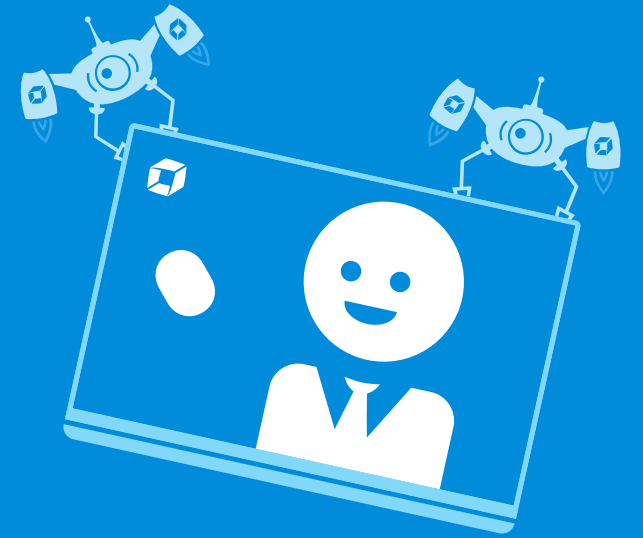




Monitoring Redefined



Klaus Enzenhofer

Director Technology Strategy

 klaus-enzenhofer

 @kenzenhofer











The 4 Core KPIs of Monitoring

#1: Business KPI

(Heading omitted)

Revenues

Sales \$ 85,000

Investment income 500

Total revenues **85,500**

Expenses

Cost of goods sold 61,000

Selling, general & admin expenses 13,000

Interest expense 800

Total expenses **74,800**

Net income **\$ 10,700**



Dashboard name

Critical Systems Summary

System profile

Marriott.com Production

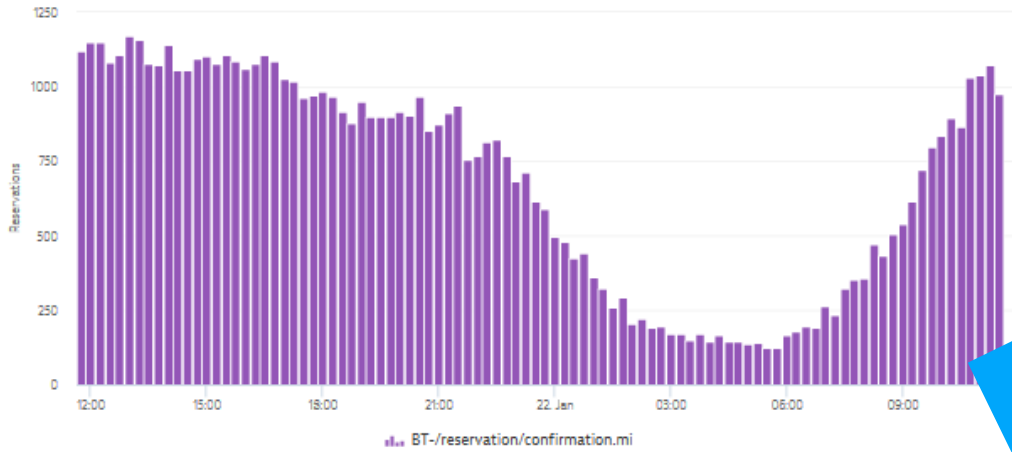
Application

All applications (incl 2280 auto-de...

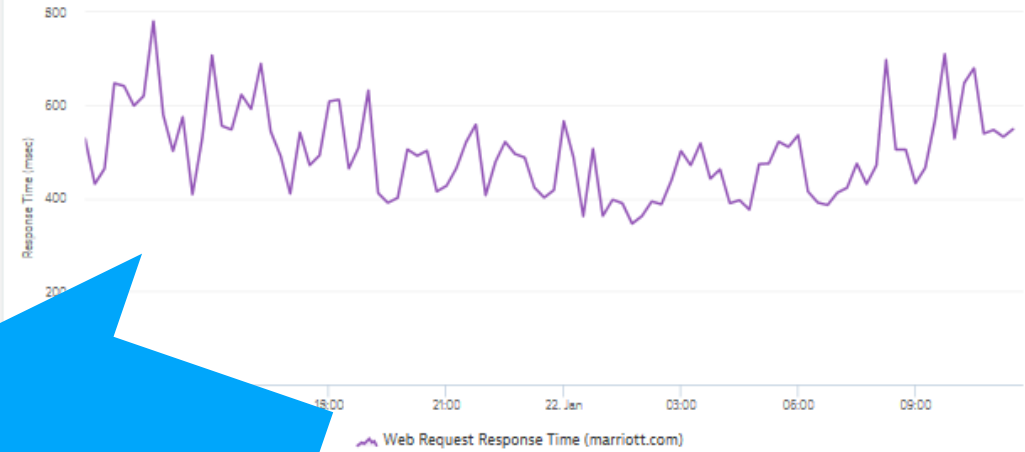
Timeframe

Last 24 hours

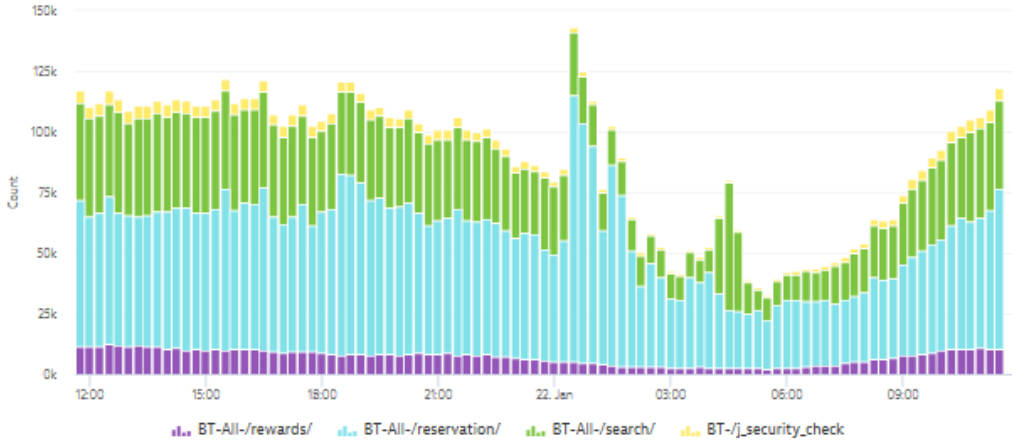
Marriott.com Bookings



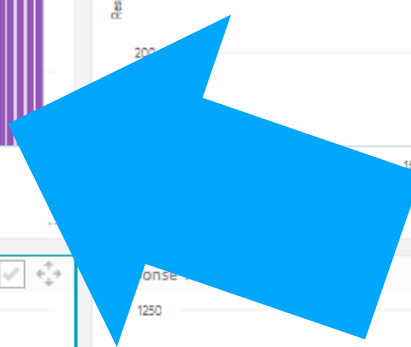
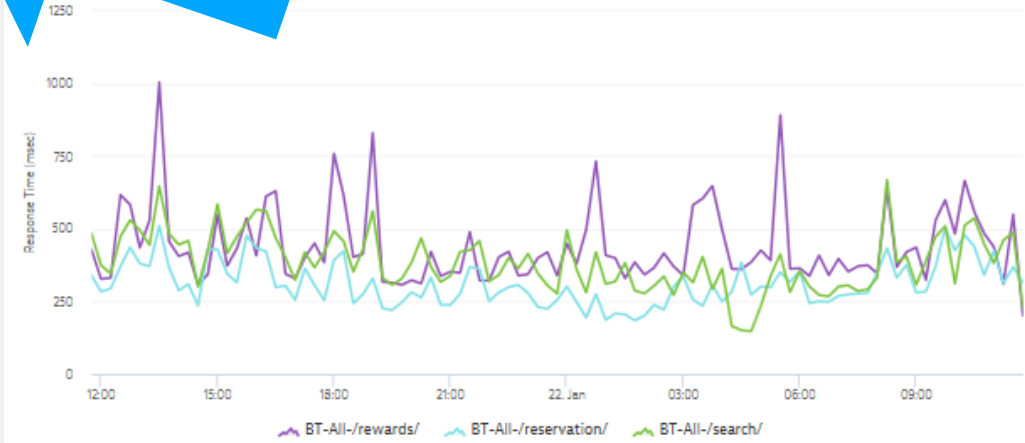
Marriott.com Average Response Time



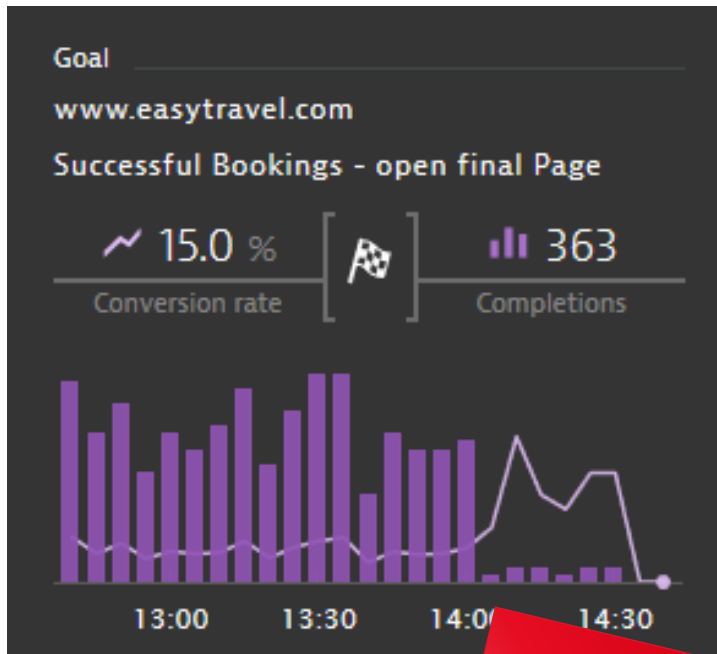
Transaction Volume by Functional Area



Transaction Volume by Functional Area



Business KPI

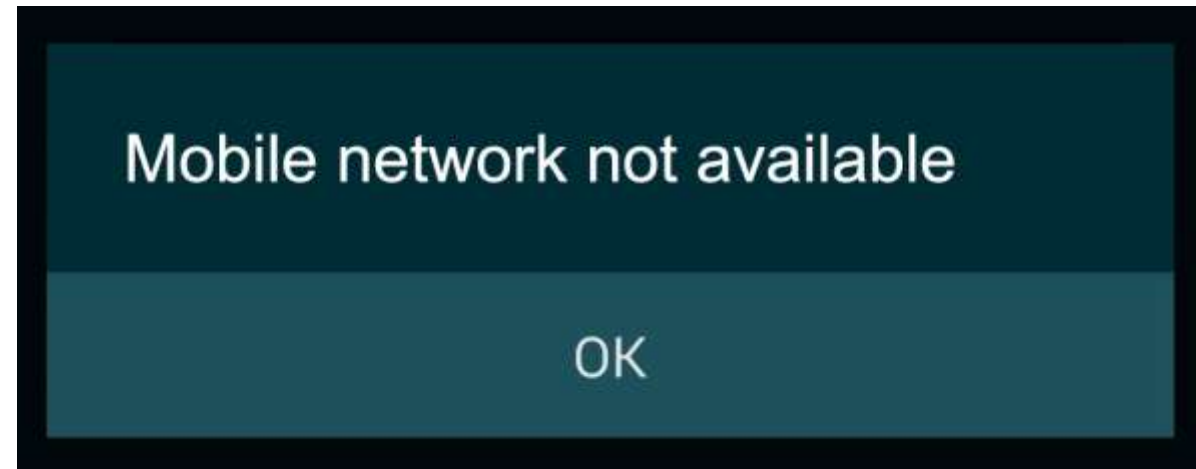


Watch your business success!

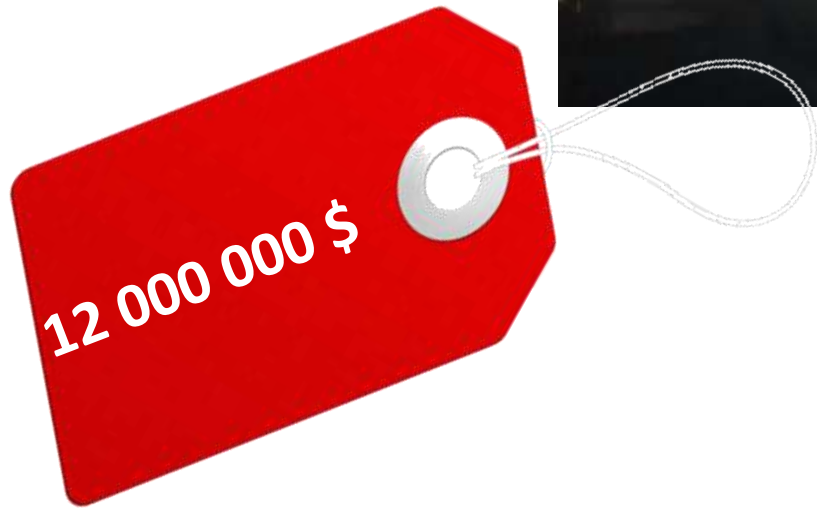
What's next?



