

Fuji Manual

v1.5.0

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Chapter 1

Concept

1.1 Configuration File

1.1.1 Definition

All files inside `config/fuji` directory are named `configuration file`

1.1.2 Types

Note: The types of configuration files

1. Control File A `control file` is used to control behaviours.

1.1. Main-Control File The **main-control file** refers to the `config/fuji/config.json` file, which is used to enable/disable a module.

1.2. Module-Control File Some modules will have their own control file, which is used to control the behaviour of the module.

2. User-Data File User-data files are used to store the data generated by the user.

1.2 Module

1.2.1 Definition

A module is used to provide a specific purpose.

Example: The purpose of modules

1. **ChatModule** provides chat-format customization.
2. **TpaModule** provides `/tpa` command.

1.2.2 Properties

The properties of a module are as follows:

1. **Can be disabled** You can disable a module completely in `main-control` file by setting the value of its `enable` key to `false`.
2. **Can work standalone** The code of a module is self-contained, there is no reference to other modules.

1.2.3 Module Path

A module is identified by a unique module path.

Example: What a module-path looks like?

The module path of the module `tpa` is `tpa`.
The module path of the module `history` whose parent module is `chat`, is `chat.history`.
You will see a list of **enabled modules** identified by their **module path** at the server-startup process.

A module can have sub-module.

The relationship between **parent-module** and **sub-module** is relative, and there is nothing special about **sub-module**.

1.2.4 How to enable/disable a module?

You can enable/disable a module in `config/fuji/config.json` by setting the value of its `enable` key to `true/false`. A module will be enabled if the following conditions are met:

1. The required dependency mods are installed.
2. Its parent-module is enabled.
3. The value of its `enable` key is set to `true`.

Example: How to enable a sub-module?

To make the module `chat.display` enabled, you need to enable `chat` module first.

1.3 Job

1.3.1 Definition

A job is some things will be done repeatedly.

1.3.2 Cron Expression as Trigger Rule

A language named cron language is used to define when a job should be triggered.

Tip: Don't write cron expression by hand. Use generator!

A cron expression looks like `0 * * ? * *`, which means trigger the job every minute.

You can use the generator to generate a cron expression: <https://www.freeformatter.com/cron-expression-generator-quartz.html>

1.4 Regex

1.4.1 Definition

Regex is a language used to define the pattern of strings.

1.4.2 Reference

1. <https://regexr.com/>
2. <https://regex101.com/>

Chapter 2

Permission

2.1 Definition

A **permission** is used to decide whether a **player** can do something or not.

2.2 Types

To make the discussion clearer, we define the types of **permission** as follows:

1. **level permission** A permission level is a non-negative number used in vanilla minecraft. The higher number means the higher authority.
2. **string permission** Usually, a **string permission** is introduced by a **permission plugin**, such as luckperms.

2.3 What is the permission system used by fuji?

2.3.1 Explanation

Fuji use the mojang's vanilla permission system, which is based on level permission.

As a convention, most of the commands registered by fuji, requires level permission to be 0 to use. Only a few of the commands require the level permission to be 4 to use.

2.3.2 Set a string permission for a command

By default, fuji only use the level permission as the requirement of a command. However, if you want to use string permission for a command, you can use command permission module, which is used to override the requirement of an existing command.

Example: Allow players to use /seed command

The command `/seed` provided by mojang requires level permission to be 3 to use. If you want to allow players to use `/seed` command, but you don't want to grant op for them. Then in this situation, you can grant the string permission for them: `/lp group default permission set fuji.permission.seed true`, which means that: set the requirement of command `/seed` to string permission `fuji.permission.seed`.

Example: Dis-allow players to use /list command

The command `/list` provided by mojang required level permission to be 0 to use. If you want to dis-allow players to use `/list` command, but because this command requires no string permission to use, so it's impossible to ban it via luckperms. In this situation, you can grant a string permission: `/lp group default permission set fuji.permission.list false` for them, which means that: set the requirement of command `/list` to string permission `fuji.permission.list`.

Example: Unset the override of requirement of the command

To undo the operation in the first example, just issue `/lp group default permission unset fuji.permission.seed`

2.4 Reference

1. https://minecraft.fandom.com/wiki/Permission_level

Chapter 3

Meta

3.1 Definition

A `meta` is a `key-value` pair.

Note:

Note that `meta` is introduced by `luckperms` mod, there is no `meta` in vanilla minecraft.

3.2 Example

Example: Set a meta for a group.

The `home` module supports the meta `fuji.home.hone_limit`, which controls how many homes a player can create. To set the max homes limits to 3: `/lp group default meta set fuji.home.hone_limit 3`

Example: Query all metas for a group.

```
/lp group default info
```


Chapter 4

Configuration

4.1 Main-Control File

4.1.1 Configuration

common The common options inside `config/fuji/config.json` will influence all modules.

quartz Fuji use quartz library as scheduler, all the **Job** are managed by quartz. Quartz library use a language called **cron language** to define when to trigger a job.

logger_level The logger level for quartz. The logger level from high to low are: OFF, FATAL, ERROR, WARN, INFO, DEBUG, TRACE, ALL.

Example: Enable all logs for quartz

Set the value to **ALL** to display all the messages from quartz. It's recommended to set at least **WARN** level, to avoid **console spam**.

backup Fuji will back up the `config/fuji` directory automatically before it loads any module.

max_slots How many backup should we keep?

skip The list of **path resolver** to skip in backup.
Insert **head** means skip the folder `config/fuji/head`.

language

default_language The default language to use.

