

A person wearing a white shirt, dark shorts, and a backpack is riding a mountain bike on a rocky ridge. The background shows a vast, hazy landscape with rolling hills and a clear blue sky. A green circular graphic is overlaid on the right side of the image, containing the title and author information.

Gatling for JMeter dummies

Rainer Steinegger
Application Engineer, Unic GmbH

Rainer Steinegger

- Java Backend Engineer
- Java User Group KA Organizer
- Mentor at Devox4Kids
- Married and 3 kids



featuring some friends



Agenda

- JMeter
- Gatling to the rescue!!111
- Gatling Basics and Code

Why load-/stresstests?!

JMeter

Performance



one user per thread

might take many threads





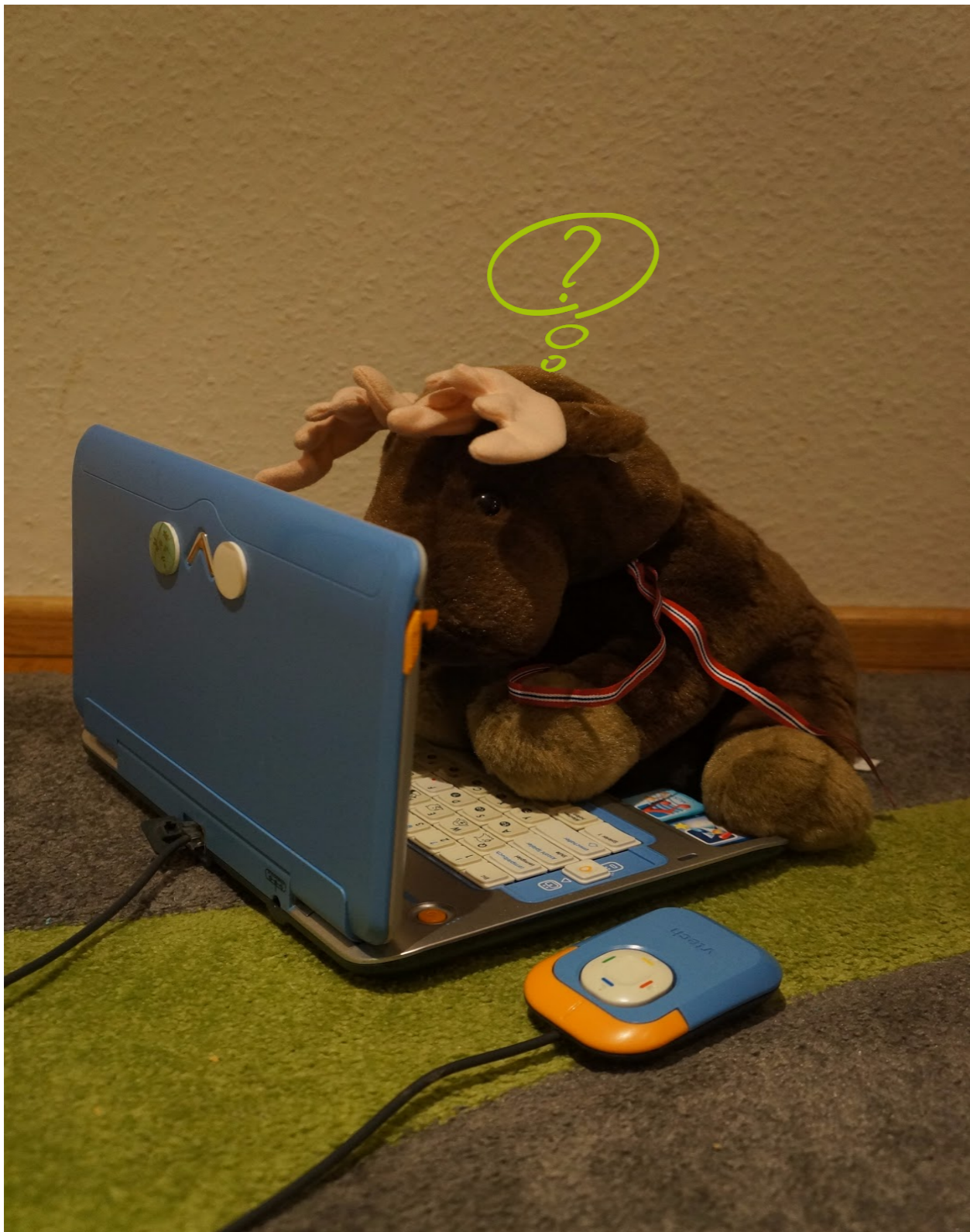
... and doesn't scale well

Blocking I/O



Thread.sleep()