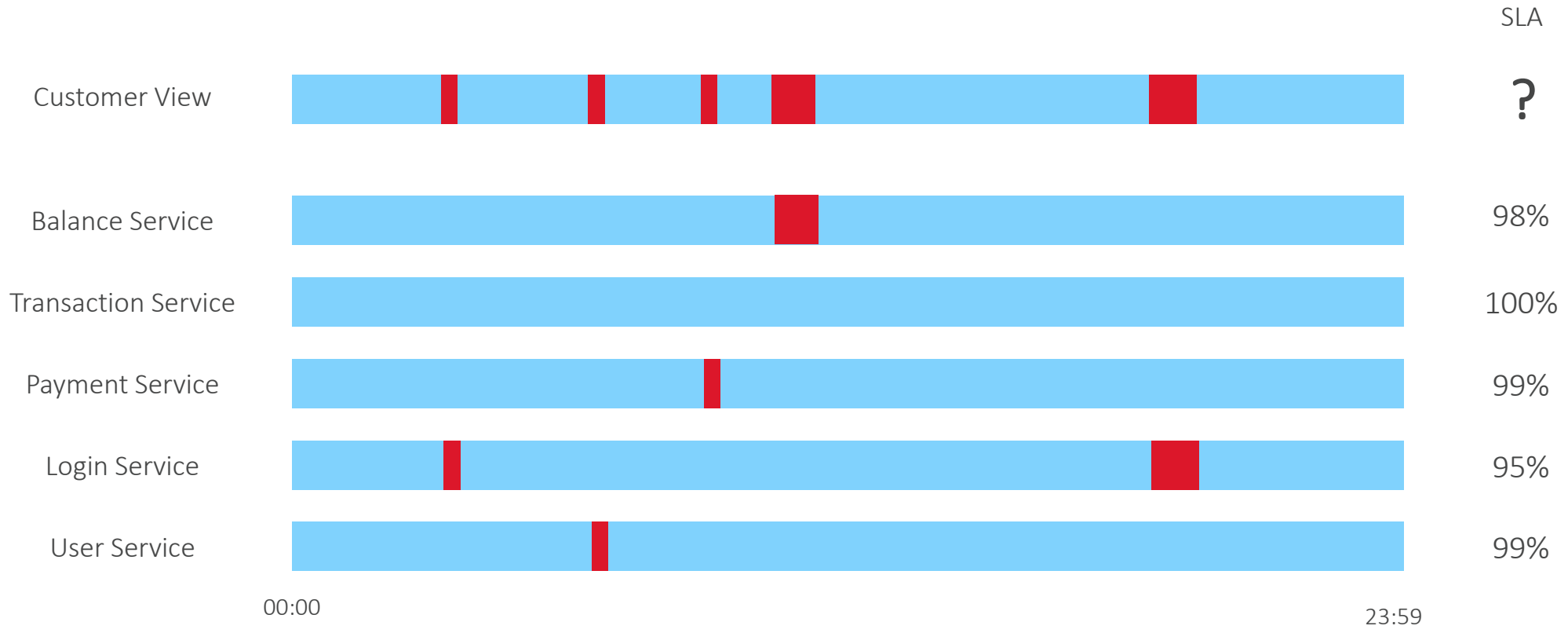
**Currently
Not Available**



#2: Availability KPI









Watch your Availability!

What's next?

Firefox

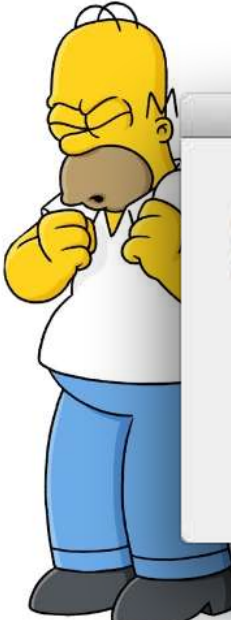
Error 404: doughnut not found!


livadaru.net/404

roomstog

Disable Cookies CSS Forms Images Information Miscellaneous Outline Resize Tools View Source Options

404





https://www.btopenzone.com:8443
JavaScript error detected!
Error: TypeError: 'null' is not an object
Line: 0
URL: undefined
Browser: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_7_3) AppleWebKit/534.53.11 (KHTML, like Gecko) Version/5.1.3 Safari/534.53.10

OK

[Go to website home page](#)


This website server is powered by [Domain Technologie Control \(DTC\)](#), an open-source control panel
Webhosting by: [icX.at](#)

exists!
his server.
an incorrect

Büroprofi Kanex SK - výsledky: baterka 9v

[Môj košík](#)
[Najnovšie pridané tovary](#)
[Oblíbené položky](#)
[Rychlá objednávka](#)
[Pomoc](#)
[Kontakty](#)

Vítejte! Přiházejte se, abyste se zaregistrovali


 Dodanie do 24-48 hodín Od 60 € doprava zadarmo Viac ako 10.000 výrobkov

Zelená linka: 0800 154 609

0 produktov v košíku
 Eur 0,00
 možnosť dopravy zdarma





Zadáte názov alebo objednávacie číslo produktu **Hľadať**

[Papier](#)
[Archivácia](#)
[Tonery](#)
[Kancelárske potreby](#)
[Prezentácia](#)
[Drogeria](#)
[Písacie a kóp. prost.](#)
[Prehľad](#)

"baterka 9v"

nájdených: 4 výsledkov

Usporiadať podľa: ▼


 <p>Bateria Connect alkalická, 9V, MN1604 napájací: 9V typ: MN1604, batéria: 1 ks Obj. číslo: PBS050363</p> <p><small>obrazok</small></p>	<p>1 ks € 1,74</p> <p> <input type="text" value="Hľadajte"/> <input type="button" value="W"/> </p> <p><small>Do obľúbených</small></p>
 <p>Bateria 9V, B1258 Obj. číslo: 6F22</p> <p><small>obrazok</small></p>	<p>1 ks € 1,76</p> <p> <input type="text" value="Hľadajte"/> <input type="button" value="W"/> </p> <p><small>Do obľúbených</small></p>
 <p>Bateria alkalická Verbatim 9 V block, 1 ks... napájací: 9V typ: block, batéria: 1 ks Obj. číslo: LAMB0VEA9VB1</p> <p><small>obrazok</small></p>	<p>1 ks € 2,49</p> <p> <input type="text" value="Hľadajte"/> <input type="button" value="W"/> </p> <p><small>Do obľúbených</small></p>
 <p>Energizer batéria alkalická SLR61, 9 V Block Obj. číslo: TFK10016</p> <p><small>obrazok</small></p>	<p>1 ks € 5,28</p> <p> <input type="text" value="Hľadajte"/> <input type="button" value="W"/> </p> <p><small>Do obľúbených</small></p>

Náša ponuka je zamierená na právnické osoby. Naše ceny sú uvedené bez DPH a zahrnujú sa do príslušných území.

Büroprofi Kanex SK - výsledky: baterka 9v - Microsoft Internet Explorer

[Môj košík](#)
[Najnovšie pridané tovary](#)
[Oblíbené položky](#)
[Rychlá objednávka](#)
[Pomoc](#)
[Kontakty](#)

Vítejte! Přiházejte se, abyste se zaregistrovali


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[Papier](#)
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[Prezentácia](#)
[Drogeria](#)
[Písacie a kóp. prost.](#)
[Prehľad](#)

nájdených: 4 výsledkov

Usporiadať podľa: ▼

Internet



E-Mail [Kontakte](#) SMS Kalender Handy Einstellungen

[Feedback](#) [Hilfe](#)



**Federal Aviation
Administration**



IE6/IE7

NO reload button

Example of error:

PurePath	Response Time (ms)	Server Contrib	Network Cont	User Experience	Client Errors	Client IP	Start Time
click on "Continue"	3151	7		- satisfied	1	172.17.0.58.48	2016-02-28 07:25:54.286
Frame Resize Event=[Leaving View=genderSelection][Event=W...	-			satisfied	0	172.17.0.58.48	2016-02-28 07:25:54.802
click on "No"	2715	7		- satisfied	1	172.17.0.58.48	2016-02-28 07:26:08.746
Frame Resize Event=[Leaving View=vdbc offerVdbCompensati...	-			satisfied	0	172.17.0.58.48	2016-02-28 07:26:09.266
click on "Continue"	1139	13		- satisfied	1	172.17.0.58.48	2016-02-28 07:26:13.407
Frame Resize Event=[Leaving View=checkin dangerousGoodsQ...	-			satisfied	0	172.17.0.58.48	2016-02-28 07:26:13.933
click on "Continue"	4322	14		- tolerating	0	172.17.0.58.48	2016-02-28 07:26:18.553
Frame Resize Event=[Leaving View=itinerary][Event=Waiting Fr...	-			satisfied	0	172.17.0.58.48	2016-02-28 07:26:19.051
click on "No thanks continue to checkin"	1092	13		- satisfied	1	172.17.0.58.48	2016-02-28 07:26:26.433
Frame Resize Event=[Leaving View=seatUpgrade][Event=Waiti...	-			satisfied	0	172.17.0.58.48	2016-02-28 07:26:26.952
click on "Continue with baggage options"	686	9		- satisfied	0	172.17.0.58.48	2016-02-28 07:26:35.319
Frame Resize Event=[Leaving View=itinerary][Event=Waiting Fr...	-			satisfied	0	172.17.0.58.48	2016-02-28 07:26:35.839
click on "No"	2668	11		- satisfied	0	172.17.0.58.48	2016-02-28 07:26:40.948
Frame Resize Event=[Leaving View=aba personalizedBaggage...	-			satisfied	0	172.17.0.58.48	2016-02-28 07:26:41.444
click on "javascript:addBaggagePieces('1*' A'Ti 2 /?')2...	5694	13		- tolerating	1	172.17.0.58.48	2016-02-28 07:26:57.16...
Frame Resize Event=[Leaving View=aba personalizedOffer][Ev...	-			satisfied	0	172.17.0.58.48	2016-02-28 07:27:00.254
CUSS Callback status 309	78	-		- satisfied	0	172.17.0.58.48	2016-02-28 07:44:49.176
Browser Error on '/i /webkiosk/start.htm'	-			frustrated	1	172.17.0.58.48	2016-02-28 07:44:49.271

Node	Detail	Exec Total (ms)	Elapsed Time (ms)	Timeline
Action (click on "javascript:addBaggagePie...	click on "javascri...	5694.00	0.00	
Loading of page '/i /webkiosk/start.htm'	_load_:_load_	437.00	5257.00	
Web Requests		-	-	
(200) '/i /webkiosk/start.htm'		12.80	5257.00	
onLoad handler executions of page '/	_onload_:_load_	328.00	5366.00	
Frame Resize Event	[View=goToDesk...	0.00	5366.00	
Browser Error: error:https://kiosk.k	error:https://kios...	0.00	5678.00	
Frame Resize Event				

Node Summary	
Node:	
Error Type:	
Detail:	erro
Exec Total (ms):	
API:	Bro
Agent:	

Approximately 20 minutes before 309 there is the last customer interaction

What you see here, is the CUSS status 309


The fix:
Improved the code to prevent this freeze situation.



CK – Business KPI Dashboard

Webkiosk LE KPI dashboard (WorldWide per hour)

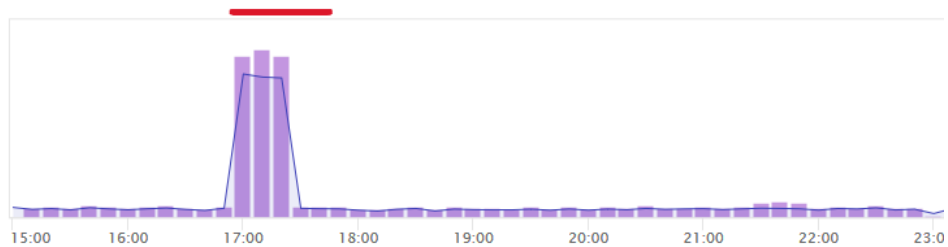


 www.easytravel.com

Improve the quality of your application by fixing most frequent JavaScript errors. Click on one of the JavaScript errors to view details.

Filter user types

Start typing to filter...



Top JavaScript errors In last 6 hours

Analysis range 6 hours. Click anywhere in the chart to change the time frame for analysis.

Error

Unexpected end of input – *jquery-1.10.2.min.js*

Cannot set property 'w' of undefined – *hook.js*

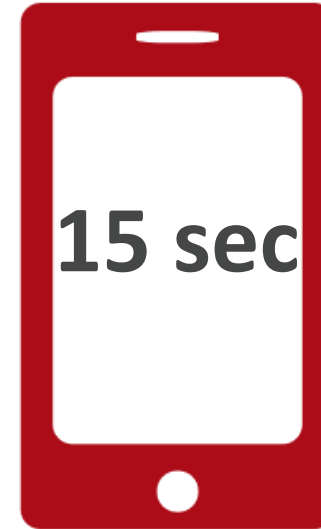
TypeError: Result of expression 'test' [undefined] is not an object

Invalid argument – *jquery.js*

Watch your Errors!

What's next?

Why?





4.5 sec

Chrome 49

Sanity Check



15 sec

Chrome Mobile 33

Browser Check

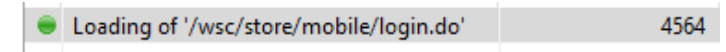
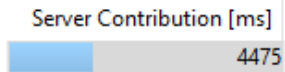
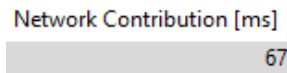
Same Page

Network

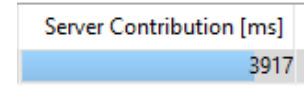
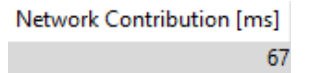
Server Side



Local WLAN



Local WLAN



Only difference is Browser & Device

Why did they look at the performance
on the mobile device?

Change in their
compensations plan!

Contract SLA:
Average Response Time < 3 sec
on Desktop + Mobile



User

Good idea?!



Develop Across All Platforms

Learn one way to build applications with Angular and reuse your code and abilities to build apps for any deployment target. For web, mobile web, native mobile and native desktop.

Speed & Performance

Achieve the maximum speed possible on the Web Platform today, and take it further, via Web Workers and server-side rendering.

Angular puts you in control over scalability. Meet huge data requirements by building data models on RxJS, Immutable.js or another push-model.



Let's take a look at the timings!

