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| The latest version of this document is found at |
| <https://remz.ca/emulinker/documentation.pdf> |
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- 1.1 → Introduction & Software
- 1.2 → Emulators
- 1.3 → List of commands
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- 1.6 → Master Servers List (Backup)

Websites:
<https://EmuLinker.org>
<https://kailleraeborn.github.io>

Kaillera is software called middleware. It brings you the possibility to play video games online through the use of emulators.

It consists of a client and a server. The client is usually embedded into your favorite emulator and the server is a stand-alone application that needs to be run on a machine directly wired to the Internet.

- ▶ Kaillera features:
 - Small, fast and efficient C++ code.
 - UDP use for better latency.
 - Intelligent networking cache code.
 - Multi-platform support.
 - Low to no lag for players with good ping.
 - Works through firewalls.
 - LANs/WANs support.

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• OPEN KAILLERA •
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Open Kaillera is an open-source client library, aimed to extend and improve maintaining backward-compatibility with the Kaillera netplay protocol.

▶ Mode 1. P2P

Host must select host tab and then the game they want to play. The player hosting must send the client their IP address. Client copies and enters the IP in the 'Connect' tab then click 'Connect'. If the hosts ports are not blocked the client should be able to join the hosted game room. Both players must check the 'click here when ready' box for the game to start. Select 'Record game' before starting the game to have the game recorded for later viewing.

► Mode 2. Client

When a desync occurs mid-game in a server, click 'Drop' in the Kaillera client to disconnect and unfreeze game, so you can re-enter to the server without the need to end the program via Task Manager.

► Mode 3. Playback

Recorded games are saved as .krec files in a record folder which is automatically created in the same directory as your emulator. Press refresh for new files to show on the Playback list. The replay is shown through the emulator. It's not a video file, basically keystrokes are recorded during playthrough and imitated during playback automatically.

↓ Downloads

- Open Kaillera - n02 v0.5r1 (kaillera 0.9 compatible) - Mar 27 2021
<https://emulinker.org/downloads/>

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• EMULINKERSF •
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EmuLinker is a high-performance, scalable, secure, open-source re-implementation of the Kaillera network protocol server.

EmuLinkerSF is a modified version of the original EmuLinker server created by Moosehead with new features by SupraFast.

► EmuLinker features (Implementation):

- Written 100% in Java.
- Designed following the MVC pattern for extensibility.
- Modular design using PicoContainer.
- Highly concurrent for performance using concurrency APIs in Java 1.5.

► EmuLinker features (Server):

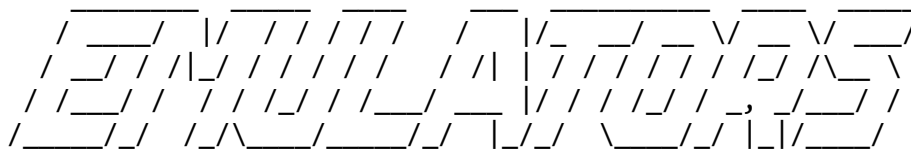
- Stops all know hacks and exploits from the original Kaillera server by using strong buffer, boundary, and overflow checking.
- Does not allow interruption of games in progress.
- Game desynch detection and notification.
- Intelligent desynch handling: if one player drops or lags, others can continue playing.
- International language support.
- Prevents emulator lockup when game starter drops quickly.
- Multiple user access levels with a comprehensive set of escape commands for online server administration.
- Aggressive spam control with chat message and game name validation.
- Games remember users that were kicked to prevent annoying re-joining.
- Duplicate user login protection with reconnection handling.
- Game and emulator filters enable server owners to run a server intended for a specific game, and/or restrict playing of a specific game or games.
- Maximum game setting to help limit bandwidth usage.

- Uses a configurable limited range of network ports instead of any available port, making firewall setup easier than the original server.
- Inactivity timeout prevents extended user idling.
- Extensive logging of all server activity with automatic log file rotation.
- Domain name support in access file allows for each configuration for people without a static IP address.
- Unique Autofire Detector feature can alert players about possible cheating.

↓ Downloads

- EmuLinkerSF (Server)
- EmuLinkerSF (Admin Client)

<https://emulinker.org/downloads/>



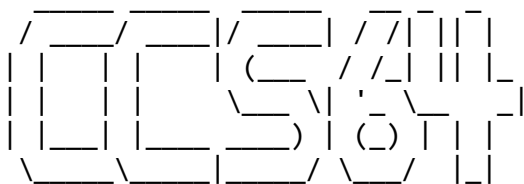
↓ <https://remz.ca/emu>

- CCS64 —————→ Commodore 64 (C64)
- DEmul —————→ Sega NAOMI, Sega NAOMI 2, Atomiswave
- ePSXe —————→ Sony PlayStation (PSX)
- Gens —————→ Sega Mega Drive (Genesis), 32X
- MAME —————→ Arcade, Neo·Geo
- Mupen64++ —————→ Nintendo 64 (N64)
- Nestopia —————→ Nintendo Entertainment System (NES)
- Nostalgia —————→ Intellivision
- Snes9K —————→ Super Nintendo Entertainment System (SNES)
- WinUAE —————→ Commodore Amiga

Other emulators with Kaillera (without tutorials yet):

- Atari800Win Plus → Atari 400, 800, 600 XL, 800XL, 130XE, 5200
- Meisei —————→ MSX

Note: leave the configuration by default to avoid desyncs while playing online (unless specified otherwise in said tutorial).



[Description]

CCS64 is an accurate Commodore 64 emulator which can play Commodore 64 formatted cartridges, demos, games, and music in Windows.

↓ Downloads

- CCS64 v3.9.2

https://remz.ca/kaillera/emu/CCS64_V3.9.2.zip

[Tutorial]

'-Options > Input...'

Control Port 1: Joystick / Key-Set 1. Go to 'Define Joystick Keyset...' to configure the controls.

Control Port 2: None

The second player must have the settings in reverse order (Control Port 1: None. Control Port 2: Joystick / Key-Set 1).

The controls will be mixed for both players if this isn't set up correctly.

~ To start playing online: '-File > Load C64 Files > Tape...' Go to (Dir) Roms, highlight the game and then hit F3.

↓ ROMs C64 [No-Intro]

<https://romcollector.asuscomm.com/>

» FAQ:

<http://www.ccs64.com/ccs64faq.html>



[Description]

DEmul is a Dreamcast emulator. At present, the emulator supports the emulation of the arcade machines based on the Sega Dreamcast such as NAOMI, NAOMI 2 and Atomiswave.

