CV:TDE Guide

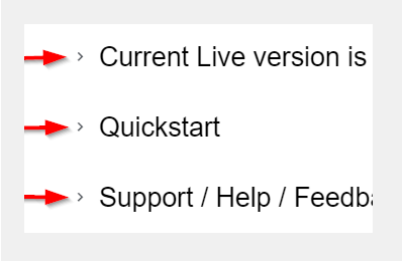
Creativerse on Steam - Help on creativersegame.com

This is a live, work in progress document meant to become the main one-stop technical guide for **Creativerse: The Definitive Edition**.

(order of sections and contents subject to change at any time)

If you spot any inaccuracies in this guide, need any clarification or help about it, please post in this thread (Steam Forums) or check the Support / Help / Feedback section.

If you are not seeing the contents of the sections you can expand them by clicking on the "**>**" symbols:



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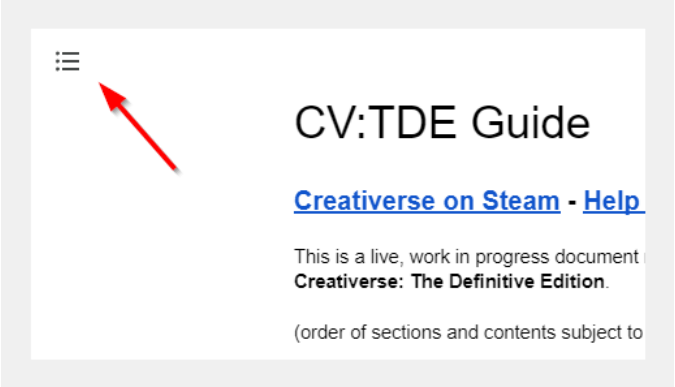


Current Live version is 4.2.0.0 (patch notes)

Linux/Proton 8.0

Version 4.0+ of Creativerse: The Definitive Edition seems able to run all of its features using Proton 8.0 - added the known installation / caches / server data folder positions in the various section below.

Even though the client isn't officially supported on Linux, the changes in Proton 8.0 made the game seemingly fully playable on the Steam Deck as well.

Quickstart

Unlock all costumes / all crafts

Starting from version 4.1 you can manage all crafts / unlocks / discoveries / costumes / perks / villager jobs from the Player List, clicking on your own player name or anyone else's if you have permissions to do so. Some of those player options can only be altered for players which are online.

Additional chat commands already available in version 4.0:

`/unlockallcostumes`

`/unlockallcrafts`

Owners of a world are always allowed running all these commands, if you want to grant this ability to another player, you can do so from the Player list - click on a player, click on Manage Commands, select the commands you want to grant to that player and save.

Pay attention that the other two commands allow unlocking crafts and costumes for any other player, so don't grant these to players you don't fully trust about not abusing them:

`/unlockallcraftsforplayer playerName`

`/unlockallcostumesforplayer playerName`

All of these unlock commands may cause the game to freeze for a few seconds to handle all the "unlock" notifications that will be sent to the client by the server.

You can only unlock crafts and costumes for players which are currently online (or as above, just grant them those first two commands and they'll run the command themselves when they'll be online).

Unlock problems

Even though we tried our best to polish the new progression and unlocks we ended up missing some cases. We'll do our best to complete the work in the next patches, for the time being, here are the workarounds.

Swords

Some of the swords were meant to be part of the Quests completions but we added them after some players already completed those quests in some worlds. The workaround there is to reset the corresponding quest via a command like this:

```
/quests reset de_quest_complete_quests_iron
```

Once you run that command you'll be able to re-complete that quest again and get the missing sword unlock of that set.

Check the Codex for the completed quests and see which one you need to get the swords you're missing, the "catch-all quests" are named like this:

```
/quests reset de_quest_complete_quests_wood
/quests reset de_quest_complete_quests_stone
/quests reset de_quest_complete_quests_obsidian
/quests reset de_quest_complete_quests_iron
/quests reset de_quest_complete_quests_diamond
/quests reset de_quest_complete_quests_lumite
```

Migrate a world

Players cannot migrate worlds themselves anymore (since version 4.0.0)

We managed to recover a good part of the worlds from the servers that have been shut down, you can contact support@playfulstudios.com and we'll verify if we have a copy of your worlds.

Create a world

1. Launch the game and click on Play from the main screen to get to the new Server Browser
2. Either click on the Create tab or on the "Create world" card in the Local tab
3. Set your world up as you please, make sure you check the Advanced settings as well, as there are many new options available
4. Click on "Create World"

If you kept the "Launch world upon creation" flag, the world should get created (possibly the template could get downloaded) and you should get logged in automatically.

If you didn't select that option, check the next section.

See the troubleshooting section for anything going wrong.

Play a local world

1. Launch the game and click on Play from the main screen to get to the new Server Browser

2. Click on Local, you should see all your local worlds available to be run
3. Click on a world and either download the corresponding template (only needs to be done once per template) or hit Play right away on that world

When a world is launched properly you should see a notification in the bottom right corner, the game is spinning up the server behind the scenes and should log you into the world automatically.

See the troubleshooting section for anything going wrong.

Copy a world from one computer/account to another

1. Find where the world is stored (CV Worlds / Backups / Templates folders)
2. Zip the world folder (just to make it easier to move it around)
3. Copy it over to the same position on the other computer (unzipping it)
4. Maybe edit the config_world.json file inside of the world folder so that it contains your Steam ID as owner instead of that of the other player (this isn't strictly necessary unless you have activated whitelisting and your account isn't whitelisted yet, as that would lock you out of the world)
5. Once that's done, launching the game you should see this new world in the Local tab and be able to play it.

See the troubleshooting section for anything going wrong.

Let someone else join on the same LAN

Worlds will be visible in the LAN tab only if they're running in these two port ranges: 26900-26905 and 27015-27020 (this is a Steam requirement for the dedicated servers to be visible via LAN).

Since the game uses three ports (the specified base port and the next two ports, computed adding 1 and 2 to such base port), it's better to stick to the start of such ranges - that is, either use 26900 or 27015.

As long as the world uses one of those two base ports no other steps should be necessary to let anyone join a world from within the same LAN - any running world should be visible in the LAN tab of any client running on any computer within the same LAN.

If the world does not show up in the LAN tab you can try enabling the "force IP" option from the settings of the Play screen (similarly, if you want to create a launcher, you can enable that option in the BAT launcher, you can create such launchers from Play > Local, then clicking on the world, then clicking the bottom-right button depicting a folder tree) - this "force IP" option may solve the problem of the world not showing up in the LAN screen. Alternatively you could use the Play > Online > Direct connection option once you find the LAN IP associated with your computer.

See Networking for in depth details about how the multiplayer system can be set up.

See the troubleshooting section for anything going wrong.

Let someone else join from anywhere

Only IPv4 is supported. You need a computer that actually gets an IPv4 directly or indirectly (your connection needs to be assigned an IPv4 by your Internet Service Provider (ISP), this won't work if your ISP puts you behind a GCNAT / Proxy, this can be normally verified by checking what public IP is reported by your router and checking if it matches with the IP reported by an internet search such as "what is my ip address?" - if the IP reported by your router matches the internet search, the port forwarding described below should work - if it doesn't match, you're likely behind a CGNAT / Proxy, and you'd need your ISP to be assigned an IPv4).

Worlds running only under IPv6 addresses wil not be visible by other players.

1. Make sure you know the port the world is running on.

   The default ports used by the game are as follows:
   a. 26900 on UDP, to actually let players connect to the world
   b. 26901 on UDP, to query the world state and let others see the world in the various lists (this is computed adding 1 to the base game port)
   c. 26902 on TCP, to serve the WebAdmin and to provide some more data to the connected clients (this is computed adding 2 to the base game port)

2. Make sure you know the internal IP assigned to your computer
3. Make sure the above ports, with the proper UDP and TCP protocols, are forwarded to your internal IP

See Port Forwarding for in-depth instructions about all the above, here is a quick video aboud port forwarding, whether you need it or not and how I set it up on my own computer / router: https://www.youtube.com/watch?v=55Tb4m31q8A

Once all the above is done, anytime your world is running it should be visible in the Online tab of the Server Browser for any other player anywhere in the world - players would then be able to join by just clicking on Play on such worlds.

See Networking for in depth details about how the multiplayer system can be set up.

See the troubleshooting section for anything going wrong.

Join someone else's world

1. Launch the game and click on Play from the main screen
2. Click on the Online tab
3. Find the world you want to join and click on it
4. Click on the Play button on the world preview

Joining someone else’s world does not require downloading any Template.

Remember that you'll be playing in someone else's world: their world, their rules - they could kick you out at any time and you'd lose any work / builds (and time) you have invested in that world. Only play in worlds whose owners / administration you know and trust, if you care about not taking such risks.

See the troubleshooting section for anything going wrong.

Joining a world which has the Whitelist protection

Some worlds may have the Whitelisting system in place and you won't be able to join them unless the owner whitelists your Steam ID.

When you click on any of such worlds, you should have a button to send a request.

Fill in the request with a message to make it easier for the owner to recognize you, they will see your Steam ID and will be able to see your Steam profile anyways.

Once you have sent such a request you need to wait until you're whitelisted - you will not receive any notification, at best you can try and enter the world at intervals and see if it lets you in.

In theory you shouldn't be asking permission to enter a whitelisted world unless you're in touch with that owner via other means and you already know you're going to be accepted (in such a case you'd just have to tell the owner you have sent the request, so that they can handle it and tell you when you can enter).

Regardless, remember you'd be playing in someone else's world: their world, their rules - they could kick you out at any time and you'd lose any work / builds (and time) you have invested in that world. Only play in worlds whose owners / administration you know and trust, if you care about not taking such risks.

See the troubleshooting section for anything going wrong.

Making the world findable while not in the public lists

Regardless of how you host your world, as long as it can be joined at all (behind a LAN with Port Forwarding or on a remote server) you can set the world not to appear in the public lists by setting it as Private.

If you do so, other players need to know the IP address of your world to find it via the Direct Connection tab of the Server Browser accessible from the Play button.

If you're hosting locally your IP address may change at any time when you restart the router, so that's not really handy, cause you'd have to tell your friends your current public IP every

time it changes. In such a case you can get a "no ip" service which lets you associate a domain name (such as myname.example.com) to your dynamic IP address, with maybe a small program to keep running on your computer to update the IP as it changes without any additional action on your end.

By doing so your friends will be able to find your world by putting that domain name in the Direct Connection tab along with the right port. Once a world is recorded there it will remain visible the next time the player launches the game, for faster access to your world.

If you're running the world on a remote server you may live with a static IP and telling such info to your friends to be used in the Direct Connection tab without having to communicate changes every now and then, but even there, the best option would be to have a domain name that automatically resolves to the right IP address.

See the troubleshooting section for anything going wrong.

Protecting your world

Regardless of how you have set your Networking up, if someone is able to find your world (be it on the lists or by figuring out the IP + Port the server uses) they may be able to join your world. This is particularly true for other computers behind the same LAN (if you're running the world locally) because those computers will be able to communicate with your computer even without any port forwarding set up in the Router.

Once a player has joined your world, depending on the World Settings you have selected, they may be able to pull and place blocks, create claims, use TNT and excavators and in general damage any unprotected build.

The only way to completely prevent someone from entering your world in first place is to activate the Whitelist option in your world settings. Once that option is enabled, only whitelisted Steam IDs will be allowed entering the world.

Once a player has sent a request you'll be able to manage the requests from the Access Requests list - you can find this list while in-world, from the Player list, there's a "hammer" button at the top of the page. Alternatively this list can be accessed from the WebAdmin as well, currently it is in the Tools section of the WebAdmin.

If you remove the Whitelist option from the world settings the list of requests and whitelisted players will remain there, it will just be ignored by the server, which will allow anyone to enter (unless they're banned).

Being banned and not being whitelisted are two completely different things. They will both prevent players from joining though.

If you want to allow players in yet prevent them from doing anything on free land, you can enable the "New players default to Visitor".

Visitors, by default, aren't allowed placing claims or building / digging anything, but if you change the settings to allow visitors to start with some claims or have a max number of claims above zero, they'll be able to claim and do all the other actions in their own claims. They will still be unable to touch anything on free land.

Only Builders and above are able to touch the free land.

Important: claim settings will override such "visitor" limitation, so if you have any claim which is set to "Default to Builder", anyone will be a builder there, even players which are visitors for the world in general.

Make sure you fully understand how these permissions work, keep all the builds protected by claims and make sure the claims themselves don't have the wrong settings giving permissions to unwanted players. When you place a new claim no one can do anything there apart from you, so an easy way to be sure a claim is set properly is just to remove the claim and place it again.

Troubleshooting

For anything that you can't sort out on your own following this guide please see Support / Help / Feedback.

Game does not start at all

Validate the game installation from Steam:

1. Right click on "Creativerse" in your Library list
2. Select "Properties"
3. Click on "Local Files"
4. Click on "Verify integrity of game files"

Make sure there's no other instance of Creativerse (or CreativerseServer) running in the Task Manager, maybe also reboot the computer, then try launching the game again.

Game starts but the main screen fails to connect

Creativerse requires an active connection and requires Steam to be running at least in Invisible mode (won't work in full offline mode).

Even if your computer seems to be correctly connected to the Internet, you may still try and reboot the Router (different programs connect to the Internet in different ways and talk to different servers, rebooting the Router may sort this out occasionally).

Try a different connection, preferably a decent mobile connection via USB tethering.

The Play screen or the Settings screen takes a lot of time to show up

Right after launching the game, the game itself will need a bit of time to load the built-in browser which will be used to show various different new UIs - one of these is the new Play screen along with the Settings screen

This loading happens automatically in the background as you launch the game, so that you normally get the Play screeen to show up right away as you click on Play from the main screen.

We may end up finding a way to speed this process up but for the time being, please be patient as the Server Browser loads up.

The Play screen / Settings screen don't show up at all

Some of the new UIs we are using rely on a built-in browser, as long as the main code of such UIs gets properly loaded, you should be able to try and refresh such UIs by using the following key combination: Control + Shift + R (or using the reload button, depicting a revolving arrow, where present)

If that combo doesn't seem to do anything, try and restart the game.

If that still doesn't work try checking the Player.log file for any seemingly meaningful error - one of such errors could be about the failure to add sandbox rules for the built-in browser plugin (Vuplex 3D WebView, which uses Chromium behind the scenes), this error in particular seems caused by installing the game in a path that uses symbolic links, the solution in such a case would be to install the game in a path that doesn't use any symbolic links.

If you still can't sort things out please head to Support / Help / Feedback and we'll take it from there.

Can't migrate a world

Players cannot migrate worlds themselves anymore (since version 4.0.0)

We managed to recover a good part of the worlds from the servers that have been shut down, you can contact support@playfulstudios.com and we'll verify if we have a copy of your worlds.

Worlds ask for downloading a Template even though I already downloaded it

This may happen when you launch a local world, then leave the world, which should send you back to the main screen, which in turns has had to re-load the new Server Browser UI.

This UI needs to communicate with mod.io to get the data about the templates and verify which ones have been already downloaded.

Sometimes this communication may not complete in time for the Server Browser to know that a given template is available already.

Try just refreshing the Server Browser by using the Control + Shift + R key combo or hitting the revolving arrow "Reload" button.

Trying to launch a world from the Local tab nothing happens

There could be some lingering instance preventing the world from firing up.

First of all close the game, then check the Task manager and kill any instance of Creativerse or CreativerseServer you can find, then try launching the game again and see if you can launch worlds from the Local tab.

If you can't find any lingering instances anywhere and you still can't launch any local world try first completely closing the Steam client and restarting it.

If that still doesn't work see the Files and Logs section to check the logs yourself or see Support / Help / Feedback.

Trying to download a Template doesn’t do anything

Some old Template may not have been moved to mod.io and as such the new version of the game wouldn't be able to find it there to be downloaded.

See the Files and Logs section to check the logs yourself or see Support / Help / Feedback. For a persistent "Template not found" error make sure you email us sending over the logs so that we can find the template which hasn't been made available to try and sort the problem out - if we have that template at all, we will make it available for download.

