. It is recommended that it be
disabled (=N) if unneeded.
*/
ENABLE_LINKED=N                 ; Controls processing of *** LINKED command
                                ; Y = allows unrestricted use
                                ; A = allows use by application program
                                ; N = disabled
/*
AX25 port definitions:
The LOOPBACK port simulates a connection by looping input to output. To test,
start BPQTerminal and enter: 'C 1 MYNODE via MYCALL'
In this example '1' is the LOOPBACK port number. The LOOPBACK port is provided
for testing purposes and would rarely be included in an established system.
*/

; -------------------------PORT 1 ----------------------------
; LOOPPACK sport specification
PORT
 PORTNUM=1                      ; Optonal but sets port number if stated
 ID=LOOPBACK                ; Defines the Loopback port name
 TYPE=INTERNAL              ; Loopback is an internal type
ENDPORT

; -------------------------PORT 3-----------------------------
;
PORT
 ID=Telnet Server
 DRIVER=Telnet
 CONFIG
   LOGGING=1
   DisconnectOnClose=0
   TCPPORT=8010
   FBBPORT=8011
   HTTPPORT=8080
   LOGINPROMPT=user:
   PASSWORDPROMPT=password:
   MAXSESSIONS=10

;  ----WINLINK SETTINGS------------------
;      uncomment if you become a winlink sysop
;    CMS=1
;    CMSCALL=CLLSGN       ; CMS Access Callsign (with SSID if used)
;    CMSPASS=             ; WL2K sysop password
;    FALLBACKTORELAY=1    ; will try to get to RMS RELAY if CMS unavaiable
```

```
;    RELAYHOST=192.168.1.21  ; put the name or ip number of your RMS_RELAY here

   CTEXT=Welcome to CALLSIGN Telnet Server\n Enter ? for list of commands\n\n
        USER=Name,Password,CLLSGN,,SYSOP

; add as many as you like
ENDPORT

; -------------------------PORT 4-----------------------------
PORT
 PORTNUM=4          ; Optional
 ID=2 Meter Radio
 TYPE=ASYNC
; DRIVER=UZ7HO    ; not necesary for tcp kiss connection
 PROTOCOL=KISS
 IPADDR=127.0.0.1
 TCPPORT=8100
 SPEED=9600
 CHANNEL=A
 PACLEN=64
 MAXFRAME=1
 QUALITY=192
 TXDELAY=400
 SLOTTIME=100
 PERSIST=60
 MINQUAL=95
 FRACK=5000          ; Levvel 2 timeout in milliseconds
 RESPTIME=1000     ; Level 2 delayed ack timer in milliseconds
 DIGIFLAG= 1         ; 0=OFF, 1=ALL; 255=UI ONLY
 USERS=20    ; maximum users
 FULLDUP=0
 TXTAIL=50
 MHEARD=Y
 RETRIES=4  ;  Level 2 retries
ENDPORT
/*
ROUTES:                                ; Locked routes (31 maximum)
;There are no locked routes in this example.
***                                    ; Denotes end of locked routes
*/

/*
Applications:
There are no current associated applications, thus no active APPLICATION statements.
With a chatconfig file you could open up chat.
*/
APPLICATION 1,CHAT,,CLLSGN-4,BPQCHT,255
;APPLICATION 2,RMS,C 3 CMS,CLLSGN-11,linbpq,255
;APPLICATION 3,RELAY,C 3 RELAY,CLLSGN-12,linbpq,255
```