Navigation Start:	0 ms
Domain Lookup End:	269 ms
Connect End:	330 ms
Response Start:	517 ms
Response End:	518 ms
Dom Loading:	519 ms
Dom Interactive:	519 ms
DomContentLoaded Event End:	520 ms
Dom Complete:	520 ms
Load Event End:	522 ms

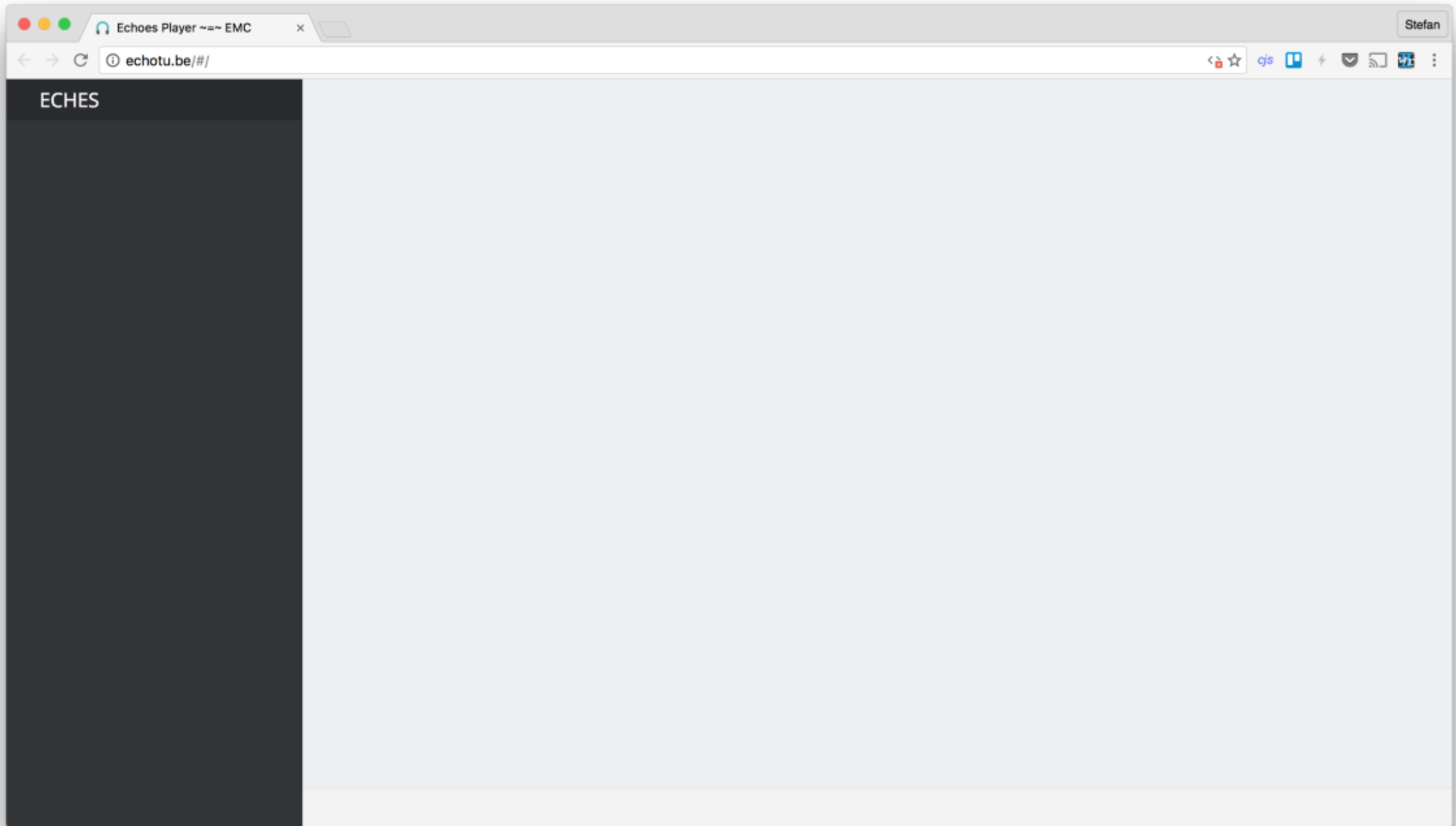


Developer



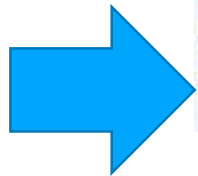


User



Web Requests Details

HTTP Method:	GET		
URI:	/wsc/...mobile/themes/oneui_android/dojox/ListItem.css		
Query:	-		
HTTP Tag:			
Servlet Name:	-		
Web Application Id:	-		
Client IP:	10.50.100.100		
Host:	mobile.samsung.com		
Response Status:	200 - OK		
Transferred Bytes	Total	Header	Body
Request:	738 Bytes	738 Bytes	0 Bytes
Response:	493 Bytes	351 Bytes	142 Bytes

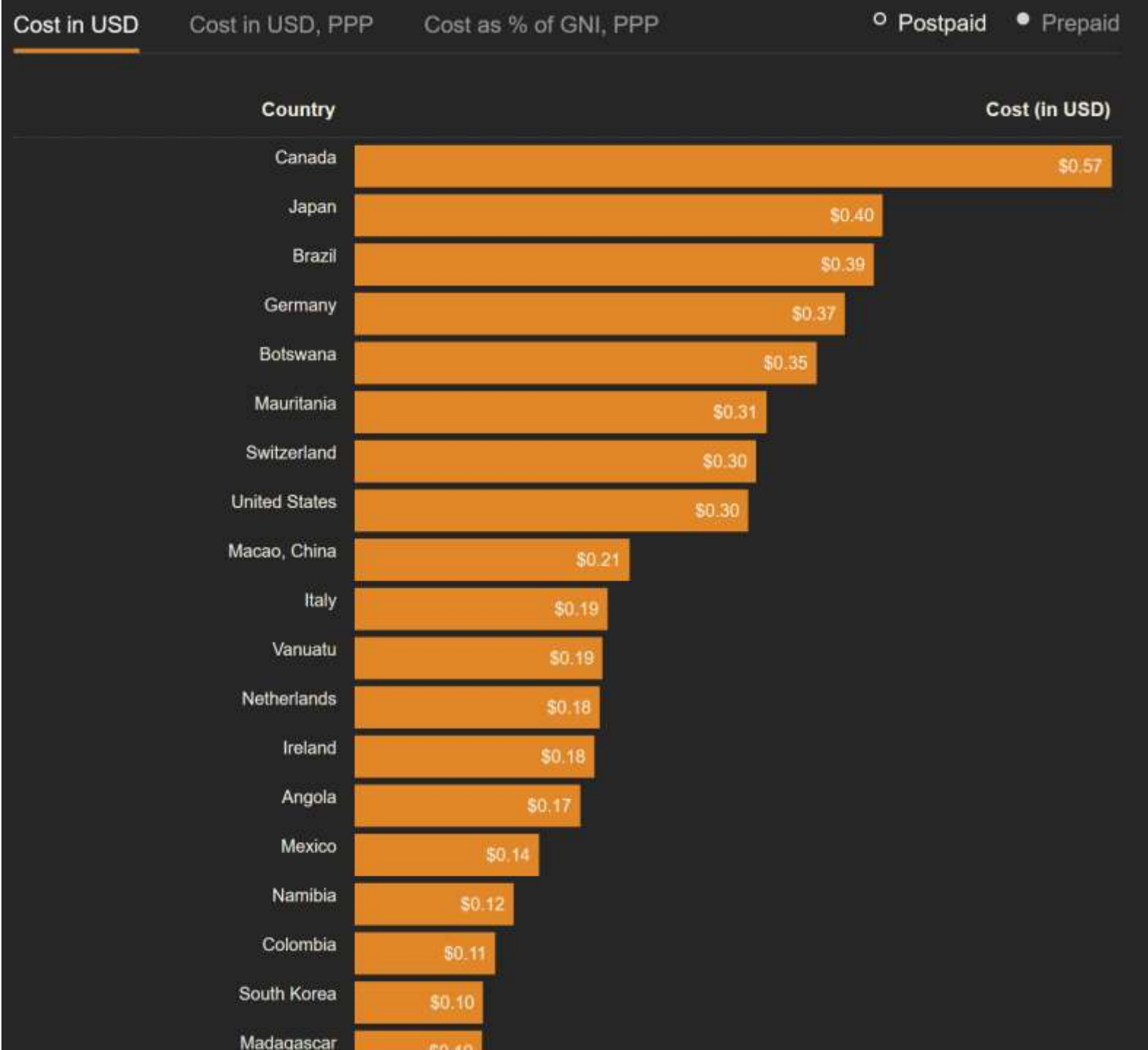


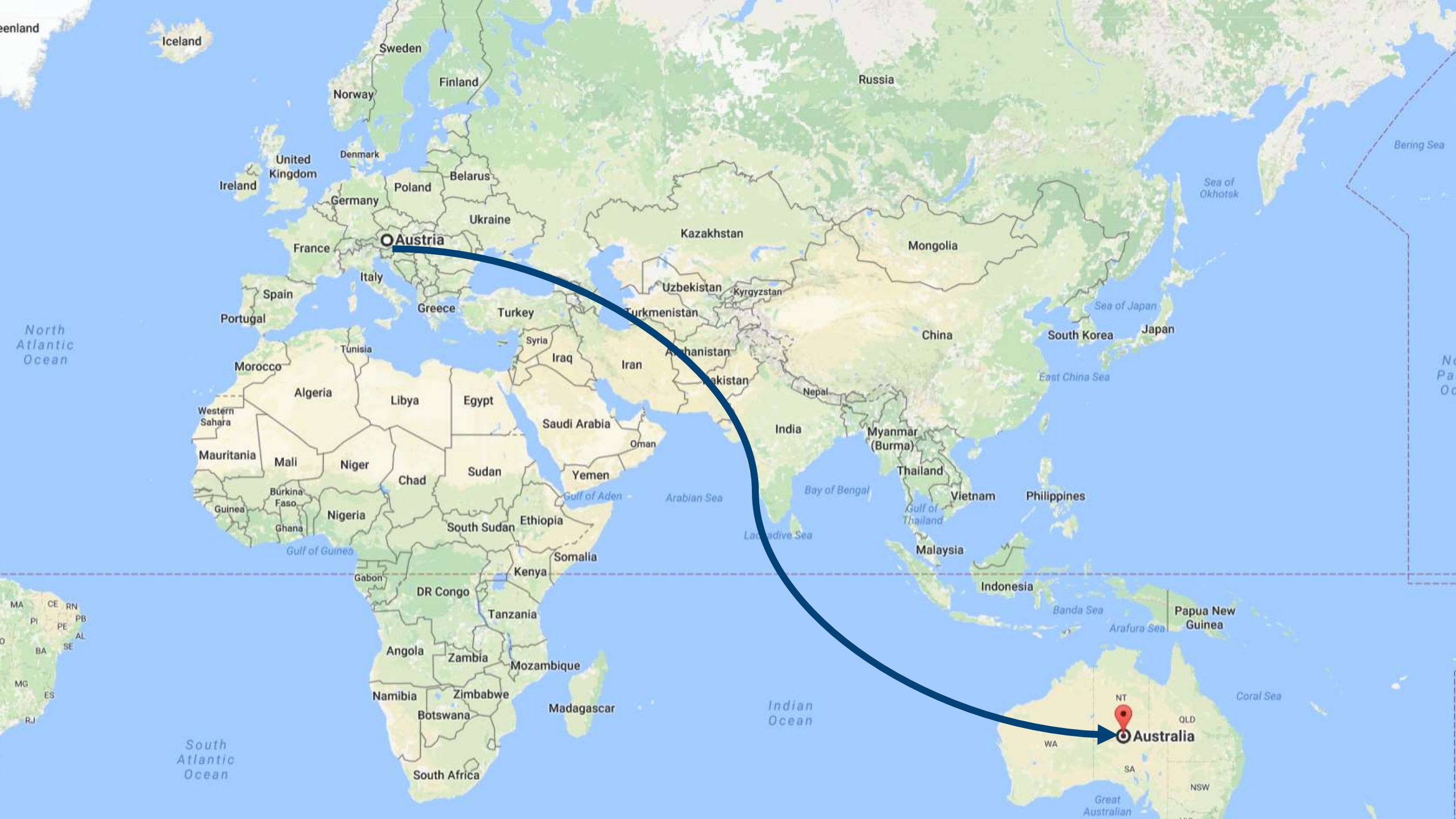
~200 Resources had larger Header than Body



The CDN bill exploded!

<https://whatdoesmysitecost.com>





Iceland

North Atlantic Ocean

MA CE RN PB
PI PE AL
BA SE
MG ES
RJ

South Atlantic Ocean

Sweden
Norway
Denmark
United Kingdom
Ireland
France
Spain
Portugal
Morocco
Algeria
Libya
Egypt
Sudan
Ethiopia
South Sudan
Kenya
Tanzania
Angola
Zambia
Mozambique
Namibia
Botswana
South Africa
Germany
Poland
Belarus
Ukraine
Italy
Greece
Turkey
Syria
Iraq
Iran
Saudi Arabia
Yemen
Oman
Kazakhstan
Uzbekistan
Kyrgyzstan
Turkmenistan
Afghanistan
Pakistan
India
Nepal
Myanmar (Burma)
Thailand
Vietnam
Malaysia
Indonesia
Papua New Guinea
Russia
Mongolia
China
South Korea
Japan
Philippines
Vietnam
Malaysia
Indonesia
Papua New Guinea
Austria
Australia

Sea of Okhotsk

Sea of Japan

East China Sea

Arabian Sea

Bay of Bengal

Laccadive Sea

Gulf of Thailand

Banda Sea

Arafura Sea

Coral Sea

Great Australian

NT

WA

SA

QLD

NSW

Bering Sea

North Pacific Ocean



Back Home



PAYMENT DUE DATE:

Oct 07, 2013

TOTAL AMOUNT DUE:



ACCOUNT NUMBER

INDICATE YOUR
at the back of the

AMOUNT DUE:

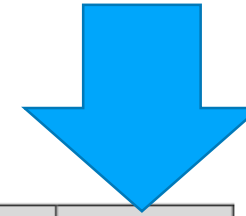
-2.48

429.27

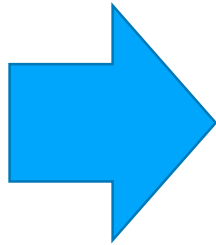
426.79

NT DUE:

Back Home



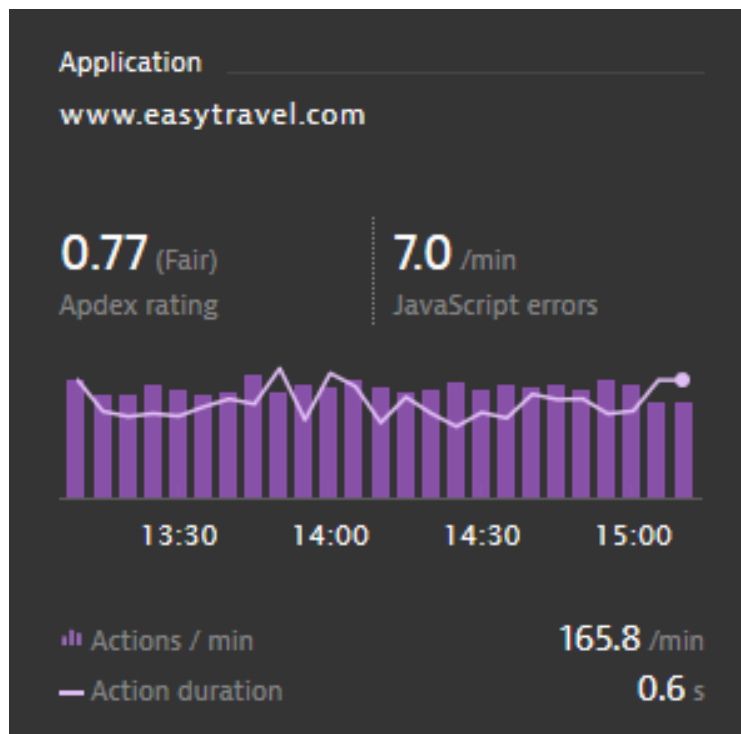
Land	Zone	abgehende Verbindungen /min ¹⁾	ankommende Verbindungen /min	Preis pro SMS ²⁾	Preis pro MMS	Daten Preis pro 100 KB
Afghanistan	Zone 4	4,16	2,08	0,42	0,83	1,66
Ägypten	Zone 4	4,16	2,08	0,42	0,83	1,66
Aland Inseln	Zone EU	EU	0,01140	EU	EU	EU
Albanien	Zone 2	1,66	0,83	0,34	0,83	1,24
Algerien	Zone 4	4,16	2,08	0,42	0,83	1,66
Andorra	Zone 2	1,66	0,83	0,34	0,83	1,24
Angola	Zone 4	4,16	2,08	0,42	- ³⁾	- ³⁾
Anguilla	Zone 4	4,16	2,08	0,42	0,83	1,66
Antigua & Barbuda	Zone 4	4,16	2,08	0,42	0,83	1,66
Argentinien	Zone 4	4,16	2,08	0,42	0,83	1,66
Armenien	Zone 4	4,16	2,08	0,42	0,83	1,66
Aruba	Zone 4	4,16	2,08	0,42	0,83	1,66
Aserbaidtschan	Zone 4	4,16	2,08	0,42	0,83	1,66
Äthiopien	Zone 4	4,16	2,08	0,42	- ³⁾	- ³⁾
Australien	Zone 3	3,33	1,66	0,38	0,83	1,66
Bahamas	Zone 4	4,16	2,08	0,42	0,83	1,66
Bahrain	Zone 4	4,16	2,08	0,42	0,83	1,66



HTTP Archive – Transfer Size Trend

Total Transfer Size & Total Requests





#4: Performance KPI

Monitoring needs to cover:

Business Results

Availability

Errors

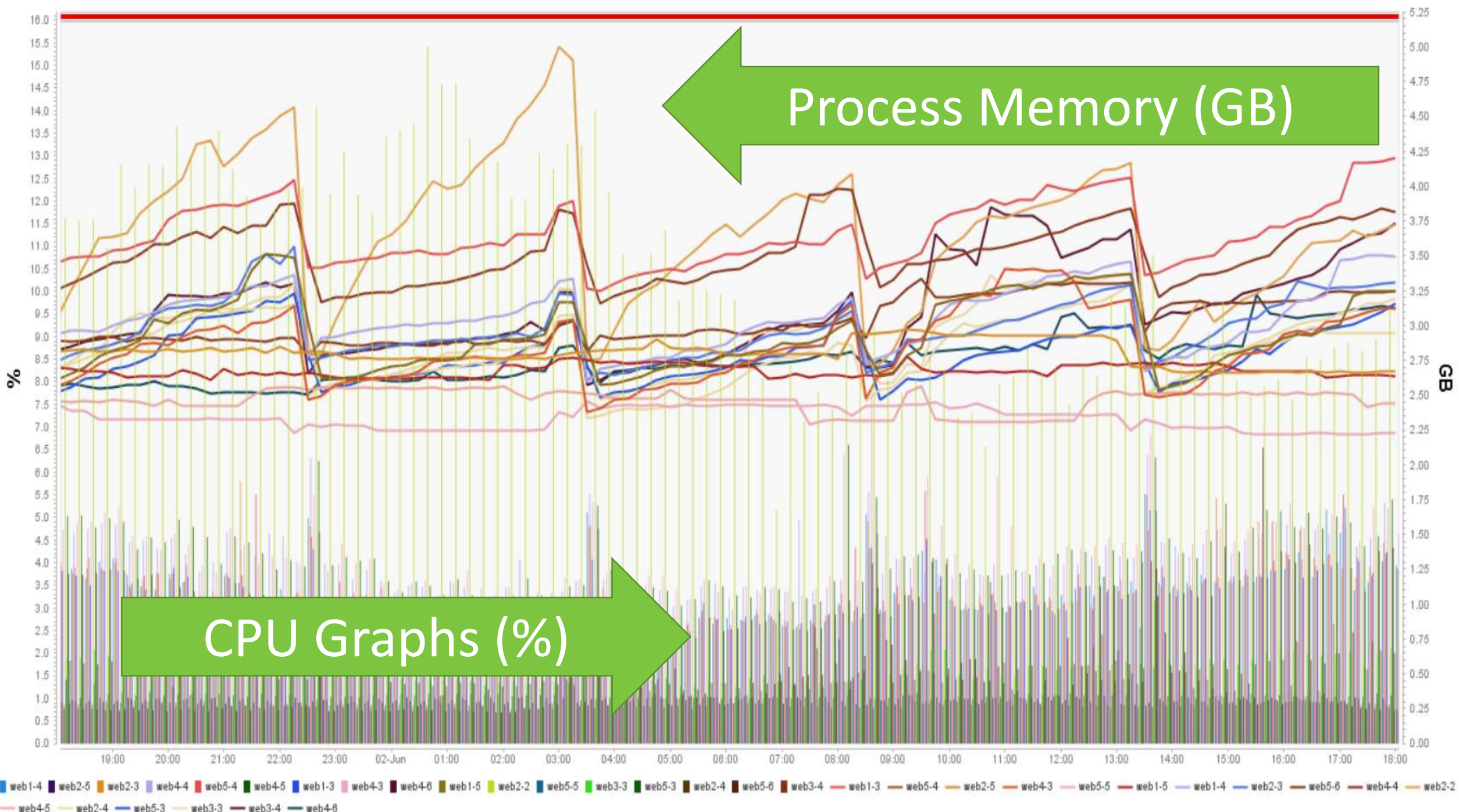
Performance





Monitoring used to
be about looking at
dashboards ...





.. and about
analyzing logs &
exceptions ...



Exceptions

Count	Exception Class	Message	Throwing Cl
3369	org.apache.catalina.connector.ClientAbortException		org.apache.c...
1084	org.apache.axis.ConfigurationException	No service named WebServiceSo...	org.apache.a...
999	org.jboss.ejb.plugins.cmp.ejbql.JBossQLParser\$Lookahead...	-	org.jboss.ejb...
730	com.ctc.wstx.exc.WstxIOException	-	com.ctc.wstb...
730	org.apache.axis2.AxisFault	-	org.apache.a...
450	org.apache.axis.ConfigurationException	No service named http://dotnetp...	org.apache.a...
368	org.apache.axis2.AxisFault	Read timed out	org.apache.a...

Top Exceptions

Logging

Count	Name	Severity	Message
3973	com.jloadtrace.gospace.backend.util.EJBHomeFactory	INFO	Retrieving EJB home interface
765	com.jloadtrace.gospace.backend.webservices.communic...	INFO	special offers webservice calle
765	com.jloadtrace.gospace.backend.webservices.logic.Specia...	INFO	Special offers logic sib called
730	org.apache.axis2.transport.http.CommonsHTTPTransport...	ERROR	
368	org.apache.axis2.transport.http.HTTPSender	INFO	Unable to send via Post to uri[h
365	org.apache.axis2.transport.http.AxisServlet	INFO	org.apache.axis2.AxisFault
365	org.apache.axis2.engine.AxisEngine	ERROR	null

Top Logs

But the apps and services we build have transformed to something more dynamic...



A whole new technology stack & polyglot development

Develop



Amazon
DynamoDB



AWS Lambda



nodejs



mongo db



netty



cassandra



redis

Ship



AWS
CodeDeploy



ansible



jenkins



puppet



chef

Deploy



AWS Elastic
Beanstalk



Amazon
API Gateway



docker



cloudfoundry



rh openshift



rh atomic



rocket

Run



Amazon EC2



core os



rancher



kvm



busybox



eureka/hystrix

Scale



Amazon EC2
Container Services



mesos



marathon



kubernetes



swarm

Compute



Amazon



azure



openstack



mesosphere



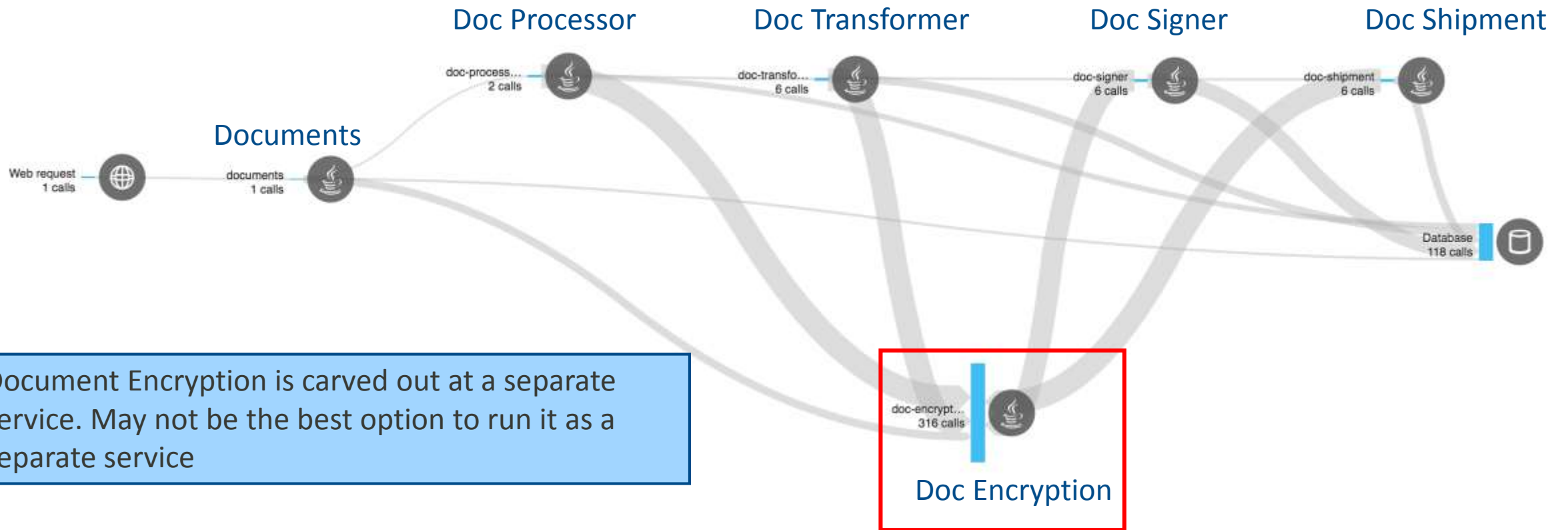
calico



weave

Granularity

Granularity



Tight Coupling

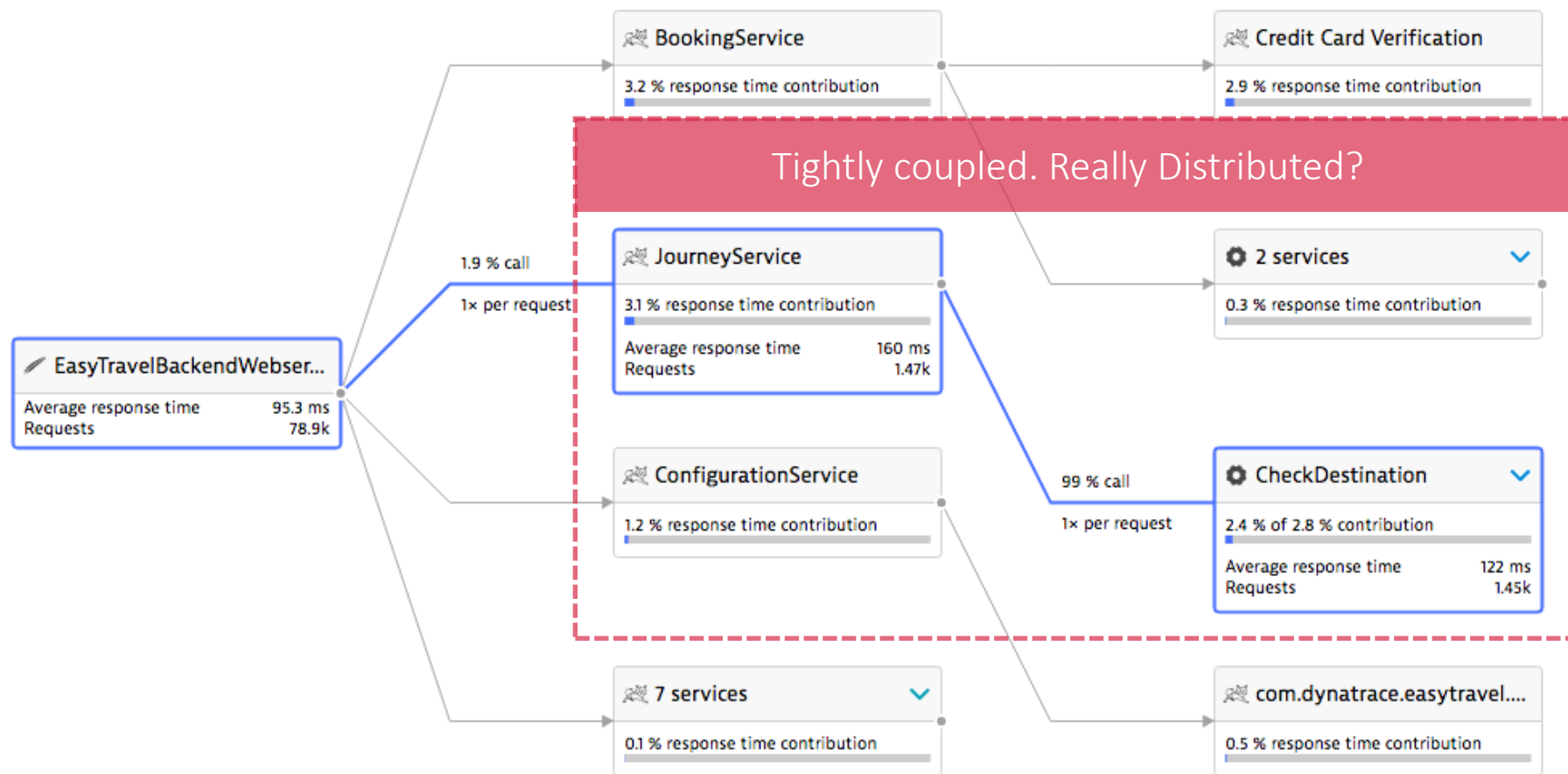
Showing service flow of requests to EasyTravelBackendWebserver:8091

today, 10:10 - 12:10

99 % of requests to JourneyService call CheckDestination (averaging 1 call per request)

