

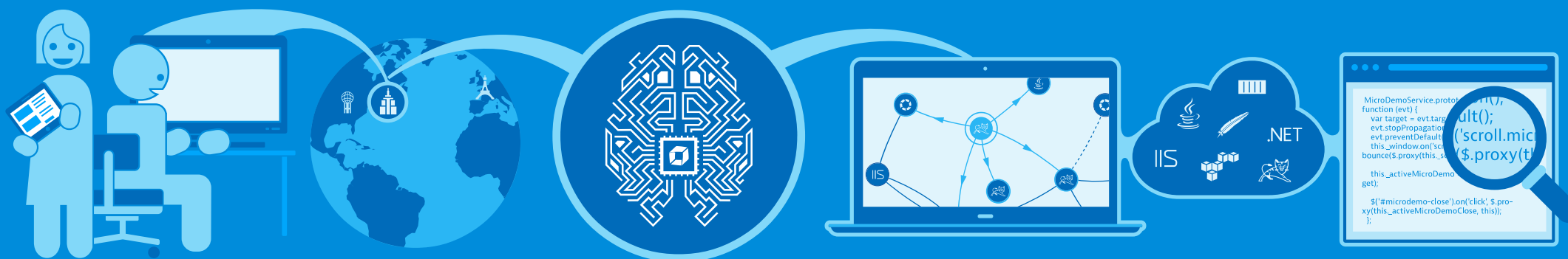


OpenStack 全栈故障诊断和监测

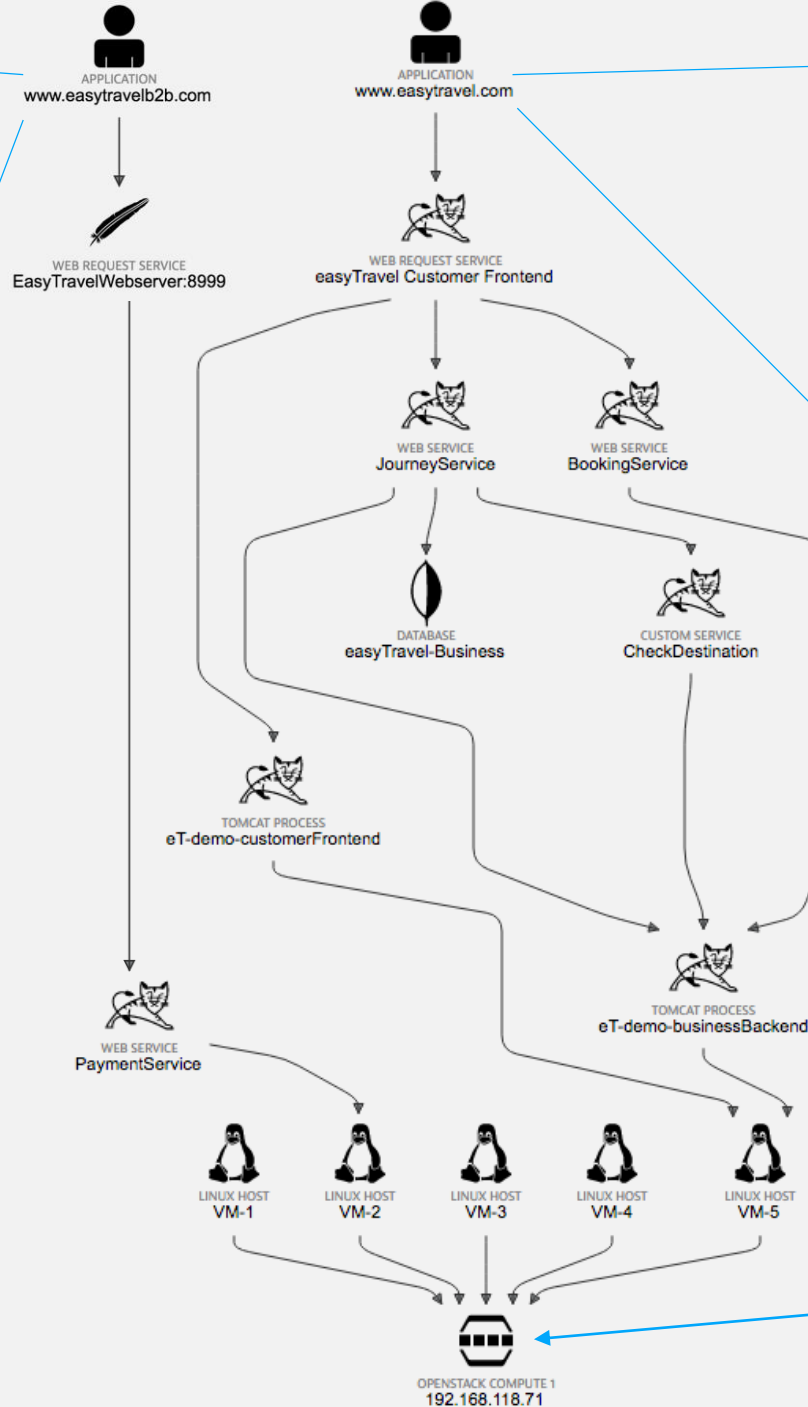
2017年7月25日

Wilson Lai

大中华区技术总监



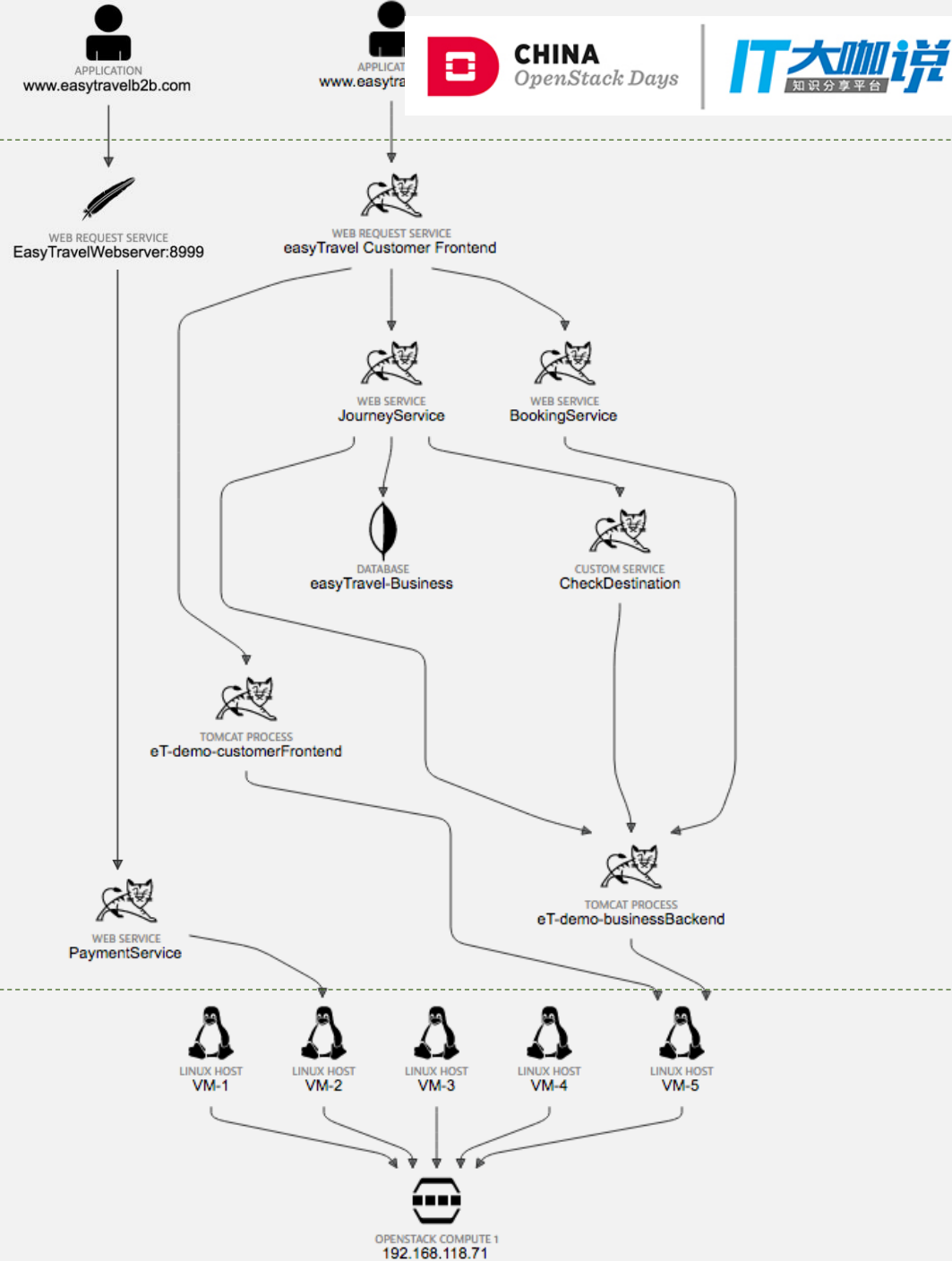
Welcome to the easyTravel Administration Portal

