



Jenkins : Enabling Agility & Efficiency

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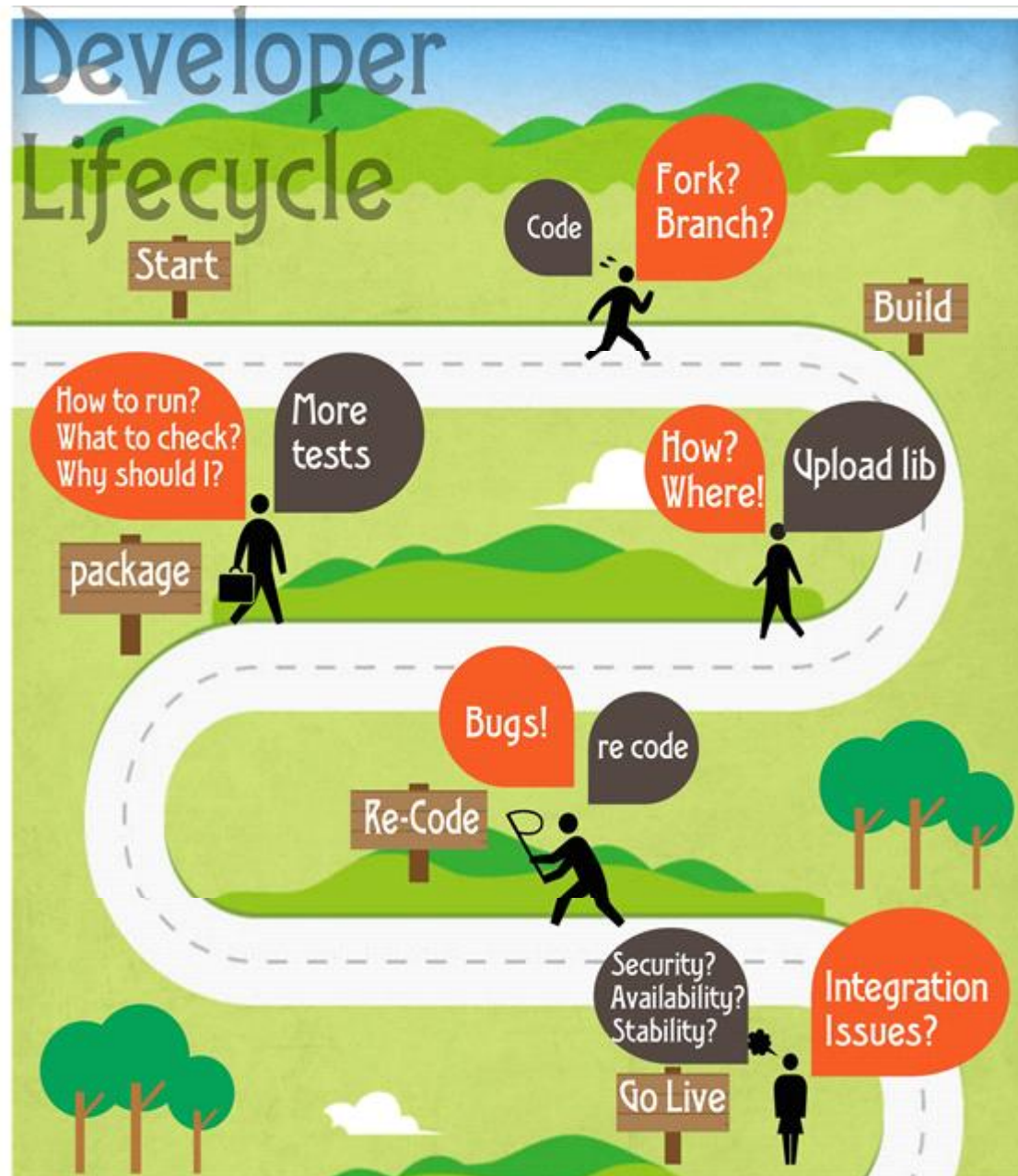
#jenkinsconf

