Hospital Packet Network
F6FBB Implementation Guide

Prepared for:

Santa Clara County
Department of Health Services
Office of Disaster Medical Services

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Revision 1.2

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Revision

September 2004	Original	Jim KN6PE
December 11, 2004	V1.1	Art N9ZZK, contributor, Section 4.4, process for setting up auto boot for Windows XP
February 2007	V1.2	Reference change to new Outpost Website

1   Introduction

1.1   Overview

My interest in BBS applications came about accidentally.

Packet has been used throughout Santa Clara County (CA) for many years. Packet is considered essential to the County Emergency Managers because of its fail-safe nature and its independence of the existing infrastructure in the event of a disaster. While intended to pass California RIMS (Regional Information Management System) reports on disaster and activation status, packet has demonstrated its usefulness for passing a variety of list-based traffic that would be impractical on voice channels.

This aspect of packet was also considered very attractive to Santa Clara County Department of Health Services (DHS), Office of Disaster Medical Services (ODMS). ODMS' mission is to coordinate preparedness and response to public health threats and disasters. One of their key constituents are the County Hospitals.

ODMS has been working to put emergency communications in place for their hospitals throughout the county. With voice communications under control and monthly equipment checks held, their focus has turned to packet as a means for rolling up status and passing detailed messages.

1.2   The need for a packet infrastructure

The *Outpost Packet Message Manager* program has been adopted by several of the cities throughout Santa Clara County as their standard packet-messaging client.

Outpost is a Windows-based message client that lets you send and receive packet messages with almost any Amateur Radio Bulletin Board System (BBS) or TNC personal mail box.

I designed Outpost for the ARES/RACES packet user community. The thinking behind it was to create an intuitive, easy-to-use program that lets ARES/RACES organizations focus on the "message," not the "medium," as they pass packet traffic to and from an Operational Area BBS.

Outpost has a similar look and feel to other contemporary mail clients. It features Windows-driven forms and screens that handle creating, sending, receiving, and storing packet messages on your PC. It also can run automatically where it periodically checks for out-going and in-coming messages. For more information, see http://www.outpostpm.org/.

Because of an ease of use requirement, ODMS plans to roll Outpost out to its 14 participating hospitals. Unfortunately, the BBS used by the Santa Clara County RACES organization was not an option due to the current user load from participating county cities.

Thus my search for a BBS.

1.3   BBS Requirements

The BBS had to meet several requirements to be viable for the County.

Hardware Configuration

1. Common hardware. The computer needs to be Intel-based to ensure some element of supportability and commonality with the bulk of the processing platforms available at the County and on the market.

2. Contemporary Operating System. I've worked in the DOS world before. However, you loose the power of the platform particularly if you have more recent hardware. The O/S needs to be Windows 98, 2000, or XP. Windows NT is excluded because of the administrative overhead that it includes.

3. TNC. The county purchased KPC-3+'s for all hospitals as the standard TNC. This BBS implementation needs to support the KPC-3+.

4. Radio Channels. All hospitals will come in on a 2 meter port based on committed radio purchases. A multi-band, multi-port configuration is not currently required.

BBS Configuration

5. Number of Ports. The BBS will need to support up to 14 hospitals, with on average 4 concurrent connections. My assumption is that random packet usage will generate a sufficient distribution of traffic over the time domain thereby permitting a reasonable level of channel loading.

6. Support Tactical calls. This is an equivalent feature to what we do with voice nets… All assigned users have a tactical call sign that can be passed from user to user regardless of the owned FCC Call Sign.

7. Supportability. The BBS should be stable, documented, and has a known owner (just in case)

8. Installed Base. The BBS should be widely in production. This implies there is a community out there that can act as a resource as you are bringing a BBS on line.

9. Remote support. Remote sysops will be recruited and given training.

Interoperability

10. Outpost. Given the Hospital's desire to use Outpost, this seems to be a good idea.

What is not required

1. Message forwarding. For the moment, all messages originating on the BBS are assumed to be addressed to participating members of the BBS.

2. Others?

1.4 The Solution

The configuration I have adopted to address the above requirements is:

F6FBB BBS System (www.f6fbb.org)

Per the website, "FBB is a bulletin board software for amateur packet-radio. This software is free of charges. It can be copied or installed only for non-commercial use abiding by the laws.

"This software has been developed to be compiled on different architectures including MS-DOS (DosFBB), Windows 16 (WinFBB-16), Windows 32 (WinFBB-32) and Linux on PC hardware (LinFBB). All these versions have almost the same functionalities. Some differences may happen due to the capabilities of the operating and windowing systems."

G8BPQ (BPQ) AX25 Networking Package
(Many sites have it, I found mine at… http://skyscraper.fortunecity.com/digital/3/bpq/)

Per the BPQCODE.DOC file, "This software allows an IBM PC, or similar machine, equipped with suitable communications hardware, to act as a Node in a NET/ROM compatible AX25 network, and/or to support a multi-user Mailbox [BBS], or other similar applications.

"The switch section of the code supports up to 16 AX25 ports, and the application interface supports up to 64 connections.

1.5   Other software components

Along with the application components above, you will need the following:

PKZIP	Required for unzipping the BPQ application
Terminal Emulator	Required to verify that the TNC is functional. Should be able to set and reset the TNC in KISS mode. While Hyperterm is a good choice for a general packet program, PACTERM is a good for sending the control codes to reset the TNC back to Command mode.

Make sure these applications are available before proceeding.

1.6   BBS implementation steps

The following are the steps to implement this BBS configuration.

1. Set up the BPQ Software
2. Setup the F6FBB BBS Software
3. Final PC configuration

These topics are covered in detail in the following sections.

2   Setting up BPQ

2.1   Introduction

This instance of BPQ is tailored specifically to the needs of this project's FBB BBS implementation. There are undoubtedly plenty of other changes that could be made in terms of routes, ports, and other general configuration settings, of which this GUIDE will not address. However, BPQ does support the hardware and software configuration with which I had to work.

I am using version 408A as released in the BPQ408A.ZIP file. By the time you read this, there could be another version available, and if there is a compelling reason to upgrade, I'll do so and update this doc. Until then, I'm operating under the premise… *if it works, don't fix it*… and this version works very well.

This Guide is also not intended to replace the existing document that has been developed and included with the distribution of the software. Instead, it is a confirmed procedure to get BPQ408A up and running in preparation for moving on to the FBB portion of the project.

Note: The BPQ documentation is pretty good and you should have a copy available prior to beginning.

Note: While getting a BPQ instance up and running is not complex, it does require an ATTENDION TO DETAIL to avoid troubleshooting a problem that did not need to happen, particularly if your configuration is different from mine.

Final Note: I am NOT a BPQ expert. However, I did read the docs and spent some time getting it to work by doing several clean installs. My conclusion: you do not have to be a BPQ expert to get this software up and running.

2.2   Current configuration

My activities for this portion of the project were driven by the constraints under which I had to operate (PC, O/S, TNC, etc.). Therefore, if you choose to follow this path AND your environment configuration is different, you may need to tweak the procedure to your own specific needs. However, having implemented this once (and running through this procedure 3 times to ensure I got this doc right), I am confident that the reader should not have a problem getting BPQ on line.

