Ham Radio on FreeBSD

Ideas for this talk from:

- Dan Langille, Ottawa
- Greg Lehey, Adelaide Australia
- Nik Clayton
- Scott Nolde KD5ZEF
- various other people with their suggestions and comments

Why use a computer for ham radio in the first place?

- Satellite prediction for hamradio
- APRS
- Tracking DX stations
- Electronic log
- Digital modes

What is FreeBSD

- FreeBSD is an operating system.

- Berkeley Software Distribution.

- Yes FreeBSD is Free.

What is an Operating system?

- Software designed to control the hardware of a specific data-processing system in order to allow users and application program to make use of it.

   - American Heritage dictionary 4th ed.

What is that in English?

- Windows is an operating system. You turn on your computer and you run applications on it.

- FreeBSD is an operating system, you turn on your computer and you run applications on it.

- BSD was based on the UNIX Operating System.

FreeBSD as a desktop

- FreeBSD is a very capable desktop and user friendly!

- GNOME
- KDE
- OpenOffice
- FireFox
- Acrobat

- GIMP
- Afterstep / Enlightenment / Sawfish / BlackBox / IceWM ...
- CD/DVD burning
- mp3 ripping/playing

- These slides were done on FreeBSD

Why use FreeBSD for ham radio applications?

- It is far easier to control hardware from FreeBSD than Windows, as Windows moves to USB, etc. . .

- The ham radio applications are free and there are plenty of them, as of last count over 35 alone. All Free.

Various ham radio applications

- **gpredict** graphical satellite prediction
- **Xwota** see who else is on the air
- **wsjt** E.M.E. weak signal application
- **Xastir** graphical APRS application
- **fldigi** HF digital comm program

gpredict

- **gpredict** is a satellite tracking and prediction application

- written by Alexandru Csete.

- Part of the groundstation suite, its purpose is to track the various amateur, weather and military satellites that are of interest to radio amateurs.

Hamradio on FreeBSD

XWota

·**Xwota** is a very simple Linux/FreeBSD/xBSD client for the WOTA Database (Who is On The Air Database) written by IZ0ETE.
•It's very similar to a DX Cluster client, but it works with the WOTA server.

•http://www.wotadb.org/

Hamradio on FreeBSD

Date/Time	Call	Freq	Country	State	Grid	County	Lat/Long	Status	Co
2006-11-03 23:44	WA3G	3.7973	UNITED STATES	MD	FM19	BALTIMORE	39.53/-76.34	Listening	Cl
2006-11-03 23:44	AA2AP	14.1700	USA	NY	FN30	NEW YORK	40/95	Listening	
2006-11-03 23:44	W7LKG	0	UNITED STATES				47.11/122.38	Tuning	
2006-11-03 23:46	W4SVO	0	UNITED STATES	FL		Marion	40/-95	Tuning	
2006-11-03 23:47	WB4EJC	14.1903	UNITED STATES	FL		Broward	26.24/-80.19	Tuning	Ri
2006-11-03 23:49	KG2SA	14.225	UNITED STATES	NY	FN32HR	RENSSELAER	42.72/73.43	Listening	C:
2006-11-03 23:49	W7LKG	14.0180	UNITED STATES				47.11/122.38	Tuning	
2006-11-03 23:51	WM4B	7.0700	USA	GA	EM82	Houston	32.53/83.65	Tuning	
2006-11-03 23:51	W4SVO	0	UNITED STATES	FL		Marion	40/-95	Listening	
2006-11-03 23:52	WA3G	3.7974	UNITED STATES	MD	FM19	BALTIMORE	39.53/-76.34	Tuning	Cl
2006-11-03 23:54	W7LKG	14.0180	UNITED STATES				47.11/122.38	Listening	
2006-11-03 23:57	WA3G	3.7970	UNITED STATES	MD	FM19	BALTIMORE	39.53/-76.34	Tuning	Cl
2006-11-03 23:59	WM4B	7.0700	USA	GA	EM82	Houston	32.53/83.65	Tuning	
2006-11-04 00:00	N4MQY	14.253	UNITED STATES	AZ	DM33	MARICOPA	33/-112	Tuning	Bi
2006-11-04 00:02	WA3G	3.7970	UNITED STATES	MD	FM19	BALTIMORE	39.53/-76.34	Calling	Cl

Frequency — Comment — Update

Participate: Yes — Read frequency from Rig: No — Message Autoanswer: No

Connected

wsjt

- **WSJT** is a computer program for amateur radio VHF/UHF communication using state of the art digital techniques. Typical applications include communication by meteor scatter and EME (Earth-Moon-Earth) propagation paths.

Xastir

- **Xastir** is an APRS client program that uses amateur radio and internet services to convey GPS mapping, weather, and positional data in a graphical application. It has been developed by and for amateur radio enthusiasts to provide real-time data in an easy to use package.

