
ODL Parent

Release 6.0.4

Jan 16, 2020

Contents:

1	ODL Parent release notes	3
1.1	Version 6.0.4	3
1.2	Version 6.0.3	3
1.3	Version 6.0.2	4
1.4	Version 6.0.1	5
1.5	Version 6.0.0	5
1.6	Version 5.0.1	7
1.7	Version 5.0.0	8
1.8	Version 4.0.9	10
1.9	Version 4.0.8	11
1.10	Version 4.0.7	12
1.11	Version 4.0.6	12
1.12	Version 4.0.5	12
1.13	Version 4.0.4	12
1.14	Version 4.0.3	12
1.15	Version 4.0.2	15
1.16	Version 4.0.1	15
1.17	Version 4.0.0	17
1.18	Version 3.1.3	22
1.19	Version 3.1.2	22
1.20	Version 3.1.1	23
1.21	Version 3.1.0	24
1.22	Version 3.0.3	25
1.23	Version 3.0.2	26
1.24	Version 3.0.1	26
1.25	Version 3.0.0	27
2	Developing with ODL Parent	31
2.1	Parent POMs	31
2.2	Features (for Karaf 3)	36
2.3	Features (for Karaf 4)	37

This documentation provides information needed to help you write code using the ODL Parent project.

1.1 Version 6.0.4

This is a bug-fix upgrade from version 6.0.3.

1.1.1 Bug fixes

- `single-feature-test` was using outdated repositories, including Maven Central, which [broke on Jan 15, 2020](#). This has been corrected.

1.1.2 Third-party dependencies

- JUnit 4.11 → 4.11.3, release notes: * [4.12](#) * [4.13](#)
- log4j2 2.11.2 → 2.13.0, release notes: * [2.12.0](#) * [2.12.1](#) * [2.13.0](#)
- netty 4.1.42 → 4.1.45, release notes: * [4.1.43](#) * [4.1.44](#) * [4.1.45](#)

1.1.3 Plugin upgrades

- `maven-assembly-plugin` 2.2-beta5 → 3.2.0
- `maven-archetype-plugin` 3.1.1 → 3.1.2

1.2 Version 6.0.3

This is a bug-fix upgrade from version 6.0.2.

1.2.1 Bug fixes

- The fix for [ODLPARENT-216](#) ended up breaking `org.kohsuke.metainf-services` integration. While this could be fixed in downstreams by adding proper `</annotationProcessorPaths>` entry, it is a regression from 6.0.1.

1.3 Version 6.0.2

This is a security/bug-fix upgrade from version 6.0.1.

1.3.1 Bug fixes

- `single-feature-parent` was setting up Karaf repositories incorrectly, leading to the test using unpatched Karaf resources. This has now been fixed and the test run is using environment equivalent to the contents of the distribution. See [ODLPARENT-209](#) for details.
- `immutable.org` integration relied on pre-JDK9 way of integration, where the annotation processor was just dropped as a dependency. This does not work with JDK9+ artifacts which are also explicit JMPS modules. Note that users are advised to switch to depending on the `annotations-classified` artifact. See [ODLPARENT-216](#) for details.
- Assembled Karaf distribution did not perform proper JDK checks and allowed launching with JDK8, leading to a failure to install OpenDaylight components with an error stack, which confuses users not familiar with OSGi. The distribution now refuses to start with anything other than JDK11. See [ODLPARENT-218](#) for details.

1.3.2 Third-party dependencies

- Akka 2.5.25 → 2.5.26
- Checkstyle 8.20 → 8.26, release notes: * 8.21 * 8.22 * 8.23 * 8.24 * 8.25 * 8.26
- H2 database 1.4.199 → 1.4.200
- Hamcrest 2.1 → 2.2
- JaCoCo 0.8.4 → 0.8.5
- Karaf 4.2.2 → 4.2.6, release notes: * 4.2.3 * 4.2.4 * 4.2.5 * 4.2.6
- Powermock 2.0.2 → 2.0.4
- Sevntu 1.35.0 → 1.36.0

1.3.3 Plugin upgrades

- `maven-bundle-plugin` 4.1.0 → 4.2.0
- `maven-jar-plugin` 3.1.2 → 3.2.0
- `maven-source-plugin` 3.1.0 → 3.2.0
- `modernizer-maven-plugin` 1.9.0 → 2.0.0

1.4 Version 6.0.1

This is a security/bug-fix upgrade from version 6.0.0.

1.4.1 Bug fixes

- `karaf-plugin` ignored exceptions coming from its failure to resolve `${karaf.etc}` variable. This has now been fixed and the URL handling has been revised to fix build on Windows. See [ODLPARENT-214](#) for details.
- `leveldb-jni` jar, which has been seeded to `nexus.opendaylight.org` long time ago is not published in Maven Central. This has been resolved by repackaging this jar and publishing it from `odlparent`. See [ODLPARENT-210](#) for details.

1.4.2 Third-party dependencies

- Bouncy Castle 1.63 → 1.64
- Jackson 2.9.9 → 2.9.10
- Javassist 3.24.1-GA → 3.26.0-GA
- Guice 4.1.0 → 4.2.2, release notes: * 4.2.0 * 4.2.1 * 4.2.2
- Mockito 2.25.1 → 2.28.2, release notes: * 2.25.2 * 2.25.3 * 2.25.4 * 2.25.5 * 2.25.6 * 2.25.7 * 2.26.1 * 2.26.2 * 2.27.1 * 2.27.2 * 2.27.3 * 2.27.4 * 2.27.5 * 2.28.0
- Netty 4.1.39 → 4.1.42, release notes: * 4.1.41 * 4.1.42
- `pt-triemap` 1.0.6 → 1.1.0
- `reactive-streams` 1.0.2 → 1.0.3
- `stax2-api` 3.1.4 → 4.2
- `woodstox-core` 5.0.3 → 5.3.0, release notes: * 5.1.0 * 5.2.0 * 5.3.0

1.5 Version 6.0.0

This is a major upgrade from version 5, with breaking changes; projects will need to make changes to upgrade to this version.

1.5.1 Java 11 is required

This release sets `maven.compiler.release=11` and enforces that the JDK used to build is Java 11+. As there may be issues with various maven plugins when faced with JDK9+ constructs and JDK11+ classes, target release can be controlled on a per-artifact basis (i.e. target Java 10 with `maven.compiler.release=10` property).

This release has been validated with `openjdk-11.0.4` and is not supported on any lower version. As usual, we recommend using latest available JDK/JRE for Java 11 during development and deployment.

1.5.2 Checkstyle/SpotBugs/Modernizer run by default

With this release code artifacts always run `maven-checkstyle-plugin`, `spotbugs-maven-plugin` and `modernizer-maven-plugin`. Checkstyle and SpotBugs run in enforcing mode, i.e. will fail build if any violations are found. Modernizer is configured to report Java 8-compatible constructs and will not fail the build unless instructed to do so.

Behavior of each of these is controlled via a maven property on a per-artifact basis:

- `odlparent.checkstyle.enforce` controls checkstyle enforcement: defaults to `true`, but can be set to `false`
- `odlparent.checkstyle.skip` controls checkstyle invocation: defaults to `false`, but can be set to `true`
- `odlparent.spotbugs.enforce` controls SpotBugs enforcement: defaults to `true`, but can be set to `false`
- `odlparent.spotbugs.skip` controls SpotBugs invocation: defaults to `false`, but can be set to `true`
- `odlparent.modernizer.enforce` controls modernizer enforcement: defaults to `false`, but can be set to `true`
- `odlparent.modernizer.skip` controls modernizer invocation: defaults to `false`, but can be set to `true`
- `odlparent.modernizer.target` controls modernizer Java version: defaults to `1.8`, but can be set to `1.11` or similar

1.5.3 Bug fixes

- blueprint container had `org.apache.aries.blueprint.preemptiveShutdown` set to `false` to enable it to work with Config Subsystem. As that component is long gone, this property has been removed as part of ODLPARENT-34. Furthermore, system properties related to Config Subsystem/NETCONF integration have been removed as well.