↓ Downloads

- BIOS Pack (DC)

http://www.mediafire.com/download/y7b7179zka4zeud/demul07a_bios.7z

or

https://mega.nz/#!aNIQ2TrR!OAUp3t4R5V_5neKhIRjc6BGkQcMd-D7coh_U9TgQYwk

- DEmul v0.7

https://remz.ca/kaillera/emu/demul07_180428.zip

↓ Downloads (Older emulators/versions)

- DEmul v0.5.7 (Latest version with DX9 support)

https://remz.ca/kaillera/emu/DEmul_0.5.7.zip

- DEmul v0.5.6 (Specific version to play Dreamcast games)

[https://remz.ca/kaillera/emu/DEmul_0.5.6_\(FGO_Repack\).zip](https://remz.ca/kaillera/emu/DEmul_0.5.6_(FGO_Repack).zip)

[Tutorial] (v0.5.7)

- 'Config > Netplay' and check the 'Enable netplay' option.

- 'Config > Controls' to set up the controls ("Joy 1" in both systems).

- 'Config > Plugins and Paths' and select these options: Video Plugin: gpuDXv3* / GD-ROM Plugin: gdrImage.

* If this option doesn't appear, you need to install the DirectX 9.0c

> <https://www.mediafire.com/folder/xma2w7owh52k7/>

~ To start playing online: Load the game, then the Kaillera client starts automatically.

↓ ROMs (v0.5.7)

<https://mega.nz/#F!ud8l1QoK!-zc7TCPtaoy714TtHUYM8w>

↓ ROMs [Arcade]

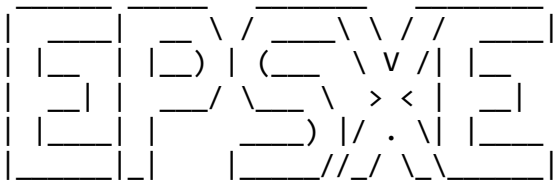
https://archive.org/download/demul07_2017/2_demul_roms_11-11-2017/

↓ ROMs [Redump]

<https://1fichier.com/dir/v7aTubb7>

» FAQ:

<https://translate.google.com/translate?sl=ru&tl=en&u=http%3A%2F%2Fdemul.emulation64.com%2Ffaq%2F>



[Description]

ePSXe (enhanced PSX emulator) is a PlayStation video game console emulator for

x86-based PC hardware with Microsoft Windows or Linux, as well as devices running Android.

↓ Downloads

- ePSXe v1.6.0

<http://remz.ca/ePSXe.v1.6.0.zip>

[Tutorial]

- 'Config > Wizard Guide'

1/7: Config >>

2/7: SCPH-1001

3/7: Pete's DX6 D3D Driver 1.77*

4/7: Eternal SPU Plugin Lite 1.41*

5/7: ePSXe CDR WNT/W2K core 1.5.2.

6/7: Controller 1

7/7: Done

* You need to configure the plugins as they are shown in these screenshots:

Video → <https://i.imgur.com/fBFa2ME.png>

Sound → <https://i.imgur.com/dhYgWdf.png>

- 'Config > Netplay'

Select the 'CyberPad' plugin for 1-2 Player games.

Select the 'PS4NET' plugin for 1-8 Player games.**

** Select this plugin only in case that there are 3 players or more in the same game room.

It's possible to save the progress of the games while playing online (necessary to finish long games such as RPGs).

After saving the progress in the game, send to the other player the 2 files located in your 'memcards' folder.

The other player has to put those files in its 'memcards' folder, go to - 'Config > Memory Card' and select those files.

1: epsxe000.mcr

2: epsxe001.mcr

After that, isn't necessary anymore to send to the other person the "newer" savestates every time you save the progress.

~ To start playing online: Load the game, then the Kaillera client starts automatically.

Press Esc (while playing online) to close properly your current game, then press 'Drop' and close the Kaillera client.

Lastly, check in the Task manager (Ctrl + Alt + Del) that the "ePSXe.exe" process is still not running in the background.

↓ ROMs (Some games)

https://mega.nz/#F!JJkVwQJC!VXhoDEPkN_RWym4cF7g75Q

↓ ROMs [Redump]

<https://mega.nz/folder/nihEGDQY#UGM1X3cWYeoTdp5iXWVr1g>

[#] <https://1fichier.com/dir/N2hNhPQS>
[A] <https://1fichier.com/dir/Y9U2fom9>
[B] <https://1fichier.com/dir/DSFvS0ZG>
[C] <https://1fichier.com/dir/PQYU12gZ>
[D] <https://1fichier.com/dir/GwDxfaDl>
[E] <https://1fichier.com/dir/qLQlInpeF>
[F] <https://1fichier.com/dir/jSzzijef>
[G] <https://1fichier.com/dir/828t55FJ>
[H] <https://1fichier.com/dir/xtLTIsCS>
[I] <https://1fichier.com/dir/ksrubJPd>
[J] <https://1fichier.com/dir/J3cFcTLf>
[K] <https://1fichier.com/dir/N8QFrzWw>
[L] <https://1fichier.com/dir/fDyQnub2>
[M] <https://1fichier.com/dir/t7ZTclvD>
[N] <https://1fichier.com/dir/yCHBWP6>
[O] <https://1fichier.com/dir/io1w9srX>
[P] <https://1fichier.com/dir/eID7m3Sg>
[Q] <https://1fichier.com/dir/ksLtDhhx>
[R] <https://1fichier.com/dir/kIh6aKcc>
[S] <https://1fichier.com/dir/gMASNNqZ>
[T] <https://1fichier.com/dir/SKE594h>
[U] <https://1fichier.com/dir/rqppQ4oT>
[V] <https://1fichier.com/dir/yJ31arCX>
[W] <https://1fichier.com/dir/MzWjF6oS>
[X] <https://1fichier.com/dir/cx5AcGKA>
[Y] <https://1fichier.com/dir/T4fck0Jr>
[Z] <https://1fichier.com/dir/bQCjEb7e>



[Description]

Gens is a Sega Mega Drive/Genesis emulator. Gens also supports running Sega CD and Sega 32X games.

↓ Downloads

- Gens v2.10

<https://remz.ca/wgens210.zip>

- Gens v2.14

https://remz.ca/Gens_2.14.zip

[Tutorial]

Since the v2.10 crashes when you try to set up the controls, you need to run the v2.14 in first instance (gens214.exe).

- 'Graphic > Render' and choose 'Double' or '2xSAI (Kreed)'

- 'Sound > Rate' and select '44100'

- 'Sound' and enable the option 'YM2612 High Quality'

- 'Option > Joypads... > PORT 1 - Player 1 > Redefine Keys'

- 'Option > Bios/Misc Files...' to configure the BIOS.

Genesis:

Genesis —→ Genesis_OS_ROM.bin

32X:

M68000 —→ 32X_G_BIOS.BIN

Master SH2 → 32X_M_BIOS.BIN

Slave SH2 → 32X_S_BIOS.BIN

Sega CD:

USA (U) —→ scd_110.bin

EUR (E) —→ mcd2_200.bin

JAP (J) —→ mcd_101.bin

Browse to your ROMs folder and load a game so the emulator recognizes the root directory of the games.

Note: the Sega CD games doesn't work in Kaillera mode.