16

- http://www.xastir.org/
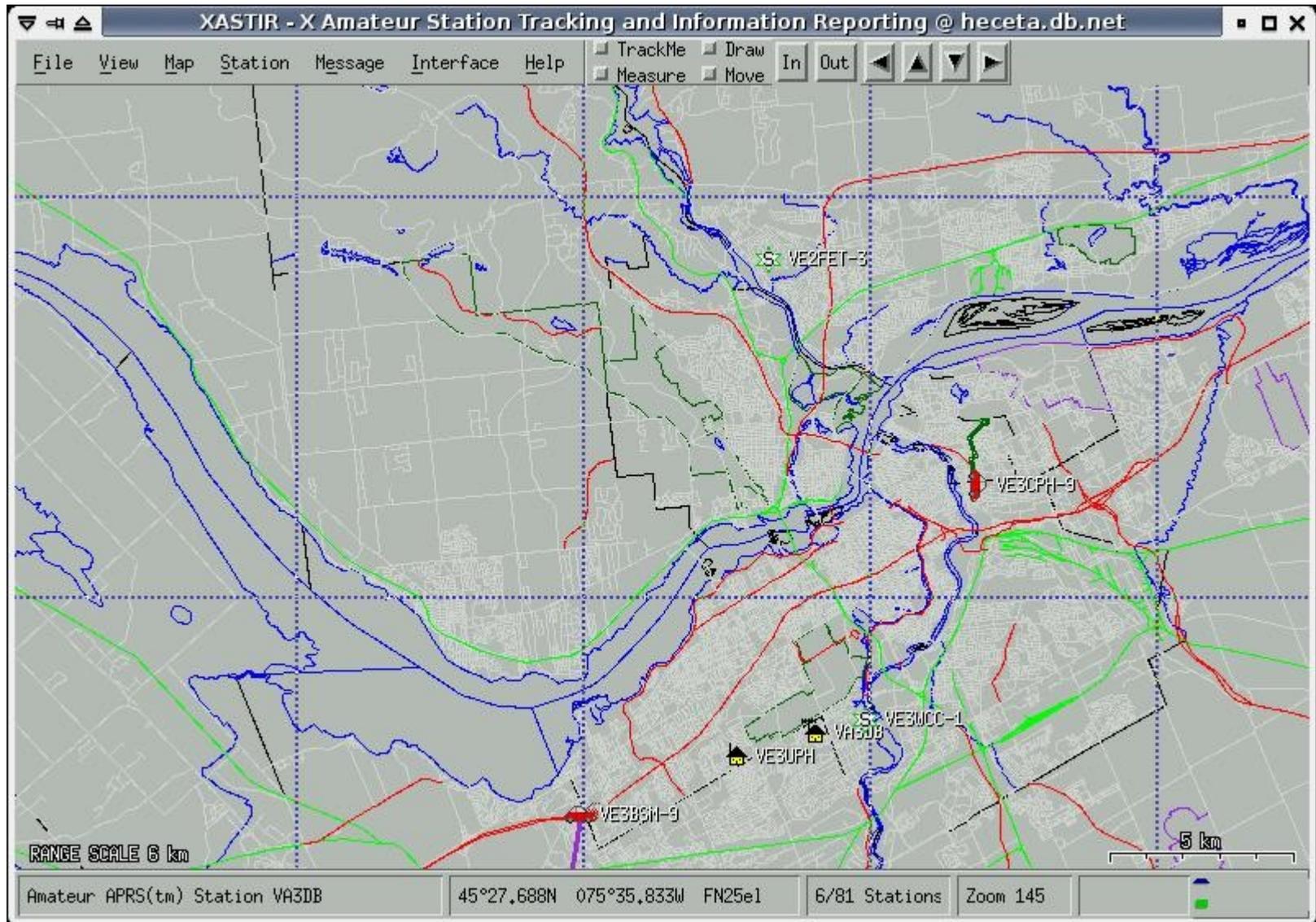
fldigi

- Digital modem program, way too many modes to list. Handles CW, psk31, RTTY, mfsk, hell, amongst others.

http://www.w1hkj.com/Fldigi

Files   Op Mode   Configure   Tune   Help

Freq: Time: Call: Name: Rst(r):Rst(s)Qth: Loc: QRZ
14025.572 [   ] [▦] [   ] LORNE   [   ] [   ] Somone, , SENEGAL   IK14ll   Clear

