



Open Source IRC Client for Windows and Linux

<https://github.com/nutjob-laboratories/merk/>

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Directories and Configuration Files

MERK stores all its settings in a directory it creates in the user's home directory, named **.merk**. Inside this directory, MERK creates three more directories:

- **logs**. This is where MERK stores channel and private chat logs.
- **styles**. This is where MERK stores text style files, and the palette used for dark mode.
- **scripts**. This is where MERK stores, and first looks for, scripts. This is the default directory chosen when running a script via the server window toolbar, input menu, or right click menus, or when saving a script in the editor.

MERK also creates two other files in this directory, **settings.json** and **user.json**:

- **settings.json**. Where MERK stores and loads application settings.
- **user.json**. Where MERK stores user information, such as the chosen nickname, username, and the like, as well as the application's connection history and any connection scripts.

When using the **/script** command, if a full filename is not provided, MERK will look for the script in several locations, in order:

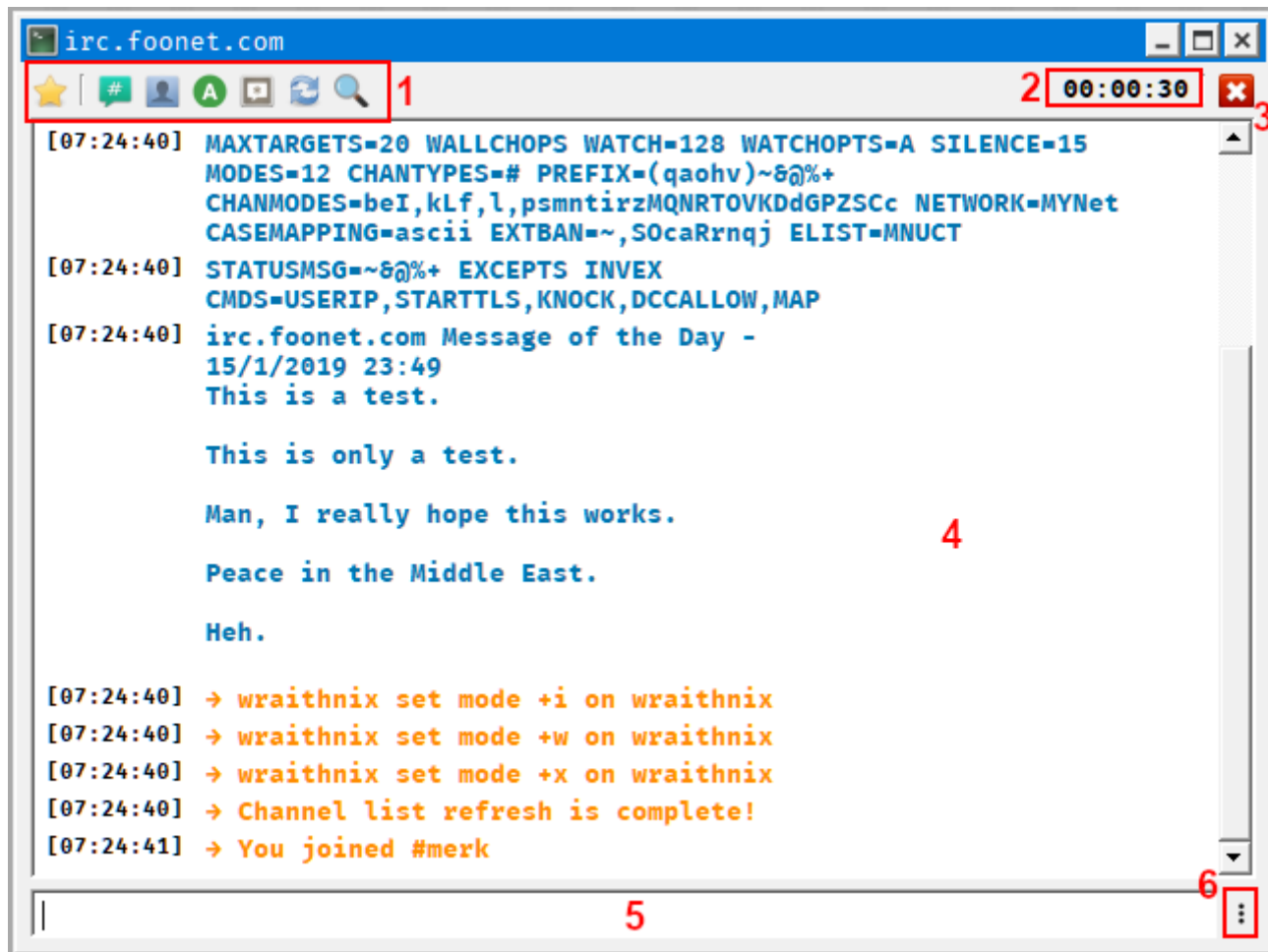
1. The **scripts** directory.
2. The settings directory (by default, **.merk** in the user's home directory).
3. The application's installation directory.