Template download fails from in game and can't complete it

Templates are now hosted on https://mod.io/g/creativerse - you can download templates manually from there and put the corresponding archives in the `dltemplates` folder, the game should see them and let you use them (for details about how to find that folder click here).

If you know for a fact that you can't access mod.io this may prevent you from launching a world even if you managed to get a copy of the template in some other way, because the server will still try and contact mod.io to validate the file.

You can workaround this problem by using an "official" template as if it was a custom one.

Get your hands on the template you need and instead of putting it in the `dltemplates` folder (see following links for the exact position) you can put it in the `templates` folder - you also have to rename it so that's different from the official template key and the game will not mix the two up.

This action will let the game consider this template as a custom one and the server will not try and validate it against mod.io.

In detail:

- download the file of the template, it could have a name like this one once downloaded: `25b95767960e4810a0d896f2b4d1d3df.zip`
- put it in the `templates` folder
- rename it so that it doesn't conflict with the original key, for example `custom-rw6.zip`
- launch the game and make sure it appears in the Local section of the Templates gallery
- find the world folder that's supposed to use this template (it better match the original template you really needed for this world, or you'll end up with builds floating in the sky or buried under a mountain)
- edit the config_world.json file so that it uses `custom-rw6` instead of `25b95767960e4810a0d896f2b4d1d3df` as template key

Once you've performed all of those steps the game should be able to run that world without contacting mod.io at all.

See the next section below if you don't have any world to edit at all and you can't create worlds at all.

See the Files and Logs section to find the position of the `dltemplates` folder or see Support / Help / Feedback.

Can't access templates at all, can't create worlds at all, can't launch worlds at all

If your client isn't able to access mod.io at all the client will not let you create any world at all from the Server Browser, may also not let you launch worlds either.

We'll see if we can sort this out in a future patch, at least not to lock you out from creating worlds using custom templates or lock you out from launching them, but for now here is the workaround:

- follow the steps above so that you have an official template renamed and put in the custom templates folder
- create a new world folder with this name `/worlddata/worlds/my-world-key` and create an empty `config_world.json` file there
- fill the JSON with the text below making sure you adapt the template key according to how you renamed the official template above
- if you need to change the world key also make sure to rename the folder so that folder name and world key match
- change the world owner Steam ID to match your real Steam ID

```
{
  "GamePort": 26900,
  "PrivateServer": false,
  "UsePlayerAccessFile": false,
  "WorldOwnerSteamId": "12345678901234560",
  "WorldKey": "ny-world-key",
  "TemplateKey": "template-key",
  "WorldName": "world name string",
  "WorldDescription": "world description string",
  "Tags": ["tag1", "tag2", "tag3"]
}
```

Once you've done all the above steps correctly, the world should show up in the Local tab of the Server Browser even if you are completely cut out from accessing mod.io

If the Server Browser doesn't let you even see the Play button due to the inability to talk to mod.io, you can launch such a world using the CV Dedicated Server separately - once you have the world running like that you should be able to see it in the LAN tab (if you used a port in the 26900-26905 and 27015-27020 ranges), otherwise you can create a direct connection to it typing "localhost" or "127.0.0.1" in the direct connection dialog (along with the right base port number)

See the Files and Logs section to find the position of the `worlddata` folder or see Support / Help / Feedback.

Can’t join someone else’s world

Due to the new architecture of the game, it will be possible to find servers around with incompatible game versions.

If clicking on the world you see a notice "Server version mismatch, unable to join" then you can't do anything about that, other than maybe trying to contact the owner of such a world and tell them to update their server installation.

If you do get the Play button and you get an error after trying to join, depending on what the error reads you may need to see other troubleshooting steps (may be enough to just restart your Rourter) or the world itself may have been set up improperly by the owner (and there only the owner would be able to sort the problem out).

Finally if none of the above seems to help or doesn't seem to apply to your case, see Support / Help / Feedback.

Unable to interact with anything in some area

Even if the worlds can now be run via the CV Dedicated Server (be it indirectly launching the world from the Local tab, or directly launching the Server separately) the limits of the client are pretty much the same as they were before.

This means that there's just so much that the game can handle at once - if you have large amounts of interactive / active elements, such as chests, doors, signs, pets, crops, NPCs and so forth, the game may just be unable to handle the load and take a lot of time to even just load all that data from the server and make the various things work one way or another.

Check the behavior of those active / interactive elements in a brand new world, preferably a flat one with mobs disabled, and see if the problem still appears, or test in some area without any build in the world where you are having problems.

If the problems only seem to happen in a specific area of a specific world, you most likely have some kind of area overload, or some looping circuit preventing the game from loading / running that area properly.

Creativerse does not impose any building limits, and the limit at which a given server - world - client combination will start to struggle varies depending on the machine which is running the server, the load it needs to handle (say, multiple players playing at once in the same world), the settings you're running with on the client, how powerful the computer running the client is and so forth.

This means that it's up to the players to find a compromise between how an area looks and how well it performs.

If you believe you don't have any meaningful amount of active elements and that you shouldn't be having those problems, please check How to report bugs and problems and get in touch with support as explained there.

Is it safe to kill the game client or the game server?

You should be able to kill any such instances at any time without any major data loss (even if you happen to kill a running server, the running server saves to disk every minute, nothing really should go lost other than the very last minute of actions).

IMPORTANT: if you have a very heavy area with lots of things going on, the server may still take a while to persist - even trying every minute, if you throw too much at an area, it may take several minutes to persist.

Always better to give the server enough time to persist the changes to avoid any losses.

Ideally, you should be running the server separately, so that leaving the world from the client won't close the server and so that you can keep eyes on the server console to know when such heavy changes have been persisted, and maybe also a backup performed, for good measure.

Then you can go on a killing spree.

Server running for a long time starts causing troubles

We've received reports from players running servers for several days experiencing problems, in particular for the Windows version of the server vs the Linux one.

We'll investigate such issues but for the time being, it may be a good idea to restart the server regularly (or when such problems happen) to see if those problems disappear.

Among the reported oddities:

- Ghost players seemingly in-world but appearing offline in the list
- Pets of a given player not showing up in-world

Setting things up to have the server restarted every day or every other day may help reducing random oddities for the time being.

Regardless of that, if you experience any problem running a server for several days please do get in touch and let us know (see Support / Help / Feedback to contact us).

I'm experiencing some oddity and none of the above helped

Try and clear the Client's caches and Steam Downloads cache. As long as you have backups of your caches it's always safe to completely delete them and also completely uninstall / reinstall the game.

Support / Help / Feedback

Depending on the type of help you need or the feedback you want to provide you have various ways to get in touch with the support or with other players. This guide contains many sections covering a lot of possible pitfalls, try and search for the problem you're having in this guide first trying any suggested solutions or workarounds.

If nothing in this guide helps you can:

- Contact support via email at support@playfulstudios.com or contact me directly on Discord: entuland#7134

- Post in the Steam Forums, but check the section about How to report bugs and problems:
  - General Discussions section (post general questions / feedback here)
  - Bugs and Issues section (post bugs here)
  - Suggestions section (post suggestions here)

- Join the Creativerse Discord Server and ask in the #peer-help channel. There's no suggestions or bugs channels on our Discord server, and that's on purpose. Suggestions and bugs get easily buried and lost there, you really need to post suggestions and bugs on the Steam Forums.

How to report bugs and problems

Before you report a bug or a problem you first need to try your best to isolate and define the reproduction steps.

If we can't reliably reproduce a problem the chances of finding the cause and fixing it are close to zero, if not zero at all.

Bail out of the following list as soon as you have consistently reliable reproduction steps.

1) Create a new Local flat world with mobs disabled and try there
2) If a flat template doesn't fit for the problem at hand, create a new Local world with the same template of the world where you are having the problem, and try there
3) If all looks good in the above steps, go to some area of the world which is giving you problems and try to reproduce the problems **away from any built area**
4) If you still can't repro the problem, try approaching a built area where the problem happens, not teleporting there though, approach the area flying / walking till some part of the built area is loaded nearby, and try there
5) If the problem involves multiplayer, try copying the world folder from CV Worlds / Backups / Templates folders and have that world run by another computer / player / account trying to isolate whether the problem is tied to the world, to the computer running the world or to the account running the world

Once you have done your best to isolate the problem, write down all of what you tried to know what works and what doesn't and post the details in the Bugs section of the Creativerse Community Forums.

You can grab screenshots and publish them on Steam to be linked in your report, or just put the screenshots in whichever image sharing website you like better.

If you are unsure about how to try and isolate the problem you can still post in the Bugs section of the forums above or you can post in the #peer-help channel of our Creativerse Discord Server.

To prepare a full report to be emailed to support please make sure you gather all this info...

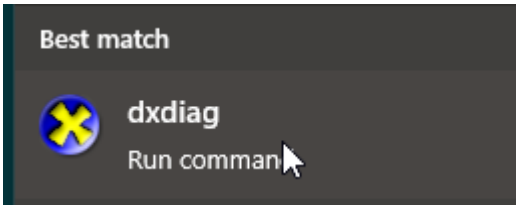
- DxDiag.txt as explained below
- World folder
- Server logs
- Player.log
- any crash report as explained below
- any details and screenshots about the problem

...and send everything over to support@playfulstudios.com

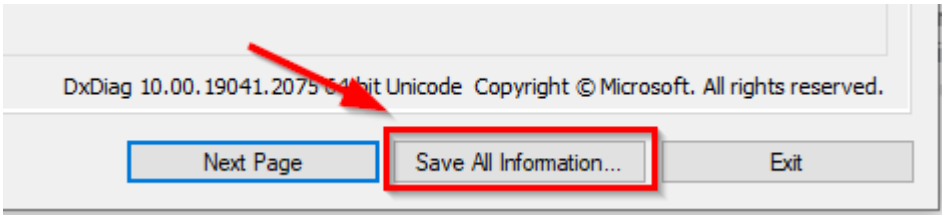
If the zipped world folder is too big to be sent over via email please put it on something like Google Drive or Dropbox and send the link to that zip file instead).

Collect the DxDiag.txt report

Open the Start menu and type `dxdiag`, you should see a program like this:



Launch it and click on this button at the bottom to save the `DxDiag.txt` file:



Include the `DxDiag.txt` file in the report as explained in How to report bugs and problems.

Find any crash reports

If the game crashed it could have created a crash report in this location (all the following are the same spot, just different ways to get there):

```
%localappdata%\Temp\PlayfulCorp\Creativerse\Crashes
```

```
%appdata%\..\Local\Temp\PlayfulCorp\Creativerse\Crashes
```

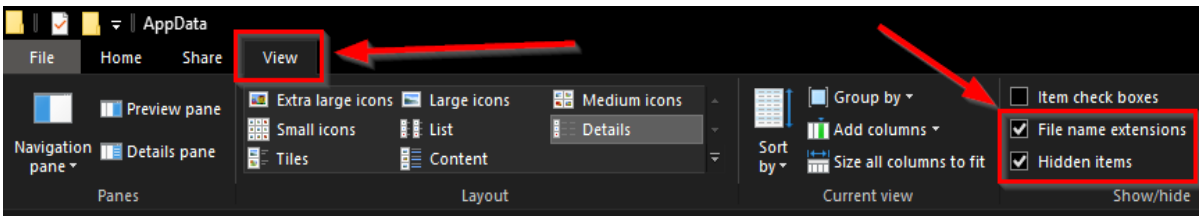
```
C:\Users\username\AppData\Local\Temp\PlayfulCorp\Creativerse\Crashes
```

If you find anything there check the dates, zip anything that seems relevant and fresh enough to match with the problem you are experiencing and send such zip files in the report as explained in How to report bugs and problems.

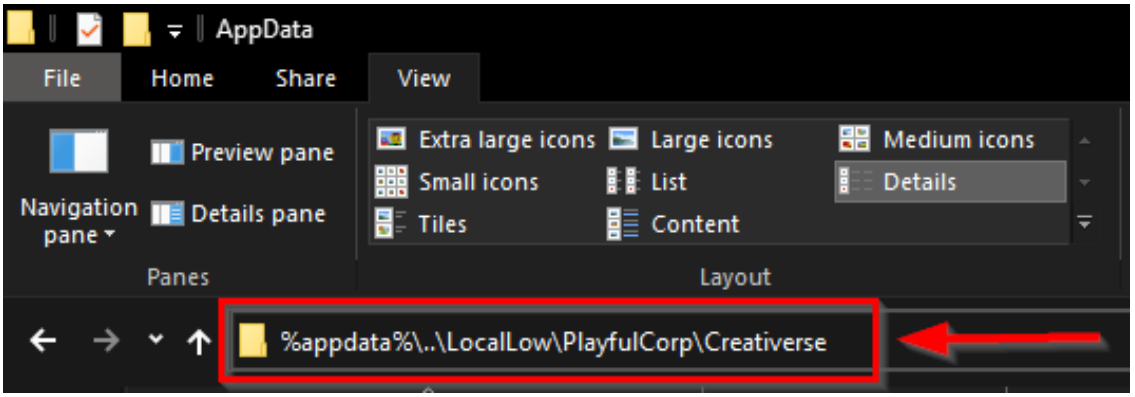
Files and Logs

Hidden folders warning

If you want to find some of the following folders manually you may need to activate the option to show hidden folders in your Files Explorer - once you're there, you may want to activate the option to see file names extensions as well:



Alternatively just copypaste the entire provided path in the path bar of your Files Explorer, for example like this:



CV Client installation folder

The game gets installed in the SteamApps/Common folder just like any other Steam game.

Windows

The position on Windows could be something like this:

```
C:\Steam\steamapps\common\Creativerse
```

The client ships with the Server, which will live in this subfolder in particular:

```
C:\Steam\steamapps\common\Creativerse\Server
```

Linux / Proton

Since TDE version 4.0, after the release of Proton version 8.0, the game seems able to run local worlds directly from the client.