1.5.4 Upstream version removals

The following upstream dependencies have been removed from dependency management:

- `com.google.code.findbugs/jsr305`

1.5.5 Third-party dependencies

The dependency on `xmlunit-assertj` and `modernizer-maven-annotations` has been added and the following dependencies have been upgraded:

- Akka 2.5.23 → 2.5.25, release notes: * 2.5.24 * 2.5.25
- apache-sshd 2.2.0 → 2.3.0
- Bouncy Castle 1.62 → 1.63
- commons-beanutils 1.9.3 → 1.9.4
- commons-codec 1.12 → 1.13
- commons-text 1.6 → 1.8, release notes: * 1.7 * 1.8
- Checkstyle 8.18 → 8.20, release notes: * 8.19 * 8.20

- jackson-databind 2.9.9 → 2.9.9.3
- jaxb-api 2.2.8 → 2.3.0, aligning it with Karaf-provided version
- Netty 4.1.36 → 4.1.39, release notes: * 4.1.37 * 4.1.38 * 4.1.39
- Sevntu 1.32.0 → 1.35.0, release notes: * 1.33.0 * 1.34.0 * 1.34.1 * 1.35.0
- Scala 2.12.8 → 2.12.9, release notes: * 2.12.9 * 2.12.10
- slf4j 1.7.25 → 1.7.28
- triemap 1.0.5 → 1.0.6
- typesafe/ssl-config 0.3.7 → 0.3.8
- Xtend 1.17.1 → 1.19.0, release notes: * 1.18.0 * 1.19.0

1.5.6 Plugin upgrades

- git-commit-id-plugin 2.2.6 → 3.0.1, release notes: * 3.0.0 * 3.0.1
- maven-javadoc-plugin 3.1.0 → 3.1.1
- pmd-maven-plugin 3.11.0 → 3.12.0
- spotbugs-maven-plugin 3.1.11 → 3.1.12.2, release notes: * 3.1.12 * 3.1.12.1 * 3.1.12.2

1.6 Version 5.0.1

This is a bug-fix upgrade from version 5.0.0.

1.6.1 Third-party dependencies

The following dependencies have been upgraded:

- Akka 2.5.21 → 2.5.23, release notes: * 2.5.22 * 2.5.23
- asciidoctorj-diagram 1.5.12 → 1.5.16
- Bouncy Castle 1.61 → 1.62
- commons-lang3 3.8.1 → 3.9
- JaCoCo 0.8.3 → 0.8.4
- Jackson 2.9.8 → 2.9.9
- Jolokia 1.6.0 → 1.6.2, release notes: * 1.6.1 * 1.6.2
- Mockito 2.25.0 → 2.25.1
- Netty 4.1.34 → 4.1.36, release notes: * 4.1.35 * 4.1.36
- PowerMock 2.0.0 → 2.0.2, release notes: * 2.0.1 * 2.0.2
- Reactive Streams 1.0.1 → 1.0.2
- scala-parser-combinators 1.1.1 → 1.1.2
- Sevntu 1.32.0 → 1.33.0
- Typesafe Config 1.3.2 → 1.3.3

- `triemap` 1.0.4 → 1.0.5
- `XBean finder` 4.12 → 4.14, release notes: * 4.13 * 4.14
- `xmlunit` 2.6.2 → 2.6.3
- `Xtend` 2.17.0 → 2.17.1

1.6.2 Plugin upgrades

- `maven-archetype-plugin` 3.0.1 → 3.1.1, release notes: * 3.1.0 * 3.1.1
- `maven-bundle-plugin` 4.1.0 → 4.2.0
- `maven-checkstyle-plugin` 3.1.0 → 3.1.0
- `maven-compiler-plugin` 3.8.0 → 3.8.1
- `maven-help-plugin` 3.1.1 → 3.2.0
- `maven-jar-plugin` 3.1.1 → 3.1.2
- `maven-plugin-plugin` 3.5.2 → 3.6.0
- `maven-source-plugin` 3.0.1 → 3.1.0
- `maven-surefire-plugin` 2.22.1 → 2.22.2

1.6.3 New plugins

- `modernizer-maven-plugin` declared, allowing downstreams to more easily activate it, and so detect code which should be updated to more modern equivalent.

1.6.4 New features

- `odl-caffeine-2` provides a pre-packaged feature for the Caffeine caching framework, along with the Guava compatibility layer.

1.7 Version 5.0.0

This is a major upgrade from version 4, with breaking changes; projects will need to make changes to upgrade to this version.

The most significant change is [ODLPARENT-198](#), which removes JSR305 from default dependencies and does not present it at class path by default.

1.7.1 Deleted artifacts

`findbugs` has been removed, as its only purpose was to provide FindBugs rule definitions. Equivalent definitions are available in `spotbugs`.

1.7.2 Bug fixes

- `blueprint-maven-plugin` used to scan the entire classpath, resulting in potential conflicts across projects. Scanning is now limited to `${project.groupId}`, limiting conflict domain to single project. See [ODLPARENT-109](#).
- `bundle-maven-plugin` configuration ignored generated `ServiceLoader` service entries, which has now been fixed. See [ODLPARENT-197](#).
- Bundle tests are now enabled by default. See [ODLPARENT-158](#) and [ODLPARENT-80](#) for details.
- Karaf log file rollover was not explicitly set up, leading to inability to easily override the defaults. See [ODLPARENT-153](#) for details.
- Karaf log file used to use default maximum 16MiB file size, this has now been increased to 64MiB. See [ODLPARENT-154](#).
- `features-test` excluded `opendaylight-karaf-empty`'s transitive dependencies, leading to the need to re-declare them in `single-feature-parent`. This re-declaration was forgotten in for `bcpkix-framework-ext` and `bcprov-framework-ext` bundles, which lead to them not being present in the local repository. See [ODLPARENT-130](#).

1.7.3 Upstream version removals

The following upstream dependencies have been removed from dependency management:

- `cassandra-driver-core`
- `org.codehaus.enunciate/enunciate-core-annotations`
- `org.jboss.resteasy/jaxrs-api`
- `org.json/json`
- `org.osgi/org.osgi.compendium`

1.7.4 Removed features

- `odl-jersey-1`
- `features-akka` feature repository has been integrated into `features-odlparent`

1.7.5 Third-party dependencies

The following dependencies have been upgraded:

- `apache-sshd 2.0.0 → 2.2.0`
- `Aeron 1.12.0 → 1.15.3`, release notes: * 1.13.0 * 1.14.0 * 1.15.0 * 1.15.1 * 1.15.2 * 1.15.3
- `Agrona 0.9.27 → 0.9.33`, release notes: * 0.9.28 * 0.9.29 * 0.9.30 * 0.9.31 * 0.9.32 * 0.9.33
- `Akka 2.5.19 → 2.5.21`, release notes: * 2.5.20 * 2.5.21
- `antl4r 4.7.1 → 4.7.2`
- `asciidoctorj-diagram 1.5.11 → 1.5.12`
- `Bouncy Castle 1.60 → 1.61`
- `checkstyle 8.16 → 8.18`, release notes: * 8.17 * 8.18

- commons-codec 1.11 → 1.12
- Google Error Prone 2.3.2 → 2.3.3
- Google Guava 25.1 → 27.1, release notes: * 26.0 * 27.0 * 27.0.1 * 27.1
- Google Truth 0.42 → 0.43
- h2 database 1.4.196 → 1.4.199
- Immutables 2.7.3 → 2.7.5
- Javassist 3.24.0-GA → 3.24.1-GA
- log4j2 2.11.1 → 2.11.2
- Mockito 2.23.4 → 2.25.0, release notes: * 2.24.0 * 2.25.0
- Netty 4.1.32 → 4.1.34, release notes: * 4.1.32 * 4.1.33 * 4.1.34
- OSGi 5.0.0 → 6.0.0
- Powermockito 1.7.4 → 2.0.0, release notes: * 2.0.0-beta.5 * 2.0.0-RC.1 * 2.0.0
- SpotBugs 3.1.9 → 3.1.12
- ThreeTen 1.4.0 → 1.5.0
- Xtend 2.16.0 → 2.17.0

1.7.6 Plugin removals

- gmaven-plugin
- maven-findbugs-plugin

1.7.7 Plugin upgrades

- jacoco-maven-plugin 0.8.2 → 0.8.3
- maven-invoker-plugin 3.1.0 → 3.2.0
- maven-javadoc-plugin 3.0.1 → 3.1.0
- spotbugs-maven-plugin 3.1.8 → 3.1.11

1.8 Version 4.0.9

This is a bug-fix upgrade from version 4.0.8.

