

User Manual

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Introduction

TagPro is a real-time multiplayer capture-the-flag game built with C++ and Qt. It features client-server architecture, allowing multiple players to compete across different Windows/Linux machines.

The application consists of:

- An option to run a dedicated server instance, or for a player to locally host a server and participate in the match.
- A graphical client with lobby system and game screen using Qt6 development packages.
- Cross-platform support (Windows and Linux)

Installation and Setup

See doc/readme.txt for installation/development notes and build instructions.

Usage

Dedicated Server

When running the program as a server-dedicated instance, there is no GUI interface.

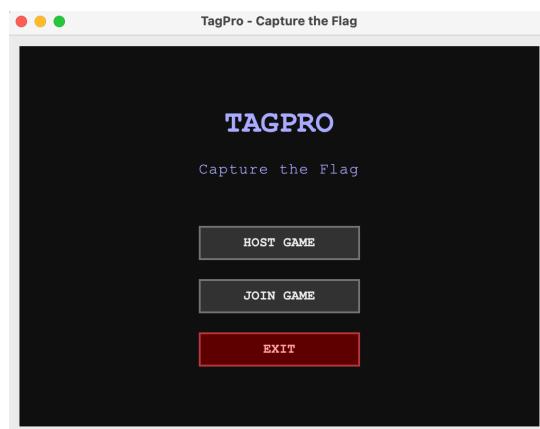
```
$ ./build/TagPro --server 12345
[Server] instance created on port 12345
[Server] Listening on port 12345
Server started on port 12345
Press Ctrl+C to stop
^C
[Server] Shutdown signal received (2)
[Server] Select error
[Server] Stopped listening for Clients.
[GAME] Stopped lobby 1
[Server] Server has stopped cleanly.
[Server] Destructor called, stopping server
$ █
```

GUI Application

Main Menu

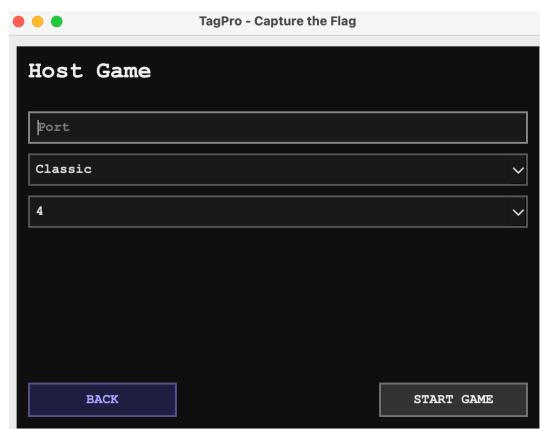
Upon launch, you'll see the main menu with three options:

- **Host Game:** Create a new game server
- **Join Game:** Connect to an existing server
- **Exit:** Close the application



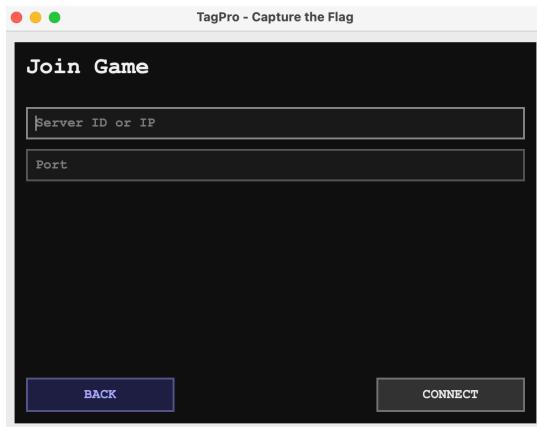
Hosting a Game

1. Click **Host Game**
2. Configure settings
3. Click **Start Game**
4. The server starts and you automatically join as the host