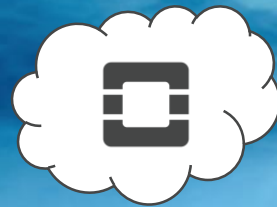
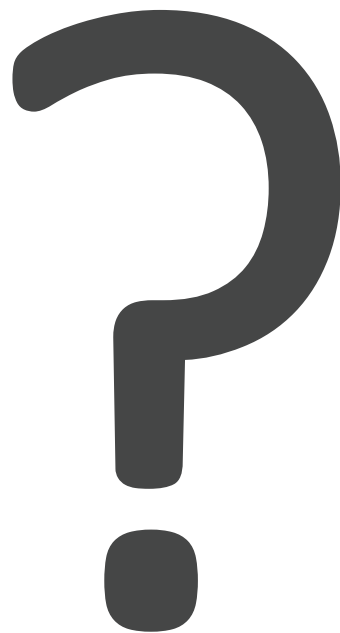


用户体验是非常重要的！

云是关于应用程序

你好，我是云





NOVA

an OpenStack Community Project



KEYSTONE

an OpenStack Community Project



NEUTRON

an OpenStack Community Project



CINDER

an OpenStack Community Project



GLANCE

an OpenStack Community Project





OneAgent

栈全

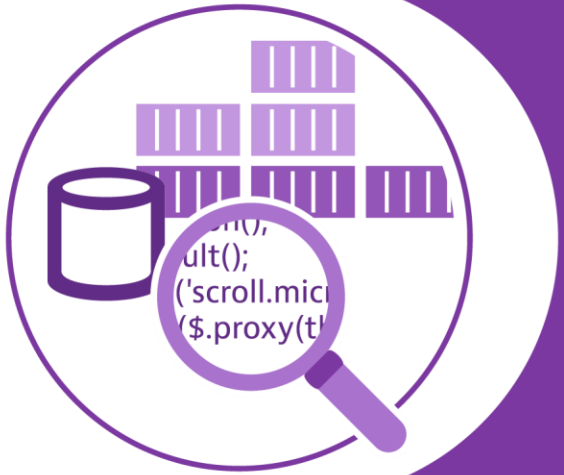
发现，建模与分析



浏览器

移动*

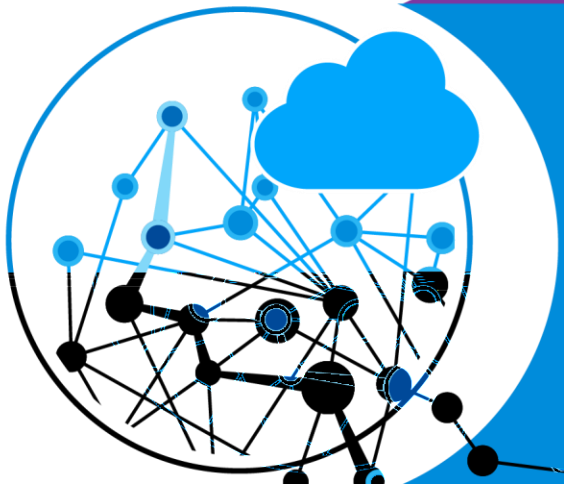
第三方



应用 - 与Web服务器

服务

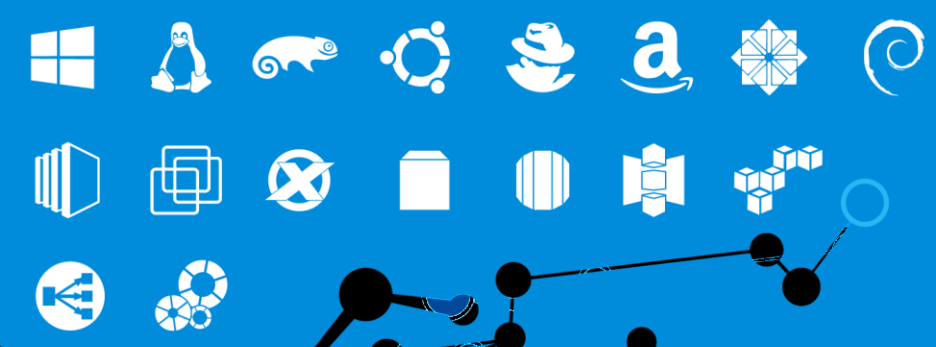
容器，进程，日志



操作系统，磁盘

云端

网络



One Agent 监视所有项目

php

IIS
.NET

Download Dynatrace OneAgent

Select the platform that your applications run on. By continuing you agree to our [Terms of Service](#).

Windows Linux

You can also monitor your PaaS platform.

Set up PaaS monitoring

2. And run the installer with root rights:

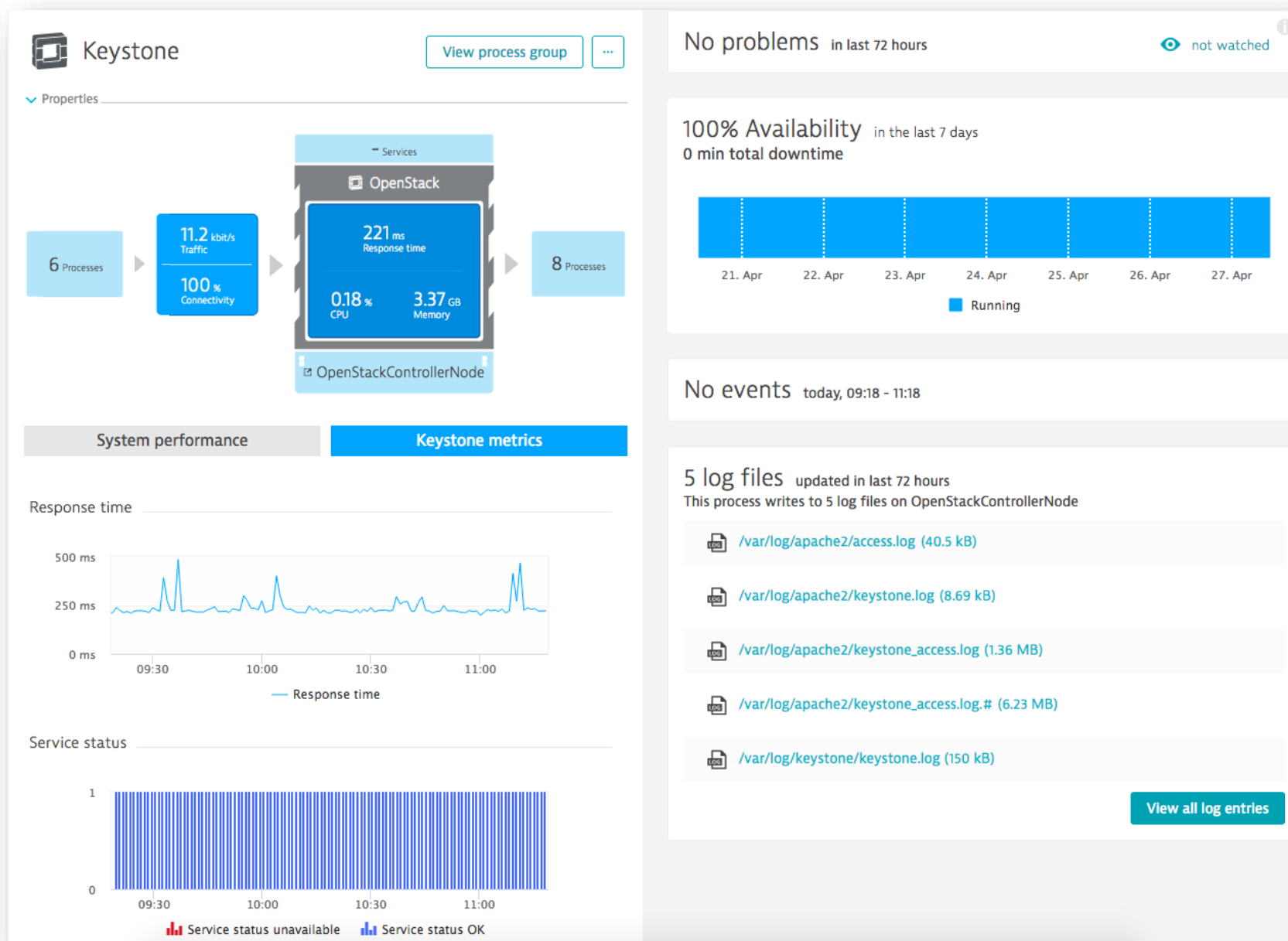
```
/bin/sh Dynatrace-OneAgent-Linux-1.109.173.sh APP_LOG_CONTENT_ACCESS=1
```

