On The Road To Continuous Delivery

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Software-Architecture
Agile Projectmanagement
Software Quality
Continuous Delivery

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Software Engineer
Software Quality
Continuous Delivery

Continuous Delivery

=

With Continuous Delivery (CD), teams continuously deliver new versions of software to production by decreasing the cycle time between an idea and usable software through the automation of the entire delivery system: build, deployment, test, and release.

http://refcardz.dzone.com/refcardz/continuous-delivery-patterns

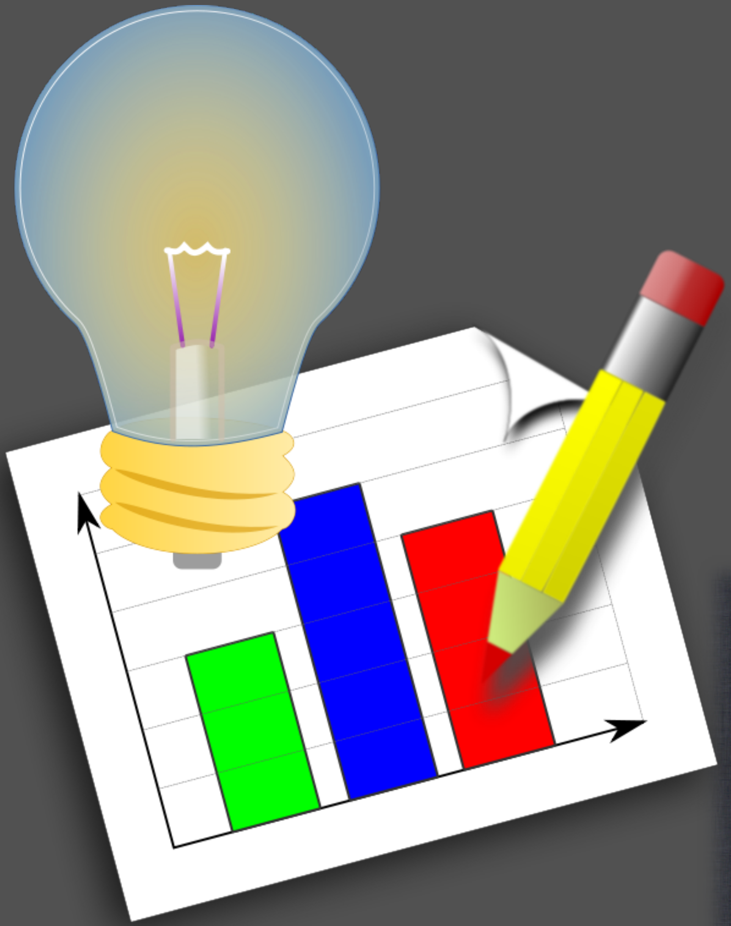
Roadmap = Plan

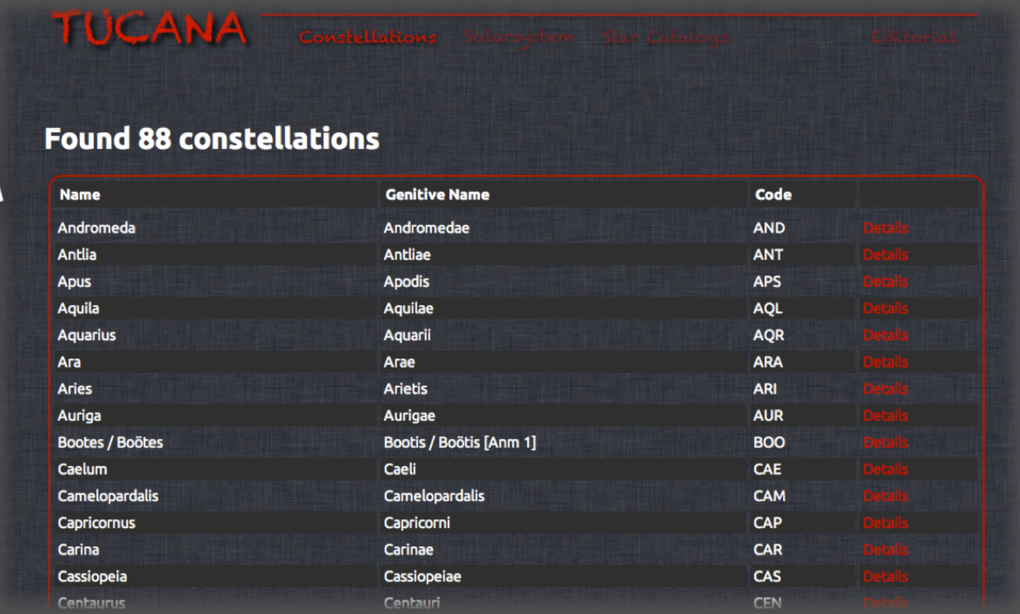
What we need:

- A project
- A team
- A little bit of software

TUCANA

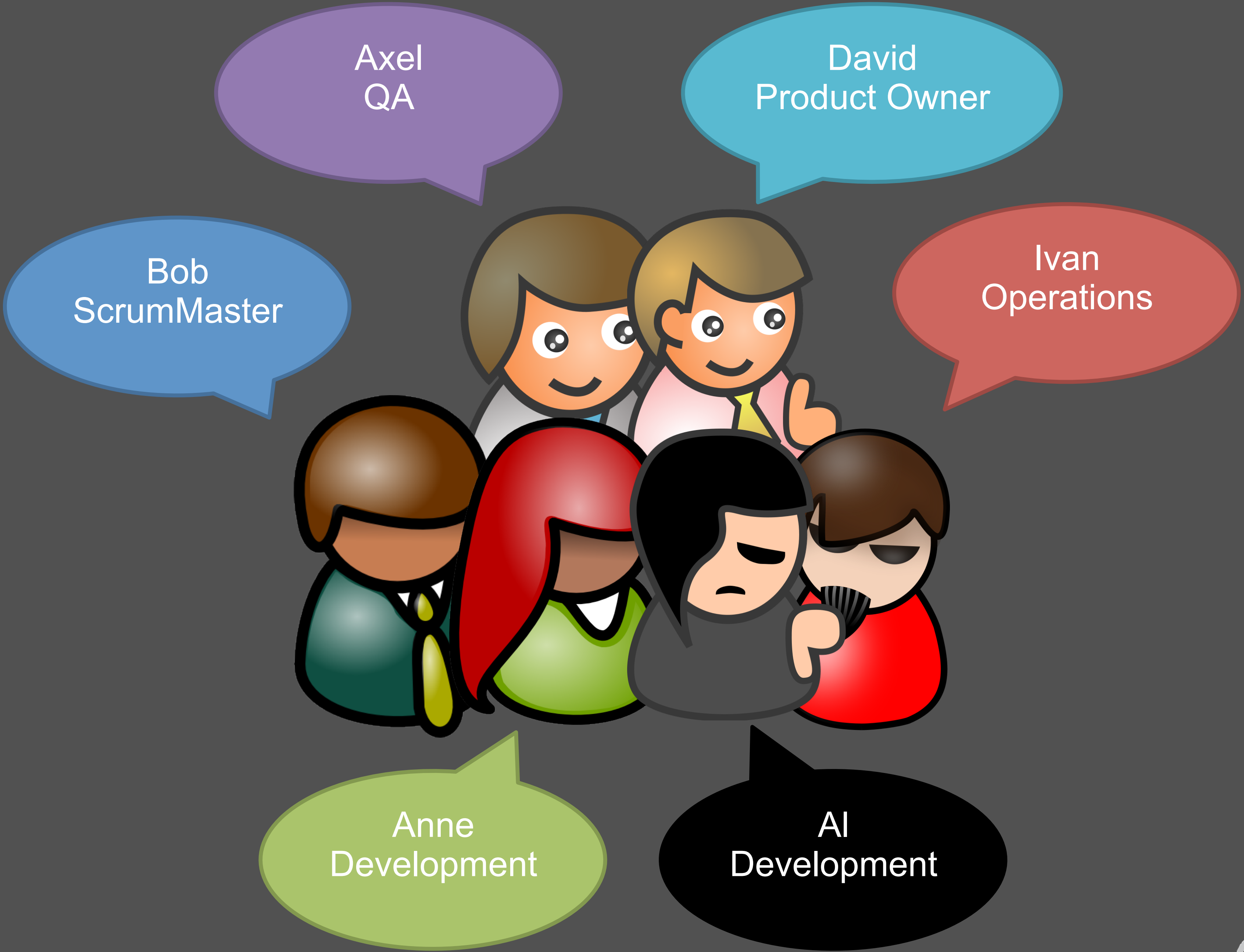
http://www.github.com/thorque/tucana





Found 88 constellations

Name	Genitive Name	Code	
Andromeda	Andromedae	AND	Details
Antlia	Antliae	ANT	Details
Apus	Apodis	APS	Details
Aquila	Aquilae	AQL	Details
Aquarius	Aquarii	AQR	Details
Ara	Arae	ARA	Details
Aries	Arietis	ARI	Details
Auriga	Aurigae	AUR	Details
Bootes / Boötes	Bootis / Boötis [Anm 1]	BOO	Details
Caelum	Caeli	CAE	Details
Camelopardalis	Camelopardalis	CAM	Details
Capricornus	Capricorni	CAP	Details
Carina	Carinae	CAR	Details
Cassiopeia	Cassiopeiae	CAS	Details
Centaurus	Centauri	CEN	Details