The requirements for this portion of the project are as follows:

PC	Pentium III, 233 MHz
Operating System	Windows 98
Serial Ports	COM1, COM2
TNC	KPC-3
TNC Settings	Com1, 9600,8,N,1

2.3   Finding the BPQ Software

There are several websites that have the BPQ software available for download and, finding them are easy.

1	Create the directory: \Download\BPQ	
2	Run your browser (Netscape, IE, etc.)	
3	Go to your favorite search site (ie: Google) and enter into the search field "BPQ408A download".	This ensures you get exactly the version of BPQ used here. There may be more recent versions that work just as well or better…

		however this version works fine for me.
4	Once at one of the sites, download the file BPQ408a.zip to your computer and save it in directory created above.	

2.4   Installation

BPQ does not comes with a typical "setup.exe" program that installs it in the "C:\Program Files" directory, do Windows Registry manipulations, or anything else. Instead, all the files you need to implement BPQ are ready for use once they are unzipped.

5	Create the directory C:\BPQ	What I used; could be anything.
6	Move the BPQ408A.ZIP file to this directory.	
7	Unzip the contents into that directory.	
8	Print the following documents and put them in a binder.	You should have them as reference.

PROGS.DOC	A description of all the programs that come with this distribution.
BPQCODE.DOC	Overview doc of the application, and general direction on getting it up and running.
BPQCFG.TXT	The BPQ configuration file that comes with the application. You will edit this to get BPQ to work in your environment.
PORTS.DOC	The description of the commands founds in the BPQCFG.TXT file for how the ports are set up.
COMMANDS.DOC	Explains the commands available within the Node section of the G8BPQ Switch.

2.5   Configure the BPQ Software

In general, you can use almost all of the defaults for this setup. However, there were specific changes I made to support my requirements.

DESQVIEW:	Set to "0", not used. DESQview is from Quarterdeck and implements multitasking under MS-DOS.
Node Call Sign:	KN6PE-3
Node Alias:	CUPTNO (short for Cupertino, CA)
BBS Call Sign:	KN6PE-5 **MUST BE THE SAME FOR THE FBB SETUP**
BBS Alias:	HOSPTL (abbreviation for Hospital)
IDMSG:	Network node (HOSPTL)
INFOMSG:	KN6PE Packet Switch, Cupertino, CA CM87xv (1st line)
CTEXT:	Welcome to SCC DHS/Hospital Packet Switch in Cupertino
Port Config	See text file below.
Routes	None used, commented out

