Linux For Hams

Orv Beach

W6BI

More Linux History

- But hasn't really taken over the desktop.
  - Microsoft monopoly of built PCs
    - Threatened to revoke Windows discounts for any vendor that offered PCs with a non-Windows OS.
    - Eventually ruled a monopoly in court
  - People use the OS that comes with their computer – with Linux on it, use remains limited to 2-3%

A Bit of Linux History

- Started as a desktop OS in 1991
- Has expanded to servers (including supercomputers), firewalls, routers, set top boxes, phones, DVRs, phone switches, cell phones, automobile entertainment systems, etc., etc., etc.
- But hasn't really taken over the desktop.

Linux on the Desktop

- Many different varieties – just like cars
- Like cars – 95% the same...
- Biggest differences:
  - The Graphical User Interface (that mousey-clicky thing on the screen)
  - Package Management (can also be mousey-clicky)

The Graphical User Interface (GUI)

- *Windows**
- GNOME
- Unity (only on Ubuntu, by Canonical)
- Plasma
- LXDE (lighter weight*)
- XFCE (lighter weight*)

* lighter weight = more admin effort

Linux is NOT Windows

- No drive letters
  - “C:” → “/”
- Highly-resistant to exploits
- No licensing
- Email attachments aren't executable

Linux is NOT Windows

- OS, drivers & utilities are the chassis & drivetrain of the car
- UI is the body & interior
- Can run different GUIs
  - KDE, GNOME, XFCE, LXDE on Fedora, Ubuntu, etc.
  - GUI not mandatory
  - Without GUI, looks like a DOS computer on steroids

The Command Line

- Like DOS – but much more powerful
- Like DOS, ~~hundreds~~ thousands of commands
- Like DOS, you only usually use a couple dozen.
    - Ex: mkdir, rmdir, cd, etc.
    - DOS – Unix cheat sheet: http://tinyurl.com/qxgo9jo

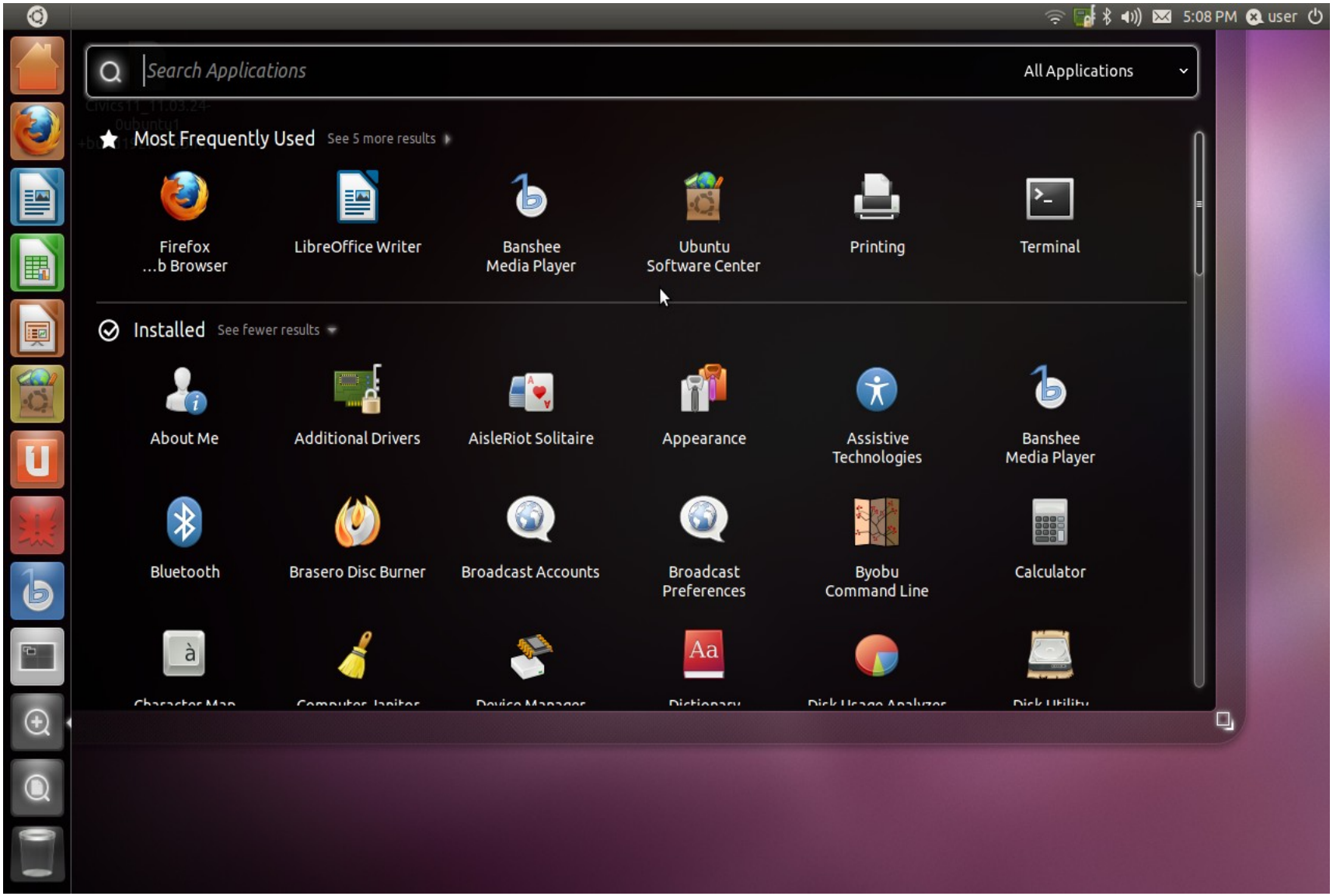
Administration

- Regular user accounts can't modify system files or install software in system directories
- “root” account (or root authentication) used to do administration
- Vastly more secure than legacy Windows systems