The installation position in this case would be as follows:

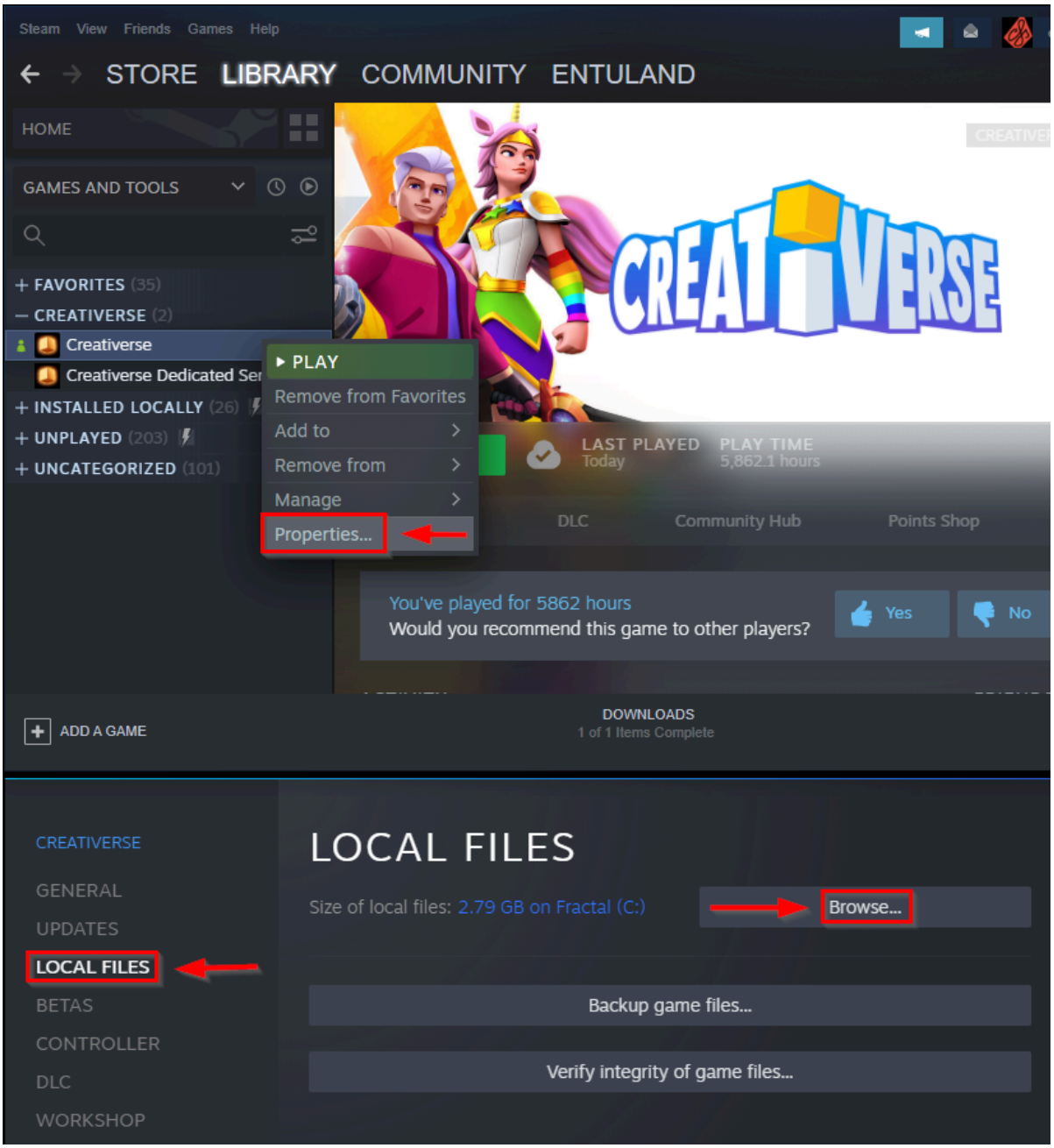
```
~/.local/share/Steam/steamapps/common/Creativerse
```

The client ships with the Server, which will live in this subfolder in particular:

`~/.local/share/Steam/steamapps/common/Creativerse/Server`

Finding the position via the Steam Client

You can easily reach those two positions by right-clicking on the corresponding entry in your Steam Library list, selecting "Properties", then clicking on the "Local Files" tab and finally clicking on the "Browse..." button:



CV Client caches & logs

If you can't find the following folder check the Hidden folders warning section.

Client caches are stored in this position:

Windows:
`%appdata%\..\LocalLow\PlayfulCorp\Creativerse`

Linux/Proton:
`~/.local/share/Steam/steamapps/compatdata/280790/pfx/drive_c/users/steamuser/AppData/LocalLow/PlayfulCorp/Creativerse`

Within that folder, in particular, you'll find the following folders and files (among other stuff):

`Steam` : contains all the files that are sync'd by the Stream Cloud system

`Blueprints`: contains all the blueprints that the player has "seen" (could be just cornerstones that the player has received / picked up in a world - technical details about the blueprint files here)

`Library` : contains, among other things, a subfolder named "blueprints" that will store the blueprints that the player has captured on the computer at hand

`Player.log` : the log of the client, contains the most recent playing session

`Player-prev.log` : the second to last playing session

Whenever you experience any problem and you need to contact support, try and collect the log files right away - the "prev" version of the log is there to help in case you fire up the game by mistake before you could grab the log - the log file would get overwritten by doing so, this is just a safety fallback for possible misclicks.

Clearing the Client caches

If you experience some oddity which really doens't make sense, you may be having some broken caches getting in the way.

If you do, try and make a backup of the above entire folder (so that all of the Steam / Blueprints / Library and so forth are backed up) and just delete such a folder while the game is closed, then start the game back up again and check if the problem disappeared.

You may not need to put anything back after such a cleanup, but just in case keep that backup so that you can copy back the Blueprints / Library subfolders in case you're missing any blueprint which you never published but was supposed to be still there.

The real safe way not to lose a blueprint is always to publish it on the Steam workshop - you can publish it and immediately set it to private from the steamcommunity.com website, you can access it directly from the Steam client or from any web browser.

Clearing the Steam Downloads cache

If the above doesn't work, you can try clearing the Steam Downloads caches, we had reports from some players about this sorting things out in some cases.

Pay attention that clearing the Steam Downloads caches will log you out of Steam, you'll need your access credentials to log in again.

CV Server installation folder & logs

See the CV Dedicated Server section to install the server separately from the client, see CV Client installation folder for a shortcut via your Steam Library.

Since the client ships with the server program as well, you can find the server installation inside of the client installation:

```
C:\Steam\steamapps\common\Creativerse\Server
```

If you install the server program separately from Steam (it is available as a separate tool), it would end up installed in a position like this:

```
C:\Steam\steamapps\common\Creativerse Dedicated Server
```

If you installed the server on Linux the server folder would look something like this:

```
~/.steam/steamapps/common/Creativerse Dedicated Server
```

(pay attention that the installation folder for the server bundled with the client would be quite different using Proton on Linux for the client)

Inside of the server installation folder (among other things):

`Admin` : this folder contains a load of HTML, CSS and JS files which are used mainly for the WebAdmin interface. Many files in here are used by the client program as well. This is where things get quite a bit technical: the client may use some files from the local installation or could load the page from the remote server that's running the world. Altering anything in this folder will be picked up on the fly and you could see the changes live in-game just refreshing the corresponding UIs (all the in-game UIs have a Control + Shift + R combo hooked up to the "reload" action or a "reload" button). Be aware that there's no override mechanism in place: if you customize anything in here and the server gets updated to a new version, any of your changes could go lost. **Backup your changes at all times**.

`logs` : this folder contains various log files and subfolders; assume your world key is "`my-world`", then your server log will be in this position: `logs/my-world/my-world server.log` - the world key appears in the subfolder and also in the file name so that you can pack the whole folder or send over only the file and it will still show the world key.

`CreativerseServer` (or `CreativerseServer.exe`) : this is the actual server program you can invoke separately (and independently of Steam) to run your worlds.

CV Worlds / Backups / Templates folders

This is the main server data folder.

Starting from version 4.1 you can get to the world folders / backup folders from the Play > Local tab, clicking on the folders button bottom right in the world card.

This folder and its contents get created by the server at the first run, you can run the server with a dummy world ID if you aren't sure about where these folders should show up in your exact setup. See CV Dedicated Server for additional details about how to install the server program separately from the client.

Important: if you want to move the Worlds / Backups to a different drive, you can specify the paths in a server.json file to be put directly in the main CreativerseServer folder mentioned below. File format here.

Position on Windows

If you can't find the following folder check the Hidden folders warning section.

All the following are equivalent:

```
%localappdata%\PlayfulCorp\CreativerseServer
```

```
%appdata%\..\Local\PlayfulCorp\CreativerseServer
```

```
C:\Users\username\AppData\Local\PlayfulCorp\CreativerseServer
```

In the last version, the exact position depends on where you have the Users folder and which username you have on Windows

Position on Linux

This is the position I could verify on Ubuntu 20.04 LTS, with the server installed via SteamCMD:

```
~/.local/share/PlayfulCorp/CreativerseServer
```

The position may vary on your installation, running the server should also print the position of the worlds folder at the beginning of the log / console output.

Position on Linux via Proton

When launching / creating worlds from the Play > Local tab of the client running via Proton, the worlds will end up in one of these positions, if you can't find one try with the other:

`~/.local/share/Steam/steamapps/compatdata/280790/pfx/drive_c/users/steamuser/AppData/Local/PlayfulCorp/CreativerseServer`

`~/.steam/steam/steamapps/compatdata/280790/pfx/drive_c/users/steamuser/AppData/Local/PlayfulCorp/CreativerseServer`

Overall contents

The above mentioned position should contain all the following by default, as the very least.

`persistence.json` : this contains the default backup settings for any world that will be run by the server, unless such settings get overridden by a similar file in any given world folder. More about the format of this file persistence.json.

`worlddata` : this will in turn contain the following:

`backups` : will contain a subfolder matching each world key, with subfolders matching the backup intervals specified by persistence.json.

`worlds` : will contain a subfolder for each world, where the world folder name will match the world key / world ID.

For example:

`worlddata/backups/my_world_key/Daily`

`worlddata/worlds/my_world_key/config_world.json`

Where `my_world_key` could really be anything, from a random string of numbers and letters (for a migrated world) to a string closely matching the world name you picked at world creation.

Every backups subfolder, in turn, will contain files named with this format: `YYYY-MM-DD_hh-mm-ssZ.zip` (these timestamps are in UTC-0 format, that is, they may not match your local timezone), inside separated folders named after the intervals specified by `persistence.json`

Additionally, two more folders will be created once a valid world key has actually been attempted running:

`dltemplates` : this will contain any template downloaded from mod.io - RW and flat templates will go here. If you have troubles with this please see Template download fails from in game and can't complete it

`templates` : this can be used to create custom templates.

If you want to override/change the position of some or all of these folders see either server.json or Moving the entire CreativerseServer folder.

World folder contents

Among other things, these are the main contents of a world folder:

`config_world.json` : this is the only strictly necessary file to get a world started, it contains all the world settings, the reference to the Template to be used and so forth. You can easily create a copy of an existing world (without anything that has ever been done in that world, just the settings) by copying such a file over, editing it to change the world key and putting it in a maching new world folder, see the file format here.

`mapinfo.json` : this file will be created by the server at launch time if missing (according to the Template specified in the config_world.json file) - once this file has been created it won't be touched by thes server anymore, can be modified in some cases to tweak the procedural templates, see the file format here.

`_screenshots`: can contain a `world_screenshot.png` file which will be shown to players in the Server Browser or in the ESC screen; you can customize this as you please, keep a 16:9 format, cause that's what the game will expect;

`_blueprints` : should contain any blueprint that has ever been captured or "seen" in this world (both published and unpublished blueprints could end up here)

`PersistedData` : this will contain the `PersistedData.sqlite` database that will actually contain most of the world data: player list, mailbox messages, permissions, claims, contents of chests, settings of machines and so forth; the alterations made to the terrain are NOT stored in the database.

All alterations to the actual terrain data (placed blocks and dug blocks) will be stored in additional binary files with names like these `0_0`, `n1_0`, `n1_n1` and so forth.

A custom `persistence.json` file can be added inside the world folder to override the backup settings only for that specific world. See file format persistence.json.

Moving the entire CreativerseServer folder

Regardless of being on Windows or on Linux, you can change the position of this folder via some command line / shell magic.

(if you want to overrride the templates / worlds / backups folders separately you can do that from server.json, this is to move everything in one go, including where the server will look for `server.json` and persistence.json).

For example, you can go to this folder:
`%localappdata%\PlayfulCorp`

and move the entire `CreativerseServer` to another location, even renaming it, such as `D:\CreativerseServer` or `D:\MyServerData`

Or the same thing on Linux, going to this folder:
`~/.local/share/PlayfulCorp`
and moving the entire `CreativerseServer` to another location, even renaming it, such as `/somepath/CreativerseServer` or `/somepath/MyServerData`.

Once you have done the above you have to instruct the system to point to the new location, so that any program will find it (be it the game or your files explorer or anything else).

On Windows this is done using the `mklink` command from the command line running in Administrator Mode.

In detail:

- open the Start menu
- type "command" or "cmd", you should see the Command Prompt program
- launch it in Administrator Mode
- `cd` into the right folder, executing `cd %localappdata%\PlayfulCorp`
- once you're there you can run `dir` just to confirm that the folder is empty after you moved `CreativerseServer` away
- run this command to create the symbolic link: `mklink /D CreativerseServer D:\MyServerData`
- you should see a confirmation that the symbolic link has been created, or run `dir` again to verify it

On Linux the steps are pretty much the same, but you have to use the `ln` command.

In detail:

- open a terminal
- `cd` into the right folder, executing `cd ~/.local/share/PlayfulCorp`
- once you're there you can run `ls` just to confirm that the folder is empty after you moved `CreativerseServer` away
- run this command to create the symbolic link: `ln -s CreativerseServer /somepath/MyServerData`
- you should see a confirmation that the symbolic link has been created, or run `ls` again to verify it

Once you perform all of those steps correctly the game will read and write from the new position - this will also avoid the templates getting saved on your home/system drive/partition by default.

CV Dedicated Server

Install via SteamCMD

This step may be optional, for now it's the only way I tested on Linux. Not strictly necessary on Windows.

Install SteamCMD: https://developer.valvesoftware.com/wiki/SteamCMD

Install the Creativerse Dedicated Server using this command in a terminal:

```
steamcmd +login anonymous +app_update 1098260 +exit
```

After the first run

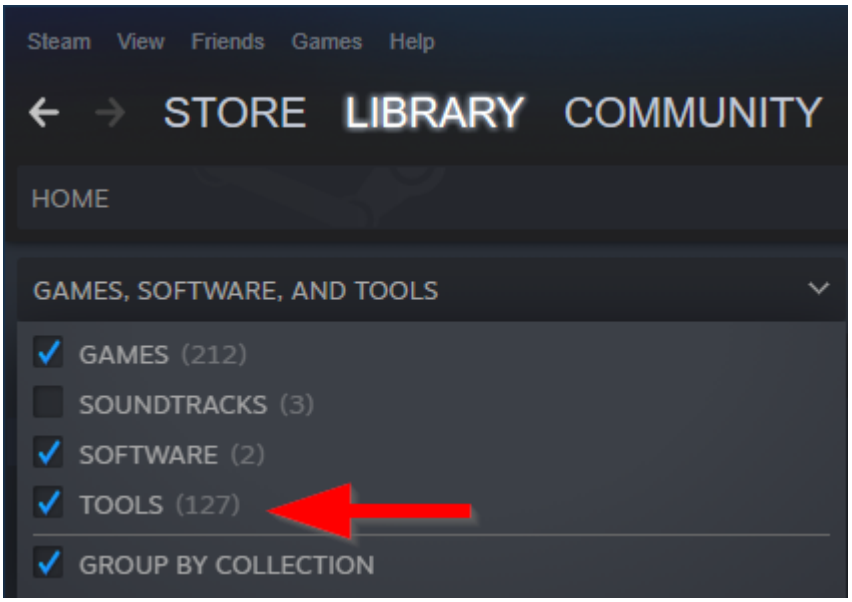
I know it seems out of order, but I'm putting this here so that it gets the proper attention:

- the Dedicated Server needs to be run once to have the folder structure created (you could create it yourself knowing where everything goes, read below to know how to run it the first time)
- the Dedicated Server can't create worlds, you have to either copy over an existing world created by the client or create a new one with the base boilerplate, which is really just a config_world.json with the right contents in the right folder.

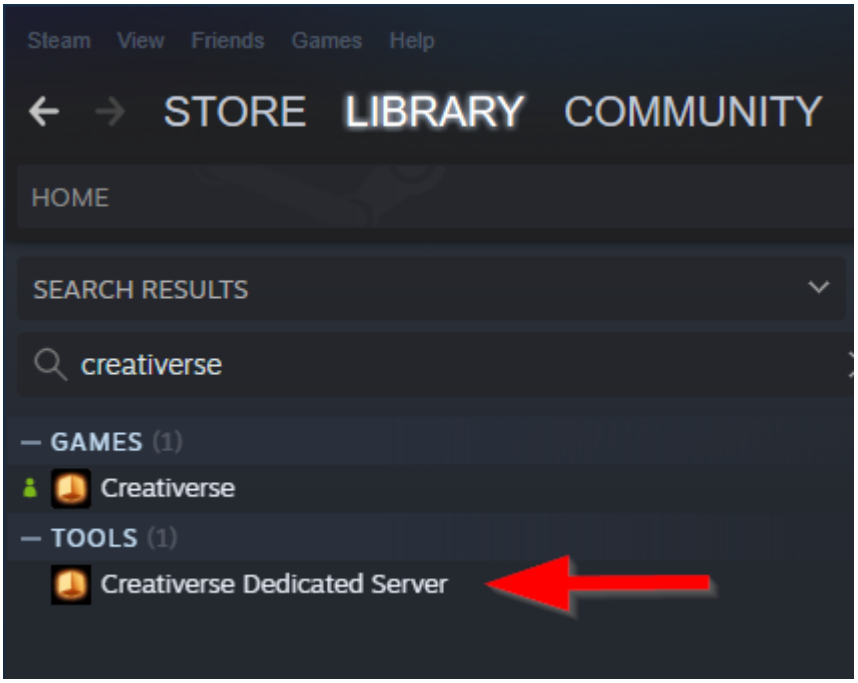
By reading the following and by checking an existing `config_world.json` you should be able to manually create new worlds for the Dedicated Server to run.

