1 Meme

1.0.1 Libraries

Dropwizard uses - Jetty for HTTP - Jersey for REST - Jackson for JSON - Metrics for metrics - Guava for utilities - SL4J & Logback for logging - JDBI for datastorage

Apache Derby - Small footprint - Based on the Java, JDBC, and SQL

Flyway - "Evolve your Database Schema easily and reliably across all your instances"

Kyrnonet - "... a clean and simple API for efficient TCP and UDP" - Makes use of the Kryo Serialisation Library

1.0.2 Toooling

Jenkins - Continuous integration server SonarQube - Code quality JUnit - Test framework JaCoCo - Test coverage Gradle - Build automation system Artifactory - single access point to binary resources

1.0.3 TDD

- When you get a bug report, write a test that exposes the bug
- Concentrate tests on *boundary conditions.*
- Test for *exceptional behaviours.*

1.0.4 Git

Central repository Pull master branch Edit, stage, commit to local master Push to central repository

Distributed repositories Each developer has their own repository Work on local master Use pull requests to notify of code to merge Repository manager approves and pulls code to main repo

Release branches Each release & patch is its own branch Simplifies maintaining multiple versions of a system Separate master for releases Development happens in branches Simplified history of releases Bug fixes Branches for bug fixes Merged into master when fixed

1.0.5 Mocking

- Dummies - test objects which are never used but exist only to satisfy syntactic requirements – Stubs - test objects whose methods return fixed values, and support the specific test cases only
- Fakes — test objects whose methods work but have only limited functionality – Mocks — test objects which know how they're meant to be used, e.g. the sequence in which their methods should be called (allowing behavioural verification instead of just state verification)

1.0.6 Databases

JDBC – Java Database Connectivity - Is a built-in Java library that enables direct programmatic control over a relational database, without needing to use SQL - Provides methods for querying and updating data in the database - Oriented towards relational database - Low level control - Java library, therefore Does NOT require third party imports - Client side drivers convert from java to DBMS protocol - More lines of code, faster at run time

JDBI – intermediate level relational database library - Like JDBC, but also provides simple tools for DAO's (Data Access Objects) - Methods access DAO connected to underlying database. - Low-level control - Simplified usage compared to JDBC, slower in execution

JPA – Java Persistence API – more advanced Data Access Object tools - JPA is an object-role modelling approach to working with a database from a Java program. - The idea is that in the program you focus on objects. - In the database you design your tables, relations, keys and constraints. - You then specify how to map from the program's objects to the database's tables.

JDO – similar in concept to JPA, but is not limited to relational databases. - Allows changes to underlying DB technology (more control) - Supports NoSQL and other database structures other than RDB