9	Edit the BPQCFG.TXT file to your specifications.	The following is my BPQCFG.TXT file currently in production. I made 10 changes to this file that are indicated in **BOLD text**.

```
;       For Version 4.08
;
;
;       CONFIGURATION FILE FOR G8BPQ SWITCH SOFTWARE
;
;       The program which converts this text file to binary
;       form is currently very crude - be VERY careful when
;       editing this file!
;
;
;       The order of parameters in not important, but they
;       all must be specified - there are no defaults
;
;
;
HOSTINTERRUPT=127 ; Sets the Interrupt used to access BPQ Host Mode. Will
                  ; normally be 127, but may be changed if this clashes with
                  ; other software. BTRIEVE seems to use 127, so if you are
                  ; using it, try INTERRUPT=126


;       Memory Usage. If EMS=1, the system will attempt to put its
;       data area into EMS Memory. At the moment it makes no attempt
;       to manage sharing of the EMS window, so you must not run any other
;       software using EMS.
;
;       Setting EMS=1 seems to cause problems with Desqview. I suggest it
;       is only used with non-DV installations.
;
;
EMS=0                             ; dont use EMS RAM
;
;       I seem to have problems with systems not using DESQVIEW - especially
;       NNA BBS's. The DV calls SHOULD be ignored if DV is not loaded, but
;       just in case, if you set DESQVIEW=0, the 'Release Timeslice' call
;       wont be used. MAKE SURE that you set DESQVIEW=1 if using DV, or
;       performance will be seriously affected.
;
DESQVIEW=0
;
;
;       Station Identification.
;
;       If a user connects to the NODE Callsign or Alias, he is linked
;       to the switch code, and can use normal NetRom/TheNet commands
;
;       If he connects to the BBS Callsign or Alias he will be connected
;       directly to a BBS port. If none are available, the connect will
;       be rejected.
;
;       Note that of you are running only a NODE (ie BBS=0), or
;       or just a BBS (NODE=0), then you must still put in two pairs of calls,
;       but they MUST be the SAME.
;
;       If you are running both, the calls MUST be different

NODECALL=KN6PE-3              ; NODE CALLSIGN
NODEALIAS=CUPTNO


BBSCALL=KN6PE-5                        ; BBS CALLSIGN
BBSALIAS=HOSPTL                        ; BBS ALIAS
```

```
;
;       'ID' MESSAGE - SENT EVERY IDINTERVAL MINS
;
;       WILL BE ADDRESSED FROM THE PORT CALLSIGN (IF DEFINED)
;           ELSE FROM THE NODE CALL
;
;       The following format allows KA nodes to include your system in
;       their 'Nodes' lists.
;
IDMSG:
Network node (HOSPTL)
***
;
UNPROTO=MAIL                    ; DEFAULT UNPROTO ADDR

;       'I' COMMAND TEXT
;
;       Note that the bit about needing a port param in connects is only
;       necessary if you are running more that one (radio) port.
;
INFOMSG:
KN6PE Packet Switch, Cupertino, CA. CM87xv
Commands are basically the same as NET/ROM, but to connect to another
normal station (not another node), you must specify a port number before
the callsign. Use PORTS command to list available ports. The BBS command
connects you to the associated Mailbox.
***
;
;       CTEXT - Normally will only be sent when someone connects to
;       the NODE ALIAS at level 2. If FULL_CTEXT is set to 1, it
;       will be sent to all connectees. Note that this could confuse BBS
;       forwarding connect scripts.
;
CTEXT:
Welcome to SCC DHS/Hospital Packet Switch in Cupertino
Type ? for list of available commands.
***

FULL_CTEXT=0                    ; SEND CTEXT ONLY TO L2 CONNECTEES TO ALIAS

;       Network System Parameters
;
OBSINIT=5                       ; INITIAL OBSOLESCENCE VALUE
OBSMIN=4                        ; MINIMUM TO BROADCAST
NODESINTERVAL=60                ; 'NODES' INTERVAL IN MINS
IDINTERVAL=15                   ; 'ID' BROADCAST INTERVAL (UK Regs require
                                ; an AX25 ID every 15 mins)
;
BTINTERVAL=0                    ; NO BEACONS

L3TIMETOLIVE=25                     ; MAX L3 HOPS
L4RETRIES=3                     ; LEVEL 4 RETRY COUNT
;
;       I have seen suggestions that L4TIMEOUT should be increased to very
;       high values (even as long as seven mins). Although 60 may be a bit
;       short in some cases, I STRONGLY advise that you dont go much above
;       120 secs unless you understand ALL the implications.
;
;       I've set TTL and TIMEOUT to the values agreed by the latest SYSOPS
;       meeting - this does not imply that I agree with them!
;
L4TIMEOUT=120                   ; LEVEL 4 TIMEOUT
L4DELAY=10                      ; LEVEL 4 DELAYED ACK TIMER
L4WINDOW=4                      ; DEFAULT LEVEL 4 WINDOW
;
MAXLINKS=30                     ; MAX LEVEL 2 LINKS (UP,DOWN AND INTERNODE)
MAXNODES=120                    ; MAX NODES IN SYSTEM
MAXROUTES=35                    ; MAX ADJACENT NODES
MAXCIRCUITS=64                  ; NUMBER OF L4 CIRCUITS
MINQUAL=10                      ; MINIMUM QUALITY TO ADD TO NODES TABLE
```

```
BBSQUAL=30                      ; BBS Quality relative to NODE - used to
                                ; limit 'spread' of BBS through the network
                                ; to your required service area. I've been
                                ; asked to set a low default to encourage you
                                ; to think about a suitable value. Max is 255

BUFFERS=255                     ; PACKET BUFFERS - 255 MEANS ALLOCATE AS MANY
                                ; AS POSSIBLE - NORMALLY ABOUT 130, DEPENDING
                                ; ON OTHER TABLE SIZES
;
;       TNC DEFAULT PARAMS
;
PACLEN=120                      ; MAX PACKET SIZE
;
;       PACLEN is a problem! The ideal size depends on the link(s) over
;       which a packet will be sent. For a session involving another node,
;       we have no idea what is at the far end. Ideally each node should have
;       the capability to combine and then refragment messages to suit each
;       link segment - maybe when there are more of my nodes about than 'real'
;       ones, i'll do it. When the node is accessed directly, things are a
;       bit easier, as we know at least something about the link. So, from
;       Version 3.11 onwards, there are two PACLEN params, one here and
;       one in the PORTS section. This one is used to set the initial value
;       for sessions via other nodes, and for sessions initiated from here.
;       The other is used for incoming direct (Level 2)      sessions. In all cases
;       the TNC PACLEN command can be used to override the defaults.
;
;       The main reason for changing this now was a request from someone
;       wanting to run an HF port.
;
;
;
TRANSDELAY=1                    ; TRANSPARENT MODE SEND DELAY - 1 SEC
;
;       Level 2 Parameters
;
; T1, T2 and N2 are now int the PORTS section
;
T3=180                          ; LINK VALIDATION TIMER (3 MINS)

IDLETIME=900                    ; IDLE LINK SHUTDOWN TIMER (15 MINS)
;
;
;       Configuration Options
;
BBS=1                           ; INCLUDE BBS SUPPORT
NODE=1                          ; INCLUDE SWITCH SUPPORT
;
HIDENODES=0                     ; IF SET TO 1, NODES STARTING WITH # WILL
                                ; ONLY BE DISPLAYED BY A NODES * COMMAND
;
;       THE *** LINKED COMMAND IS INTENDED FOR USE BY GATEWAY SOFTWARE, AND
;       CONCERN HAS BEEN EXPRESSED THAT IT COULD BE MISUSED. I RECOMMEND THAT
;       IT IS DISABLED IF NOT NEEDED.
;
ENABLE_LINKED=N                 ; CONTROLS PROCESSING OF *** LINKED COMMAND
                                ; Y ALLOWS UNRESTRICTED USE
                                ; A ALLOWS USE BY APPLICATION PROGRAM
                                ; N (OR ANY OTHER VALUE) DISABLE
;
;
;
;
;       'COMBIOS' Port definitions.
;
;       This section defines the virtual TNC's that the code supports.
;
;       The basic format is:
;
;           TNCPORT
```

```
;                COM=n           ; COMBIOS port number
;                 APPLMASK=nn    ; Defaults to 1 (BBS)
;                  APPLFLAGS=nn  ; Defaults to 6
;             ENDPORT
;
;        See APPLS.DOC for details on use of APPLFLAGS and APPLMASK
;
;        Only TNC2 applications are supported through this interface.
;        For information on using KISS or DEDHOST applications, see file
;        DRIVERS.DOC
;
;        Dont try to define more than 16 ports.
;
TNCPORT
        COM=1
ENDPORT


TNCPORT
        COM=3
        APPLFLAGS=4              ; NO 'CONNECTED' TO USERS
ENDPORT


;
;        AX25 PORT DEFINITIONS
;
;        These define the external links - normally to radios, but possibly
;        to other computers, modems, etc.
;
;        The hardware type and protocol are now defined separately, but
;        at the moment only a limited number of combinations are possible
;
;        Interrupt levels may be shared by any cards with suitable
;        hardware. Examples are all but the earliest DRSI cards, and
;        a MS400 modified as described by AA4RE in his MBBIOS documentation.
;
;        There is a significant overhead in using the shared interrupt
;        feature - try to use it on relatively low speed links, and
;        wath out for TX underruns/RX overuns.
;
;
;        See file PORTS.DOC for full details of available paramters.
;
;        Note that all timer values are in ms intervals. Most TNC's
;        use different units for the various timers, so be careful!
;
;        The timings are all derived from the PC's timer interrupt,
;        who's frequency is about 18.2 HZ, so the resolution is only to
;        approx 50ms.
;
PORT
        ID=144.950 SCC/DHS Port
        TYPE=ASYNC
        PROTOCOL=KISS
        IOADDR=3F8H
        INTLEVEL=4
        SPEED=9600
        CHANNEL=A
        QUALITY=10
        MAXFRAME=2
        TXDELAY=500
        SLOTTIME=100
        PERSIST=64
        FULLDUP=0
        FRACK=7000
        RESPTIME=2000
        RETRIES=10
        PACLEN=120
ENDPORT
```

```
ROUTES:
;
;       ROUTES TO LOCK IN
;
;       specify Callsign, Quality and Port. You can now also specify
;       MAXFRAME, FRACK, PACLEN (in that order) to override the port
;       defaults.
;
; G4RFG-1,0,2                    ; MARGINAL, SO QUALITY = 0
; G4RFG,0,1
; GB7LX-2,0,1
; GB7LX-7,20,2
; G0GDR-1,100,2,1,6000,100       ; not always very good, so maxframe=1
***
;
;       APPLICATIONS SUPPORTED
;
;       UP TO 8 ENTRIES OF UP TO 12 BYTES EACH
;
;       THE FIRST 3 ARE RESERVED FOR BBS, HOST, AND REMOTE SYSOP - YOU
;       CAN DEFINE THE OTHERS AS YOU LIKE.
;
;       FOR COMPATIBILITY WITH EARLIER VERSIONS, JUST ENTER APPLICATIONS=BBS
;
;       NAMES STARTING WITH * ARE NOT INCLUDED IN 'VALID COMMANDS' DISPLA
;
APPLICATIONS=BBS,,*SYS,CHAT/C NMCHAT
;
;       NOTE THAT THE LAST ITEM CREATES A 'COMMAND ALIAS'. IF THE USER
;       ENTERS 'CHAT' THIS IS CONVERTED BY THE SWITCH TO 'C NMCHAT'. THE
;       TOTAL LENGTH OF THE PAIR CANNOT EXCEED 15 BYTES
;
```

10	When done, save the file.	
11	Run the BPQCFG.EXE program by double-clicking the program name.	This program converts the configuration file BPQCFG.TXT into a binary file (BPQCFG.BIN) that is accessed by the BPQCODE.EXE program.
		VERIFY that the program reports… "Conversion (probably) successful"
		NOTE: any subsequent changes to the BPQCFG.TXT will require this program to be run again, BPQCODE.EXE to be stopped, then re-started for the changes to take affect.