Install via the Steam Client

To find the server in the Library make sure you have the Tools set to visible:



Once the Tools are visible you can filter for Creativerse and see something like this:



Windows

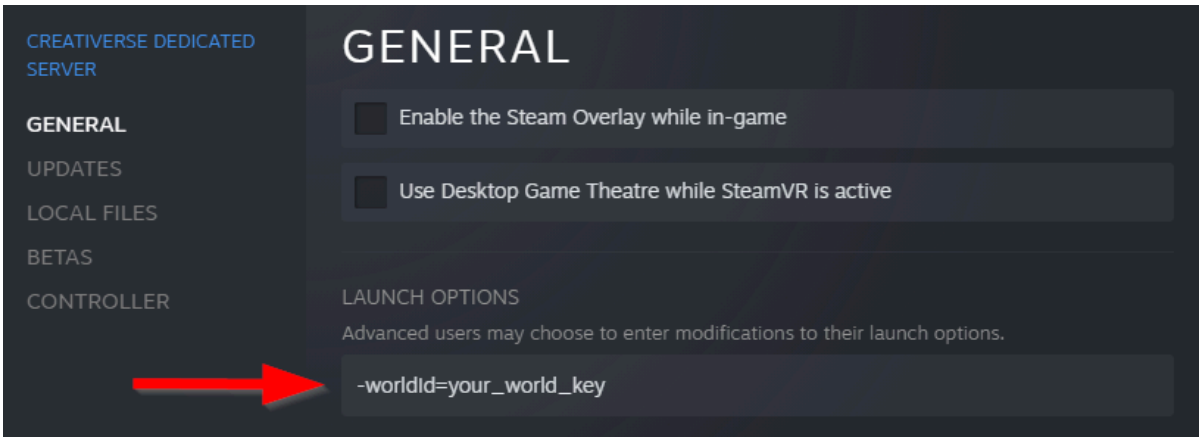
Install the server via SteamCMD or via the Steam Client.

First run

If you have never played any local worlds via the CV Client you need to run the Server at least once with any world key (doesn't matter the key) to ensure the correct folders are created. More about this below, keep reading.

Run via Steam

You can specify the world key in the properties of the Server:



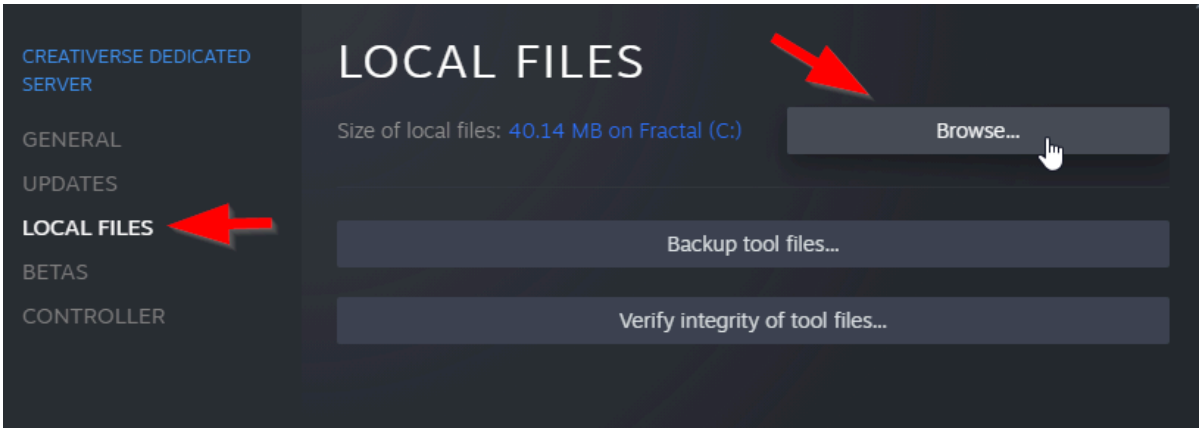
Important: right now that parameter is strictly case sensitive, there's a capital "i" in "worldId" - like, not `-worldid=` but really `-worldId=`

Once you have set the launch options up you can immediately launch the Server from the Play button on Steam - this run is meant to let the server create the necessary world / template folders even if you may get an error about being unable to find the world. This first run will create the CV Worlds / Backups / Templates folders. Ignore any errors about the server not finding the world. You can skip over to Find the Windows data folder to proceed with copying your world over to be run by the server.

If the server runs but for whatever reason you can't see it in the LAN or is giving you other seemingly weird issues, try adding this to the command line / launch settings: `-forceIp=0.0.0.0` - that will force the game to listen to all the internal IP addresses instead of the default `127.0.0.1` and may sort some of those issues out. Also using a non-standard port would cause the world not to appear in the LAN tab, so pay attention to that as well - see config_world.json to tweak the base port manually.

Run from the command line

Find the installation folder of the Server, you can do that via this Browse button:



Once you're in the correct position you can open the Command Prompt by just typing "cmd" in the path bar of the Files Explorer and hitting Enter.

Either way you're supposed to be in a folder like this:

```
C:\Steam\steamapps\common\Creativerse Dedicated Server
```

Run the server with this command:

```
CreativerseServer -worldId=your_world_key
```

where "your_world_key" can be anything at this point: this run is meant to let the server create the necessary world / template folders even if you may get an error about being unable to find the world.

Important: right now that parameter is strictly case sensitive, there's a capital "i" in "worldId" - like, not `-worldid=` but really `-worldId=`

If the server runs but for whatever reason you can't see it in the LAN or is giving you other seemingly weird issues, try adding this to the command line / launch settings: `-forceIp=0.0.0.0` - that will force the game to listen to all the internal IP addresses instead of the default `127.0.0.1` and may sort some of those issues out. Also using a non-standard port would cause the world not to appear in the LAN tab, so pay attention to that as well - see config_world.json to tweak the base port manually.

Find the Windows data folder

Once the server has run at least once check whether all of these folders/files have been created:

```
%localappdata%/PlayfulCorp/CreativerseServer
%localappdata%/PlayfulCorp/CreativerseServer/persistence.json
%localappdata%/PlayfulCorp/CreativerseServer/worlddata
%localappdata%/PlayfulCorp/CreativerseServer/worlddata/backups
%localappdata%/PlayfulCorp/CreativerseServer/worlddata/worlds
```

If all the above is there, copy your world folder inside of the last folder mentioned above, you should end up with something like this:

```
%localappdata%/PlayfulCorp/CreativerseServer/worlddata/worlds/your_world_key/config_world.json
```

Finally, run the server again, either via Steam or via the command line, replacing "your_world_key" with the right world ID.

Once a world has been successfully run at least once these two other folders should get created:

```
%localappdata%/PlayfulCorp/CreativerseServer/dltemplates
%localappdata%/PlayfulCorp/CreativerseServer/templates
```

Linux

These steps have only been tested on Ubuntu 20.04 LTS. Since version 4.0 the server may work fine on more recent versions as well (using SSL version 1.1 or above).

First run

Once the Server is installed you should end up with the server installed in a position like this:

```
~/.steam/steamapps/common/Creativerse Dedicated Server
```

Go to the above position in the terminal. Don’t worry about not having copied / set up a world to be launched yet.

Run this command in the above folder:

```
./CreativerseServer -worldId=your_world_key
```

where "your_world_key" can be anything, even if the world doesn’t exist yet: this run is meant to let the server create the necessary world / template folders even if you may get an error about being unable to find the world. Ignore any errors about the server not finding the world.

Important: right now that parameter is strictly case sensitive, there's a capital "i" in "worldId" - like, not `-worldid=` but really `-worldId=`

If the server runs but for whatever reason you can't see it in the LAN or is giving you other seemingly weird issues, try adding this to the command line / launch settings: `-forceIp=0.0.0.0` - that will force the game to listen to all the internal IP addresses instead of the default `127.0.0.1` and may sort some of those issues out. Also using a non-standard port would cause the world not to appear in the LAN tab, so pay attention to that as well - see config_world.json to tweak the base port manually.

Find the Linux data folder

Check whether all of these folders/files have been created (the beginning of the output of the first run of the server should show the exact position, it may vary from the following):

```
~/.local/share/PlayfulCorp/CreativerseServer
~/.local/share/PlayfulCorp/CreativerseServer/persistence.json
~/.local/share/PlayfulCorp/CreativerseServer/worlddata
~/.local/share/PlayfulCorp/CreativerseServer/worlddata/backups
~/.local/share/PlayfulCorp/CreativerseServer/worlddata/worlds
```

If all the above is there, copy your world folder inside of the last folder mentioned above, you should end up with something like this:

```
~/.local/share/PlayfulCorp/CreativerseServer/worlddata/worlds/your_world_key/config_world.json
```

Finally, run the server again replacing "your_world_key" with the right world ID.

Once a world has been successfully run at least once these two other folders should get created:

```
~/.local/share/PlayfulCorp/CreativerseServer/dltemplates
~/.local/share/PlayfulCorp/CreativerseServer/templates
```

Possible missing steamclient.so library

If you still can't get the server to launch with the correct world key in place, you may get an error about the game not finding the `steamclient.so` library.

Check the actual console / log error messages to verify where the server is trying to load the steamclient.so library from.

It could be something like this: `~/.steam/sdk64/steamclient.so`

According to what the error reports, copy the corresponding file from this position:

`~/.steam/steamapps/common/Creativerse Dedicated Server/linux64/steamclient.so`

to the position the Server is trying to load it from (possibly the `sdk64` folder mentioned above).

Creating a launcher for a local world

Since version 4.1 you can click on the folders button bottom right on any world in the Play > Local tab and generate a `.bat` launcher on your Windows desktop.

Once the server is running separately from the client you can join the world from the Online tabs (Public / LAN / Direct depending on your setup and preferences) - can't join the world from the Play > Local tab anymore (as that would try and run the world with a new server and it would fail conflicting with the other server that's already running from the launcher).

Launching multiple servers at once

The Dedicated Server can be launched multiple times concurrently, all it cares about is that you do not use the same port range for more than one world at a time.

So if you have one world running on port `26900` (which automatically uses ports `26900`, `26901` and `26902`) you'll have to set the other world to start from `26903` or something.

If you care about visibility on the LAN tab, take in account that Steam limits it to ranges `26900-26905` and `27015-27020`. This means you can at best have 4 worlds run from the same machine visible on the LAN tab, with ports for each world set to `26900, 26903, 27015` and `27018`.

If you don't care about such a visibility you're free to use any port in the `1-65535` range, but as you may guess, many other programs use ports to communicate. You can see a list of commonly "occupied/reserved" ports in a page like this on Wikipedia to try and avoid most obvious conflicts.

You can automate launching more than one server at a time from a single script or a single batch file.

For example, here is a batch file which launches three separate worlds at 60 seconds of interval (better to keep them spaced apart, in particular if two worlds are using the same template, or one server instance may try and mess with the template file while another server instance is keeping it locked):

```
cd C:\Steam\steamapps\common\Creativerse Dedicated Server

start creativerseserver -worldId=world_key_one
timeout 60

start creativerseserver -worldId=world_key_two
timeout 60

start creativerseserver -worldId=world_key_three
```

Creativerse Networking Setups

Playing in a Creativerse world relies on a CV Server to be running somewhere, providing the world data.

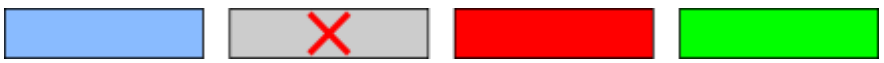
The following graphs illustrate various ways to get the Client / Server setups going, these are meant to be mostly "conceptual" graphs, take with a grain of salt, they're not meant to be too technical.

Definitions

Here are a few definitions for the sake of these graphs and for the sake of the Port Forwarding section below

---

Colors



Blue: this indicates something that's working normally.
Gray with red X: this indicates something that failed, stopped working or got closed / shut down for whatever reason.
Red: this indicates something that got disconnected due to something else having stopped working.
Green: this indicates something that still works fine despite something else having stopped working.

Names

Internet: this represents the Internet as a whole, past your Router.

Router: whatever your computer uses to connect to the Internet.
Local PC: this could be your computer or one of your relatives' computers, or even the computer of your neighbor leeching your connection. Just means a computer connected to the same LAN as yours.
Remote PC: this could be the computer where you host the server or the computer of another player. Anything outside of your LAN, yet connected to the Internet somehow.
CV Client: the actual game you can run to play and access worlds.
CV Server: the program that runs a world and serves its data to any connected CV Client.

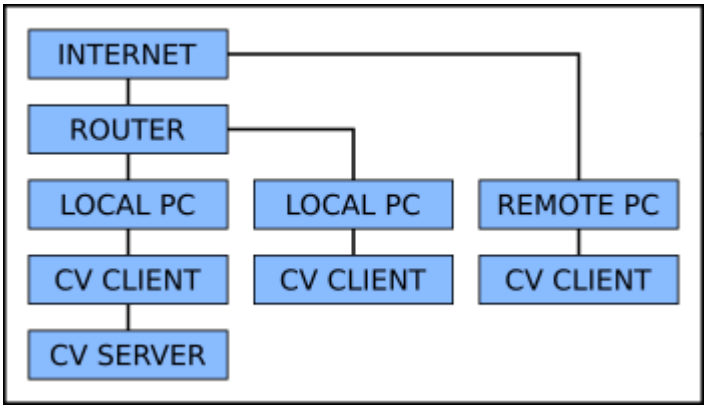
LAN: Local Area Network, it's the network of devices connected to the Router.
WAN: Wide Area Network, just another name for "the Internet" in general, anything past your Router.
IP: Internet Protocol, just to know what "IP" in "IP address" stands for.
IPv4: the "well known" format of IP addresses in the form of `w.x.y.z` where each letter is really a number from 0 to 255, for example `192.168.10.20`
IPv6: the new format of IP addresses with a wider range of values, they have a form like `2001:db8::8a2e:370:7334`, see IPv6 for more info about it.

Creativerse only supports IPv4 addresses, so your Router **has** to get a public IPv4 address when hosting worlds locally or you wouldn't be able to let others join your worlds from outside the LAN.

This address cannot be shared by other customers of your ISP, so if you're behind a CGNAT / Proxy you'd have to ask your ISP to change this setting on your connection.

Setups

Server launched by the Client



This is probably the simplest and most common setup:

- launch the Client on your computer
- click on the Local tab in the Server Browser
- select a world and hit Play

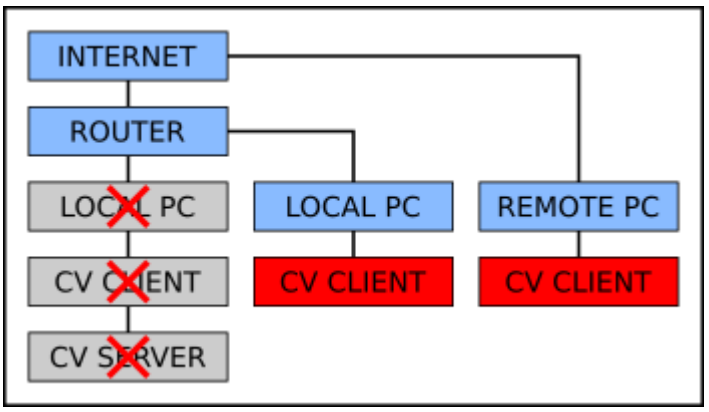
Once you do the above, the Client will launch the Server behind the scenes to serve the world data.