1.8.1 Bug fixes

- `karaf-plugin` invocation in `karaf4-parent` caused previously patched features to be overwritten with their stock versions, referencing bundles which were not populated in the local repository. (See [ODLPARENT-194](#).)
- `karaf-plugin` version in `karaf4-parent` is now provided through plugin management so downstreams can override it without needing to repeat its configuration.
- `karaf-plugin` no longer reads features twice when running discovery, speeding up the process a bit.

- Recent versions of the SpotBugs Maven plugin use SLF4J 1.8 beta 2, which can't use the 1.7.25 implementation we provide; we therefore provide an implementation of 1.8 beta 2 when SpotBugs is used. (See [ODLPARENT-184](#).)

1.8.2 New features

- `odl-woodstox` wraps the Woodstox StAX implementation which is imposed on us by Karaf.

1.9 Version 4.0.8

This is a bug-fix and minor upstream bump upgrade from version 4.0.7.

1.9.1 Bug fixes

- `bcprov-ext-jdk15on` is a superset of `bcprov-jdk15on`, so there's no need to ship both; we now only ship the former. In addition, we install the Bouncy Castle JARs in `lib/boot` so that they continue to be available on the boot classpath (JDK 9 removes the extension mechanism which was used previously), and provide the corresponding bundles from the boot classpath instead of using separate JARs in the system repository. (See [ODLPARENT-183](#) and [ODLPARENT-185](#).)
- A dependency check has been added to ensure that we don't run into the TrieMap dependency bug in 4.0.6 again.
- Dependencies pulled in by features are now checked for convergence, and `karaf-plugin` warns when it finds diverging dependencies (the same artifact with two different versions). Upstream-provided features are patched to avoid the following divergences (and upgrade some dependencies in the process):
 - Aries utilities 1.1.0/1.1.3 (upgraded to 1.1.3).
 - Commons Beanutils 1.8.3/1.9.3 (upgraded to 1.9.3).
 - Commons Codec 1.8/1.10 (upgraded to 1.11).
 - `javax.mail` 1.4.4/1.4.7 (upgraded to 1.4.7).

(See [ODLPARENT-189](#).)

1.9.2 New features

- `odl-dropwizard-metrics` provides Dropwizard Metrics (which are also available in dependency management).
- `enunciate-maven-plugin` is added as the replacement for `maven-enunciate-plugin`.

1.9.3 Third-party dependencies

The following dependencies are no longer provided by the JVM, starting with version 11, but we make them available via dependency management for projects which need them:

- `javax.annotation-api`.
- JAXB (`jaxb-core`, `jaxb-impl`).

The following dependencies have been upgraded:

- Checkstyle 8.15 → 8.16.
- Dependency Check 4.0.0 → 4.0.2.
- git-commit-id 2.2.5 → 2.2.6.
- Immutables 2.7.1 → 2.7.3:
 - 2.7.2.
 - 2.7.3.(2.7.4 breaks our Javadocs.)
- Jackson 2.9.7 → 2.9.8.

1.10 Version 4.0.7

This is a bug-fix release, correcting the `triemap` import declaration.

1.11 Version 4.0.6

This is a bug-fix and minor upstream packaging upgrade from version 4.0.5.

1.11.1 Bug fixes

Single-feature-test was broken with JDK 9 and later and Karaf 4.2.2; this release adds the additional JVM configuration needed.

1.11.2 Third-party dependencies

This release adds the `triemap` BOM to dependency management.

1.12 Version 4.0.5

This is a bug-fix release: the Karaf Maven plugin, in version 4.2.2, is **broken** in some cases we need in OpenDaylight; we revert to 4.2.1 in `karaf4-parent` to avoid this.

1.13 Version 4.0.4

This is a bug-fix release, reverting the change made in 4.0.3 to handle building with either `zip` or `tar.gz` Karaf archives (which breaks builds in our infrastructure, without the empty Karaf archive).

1.14 Version 4.0.3

This is a bug-fix and minor upstream bump upgrade from version 4.0.2.

1.14.1 Bug fixes

- Our FindBugs configuration for JDK 9 and later caused the plugin to run everywhere; instead, this version defines the `findbugs.skip` property to disable the plugin in modules where it would be used otherwise.
- The PowerMock declarations in dependency management missed `powermock-api-mockito2`, which is necessary for modules using PowerMock with Mockito 2.
- The “quick” profile (`-Pq`) now skips SpotBugs.
- JSR-305 annotations are now optional, which fixes a number of issues when building with newer JDKs.
- We provide JAXB with JDK 11 and later (where it is no longer provided by the base platform).
- `odlparent-artifacts` has been updated to accurately represent the artifacts provided.
- `javax.activation` is now excluded from generated features (it’s provided on Karaf’s boot classpath).
- When the build is configured to build Karaf distributions in `tar.gz` archives, but not `zip` archives, `features-test` used to fail; it will now use whichever is available ([ODLPARENT-174](#)).
- Explicit GCs are disabled by default, so that calls to `System.gc()` are ignored ([ODLPARENT-175](#)).
- Null checks are disabled in SpotBugs because of bad interactions with newer annotations and the bytecode produces by JDK 11 and later for `try-with-resources`.
- Akka Persistence expects LevelDB 0.10, so we now pull in that version instead of 0.7.

1.14.2 Dependency convergence

A number of dependencies have been added or constrained so that projects using this parent can enforce dependency convergence:

- Karaf’s `framework` feature is used as an import POM, so that we converge by default on the versions used in Karaf.
- The following dependencies have been added to dependency management:
 - `commons-beanutils`
 - the Checker Framework
 - Error Prone annotations
 - `javax.activation`
 - `xml-apis`

1.14.3 New features

The following Karaf features have been added:

- `odl-antlr4` (providing `antlr4-runtime`);
- `odl-gson` (providing `gson`);
- `odl-jersey-2` (providing Jersey client, server, and container servlet, along with the necessary feature dependencies);
- `odl-servlet-api` (providing `javax.servlet-api`);
- `odl-stax2-api` (providing `stax2-api`);
- `odl-ws-rs-api` (providing `javax.ws.rs-api`);

A new `sonar-jacoco-aggregate` profile can be used to produce Sonar reports with aggregated JaCoCo reports. Additionally, Sonar builds (run with `-Dsonar`) are detected and run with a number of irrelevant plugins disabled.

1.14.4 Upstream version upgrades

- Akka 2.5.14 → 2.5.19 (and related `ssl-config`, Aeron and Agrona upgrades):
 - 2.5.15.
 - 2.5.16.
 - 2.5.17.
 - 2.5.18.
 - 2.5.19.
- Commons Text 1.4 → 1.6.
- Eclipse JDT annotations 2.2.0 → 2.2.100.
- Javassist 3.23.1 → 3.24.0.
- Karaf 4.2.1 → 4.2.2, with related upgrades.
- LMAX Disruptor 3.4.1 → 3.4.2.
- Mockito 2.20.1 → 2.23.4.
- Netty 4.1.29 → 4.1.31:
 - 4.1.30.
 - 4.1.31.
- Pax Exam 4.12.0 → 4.13.1.
- Scala 2.12.6 → 2.12.8:
 - 2.12.7.
 - 2.12.8.
- Wagon HTTP 3.1.0 → 3.2.0.
- Xtend 2.14.0 → 2.16.0.

