D-RATS

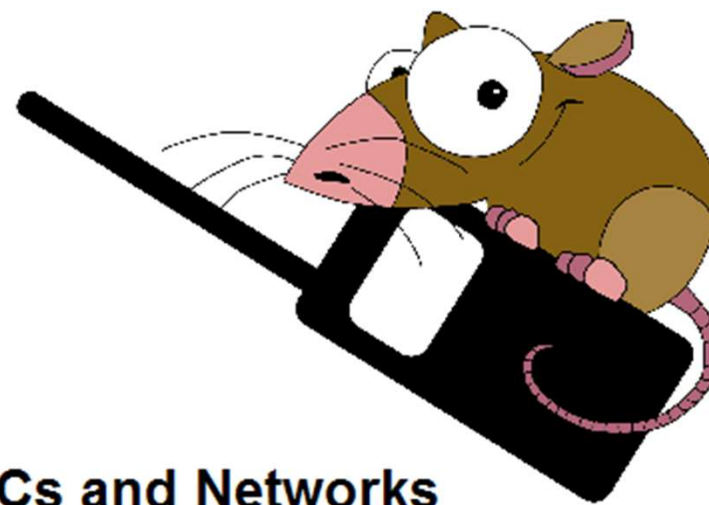**Ver 0.3.9**

A communication tool for D-STAR, TNCs and Networks

Scott Allison (K3RL) and Carl Keller (KC3KFW)

Overview

- A multi-platform integrated tool for communication using D-STAR radios. With only a pair of radios (or an entire repeater stack) a variety of data transmission methods are supported, including:
  - Instant-message chat
  - Automatic beacon messages
  - File transfers with error detection
  - Structured forms (email)
  - GPS position reports
- The software can be run on Windows, MacOS and Linux/UNIX computers
- A D-STAR radio is not required to use the application

Developed for 1st Responders

- Initially developed for the Washington County ARES/RACES group in Oregon by Dan Smith, KK7DS
- D-RATS quickly evolved into a full blown multi-platform EmComm software suite for data communications using D-STAR radios
- The D-RATS suite can give you access to additional resources:
  - Image transfer,
  - Custom communication forms
  - e-mail portals over several miles with the D-RATS e-mail gateway
  - Full asset tracking with multiple layer resource maps

D-RATS What Does it Do

- The application runs on a local computer and connected to a D-STAR radio, internet, or both
- D-RATS works as a message hub
- Communication via radio using low speed data (DV data mode)
  - Using radio simplex
  - Using radio via repeater
- Communication via internet
  - D-RATS ratflectors

D-RATS Simplex

Digital communications can be done between two radio operators using simplex Communications
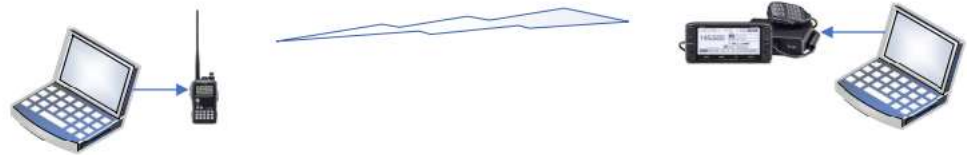
D-RATS Repeater Operations

D-RATS can be used through any repeater that is D-STAR capable

In Somerset County D-RATS can be used through the follow repeaters

K3SMT - Mt Davis 443.725+

W3DCW – Hays Mill 441.500+

WR3AJL – Statler Hill 146.625-

What is a Ratflector?

- A D-Star Reflector equals a D-Rats Ratflector.
- Like D-Star Reflectors, Ratflectors are typically connected to the Internet.
- A user can be connected to more than one Ratflector at a time to allow for wider communication path
- Once connected to a Ratflector, you can perform functions, such as sending email and chatting, via the Internet with the right set up.
- PennLink XLX Constellation group hosts a Ratflector here in Pennsylvania

Ratflector

Local stations can connect to a Ratfector via internet to chat, send emails, or transfer files to other stations

