About Me

Triona Workshop
Mainz, September 2014

Thomas Wehrspann

Consultant

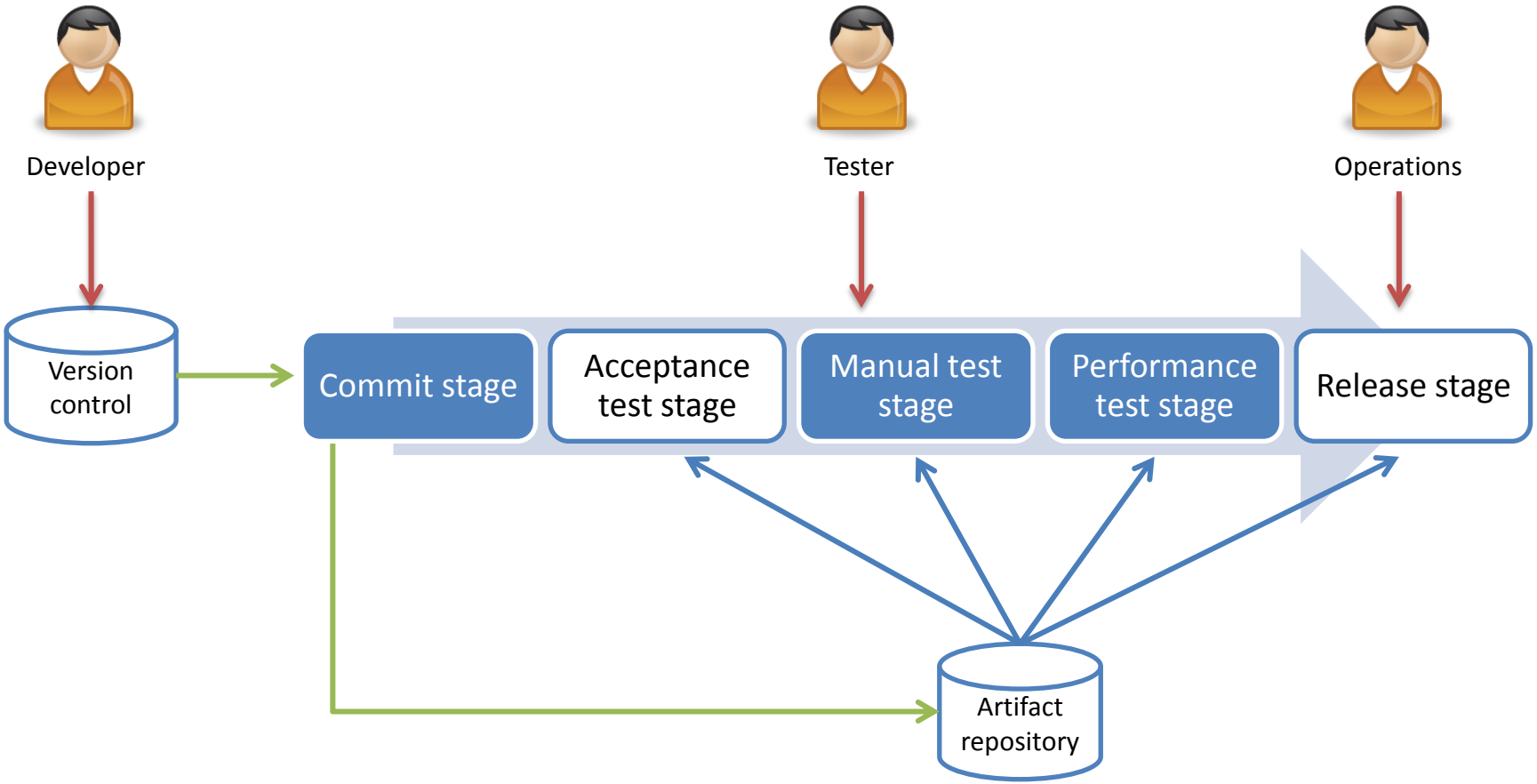
TRIONA
INFORMATION UND TECHNOLOGIE
Wilhelm-Theodor-Römheld-Str. 14
55130 Mainz