Usability



peer reviews

```

<?xml version="1.0" encoding="UTF-8"?>
-<jmeterTestPlan version="1.2" properties="2.4" jmeter="2.9 r1437961">
+<jmeterTestPlan version="1.2" properties="2.8" jmeter="2.13 r1665067">
  <hashTree>
    <TestPlan guiclass="TestPlanGui" testclass="TestPlan" testname="Provisioning_Service_API_Tests" enabled="true">
      <stringProp name="TestPlan.comments"></stringProp>
@@ -234,7 +234,7 @@
      <RegexExtractor guiclass="RegexExtractorGui" testclass="RegexExtractor" testname="AccountKey_Extractor" enabled="true">
        <stringProp name="RegexExtractor.useHeaders">>false</stringProp>
        <stringProp name="RegexExtractor.refname">accountKey_1</stringProp>
-        <stringProp name="RegexExtractor.regex">&quot;accountKey&quot;;(\d+)</stringProp>
+        <stringProp name="RegexExtractor.regex">&quot;accountKey&quot;;&quot;(\d+)&quot;</stringProp>
        <stringProp name="RegexExtractor.template">${1$}</stringProp>
        <stringProp name="RegexExtractor.default">NOTFOUND</stringProp>
        <stringProp name="RegexExtractor.match_number">1</stringProp>
@@ -243,7 +243,7 @@
      <RegexExtractor guiclass="RegexExtractorGui" testclass="RegexExtractor" testname="EntitlementKey_Extractor" enabled="true">
        <stringProp name="RegexExtractor.useHeaders">>false</stringProp>
        <stringProp name="RegexExtractor.refname">entitlementKey_1</stringProp>
-        <stringProp name="RegexExtractor.regex">&quot;entitlementKeys&quot;;\[(\d+)\]</stringProp>
+        <stringProp name="RegexExtractor.regex">&quot;entitlementKeys&quot;;\["(\d+)\]&quot;</stringProp>
        <stringProp name="RegexExtractor.template">${1$}</stringProp>
        <stringProp name="RegexExtractor.default">NOTFOUND</stringProp>
        <stringProp name="RegexExtractor.match_number">1</stringProp>
@@ -251,8 +251,8 @@
    <hashTree/>
    <ResponseAssertion guiclass="AssertionGui" testclass="ResponseAssertion" testname="Response Assertion" enabled="true">
      <collectionProp name="Asserion.test_strings">
-        <stringProp name="-626189834">&quot;accountKey&quot;;${accountKey_1}</stringProp>
-        <stringProp name="1693228287">&quot;entitlementKeys&quot;;[${entitlementKey_1}]</stringProp>
+        <stringProp name="1950126774">&quot;accountKey&quot;;&quot;${accountKey_1}&quot;</stringProp>
+        <stringProp name="1832305727">&quot;entitlementKeys&quot;;["${entitlementKey_1}"]</stringProp>
      </collectionProp>
      <stringProp name="Assertion.test_field">Assertion.response_data</stringProp>
      <boolProp name="Assertion.assume_success">>false</boolProp>
@@ -1232,8 +1232,8 @@
    <hashTree/>
    <ResponseAssertion guiclass="AssertionGui" testclass="ResponseAssertion" testname="Response Assertion" enabled="true">
      <collectionProp name="Asserion.test_strings">
-        <stringProp name="295529901">&quot;key&quot;;${entitlementKey_1}</stringProp>

```

XML!!!