Ratflector
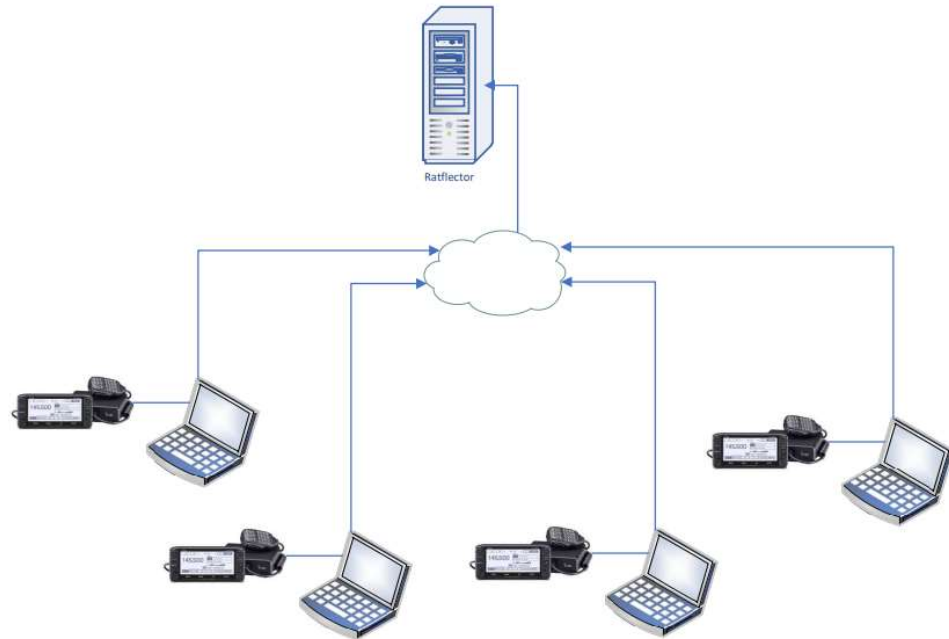
D-RATS Constellation

This is a possible scenario for use of application

Operator 3 is located at an activated shelter w/o internet of phone connectivity

Operator 2 is located at EMA office an has radio communications with Operator 3

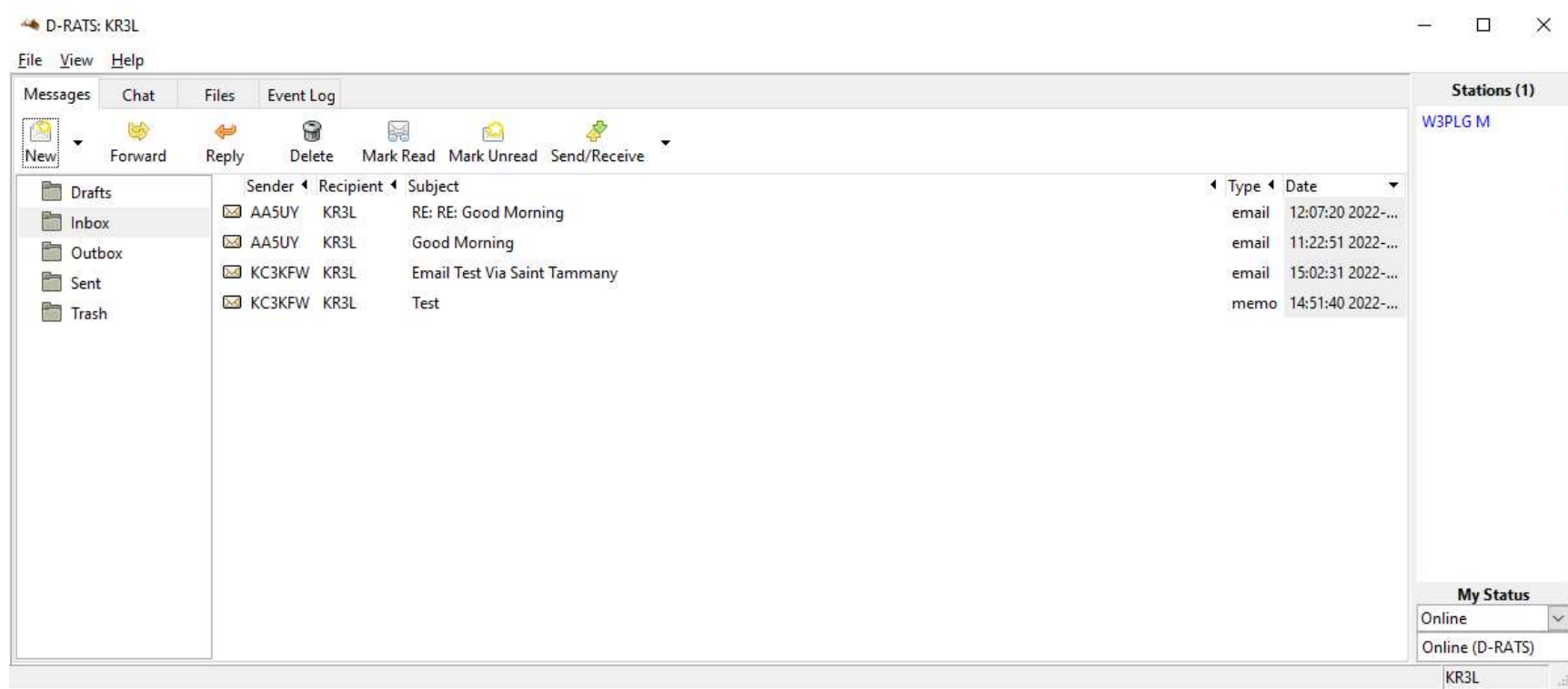Operator 1 is a supporting agency with internet connectivity

Messages can be sent through the system from one operator to another without loss of original message
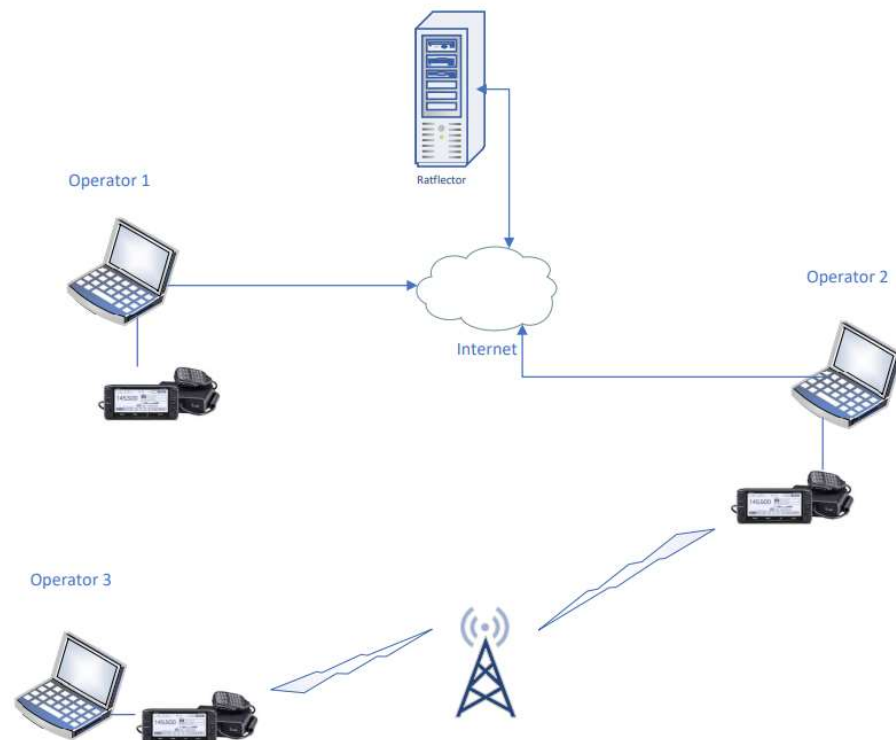
D-RATS