2.6   Setting up the KPC-3

12	Using any terminal emulator program, confirm the KPC-3 is working correctly in Host Mode.	I used Hyperterm. Make sure you can get to the command prompt.
13	Put the TNC is KISS mode. At the TNC cmd prompt, enter the following commands: cmd: Int kiss cmd: reset Exit the terminal emulator program.	After typing reset, you won't get any other response from the TNC. At this point, the TNC is in KISS mode.

2.7   Initial BPQ Configuration Test

To test that the BPQ configuration is correct, do the following:

14	Turn on your radio and TNC. Set the frequency to your packet channel.	An obvious step, but how many of you actually tried to operate packet without doing this?
15	Make sure you are in the BPQ directory (cd \BPQ)	For the test, when you run the BPQ program, you need to be in the same directory as the BPQCFG.BIN file.
16	Run the BPQCODE program.	A DOS window is opened and a message is displayed stating that the program is started. DO NOT close this window. Closing the window will end the BPQCODE program.
17	Verify you can connect to the BPQ port. From this 2nd PC, enter the following command to connect to the node cmd: connect kn6pe-3	This requires a 2nd PC with packet capabilities and a Terminal Emulator program. Make sure that PC's TNC is working correctly. A connect message is displayed and you should be connected to the BPQ Node.
18	Test some basic NODE commands. From this 2nd PC, enter the following commands: ? Causes the Node commands to be displayed INFO Displays the "INFOMSG" message PORTS Displays the single port we configured	If you get this far, this confirms that the BPQ is running and the config file was probably set up correctly.
19	Stop the BPQCODE Program.	This is done in the DOS window. Close the window to make sure it is off.

2.8   Final System Configuration

20	At the BPQ node computer edit the AUTOEXEC.BAT file, and add the following lines. CD \BPQ BPQCODE	The BPQCODE must ultimately be loaded as a system program, not a user's session program. FBB will be looking for it as a system program. This is done by adding these lines to the AUTOEXEC.BAT. Then, at boot up, before the rest of Windows is loaded, the BPQCODE program is run. **NOTE:** this file may be hidden. To unhide all files: Start> Settings> Control Panel> Folder Options> View. Click on "show hidden files and folders"… press OK
21	Copy the following files from the C:\BPQ directory to the C:\Windows\Systems directory. BPQCODE.386 BPQDLL.DLL	These are required for BPQCODE to run as a system program. If you skip this step, BPQCODE will error out when it is run. **NOTE:** this file may be hidden. To unhide all files: Start> Settings> Control Panel> Folder Options> View. Click on "show hidden files and folders"… press OK

22	Reboot the BPQ node computer.	After the initial Windows 98 banner, the screen will go BLACK and display one line at the top of the monitor stating the BPQCODE is started. Windows will continue to boot as usual. BPQCODE is now loaded as a system program.
23	Verify you can connect to the BPQ port. Enter the following command: cmd: connect kn6pe-3 Try entering some of the commands previously tried.	From another PC with packet capabilities, run a Terminal Emulator program. A connect message is displayed and you should be connected to the BPQ Node.
24	If you get this far, you are ready for the FBB portion of the setup.	

3   Setting up FBB

3.1   Introduction

Configuring the FBB software can include several different kinds of options to support a variety of needs.

This instance of FBB has the following requirements:

1. Support 14 hospitals. Additional medical centers may be added later.

2. Allow up to 8 simultaneous connections.

3. No networking to other BBSs.

3.2   Before you begin

Before beginning, print the following documents and put them in a binder. You should have them for reference.

First Doc	www.f6fbb.org/fbbdoc/docfirst.htm, For SysOps who have never used FBB software before.
SysOp Commands	www.f6fbb.org/fbbdoc/docsysop.htm, Describes the SysOp commands available under the BBS menu.
Console Commands	www.f6fbb.org/fbbdoc/docfunck.htm, Describes the console commands.
BBS commands	www.f6fbb.org/fbbdoc/docbbs.htm, Overview of the BBS commands.
INIT.SRV	www.f6fbb.org/fbbdoc/fmtinit.htm, The file that FBB looks for when starting up.
INIT.PORT.SYS	www.f6fbb.org/fbbdoc/fmtport.htm, The file that FBB looks for on port information.
BPQ config info	www.f6fbb.org/fbbdoc/fbpq.htm, The file that describes how BPQ is configured into the system.

Unlike BPQ, the FBB configuration is more extensive with both interactive (forms based) and manual (you edit a config file) configuration setups. All configurations will end up in one of several configuration files. Some of these files are (assumes the default C:\FBB installation directory is selected at install time):

Configuration Files that you must check or change

These files should be changed either programmatically or manually.

Config File	Location	Updated By	Description
init.srv	c:\fbb\.	Instwfbb.exe	Contains most of the FBB settings.
port.sys	c:\fbb\system\	Instwfbb.exe	Contains a variety of information on the TNCs, the number of channels, and other I/O related configuration.
inittnc1.sys	c:\fbb\system\	Manually	Contains startup parameters for TNCs
maint1.sys	c:\fbb\system\	Manually	Contains shut-down parameters for TNCs

Config File	Location	Updated By	Description
bbs.sys	c:\fbb\system\	Manually	Defines all BBSs that receive bulletins. All entries are removed for this instance.
forward.sys	c:\fbb\system\	Manually	Contains information for how to forward messages.
passwd.sys	c:\fbb\system\	Manually	Password file for remote SYSOPs.

Configuration Files that you could change

These files may require some changes if your situation requires it. I made no changes to these files.

beacon1.sys	c:\fbb\system\	Manually	Configures the Beacon Text
cron.sys	c:\fbb\system\	Manually	Defines which tasks or programs are run every hour.
gateway.sys	c:\fbb\system\	Manually	
langue.sys	c:\fbb\system\	Manually	Defines which languages are useable by the BBS.
memo.sys	c:\fbb\system\	Manually	
multi.txt	c:\fbb\system\	Manually	
protect.sys	c:\fbb\system\	Manually	Defines "safe" directories
redist.sys	c:\fbb\system\	Manually	Defines bulletin redistribution.
reject.sys	c:\fbb\system\	Manually	
swapp.sys	c:\fbb\system\	Manually	Swap to/from/etc in messages (?)
themes.sys	c:\fbb\system\	Manually	Defines various theme zones

Executable Files

Along with the Configuration files, these are the key executable files that you will encounter.

