Developing with Eclipse Che, Docker and Ansible

DevEnvy: Development Environments as Code

Eclipse Che is a developer workspace server and cloud IDE that is tightly integrated with Docker. Che allows a developer to define workspaces -- a collection of Docker containers (e.g. Python with PostgreSQL, C++, or Java EE with JBoss & Oracle DB). These workspaces can be shared with others without the hassle of installing and configuring additional software. This allows technical managers to seamlessly review code, and front-end developers, UX and UI designers to easily style and test interfaces. This is also beneficial for project managers as it streamlines the process within departments, standardizes environments, and allows employees to easily support each other's projects. Having a portable workspace can also simplify disaster recovery, for example, after a computer is reimaged. Our aim to investigate different Che workflows and determine how it might be used to improve delivery and quality of infrastructure and software within the University.

View pitch at: http://cio.umich.edu/michigan-it/hacks-with-friends/submitted-pitches

Problems:

1. Developer onboarding and sharing of development environments requires multiple changes to a developer laptop or workstation
2. Recreating a production environment is hard when there seems to be a difference in environments (e.g. Dev1: it works on my laptop! Dev2: I can't get mine to work!)

Benefits:

1. **Quickly bring up and tear down a development stack** without installing additional software.
    a. Python with tomcat and postgresql database
    b. C++ app
    c. Ruby on Rails with MySQL and Tomcat
    d. Java EE on JBoss 7 with Oracle DB.
2. **Create repeatable, predictable, stable environments.** Configuring and imaging your containers guarantees your environments are installed and configured exactly the same.
3. **Streamline disaster recovery.** When receiving a new machine or after a reimage getting your workspace set up again is as easy as checking out the projects. (i.e. getting your Mac core imaged)
4. **Maintain cleaner workstations.** This process keeps the developers computers clean and free from installing multiple database, programing languages, IDEs
5. **Delegate tasks and leverage expertise:**
    a. DBA's create database containers,
    b. DevOps engineers develop a hosting containers,

c. Software engineers combine them with an IDE.

Deliverables:

Show proof of concept:

- A Git organization where you can download and install different development environments
- Documentation on how to use this both from install, and how to implement mid-project

Nice to have:

- Start out with local developer Che, set up shared dev ops environment (Ansible)
- Implement a “real” business context that
- Explore using it both in Che and on local IDE
- DSA: Push docker installation & configuration to managed PCs
- Test out pair/peer coding

Tasks for Hacks with Friends event:

- Install Docker
- Install Development Environment images
    - Python
    - Ruby
    - J2EE
- Document getting an existing project into DevEnvy