Application Overview

Main Window

Application Main Window

- This is the first screen you will see when you start D-RATS

- D-RATS also notifies all stations that your station is now online and your call sign will appear in their Stations Pane

- Any stations that have messages in their Outboxes addressed to you, will now deliver them to your Inbox

- Each of D-RATS different Modes are accessed from the Tabs at the top of the window

- The right side of the window displays callsigns heard and the time since last heard in parentheses. Hover your mouse over a callsign to display their status and status message.

Station Pane

- The right side of the window displays callsigns heard and the time since last heard in parentheses.

- Hover your mouse over a callsign to display their status and status message

- Right click your mouse on a callsign to display a context sensitive menu of additional operations.
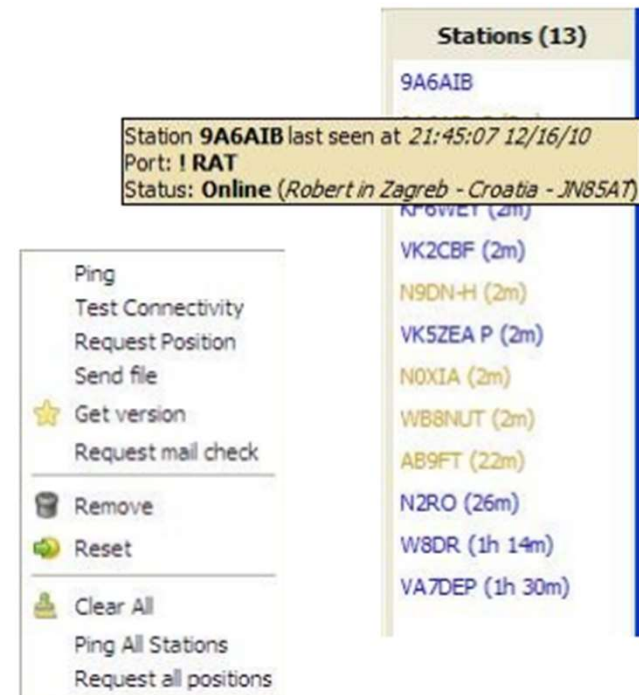
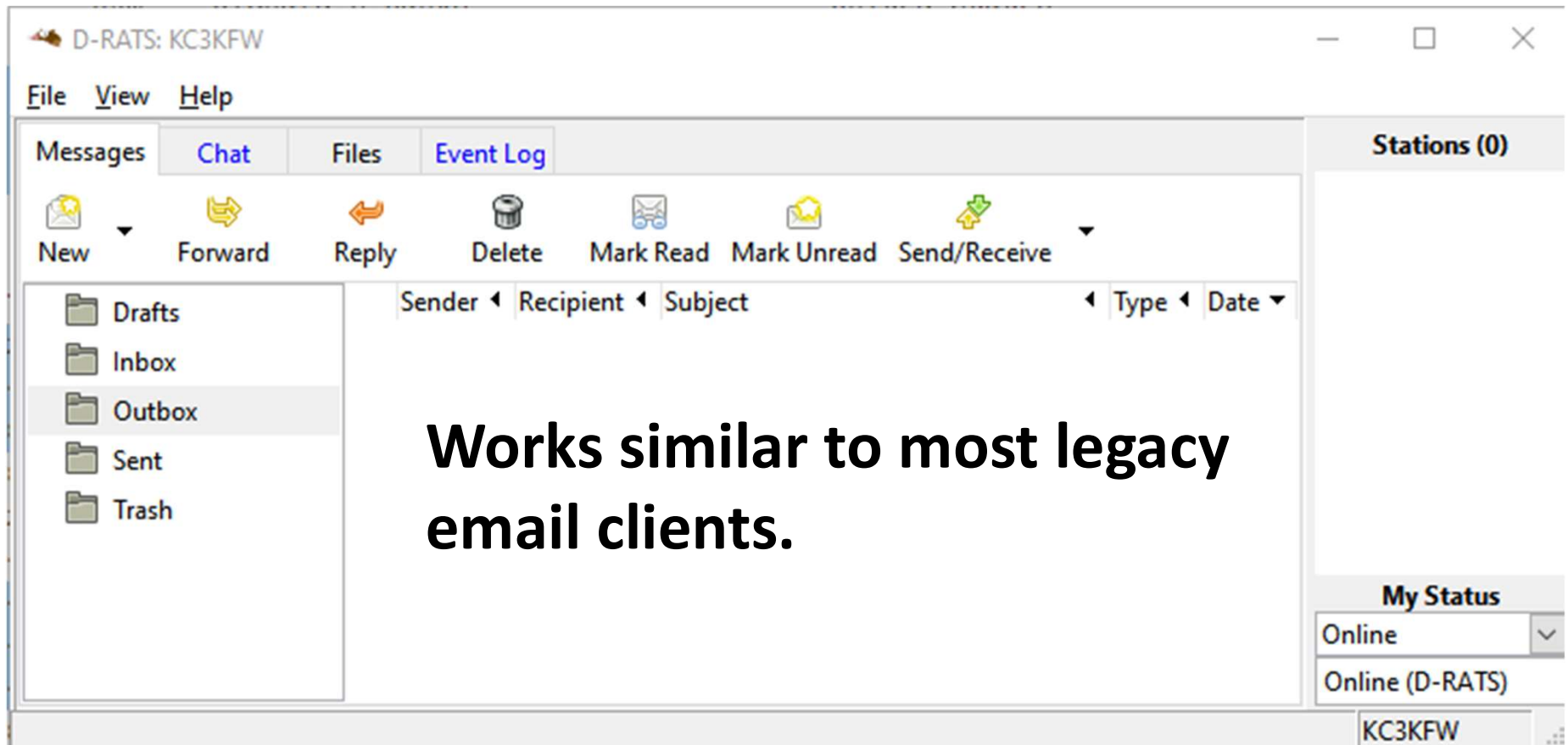# Station Pane: Menu of additional operations

