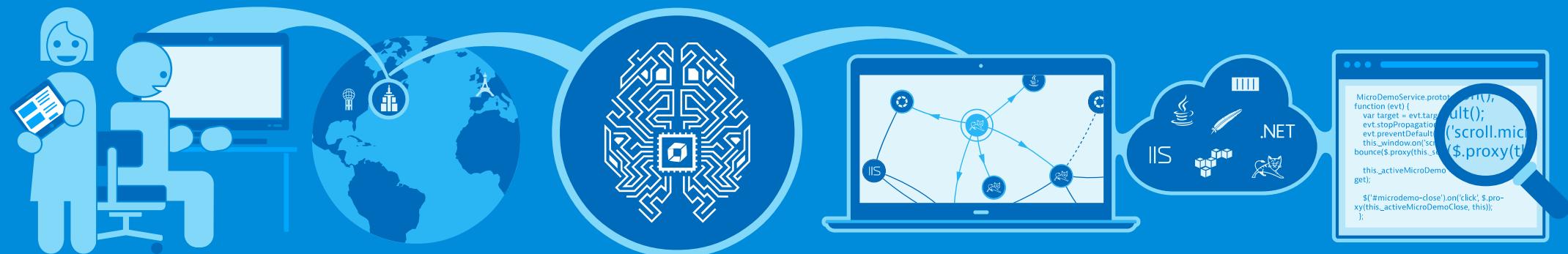


OpenStack 全栈故障诊断和监测

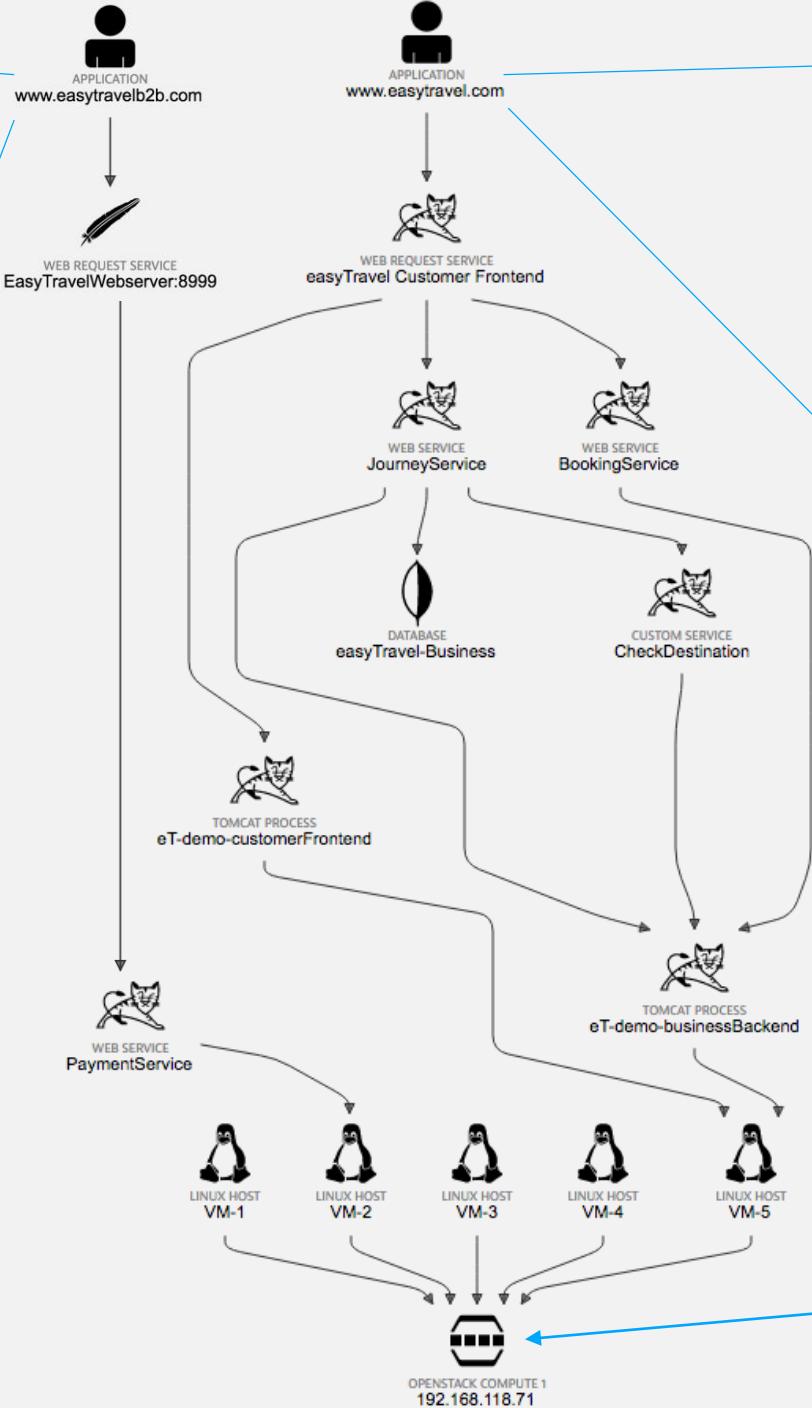
2017年7月25日

Wilson Lai

大中华区技术总监



Welcome to the easyTravel Administration Portal



CHINA
OpenStack Days

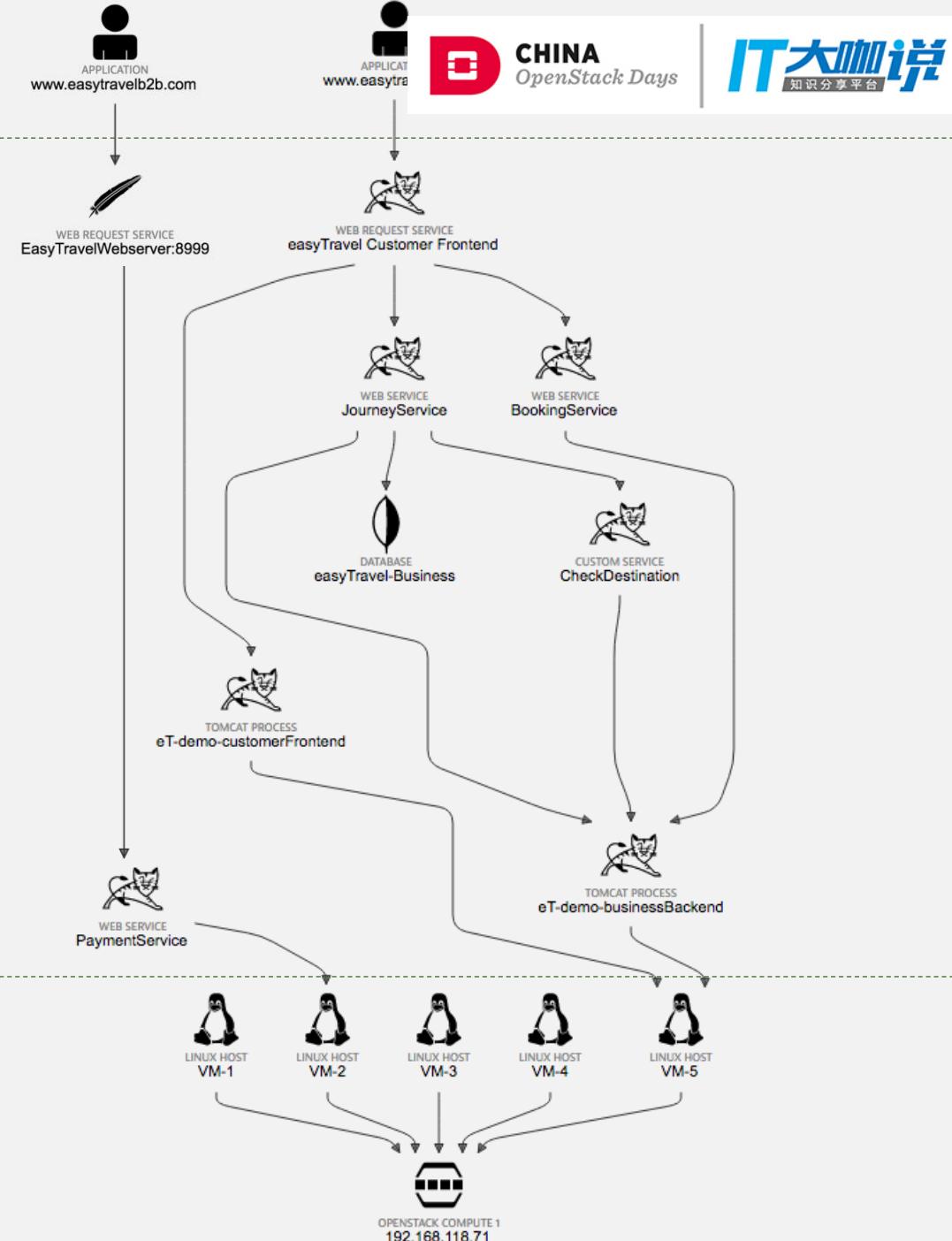
IT大咖说
知识分享平台

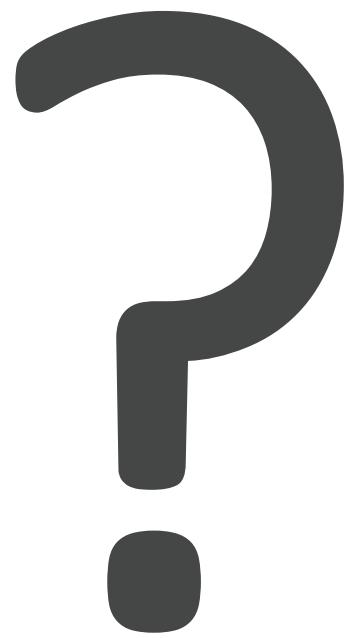
openstack®

用户体验是非常重要的！

云是关于应用程序

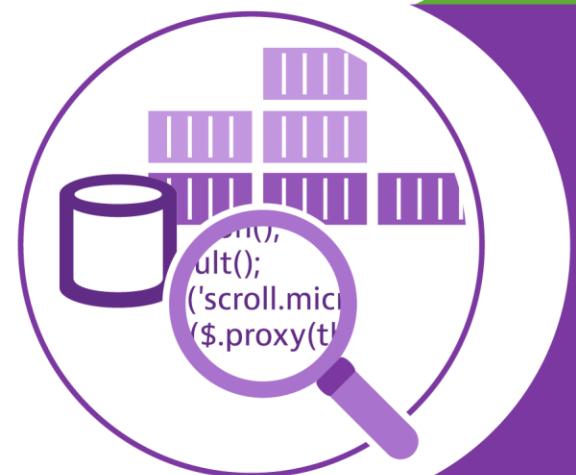
你好，我是云



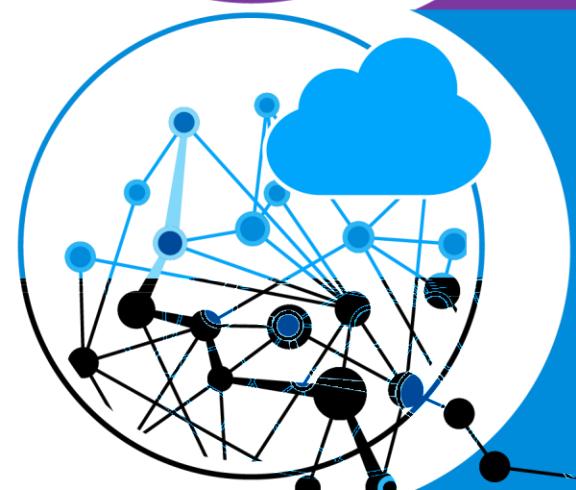




浏览器



应用 - 与Web服务器



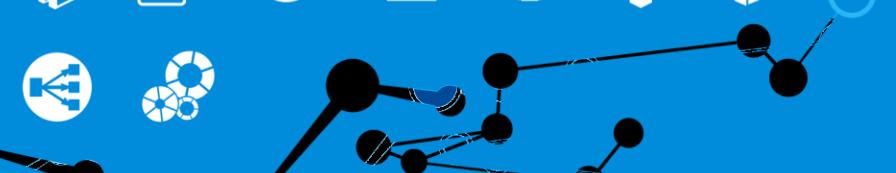
操作系统, 磁盘



云端



网络



OneAgent

发现, 建模与分析

One Agent 监视所有项目





Keystone

Properties

6 Processes → 11.2 kbit/s Traffic → 100% Connectivity → OpenStack → 221 ms Response time → 0.18 % CPU → 3.37 GB Memory → 8 Processes

System performance

Keystone metrics

Response time

Service status

No problems in last 72 hours

100% Availability in the last 7 days
0 min total downtime

No events today, 09:18 - 11:18

5 log files updated in last 72 hours

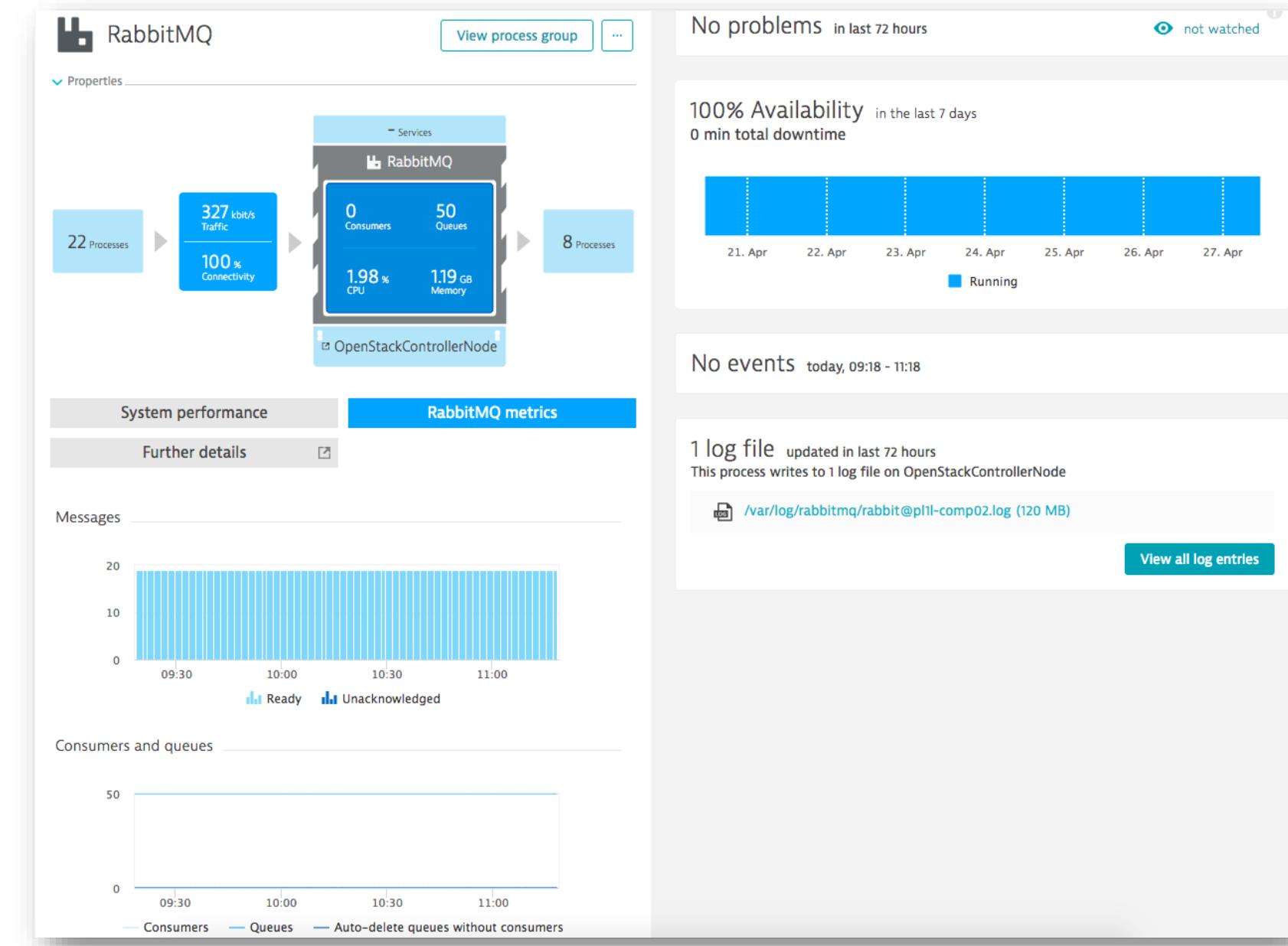
This process writes to 5 log files on OpenStackControllerNode

- LOG /var/log/apache2/access.log (40.5 kB)
- LOG /var/log/apache2/keystone.log (8.69 kB)
- LOG /var/log/apache2/keystone_access.log (1.36 MB)
- LOG /var/log/apache2/keystone_access.log.# (6.23 MB)
