CODEXE
AN ONLINE DEVELOPMENT ENVIRONMENT

By Joe Fazzino

WHY?

Installing tools is a bad experience

Limited resources on a local machine

The web is powerful now

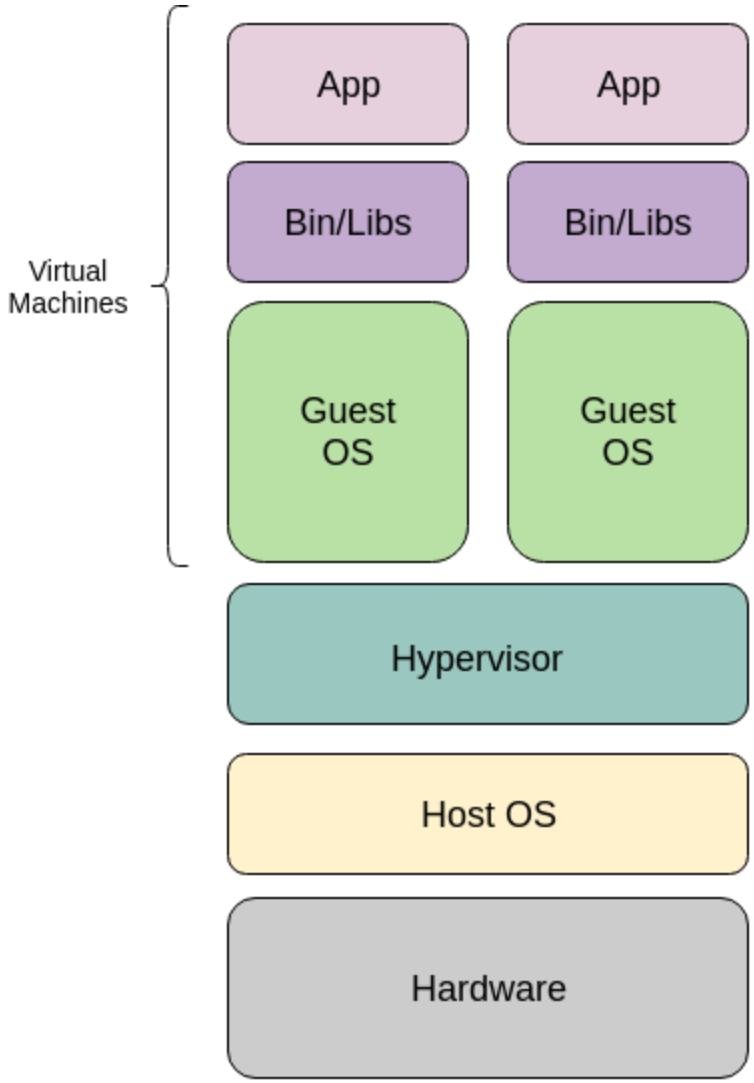
HOW?