thomas.wehrspann@triona.de

Agenda

- Rückblick
- Akzeptanztests
- Monitoring

Rückblick…



… Continuous Delivery

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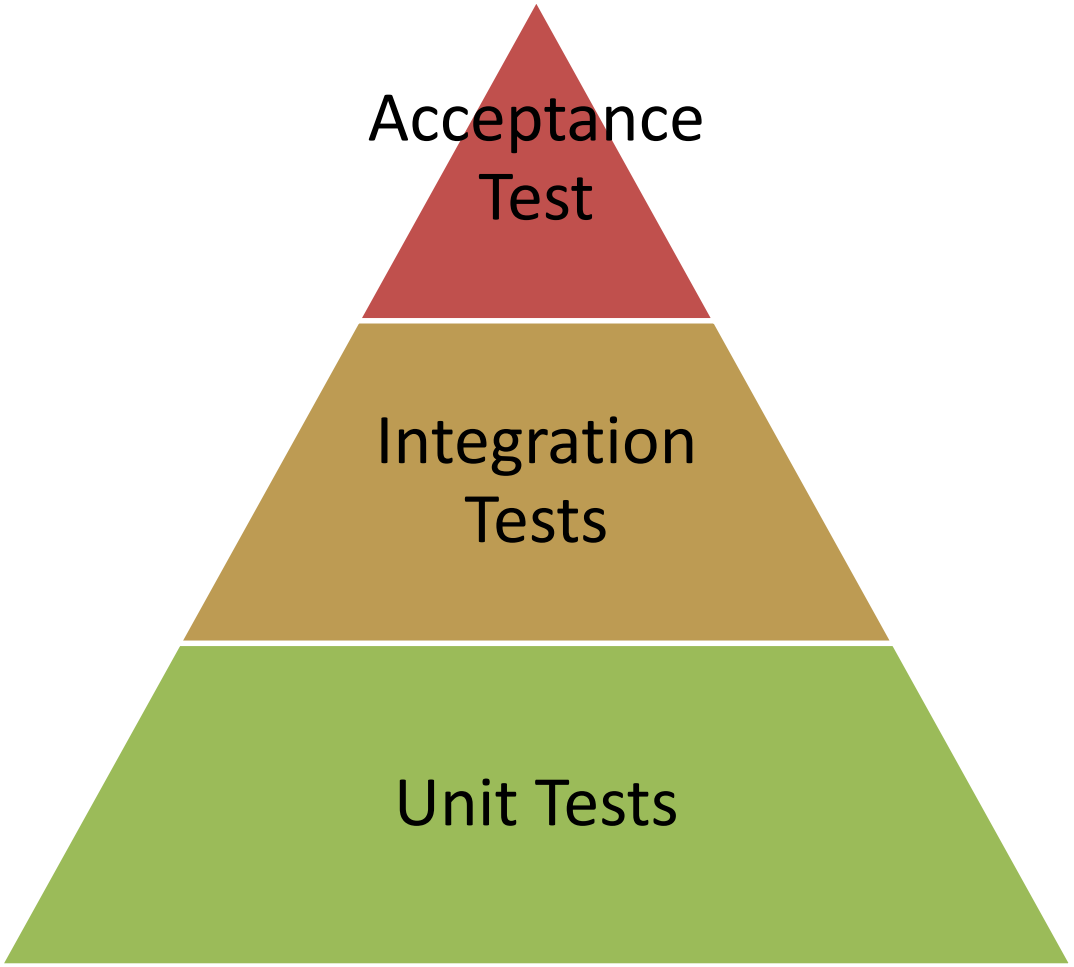
Introduction to User Acceptance Testing

Thomas Wehrspann
Mainz, September 2014

What are acceptance tests

- User‘s point of view
- External view of a system
- Examine externally visible effects
  - Inputs and outputs
  - State changes
  - External interfaces
- Implementation independent

Testing strategies



What are acceptance/functional tests

Unit testing makes sure you are using quality ingredients. Functional testing makes sure your application doesn't taste like crap.

--- Brett Jones

Behavior-Driven Development

- Based on Test-Driven Development
- Behavioural specifications

Title: The story should have a clear, explicit title.