- LOG /var/log/keystone/keystone.log (150 kB)

[View all log entries](#)

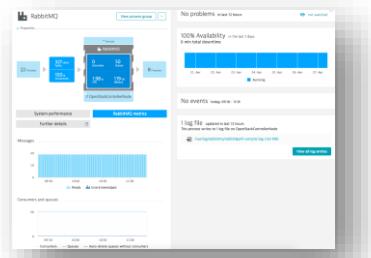


OpenStack 服务可用性/性能





OpenStack 服务可用性/性能



配套服务

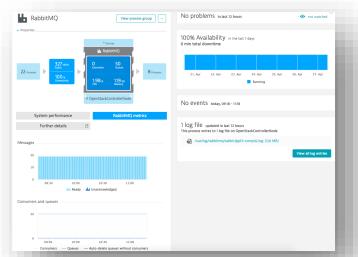
3 Compute nodes 1 Project

Start typing to filter...

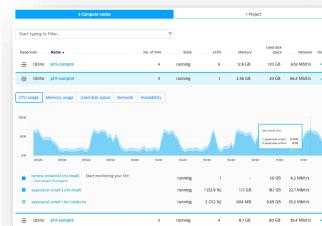
Hypervisor	Name	No. of VMs	State	vCPU	Memory	Used disk space	Network	Details
QEMU	pl11-comp03	4	running	6	12.8 GB	120 GB	67.6 Mbit/s	
QEMU	pl11-comp04	3	running	1	2.56 GB	20 GB	66.4 Mbit/s	
CPU usage Memory usage Used disk space Network Availability								
<p>2017-04-27 11:13</p> <p>easytravel-small-1: 6.74% easytravel-small-2: 63%</p>								
lirona-instance3 (m1.small)	Start monitoring your VM Download OneAgent	running	1	-	20 GB	8.2 Mbit/s		
easytravel-small-2 (m1.small)		running	1 (32.9 %)	1.17 GB	18.1 GB	22.7 Mbit/s		
easytravel-small-1 (m1.medium)		running	2 (7.12 %)	604 MB	9.69 GB	35.5 Mbit/s		
QEMU	pl11-comp05	3	running	4	8.7 GB	80 GB	39.4 Mbit/s	



OpenStack 服务可用性/性能



配套服务



资源能力与使用情况

Log viewer
Here you can browse through the contents of individual process log files or search selected log files using keywords and filtering. Search queries can be saved and reused later. Log results can be returned in either raw or aggregated form.