- Ping: Check the status of a station

- Test Connectivity: Test the quality of the path to an RF station.

- Request Position: Get the location of a station to be displayed on the map

- Get version: Request version of D-RATS

- Request mail check: Check if a station is holding mail for you

Status Pane

- This is what other users will see when they hover their mouse over your callsign

- Use the drop-down arrow to set your status as "Online" or "Unattended".

- Second box allows you to type a short message to displayed your status to other stations
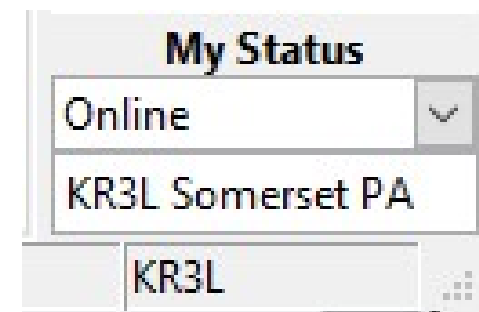
The Messages Window
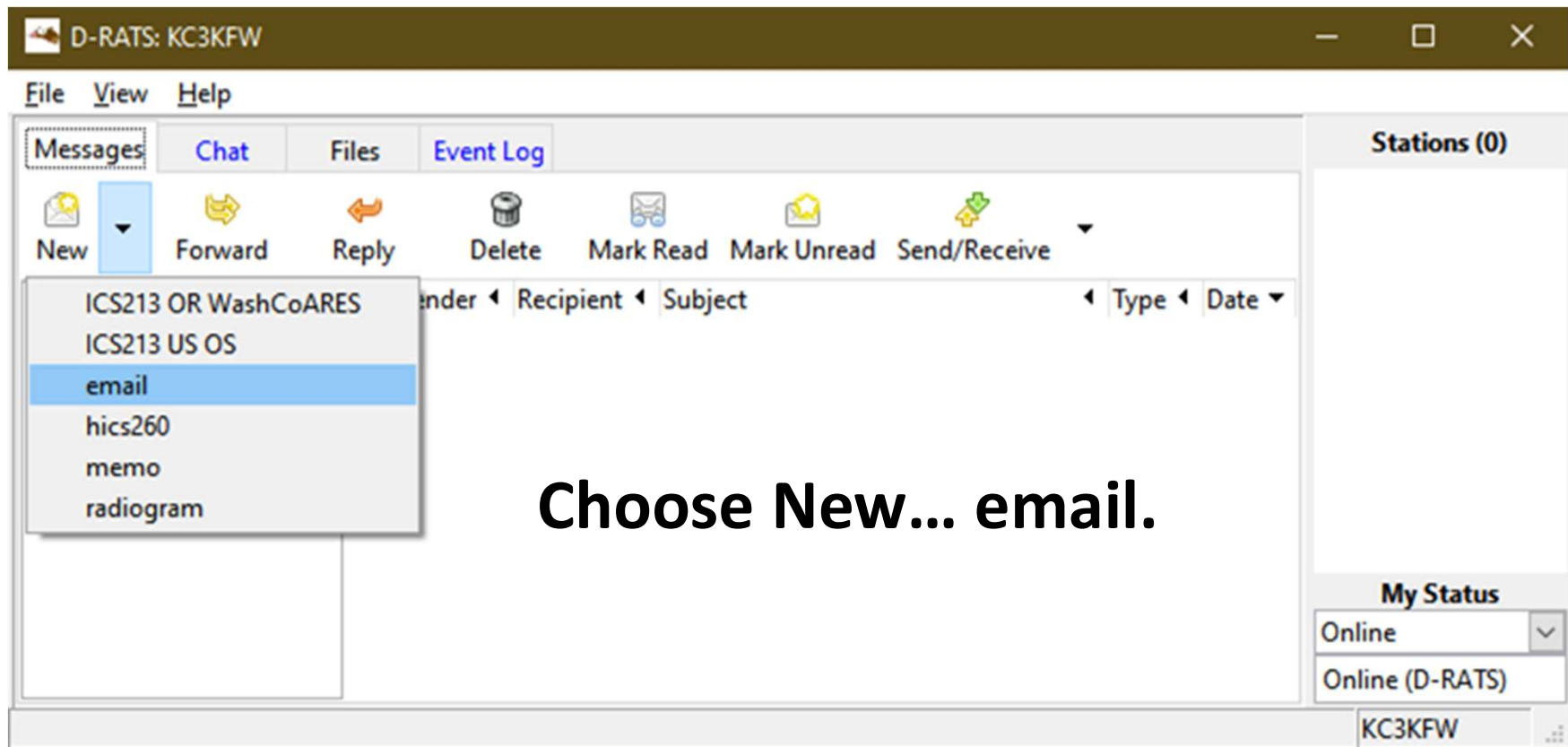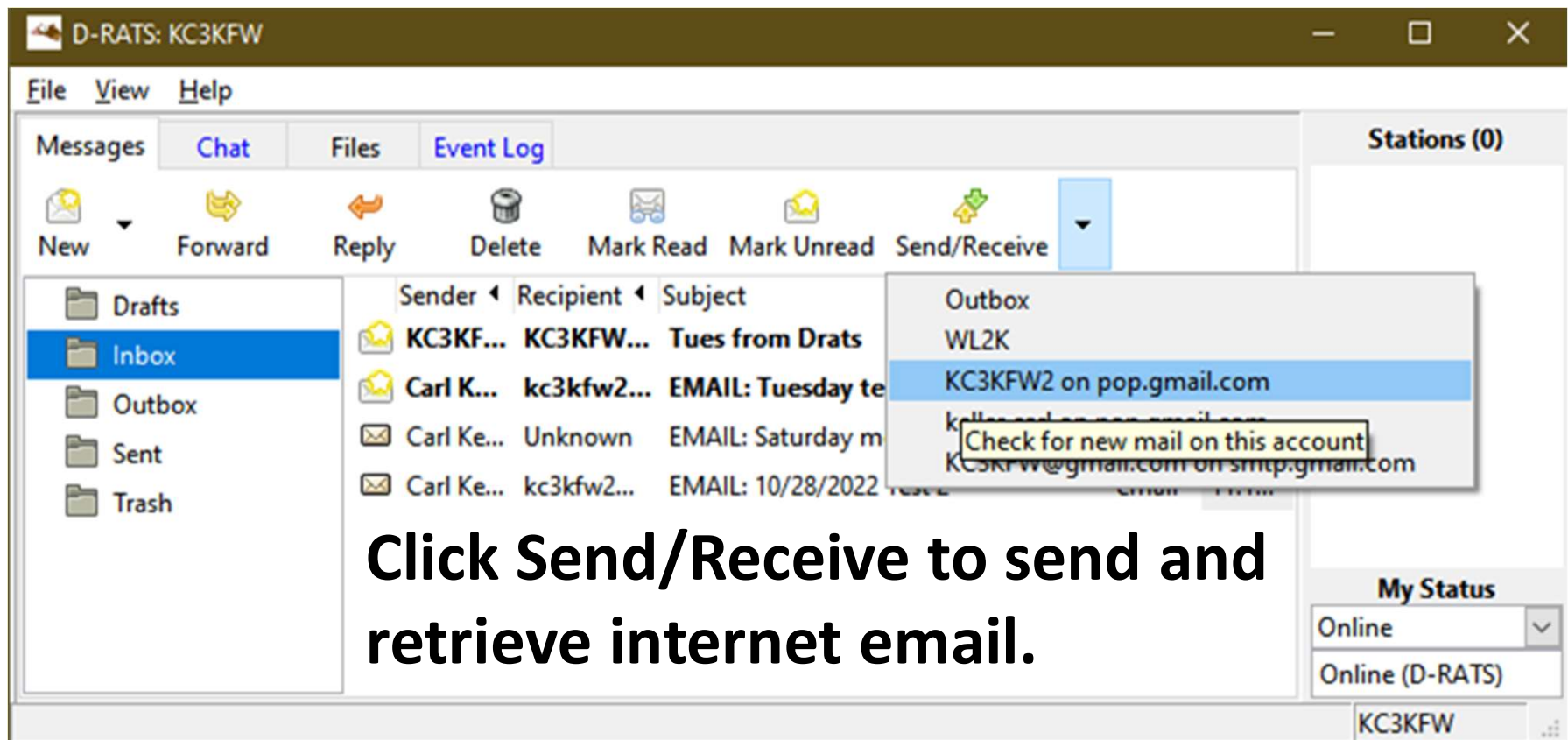
Works similar to most legacy email clients.

