



Apache Sling and Karaf for Web Sites and Applications

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adaptTo() 2016 // 2016-09-28

The Apache Sling Project

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Web Sites and Applications

- multi-regional and multilingual microsites (Flash/ .fla, XML-driven) of an international manufacturer (automotive)
- text content delivered in Word documents, transformed to (always different) XML
- Apache HTTP Server for plain HTML files or CQ
- small team, short cycles, hard deadlines

- moving away from Flash to Flex
(.fla and Flash IDE to .mxml/.as3 and IntelliJ IDE/Maven)
- building an common application framework
- unifying XML format ("page" hierarchy)
- increasing productivity

- moving away from Flash (Flex) to HTML5
(the "management has now iPads" factor)
- still multi-regional and multilingual microsites, but also more complex business applications (e.g. TCO calculator)
- small team, short cycles, hard deadlines
- keeping (semiautomatic) XML authoring process

- TYPO3 (CEO loves it)
- custom PHP application (PHP lead wants to build)
- Magnolia (Java/Flex lead is committer)
- CQ (used by client)
- Sling (Java/Flex lead felt in love with it...
and has an "upgrade" path for team and sites/apps from Sling to CQ in mind)

What is Sling?

**It is (also) the simplest device
for delivering content very fast.**

Roy T. Fielding

Apache Karaf

- started its live as Apache ServiceMix Kernel in 2008
- moved to Apache Felix in 2009 and was renamed Karaf
- finally became an Apache top-level project in 2010
- current version 4.0.7 (4.1 WIP)

- **Karaf Container** a modern and polymorphic container for hosting any kind of applications: OSGi, Spring, WAR, etc.
- **Karaf Cellar** clustering solution for Karaf
- **Karaf Cave** implementation of OSGi Repository specification
- **Karaf Decanter** monitoring solution for Karaf
- **Karaf Boot** easy way to build a run everywhere artifact embedding the Karaf Container (WIP)

- Apache Felix and Eclipse Equinox
- OPS4J Pax Web (default) instead of Apache Felix HTTP Service
- Features
- Shell
- OS integration (“Service Wrapper”)

a simple and flexible way to provision applications:

- a name
- a version
- an optional description (eventually with a long description)
- a set of bundles
- optionally a set of configurations or configuration files
- optionally a set of dependency features

Yes, OSGi Subsystems are supported also!

Sling Launchers

What is Sling?

a set of bundles

unknown

- Sling Launchpad
- Sling Crankstart
- Karaf

Karaf @ Sling or Sling on Karaf

- handcrafted features for ServiceMix Kernel and Karaf 2.x
- Launchpad build generated feature
(back when there was `build.xml` and Jackrabbit Derby only)
- broken after Sling 6 due to missing `StartupHandler` (Launchpad API)
- splitted single big feature into lots of smaller ones, each backed by an IT
- upgraded Karaf to 3.0 and 4.0

- Karaf Features: Apache Sling Features for provisioning with Apache Karaf
- Karaf Configs: Apache Sling configurations for provisioning with Apache Karaf
- Karaf Distribution: Apache Sling Karaf Distribution
- Karaf Integration Tests: Integration Tests for Apache Sling Karaf
- Karaf Launchpad Integration Tests (Oak Tar): Launchpad Integration Tests for Apache Sling with Oak Tar on Karaf

Sling's Karaf Features

67 fine-grained features and still adding

- sling-auth-*
- sling-commons-*
- sling-extensions-*
- sling-installer*
- sling-jcr*
- sling-launchpad-*
- sling-nosql-*
- sling-scripting*
- *-sling
- ...

```
<feature name="sling-samples-fling" version="1.0.0">
  <bundle>mvn:org.apache.sling.samples/org.apache.sling.samples.fling/0.0.2</bundle>
  <feature version="1.0.0">sling</feature>
  <feature version="1.0.0">sling-scripting-thymeleaf</feature>
  <feature version="1.0.0">sling-commons-messaging</feature>
  <feature version="1.0.0">sling-commons-messaging-mail</feature>
  <feature version="1.0.0">sling-extension-models</feature>
  <feature version="1.0.0">sling-extension-query</feature>
  <feature version="1.0.0">sling-extension-validation</feature>
  <feature version="1.0.0">sling-auth-form</feature>
  <configfile finalname="/etc/o.a.s.commons.messaging.mail.internal.SimpleMailBuilder.config">
    mvn:o.a.s/o.a.s.karaf-configs/1.0.0/config/o.a.s.commons.messaging.mail.internal.SimpleMailBuilder
  </configfile>
  <configfile finalname="/etc/o.a.s.samples.fling.internal.WiserSmtpService.config">
    mvn:o.a.s/org.apache.sling.karaf-configs/1.0.0/config/o.a.s.samples.fling.internal.WiserSmtpService
  </configfile>
</feature>
```

No Sling repo - install a Launchpad feature!

- `sling-launchpad-oak-tar`
- `sling-launchpad-oak-mongo`
- `sling-launchpad-nosql-couchbase`
- `sling-launchpad-nosql-mongodb`

Sling's Karaf Distribution

- build on top of Sling's Karaf Features
- as close a possible to Karaf's standard distribution in terms of configuration and libs
- every feature packed into the distribution archive for easy offline usage
- no Sling feature preinstalled
- download, unpack, start and install features

What's next?

- getting KARAF-4105 fixed
- supporting OSGi Requirements and Capabilities
- adapting Karaf 4 feature style (prerequisite, dependency)
- adding descriptions for each feature
- releasing (or removing) all SNAPSHOTs used in features.xml

Apache Karaf: <https://karaf.apache.org>

Sling Karaf: <https://github.com/apache/sling/tree/trunk/karaf>