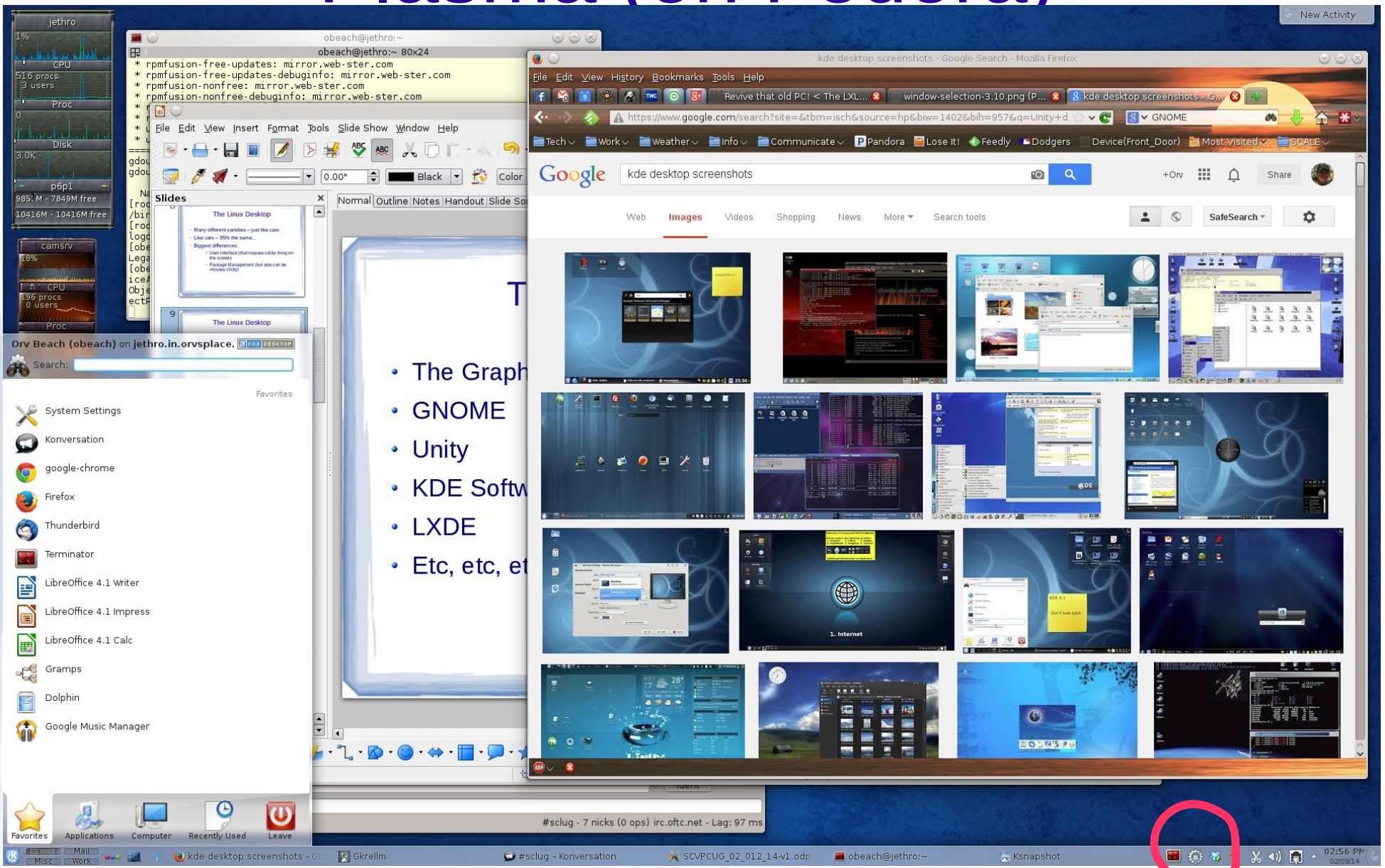
“Repositories”

- Standard repositories
- Add-ons
  - Available packages:
    - Ubuntu + Universe repository: 52,000
      - Added internally to OS
    - Fedora + RPMFusion repository: 42,000
      - http://rpmfusion.org/ ← installation instructions

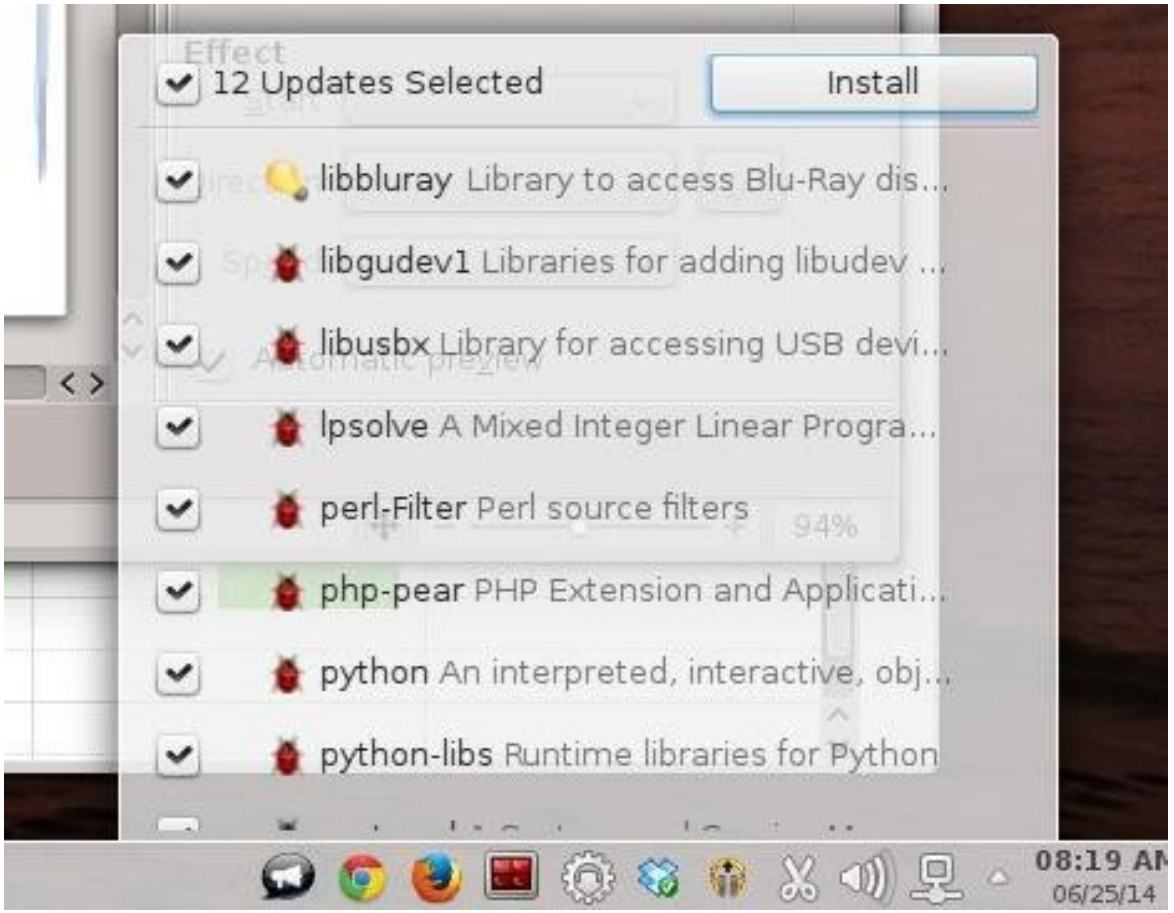
Unity (on Ubuntu)