Need an environment that can execute code

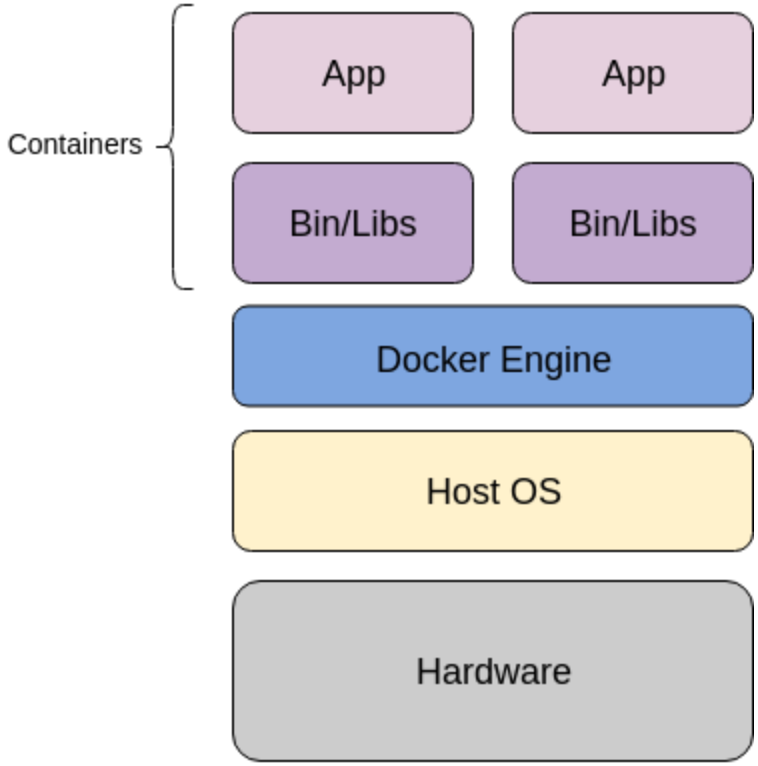
Need an environment with isolation

Need a secure environment

SOLUTION: VIRTUALISED ENVIRONMENT



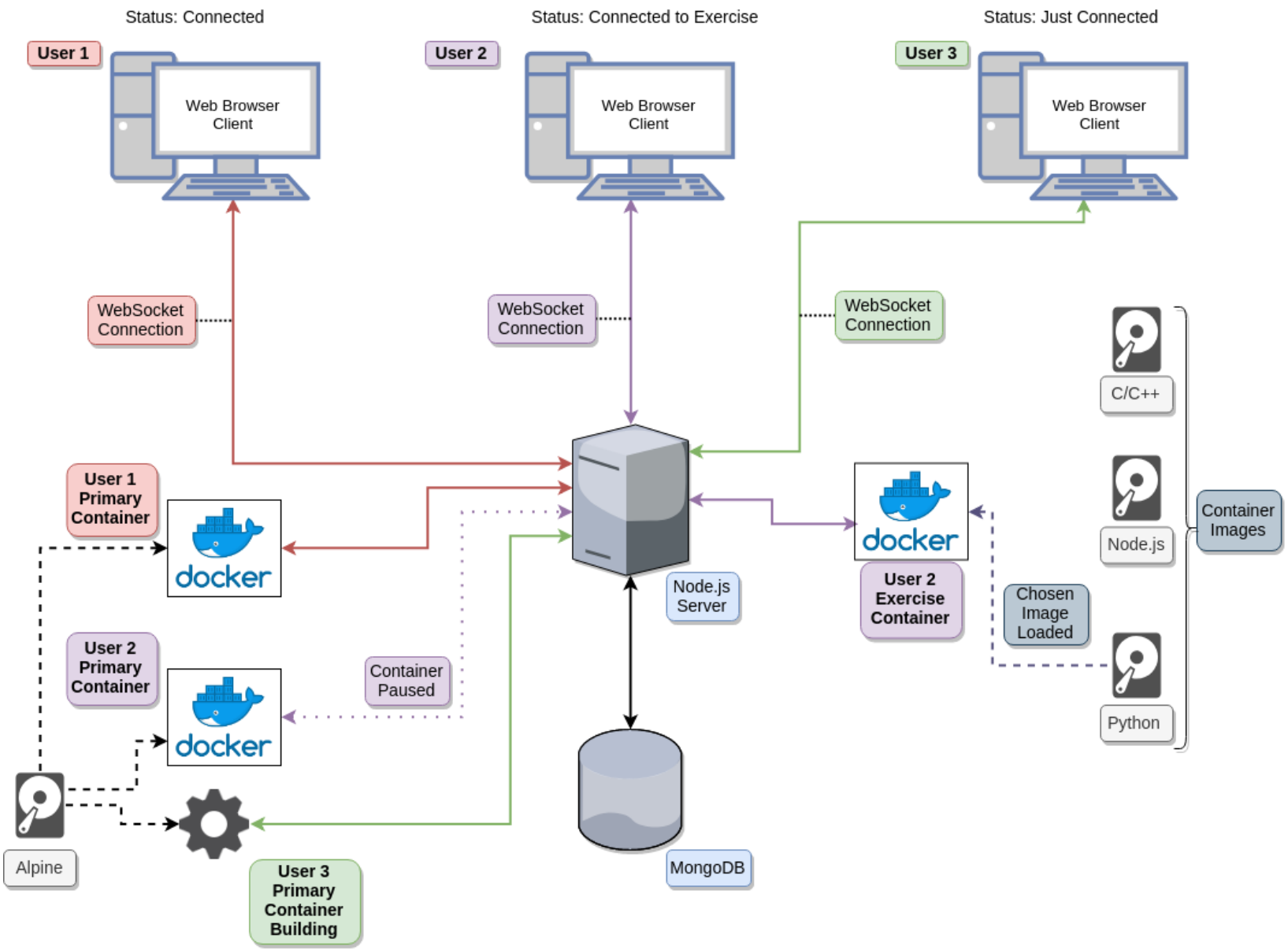
Traditional Virtual Machine architecture with Hypervisor



Container architecture powered by the Docker Engine

DEMO

ARCHITECTURE



SECURITY

Linux Containers are enabled by `cgroups` and `namespaces`

NOT FOOL PROOF

PERMISSIONS

Docker automatically makes you a root user on the container

This is obviously bad

Solution: Make all containers come with a low permissioned user

THIS IS ALSO NOT FOOL PROOF

OUTPUT

Functional development environment in the browser

Industry standard code editor

Linux terminal emulator

REFLECTIONS

Do performance measuring sooner

Focus more on security

FUTURE

Secure sandbox container runtime

User accounts and container snapshots

THANK YOU

QUESTIONS?