Axel
QA

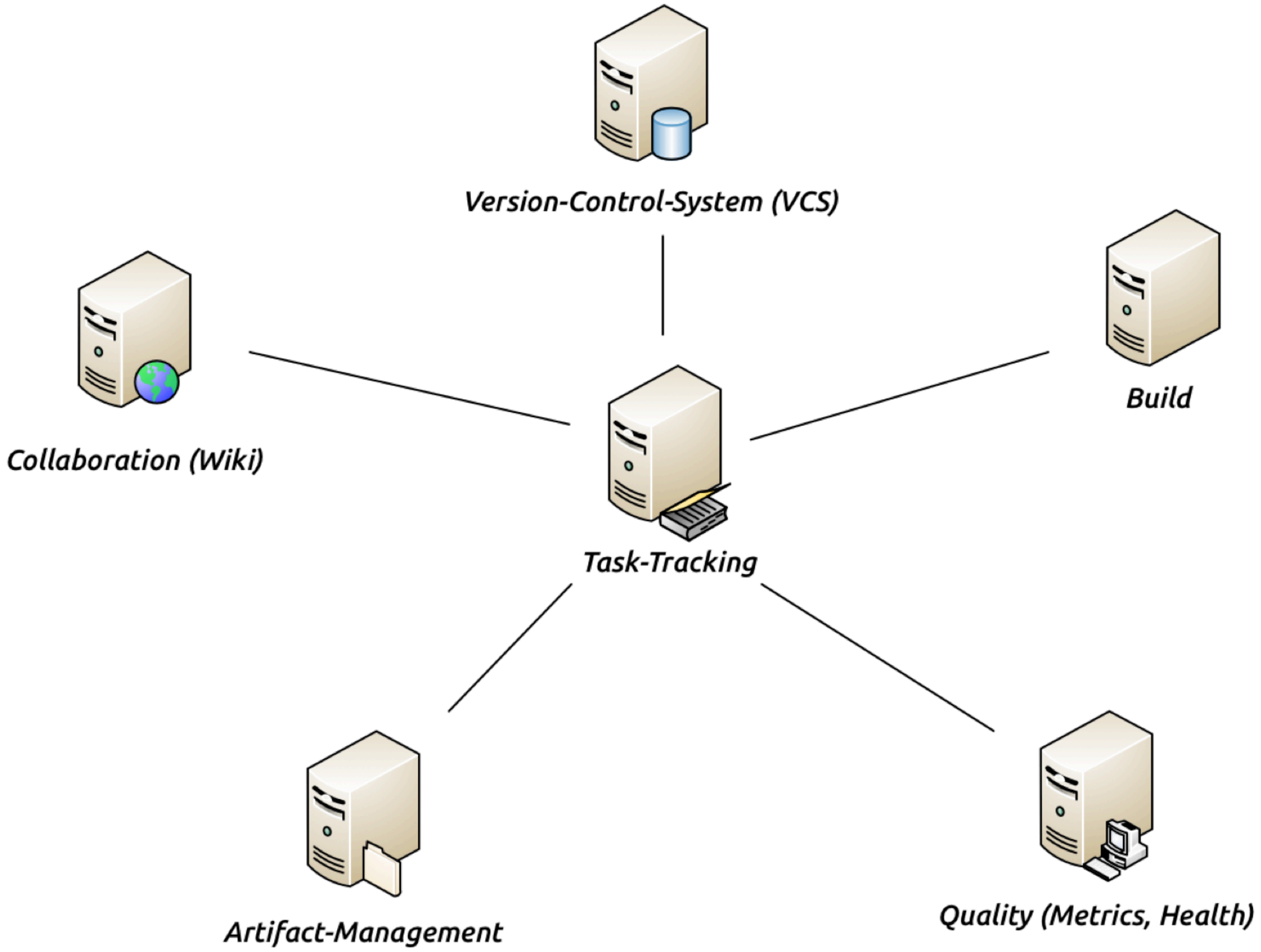
David
Product Owner

Bob
ScrumMaster

Ivan
Operations

Anne
Development

Al
Development



Version-Control-System (VCS)

Collaboration (Wiki)

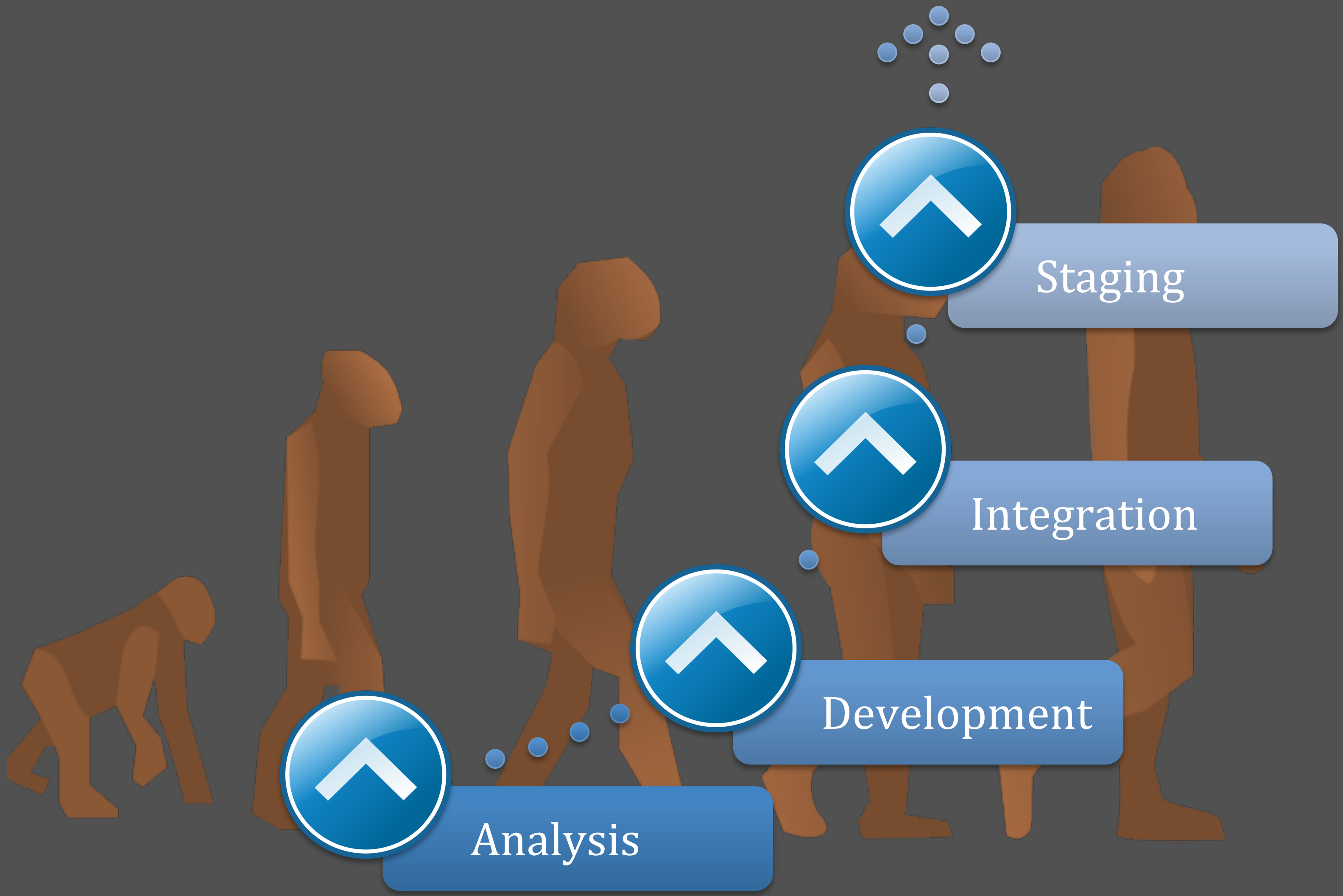
Build

Task-Tracking

Artifact-Management

Quality (Metrics, Health)

Now we have a project, a team and the software we need...