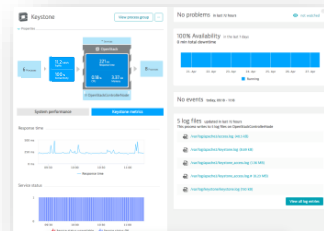
Copy

3. Restart the processes that you want to monitor.

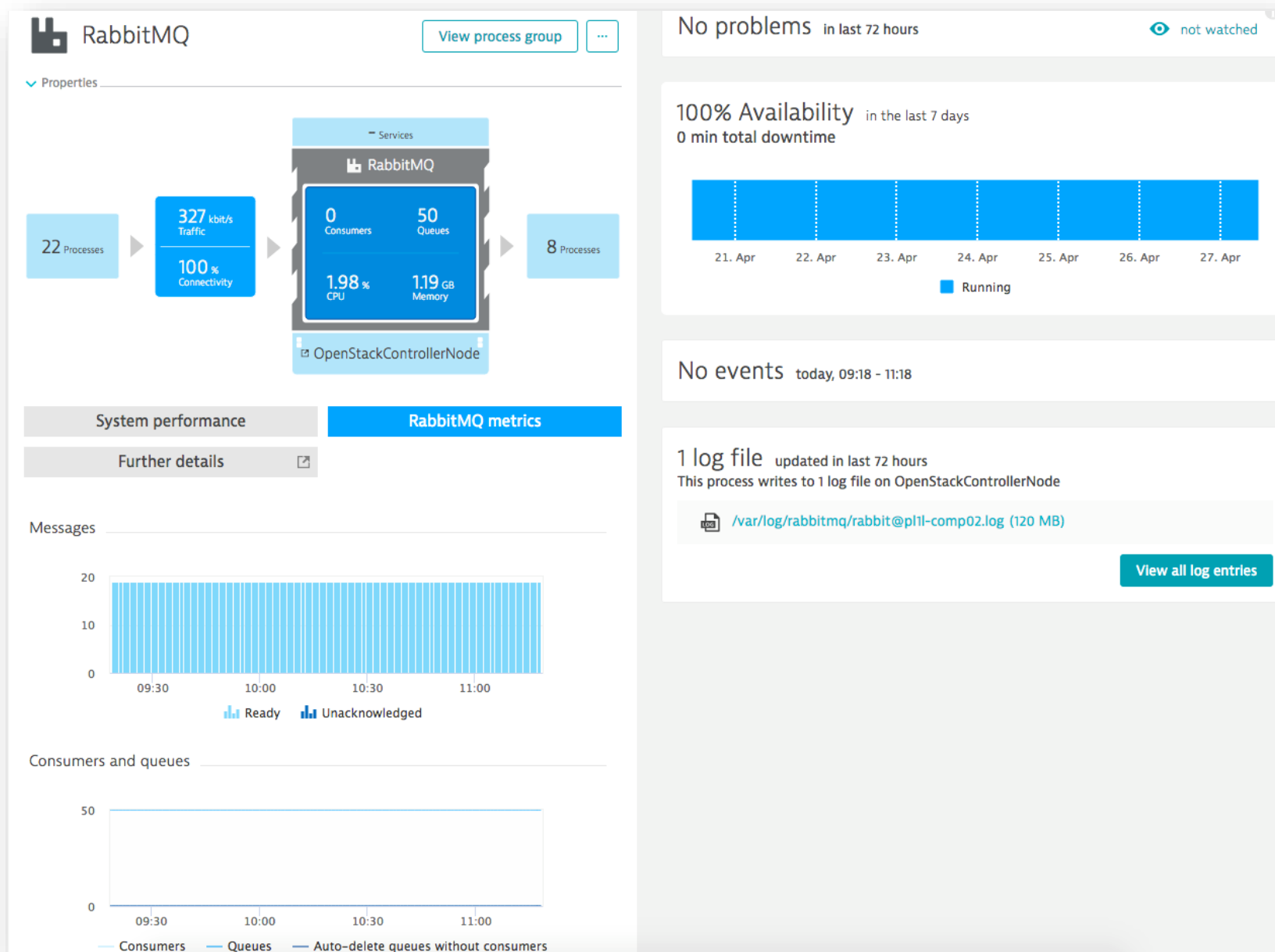


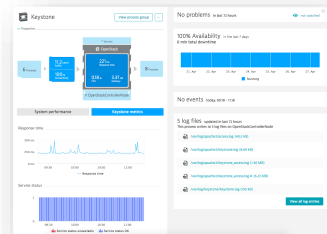
CHEF



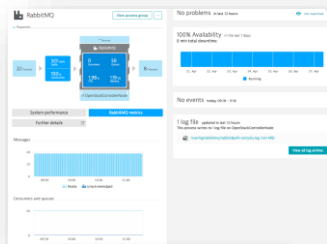


OpenStack 服务可用性/性能

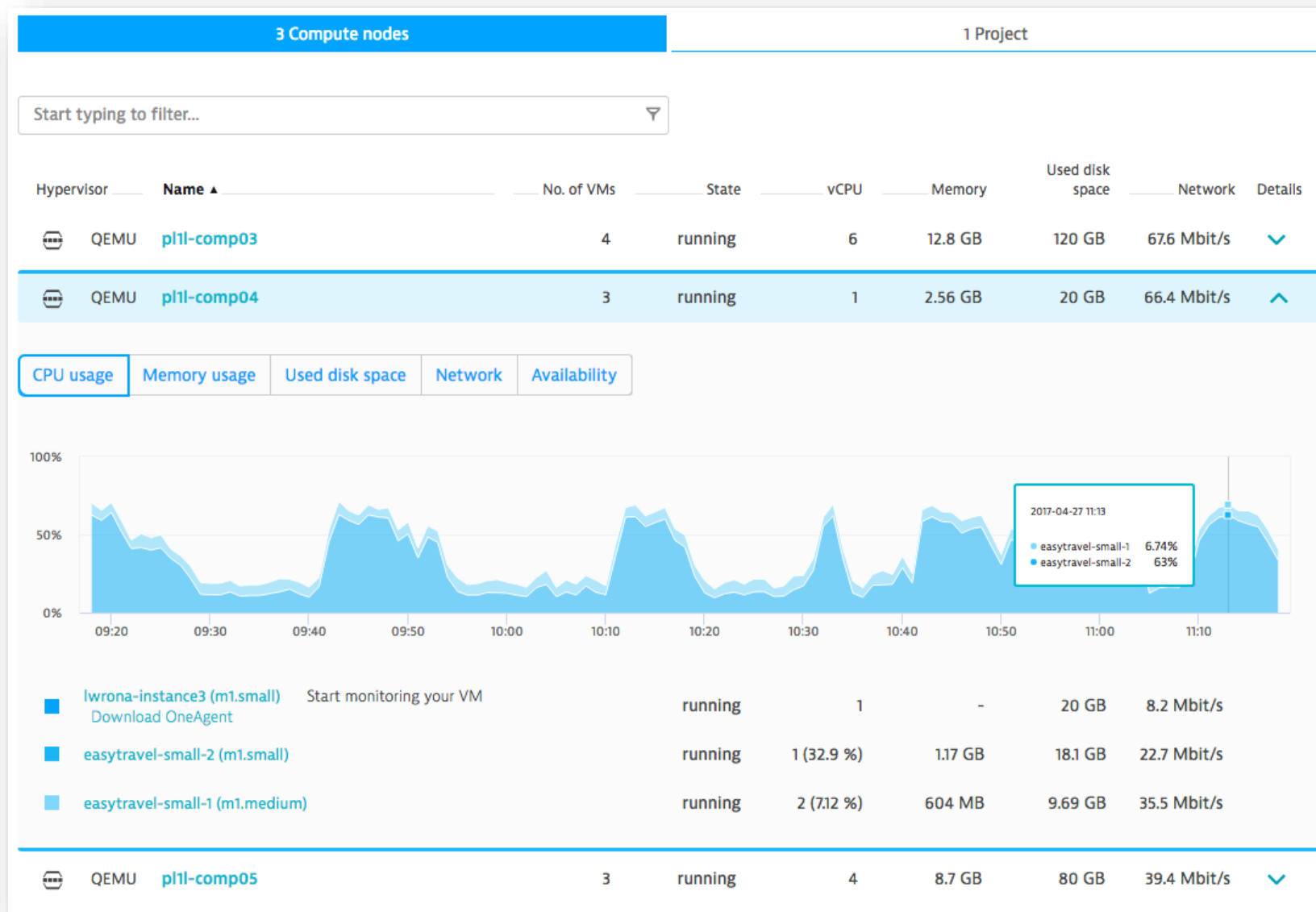


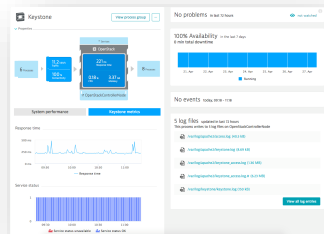


OpenStack 服务可用性/性能

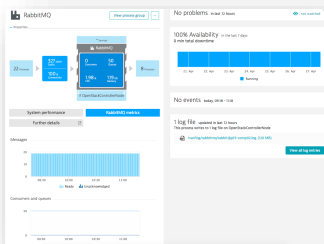


配套服务

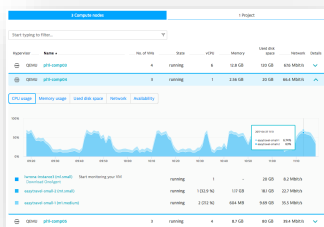




OpenStack 服务可用性/性能



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](#)

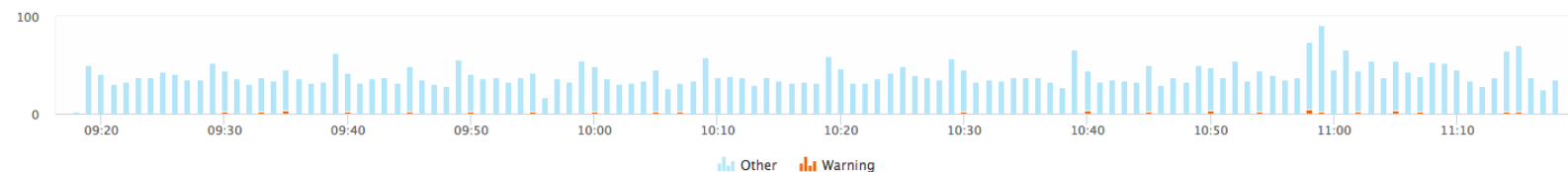
[Download log files](#)

[Display log](#)