Agenda

- Challenges
- Guiding principles
- Jenkins execution model
- Build & Test
- Package & Deploy
- Configuration and usage

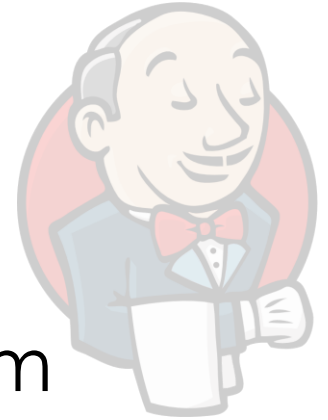


Developer lifecycle



Challenges

- Cross functional, cross geography team
- Productivity & Agility
- Open source model
- Quality standards
- Early, often & continuous integration



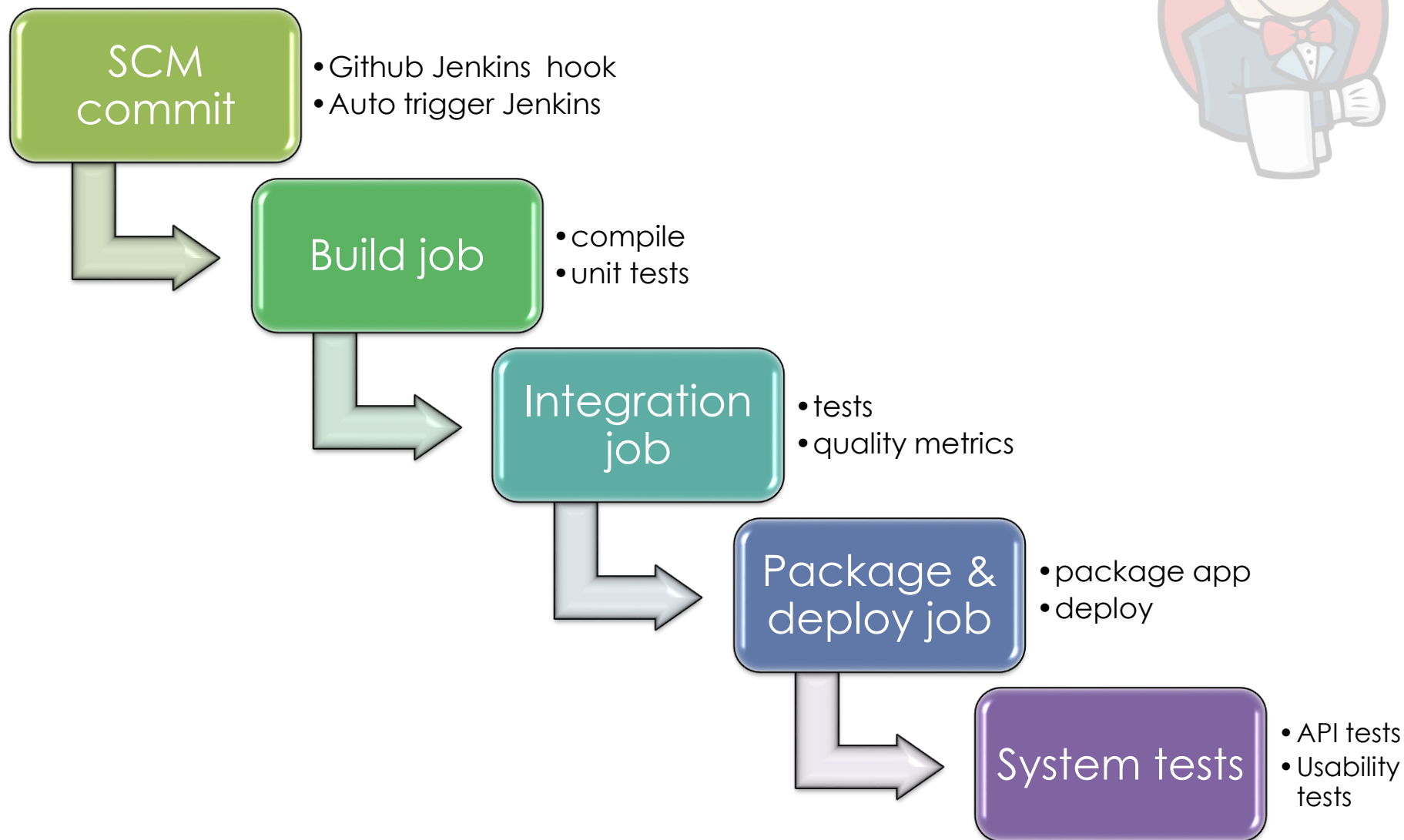
Guiding principles

- 3 Cs
 - Continuous integration
 - Continuous feedback
 - Continuous delivery
- Build, test and notify often