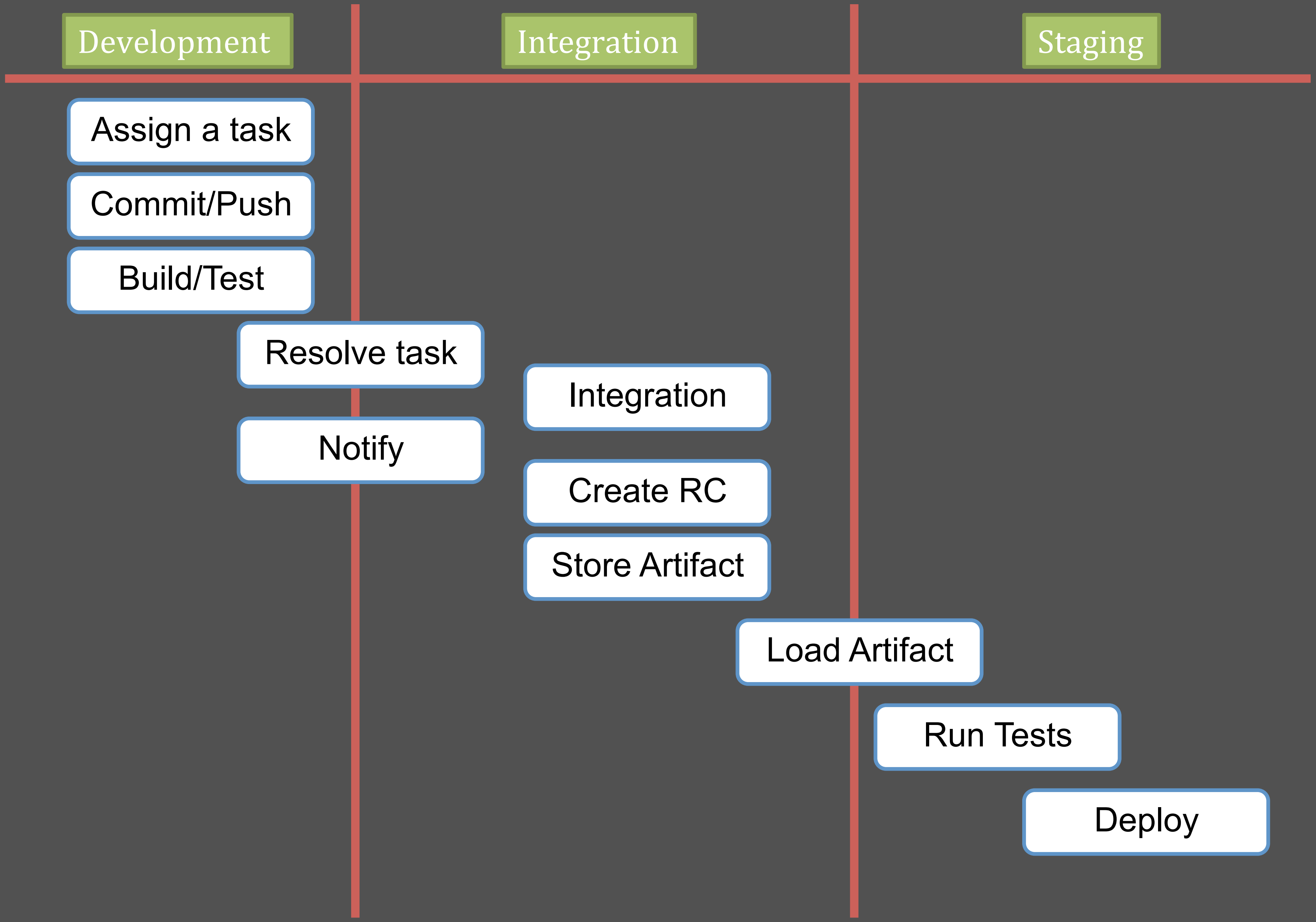


Staging

Integration

Development

Analysis



Development

Integration

Staging

Assign a task

Commit/Push

Build/Test

Resolve task

Notify

Integration

Create RC

Store Artifact

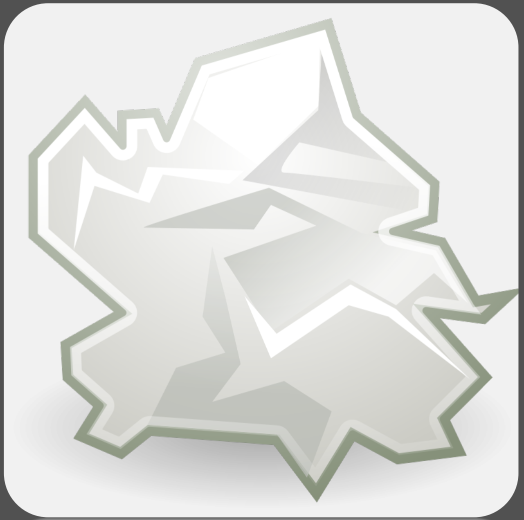
Load Artifact

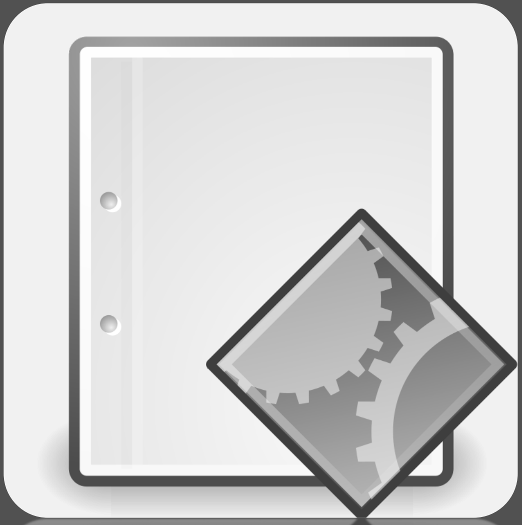
Run Tests

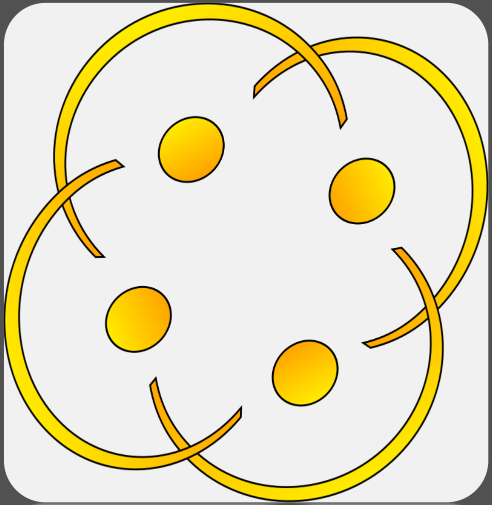
Deploy

Analysis

Attendees



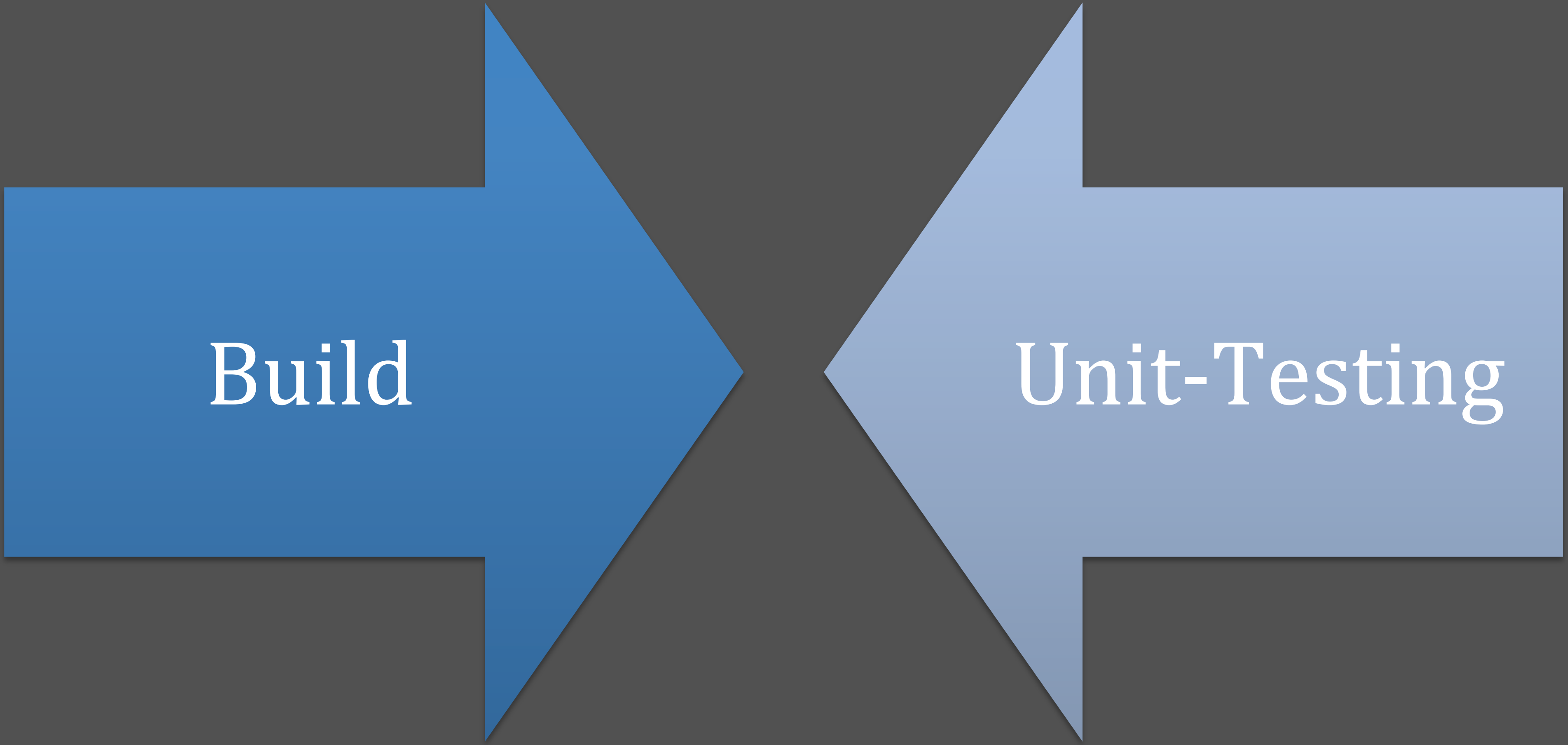




QUALITY CONTROL • APPROVED •

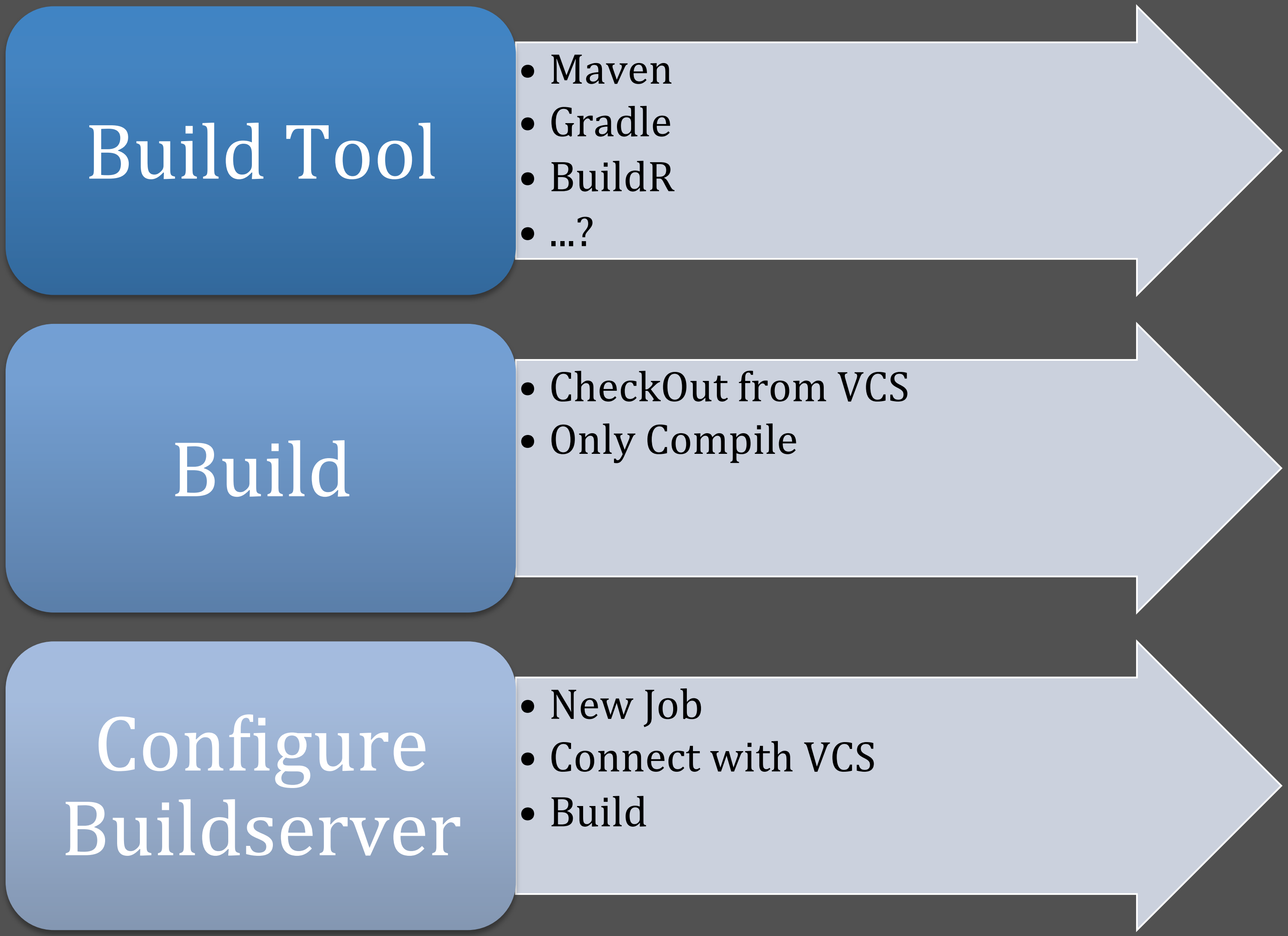
Development

Attendees



Build

Unit-Testing



Build Tool

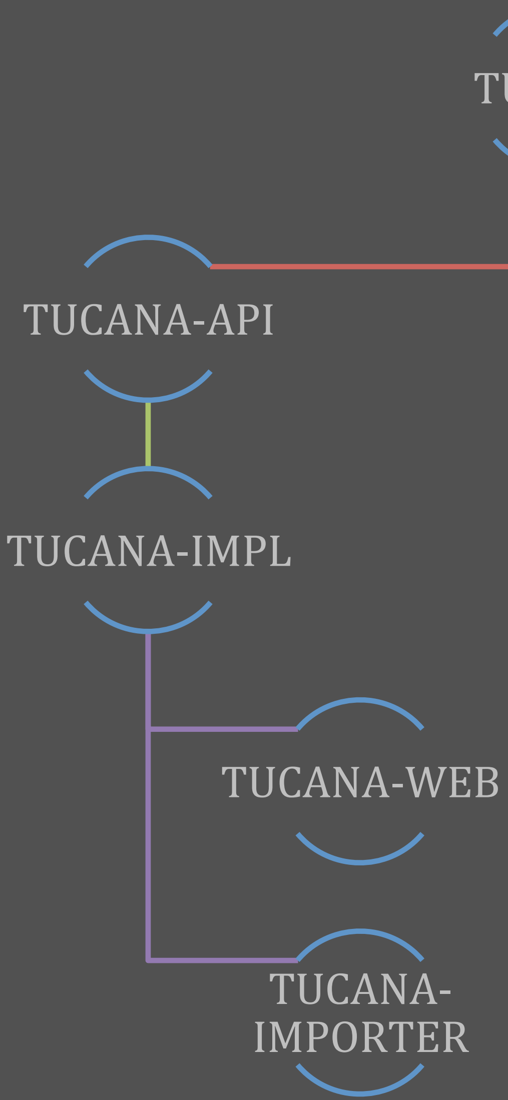
- Maven
- Gradle
- BuildR
- ...?

Build

- CheckOut from VCS
- Only Compile

Configure Buildserver

- New Job
- Connect with VCS
- Build



TUCANA

TUCANA-API

TUCANA-IMPL

TUCANA-WEB

TUCANA-IMPORTER

```
<project>
    <modelVersion>4.0.0</modelVersion>
    <groupId>org.tucana</groupId>
    <artifactId>tucana</artifactId>