1.14.5 Plugin version upgrades

- AsciiDoctor 1.5.6 → 1.5.7.1 (with related AsciiDoctorJ upgrades).
- Bundle 4.0.0 → 4.1.0.
- Checkstyle 8.12 → 8.15.
- DependencyCheck 3.3.2 → 4.0.0.
- Failsafe / Surefire 2.22.0 → 2.22.1.
- Help 3.1.0 → 3.1.1.
- JAR 3.1.0 → 3.1.1.
- PMD 3.10.0 → 3.11.0.
- Remote Resources 1.5 → 1.6.0.

- Shade 3.2.0 → 3.2.1.
- SpotBugs 3.1.6 → 3.1.9.
- XBean finder 4.9 → 4.12.
- XTend 2.14.0 → 2.16.0.

1.15 Version 4.0.2

This is a bug-fix and minor upstream bump upgrade from version 4.0.1.

1.15.1 Bug fixes

Previous releases overrode Karaf's `jre.properties`; this is no longer necessary, and was causing failures with Java 9 and later (our version of `jre.properties` didn't have the appropriate settings for anything after Java 8). This release drops that override. See [ODLPARENT-168](#) for details.

1.15.2 Upstream version upgrades

- Commons Lang 3.8 → 3.8.1.
- Jackson 2.9.6 → 2.9.7.
- Netty 4.1.28 → 4.1.29.

1.15.3 Plugin version upgrades

- JAR 3.0.2 → 3.1.0.
- Javadoc 3.0.0 → 3.0.1.
- Jersey 2.22.2 → 2.25.1, along with Glassfish JSON 1.0.4 → 1.1.2.
- Plugin 3.5 → 3.5.2:
 - 3.5.1.
 - 3.5.2.
- Resources 3.0.1 → 3.1.0.

1.16 Version 4.0.1

This is a bug-fix and minor upstream bump upgrade from version 4.0.0.

1.16.1 Bug fixes

The JaCoCo execution profile was incorrect, breaking Sonar; the report is now written correctly, so that Sonar can find it.

The Blueprint Maven plugin fails when it encounters Java 9 classes; this is fixed by forcefully upgrading its dependency on xbean-finder. See [ODLPARENT-167](#) for details.

1.16.2 Upstream version upgrades

- SpotBugs 3.1.6 → 3.1.7.

1.16.3 Upstream version additions

- Mockito Inline is added alongside Mockito Core, to ensure that the versions are kept in sync.

1.16.4 Plugin version upgrades

- Clean 3.0.0 → 3.1.0.
- Compiler 3.7.0 → 3.8.0.
- Dependency 3.0.2 → 3.1.1:
 - 3.1.0.
 - 3.1.1.
- Dependency Check 3.3.1 → 3.3.2.
- Enforcer 3.0.0-M1 → 3.0.0-M2.
- Failsafe 2.20.1 → 2.22:
 - 2.21.
 - 2.22.
- Help 2.2 → 3.1.0:
 - 3.0.0.
 - 3.0.1.
 - 3.1.0.
- Invoker 2.0.0 → 3.1.0:
 - 3.0.0.
 - 3.1.0.
- JAR 3.0.2 → 3.1.0.
- Project Info Reports 2.9 → 3.0.0.
- Resources 3.0.1 → 3.1.0.
- Shade 3.1.0 → 3.2.0.
- Site 3.7 → 3.7.1.
- Surefire 2.18.1 → 2.22.0:
 - 2.19.
 - 2.19.1.
 - 2.20.
 - 2.21.
 - 2.22.

1.17 Version 4.0.0

This is a major upgrade from version 3, with breaking changes; projects will need to make changes to upgrade to this version.

This [Wiki page](#) has detailed step-by-step migration instructions.

ODL Parent 4 requires Maven 3.5.3 or later; this is needed in particular to enable SpotBugs support with current versions of the SpotBugs plugin.

1.17.1 Known issues

This release's SpotBugs support doesn't handle Guava 25.1 correctly, resulting in false-positives regarding null handling; see [ODLPARENT-161](#) for details. Until this is fixed, the corresponding warnings are disabled, which matches our existing FindBugs configuration (which suffers from the a variant of this, with the same consequences).

We are planning on upgrading Akka during the 4.x cycle, even if it results in a technically breaking upgrade. This is currently blocked on an OSGi bug in Akka; see [Akka issue 25579](#) for details.

1.17.2 Blueprint and OSGi service handling

Previous releases used an OpenDaylight-specific directory for Blueprint XML files, `org/opendaylight/blueprint`. It turned out this wasn't useful, so version 4 uses the default directory, `OSGI-INF/blueprint`.

The Maven bundle plugin is now configured to omit the `Import-Service` and `Export-Service` headers, since they are deprecated, unnecessary in OpenDaylight, and liable to cause issues.

With previous releases of OpenDaylight, projects were encouraged to use Pax CDI API annotations to describe their Blueprint beans, services and injections; with version 4, Blueprint annotations should be used instead:

- modules should depend on `org.apache.aries.blueprint:blueprint-maven-plugin-annotation`, with the `<optional>true</optional>` flag, instead of `org.ops4j.pax.cdi:pax-cdi-api`;
- `@OsgiServiceProvider` on bean definitions is replaced by `@Service`;
- `@OsgiService` at injection points is replaced by `@Reference`;
- `@OsgiService` on bean definitions, while technically wrong, can be seen in the OpenDaylight codebase; this is replaced by `@Service`;
- service lists can be injected using `@ReferenceList`.

See [this Gerrit patch](#) for an example.

1.17.3 Compiler settings

Builds now warn about unchecked type uses (such as raw types where generics are available).

JUnit and Mockito are always available as test dependencies and no longer need to be declared in POMs.

1.17.4 New build profiles

An OWASP profile is now available to run OWASP's dependency checker; this will check all third-party dependencies against the NVD vulnerability database. To enable this, run Maven with `-Powasp`.

1.17.5 Build profile changes

-Pq now skips Modernizer.

1.17.6 New features

odl-akka-leveldb-0.10 wraps LevelDB 0.10 for Akka.

odl-apache-commons-codec wraps Apache Commons Codec.

odl-apache-commons-lang3 wraps Apache Commons Lang 3.

odl-apache-commons-net wraps Apache Commons Net.

odl-apache-commons-text wraps Apache Commons Text.

odl-apache-sshd wraps Apache SSHD.

odl-guava provides the default ODL version of Guava; it should be used instead of odl-guava-23 or the new odl-guava-25.

odl-jackson-2.9 wraps Jackson 2.9.

1.17.7 New FindBugs and SpotBugs settings

FindBugs and SpotBugs are configured with [the SLF4J extension](#) (version 1.4.0 for FindBugs, 1.4.1 for SpotBugs). This will flag misused SLF4J calls, in particular message templates which don't match the arguments, and invalid placeholders (e.g. %s instead of {}).

1.17.8 Deleted artifacts

aggregator-parent was unusable outside odlparent and has been removed. Instead, the maven.deploy.skip and maven.install.skip properties are available to disable deploying and installing artifacts.

1.17.9 Upstream version upgrades

This version upgrades the following third-party dependencies:

- Aeron 1.7.0 → 1.9.3:
 - 1.8.0.
 - 1.8.1.
 - 1.8.2.
 - 1.9.0.
 - 1.9.1.
 - 1.9.2.
 - 1.9.3.
- Agrona 0.9.12 → 0.9.21:
 - 0.9.13.
 - 0.9.14.

- 0.9.15.
- 0.9.16.
- 0.9.17.
- 0.9.18.
- 0.9.19.
- 0.9.20.
- 0.9.21.
- Akka 2.5.11 → 2.5.14:
 - 2.5.12.
 - 2.5.13.
 - 2.5.14.
- ASM 5.1 → 6.2.1 (synchronised with Karaf).
- Bouncy Castle 1.59 → 1.60.
- Checkstyle 8.4 → 8.12.
- Commons Lang 3.7 → 3.8.
- Commons Text 1.1 → 1.4:
 - 1.2.
 - 1.3.
 - 1.4.
- Eclipse JDT annotations 2.1.150 → 2.2.0.
- EclipseLink Moxy JAXB 2.7.1 → 2.7.3.
- Enunciate core annotations 2.10.1 → 2.11.1.
- Felix Metatype 1.1.6 → 1.2.0 (synchronised with Karaf).
- Google Truth 0.40 → 0.42.
- Guava 23.6.1 → 25.1:
 - 23.4.
 - 23.5.
 - 23.6.
 - 24.0.
 - 24.1.
 - 25.0.
 - 25.1.
- Immutables 2.5.6 → 2.7.1.
- Jackson 2.8.9 → 2.9.6:
 - 2.9 feature overview.
 - 2.9.