Tip: Enable multi-language support for fuji

See [language](#)

4.2 Module-Control File

You can read more about `module-control` file for each module in [Module](#)

Chapter 5

Module

5.1 config

5.1.1 Purpose

This module provides the root command `/fuji`, which includes some operations on fuji itself.

5.1.2 Command

5.1.2.1 `/fuji reload`

Reload all configuration files and all modules.

Note: Module itself can't be hot reloaded

After you `enable` or `disable` a module, you must `restart` your server.

5.2 language

5.2.1 Purpose

This module provides client-side multi-language support.

Note: What is client-side language?

When the client joins a server, it will send its client options, including the client-side language value. The server can send messages in language used by the client later.

5.2.2 Feature

1. **Client-Side Respect** The client-side language will be respected if possible.
2. **Lazy-load** Only load the necessary language into the memory.

5.2.3 Difference

Disabled: All the players use the `default_language`.

Enabled: Fuji will **try** to respect the player's client-side language, if the server-side supports.

5.3 placeholder

5.3.1 Purpose

This module provides more `placeholder` for `Text Placeholder API` mod.

5.3.2 Placeholder

1. `%fuji:player_mined%` sum of mined blocks of a player
2. `%fuji:server_mined%` sum of mined blocks of a server
3. `%fuji:player_placed%` sum of placed blocks of a player
4. `%fuji:server_placed%` sum of placed blocks of a server
5. `%fuji:player_killed%` sum of killed entities of a player
6. `%fuji:server_killed%` sum of killed entities of a server
7. `%fuji:player_moved%` sum of moved distance of a player
8. `%fuji:server_moved%` sum of moved distance of a server
9. `%fuji:player_playtime%` sum of playtime of a player
10. `%fuji:server_playtime%` sum of playtime of a server
11. `%fuji:health_bar%` the health bar of a player
12. `%fuji:rotate hello%` rotate the string `hello`
13. `%fuji:has_permission%` check luckperms permission
14. `%fuji:has_meta%` get luckperms meta
15. `%fuji:random_player%` get a random online player
16. `%fuji:random 1 5%` get a random number from 1 to 5
17. `%fuji:escape%` escape a placeholder form the parser.

An optional number argument is used as the levels to escape.

18. `%fuji:date%` get current date.

An optional string argument is used to set the **date formatter**, for example, `%fuji:date HH:MM%`.

See also: <https://docs.oracle.com/javase/8/docs/api/java/text/SimpleDateFormat.html>

Tip: Use placeholder in language file

It's allowed to write placeholders in language file.

Note: Some other mods that provide more placeholders

<https://placeholders.pb4.eu/user/mod-placeholders/>

5.4 tpa

5.4.1 Purpose

This module provides teleport request for players.

5.4.2 Command

5.4.2.1 /tpa

5.4.2.2 /tpahere

5.4.2.3 /tpaaccept

5.4.2.4 /tpadeny

5.4.2.5 /tpacancel

5.4.3 Configuration

timeout Tpa request expiration duration.unit is second

5.5 back

5.5.1 Purpose

This module allows player to teleport back to **last teleport point** or **death point**.

5.5.2 Command

5.5.2.1 /back

5.5.3 Configuration

ignore_distance If the player's teleportation destination is close enough, we ignore this teleportation.

5.6 home

5.6.1 Purpose

This module allows players to create their home.

5.6.2 Command

5.6.2.1 /home

5.6.3 Meta

1. **fuji.home.home_limit** The home number per player limit.

5.7 pvp

5.7.1 Purpose

This module provide pvp state toggle.

5.7.2 Command

5.7.2.1 /pvp

5.8 afk

5.8.1 Purpose

This module provides afk detection, afk event, afk name customization and afk effects.

5.8.2 Command

5.8.2.1 /afk

5.8.3 Configuration

format The **tab list name** format when a player is afk

afk_checker

cron The cron to define how the afk_checker is triggered.

afk_event Execute commands on afk events.

Example: Kick a player if he enters afk state

```
"on_enter_afk": [  
  "send-broadcast <gold>Player %player:name% is now afk",  
  "kick %player:name% You are kicked beacause of afk."  
]
```

event Afk effects are applied if a player enters afk state.

invulnerable Immune to all damage?

targetable Can be targeted by a hostile entity?

moveable Can be moved if in afk state?

5.9 chat

5.9.1 Purpose

This module provides chat system customization.

5.9.2 Feature

1. You can create your own `regex transformer` to replace `chat message` sent by players.
2. You can insert any `placeholder` like `%world:name%`
3. You can insert player's prefix and suffix. Just insert `%fuji:player_prefix%` and `%fuji:player_suffix%`.
4. You can insert `"item"`, `"inv"` and `"ender"` to display your item, inventory and ender-chest.
5. You can insert `"Steve"` to mention another player named Steve.
6. You can insert `"pos"` to show the position.
7. You can use `markdown language` to define simple format.
8. You can use `mini-message language` to define complex format.
9. Besides the `server chat format`, each player can also set their per-player chat format.
10. This module doesn't **cancel** the vanilla chat events, so it can work with other chat related mods.

Note: Set prefix and suffix for players

Luckperms is required to set `prefix` and `suffix`.

After you installed `luckperms` mod, just issue `/lp group default meta setprefix <yellow>[awesome]` to assign prefix.

Don't forget to change the format in chat module, and issue `/fuji reload`

Tip: Write complex style using mini-language

You can use `mini-language` to write complex text.