First, MERK will attempt to find the script using the provided filename, and if the script is still not found, it will append the default file extension (which is **.merk**) to the filename and search again.



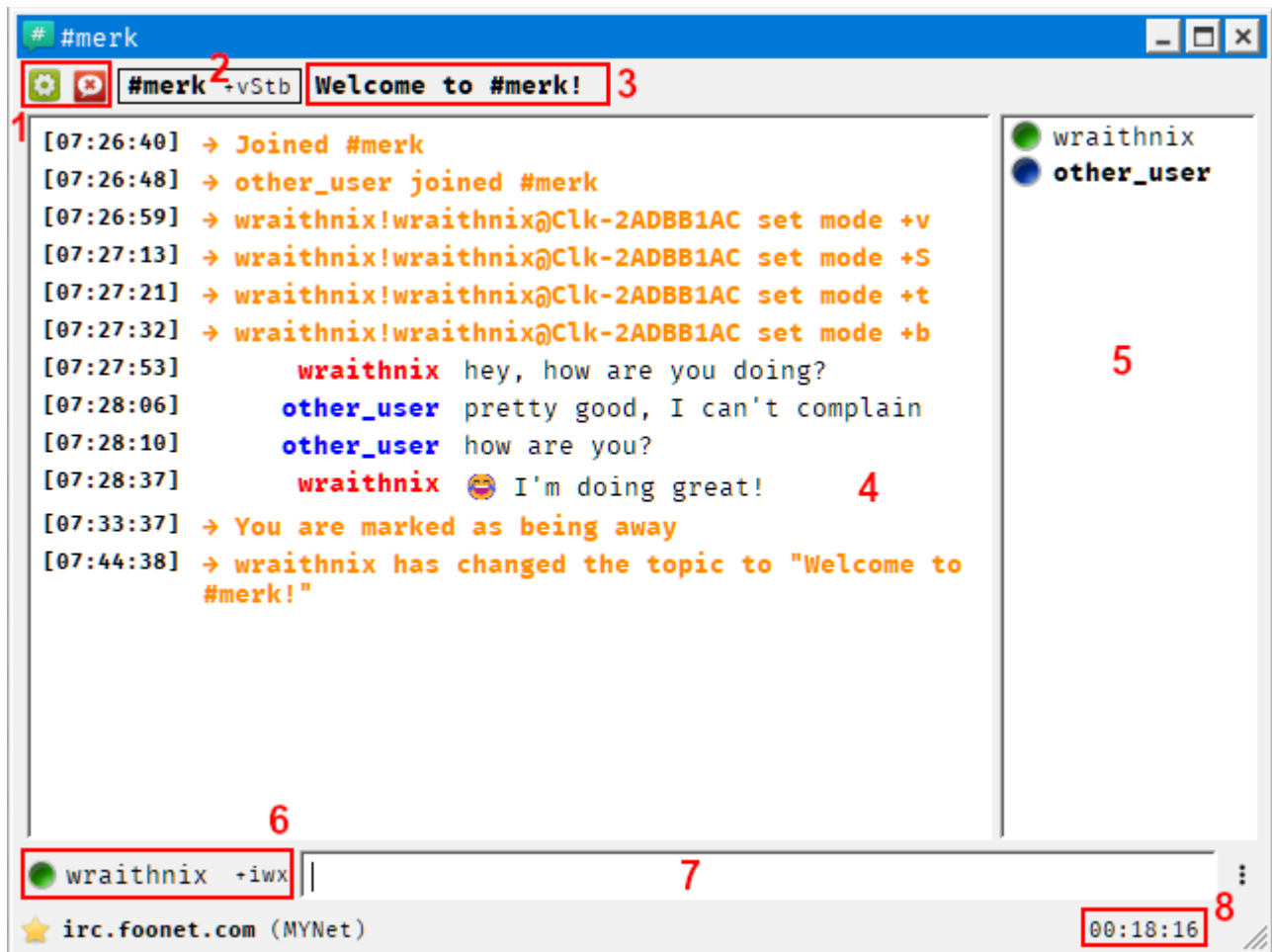
These folders can be opened in your default file manager from the client by clicking on the appropriate entry in the "Directories" submenu, near the bottom of the "Settings" menu.