The Server will be a "child" of the Client, in a sense, because if the Client gets stopped for whatever reason, the Server will go down as well.

The Server will go down automatically the moment you leave the world as well.

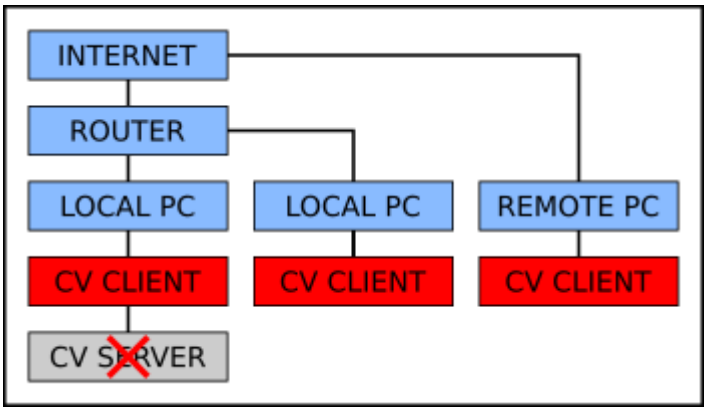
In this scenario, anyone else will be able to join your world as long as you're in the world yourself - another Client on another local PC will be able to join, another player from their remote PC (assuming your Router is set up properly with Port Forwarding) will be able to join as well.

Failure case 1



This is the case where the Server fails or gets closed for whatever reason, or you leave the world, or you close the Client, or you shut down the PC: anyone else will be disconnected the moment the Server isn't running anymore.

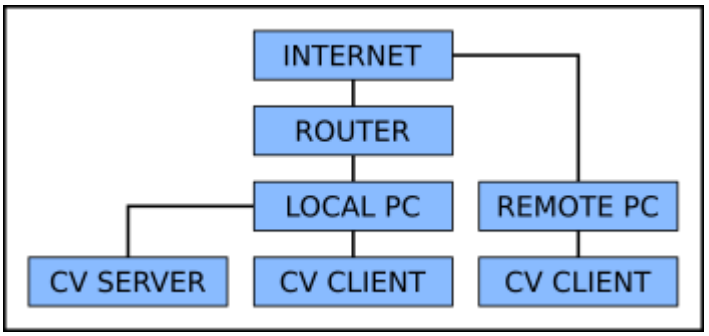
Failure case 2



Even if only the Server fails, of course any connected Clients would disconnect - yours and anyone else's.

Not depicted in the graph, if your whole LAN goes down, the Server will go down with it, all remote Clients would of course get disconnected as well.

Server and Client running separately on the same computer



This is the case where you launch the Server separately from the Client, even though they're on the same computer.

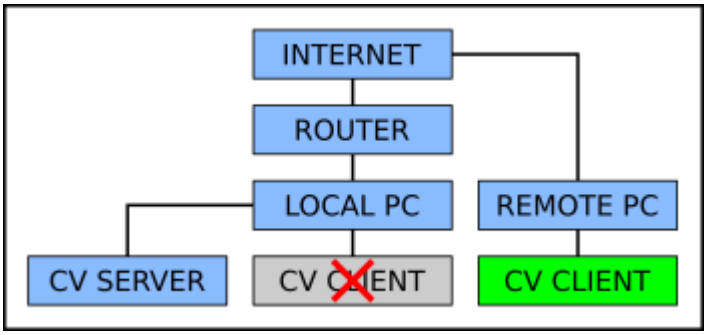
As long as the Server is running, clients will be able to connect to it.

Other players on the same LAN should always be able to connect, even if you don't set your Router up.

Players on remote PCs outside of your LAN will still require the Router to have Port Forwarding set up properly.

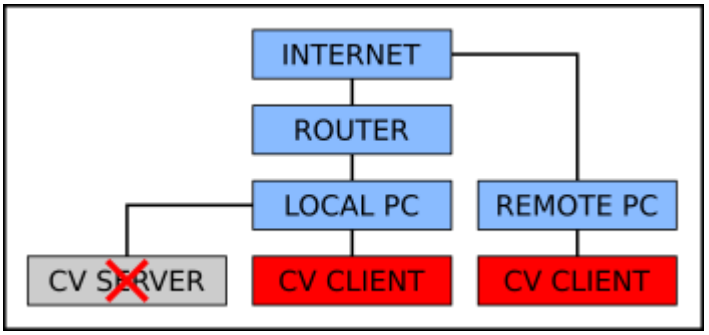
Since the world is running on a Server that has been launched separately, you will need to join the world via one of the Online tabs in the Server Browser, not from the Local tab.

All OK if you close your Client



Since the Server has not been launched by your Client, you can close your Client at any time, any other Client will remain connected just fine as long as the Server is running.

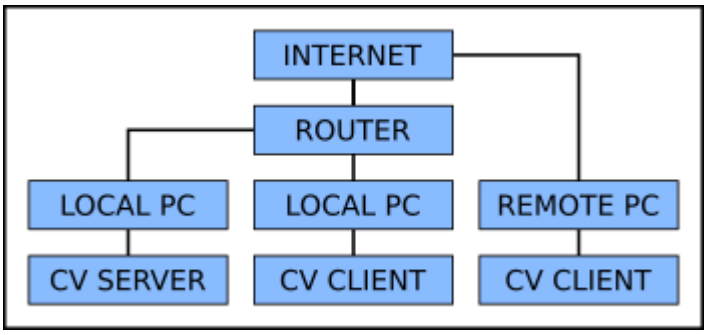
Server failure



As always, any connected clients will disconnect if the Server stops being reachable for whatever reason, so even if you can close your Client, you can't shut down your PC. Or better, you can, but the remote Clients would get disconnected.

Not depicted in the graph, if your whole LAN goes down, the Server will go down with it, all remote Clients would of course get disconnected as well.

Server on a different local PC

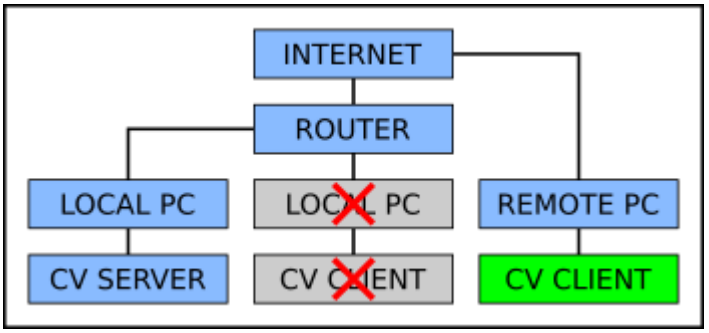


This is the case where you may want to keep the Server running on another computer behind your LAN: that other computer will take all the load of running the Server and will let you shut down your computer at any time without consequences on the Server.

Here the local PC running the Server could be even a very weak machine, since the Server is very lightweight, and you could in theory keep it running 24/7.

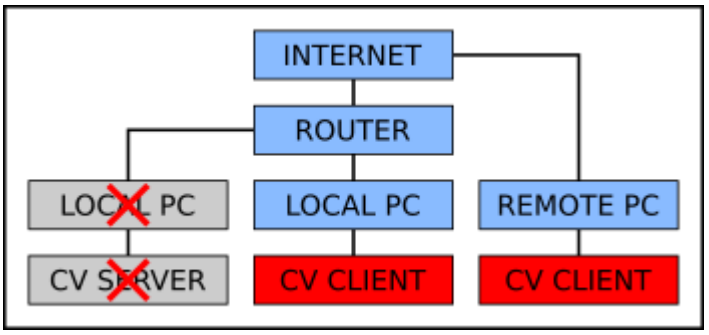
As with the previous setups, you need to have the Port Forwarding set up properly in the Router for remote Clients to connect.

All OK if you shut down your PC or close your client



As above, since the Server is running on a separate computer, shutting your PC down or closing the Client will not affect other connected Clients.

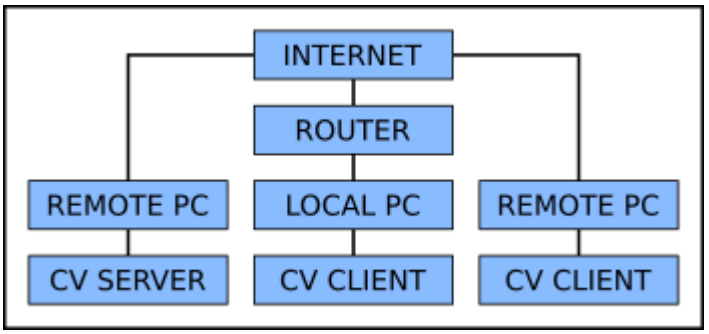
Server failure



If the Server (or the computer running it) fails or gets closed, any connected Client will disconnect.

Not depicted in the graph, if your whole LAN goes down, the Server will go down with it, all remote Clients would of course get disconnected as well.

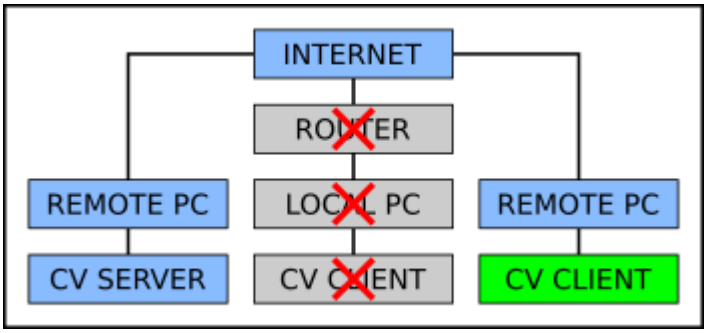
Server on a remote PC



This is the most flexible setup that will let you keep your world running 24/7 without any computer running behind your LAN.

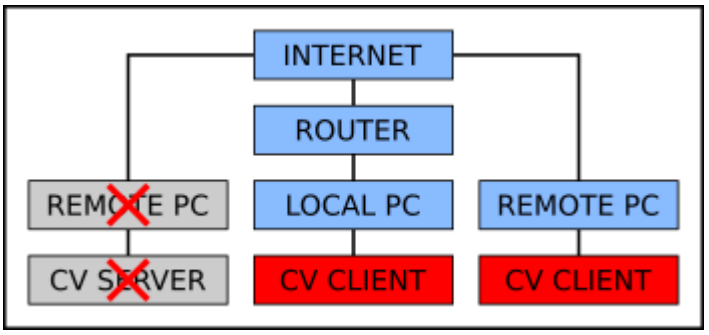
This setup does NOT require any Port Forwarding.

All OK if everything is off in your house



Since the Server runs on a remote PC and doesn't depend on any computer in your house, anyone else will be able to continue playing on your Server at any time.

Server failure



The moment the Server or the remote PC hosting it goes down for whatever reason, of course, all clients would get disconnected.

Port Forwarding

As usual, this guide isn't meant to be super technical or super accurate about subjects which aren't strictly tied to Creativerse. Take the following with a grain of salt, search the Internet for the proper formal definitions and technical details - see Support / Help / Feedback if you spot anything blatantly wrong that needs fixing and you want to report it to us.

Here is a quick video aboud port forwarding, whether you need it or not and how I set it up on my own computer / router: https://www.youtube.com/watch?v=55Tb4m31q8A

See the Definitions section above if you have no idea what WAN or LAN stand for.

What's port forwarding all about?

When you use a computer connected to the Internet via a Router, using an IPv4 address, your computer gets two IP addresses:

- a LAN IP address (directly), normally in the form of `192.168.x.x`, this is unique to this specific computer and only used internally within your LAN

- a WAN IP address (indirectly), which will be the same for all computers within your LAN

The above means that when another computer on the Internet needs to communicate with your computer behind the Router, the remote computer will only see your WAN IP, it will have no information about which LAN IP you have.

This also means that the Router has to keep track of your requests, send them over to the Internet, receive the responses and send them back to your computer and not to your Smart Fridge.

(that's why it's named "Router", because "it *routes* requests")

A different situation happens when you are not starting the communication yourself (say, requesting a page in your browser) but when another computer on the Internet wants to communicate with a specific program on your computer (say, a Creativerse player trying to join your world).

In such a scenario the remote computer will send a request to your Router (since the remote computer only knows about your WAN address) and the Router has to figure out where to send this request.

Since you didn't start the communication yourself, the Router has no idea which computer in the LAN should handle such requests.

Adding the port forwarding to your Router is how you say: "hey Router, the CV Server is running on this computer, not on my Smart Fridge".

Find your LAN IP address

In order to add a port forward you need to know which LAN IP will be used by the Creativerse Dedicated Server - this will be the same of the computer running the Client if you launch the worlds from the Local tab instead of using the Dedicated Server separately.

On Windows you can run `ipconfig` at the command prompt and get an output like this:

```
C:\Users\yourusername>ipconfig

Windows IP Configuration

Ethernet adapter vEthernet:

   Connection-specific DNS Suffix  . : domain.example.com
   Link-local IPv6 Address . . . . . : fe80::9195:4915:d06a:33d7
   IPv4 Address. . . . . . . . . . . : 192.168.1.142
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.1.1
```

In the above output, the number you are looking for is the IPv4 Address, in this case it would be `192.168.1.142` - keep this address handy.

On Linux you can run `ifconfig` in a terminal and get an output like this:

```
linux@user:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 192.168.1.142 netmask 255.255.240.0 broadcast 192.168.15.255
        [other stuff here snipped for brevity]
```

In the above output, the number you are looking for is the inet address, in this case it would be `192.168.1.142` - keep this address handy.

Find your CV Server Port

This is easy: it's the "Game Port" number that appears in your world's advanced settings. It defaults to 26900 but you can change it to whatever you like better, with the limitation that the Steam Dedicated Server only supports showing LAN servers in the ranges 26900-26905 and 27015-27020.

Your world will still be available for joining even if you don't pick a Game Port within the limits required by the Steam Dedicated Server - the only difference is that it wouldn't show up in the LAN tab of the Server Browser [TODO add link].

Find out this port number for your world / server and keep it handy.

Set port forwarding up and ensure your computer always gets the same internal IP

This is where things start to vary wildly. How you access the configuration of your Router and where this feature appears can be so different that's impossible to cover all the variations here.

We'll show a simple example just to give an idea, you'll have to check the documentation of your own Router (searching on the Internet, asking the support of your Internet Service Provider or the alike).

Connect to your Router administration interface

It could be as simple as opening your browser, punching in an address like `192.168.1.1` and hitting Enter (by the way, notice that in this case this matches with the Default Gateway shown in the example given by Find your LAN IP address, at least in the Windows case, not sure where this information would show up on Linux)

Once you get to see such administration interface you may be required to provide a username and password to actually change the settings. These may be the default credentials of your Router (possibly something trivial such as "username: admin, password: admin") if you have never changed them. May want to change these access credentials if you didn't already.

Find where you can reserve / assign always the same IP to your computer

In order to ensure the following port forwards are always valid, you need to ensure that your router assigns always the same LAN IP to your computer.

This is normally done in some Lan / Network settings page where you can specify which address you want to assign / reserve, such as `192.168.1.142`, and specify which computer should get this address - this could be just selecting a dropdown with your computer name.

If you don't do this step, then next time you disconnect your computer or restart the router, your computer may get a completely different LAN IP address, making all the following rules useless.

Find where the Port Forwarding options are

It could be something like "Internet setup" or "WAN Services" or the alike. The documentation of your exact brand / model of Router should tell you where the Port Forwarding is supposed to be set up.