See more:

1. <https://docs.advntr.dev/minimessage/format.html>
2. <https://placeholders.pb4.eu/user/quicktext>

5.9.3 Command

5.9.3.1 /chat

5.9.4 Placeholder

1. `%fuji:pos%` player current position
2. `%fuji:player_prefix%` player prefix
3. `%fuji:player_suffix%` player suffix

5.9.5 Configuration

format The server chat format for all players.

rewrite The `regex` language list used to **rewrite** the player chat message.

You can use regex language to transform player's chat input (only chat message, no command usage).

mention_player If you insert **Steve** in chat message, then the player named Steve will get audio mention.

sound The type of **sound** used to notify the mentioned player.

Tip: Query all identifiers of sound

```
/playsound ...
```

volume

pitch

repeat_count The sound repeat count.

interval_ms The interval between each repeat.

spy Log chat information into server-console.

5.9.6 Sub-Module

5.9.6.1 display

5.9.6.1.1 Placeholder

1. `%fuji:item%` display player's main-hand item.
2. `%fuji:inv%` display player's inventory.
3. `%fuji:ender%` display player's ender-chest.

5.9.6.1.2 Configuration

expiration_duration_s For each display data, how long should we save in the memory. Note that if a player shares its inventory items, then fuji will save a copy of his inventory data in the memory.

5.9.6.2 history

New joined players can see the historical chat messages.

5.9.6.2.1 Configuration

buffer_size How many chat messages should we save, so that we can send for a new-joined player.

5.9.7 Reference

1. [Text Placeholder API - default placeholders](#)
2. [Luckperms - prefix, suffix and meta](#)

5.10 motd

5.10.1 Purpose

This module provides motd customization.

5.11 nametag

5.11.1 Purpose

This module provides nametag customization.

5.11.2 Configuration

update_cron The cron used for the job to **update** the properties of **display entity**.

style Define the style for the nametag **display entity**.

render Define the nametag render behaviour.

Note: The explanation of each field in style and render

You can refer to the minecraft wiki about **display entity**: <https://minecraft.wiki/w/Display>

5.11.3 Example

Example: Set background to blue color

```
"background": -16776961
```

Example: Set half transparency

```
"text_opacity": 128
```

Example: Scale the size of text into double

```
"scale": {  
  "x": 2.0,  
  "y": 2.0,  
  "z": 2.0  
},
```

5.11.4 Reference

1. <https://minecraft.wiki/w/Display>

5.12 tab_list

5.12.1 Purpose

This module provides tab list customization.

5.12.2 Configuration

update_cron The cron used for the job to update the tab list.

style The style for tab list.

5.12.3 Sub-Module

5.12.3.1 sort

5.12.3.1.1 Purpose

If enable this module, the `player names` in `tab_list` will be sorted by `weight`.

The default weight is 0, the range of weight is [0, 675], which means you can set at most 676 sort groups.

5.12.3.1.2 How it works

The tab list sort method is client-side decided. So the workaround is to send virtual-player entry to the client-side, and hide the real player in client-side's tablist.

In this case, the client-side will find that, all command target selector will display the virtual-player. And you can see the virtual-player in client-side's Player Reporting UI.

Note: The virtaul player has no performamnce issue

The virtual-player is just an entry listed in tab list, when the client ask the server tab list, the server lie with the virtual-player list.

There is not a real player entity in the server side, so no extra performance problem.

The sync method is event-based, and cached, so the performance is good.

5.12.3.1.3 Example

Example: Set a weight in a group

Issue the command `/lp group default meta set fuji.tab_list.sort.weight 1`
After you set a new weight, you should issue `/fuji reload` or re-connect to refresh the tab-list.

5.12.3.1.4 Sub-Module

5.12.3.1.4.1 sync_game_profile

Whether to copy the game profile from real-player to virtual-player.

5.12.3.2 faker

5.12.3.2.1 Purpose

This module is used to send random fake data to client.

5.13 rtp

5.13.1 Purpose

Provides random teleportation.

5.13.2 Feature

1. Per dimension configurable.
2. Ignore fluid blocks, such as water and lava.
3. Ignore powered snow.

5.13.3 Command

5.13.3.1 /rtp

5.13.3.1.1 Argument

1. **--dimension** target dimension

Tip: Improve the performance on rtp

It's highly recommended to pre-gen the world chunks. To gen a new chunk during rtp requires about 2 10 seconds. If a chunk is pre-gen, then it will be fast.

5.13.4 Configuration

setup Teleport setup per dimension. Dimensions that are not in the list will be disabled to rtp.

5.14 works

5.14.1 Purpose

This module provides a bill-board gui for players to show their **works**.

5.14.2 Concept

A **work** is a **teleporation point**.

The types of work are as follows:

1. **Non-Production-Work** the project don't produce any resource (e.g. bone, string, coal).
2. **Production-Work** the project produce some resource.

Note: The main difference between non-production work and production-work

For a production-work, fuji provides the **production sample** to count the **hopper** and **minecart-hopper**

Tip: About the production counter

1. You can use the production counter provided by production work to sample the output.
2. This module works with carpet-fabric's hopper counter. You can use both of them at the same time.
3. The hopper counter provided by this module will not destroy the item.

5.14.3 Command

1. `/works`

5.14.4 Configuration

sample_time_ms For a production-work, how long should we sample it?

sample_distance_limit For a production-work, how large the radius should we considered as the work's production.

sample_counter_top_n For a production-work, we only display the topN output items.

5.15 deathlog

5.15.1 Purpose

This module logs the inventory on player death.