AudioService-Meeting-Full.jmx (/Users/rainer/dev/src/depot/LoadTest/TestCases/AudioService/TestPlans/AudioService-Meeting-Full.jmx) - Apache JMeter (2.13 r1665067)

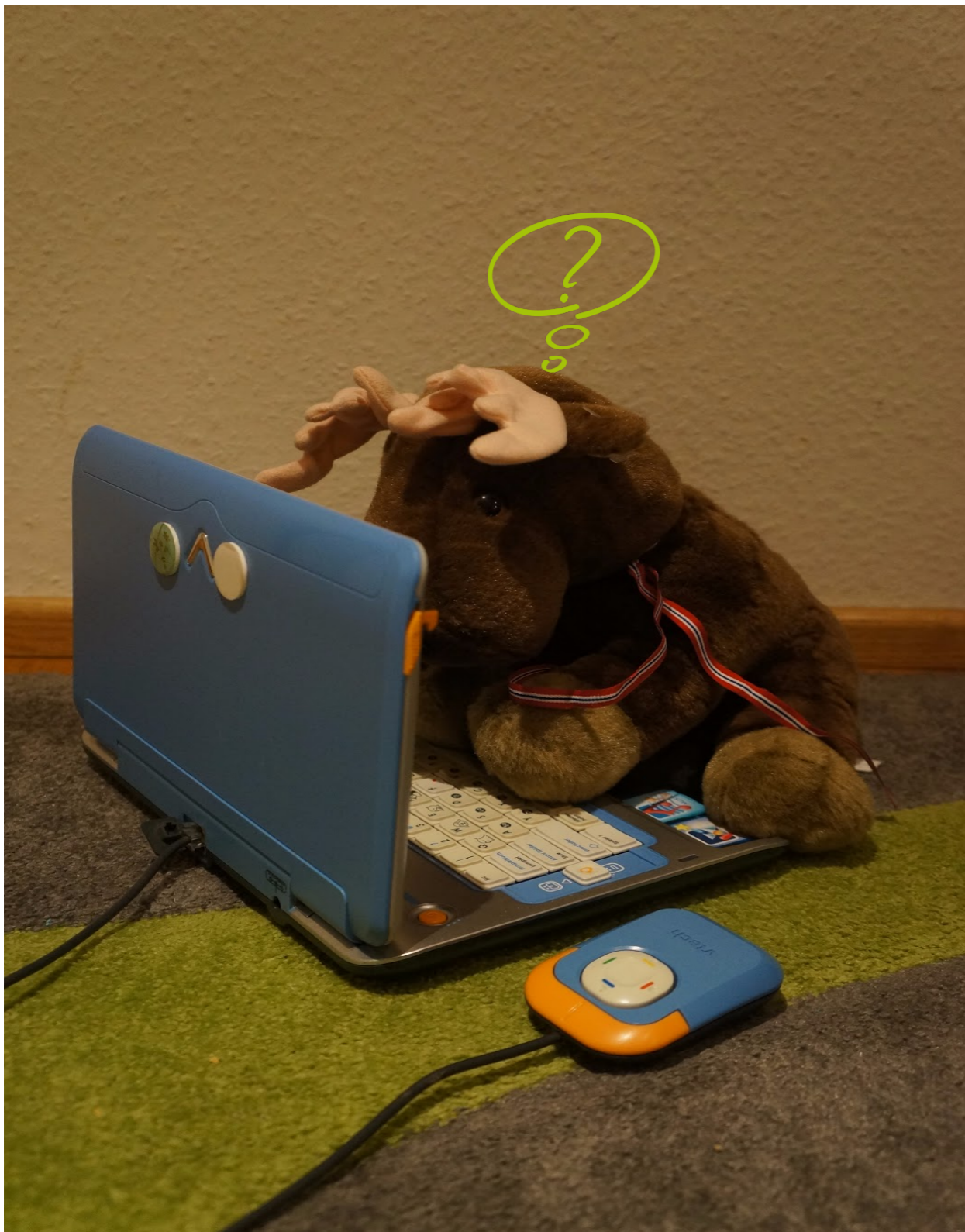
7 0 / 0

Configuration variables

refactorings...

