



Docker used for Tango Device Server Development at MaxIV

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October 5, 2019



Why is this important?

A good development environment is...

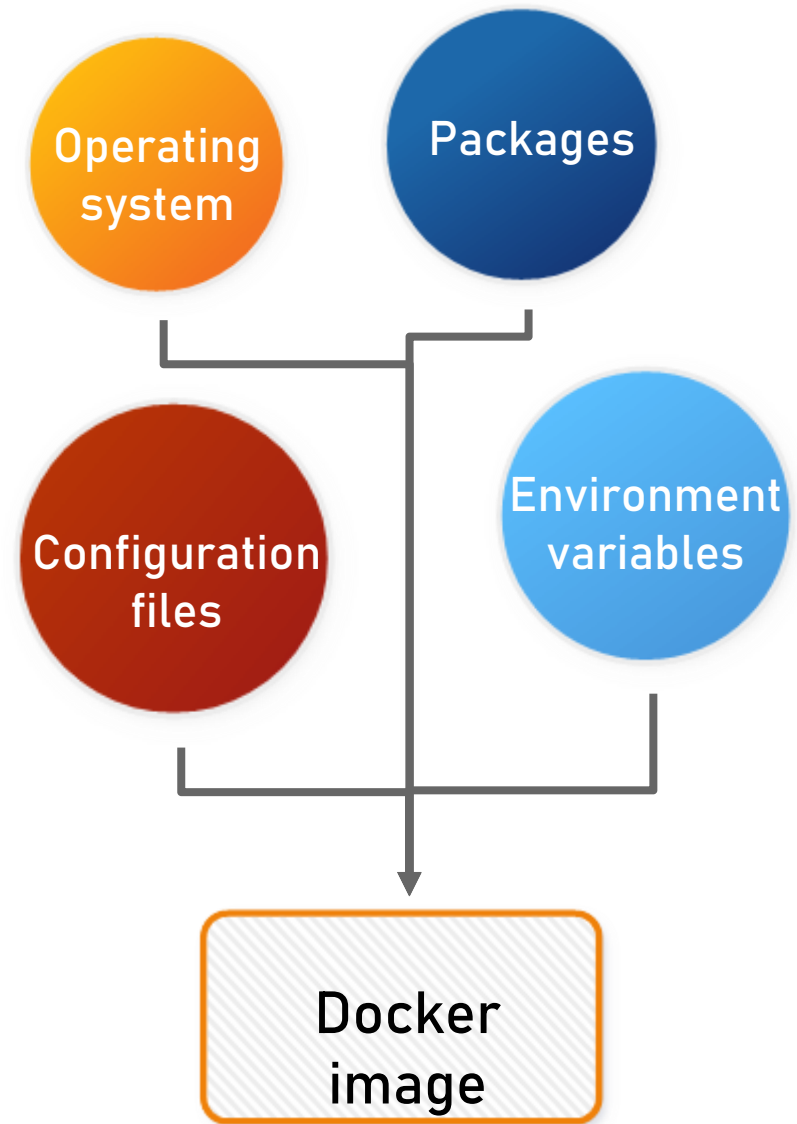
- Flexible
- Reusable
- Stable
- Distributed

So that we can...

- Multiple use cases
- Recover cost to set it up
- Know which library versions
- Easy sharing