    <version>1.0.0-SNAPSHOT</version>
    <modules>
        <module>tucana-api</module>
        <module>tucana-impl</module>
        <module>tucana-importer</module>
        <module>tucana-web</module>
    </modules>
    <packaging>pom</packaging>
```

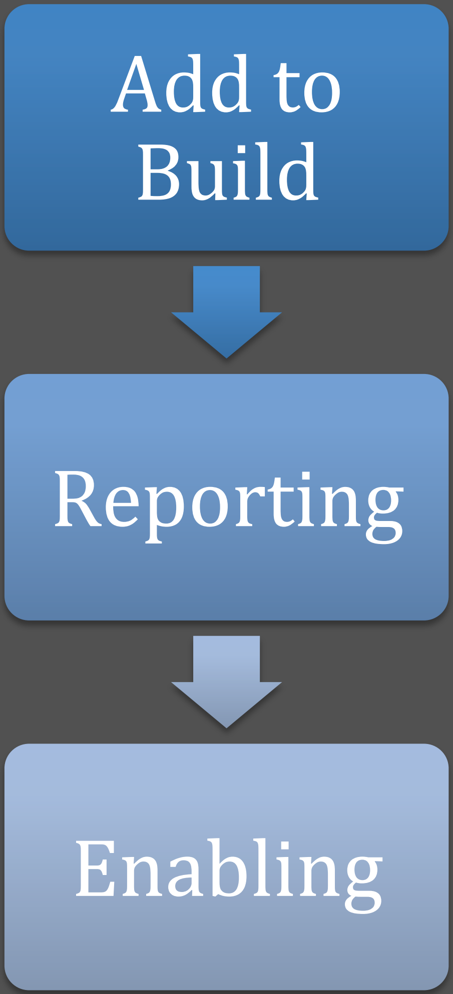
Testable

Automatic

Repeatable

Unit

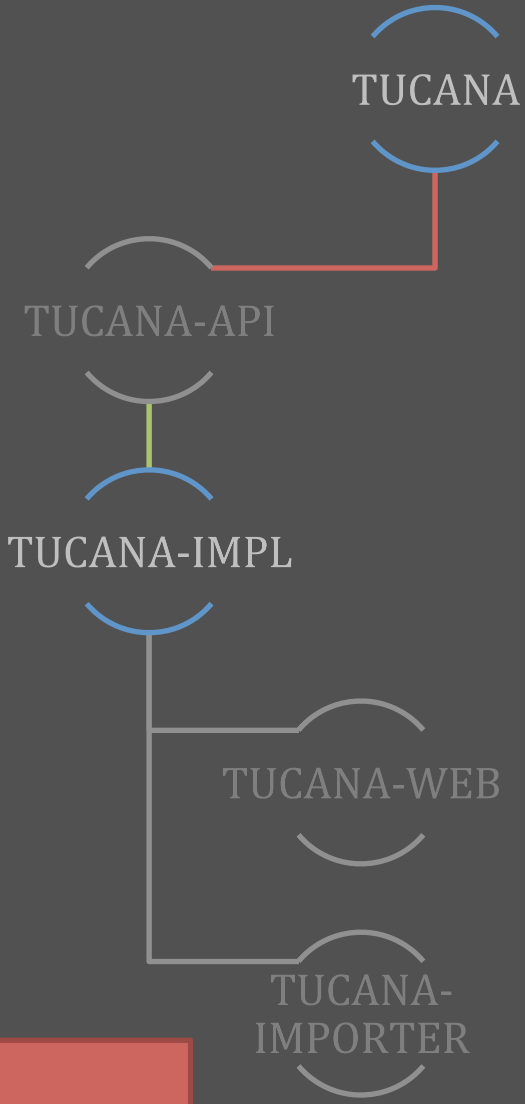
Fast



Add to Build

Reporting

Enabling



TUCANA

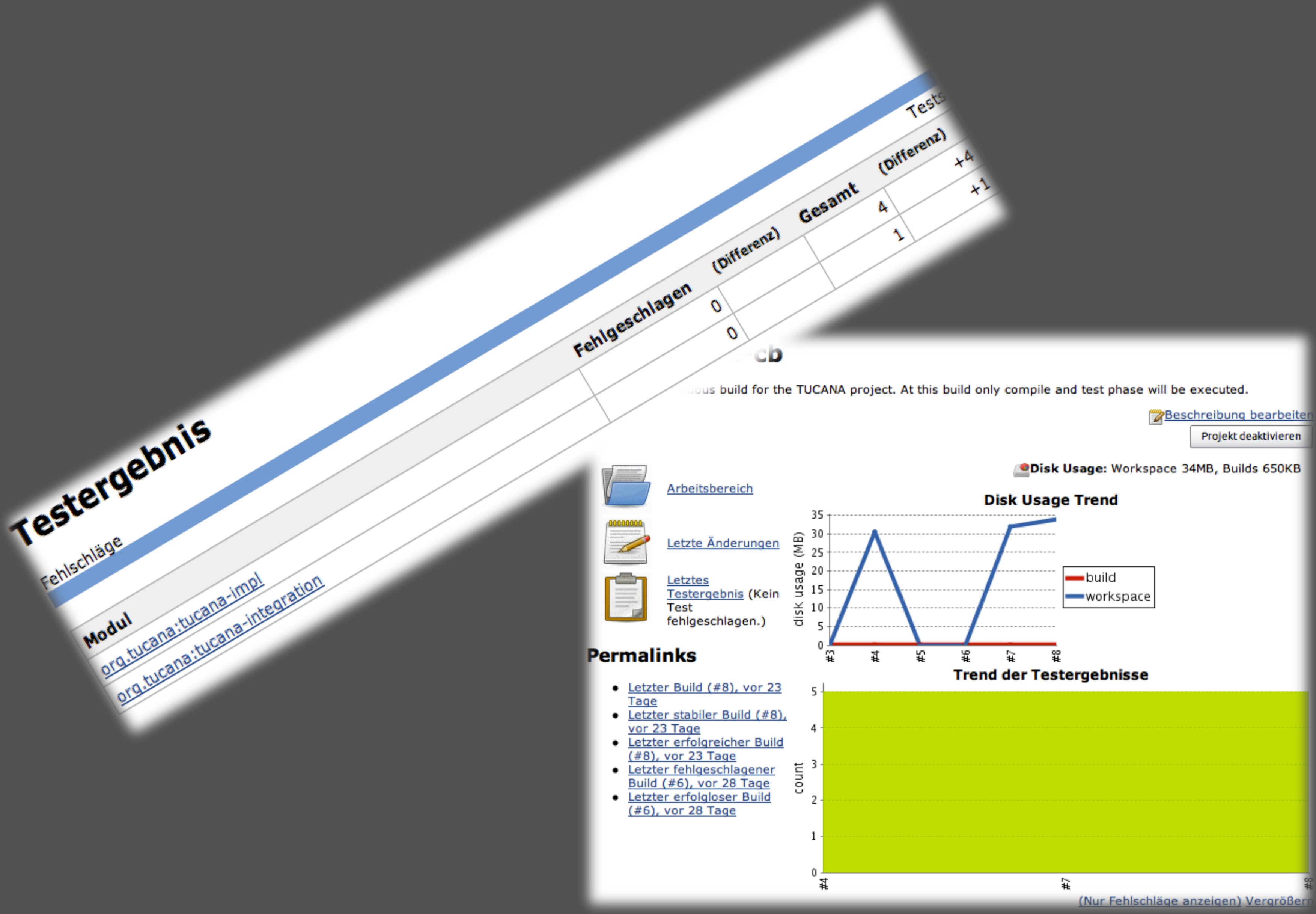
TUCANA-API

TUCANA-IMPL

TUCANA-WEB

TUCANA-IMPORTER

```
<plugin>
   <artifactId>maven-surefire-plugin</artifactId>
   <groupId>org.apache.maven.plugins</groupId>
   <version>2.12</version>
</plugin>
```



Testergebnis

Fehlschläge

Tests

Modul	Fehlgeschlagen	(Differenz)	Gesamt	(Differenz)
org.tucana:tucana-impl	0		4	+4
org.tucana:tucana-integration	0		1	+1

cb

ous build for the TUCANA project. At this build only compile and test phase will be executed.