Logs summarized to 22 groups. View chart by log level

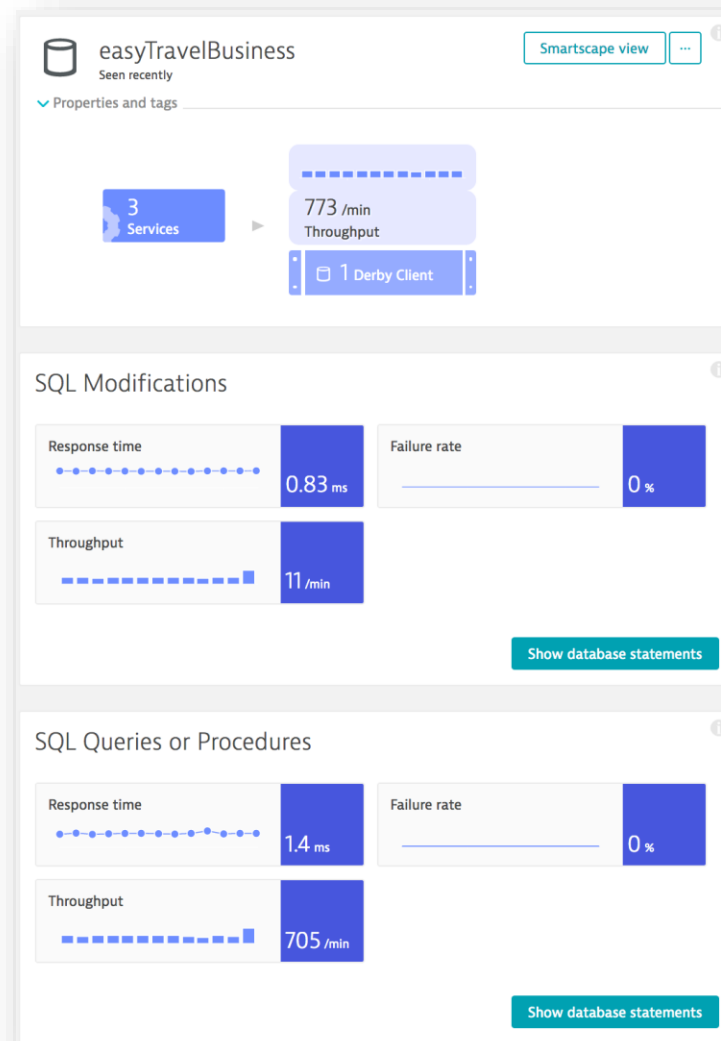
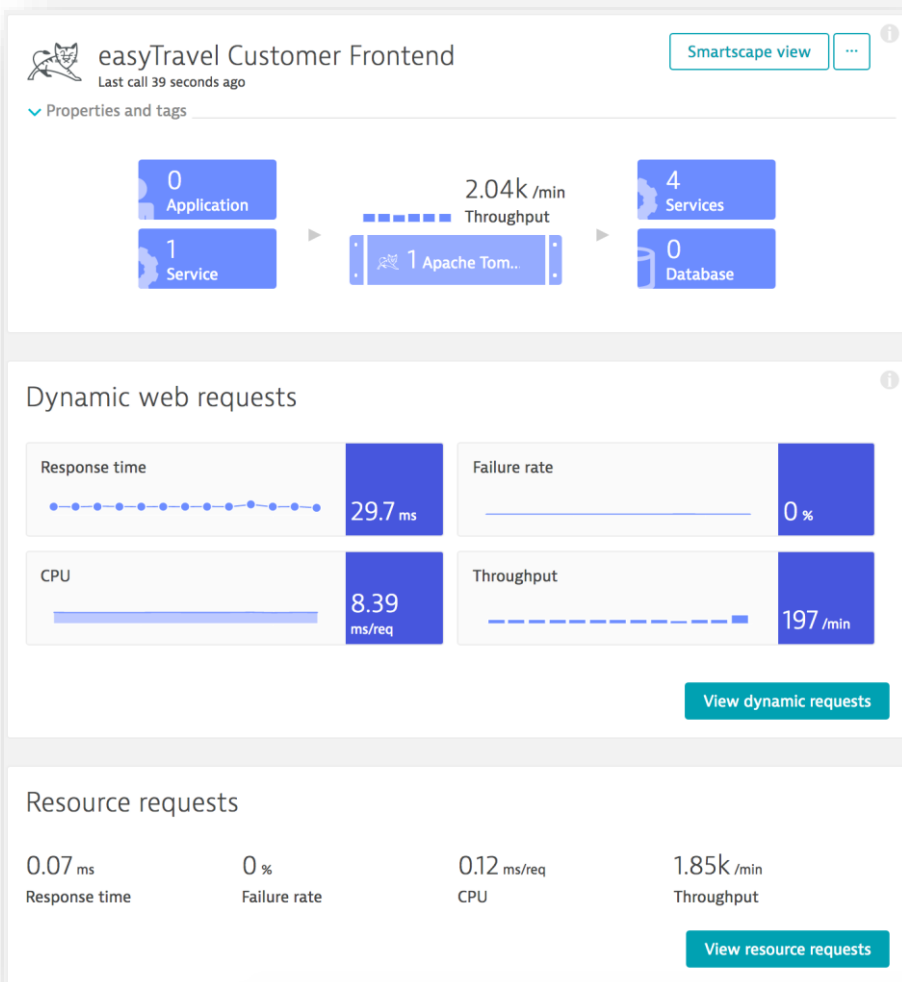
[Share](#)

[Export results](#)



#	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:*	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: lwrna_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



3 Problems in last 72 hours

not watched ⓘ

Current hotspots

 ⓘ

- 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<>?`

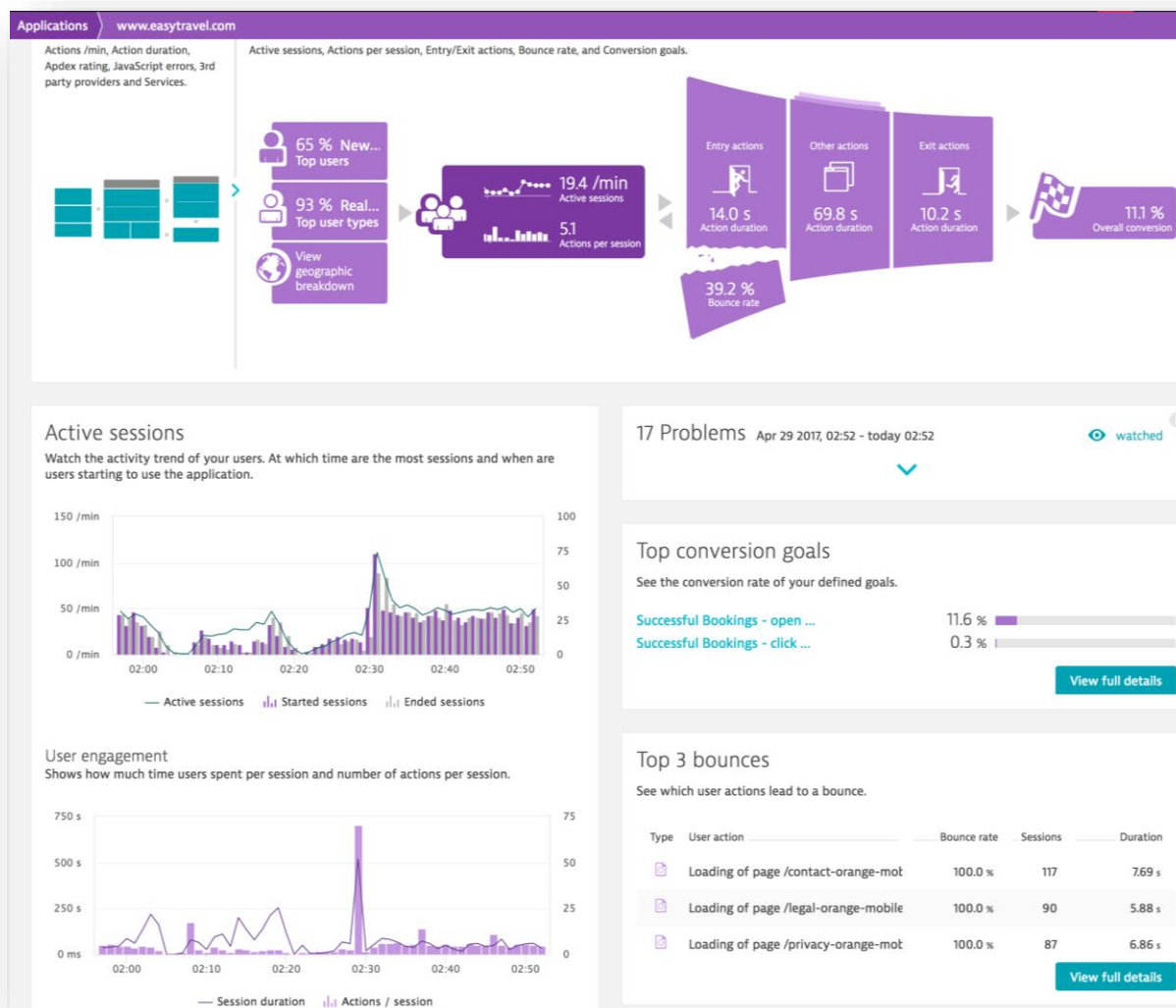
Understand dependencies

 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](#)

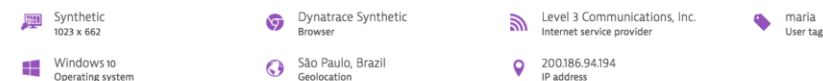
No events yesterday, 05:56 - today 05:56