Server Windows



1. **Toolbar.** Buttons that perform basic actions; some on the IRC server, such as joining a channel, changing your nickname, and setting your away status, and others on the client, like selecting a script to run, refreshing the channel list from the server, and opening the channel list dialog.
2. **Connection uptime.** This displays how long MERK has been connected to the server.
3. **Disconnect.** Pressing this button issues a **QUIT** command and quickly disconnects from the IRC server.
4. **Display.** Displays any messages from the server, as well as notices, outgoing private messages, and the like.
5. **Text input widget.** Type commands in here, and press "enter" to execute them.
6. **Input menu.** Clicking on this brings up a menu that allows you to do various tasks, like changing the spellchecker's language. This button is present on channel or private message windows, too.

Channel Windows



1. **Mode Editor and Banlist.** The mode editor button displays a menu that allows the user to set or remove popular channel modes, if their status allows it; if they are not a privileged enough user, the button is hidden. The banlist displays a list of users that have been banned from the channel; if the banlist is empty, the button is hidden.
2. **Name and mode display.** Here, the channel name and any channel modes are displayed.
3. **Topic.** The channels topic is displayed here. Click on the topic to edit it, and press enter to send any changes to the server.
4. **Chat display.** Channel chat, as well as system messages, are displayed here.
5. **User list.** A list of users in the channel is displayed here. Privileged users have special icons next to their name (green for channel operators, blue for voiced users, etc.), and normal users do not. Nicknames are displayed in bold if the users are present, and in normal weight if they are away.
6. **Nickname.** This displays the currently used nickname, and any user modes set.
7. **Text input widget.** Type your chat or commands here, and press enter to send them to the server or client.
8. **Uptime.** This displays how long the client has been connected to the channel.

Commands and Scripting Guide

This is a list of commands that can be issued in either the text input widget in the client, or in scripts. There are two commands, however, that can only be issued in scripts: **/wait**, and **/jump**. These two commands *cannot* be used in the text input widget. A third command, **/focus**, can *only* be used in the text input widget, and will be ignored by scripts.