~ To start playing online: 'File > Netplay'

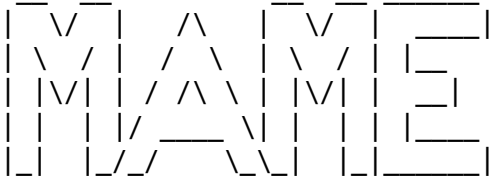
Press Ctrl+C (while playing) to stop the emulation properly.

↓ ROMs (2-Player simultaneous games)

<https://mega.nz/#F!YVEhgY7Z!DN3HphHiNBVbcm4c051gw>

» FAQ:

<http://www.gens.me/faq.shtml#gensf>



[Description]

MAME (an acronym of Multiple Arcade Machine Emulator) is an emulator application designed to recreate the hardware of arcade game systems in software on modern personal computers and other platforms.

↓ Downloads

- MAME BIOS Pack*

https://remz.ca/kaillera/emu/MAME_Bios_Pack.zip

- MAME32k 0.64 (Feb 3 2003)

<http://remz.ca/umk3/mame32k0.64en-ok.zip>

- MAME32++ 0.119 (Sep 14 2007)

http://remz.ca/umk3/mameppk_bin_gcc-0.119-20070914-ok.zip

- HoubaUI++ 0.125 R13 (Jun 27 2009)**


[https://remz.ca/kaillera/emu/HoubaUIpp_0.125_R13_\(Jun_27_2009\).zip](https://remz.ca/kaillera/emu/HoubaUIpp_0.125_R13_(Jun_27_2009).zip)

- MAME32 More! 0.84.177 (Sep 7 2016)

[https://remz.ca/kaillera/emu/MAME32_More_0.84.177_\(Sep_7_2016\).zip](https://remz.ca/kaillera/emu/MAME32_More_0.84.177_(Sep_7_2016).zip)

[Tutorial]

- 'Options > Directories...' select your ROMs folder.

To set up the controls: load any game and press the Tab  key: 'Input (General) > Players 1 Controls'

• Optional changes:

- MAME32++ / HoubaUI++

- 'Options > Default Game Options... > Display' enable "Run in a window" and "Start out maximized"

- 'Options > Default Game Options... > Miscellaneous' enable "Skip game info" and disable "Quit game with confirmation"

- MAME32 More!

- 'Options > Default Game Options... > Miscellaneous' disable "Confirm on exit"

* Place the BIOS files in the same folder as your ROMs.

** Use HoubaUI++ to play those 3D games that don't work properly in MAME32++.
Eg: Bloody Roar 2, Ehrgeiz, Mortal Kombat 4, Street Fighter EX 2 / Plus, Tekken 2, Tekken 3, Tekken Tag Tournament, etc.

Some default keys:

F2: Service Mode*

F3: Reset

F5: Swap Players Controls (for MAME32k / MAME32 More! - Supports up to 4 players)

LeftShift+F5~F6: Swap Players Positions

LeftShift+F7: Create a savestate

F7: Load the savestate (for MAME32k / MAME32 More!)

RightShift+F7: Load the savestate (for MAME32++ / HoubaUI++)


LeftShift+F10: Send DIP Switches to the other players (for MAME32k / MAME32 More! - Then press F3 to apply the changes)

LeftShift+F3: Send DIP Switches to the other players (for MAME32++ / HoubaUI++)

P: Pause the game while you're playing online (for MAME32k / MAME32 More!)

1: Start

5: Coin

* Not all the games have a Service Mode; If not, check the DIP Switches option under the Tab  menu.

To skip the EPPROM errors in some games (eg. Run and Gun, Soccer Superstars) you must hold on F2 and press F3 at the same time.

You don't need to configure anything to play those 4 and 6 players versions, they will become 4p or 6p when you play them in Kaillera.

4 players rules:

For 2 players: 1p,2p vs cpu

For 3 players: 1p,2p vs 3p

For 4 players: 1p,2p vs 3p,4p

6 players rules:

For 2 players: 1p,2p vs cpu

For 3 players: 1p,2p,3p vs cpu

For 4 players: 1p,2p vs 3p,4p

For 5 players: 1p,2p,3p vs 4p,5p

For 6 players: 1p,2p,3p vs 4p,5p,6p

~ To start playing online:

- 'File > Play network game...' (for MAME32k)

- 'File > Kaillera NetPlay...' (for MAME32++ / HoubaUI++)
- 'File > Play Kaillera Game...' (for MAME32 More!)

↓ ROMs (2-Player simultaneous games)
<https://mega.nz/#F!dYEmiJYL!OPKSyxRbYYajLh6R-pW6Lg>
↓ ROMs (2-Player simultaneous games) [ROM-Set Pack]
<https://www.mediafire.com/folder/o10thqlx6alf1/>

» FAQ:
https://wiki.mamedev.org/index.php/Frequently_Asked_Questions



[Description]

Mupen64++ is a version of Mupen64 build off the original source with added Kaillera support. It has a high rate of compatibility.

Project64k is a modified version of the Project64 emulator with added netplay support through the Kaillera network.

↓ Downloads

• Mupen64++ Beta 0.1.3.12
<https://remz.ca/n64/Mupen64++.zip>

↓ Downloads (Older emulators/versions)

• Project 64k 0.13 (01 Aug 2003)
<https://remz.ca/Project64k.zip>

[Tutorial]

- 'Options > Settings... > Directories' select your ROMs folder.

- 'Options > Input Settings...' set up the controls.

~ To start playing online:

Mupen64++: 'Utilities > KailleraClient (Netplay)'

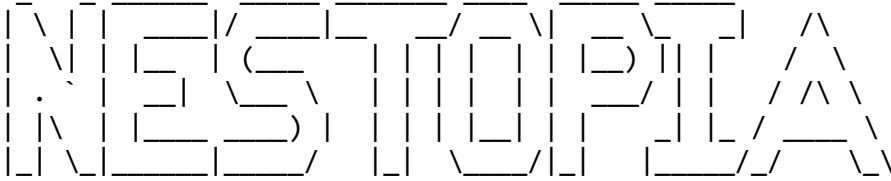
Project64k: 'File > Start NetPlay...'

↓ ROMs N64 [No-Intro]

<https://romcollector.asuscomm.com/>

» FAQ:

<https://web.archive.org/web/20150407164327/http://www.pj64-emu.com/faqs/>



[Description]

Nestopia is an open source NES/Famicom emulator designed to emulate the NES hardware as accurately as possible.

↓ Downloads

- Nestopia UE v1.50

https://remz.ca/kaillera/emu/nestopia_1.50-win32.zip

↓ Downloads (Older emulators/versions)

- Nestopia v1.40

<http://remz.ca/Nestopia140bin-ok.zip>

[Tutorial]

- 'Options > Input...' set up the controls.

- 'View > Screen Size' select 2X.

- 'Options > Preferences' disable "Confirm exit"

It's possible to use cheats while playing on Kaillera, going to 'Options > Cheats... > Add...'

<https://www.gamegenie.com/cheats/gamegenie/nes/index.html>

Note: all the players should enable the same cheats on the emulator, otherwise the game will desync sooner or later.