Beschreibung bearbeiten

Projekt deaktivieren

Disk Usage: Workspace 34MB, Builds 650KB

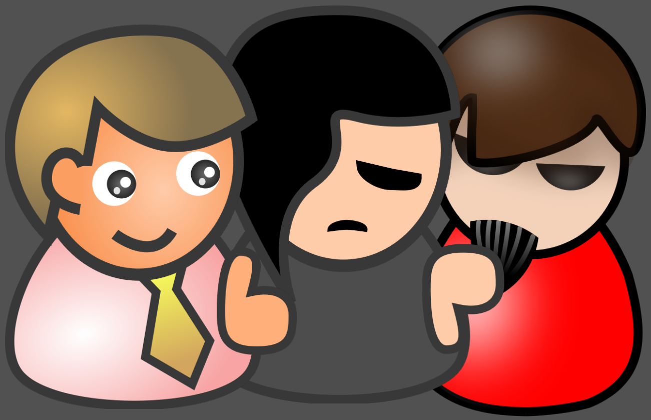
- Arbeitsbereich
- Letzte Änderungen
- Letztes Testergebnis (Kein Test fehlgeschlagen.)

Permalinks

- Letzter Build (#8), vor 23 Tage
- Letzter stabiler Build (#8), vor 23 Tage
- Letzter erfolgreicher Build (#8), vor 23 Tage
- Letzter fehlgeschlagener Build (#6), vor 28 Tage
- Letzter erfolgloser Build (#6), vor 28 Tage

(Nur Fehlschläge anzeigen) Vergrößern

Integration



Attendees

Now let the code play with other components and resources

Start your Container

Execute Scripts

Run Integrationtests

```
>mvn -e integration-test
```

```
<bean id="liquibase"
    class="liquibase.integration.spring.SpringLiquibase“ .../>
<jdbc:initialize-database id="dataSource" type="HSQL“>
   <jdbc:script location="database/constellation.sql"/>
   <jdbc:script location="database/constellation_details.sql"/>
</jdbc:initialize-database>
```

```
<plugin>
    <artifactId>maven-surefire-plugin</artifactId>
    <groupId>org.apache.maven.plugins</groupId>
    <configuration>
        <skipTests>true</skipTests>
    </configuration>
    <executions>
        <execution>
            <phase>integration-test</phase>
            <goals><goal>test</goal></goals>
            <configuration>
                <skipTests>false</skipTests>
            </configuration>
        </execution>
    </executions>
</plugin>
```

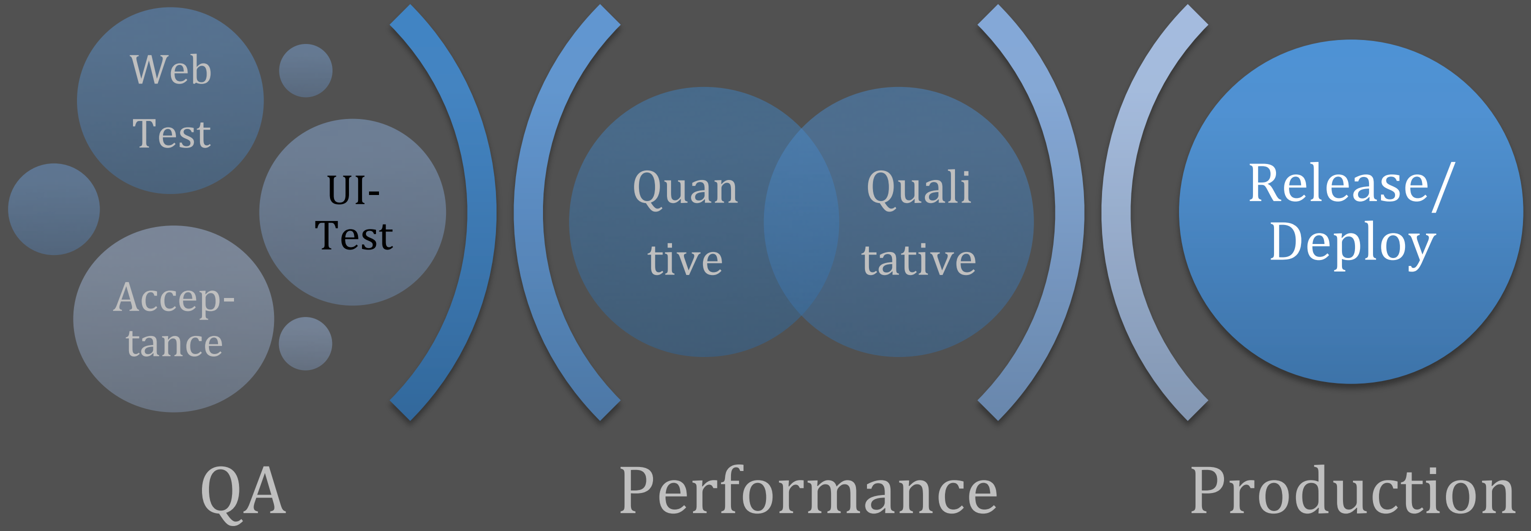
Release Candidate

Archive

Structured

Staging

Attendees



Web Test

UI-Test

Accep-tance

QA

Quan tive

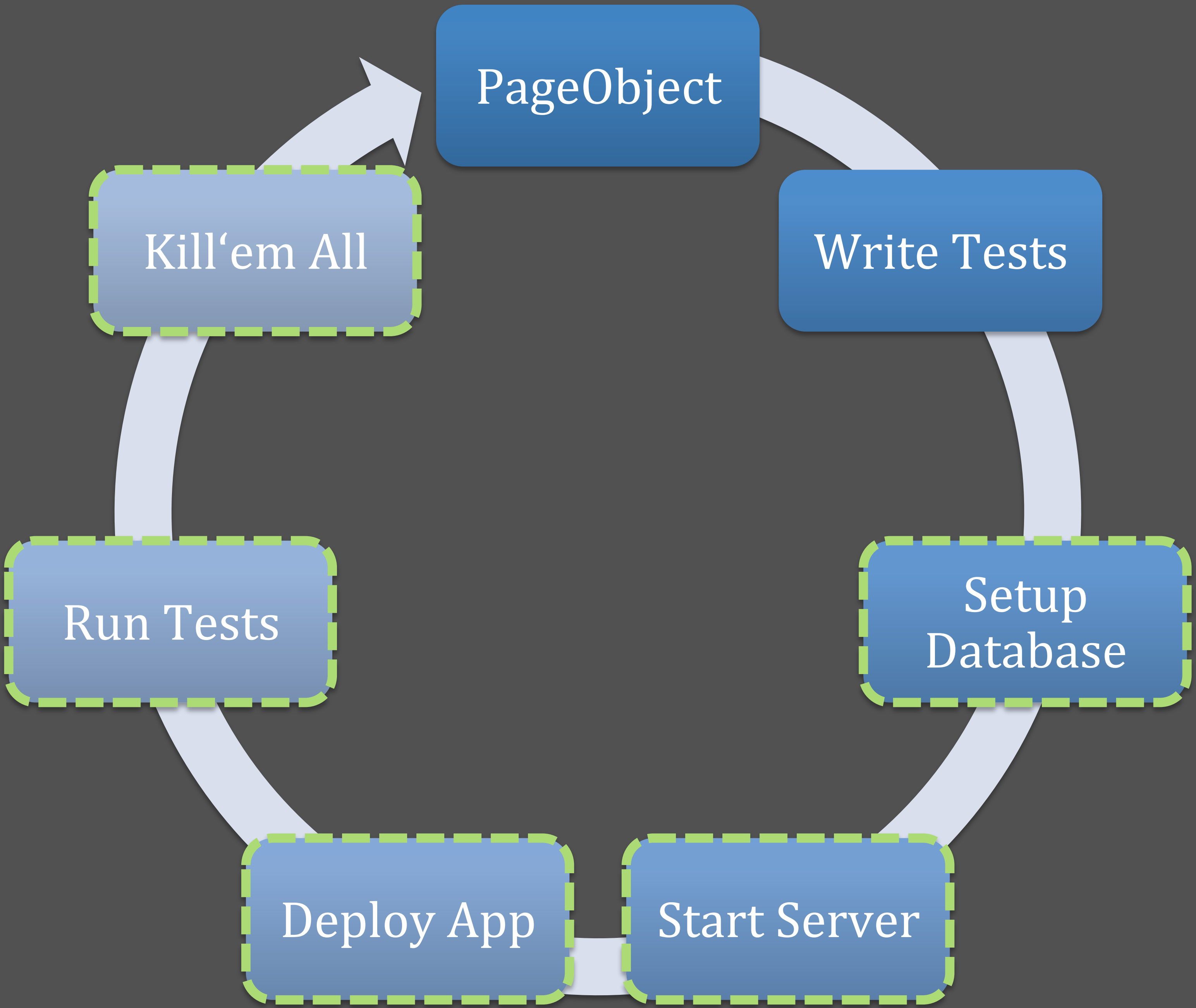
Quali tative

Performance

Release/ Deploy

Production

Gebish your app



PageObject

Write Tests

Setup Database

Start Server

Deploy App

Run Tests

Kill‘em All

```
class ConstellationListPage extends Page {
    static at = { title == "TUCANA: The list of constellations" }

    static content = {
        datatable {
            $("table.datatable")
        }

        results{
            datatable.$("tbody tr")
        }

        code_of_first_result{
            results[0].find("td")[2].find("span")
        }

        code_of_last_result{
            results[results.size()-1].find("td")[2].find("span")
        }

    }
}
```

http://code.google.com/p/selenium/wiki/PageObjects

```
class ConstallationListPageTest extends GebTest{

    @Test
    final void "check whether constellation are in alphabetically order"(){
        Browser.drive(getBrowser()) {
            to ConstellationListPage

            Assert.assertTrue(at(ConstellationListPage))
            Assert.assertEquals("AND", code_of_first_result.text())
            Assert.assertEquals("VUL", code_of_last_result.text())
        }
    }
}
```

