W1MAT Scheduler
Documentation
Version 1.0.0.0
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Visit www.kv1j.com/w1mat/scheduler.htm for more information.

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1. System Requirements

- Microsoft Windows XP SP2, Windows Vista, or Windows 7
  Windows 8 has not yet been tested, but should be compatible

- Microsoft .NET Framework 2.0 or higher

2. Configuration

Configuration settings and skeds are saved in ServerData.ini when the programs are closed. **In the event that the server configuration file is deleted or corrupted, all configuration and saved skeds can be obtained by copying ServerData.ini from a client computer.** If a client program is started and closed without connecting to the server, it will empty the skeds saved in its configuration.

2.1 Server

Open W1MAT Scheduler Server. Press the [Setup] button on the main window. All changes to the settings are automatically saved when the window closes. (Note: Settings can only be changed when the server is not connected)
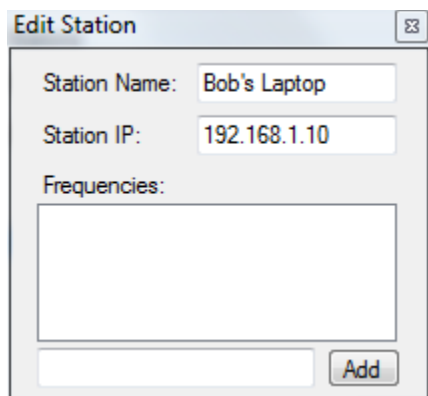
The following window will open:

2.1.1 Configuring Stations

To add a station, type in a descriptive name for the station (i.e. "Bob's Laptop" or "222 and 432") in the field labeled "Station Name." Enter the IP address of the computer at this station in the field labeled "Station IP." Click the [Add] button or press {Enter} to add the station. Add all client computers, as well as the server computer to this list.

To remove a station, select the station in the list of stations by clicking on its name. Click the [Remove] button, or press {Delete}. Click [Ok] on the warning screen that is displayed if you are sure you want to delete the station. All skeds and configuration for the deleted station will be lost.

To edit a station's information, select the station in the list of stations by clicking on its name. Click the [Edit] button, and the following window will be displayed:

You may change the name or IP address of the station on this window. All changes are automatically saved when the window is closed. To add a frequency to the default frequency list for the station, enter the frequency in the field next to the [Add] button. Click [Add] or press {Enter} to add to the list. To remove a frequency, select the frequency by clicking on it and press {Delete}. The first frequency will fill in by default when the station is selected in the scheduling window. All other frequencies will be listed in the order shown in this window.
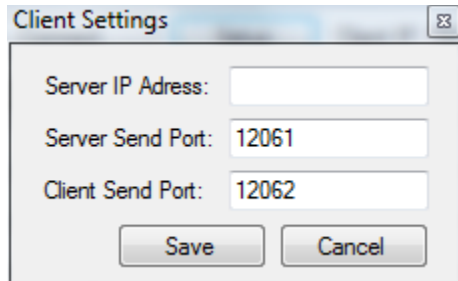
2.1.2 Configuring the Network

Set the broadcast IP address to the broadcast IP of your local subnet. For example, if the IP of the server computer is 192.168.1.XXX, set the broadcast IP to 192.168.1.255. The broadcast IP can also be set to 255.255.255.255 if issues with connectivity occur.

The UDP ports used by default are 12061 and 12062. These may be set to any valid port value desired, provided the port is not in use by another program. The default ports should be free and it is not recommended to change their values. The ports must also be updated in each client's configuration if changes are made.

2.2 Client

Open W1MAT Scheduler Client. Press the [Setup] button on the main window. (Note: Settings can only be changed when the client is not connected)
The following window will appear:

Enter in the IP address of the computer running the server program of W1MAT Scheduler. The UDP ports used by default are 12061 and 12062. These may be set to any valid port value desired, provided the port is not in use by another program. The default ports should be free and it is not recommended to change their values. The ports must also be updated in each client's configuration and the server configuration if changes are made.

Click [Save] to save all changes. Click [Cancel] or close the window to discard all changes made.

3. Connecting Computers

3.1 Server-Client Mode

Install and configure the server program on one computer on the network. Install and configure the client program on all other computers you wish to use. (Note: The client may be connected from a computer not specified in the server configuration, but it will not be assigned a station. It can however perform all scheduling operations.)