Commands	Description
/help [COMMAND]	Displays command usage information
/me MESSAGE...	Sends a CTCP action message to the current chat
/msg TARGET MESSAGE...	Sends a message
/notice TARGET MESSAGE...	Sends a notice
/join CHANNEL [KEY]	Joins a channel
/part CHANNEL [MESSAGE]	Leaves a channel
/nick NEW_NICKNAME	Changes your nickname
/topic CHANNEL NEW_TOPIC	Sets a channel topic
/mode TARGET MODE...	Sets a mode on a channel or user
/invite NICKNAME CHANNEL	Sends a channel invitation
/kick CHANNEL NICKNAME [MESSAGE]	Kicks a user from a channel
/whois NICKNAME [SERVER]	Requests user information from the server
/who NICKNAME [o]	Requests user information from the server
/whowas NICKNAME [COUNT] [SERVER]	Requests information about previously connected users
/quit [MESSAGE]	Disconnects from the current IRC server
/oper USERNAME PASSWORD	Logs into an operator account
/away [MESSAGE]	Sets status as "away"
/back	Sets status as "back"
/raw TEXT...	Sends unprocessed data to the server
/time	Requests server time
/version [SERVER]	Requests server version
/connect SERVER [PORT] [PASSWORD]	Connects to an IRC server
/connectssl SERVER [PORT] [PASSWORD]	Connects to an IRC server via SSL
/xconnect SERVER [PORT] [PASSWORD]	Connects to an IRC server & executes connection script
/xconnectssl SERVER [PORT] [PASSWORD]	Connects to an IRC server via SSL & executes connection script
/print TEXT...	Prints text to the current window
/focus [SERVER] WINDOW	Switches focus to another window. Calls to /focus from scripts will be ignored (use /jump instead)

Commands	Description
/maximize [SERVER] WINDOW	Maximizes a window
/minimize [SERVER] WINDOW	Minimizes a window
/restore [SERVER] WINDOW	Restores a window
/cascade	Cascades all subwindows
/tile	Tiles all subwindows
/clear [WINDOW]	Clears a window's chat display
/settings	Opens the settings dialog
/style	Edits the current window's style
/alias TOKEN TEXT...	Creates an alias that can be referenced by \$TOKEN
/alias	Prints a list of all current aliases
/unalias TOKEN	Deletes the alias referenced by \$TOKEN
/script FILENAME	Executes a list of commands in a file
/edit [FILENAME]	Opens a script in the editor; if called without an argument, opens an editor window
/play FILENAME	Plays a WAV file
/list [TERMS]	Lists or searches channels on the server; use "*" for multi-character wildcard and "?" for single character
/refresh	Requests a new list of channels from the server
/knock CHANNEL [MESSAGE]	Requests an invitation to a channel
/wait SECONDS	Pauses script execution for SECONDS; can only be called from scripts
/jump WINDOW_NAME	Moves execution of the script to WINDOW_NAME ; can only be called from scripts, and should be used in scripts rather than /focus
/exit [SECONDS]	Exits the client, with an optional pause of SECONDS before exit
/config [SETTING] [VALUE...]	Changes a setting, or searches and displays one or all settings in the configuration file. Caution: <i>use at your own risk!</i>

Scripting MERK

There are two types of scripts in MERK: connection scripts, and all other scripts.

Connection Scripts

Connection scripts are the scripts entered into the connection dialog, and are intended to be executed as soon as the client connects to the server. Unlike other scripts, they are stored in the user configuration file, and, outside of connection, can only be executed with the script editor. Connection scripts do *not* have a context (see **Context** and **Writing Connection Scripts** below).

All Other Scripts

All other scripts are, well, *scripts*: a list of commands, one per line, issued in order. Scripts have a context, which is the window that they are called from or executed in. They can be executed in several ways:

- From the **"Run"** button on a server window's toolbar. The script will be executed in the server window's context.
- From the **"Run"** entry in a window's input menu. The script will be executed in that window's context.
- From the **"Run"** entry in a window's chat display right-click menu. The script will be executed in that window's context.
- By issuing the **/script** command. The script will be executed in the window that the command was called from's context.
- From the **"Run"** menu in a script editor window. The user can select which context to run the script in, or optionally select to run the script on *all* windows simultaneously (with each window running that script in the window's context).

Scripts can have comments. Comments must begin with **/*** and end with ***/**, and can span multiple lines. Commands issued within comment blocks will be ignored, as will any text inside the comment block:

```
/*  
/msg $_WINDOW This command WILL NOT be executed  
*/  
  
/msg $_WINDOW This command WILL be executed
```

Commands in scripts should be issued at the *start* of a line, with no spaces or tabs in front of them.

