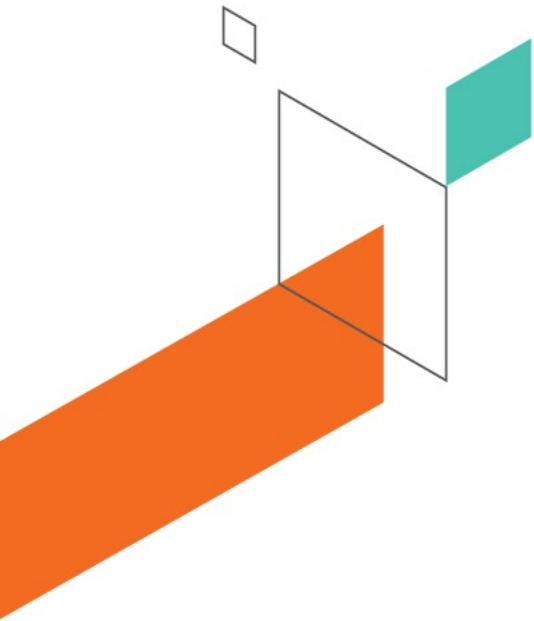


The background of the image is a solid orange color with a white geometric pattern of interlocking cubes or hexagons. A diagonal white line runs from the bottom-left corner towards the top-right corner, separating the patterned area from a plain white area.

Magento **Live**

UK | 2017

The Story about Selling the Unicorn



Stefan Willkommer
CEO and Co-Founder
@ TechDivision



swillkommer





1912

Founded

1.450

Employees

100

Countries

470

Mio. € Revenue

2010





SCHOKOLADE

KOLLEKTION

GESCHENKIDEEN

SCHOKO-GRUSS

Den gesamten Shop durchsuchen..



Dieser Sommer
ist von der ganz
leckeren Sorte!

Schon probiert? Die neuen RITTER SPORT Sommersorten.

JETZT ENTDECKEN >



2016





775 0



268 0



175 0



31-10-2016



Ritter Sport Deutschland 🌟🌟 aufgeregt.

31. Oktober 2016 · 🌐



Quadratisch. Magisch. Gut.

Am Dienstag um 10 Uhr lüften wir ein großes Geheimnis! Bleibt dran und abonniert unsere Seite, um nichts zu verpassen!





1-11-2016



**simple start,
fatal consequences**

The Setup

- normally 100 orders per day
- between 1. and 2. November over 6.000 Orders
- Server for the first action
 - 4 CPU Cores
 - 8 GB Ram

Die letzte Einhorn-Schokolade

Es glitzert, alle wollen es...



100 Gramm für 1,99 Euro. Weiße Joghurt-Schokolade trifft auf Johannisbeer-Cassis. Die gab es nur im Online-Shop oder im Berliner Flagshipstore

Foto: Marion Hunger

Ein Stück vom Glück: Schon um 6.30 Uhr standen Anna (17) und Johanna (15) Eichelberg aus Passau vor der dem Ritter Sport Flagshipstore in der Französischen Straße. Ihr Ziel: Acht Tafeln Einhorn Schokolade – in pinker Verpackung mit Glitzerstaub. Die letzten ihrer Art. 5000 Tafeln hatte der Shop am Donnerstag auf drei Ständern aufgebaut. Um zehn Uhr reichte die Schlange vor dem Laden bis zur Friedrichstraße.



Riesen Ansturm auf den Verkauf der Einhorn-Schokolade von Ritter Sport (Foto: Marion Hunger)



DANKTE 

QUADRATISCH.
MAGISCH. GUT.



EINHORN

Weißer Schokolade mit Joghurt & Himbeer-Cassis-Regenbogen

7-11-2016



The new Setup

- Server Upgrade (HA)
 - 2 x Quad Core
 - 28 GB RAM
 - SSD
- Software Upgrade
 - FPC
 - Magento
 - Infrastructure
 - Cloudfront

Loadtests upfront

- 10.000 Requests/s to catalogue
- 200 Requests/s. cart and checkout
- 5 Orders/s.

=> apx. 20 times of the traffic of the first time

**simple start,
more fatal consequences**

14-11-2016

0:00 o'clock

#glittersport

Twitter, Facebook and the social media....