Notes: Born: 1949   Save

E I TT TTE S U M B E CUZ NW E TRING SUM L OW QRM NO PROBLEM E X CEPT WHEN A BE T OF QSB S
ITS U = I FINALL Y FOUND MY LAU E EEE ALLE N WD WREN CS ES ES ADJUSTED MY PADL F EE EE
PADDLE HEE = GUESS IT D OESNT H E LP MY SORE F E S I FI S I * FI S T HEE = GUESS MY MIXING UP C
BATT E R D OE S NT H E L P M Y AR THRI TIS H EE WS EN B EV WAS MAKING COO K I ES WE B O TH TOO
K TURNS MINT ING THE BAT T E R ES IT WASNT RUFF ON E I TH ER OF US TT WAY HEE = DARN
PEANUT BUT T E R COO KIES ARE THE RUF FEST O N II OF TS EM HEE = OK JIM U HVFU N ES T OM U
MADE ME HUNGR Y I T V Y S ARD TO GE T G UD BE E F DWN S R BUT THINK I WL GRILL OUT ES D O A
CHIC KEN FOR DINN ER TODAY HEE SOON WL HV BOAT B K HR ES WL GET M ORE FI S H HR ON M Y
LAST BA G FM FEE Z E R HEE = S O U GUYS B OTH HVA GRE AT NEWYE <AR>S ES HPE CU ALL ON MANY
BAND S NE XT YE AR = <AR> N0 SS KF7E D E V31 JP GA ES 161 TOM K *L* *KE'E□

                            14025.5   14026.0   14026.5   14027.0   14027.5

clr Wtr x1 Norm ◄ ❚❚ ► ◄|◄ [572] ►|► ◄| -10 |► ◄| 40 |► QSY ☐Lck ☐Rev   ☐T/R
CW   [   ] [   ] [   ]   ◇ ▮Afc ▮Sql

Files Op Mode Configure Tune Help

Freq: Time: Call: Name: Rst(r):Rst(s)Qth: Loc: QRZ
14072.019   [▦] 6w7rv   LORNE   Somone, , SENEGAL   IK14ll   Clear

Notes: Born: 1949   Save

u haves9,
name es Jan Jan Jan,
QTH is Somone Senegal Somone Senegal 45 km S/E from Dakar Difficult to understand many OM
calling. BTU
KP4DS KP4DS de 6W7RV 6W7RV PSE K
6W7RV de GP4DS #avtYou are in my log and tks for contact. My wife is calling for dinner so all the
best Good luck my friend, 73!
KP4DS DE 6"7RV I'm not collector but if you wioh a QSL card, via manager only F8CMT F8CMT and/or
eQSL and ieOTW KP4DS de 6W7RV KK□

                                            Alt

        14070.5   14071.0   14071.5   14072.0   14072.5

clr Wtr x1 Norm ◀ ▐▐ ▶ ◀ ◀ 2019 ▶ ▶ ◀ -10 ▶ ◀ 40 ▶ QSY ☐Lck ☐Rev   ☐T/R

BPSK31 s/n 10 dB imd -12 dB   ◇ ☐Afc ☐Sql

Files   Op Mode   Configure   Tune   Help

Freq: Time: Call: Name: Rst(r):Rst(s)Qth: Loc: QRZ
21137.342   2021   ▣   t94of   PREDRAG   MANCHESTER,NH, , USA   Clear

Notes: Born: 1971   Save

```
PSE  K...9"1CWT    OZ1CWT   DE  EA5FL
NAME IS : JOSE  JOSE
RST: 578  578
HW COPY ???   ...BTU MMMMOZ1CWT   DE  EA5FL SPSE  ...(9"1CW DE  EA5FL
L DE GR  , GLAD TO WORK YOU FOR FIRST  TIME.
TNX. FOY  B  CONTACT  .8BEST  WISHES  FOR THE  NEW YEAR  , 73S  FROM  SPAIN .........OZ1CWT   DE
EA5FL   ... K ........QSL JENS  ,( AGAINAND 3S  HDE JOSE  , GOOD  LUCK !!!....
OZ1LWT   DE EA5FL  SK....
CQ DX  CQ DX    EA5FL  EA5FL  EA5FL
CQ  D CQ  DX    EA5FL  EA5FL  FLPSE  K....
```

Alt

21136.0   21136.5   21137.0   21137.5   21138.0

clr   Wtr   x1 SLOW   ◀ ❚❚ ▶   ◀◀ 1932 ▶ ▶   ◀ -10 ▶   ◀ 40 ▶   QSY   ☐Lck ☐Rev   ☐T/R

RTTY   Shft 170   Baud 45.0   ◇ ☐ Afc   ☐ Sql

Is BSD supported?

- Yahoo! (FreeBSD)
- Hotmail (FreeBSD)
- IBM (Whistle InterJet, FreeBSD)
- International Space Station (NetBSD)
- Apple computer (MacOS X)
- Routers, other embedded systems
- Lots of support from local community

For more information

- Sites of interest:

  – http://www.FreeBSD.org/

  – http://www.pcbsd.org

  – http://www.freshports.org/hamradio

  – http://www.freesbie.org/