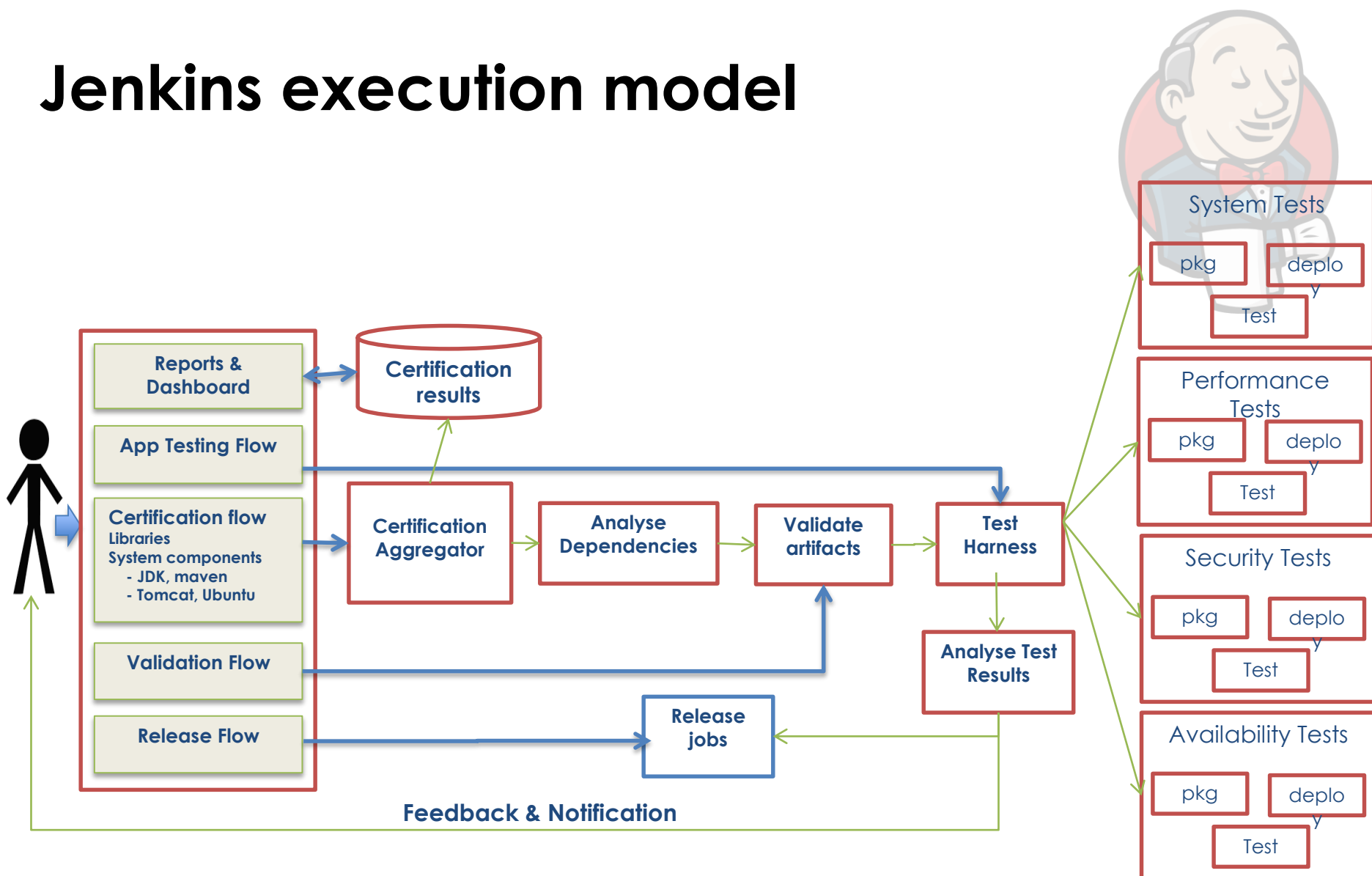


**Jenkins enable us to achieve 3 Cs
efficiently with agility**

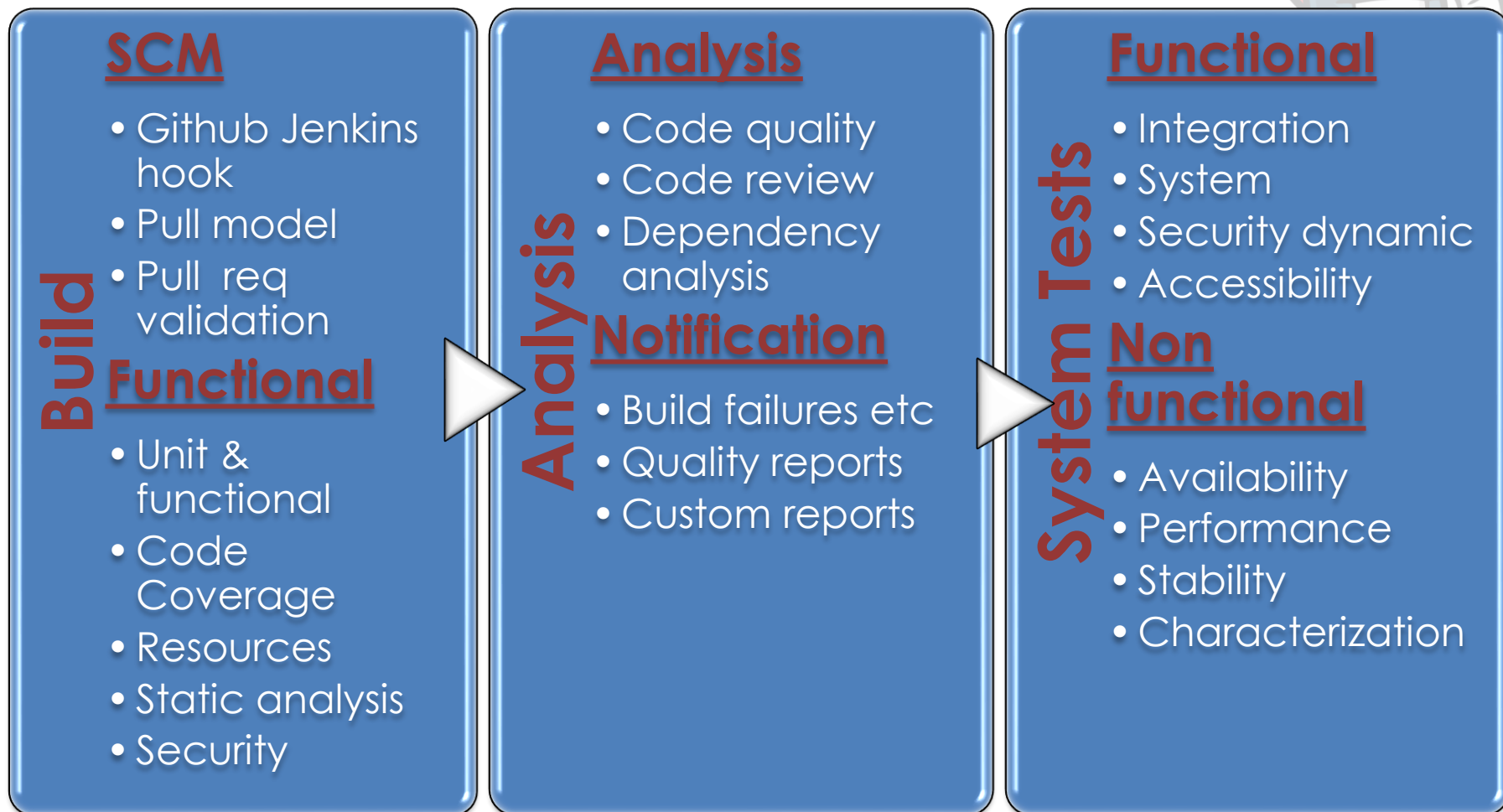
Jenkins execution model



Jenkins execution model



Build & Test



Build

SCM

- Github Jenkins hook
- Pull model
- Pull req validation

Functional

- Unit & functional
- Code Coverage
- Resources
- Static analysis
- Security

- Jenkins make it easy

- SCM

- Great integration with build systems and SCM tools
 - Github plugin helps set up pull req and build process
 - Auto merge/reject based on analysis

- Quality Analysis

- Tests, code coverage
 - Static analysis
 - Findbugs, PMD, Checkstyle, Javadoc
 - Compiler warning
 - Security scan
 - JS/CSS syntax validation



Build

- Productivity and agility improvements
 - Users focus on their actual work
 - Great integration with IDE & browsers
 - No manual trigger, review and merge