The Messages Window

Choose New... email.

The Messages Window

Click Send/Receive to send and retrieve internet email.

The Messages Window

Create an email, and click Send to move it to the Outbox.

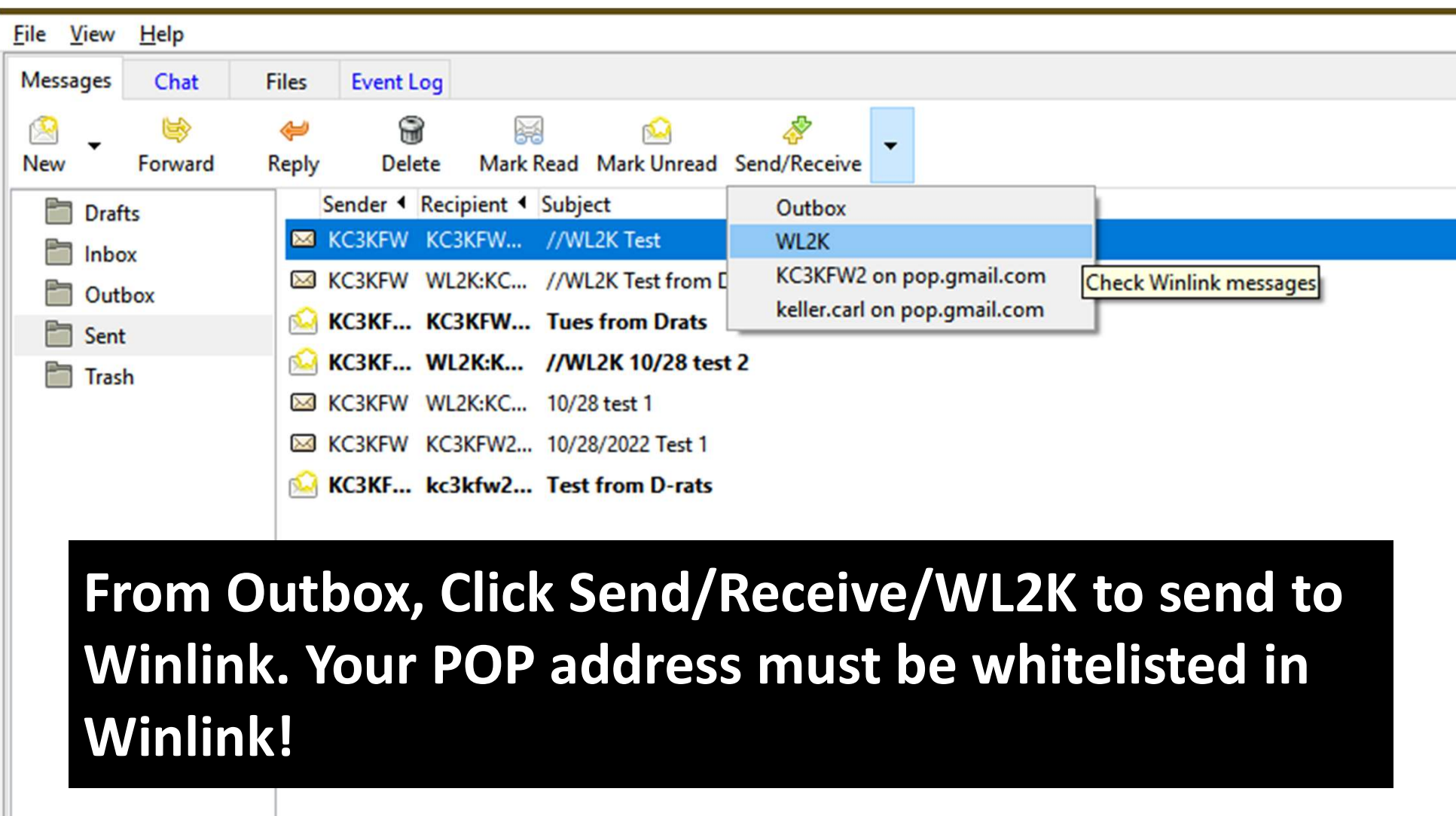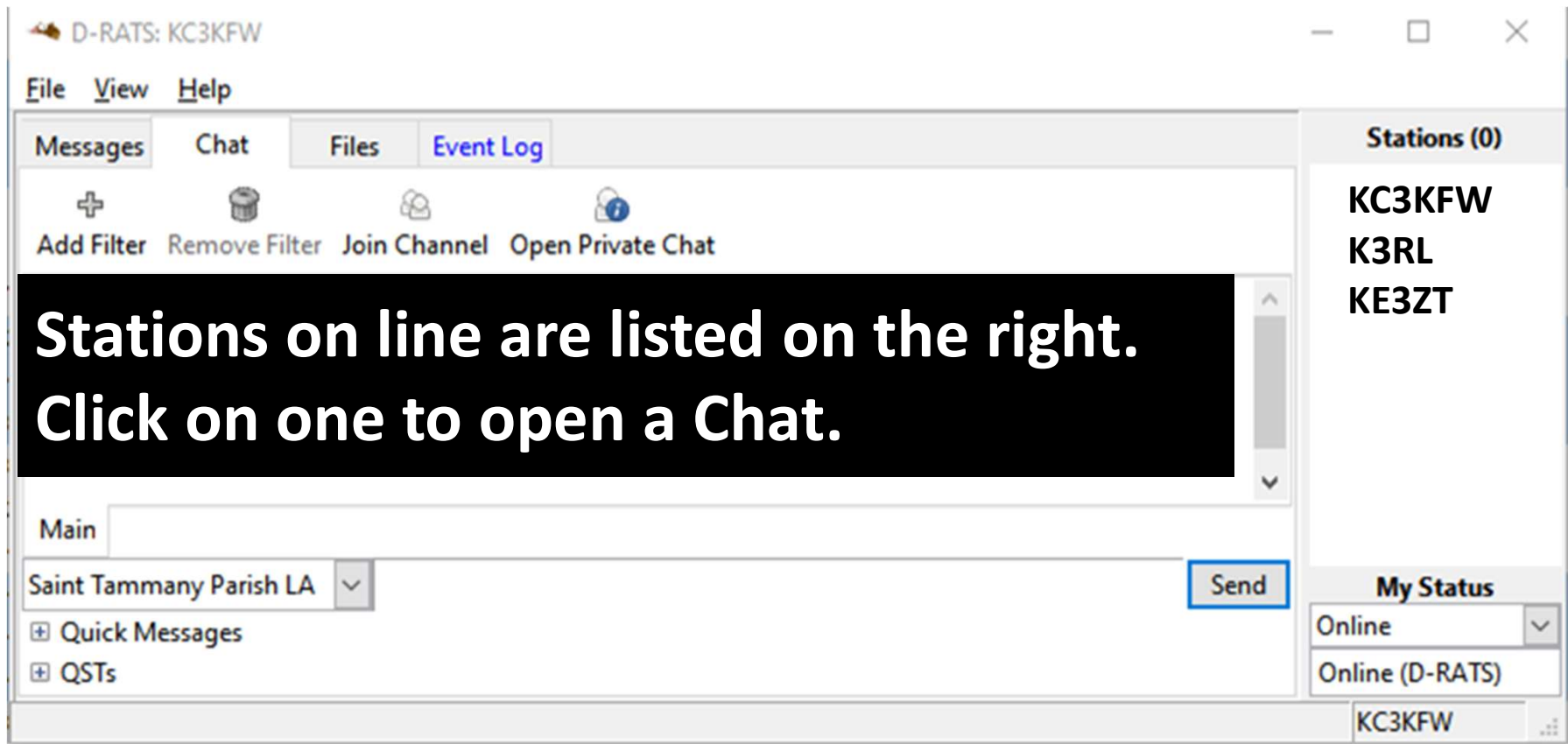Format for email to Winlink.org. Note the //WL2K in subject line. POP mail must be working and active.

