

D-RATS Installation and Digital Check-In via Chat Cherokee County ARES

Task DRA1010

Version 1.6
30 MAY 2022



W1JKU
Cherokee ARES

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Overview

D-RATS allows for real-time digital communication using a PC via D-STAR devices or through the Internet.

D-RATS supports:

- Instant messaging style chat
- Email capability to Winlink or Internet Email Addresses
- Generation and Sending of predefined Forms like ICS-214
- Position Reporting with included Maps

This document will focus on installation and configuring D-RATS to perform Chat functionality and digital check-ins to the GA-ARES Ratreflector over the Internet.

At the end of the training guide is a Drill Cherokee ARES we will practice on upcoming NET's/Training opportunities.

If you have recommendations for changes or updates, please contact w1jku.us@gmail.com

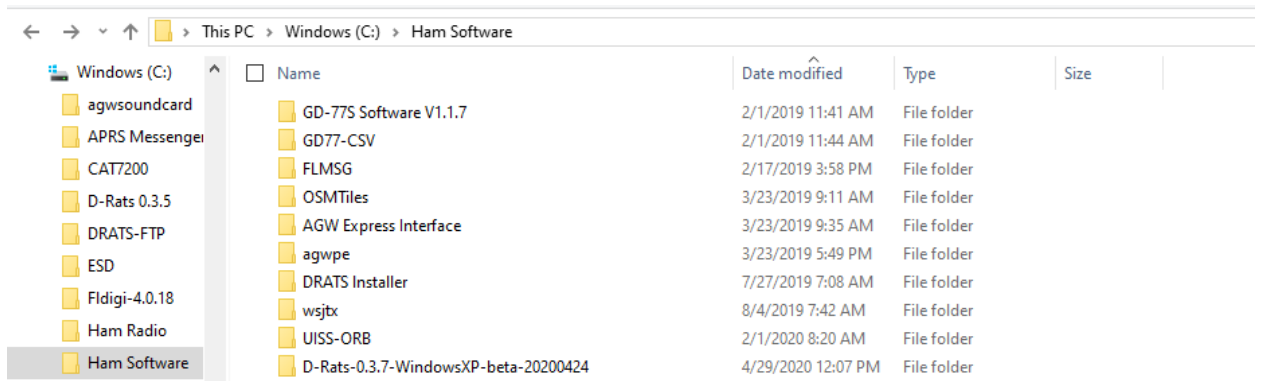
References:

1. [D-RATS Download Page](#)
<http://dstarinfo.com/drats.aspx> - Suggest you keep checking this page on a monthly basis and utilize the Beta Download. As of May 3, 2020, Beta Version 0.3.9 is available for download.
2. D-RATS Installation Guide - courtesy of GA-ARES:
[http://dstarinfo.com/Data/Sites/1/media/getting-started-with-d-rats-\(ga\).pdf](http://dstarinfo.com/Data/Sites/1/media/getting-started-with-d-rats-(ga).pdf)
3. GAARES YouTube Training Material: <https://www.gaares.org/training.php>
4. GAARES D-RATS Training Material: <https://gaares.org/drats.php>

Installation and Configuration for GA ARES Ratflector

1. The new version of D-RATS does not come with an Installer. You must download the zip file, extract the folder from the zip file and place it on the drive and location of your choosing.

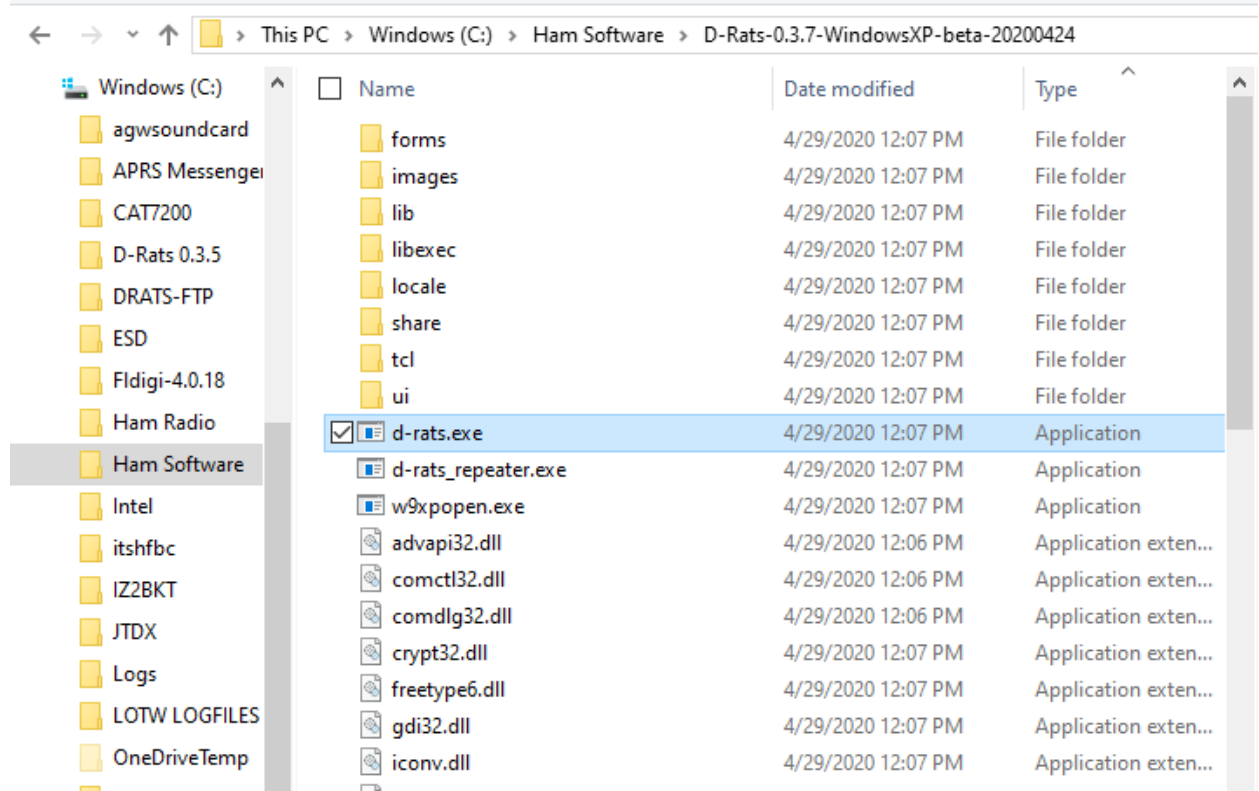
In the example below, I extracted the folder **D-Rats-0.3.7-WindowsXP-beta-20200424** to my personal folder of **c:\HAM Software**



Name	Date modified	Type	Size
GD-77S Software V1.1.7	2/1/2019 11:41 AM	File folder	
GD77-CSV	2/1/2019 11:44 AM	File folder	
FLMSG	2/17/2019 3:58 PM	File folder	
OSMTiles	3/23/2019 9:11 AM	File folder	
AGW Express Interface	3/23/2019 9:35 AM	File folder	
agwpe	3/23/2019 5:49 PM	File folder	
DRATS Installer	7/27/2019 7:08 AM	File folder	
wsjtx	8/4/2019 7:42 AM	File folder	
UISS-ORB	2/1/2020 8:20 AM	File folder	
D-Rats-0.3.7-WindowsXP-beta-20200424	4/29/2020 12:07 PM	File folder	

2. You may then run d-rats.exe from the folder above, there will be no shortcut automatically added to your PC since there is no Windows installer for this beta version of D-RATs.