Errors

For the most part, MERK ignores errors in scripts, with two exceptions: calling `/wait` with a non-number argument, and trying to `/jump` to a window/context that does not exist, will halt script execution immediately. Every other error will display an error message (if script error messages are turned on in settings), and continue execution of the script. Error messages will be displayed for:

- Lines that do not contain a command
- Lines that start with `/` and are not followed by a valid command
- Calls to commands with an incorrect number of arguments
- Calls to commands with invalid arguments

If an error is encountered, an error message will be displayed. The error message will contain:

- The line number the error occurred on
- A description of the error

After the error is displayed, *the script will continue to execute*. Scripts run in an external process, and cannot be halted (with the two exceptions described above). Please write, read, and test your scripts carefully.

Aliases

Aliases are tokens that can be created to insert specific strings into your input in the client (if the **Interpolate aliases into input** setting is turned on, which is the default) or into your scripts. For example, let's create an alias named 'GREETING', and set it to the value 'Hello world!':

```
/alias GREETING Hello world!
```

Now, if you want to insert the string "Hello world!" into a command or any output, you can use the alias interpolation symbol, which is **\$** by default, followed by the aliases name, to insert your alias into the command or output:

```
/msg #mychannel $GREETING
```

This sends a message to #mychannel that says "Hello world!" to everyone in the channel!

Alias names *must* start with a letter, and not a number or other symbol. This is to prevent overwriting built-in aliases created for each window's context (see **Built-In Aliases**).

To create an alias, use the **/alias** command. To see a list of all aliases set for the current window, issue the **/alias** command with no arguments. To delete an alias, issue the **/unalias** command.

Aliases can also be used as macros, and can contain an entire command. For example, let's say that you like to issue a greeting to everyone that enters a channel, but typing **/msg #mychannel Hello, and welcome!** is a pain to type every time someone joins, you could create this alias:

```
/alias GREETING /msg $_WINDOW Hello, and welcome!
```

Now, whenever someone joins you channel, just type **\$GREETING** into the text input widget to send your message! The above example uses a built-in alias, which is explained in **Built-In Aliases**.

All aliases are *global*; that is, they are available to all and every script executed on the client after they are created. They can also be changed by any script or command. Aliases created by connection scripts will be available and visible to any scripts executed after the connection script. Any script can also delete an alias with the **/unalias** command.

Built-in aliases cannot be deleted with the **/unalias** command. The client will display an error that says the alias doesn't exist if attempted.

Built-In Aliases

Each window has a number of aliases for use that are built-in to the window's context, and do not require the user to create them. Built-in alias names start with an underscore (_) and are all uppercase.

Alias	Value
_NICKNAME	The user's nickname.
_USERNAME	The user's username, as set in user settings.
_REALNAME	The user's realname, as set in user settings.
_WINDOW	The name of the window the alias is being used in
_WINDOW_TYPE	The type of window the alias is being used in; either <code>server</code> for server windows, <code>channel</code> for channel windows, or <code>private</code> for private chat windows
_SERVER	The server the window is connected to; this will be the address used to connect to the server
_PORT	The port on the server the window is connected to
_HOST	The reported hostname of the server the window is connected to; if that is not know, then this will be set to the server's address, a colon, and the server's port.
_UPTIME	How long the window the alias is used in has been connected or has been in use, in seconds.
_STATUS	If the window is associated with a channel, this will contain the window's channel status (operator , voiced , etc.); otherwise, this will be set to normal .
_MODE	Any modes set on the user associated with the window.
_TOPIC	If the window the alias is being used in is a channel window, this will contain the channel's topic, if there is one.
_PRESENT	If the window the alias is being used in is a channel window, this will contain a list of users in that channel, separated by commas.