~ To start playing online: 'Netplay > Connect', 'Add...' add the ROMs to the list, then click on 'Launch..' button.

↓ ROMs NES & FDS [No-Intro]

<https://romcollector.asuscomm.com/>

NOSTALGIA

[Description]

Nostalgia is a Mattel Intellivision emulator.

↓ Downloads

- Nostalgia v5.0

https://remz.ca/kaillera/emu/Nostalgia_5.0.zip

[Tutorial]

- 'Tools > Controller Config' set up the controls.

~ To start playing online: 'File > Start Kaillera'

» FAQ:

<http://www.intellivision.us/intvgames/nostalgia/nostalgia.php>

SNES9K

[Description]

Snes9K is a modified version of the Snes9x emulator with added netplay support through the Kaillera network.

↓ Downloads

- Snes9K v0.09z

<http://remz.ca/snes9k009z2.exe>

[Tutorial]

'File > Load Game...' and browse to your ROMs folder, then load a game so the emulator recognizes the root directory of the games.

'Input > Joypad configuration...' to set up the controls.

Press F12 (while playing online) to swap controls between the first and the second

player.

To be able to play the Kirby games, you must disable the "Enable Multitap 5" option in 'File > Kaillera Configuration'.

By default, the emulator displays this message: If you are using the Mouse, SuperScope or Multiplayer Adapter, switch to Controller.

~ To start playing online: 'File > Play Kaillera Game'

↓ ROMs SNES & Satellaview [No-Intro]

<https://romcollector.asuscomm.com/>



[Description]

WinUAE-Kaillera is a computer emulator which emulates the hardware of the Commodore Amiga range of computers.

↓ Downloads

- WinUAE 0.8.22 R1

<https://www.mediafire.com/folder/o9ccs6nxsx88t/>

[Tutorial]

<null>

~ To start playing online: 'Kaillera > Launch Kaillera'

[ROMs] (List of games included in the pack)

6tris, Alien Breed, Alien Breed SE, Apidya, Arcade Pool, Blood Money, Bubble Bobble, Chaos Engine CD32, Double Dragon 3, Dyna Blaster, E-Motion, Frontal Assault, Golden Axe, Gravity Power, Great Courts 2, International Karate +, Jaguar, Lemmings - Oh No! More, Lemmings, Lotus, Mega Twins, Mercs, Micro Machines, Mortal Kombat, Nitro, North & South, Pang, Parasol Stars, Pinball Dreams, Pinball Obsession, Sensible Golf, Sensible Soccer, Settlers, Silkworm, Speedball 2, Spy vs Spy, Super Off Road, Super Space Invaders, Super Twin Tris, Supercars 2, SWV, Terminator 2 - The Arcade Game, Tetrix, Warzone, Wiz N Liz, Worms DC, Xtreme Racing.

EmuLinkerSF commands

/command - Function
- Number

• General commands

/alivecheck - Allows a user to check if he/she is still connected
to the server.

/finduser <nickname> - Allows a user to find in what game another user is,
and what is his/her User ID.

/help - Brings up the command.

/ignore ~ /unignore <User ID> - Allows a user to ignore or unignore another user.

/ignoreall ~ /unignoreall - Allows a user to ignore or unignore the entire
server.

/me <message> - Allows a user to “emote” on the general chat.

/msg <User ID> - Allows a user to send a private message to another
user in the server.

/msgon ~ /msgoff - Allows a user to enable or disable the reception of
private messages.

/myip - Allows a user to see what its IP address is.

/version - Allows a user to see which version of EmuLinker the
server is running.

• Game room commands

/detectautofire 0 ~ 5 - Allows a user to scan and check if another user in
the game is using autofire.

/help - Brings up the command.

/lagreset - Resets the counter of lag spikes.

/lagstat - Shows the amount of lag spikes that each user in
the game room has.

/maxping # - Allows the host of a game to set the highest ping allowed to enter the game.

/maxusers # - Allows the host of a game to set the maximum amount of users allowed in the game room at one time.

/mute ~ /unmute <User ID> - Stops a specific user from typing in-game.

/muteall ~ /unmuteall - Stops users from typing in-game.

/num - Allows a user to see what is the number of users inside a game room.

/p2pon ~ /p2poff - Allows faking P2P. This option ignores all the server activity during gameplay.

/samedelay true ~ false - Allows the host to set the game delay. If the owner chooses to play with the same delay, all the players will be playing with the delay of the user with the worst ping.

/setemu - Restricts the game room to the emulator the host is using. Ex. "MAME32k", "Project64k", etc.

/setconn - Allows a user to restrict the connection type to the one the user has set up for itself.

/startn # - The game will start automatically when a certain amount of users join to the game room.

/swap # - Swap the controls for each user in the game room.**
**Compatible with all the emulators (except ePSXe).

Kaillera client commands (Nov 1 2007)

- General commands

/clear - Allows a user to clear all the text of the general chat.

/pcs - Similar to the "stats" command: shows the amount of lost/misorder packets.

/reconnect automatically. - Allows a user to reconnect to the server

/stats - Allows a user to see what is the bandwidth consumed

on the server in real-time.

`/swm` - Allows a user to switch the screen between its current game room and the server's games list.

UOKS commands (v0.92)

- Game room commands

`/lagreset` - Resets the lag-checking system (use it shortly before `/lagstat` if game has been running awhile).

`/lagstat` - Displays the number of lag spikes each game room user has.

`/limit #` - Sets user limit for game lobby. User limit defaults to 8, and can't be changed to a number less than the number of users currently in the game, nor can it be changed to a number greater than the user limit of the server, or 32, whichever is less. User limits are enforced.

`/start` - This command starts the game, the same as the start button in the default client. This is necessary so that game hosts who have 'inherited' their power from a previous host leaving the game can still start the game, despite their client not otherwise having an interface for it.

`/swap #####` - Remaps user inputs on the fly, while game is playing. User inputs are reset on game start. Only the first 8 user inputs can be remapped, or used for remapping. Duplicates are allowed. The numbers supplied are the original player numbers, and are not affected by previous '`/swap`' commands. Using a '0' for a player's input means 'don't change from previous mapping'. The first example '`/swap 01`' does not change the input currently used for player 1, but uses player 1's input for player 2. The second example '`/swap 20663`' uses player 2's input for player 1, player 6's input for 3 and 4, and player 3's input for 5.

`/swapreset` - This command resets all input mappings in the game to the state they would be in if no '`/swap`' commands had ever been issued.

