

Where and When to Docker

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Agenda

- What is Docker
- Why Docker?
- What about security?
- Where to Docker
- Where not to Docker
- When to Docker
- When not to Docker
- Customer Use Cases
- Q&A



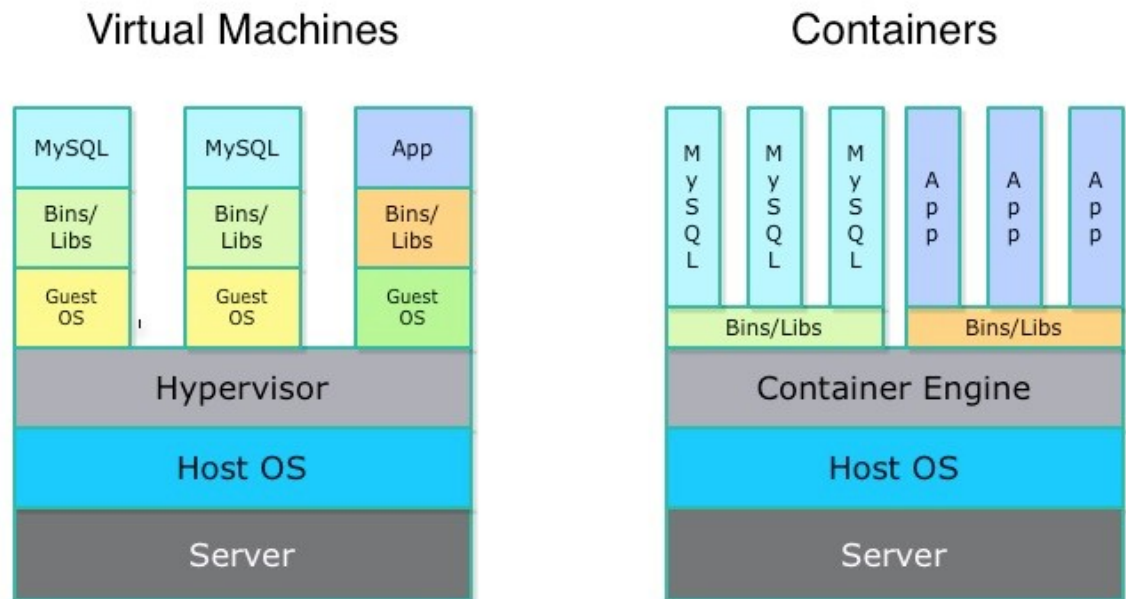
What is Docker?

- Containers for everyone.
- **Consistent** packaging environment for applications.
- A platform for developers and operations to build, ship, and run application **images**.
- **Containers** run Linux apps on Linux hosts.
- Version control for not only app but entire environment.
- Included and fully **supported** in SLE 12.



Why Docker?

- Massive resource consolidation (~ 5X).
- Rapid and consistent deployments.
- Bridge gap between developers and operations.
- End-to-end audit trail and security controls.
- Standardization.
- Flexibility.



What about security?



- No access to production (SSH, CLI, etc...)
- Stateless nature of environment mitigates against APT
- Minimal images mean fewer attack vectors
- Deployment methodology allows for rapid response
- Full audit trail for entire lifecycle of deployment
- Breaks down communication barriers (Dev, Ops, Sec)
- Automation ensures consistency
- AppArmor and/or SELinux to confine everything