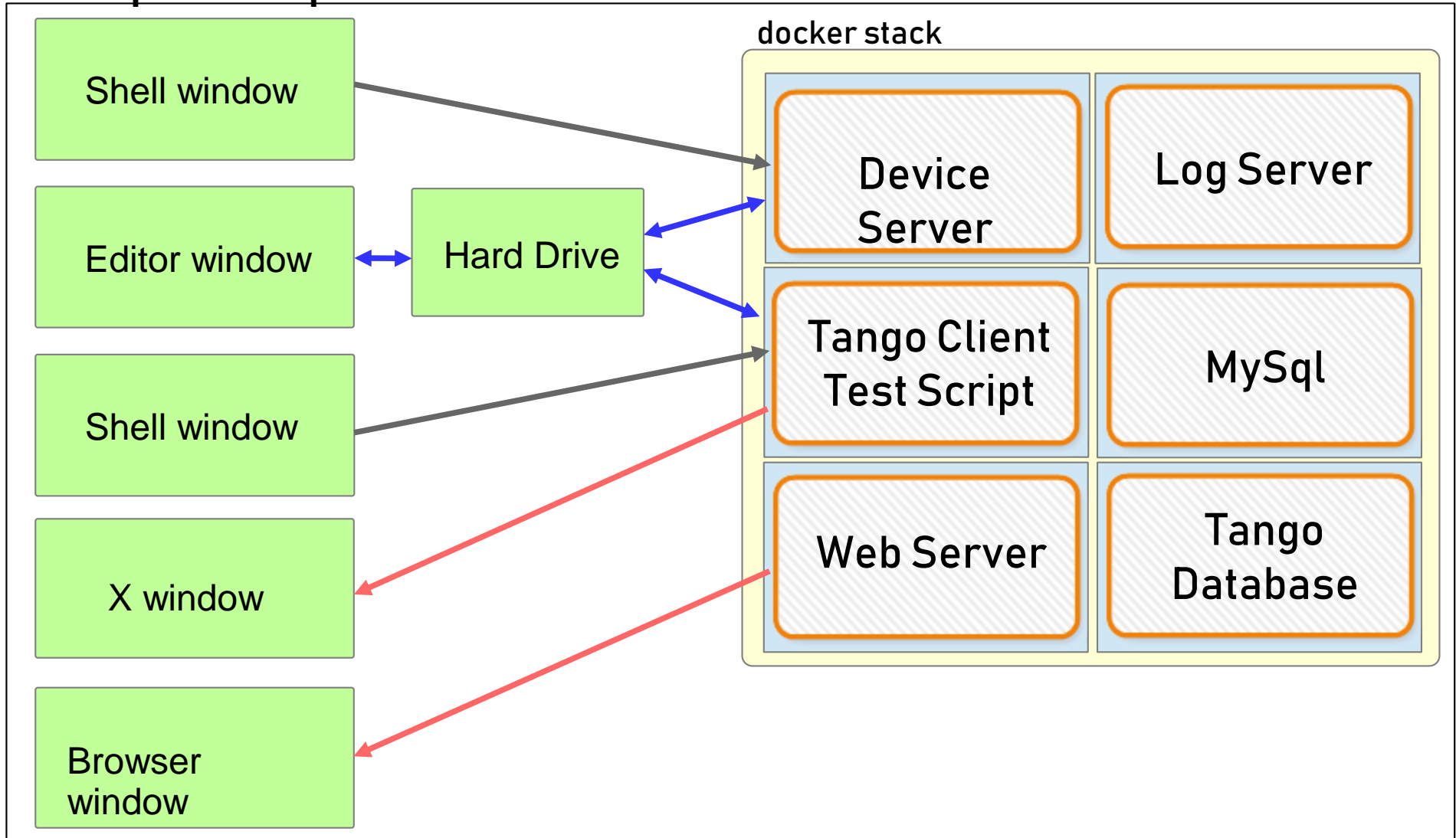
Docker Concepts

- Build images
- One service per image
- Share images to registry
- Run images in Containers
- Containers share hard drive
- Access shell in Container
- Reset Containers anytime