Table of delay frames

Ping	Delay value
1. LAN	(60 packets/s)
0-16	1 frame
17-33	2 frames

34-49	3 frames
50-66	4 frames
67-83	5 frames
84-99	6 frames
100-116	7 frames
117-133	8 frames
134-149	9 frames
150-166	10 frames
167-183	11 frames
184-199	12 frames

2. Excellent (30 packets/s)

0-33	3 frames
34-66	5 frames
67-99	7 frames
100-133	9 frames
134-166	11 frames
167-199	13 frames

3. Good (20 packets/s)

0-49	5 frames
50-99	8 frames
100-149	11 frames
150-199	14 frames

4. Average (15 packets/s)

0-66	7 frames
67-133	11 frames
134-199	15 frames

5. Low (12 packets/s)

0-83	9 frames
84-166	14 frames
167-199	19 frames

6. Bad (10 packets/s)

0-99	11 frames
100-199	17 frames

In order to have a decent input-lag when playing online, it is preferable to have a ping below 100 (or less than 10 frames delay).



- Kaillera FAQ section (Partial backup) •

.....

- ▶ Why is my game so laggy when I play? | What is lag? What is desync? What does "Ping" mean?

When you play games over the Internet, you can be playing against someone that is across the world. When speed is concerned, you start to run into concept of the speed of light.

Say I'm in New York, and I want to play a server in Tokyo. That's about 6760 miles. The speed of light is approximately 186,000 miles per second. In ideal conditions, your signal has to go from your computer to the server, and back. Assume that this electronic communication happens at the speed of light. (Which it does not. There are other problems due to overhead, A/D conversions, etc. Not to mention that electricity travels a bit slower than the speed of light.)

So, we have to go 6760 miles there, and 6760 miles back. That's 13520 miles. At the speed of light, it would take about 72.688 ms ($[13520\text{mi} / 186000 \text{ mi/sec}] * 1000\text{ms/sec}$). So, at best you can have a 72 ms ping. (Not taking into account time lost by routing hops, A/D conversion, network overhead, latency, etc.)

You really can't defeat the speed of light.

- Lag: AKA network latency and ping time. If you say you are "lagging", network-savvy people are going to think that when you press a key, your actions are delayed. Lag is NOT shown when you are playing but the game appears to have locked and none of the keys work. That is called...

- Packet Loss: Over the TCP/IP and UDP protocols and the others, data is sent out in little packets of data. I believe it is approximately a few hundred bytes, (someone who knows, please let me know). The receiving computer reassembles these packets, according to stamps on them, into what it was supposed to be. In UDP, which Kaillera uses, these can be received out of order and there's a timestamp on them so that they can expire. Ex.: If you're playing a fighter and you press a punch, you don't want it to be received after the kick you pressed first; fighting would be downright hilarious. You may never get a UDP packet since it is just sent once and that's it. Once it's expired, if your computer ever DOES get it, the packet is checked against the computer's clock and just ignores it.

In TCP/IP, packet loss does not happen as often, and the participating computers connection seems to last longer, usually until both computers feel the connection has just been lost. (This is why IRC, laggy as all hell, still works). TCP/IP replies with what we call an "ACK" (acknowledgement) when a packet has been received. Until that, the other computer keeps sending the little packet out until it gets the "ACK". The problem is, this takes up bandwidth on a connection, thus for things like Kaillera, UDP is much more preferred so lag can be reduced.

- Choppiness: You will see choppiness in the game if there is some lag happening. The resulting effect from packet loss in UDP is that you may have some packets that

are not received. This would not only cause lag, since the timing would be held back, but you may also miss a transmitted move or button press. One of the benefits of UDP is that all of the bandwidth of both computers is used to full and not wasted resending packets. The problem is if a packet is not received the computer that was supposed to get it has nothing to do. With the way Kaillera is set up, (which it has to be, or desyncs would occur whenever a packet is lost) the program is set to stick until it receives a packet so the other player(s) can move. Work some brain cells for a second and you can see this was the only sensible thing to do. This prevents Kaillera from desyncing. Those of you who frequently get perfect games feel rested: you are getting relatively low packet loss: less than 5%. 0 is quite uncommon just because there's so much traffic everywhere. High speed connections usually have much lower rates of packet loss than dialup. This entire process works so fast however that even though you think you're playing a smooth game, packets are still getting dropped and despite the fact that this is happening, you can't tell Kaillera has stopped working for 2 milliseconds.

In addition, Kaillera implements modern technology which make UDP packet transmission much more reliable. But even with that, if your connection is bad, there's no magical way around it.

If your games keep getting choppy, check out what's going on with your Internet connection. For instance, if you're in the middle of any file transfer while playing with Kaillera or are using other bandwidth-eating applications.

► What is the "Connection" setting used for, and what should I put there?

You usually should leave it on it's default setting of "Good". The "Connection" setting will tell Kaillera how many packets it will send each second. A rate of 20 packets per second is usually good for all types of connections. See the above entry regarding packet loss. If you send less packets per second, the connection will be more reliable and your game will be less choppy. The downside is that if you choose a connection setting too low, you may feel that it is too tough to complete complicated moves, such as those required in most common fighting games. The "Good" setting is truly and decent medium.

► Help! My game goes out of sync! (aka. desync) Why?

Desync is a thorn in the side of playing emulators over a network. If you want to know why this also happens in PC games, keep reading this paragraph, otherwise skip down a bit. This also comes up in real time strategy games. For example Starcraft, those of you that play(ed) it, you know each player can have around 100 or more units, not to mention buildings, at once. Maybe each on screen "entity" takes about 200 bytes. That's 200 entities for each player, 4 kilobytes for those entities. If there are 8 players, that's 32k. Your 56k modem can not send 32 kilobytes per second reliably. In the game Black and White, you can have unlimited amounts of villagers. The more villagers, the more houses, food, wood, and prayer power you get. That's a ton of data that needs to be sent to EVERY player. Peer-to-Peer games do not usually send every single piece of data to each computer. Obviously, that would be too much data to send consistently, and quite a waste of time. So instead, they do something like what Kaillera does, send tiny updates.

In essence, Kaillera just sends keystrokes. The server you connect to is the host, NOT whoever makes the room for the game. Every key you press while playing is sent to the server you connect to and it then routes it back to you and to everyone else. Again, it does not matter who hosts a game, the playing experience on a single server will be the pretty much the same unless one player reconnects to their ISP.

When you press a key while in Kaillera, as stated above, it is sent to the server and sent to everyone else:

```
      - Player 1
    /
Server - Player 2
    \
      - Player 3
```

If player 1 presses punch, it goes to the server, and then it follows the lines back to each player. If one player is experiencing heavy packet loss, all players stick because as mentioned in the above topic:

Kaillera waits for keystrokes. As you can imagine this is very unreliable. It's like telling a person to remember a sentence for you and you can tell them to go back and forward, delete words and add words. If one of you screws up going forward, back, add or remove and then you both write the sentence out, you get modified sentences. The result is one of you could still have the correct new sentence but since the other person screwed up, you are "desynced". This is exactly what happens with a desync. One of the player's Kaillera will "think" about something differently. It could also be caused by packet corruption that was somehow received (though the likelihood of that is low, it does happen). Since nothing but keys are sent, there is no way currently feasible to synchronize. One possibility that is being explored is to copy byte for byte the game's "state" from one computer to all the others. Technically you could "teleport" if you were playing a game like Dungeons & Dragons, to each other and you would be synched but usually it's not that easy. You could have different scores and stuff. This tiny update stuff is the blind leading the blind. Each client blindly assumes the other clients have exactly what it has. Usually this works. When there's a desync, it doesn't.