Narrative

A short, introductory section that specifies

- who (which business or project role) is the driver or primary stakeholder of the story (the actor who derives business benefit from the story)
- which effect the stakeholder wants the story to have
- what business value the stakeholder will derive from this effect

Acceptance criteria or scenarios

a description of each specific case of the narrative. Such a scenario has the following structure:

- It starts by specifying the initial condition that is assumed to be true at the beginning of the scenario. This may consist of a single clause, or several.
- It then states which event triggers the start of the scenario.
- Finally, it states the expected outcome, in one or more clauses.

Where are acceptance tests used

- As documentation for analysts/business people
- As documentation for the developers
- As documentation for the testers
- As documentation for the project

Test Frameworks

- JBehave
- Cucumber
- FitNesse

- xUnit

Test Frameworks

- Technical Requirements
- Functional Requirements
- Test Data
- Company Requirements

How to create Acceptance Test

Independent

Negotiable

Valuable

Estimable

Small

Testable

Valuable to the end user

How to create Acceptance Test

Acceptance Criteria

Given some initial context,
When an event occurs,
Then there are some outcomes.

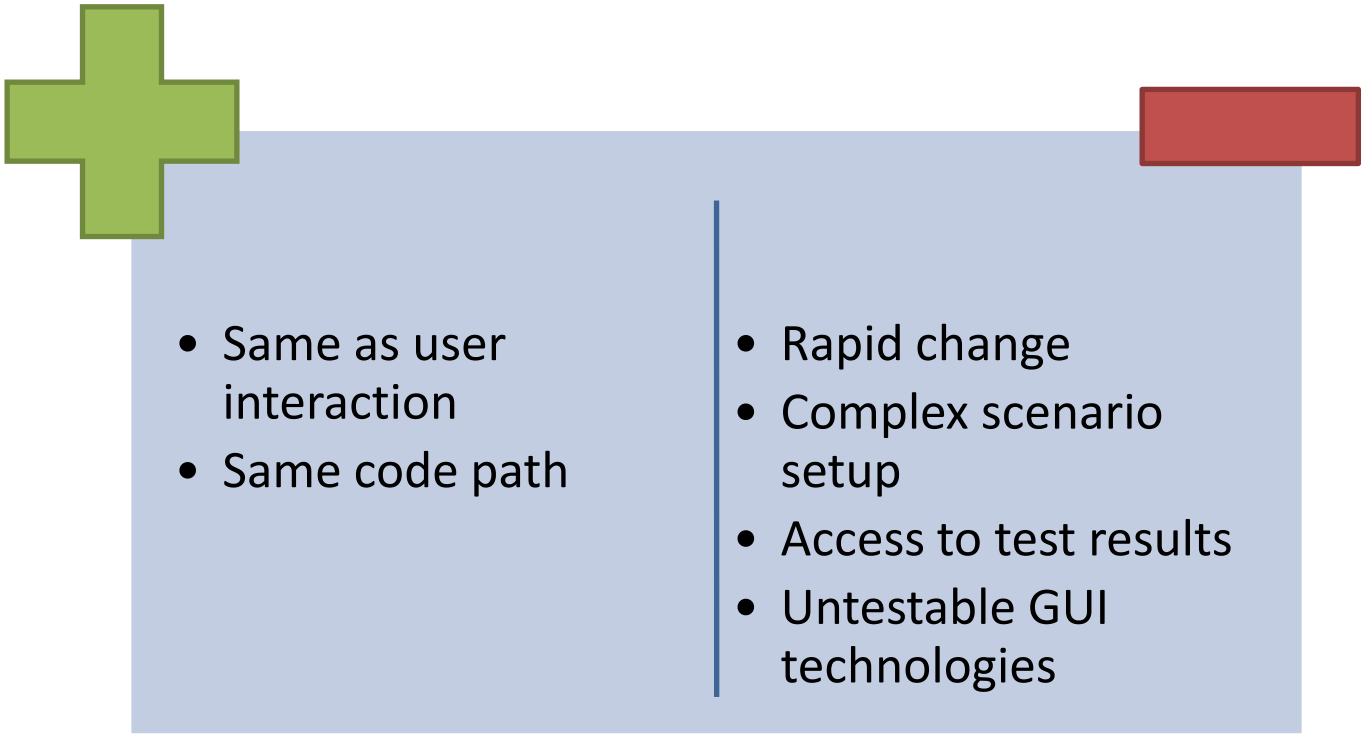
Test Implementation

Code uses domain language; no reference to UI elements

Application Driver

Understands how to interact with the application to perform actions and return results