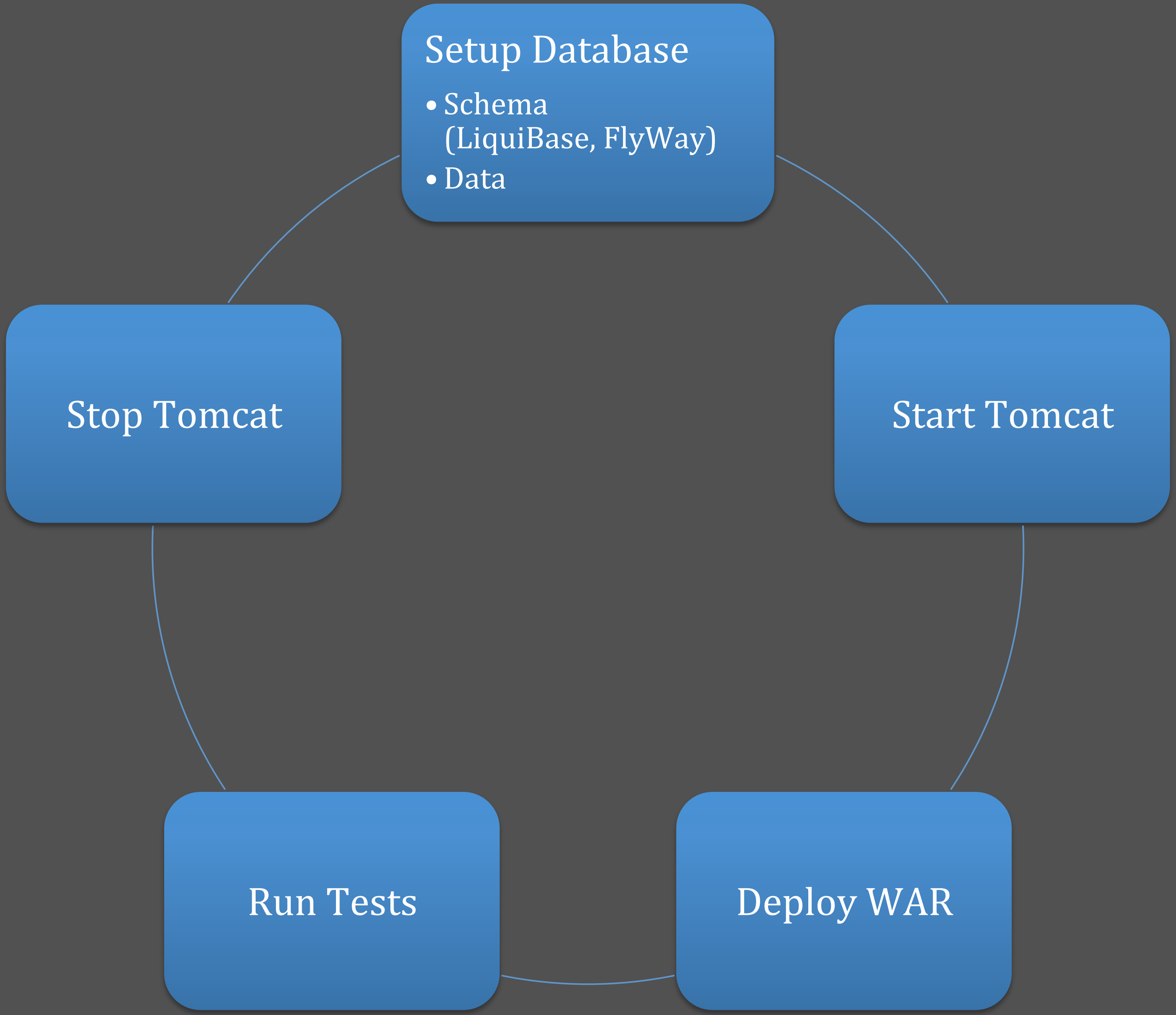
```
class ConstallationListPageTest extends GebTest{

    def "check whether constellation are in alphabetically order"(){
        when:
            to ConstellationListPage

        then:
            at(ConstellationListPage) &&
            "AND“ == code_of_first_result.text() &&
            "VUL“== code_of_last_result.text()
        }
    }
}
```

spock

the enterprise ready specification framework

```
using "geb"

scenario "check whether constellation are in alphabetically order", {
    given "our base url", {
        baseUrl = "${System.properties['geb.build.baseUrl']}"
    }

    when “visit the ConstellationListPage", {
        to ConstellationListPage
    }

    then "we arrive at the page", {
        at ConstellationListPage
    }

    and “check whether the first entry is AND", {
        "AND“ == code_of_first_result.text()
    }

    and “check whether the last entry is VUL", {
        "VUL“== code_of_last_result.text()
    }
```