Fill in the Port Forwarding rules

Such rules normally require these fields:

- a name for the rule, normally free text, you can name it "Creativerse Server" or "Whatever" just in the same way
- the protocol of the rule, either TCP or UDP
- the WAN port, called "external port" by some Routers
- the LAN port, called "internal port" by some Routers
- the IPv4 of the computer that's supposed to handle such requests

You'd need the following three rules, assuming that your CV Game Port is set to 26900 and that you found your LAN IP of the CV Server:

- Rule one (this is the port used by the game to communicate with the remote players):
  - port 26900 (both for WAN and LAN)
  - protocol UDP
  - the LAN IP of the CV Server
- Rule two (this is the port used by the Steam Dedicated Server system to perform queries and distribute information):
  - port 26901 (both for WAN and LAN)
  - protocol UDP
  - the LAN IP of the CV Server
- Rule three (this is the port used by the CV Dedicated Server to provide access to the WebAdmin):

        - port 26902 (both for WAN and LAN)
        - protocol TCP
        - the LAN IP of the CV Server

If you changed the base Game Port to be something different, just tweak the numbers accordingly, for example:
- 27015 for rule #1
- 27016 for rule #2
- 27017 for rule #3

If your Router allows specifying a range of ports and/or specifying multiple protocols for the same rule you could simplify all the above, for example:
- Single rule:
    - port range 26900-26902 (both for WAN and LAN)
    - protocol TCP/UDP
    - the LAN IP of the CV Server

Doesn't matter that 26900 wouldn't need TCP and that 26902 wouldn't need UDP, if the Router allows such a simplified rule, it will work just fine.

Once you have all the above set and saved, other players should be able to connect to your world from outside your LAN.

Certain routers require restarting for the above settings to take effect. If the settings look fine to you but they don't seem to work, try tgurning the router off, waiting half a minute or so, then turn it on again.

World Settings

Main Settings

World Name, **World Description** and **Tags** should be fairly obvious.

World Name is capped at 64 chars, Tags are capped at 112 chars including separators, the world settings editor and the world creation form will warn you if you are exceeding these limits. Commas, spaces and semicolons can be used to separate tags, but in the end they'll be stored as comma-separated, so you can't really use commas as tag names. Don't use # signs, they'll be added to the tags automatically when showing them.

Pay attention that the World Name will be used to generate the world key (and world folder name). If you pick a name like "My first world!" the world key will be something like "my_first_world". The game will not let you create two worlds with the same world key. See config_world.json for more technical details.

Advanced Settings

Some advanced settings will be shown in the main editing / creation form, but all of them will be shown in the Advanced Settings dialog.

Players

See Protecting your world for the minimum essentials.

New players default to visitors: any new players entering your world will be set to visitor by default (otherwise they'll get the Builder role by default)

Max Players: how many players can enter your world at the same time. You can have thousands of players in a world, this only affects the ability of entering the world and playing at the same time.

Disable PVP: prevents players from being able to hurt each other. This setting can be overridden in individual claims. Visitors are always unable to cause any damage to other players.

Creator Mode Permission Level: this affects the chosen level and higher levels. For example if you set this to Mod, all Mods, Admins and the Owner will be able to access Creator Mode, but not Builders or Visitors. Access to Creator Mode can be granted or revoked separately for each player from the [TODO Player List].

Private World: this setting causes the world not to be announced and not to show up in the Online Public lists. The world may still be visible in the LAN tab and players knowing the correct IP / port could still find it and join. **This is NOT a security measure to prevent players from entering your world.**

Require Whitelisting to Join: this setting causes the server to use an access file with all the whitelisted players. Players will not be able to join if they're not whitelisted. Players will be able to request access to your world via a button in your world card. You'll be able to review, accept and refuse requests from the WebAdmin and from the [TODO Player List]. Admins and Mods will be able to review/accept/refuse from the Player List as well.

Difficulty

Difficulty Preset: this is just a dropdown for Easy / Normal / Hard / Nightmare presets, you'll be able to customize all the various settings below separately. Difficulty presets also affect Abilities.

Damage to Players Multiplier: how much to scale the damage that players receive from mobs and other players. Set it to 2 for doubling the damage, 0.5 for halving it and so forth depending on the numbers you pick.

Damage to Enemies Multiplayer: same as above, but for the damage received by mobs.

Drop Inventory / Quickbar / Equipment on Death: whether or not you'll lose the corresponding items when you die. If any of these is enabled, the items you lose will be put in a Death Statue. If none of these options is selected you will not lose anything on death and there will be no Death Statue.

Disable Flashlight / Disable Glider: fairly obvious. This will affect all players including the owner.

Disable Death Marker on HUD: when you die and a Death Statue gets created, a Skull marker will appear in your compass, pointing to the location of the Death Statue itself. If you disable this option the marker in the compass will not appear, but your Death Statue will still be there to be recovered. You just have to find it.

Peaceful Mobs: just makes normally hostile mobs peaceful by default - unless attacked. Don't poke the Swamp Trog.

Abilities

All these fields are affected by the Difficulty presets.

Max Roll Charges: how many rolls a player can accumulate.

Roll Recharge Time: how many seconds are required to recharge one roll.

Roll Usage Cooldown: how many seconds before being allowed to perform another roll.

Gauntlet Smash Required Stamina: amount of stamina consumed by a Gauntlet Smash / Power Attack. The max valid value is 1, but you can set it above 1 to prevent the Gauntlet Smash to be usable at all.

Stamina Drain while Sprinting: multiplier for Stamina Drain while sprinting (2 doubles the drain speed, 0.5 halves it and so forth)

Stamina Drain while Gliding: as above, but for gliding.

Claims

Disable Claims: this option will not use any claim information and will not allow placing any new claims. Any existing claims will still be remembered when you turn this option off - selecting this option does not delete any claims, it will simply ignore them.

You can use this option to take care of any problem in a claim where you don't have any permissions (even if you're the owner) without having to ban the player to release the claim - say, a player left a lot of active cornerstones in their claim but they're close to another player, causing performance problems: you can temporarily disable the claims, pull all those cornerstones, stash them in a chest with a sign for the player, and finally enable the claims again.

May want to lock the world with the Whitelisting option, or be sure you only have trusted players in the world (or no one around at all) during such "disable claims and cleanup" operations, just to be sure no one damages unprotected claims in the meantime.

Starting Claims Count by Role: how many claims will be assigned to a player according to their role, without having to buy them. Any claim past this number (within the Max Claims limit below) will require buying.

Max Claims per Role: max amount of claims a player can have according to their role. Once this max is reached, it will not be possible to buy any more claims.

Claim Resource Cost by Claim Level: defines the price of buying a claim, depending on the amount of claims a player already has. This can be as simple as a single row reading "Dirt 1", and every claim will cost 1 Dirt no matter what, or could be fine-tuned with multiple ranges, for example "10 Coal for claims from 1 to 10, 50 Obsidian for claims from 11 to 20, 100 Iron for claims from 11 onwards" and so forth.

Spawning

All spawning multipliers / factors affect the chance of such a spawn - 2 doubles it, 0.5 halves it and so forth.

If something has 2% chance and you set the multiplier to 100, the chance will become 200% but any value above 100% will not have any additional effect.

Other spawning conditions still apply (e.g. checking for Pigsy spawns it may spawn a group if there's no Pigsy in the chunk, but it will spawn none if there's at least one Pigsy there - different rules check for different amounts).

Disable Mobs Spawning: prevents "normal" mobs from spawning (i.e. the ones you can interact with). You can still enable them per-claim.

Disable Ambient Mobs Spawning: only affects Bees, Moths and Butterflies. You can still enable them per-claim.

Mobs Spawning Multiplier: changes the chances of mob spawns, read above for the actual behavior.

Treasure Spawning Multiplier: same as with the mobs, but just applied to Treasure Chests.

Regrowth Multiplier: same as above, but affecting respawning of Queen Bees, Mushrooms and other plants here and there.

NPCs / Villagers

Disable NCPs / Villagers Spawning: prevents the Villagers from spawning in the wild. You can still enable them per-claim.

Villager Interaction Cooldown: how many minutes must pass before you can get loot from a Programmable Villager again.

Costumes

Costume Purchase Resource: which item to use for the Costumes shop in the character customization. Any costume that is granted by a Quest cannot be purchased.

Costumes Cost: allows specifying the cost for a costume given its slot, or even specifying the cost for a specific costume. The "Any slot" will only apply in case you disable any of the other "Hat / Head / Body / etc" slots. If a Costume is given a specific row with its cost it will override the cost assigned to its slot.

Also see: Unlock all costumes / all crafts

World

Skybox: changes the texture used by the Skybox. Right now only two skyboxes are available, Normal and Celestial, and they will only affect the night sky.

Disable Map: prevents the map view from being opened at all. This also prevents the ability to buy, place and remove claims.

Disable Fog of War: uncovers all the map for all players. As you move around on the map you will still get the "New area discovered" notifications and such areas will be remembered, so that they will stay uncovered if you re-enable the Fog of War.

Disable Explosions: invalidates TNT / Excavators and any throwable explosives. Either you will not be able to activate them or they will not have any effect. Corresponding claim setting will override this world-wide option.

Disable Fire Spread: prevents fire from spreading and prevents fire bombs from burning anything. Corresponding claim setting will override this world-wide option.

Disable Corruption Spread: prevents blocks and liquids from getting corrupted or purified, either by other blocks nearby or by throwables. The corresponding claim setting should be able to override the world-wide setting, but this may still be buggy.

Disable Day Variations: in Creativerse there are just two day variations: normal days and foggy days. Enabling this options just prevents foggy days from happening.

World Edge Fog Begin Distance: how far from the world edge the fog will begin appearing. Measured in blocks.

World Edge Full Fog Distance: how far from the world edge the fog will be full. Measured in blocks.

World Edge Full Fog Density: how dense the world edge fog will be once you're fully into it. Ranges from 0 to 1, even just 0.05 is quite substantial fog thickness.

Gravity

Low Gravity: with this option enabled all the "Low Gravity" settings will take effect, otherwise the "Normal Gravity" settings will be used.

Normal Gravity Value: changes how much time you have left to say your prayers in case you don't have Creator Mode, don't have the Glider available and you forgot the Love Potions and Jerky Sandwiches at home. The higher the value, the faster the prayers should be.

Normal Gravity Jump Multiplier: how high you can jump. The default of 1 will let you jump 2 blocks, so if you want to jump 6 blocks, you need to set this value to 3. If you're playing Creativerse but you'd rather be playing another game, set it to 0.5.

Normal Gravity Fall Damage Multiplier: how much damage you'll get if your prayers were ineffective. Set it to 2 for for double the damage, 0.5 for half the damage and so forth, you know the drill.

Low Gravity Value (and matching Jump / Fall options): the same as above, but will take effect only when "Low Gravity" is enabled. You can totally make Low Gravity be 10 times stronger than normal gravity. Yeah, you can totally be that evil.

Building

Disable Block Digging, **Disable Block Placing** and **Disable Block Painting** should be fairly self explanatory.

The first two options have been ported over from Adventures so that owners could set up kind of Adventure-like multiplayer worlds, we may not have any use for Adventure Gates and Checkpoint as of yet, but these two options could already make for interesting twists. Just setting players to Visitors wouldn't have cut it, as Visitors aren't able to hurt mobs, this could be a step forward.

The third option is there just because we could add it (and because some players may not like the paint feature in first place, so we gave them control to prevent the feature from being used in their worlds at all).

Inventory

Max Item Stack: right now it only applies to chests and only affects newly added stacks. We may need to revisit this behavior.

Disable Arc Vaults: even though Arc Vaults won't allow transferring items across worlds anymore, owners may want to prevent access to them for an added challenge.

Crafting

Free Crafting: does not require any materials to craft in the backpack. Does not affect unlock progression.

Default Progression: forces going through all the unlocks from scratch (also forces finding recipe items for all crafts that require one). Fresh start is back!

Also see: Unlock all costumes / all crafts

Blueprints

Disable BP Kit Purchase: self explanatory, the option will be disabled in the cornerstones.

BP Kit Purchase Resource: lets you customize which item to use for buying kits. Could be anything from Grass to Chizzard Noodles Soup or Lumite Node Stairs Inner Corners

BP Kit Cost Factor: lets you tweak the cost of the BP Kits (2 doubles the cost, 0.5 halves it and so forth).

Autobuild

Disable Autobuild and **Autobuild Purchase Resource**: see above, same behavior as the BP Kits.

Autobuild Cost per Block: this is a bit tricky but here's the gist of it: the default of `0.0001` (which is one in ten thousand) means that from 1 to 10,000 blocks you'll only need one Resource unit to perform autobuild - say, if the resource is the QBit, you'll use 1 QBit; from 10,001 blocks to 20,000 you'll need 2 QBits and so forth. If you want to impose 1 QBit every 100 blocks, you need to set the value to one hundredth, which would be `0.01`.

Events

Pumpkiru Event Enabled: enables Pumpkiru Event (affects spawning of the Pumpkiru trader and ghost mobs)

Elfi Event Enabled: enables Elfi Event (affects spawning of the Elfi trader, gift box treasures and Reaudolph)

Traders Enabled: enables spawning of Pumpkiru / Elfi traders (does not affect stuff like ghost mobs and Reaudolph); this only works if the corresponding events are enabled - lets you start the events without having the traders show up, to have kind of a "pre event" and a "full event" where players can actually purchase from the traders.

Traders Spawn Factor: affects the chances of spawning only for traders. See Spawning for the actual behavior of this multiplier.

Misc

Base Game Port: base connection port used for multiplayer (the query port will be this number +1, the WebAdmin port will be this number +2) - Port Forwarding uses these, the base port is the one to use for [TODO direct connections]

World Owner Steam ID: Steam ID of the World Owner (can be different from your own Steam ID if you want to host the world for someone else - this Steam ID gets the World Owner role automatically withou the need to be manually promoted.

Disable Error Block Check: prevents error block markers from appearing in-world.

File formats

Just a small warning before messing with JSON files (there will be other formats, this is the easiest to edit and the easiest to mess up with stray commas).

Invalid JSON commas

In JSON it's invalid to have a comma before the closing bracket of an object or of an array. The various parts of the game may or may not fail on such invalid JSON files, just stick to valid JSON and you'll be fine.

This is a valid JSON object:

```
{
  "foo": "some value 1",
  "bar": "some value 2"
}
```

This is NOT valid JSON, the comma after "some value 2" is wrong:

```
{
  "foo": "some value 1",
  "bar": "some value 2",
}
```

The same goes for arrays, this is valid JSON array inside of a valid object:

```
{
  "foo": [1, 2, 3]
```

```
}
```

This is NOT valid JSON, the comma after the 3 makes the array invalid:

```
{
  "foo": [1, 2, 3,]
}
```

persistence.json

This file normally lives in the main server data folder, it's meant to specify the frequency and amount of backups for all worlds run by the installation. Individual world folders can contain a copy of this file with settings to be applied only to that specific world.

The default version of this file should look something like this:

```
{
  "Backups": {
    "Interval": {
      "IntervalMinutes": 10,
      "MaxToKeep": 1
    },
    "Hourly": {
      "IntervalMinutes": 60,
      "MaxToKeep": 1
    },
    "Daily": {
      "IntervalMinutes": 1440,
      "MaxToKeep": 1
    },
    "Weekly": {
      "IntervalMinutes": 10080,
      "MaxToKeep": 1
    }
  }
}
```

The `Backups` root is necessary and needs to stay exactly like that.

The `IntervalMinutes` field specifies how often a backup with this specific name will be created.

The `MaxToKeep` field specifies how many different backups will be created with this specific name. Older backups past this amount will be automatically deleted.

The names of the various backups (`Interval`, `Hourly`, `Daily` and so forth) can be customized at will. Stick to only letters and maybe numbers, don't use special characters or spaces, at best you can use hyphens and underscores. These names will be used to name the corresponding folders inside of the backups folder.

In the `Backups` root of this JSON file you're free to have as many subsections with any name you want, including removing all the default ones.

For example:

```
{
  "Backups": {
    "Often": {
      "IntervalMinutes": 1,
      "MaxToKeep": 10
    },
    "Rarely": {
      "IntervalMinutes": 600,
      "MaxToKeep": 2
    }
  }
}
```

With the above setting, the server will create a backup every minute and will save them in the `Often` folder, keeping only the most recent 10 backups, the `Rarely` backups will be done every 10 hours and only the 2 most recent backups will be kept.

Pay attention to the commas after the closing curly brackets, in JSON it's invalid to have a comma after the last element of an object / array.