To begin scheduling, click [Start Server] on the main window of the server program. After starting the server, click [Connect] on the main window of each client program. To disconnect a client, press [End Connection] on the main window. The client program must be restarted to reconnect. The client will be automatically disconnected if the program is closed. To stop the server, click [Stop Server] or exit the program.
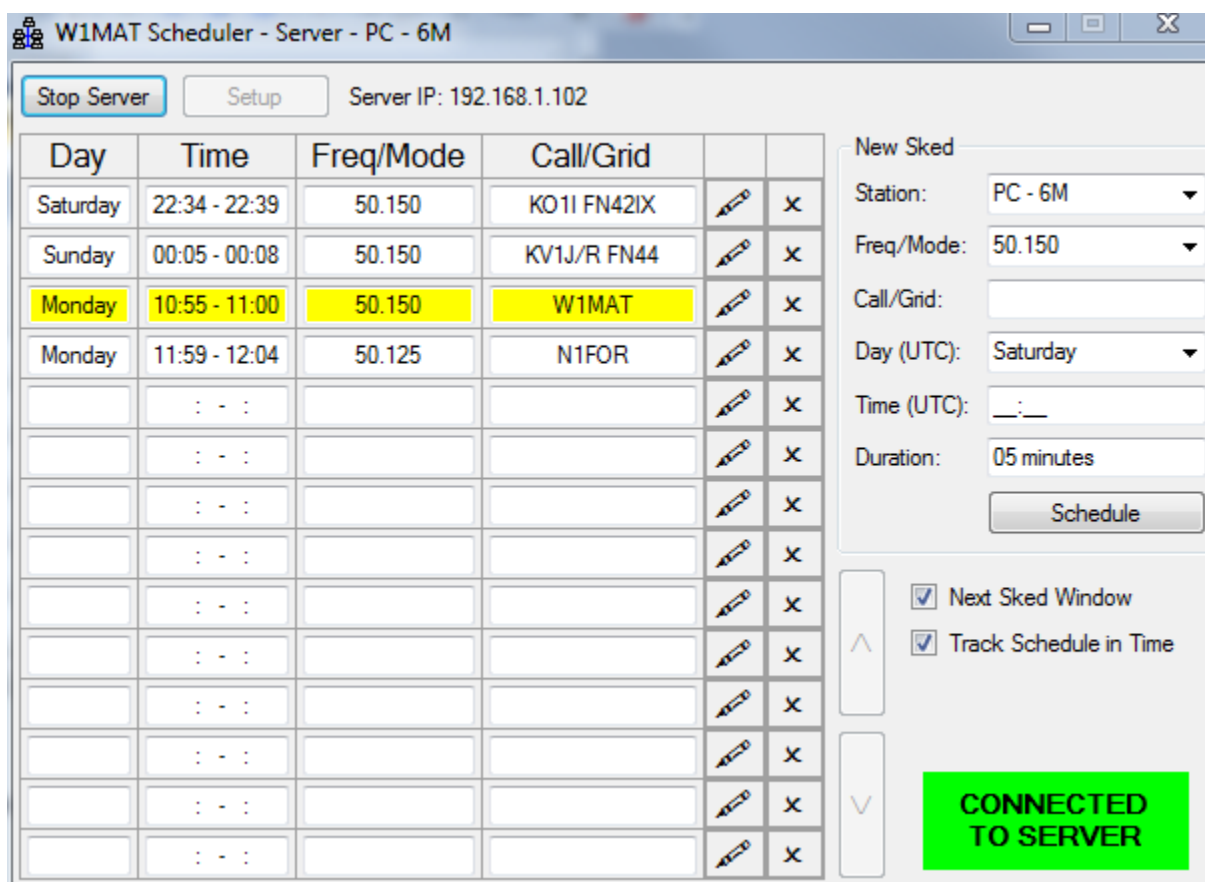
When the server is started or a client is connected to the server, the red box in the lower right hand corner of the main window will turn green to confirm the connection. If a client loses connection to the server for more than 6 seconds, this box will turn red on the client. Scheduling operations will not be allowed if connection is lost. The box will turn green again once connection is restored.

3.2 Single Computer Use

The scheduler may be used in a non-networked setup on a single computer. Install and run the server program on the computer. Add a single station to the configuration, and add any default frequencies you wish on that station. Ensure that the station's IP address is set to the computer's IP address to ensure proper functionality. It is not necessary to click [Start Server]. All scheduling operations will function as normal. The client program cannot be used unless it is connected to a server.

4. Scheduling Operations

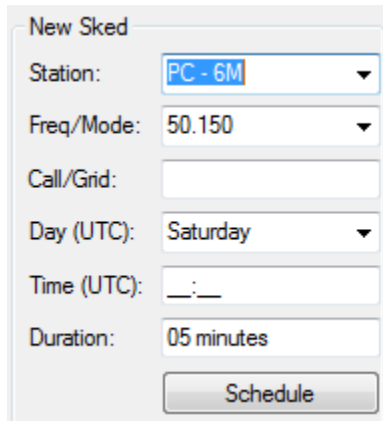The main scheduling window appears on startup:

4.1 Changing the Display

Only one station's skeds can be displayed at a time. To change the displayed station, change the selected station in the list labeled "Station" under "New Sked."

The main window can display 14 skeds at a time. If a station has more than 14 skeds, addition skeds can be viewed by using the mouse scroll wheel, or the [/\] or [\/] buttons on the main window. The [/\] and [\/] buttons can be held down to scroll for longer distances.