#ritter-sport

#einhorn

14-11-2016

15:00 o'clock

caching is everything and nothing

14-11-2016

21:00 o'clock



The analogy



- 40.000 Concurrent-Users in Peak-times (TV Product-Placement at Prime Time)
- Page-loading < 0.5 Seconds
- Hosting via Amazon Cloud (AWS) incl. Cloudfront Services
- 2 Live-applicationserver + 1 Varnish Server + 1 Server for DB, Redis, Elastic + 1 Loadbalancing
- 2 Applicationserver as spare
- Setup designed for 250.000 Concurrent User within 1 hour

Aktuell
37625
aktive Nutzer auf der Website



Seitenaufrufe

Pro Minute

45.000

30.000

15.000

- 26 Min

- 21 Min

- 16 Min

- 11 Min

- 6 Min

- 1 Min

Pro Sekunde

375

350

325

300

275

250

225

200

15-11-2016

16:00 o'clock

The AWS Setup

- 1 x ELB (Elastic Load Balancing)
- 6 x EC2 Web nodes (c4.8xlarge)
 - 36 v CPUS, 64 Bit, 60 GB RAM, 10 GBit Network
- 1 x EC2 DB (c4.8xlarge)
 - 36 v CPUS, 64 Bit, 60 GB RAM, 10 GBit Network



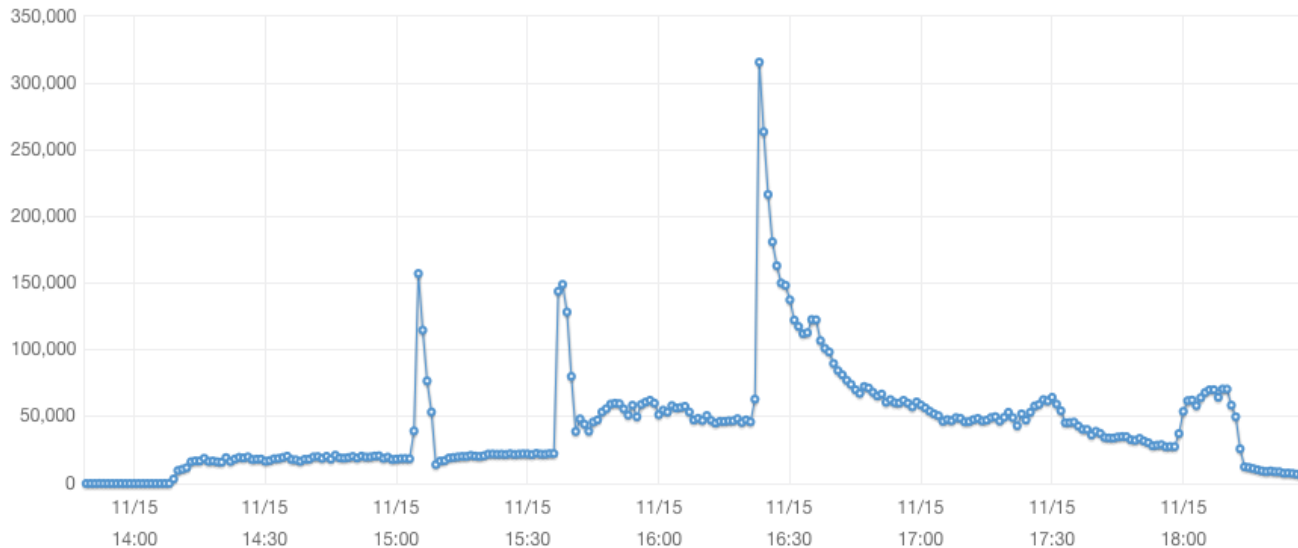
CloudWatch Monitoring Details



Sum Requests (Count)