With the keystroke method the best way to check for a desync is compare scores. Tell each player your score and have them tell you what they see your score as. If it's different, you're desynced. You can also check to see if players are hitting the air.

Packet corruption would seem the most likely culprit for desync. This is when somehow, over the network, the packet gets a bit or more changed in it. TCP/IP has a quick check I think and discards corrupted packets and doesn't send the ACK. UDP doesn't care, and just drops it. Corrupted packets are supposed to be dropped but it can be possible to receive a corrupted packet and try to use it. I don't think this happens often. Usually corruption is faulty hardware. I don't know if this is

the case, but if these corrupted packets are sent off as being correct, received and used, this causes HORRIBLY unwanted results.

> Source: <http://www.kaillera.com/faq.php>

.....
• Kaillera P2P client FAQ section (Partial backup) •
.....

Q: What's this?

A: It's a Kaillera client file for Kaillera supported emulators that allows you to connect directly to your opponent to play.

Q: Why would I want to connect directly? What's wrong with playing with normal client in Kaillera servers?

A: There's nothing wrong with playing with normal client in Kaillera servers. This isn't a replacement for our good old trusty reliable Kaillera. This is merely an extra option for users who wants to directly connect to their opponent's machine and play with half the response delay of playing in Kaillera servers.

Q: I hosted and my IP address is 127.0.0.1:27886 but how come my friend can't connect? How do I get my IP?

A: 127.0.0.1 is the loopback IP address. I.e. it will always point to your own computer. So someone on the Internet or even your local network can't connect on the Internet to you using this IP address. To connect you will need your external IP address.

<https://www.whatismyip.com/>

Q: Does it give any advantage to low pingers over high pingers like normal Kaillera?

A: No. Ping (a.k.a. latency) can be seen as a network property between 2 endpoints. There are only 2 endpoints in P2P and hence both users share the same ping.

Q: How do I change my connection setting to "Good" connection setting?

A: You can't! By default, it behaves like "LAN" on Kaillera. If you are having lag spike problems, an option to allow for one and two extra frames delay to smooth the game out further has been added and is configurable by host.

Q: Does host have any advantage? How is host different to connector?

A: No. Host is obviously the one who is connected to. Host has the privilege of taking certain initiatives such as calculating average ping and throughput but nothing special. Client's clock also gets synchronized emit the same time as host. On the negative side, host needs to have the hosting port forwarded in the router so the connector can connect. Once the game starts, both behave identically.

Q: Does host have to fill in the "Peer IP" box?

A: No. That's the only box the connector has to fill in. Host has to fill in everything else.

Q: I did all that but the other player can't see my game.

A: The most probable reason for this is if you don't have your hosting ports forwarded. By default, port is 27886/UDP must be forwarded to be able to host games.

Q: It's possible to play via P2P with more than 2 players?

A: Unfortunately no. Use standard Kaillera servers which support up to 8 players per game.

Q: How does it's delay compare to Kaillera?

A: The delay in it's vary close to half of the ping between the users (RTT/2) whereas the delay in normal Kaillera should converge to ping between the user and server (again RTT) as higher connection settings are used. Note that Kaillera as well as most of the emulators who incorporate Kaillera are discrete implementations and they works in terms of whole frames (typically and assumed to be 16.66667 ~ 17 ms) instead of fractions.

Q: Why are my games going choppy when I use this?

A: The connection between you and your peer isn't that consistent. Use the "Smoothing" option when playing this peer.

- "If near UB" adds 8ms to your ping time before the delay is locked in.
- "Always" adds an extra frame of delay.
- "Extra" adds two extra frames of delay.

> Source: <http://p2p.kaillera.ru/>

▲ Why partial backups? Obsolete and useless questions were removed. It has also been revised and updated.

.....
• Kaillera Network Protocol •
.....

Kaillera network protocol analysis started originally by Anthem and Okai project.
Completed by SupraFast with help from Moosehead.
Master server format analysis by SupraFast.

```
'-----  
'Protocol  
'-----  
'//Logging in State  
'Client: HELLO0.83  
'Server: Port notify HELLOD00D#\0 [# = new port number. eg. HELLOD00D7159]  
'      or TOO\0 [if server is full]  
'Client: User Login Information [0x03]  
'Server: Server to Client ACK [0x05]
```

```
'Client: Client to Server ACK [0x06]
'Server: Server to Client ACK [0x05]
'Client: Client to Server ACK [0x06]
'Server: Server to Client ACK [0x05]
'Client: Client to Server ACK [0x06]
'Server: Server to Client ACK [0x05]
'Client: Client to Server ACK [0x06]
'***ACK's calculate one's ping. Generally 4 are sent, but not always. Clients _
  respond to Server ACK's***
'Server: Server Status [0x04]
'Server: User Joined [0x02]
'Server: Server Information Message [0x17]
,
//Global Chat State
'Client: Global Chat Request [0x07]
'Server: Global Chat Notification [0x07]
,
//Game Chat State
'Client: Game Chat Request [0x08]
'Server: Global Chat Notification [0x08]
,
//Create Game State
'Client: Create Game Request [0x0A]
'Server: Create Game Notification [0x0A]
'Server: Update Game Status [0x0A]
'Server: Player Information [0x0D]
'Server: Join Game Notification [0x0C]
'Server: Server Information Message [0x17]
,
//Join Game State
'Client: Join Game Request [0x0C]
'Server: Update Game Status [0x0E]
'Server: Player Information [0x0D]
'Server: Join Game Notification [0x0C]
,
//Quit Game State
'Client: Quit Game Request [0x0B]
'Server: Update Game Status [0x0E]
'Server: Quit Game Notification [0x0B]
,
//Close Game State
'Client: Quit Game Request [0x0B]
'Server: Close Game Notification [0x10]
'Server: Quit Game Notification [0x0B]
,
//Start Game State
'Client: Start Game Request [0x11]
'Server: Update Game Status [0x0E]
'Server: Start Game Notification [0x11]
'Client: *Netsync Mode* Wait for all players to give: Ready to Play Signal [0x15]
```



```
'Server: Update Game Status [0x0E]
'Server: *Playing Mode* All players are ready to start: Ready to Play Signal
Notification [0x15]
'Client(s): Exchange Data. Game Data Send [0x12] or Game Cache Send [0x13]
'Server: Sends data accordingly. Game Data Notify [0x12] or Game Cache Notify
[0x13]
,
'//Drop Game State
'Client: Drop Game Request [0x14]
'Server: Update Game Status [0x0E]
'Server: Drop Game Notification [0x14]
,
'//Kick Player State
'Client: Kick Request [0x0F]
'Server: Quit Game Notification [0x0B]
'Server: Update Game Status [0x0E]
,
'//User Quit State
'Client: User Quit Request [0x01]
'Server: User Quit Notification [0x01]
,
-----
,
-----
'Server List - http://www.kaillera.com/raw\_server\_list.php
'                http://www.kaillera.com/raw\_server\_list2.php
-----
,
'Note: LF = LineFeed = 10
,
'Format: serverName[LF]ipAddress:port;users/maxusers;gameCount;version;location[LF]
,
'Example:
,
'Unknown Server
'111.111.111.111:27888;0/10;0.86;Europe
,
-----
,
-----
'Packet format: multi bytes in little endian format [1st_Byte * 256 + 2nd_Byte]
,
-----
'//Initial byte
'1B - byte - Number of messages in packet [generally you will always have n-3
messages. _
,
'                During gameplay, it may be necessary to
increase.]
,
'//5 byte header before each message
'2B - word - The number of this message; every message sent is increased by 1.
'2B - word - Length of this message; includes message type and size of data being
sent
```

```
'1B - byte - Message type ex). 0x03 User Login
,
'//Message
'Data
,
'[Repeats 5 byte header and Data for each message]
,
'eg). (1B), 2B,2B,1B,DataA [Repeats} 2B,2B,1B,DataB [Repeats] 2B,2B,1B,DataC and
etc.
'eg). User Quit Request [0x01]: (01), 01,00, 04,00, 01, 00,00,FF
, initial message# Length Type Data
, ^
, Note: We are only sending one message! If it were
```

```

, 2 messages this would be 02.
'The packet to send would look like this: 01,01,00,04,00,01,00,00,FF
,
-----
,
-----
```

```
'Message Types [all multi-bytes are in little endian format]
'Assume all strings end in "\0". Empty Strings are just "\0"
,
-----
```

```
' 0x01 = User Quit
, Client Request:
, NB : Empty String [00]
, 2B : 0xFF
, NB : Message
,
, Server Notification:
, NB : Username
, 2B : UserID
, NB : Message
,
, 0x02 = User joined
, Server Notification:
, NB : Username
, 2B : UserID
, 4B : Ping
, 1B : Connection Type (6=Bad, 5=Low, 4=Average, 3=Good, 2=Excellent, &
1=LAN)
,
, 0x03 = User Login Information
, Client Notification
, NB : Username
, NB : Emulator Name
, 1B : Connection Type (6=Bad, 5=Low, 4=Average, 3=Good, 2=Excellent, &
1=LAN)
,
, 0x04 = Server Status
, Server Notification:
```