- 2.9.1.
- 2.9.2.
- 2.9.3.
- 2.9.4.
- 2.9.5.
- 2.9.6.
- JaCoCo 0.8.1 → 0.8.2.
- Javassist 3.22.0 → 3.23.1. This provides compatibility with Java 9 and later, and fixes a file handle leak.
- Jettison 1.3.8 → 1.4.0.
- Jetty 9.3.21 → 9.4.11 (synchronised with Karaf):
 - 9.4.0.
 - 9.4.1.
 - 9.4.2.
 - 9.4.3.
 - 9.4.4.
 - 9.4.5.
 - 9.4.6.
 - 9.4.7.
 - 9.4.8.
 - 9.4.9.
 - 9.4.10.
 - 9.4.11.
- Jolokia OSGi 1.5.0 → 1.6.0.
- Karaf 4.1.5 → 4.2.1:
 - 4.1.6.
 - 4.2.1.
- LMAX Disruptor 3.3.10 → 3.4.1:
 - 3.4.0.
 - 3.4.1.
- META-INF services 1.7 → 1.8.
- Mockito 1.10.19 → 2.20.1; see [What's new in Mockito 2](#) for upgrade instructions and the list of issues you might run into.
- Netty 4.1.22 → 4.1.28:
 - 4.1.17.
 - 4.1.18.
 - 4.1.19.

- 4.1.20.
- 4.1.21.
- 4.1.22.
- 4.1.23.
- 4.1.24.
- 4.1.25.
- 4.1.26.
- 4.1.27.
- 4.1.28.
- Pax Exam 4.11.0 → 4.12.0.
- Pax URL 2.5.3 → 2.5.4, which only fixes a potential `NullPointerException`.
- PowerMock 1.6.4 → 1.7.4:
 - 1.6.5.
 - 1.6.6.
 - 1.7.0.
 - 1.7.1.
 - 1.7.2.
 - 1.7.3.
 - 1.7.4.
- Scala parser combinators 1.0.7 → 1.1.1:
 - 1.1.0.
 - 1.1.1.
- SpotBugs 3.1.0 → 3.1.6.
- Threeten Extra 1.3.2 → 1.4.
- Typesafe SSL config 0.2.2 → 0.2.4:
 - 0.2.3.
 - 0.2.4.
- Wagon HTTP 2.10 → 3.1.0.
- XMLUnit 1.6 → 2.6.2.

1.17.10 Upstream version additions

The following upstream dependencies have been added to dependency management:

- Apache SSHD 2.0.0, with EdDSA and Netty support (EdDSA is provided by `net.i2p.crypto:eddsa`).
- Blueprint annotations (`org.apache.aries.blueprint:blueprint-maven-plugin-annotation`).
- Log4J2.
- Pax Web 7.2.3 (synchronised with Karaf).

1.17.11 Upstream version removals

The following upstream dependencies have been removed from dependency management:

- Google Protobuf.
- Our repackaging of Jersey Servlet.
- JUnit's `junit-dep`, which has long been obsolete.
- LevelDB (which is still available as features).
- Pax CDI API — Blueprint annotations should be used instead.

1.17.12 Plugin version upgrades

The following plugins have been upgraded:

- Blueprint 1.4.0 → 1.10.0.
- Build helper 1.12 → 3.0.0.
- Bundle plugin 3.5.0 → 4.0.0.
- Checkstyle 2.17 → 3.0.0.
- Duplicate finder 1.2.1 → 1.3.0.
- Git commit id 2.2.4 → 2.2.5.
- Jacoco Maven plugin 0.8.1 → 0.8.2.
- Javadoc 3.0.0 → 3.0.1.
- PMD 3.8 → 3.10.0:
 - 3.10.0.
- Sevntu 1.29.0 → 1.32.0.
- SpotBugs 3.1.0-RC6 → 3.1.6 (see the SpotBugs changes above).

1.18 Version 3.1.3

This version fixes the following issues:

- **ODLPARENT-156**: `xtend-maven-plugin`'s dependencies end up pulling in conflicting dependencies. ODL Parent now constrains part of its dependency tree to avoid this.

This version adds `odl-jackson-2.8` to `odlparent-artifacts`.

1.19 Version 3.1.2

This version fixes the following issues:

- **INFRAUTILS-41**: `jre.properties` includes `com.sun.management` so that it can be enabled if necessary. (This doesn't add a dependency on `com.sun.management`, it allows bundles to use it if it is present.)
- **ODLPARENT-136**: `SingleFeatureTest` pulls in `org.osgi.compendium`.

- **ODLPARENT-144:** `org.apache.karaf.scr.management` is whitelisted so that it no longer affects `SingleFeatureTest`.
- **ODLPARENT-146:** null-related FindBugs checks which produce false-positives with Guava 23.6 and later are disabled, so that this really is fully backwards-compatible with 3.0 and later.
- **ODLPARENT-148:** `SingleFeatureTest` preserves `target/SFT/karaf.log`.

This version includes the following improvements:

- `custom.properties` no longer includes OVSDB-specific configuration.
- The `odl-jersey-1` feature includes the Jersey client.
- Redundant bundle dependency declarations in `SingleFeatureTest` have been removed (these are declarations which are also present in our base Karaf distribution).
- Build errors involving invalid feature or bundle URLs now indicate which feature is at fault.
- Obsolete Log4J overrides have been removed from `SingleFeatureTest`.

When building using JDK 9 or 10, the default settings have been changed as follows to avoid errors or extraneous warnings:

- SFT is disabled (it needs Karaf 4.2 or later);
- Javadocs are generated as HTML 4;
- SpotBugs is disabled on JDK 10 or later;
- FindBugs is disabled on JDK 9 or later.

The following third-party dependencies have been upgraded:

- EclipseLink Moxy JAXB 2.6.2 → 2.7.1.
- Google Truth 0.36 → 0.40.
- Gson 2.8.2 → 2.8.5.
- Guava 23.6 → 23.6.1. This addresses CVE-2018-10237 (that's the only change in this release).
- Jacoco Maven plugin 0.8.0 → 0.8.1.
- JDT annotations 2.1.0 → 2.1.150.
- Scala 2.12.5 → 2.12.6.
- Scala Parser Combinators 1.0.6 → 1.0.7.
- Sevntu 1.24.2 → 1.29.0.
- Xtext and Xtend 2.13.0 → 2.14.0.

The following Maven plugin has been upgraded:

- Javadoc 3.0.0 → 3.0.1.

1.20 Version 3.1.1

This version fixes the following issues:

- **ODLPARENT-137:** restore the OpenDaylight prompt.
- **ODLPARENT-146:** Guava 23.6 switched from `@Nullable` to `@NullableDecl`, which causes false positives in FindBugs' `NP_NONNULL_PARAM_VIOLATION` rule; we're disabling the rule for now.

1.21 Version 3.1.0

This version fixes the following issues:

- Mycila dependencies are now “compile” scoped rather than “test”; this allows child projects to use Guice with Mycila more easily.
- The duplicate finder now ignores `web.xml` and Blueprint XML files.

This version includes the following improvements:

- The `-Pq` profile skips Maven Modernizer, in preparation for its future integration (and its use in child projects).
- An OWASP profile, `-Powasp` is available for vulnerability checking.
- A new `odl-jackson-2.8` feature provides Jackson 2.8 to child projects.