Name	Value	Description
ltEnv	<code>\${_P(ltEnv, lt1)}</code>	
audioSvcPort	<code>\${_P(audioSvcPort, 80)}</code>	
queueServiceHostName	<code>\${_P(queueServiceHostname, queueiltsvc.lt.expertcity....}</code>	
queueServicePort	<code>\${_P(queueServicePort, 80)}</code>	
protocol	<code>\${_P(protocol, http)}</code>	
accountKey	<code>\${_P(accountKey,2612316843028819462)}</code>	
organizerKey	<code>\${_P(organizerKey,2140117280829255430)}</code>	
timeout	60000	
orgld	<code>\${_P(emailPrefix,audio-global11)}</code>	
emailsuffix	<code>\${_P(emailSuffix,jedix.com)}</code>	
userPassword	<code>\${_P(userPassword,secret11)}</code>	
threadCount	<code>\${_P(threadCount, 30)}</code>	
loopCount	<code>\${_P(loopCount, 1000000)}</code>	
duration	<code>\${_P(duration, 7200)}</code>	
startCounter	<code>\${_P(startCounterFullTest, 11111111)}</code>	
endCounter	<code>\${_P(endCounterFullTest, 129999999)}</code>	
isTestRun	<code>\${_P(isTestRun, false)}</code>	
startTestCounter	<code>\${_P(startCounterFullForTestRun, 43111111)}</code>	
endTestCounter	<code>\${_P(endCounterFullForTestRun, 43222222)}</code>	
product	<code>\${_P(product, G2M)}</code>	
liveMeetingRPS	<code>\${_P(liveMeetingRPS, 1.5)}</code>	
requestsPerMeeting	<code>\${_P(requestsPerMeeting, 18)}</code>	
numberOfAgents	<code>\${_P(numberOfAgents, 4)}</code>	
numberOfHostsUnderTest	<code>\${_P(numberOfHostsUnderTest, 2)}</code>	

Detail Add Add from Clipboard Delete Up Down



plugin dependencies and versions

Gatling to the rescue!!111

Performance



netty for non-blocking I/O

~~Thread.sleep()~~



versioning and peer reviews



StandardSimulation.scala (/Users/rainer.steinegger/dev/src/github/gatling-demo/src/test/scala/com/unic/gatling/simulations)

Side-by-side viewer | Do not ignore | Highlight words | 1 difference

46d583276cb1d33dad1d33ab2538763011a7e3d3 (Read-only) | Local

```

✓ package com.unic.gatling.simulations
import com.unic.gatling.configurations.{Environment, Headers}
import com.unic.gatling.scenarios.{CreateAndAccessUnicornsScenario, FilterUni
import io.gatling.core.Predef._
import io.gatling.http.Predef._

class StandardSimulation extends Simulation {

  val httpConf = http
    .baseUrl(Environment.baseUrl)
    .contentTypeHeader(Headers.contentType)
    .acceptHeader(Headers.acceptType)

  val scenarios = List(
    CreateAndAccessUnicornsScenario.createAndAccessUnicornsScenario.inject(
      atOnceUsers(1)),
    FilterUnicornsScenario.filterUnicornsScenario.inject(
      atOnceUsers(15), constantUsersPerSec(2) during(5))
  )

  setUp(scenarios)
    .protocols(httpConf)
    .assertions(
      global.responseTime.max.lte(Environment.maxResponseTimeInMs.toInt)
    )
}

```

```

package com.unic.gatling.simulations
import com.unic.gatling.configurations.{Environment, Headers}
import com.unic.gatling.scenarios.{CreateAndAccessUnicornsScenario, FilterUnicor
import io.gatling.core.Predef._
import io.gatling.http.Predef._

class StandardSimulation extends Simulation {

  val httpConf = http
    .baseUrl(Environment.baseUrl)
    .contentTypeHeader(Headers.contentType)
    .acceptHeader(Headers.acceptType)

  val scenarios = List(
    CreateAndAccessUnicornsScenario.createAndAccessUnicornsScenario.inject(
      atOnceUsers(2)),
    FilterUnicornsScenario.filterUnicornsScenario.inject(
      atOnceUsers(15), constantUsersPerSec(2) during(5))
  )

  setUp(scenarios)
    .protocols(httpConf)
    .assertions(
      global.responseTime.max.lte(Environment.maxResponseTimeInMs.toInt)
    )
}

```

Scala for DSL

use the tools you are used to!