Exe File	Location	Description
Runfbb.exe	c:\fbb\bin	The FBB program.
Runfbb.bat	c:\fbb\bin	This is the very first file that Runfbb invokes. Per the documentation, "you really do not have to make any changes in the file, unless you did some changes during the installation process. … path names may be the extent of the changes required."
Instwfbb.exe	c:\fbb\bin	A forms-based program that collects information and writes it to the INIT.SRV and PORT.SYS files. Eighteen menus are accessed sequentially where you can enter configuration data. While most of the forms are very intuitive, the final few BBS port setup forms, in my opinion, were not. This program is called during the Installation process as well as selectable from the FBB BBS application form the FBB "Main Parameters" menu.

3.3 Finding the FBB Software

The best reference for the FBB BBS software is the source… www.f6fbb.org. There are several websites that have the BPQ software available for download and, finding them are easy.

	Create the directory: \Download\FBB	
1	Run your browser (Netscape, IE, etc.)	
2	Proceed to www.f6fbb.org.	This is the author's site for the FBB BBS software.
3	On the left, find and click on "Latest Versions"	
4.	In the WinFBB category, download the 4 files to the directory created above: WinFBB 7.00g Disk 1 (w700g-1.zip) WinFBB 7.00g Disk 2 (w700g-2.zip) WinFBB 7.00g Disk 3 (w700g-3.zip) WinFBB 7.00i Upgrade to 7.00i (w700g-1.zip)	

3.4 Installation

FBB comes with a Windows setup program that manages the entire setup process.

1	Unzip the contents of the following 3 files into the directory where the zip files are located. w700g-1.zip w700g-2.zip w700g-3.zip	
3	Run the INSTALL.EXE file.	This runs the install process.
4	When prompted, accept the default install directory for FBB (C:\FBB).	If you want WinFBB installed elsewhere, change it now by entering a new drive/path, but be prepared to edit any file that had c:\FBB as the default.
5	When prompted, read and close the readme file.	
6	Accept changes to the SYSTEM.INI file.	This step adds the following line to support TNC's: comm.drv=fbbcomm.drv
7	Accept changes to the AUTOEXEC.BAT file.	This adds 2 KB to the environment.
8	Configure the FBB software (described below).	As one of the last steps of the installation process, the FBB configuration program (INSTWFBB) is run. The following section covers this program.

3.5 Main FBB Software Configuration

The INSTALL.EXE program runs the INSTWFBB program. This program presents a sequence of forms that collect information about the FBB instance.

The following 18 tables describe the changes (in **BOLD**) to each form that I made to get my instance of FBB up and running the way I wanted. Final configuration edits can be made directly to the INIT.SRV and PORT.SYS files using any editor that can create and save ASCII files, of from the INSTWFBB program from one of FBBs' menu options.

1. BBS Information

This is the first form displayed during the Configuration process. The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
BBS Call Sign:	**KN6PE**	This is the call sign to which users will connect. **Must match the call sign used by BPQ.**
SSID:	**5**	**Must match the SSID used by BPQ.**
H Route:	**#NCA.CA.USA.NOAM**	The hierarchical address to this BBS. This will be critical to get right in the event Forwarding is later enabled. Enter your Route.
City:	**Cupertino**	The city where the BBS operates. This text shows up as part of the BBS Beacon message.
Qth Locator:	**CM87xv**	The maidenhead grid identifier for this BBS.
Zip Code:	**95014**	The zip code of where this BBS is located.
Msg Header	[$c] FBB$E $$:$R	Default value.

2. Directories and Special Files

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
System Files:	C:\FBB\SYSTEM\	Default value
Messages:	C:\FBB\MAIL	Default value
Bin Messages:	C:\FBB\BINMAIL	Default value
YAPP:	C:\FBB\USERS\YAPP	Default Value
Documentation:	C:\FBB\DOCS	Default Value
Import file:	C:\FBB\MAIL.IN	Default value
BBS-Up File:	<blank>	
BBS-down File:	<blank>	

3. FbbDos Virtual Disks

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
Disc C	C:\FBB\USERS	Default value. All other fields left blank.

4. Sysop and UI Information

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
SYSOP's Call Sign:	**KN6PE**	Name of the primary SYSOP
SysOp First Name:	**Jim**	
SysOp Msgs To:	*****	Default value
WP Msg Via:	NO	Default value, unchecked
Back nb in UI:	500	Default value
Seconds between UI:	5	Default value
Ack Messages in UI:	YES	Default value, checked
Transit Priv mail in UI:	YES	Default value, checked
End user priv mail in UI:	YES	Default value, checked
Subject displayed in UI	NO	Default value, unchecked

5. Default options at first connection

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
Expert	**YES**	Checked. Because all planned users will connect with Outpost, we do not need superfluous prompts.
Sysop	NO	Default value, unchecked
BBS	NO	Default value, unchecked
PMS	NO	Default value, unchecked
Paging	NO	Default value, unchecked
See All messages	**NO**	Uncheck. Displays the list of messages for a station on initial connection. Outpost will prompt for an exact message list anyway. If left checked, this just adds unnecessary channel traffic.
Unproto List	**NO**	Uncheck. Used by other systems listening to the UI packets on a frequency to create a list identical to the one of the BBS. If left checked, this just adds unnecessary channel traffic.
List of new messages at Logon	**NO**	Uncheck. Displays the list of all new messages on the BBS since last connection. Outpost will prompt for an exact message list anyway. If left checked, this just adds unnecessary channel traffic.

6, 7, 8. Access Security Options

The next 3 screens are essentially the same, but for different security levels. The information from this form is written to the C:\Fbb\init.srv file.

Field	User	SYSOP	Security after Sysop command	Comments
Read all messages	Yes	Yes	Yes	Default value
Kill all messages			Yes	Default value
SYS Command Allowed		Yes	Yes	Default value
Remote SysOp commands			Yes	Default value
Edit FbbDos labels		Yes	Yes	Default value
Delete FbbDos files		Yes	Yes	Default value
Access to all gateways			Yes	Default value
Run DOS Programs			Yes	Default value
Access to the whole disk			Yes	Default value
Special Commands (/A, /R)			Yes	Default value

9. Warning messages

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
<all fields>	YES	Default Value, checked.

10. Forwarding

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
<all fields>	**NO**	Uncheck these boxes. FBB comes with the first 3 fields -- FBB Forwarding, Compressed Forwarding, and Compressed forwarding with resume – checked. Because our implementation of FBB will not do any forwarding, uncheck all fields.

11. Miscellaneous

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
Test Mode:	**NO**	Uncheck this box. FBB comes with this checked. Uncheck this box to ensure FBB talks to the BPQ ports.
Full Log	YES	Default Value, checked
Indication of Channels:	YES	Default Value, checked

Field	Value	Comments
User must give information	**NO**	Uncheck. Because we know who is logging in, there is no reason to prompt for this info. If forwarding is enabled in the future and the BBS gets more general use, then we may want to know who is using the system for audit purposes. If this BBS becomes heavily networked, then this should be changed to YES, and confirm that all Hospital users are pre-registered prior to an emergency.
Bulletins in mail beacon:	Yes	Default value
<all other fields>	<used default>	Default value.

12. Memory Cache

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
<all fields>	YES	Default values, checked.

13. Color configuration

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
<all fields>	<default values>	Default values. Else, change to suit your needs.