The following third-party dependencies have been added to dependency management:

- [ThreeTen-Extra](#)

The following third-party dependencies have been upgraded:

- Aeron 1.2.5 → 1.7.0; release notes:
 - 1.3.0
 - 1.4.0
 - 1.5.0
 - 1.5.1
 - 1.5.2
 - 1.6.0
 - 1.7.0
- Agrona 0.9.5 → 0.9.12; release notes:
 - 0.9.6
 - 0.9.7
 - 0.9.8
 - 0.9.9
 - 0.9.10
 - 0.9.11
 - 0.9.12
- Akka 2.5.5 → 2.5.11; release notes:
 - 2.5.6
 - 2.5.7
 - 2.5.8
 - 2.5.9
 - 2.5.10
 - 2.5.11
- Commons Lang 3 3.6 → 3.7

- Guava 23.3 → 23.6; release notes:
 - 23.4
 - 23.5
 - 23.6
- H2 database 1.4.193 → 1.4.196
- Jacoco 0.7.9 → 0.8.0
- Javassist 3.21.0 → 3.22.0
- lmax-disruptor 3.3.7 → 3.3.10; release notes:
 - 3.3.8
 - 3.3.9
 - 3.3.10
- Netty 4.1.16 → 4.1.22; release notes:
 - 4.1.17
 - 4.1.18
 - 4.1.19
 - 4.1.20
 - 4.1.21
 - 4.1.22
- Scala 2.12.4 → 2.12.5
- Typesafe Config 0.2.1 → 0.2.2

The following Maven plugins have been upgraded:

- FindBugs 3.0.4 → 3.0.5
- Git commit id 2.2.2 → 2.2.4; release notes:
 - 2.2.3
 - 2.2.4

1.22 Version 3.0.3

This version fixes the following issues:

- `ODLPARENT-136: features-test` needs `org.osgi.compendium`.
- Jackson dependencies are declared using `jackson-bom` to ensure all they remain consistent.
- `find-duplicate-classpath-entries` is run in the “verify” phase rather than the “validate” phase, which is too early.
- The version of Jetty we pull in is now aligned with that declared in Karaf, resolving a number of restart and dependency issues.
- Pulling in the `wrap` feature unconditionally is no longer necessary, so `karaf4-parent` no longer does so.

- `metainf-services` are declared with scope “provided” to avoid their being included in downstream features (it’s a build-time dependency only).
- `leveldb-api` is excluded from `odl-akka-leveldb-0.7`, and `jsr250-api` from `enunciate-core-annotations`, to avoid duplicate having classes on the classpath.
- Since the `ssh` feature is excluded from generated features, our Karaf need to enable it at boot in all cases.
- `bundle-test-lib` is now a bundle.
- Since we use static SLF4J loggers, the `SLF4J_LOGGER_SHOULD_BE_NON_STATIC` rule needs to be disabled in our FindBugs configuration (this allows downstream projects to enable `findbugs-slf4j` without having to deal with all the resulting false-positives).
- `org.apache.karaf.scr.management` is white-listed in SFT to avoid failures apparently related to that component (which we don’t care about).

This version upgrades the following third-party dependencies:

- Antlr 4.7 → 4.7.1
- BouncyCastle 1.58 → 1.59
- Jersey 1.17 → 1.19.4 (additionally available as the `odl-jersey-1` feature)
- Jolokia 1.3.7 → 1.5.0
- Karaf 4.1.3 → 4.1.5; release notes:
 - Karaf 4.1.4
 - Karaf 4.1.5

1.23 Version 3.0.2

This version fixes the following issues:

- `SingleFeatureTest` uses the configured local Maven repository for Pax Exam.
- JavaDoc links are disabled for now to [speed up builds](#). A new `javadoc-links` profile enables the links.
- Conditional feature dependencies are processed, ensuring our [distribution is complete](#).
- Startup features are [adjusted for Karaf 4.1](#), avoiding unnecessary refreshes.
- The `hiddenField` Checkstyle check is disabled for abstract methods.
- The default logging configuration uses Log4J2, which is the new default in Karaf 4.1.

This version upgrades the following dependencies or plugins:

- `maven-enforcer-plugin` 1.4.1 → 3.0.0-M1
- `maven-javadoc-plugin` 3.0.0-M1 → 3.0.0

1.24 Version 3.0.1

This version fixes the following issues:

- Karaf pulls in an invalid Hibernate feature repository, breaking downstream dependencies pulling in the “war” feature. `populate-local-repo` corrects the repository dependency.

1.25 Version 3.0.0

1.25.1 Compiler settings

Build now show compiler warnings and deprecation warnings. This doesn't affect the result or require any changes currently, it just makes the issues more visible.

1.25.2 New Checkstyle rules

Checkstyle has been upgraded from 7.6 to 8.4 (see the [Checkstyle release notes](#) for details), and Sevntu from 1.21.0 to 1.24.2 (note that the latter's group identifier changed from `com.github.sevntu.checkstyle` to `com.github.sevntu-checkstyle`; you might need to update your IDE's configuration).

The following Checkstyle rules are enabled; this might require changes in projects which enforce Checkstyle validation:

- `AvoidHidingCauseExceptionCheck`
- `FinalClass`: utility classes must be declared `final`
- `HiddenField`: fields must not be shadowed
- `HideUtilityClassConstructor`: utility classes must hide their constructor

1.25.3 Karaf

Karaf has been upgraded to 4.1.3. This should be transparent for dependent projects.

1.25.4 Karaf distributions

- When building a Karaf distribution using `karaf4-parent`, projects can specify which archives to build: the `karaf.archiveZip` property will enable ZIP files if `true`, and `karaf.archiveTarGz` will enable gzip-compressed tarballs if `true`. By default both are enabled.
- Our Karaf distribution provides Bouncy Castle at startup. Auto-generated feature descriptors take this into account (they won't embed a Bouncy Castle dependency).

1.25.5 Feature removals

- The `odl-triemap-0.2` feature wrapping `com.github.romix:java-concurrent-hash-trie-map` was rendered obsolete by YANG Tools' implementation and has been removed.

1.25.6 Feature additions

- `odl-javassist-3` provides Javassist in a feature.
- `odl-jung-2.1` provides JUNG in a feature.

1.25.7 Upstream version upgrades

The following upstream dependencies have been upgraded:

- Akka 2.4.18 → 2.5.4; release notes:
 - Akka 2.5.0
 - Akka 2.5.1
 - Akka 2.5.2
 - Akka 2.5.3
 - Akka 2.5.4
- Awaitility 2 → 3
- Bouncy Castle 1.57 → 1.58
- Commons Codec 1.10 → 1.11
- Commons File Upload 1.3.2 → 1.3.3
- Commons IO 2.5 → 2.6
- Eclipse JDT annotations 2.0.0 → 2.1.0
- Felix Dependency Manager 4.3.0 → 4.4.1
- Felix Dependency Manager Shell 4.0.4 → 4.0.6
- Felix Metatype 1.1.2 → 1.1.6
- Google Truth 0.28 → 0.36 (with the Java 8 extensions)
- Gson 2.7 → 2.8.2
- Guava 22 → 23.3 along with the associated feature name change from `odl-guava-22` to `odl-guava-23` (dependent packages *must* change their dependency); release notes:
 - Guava 23
 - Guava 23.1
 - Guava 23.2
 - Guava 23.3
- Immutables 2.4.2 → 2.5.6
- Jackson 2.3.2 → 2.8.9
- Jacoco 0.7.7 → 0.7.9; release notes:
 - Jacoco 0.7.8
 - Jacoco 0.7.9
- Jacoco Listeners 2.4 → 3.8
- Javassist 3.20.0 → 3.21.0
- Jettison 1.3.7 → 1.3.8
- Jolokia 1.3.6 → 1.3.7
- JSONassert 1.3.0 → 1.5.0
- logback 1.2.2 → 1.2.3