' NB : Empty String [00]
' 4B : Number of Users in Server (not including you)
' 4B : Number of Games in Server
' NB : List of Users
' NB : Username
' 4B : Ping
' 1B : Connection Type (6=Bad, 5=Low, 4=Average, 3=Good,
2=Excellent, & 1=LAN)
' 2B : UserID
' 1B : Player Status (0=Playing, 1=Idle)
' NB : List of Games
' NB : Game Name
' 4B : GameID
' NB : Emulator Name
' NB : Owner of Room
' NB : Number of Players/Maximum Players [MvC: 2/2, MvC4P: 4/2]
' 1B : Game Status (0=Waiting, 1=Playing, 2=Netsync)
'

' 0x05 = Server to Client ACK
' Server Notification:
' NB : Empty String [00]
' 4B : 00
' 4B : 01
' 4B : 02
' 4B : 03
'

' 0x06 = Client to Server ACK
' Client Notification:
' NB : Empty String [00]
' 4B : 00
' 4B : 01
' 4B : 02
' 4B : 03
'

' 0x07 = Global Chat
' Client Request:
' NB : Empty String [00]
' NB : Message
'
' Server Notification:
' NB : Username
' NB : Message
'

' 0x08 = Game Chat
' Client Request:
' NB : Empty String [00]
' NB : Message
'
' Server Notification:
' NB : Username
'

```

'         NB : Message
'
' 0x09 = Client Keep Alive
'         Client Request:
'         NB : Empty String [00]
'
' 0x0A = Create Game
'         Client Request:
'         NB : Empty String [00]
'         NB : Game Name
'         NB : Empty String [00]
'         4B : 0xFF
'
'         Server Notification:
'         NB : Username
'         NB : Game Name
'         NB : Emulator Name
'         4B : GameID
'
' 0x0B = Quit Game
'         Client Request:
'         NB : Empty String [00]
'         2B : 0xFF
'
'         Server Notification:
'         NB : Username
'         2B : UserID
'
' 0x0C = Join Game
'         Client Request:
'         NB : Empty String [00]
'         4B : GameID
'         NB : Empty String [00]
'         4B : 0x00
'         2B : 0xFF
'         1B : Connection Type (6=Bad, 5=Low, 4=Average, 3=Good, 2=Excellent, &
1=LAN)
'
'         Server Notification:
'         NB : Empty String [00]
'         4B : Pointer to Game on Server Side [client has no use for this...]
'         NB : Username
'         4B : Ping
'         2B : UserID
'         1B : Connection Type (6=Bad, 5=Low, 4=Average, 3=Good, 2=Excellent, &
1=LAN)
'
' 0x0D = Player Information
'         Server Notification:
'         NB : Empty String [00]

```

```

'           4B : Number of Users in Room [not including you]
'           NB : Username
'           4B : Ping
'           2B : UserID
'           1B : Connection Type (6=Bad, 5=Low, 4=Average, 3=Good, 2=Excellent, &
1=LAN)
'
'   0x0E = Update Game Status
'   Server Notification:
'   NB : Empty String [00]
'   4B : GameID
'   1B : Game Status (0=Waiting, 1=Playing, 2=Netsync)
'   1B : Number of Players in Room
'   1B : Maximum Players
'
'   0x0F = Kick User from Game
'   Client Request:
'   NB : Empty String [00]
'   2B : UserID
'
'   0x10 = Close game
'   Server Notification:
'   NB : Empty String [00]
'   4B : GameID
'
'   0x11 = Start Game
'   Client Request:
'   NB : Empty String [00]
'   2B : 0xFF
'   1B : 0xFF
'   1B : 0xFF
'
'   Server Notification:
'   NB : Empty String [00]
'   2B : Frame Delay (eg. (connectionType * (frameDelay + 1) <-Block on
that frame
'   1B : Your Player Number (eg. if you're player 1 or 2...)
'   1B : Total Players
'
'   0x12 = Game Data
'   Client Request:
'   NB : Empty String [00]
'   2B : Length of Game Data
'   NB : Game Data
'   *eg). MAME32K 0.64 = 2 Bytes/Input _
'   Connection Type = (3=Good), so...3 * 2 = 6 Bytes for 1 Player's
Input)*
'
'   Server Notification:
'   NB : Empty String [00]