From Outbox, Click Send/Receive/WL2K to send to Winlink. Your POP address must be whitelisted in Winlink!

The Chat Window

The Chat Window

A screenshot of the D-RATS: KC3KFW chat window. The menu bar shows File, View, Help. Tabs include Messages, Chat, Files, Event Log. Toolbar buttons: Add Filter, Remove Filter, Join Channel, Open Private Chat. A black overlay box reads "The Ratflector to which you are connected is below." The message area shows "Main" with a dropdown "Saint Tammany Parish LA", a Send button, Quick Messages and QSTs. On the right is "Stations (0)" and "My Status" set to "Online" / "Online (D-RATS)". Bottom shows KC3KFW.

The Chat Window

The Files Window

Your files for sharing are in the D-Rats folder on your Desktop. You can also download files from other users. It works just like FTP.
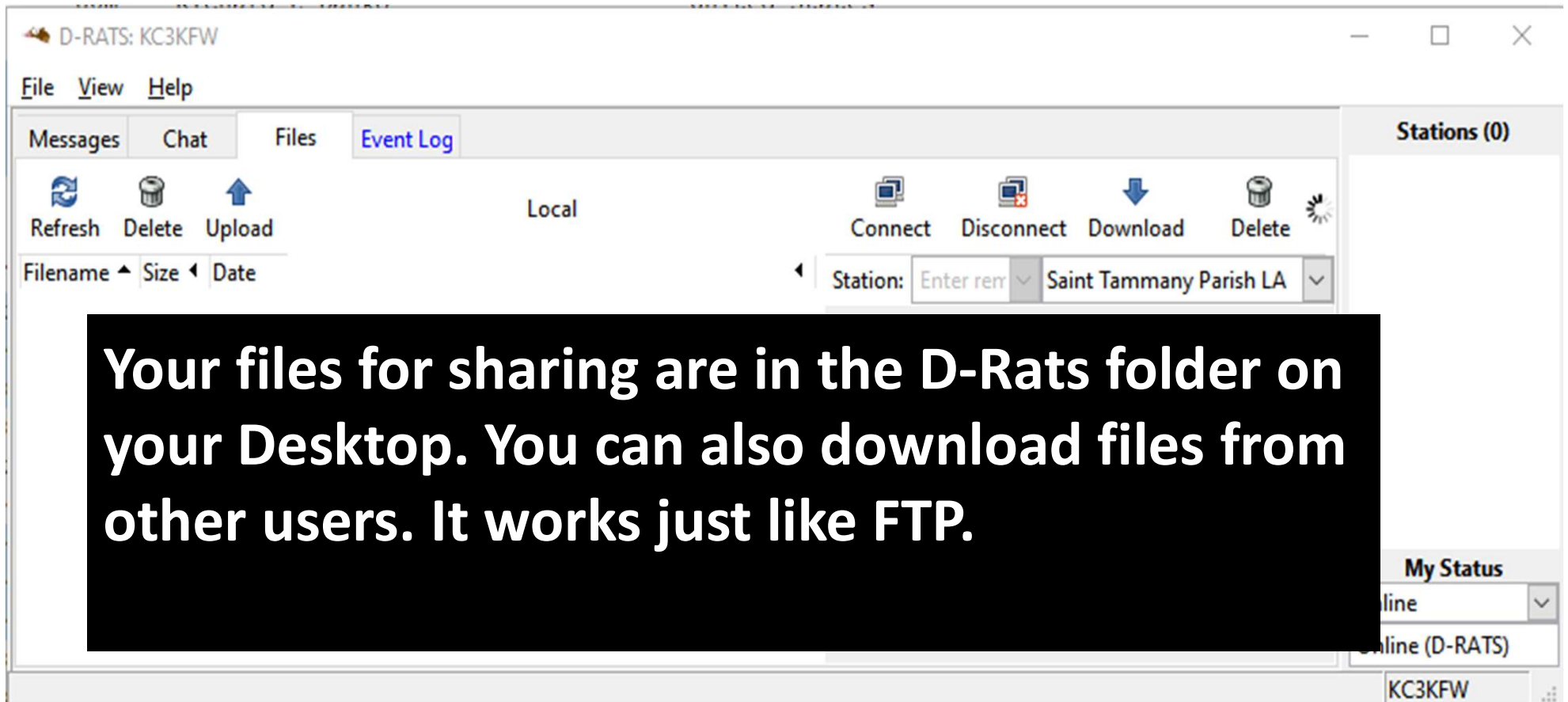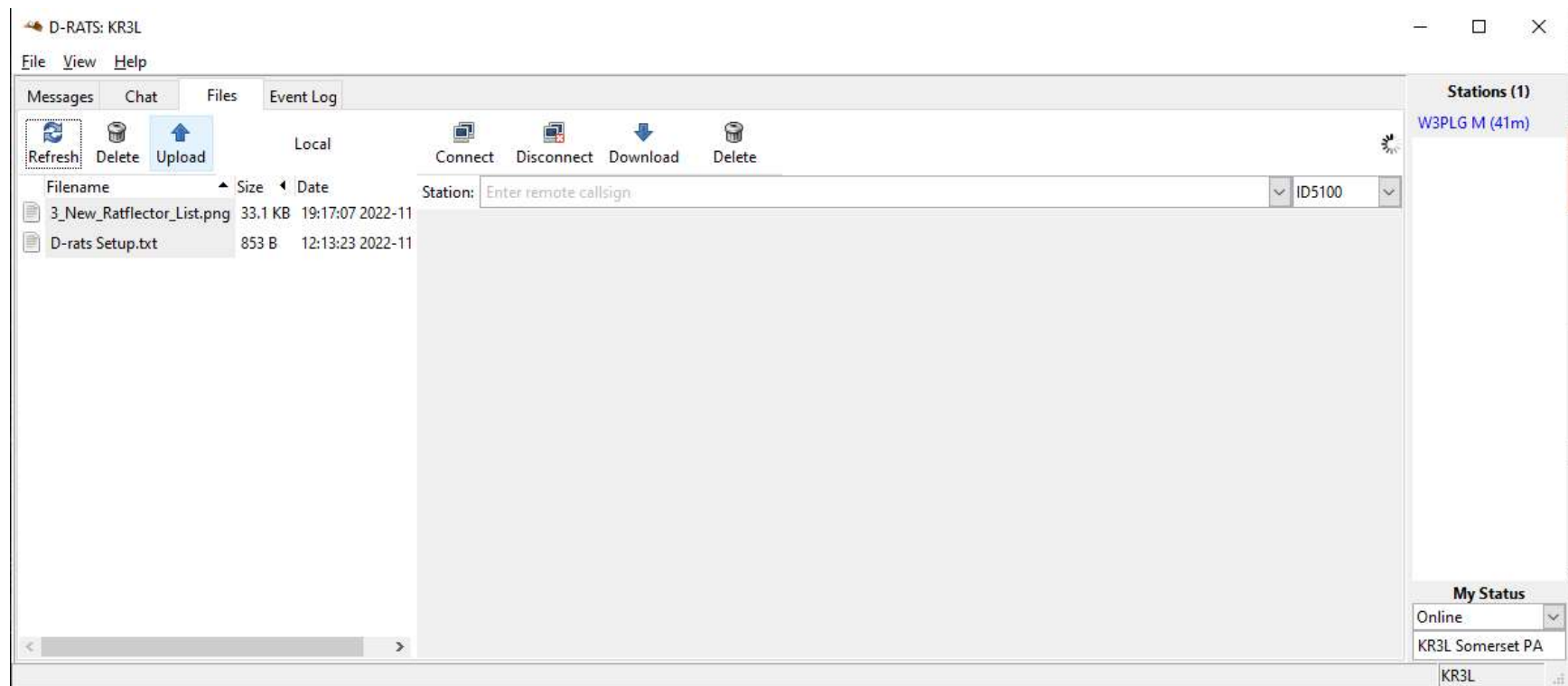
File Transfer Window

