

# Felsökning och rapportering i CI

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# Felsökning och rapportering i CI

## *Idag går vi igenom:*

- Varför pipelines går sönder
- Vanliga fel och hur du tolkar dem
- Hur du läser loggar effektivt
- Testfailures vs byggfel vs credentials-problem
- Artifacts & testrapporter
- Hur man lägger till “test-summary” i GitHub Actions



## Mål:

Kunna hitta, förstå och lösa fel i ett CI-flöde



# Varför pipelines failar

- Tester failar
- Koden kompilarar inte
- Miljön saknar beroenden
- Credentials/hemligheter saknas
- Fel version av språk/SDK
- Externa system svarar inte
- Tidsgränser / flaky tests



En pipeline är inte magisk, den kör bara kommandon i ordning.



# De tre huvudkategorierna av fel

1

## Build errors (kompilering / beroenden)

Build failed, Class not found,  
Package missing, Failed to compile  
→ **Orsak:** fel i koden eller saknade  
libraries

2

## Test failar

AssertionError, NullPointerException  
→ **Orsak:** koden fungerar inte som  
testet förväntar sig

3

## Credentials-problem

Authentication failed, Permission denied,  
Cannot connect  
→ **Orsak:** miljö, credentials, externa tjänster

# Vanliga byggfel

- ✗ Saknade dependencies
- ✗ Fel Java-version
- ✗ Maven kan inte hitta projektet/POM
- ✗ Checkout-steget brister
- ✗ Filvägar skiljer sig mellan Windows och Linux



## Lösning:

- 1 Läs första felet, inte sista raden
- 2 Leta efter: Cannot find symbol, POM not found, Dependency not resolved
- 3 Kontrollera versionskrav: Java, Maven, dependencies
- 4 Kontrollera att filstrukturen i GitHub matchar din lokala struktur





# Vanliga testfel

## ✖ AssertionError

› förväntat värde  $\neq$  faktiskt värde

## ✖ NullPointerException

› du använder ett objekt som inte finns

## ✖ Timeout / testet hänger

› väntar på en resurs som aldrig svarar

## ✖ Tests beroende av tid, datum eller ordning

› instabila och varierar mellan körningar

## ✖ Integrationstester som kräver extern databas/API

› faller pga nätverk, latency, credentials eller att externa tjänster ligger nere

**Testfails är ofta bra! Fail = testet gör sitt jobb!**



# Vanliga credentials-problem

## ❌ Missing secrets

➤ hemligheter saknas helt i Repository → Settings → Secrets

## ❌ Felaktigt token

➤ fel värde, fel format eller gammalt token

## ❌ Actions saknar permissions

➤ workflows får inte göra allt - permissions måste slås på

**"Authentication failed"** betyder nästan alltid att Actions inte rättigheter eller saknar ett secret.







# Så läser du dina loggar

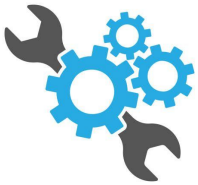
## 1. Identifiera vilket steg som failar

**build**  
failed 4 days ago in 35s

Search logs

- > ✓ Set up job
- > ✓ Run actions/checkout@v4
- > ✓ Set up JDK 17
- > ✗ Build with Maven
- > ✓ Post Set up JDK 17
- > ✓ Post Run actions/checkout@v4
- > ✓ Complete job





# Så läser du dina loggar

## 2. Läs felmeddelandet i slutet av steget

```
85 [INFO] BUILD FAILURE
86 [INFO] -----
87 [INFO] Total time: 23.826 s
88 [INFO] Finished at: 2025-11-21T14:34:28Z
89 [INFO] -----
90 Error: Failed to execute goal org.apache.maven.plugins:maven-surefire-plugin:3.5.4:test (default-test) on project ci-demo1: There are test failures.
91 Error:
92 Error: See /home/runner/work/raderaplzz/raderaplzz/target/surefire-reports for the individual test results.
93 Error: See dump files (if any exist) [date].dump, [date]-jvmRun[N].dump and [date].dumpstream.
94 Error: -> [Help 1]
95 Error:
96 Error: To see the full stack trace of the errors, re-run Maven with the -e switch.
97 Error: Re-run Maven using the -X switch to enable full debug logging.
98 Error:
99 Error: For more information about the errors and possible solutions, please read the following articles:
100 Error: [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoFailureException
101 Error: Process completed with exit code 1.
```