Search for text pattern in selected log files using [advanced query language](#) (or leave blank to return all results):
For example, ("internal exception" OR error) AND NOT repeat*

Selected log files:

5 logs on Keystone running on OpenStackControllerNode selected (7.9 MB) Change selection

Download log files Display log

Logs summarized to 22 groups. View chart by log level

Share Export results

100

0

09:20 09:30 09:40 09:50 10:00 10:10 10:20 10:30 10:40 10:50 11:00 11:10 11:20

Other Warning

▲ Level Count Source Signature

#	▲ Level	Count	Source	Signature
1	warning	19	(oslo_log.versionutils):	2017-04-27 0* WARNING Deprecated: * of the v2 Authentication APIs is deprecated as of Mitaka in favor of a similar function in the v3 Authentication APIs.
2	warning	14	(oslo_log.versionutils):	2017-04-27 0* WARNING Deprecated: *ts of the v2 API is deprecated as of Mitaka in favor of a similar function in the v3 API and may be removed in Q.
3	warning	5	(keystone.common.wsgi):	2017-04-27 08:0* WARNING Authorization failed. The request you have made requires authentication. from 172.18.160.67
4	warning	2	(keystone.common.manager):	2017-04-27 0*:00:02* WARNING Deprecated: Direct import of driver 'keystone.token.persistence.backends.sql.Token' is deprecated as of Liberty in favor of its endpoint from 'keystone.token.persistence' and may be removed in N.
5	warning	1	(keystone.common.wsgi):	2017-04-27 08:58:29,124 WARNING Could not find user: lwrone_admin
6	4120			172.18.160.67 - - [27/Apr/2017:0* +0000] "GET /v3/auth/tokens HTTP/1.1" 200 5* "-" "python-keystoneclient"
7	243			172.18.160.67 - - [27/Apr/2017:0* +0000] "POST /v*/tokens HTTP/1.1" * "-" "+keystoneauth1/2.4.1 python-requests/2.9.1 CPython/2.7.12"

云是关于应用程序

 **easyTravel Customer Frontend**
Last call 39 seconds ago

Properties and tags

0 Application
1 Service

2.04k/min Throughput
1 Apache Tomcat

4 Services
0 Database

Dynamic web requests

Response time: 29.7 ms
Failure rate: 0 %

CPU: 8.39 ms/req
Throughput: 197 /min

[View dynamic requests](#)

Resource requests

0.07 ms Response time
0 % Failure rate
0.12 ms/req CPU
1.85k/min Throughput

[View resource requests](#)

 **easyTravelBusiness**
Seen recently

Properties and tags

3 Services
1 Derby Client

773 /min Throughput

SQL Modifications

Response time: 0.83 ms
Failure rate: 0 %

Throughput: 11 /min

[Show database statements](#)

SQL Queries or Procedures

Response time: 1.4 ms
Failure rate: 0 %

Throughput: 705 /min

[Show database statements](#)

3 Problems in last 72 hours
not watched

 High consumption of service resources 30 %
`select location0_.name as name1_2_0_ from Location location0_ where location0_.name=?`

 Slow response time 47.3 ms
`select count(booking0_.id) as col_0_0_ from Booking booking0_ where booking0_.user_name=>?`

Understand dependencies Yesterday, 05:56 - Today 05:56

 Understand all dependencies and response time contributions
[View service flow](#)

 Understand which user actions and related services are dependent on this service
[Analyze backtrace](#)

No events yesterday, 05:56 - today 05:56

庆祝个人的力量

Applications > www.easytravel.com

Actions /min, Action duration, Apdex rating, JavaScript errors, 3rd party providers and Services.

65 % New... Top users
93 % Real... Top user types
View geographic breakdown

19.4 /min Active sessions
5.1 Actions per session

Entry actions: 14.0 s Action duration
Other actions: 69.8 s Action duration
Exit actions: 10.2 s Action duration

39.2 % Bounce rate
11.1 % Overall conversion

Active sessions
Watch the activity trend of your users. At which time are the most sessions and when are users starting to use the application.



— Active sessions — Started sessions — Ended sessions

17 Problems Apr 29 2017, 02:52 - today 02:52

watched

Top conversion goals
See the conversion rate of your defined goals.

Successful Bookings - open ... 11.6 %
Successful Bookings - click ... 0.3 %

[View full details](#)

Top 3 bounces
See which user actions lead to a bounce.

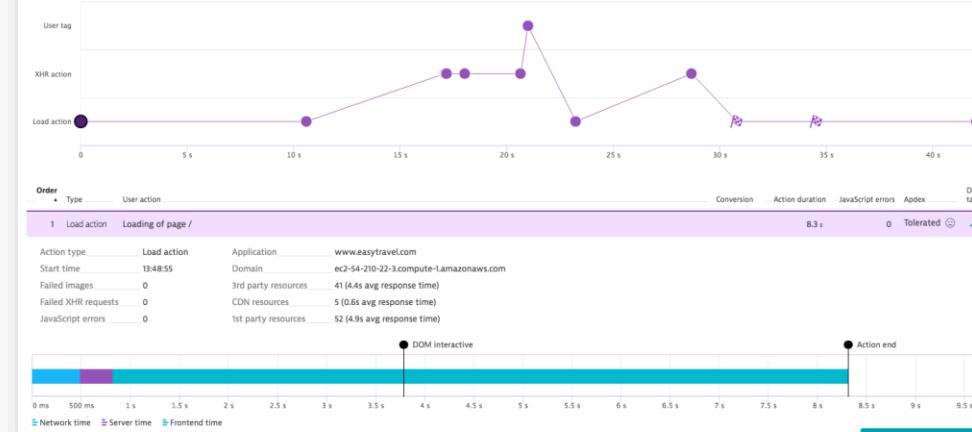
Type	User action	Bounce rate	Sessions	Duration
Loading of page	/contact-orange-mot	100.0 %	117	7.69 s
Loading of page	/legal-orange-mobile	100.0 %	90	5.88 s
Loading of page	/privacy-orange-mot	100.0 %	87	6.86 s

[View full details](#)

Session details
Duration: Today, 13:48 - 13:49 (49 s)

Synthetic 1023 x 662
Windows 10 Operating system
Dynatrace Synthetic Browser
São Paulo, Brazil Geolocation
Level 3 Communications, Inc. Internet service provider
200186.94.194 IP address
maria User tag

15 User actions
1 application: www.easytravel.com
This chart shows the sequence of user actions, when the actions occurred during the session, and the wait time between actions.



相关(Correlation)

- 相关统计的措施，指出在何种程度上的两个或两个以上的变量是否一起波动。



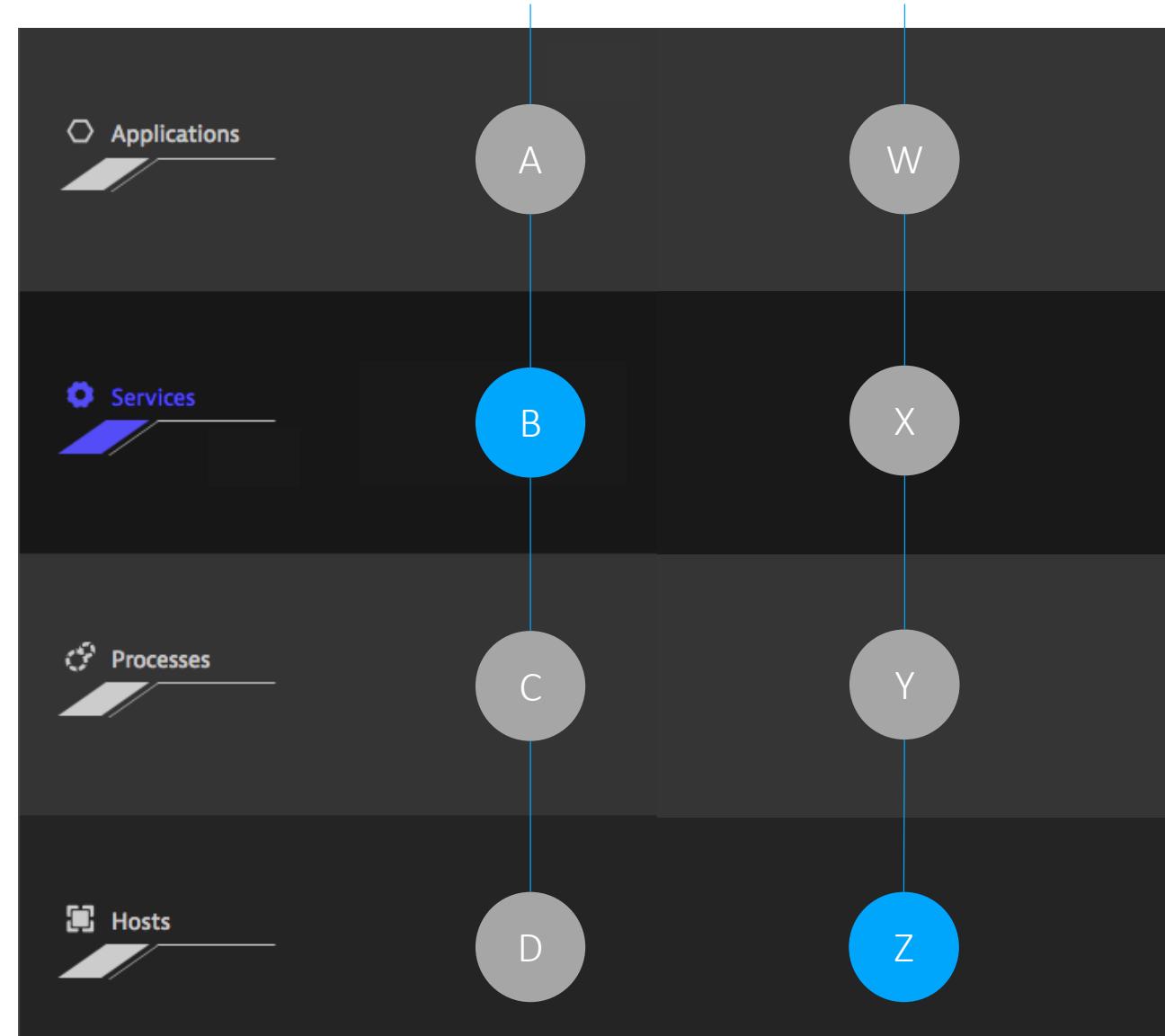
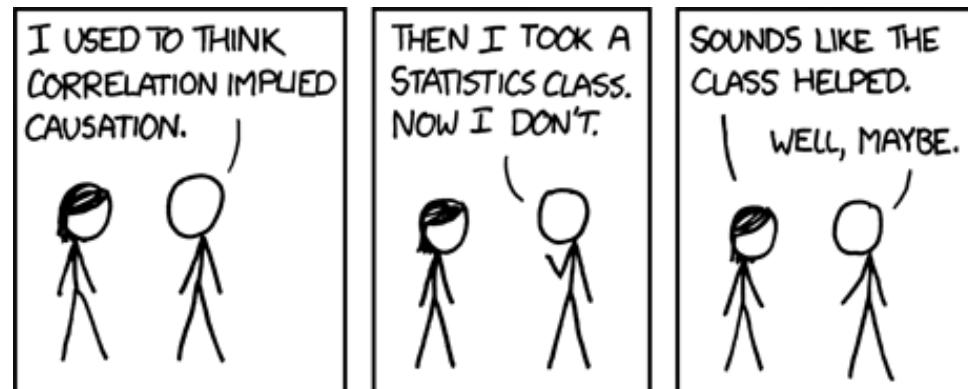
相关性并不意味着因果关系