 - Enables continuous delivery
 - Quick turn around for SDLC
 - Simple, transparent & automated system



Jenkins eco system efficiently integrates with SCM, build systems, tools & practices

Analysis



Analysis

- Code quality
- Code review
- Dependency analysis

Notification

- Build failures etc
- Quality reports
- Custom reports

- Jenkins plugin make it easy
 - Code quality
 - Builds with thresholds for violations, tests & coverage
 - Code review check
 - Dependency analysis and enforcements
 - Notification
 - Build status with actionable info
 - Quality health check, dashboards
 - Custom reports

Analysis

- Productivity and agility improvements
 - Actionable notifications
 - Helps maintain quality standards
 - Jenkins dashboard enables
 - Well informed state of a product
 - Quality metrics enables quick actions



Jenkins plugins and dashboards make it easy to take well informed decisions

Integration Tests



Functional

- Integration
- System
- Security dynamic
- Accessibility

Non functional

- Availability
- Performance
- Stability
- Characterization

- Tests
 - Auto trigger multiple test jobs
 - Test execution results & graphs
 - Results publication to SONAR
 - Auto release if criteria meets
 - Customized inputs to jobs

Integration Tests



- Jenkins automation makes testing effortless
 - Most important : no manual touch
 - Tests triggered automatically
 - Reports, dashboard and notifications generated
 - Follow up actions are taken automatically
 - Releases are done with automation
 - Build pipeline plugins a great help

Jenkins plugins enable auto triggered, automated flow for tests & releases

Package & Deploy

- Jenkins central to packaging and deployment
 - Packaging (custom plugins)
 - App deployment to VMs