Testing against the GUI



Alternative:

by-passing display-only GUI layer and directly using the business layer

Stucturing Tests

- Separate the specification of a test, or it’s intent, from the execution mechanics
- Your framework should help you create and maintain this separation
- The steps/concepts in your specifications are your unit of maintenance

Maintaining Tests

- Tests as documentation
- Simplify tests as much as possible

Example: JBehave

```
Scenario:  trader is not alerted below threshold

Given a stock of symbol STK1 and a threshold of 10.0
When the stock is traded at 5.0
Then the alert status should be OFF

Scenario:  trader is alerted above threshold

Given a stock of symbol STK1 and a threshold of 10.0
When the stock is traded at 11.0
Then the alert status should be ON
```

```
public class TraderSteps { // look, Ma, I'm a POJO!!
    private Stock stock;

    @Given("a stock of symbol $symbol and a threshold of $threshold")
    public void aStock(String symbol, double threshold) {
        stock = new Stock(symbol, threshold);
    }

    @When("the stock is traded at $price")
    public void theStockIsTradedAt(double price) {
        stock.tradeAt(price);
    }

    @Then("the alert status should be $status")
    public void theAlertStatusShouldBe(String status) {
        ensureThat(stock.getStatus().name(), equalTo(status));
    }
}
```

--- JBehave Homepage

Acceptance Testing with PhantomJS and CasperJS

CasperJS

- Javascript
- Defining & ordering browsing navigation steps
- Filling & submitting forms
- Clicking and following links
- Capturing screenshots

PhantomJS

- Headless web testing
- Javascript API
- Page automation
- Screen capture
- Network monitoring

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Einführung ins Monitoring

Thomas Wehrspann
Mainz, September 2014

Was ist Monitoring

Protokollierung

Beobachtung

Überwachung

- Regelmäßig
- Feedback
- Warnungen

Warum ist Monitoring wichtig

- Schnelle Entdeckung von **Ausfällen** und **Störungen**
- Erhöhte Server, Service und Anwendungs-**Verfügbarkeit**

Warum ist Monitoring wichtig

- **Verbesserung** der technischen Umgebung
- Verbesserung der Softwarearchitektur
- Erkennung von fachlichen/geschäftlichen **Problemen**
- Erkennung von fachlichen/geschäftlichen **Möglichkeiten**

Wem nutzt Monitoring

- Betriebsführung
- Entwickler
- Geschäftsanalytiker/Marketing

Beispiel: Elite: Dangerous Newsletter

Its great to see the lengths that you will go to when **helping us develop** the game - 4.2 million light years travelled in Beta 1 so far, to be precise!

You are also an accurate bunch – almost 75% of the 65,000 heat seeking missiles fired have found their target…

9.5% of ship hard points have missile racks equipped, but Pulse Lasers continue to be the preferred weapon of choice during Beta 1, accounting for a little over 40% of available hard-points.

It seems you like a fair fight, too, as just 0.2% of weapons are the powerful Plasma Accelerators.

Wann sollte Monitoring verwendet werden

- Entwicklung
- Test
- Produktion
- **Immer**

Best Practices

- Alle Server monitoren
- Alle Dienste monitoren
- In kurzen Intervallen prüfen
- HTTP Inhalte prüfen
- Timeouts richtig setzen

Was sollte überwacht werden

- System Metriken
- Betriebssystem Metriken
- Anwendungs Logs
- Geschwindigkeit und Verfügbarkeit

Monitoring Anwendungen

- Nagios
- Cacti
- Splunk
- NewRelic
- AppDynamics

Nagios®

splunk>

New Relic.

AppDynamics

- Elasticsearch/Logstash/Kibana

kibana

elasticsearch.