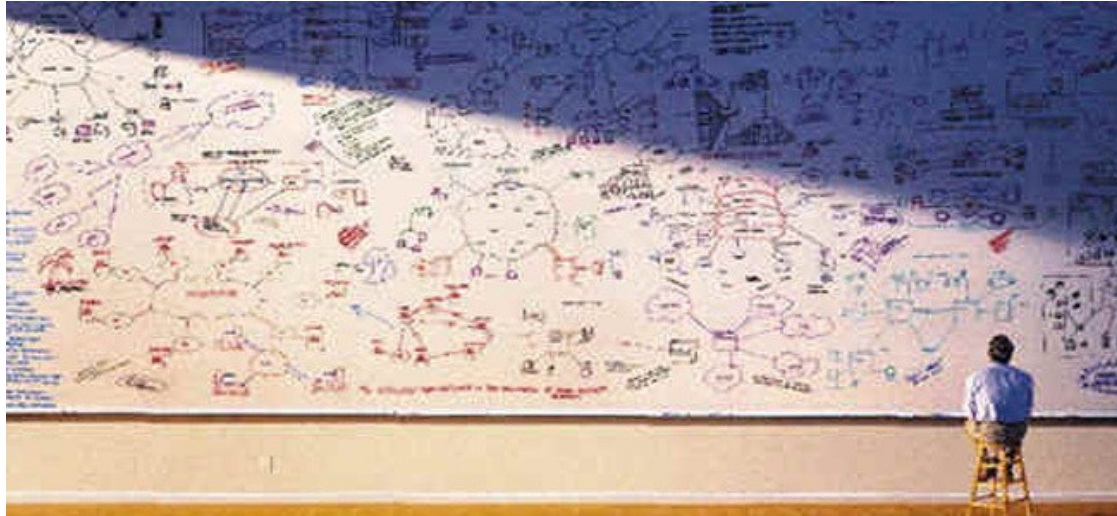
Where to Docker

- Web applications
- Microservices
- Multiple instance deployments
- Complex dev to production deployments



Where Not to Docker*

- Large, monolithic apps
- Complex legacy applications
- Complex GUI driven installations
- Single instance applications



*Unless you are brave

When to Docker

- Testing/Deploying new applications
- Developing applications
- New projects/major upgrades
- All the time!



When Not to Docker*

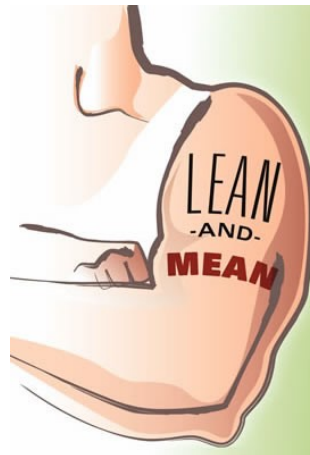
- Non-Linux environments (for now)
- Already underway projects



*Unless you are brave

Customer A Environment

- ~ 130 web applications
- Elevated security requirements
- Limited IT support staff
- Large development staff
- Focus on automation and operational efficiency



Customer A Use Case - Security

- Critical vulnerability discovered (shellshock)
- Vendor patch automatically mirrored to build server
- Automatic Docker image rebuilds based on severity
- Automated testing of images/applications
- Docker images pushed to production
- Load balancer directs traffic to new images
- Admin receives email notifying them of deployment



Lessons Learned

- Docker is only part of the solution
- 12 Factor App* design is critical
- Tools are rapidly evolving
- Community is rapidly evolving
- Be flexible



* <http://12factor.net/>

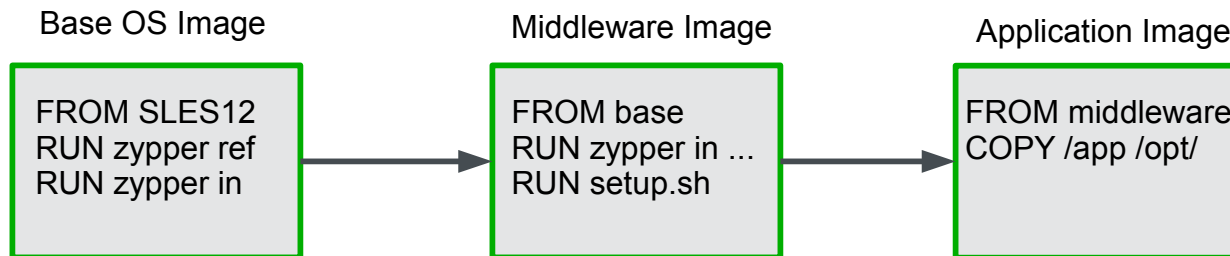
Customer B Environment

- Multiple independent IT groups
- Little inter-group communication
- Lack of standardization and centralized management
- Change Control based



Customer Use Case B

- Different IT groups control parts of the base images
- Base OS, Middleware, and Application images
- Testing and approval of merge requests



Lessons Learned

- DevOps doesn't solve internal politics
- Identify applications and stakeholders early
- Start with lower hanging fruit
- Establish quantifiable goals and metrics
- Build close relationships with vendors



Customer Environment C

- Solo Sysadmin
- Small to medium size business
- Mixed environment, runs a little of everything
- Limited compute resources