[View PurePaths](#)

[Add filter](#)



Inefficient Service Flow

(drawing parallels to Web Performance Optimization)

Showing service flow of requests to 'Varnish:8079'
yesterday, 23:27 - today 01:27

Add filter

SFPO (Service Flow & Performance Optimization) has to teach us how to optimize (micro)service dependencies through Service Flows

Varnish:8079

Avg. response time	46.8 ms
Avg. time spent in called services	22.8 ms
Requests	368k
Failed requests	704
Calls to other services	302k

See every single request in PurePath view

[View PurePaths](#)

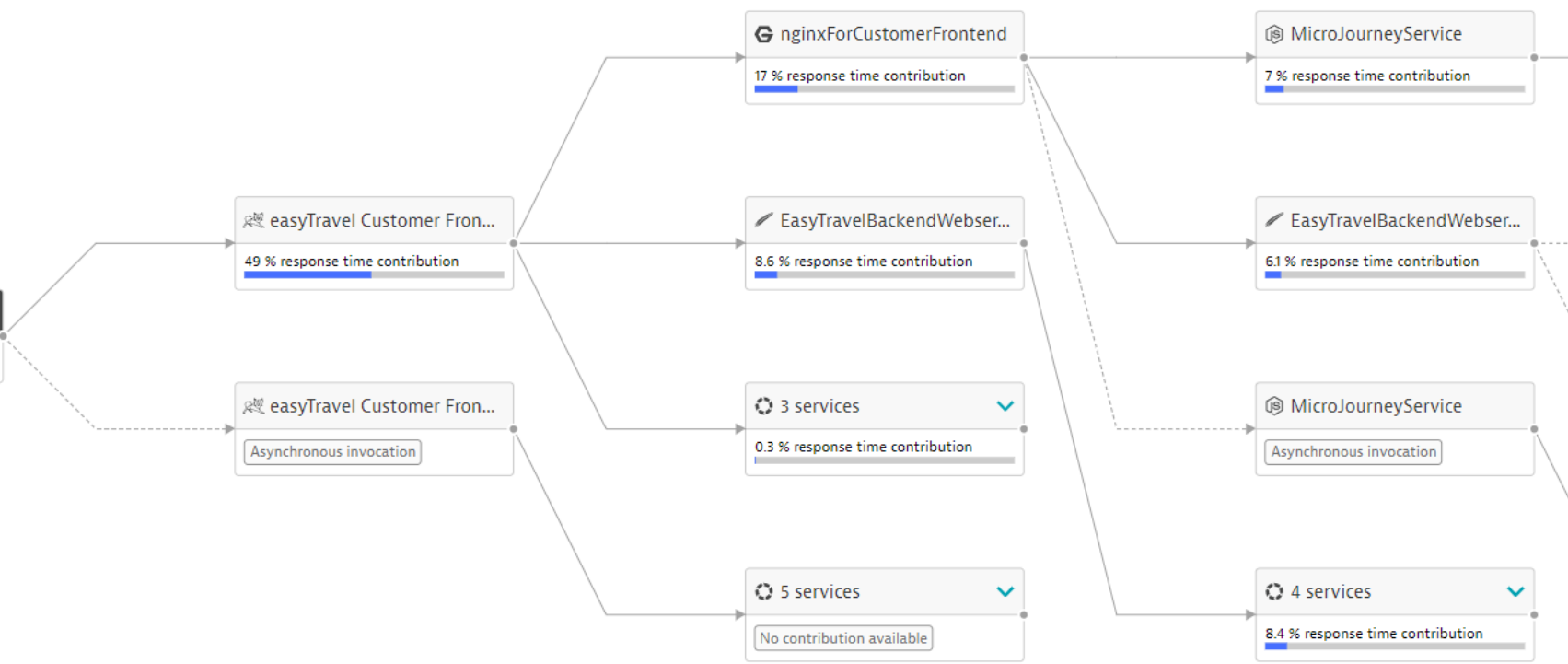
show more

No service selected

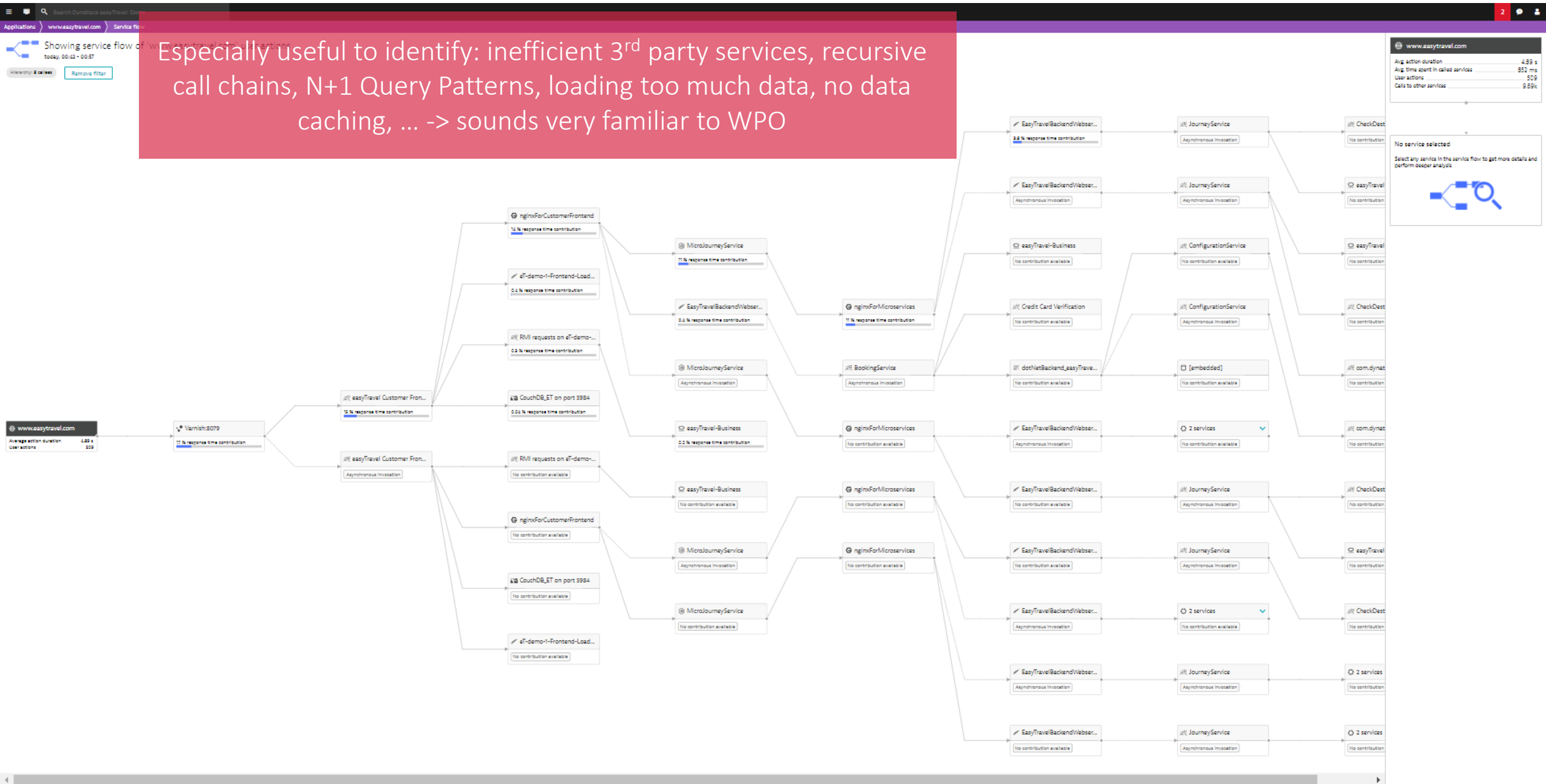
Select any service in the service flow to get more details and perform deeper analysis

Varnish:8079

Average response time	46.8 ms
Requests	368k



Especially useful to identify: inefficient 3rd party services, recursive call chains, N+1 Query Patterns, loading too much data, no data caching, ... -> sounds very familiar to WPO



'Varnish:8079' PurePath

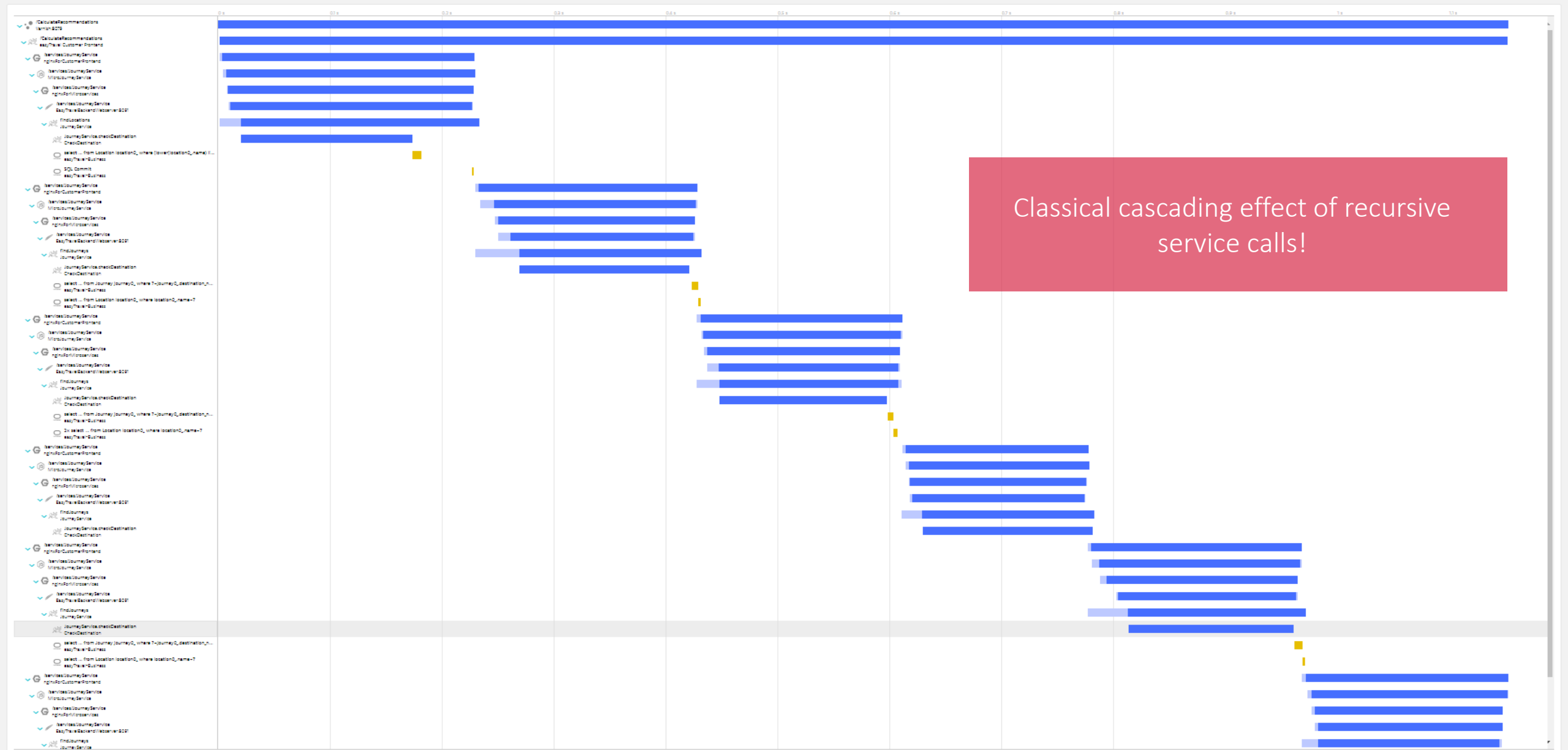
Start time: 2017 August 1 00:31:17
Response time: 155 s
Total processing time: 154 s

Breakdown of PurePath processing time

- 922 ms CPU time
- 219 ms other

Top findings

- 1 database consuming 45.0 ms



Classical cascading effect of recursive service calls!