easyb -- bdd in java can't get any easier



Setup Database

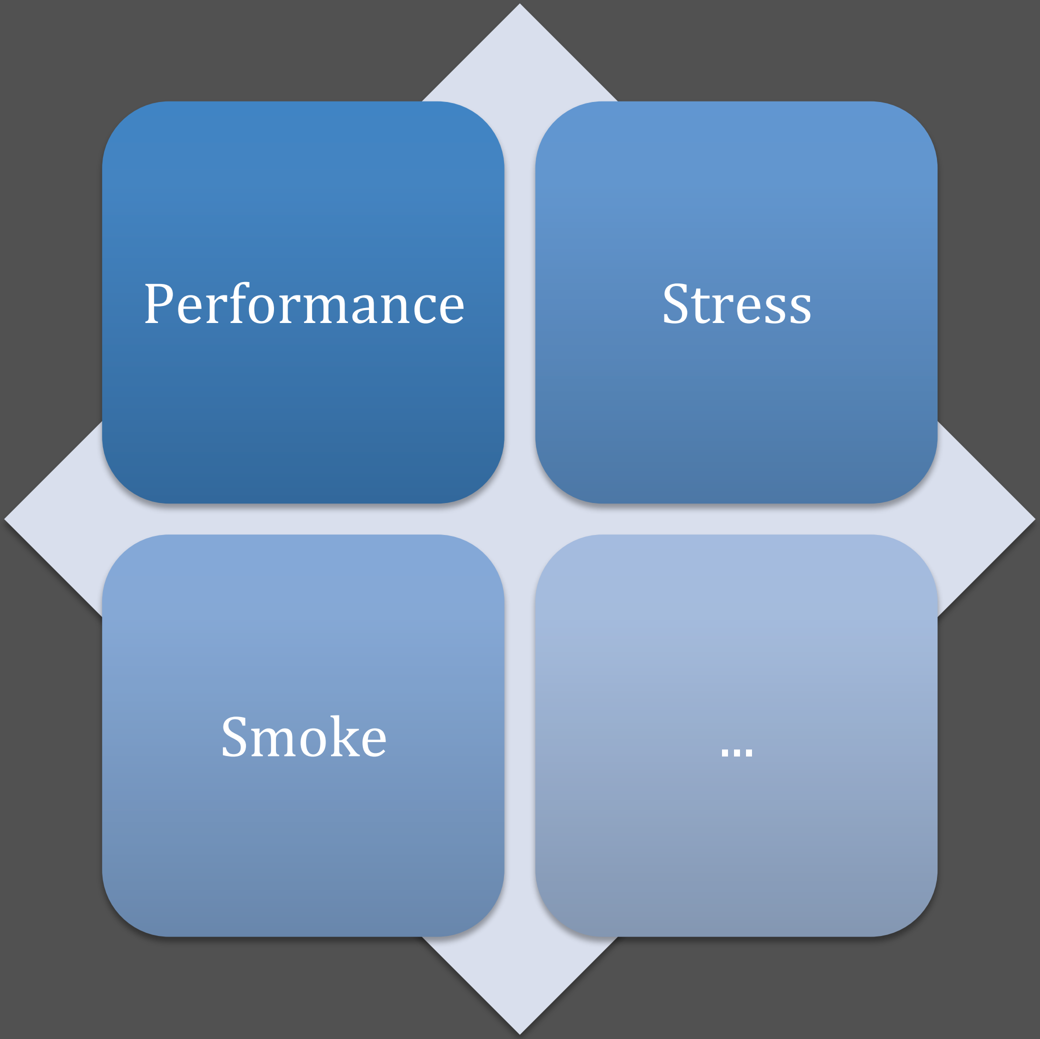
- Schema (LiquiBase, FlyWay)
- Data

Start Tomcat

Deploy WAR

Run Tests

Stop Tomcat



Performance

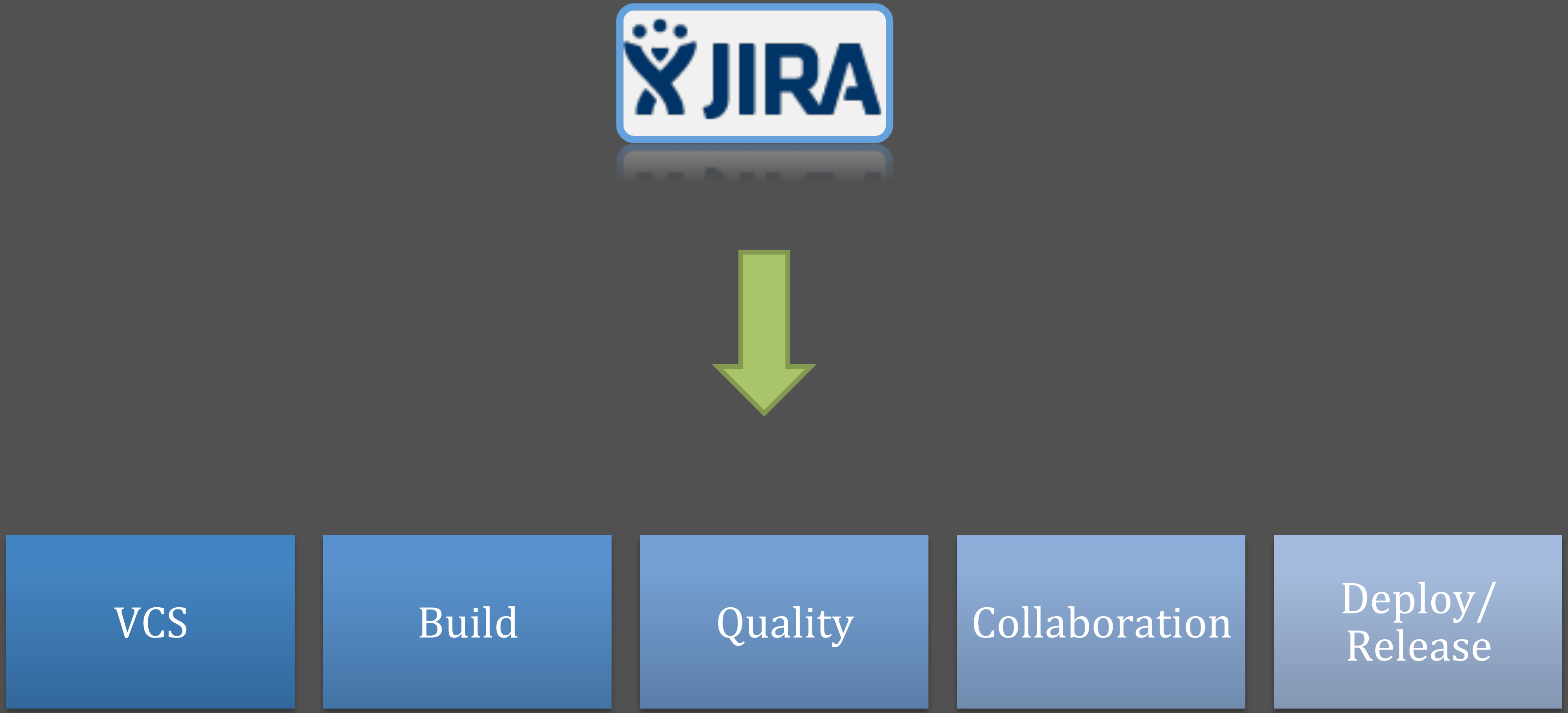
Stress

Smoke

...

Other Tests

- Canary Deployment
- Blue-Green
- Feature Toggles
- Versioning
- Configurationless Apps



JIRA

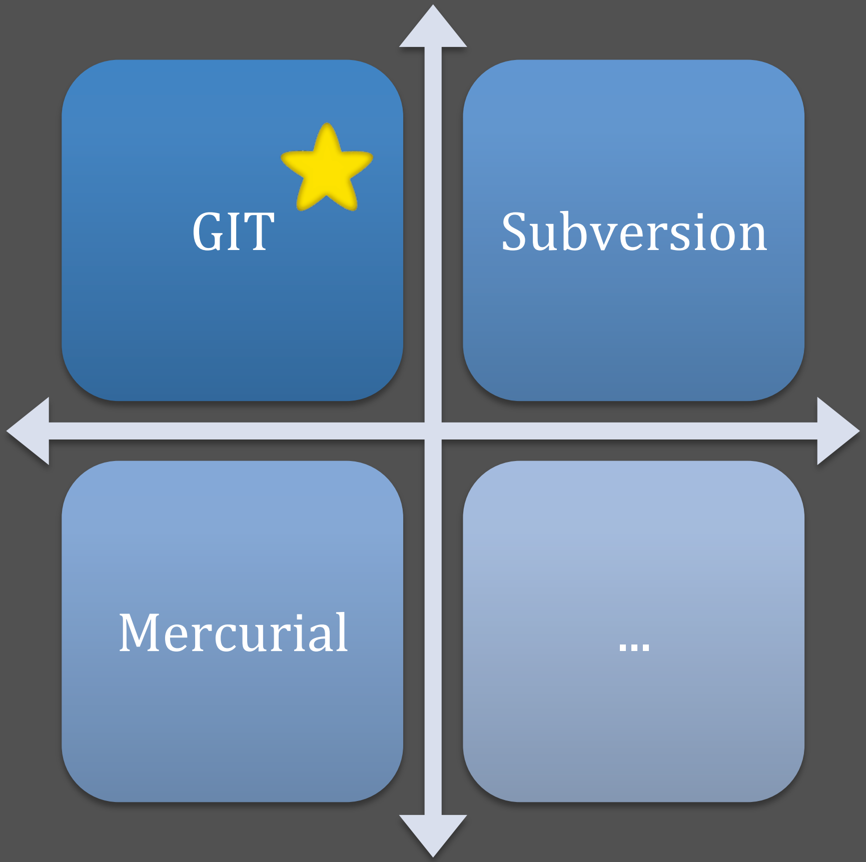
VCS

Build

Quality

Collaboration

Deploy/
Release

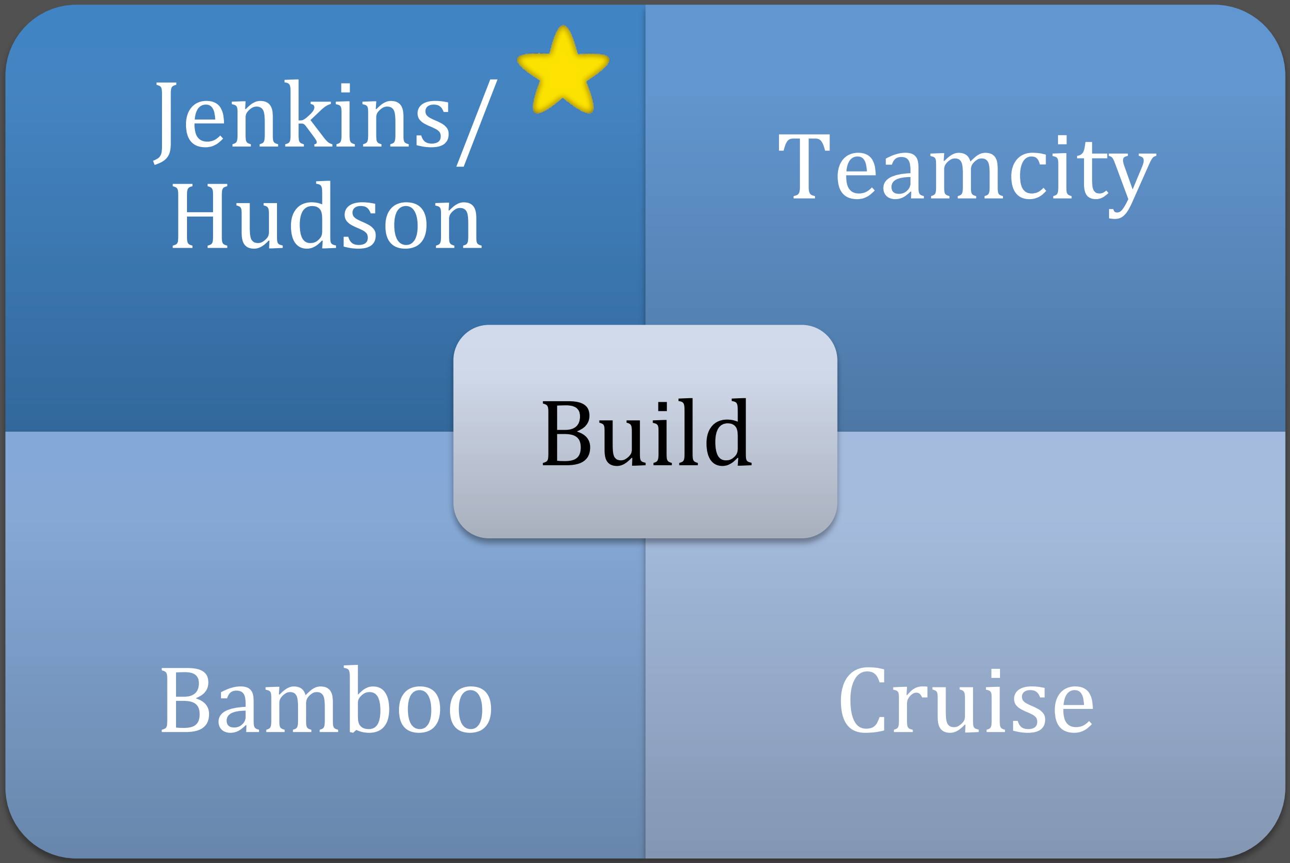


GIT

Subversion

Mercurial

...