庆祝个人的力量



Session details

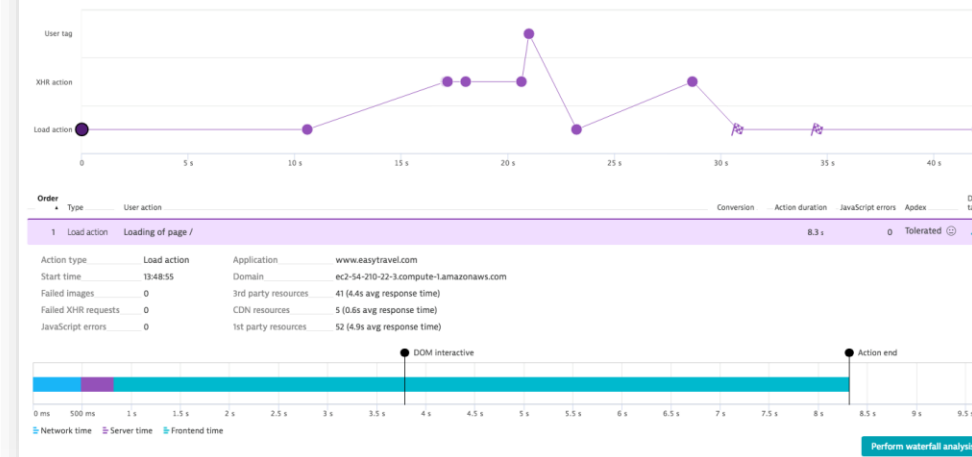
Duration: Today, 13:48 - 13:49 (49 s)



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。



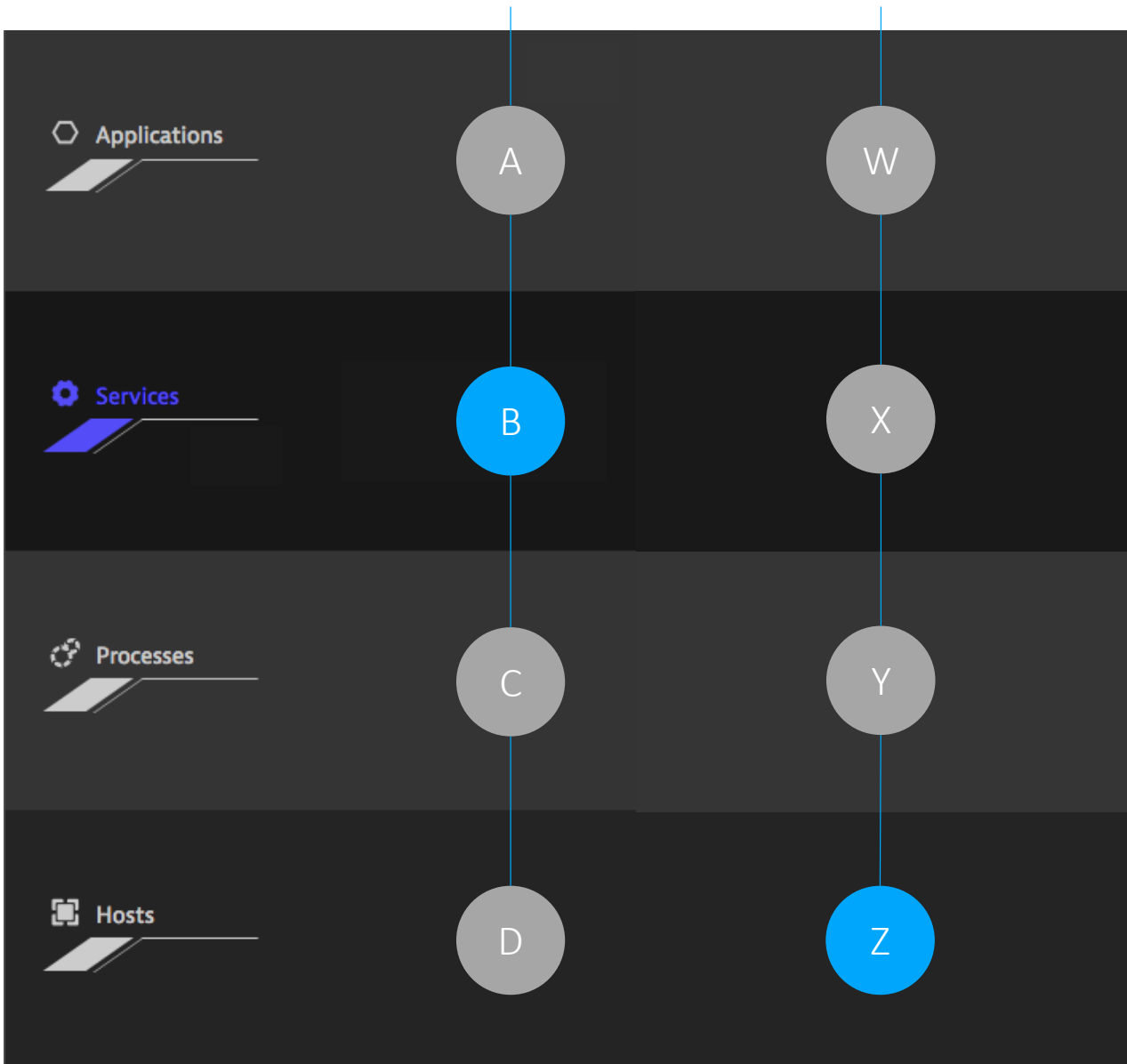
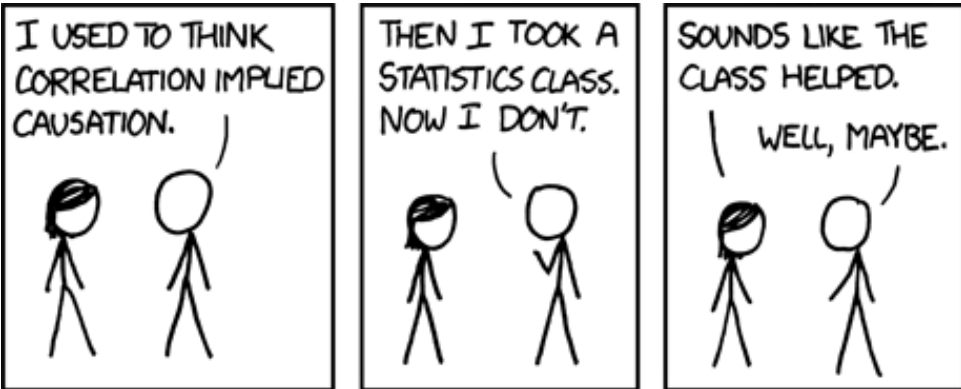
相关性并不意味着因果关系