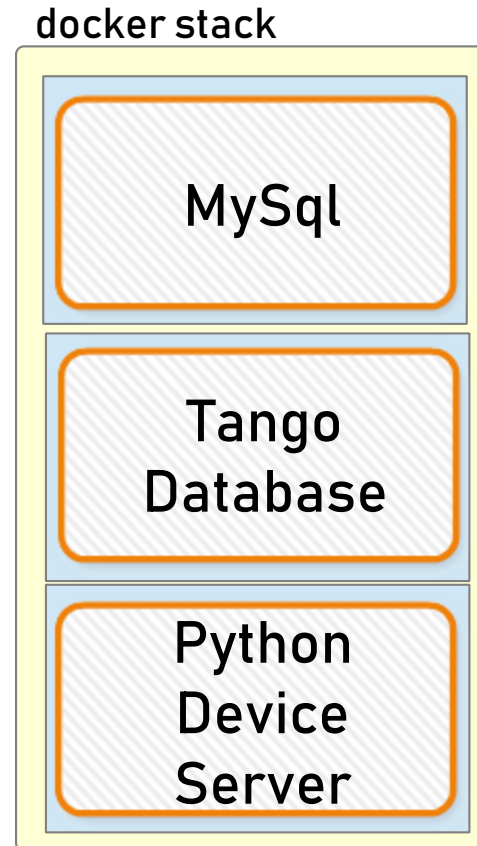
Development on Docker Stack

Developer's Computer



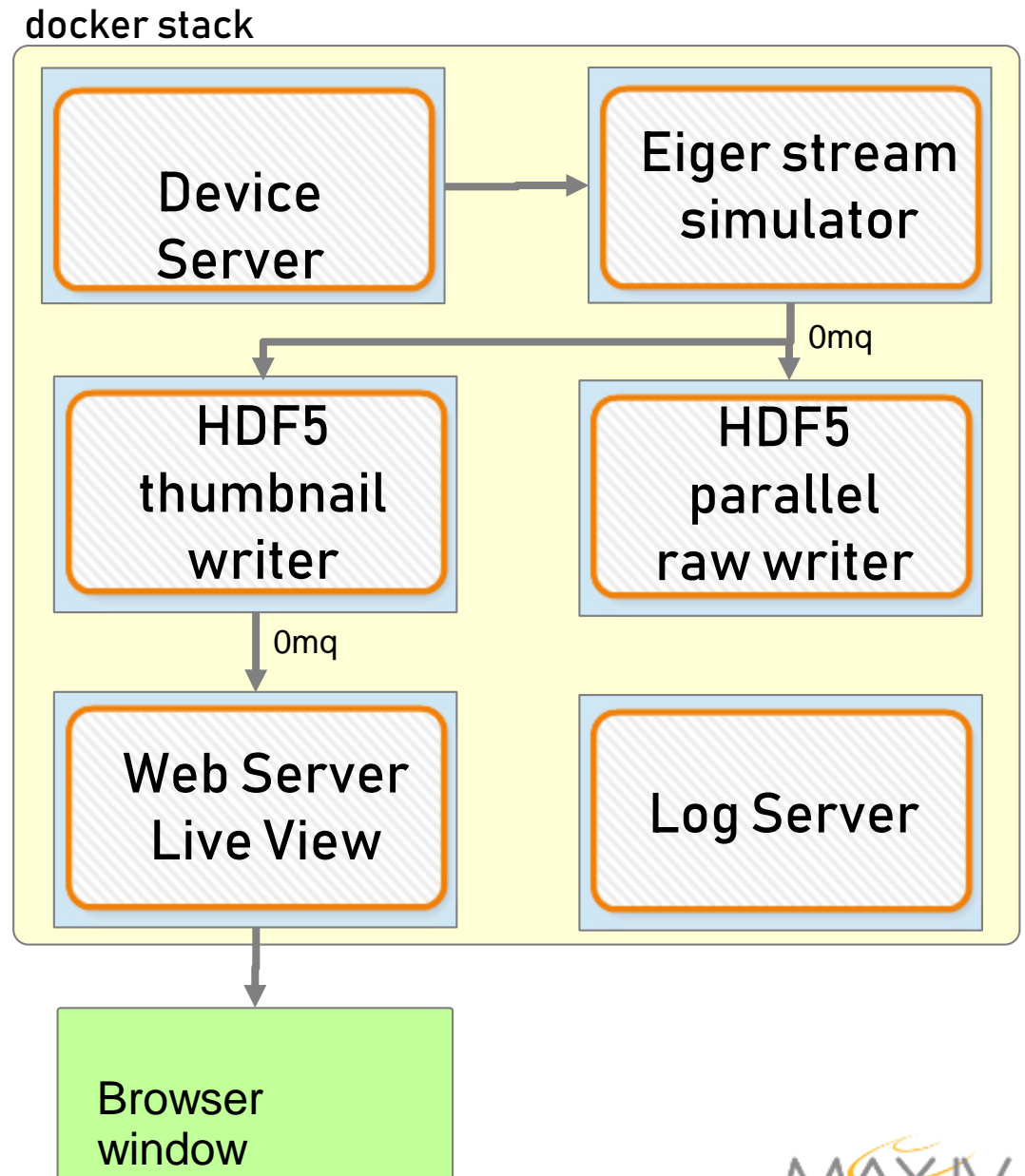
Use Case: Python Device Server

- Develop Device Server
- Shared hard drive has source code