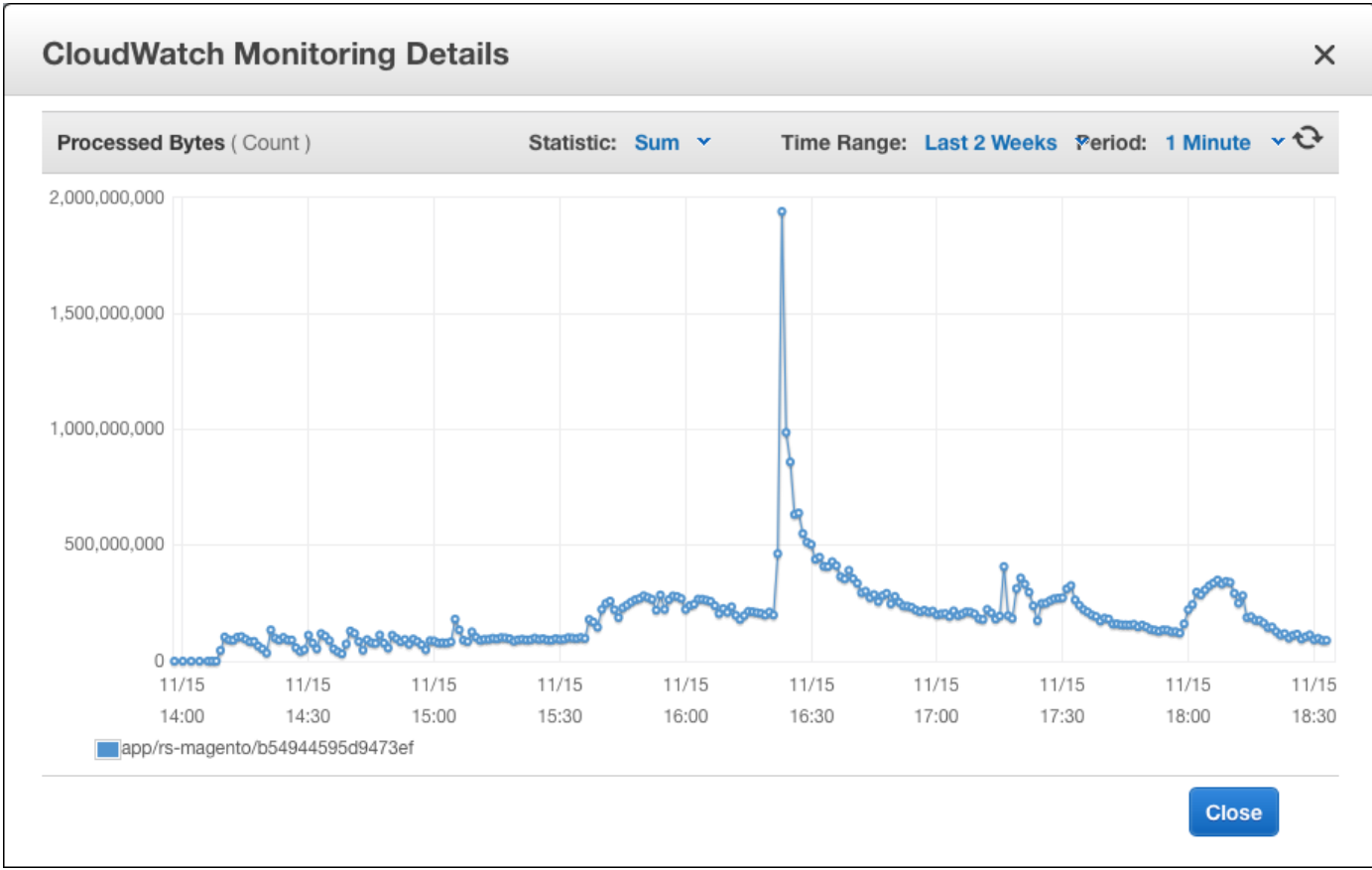
Statistic: **Sum** ▾

Time Range: **Last 2 Weeks** Period: **1 Minute** ▾ ↻



■ app/rs-magento/b54944595d9473ef

Close



```
Finder Ablage Bearbeiten Darstellung Gehe zu Fenster
zelgerj — ssh -iroot 35.156.80.175 — 35.156.80.175 — ssh -iroot 35.156.80.175 — 35.156.80.175
1 [|||||199.5] 10 [|||||] 19 [|||||188.9] 28 [|||||]
2 [|||||179] 11 [|||||] 20 [|||||17] 29 [|||||]
3 [|||||176] 12 [|||||] 21 [|||||17] 30 [|||||]
4 [|||||177] 13 [|||||] 22 [|||||179] 31 [|||||]
5 [|||||183] 14 [|||||] 23 [|||||17] 32 [|||||]
6 [|||||177] 15 [|||||] 24 [|||||17] 33 [|||||]
7 [|||||181] 16 [|||||] 25 [|||||17] 34 [|||||]
8 [|||||181] 17 [|||||] 26 [|||||17] 35 [|||||]
9 [|||||176] 18 [|||||] 27 [|||||17] 36 [|||||]
Mem [|||||]
Swp [|||||]
Tasks: 201, 3 thr; 23 running
Load average: 9.32 5.16
Uptime: 07:30:05
```

```
1 [|||||199.59] 10 [|||||] 19 [|||||177] 28 [|||||]
2 [|||||179] 11 [|||||] 20 [|||||17] 29 [|||||]
3 [|||||178] 12 [|||||] 21 [|||||175] 30 [|||||]
4 [|||||177] 13 [|||||] 22 [|||||179] 31 [|||||]
5 [|||||183] 14 [|||||] 23 [|||||17] 32 [|||||]
6 [|||||180] 15 [|||||] 24 [|||||174] 33 [|||||]
7 [|||||184] 16 [|||||] 25 [|||||176] 34 [|||||]
8 [|||||177] 17 [|||||] 26 [|||||17] 35 [|||||]
9 [|||||17] 18 [|||||] 27 [|||||176] 36 [|||||]
Mem [|||||]
Swp [|||||]
Tasks: 192, 5 thr; 28 running
Load average: 9.80 5.41
Uptime: 06:59:08
```

```
zelgerj — ssh -iroot 35.156.90.81 — 35.156.90.81 — ssh -iroot 35.156.90.81 — 35.156.90.81
1 [|||||199.10] 10 [|||||] 19 [|||||185.1] 28 [|||||]
2 [|||||177] 11 [|||||] 20 [|||||174] 29 [|||||]
3 [|||||175] 12 [|||||] 21 [|||||17] 30 [|||||]
4 [|||||176] 13 [|||||] 22 [|||||17] 31 [|||||]
5 [|||||180] 14 [|||||] 23 [|||||17] 32 [|||||]
6 [|||||176] 15 [|||||] 24 [|||||16] 33 [|||||]
7 [|||||180] 16 [|||||] 25 [|||||17] 34 [|||||]
8 [|||||175] 17 [|||||] 26 [|||||17] 35 [|||||]
9 [|||||177] 18 [|||||] 27 [|||||175] 36 [|||||]
Mem [|||||]
Swp [|||||]
Tasks: 188, 5 thr; 24 running
Load average: 9.05 5.28
Uptime: 06:59:19
```

```
1 [|||||198.68] 10 [|||||] 19 [|||||186.1] 28 [|||||]