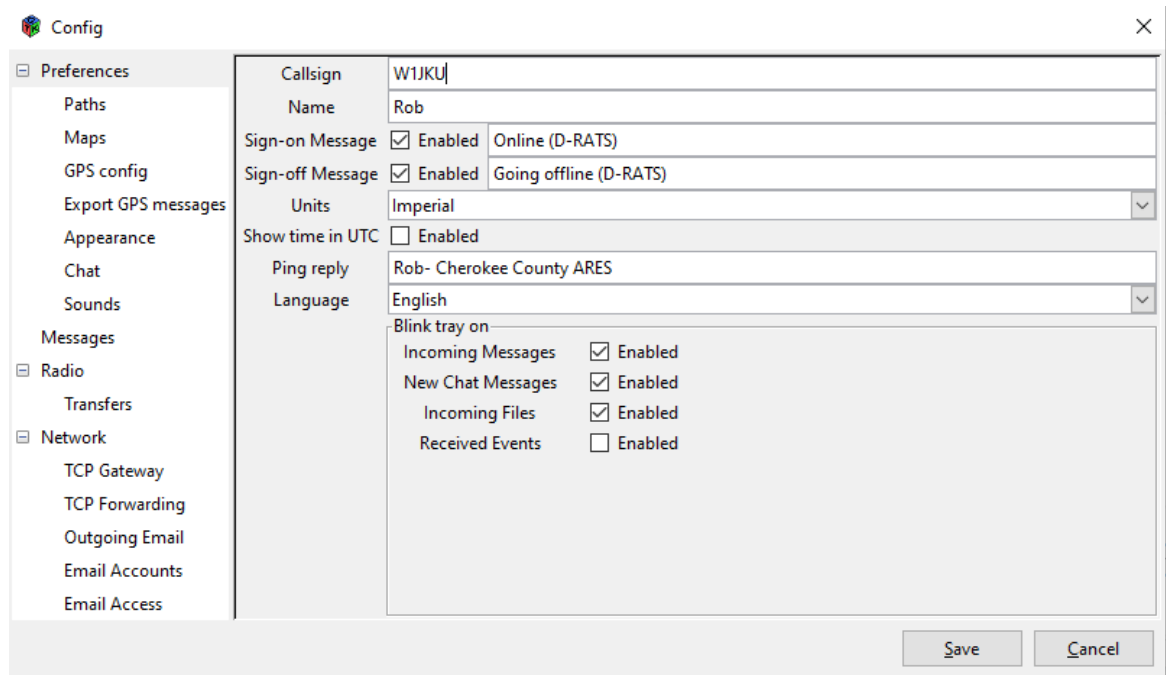
To create a shortcut on your pc, Right click on d-rats.exe and click **Pin to Start**



- When you start this new version of D-Rats for the first time, a new registry file will be created on your PC to store your settings. Follow the instructions on the screen using the [Reference section #2](#) above in this document for details on how to configure D-RATS. The instructions are very clear and provide step by step instructions. In this document, I will only cover the steps the additional steps that need to be performed not covered in the Referenced document:

[Quick Start](#), Under **File** and **Preferences**:

- Set your Callsign and Name



- b. Under **GPS Config** Set your **Latitude**, **Longitude**, and **Altitude** so your will display properly on maps and position reports

The screenshot shows a 'Config' window with a sidebar on the left and a main configuration area on the right. The sidebar is expanded to show 'GPS config' under the 'Preferences' category. The main area contains the following settings:

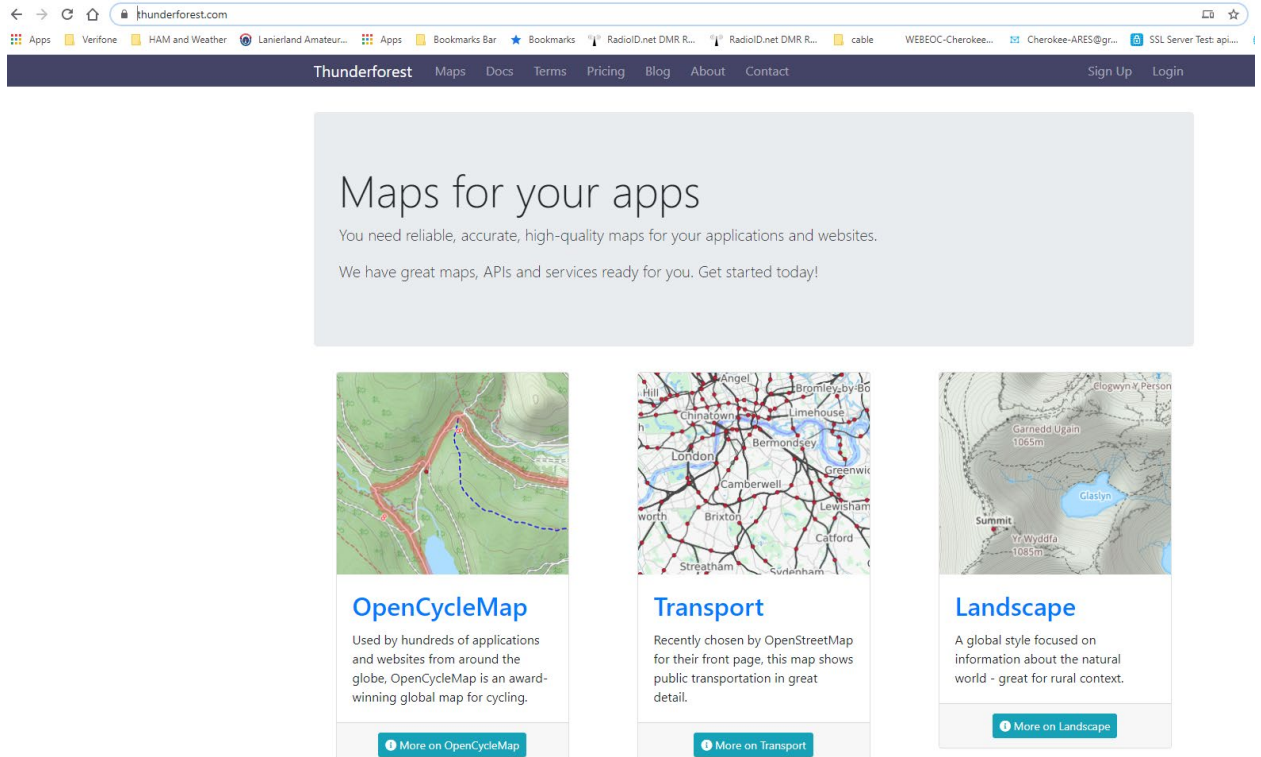
Latitude	34.144376
Longitude	-84.526587
Altitude	900
Use External GPS	<input type="checkbox"/> Enabled
External GPS	4800
GPS-A Symbol	Table: / Symbol: >
Default GPS comment	BN *20 DPRS

At the bottom right of the window are 'Save' and 'Cancel' buttons.