Plasma (on Fedora)



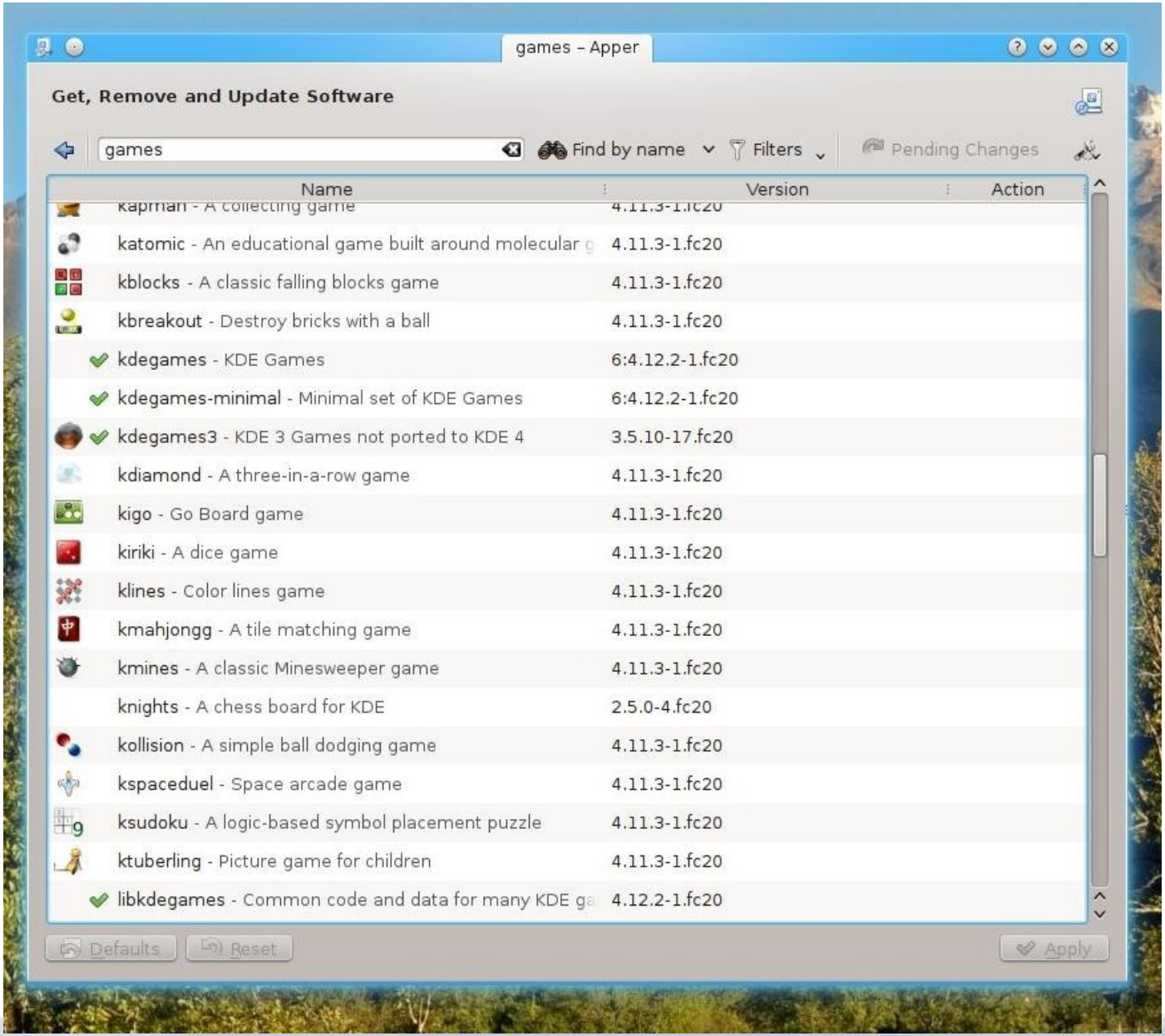
Plasma (on Fedora)



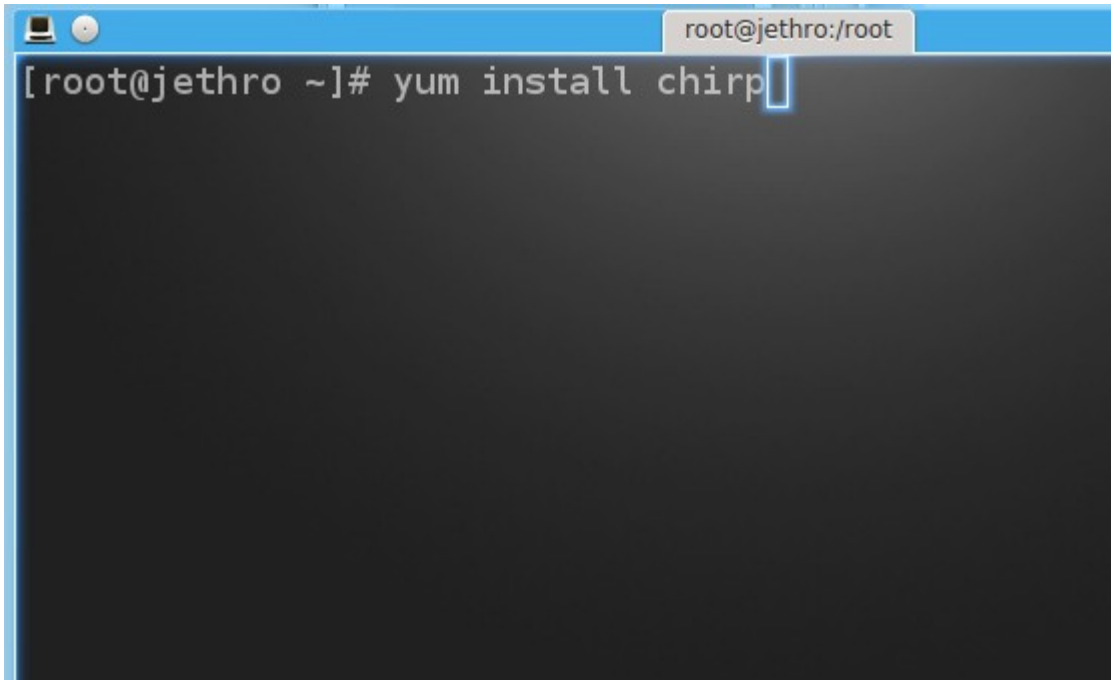
LXDE Desktop (on LXLE)

The Linux Desktop(s)

How to install software!



