APACHE SLING & FRIENDS TECH MEETUP
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Scaling up development of a modular code base

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adaptTo()

About me

@rombert

Agenda

- Modular development
- Source control
- Build tool and continuous integration
- (Integrated) development environment
- Communication
- Wrap-up

Modular development

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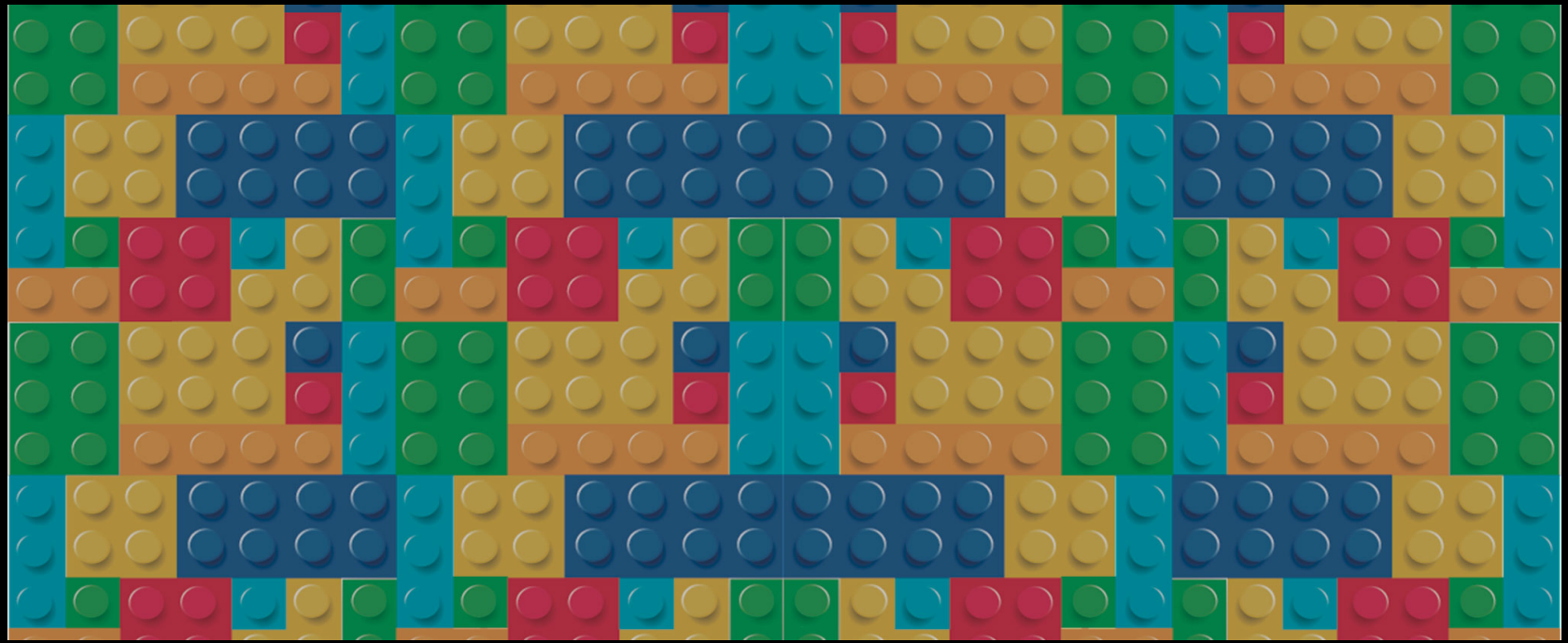
What is modular development?