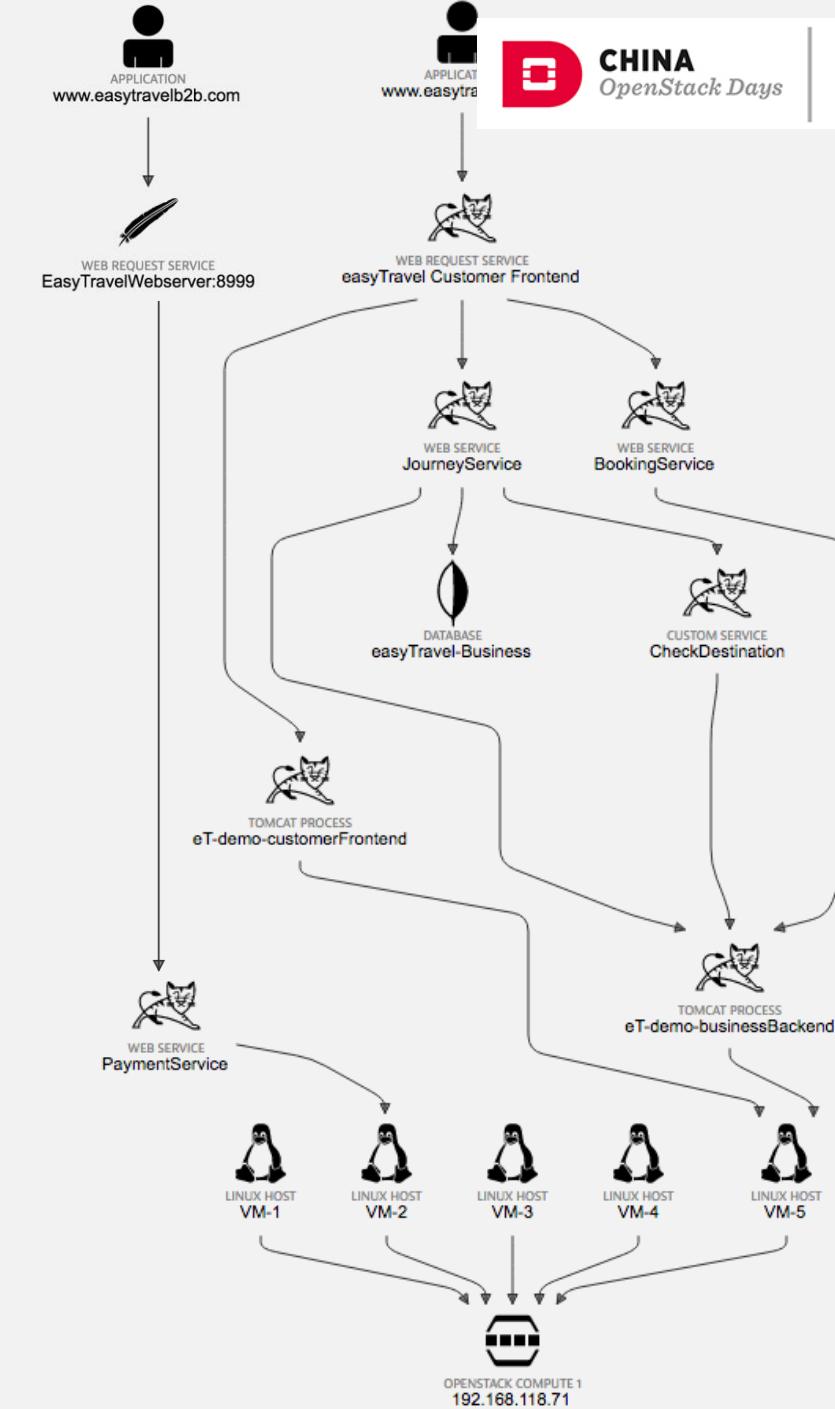


BookingService 反应时间
增加了2秒



主机 CPU > 90%







PaymentService

Response time

Failure rate

CPU

Throughput

View Median Slowest 10 % Slowest 5 %

Server response time

Response time degradation

Show problem details

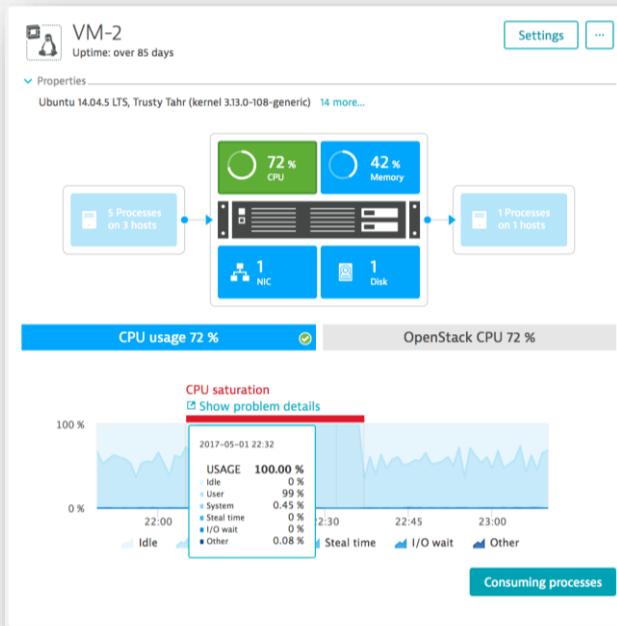


Analyze all requests during this event's time frame. Today, 01:57 - 02:30

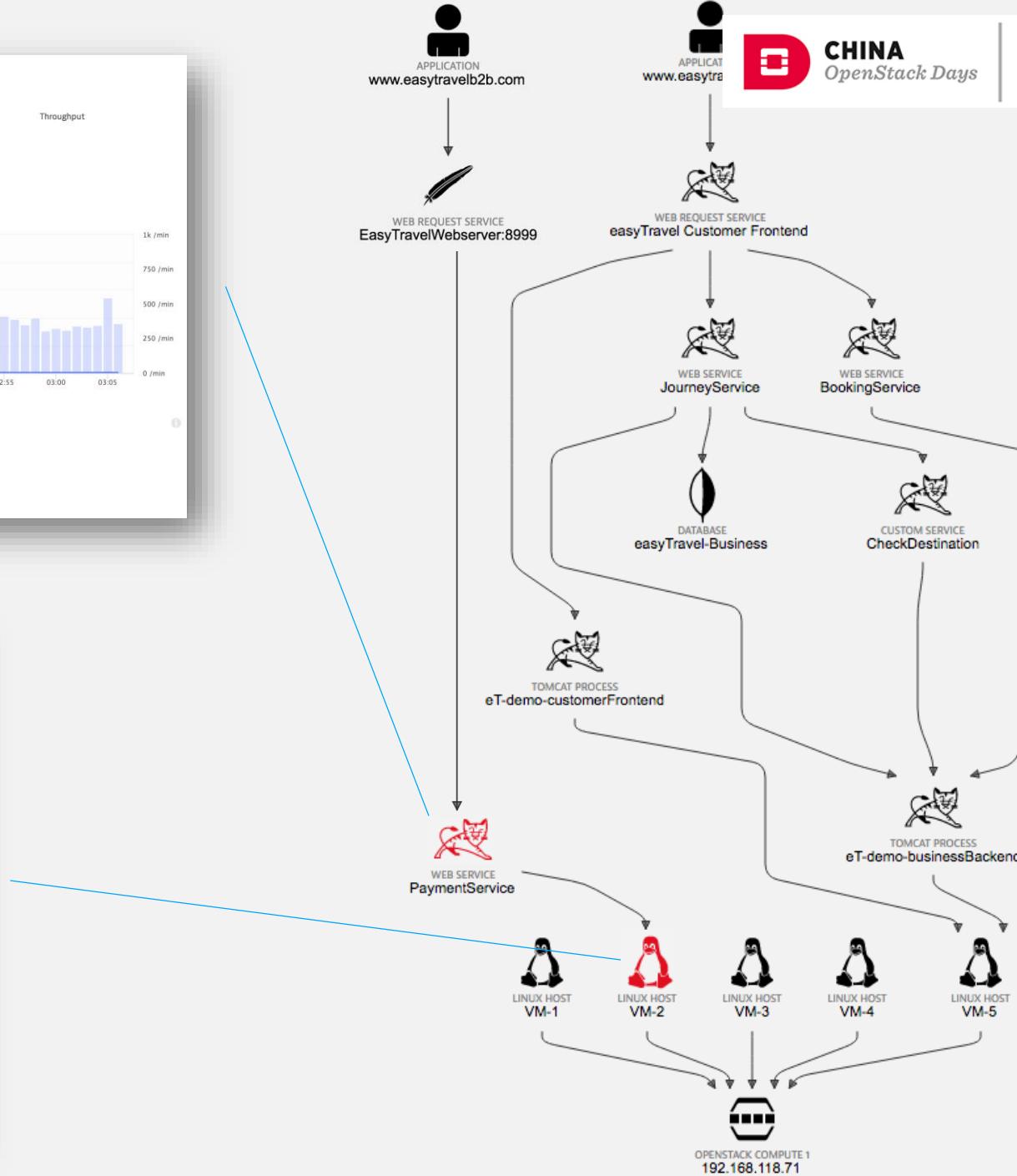
Analyze code level, database calls, and outgoing requests.
View response time hotspots