4.2 Adding a New Sked

To add a new sked, select the station you wish to schedule a contact for. Optionally, enter or change the frequency for the sked. The frequency field can also be used specify mode if necessary. Enter in the callsign of the station to work. If you wish to enter additional information about the sked, enter it in the callsign field. The main window will display a 2x3 rover call and a grid square without needing to scroll the text. Enter in the **day and time in UTC** for the sked. Optionally, change the sked duration from the default of 5 minutes. Click [Schedule] or press {Enter} in the Time or Duration fields to add the sked.

The program checks that the time is a valid UTC time (00:00 – 23:59), but allows skeds to be scheduled at the same time.
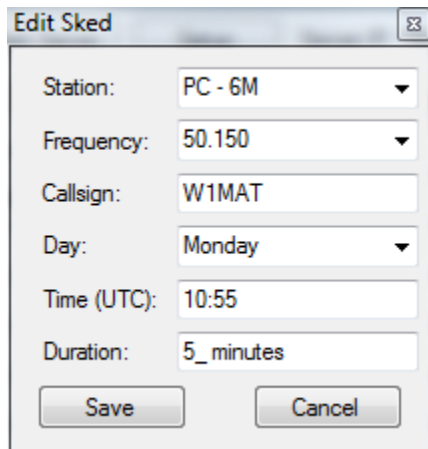
4.3 Deleting a Sked

To delete a sked after it has been worked, click the [X] button next to the sked in the main window display, or click [Delete] in the Next Sked window.

No automatic sked removal or integration with computer logging programs has been implemented yet.
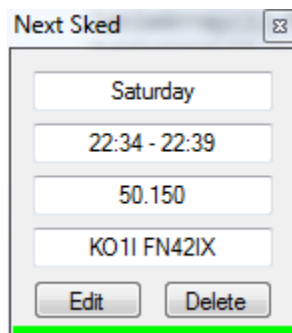
4.4 Editing a Sked

To edit a sked, press the pencil button next to the sked in the main display, or click [Edit] in the Next Sked window.

The following window will appear:

Make any changes and click [Save]. Click [Cancel] or close the window to close without saving changes. If the sked is edited or deleted by another user while the Edit Sked window is open, a notification will appear and **changes will not be saved**.

4.5 The Next Sked Window

To toggle the Next Sked window open and closed, check or uncheck the box labeled "Next Sked Window" in the upper right hand corner of the main display. The window will always appear on top of all other windows and programs open on the computer.

The Next Sked window will display the next upcoming sked for the station assigned to the current computer. **(See 4.6, Tracking in Time, for which sked is displayed.)** The sked can be edited or deleted from this window by pressing [Edit] or [Delete], respectively.

The colored line at the bottom of the screen indicates server connection status **(See 3.1, Server-Client Mode)**.

4.6 Tracking in Time

If the "Track Schedule in Time" box is selected, the Next Sked window will change as time progresses. It will display the sked that should be currently being worked, or, if there is no sked scheduled at the current time, it will show the next sked in time. If this button is checked, the current or next sked in time will also highlight in yellow in the main schedule display. **NOTE: If you are using the program on a UTC day other than Saturday, Sunday, or Monday, this feature will not work. It is designed for weekend contests only.**

If tracking in time is not enabled, the next sked window will display the earliest entry in the scheduling window.

5. Troubleshooting

Please report all bugs to Matthew Williams W1MAT (w1mat [at] arrl [dot] net).

5.1 Network Connection

If the server and a client do not communicate, try the following steps:
1. Verify the server IP is correct in the client configuration.
2. Verify that the broadcast IP is correct in the server configuration.
3. Check that the client and server computers can ping each other.
4. Turn off your firewall. It may be necessary to set port and/or program exceptions if you wish to use W1MAT Scheduler with a firewall turned on.
5. Try the network test programs provided with W1MAT Scheduler. Put the DummyListener on one computer and the DummySender on the other. Enter the broadcast IP or the IP address of the other computer into the sender. Set both programs to the same port. Type text into the sender, press {Enter}, and check that the text appears on the listener. It may be necessary to check communications in both directions.

5.2 Known Bugs / Missing Features

- Cannot view a composite schedule of all stations
- Cannot search for a sked
- The main window is not resizable
- Main schedule view does not auto scroll while tracking in time
- No white space to indicate available sked times
- Cannot restart server or client connection without restarting program
- Missing eparate field for grid square
- Missing N1MM Logger integration

6. Release History

Alpha 1 (5/25/14) – Non-networked demo of basic features
Network Test Programs (5/30/14) – UDP transmitter and receiver for testing on W2SZ/1 Mt. Greylock network
Beta 1 (6/3/14) – Fully featured version released for testing before 2014 ARRL June VHF Contest
Beta 2 (6/4/14) – Bug fixes; released for testing before 2014 ARRL June VHF Contest
Ver 1.0.0.0 (6/9/14) – First full release for use in 2014 ARRL June VHF Contest
- Added tracking schedule in time, fixed time field entry issues, scroll buttons can be held down to scroll quicker, call sign field changed to all caps and expanded to fit six digit grid squares, clients can detect connection loss to the server, allow infinite schedule size, misc. other bug fixes