14. Windows Information

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
Buffer of user window	1000	Default value.
Buffer of console window	1000	Default value.
Buffer of monitor window	1000	Default value.

15. Time Information

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
Difference with UTC (hrs):	**-7**	Cupertino is 7 hours behind UTC time (daylight savings time at the time of this writing).
Time for housekeeping (hrs):	2	Default value.
Time out user (Min)	10	Default value.
Time-out during fwd (min):	10	Default value.
Lifetime for bulletins (days):	30	Default value. Need to assess based on the requirements of the served agency.
YAPP max download (KB)	100	Default value.
Modem max download (KB):	0	Default value

16. Servers

The information from this form is written to the C:\Fbb\init.srv file.

Field	Value	Comments
<all values>	<use defaults>	Default values.

17. Communication Configuration

The information from this form is written to the c:\Fbb\System\PORT.SYS file.

Field	Interface Value	Comments
COM1	None	Default values.
COM2	None	Default values.
COM3	None	Default values.
COM4	None	Default values.
COM5	None	Default values.
COM6	None	Default values.
COM7	None	Default values.
COM8	**BPQ VXD**	Default values. Only COM8 is set for an interface type in accordance with how BPQ is set up. Refer to the BPQ documentation for the COM8 description.
COM9	None	Default values.
COM10	None	Default values.

18. Communication Configuration

The information from this form is written to the c:\Fbb\System\PORT.SYS file.

Field	Value	Comments
Port:	**1**	Port selection is on the left. This form is used to set up each port. Selecting a different port will bring up the current configuration for that port. For this installation, only PORT 1 is used.
Host Mode (Interface Type):	**BPQ**	This label is not marked, but includes the 2 left-most columns of 9 interface choices on bottom of the form. Select this first, since it will enable and set up some of the following default fields.
COM:	**8**	BPQ operates on Com Port 8 per the BOQ doc.
BPQ Port:	**0**	Set to 0
Nb ch:	**8**	The number of concurrent users that can connect at a time.
Paclen:	230	Default value when BPQ is selected
MaxFrame:	4	Default value when BPQ is selected
Nb Fwd:	1	Default value when BPQ is selected
Max Blk:	10	Default value when BPQ is selected
Fwd Min:	30	Default value when BPQ is selected
Fwd Per:	60	Default value when BPQ is selected
Info:	**144.950**	The 2 meter frequency on which this BBS will operate. This is for display only.
Port Mode:	**Users**	Checked. This is 1 of 3 choices below the Info field.
Services:	**None**	Unchecked. YAPP and GATEWAY are optional services that can be handled on this port. These are currently not needed (or completely understood) for this setup to work.

3.6   Completing FBB Software Configuration

9	When done,
	        press File > Save.
	        press File > Exit	

10	Accept all Language files.	This is optional, and appears to have no impact on the FBB.
11	Accept the Reboot when prompted.	This is required to allow the COM driver to take effect.

3.7   Upgrade to version w7.00i

12	Unzip the file w700i-1.zip.	
13	Copy the WFBB.EXE file to the C:\FBB\BIN directory	This step replaces the existing w7.00g WFBB.EXE file version.

3.8   Check the INIT.SRV File

Additional information is available from http://www.f6fbb.org/fbbdoc/fmtinit.htm

If you completed the "Main FBB Software Configuration" step (INSTWFBB.EXE above) correctly, no further changes should be needed to this file. When complete, the C;\FBB\Init.srv should look like this. You should be able to see each change mapped into this file.

```
# FBB7.00
#
############################
# INIT.SRV for FBB 7.00    #
# for KN6PE BBS by KN6PE  #                              Manual change
############################
#
# Set-up file
#
#
# Callsign and H-route of BBS, without SSID
KN6PE.#NCA.CA.USA.NOAM
#
# SSID of BBS
5
#
# Qra Locator of this BBS
CM87XV
#
# Qth of this BBS
Cupertino, CA
#
# Directory of system files
C:\FBB\SYSTEM\
#
# Directory of message files
C:\FBB\MAIL\
#
# Directory of compressed files
C:\FBB\BINMAIL\
#
# Directory of users' DOS.
# Up to 8 drives (will appear as drive A: to H:) may be specified.
# These can be physical drives (disks/hard-disks) or direct on C:
*,*,C:\FBB\USERS\,*,*,*,*,*
#
# Directory of YAPP files
C:\FBB\USERS\YAPP\
#
# Directory of documentation files
C:\FBB\DOCS\
#
# First name of SYSOP
Jim
#
# Callsign of SYSOP
KN6PE
#
# May have more callsigns, seperated by a space.
# Callsign (and route if needed) that will have copy of SYSOP messages
# ***** cancels.
*****
#
# Path and filename for import file
C:\FBB\MAIL.IN
#
# Type of video and time before screenblank
# Type: 0=CGA, 1=EGA, 2=VGA
# Screenblank:  Number of no-activity minutes before blanking.  0=disable
2 60
#
```

```
#
# Full log (OK or NO)
OK
#
# Direct video (OK or NO)
OK
#
# Indication of channels (OK or NO)
OK
#
# Test-Mode (NO - OK) and WinFBB ONLY: watchdog: 1->9 = COM1->COM9 or
# 81->84 = LPT1->LPT4.
NO
#
# Use (when possible) forward type FBB (OK or NO)
#############################################################################
# New in 5.15c45-51: Parametres:
#  1  : A space is mandatory before the @ in a send message command
#  2  : The length of the fields of a hierarchical address is not
#       tested to be 6 characters
#  4  : The header line of a message is not truncated to the space before
#       the 79th character
#  8  : Header MBL/RLI
#  16 : If there is no BBS field, the callsign of the BBS is sent to the PMS
#  32 : Deletes the DATA messages sent to SYSOP
#  64 : Don't use the BID recovered from headers and use a new one
#  128: Accepts forwarding only from pre-declared BBS
#  256: WP Messages are not held.
#  512: XForwarding protocole has priority on FBB protocole.
# 1024: Generation of an alternate BID like F6FBB-12345 (for dual BBS site)
# 2048: Checksum unvalidated on XFwd.
# 4096: Test of callsigns is less strict.  Allows all "callsigns" as long
#       as they have one figure (0-9) anywhere in the callsign.
NO
#############################################################################
#
# Use (when possible) compressed forward (OK or NO)
#
# Add 1 if forward-resume is allowed (should normally be..)
#############################################################################
# New in 5.15c51:
# Add 2 if XFWD is allowed
NO 0
#############################################################################
# HROUTE look-up and database update validation (OK or NO)
OK
#
#  User must give Name, HomeBBS, Qth and ZipCode (OK or NO)
OK
#
# First connection mask :
# 0   : Disable
# 1   : Excluded
# 2   : Local
# 4   : Expert
# 8   : Sysop
# 16  : BBS
# 32  : Pagination
# 64  : Guest
# 128 : Modem
# 256 : See-all-messages
# 512 : Unproto list asking is allowed
# 1024: List of new messages at logon
1920
#
#
# Security codes.
# Users can :
# 1  : Read all messages, including private messages
# 2  : Kill all messages
# 4  : Send SYS command
```

```
# 8  : Use remote sysop commands (edit, forward, etc...)
# 16 : Edit labels in YAPP, FBBDOS, DOCS
# 32 : Can delete files in YAPP, FBBDOS
# 64 : Have access to all gateways
# 128: Run DOS commands
# 256: Have access to the entire hard disk
# 512: Have access to commands /A (stop) and /R (Reboot)
# All:   Sysop: Sysop after successful SYS-command:
0      53     1023
#
# New in 5.15b:
# Warning-messages to sysop:
#    1: Disk almost full (less than 1 Mb free)
#    2: Error in system-file (FORWARD, BBS, REJECT..)
#    4: Server-error
#    8: Ping-Pong
#   16: Missing forward-route
#   32: Missing NTS-route
#   64: Message not found
#  128: Error in forward-proposal
#  256: Message rejected at remote BBS
#  512: Message is being held at remote BBS
#
1023
# Time (hour) for housekeeping (cleanup of messages)
2
#
# Time-out for normal users and during forward:
10 10
#
# Max download-size (kilobytes) pr period for YAPP and via modem.
# 00 disable
100 0
#
# Hours +/- in relation to UTC
-7
#
# Number of callsigns in mail beacon.  B means include local bulletins.
B20
#
# Number of lines in scroll buffers
#
# User  Console  Monitoring
1000 1000 1000
#
# Text for forward header (Do not change !)
#
[$c] FBB$E $$:$R
#
# Number of saved BIDs. Max 32000
# Use as many as possible (depends on memory)
10000
#
# Lifetime for bulletins (days)
30
#
##########################################################################
# New in 515c7:  OVR removed
# Use memory-vcache.  No=0, Yes=1 (preferred)
# In memory-cache: BID MSG HIE SCR WPG REJ FWD
1 BID MSG HIE SCR WPG REJ FWD
#
##########################################################################
#
# List of routes to send WP messages

#
#
# Zip of this BBS
95014
#
```

```
# Back number, delay, type of messages in unproto lists
# A = ACK-messages
# P = Personal messages to local users
# V = Personal messages in transit
# M = Subject is replaced with stars in personal mail
#
500 5 AVP
#
# DRSI and TFPC interrupt (Hexadecimal, default FF and FE)
FF
#
# Programs to start just before BBS starts and shuts down
#
# BBS-UP program (default empty)

#
# BBS-DOWN program (default empty)

#
# Colour on texts :
#
# Black       : 0     Dark grey      : 8
# Blue        : 1     Light blue     : 9
# Green       : 2     Light green    : 10
# Cyan        : 3     Light cyan     : 11
# Red         : 4     Light red      : 12
# Magenta     : 5     Light magenta  : 13
# Brown       : 6     Yellow         : 14
# Light grey  : 7     White          : 15
#
#
# Background colors :
#
# Status (top)
1
# Separation (middle)
7
# Texts (bottom)
0
# Menues
4
#
#
# Foreground colors :
#
# Status (top)
7
# Separation (middle)
1
# Menues (bottom)
14
# Text sent
10
# Text received
12
# UI (headers)
15
# UI (text)
7
# Console
14
# Beacon
6
# Channel marking
11
#
-------
#
# List of servers :
# Internal servers REQCFG and WP new in 5.15
#
```

```
REQDIR  REQDIR.COM    Request directory
REQFIL  REQFIL.COM    Request file
REQCFG  **********    Request configuration
WP      **********    Request White pages info
MULTI   MULTI         Multi-server, default language (english)
#
# End of INIT.SRV file
#
```

