HICA: Host Integrated Container Applications

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About HICA

- Developed as part of Docker Global Hack Day 3
- Main goal is to turn Docker Images into "Executables"
  - And more, make them work as standard system executables
  - Current working directory, pipes, devices, sockets ...
- Written in Python, packaged in pip
- Documented
- SELinux Compatible
- Desktop and GPU Applications compatible
- Works with local images only, HICA will never pull an image
- Heavily based around image labels

Deep Dive

- Functionality based around so called feature injectors
    a. bind_pwd injector which bind mounts current working directory into the container
    b. xsocket injector which bind mounts the Xsocket into the container
    c. bind_home injector which bind mounts current users' home directory into the container
    d. https://github.com/shaded-enmity/docker-hica/blob/master/docs/labels.md

- Each injector is a separate object with a well defined properties
    a. Label
    b. Command line argument override
    c. Textual description

- Command aliases for ease of use and memorability

Benefits

- Easy lifecycle management
    - Create image, remove image
    - Garbage doesn't pile up on you hard drive
        - Installing software is easy, getting rid of it is hard
        - Curl2sudo, configure && make && make install etc.
- Simple way to use multiple versions of software
    - Need some bleeding edge version of a browser for testing?
    - Need to build something from master?
- BYODE (Bring Your Own Development Environment)
    - Save your dev environment as an image and use it wherever you like

Project Info

- URL: https://github.com/shaded-enmity/docker-hica
- Label descriptions: https://github.com/shaded-enmity/docker-hica/blob/master/docs/labels.md
- Security considerations: https://github.com/shaded-enmity/docker-hica/blob/master/docs/selinux.md
- Dockerfile guidelines: https://github.com/shaded-enmity/docker-hica/blob/master/docs/dockerfile-guidelines.md

Demo and Q&A Time!

Thank you for listening :)