Joining a Game

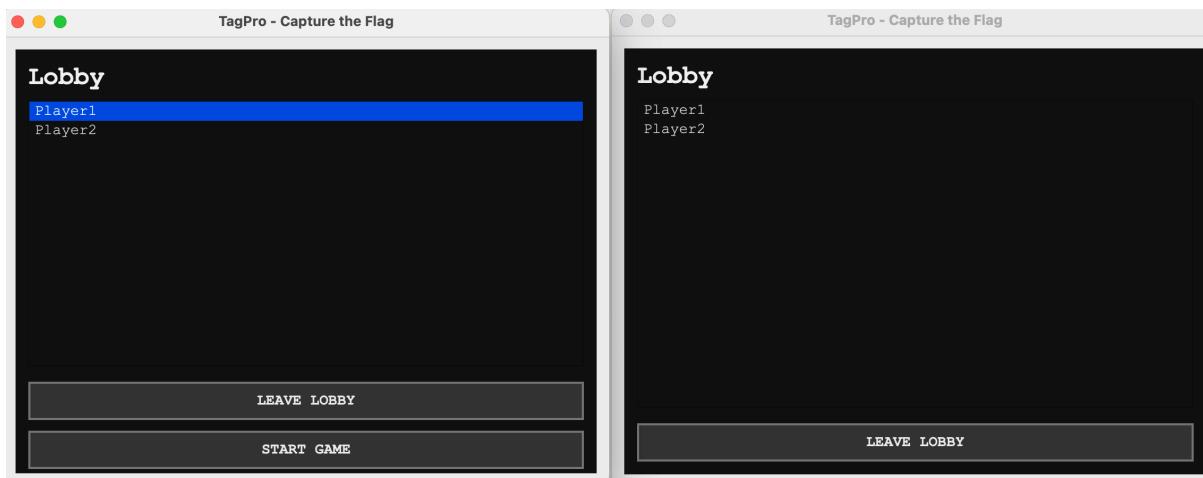
1. Click **Join Game**
2. Enter server IP address (127.0.0.1 for local games)
3. Enter port number (match the host port)
4. Click **Connect**



Lobby Screen

After connecting, you'll see the lobby with:

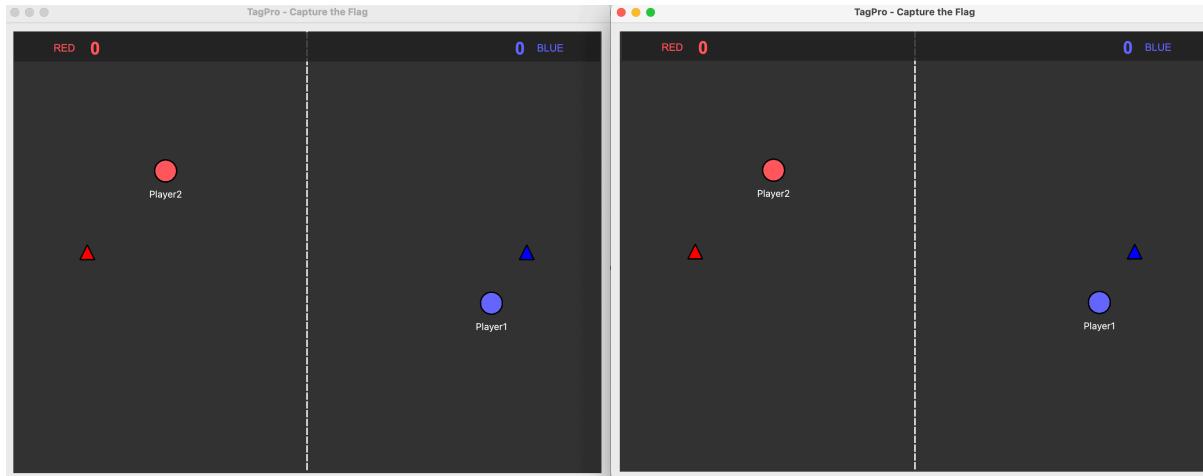
- List of connected players
- **Start Game** button (visible only to host)
- **Leave Lobby** button
 - If the host leaves the lobby, the server is closed and all connected players are kicked from the game.
 - Clients/other players are free to leave the lobby without closing the server.



Gameplay

The game features:

- Arena with center dividing line
- Red and blue team zones
- Player avatars (circles) with name tags
 - The host is player 1 (blue)
- Team-colored flags (triangles)
- Score display



Controls

- W/A/S/D: Move your player
- Movement is physics-based with acceleration and friction
- Collision with walls and other players is simulated

Game Mechanics

1. **Objective:** Capture the enemy flag and return it to your base
2. **Flag Carrying:** Pick up the enemy flag by touching it
3. **Scoring:** Return captured flag to your own flag location
4. **Tagging:** Tag enemy flag carriers to make them drop the flag
5. **Respawn:** Tagged players respawn at their team's base

Exiting the Game

- Close the window to exit
- Players can leave mid-game (returns to main menu)
- Server continues until all players disconnect or host closes