# Så läser du dina loggar

## 3. Scrolla uppåt en liten bit! “Root cause” finns några rader upp

```
109 [INFO]
110 [INFO] Results:
111 [INFO]
112 Error: Failures:
113 Error: CalculatorTest.addShouldReturn3:32 expected: <3> but was: <5>
114 Error: CalculatorTest.addShouldReturn3_withLogger:59 expected: <3> but was: <5>
115 Error: CalculatorTest.addShouldReturn3_withPrintln:43 expected: <3> but was: <5>
116 [INFO]
117 Error: Tests run: 9, Failures: 3, Errors: 0, Skipped: 0
118 [INFO]
119 [INFO] -----
120 [INFO] BUILD FAILURE
121 [INFO] -----
122 [INFO] Total time: 26.345 s
123 [INFO] Finished at: 2025-11-25T12:09:05Z
124 [INFO] -----
```



# Så läser du dina loggar

## 4. Tänk kategorier: build? test? credentials?

```
45 Error: Tests run: 7, Failures: 3, Errors: 0, Skipped: 0, Time elapsed: 0.228 s <<< FAILURE! -- in systementor.cidemo1.CalculatorTest
46 Error: systementor.cidemo1.CalculatorTest.addShouldReturn3_withPrintln -- Time elapsed: 0.012 s <<< FAILURE!
```

```
21 [INFO] -----
22 Error: COMPILATION ERROR :
23 [INFO] -----
```

```
797 Error: Errors:
798 Error: ProductApiTest.getProductsShouldReturn200:20 » IllegalArgumentException accessToken cannot be null
```

```
26 [INFO] -----
27 Error: Failed to execute goal org.apache.maven.plugins:maven-compiler-plugin:3.14.0:compile (default-compile) on project ci-demo1: Fatal error
compiling: error: release version 17 not supported -> [Help 1]
```

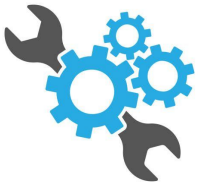


# Logga direkt i testerna: `System.out.println()`

```
@Test
void addShouldReturn3_withPrintln() {
    System.out.println("Println INFO: Starting test addShouldReturn3...");

    int result = calculator.add(a, b);
    System.out.println("Println INFO: Result from calculator: " + result);

    try {
        assertEquals(3, result);
        System.out.println("Println SUCCESS: Test passed! addShouldReturn3 returned 3");
    } catch (AssertionError e) {
        System.out.println("Println ERROR: Test failed! Expected 3 but got: " + result);
        throw e;
    }
}
```



# Logga direkt i testerna: **Logger**

```
private static final Logger logger = Logger.getLogger(CalculatorTest.class.getName());

@Test
void addShouldReturn3_withLogger() {
    logger.info("Logger: Starting test addShouldReturn3...");

    int result = calculator.add(a, b);
    logger.info("Logger: Result from calculator: " + result);

    try {
        assertEquals(3, result);
        logger.info("Logger: SUCCESS: Test passed! addShouldReturn3 returned 3");
    } catch (AssertionError e) {
        logger.severe("Logger: FAIL: Expected 3 but got " + result);
        throw e;
    }
}
```