Modular development vs modular deployment

Development/Deployment	Not Modular	Modular
Not Modular	I	II
Modular	III	IV

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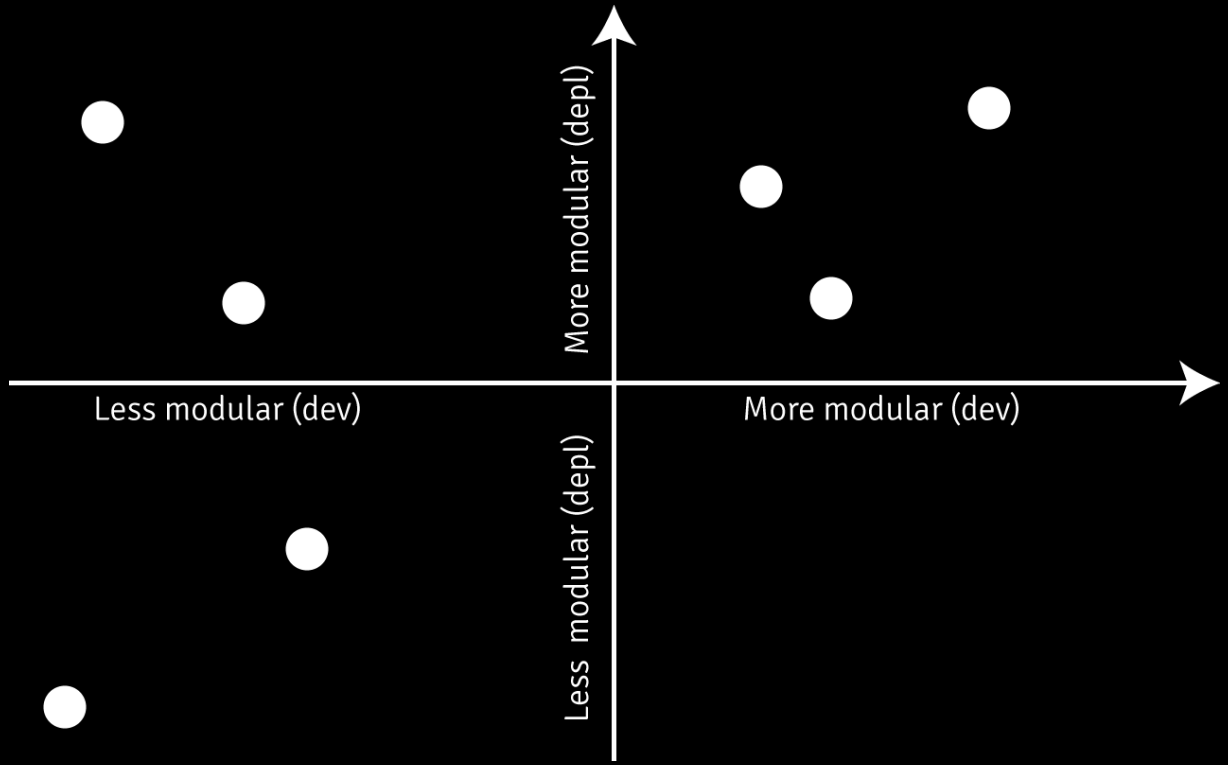
Modular development vs modular deployment



Source control

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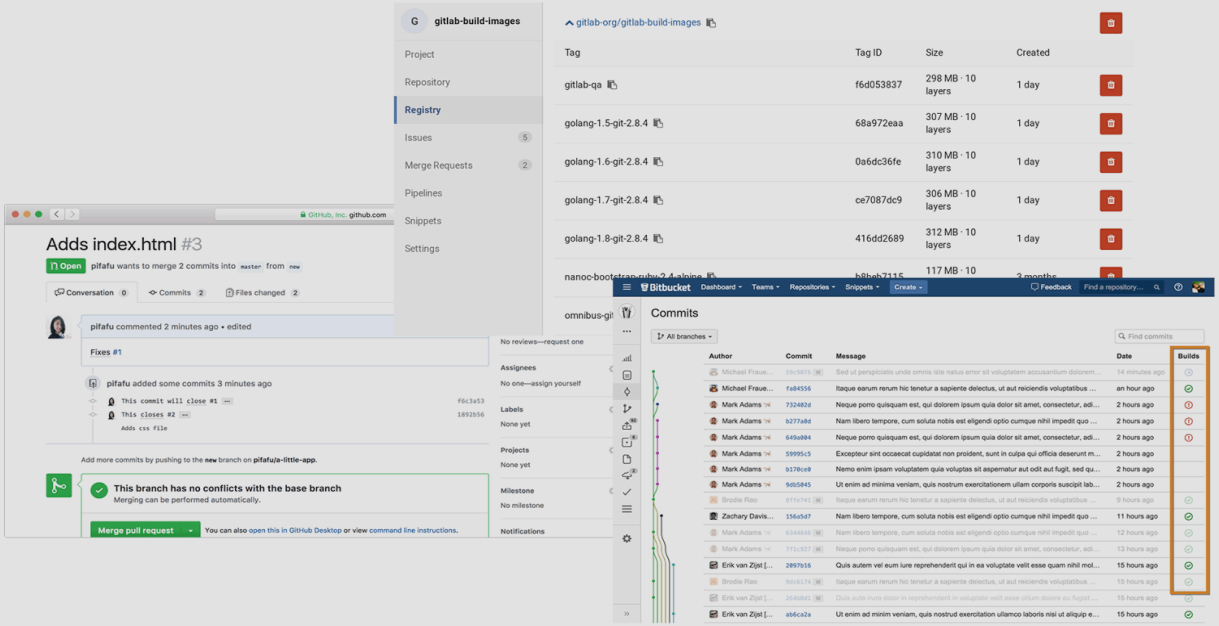
Source control: to split or not to split