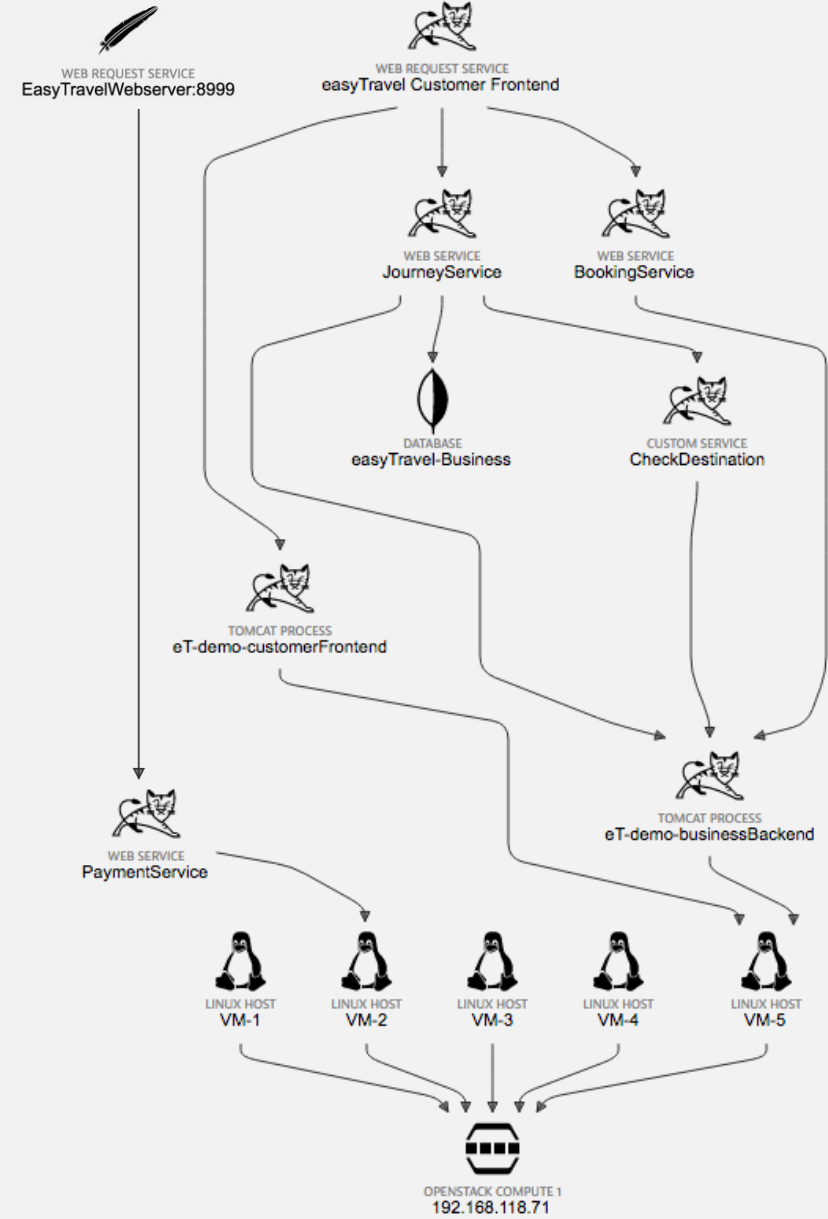
B

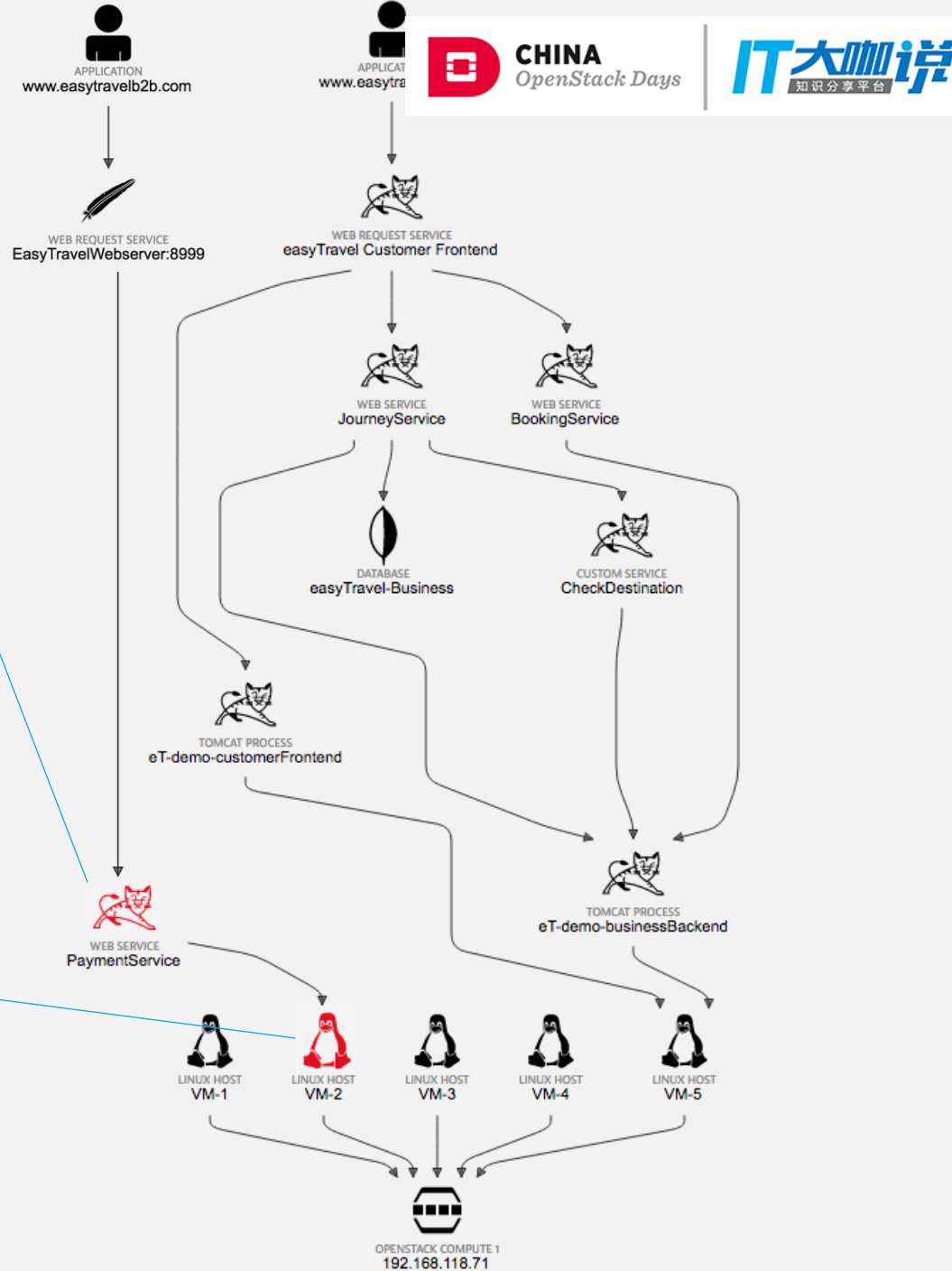
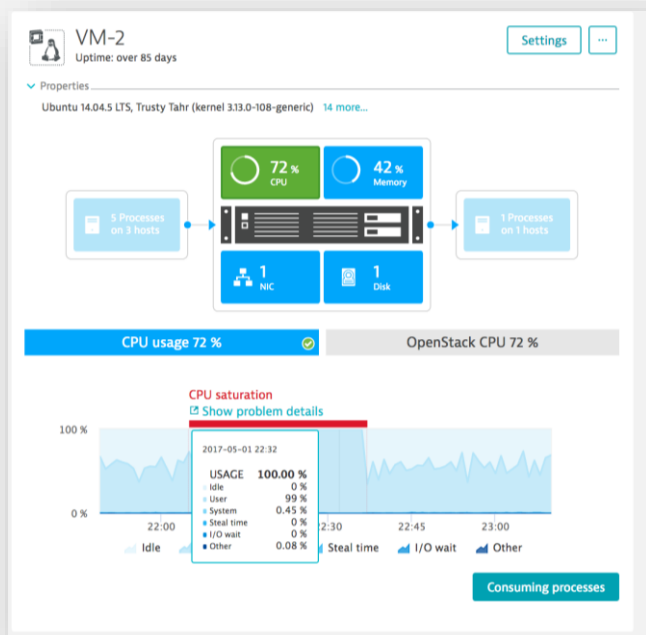
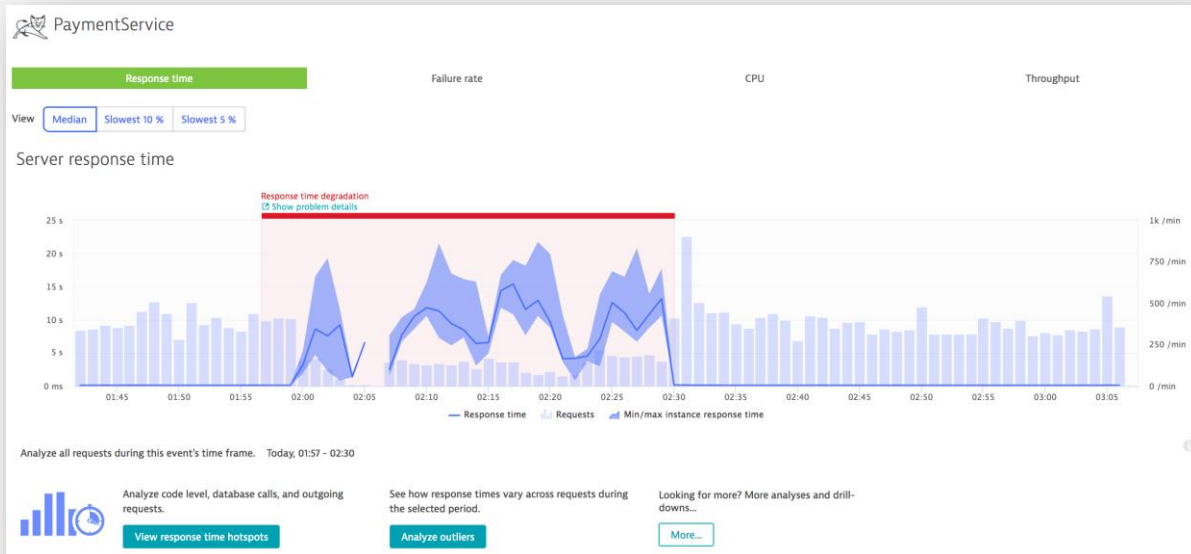
Bookingservice 反应时间
增加了2秒