5.15.2 Command

1. `/deathlog`

5.15.3 Example

Example: Query the logs for a player

```
/deathlog view Steve
```

Example: Restore a death log for a player

```
/deathlog restore Steve 0 Steve
```

Tip: The death log index number is clickable

You can click the number to quickly restore the logged inventory to your inventory.

5.16 functional

5.16.1 Purpose

This module allows players to open a virtual-gui for functional-block.

5.16.2 Sub-Module

5.16.2.1 /workbench

5.16.2.2 /enchantment

5.16.2.3 /grindstone

5.16.2.4 /stonecutter

5.16.2.5 /anvil

5.16.2.6 /cartography

5.16.2.7 /enderchest

5.16.2.8 /smithing

5.16.2.9 /loom

5.17 system_message

5.17.1 Purpose

This module provides **system message** customization.

Note: What is system message?

Here are some messages that are system message:

1. player join and leave server message
2. player advancement message
3. player death message
4. player command feedback
5. player whitelist message

Note: Server-side message and Client-side message

It should be noted that, no all messages inside **mojang's official language file** are server-side message. If a message is client-side message, which means that the message is only used in client-side, then the module will have no effects on this message.

Warning: Possible conflicting with StyledChat

If you are using this module with **StyledChat** mod installed, you need to remove the conflicting **language keys** in **key2value** configuration.

See also: <https://github.com/sakurawald/fuji-fabric/issues/65>

5.18 cleaner

5.18.1 Purpose

This module provides the entity cleaner to remove specified entities automatically.

Note: Only use this module to clean some edge-case entity

Since the vanilla minecraft also has a cleaner to remove the item stack in the ground, so it's recommended to only use this module to clean some weak-loading entities, like: the sand item stack ...

5.18.2 Command

5.18.2.1 /cleaner clean

Note: The cleaner will keep silent if cleans nothing

If the cleaner cleans nothing, then it will keep silent.(Which means you will not see any message in console, or in-game chat)

Tip: See what is cleaned in cleaner broadcast.

Hover your mouse on the cleaner broadcast, you can see what has been removed.

5.18.3 Configuration

cron The cron used to define the job to trigger `/cleaner clean`.

key2age The key is translatable key, which you can query in `en_us.json` language file in minecraft 1.21.

The translatable key of entity starts with `entity.minecraft`.

The translatable key of item starts with `item.minecraft` and `block.minecraft`.

The age is the existence time of the entity, the unit of age is game tick, which means $20 \text{ age} = 20 \text{ ticks} = 1 \text{ second}$.

The cleaner will only remove the entities whose translatable key equals key, and age greater equals the defined age, and the entity must not in the ignore list.

Example: Clean the sand-block entity lives longer than 60sec

```
"block.minecraft.sand": 1200
```

ignore Entities match the ignore list will not be cleaned.

ignoreItemEntity Should we ignore all item entity.

ignoreLivingEntity Should we ignore all living entity?

If you want the cleaner to remove monster or animals, you should enable this option.

ignoreNamedEntity Should we ignore named entity.(With name tag, or name changed by anvil.)

ignoreEntityWithVehicle Like entity riding in some other entity, e.g. minecraft, pig or spider

ignoreEntityWithPassengers

ignoreGlowingEntity

ignoreLeashedEntity

Note: The built-in safety rule

The cleaner will **always ignore** the following types:

1. player
2. any block attached entity (e.g. leash_knot)
3. any vehicle entity (e.g. minecart, boat ...)

5.19 command_scheduler

5.19.1 Purpose

This module allows you to define jobs using cron express to run commands.

5.19.2 Command

5.19.2.1 /command-scheduler trigger

Immediately trigger a job.

5.20 command_permission

5.20.1 Purpose

This module provides the customization of **the requirement of all commands**.

5.20.2 How it works

The vanilla minecraft use a command system named brigadier.

All the commands are registered, parsed and executed by brigadier.

In this system, all commands are build into a **tree structure**, that is to say, all commands are a direct or in-direct child of the **root command node**.

Example: What is the path of a specific command node?

For example, the command `/gamemode creative Steve` is composed by 3 command node:

1. **literal command node** = "gamemode"
2. **argument command node** = a gamemode argument
3. **argument command node** = a player argument

We say that the command path of `/gamemode creative Steve`, is ["gamemode", "gamemode", "target"].

Also, each **command node** has its **requirement**, which is a **predicate** to check if the **command source** can use the command node.

Tip: Query all the registered command path

```
/lp group default permission set fuji.permission...
```

5.20.3 Example

Example: Allow everyone to use /op command

```
/lp group default permission set fuji.permission.op true
```

5.21 `command_rewrite`

5.21.1 Purpose

This module allows you to use regex language to rewrite the command line a player issued.

5.22 `command_alias`

5.22.1 Purpose

This module allows you to define command alias, which redirect to the existing command node.

Note: A command node is identified by path

See also: <https://minecraft.fandom.com/wiki/Commands>

5.23 `command_attachment`

5.23.1 Purpose

This module allows you to attach commands into itemstack.

5.23.2 Command

5.23.2.1 `/command-attachment`

Note: The same item-stack shares the-same instance

If you hold stick * 64 in your main-hand, then all the sticks share the same attached commands.

5.23.3 Example

Example: Create a magic-stick which will heal player when click.

Hold a stick item in your main hand.

```
/command-attachment attach-one heal
```

Example: Create a magic-stick giving you diamond when left click (with use limit 3 times) and giving you gold when right click (with use limit 5 times).