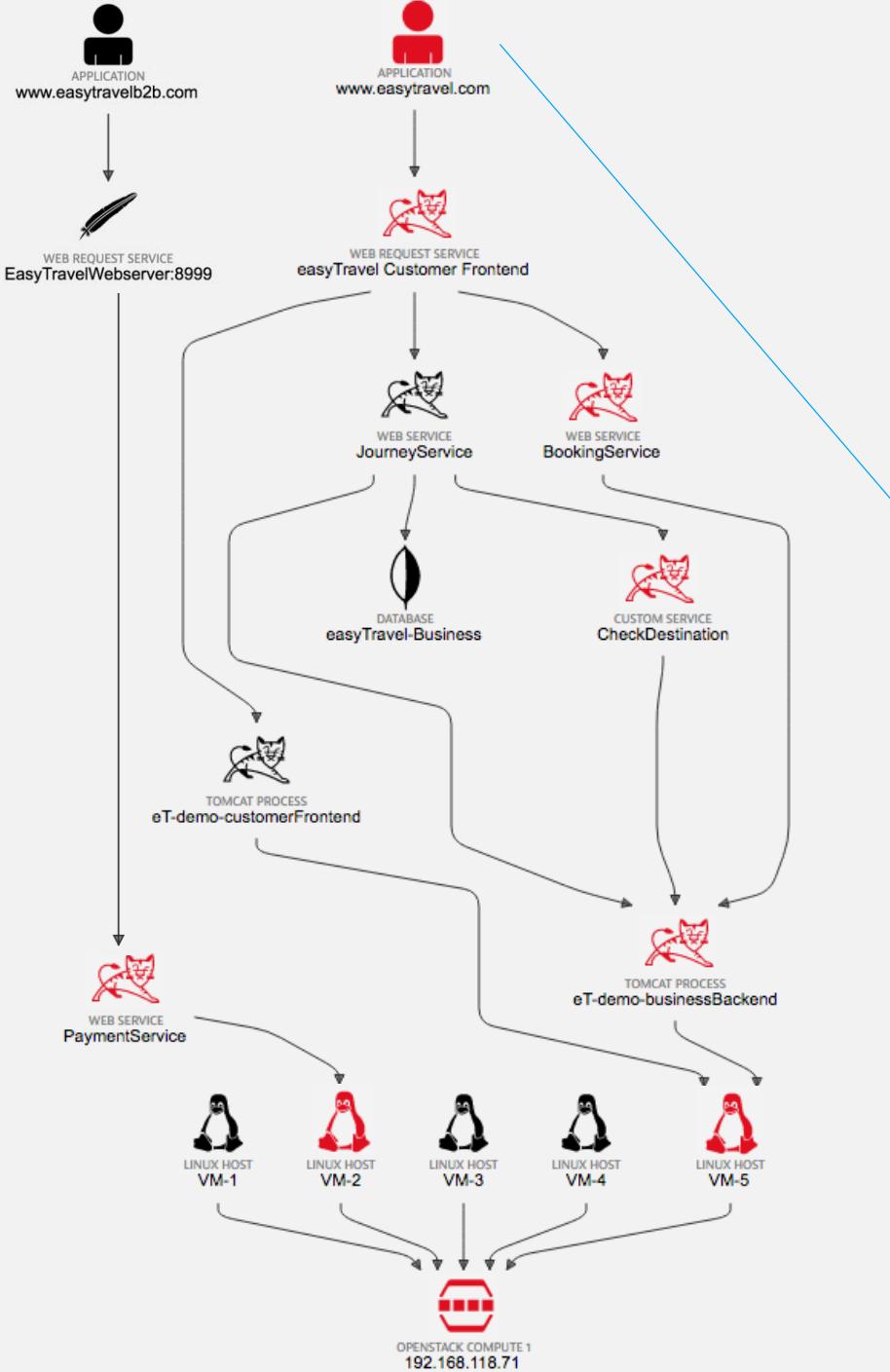
See how response times vary across requests during the selected period.
Analyze outliers

Looking for more? More analyses and drill-downs...
More...



IT大咖说
知识分享平台





The screenshot shows a performance analysis dashboard for the website www.easytravel.com.

Performance analysis: Actions /min, Action duration, Apdex rating, JavaScript errors, 3rd party providers and Services.

Resources:

- 0.0 /action 3rd party/CDN resources
- 22.3 /action Resources
- 1 Services

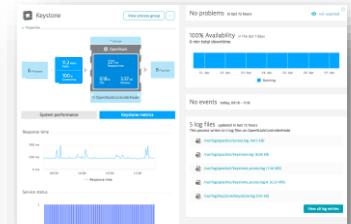
Actions: Show the slowest 10% of actions for all actions.

Impact of user activity on action duration: User action duration degradation. The chart shows a significant spike in action duration around 02:00-02:30, with a peak of approximately 150 seconds.

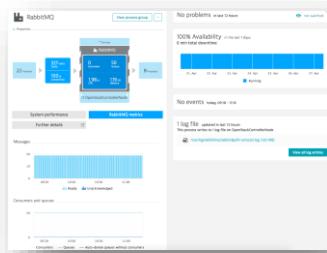
Top 3 user actions:

- Loading of page / Actions 0.93 /min
- Loading of page /Report Actions 0.87 /min
- Loading of page /Booking Actions 0.85 /min

User behavior: Active sessions, Actions per session, Entry/Exit actions, Bounce rate, and Conversion goals.