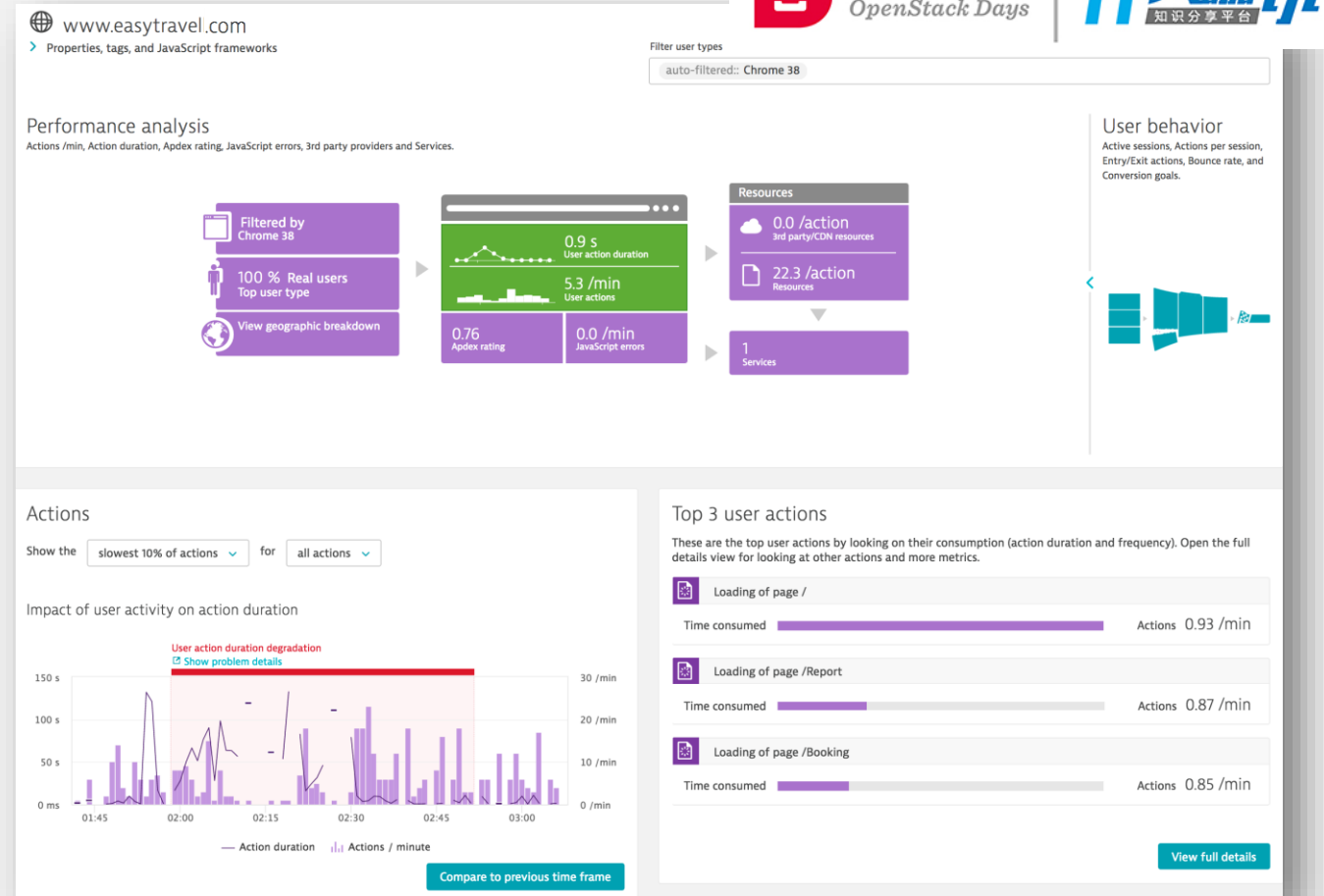
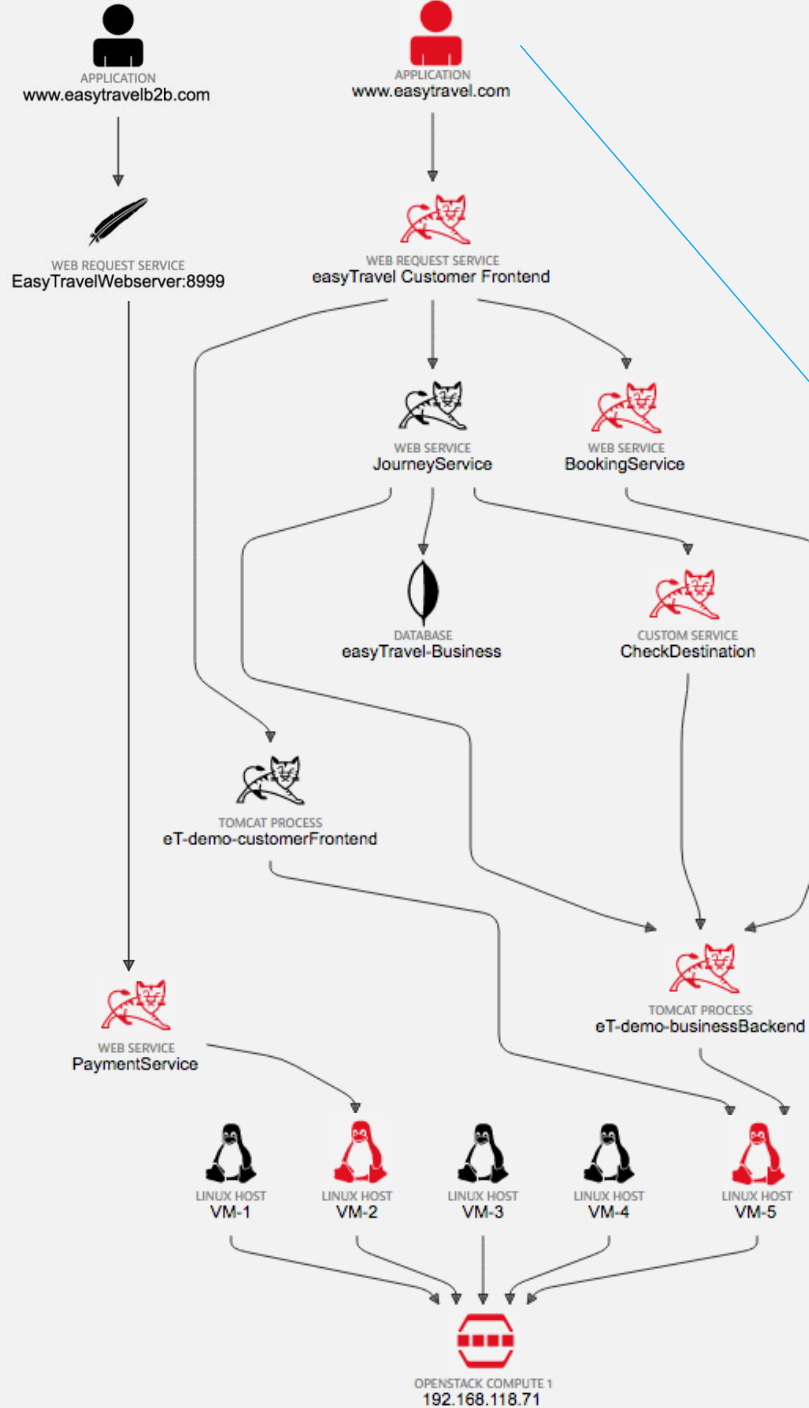
Z