Demo: ELK-Stash

- ElasticSearch (Search and analytics engine)
- Logstash (managing events and logs)
- Kibana (visualization of logs and time-stamped data)

Monitoring einrichten

Der Server/OS

- CPU
- Disk I/O und Speicher
- Swap
- Arbeitsspeicher (System, Anwendungen, …)
- Netzwerk (Verbindungen, Verkehr, …)
- Prozesse/Threads Zähler

Monitoring einrichten

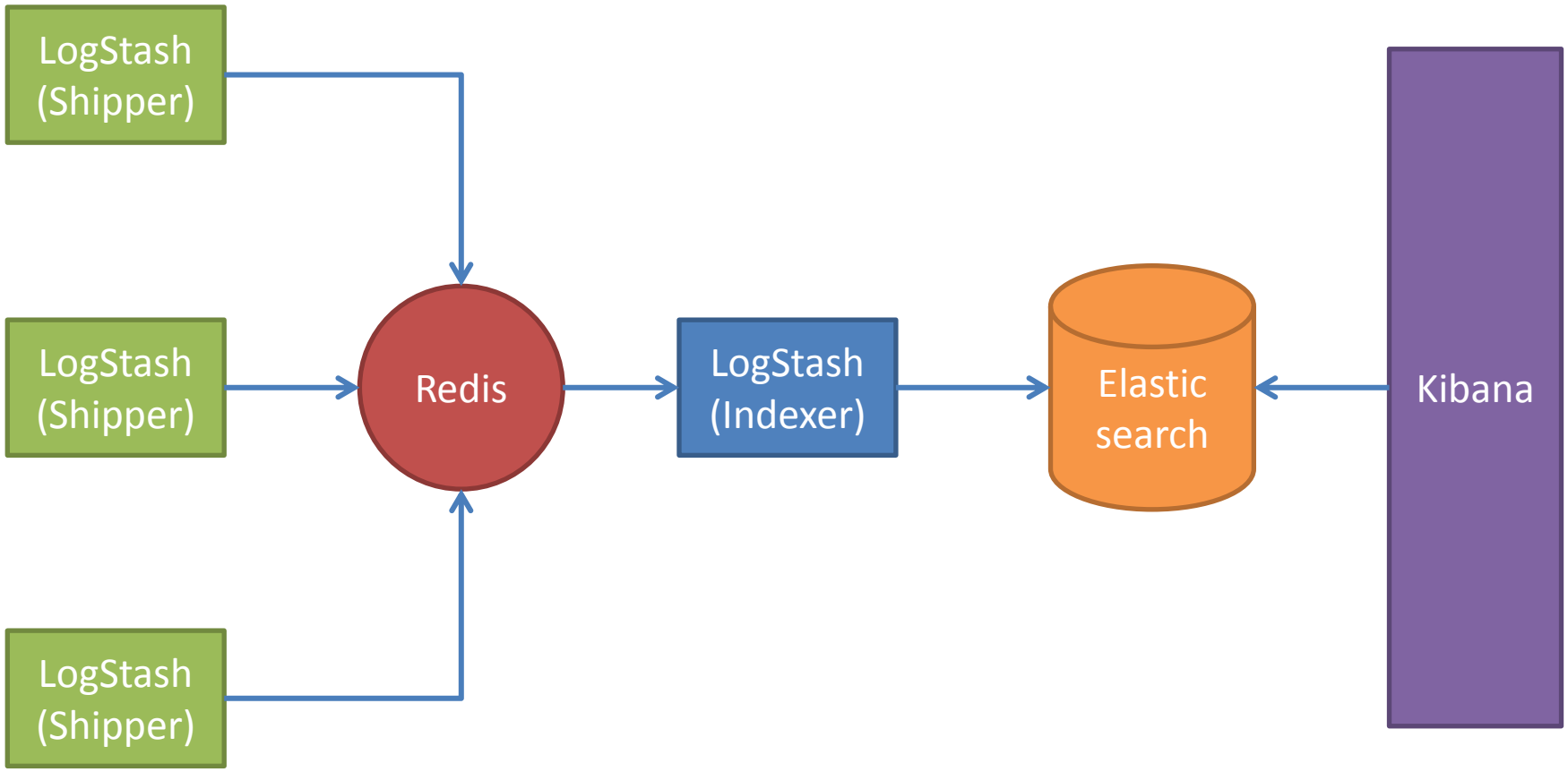
Die Anwendung