Hold a stick item in your main hand.

```
/command-attachment attach-one --maxUseTimes 3 --interactType LEFT give  
%player:name% minecraft:diamond 1  
/command-attachment attach-one --maxUseTimes 5 --interactType RIGHT give  
%player:name% minecraft:gold_ingot 1
```

Example: Query the attached commands in the mainhand item

```
/command-attachment attach-one --maxUseTimes 3 --destroyItem false give  
%player:name% minecraft:apple 1
```

5.24 `command_interactive`

5.24.1 Purpose

This module allows you to write commands in **sign block**.

5.24.2 Example

Example: Basic usage

```
/say hi %player:name%  
line 2 empty  
line 3 empty  
line 4 empty
```

Example: Add a prefix description text

```
prefix /say first  
/say the second  
/say hi %player:name%  
/say the last command
```

Example: Concat commands between lines

```
prefix /say this is  
the first /say and the  
second  
line 4 empty
```

Tip:

1. You need to press shift + right click to edit an interactive sign
2. The command is executed as the player.

5.25 `command_warmup`

5.25.1 Purpose

This module adds a warmup countdown before command usage.

Note: The difference between `command_warmup` and `command_cooldown`

`command_warmup` is before command usage, while `command_cooldown` is after command usage.

5.26 `command_cooldown`

5.26.1 Purpose

This module adds a cooldown countdown after the command usage.

5.27 `command_toolbox`

5.27.1 Purpose

This module provides some simple commands. (misc commands)

5.27.2 Sub-Module

5.27.2.1 `/bed`

5.27.2.2 `/extinguish`

5.27.2.3 `/feed`

5.27.2.4 `/fly`

5.27.2.5 `/god`

5.27.2.6 `/hat`

5.27.2.7 `/sit`

5.27.2.8 `/heal`

5.27.2.9 `/lore`

Example: Set lore for item in mainhand

```
/lore set <rainbow>the first line<newline><bold><green>the second
```

- 5.27.2.10 `/more`
- 5.27.2.11 `/ping`
- 5.27.2.12 `/realname`
- 5.27.2.13 `/nickname`
- 5.27.2.14 `/repair`
- 5.27.2.15 `/reply`
- 5.27.2.16 `/seen`
- 5.27.2.17 `/suicide`
- 5.27.2.18 `/top`
- 5.27.2.19 `/send-message`
- 5.27.2.20 `/send-broadcast`
- 5.27.2.21 `/send-actionbar`
- 5.27.2.22 `/send-title`
- 5.27.2.23 `/send_toast`

Example: Send title to a player

```
/send-title Steve --mainTitle "<rainbow>Hello" --subTitle "<blue>World"  
--fadeInTicks 60 --stayTicks 60 --fadeOutTicks 60
```

Example: Send title to online players

```
/foreach send-title %player:name% --mainTitle "<rainbow>Hello %player:name%"
```

- 5.27.2.24 `/trashcan`
- 5.27.2.25 `/tppos`
- 5.27.2.26 `/warp`
- 5.27.2.27 `/burn`
- 5.27.2.28 `/help_op`
- 5.27.2.29 `/near`
- 5.27.2.30 `/jump`
- 5.27.2.31 `/compass`

5.28 `command_spy`

5.28.1 Purpose

Log command issue into console.

5.29 command_event

5.29.1 Purpose

Execute commands on specific events.

5.29.2 Example

Example: Welcome the new-bie player

```
"on_player_first_joined": {  
  "command_list": [  
    "send-broadcast <light_purple>Welcome new player %player:name% to join  
    ↪ us!",  
    "kit give %player:name% <kit-name>",  
    "run as fake-op %player:name% rtp",  
    "delay 10 spawnpoint %player:name%"  
  ]  
},
```

5.30 world

5.30.1 Purpose

Provides a unified world management.

5.30.2 Command

5.30.2.1 /world

5.30.3 Concept

Example: What is the difference between world, dimension and dimension type?

Well, in the early stage of minecraft, a **world** only support **single-dimension**, which means 1 world only contains 1 dimension.

But now, 1 world supports multi dimension. Sometimes, you will see **world** and **dimension** means the same thing.

But clearer, we say: 1 world can contain 1 or more dimension, and each dimension has its **dimension type**.

Usually, you can say a mod adds extra dimension type and **creates an extra dimension** with that dimension type instead of **creating extra world**.

See also: https://minecraft.wiki/w/Dimension_definition

See also: https://minecraft.wiki/w/Dimension_type

Tip: The dimension and dimension types in vanilla minecraft

In vanilla minecraft, 1 world contains 3 dimensions:

1. minecraft:overworld
2. minecraft:the_nether
3. minecraft:the_end

You can see the dimensions of a world in **world/level.dat** file.

A dimension type is used to create dimensions, the vanilla minecraft has the following dimension type:

1. minecraft:overworld
2. minecraft:overworld_caves
3. minecraft:the_nether
4. minecraft:the_end

The file **server.properties** is used for **the only and default world**.

5.30.4 Configuration

blacklist The dimensions in the blacklist will not be operated by this module. Use blacklist to avoid mis-operation.

5.30.5 Example

Example: Create an extra the_nether dimension

```
/world create my_nether minecraft:the_nether
```

Example: Delete the extra dimension

```
/world delete fuji:my_nether
```

Example: Reset the extra dimension with random seed

```
/world reset fuji:my_nether
```

Tip: Specify a seed for dimension

```
/world create my_nether minecraft:the_nether --seed 1234567890  
/world reset fuji:my_nether --use-the-same-seed true
```

Tip: Make a resource-world that automatically reset every day

You can use command-scheduler module to execute `world reset` command automatically.