4. See [MAPS and Configuration with Thunderforest](#) below for a minor change on configuring and enabling D-RATS maps.

MAPS and Configuration with Thunderforest

1. Maps. The Map feature has been improved and is more reliable than the prior version of maps that stopped working. But you must first register for an API Key with <https://thunderforest.com> which is free. Click the Sign-up button and follow the directions:




The screenshot shows the Thunderforest website interface. At the top, there is a navigation bar with the Thunderforest logo and links for Maps, Docs, Terms, Pricing, Blog, About, and Contact. On the right side of the navigation bar are links for Sign Up and Login. Below the navigation bar is a large grey box with the heading "Maps for your apps" and the text "You need reliable, accurate, high-quality maps for your applications and websites. We have great maps, APIs and services ready for you. Get started today!". Below this box are three map style cards: OpenCycleMap, Transport, and Landscape. Each card features a small map preview, a title, a short description, and a "More on [Map Style]" button.

Thunderforest Maps Docs Terms Pricing Blog About Contact Sign Up Login

Maps for your apps


You need reliable, accurate, high-quality maps for your applications and websites. We have great maps, APIs and services ready for you. Get started today!



OpenCycleMap

Used by hundreds of applications and websites from around the globe, OpenCycleMap is an award-winning global map for cycling.

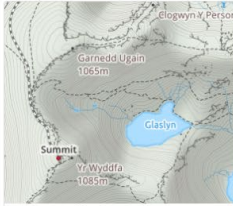
[More on OpenCycleMap](#)



Transport

Recently chosen by OpenStreetMap for their front page, this map shows public transportation in great detail.

[More on Transport](#)



Landscape

A global style focused on information about the natural world - great for rural context.

[More on Landscape](#)

2. After you have your free API Key, you can continue configuring D-RATS DO NOT attempt to manipulate the URL's in D-RATS with what you see in Thunderforest, you only need to apply your correct API Key, to the configuration, which will be depicted in Step 3 below:

The screenshot shows the Thunderforest Console dashboard. At the top, there is a navigation bar with the text "Thunderforest Console" and links for "Dashboard", "Help", and "Logout". Below the navigation bar, a green notification bar states "Signed in successfully." with a close button (X).

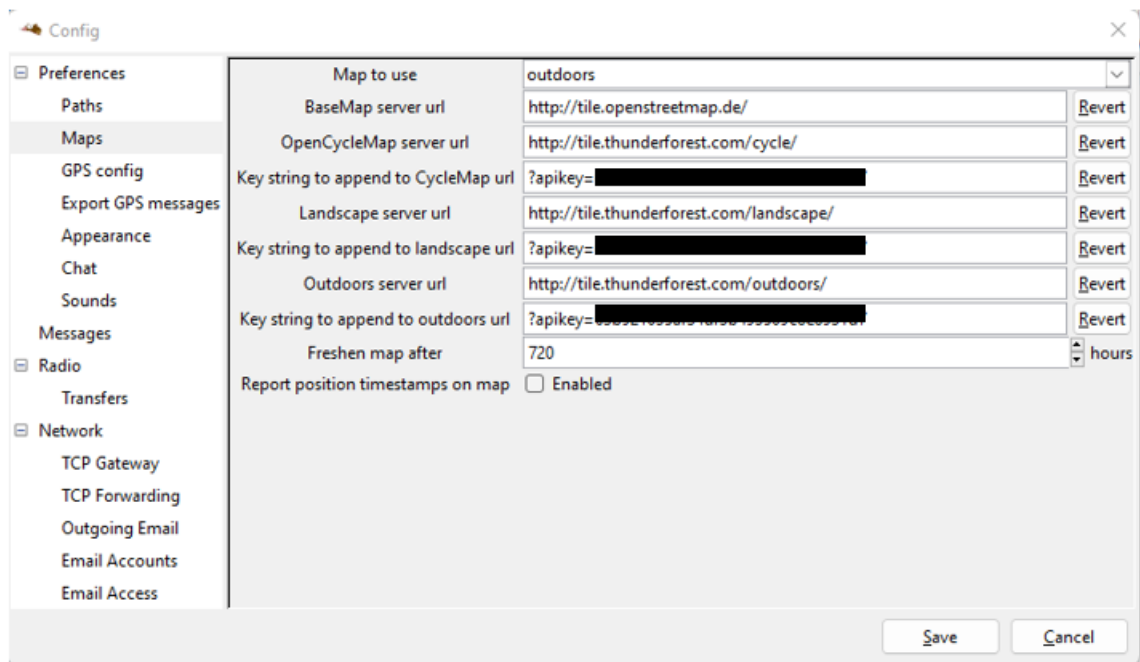
The main content area is divided into two columns. The left column contains three sections:

- Account Details**: Includes fields for Name (Rob Bruderer), Email (w1jku.us@gmail.com), Organisation (Amateur Radio), Invoice Address, Country, and EU VAT ID. An "Edit Account" button is located to the right of this section.
- Payment Information**: Shows "Card in use" as "none". A "Change" button is located to the right of this section.
- API Keys**: Shows a single API Key: 63b921035af34df3b49356 [REDACTED].

The right column contains the **Subscription** section, which includes the text "You can upgrade, downgrade or cancel your subscription at any time." and "Current Plan Hobby Project (Free)". A yellow warning box below this text states: "You need to supply your card details, and an invoice address, before you can upgrade to a paid subscription."

3. In D-RATS under File, Preferences, Maps, you will update only the 3 locations depicted below that start with **“Key string to append to...”**.
 - a. The value in all 3 will be the same consisting of **?apikey=** and your unique apikey you received in step 2 from Thunderforest.
 - b. Notice the last few digits we cross out as that is my personal Thunderforest apikey, you must use your own value.
 - c. After applying the configurations, you may need to reboot your PC before the maps function.
 - d. Change https to http in the URL. (as thunderforest is no longer using SSL certificates)

Option: If Maps is properly configured, you can change “Map to use” in D-RATS using the dropdown list to utilize the various maps supported.



Using D-RATS Maps.

- To use maps in D-RATS, simply click on View, then Maps from the main D-RATS application.
- At that time the map will appear with the callsigns and locations D-RATS has received.
- You may then zoom in or out, or if necessary, return to the Maps Configuration and change the map to be displayed.

D-RATS Map Window - map in use: base

Map

Station

Station	Latitude	Longitude	Distance	Direction
<input checked="" type="checkbox"/> Stations				
<input checked="" type="checkbox"/> WA4YIH	34.0000	-84.0000	31.78	108.17
<input checked="" type="checkbox"/> N3TSZ-2	40.0622	-75.0908	661.53	49.04
<input checked="" type="checkbox"/> W1JKU-1	34.1444	-84.5266	0.00	0.00
<input checked="" type="checkbox"/> NETWORK	34.0000	-84.1000	26.40	112.10
<input checked="" type="checkbox"/> K4DOX	34.3765	-84.9784	30.41	302.00