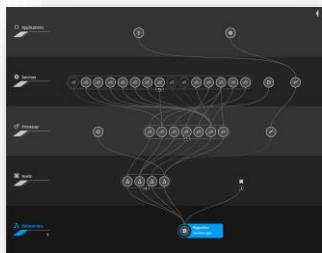
OpenStack 服务可用性/性能



配套服务



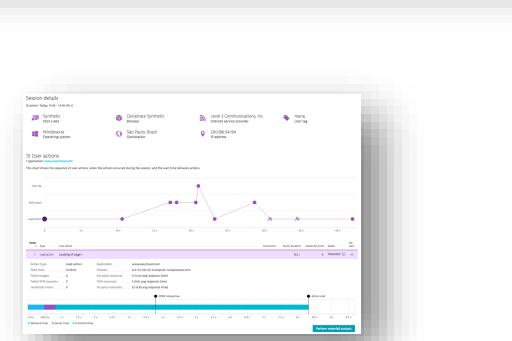
资源能力与使用情况



依赖



度量/事件/数据的相关性



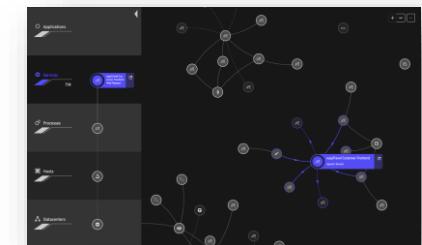
真实用户监控，用户体验影响 \$



PaaS

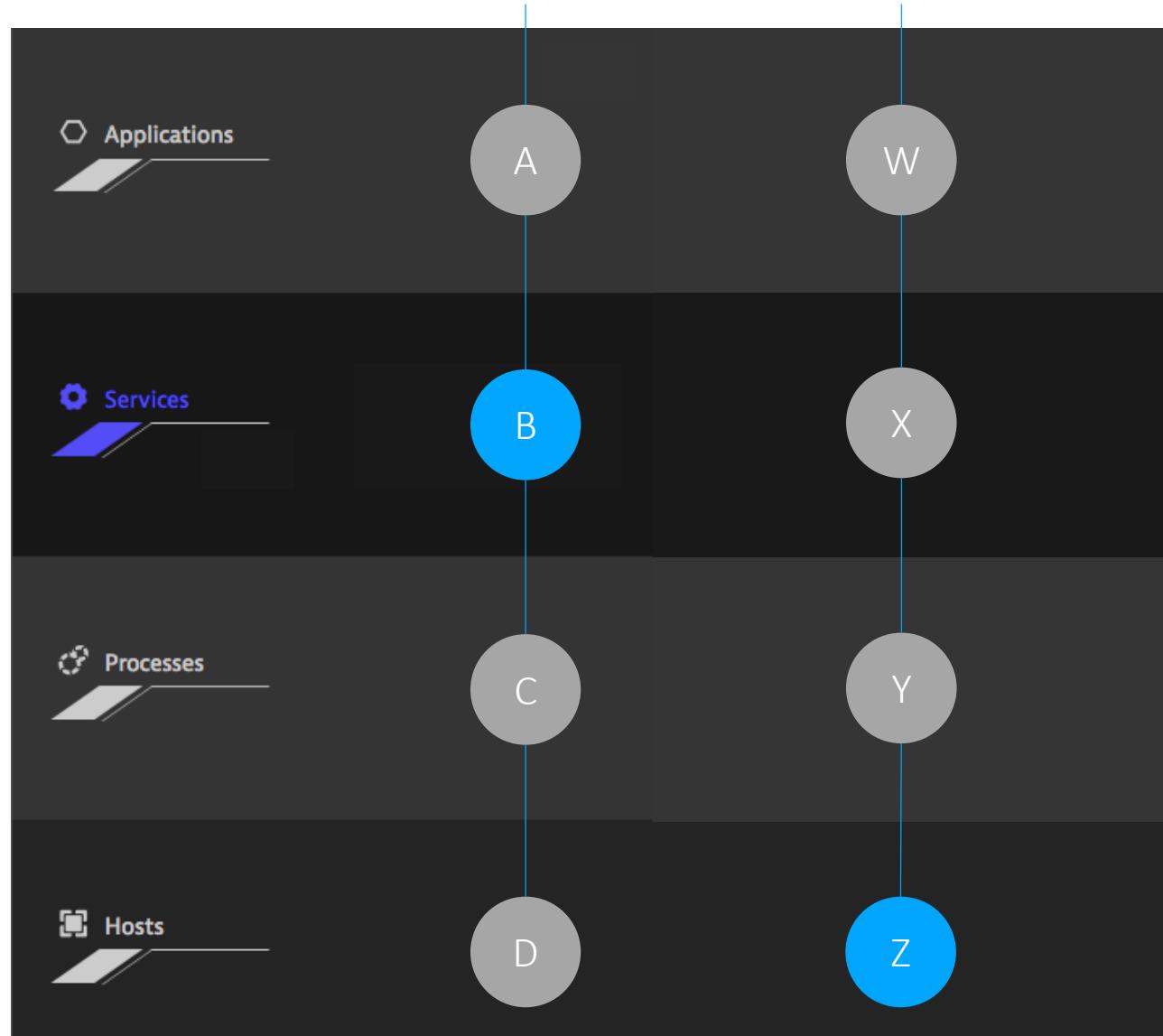


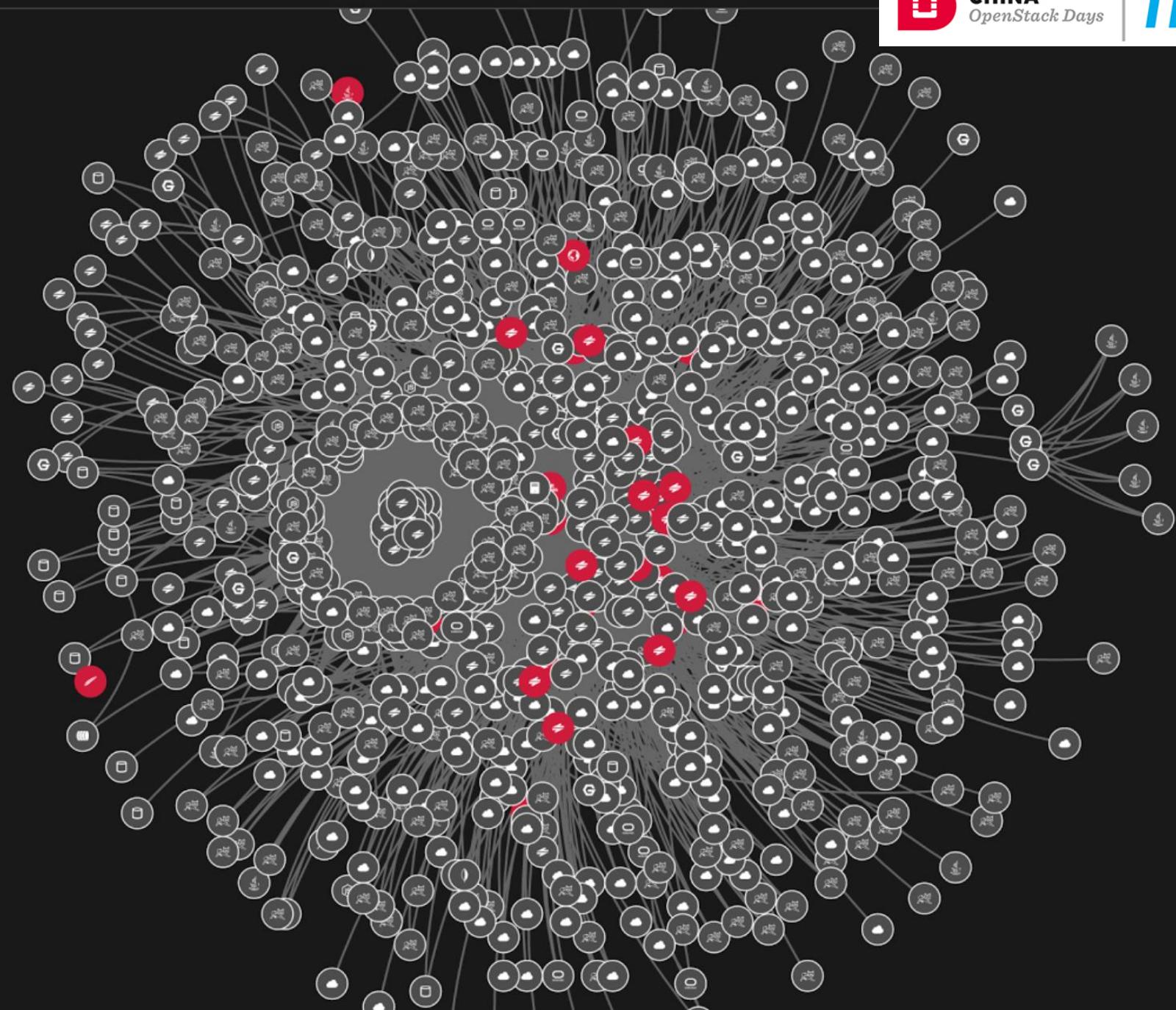
日志分析



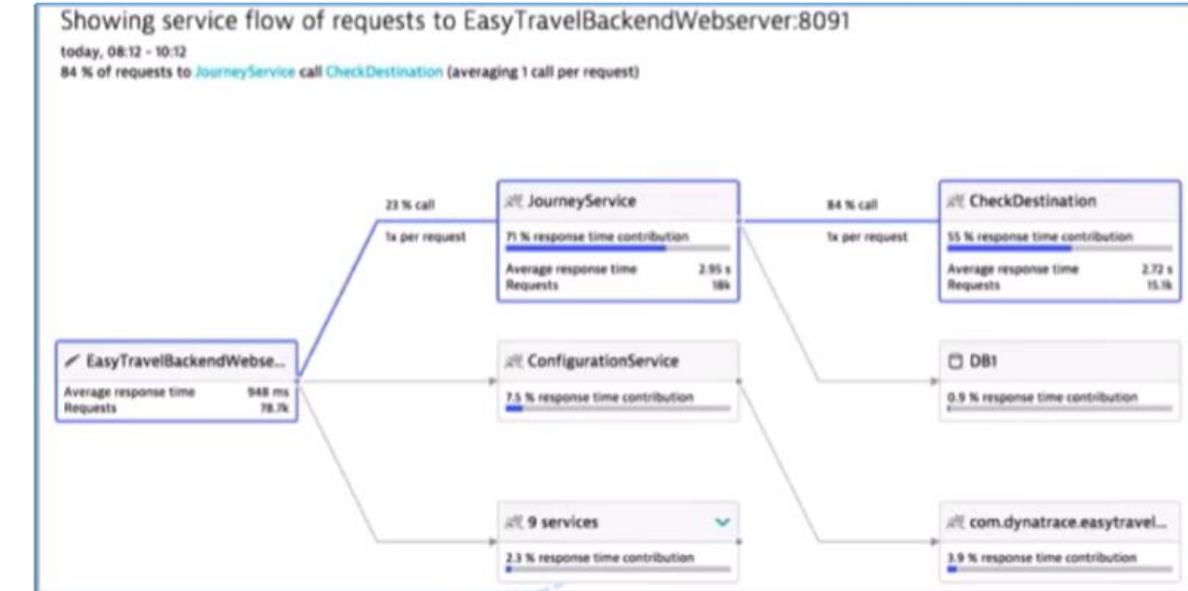
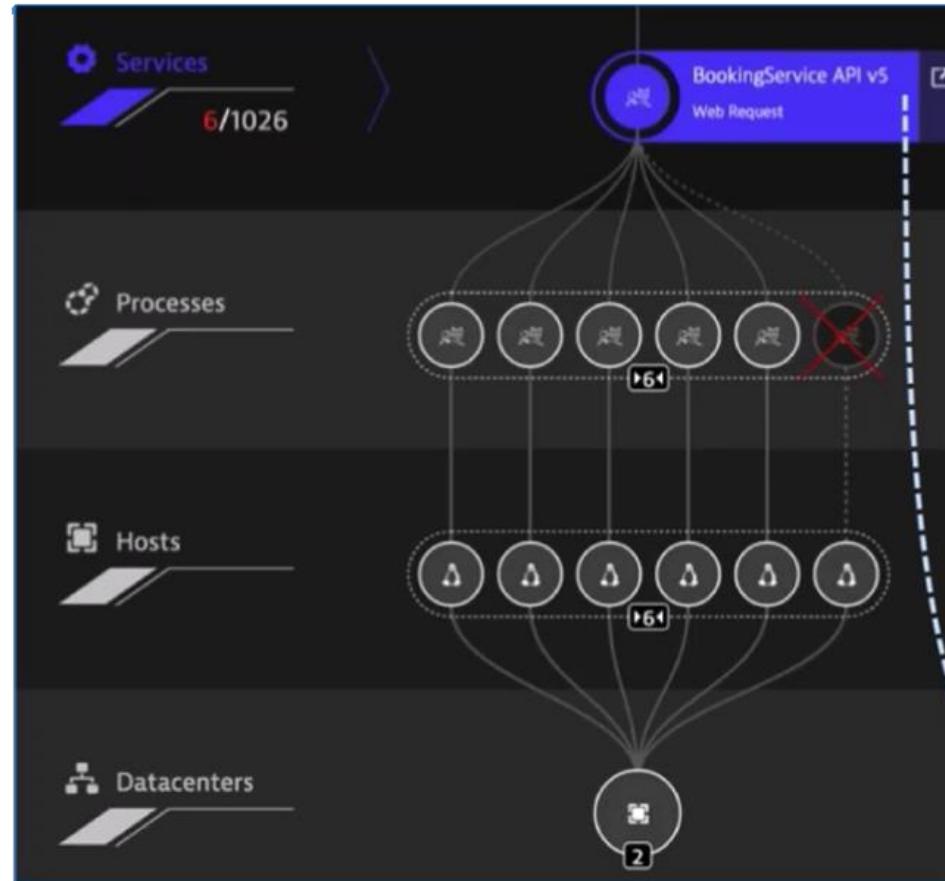
运行在顶部的应用程序

这不是一个
常规大小
的应用程序
环境！



Applications
9Services
30/3304Processes
3/10424Hosts
142Datacenters
7

让你面对新的问题



Search Dynatrace easyTravel: Demo...