Built-in aliases can be very useful in scripts, where the script may not "know" what context it is running in:

```
/* This sends a message to the current channel */
/msg $_WINDOW Hello, everybody! My name is $_NICKNAME

/* This sets the current channel's topic */
/topic $_WINDOW We've been around for $_UPTIME seconds!

/* This leaves the current channel */
/part $_WINDOW Goodbye, $_PRESENT
```

Context

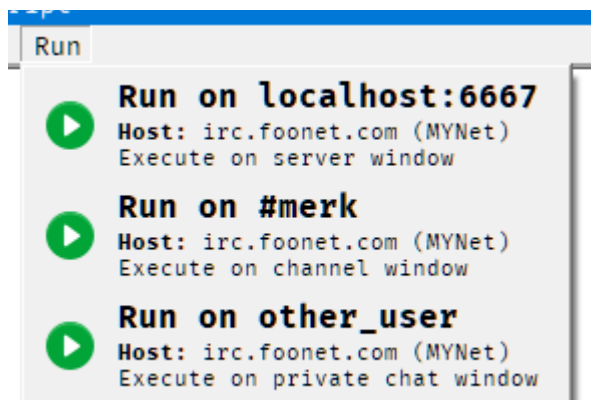
A script or command's *context* is a reference to the window the script or command is being executed in. Context is, for the most part, only necessary for scripts; the context for any commands issued by a window's text input widget is the window the command is being issued in.

Some commands can ignore an argument if they are for the current context; for example, when issuing the **/part** command, you can ignore the **CHANNEL** argument if the command is intended to be executed in the current window's context:

```
/* This leaves the current channel */  
/part  
  
/* This invites a user to the current channel */  
/invite my_friend  
  
/* This kicks a user from the current channel */  
/kick my_enemy  
  
/* This gives a user operator status in the current channel */  
/mode +o my_friend  
  
/* This sets the topic in the current channel */  
/topic Welcome to my channel!
```

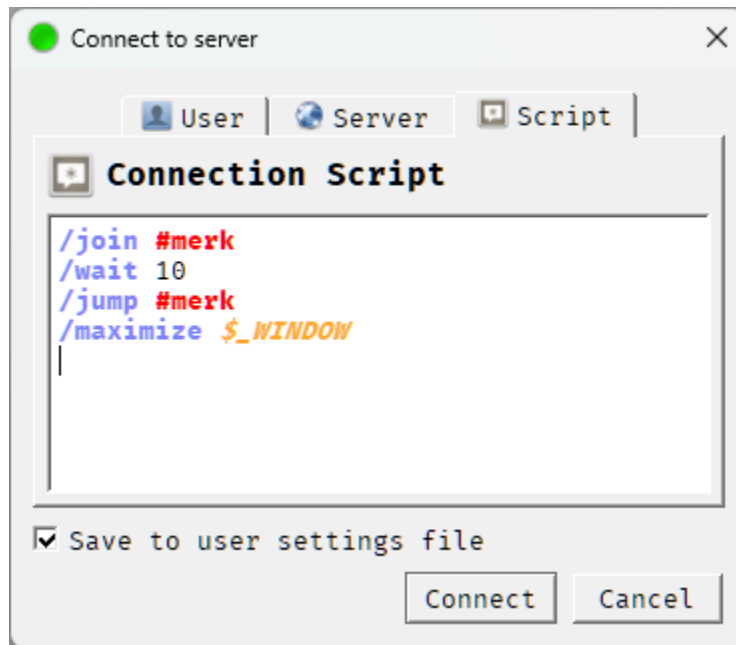
Context-less commands should *not* be issued by scripts, as it can get confusing if you run the script in the wrong context. However, if the script is being ran in a channel's or private chat window's context, context-less commands are available to the script.

When running a script from a window, either through the server window's toolbar, or the input menu, the script is always ran in that window's context. The script editor window allows you to choose which context to run the script in.



*An example "Run" menu from the script editor. The client is connected to a server on **localhost:6667**, and is in the channel **#merk** while having a private chat with **other_user**. Each selection will run the script in the specified context.*

Writing Connection Scripts



An example connection script, as seen in the connect dialog.