34.1404, -84.5282

Static position

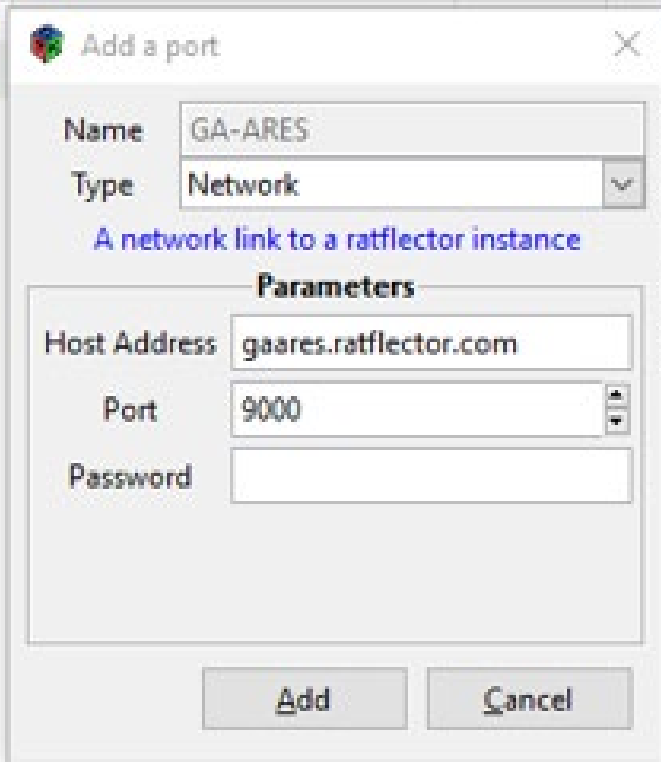
Zoom (16)

Min < > Max

Track center

GA ARES Ratreflector Configuration

1. After you install and configure D-RATS with the base instructions, please configure and enable the GA ARES Ratreflector
 - a. Click **File**
 - b. Click **Preferences**
 - c. Click **Radio**
 - d. Click **Add**
 - e. When the Add a port window appears, enter the information you see below for Name, Type, Host Address, and Port. Leave Password Blank, and then click **Add**



The screenshot shows a dialog box titled "Add a port" with a close button in the top right corner. The dialog contains the following fields and options:

- Name:** GA-ARES
- Type:** Network (selected from a dropdown menu)
- Host Address:** gaares.ratreflector.com
- Port:** 9000 (with up/down arrow buttons)
- Password:** (empty text box)

Below the fields, there are two buttons: "Add" and "Cancel".

Northwest GA District Ratflector Configuration

1. After you install and configure D-RATS with the base instructions, please configure and enable the GA ARES Ratflector
 - a. Click **File**
 - b. Click **Preferences**
 - c. Click **Radio**
 - d. Click **Add**
 - e. When the Add a port window appears, enter the information you see below for Name, Type, Host Address, and Port. Leave Password Blank, and then click **Add**

Add a port [X]

Name: NW GA District

Type: Network

A network link to a ratflector instance

Parameters

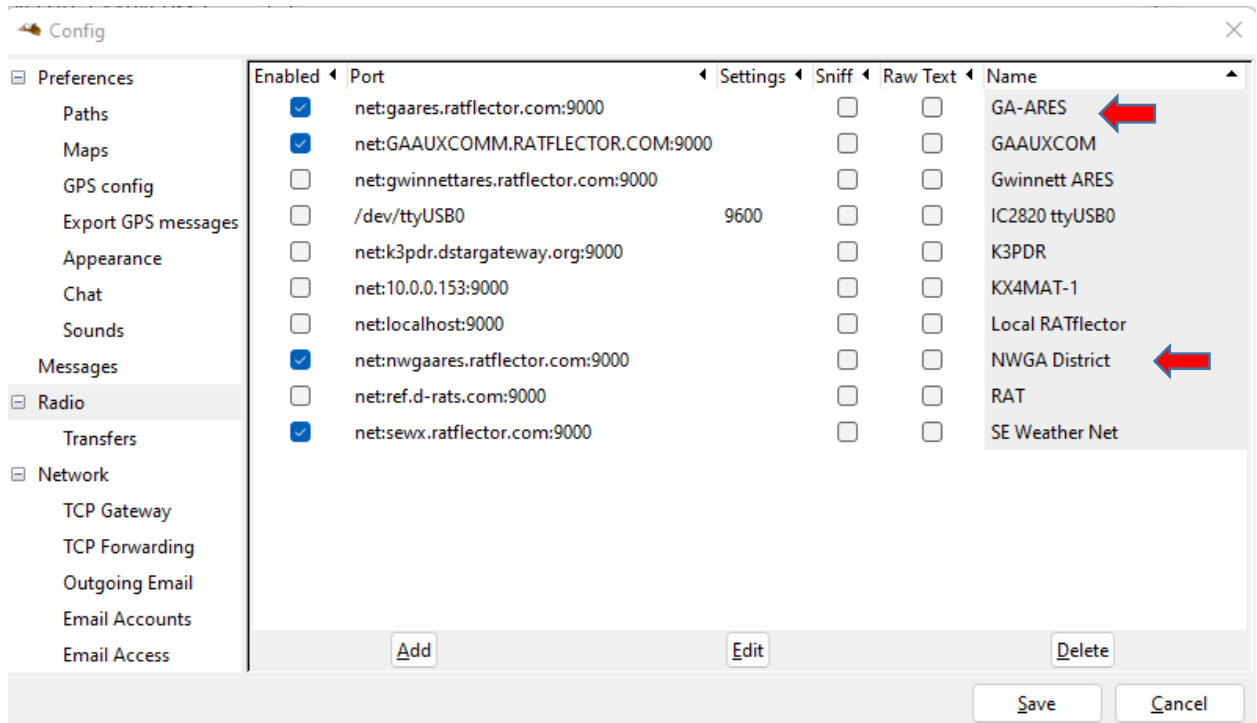
Host Address: nwgaares.ddnsfree.com

Port: 9000

Password:

[Add] [Cancel]