```

```

'           2B : Length of Game Data
'           NB : Game Data
'           *Using same example from above...If both players are on 3=Good
Connection Type _
'           and there are 2 Players, then the Total size of the incoming data
should be: _
'           3 * 2 = 6 Bytes...6 Bytes * 2 Players = 12 Bytes*
'
'       0x13 = Game Cache
'       Client Request:
'       NB : Empty String [00]
'       1B : Cache Position
'       *256 Slots [0 to 255]. Oldest to Newest. When cache is full add
new _
'       entry at position 255 and shift all the old entries down knocking
off the oldest. _
'       Search cache for matching data before you send. If found, send
that cache position, _
'       otherwise issue a Game Data Send [0x12]. When server sends a game
Data Notify to you, _
'       search for matching cache data, if not found add it to a new
position*
'
'       Server Notification:
'       NB : Empty String [00]
'       1B : Cache Position
'       *Uses same cache procedure as above.*
'
'       0x14 = Drop Game
'       Client Request:
'       NB : Empty String [00]
'       1B : 0x00
'
'       Server Notification
'       NB : Username
'       1B : Player Number (which player number dropped)
'
'       0x15 = Ready to Play Signal
'       Client Request:
'       NB : Empty String [00]
'       *Send this when your game is ready to start.*
'
'       Server Notification:
'       NB : Empty String [00]
'       *Receive this when All Players are ready to start.*
'
'       0x16 = Connection Rejected
'       Server Notification
'       NB : Username
'       2B : UserID

```

```
'      NB : Message
'
'      0x17 = Server Information Message
'      Server Notification:
'      NB : "Server\0"
'      NB : Message
'-----
```

.....
• List of Kaillera servers •
.....

[America]

```
| USA | eL beaN Server (East) —————> 35.245.177.68:27888
| CHL | ElrefugiodeShalaka —————> 181.43.0.123:27888
| USA | Emuparadise America —————> 199.101.98.242:27888
| BRA | Farofas MK —————> 35.247.201.155:27888
| USA | Galaxy —————> 198.12.101.16:27888
| USA | LA Pizza Server —————> 104.237.11.154:27888
| USA | LA (the south) —————> 71.15.37.153:27888
| BRA | Liperock Oficial Server ———> 18.228.223.222:27888
| USA | Mortal Kombat War Room ———> 208.94.244.66:27888
| USA | Mortal Kombat WaveNet ———> 198.46.248.14:27888
| BRA | Republica Old Gamer —————> 54.232.69.163:27888
| BRA | Retro Mania —————> 191.252.186.236:27888
| USA | Salt City Smash —————> 107.182.239.77:27888
| USA | Seattle Pizza Server —————> 23.227.163.253:27888
| USA | Smash Tampax —————> 199.167.29.54:27888
| USA | SSB Chicago —————> 162.211.66.81:27888
| USA | The Happy Kingdom (Central) -> 185.227.241.81:27888
| USA | The Happy Kingdom (East) ———> 167.88.48.12:27888
| USA | The Happy Kingdom (West) ———> 45.151.175.205:27888
| USA | Wils SanFran Server —————> 165.227.60.3:27888
```

[Asia]

```
| JPN | 男塾鯖 —————> otokojuku.ddo.jp
| SGP | Dragon Spirit —————> 116.251.223.214:27888
| VNM | holethanh-thanhhoa server —> 118.71.2.226:27888
| KOR | Korea Fast Server 1 —————> 121.163.78.128:27888
| KOR | Korea Fast Server 2 —————> 121.163.78.146:27888
| CHN | Pigsty Emulator Server ———> 218.90.167.83:27888
| KOR | Tekken Battle Net —————> 218.147.64.61:10000
| VNM | TungVL DaNang Server ———> 14.185.131.177:27888
```

[Europe]

```
| FRA | 2Many server —————> 91.121.3.197:27888
| NLD | Remz Wonderland —————> 192.210.175.118:27888
| ESP | EFECTO FM —————> 78.136.107.189:27888
```

```
| NLD | Emuparadise Europe —————> 50.7.189.186:27888
| FRA | Gamers City —————> 195.154.178.73:27888
| FRA | Phantasia —————> 145.239.124.250:27888
| POL | Zbojnicka Serwerownia ———> 145.239.81.203:27888
```

[Oceania]

```
| AUS | AuS Kaillera EMX —————> 202.169.104.136:27888
| AUS | SSB64 Australia 1 —————> 45.63.29.150:27888
```

[Russia]

```
| RUS | Emu-Land —————> 89.108.88.134:27888
| RUS | Moscow Entertainment Server -> 31.192.110.105:27888
| RUS | MSK1 —————> 46.188.50.48:27888
| RUS | NST Kaillera Server —————> 89.223.121.144:27888
| RUS | SourceGame —————> 109.94.2.150:27888
| RUS | Ultimate Cup —————> 151.248.126.219:27888
| RUS | Ultimate Cup-2 EKB —————> 213.189.216.117:27888
```

Revised in April 2021 // Won't be updated anymore, use the EmuLinkerSF Master Server List.

Online backup of the Master Servers List:
<https://kaillera.remz.ca>

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// Deprecated ~ For archival purposes

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• SUPRACLIENT •
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Supraclient is an alternative Kaillera client.

► Supraclient features:

- Improved layout.
- Reduced lag.
- Bypasses the known EmuLinker login error.
- Set Max Users & MOTD for gameroom.
- Additional Options in the Options Tab.

↓ Downloads

- Supraclient

<https://emulinker.org/downloads/>

.....
• UNOFFICIAL KAILLERA SERVER •
.....

UOKS is an unofficial Kaillera server based on the original binary. It was produced from the source code created by decompiling the original Kaillera server binary.

► UOKS features:

- Greatly improved internal security (several buffer overflow vulnerabilities patched over, far more error-checking on the protocols to prevent unauthorized commands / spoofing).
- Flood protection against chat flooding in game lobbies, as well as game creations and joins.
- MotD support that should work with older Kaillera clients.
- Two automatic banning systems: one for banning users who have been flooding or attempting buffer overflow exploits from entering the server, and one for preventing users who have been kicked repeatedly from a game from rejoining it.
- Additional capabilities given to game lobby creators: setting a limit on the number of users that can join the game, user input remapping, and banning a user.
- Game lobbies close only when empty, not when their creator leaves, the least recent player to join the game (otherwise known as player 2) gains all powers of the previous host (including commands to start the game and kick users from it, since the client has no interface for providing for this case).
- Improved checking in loading the configuration file.
- Generally improved performance.
- Reduced difficulty in establishing an initial connection.
- Alerts displayed in game lobby when someone joins with a version different from the current host/creator.
- Filtering of whitespace characters other than space characters (carriage returns, tabs, etc.) out of chat messages.

↓ Downloads

- UnOfficial Kaillera Server

<https://web.archive.org/web/20160326090253/http://www.emuunlim.com/sneese/unofficial-kaillera-0.92-linux.tar.gz>

<https://web.archive.org/web/20160326092742/http://www.emuunlim.com/sneese/unofficial-kaillera-0.92-win32.zip>

Last updated: Apr 25, 2021

Please visit <https://EmuLinker.org> for latest updates