Problems Problem 120

CHINA OpenStack Days

IT大咖说 知识分享平台

www.easytravel.com: User action duration degradation

Problem 120 detected at Jul 24 09:28 - Jul 24 10:19 (was open for 51 minutes).
This problem affects real users.

	Affected	Recovered	Monitored
Applications	-	1	30
Services	-	3	94
Infrastructure components	-	-	734

16,559,040 Dependencies analyzed

自动问题根源分析

Business impact analysis

An analysis of all affected service calls and impacted real users during the first 10 minutes of the problem shows the following potential impact.

 161 Impacted users	 167 Affected service calls
--	---

[▼ Show more](#)

1 impacted application

39.4 User actions per minute impacted

 www.easytravel.com Application
--

User action duration degradation

The current response time (13.6 s) exceeds the auto-detected baseline (268 ms) by 4,977 %

Affected user actions 39.4/min	User action click on "Login" on page /orange.jsf
-----------------------------------	---

Root cause

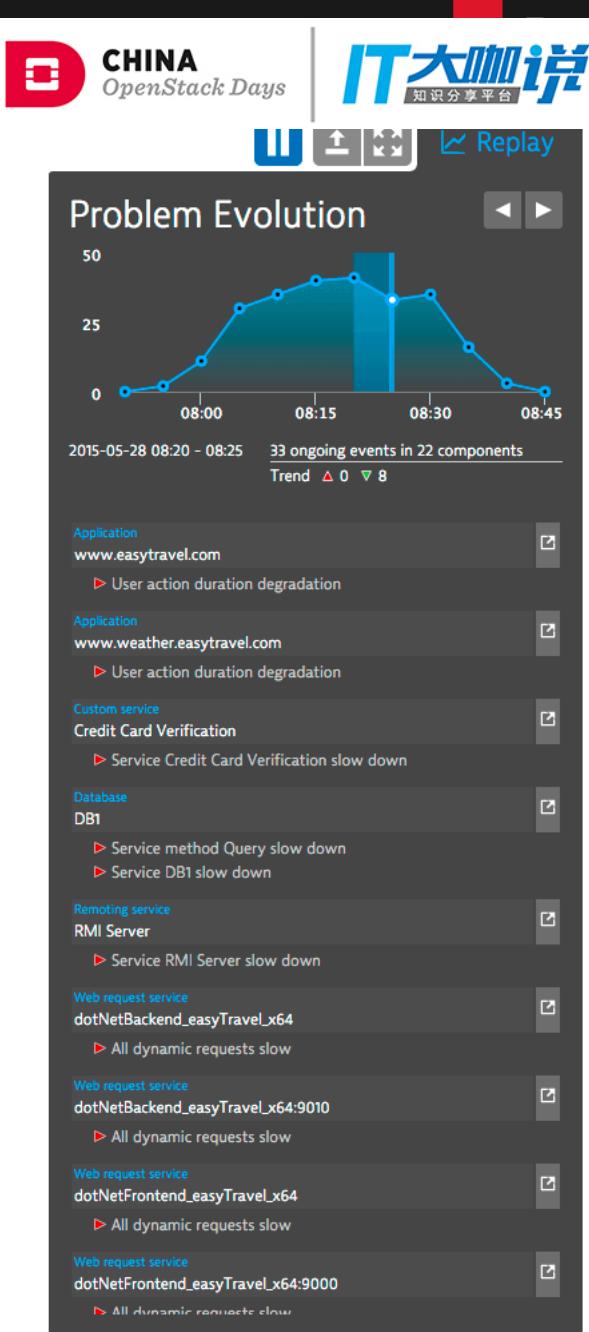
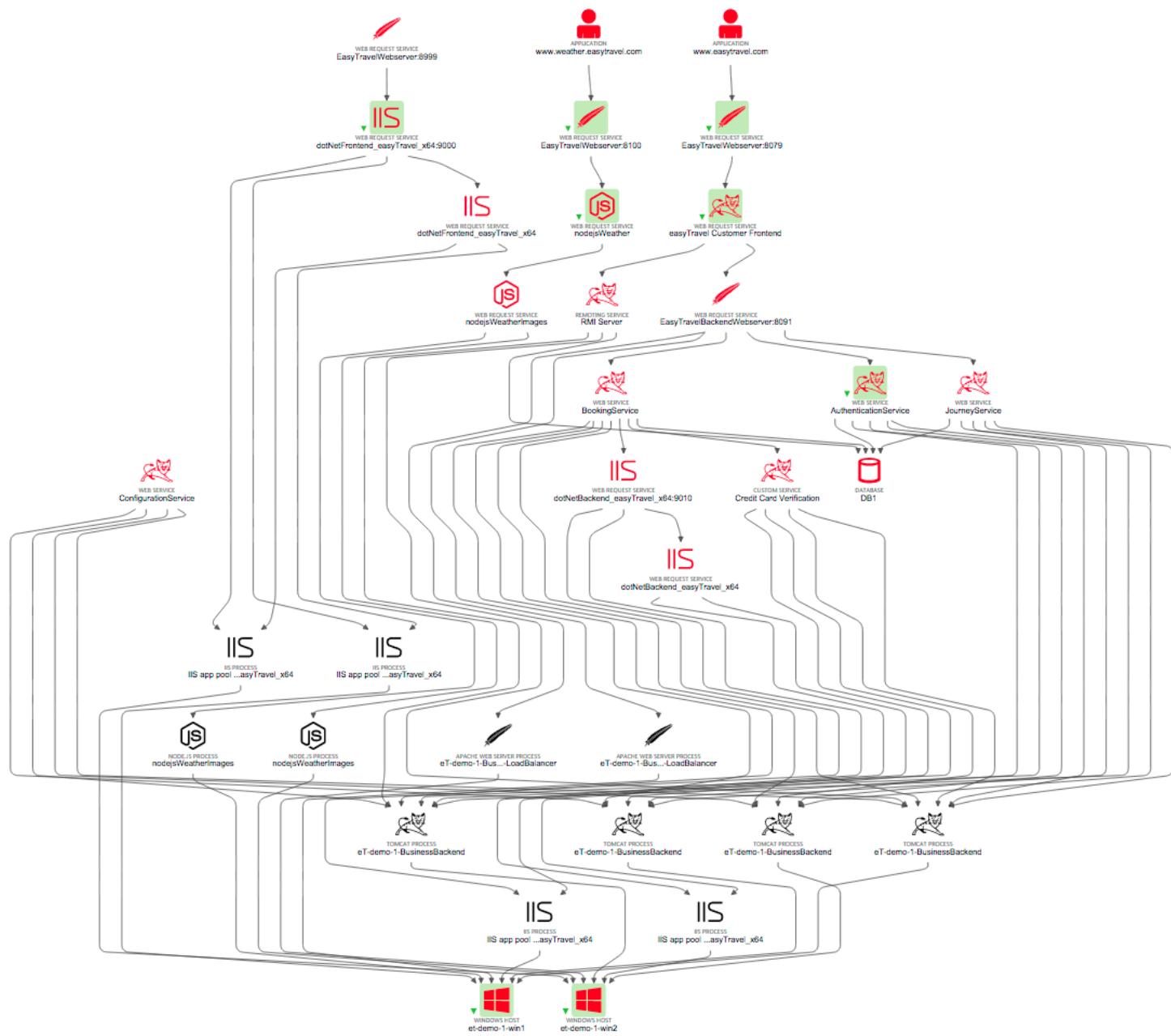
Based on our dependency analysis all incidents have the same root cause:

 AuthenticationService Web service	
 Response time degradation The current response time (3.24 s) exceeds the auto-detected baseline (29.9 ms) by 10,750 %	
Affected requests 36.8 /min	Service method All methods affected

Visual resolution path

Click to see how we figured this out.