System Tests



Functional

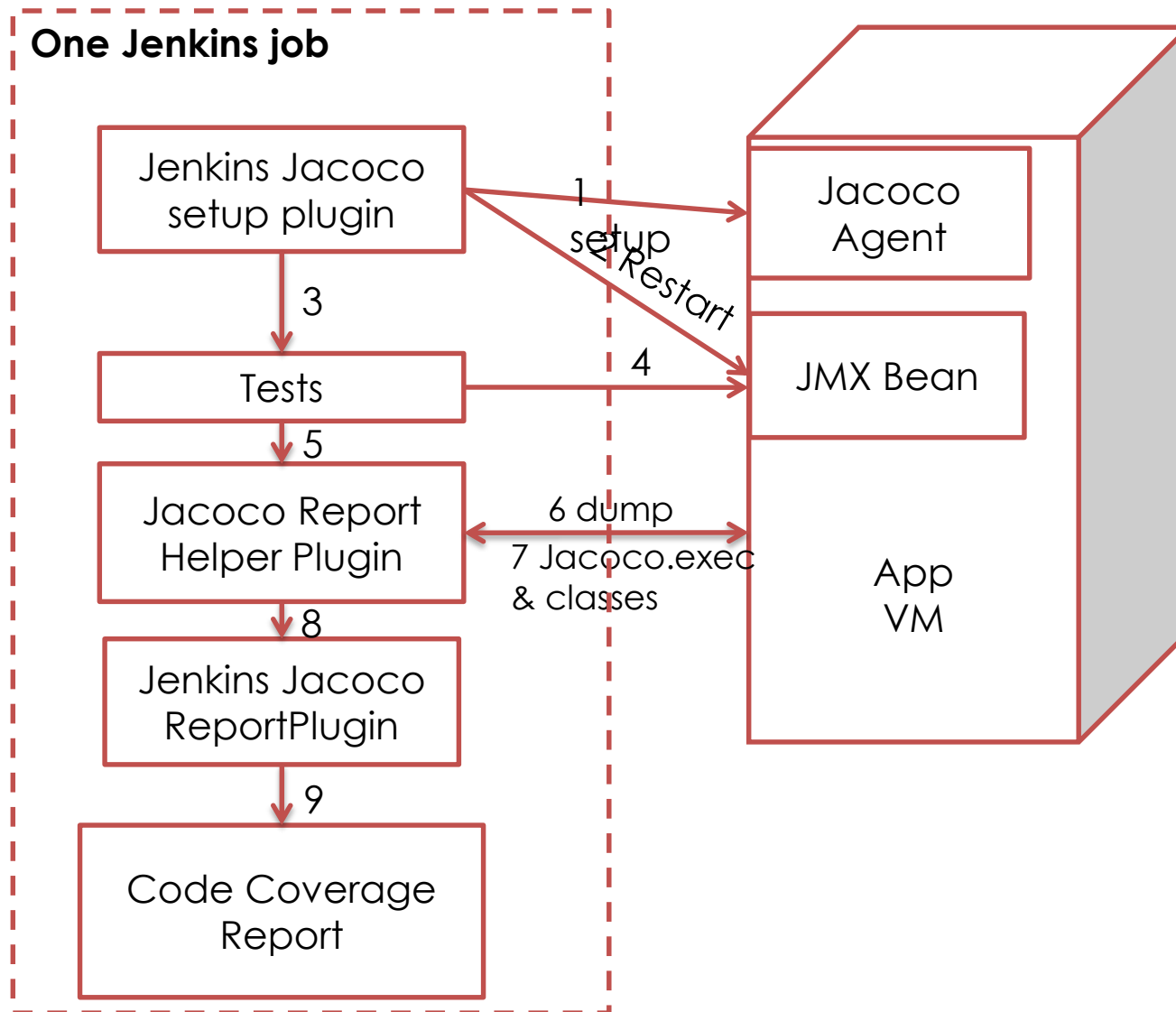
- Usability
- System
- Security dynamic
- Accessibility

Non functional

- Availability
- Performance
- Stability
- Characterization

- Jenkins with Arquillian Framework
 - Managing deployment lifecycle from the test itself
 - Helps in saving lot of VM capacity and money
- Code Coverage from VM
 - Code hit map from deployed apps
 - Helps identify heavily used and dormant code
 - Jenkins plugin
(To be open sourced soon)

Functional Code Coverage



Configurations and usage



- Productive and efficient features
 - Security features ensure job config, execution and deletions authorizations
 - Job templates optimize job creation experience hence save time and confusion
 - Job chaining enable continuous integration and delivery via auto propagation
 - More control on what gets published and how