Connection scripts are the scripts that can be entered in the connection dialog, and are executed as soon as the client completes connecting to a server. They are also the only kind of script that *does not have a context*. They can behave, in certain circumstances, as if they have the context of the server's window, but that should not be relied on. To issue commands that will have an effect on another window, use the **/jump** command to move the script to that window's context.

Before **/jumping** to another context, be aware that that window (and the context) may "not exist" yet. The channel join may not have completed, the private chat that you intended to start has not started yet, etc. The **/wait** command will help you in these situations, so you can make sure that all the contexts for your script have been created before you issue commands.

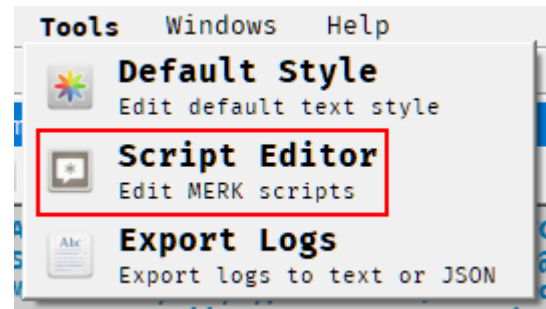
For example, let's say that when you connect to your favorite server, automatically join your favorite channel, **#merk**, say hello, and maximize the channel window. Your connection script might look like:

```
/alias FAVORITE #merk
/join $FAVORITE
/msg $FAVORITE Hello, everybody!
/wait 10
/jump $FAVORITE
/print $_WINDOW Maximizing $FAVORITE!
/maximize $_WINDOW
```

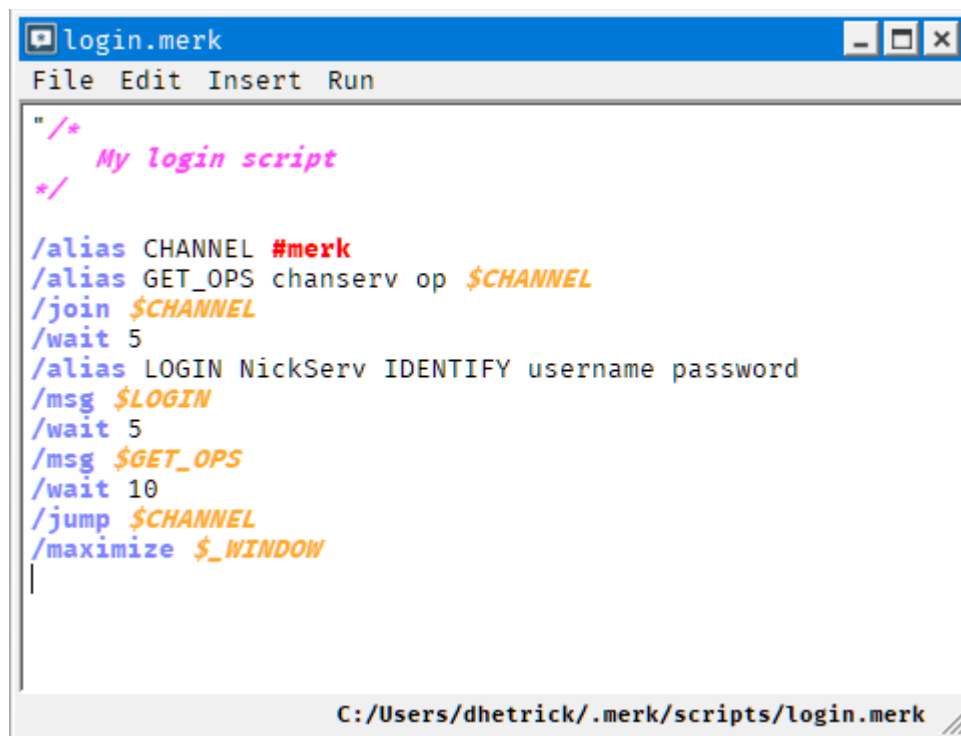
How long to **/wait** after connection will take some trial and error, due to many factors: the speed of your Internet connection, the speed of your computer, how busy the server is, how big of a log the client is loading for display, among other things. When in doubt, a longer **/wait** is preferable to a shorter one, to make sure that your script executes properly. When first writing a connection script, try **/wait 30** to pause the script for 30 seconds, and tweak from there.