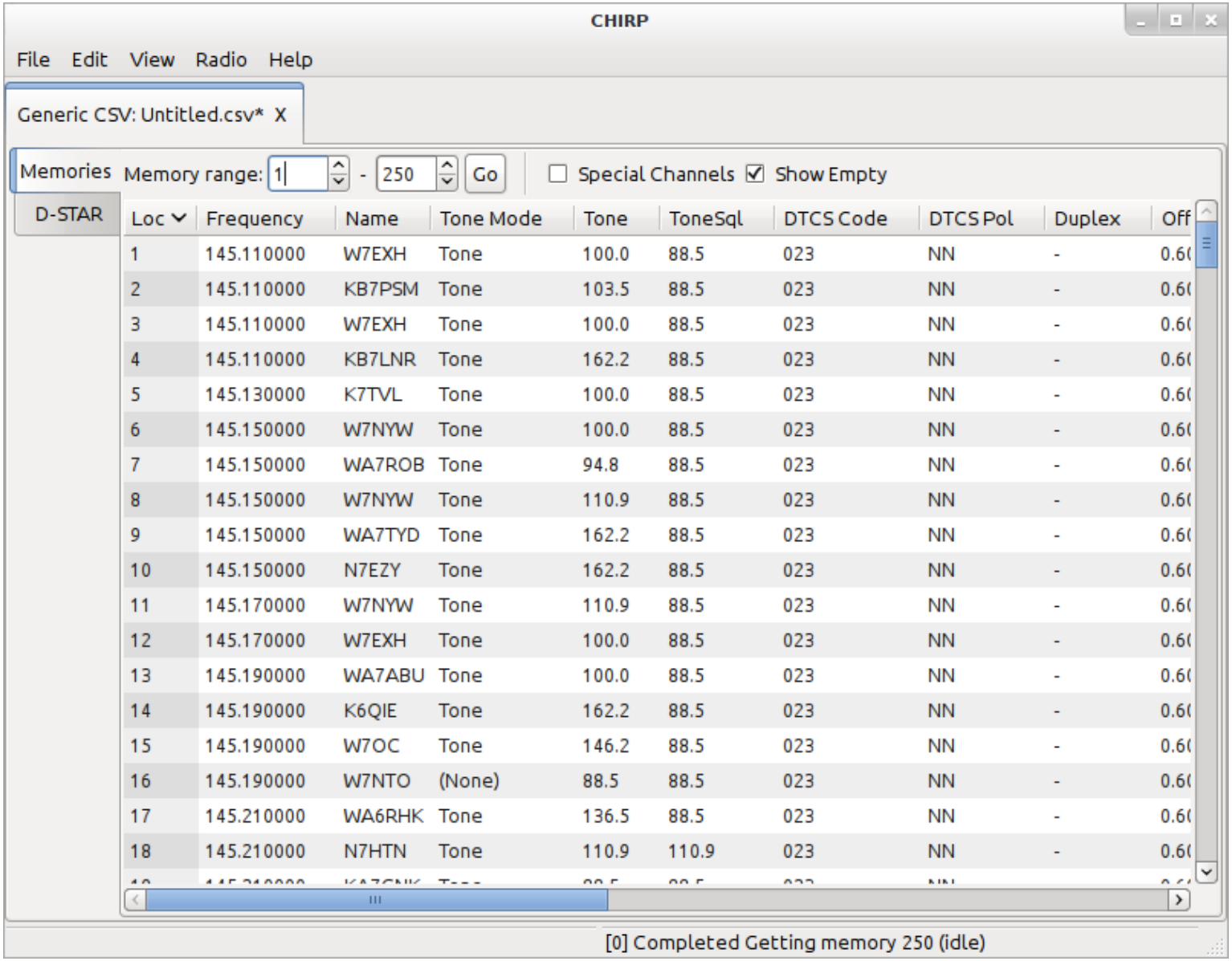
Or:



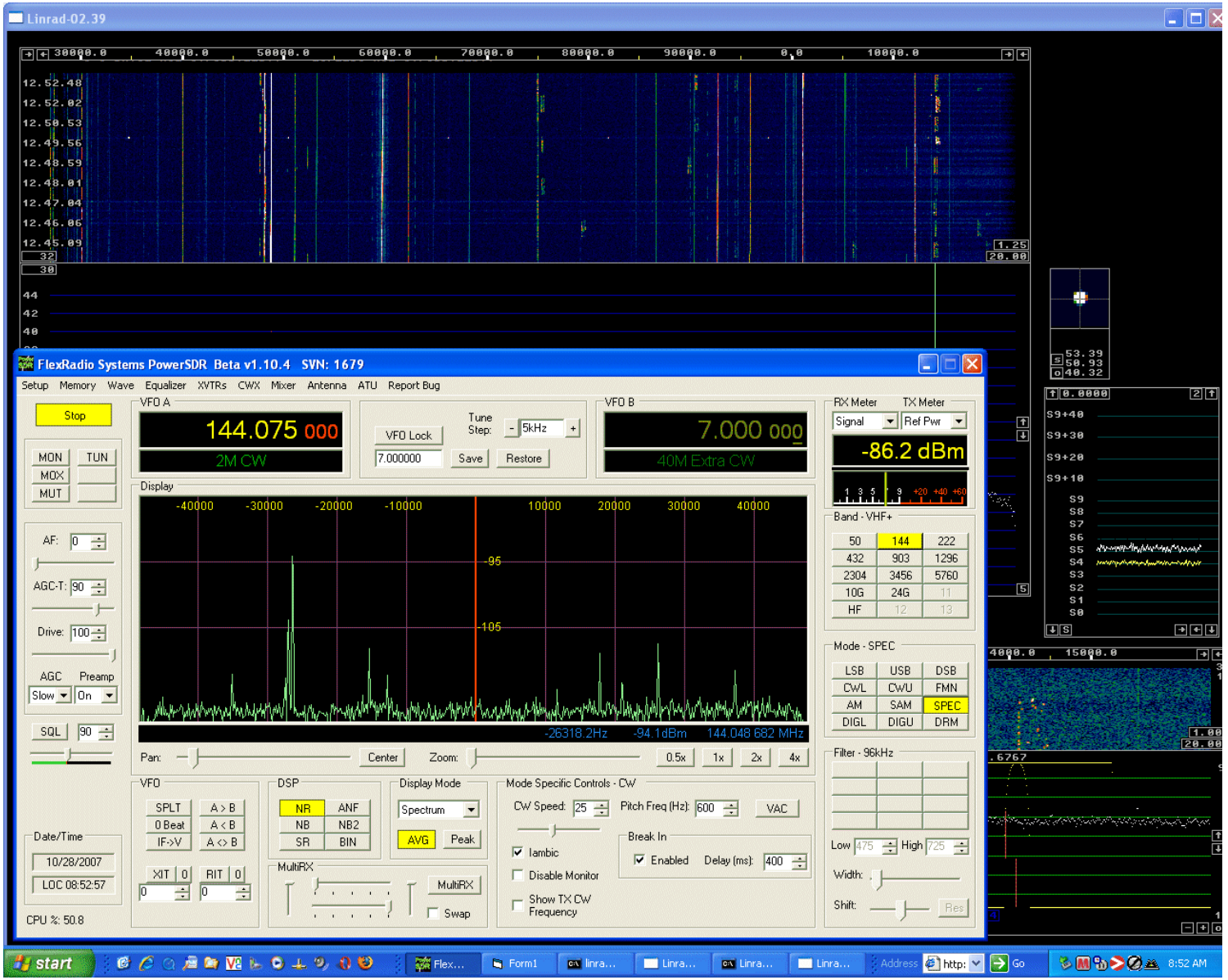
Ham Radio Software for Linux

- Not as common as Windows versions
- Much more plentiful now than in the past
- Most ham software now in RPMFusion
- Find what you're looking for at http://www.dxzone.com/catalog/Software/Linux/
- Look for it in Apper (software installation manager)
- Install it
- Play with it!