Source control: single repository

```
$ svn checkout
https://svn.apache.org↵
    /repos/asf/sling/trunk sling
# change, commit atomically
$ svn ls https://svn.apache.org↵
    /repos/asf/sling/tags | wc -l
1478
```

Source control: multiple repositories



Source control: repo (Android)

```
<?xml version="1.0" encoding="UTF-8"?>
<manifest>
  <remote  name="origin" fetch=".." />
  <default revision="master" remote="origin" />
  <project path="api" name="api.git"/>
  <project path="impl" name="impl.git"/>
</manifest>

$ repo init -u git@github.com:org/manifest.git
$ repo sync
$ repo start new-feature api/ impl/
$ repo forall -c 'git push ...'
```

Source control: repo automation

```
#!/bin/sh

echo '<?xml version="1.0" encoding="UTF-8"?>'
echo "<!-- generated by $(basename $0) -->"
echo '<manifest>'
echo '  <remote  name="origin" fetch="."/>'
echo '  <default revision="master" remote="origin"/>'

for repo in $(curl -s https://api.github.com/users/rombert/repos?sort=updated \
    | jq '.[] |  .name | match ("TMP-sling-org.apache.sling.*") | .string' | tr
-d '"' | sort); do
    name=${repo#TMP-sling-}
    echo "  <project path=\"${name}\" name=\"${repo}.git\"/>"
done
echo '</manifest>'
```

Source control: migrating to individual repositories

```
$ git clone https://github.com/apache/sling.git sling
$ git clone sling org.apache.sling.engine

$ cd org.apache.sling.engine
$ git filter-branch --subdirectory-filter
bundles/engine
$ git for-each-ref --format="%(refname)"
refs/original/
    | xargs -n1 git update-ref -d

$ ls # only data in bundles/engine
```

