Because performance matters!

- Open Source Application Performance Monitoring for the Crowd
Visual Comparison

http://www.webpagetest.org - Tested from Dulles, VA - Chrome
Performance Problems are Omnipresent

An unexpected error occurred

Try again later

Temporarily not available
Business Impact of Performance

Every **100ms** page load improvement increases revenue by **1%** (2008)

2008: 19,17 Mrd € → **191,7 Mio €**
2013: 74,51 Mrd € ...

32% of all users leave a page if the load time is between 1-5 seconds (2010)

1 seconds delay reduces revenue by **3%** (2010)

The perceived load time is **15%** higher. The remembered load time even **35%**. (2010)
Performance as Direct Competitive Factor
... because performance matters!
AGENDA

1. The inspectIT Team
2. Overview
3. Live Demo: Working with inspectIT
4. Outlook
5. Automatic Diagnosis of Performance Problems
6. Live Demo: Automated Diagnosis
ACTIVE CONTRIBUTORS

Christian Abele
Tobias Angerstein
Patrice Bouillet
Christoph Heger
Matthias Huber
Thomas Kluge
René Kugel
Jonas Kunz
Mario Mann
Marius Oehler
Ivan Senić
Stefan Siegl
Max Wassiljew
Alexander Wert
OVERVIEW ON INSPECTIT
Overview

Client Browser

Data Analysis

Application Server

Data Recorder

Database Server

Visualization

0.2s Request

0.3s Response

0.3s Query

0.1s Result

0.1s

0.4s

0.5s

5.4s

7.3s

0.3s

5.4s

(fictional timings)
Architecture

System Node 1

- JVM
  - App 1
  - App 2

Agent

Central Measurement Repository

System Node n

Agent

InspectIT RCP

Target System
Docker Container

Application Container + inspectIT Agent

CMR

inspectIT RCP
Installation

Download
http://github.com/inspectIT/inspectIT/releases

Central Measurement Repository (CMR)
startup.sh / startup.bat

Instrumentation Configuration Mapping
Environment ↔ Agent

Agent
-javaagent:<PATH_TO>/inspectit-agent.jar -Dinspectit.repository=<CMR_IP>:9070;<Agentname>
Live Demo
Sensors

- Timer Sensor
- Invocation Sequence Sensor
- Datenbank/SQL Sensor
- Logging Sensor
- Exception Sensor
- HTTP Data Sensor
- System Information Sensor
- JMX Sensor

Blog Post: Stefan Siegl – „Creating an inspectIT sensor“

http://goo.gl/5cER11
OUTLOOK
Outlook

- **Feature**
  - Business Context
  - Distributed Traces
  - End User Monitoring
  - Monitoring in Production
  - Adaptive Instrumentation
  - Automated Diagnosis
AUTOMATIC DIAGNOSIS OF PERFORMANCE PROBLEMS
Automatic Diagnosis of Performance Problems

Unscalable Analysis

Reading of Metrics

Manual Analysis

Perception of the Problem
Automatic Diagnosis of Performance Problems

- Categorization of Performance Problems
- Interpretation of Quantitative Data
- Isolation of Problem Root Causes
- Semantification of Performance Problems

Automated Analysis
Rules

Root Cause Isolation

Semantification

Clustering

Invocation Sequences
Live Demo – Preview (Automated Diagnosis)
inspectIT & Continuous Integration

Load Driver

Jenkins

e-2-e response times

System Under Test

Response Time [s]

Execution Nr.

0 1 2 3 4 5 6 7

0 1 2 3

Jenkins

detailed measurement data

performance problems
Contribute

- troubleshooting
- development
- continuous integration
- performance awareness coaching
- production
- use inspectIT
- provide documentation
- code
- bug fixes
- ecosystem
- new ideas
- vote
- feature requests
- experience reports
- feedback
- feature requests
- like & spread tweets
- write about
- tell colleagues about
- customer reference
- promote
- star & watch on GitHub
Consulting Domains

Agile Methods & Processes

Service Oriented Architecture and Technology

Business Process Management

Application Performance Management

Agile Quality Engineering

Enterprise Application Development

@novatecgmbh
Get in touch with us

www.inspectIT.rocks
@inspectIT_APM
inspectIT
inspectIT-docker
inspectit
Application Cases of inspectIT and diagnoseIT

Current State

- Performance Analysis & Troubleshooting
- Performance Awareness in Development
- Continuous performance testing as part of Continuous Integration
- Collaboration between Testing and Development Teams

Work in Progress

- Monitoring in Production
- inspectIT as Platform Service in Cloud Foundry
Diagnosis

CTA

Traces

Trace

Retrieve information from

Rule

Notify on tagging

Problem Instance Repository

Problem Instance

Create/Update

Result Description Language

Monitoring Tool

Instrumentation Refinement Request

Instrumentation Language

Insight Enrichment

Information Request

Maintain Problem Instance

Tag
Common Trace API

Motivation
Monitoring data format is tool-specific

Drawback
APM vendor lock-in limits interoperability and data exchange

Goal
APM vendor independent data access

Join us
https://goo.gl/UuoZkN

Importers

Planned

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### Profiler vs APM (inspectIT)

<table>
<thead>
<tr>
<th>Profiler</th>
<th>Purpose</th>
<th>APM (inspectIT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>fine-grained profiling method inefficiencies</td>
<td>End-to-end behaviour analysis invocation flow transactions Business context</td>
<td></td>
</tr>
<tr>
<td>object allocation threads developers very high</td>
<td><strong>Target User Group</strong> developers, operations, management</td>
<td>negligible (configurable)</td>
</tr>
<tr>
<td>application unit</td>
<td><strong>Performance Overhead</strong></td>
<td>application unit → software system</td>
</tr>
<tr>
<td></td>
<td><strong>Scope</strong></td>
<td></td>
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</tbody>
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