- D-RATS can transfer files from one station to another using D-STAR radio or the Internet.

- The left side of the screen shows the files in your local sharing folder.

- The right side of the screen displays the files in the remote stations sharing folder.

File Transfer

File Transfer continued

- Use the drop down arrows on the right side of the screen to select a station from the list, and the port to use for connecting to them.

- Click on the connect button.

- The remote stations file list will soon appear on the right side of the screen.

- To retrieve a file, highlight it and click on download.

- To send a file to the remote station, highlight a file in the local list and click upload.

- Be sure to click on the disconnect button when you are finished exchanging files with a station

The "Event Log" and "Show Debug Log" Windows

- The Event Log window on the main screen, along with the "Show Debug Log" window, found under Help on the menu bar, provide invaluable insight into what is going on with your D-Rats install!

- Both windows can help you resolve issues such as why your emails are not getting sent or received.

The "Event Log" Window

The "Show Debug Log" Window

debug.log - Notepad   — □ ✕

File   Edit   Format   View   Help

```
Mainapp   : Enabled debug log for Win32 systems
Version : headers={'User-Agent': 'd-rats/0.3.9 '}
C:\Program Files (x86)\d-rats-0.3.9_win64\D-Rats-0.3.9_64\library.zip\BeautifulSoup.py:114: UserWarning: You are using a v

This will happen at some point after January 1, 2021.

If you just started this project, this is easy to fix. Install the 'beautifulsoup4' package instead of 'beautifulsoup' and start using

If this is an existing project that depends on Beautiful Soup 3, the project maintainer (potentially you) needs to start the proce

Qst      : FeedParser not available
Qst      : QSTWeatherWU class retired
Config   : FILE: C:\Users\kelle\AppData\Roaming\D-RATS-EV\d-rats.config
Mainapp   : Loading locale `en'
Mainapp   : Locale dir is: C:\Program Files (x86)\d-rats-0.3.9_win64\D-Rats-0.3.9_64\locale
-----------------------------------------------------------------------
Mainapp   :  D-RATS v0.3.9  starting at Tue Nov 01 14:42:33 2022
Mainapp   : Platform Win32Platform:

 base:      C:\Users\kelle\AppData\Roaming\D-RATS-EV
```

Questions

References

- GA_ARES_D-RATS (gaares.org)
- http://www.dstarinfo.com/Data/Sites/1/media/getting-started-with-d-rats-%28ga%29.pdf
- https://groups.io/
- https://openweathermap.org/
- https://support.google.com/mail/answer/7104828?hl=en
- GA_ARES_D-RATS (gaares.org)
- DSTAR D-Rats | PennLink XLX Constellation (pennlinkgroup.com)