5.31 teleport_warmup

5.31.1 Purpose

This module adds a warmup cooldown before player-teleportation.

A teleportation will be interrupted if:

1. the player runs too far.
2. the player gets damage.
3. the player is in combat.

5.31.2 Configuration

warmup_second The second to wait before the teleportation.

interrupt_distance How far should we cancel the teleportation.

dimension Only allowed in the following dimensions.

Warning: Dimensions that created by other mods may have special behaviour

Some other mods will add extra dimension (like, the mod the-bumblezone-fabric). Their dimension portal may work in a different way, so this module may not be compatible with these mods.

In the default options, we only allow this module works in the vanilla minecraft dimensions.

5.32 top_chunks

5.32.1 Purpose

This module compute a **laggy score** for all loaded chunks, and return the topN lagged chunks. Higher score means more lagged.

5.32.2 Command

5.32.2.1 /chunks

5.32.3 Configuration

top The top chunks to show in **/chunks** command

nearest_distance For a chunk, how much the radius used to search the nearest player around the chunk.

hide_location Should we hide the chunk-position for a lagged-chunk? Hide chunk location to avoid grief or privacy purpose.

type2score The dict to define how lagged a type(entity/entity_block) should be.

For example: `this.put("entity.minecraft.zombie", 4);` means that if there are 15 zombies inside a chunk, then the chunk gets score $15 * 4 = 60$.

Any other types not inside the dict use the score defined for type **default**.

5.33 skin

5.33.1 Purpose

This module provides skin management.

5.33.2 Command

5.33.2.1 /skin

5.33.3 Configuration

default_skin The default skin used for player who has no skin set.

random_skins Random skin for fake-player, if you enable the local skin for fake-player.

5.34 world_downloader

5.34.1 Purpose

This module allows a player to download nearby chunks.

5.34.2 Configuration

url_format The url format used to broadcast

port

bytes_per_second_limit Max download speed limit for each connection.

context_cache_size Max download request allowed in the memory at the same time.

5.35 whitelist

5.35.1 Purpose

This module makes the mojang vanilla whitelist system only compares the **username** and **ignore UUD**.

Warning: Only enable this module in offline-mode server

If you are hosting a online-mode server, you will never need to enable this module.

5.36 head

5.36.1 Purpose

This module allows players to buy heads from head-database.

5.36.2 Command

5.36.2.1 /head

5.37 profiler

5.37.1 Purpose

This module shows server health status, such as os, vm, cpu, ram, tps, mspt and gc.

Warning:

Enable this module requires spark mod installed.

5.37.2 Command

5.37.2.1 /profiler

5.38 tester

5.38.1 Purpose

This module is only used for development. If you are a developer, you can register new commands into this module for test-purpose.

5.38.2 Command

5.38.2.1 /tester

Warning:

You should not use this module at your production-environment, because it almost does nothing useful.

5.39 multiplier

5.39.1 Purpose

This module provides some **numeric multiplier**.

5.39.2 Supported Numeric Types

1. **damage** damage to player
2. **experience** experience a player gained

5.39.3 Example

Example: Double the damage from zombie to a player

```
/lp group default meta set fuji.multiplier.damage.minecraft:zombie 2
```

Example: Cancel the fall damage

```
/lp group default meta set fuji.multiplier.damage.minecraft:fall 0
```

Example: Double all damage to a player

```
/lp group default meta set fuji.multiplier.damage.all 2
```

Example: Double all experience a player gained

```
/lp group default meta set fuji.multiplier.experience.all 2
```

Example: Half all damage to a player

```
/lp group default meta set fuji.multiplier.damage.all 0.5
```


5.40 disabler

5.40.1 Purpose

This module provides some **disabler** to disable checkers inside **vanilla minecraft**.

5.40.2 Sub-Module

5.40.2.1 chat_speed_disabler

Disable **Kicked for spamming**.

5.40.2.2 move_speed_disabler

Disable **moved too quickly** and **vehicle too quickly check**.

Warning: The movement anti-cheat inside vanilla minecraft is bad

Inside the vanilla minecraft server, there is a checker used to check if the player moves correctly. However, this checker usually makes wrong detection, and force setback the player, which makes the client-side gameplay feel lagged.

5.40.2.3 max_player_disabler

Disable the max players limit of the server.

5.41 anti_build

5.41.1 Purpose

This module allows you to ban the interaction with some item/block/entity.

5.41.2 Anti Types

The types supported by this module are as follows:

1. break_block
2. place_block
3. interact_item
4. interact_block
5. interact_entity

Tip: Query identifiers

To query block identifier, issue `/setblock ~~~...`
To query entity identifier, issue `/summon ...`
To query item identifier, issue `/give ...`

5.41.3 Exapmle

Example: Ban TNT

```
add minecraft:tnt into place_block list
```

Example: Ban TNT but allow a specific player to use

```
/lp user <player> permission set fuji.anti_build.place_block.bypass.minecraft:tnt
```

5.42 color

5.42.1 Purpose

This module provides colorize for things.

5.42.2 Sub-Module

5.42.2.1 Sign

5.42.2.2 Anvil

5.43 kit

5.43.1 Purpose

This module allows you to make kits.

5.43.2 Concept

A **kit** is a set of itemstack.

5.43.3 Command

5.43.3.1 /kit

5.44 temp_ban

5.44.1 Purpose

This module provides temp-ban.

5.44.2 Command

5.44.2.1 /temp-ban

5.44.3 Example

Example:

```
/temp-ban player Steve 12h30m15s bad boy
```

5.45 `command_meta`

5.45.1 Purpose

This module provides commands to operate on commands.