Configurations and usage

Simple configuration plugin



Job name

Source Code Management

Git Repo

 Please change default value

Branch

Maven Targets

Goals

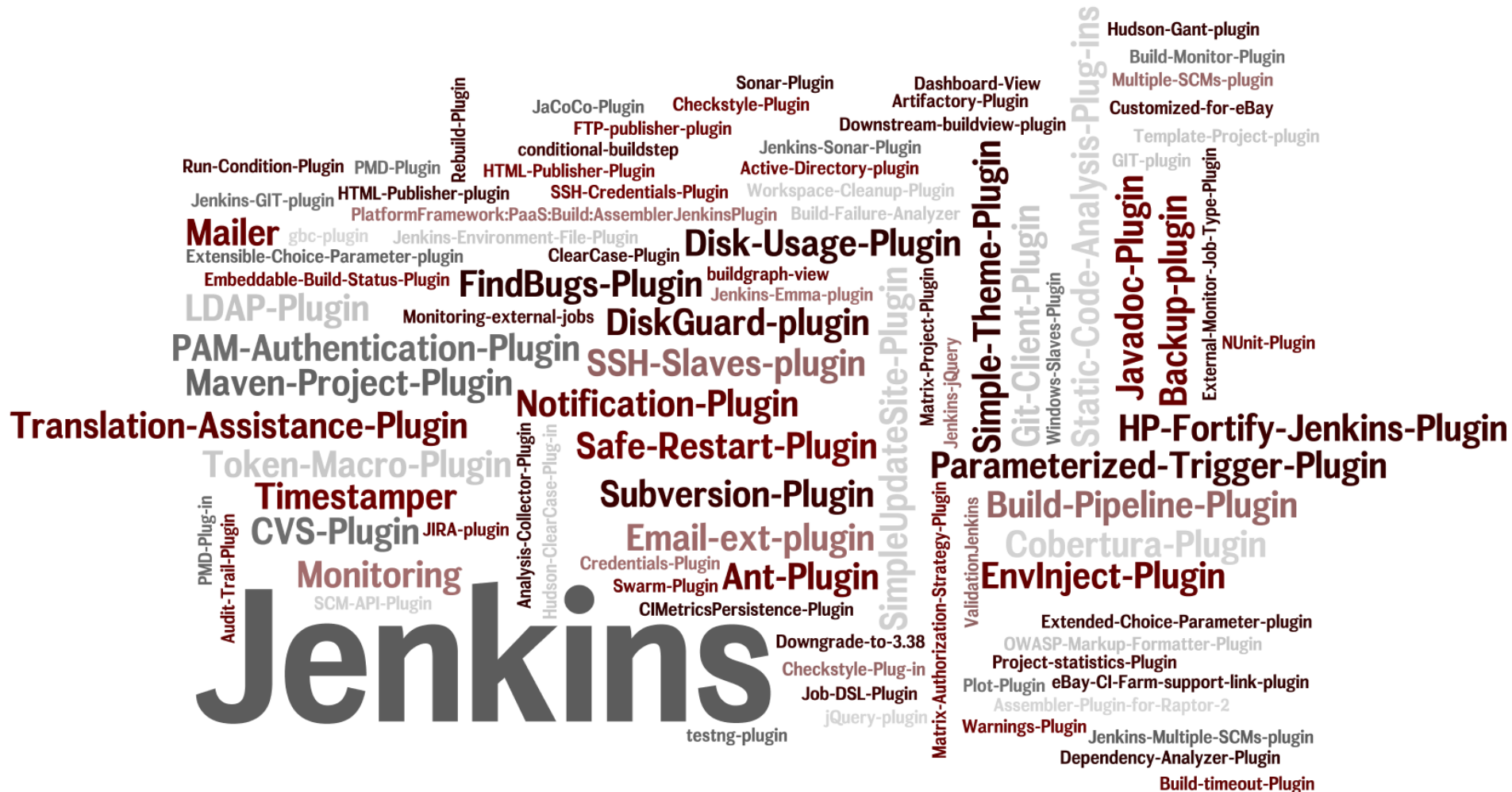
Save form and check main configuration page for other errors(if any)

POM

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[Switch to Main Configuration](#)



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Global Platform and infrastructure

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