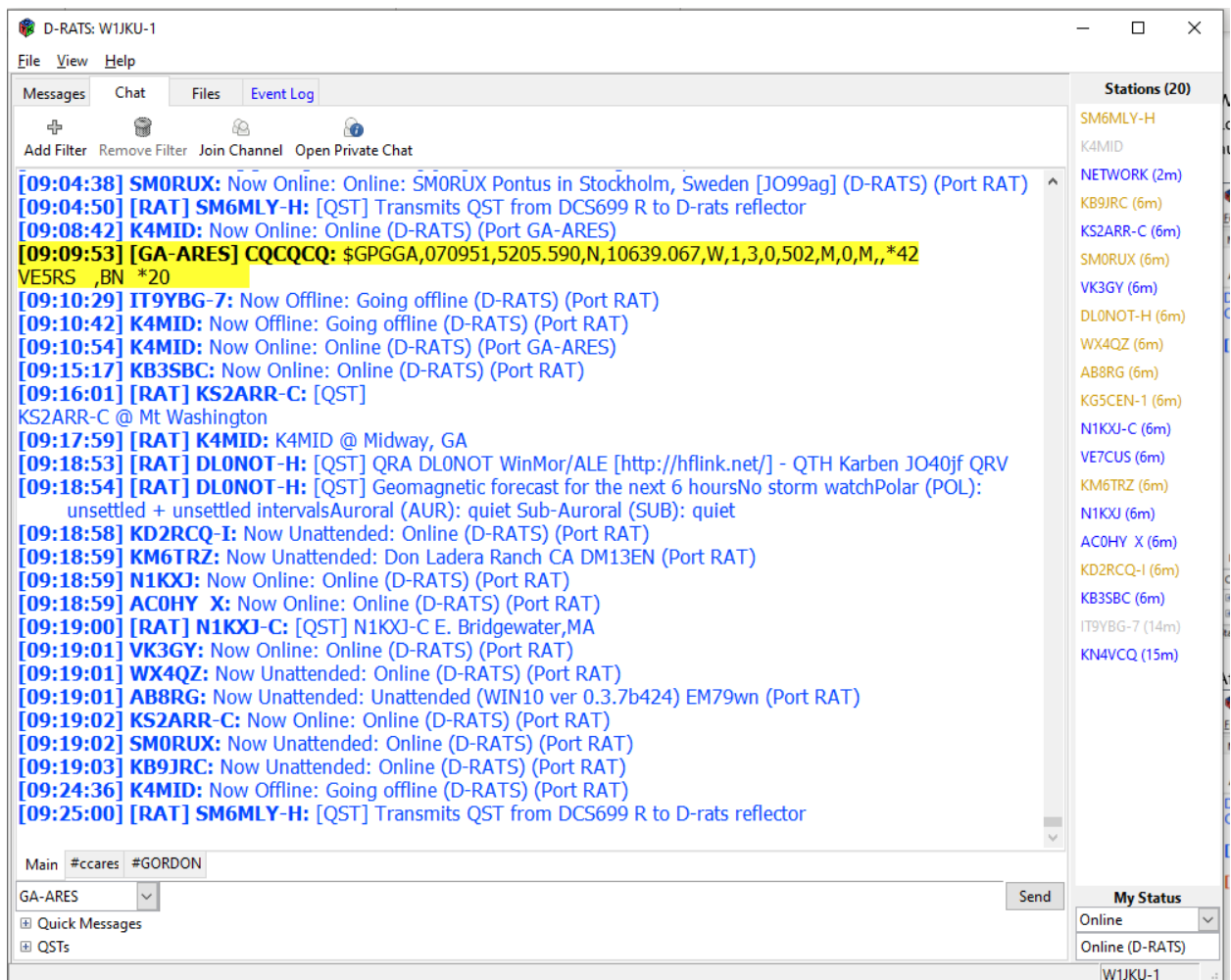
2. Your Configuration under Radio should look like this for **GA-ARES** and **NW GA District**:



3. Ensure you have the check box **Enabled** for the GA-ARES and NW GA District ratflector and any other ratflector you wish to utilize and click **Save** at the bottom of the screen.
4. You are now configured and should be able to utilize the GA-ARES and NW GA District ratflector.

Digital Check-In via Chat

1. Depending on the ratflector, your wishing to connect to, you may wish to enable or disable various ratflectors enabled in the Configuration-Radio settings.
2. To see which stations are currently connected to D-RATS, on the left side of your screen under **Stations**, right click your mouse, and click **Ping all Stations** to see which stations are currently connected.
3. To requested updated station locations that will appear on the Map, , on the left side of your screen under **Stations**, right click your mouse, and click **Request all positions**.
4. Select **GA-ARES** or **NW GA District** in the drop-down list on your screen to communicate on the respective Ratflector.



The screenshot shows the D-RATS W1JKU-1 chat window. The main chat area displays a list of messages with timestamps and station identifiers. A red arrow points to the 'GA-ARES' dropdown menu at the bottom left of the chat area. The station list on the right side of the window shows 20 stations, including SM6MLY-H, K4MID, NETWORK (2m), KB9JRC (6m), KS2ARR-C (6m), SM0RUX (6m), VK3GY (6m), DL0NOT-H (6m), WX4QZ (6m), AB8RG (6m), KG5CEN-1 (6m), N1KXJ-C (6m), VE7CUS (6m), KM6TRZ (6m), N1KXJ (6m), AC0HY X (6m), KD2RCQ-I (6m), KB3SBC (6m), IT9YBG-7 (14m), and KN4VCQ (15m). The 'My Status' dropdown at the bottom right shows 'Online (D-RATS)'.

Messages

Chat

Files

Event Log

Add Filter Remove Filter Join Channel Open Private Chat

[09:04:38] SM0RUX: Now Online: Online: SM0RUX Pontus in Stockholm, Sweden [JO99ag] (D-RATS) (Port RAT)

[09:04:50] [RAT] SM6MLY-H: [QST] Transmits QST from DCS699 R to D-rats reflector

[09:08:42] K4MID: Now Online: Online (D-RATS) (Port GA-ARES)

[09:09:53] [GA-ARES] CQCQCQ: \$GPGGA,070951,5205.590,N,10639.067,W,1,3,0,502,M,0,M,,*42
VE5RS ,BN *20

[09:10:29] IT9YBG-7: Now Offline: Going offline (D-RATS) (Port RAT)

[09:10:42] K4MID: Now Offline: Going offline (D-RATS) (Port RAT)

[09:10:54] K4MID: Now Online: Online (D-RATS) (Port GA-ARES)

[09:15:17] KB3SBC: Now Online: Online (D-RATS) (Port RAT)

[09:16:01] [RAT] KS2ARR-C: [QST]
KS2ARR-C @ Mt Washington

[09:17:59] [RAT] K4MID: K4MID @ Midway, GA

[09:18:53] [RAT] DL0NOT-H: [QST] QRA DL0NOT WinMor/ALE [http://hflink.net/] - QTH Karben JO40jf QRV

[09:18:54] [RAT] DL0NOT-H: [QST] Geomagnetic forecast for the next 6 hoursNo storm watchPolar (POL):
unsettled + unsettled intervalsAuroral (AUR): quiet Sub-Auroral (SUB): quiet

[09:18:58] KD2RCQ-I: Now Unattended: Online (D-RATS) (Port RAT)

[09:18:59] KM6TRZ: Now Unattended: Don Ladera Ranch CA DM13EN (Port RAT)

[09:18:59] N1KXJ: Now Online: Online (D-RATS) (Port RAT)

[09:18:59] AC0HY X: Now Online: Online (D-RATS) (Port RAT)

[09:19:00] [RAT] N1KXJ-C: [QST] N1KXJ-C E. Bridgewater,MA

[09:19:01] VK3GY: Now Online: Online (D-RATS) (Port RAT)

[09:19:01] WX4QZ: Now Unattended: Online (D-RATS) (Port RAT)

[09:19:01] AB8RG: Now Unattended: Unattended (WIN10 ver 0.3.7b424) EM79wn (Port RAT)

[09:19:02] KS2ARR-C: Now Online: Online (D-RATS) (Port RAT)

[09:19:02] SM0RUX: Now Unattended: Online (D-RATS) (Port RAT)

[09:19:03] KB9JRC: Now Unattended: Online (D-RATS) (Port RAT)

[09:24:36] K4MID: Now Offline: Going offline (D-RATS) (Port RAT)

[09:25:00] [RAT] SM6MLY-H: [QST] Transmits QST from DCS699 R to D-rats reflector

Main #ccares #GORDON

GA-ARES

Quick Messages

QSTs

Send

My Status

Online

Online (D-RATS)