Build tool and continuous integration

Build tool: the aggregate build

$$R = \prod r_i$$

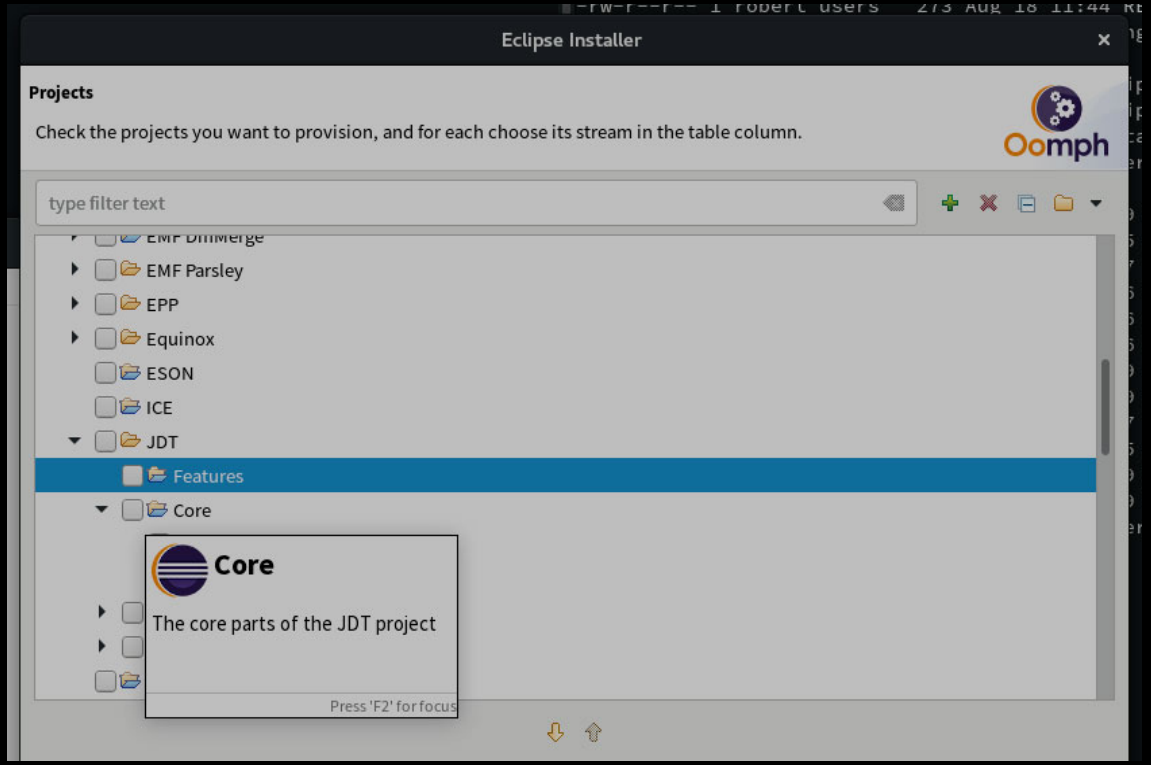
Build tool: repository

Build tool: automating creation of module builds

```
def modules = [
    [
        location: 'bundles/api'
    ],
    [
        location: 'bundles/auth/core'
    ] /* many others skipped */
]

modules.each { module ->
    jdks.each { jdkKey ->
        mavenJob(jobName(module.location, jdkKey)) {
            logRotator {
                numToKeep(15)
            }
            triggers {
                snapshotDependencies(true)
                scm('H/15 * * * *')
            }
            goals("-U clean deploy")
            /* other instructions skipped */
        }
    }
}
```

(Integrated) development environment

IDE: project discovery



IDE: shared preferences

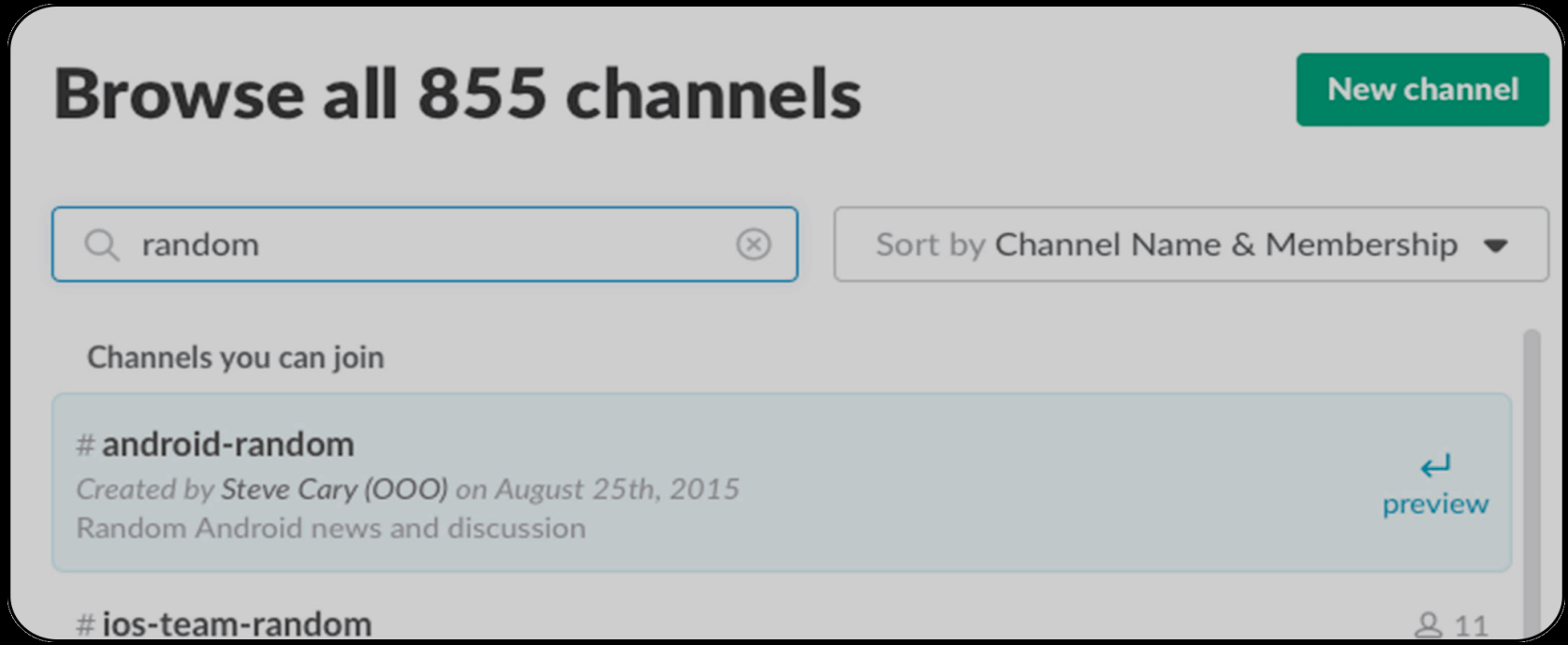
```
<!-- package your preferences as a Maven artifact --->
<dependency>
    <groupId>org.acme.tooling</groupId>
    <artifactId>acme-eclipse-formatter</artifactId>
    <version>1.0-SNAPSHOT</version>
    <packaging>eclipse-formatter</packaging>
</dependency>

<!-- configure the plugin in your parent pom -->
<plugins>
    <plugin>
        <groupId>ro.lmn.maven.rip</groupId>
        <artifactId>eclipse-preferences-maven-plugin</artifactId>
        <version>0.0.2</version>
        <extensions>true</extensions>
        <configuration>
            <repository>
                <kind>jira</kind>
                <url>https://issues.apache.org/jira</url>
            </repository>
            <commitTemplate>${task.key} - ${task.description}\n\n</commitTemplate>
        </configuration>
    </plugin>
</plugins>
```