- Database starts with minimal devices
- Device server code edited on host



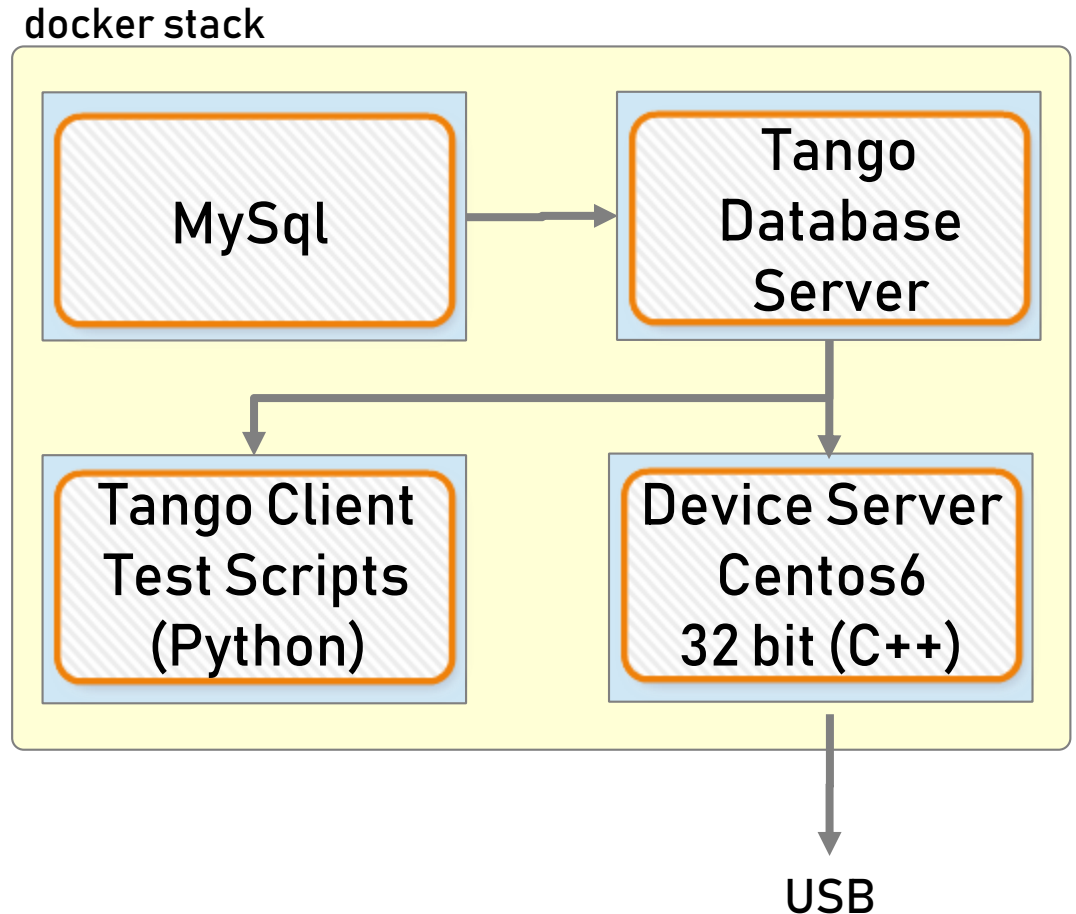
Use Case: Detector Simulator

- Eiger stream simulator
- High data rate
- Output to HDF5
- Output to Live View
- Experiment with performance