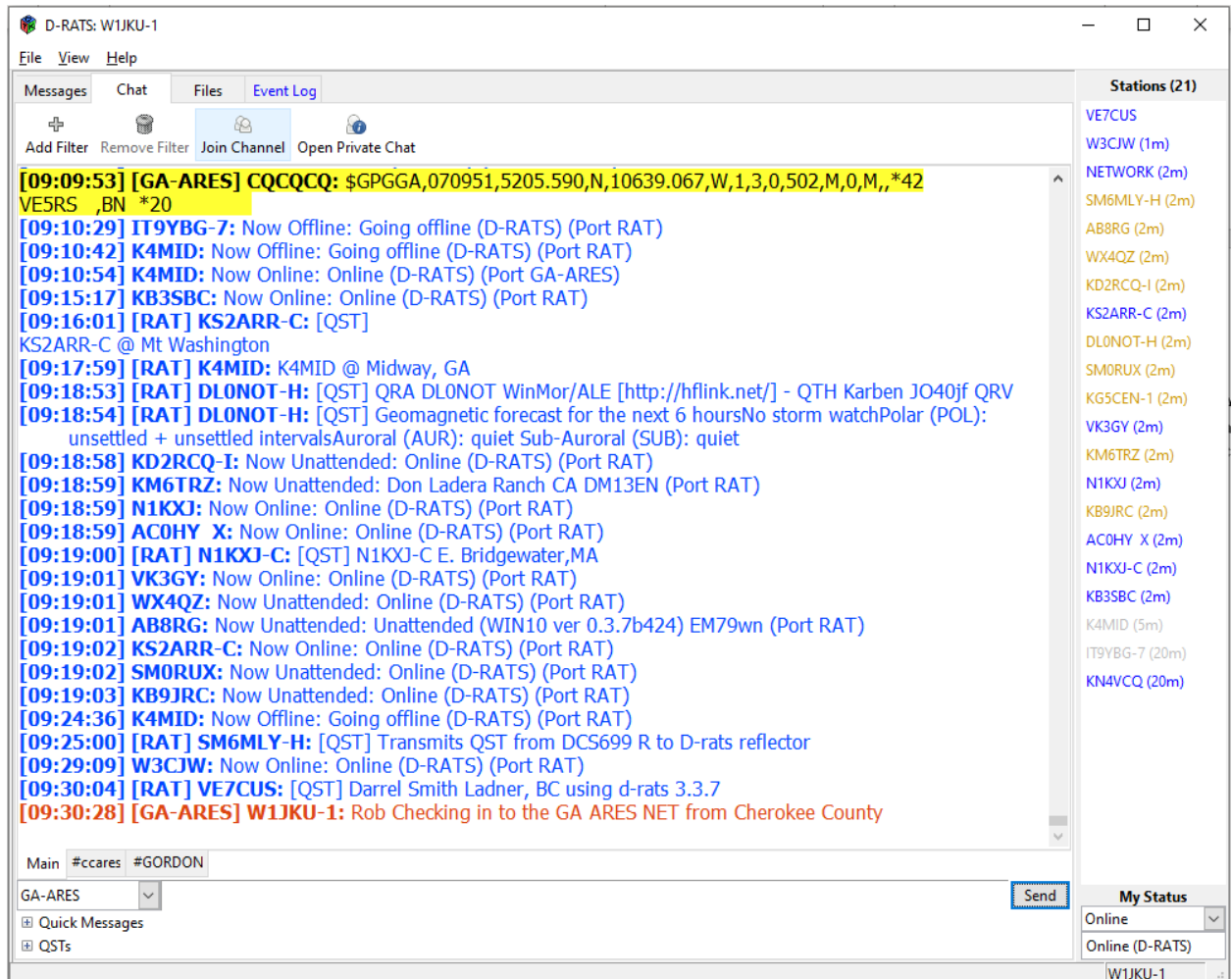
W1JKU-1

- Your cursor should be blinking to the right of the **GA-ARES / NW GA District** drop down list, where you are able to enter your message and then click **Send**.

The screenshot shows a chat window titled "D-RATS: W1JKU-1". The interface includes a menu bar (File, View, Help), tabs (Messages, Chat, Files, Event Log), and a list of messages. A red arrow points to the input area at the bottom, which contains a dropdown menu with "GA-ARES" selected and the text "Checking in to the GA ARES NET". A "Send" button is located to the right of the input area. The status bar at the bottom indicates "Station SM0RUX is now Unattended: Online (D-RATS)" and "W1JKU-1".

****** When checking in. first type the Net Control Operators Callsign then for example 'Please Check me in to GA ARES D-RATS NET' plus your Name and Location then click **Send**. There is no need to type your call-sign, D-RATS will automatically add your call sign to the message.

- After you click Send you will see your message posted in the main screen:



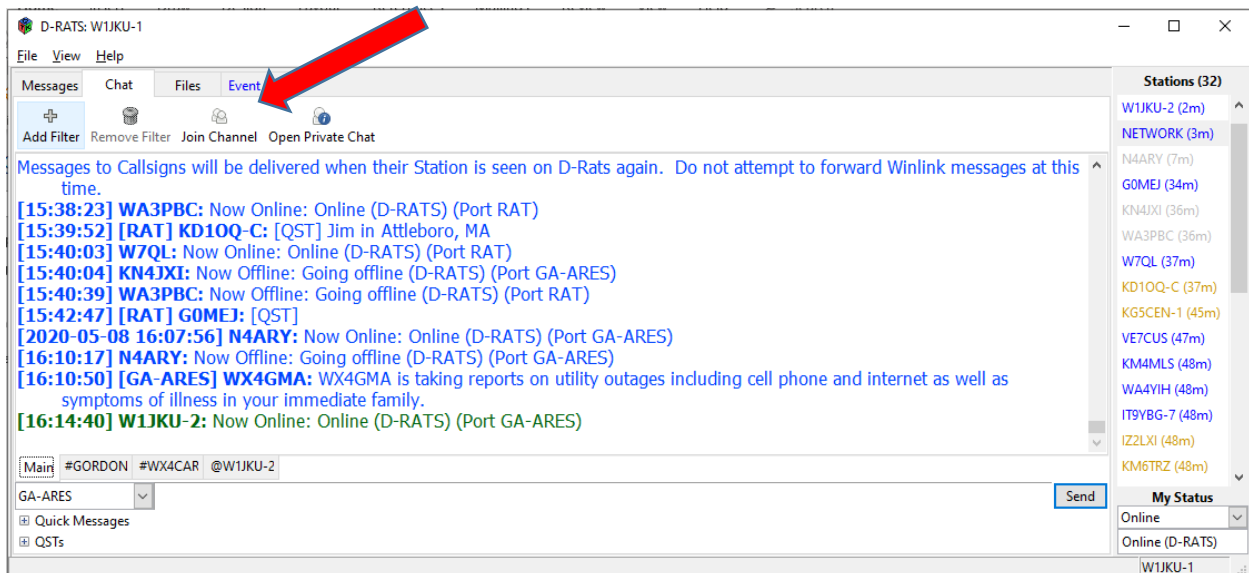
- Wait for the Cherokee Digital Net Control operator to acknowledge you. You may have to wait a few minutes as the operator collects multiple call signs and then acknowledges multiple in the same message.
- As additional call signs are acknowledged, NET Control will respond with the acknowledged call signs including previous, plus any new call signs. Just look for your call-sign. If you are not acknowledged and accidentally skipped, try again.