3.9 Check the PORT.SYS File

The following is an excerpt from www.f6fbb.org/fbbdoc/fmtport.htm.

If you completed the "Main FBB Software Configuration" step (INSTWFBB.EXE above) correctly, no further changes should be needed to this file. In this file we decide what kind of TNCs to use, how many available channels etc. A line starting with # is a comment-line. The following example has the bulk of the text comments removed. See the documentation for details on all fields.

```
# FBB7.00
# File for programming of channels and TNCs.
#
#Ports TNCs
1     1
#
#Com Interface Address (device)   Baud
8     2         0              9600
#
#TNC NbCh Com MultCh Pacln Maxfr NbFwd MxBloc M/P-Fwd Mode Freq
0   0    0    0      0     0     0     0      00/01   ----  File-fwd.
1   8    8    0      230   4     1     10     30/60   UQ   144.950
#
#TNC Nbs Callsign-SSID Mode
#1   1   LA1B-1        B
#
# End of file.
#
```

3.10 Final System Configuration

14	Edit the AUTOEXEC.BAT file, and add the following lines. PATH=%PATH%;c:\FBB\BIN	This adds the FBB path to the system configuration. When done, the autoexec.bat file should look like this… PATH=%PATH%;c:\FBB\BIN CD \BPQ BPQCODE
15	Reboot the computer.	After the initial Windows 98 banner, the screen will go BLACK and display one line at the top of the monitor stating the BPQCODE is started. Windows will continue to boot as usual. BPQCODE is now loaded as a system program. FBB should be ready to run.

3.11 Initial Test

16	Run the FBB Program as follows:
	
	START >
	  Programs >
	    FBB for Windows >
	      WinFBB
		The first time you run FBB, you will be prompted to create a bunch of system directories. Accept all directory requests.

17	Verify you can connect to FBB. From this 2nd PC, enter the following command: `cmd:   connect kn6pe-5`	From another PC with packet capabilities, run a Terminal Emulator program. Make sure that PC's TNC is working correctly. A connect message is displayed and you should be connected to the FBB BBS.
18	Send a message to yourself: `BBS HELP> `<u>`SP  <your call sign>`</u> When prompted, enter a message title. When prompted, enter a message. End the message. List messages to you… `BBS HELP> `<u>`LM`</u> Read the message… `BBS HELP> `<u>`R ###`</u> Exit the BBS `BBS HELP> `<u>`B`</u>	This is the best simple test to see if all is working. By sending a message to yourself, you can immediately list and read it back.

3.12 Update the BBS.SYS File

Stations to which BBSs you forward (the callsigns after A in FORWARD.SYS) must also be in BBS.SYS. In my case, there will be no forwarding. Therefore, all call signs are removed.

NOTE: There must be 80 (from 1 to 80) lines, even if you do not use them all. The format is very critical, so do NOT change line-arrangement! I have excluded a block of numbers. This is an incomplete sample only. See www.f6fbb.org/fbbdoc/fmtbbs.htm for details.

```
###########################
# BBS.SYS for FBB 7.00   #
# for K6FB BBS by KN6PE  #
###########################
#
# File containing all BBSs we forward to.
#
# Make sure that NO numbers are removed.
#
01
02
03
04
05
06
 :
 :
74
75
76
77
78
79
80
```

3.13 Check the BEACON1.SYS File

The following is an excerpt from www.f6fbb.org/fbbdoc/fmtbeaco.htm.

This file makes the text that will be broadcast as mail-beacon from the BBS. The first line is a parameter that says how often to send the beacon. %15 means "send one beacon every 15 minutes". The next line says to what unproto-address the beacon will be sent.

