JUnit 4 → JUnit 5

Maven Dependencies

JUnit 5 pure

```
<dependency>
  <groupId>org.junit.jupiter</groupId>
  <artifactId>junit-jupiter-engine</artifactId>
  <scope>test</scope>
</dependency>
```

JUnit 4 compat

```
<dependency>
  <groupId>org.junit.vintage</groupId>
  <artifactId>junit-vintage-engine</artifactId>
  <scope>test</scope>
</dependency>
```

- Kann problemlos parallel benutzt werden, so wie es ausschaut...
- Etwas unklar, ob man noch mehr braucht...

Was hat sich geändert (Jupiter)?

- `@BeforeClass` → `@BeforeAll`
- `@AfterClass` → `@AfterAll`
- `@Before` → `@BeforeEach`
- `@After` → `@AfterEach`
- `@Ignore` → `@Disabled`
- `@Category` → `@Tag`
- Class/Method muss nicht mehr `public` sein
- `assertThat` removed → Hamcrest

Was ist neu in JUnit 5

Test for Exceptions

```
@Test
void shouldThrowException() {
  Throwable exception = assertThrows(
    UnsupportedOperationException.class,
    () -> {
      throw new UnsupportedOperationException(
        "Not supported");
    }
  );

  assertEquals(
    exception.getMessage(),
    "Not supported");
}
```

Was ist neu in JUnit 5

Display Names

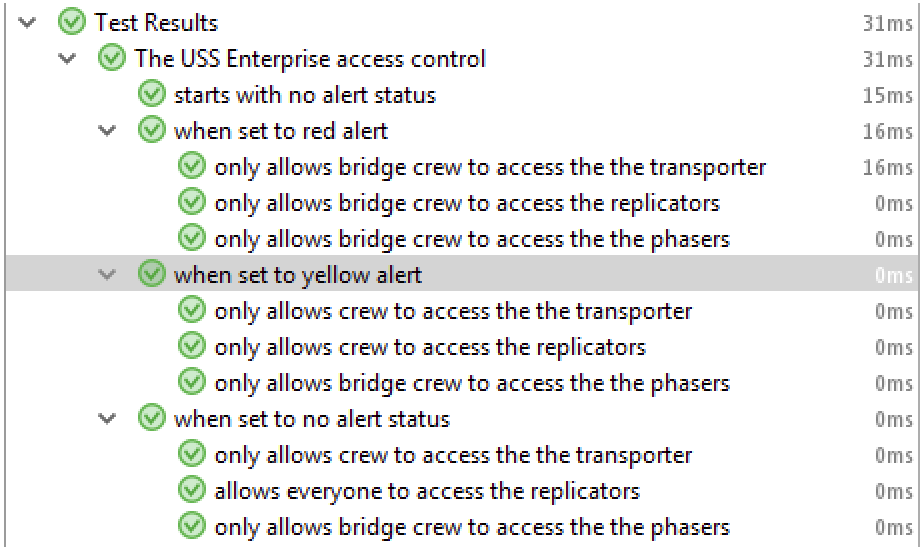
```
@DisplayName("The USS Enterprise access control")
class AccessControllTest {
  @Test
  @DisplayName("starts with no alert status")
  void noAlertStatus() { ... }

  @Test
  @DisplayName("when set to yellow alert")
  void yellowAlert() { ... }

  ...
}
```

Was ist neu in JUnit 5

Display Names



```
✓ Test Results                                                  31ms
  ✓ The USS Enterprise access control                           31ms
    ✓ starts with no alert status                               15ms
    ✓ when set to red alert                                     16ms
      ✓ only allows bridge crew to access the the transporter   16ms
      ✓ only allows bridge crew to access the replicators        0ms
      ✓ only allows bridge crew to access the the phasers        0ms
    ✓ when set to yellow alert                                   0ms
      ✓ only allows crew to access the the transporter           0ms
      ✓ only allows crew to access the replicators               0ms
      ✓ only allows bridge crew to access the the phasers        0ms
    ✓ when set to no alert status                                0ms
      ✓ only allows crew to access the the transporter           0ms
      ✓ allows everyone to access the replicators                0ms
      ✓ only allows bridge crew to access the the phasers        0ms
```

In Kombination mit "Nested Tests".

Was ist neu in JUnit 5

Parameterized Tests

```
@ParameterizedTest
@ValueSource(strings = { "racecar", "radar" })
void palindromes(String candidate) {
  assertTrue(isPalindrome(candidate));
}
```

- CSV, Enums etc. pp.
- https://junit.org/junit5/docs/current/user-guide/#writing-tests-parameterized-tests

Was ist neu in JUnit 5

Grouped Assertions

```
@Test
void canAccessPhasers() {
  assertAll(
    () -> assertTrue(sut.canAccessPhasers(picard)),
    () -> assertFalse(sut.canAccessPhasers(barclay)),
    () -> assertFalse(sut.canAccessPhasers(lwaxana)),
    () -> assertFalse(sut.canAccessPhasers(q))
  );
}
```

Bricht nicht beim ersten fail ab, sondern führt alle Assertions aus.

Was ist neu in JUnit 5

`@RunWith`, `@Rule` and `@ClassRule`

No direct replacement, they have been superseded by `@ExtendWith` and there is limited rule support in `junit-jupiter-migrationsupport`.

Was ist neu in JUnit 5

Mockito Rule

```
@ExtendWith(MockitoExtension.class)
class MockTest {
  @Mock
  Foo foo;
}
```

Was ist neu in JUnit 5

Rules

- Gibt es so nicht mehr → Extensions
- Aber einige Rules sind auch in Jupiter noch da
  - `ExpectedException`
  - `ExternalResource`
  - `TemporaryFolder`
  - `Verifier`
- Braucht *org.junit.jupiter:junit-jupiter-migrationsupport*

Was ist neu in JUnit 5

Rules

```
@EnableRuleMigrationSupport // <- IMPORTANT!
class FooTest {

  @Rule
  public final TemporaryFolder tmp =
    new TemporaryFolder();

  @Test
  void foo() {
    final Path root = tmp.getRoot().toPath();
    assertThat(root, is(not(nullValue())));
  }
}
```

Q&A

There is a lot more stuff:

- https://junit.org/junit5/docs/current/user-guide
- https://github.com/junit-team/junit5-samples