9. When Net Control Acknowledge you, you may then send your traffic:
10. This process continues on and on... This is a good method to communicate and supplement FM, SSB, WINLINK, APRS Communications.
11. More advance functions will be covered in future training.

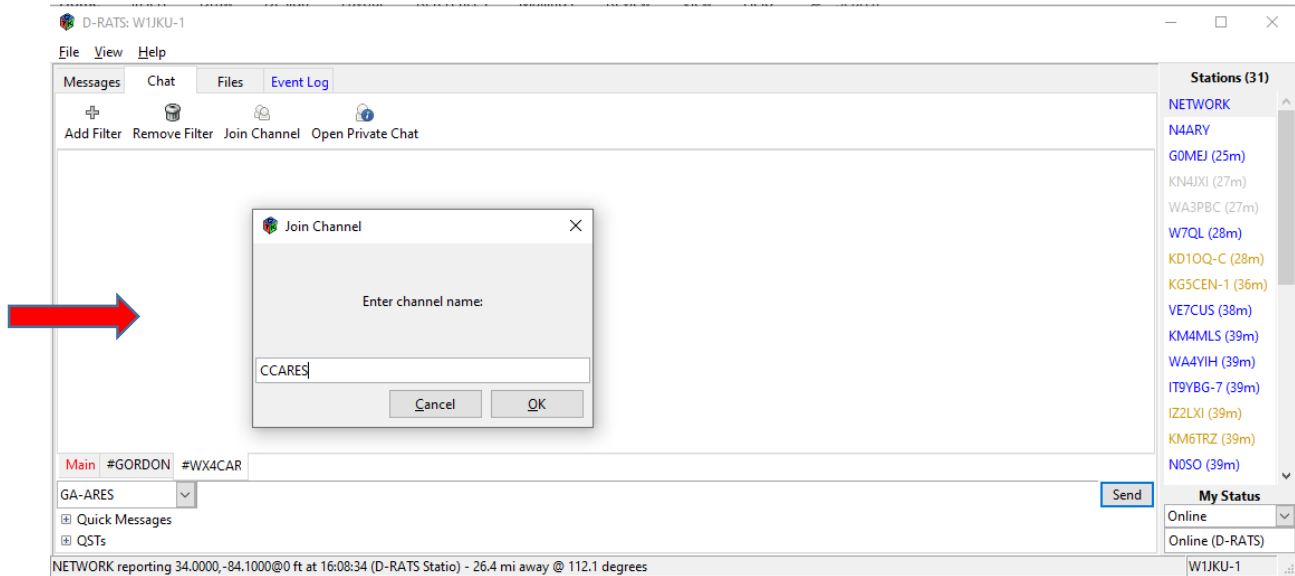
D-RATS Channels

D-RATS Channels are not secure or encrypted. No sensitive information should be passed using D-RATS. The D-RATS Channel simply allows personnel, teams, and organizations to utilize D-RATS for passing traffic via CHAT without everyone seeing the message on the Main D-RATS Chat Window, which can quickly become cluttered with all of the traffic passed.

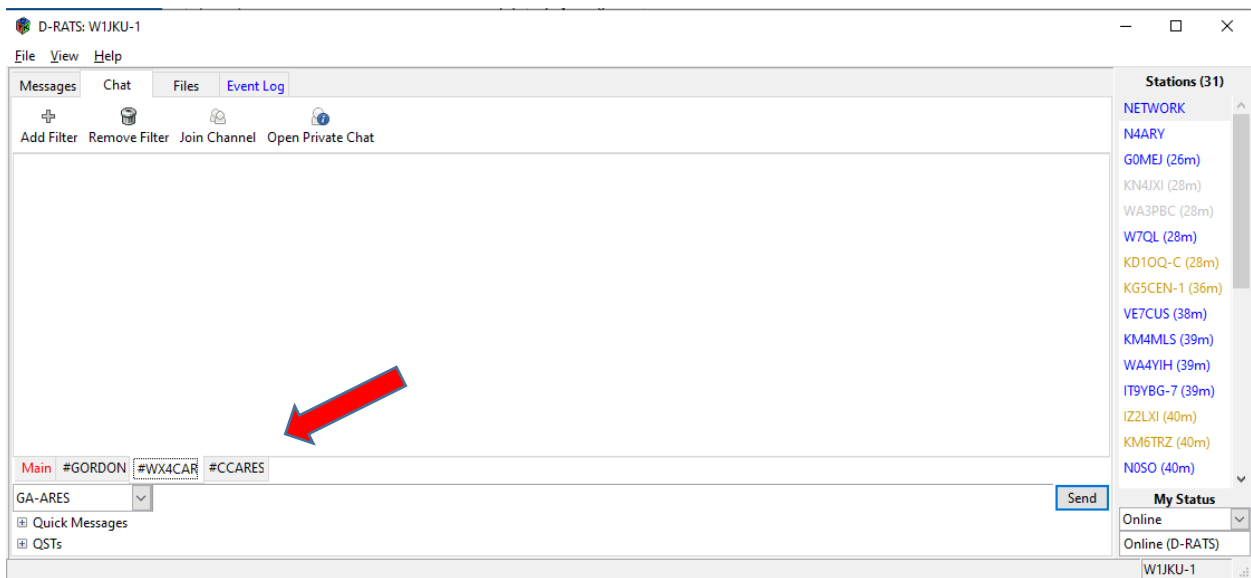
Click the **Join Channel** button from the Chat Window. You will then be instructed to enter the Channel Name.



After clicking the **Join Channel**, you will then be instructed to enter the Channel Name. In the example below, I will Join Channel ccares. You may setup unique and custom channels if you desire, you just need to ensure whomever you want to talk to knows to join that channel. The Channel name is **CASE SENSITIVE**. We will recommend using all-lowercase channel names we are establishing to avoid confusion.



When the Channel name is created in D-RATS, it will appear with # + Channel name on your screen. Simply click on the channel at the bottom of your screen to either read chats posted to that channel or to post a message to that channel.



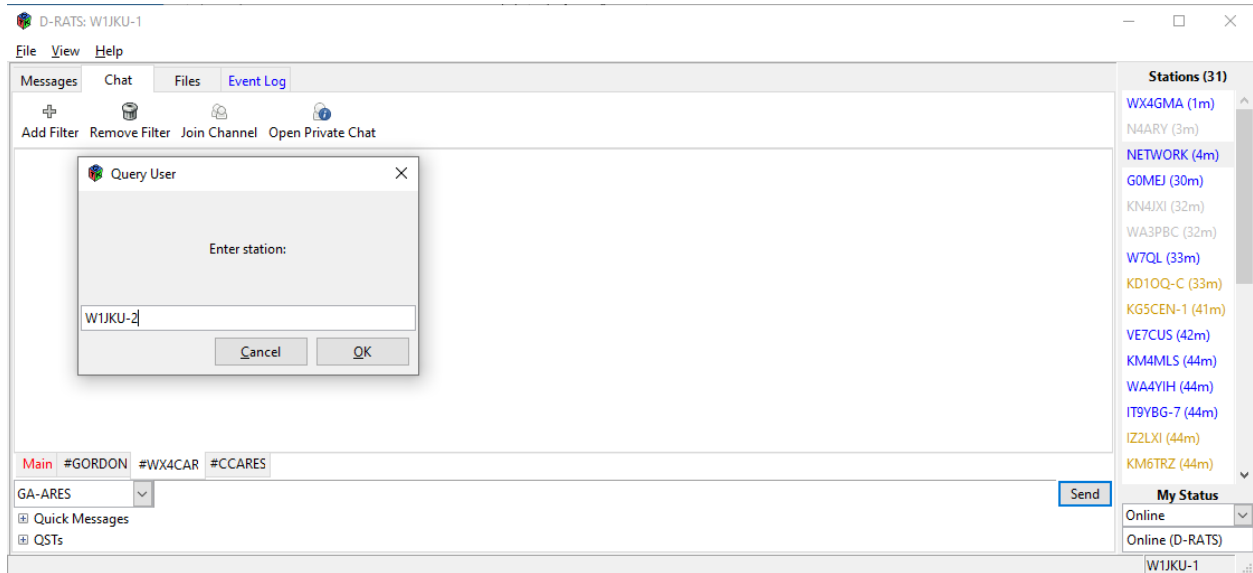
Common Channels:

1. CCARES - The Cherokee County ARES Channel. This channel is used by the Cherokee County ARES team. This is case sensitive, all Uppercase when setting up the channel.
2. WX4CAR - The WX4CAR Channel. WX4CAR plans on using our CARS channel during Field-Day, and weekly nets as another method of communicating real-time with our members. This is case sensitive, all Uppercase when setting up the channel.
3. GORDON - The Gordon County ARES Channel. This channel has been setup by Gordon County ARES. This is case sensitive, all Uppercase when setting up the channel.

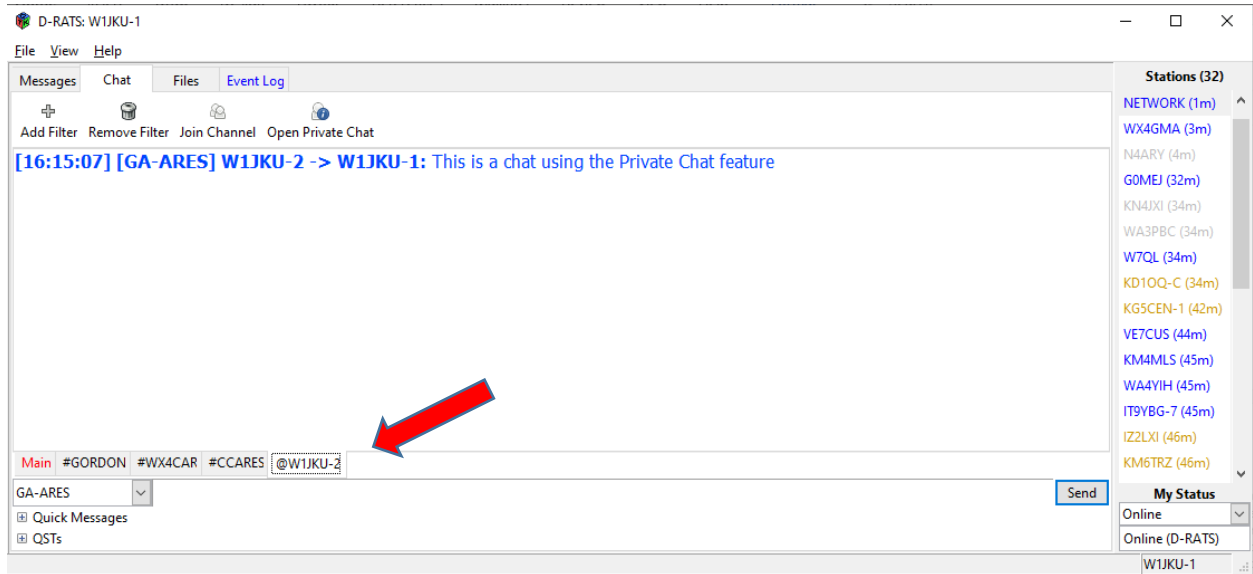
Private Chat

D-RATS **Private Chat** is not secure or encrypted. No sensitive information should be passed using D-RATS. The D-RATS Private Chat simply allows two stations to establish communication without everyone seeing the messages on the Main Chat Window., which can quickly become cluttered with all the traffic passed.

When establishing a Private Chat with another station already connected to D-RATS, you will simply press the **Open Private Chat** button and enter the **station** you would like to communicate with



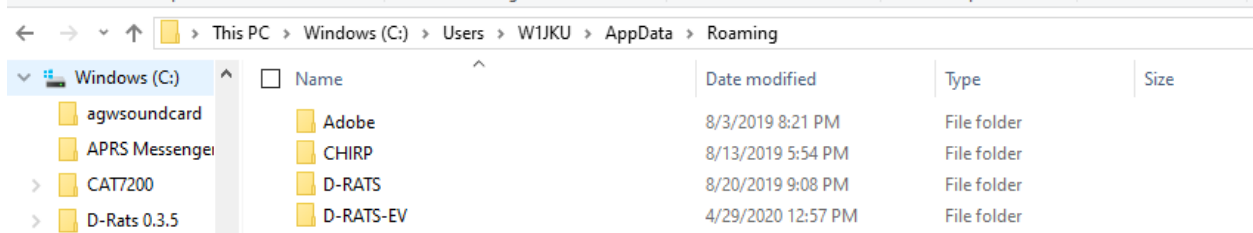
The Private Chat will be created at the bottom of your Chat window starting with an @ sign. Simply Highlight that filter to see and type messages to the station you wish to communicate with. The cool thing is that the receiving station will automatically be added to the Private Chat upon receiving the message you send. All they must do is click on the Private Chat filter at the bottom of their screen to view and send message to you.



D-RATS Exception Handling- Reconfigure D-RATS

Should your version of D-RATS not function correctly, you may have a corrupted D-RATS configuration. Since there is no installation program, you may need to manually clear the configuration in order to start fresh. (If maps will not function after validating the steps were followed correctly, you may need to execute this step.)

1. Under **C:\Users\ (the UserId you are logged in as)\APPData\Roaming**, look for a folder called **D-RATS-EV**.
2. Delete that folder and relaunch D-RATS and you should be walked through the installation as a new configuration starting with [Installation and Configuration for GA-ARES Ratflector](#) Step 1 above.



Cherokee ARES Drill DRA1010

Task: DRA1010: Digital Check-In via D-RATS instead of UHAM41

Condition: This Drill will be used to test the ARES team capability of using D-RATS to supplement normal FM Communications. During this drill, all stations capable of performing this task will use D-RATS to Check in to the GA ARES NET instead of FM. After Check-In, NET Control will then Acknowledge you via D-RATS. NET Control will announce on FM all stations that have checked in via D-RATS and provide additional instructions.

On Monday Nights at 8pm eastern, look for an opportunity to check into one of the weekly D-RATS Nets conducted on the GA-ARES Ratreflector...

Standard: Within 5 minutes, Station will perform a Digital Check-in using the GA-ARES ratreflector. Station will wait for acknowledgement from NET Control and follow instructions given.

Importance: This skill will allow you to provide quick emergency updates to the ARES team as a supplement to other communication methods available including FM, HF, Winlink, APRS, FLDIGI, SMS, Zello, Cell, etc.... No one communication method is the best in all circumstances. The ability to remain flexible, move, and communicate is an important task to be able to perform under adverse conditions.