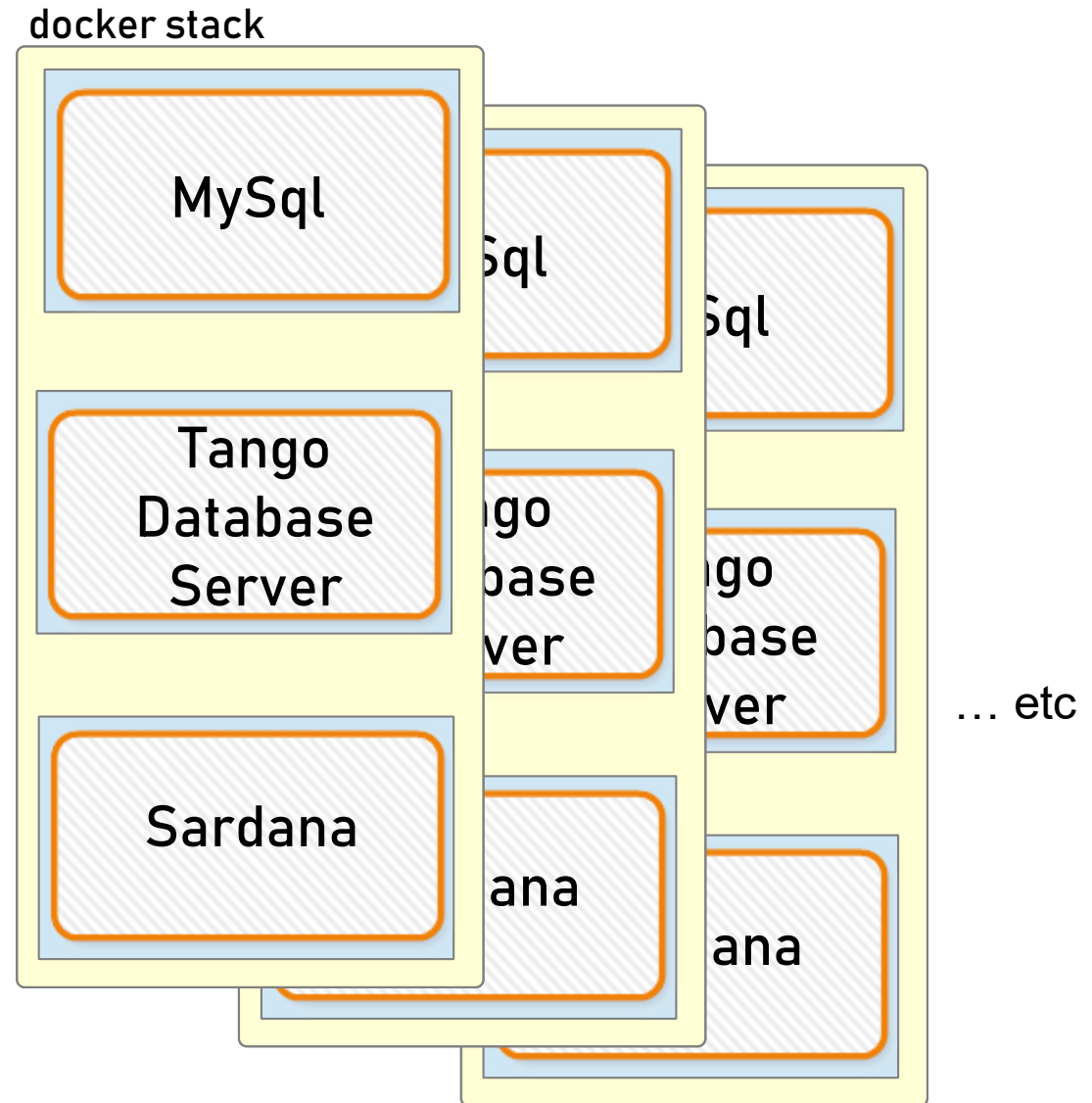
Use Case: C++ 32-bit

- Develop on Windows 10, 64 bit
- Deploy on Centos6, 32 bit
- USB Piezo stage



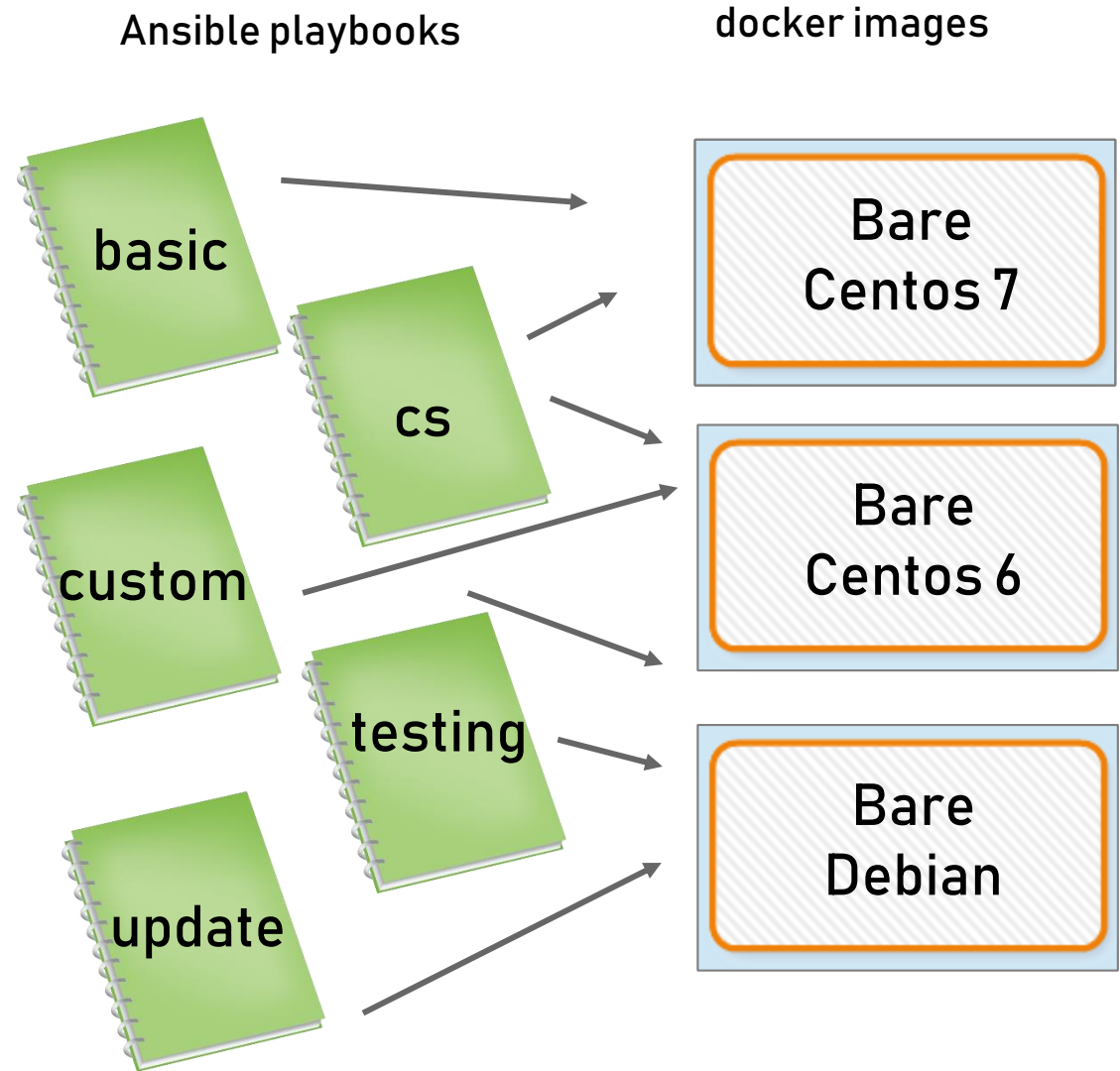
Use Case: Infrequent Bug

- Bug takes hours or days to recur
- Build a stack and run many clones of it
- 8 on one computer
- Increase chances of catching the bug