Gatling Basics

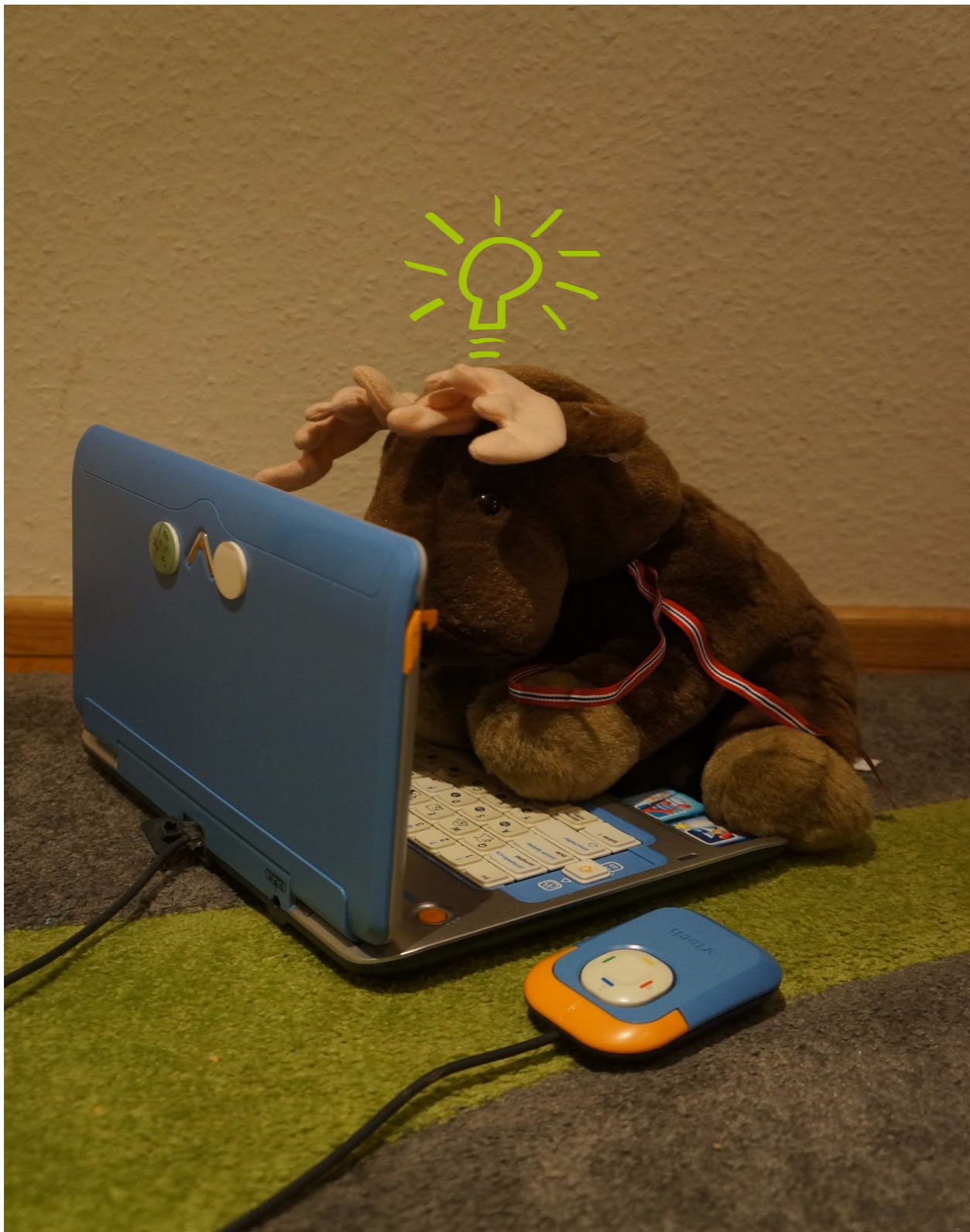
Simulations and Scenarios

Simulations:

- Standard load
- Peak exceeded
- ...

Scenarios:

- Registration
- Login
- Search
- ...



finally some code

Recap

- Gatling Recorder
- Maven Gatling Plugin and Reports
- User and sessions
- Feeder and data sources (in-memory, CSV, JSON, JDBC, ...)
- Configuration
- Assertions (requests per second, successful requests, ...)
- HTTP/... Checks
- Protocols (HTTP, Server Sent Events, WebSockets, JMS)



that's all folks!

<https://github.com/rainer-steinegger> - rainer.steinegger@unic.com