- Heap
- Status
- Fehler und Exceptions
- Funktionale Daten

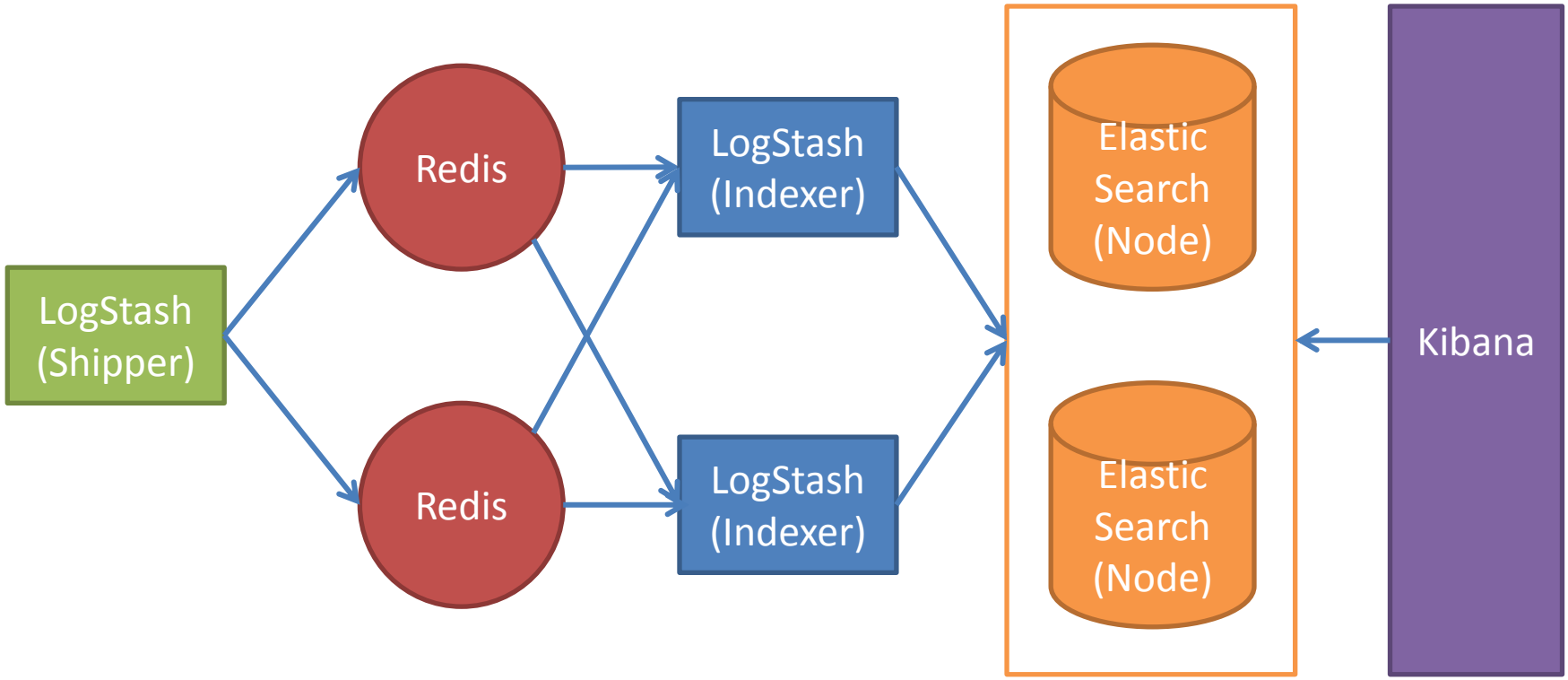
Abhängigkeiten

- Databanken
- Webserver
- Firewall
- Andere Dienste

ELK-Stash


LogStash
(Shipper)
LogStash
(Shipper)
LogStash
(Shipper)
Redis
LogStash
(Indexer)
Elastic
search
Kibana

ELK-Stash (Skaling)



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Thanks

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