

Mobycraft – Docker in 8-bit

# Aditya Gupta

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dockercon 16

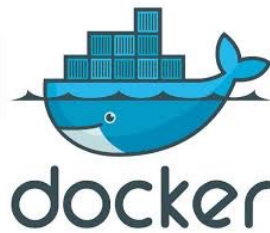
# Before we start...



8



5



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# What does it do?

- **Client-side Docker mod inspired by server-side Dockercraft**
  - Thanks Gaetan and Adrien
- **Manage Docker containers visually using Minecraft**
- **Run Docker commands from the game**
  - Regular commands
  - Convenience commands
- **Add new features that simplify container management**
  - Blocks
  - Items
- **Runs from a Java development environment**
  - Easy to debug, test new features, and contribute

# Visualizing Containers

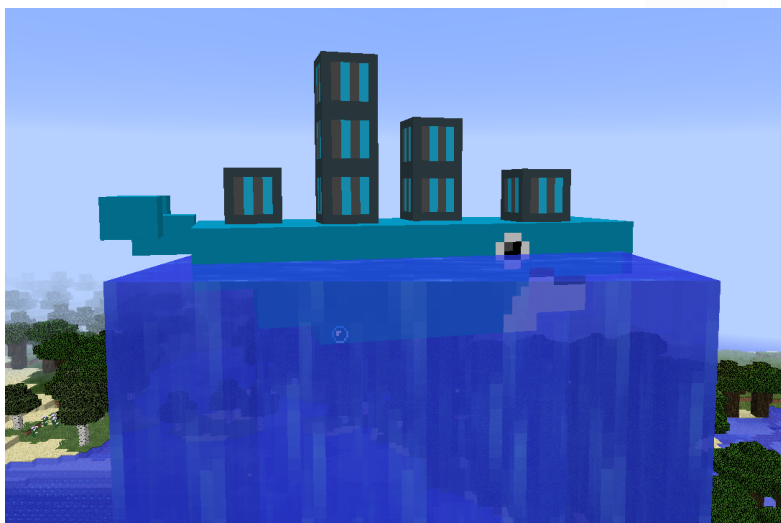
- Each container is a 5x5x7 box with two buttons and two signs
  - Start/stop button
  - Detailed information button
  - Name sign
  - Image sign
- Container look changes based on status
  - Gray for running, red for stopped
- Container Wand for interacting with containers
  - Right click on name sign to remove container
  - Other modes coming soon
- Automatic container building at specified rate



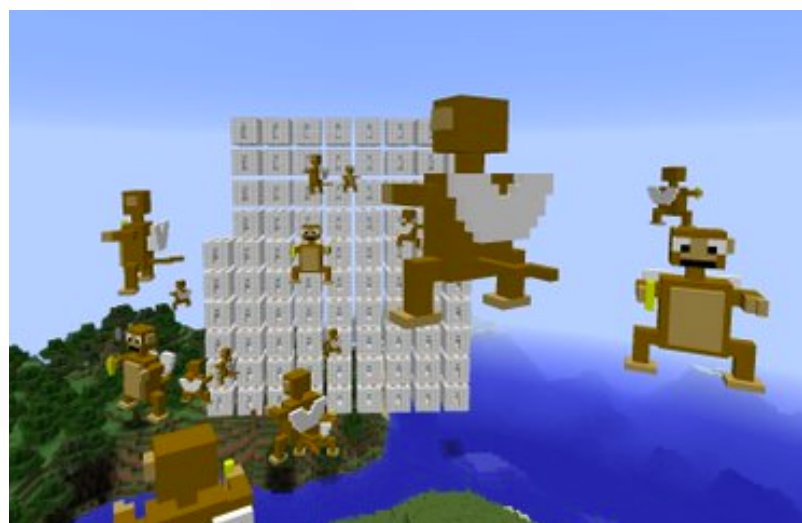
# Docker commands in Minecraft

- **Many common Docker commands**
  - `/docker ps`
  - `/docker run`
  - `/docker images`
- **Convenience commands**
  - `/docker kill_all`
  - `/docker rm_stopped`
  - `/docker heat_map`
- `/docker help` for in-game help about commands

# Fun stuff



Moby the 3D Minecraft whale mascot – custom 3D model and



Netflix's Chaos Monkey



# What I learned from this project

- **Basic Docker terminology**
  - **Container** – An application packaged so it is easy to download and run
  - **Docker client, host, and hub** – Docker CLI (client) uses REST API to talk to the Docker Machine (host), which gets containers and images from the Docker hub
  - **Docker Machine** – A host for containers and the Linux virtual machines they run on
  - **`/docker ps`** – A command that lists the containers on the current Docker machine and information about them (image, ID, status, etc.)
  - **`--help`, [docs.docker.com](https://docs.docker.com), and my dad** – Where you go when you need help with Docker
  - **Docker Swarm** – A bunch of Docker Machines that share the job of container hosting



# What I learned from this project

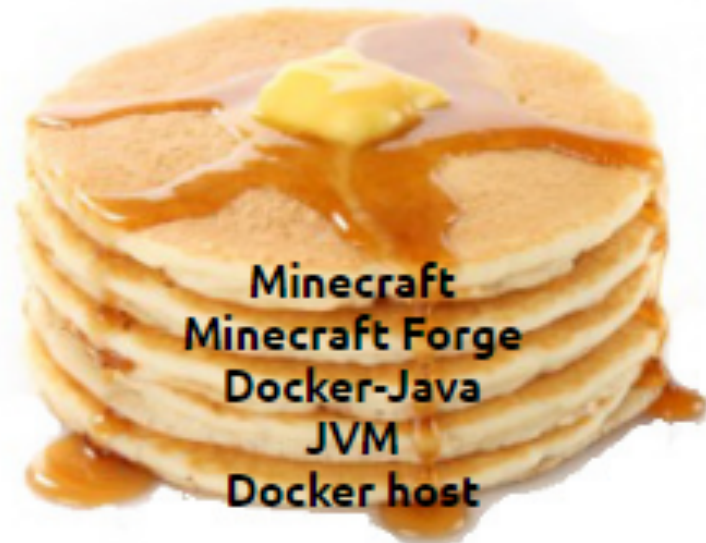
- **Some Java skills**
  - Access modifiers – `public`, `private`, `protected`, etc.
  - `continue`; and `break`; statements
- **Design patterns**
  - DRY – Don't Repeat Yourself
    - e.g. merge two `if` statements with the same conditional statement
- **Shading JARs in Gradle**
- **Asynchronous callbacks**
  - e.g. `StatisticsResultCallback` class

# Why is CLI faster than the Java API?

Command Line Interface



Mobycraft



# Upcoming features

- **Docker Swarm cluster visualization and management (issue #21)**
  - Waiting for Docker-Java to add Swarm support
- **Packaged JAR file for running in release Minecraft (#38)**
  - Only runs well from development environment
- **Show containers from a multi-cloud Docker Swarm cluster (#8)**
- **Add more modes to Container Wand (#53)**
- **Use different Docker APIs (#66)**

# How you can help

Any of the following feedback would be appreciated:

- **Code review**
- **Pull requests**
- **Issues**
- **Testing in your environment**
  - Find bugs and file issues
  - Contribute new features

GitHub repository: [github.com/AdityaGupta1/mobycraft](https://github.com/AdityaGupta1/mobycraft)

Thank you!