- LMAX Disruptor 3.3.6 → 3.3.7
- Netty 4.1.8 → 4.1.16; release notes:
 - Netty 4.1.9
 - Netty 4.1.10
 - Netty 4.1.11
 - Netty 4.1.12
 - Netty 4.1.13
 - Netty 4.1.14
 - Netty 4.1.15
 - Netty 4.1.16
- Pax URL 2.5.2 → 2.5.3
- Scala 2.11.11 → 2.12.4; release notes:
 - Scala 2.12.0
 - Scala 2.12.1
 - Scala 2.12.2
 - Scala 2.12.3
 - Scala 2.12.4
- Servlet API 3.0.1 → 3.1.0
- SLF4J 1.7.21 → 1.7.25
- webcohesion enunciate 2.6.0 → 2.10.1
- Xtend 2.12 → 2.13

1.25.8 Upstream version additions

The following upstream dependencies have been added to dependency management:

- Commons Text, `org.apache.commons:commons-text` (this will allow downstreams to migrate from `commons-lang3`'s `WordUtils`, which is deprecated)

1.25.9 Upstream version removals

The following upstream dependencies have been removed from dependency management (they are obsolete and unused):

- Chameleon MBeans
- Eclipse Link
- Equinox HTTP service bridge
- `equinoxSDK381` artifacts
- Coda Hale Metrics, which are mostly unused and should eventually be wrapped by `InfraUtils`
- `com.google.code.findbugs:jsr305` (which *must not* be used; this is enforced — annotations should be used instead)

- Felix File Install and Web Console
- Gemini Web
- Orbit
- `org.mockito:mockito-all` (which *must not* be used; this is enforced — `mockito-core` should be used instead)
- Spring Framework
- txw2
- Xerces
- `xml-apis`

1.25.10 Plugin version upgrades

The following plugins have been upgraded:

- `org.apache.servicemix.tooling:depends-maven-plugin` 1.3.1 → 1.4.0
- `org.apache.felix:maven-bundle-plugin` 2.4.0 → 3.3.0
- `maven-compiler-plugin` 3.6.1 → 3.7.0
- `maven-dependency-plugin` 3.0.1 → 3.0.2
- `maven-enforcer-plugin` 1.4.1 → 3.0.0-M1
- `maven-failsafe-plugin` 2.18.1 → 2.20.1
- `maven-javadoc-plugin` 2.10.4 → 3.0.0-M1
- `maven-shade-plugin` 2.4.3 → 3.1.0

1.25.11 New plugins

- The [Maven Find Duplicates](#) plugin can be enabled by setting the `duplicate-finder.skip` property to `false`.
- The [SpotBugs](#) Maven plugin can now be used instead of the `FindBugs` plugin (both are available, so no change is required). To use `SpotBugs`, replace `org.codehaus.mojo:findbugs-maven-plugin` with `com.github.spotbugs:spotbugs-maven-plugin`.

2.1 Parent POMs

2.1.1 Overview

The ODL Parent component for OpenDaylight provides a number of Maven parent POMs which allow Maven projects to be easily integrated in the OpenDaylight ecosystem. Technically, the aim of projects in OpenDaylight is to produce Karaf features, and these parent projects provide common support for the different types of projects involved.

These parent projects are:

- `odlparent-lite` — the basic parent POM for Maven modules which don't produce artifacts (*e.g.* aggregator POMs)
- `odlparent` — the common parent POM for Maven modules containing Java code
- `bundle-parent` — the parent POM for Maven modules producing OSGi bundles
- `single-feature-parent` — the parent POM for Maven modules producing a single Karaf 4 feature
- `feature-repo-parent` — the parent POM for Maven modules producing Karaf 4 feature repositories
- `karaf4-parent` — the parent POM for Maven modules producing Karaf 4 distributions

2.1.2 `odlparent-lite`

This is the base parent for all OpenDaylight Maven projects and modules. It provides the following, notably to allow publishing artifacts to Maven Central:

- license information;
- organization information;
- issue management information (a link to our Bugzilla);
- continuous integration information (a link to our Jenkins setup);

- default Maven plugins (maven-clean-plugin, maven-deploy-plugin, maven-install-plugin, maven-javadoc-plugin with HelpMojo support, maven-project-info-reports-plugin, maven-site-plugin with Asciidoc support, jdepend-maven-plugin);
- distribution management information.

It also defines two profiles which help during development:

- `q` (`-Pq`), the quick profile, which disables tests, code coverage, Javadoc generation, code analysis, etc. — anything which isn't necessary to build the bundles and features (see [this blog post](#) for details);
- `addInstallRepositoryPath` (`-DaddInstallRepositoryPath=../karaf/system`) which can be used to drop a bundle in the appropriate Karaf location, to enable hot-reloading of bundles during development (see [this blog post](#) for details).

For modules which don't produce any useful artifacts (*e.g.* aggregator POMs), you should add the following to avoid processing artifacts:

```
<build>
  <plugins>
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-deploy-plugin</artifactId>
      <configuration>
        <skip>true</skip>
      </configuration>
    </plugin>
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-install-plugin</artifactId>
      <configuration>
        <skip>true</skip>
      </configuration>
    </plugin>
  </plugins>
</build>
```

2.1.3 odlparent

This inherits from `odlparent-lite` and mainly provides dependency and plugin management for OpenDaylight projects.

If you use any of the following libraries, you should rely on `odlparent` to provide the appropriate versions:

- Akka (and Scala)
- Apache Commons:
 - commons-codec
 - commons-fileupload
 - commons-io
 - commons-lang
 - commons-lang3
 - commons-net
- Apache Shiro

- Guava
- JAX-RS with Jersey
- JSON processing:
 - GSON
 - Jackson
- Logging:
 - Logback
 - SLF4J
- Netty
- OSGi:
 - Apache Felix
 - core OSGi dependencies (core, compendium...)
- Testing:
 - Hamcrest
 - JSON assert
 - JUnit
 - Mockito
 - Pax Exam
 - PowerMock
- XML/XSL:
 - Xerces
 - XML APIs

Note: This list isn't exhaustive. It's also not cast in stone; if you'd like to add a new dependency (or migrate a dependency), please contact [the mailing list](#).

odlparent also enforces some Checkstyle verification rules. In particular, it enforces the common license header used in all OpenDaylight code:

```

/*
 * Copyright © ${year} ${holder} and others. All rights reserved.
 *
 * This program and the accompanying materials are made available under the
 * terms of the Eclipse Public License v1.0 which accompanies this distribution,
 * and is available at http://www.eclipse.org/legal/epl-v10.html
 */

```

where “\${year}” is initially the first year of publication, then (after a year has passed) the first and latest years of publication, separated by commas (*e.g.* “2014, 2016”), and “\${holder}” is the initial copyright holder (typically, the first author's employer). “All rights reserved” is optional.

If you need to disable this license check, *e.g.* for files imported under another license (EPL-compatible of course), you can override the maven-checkstyle-plugin configuration. `features-test` does this for its `CustomBundleUrlStreamHandlerFactory` class, which is ASL-licensed:

```

<plugin>
  <artifactId>maven-checkstyle-plugin</artifactId>
  <executions>
    <execution>
      <id>check-license</id>
      <goals>
        <goal>check</goal>
      </goals>
      <phase>process-sources</phase>
      <configuration>
        <configLocation>check-license.xml</configLocation>
        <headerLocation>EPL-LICENSE.regex.txt</headerLocation>
        <includeResources>>false</includeResources>
        <includeTestResources>>false</includeTestResources>
        <sourceDirectory>${project.build.sourceDirectory}</sourceDirectory>
        <excludes>
          <!-- Skip Apache Licensed files -->
          org/opendaylight/odlparent/featuretest/
          ↪CustomBundleUrlStreamHandlerFactory.java
        </excludes>
        <failsOnError>>false</failsOnError>
        <consoleOutput>>true</consoleOutput>
      </configuration>
    </execution>
  </executions>
</plugin>

```

2.1.4 bundle-parent

This inherits from `odlparent` and enables functionality useful for OSGi bundles:

- `maven-javadoc-plugin` is activated, to build the Javadoc JAR;
- `maven-source-plugin` is activated, to build the source JAR;
- `maven-bundle-plugin` is activated (including extensions), to build OSGi bundles (using the “bundle” packaging).

In addition to this, JUnit is included as a default dependency in “test” scope.