# Se dina loggar i GitHub Actions: `println`

```
32 [INFO] -----
33 [INFO] T E S T S
34 [INFO] -----
35 [INFO] Running systementor.cidemo1.CalculatorTest
36 Println INFO: Starting test addShouldReturn3...
37 Println INFO: Result from calculator: 5
38 Println ERROR: Test failed! Expected 3 but got: 5
39 Error: Tests run: 6, Failures: 1, Errors: 0, Skipped: 0, Time elapsed: 0.158 s <<< FAILURE! -- in systementor.cidemo1.CalculatorTest
40 Error: systementor.cidemo1.CalculatorTest.addShouldReturn3_withPrintln -- Time elapsed: 0.023 s <<< FAILURE!
41 org.opentest4j.AssertionFailedError: expected: <3> but was: <5>
42     at org.junit.jupiter.api.AssertionFailureBuilder.build(AssertionFailureBuilder.java:151)
43     at org.junit.jupiter.api.AssertionFailureBuilder.buildAndThrow(AssertionFailureBuilder.java:132)
44     at org.junit.jupiter.api.AssertEquals.failNotEqual(AssertEquals.java:197)
45     at org.junit.jupiter.api.AssertEquals.assertEquals(AssertEquals.java:150)
46     at org.junit.jupiter.api.AssertEquals.assertEquals(AssertEquals.java:145)
47     at org.junit.jupiter.api.Assertions.assertEquals(Assertions.java:531)
48     at systementor.cidemo1.CalculatorTest.addShouldReturn3_withPrintln(CalculatorTest.java:43)
49     at java.base/java.lang.reflect.Method.invoke(Method.java:569)
50     at java.base/java.util.ArrayList.forEach(ArrayList.java:1511)
51     at java.base/java.util.ArrayList.forEach(ArrayList.java:1511)
52 [INFO] Running systementor.cidemo1.CiDemo1ApplicationTests
```



# Se dina loggar i GitHub Actions: **Logger**

```
32 [INFO] -----
33 [INFO] T E S T S
34 [INFO] -----
35 [INFO] Running systementor.cidemo1.CalculatorTest
36 Nov 25, 2025 10:09:33 AM systementor.cidemo1.CalculatorTest addShouldReturn3_withLogger
37 INFO: Starting test addShouldReturn3...
38 Nov 25, 2025 10:09:33 AM systementor.cidemo1.CalculatorTest addShouldReturn3_withLogger
39 INFO: Result from calculator: 8
40 Nov 25, 2025 10:09:33 AM systementor.cidemo1.CalculatorTest addShouldReturn3_withLogger
41 SEVERE: FAIL: Expected 3 but got 8
42 Error: Tests run: 6, Failures: 1, Errors: 0, Skipped: 0, Time elapsed: 0.231 s <<< FAILURE! -- in systementor.cidemo1.CalculatorTest
43 Error: systementor.cidemo1.CalculatorTest.addShouldReturn3_withLogger -- Time elapsed: 0.116 s <<< FAILURE!
44 org.opentest4j.AssertionFailedError: expected: <3> but was: <8>
45     at org.junit.jupiter.api.AssertionFailureBuilder.build(AssertionFailureBuilder.java:151)
46     at org.junit.jupiter.api.AssertionFailureBuilder.buildAndThrow(AssertionFailureBuilder.java:132)
47     at org.junit.jupiter.api.AssertEquals.failNotEqual(AssertEquals.java:197)
48     at org.junit.jupiter.api.AssertEquals.assertEquals(AssertEquals.java:150)
49     at org.junit.jupiter.api.AssertEquals.assertEquals(AssertEquals.java:145)
50     at org.junit.jupiter.api.Assertions.assertEquals(Assertions.java:531)
51     at systementor.cidemo1.CalculatorTest.addShouldReturn3_withLogger(CalculatorTest.java:44)
52     at java.base/java.lang.reflect.Method.invoke(Method.java:569)
53     at java.base/java.util.ArrayList.forEach(ArrayList.java:1511)
54     at java.base/java.util.ArrayList.forEach(ArrayList.java:1511)
55 [INFO] Running systementor.cidemo1.CiDemo1ApplicationTests
```