This is another example, one backup every 5 minutes covering the most recent hour, then one backup every hour covering the most recent day, seven daily backups for the last week, 4 weekly backups for the last month, finally 12 monthly backups covering the last year. Pay attention to your free storage if you go overboard with the backup amounts like in this example, in particular if you have a beefy world with large backups.

```
{
  "Backups": {
    "Interval": {
      "IntervalMinutes": 5,
      "MaxToKeep": 12
    },
    "Hourly": {
      "IntervalMinutes": 60,
      "MaxToKeep": 24
    },
    "Daily": {
      "IntervalMinutes": 1440,
      "MaxToKeep": 7
    },
    "Weekly": {
      "IntervalMinutes": 10080,
      "MaxToKeep": 4
    },
    "Monthly": {
      "IntervalMinutes": 43200,
      "MaxToKeep": 12
    }
  }
}
```


Remember that you can override the backup settings for individual worlds, if you run many different worlds you may want to keep "lightweight" backup settings in the main `persistence.json` file and specify more frequent backups only for very important and active worlds.

config_world.json

This file lives in a world folder.

This file will contain far more fields than in this example, only the most vital fields will be described, the vast majority of the other fields will be editable from the game as the world is running, either from the ESC screen while in the world or from the WebAdmin. See World Settings for a full recap of all the settings.


```
{
  "GamePort": 26900,
  "PrivateServer": false,
  "UsePlayerAccessFile": false,
  "WorldOwnerSteamId": "12345678901234560",
  "WorldKey": "world-key",
```

```
  "TemplateKey": "template-key",
  "WorldName": "world name string",
  "WorldDescription": "world description string",
  "Tags": ["tag1", "tag2", "tag3"]
}
```

GamePort: this is the base port that will be used by the game, along with two more ports, computed by just adding 1 and 2 to this value, so if you have 26900 here, the ports will be 26900, 26901 and 26902 - this is mainly important for accessing the WebAdmin (cause the WebAdmin runs on the +2 port) and for Port Forwarding.

PrivateServer: if set to true it will prevent the world from being announced on the public lists via the Steam Dedicated Servers system. See Protecting your world for more details.

UsePlayerAccessFile: if set to true it will require players to be whitelisted before being able to join the world.See Protecting your world for more details.

WorldOwnerSteamId: this is the owner of the world, which will be guaranteed to have Owner role whenever they enter the world, no matter what. This is useful if you want to run a world for a friend - you can run the server and keep full access from the WebAdmin, still giving your friend the Owner role automatically to allow them to change all settings from in-world.

WorldKey: this is the ID of the world, which **must be** same as the name of the folder of this world (read the note below for the allowed chars). This is also the value you'd pass from the command line to the CV Dedicated Server. If you want to rename the world folder you have to change this field accordingly (and the other way around).

IMPORTANT: the **WorldKey** can only contain letters, numbers, hyphens and underscores - do NOT use spaces, parentheses, accented characters or anything else, the world may not start up or some parts of the interfaces may behave erratically.

WorldName, **WorldDescription**, **Tags**: just normal strings which will be visible in the game. Remember the warning about Invalid JSON commas for the tags array.

PlayerAccess.json

This file lives in a world folder.

```
[
  {
    "PlayerSteamId": "12345678901234560",
    "Message": "someplayername: \"plz let me in\"",
    "Created": "2022-11-14T15:09:33Z",
    "Updated": "2022-11-14T15:09:33Z",
    "Blacklisted": "2022-11-14T15:12:12Z",
```

```
    "BlacklistReason": "never liked the guy"
  }
]
```

You normally shouldn't need to mess with this file directly, you'll have access to the requests to accept / reject them as needed from the WebAdmin or from the in-game Players list (only the Owner, the Admins and the Mods will have access to such requests and can administer them).

mapinfo.json

This file normally lives in a template folder / archive, but once a world is run, a copy of such file will be saved in the corresponding world folder.

You shouldn't normally need to worry about this file other than knowing that you can delete it at any time and the server will copy it back from the template as needed.

You could edit a flat template mapinfo.json file inside of a world folder to tweak the generation (examples below) but it's normally better to do that with a fully separated [TODO custom template].

After altering a mapinfo.json file you need to restart the server / re-launch the world for the changes to be appplied.

Do not alter a mapinfo.json wich does NOT have the "procedural" field set to true, as those are pre-built templates which are not generated procedurally: best case your changes may or may not work, worst case the server will not start and you'll have to trash or fix this file from the world folder before launching the server up again.

Warning: altering the mapinfo.json file of an existing world may cause existing builds to get buried or submerged or remain floating in the air. This could be totally fine for you and you could revert / tweak the values till you get the result you want. The actual deletions / additions performed in the world are stored as so-called "deltas", the template just determines what appears outside of such deltas, so you shold be fine running tests and burying / unburying builds repeatedly.

We'll provide an example and some explanations here just for the sake of quickly testing flat template variants.

Do not just copypaste the settings from here, create a flat world, run it once, then go to its world folder and edit the mapinfo.json you'll find there.

Mess at your own risk, no guarantees.

```
{
  "radius": "32",
```

```
  "height": "16",
  "seed": "3423",
  "sea_level": "1",
  "base_elevation": "1",
  "procedural": true,
  "config": {
    "type": "flat",
    "params": {
      "height": 1,
      "block": "dirt",
      "meta": 0
    }
  },
  "layers": [

    ...snipped layers...

    {
      "name": "surface",
      "elevation": [
        "1",
        "224"
      ]
    }
  ],
  "player_spawn_chunks": [
    [
      "0",
      "0"
    ]
  ]
}
```

radius: this is expressed in chunks and will determine the map size.

A radius of 32 means:

- 32 chunks from the center of the map to the edge of the map
- which in turn means 32 chunks times 16 blocks = 512 blocks
- which in turn means the whole map will be 1024x1024 blocks (cause the radius is half the diameter in this case)

height: this is again expressed in chunks and will determine how high the Top of the Sky will be (building limit on the vertical).

As of right now this "height" field has been made obsolete, the game will ignore this value and just allow placing 255 blocks from the end of the world to top of the sky on older templates which may have this value set lower than 16.

seed: this is completely useless on a flat template map, whatever you may set it to wouldn't make any difference

sea_level / base_elevation: not sure exactly what thhese do, should probably be kept at the same value of "height" in the "config" sub-section, probably they're completely ignored.

procedural: needs to be left as `true` to let the game even take in account the "config" sub-section.

config: contains the configuration to be passed to the procedural generators system, we will only cover the flat one here

- **type**: keep this to "flat"
- **params**: contains the actual params to be passed to the "flat" generator in this case
    - **height**: how many layers of blocks to lay down on the template, minus 1, which will be used for the End of the World blocks.

      This means that if you want 10 layers of blocks you need to put 11 here, if you want 15 layers you need to put 16 here and so forth.
    - **block**: the internal block ID to use for generating such layers

      You can try and guess such ID, most blocks have obvious IDs such as "grass", "dirt", "stone" and so forth.

      You can look the IDs up from the WebAdmin reference page or you could peek into the JSON files which are shipped into the `Admin/shared/js/data` folder of the CV Dedicated Server installation

      If you're willing to peek into such files you'll be able to figure out how to hunt down a block ID from its item ID or from its localization string (which you can find in `Admin/shared/js/localization`)

      If you set the height to 1 (inside this params section) the block you specify will make no difference (cause the first layer is always End of the World blocks), but stick to a valid block ID or the procedural generator will fail during the attempt at looking this ID up.

      You can set this to be a liquid as well, such as "water" or "water_mineral"

- **meta**: this is a number which can contain rotation / paint / liquid info in a "packed way" so to speak.

  If you use a liquid block ID set meta to 63 to ensure you'll have a still water surface, otherwise all water will be flowing.

  If you use a solid block ID set meta to 0 to avoid any paint or rotation.

  The [TODO custom generator] guide contains more info about how the meta field behaves exactly.

  In the meantime you could use this webtool https://entuland.com/metapaint/ to pick specific color combinations. If you do, remember to set the base meta to 0 or to 63 depending on the block you're using and copy the full meta value from the webtool.

layers: these are probably useless for the current procedural generators, you can set all layers to have elevation "0", "0" (the first value is where the layers starts - bottom - the second is where the layer ends - top.

Maybe stick to only changing the "surface" elevation from whatever "params > height" value you have decided earlier on (for the first value, bottom) and keep "224" or something as the second value (top). Probably makes no difference, but you're free to mess around and see what happens.

player_spawn_chunks: these should work fine and can be altered in any procedural template, probably also in any normal pre-built template.

These values are completely ignored when you run a `/setspawn` command in the chat (but you can revert that with `/unsetspawn`).

The values of these spawning chunks are counted from the center of the map, so a "0", "0" value will be the center of the map, "-4", "-4" will be a chunk about one claim south-west of the center and so forth. First value is the west / east coordinate of the chunk, from negative to positive, the second value is the south/north coordinate of the chunk, again from negative to positive.

Do not set any of these values any higher than the radius of the map - players may end up getting spawned outside the map boundaries.

A couple of examples to play with:

- Nothing but end of the world blocks: "params > height" set to 1 (same for sea_level, base_elevation and the first value of the "surface" elevation, if anything), block ID and meta don't matter (but keep a valid block ID there)
- Just one single layer of diamond nodes: "params > height" set to 2, block ID set to "diamond_block", meta set to 0

- 100 layers of mineral water: "params > height" set to 101, block ID set to "water_mineral", meta set to 63

Remember the warning about invalid JSON commas.

server.json

This file normally is meant to be put in the main server data folder and it is meant to specify path overrides for where your worlds or backups are stored.

(if you want to move the entire CreativerseServer folder see Moving the entire CreativerseServer folder instead)

This file is not created automatically. You need to create it yourself and fill it in with something like this:

```
{
  "TemplateOverridePath": "D:\\MyCVTemplates",
  "WorldOverridePath": "D:\\MyCVWorlds",
  "WorldBackupOverridePath": "D:\\MyCVBackups"
}
```

`TemplateOverridePath` will tell the server where to look for folders `/dltemplates` and `/templates` - that is, the new position will contain such two subfolders.

`WorldOverridePath` will tell the server where to look for the contents of `/worlddata/worlds` - that is, the new position will contain world folders directly.

`WorldBackupOverridePath` will tell the server where to look for the contents of `/worlddata/backups` - that is, the new position will contain world backup folders directly.

If these overrides are set up after templates / worlds / backups have already been created, it is up to the players to move such folders and files to their new position, or to clean up the unneded remaining files.

If you're running on Linux use the corresponding full paths according to the folder you want to save, starting from the root - the home `~` character at the beginning of the path should work just as fine.

For Windows make sure you either use the forward slash (should work just fine) or the double backslash not to have JSON interpret it as an escape sequence.

If you don't need a field remember the warning about invalid JSON commas, so removing a couple of fields would end up in a file like this, notice the lack of any comma after the value of the last field:

```
{
  "WorldOverridePath": "D:\\MyCVWorlds",
  "WorldBackupOverridePath": "D:\\MyCVBackups"
}
```

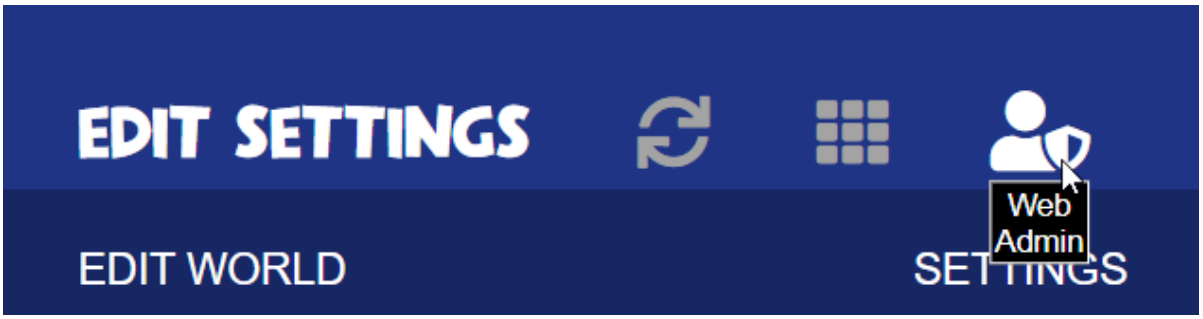
WebAdmin

What's the WebAdmin?

The WebAdmin is a set of HTML pages served by the CV Dedicated Server while a world is running, only accessible from the same computer that is running the Server itself.

It provides full owner privileges (even if your Steam ID is not marked as Owner in the world settings) plus a load of additional tools to administer the world.

If the world is run by the same computer as the client, you can access the WebAdmin from this button in the World Settings page while in that world:



Main Pages

The exact URL of each page depends on the GamePort in the World Config. Here we'll assume the default port `26900`, which results in the WebAdmin using port `26902`.

Admin Home page

http://localhost:26902/admin/admin.html

This page shows a quick recap of the world run by the server, including the world name, screenshot, world size and map image size.

More widgets / links will be added to this page over time.

World Config page

http://localhost:26902/admin/worldedit-admin.html

Allows altering all the world configuration with the same form available in-game. All settings will be applied on the fly (exception made for some settings which require restarting the server, such as the GamePort.

Some settings can't be changed while the world is running, such as the Owner Steam ID or the Private World setting. In order to change these settings you need to stop the server and alter them from the config_world.json file in the corresponding world folder.

Players page

http://localhost:26902/admin/players.html

Lists all Players of the world with more details compared to what can be seen from the in-game Playerlist.

Also includes an Export button at the bottom of the page in case you need to handle this data somewhere else.

Every record includes a Links column:

- **Manage**: allows promoting / demoting / banning / managing commands just like the in-game Playerlist
- **Mail**: allows seeing the Mailbox of that player exactly as they see it in-game
- **Pets**: this is a filtered version of the next Entities link, allows seeing all the pets belonging to this player, including their coordinates. The Map has a tool to show all pets belonging to a player as well.
- **Entities**: lists all entities belonging to a player - this includes teleporters, pets, chests, lights, switches and so forth, anything that isn't a pure inert block in Creativerse most likely has an Entity associated to it, to provide interaction and store additional information.

The Pets and Entities pages include distance filtering and an Export button.

The color and sprite associated to each player are assigned automatically and are there just for the sake of differentiating claims in the Map, no other purpose.

Claims page

http://localhost:26902/admin/claims.html

Lists all claims of the world, including their coordinates and permissions, plus additional filters and sorting functions (say, to check the most recent claims). Allows exporting the visible data but doesn't currently allow performing any action on the claims itself.

If you're up for some nitty gritty data handling you can delete or reassign individual claims from the [TODO database].

Map page

http://localhost:26902/admin/map.html

This is the most complex tool added to the WebAdmin, the interface is still quite a bit clunky but we'll improve how it looks over time.

Interface Splitters

This map interface has two splitters: one separates the main controls (top-right) from the player list (bottom-right), the other separates these two from the map viewport (left).

You can drag around the splitter bars to resize the sections, doubleclick the bars to set the split ratio to 50/50, and shift-click to change the splitter orientation between horizontal and vertical.

Map area

You can click and drag the map image around freely and you can use the mousewheel to zoom in and out.

The mouse needs to be over the map image for the zoom feature to work at all.

If you drag the map outside of the viewport just doubleclick in the viewport itself and the map will be re-centered.

The Settings page allows customizing various parts of this Map.

Map Controls

You can change the opacity of the map image, claims and the two main grids (claims grid and areas grid).

In this section you can also set a minimum distance to check whether someone has claimed too close to another player. The claims failing the distance check will be highlighted on the map.

Clicking the Free Land button will highlight all the free land claims which would pass such a distance check.

Player list options

Works the same as the controls in the Players page, but it will affect the reduced version in the bottom-right section of the map page.

Display pets

Just a player name search box and a button to find all pets belonging to a player anywhere on the map. If any pet is found, you'll see a small dot on the map which you can hover to see which type of pet it is and its coordinates.