Script Editor

To launch the script editor, use the /edit command, or select **Script Editor** from the "Tools" menu:



The script editor is a basic text editor with a few special features:



An example script open in the script editor.

- **Syntax highlighting.** Comments, commands, channels, and aliases are highlighted. Colors and text styles can be changed in the MERK settings.
- **Loading, saving, and editing all MERK scripts.** This includes editing connection scripts, which are stored in the user configuration file.
- **Running scripts directly in the editor.** Scripts can be ran in any (or all) contexts available at runtime.
- **Macros.** The "Insert" menu contains macros to insert commands into a script. Click one of the macros, fill out any needed details in the dialog that pops up, and a complete command is inserted into the script.

Text Styles

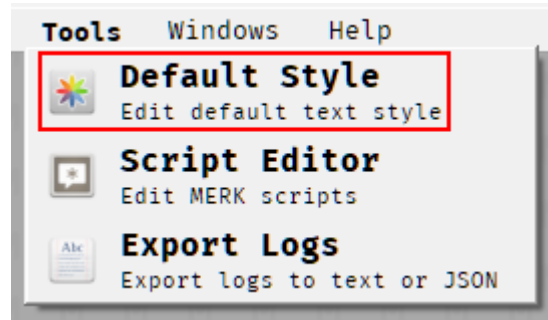
MERK has a text style engine that colors all chat text, and can be edited by end users with the style editor:



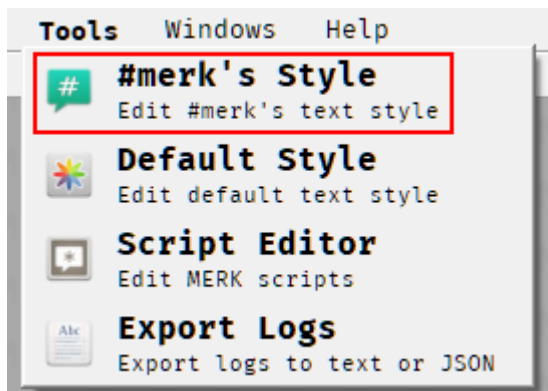
1. **Display.** This is what the text style will look like in the client. Any changes in color or style will be displayed here instantly.
2. **Background and foreground color.** Set the color of the text and the background color here.
3. **Message styles.** Change the color and style of individual message types here.
4. **Default style.** Set all colors to the default style that ships with MERK. This is different from the "default" style that is applied to server windows and any windows that do not have a style.
5. **Open style.** Here, you can open any existing MERK style file for editing. Colors and styles will be loaded and displayed.
6. **Save as....** Save this style to a file. It will not be applied, only saved to a file.
7. **Save and Cancel.** Saving this file also automatically applies it. Pressing the "cancel" button closes the dialog, and all changes are discarded.

How Styles Are Applied

Server windows always use the default style, which can be edited by selecting "Edit default text style" in the "Tools" menu.



Channel and private chat windows can have their own styles which can be edited by selecting the "Edit [NAME] text style" option from the "Tools" menu. Styles are saved with the IRC network of the channel or private chat in mind, so they will load no matter which server the client is connected to. For example, if the user has set a text style for the **#merk** channel on the EFnet network, it will load and be applied to the **#merk** window if the user is connected to **irc.underworld.no** on port 6667, **irc.choopa.net** on port 9999, or **irc.prison.net** on port 6667, as all of these servers are on the EFnet IRC network.



The top entry in the "Tools" menu will be the option to open the text style editor for the current window, if that window's style can be edited. Here, we see the option to edit the style for the **#merk** IRC channel.