

Amazon

Part 0

- Builders tool
 - deliver software
 - onboarding training
 - 如何以amazon的方式交付软件
 - internal training / conference
- Devops 2001-2002
 - 之前开发 测试, Ops分不同的team
 - release train有瓶颈, 走不快
 - 目的是Move faster

part 1 - Decomposing

- 单体->微服务
- small teams
 - 2 pizzas team
 - 一个team own一个service
 - 自治、独立、ownership
 - 从需求backlog、开发、测试到Ops

Part 2 - Automate everything

- Building tools for entire process
 - automate every things which can be done manually
 - Scaring at the first
 - 改一点代码, 就会自动部署
- 每次部署有同样的自动化测试覆盖
 - Integration testing
 - Brower web based testing (Selenium)
 - Load test
- Measure everything, monitor everything
 - 不仅可以频繁提交, 还能有更高质量的product, 很少的prod issue
 - higher quality faster release cycle, release more and get higher quality

Part 3 - Pessimistic deployment

- entire process is a pessimistic process
- try to find reasons to fail the deployment
- Once tests fail, stop and auto roll back to the previous good state
- do some transactional testing on one region/box and try to break it

part 4 - Security

- Engineers in Amazon need to think as security engineers, architects and testers
- first: work threat models and send to specialist review
 - 安全专家不亲自安全建模, 只负责review
 - 工程师自己own security because they are closest to the problem
- Development
 - submit code -> code review/peer review -> auto checks apart from CR
 - Security issues static diagnosis
- Build process
 - additional static diagnosis
- Release pipeline
 - Canary monitors
 - positive/negative security checks
 - check integrity of the pipeline

Part 5 - 整个pipeline的强制policy的checkers

- inspect into the pipeline to see what is best practice
- allow people to create rules to cover every single deployment
 - UT coverage must be higher than 70%
 - not allow to deploy all regions at the same time, once it happens, auto stop it.
- templates for how to get started
 - using inspections to inspect the way which is not bad
- policy apart from the templates
 - 把经验教训、错误输入到policy
 - 通过policy来阻止新人犯错

Part 6 - Teaching

- The best way to teach people is to make them do it, then review, not actually do
- Review & teach
 - Architect
 - Security
 - Testing
 - Operations
- All distributed to the teams
 - 5 Whys
 - RCA - Root cause analysis

Part 7 - others

- Operations is important at Amazon
 - Leadership team spend lot of time on operations
 - distributed to each teams
 - every team prepare their dashboard
 - represent them and explain the blips
- The best way to plan is bottom up
 - 一线员工close to the customer, familiar with their requirement and problem
- Communication consistency is hard
 - 2 teams are working on duplicated things
 - accept it
 - better than nothing
- Cooperation among teams
 - Plan the cooperations needed into annual planning process
 - then easy to make it happen
 - bug fixes -> commit and deploy, push out directly
- How to deploy frequently
 - Features -> put behind feature flag (Feature toggle), 5-10 deployments per day
 - whole feature to publish
- DevSecOps是把安全嵌入deployment process, 但是Amazon在部署之前有很多安全相关实践 (full automation)



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