5.45.2 Sub-Module

5.45.2.1 `run`

5.45.2.1.1 Purpose

This module provides `/run` command, which can run a command with context.

5.45.2.1.2 Command

5.45.2.1.2.1 `/run`

5.45.2.1.3 Example

Example: Give random diamonds to all online players

```
/run as console give @a minecraft:diamond %fuji:random 8 32%
```

Example: Give all online players random diamonds

```
/run as console foreach give %fuji:escape player:name% minecraft:diamond  
%fuji:escape fuji:random 8 32%
```

Example: Execute a commands as a player

```
/run as player Steve back
```

Example: Execute a commands as fake-op

```
/run as fake-op Steve give %player:name% minecraft:apple 1
```

5.45.2.2 for_each

5.45.2.2.1 Purpose

This module provides /foreach command.

If a command is only targeted for single player, you can use /foreach to apply it for each player.

5.45.2.2.2 Command

5.45.2.2.2.1 /for_each

5.45.2.2.3 Example

Example: Say hello to online players

```
/foreach say hello %player:name%
```

Tip: Escape the placeholder properly

If you use foreach in scheduler module, then you should escape (Write %fuji:escape player:name% instead of %player:name%) the placeholder.

It's because the command-scheduler module will try to parse the placeholder, and you need to escape the placeholder, so that the placeholder can be parsed by /foreach command.

Here is an example about escape the foreach command in scheduler command list: /foreach give %fuji:escape player:name% minecraft:diamond 16

5.45.2.3 chain

5.45.2.3.1 Purpose

A chain command allows you to run another 2 commands, the first is any command, and the second is the chain command.

Note: The return value of a command

In vanilla minecraft, the return value of command, are failed, pass and success.

5.45.2.3.2 Command

5.45.2.3.2.1 /chain

5.45.2.3.3 Example

Example: A nested chain.

```
/chain say 1 chain say 2 chain say 3
```

Example: A breakable chain.

```
/chain bad command here chain say 2
```


5.45.2.4 delay

5.45.2.4.1 Purpose

Delay command allows you to execute a command in specific seconds.

5.45.2.4.2 Command

5.45.2.4.2.1 /delay

5.45.2.4.3 Example

Example: A basic usage

```
/delay 3 say three seconds passed
```

Example: A nested delay

```
/delay 1 delay 2 delay 3 say 6 seconds passed.
```

5.45.2.5 json

5.45.2.5.1 Purpose

Provides a unified json editor.

5.45.2.5.2 Command

5.45.2.5.2.1 /json

5.45.2.5.3 Exaxmple

Example: Read a key

```
/json read "config/fuji/config.json" "$.common.quartz.logger_level"
```

Example: List keys

```
/json read "config/fuji/config.json" "$.modules.keys()
```

Example: Set a key

```
/json write "config/fuji/config.json" "$.common.quartz.logger_level" NULL  
null
```

5.45.2.5.4 Reference

1. <https://goessner.net/articles/JsonPath/>

5.45.2.6 attachment**5.45.2.6.1 Purpose**

Provides a unified attachment facility, which can attach any data to any object.

5.45.2.6.2 Command**5.45.2.6.2.1 /attachment****5.45.2.6.3 Example**

Example: Set a attachment

```
/attachment set news today hello world
```

Example: Get a attachment

```
/attachment get news today
```

5.45.2.7 shell

5.45.2.7.1 Purpose

This module provides `/shell` command, which executes the command line in your host shell.

Danger: This is a dangerous module

This module is a powerful and dangerous module, not recommended to enable it.

5.45.2.7.2 Example

Example: Create a file using placeholder

```
/shell touch %player:name%.dangerous
```

Example: Execute a program in the host os

```
/shell emacs
```

Example: Possible to download a virus from Internet and execute it!

```
/shell ...
```

5.46 gameplay

5.46.1 Sub-Module

5.46.1.1 multi_obsidian_platform

5.46.1.1.1 Purpose

This module makes every **ender portal frame** generates its own **obsidian platform** (Up to 128 in survival-mode).

You can even use creative-mode to build more ender portal frame and more obsidian platform.

Note: All the obsidian platforms are vanilla-respect

All the extra obsidian platforms have the same behaviour as the vanilla one which locates in (100,50,0).

5.46.1.1.2 Configuration

factor The coordination-conversion factor between overworld and the_end. In vanilla minecraft, the factor between overworld and the_nether is 8.

5.46.1.2 carpet**5.46.1.2.1 Sub-Module****5.46.1.2.1.1 fake_player_manager****5.46.1.2.1.1.1 Purpose**

Enable this module requires carpet-fabric mod installed. This module provides some management for fake-player.

5.46.1.2.1.1.2 Command

1. `/player who` query the owner of the fake-player
2. `/player renew` renew all of your fake-players

5.46.1.2.1.1.3 Configuration

caps_limit_rule How many fake-player can each player spawn (in different time)?

The tuple means (day_of_week, minutes_of_the_day, max_fake_player_per_player).

The range of day_of_week is [1,7].

The range of minutes_of_the_day is [0, 1440].

For example: (1, 0, 2) means if the days_of_week ≥ 1 , and minutes_of_the_day ≥ 0 , then the max_fake_player_per_player now is 2.

Besides, you can add multi rules, the rules are checked from up to down.

The first rule that matches current time will be used to decide the max_fake_player_per_player.

You can issue `/player who` to see the owner of the fake-player.