2 [|||||175] 11 [|||||] 20 [|||||17] 29 [|||||]
3 [|||||179] 12 [|||||] 21 [|||||17] 30 [|||||]
4 [|||||176] 13 [|||||] 22 [|||||16] 31 [|||||]
5 [|||||180] 14 [|||||] 23 [|||||16] 32 [|||||]
6 [|||||178] 15 [|||||] 24 [|||||17] 33 [|||||]
7 [|||||177] 16 [|||||] 25 [|||||175] 34 [|||||]
8 [|||||178] 17 [|||||] 26 [|||||17] 35 [|||||]
9 [|||||177] 18 [|||||] 27 [|||||17] 36 [|||||]
Mem [|||||]
Swp [|||||]
Tasks: 194, 5 thr; 32 running
Load average: 10.10 5.64
Uptime: 06:58:04
```

```
zelgerj — ssh -iroot 35.156.69.97 — 35.156.69.97 — ssh -iroot 35.156.69.97 — 35.156.69.97
1 [|||||] 10 [|||||] 19 [|||||] 28 [|||||]
2 [|||||] 11 [|||||] 20 [|||||] 29 [|||||]
3 [|||||] 12 [|||||] 21 [|||||] 30 [|||||]
4 [|||||] 13 [|||||] 22 [|||||] 31 [|||||]
5 [|||||] 14 [|||||] 23 [|||||] 32 [|||||]
6 [|||||] 15 [|||||] 24 [|||||] 33 [|||||]
7 [|||||] 16 [|||||] 25 [|||||] 34 [|||||]
8 [|||||] 17 [|||||] 26 [|||||] 35 [|||||]
9 [|||||] 18 [|||||] 27 [|||||] 36 [|||||]
```

```
1 [|||||198.68] 10 [|||||] 19 [|||||184] 28 [|||||]
2 [|||||180] 11 [|||||] 20 [|||||17] 29 [|||||]
3 [|||||176] 12 [|||||] 21 [|||||16] 30 [|||||]
4 [|||||174] 13 [|||||] 22 [|||||17] 31 [|||||]
5 [|||||174] 14 [|||||] 23 [|||||17] 32 [|||||]
6 [|||||176] 15 [|||||] 24 [|||||] 33 [|||||]
7 [|||||179] 16 [|||||] 25 [|||||17] 34 [|||||]
8 [|||||174] 17 [|||||] 26 [|||||16] 35 [|||||]
```

```
zelgerj — ssh -iroot 35.156.50.247 — 35.156.50.247 — ssh -iroot 35.156.50.247 — 223x67
1 [|||||198.15] 10 [|||||] 19 [|||||] 28 [|||||]
2 [|||||] 11 [|||||] 20 [|||||] 29 [|||||]
3 [|||||] 12 [|||||] 21 [|||||] 30 [|||||]
4 [|||||] 13 [|||||] 22 [|||||] 31 [|||||]
5 [|||||] 14 [|||||] 23 [|||||] 32 [|||||]
6 [|||||] 15 [|||||] 24 [|||||] 33 [|||||]
7 [|||||] 16 [|||||] 25 [|||||] 34 [|||||]
8 [|||||] 17 [|||||] 26 [|||||] 35 [|||||]
9 [|||||] 18 [|||||] 27 [|||||] 36 [|||||]
Tasks: 232, 9 thr; 24 running
Load average: 9.58 4.06
Uptime: 06:59:55
```



```
Finder Ablage Bearbeiten Darstellung Gehe zu Fenster Hilfe
zelgerj — ssh -lroot 35.156.80.175 — ssh -lroot 35.156.80.175 — 110x13
35.156.80.175
1 [||||] ] 10 [ ] ] 19 [ ] ] 28 [ ] ]