Customer Use Case C

- Put everything in containers
- Backup scripts, maintenance utilities

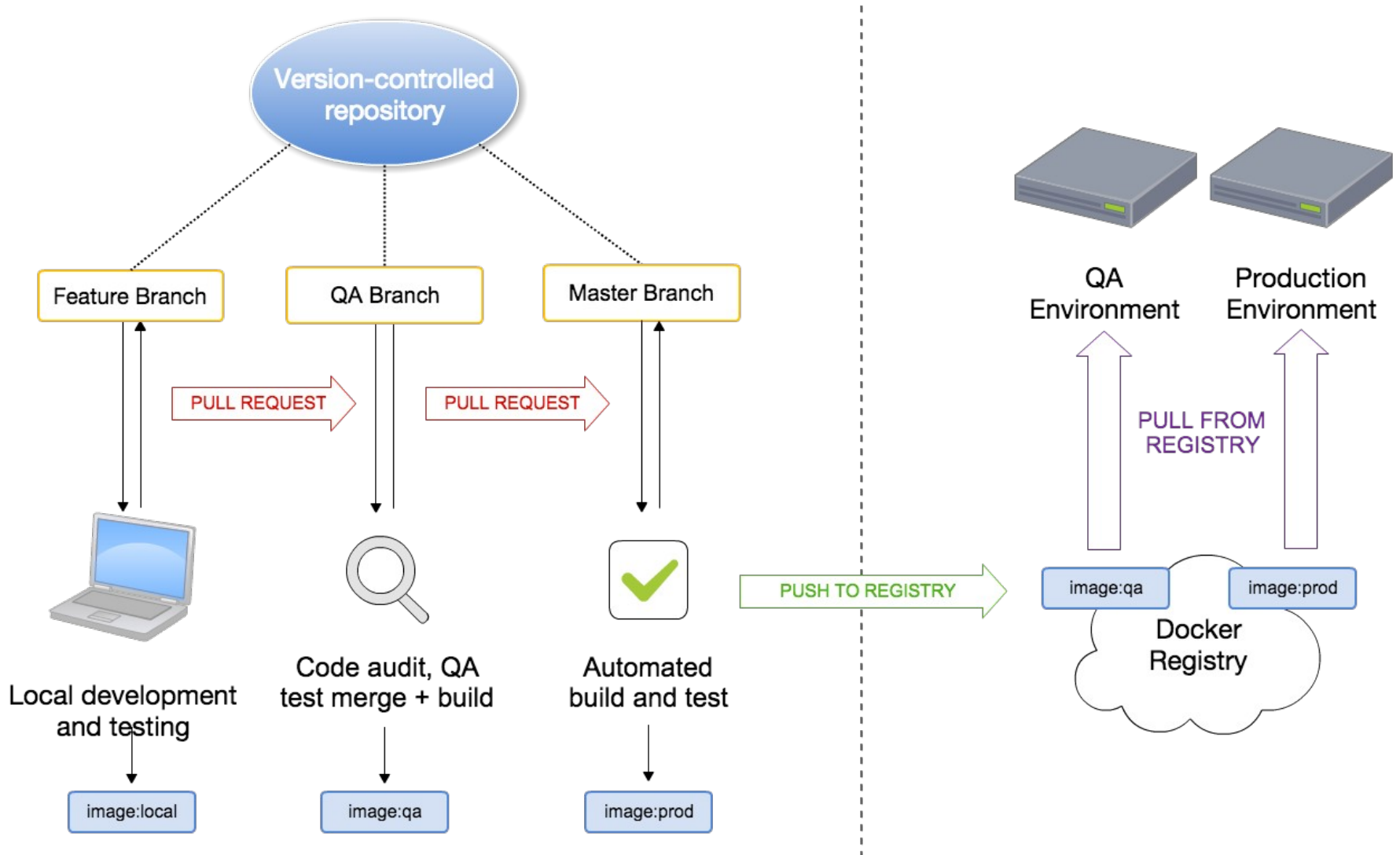


Lessons Learned

- Passion matters
- Moving the right environment is easy
- Don't force a square peg into a round hole
- DevOps can be a force multiplier



Sample Workflow



Docker Statistics

- 21,000+ GitHub Stars
- 400+ Million Docker Container Downloads
- 75,000+ Dockerized apps in Docker Hub
- 150+ Meetup groups in 50+ countries
- 900+ Community Contributors
- 50,000+ Third party projects using Docker
- Launched March 13th, 2013



Learn more about how Docker
and DevOps can work for you
www.novacoast.com/devops

Thank you.





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