Communication

Communication: single channel

- [Openstack] OpenStack Keystone HA and Pacemaker on Ubuntu *Imran Ahmed*
- [Openstack] [openstack-dev] [PTG] Video interviews at PTG, now scheduling *David Moreau Simard*
  - [Openstack] [openstack-dev] [PTG] Video interviews at PTG, now scheduling *Rich Bowen*
- [Openstack] [heat] *Lars-Erik Helander*
- [Openstack] Neutron MySQL issues. *Ken D'Ambrosio*
- [Openstack] [FEMDC] IRC meeting Today 15:00 UTC *lebre.adrien at free.fr*
- [Openstack] [openstack][pike][neutron] *Jai Singh Rana*
- [Openstack] [heat] default collectors *Volodymyr Litovka*
- [Openstack] [Fuel] Danube Fuel 10 compute node base system partition size *Jim Okken*
- [Openstack] [cinder] [nova] Inconsistency *Sinan Polat*
- [Openstack] Upload image to specific cinder backend *Ray Sun*
- [Openstack] MTU on Provider Networks *John Petrini*
  - [Openstack] MTU on Provider Networks *Remo Mattei*
  - [Openstack] MTU on Provider Networks *Curtis*
    - [Openstack] MTU on Provider Networks *John Petrini*
- [Openstack] QEMU/KVM crash when mixing cpu_policy:dedicated and non-dedicated flavors? *Tomas Brännström*
  - [Openstack] QEMU/KVM crash when mixing cpu_policy:dedicated and non-dedicated flavors? *Steve Gordon*

Communication: multiple channels



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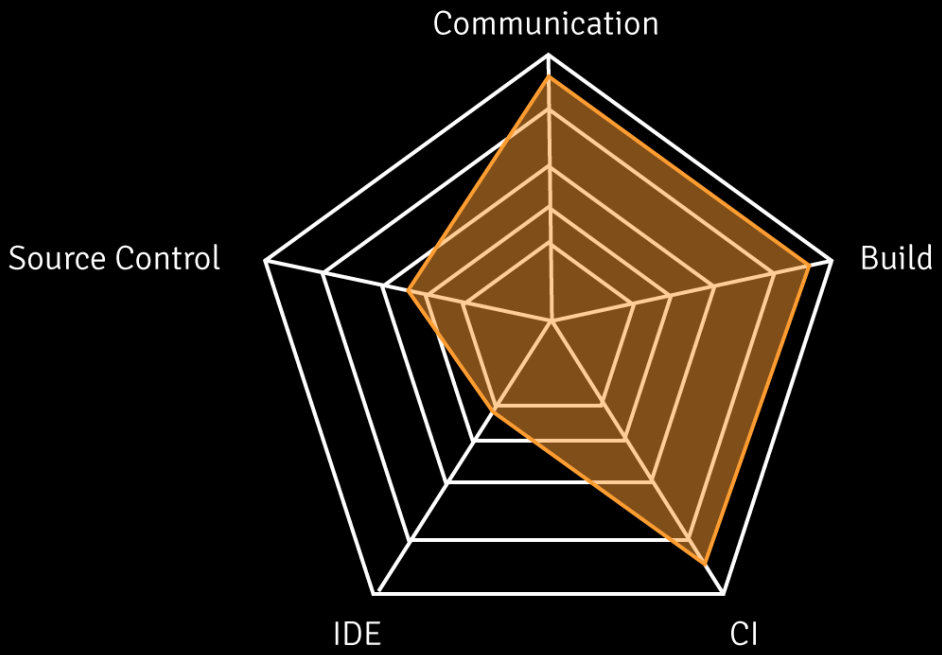
Communication: a split?

