Multiplayer Minecraft in Mere Moments

Using AWS/Docker/REX-Ray to deploy a Minecraft Server in 30 minutes

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Proud Heng
Akira Wong
About Us

• Proud Heng @proud_heng
  • Math-CS Junior @ UCSD
  • Mentor for WHS Robotics
  • Keeps Minecraft on “Peaceful”

• Akira Wong @akiraw95
  • CS Senior @ UCI
  • Knows what FORTRAN is
  • nano-using casual
Minecraft Is HUGE
I want to play Minecraft with my kids and friends!

Need to set up a Minecraft server, but...

What dependencies are there?  What if something needs to be updated?

IT’S COMPLICATED!

How do I configure ports and IP addresses?  How do I make sure it stays online?
Solution: Containers
What’s a Container anyway?

- Isolated app environment, similar to a VM
- More lightweight; scalable
- Portable
What’s a Container anyway?

Automated configuration

Dockerfile
FROM ...
RUN ...
EXPOSE ...
CMD ...

Stateless

store data in container

kill container

...state not retained

start container again…
Statelessness - What was that?

Containers do not retain data between instances

ONE TINY PROBLEM...
How do I make sure my Minecraft server’s data is safe?
Volume Mounts

- My container needs to be **stateful** to store Minecraft server data.
- Mount local directory as volume for container.

Local Machine

~:/minecraft/

Docker Container

/data/

`state retained!`

`kill container run container`
REX-Ray to the rescue

Where should we save our Minecraft server data?

Mount local storage as volume for container!

Instead of local storage…
Mount cloud storage as volume for container!

How?

REX-Ray
Setting up Minecraft servers is easy!

- What dependencies are there?
- What if something needs to be updated?
- How do I configure ports?
- How do I configure IP addresses?
- How do I make sure it stays online?
- How do I make sure my Minecraft server’s data is safe?
• Configure a virtual machine on AWS
• Install Docker and REX-Ray
• Get a Minecraft server running
• Play Minecraft with friends and family
• Upgrade your AWS virtual machine
- Automated application deployment
- Isolated application environment
- https://www.docker.com/what-docker

**Docker**

- Open source volume driver for Docker
- Mounts remote volumes to store application data

**REX-Ray**

- Deploy virtual machines in the cloud
- Persistent storage in the cloud

**AWS EC2/EBS**
Resources & Contact Info

proud.heng@gmail.com
wong.akira95@gmail.com

https://github.com/akiraw95/minecraft-container