Only the owner can operates the fake-player. (Op can bypass this limit)

renew_duration_ms How long should we renew when a player issue `/player renew` The command `/player renew` allows the player to manually renew all of his fake-player. If a fake-player don't gets renew, then it will expired and get killed. Use-case: to avoid some long-term alive fake-player.

transform_name The rule to transform the name of fake-player. Use-case: add prefix or suffix for fake-player.

use_local_random_skins_for_fake_player Should we use local skin for fake-player? Enable this can prevent fetching skins from mojang official server each time the fake-player is spawned. This is mainly used in some network situation if your network to mojang official server is bad.

5.46.1.2.1.2 better_info

5.46.1.2.1.2.1 Purpose

Add nbt query for /info block command. Add the command /info entity.

Chapter 6

Q&A

6.1 Where is the configuration files?

As a convention, all the files are placed in `config/fuji/` directory.

6.2 What is .json file?

A json file is a text file, whose name normally ends with `.json`.

6.3 How can I edit a configuration file?

To ensure the `readable` and `transparent`, most of the files are saved as `pure text format`. You can open them with a `text editor`.

Tip: Use a modern text editor.

Some files may have a large number of lines, so it's highly recommended to use a `modern` text editor, which can highlight symbols and reveal the structure of the file, such as:

1. `Visual Studio Code`
2. `Visual Studio Code - Web Online Editor`
3. `Vim`
4. `Emacs`
5. `Sublime Text`

6.4 What is .dat file?

The file whose name ends with `.dat` are the `vanilla minecraft NBT format file`. To open such a file, you need to use a `NBT Editor`, such as `NBTExplorer`.

6.5 How to update fuji to a new version?

6.5.1 Backup the data

Back up the `config/fuji` directory.

6.5.2 Test the new version in your test-environment

Put the new version of fuji into `mods/` directory, start the server, and adjust the configuration to what you want.

Warning: Don't test new changes directly in your production-environment

It's highly recommended to setup a test-environment for a network-maintainer, so that you can test and tweak installed mods into what you want, and avoid un-expected situations.

6.5.3 Apply the changes to production-environment

Now, it's ready to apply the changes to your production-environment.

6.6 Fuji conflits with one of my mods.

You can disable the conflicting module. If possible, create an issue at [fuji issue page](#), so that we can solve this later.

6.7 How can I report bugs or suggest new features?

You can create an issue at [fuji issue page](#)

Chapter 7

Transformer

7.1 Command Transformer

The following commands can be transformed:

1. `/blockcycling` = `/give player minecraft:debug_stick`
2. `/blockinfo` = `/data get block`
3. `/blocknbt` = `/data get block`
4. `/entityinfo` = `/data get entity`
5. `/entitynbt` = `/data get entity`
6. `/customrecipe` = **recipe editor**
7. `/exp` = `/experience`
8. `/gm`, `/gms`, `/gms` = `/gamemode`
9. `/findbiome` = `/locate biome`
10. `/tempfly` = `use luckperms temporal permission`
11. `/flyspeed` = `/attribute player minecraft:generic.flying_speed`
12. `/walkspeed` = `/attribute player minecraft:movement_speed`
13. `/maxhealth` = `/attribute player minecraft:generic.max_health`
14. `/groundclean` = `/kill @e[type=...]`
15. `/spawner` = `interact spawner block with spawn egg`
16. `/spawnmob` = `/summon`
17. `/shoot` = `/summon with motion`
18. `/smite`, `/thunder` = `/summon minecraft:lightning_bolt`

19. `/stats, /statsedit` = all stats files are located in `world/stats`
20. `/tree` = use `tree brush` from `world-edit` mod
21. `/unbreakable` = `/enchant player minecraft:unbreaking`
22. `/item_maker` = `/give`
23. `/replaceblock` = `/setblock`
24. `chunks loading/unloading commands` = These commands will not bring performance improvements.
25. `/note` = `/attachment get note`
26. `/...all` = `/foreach ...`
27. `/cuff` = use `anti-build` module with `string` permission
28. `/cheque` = use `command-attachment` module to make magic item

7.2 Command Generator

You can generate complex and powerful commands using:

1. <https://www.digminecraft.com/generators/>
2. <https://minecraft.tools/en/public-gallery.php>

Chapter 8

Development

8.1 Setup the development environment

1. Clone the source:

```
git clone https://github.com/sakurawald/fuji-fabric.git
```

2. Change the working-directory:

```
cd fuji-fabric
```

3. Compile the source:

```
./gradlew build
```

Chapter 9

Suggestion

9.1 Suggestion on server-side mods

9.1.1 Explanation

Here is some mods that existing and recommended to use, which can make your life easier in fabric server-side crafting.

Note that fuji doesn't require these mods installed to work, and some of these mods have the same functionality as fuji.

If you want to taste something different, and if some of the mods provides a better experience than fuji, then you can just disable the module in fuji, and go use it.

Tip: Decide according to your situation

The suggestion is personal, you can make decision according to your preference.

9.1.2 Server-side mode list

1. `skin restorer`
2. `head index`
3. `carpet`
4. `ledger`
5. `styled chat`
6. `styled nickname`
7. `styled sidebar`
8. `styled player list`
9. `universal shop`
10. `image2map`
11. `inv view`
12. `universal graves`
13. `sit`
14. `lithium`
15. `krypton`
16. `luckperms`
17. `spark`
18. `enclosure`
19. `essential commands`
20. `world-edit`
21. `chunky`
22. `tab`
23. `blue map`
24. `mini motd`
25. `husk homes`