

SystemD

The two files below are the merger of other Minecraft SystemD service files I came across on the web and the screen-based method I originally used for running Minecraft instances.

Here's a breakdown of the processes that facilitate automatically loading the Minecraft server instance(s) when the system boots up:

1. The systemd minecraft@ instance specific **service** launches **screen**. (ie: systemctl start minecraft@creative1)
2. **screen** launches the script **start-server-in-screen-systemd** (as instructed by the SystemD service).
3. **start-server-in-screen-systemd** launches "**java fabric-server-launch.jar**" (with a lot of other arguments for optimization)
4. **java** loads fabric-server-launch.jar
5. fabric-server-launch.jar takes care of loading your Minecraft server instance

I chose to use screen a bash script instead of launching java directly from systemd for these two reasons:

1. **screen** allows you to directly interact with the Minecraft server console without needing an rcon application, and its the way I'm used to dealing with server instances.
2. Using a bash script to launch the Minecraft server instance was easier to deal with per-instance customizations. You can facilitate the same thing directly from systemd, I just didn't want to take the time to learn how to do.

Setting up your environment

Below is an example of the files and folders that are needed for this setup.

```
# create minecraft systemd service and socket files
# copy contents of files from contents further down the page
vi /etc/systemd/system/minecraft@.service
vi /etc/systemd/system/minecraft@.socket

# example for server-instance creative1

# required files for server-instance creative1
# copy contents of file from contents further down the page
vi /opt/minecraft/server-instances/creative1/start-server-in-screen-systemd
```

```
# systemctl commands for server-instance creative1
systemctl enable minecraft@creative1.service
systemctl start minecraft@creative1.service
systemctl status minecraft@creative1.service
```

Prep commands

```
MCROOT=/opt/minecraft
mkdir -p $MCROOT/server-instances $MCROOT/tools

# change ownership if desired
chown -R minecraftuser:minecraftuser $MCROOT/server-instances

# git and make mcrcon
cd $MCROOT/tools
git clone https://github.com/Tiiffi/mcrcon.git
cd mcrcon
make
# only install it if you want, otherwise just run the binary from here
# sudo make install

# create server instance folders
MCINSTANCE1=$MCROOT/server-instances/creative1
mkdir -p $MCINSTANCE1
chown -R minecraftuser:minecraftuser $MCINSTANCE1
```

/etc/systemd/system/minecraft@.service

```
[Unit]
Description=Minecraft Server - %i
Wants=network-online.target
After=network-online.target
ConditionPathExists=/opt/minecraft/server-instances/%i

[Service]
WorkingDirectory=/opt/minecraft/server-instances/%i

User=minecraftuser
Group=minecraftuser
```

Sockets=minecraft@%i.socket

StandardInput=socket

StandardOutput=journal

StandardError=journal

PrivateUsers=true

ProtectSystem=full

ProtectHome=true

ProtectKernelTunables=true

ProtectKernelModules=true

ProtectControlGroups=true

NoNewPrivileges=true

WorkingDirectory=/opt/minecraft/server-instances/%i

Type=simple

ExecStart=screen -D -m -S minecraft-%i ./start-server-in-screen-systemd

ExecStop=/bin/sh -c "/bin/echo stop > /opt/minecraft/server-instances/%i/systemd.stdin"

Restart=on-failure

RestartSec=60s

[Install]

WantedBy=multi-user.target

/etc/systemd/system/minecraft@.socket

[Unit]

BindsTo=minecraft@%i.service

[Socket]

ListenFIFO=/opt/minecraft/server-instances/%i/systemd.stdin

Service=minecraft@%i.service

SocketUser=minecraftuser

SocketGroup=minecraftuser

RemoveOnStop=true

SocketMode=0600

/opt/minecraft/server-instances/%i/start-server-in-screen-systemd

The systemd service launches screen and tells it to run this file per instance, which actually runs
SystemD Minecraft@ Service -> Screen -> start-server-in-screen-systemd -> Java -> Fabric ->
Minecraft

```
#!/bin/bash
```

```
# Simple command to start fabric server with diffent RAM options
```

```
#java -Xms4096M -Xmx4096M -jar fabric-server-launch.jar nogui
```

```
#java -Xms6144M -Xmx6144M -jar fabric-server-launch.jar nogui
```

```
# 20211210
```

```
# Added the following line to fix a security bug announced today
```

```
# -Dlog4j2.formatMsgNoLookups=true
```

```
# Launching Minecraft with a specific java binary using Aikar's server flags
```

```
/usr/lib/jvm/java-17-oracle/bin/java -Xms8G -Xmx8G -XX:+UseG1GC -XX:+ParallelRefProcEnabled -
```

```
XX:MaxGCPauseMillis=200 -XX:+UnlockExperimentalVMOptions -XX:+DisableExplicitGC -XX:+AlwaysPreTouch -
```

```
XX:G1NewSizePercent=30 -XX:G1MaxNewSizePercent=40 -XX:G1HeapRegionSize=8M -
```

```
XX:G1ReservePercent=20 -XX:G1HeapWastePercent=5 -XX:G1MixedGCCountTarget=4 -
```

```
XX:InitiatingHeapOccupancyPercent=15 -XX:G1MixedGCLiveThresholdPercent=90 -
```

```
XX:G1RSetUpdatingPauseTimePercent=5 -XX:SurvivorRatio=32 -XX:+PerfDisableSharedMem -
```

```
XX:MaxTenuringThreshold=1 -Dusing.aikars.flags=https://mcflags.emc.gs -Daikars.new.flags=true -jar fabric-  
server-launch.jar nogui
```

#end

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