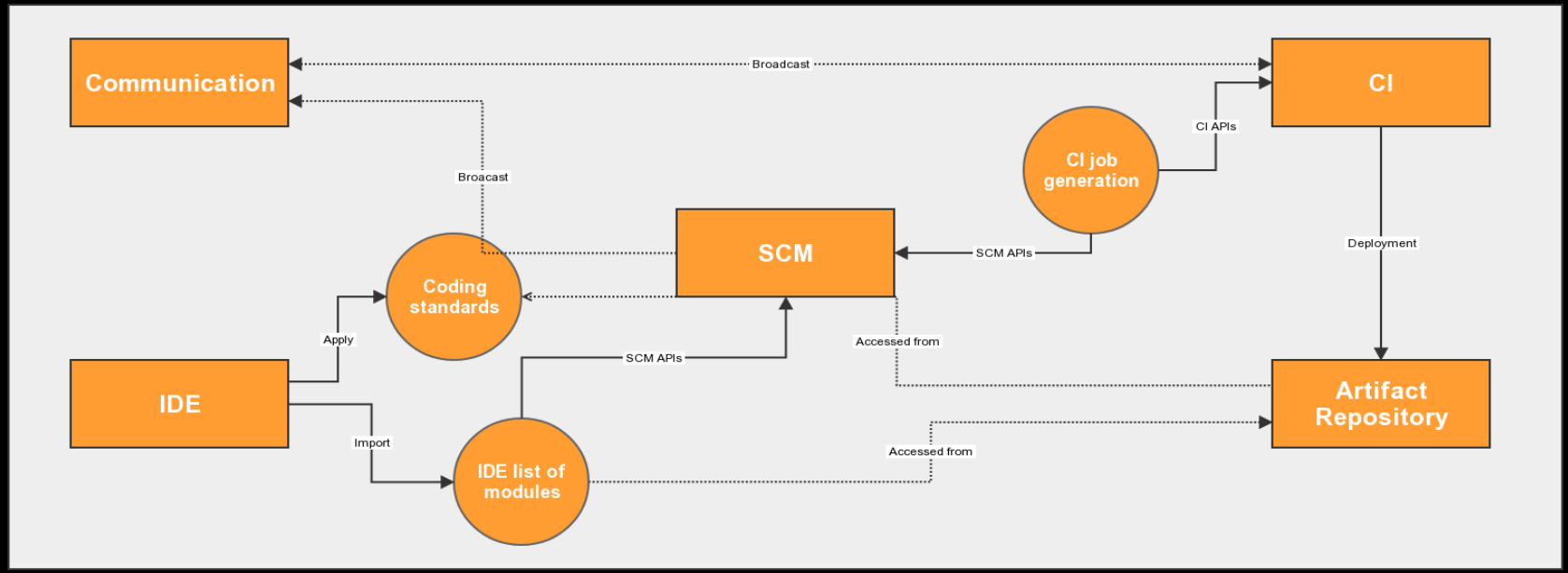
Wrap-up

Modular development - Sling



The big picture

The big picture



Supporting tools

- https://github.com/jenkinsci/job-dsl-plugin
- https://gerrit.googlesource.com/git-repo/
- https://projects.eclipse.org/projects/tools.oomph
- http://www.catb.org/~esr/reposurgeon/reposurgeon.html

Examples of modular development

- https://svn.apache.org/repos/asf/sling/trunk/tooling/jenkins/
- https://github.com/wcm-io-devops/eclipse-maven-plugin
- https://github.com/bdelacretaz/docker-jenkins-dsl-ready
- https://wiki.openstack.org/wiki/MailingListEtiquette