THIS IS WHY
monitoring had to
transform as well

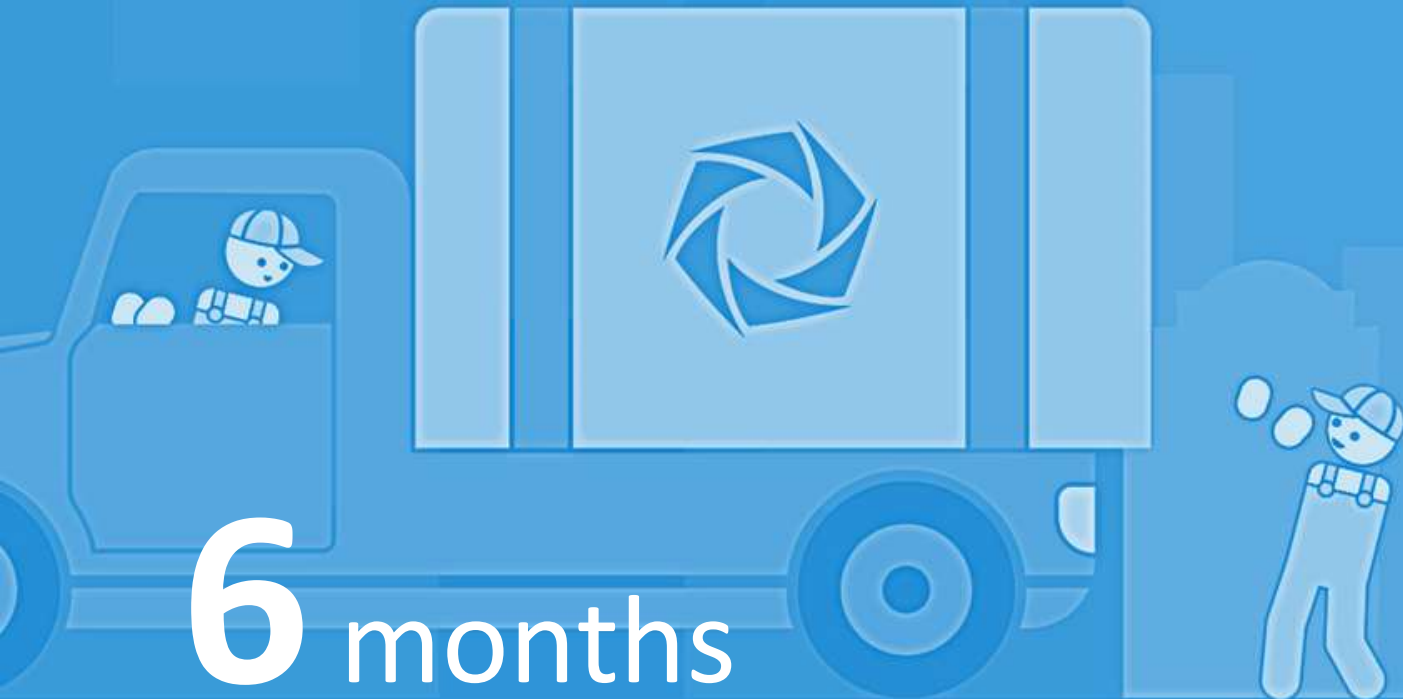


2011

2 major releases/year
customers deploy & operate **on-prem**

6 months

major/minor release

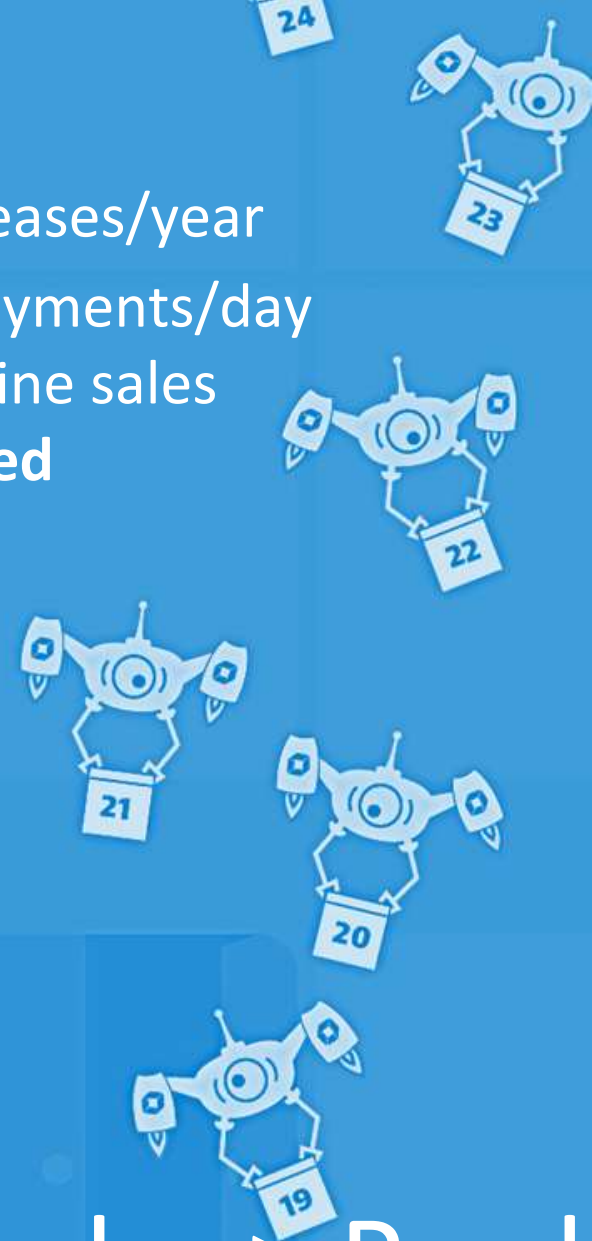


2016

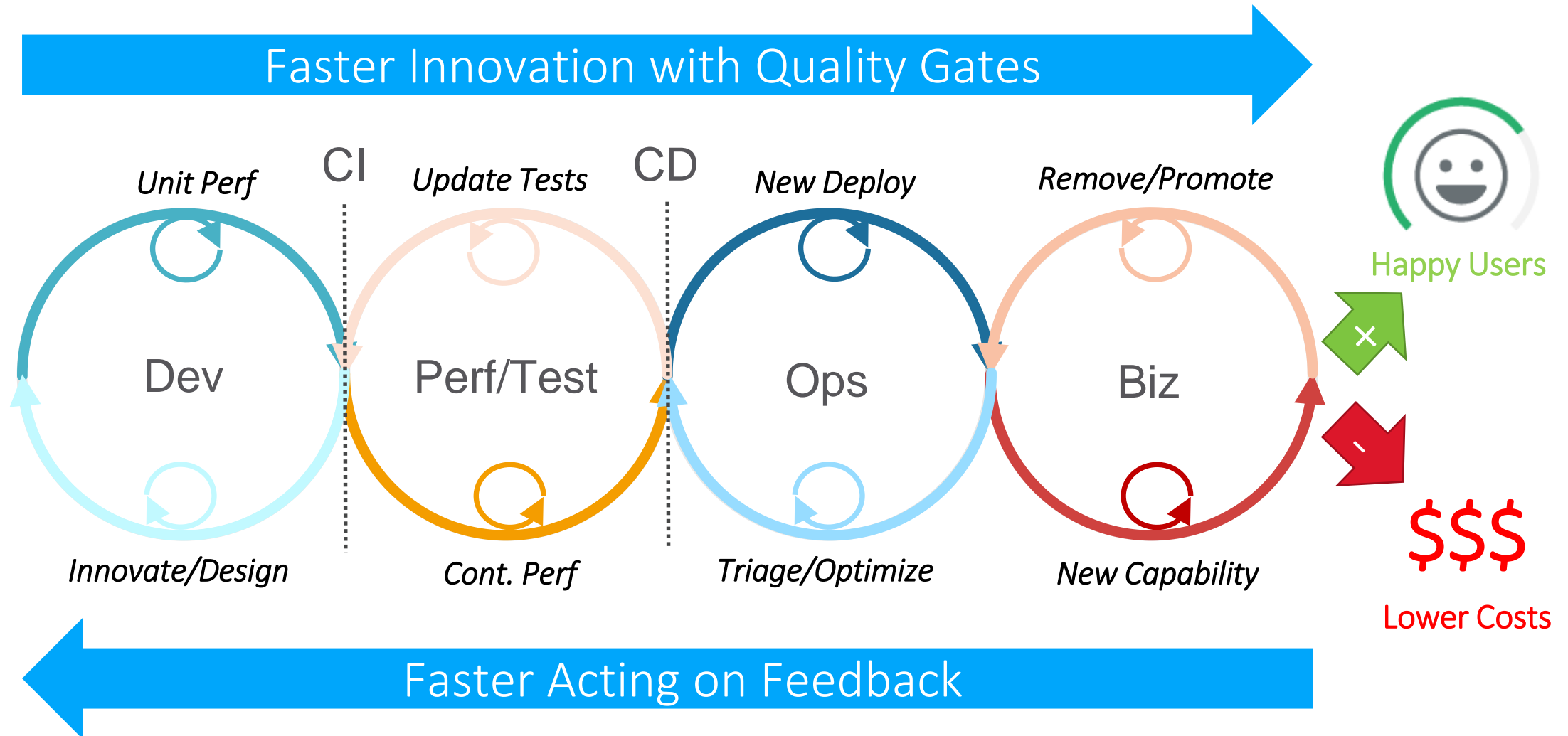
26 major releases/year
500 prod deployments/day
self-service online sales
SaaS & Managed

1h : Code -> Prod

sprint releases (continuous-delivery)



Monitoring as Pipeline & Platform Feature



Role of Dynatrace DevOps Team



acting as
Engineers
&
Product Managers

Dynatrace Managed/SaaS
Orchestration Layer

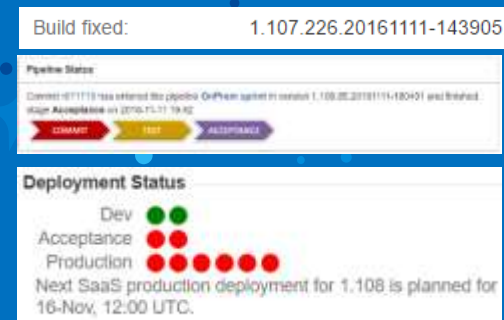
Pipeline Visualization



Deployment Timeline



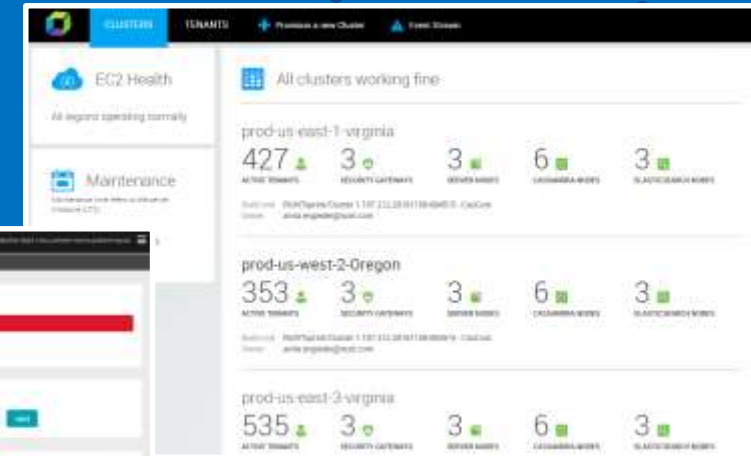
JIRA Integrations



Log Overview
using Dynatrace Log API



Dynatrace



Shift-Left Continuous Performance with Dynatrace

Response time

Failure rate

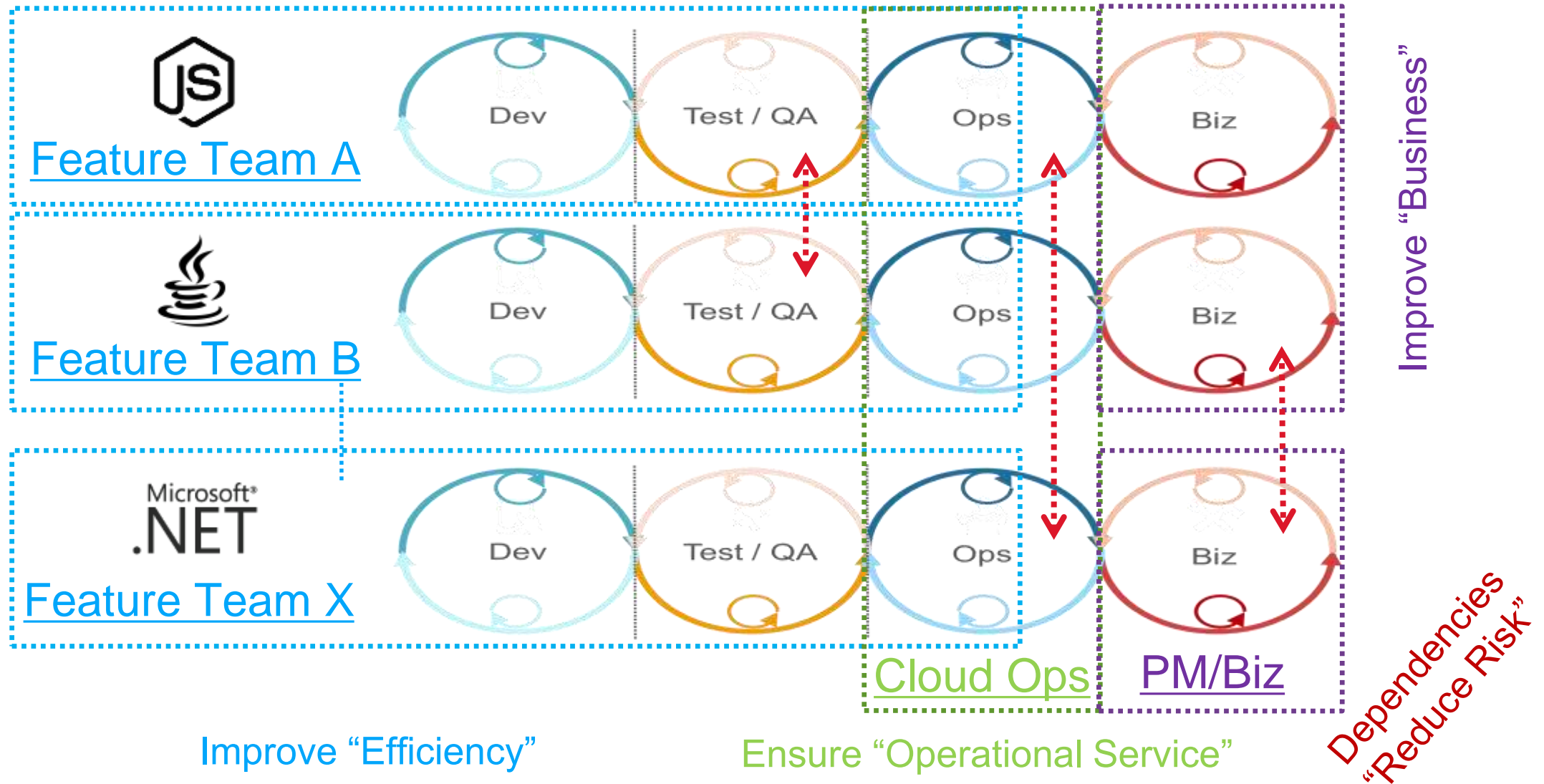
CPU consumption

“Performance Signature”
for Build Nov 16

“Performance Signature”
for Build Nov 17



Learnings when scaling DevOps Pipelines



Dynatrace Transformation by the numbers

More Agile

~120

Code commits / day

340

Stories per sprint

26

Releases / Year

More Quality

31000

Unit & Int Tests / hour

60h

UI Tests per Build

93%

Production bugs found
by Dev

More Stability

450

Global EC2 Instances

99.998%

Global Availability

500

Deployments / Day

High Performers vs Low Performers: Speed Gap Closing but Quality Gap Increasing

Table 1: Changes in IT performance of high performers, 2016 to 2017

IT performance metrics	2016		2017
Deployment frequency	200x more frequent	➔	46x more frequent
Lead time for changes	2,555x faster	➔	440x faster
Mean time to recover (MTTR)	24x faster	➔	96x faster
Change failure rate	3x lower (1/3 as likely)	➔	5x lower (1/5 as likely)