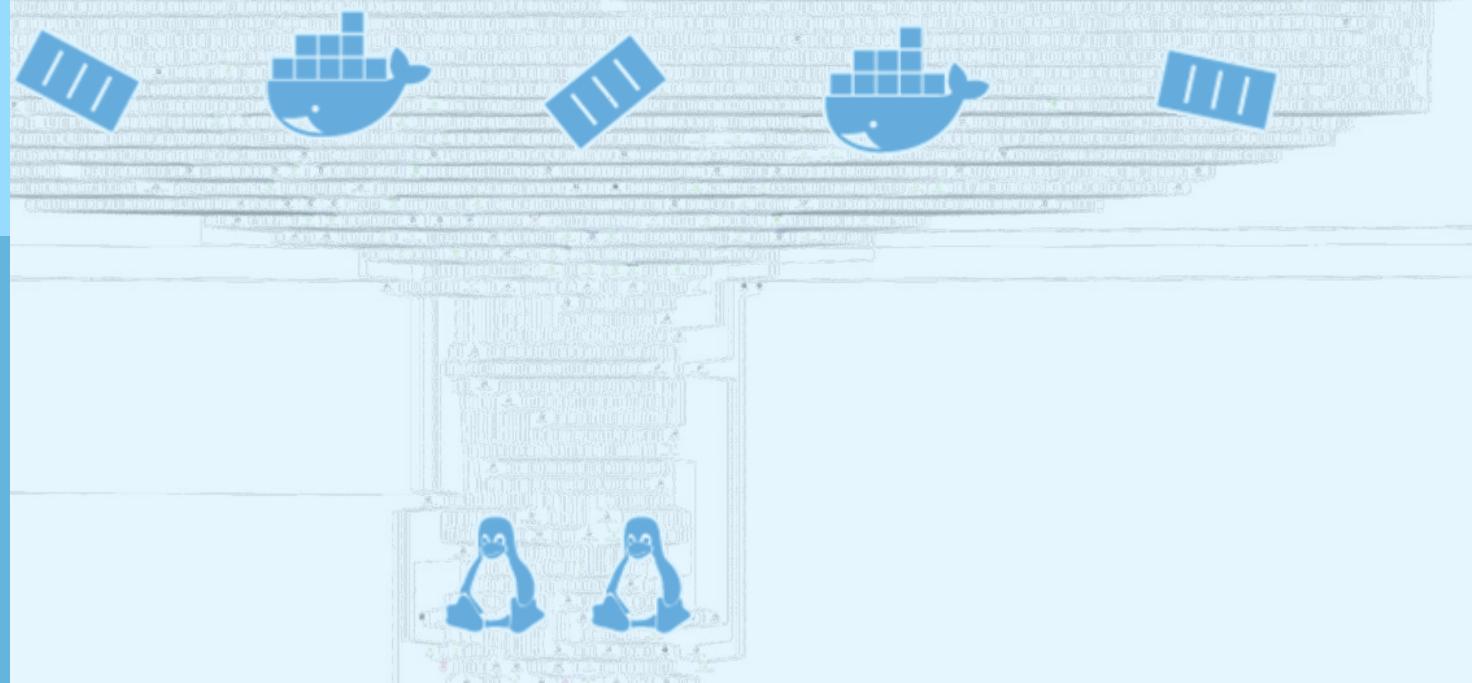




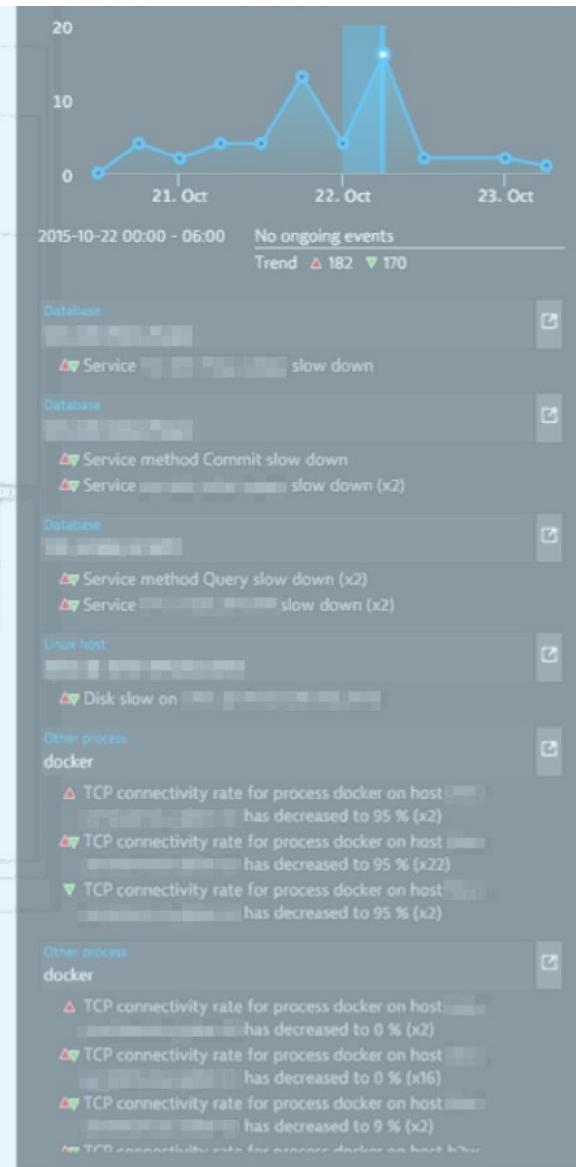
应用及服务



进程及容器



主机



你能大海捞针吗？

Problem 937 > Visual resolution path



Replay

Root cause
Based on our dependency analysis all incidents have the same root cause:

docker
Process Analyze Root Cause

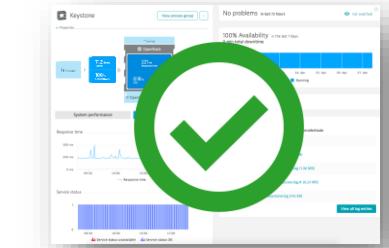
Connectivity problem ⚠
TCP connectivity rate for process docker on host b2w-persistencia-glete-03 has decreased to 95 %

docker
Process Since 10 h 43 m healthy again Analyze Root Cause

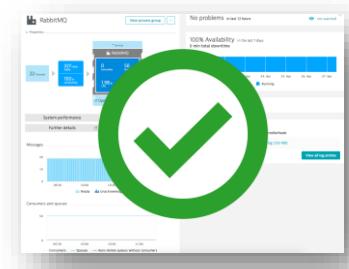
Connectivity problem ✔
TCP connectivity rate for process docker on host b2w-persistencia-glete-02 has decreased to 0 %

8200亿 依赖

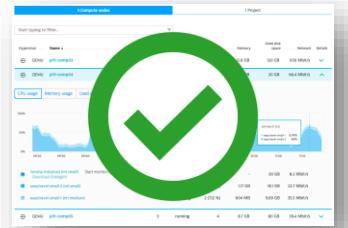
网络问题



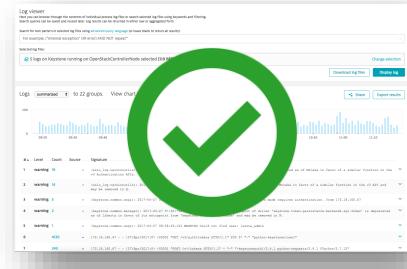
OpenStack 服务可用性/性能



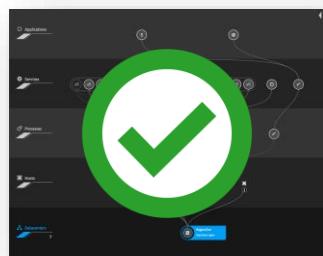
配套服务



资源能力与使用情况



日志分析

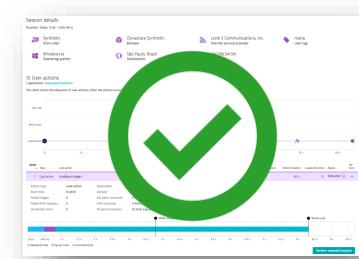


依赖

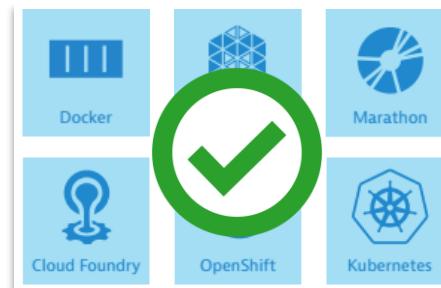
dynatrace



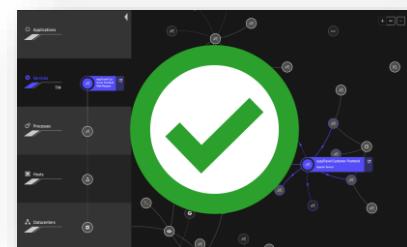
度量/事件/数据的相关性



真实用户监控，用户体验影响 \$



PaaS



运行在顶部的应用程序

更好的数据令 Dynatrace 人工智能可行

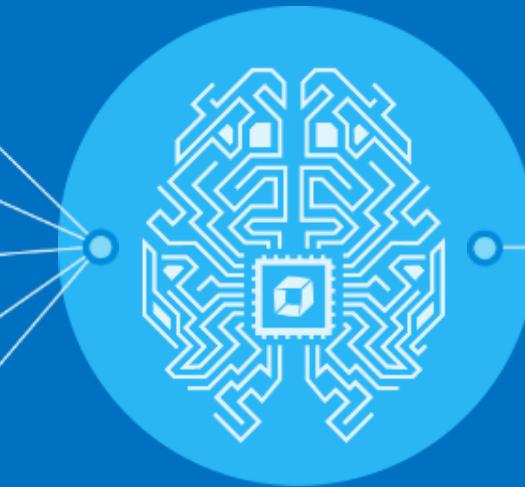
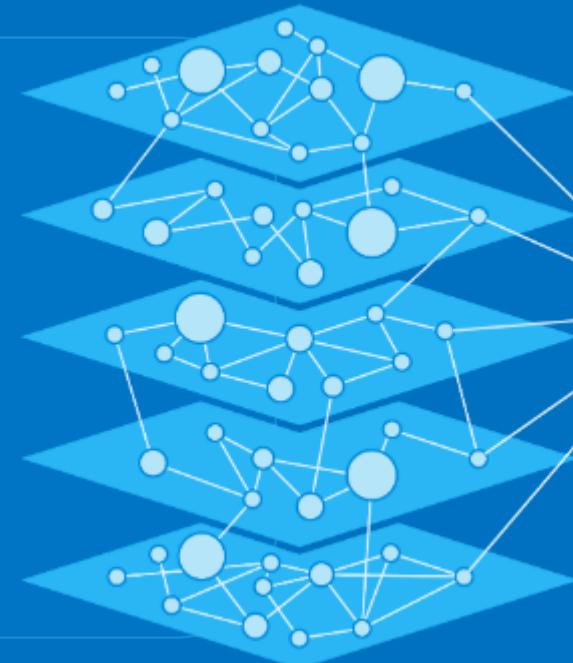
100% 高保真数据

端到端的连接

高级分析

可操作的见解

Mobile Application	Browser Synthetic
Code	Server
Database	Mainframe
Network	Log & Events
Container	API
Micro-service	Cloud



- 自动化的 workflows
- 自动检测问题
- 自动根原因分析
- 自然语言接口

所有交易 · 所有的时间

PurePath + SmartScape

内置的专家知识

因果关系给出答案

自动插装

实时依赖检测

自我学习 A.I.

全自动化

谢谢您！

Wilson Lai
Director of Sales Engineering