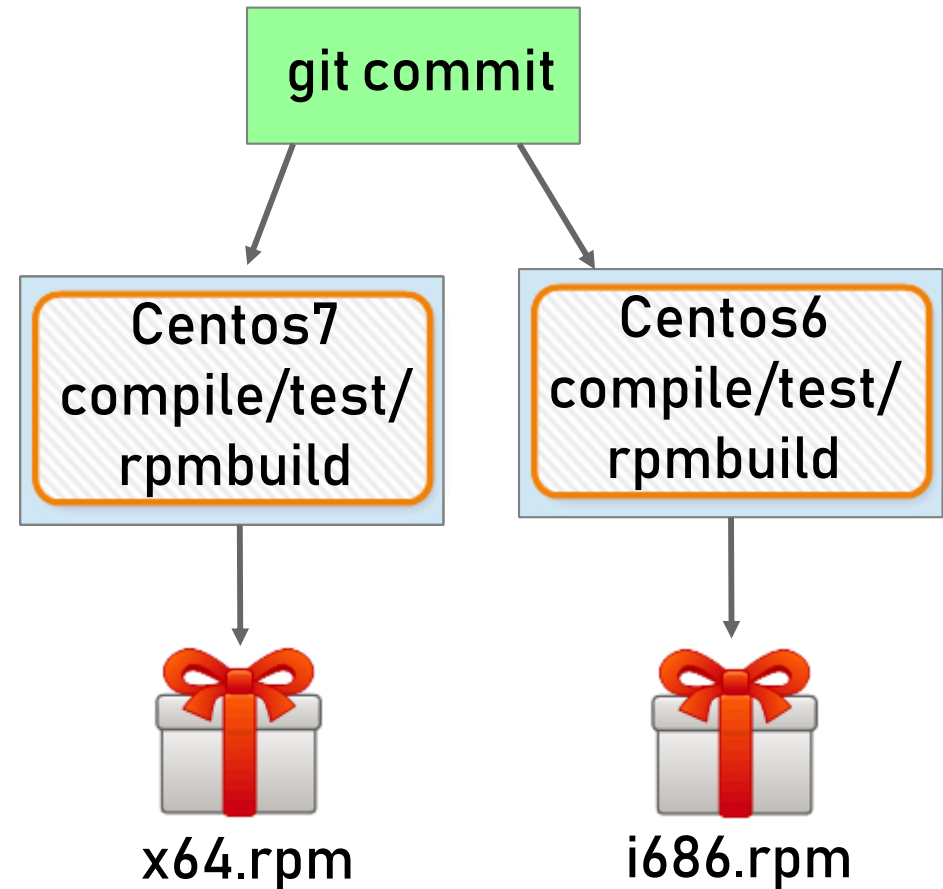
Use Case: Ansible Testing

- Ansible has logic
- Real computers are not pristine
- Test steps to upgrade
- Verify before push
- Reset and try again



Using in GitLab CI/CD

- Use same images which are used in development
- Tests can be done with stacked servers



To Do

- Runtime parameters to make more reusable
- Choosing a naming convention
- Standardizing common base images
- Testing the images and stacks
- Documentation
- Training

Continuing the Conversation

- A basic example for you to try

<https://gitlab.com/MaxIV/development-dockerfile-examples>

- Documentation ... please see the README.md
- Soliciting suggestions for improvements
- How may we collaborate?