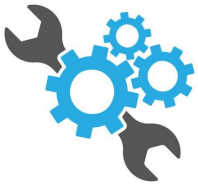
## Minimal skillnad i Actions...

```
32 [INFO] -----
33 [INFO] T E S T S
34 [INFO] -----
35 [INFO] Running systementor.cidemo1.CalculatorTest
36 println INFO: Starting test addShouldReturn3...
37 println INFO: Result from calculator: 3
38 println SUCCESS: Test passed! addShouldReturn3 returned 3
39 Nov 25, 2025 10:15:32 AM systementor.cidemo1.CalculatorTest addShouldReturn3_withLogger
40 INFO: Starting test addShouldReturn3...
41 Nov 25, 2025 10:15:33 AM systementor.cidemo1.CalculatorTest addShouldReturn3_withLogger
42 INFO: Result from calculator: 3
43 Nov 25, 2025 10:15:33 AM systementor.cidemo1.CalculatorTest addShouldReturn3_withLogger
44 INFO: SUCCESS: Test passed! addShouldReturn3 returned 3
45 [INFO] Tests run: 7, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.221 s -- in systementor.cidemo1.CalculatorTest
46 [INFO] Running systementor.cidemo1.CiDemo1ApplicationTests
47 10:15:33.364 [main] INFO org.springframework.test.context.support.AnnotationConfigContextLoaderUtils -- Could not detect default configuration classes
for test class [systementor.cidemo1.CiDemo1ApplicationTests]: CiDemo1ApplicationTests does not declare any static, non-private, non-final, nested
classes annotated with @Configuration.
48 10:15:33.468 [main] INFO org.springframework.boot.test.context.SpringBootTestContextBootstrapper -- Found @SpringBootTestConfiguration
systementor.cidemo1.CiDemo1Application for test class systementor.cidemo1.CiDemo1ApplicationTests
49
50 . ____ _ _ _ _
51 /\ / ___'_ __ _ ( '_ ) ___ __ \ |_ \ \ \ \
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53 \V ___)' | | |' | | |' | | |' | | |' | \ V _/ | \ \ \ \
54 ' |___|' | |__' | | |' | | |' | | |' | | |' | \ V _/ | \ \ \ \
55 =====|_|=====|_|_/=/_/_/_/_/
56
57 :: Spring Boot ::                (v3.5.6)
```

# Överkurs! Test-summary



## GitHub Link



<https://github.com/test-summary/action>

**maven.yml**  
on: push

build 9s — Test 43s

**Test summary**

✓ All tests passed  
9 tests passed

Job summary generated at run-time

```
- name: Test Summary
  uses: test-summary/action@v2
  with:
    paths:
    "target/surefire-reports/*.xml"
  if: always()
```

Lägg till denna  
**step** under

-run: mvn test  
i din workflow!

**maven.yml**  
on: push

build 14s — ✗ Test 39s

**Test summary**

Some tests failed  
6 tests passed, 3 tests failed

**Test failures:**

- addShouldReturn3\_withPrintln: systementor.cidemo1.CalculatorTest

expected: <3> but was: <5>

org.opentest4j.AssertionFailedError: expected: <3> but was: <5>

at org.junit.jupiter.api.AssertionFailureBuilder.build(AssertionFailureBuilder.java:151)  
at org.junit.jupiter.api.AssertionFailureBuilder.buildAndThrow(AssertionFailureBuilder.java:132)  
at org.junit.jupiter.api.AssertEquals.failNotEqual(AssertEquals.java:197)  
at org.junit.jupiter.api.AssertEquals.assertEquals(AssertEquals.java:150)  
at org.junit.jupiter.api.AssertEquals.assertEquals(AssertEquals.java:145)  
at org.junit.jupiter.api.Assertions.assertEquals(Assertions.java:531)  
at systementor.cidemo1.CalculatorTest.addShouldReturn3\_withPrintln(CalculatorTest.java:43)  
at java.base/java.lang.reflect.Method.invoke(Method.java:569)  
at java.base/java.util.ArrayList.forEach(ArrayList.java:1511)  
at java.base/java.util.ArrayList.forEach(ArrayList.java:1511)



DEMO

# Gruppövning: Hitta felen!



(Bensträckare)

- 1 Klona ner detta repo, det **kryllar** av diverse fel!
- 2 **OBS! Innan** ni öppnar projektet, radera **.git-mappen!!**
- 3 Öppna projektet i valfri IDE och pusha upp det till **er egen** GitHub
- 4 Använd GitHub Actions och er nya felsöknings-kunskap
- 5 Hitta fel via loggarna -> fixa fel -> push till GitHub -> hitta nästa fel
- 6 Se hur många fel ni hinner lösa!

Något som krånglar?  
**Google** is your friend!!



*Good Luck!*  
😊

🗨 **Efter övningen:**

Fick ni till det? Hur många fel löste ni? Vad fastnade ni på?