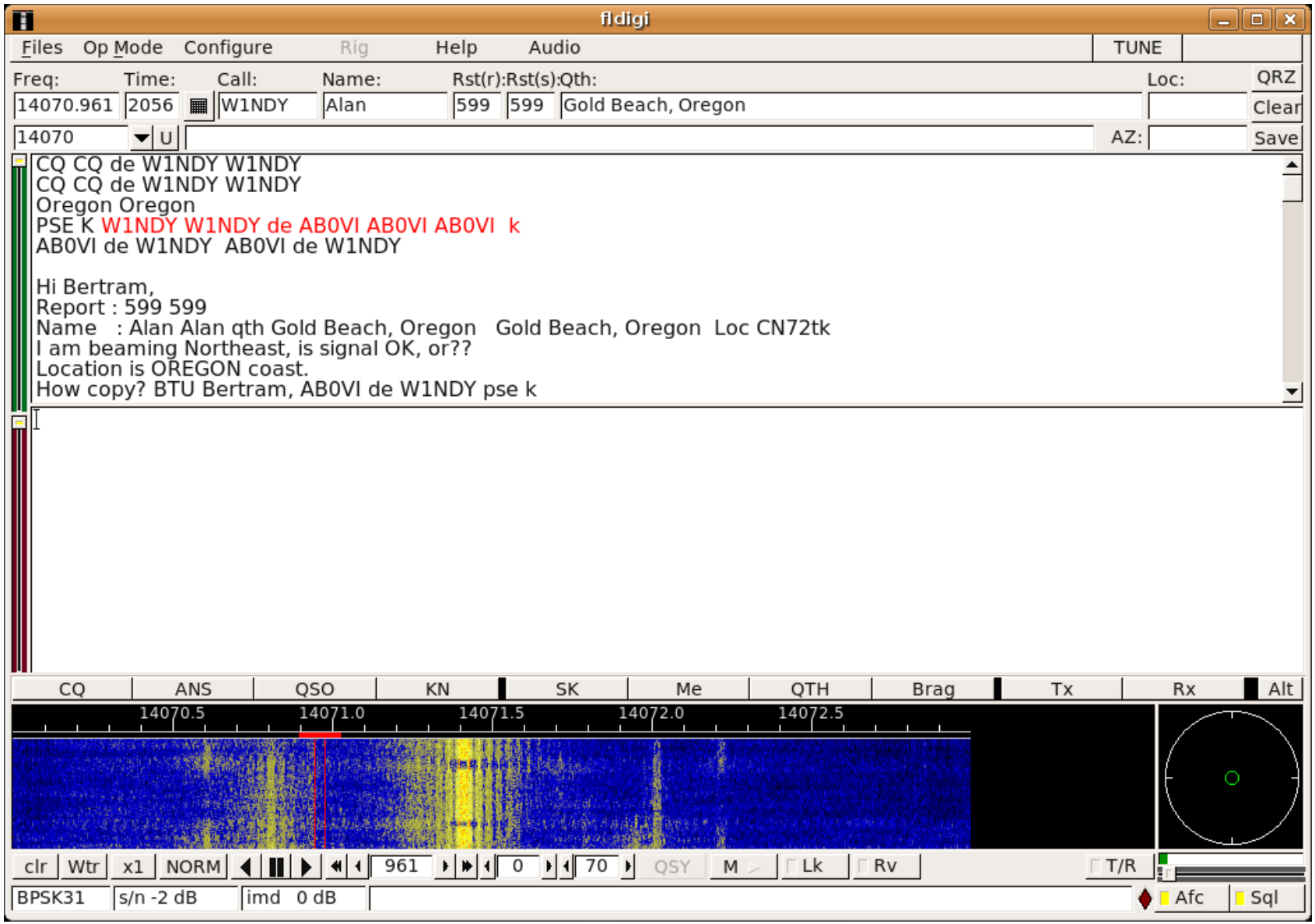
Chirp


CHIRP
File Edit View Radio Help
Generic CSV: Untitled.csv* X
Memories
Memory range: 1 - 250 Go
Special Channels
Show Empty
D-STAR
Loc Frequency Name Tone Mode Tone ToneSql DTCS Code DTCS Pol Duplex Off
1 145.110000 W7EXH Tone 100.0 88.5 023 NN -
2 145.110000 KB7PSM Tone 103.5 88.5 023 NN -
3 145.110000 W7EXH Tone 100.0 88.5 023 NN -
4 145.110000 KB7LNR Tone 162.2 88.5 023 NN -
5 145.130000 K7TVL Tone 100.0 88.5 023 NN -
6 145.150000 W7NYW Tone 100.0 88.5 023 NN -
7 145.150000 WA7ROB Tone 94.8 88.5 023 NN -
8 145.150000 W7NYW Tone 110.9 88.5 023 NN -
9 145.150000 WA7TYD Tone 162.2 88.5 023 NN -
10 145.150000 N7EZY Tone 162.2 88.5 023 NN -
11 145.170000 W7NYW Tone 110.9 88.5 023 NN -
12 145.170000 W7EXH Tone 100.0 88.5 023 NN -
13 145.190000 WA7ABU Tone 100.0 88.5 023 NN -
14 145.190000 K6QIE Tone 162.2 88.5 023 NN -
15 145.190000 W7OC Tone 146.2 88.5 023 NN -
16 145.190000 W7NTO (None) 88.5 88.5 023 NN -
17 145.210000 WA6RHK Tone 136.5 88.5 023 NN -
18 145.210000 N7HTN Tone 110.9 110.9 023 NN -
[0] Completed Getting memory 250 (idle)

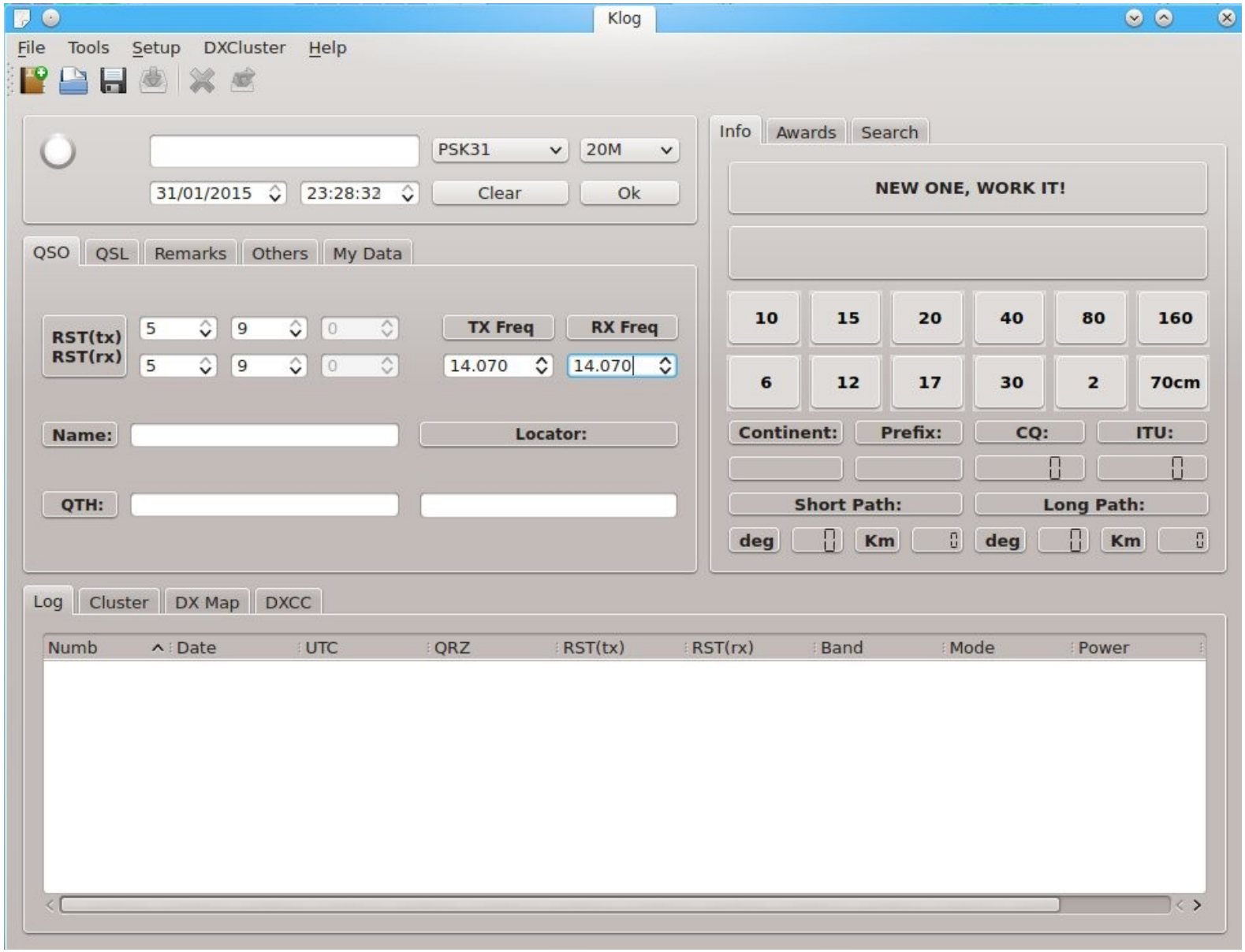
linrad


Linrad-02.39
FlexRadio Systems PowerSDR Beta v1.10.4 SVN: 1679
Setup Memory Wave Equalizer XVTRs CWX Mixer Antenna ATU Report Bug
Stop
VFO A
144.075 000
2M CW
VFO Lock
Tune Step:
5kHz
7.000000
Save
Restore
VFO B
7.000 000
40M Extra CW
RX Meter
TX Meter
Signal
Ref Pwr
-86.2 dBm
MON
TUN
MOX
MUT
Display
-40000 -30000 -20000 -10000 10000 20000 30000 40000
-95
-105
-26318.2Hz -94.1dBm 144.048 682 MHz
Pan:
Center
Zoom:
0.5x
1x
2x
4x
Band - VHF+
50 144 222
432 903 1296
2304 3456 5760
10G 24G 11
HF 12 13
AF:
AGC-T:
Drive:
AGC
Preamp
Slow
On
SQL
Mode - SPEC
LSB USB DSB
CWL CWU FMN
AM SAM SPEC
DIGL DIGU DRM
Filter - 96kHz
Low
High
Width:
Shift:
Res
VFO
SPLT
0 Beat
IF->V
A > B
A < B
A <> B
XIT
RIT
DSP
NR
ANF
NB
NB2
SR
BIN
MultiRX
Display Mode
Spectrum
AVG
Peak
Mode Specific Controls - CW
CW Speed:
Pitch Freq (Hz):
VAC
Iambic
Disable Monitor
Show TX CW Frequency
Break In
Enabled
Delay (ms):
Swap
Date/Time
10/28/2007
LOC 08:52:57
CPU %: 50.8
start
8:52 AM