This file is used as is. No changes were applied.

```
# %15
! MAIL-1
$d $T <<< Mailbox $O $c >>> $N active messages.
Messages for$W$Q
```

3.14 Update the FORWARD.SYS File

In my case, there will be no forwarding. Therefore, the entire file is commented out. This is a detailed configuration file. I commended everything out. See www.f6fbb.org/fbbdoc/fmtforwa.htm for details.

```
****************
* Forward-file *
*  for KN6PE   *
****************
*
*
* HF
*
** < FWD\F6ABJ
*
* UHF/VHF
*
** < FWD\LA1B
*
* PMS
*
*< FWD\G0DJT
*< FWD\LA6IM
*< FWD\LA9RY
*< FWD\LA4BL
*
* EXPORT
*
** < FWD\AMSAT
*
* Parking HF-rig
*
*P C
*D QSY2 14.111
```

3.15 Update the INITTNC1.SYS File

The following is an excerpt from www.f6fbb.org/fbbdoc/finittnc.htm.

When the BBS starts, it sends some standard parameters to the TNC, like PACLEN, MAXFRAME etc. These parameters are in PORT.SYS. But in addition to this, we may send some more parameters to each TNC. We send parameters to TNC 1 with the INITTNC1.SYS, to TNC 2 with INITTNC2.SYS etc.

The file used for this instance is per the BPQ file found at www.f6fbb.org/fbbdoc/fbpq.htm.

```
#
# INITTNC for BPQ interface
#
A1
R0
UMAIL
M1
N1
```

3.16 Check the MAINT1.SYS File

This file is used as is. No changes were applied.

```
UR1
CTBBS ($c) was shut down for service $d $T.
```

3.17 Update the PASSWD.SYS File

The following is an excerpt from www.f6fbb.org/fbbdoc/fmtpassw.htm.

The first line in this file is the generic password. That is, this password will be used for all sysops that do NOT have a special password of their own.

The next line is a special password for one special sysop, in this case, KR6CO. The two first numbers correspond to the same "security-numbers" in INIT.SRV (check this). In this case, KR6CO will have the security- number 69 before a successful SYS-command, and 1023 after. In the next line the numbers for K6TEN is 123 and 1023. Each line in PASSWD.SYS can have a maximum of 255 characters.

```
ThisisnotthepasswordfileIusebutishereasanexample
KR6CO 69 1023 thisisthepasswordofkr6co
K6TEN 123 1023 thisisthepasswordofk6ten
```

3.18 Check the PROTECT.SYS File

The following is an excerpt from www.f6fbb.org/fbbdoc/fmtprote.htm.

This file allows you to specify some directories in which you do NOT want any sysop to be able to delete any files, without a special syntax. To delete files in protected directories, the command must look like this: DEL +FORWARD.SYS. In an un-protected directory the command looks like this: DEL FORWARD.SYS. So you can see that you need an extra '+' sign in protected directories.

For my installation, I left this file in tact. NOT DECIDED.

```
\
\archiver
\bbsfiles
\bbsyapp
\fastback
\dos
\fbb
\fbb\files
\fbb\mail
\fbb\oldmail
\fbb\sauve
\fbb\yapp
\ncsmall
\norton
\pascal
\tools
\yapp
```

3.19 Other files not changed here

For the general list of all the other files not covered here, check out…
www.f6fbb.org/fbbdoc/docform.htm.

4 Final BBS Setup

4.1 Introduction

If you get this far, you are on your way to an operational BBS. This section covers the following sections:

User Setup

Sysop Setup

Configure PC to auto-boot the BBS after a power-fail

4.2 User Setup

For the DHS Packet BBS, the intent is to have all users pre-registered on the BBS prior to any disaster. This is done as follows:

1.	Identify the list of BBS users by call sign and tactical sign.	This task will be left up to the ODMS communications staff.
2.	JIM… see the screen to configure.	

4.3 Sysop Setup

Volunteers for Sysop duty on the ODMS Packet BBS will be nominated and approved by the ODMS staff. For each individual approved as a Sysop, specific training on remote access and system maintenance will be performed. This is done as follows:

3.	Identify the list of BBS Sysops.	These individuals must be approved by the ODMS staff.
4.	The SYSOP password policy for this BBS is: 1. Individual passwords will be developed for Sysop. 2. Password file updates will be made by the ODMS communications lead. 3. Passwords will be a combination of letters and numbers and should not spell a word. 4. Passwords will be changed every 12 months.	
5.	Edit and update the PASSWD.SYS file.	

4.4 Auto-boot the PC after Power-fail – Windows 98

The BBS PC may be located in a remote location and not readily available to an operator. Therefore, it is critical that the PC have the capability to boot up and run the FBB BBS without any operator intervention.

Each version of Windows seems to set this up differently. In general, the best recommendation is to search the Internet using the following string:

"Prevent a Windows 98 Logon Prompt at Startup" or whatever version of windows you are using.

For my Windows 98 System, I ended up at the Microsoft Support site (http://support.microsoft.com/default.aspx?scid=http://support.microsoft.com:80/support/kb/articles/Q152/1/04.ASP&NoWebContent=1) and proceeded as follows:

6.	Remove the Windows Network Logon. Click **Start**, point to **Settings**, click **Control Panel**, and then double-click **Network**.	
7.	On the Configuration tab, click **Windows Logon in the Primary Network Logon** box, and then click **OK**.	
8.	When you are prompted to restart your computer, click **No**.	
9.	In Control Panel, double-click **Passwords**. On the Change Passwords tab, click **Change Windows Password**, select any of the check boxes that you want, and then click **OK**.	
10.	In the **Change Windows Password** dialog box, type your current Windows password in the Old Password box. Leave the New Password and Confirm New Password boxes **blank**, click **OK**, and then click **OK**.	
11.	Reboot the PC.	Verify the PC does not prompt you for a logon password.
12.	Make FBB automatically boot up. Navigate to the c:\FBB\BIN directory. Create a short-cut to WFBB.EXE Move the Shortcut to the Startup directory.	
13.	Reboot the PC.	VERIFY the PC does the following: 1. loads the BPQ software 2. does not prompt for a logon and pass 3. automatically loads the FBB BBS application

4.5 Auto-boot the PC after Power-fail – Windows XP

For Windows XP System, Art N9ZZK found this reference (http://www.dougknox.com/xp/tips/xp_autologon_home.htm) on how to set this up:

14.	Click Start, Run and enter CONTROL USERPASSWORDS2	
15.	In the list of users, highlight the user account you want automatically logged on.	
16.	Uncheck the box: "Users must enter a Username and password…"	
17.	Click Apply.	
18.	In the next dialog, enter the password for the account you selected in Step 2, if any	
19.	Press OK to complete.	

4.6 Periodic Shut-down/Auto-reboot of the PC

Depending on your situation, your PC may require a periodic rebooting to address a problem where some other program (none described in this document) degrades the system performance over time.

The following link points to a reboot utility that Art N9ZZK has used on his system to address a memory leak with another program he has running.:

Reboot utility: http://www.ampsoft.net/utilities/WinOFF.php

<<< End of Implementation Guide. >>>