BizDevOps Adoption Challenges

Technical Complexity

DevOps promotes choice:
“the best stack for your problem”

Bad Data & Code Quality

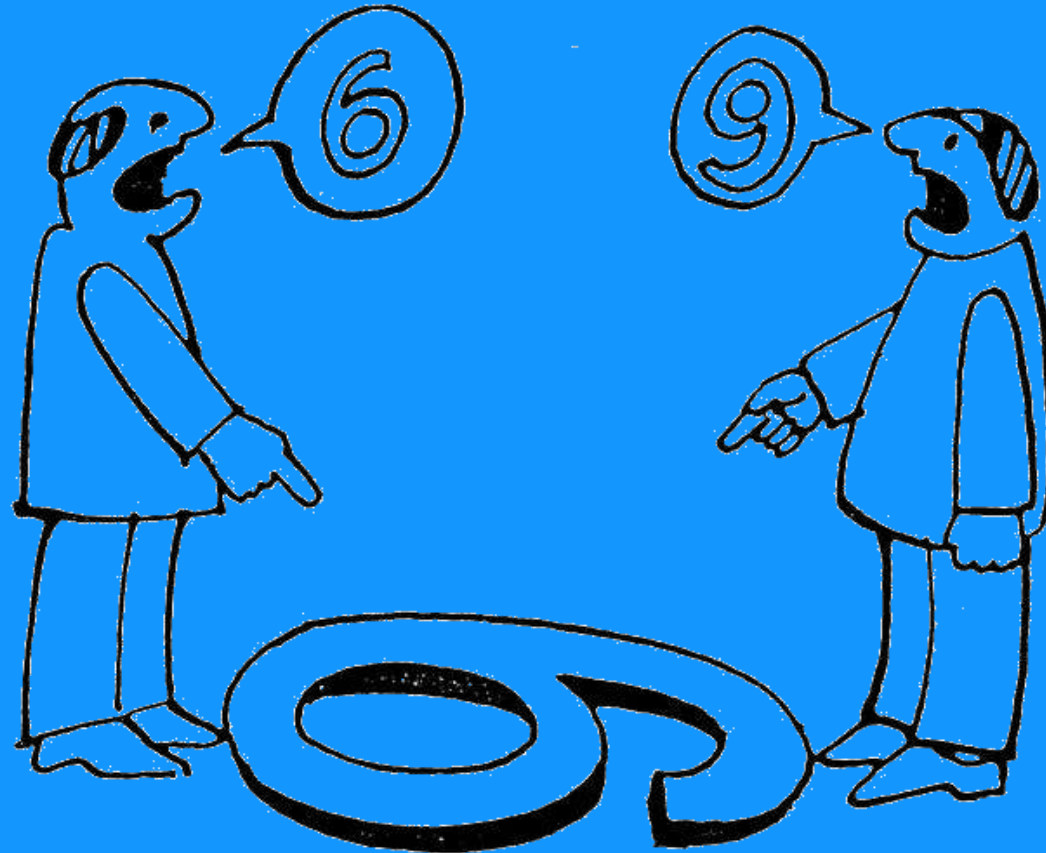
DevOps today mainly driven by Biz
“faster to market” but not “quality to market”

Data & Department Silos

DevOps promotes small & agile:
“2 Pizza Teams”, “Services”, “Containers”

The reason why:

Different Perspective from Biz and DevOps





UX-Designer

Executives

Marketing Analysts

Search Engine Optimization

CxO

Customer Success Team

Security team

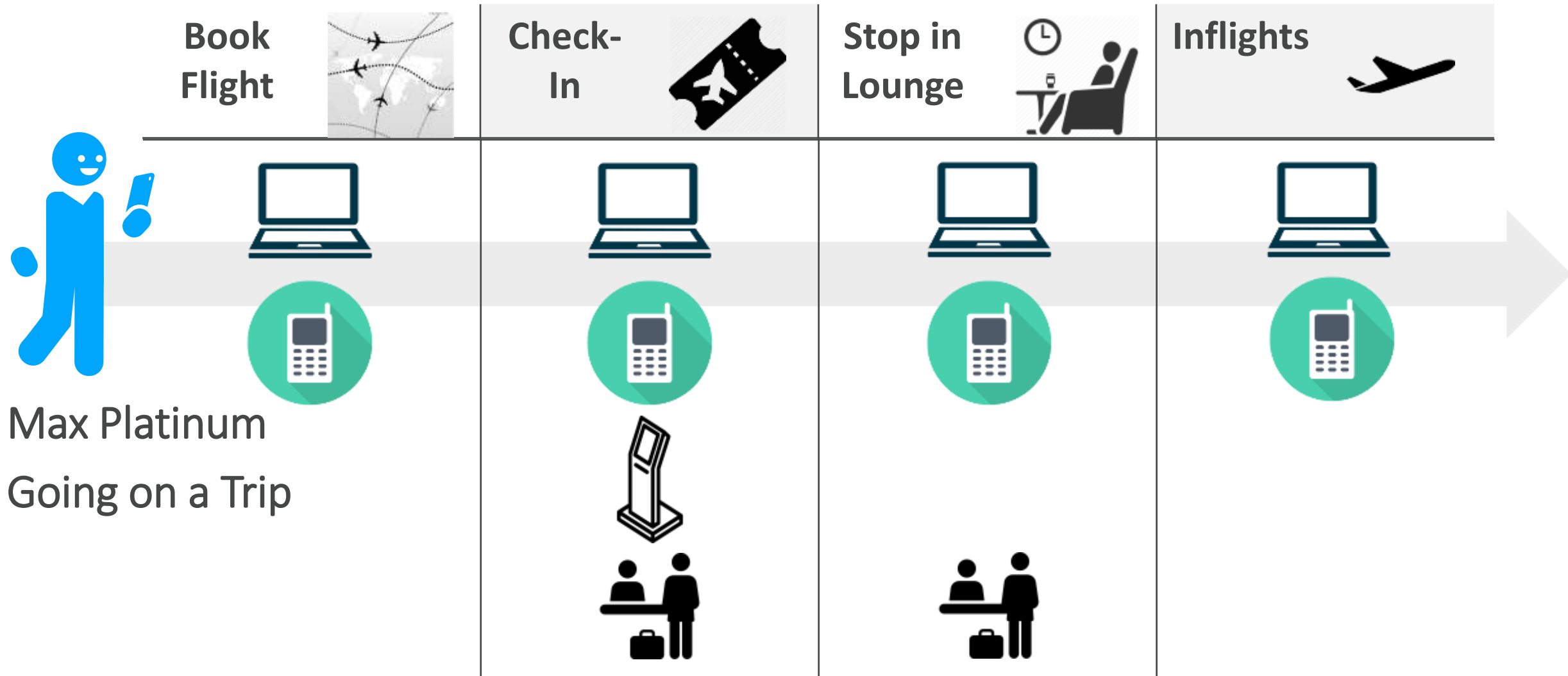
App Owner

Fraud Detection













Business Analytics



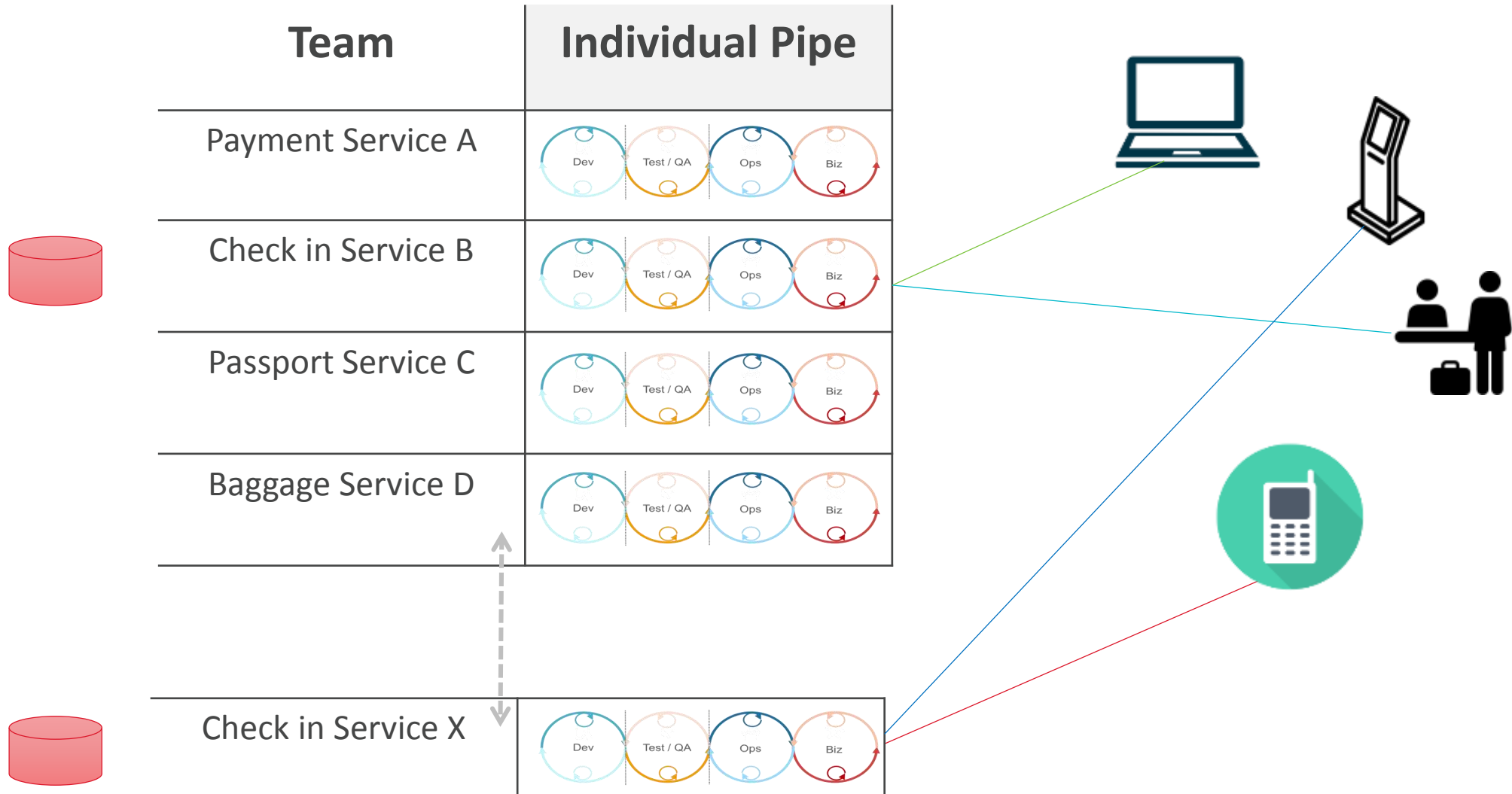
Biz View: Airline – Platinum Member Traveling

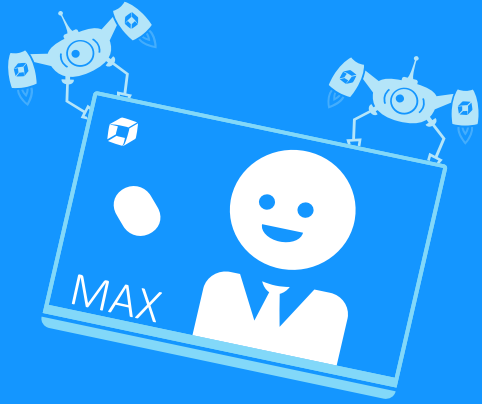


Dev View: Airline – Platinum Member Traveling

Team	Individual Pipe	Cycle Time	Monitoring
  Geo Service Team		Weekly	
    Product Service Team		Every Sprint	
  Book Service Team		Daily	
  Auth Service Team		On-Demand	
  Mobile App Team		Monthly	

ISSUE! Max Platinum Can Not Check In!

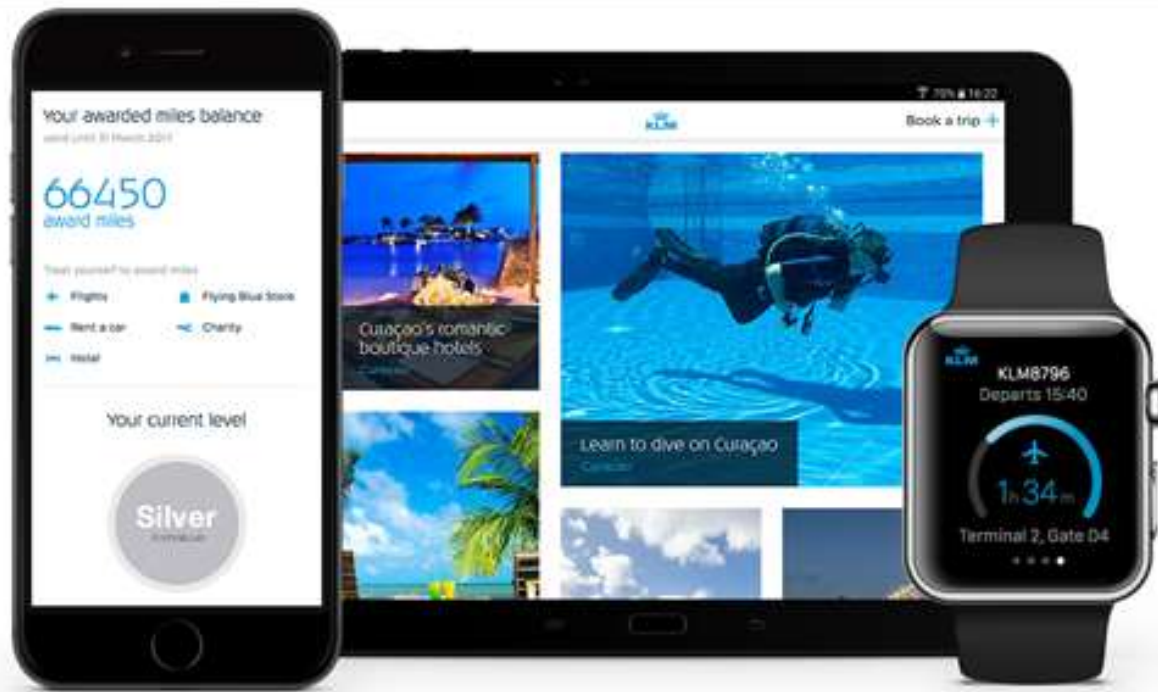




Are we making MONEY with Max?
Which digital touchpoints is MAX using?