Tools page

http://localhost:26902/admin/tools.html

This page contains link to various alpha features:

- **Quests**: allows editing the quests for the world you're running - if you need to test the behavior of the quests you can run `/quests resetall` in the chat to get rid of any past quest you may have already completed.
- **Reference**: allows seeing plenty of details about all the items / blocks in Creativerse, even stuff which may not be active. Interface heavily WIP.
- **Mail Reports**: recap of any mailbox messages that could have been reported by players.
- **Access Requests**: same list you could access from the in-world "User with shield" icon at the top of the World Setttings page
- **Loggers**: allows changing the logging levels for various loggers of the server, changes will only affect the logging for the current session, when the server will be restarted, the logging levels will be set back to their default values.
- **Network Stats**: allows seeing various stats of the running server, also allows recording a snapshot of such traffic to be sent over to Support in case of need.
- **'islands-simplex' template generator**: just what it reads - can't use / apply those templates right from there though, you'll need to export them and put them in the right spot to be seen by the server, more info in [TODO islands-simplex template generator]

Backups page

http://localhost:26902/admin/backups.html

Allows seing the settings and the backups you have for that specific world. Issuing a restore will set the server up for the rollback and will shut it down, but the server will not start back up again on its own, you'll have to start it yourself (either from the CV Dedicated Server or by just launching the world again from the Local tab.

Settings page

http://localhost:26902/admin/settings.html

Mainly settings for the Map page and for the overall behavior of the WebAdmin lists.

Steam Cloud Manual Setup

IMPORTANT: putting your worlds in the Steam Cloud folder may result in data loss in case of synchronization problems and in case you run out of space. **You follow these instructions at your own risk, make sure you perform regular backups and never rely only on the Steam Cloud saving system.**

In order to minimize the risks of data loss you need to fully understand how this system works.

Do not perform any operation while you read the following instructions, first read them and then follow the checklists at the bottom of this section, making sure you perform the steps exactly in the order they are provided.

Steam will sync your Cloud data before launching Creativerse and after closing it, this is important because any operation performed on the Steam Cloud data folder while the game is closed may go lost.

Creativerse world folders may become very large, the database in particular could become several MB large depending on the amount of players and blueprints that you use in such a world, over time the database could grow even past the 1GB mark, this is important because the space you have available on the Steam Cloud for Creativerse is limited, you can check the available space from the game properties, accessible right clicking on Creativerse in the Steam library.

The above is also important because the database file is a single file and Steam will need to copy that entire file over to the Cloud every time that file changes.

This means that if you have a 500MB world database and you make **any** changes to it (say, you just enter the world and change your character position), Steam will have to copy all of the 500MB over to the Cloud - this may require a substantial amount of time depending on your connection speed and may increase the chances of the Cloud synchronization failing to complete successfully.

Steam Cloud folder on Windows:

`%appdata%\..\LocalLow\PlayfulCorp\Creativerse\Steam`

That's a shortcut to the actual position, which will vary depending on your username on Windows.

Assuming that your username on windows is "your_username", the actual path will be something like this:

`C:\Users\your_username\AppData\LocalLow\PlayfulCorp\Creativerse\Steam`

In order to have the world folders stored in this position you need to put the information in the `server.json` file, which goes in this folder:

`%localappdata%\PlayfulCorp\CreativerseServer`

As above, that's just a shortcut to the actual position, which would look something like this:

`C:\Users\your_username\AppData\Local\PlayfulCorp\CreativerseServer`

Inside of the `server.json` file you need to specify the position of the world folders.

Assume you want to have your worlds in a "worlds" subfolder of the Steam Cloud folder, you need the `server.json` file to have a content like this:

```
{
	"WorldOverridePath": "C:/Users/your_username/AppData/LocalLow/PlayfulCorp/Creativerse/Steam/worlds"
}
```

The above forward slashes will work just fine, if you want to use backslashes you need to double them like this:

```
{
	"WorldOverridePath": "C:\\Users\\your_username\\AppData\\LocalLow\\PlayfulCorp\\Creativerse\\Steam\\worlds"
}
```

Steam Cloud folder on Linux:

`~/.steam/steam/steamapps/compatdata/280790/pfx/drive_c/users/steamuser/AppData/LocalLow/PlayfulCorp/Creativerse/Steam/`

The above is a shortcut to the actual folder which will depend on your username on Linux, assuming your username on Linux is "your_username", the actual path will be something like this:

`/home/your_username/.steam/steam/steamapps/compatdata/280790/pfx/drive_c/users/steamuser/AppData/LocalLow/PlayfulCorp/Creativerse/Steam/`

Important: the `steamuser` text does not depend on anything else, it will **always** be exactly `steamuser` and you shouldn't change it.

In order to have the world folders stored in this position you need to put the information in the server.json file, which goes in this folder:

`~/.steam/steam/steamapps/compatdata/280790/pfx/drive_c/users/steamuser/AppData/Local/PlayfulCorp/CreativerseServer`

As above, that's just a shortcut to the actual position, which would look something like this:

`/home/your_username/.steam/steam/steamapps/compatdata/280790/pfx/drive_c/users/steamuser/AppData/Local/PlayfulCorp/CreativerseServer`

Inside of the `server.json` file you need to specify the position of the world folders.

Assume you want to have your worlds in a "worlds" subfolder of the Steam Cloud folder, you need the `server.json` file to have a content like this:

```
{
	"WorldOverridePath": "C:/Users/steamuser/AppData/LocalLow/PlayfulCorp/Creativerse/Steam/worlds"
}
```

Pay attention that on Linux this path will be exactly like that with `steamuser` and won't change depending on your Steam username or your Linux username. This is because Creativerse on Linux runs via Proton, which in turn "fakes" a Windows filesystem which will always run with `steamuser` as Windows username.

Steam Cloud Checklists

First run checklist

1. while Creativerse is closed find the position where the `server.json` file goes
2. if the `server.json` file is there, edit it according to the information above
3. if the `server.json` file does not exist, create it and fill it according to the information above
4. launch Creativerse
5. either create a new world from the game or copy the world folders in the "worlds" folder inside of the Steam Cloud folder according to the information above
6. launch the world / play as you normally would
7. do NOT quit the game from the ESC screen while you are in a world, leave the world first
8. after leaving the world give the game a minute to complete the shutdown of the world behind the scenes
9. quit the game, Steam should now sync the Cloud data automatically
10. make sure Steam reports the Cloud Status for Creativerse as "Up to date"

Checklist from another device

(after you have already successfully put a world in the Cloud folder from the first device):

1. while Creativerse is closed find the position where the `server.json` file goes
2. if the `server.json` file is there, edit it according to the information above
3. if the `server.json` file does not exist, create it and fill it according to the information above
4. launch Steam and verify that the Cloud Status for Creativerse is reported as "Up to date"

5. open the Steam Cloud folder and verify that it contains the "worlds" subfolder, just to doublecheck that all really looks fine
6. launch Creativerse
7. the world you have put in the Cloud from the first device should show up in the Play > Local tab
8. launch the world / play as you normally would
9. do NOT quit the game from the ESC screen while you are in a world, leave the world first
10. after leaving the world give the game a minute to complete the shutdown of the world behind the scenes
11. quit the game

Normal playing checklist:

(once all the above is done and all seems good)

1. launch Steam and verify that the Cloud Status for Creativerse is reported as "Up to date"
2. launch Creativerse
3. launch the world / play as you normally would
4. do NOT quit the game from the ESC screen while you are in a world, leave the world first
5. after leaving the world give the game a minute to complete the shutdown of the world behind the scenes
6. quit the game

Technical Blueprint Details

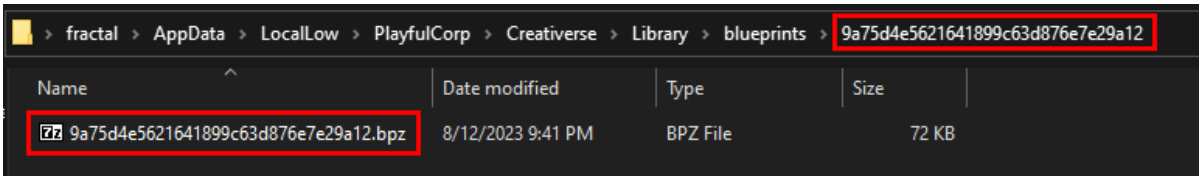
When you capture a blueprint in Creativerse the game stores different copies of the same blueprint in different spots and with different identifiers.

This section explains each operation the game performs in case you need to manage the files manually for whatever reason.

The moment you capture a blueprint the first thing the game does is putting a copy of such blueprint in this folder of the caches:

```
%appdata%\..\LocalLow\PlayfulCorp\Creativerse\Library\blueprints
```

For example on my computer (since my account is named "fractal" in this case), it would be something like this:

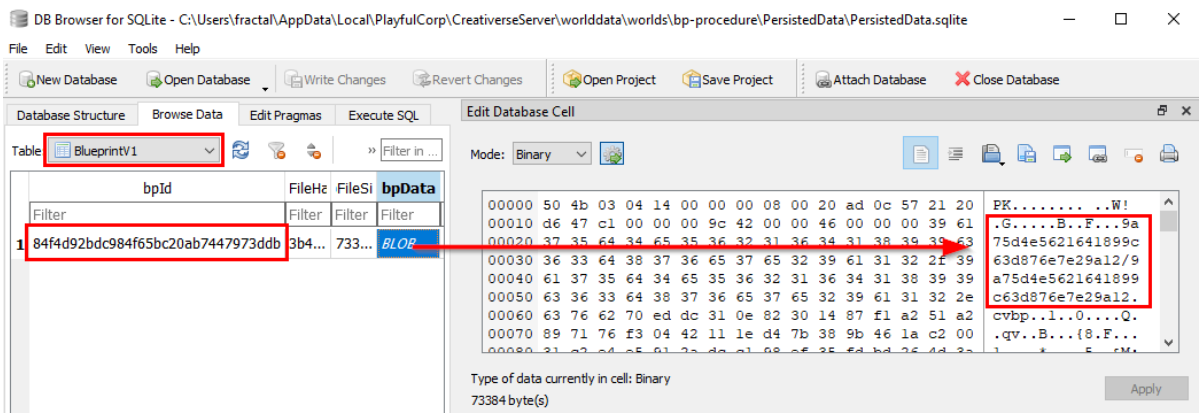


Notice the folder name and .bpz file name are exactly the same (9a75d4e5621641899c63d876e7e29a12 in this case) - this information will matter later on if you care.

Important: This copy is only stored in this folder on this computer, if you were to delete the world where you captured the blueprint _and_ you also deleted the above file without publishing the blueprint on the Steam Workshop, the blueprint would go completely lost. The same goes if you were to delete all instances of any cornerstones you may have in any world _and_ also deleted the above file.

In addition to the above, since you captured the blueprint in a world and the game gives you a cornerstone right away at the end of the capture, the world itself would store a _different_ copy, with a different ID.

The actual blueprint data would go into the PersistedData.sqlite world database, in the BlueprintV1 table, stored inside of the bpData column as a BLOB (Binary Large OBject, really just a file stored in the database):

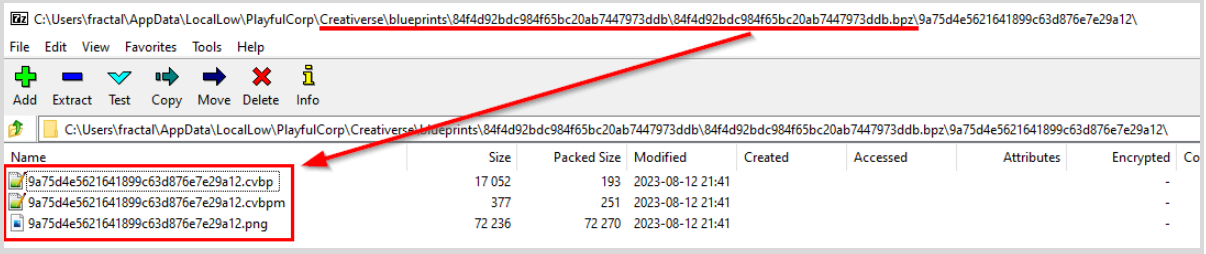


Pay attention at how the blueprint ID, for the world, isn't really 9a75d4e5621641899c63d876e7e29a12 but 84f4d92bdc984f65bc20ab7447973ddb

The "original" ID that the blueprint has been captured with can still be seen in the BLOB data (the box on the right which shows a preview of the file contents).

In addition to the above, the game will also store a separate copy in the caches folder, this time in this other subfolder (pay attention that this "blueprints" folder is _not_ inside of the Library folder):

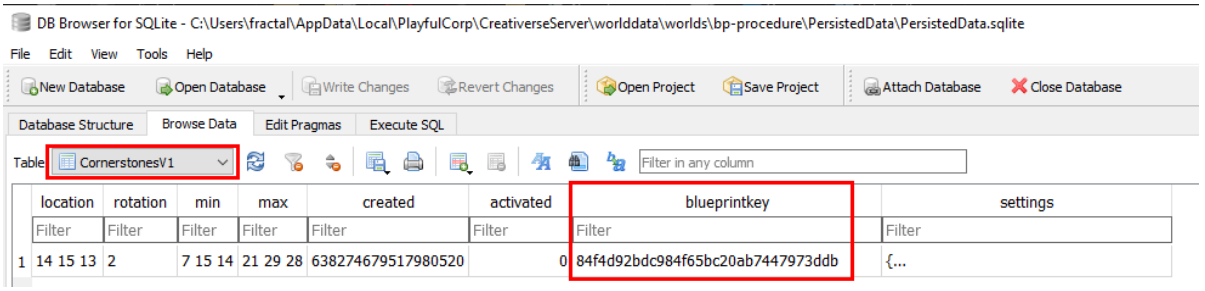
```
%appdata%\..\LocalLow\PlayfulCorp\Creativerse\blueprints
```



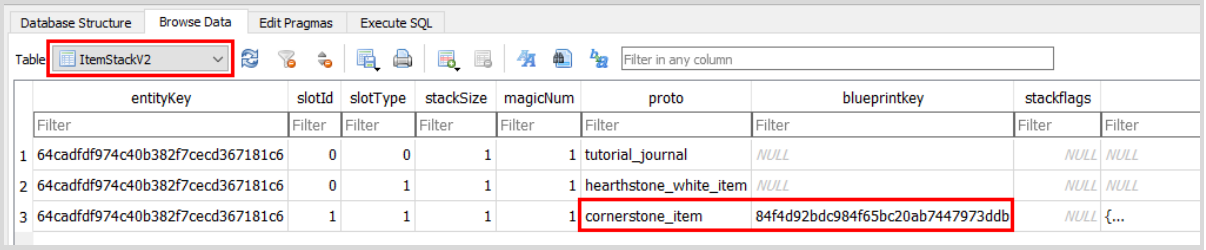
Notice how the folder / file names in this case use the ID 84f4d92bdc984f65bc20ab7447973ddb, but the actual file contents will use the ID 9a75d4e5621641899c63d876e7e29a12

The world will not keep that file in the database indefinitely: it will regularly check whether there is any cornerstone, either placed in the world, or in a chest, or in the inventory of a player - if the world doesn't find any reference to that specific blueprint, the world itself will "forget" that blueprint and there will be no trace in the database.

When the cornerstone is placed in the world it will be referenced by EntityV1 table (records with "proto" column containing "cornerstone"), when it's activated it will be referenced also by the CornerstonesV1 tableas well:



When the cornerstone is in a player / chest inventory it will be referenced by the ItemStackV2 table:



Notice again how the world uses its own reference ID (84f4d92bdc984f65bc20ab7447973ddb) and not the one the game created when the blueprint has been captured (9a75d4e5621641899c63d876e7e29a12)

The game does not perform any explicit backups for the blueprint files stored in the game caches, and the cornerstones you may have in a world may go lost for various reasons (not least bugs) so the best way not to lose a build / blueprint is:

- Making sure the original build is still there in a world somewhere, a world of which you have backups
- Publishing the blueprint on the Steam workshop (you can publish the blueprint and immediately set it as private from the workshop itself, outside of the game, if you don't want others to see your own blueprints)