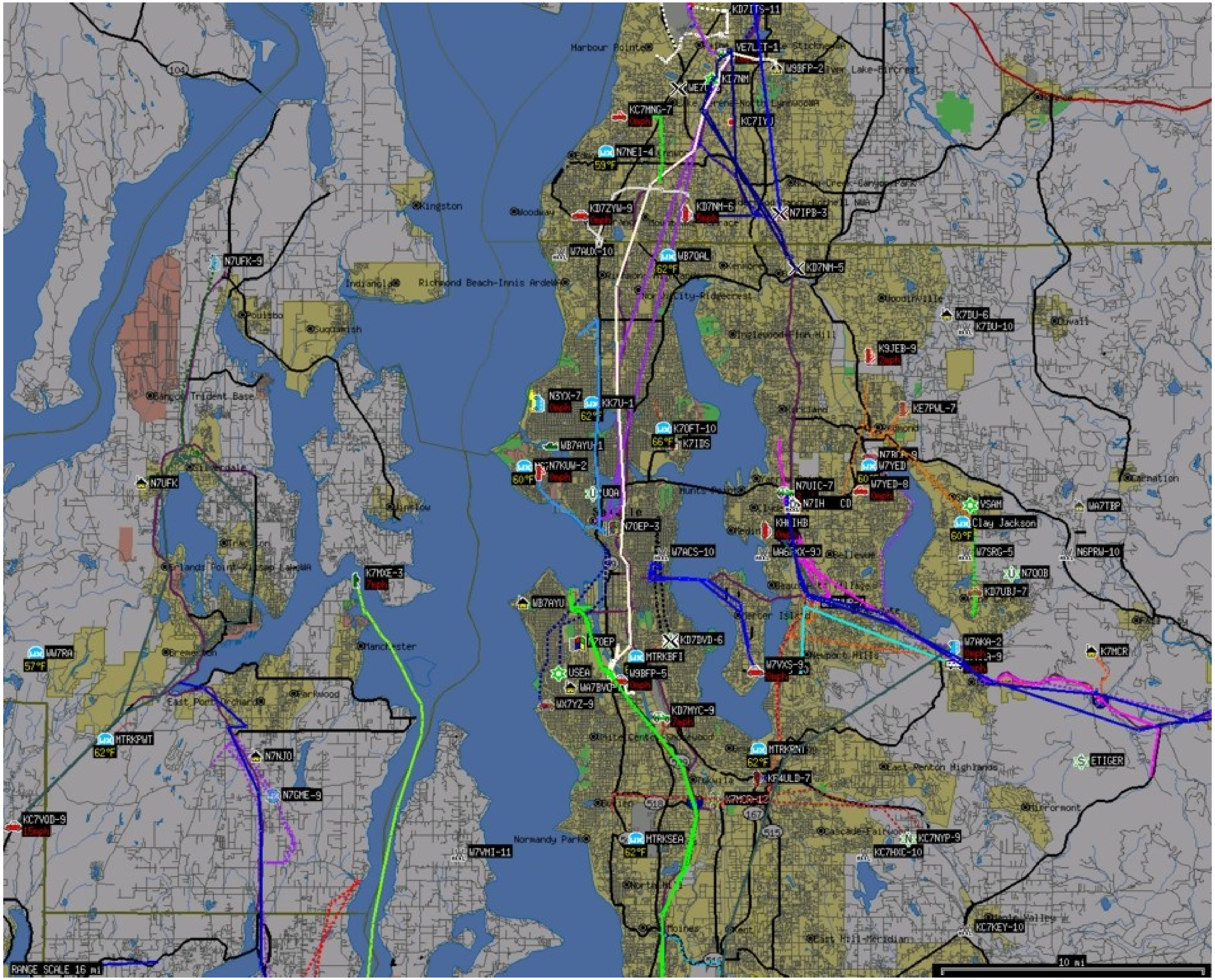
fldigi


fldigi
Files Op Mode Configure Rig Help Audio TUNE
Freq: Time: Call: Name: Rst(r):Rst(s):Qth: Loc: QRZ
14070.961 2056 W1NDY Alan 599 599 Gold Beach, Oregon Clear
14070 U AZ: Save
CQ CQ de W1NDY W1NDY
CQ CQ de W1NDY W1NDY
Oregon Oregon
PSE K W1NDY W1NDY de AB0VI AB0VI AB0VI k
AB0VI de W1NDY AB0VI de W1NDY
Hi Bertram,
Report : 599 599
Name : Alan Alan qth Gold Beach, Oregon Gold Beach, Oregon Loc CN72tk
I am beaming Northeast, is signal OK, or??
Location is OREGON coast.
How copy? BTU Bertram, AB0VI de W1NDY pse k
CQ ANS QSO KN SK Me QTH Brag Tx Rx Alt
14070.5 14071.0 14071.5 14072.0 14072.5
clr Wtr x1 NORM 961 0 70 QSY M Lk Rv T/R
BPSK31 s/n -2 dB imd 0 dB Afc Sql

klog


Klog
File
Tools
Setup
DXCluster
Help
PSK31
20M
31/01/2015
23:28:32
Clear
Ok
QSO
QSL
Remarks
Others
My Data
RST(tx)
RST(rx)
5
9
0
TX Freq
RX Freq
14.070
14.070
Name:
Locator:
QTH:
Info
Awards
Search
NEW ONE, WORK IT!
10
15
20
40
80
160
6
12
17
30
2
70cm
Continent:
Prefix:
CQ:
ITU:
Short Path:
Long Path:
deg
Km
deg
Km
Log
Cluster
DX Map
DXCC
Numb
Date
UTC
QRZ
RST(tx)
RST(rx)
Band
Mode
Power