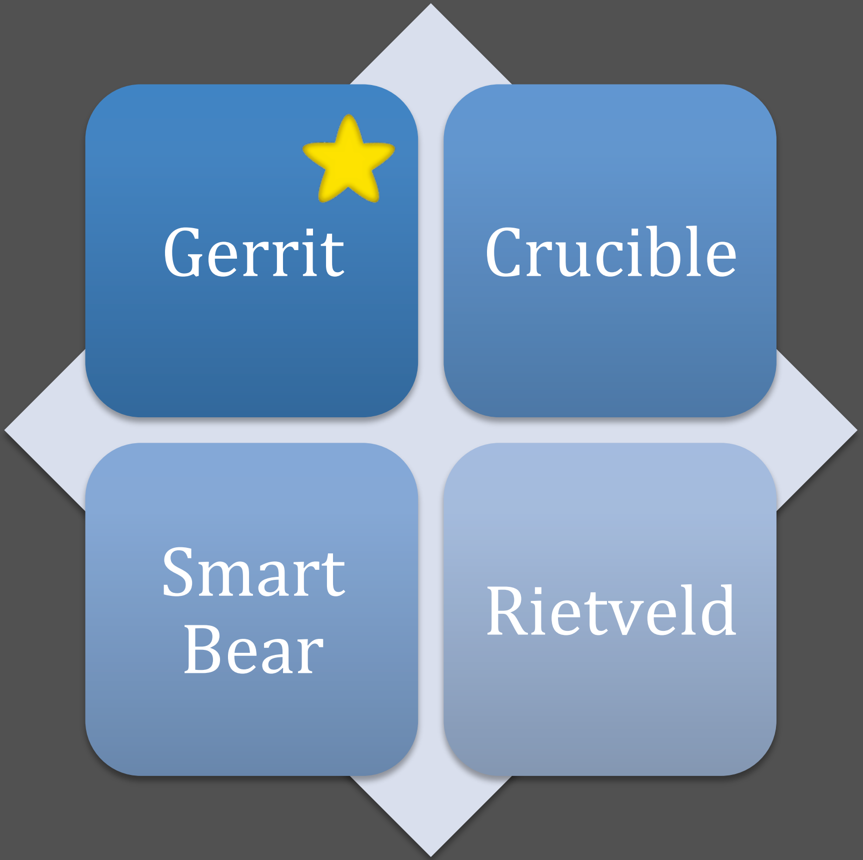
Jenkins/ Hudson

Teamcity

Build

Bamboo

Cruise

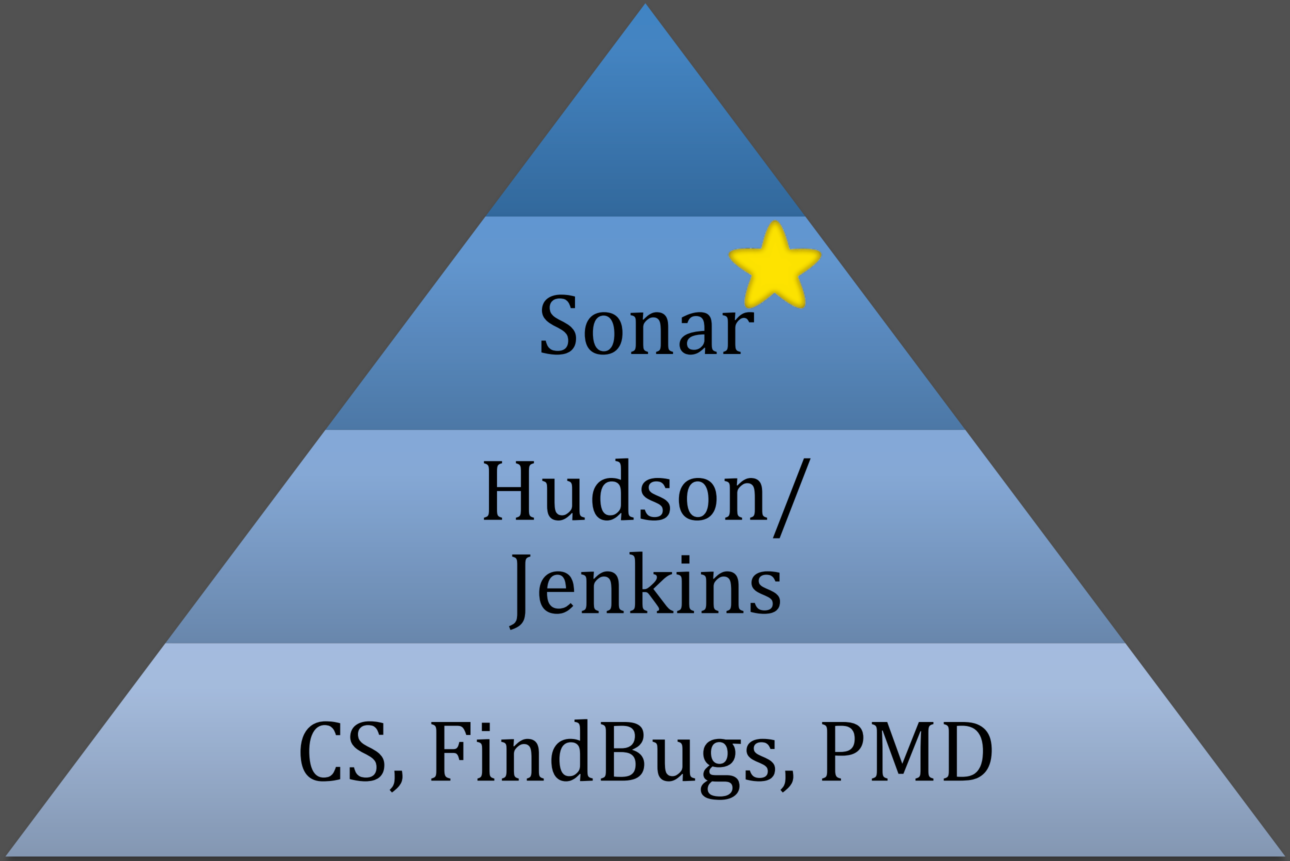


Gerrit

Crucible

Smart Bear

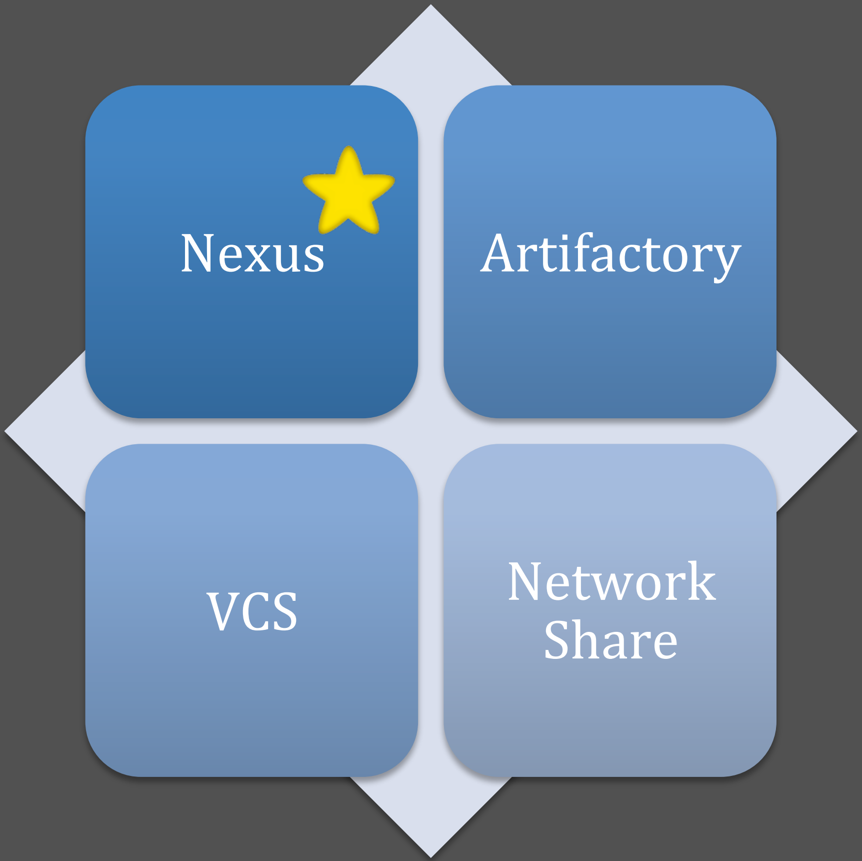
Rietveld



Sonar

Hudson/ Jenkins

CS, FindBugs, PMD

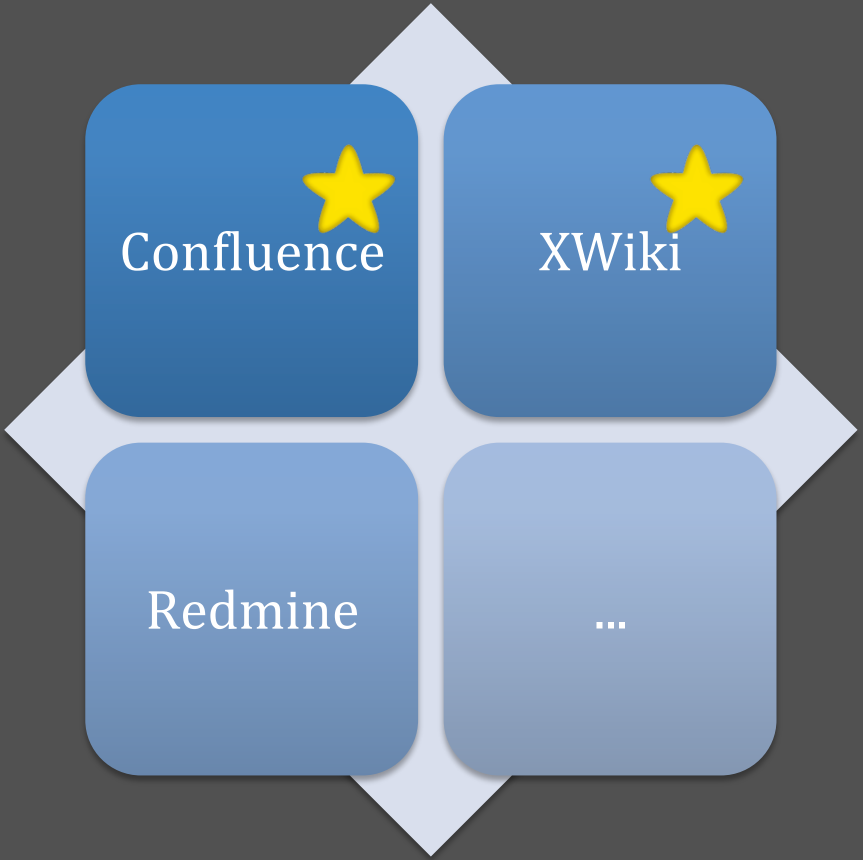


Nexus

Artifactory

VCS

Network Share



Confluence

XWiki

Redmine

...

Eclipse & Mylyn

JIRA

GIT

Jenkins

Sonar

Gerrit

Nexus

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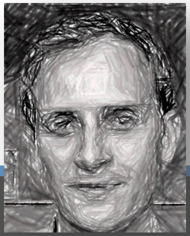

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