2 [||] ] 11 [ ] ] 20 [ ] ] 29 [ ] ]
3 [||||] ] 12 [ ] ] 21 [ ] ] 30 [ ] ]
4 [||||] ] 13 [ ] ] 22 [ ] ] 31 [ ] ]
5 [ ] ] 14 [ ] ] 23 [ ] ] 32 [ ] ]
6 [ ] ] 15 [ ] ] 24 [ ] ] 33 [ ] ]
7 [ ] ] 16 [ ] ] 25 [ ] ] 34 [ ] ]
8 [ ] ] 17 [ ] ] 26 [ ] ] 35 [ ] ]
9 [ ] ] 18 [ ] ] 27 [ ] ] 36 [ ] ]
Mem [|||||] ]
Swp [ ] ]
Tasks: 571, 3 thr; 1 running
Load average: 5.40 3.40
Uptime: 04:20:36
```

```
1 [||||] ] 10 [ ] ] 19 [ ] ] 28 [ ] ]
2 [||] ] 11 [ ] ] 20 [ ] ] 29 [ ] ]
3 [||||] ] 12 [ ] ] 21 [ ] ] 30 [ ] ]
4 [||||] ] 13 [ ] ] 22 [ ] ] 31 [ ] ]
5 [||||] ] 14 [ ] ] 23 [ ] ] 32 [ ] ]
6 [ ] ] 15 [ ] ] 24 [ ] ] 33 [ ] ]
7 [ ] ] 16 [ ] ] 25 [ ] ] 34 [ ] ]
8 [ ] ] 17 [ ] ] 26 [ ] ] 35 [ ] ]
9 [ ] ] 18 [ ] ] 27 [ ] ] 36 [ ] ]
Mem [|||||] ]
Swp [ ] ]
Tasks: 574, 5 thr; 2 running
Load average: 5.83 3.50
Uptime: 03:49:39
```

```
zelgerj — ssh -lroot 35.156.90.81 — 35.156.90.81 — ssh -lroot 35.156.90.81 — 110x15
1 [||||] ] 10 [||||] ] 19 [ ] ] 28 [ ] ]
2 [||||] ] 11 [ ] ] 20 [ ] ] 29 [ ] ]
3 [||] ] 12 [ ] ] 21 [ ] ] 30 [ ] ]
4 [||||] ] 13 [ ] ] 22 [ ] ] 31 [ ] ]
5 [||||] ] 14 [ ] ] 23 [ ] ] 32 [ ] ]
6 [||||] ] 15 [ ] ] 24 [ ] ] 33 [ ] ]
7 [ ] ] 16 [ ] ] 25 [ ] ] 34 [ ] ]
8 [ ] ] 17 [ ] ] 26 [ ] ] 35 [ ] ]
9 [ ] ] 18 [ ] ] 27 [ ] ] 36 [ ] ]
Mem [|||||] ]
Swp [ ] ]
Tasks: 575, 5 thr; 1 running
Load average: 10.95 7.43
Uptime: 03:49:51
```

```
1 [||||] ] 10 [ ] ] 19 [ ] ] 28 [ ] ]
2 [||] ] 11 [ ] ] 20 [ ] ] 29 [ ] ]
3 [||||] ] 12 [ ] ] 21 [ ] ] 30 [ ] ]
4 [||||] ] 13 [ ] ] 22 [ ] ] 31 [ ] ]
5 [||] ] 14 [ ] ] 23 [ ] ] 32 [ ] ]
6 [||||] ] 15 [ ] ] 24 [ ] ] 33 [ ] ]
7 [ ] ] 16 [ ] ] 25 [ ] ] 34 [ ] ]
8 [||] ] 17 [ ] ] 26 [ ] ] 35 [ ] ]
9 [ ] ] 18 [ ] ] 27 [ ] ] 36 [ ] ]
Mem [|||||] ]
Swp [ ] ]
Tasks: 575, 5 thr; 7 running
Load average: 4.09 2.50
Uptime: 03:48:36
```

```
zelgerj — ssh -lroot 35.156.50.247 — 35.156.50.247 — ssh -lroot 35.156.50.247 — 110x15
1 [|||||] ] 10 [||||] ] 19 [||] ] 28 [ ] ]
2 [||] ] 11 [ ] ] 20 [ ] ] 29 [ ] ]
3 [||||] ] 12 [ ] ] 21 [ ] ] 30 [ ] ]
4 [||||] ] 13 [ ] ] 22 [ ] ] 31 [ ] ]
5 [||||] ] 14 [ ] ] 23 [||||] ] 32 [ ] ]
6 [||||] ] 15 [ ] ] 24 [ ] ] 33 [ ] ]