Digital Touchpoints:

M Silo #1	Business Result	System Availability	Errors	Performance
D Silo #2	Business Result	System Availability	Errors	Performance
P Silo #3	Business Result	System Availability	Errors	Performance
Voice In R Silo #4	Business Result	System Availability	Errors	Performance
	Silo #6	Silo #7	Silo #8	





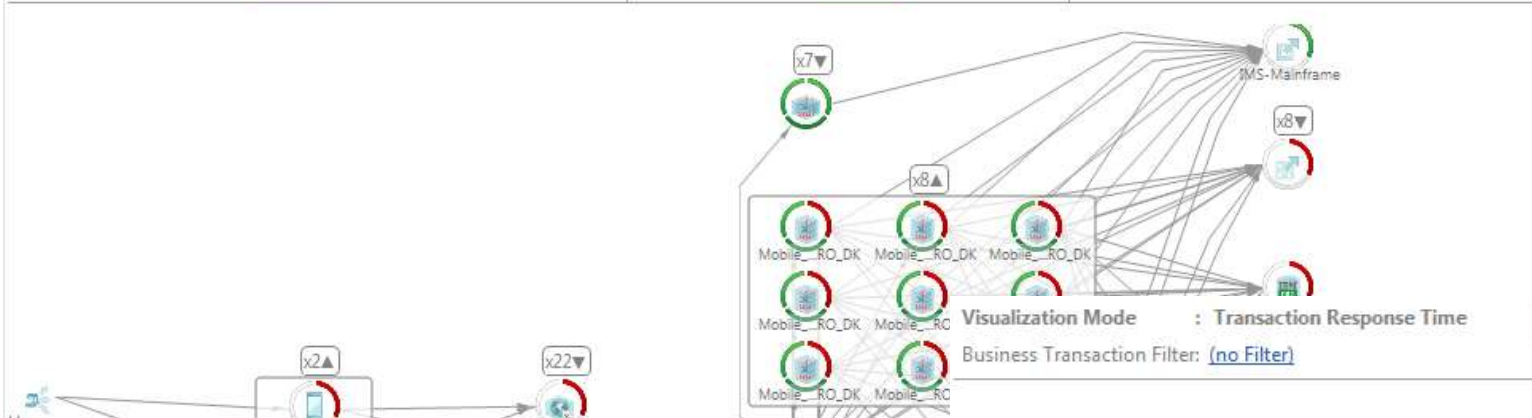
Transaction Flow [Icons]

Visualization Mode : **Topology**

Business Transaction Filter: [\(no Filter\)](#)

Total Transactions : 378,404 (3388.19 per minute) Inter Tier Time Per Transaction: 0.04ms (0%) [\(show\)](#)

Failed Transactions: **70 (0.02 %)** ⓘ

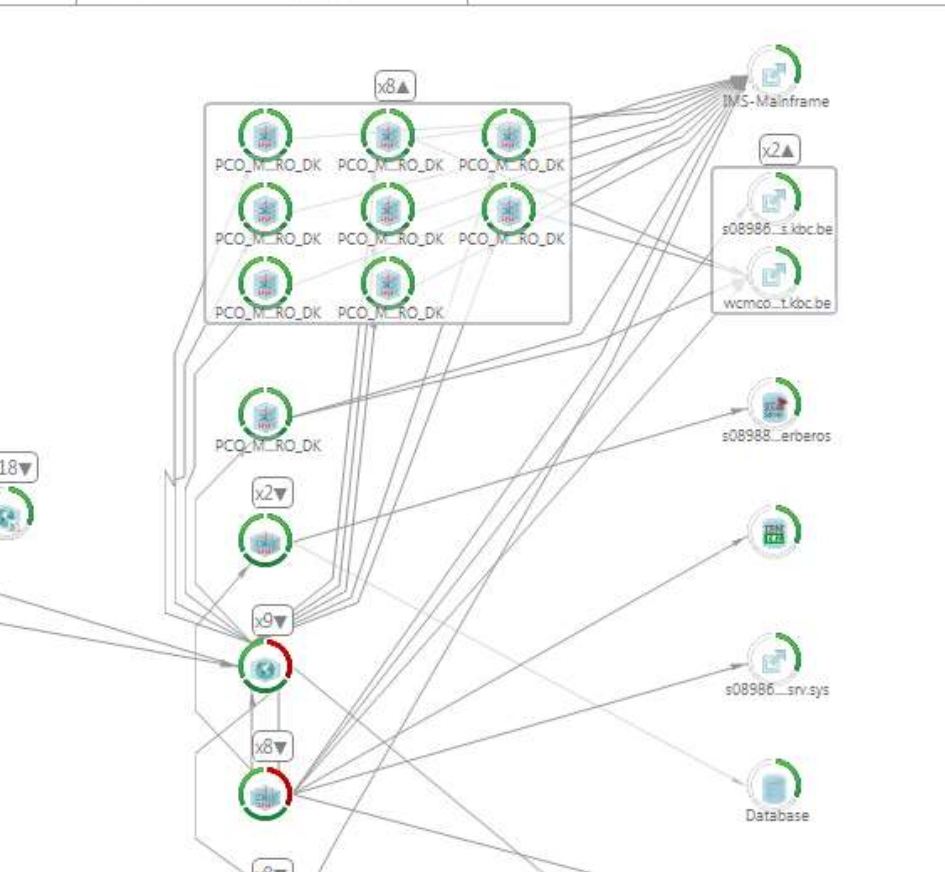


Visualization Mode : **Transaction Response Time**

Business Transaction Filter: [\(no Filter\)](#)

Total Transactions : 163 (5.7 per minute) Inter Tier Time Per Transaction: 0.65ms (0%) [\(show\)](#)

Failed Transactions: 0 (0 %)



Dashboard - TCH - Highlevel Application Health - Dynatrace Client

Dashboard Edit Tools Settings Help

TCH - Highlevel Application Health shows data of 2023-08-16 10:17:40 AM in timeframe last 72 hours

Host Health

- Host CPU Unhealthy
- Host Disk Unhealthy
- Host Memory Unhealthy
- Host Network Unhealthy

Application Process

- Application Process Out of Memory
- Application Process Unresponsive (urgent)
- Application Process Unhealthy

Important Business Transactions

Indicators based on important business transactions for Touch & Mobile. Each transaction has own based threshold.

- Touch: TCH Contact Threshold Violation, TCH Loading of APP Threshold Violation, TCH Open for update Threshold Violation, TCH Relating detail (user category) Threshold Violation, TCH Relating user over TCH Threshold Violation
- Touch: TCH Order Threshold Violation, TCH In-App chat (user category) Threshold Violation, TCH In-App chat (user category) Threshold Violation, TCH Loading Threshold Violation, TCH Screen Threshold Violation
- Mobile: MCE Login Threshold Violation, MCE Download to login Threshold Violation, MCE Download to login Threshold Violation, MCE Relating User over TCH Threshold Violation

Logons by application

Logon for MCE-Mobile applications

25275 logons

Mainframe status

- Request time degraded

Midtier status

- MCE Slow response on Midtier
- TCH Slow response on Midtier

Midtier status - MOBILE

- Response time degraded for slow requests

User Action response Times

Overall response time degradation based on automatic baseline

Load balancing

Amount of requests split by host. Indicates issues with loadbalancing when not equally spread

Response time by internet provider

Indicates when something is wrong with the network of the most popular providers

Mobile Logon

Logon for mobile applications

128804 logons

Mobile Pay Count

Mobile Payments

1427 logons

Load balancing

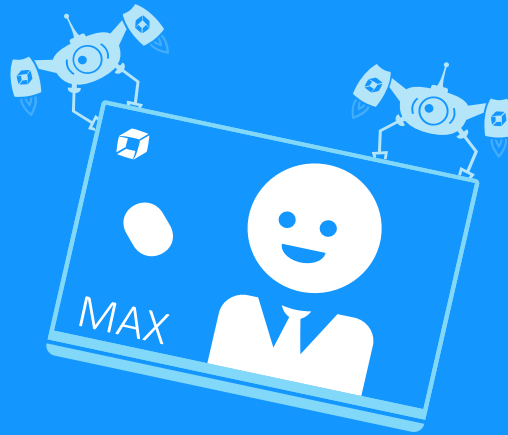
Used providers

195000 logons

So what should we do now?

Have a BIG vision

We need to answer the same questions for ALL touchpoints



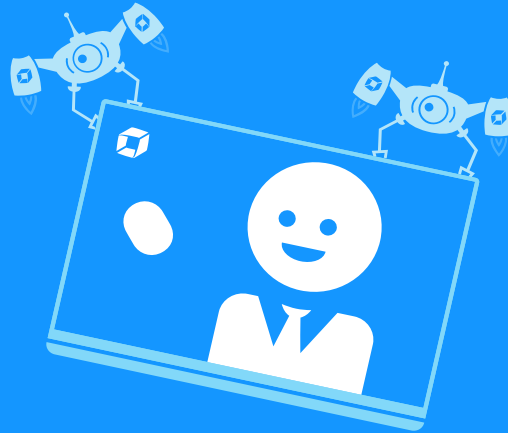
Digital Touchpoints:

- Mobile App
- Desktop Web
- Kiosk App
- PoS-System
- Voice Interfaces (Alexa,...)
- Rich Client App

Business Result	System Availability	Errors	Performance
Business Result	System Availability	Errors	Performance
Business Result	System Availability	Errors	Performance
Business Result	System Availability	Errors	Performance

Digital Touchpoints:

- Mobile App
- Desktop Web
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- Rich Client App



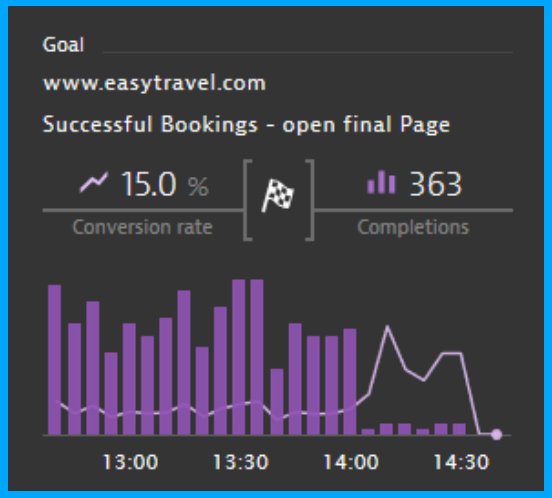
Device:

- Mobile
- Mobile Browser
- Smart Watch
- ATM
- Car Entertainment System
- TV

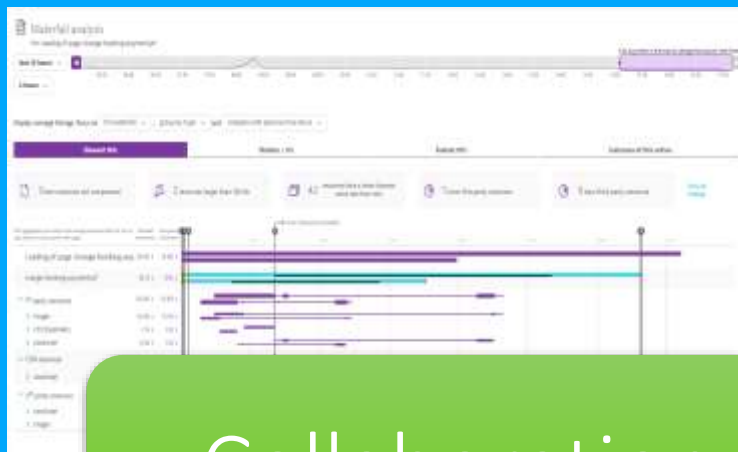
Locations:

- Vienna, Austria
- Store Salzburg
- Check-in Terminal A FRA
- Construction Site ABC, India

Biz



Dev



Ops



Collaboration based on Consistent Data

Act tomorrow locally!

Make the KPIs available to others

Take a look the 4 Key KPIs and check them

Establish a quality gate beyond functional health

Introduce monitoring early in the pipeline

Chart your money making step/action

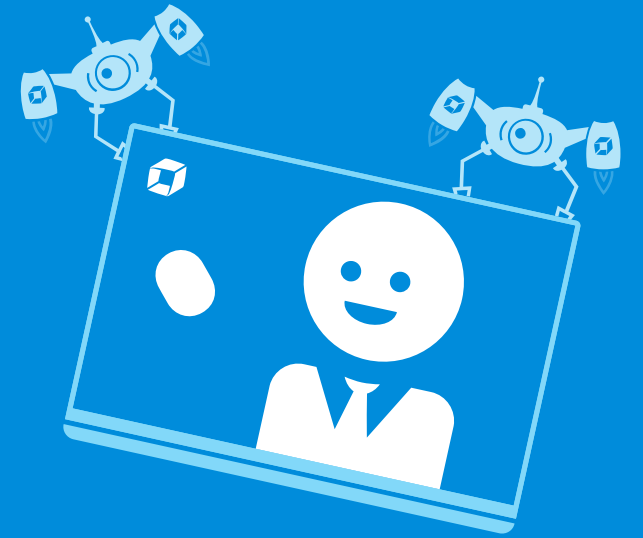
Start with a minimal DevOps

Check your monitoring solution future readiness

No Monitoring in place? – Checkout Dynatrace



Monitoring redefined



Klaus Enzenhofer

Director Technology Strategy

 klaus-enzenhofer

 @kenzenhofer