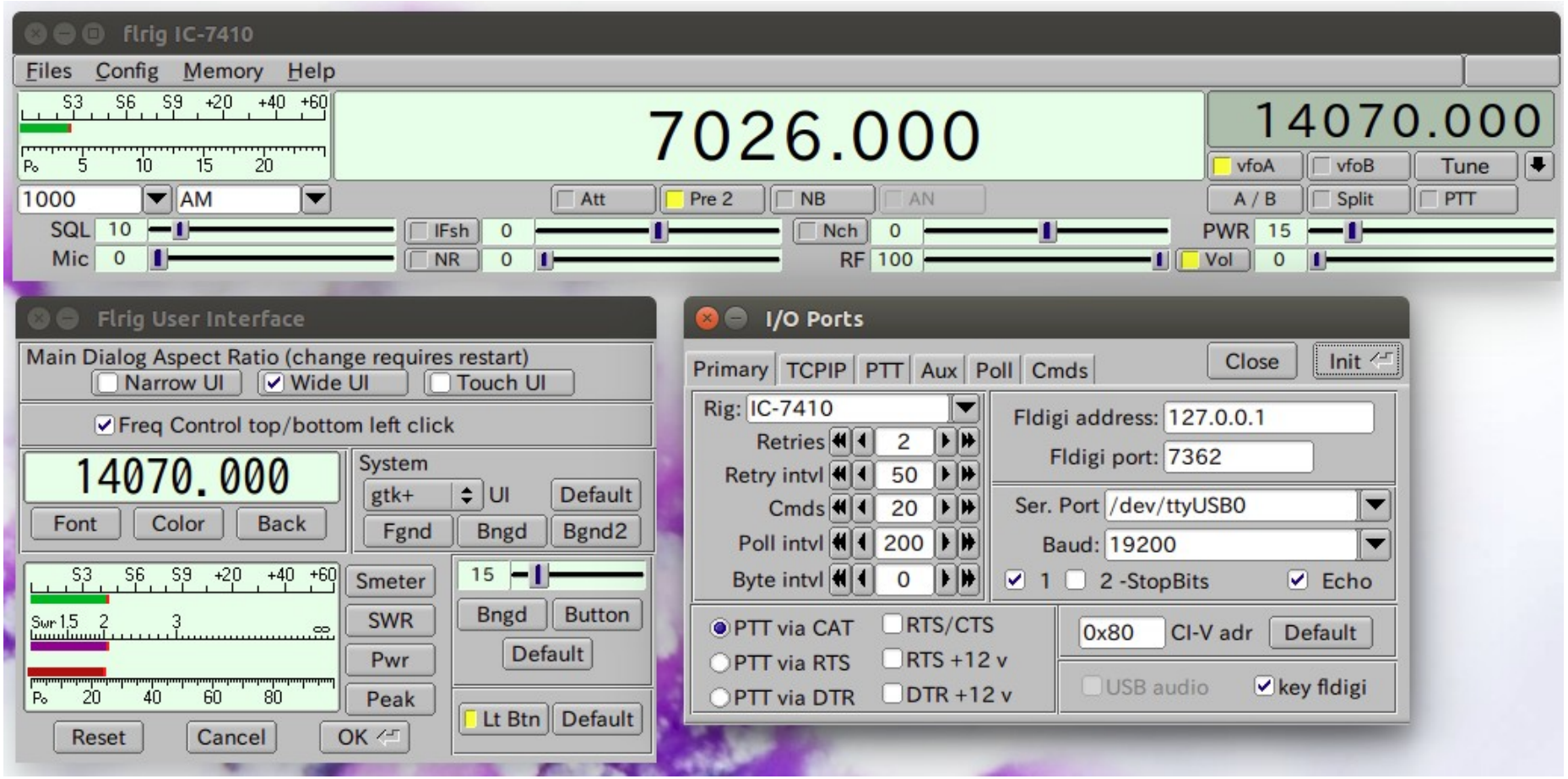
xastir


KD7ITS-11
Kingston
Woodway
Poulsbo
Suquamish
Indianola
Manchester
Normandy Park
Woodinville
Duvall
Carnation
Kirkland
Redmond
Bellevue
East Renton Highlands
Mirrormont
RANGE SCALE 16 mi
10 mi

GRIG (GNU Rig)


GRIG:
Radio
Settings
View
Help
Power
PTT
Lock
S UNITS
VFO A
RIT
10 106.000 kHz
0.00 kHz
CW
Narrow
AGC OFF
ANT 1
0..5
None
1
2
3
4
5
6
7
8
9
CLR
0
ENT
A / B
Split
A = B
A«»B
M / V
ATT OFF
PREAMP OFF

flrig


flrig IC-7410
Files Config Memory Help
7026.000
14070.000
vfoA vfoB Tune
A / B Split PTT
1000 AM
Att Pre 2 NB AN
SQL 10 IFsh 0 Nch 0 PWR 15
Mic 0 NR 0 RF 100 Vol 0
Flrig User Interface
Main Dialog Aspect Ratio (change requires restart)
Narrow UI Wide UI Touch UI
Freq Control top/bottom left click
14070.000
Font Color Back
System
gtk+ UI Default
Fgnd Bngd Bgnd2
Smeter SWR Pwr Peak
15
Bngd Button Default
Lt Btn Default
Reset Cancel OK
I/O Ports
Primary TCPIP PTT Aux Poll Cmds
Close Init
Rig: IC-7410
Retries 2
Retry intvl 50
Cmds 20
Poll intvl 200
Byte intvl 0
Fldigi address: 127.0.0.1
Fldigi port: 7362
Ser. Port /dev/ttyUSB0
Baud: 19200
1 2 -StopBits Echo
PTT via CAT PTT via RTS PTT via DTR
RTS/CTS RTS +12 v DTR +12 v
0x80 CI-V adr Default
USB audio key fldigi

Where to get the goodies!

- Linux distributions:
  - Ubuntu – ubuntu.com
  - Fedora – fedoraproject.org
    - Main extras repository: http://rpmfusion.org/
  - LXLE – http://lxle.net/
  - Korora - https://kororaproject.org/
  - Mint - http://www.linuxmint.com/

Questions?

Google is your friend!

Google example searches (always start with 'linux'):

- `linux ham logging software`
- `Fedora Linux how to configure a printer in KDE`

When all else fails – email me: orv.beach@gmail.com