7 [||||] ] 16 [ ] ] 25 [ ] ] 34 [ ] ]
8 [||] ] 17 [ ] ] 26 [||||] ] 35 [ ] ]
9 [||||] ] 18 [ ] ] 27 [||] ] 36 [ ] ]
Mem [|||||] ]
Swp [ ] ]
Tasks: 28, 2074 thr; 3 running
Load average: 50.43 32.86
Uptime: 04:35:49
```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
83418	mysql	20	0	39.56	12.16	13848	S	R2R	20.4	5899.38	/usr/sbin/mysqld --basedir=/usr --datadir=/var/lib/mysql --plugin-dir=/usr/lib/mysql/plugin --log-error=/var/log/mys
82650		20	0	39.56	12.16	13848	S	14.3	20.4	0:01.42	/usr/sbin/mysqld --basedir=/usr --datadir=/var/lib/mysql --plugin-dir=/usr/lib/mysql/plugin --log-error=/var/log/mys
83024		20	0	39.56	12.16	13848	S	13.4	20.4	0:01.85	/usr/sbin/mysqld --basedir=/usr --datadir=/var/lib/mysql --plugin-dir=/usr/lib/mysql/plugin --log-error=/var/log/mys
82917		20	0	39.56	12.16	13848	S	13.4	20.4	0:01.14	/usr/sbin/mysqld --basedir=/usr --datadir=/var/lib/mysql --plugin-dir=/usr/lib/mysql/plugin --log-error=/var/log/mys
81824		20	0	39.56	12.16	13848	S	12.9	20.4	0:02.37	/usr/sbin/mysqld --basedir=/usr --datadir=/var/lib/mysql --plugin-dir=/usr/lib/mysql/plugin --log-error=/var/log/mys
83390		20	0	39.56	12.16	13848	S	12.4	20.4	0:01.72	/usr/sbin/mysqld --basedir=/usr --datadir=/var/lib/mysql --plugin-dir=/usr/lib/mysql --log-error=/var/log/mys
83667		20	0	39.56	12.16	13848	S	12.4	20.4		



sold out

Dreischichtige weiße Magermilch-Joghurt-Schokolade mit schwarzem Johannisbeer- & Himbeerpulver und Himbeerstückchen.

1,99 €
(100g - 1,99 €)

MOMENTAN AUSVERKAUFT

15-11-2016

19:00 o'clock



At a glance

300.000 concurrent users

90% of the requests to cart and checkout

35 orders/s in peak

over 1.000 orders per minute

At a glance

over 10.000 chocolate bars per minute

2 GB/Min Traffic only through website

27.000 Databaserequests/Sek. (90MB/s)

1.2 mio orders per day (extrapolated)

key learnings

Key learnings

be aware of all sales events

the day always starts at 0:00 o'clock

caching is not always a solution

high dimensional scaling only works in the cloud

be prepared for everything

oops, we did it again...



Thank you

Questions?

Stefan Willkommer
twitter: swillkommer