2.1.5 features-parent

This inherits from `odlparent` and enables functionality useful for Karaf features:

- `karaf-maven-plugin` is activated, to build Karaf features — but for OpenDaylight, projects need to use “jar” packaging (**not** “feature” or “kar”);
- `features.xml` files are processed from templates stored in `src/main/features/features.xml`;
- Karaf features are tested after build to ensure they can be activated in a Karaf container.

The `features.xml` processing allows versions to be omitted from certain feature dependencies, and replaced with “`{{version}}`”. For example:

```

<features name="odl-mdsal-${project.version}" xmlns="http://karaf.apache.org/xmlns/
↪features/v1.2.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

```

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```

xsi:schemaLocation="http://karaf.apache.org/xmlns/features/v1.2.0 http://karaf.
↪apache.org/xmlns/features/v1.2.0">

  <repository>mvn:org.opendaylight.odlparent/features-odlparent/{{VERSION}}/xml/
↪features</repository>

  [...]
  <feature name='odl-mdsal-broker-local' version='${project.version}' description=
↪"OpenDaylight :: MDSAL :: Broker">
    <feature version='${yangtools.version}'>odl-yangtools-common</feature>
    <feature version='${mdsal.version}'>odl-mdsal-binding-dom-adapter</feature>
    <feature version='${mdsal.model.version}'>odl-mdsal-models</feature>
    <feature version='${project.version}'>odl-mdsal-common</feature>
    <feature version='${config.version}'>odl-config-startup</feature>
    <feature version='${config.version}'>odl-config-netty</feature>
    <feature version=' [3.3.0,4.0.0] '>odl-lmax</feature>
    [...]
    <bundle>mvn:org.opendaylight.controller/sal-dom-broker-config/{{VERSION}}</
↪bundle>
    <bundle start-level="40">mvn:org.opendaylight.controller/blueprint/{{VERSION}}
↪</bundle>
    <configfile finalname="${config.configfile.directory}/${config.mdsal.
↪configfile}">mvn:org.opendaylight.controller/md-sal-config/{{VERSION}}/xml/config</
↪configfile>
    </feature>

```

As illustrated, versions can be omitted in this way for repository dependencies, bundle dependencies and configuration files. They must be specified traditionally (either hard-coded, or using Maven properties) for feature dependencies.

2.1.6 karaf-parent

This allows building a Karaf 3 distribution, typically for local testing purposes. Any runtime-scoped feature dependencies will be included in the distribution, and the `karaf.localFeature` property can be used to specify the boot feature (in addition to `standard`).

2.1.7 single-feature-parent

This inherits from `odlparent` and enables functionality useful for Karaf 4 features:

- `karaf-maven-plugin` is activated, to build Karaf features, typically with “feature” packaging (“kar” is also supported);
- `feature.xml` files are generated based on the compile-scope dependencies defined in the POM, optionally initialised from a stub in `src/main/feature/feature.xml`.
- Karaf features are tested after build to ensure they can be activated in a Karaf container.

The `feature.xml` processing adds transitive dependencies by default, which allows features to be defined using only the most significant dependencies (those that define the feature); other requirements are determined automatically as long as they exist as Maven dependencies.

“configfiles” need to be defined both as Maven dependencies (with the appropriate type and classifier) and as `<configfile>` elements in the `feature.xml` stub.

Other features which a feature depends on need to be defined as Maven dependencies with type “xml” and classifier “features” (note the plural here).

2.1.8 feature-repo-parent

This inherits from `odlparent` and enables functionality useful for Karaf 4 feature repositories. It follows the same principles as `single-feature-parent`, but is designed specifically for repositories and should be used only for this type of artifacts.

It builds a feature repository referencing all the (feature) dependencies listed in the POM.

2.1.9 karaf4-parent

This allows building a Karaf 4 distribution, typically for local testing purposes. Any runtime-scoped feature dependencies will be included in the distribution, and the `karaf.localFeature` property can be used to specify the boot feature (in addition to `standard`).

2.2 Features (for Karaf 3)

The ODL Parent component for OpenDaylight provides a number of Karaf 3 features which can be used by other Karaf 3 features to use certain third-party upstream dependencies.

These features are:

- Akka features (in the `features-akka` repository):
 - `odl-akka-all` — all Akka bundles;
 - `odl-akka-scala-2.11` — Scala runtime for OpenDaylight;
 - `odl-akka-system-2.4` — Akka actor framework bundles;
 - `odl-akka-clustering-2.4` — Akka clustering bundles and dependencies;
 - `odl-akka-leveldb-0.7` — LevelDB;
 - `odl-akka-persistence-2.4` — Akka persistence;
- general third-party features (in the `features-odlparent` repository):
 - `odl-netty-4` — all Netty bundles;
 - `odl-guava-18` — Guava 18;
 - `odl-guava-21` — Guava 21 (not intended for use in Carbon);
 - `odl-lmax-3` — LMAX Disruptor;
 - `odl-triemap-0.2` — Concurrent Trie HashMap.

To use these, you need to declare a dependency on the appropriate repository in your `features.xml` file:

```
<repository>mvn:org.opendaylight.odlparent/features-odlparent/{{VERSION}}/xml/features
↪</repository>
```

and then include the feature, *e.g.*:

```
<feature name='odl-mdsal-broker-local' version='${project.version}' description=
↪"OpenDaylight :: MDSAL :: Broker">
  [...]
  <feature version='[3.3.0,4.0.0] '>odl-lmax</feature>
  [...]
</feature>
```


You also need to depend on the features repository in your POM:

```
<dependency>
  <groupId>org.opendaylight.odlparent</groupId>
  <artifactId>features-odlparent</artifactId>
  <classifier>features</classifier>
  <type>xml</type>
</dependency>
```

assuming the appropriate dependency management:

```
<dependencyManagement>
  <dependencies>
    <dependency>
      <groupId>org.opendaylight.odlparent</groupId>
      <artifactId>odlparent-artifacts</artifactId>
      <version>1.8.0-SNAPSHOT</version>
      <scope>import</scope>
      <type>pom</type>
    </dependency>
  </dependencies>
</dependencyManagement>
```

(the version number there is appropriate for Carbon). For the time being you also need to depend separately on the individual JARs as compile-time dependencies to build your dependent code; the relevant dependencies are managed in odlparent’s dependency management.

The suggested version ranges are as follows:

- odl-netty: [4.0.37, 4.1.0) or [4.0.37, 5.0.0);
- odl-guava: [18, 19) (if your code is ready for it, [19, 20) is also available, but the current default version of Guava in OpenDaylight is 18);
- odl-lmax: [3.3.4, 4.0.0)

2.3 Features (for Karaf 4)

There are equivalent features to all the Karaf 3 features, for Karaf 4. The repositories use “features4” instead of “features”, and the features use “odl4” instead of “odl”.

The following new features are specific to Karaf 4:

- Karaf wrapper features (also in the features4-odlparent repository) — these can be used to pull in a Karaf feature using a Maven dependency in a POM:
 - odl-karaf-feat-feature — the Karaf feature feature;
 - odl-karaf-feat-jdbc — the Karaf jdbc feature;
 - odl-karaf-feat-jetty — the Karaf jetty feature;
 - odl-karaf-feat-war — the Karaf war feature.

To use these, all you need to do now is add the appropriate dependency in your feature POM; for example:

```
<dependency>
  <groupId>org.opendaylight.odlparent</groupId>
  <artifactId>odl4-guava-18</artifactId>
  <classifier>features</classifier>
  <type>xml</type>
</dependency>
```

assuming the appropriate dependency management:

```
<dependencyManagement>
  <dependencies>
    <dependency>
      <groupId>org.opendaylight.odlparent</groupId>
      <artifactId>odlparent-artifacts</artifactId>
      <version>1.8.0-SNAPSHOT</version>
      <scope>import</scope>
      <type>pom</type>
    </dependency>
  </dependencies>
</dependencyManagement>
```

(the version number there is appropriate for Carbon). We no longer use version ranges, the feature dependencies all use the `odlparent` version (but you should rely on the artifacts POM).