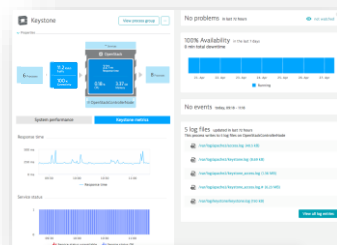
主机 CPU > 90%



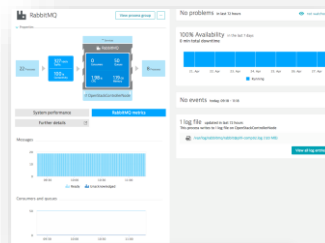




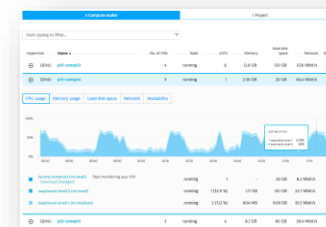




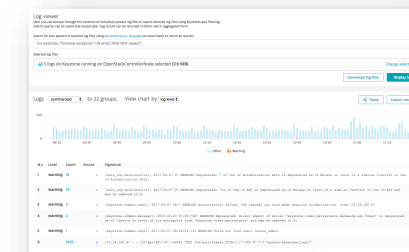
OpenStack 服务可用性/性能



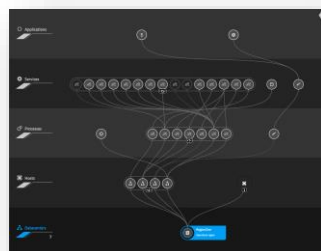
配套服务



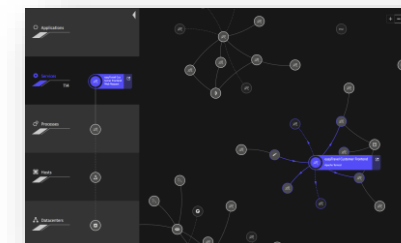
资源能力与使用情况



日志分析



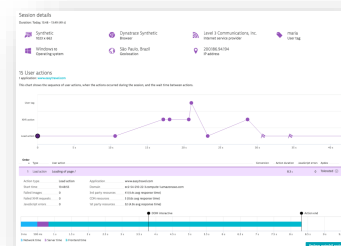
依赖



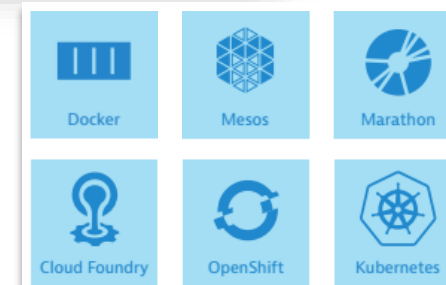
运行在顶部的应用程序



度量/事件/数据的相关性

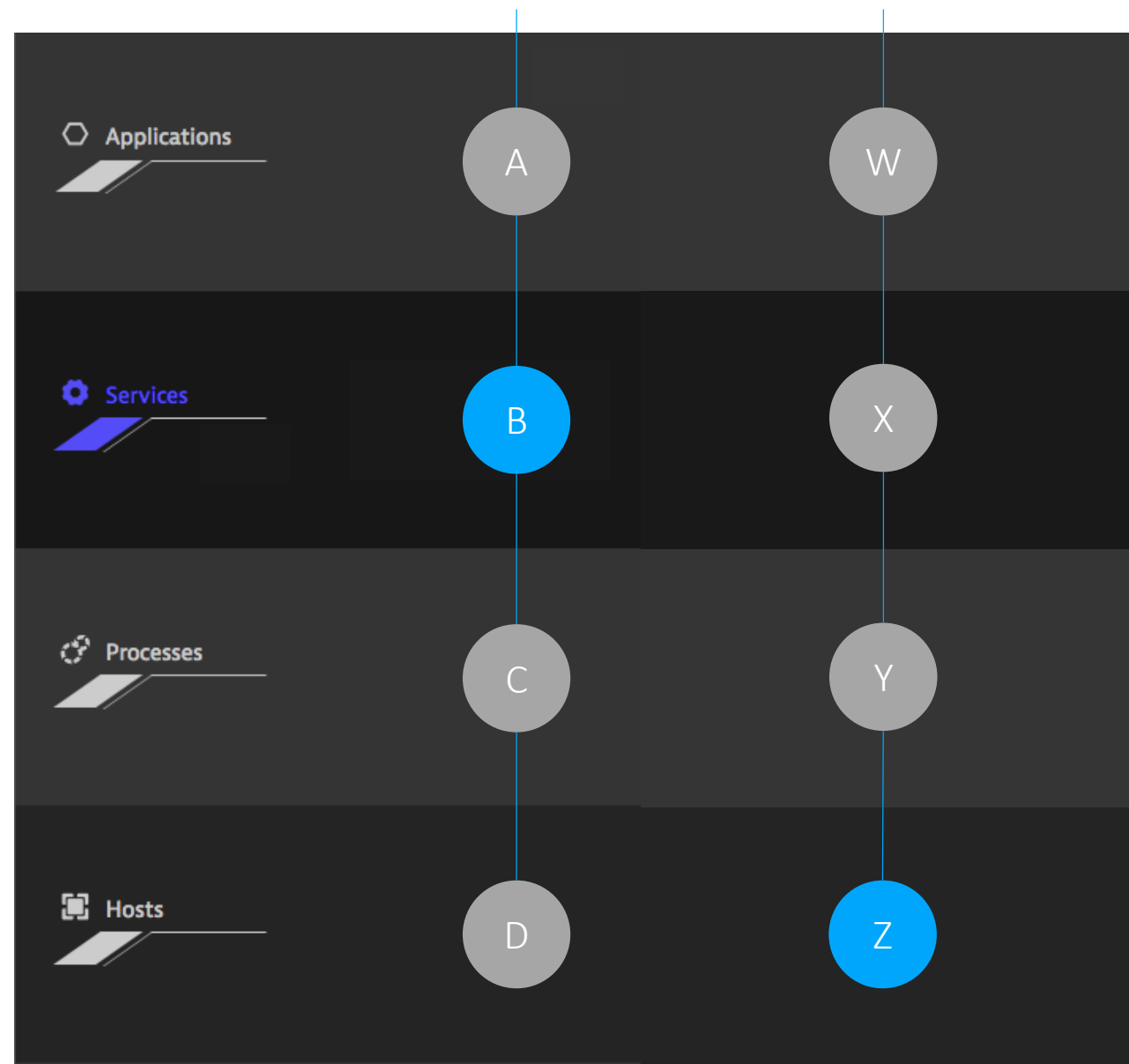



真实用户监控，用户体验影响 \$




PaaS



这不是一个
常规大小
的应用程序
环境！



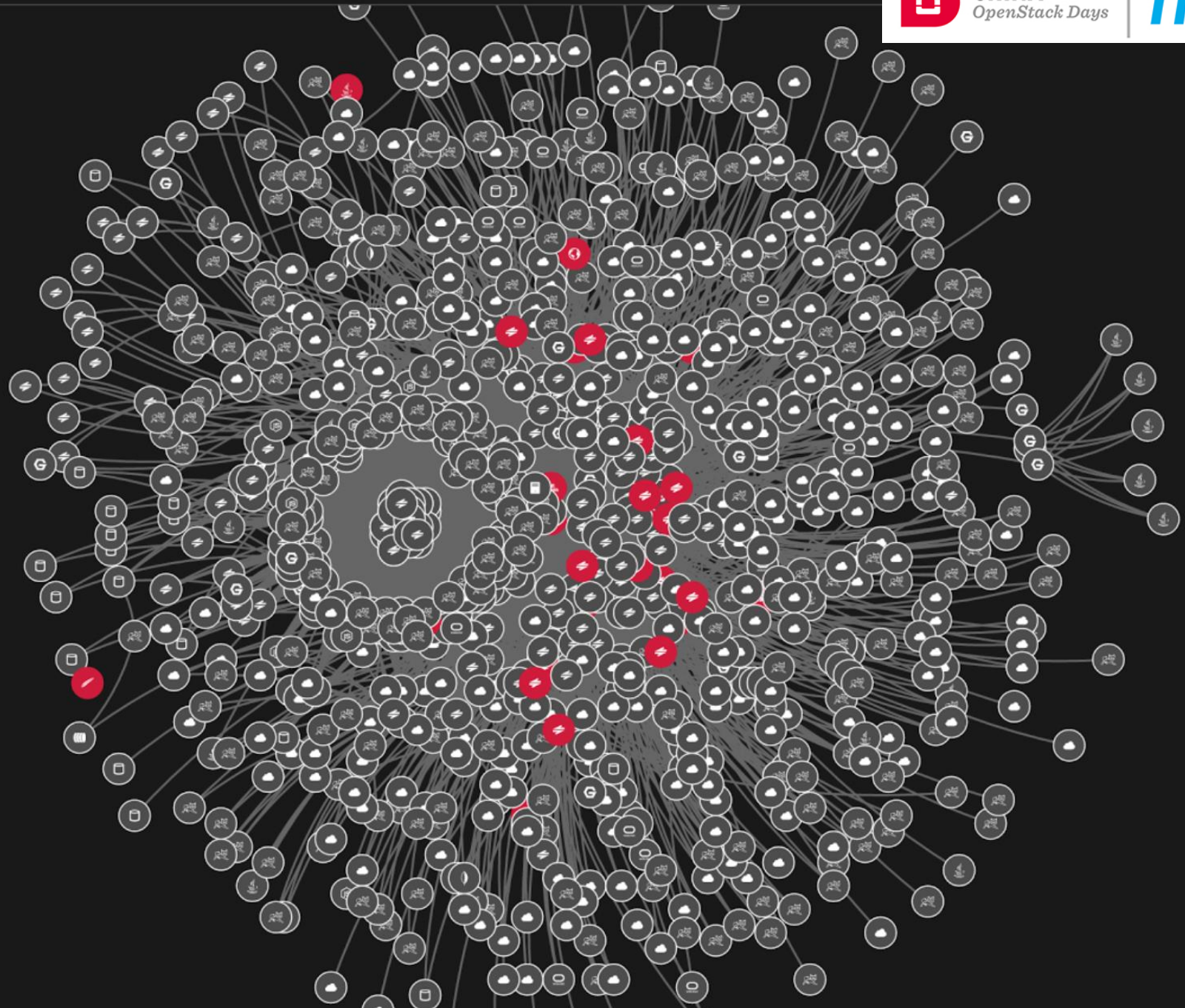
 Applications
 9

 Services
 30/3304

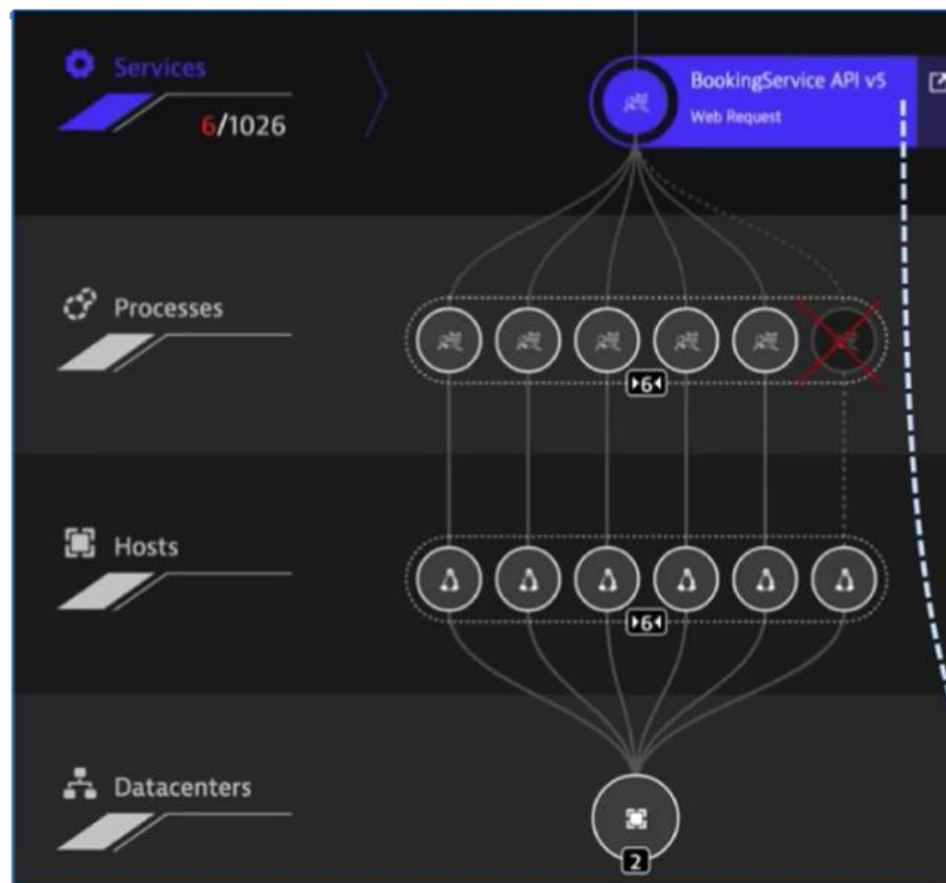
 Processes
 3/10424

 Hosts
 142

 Datacenters
 7






让你面对新的问题





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

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

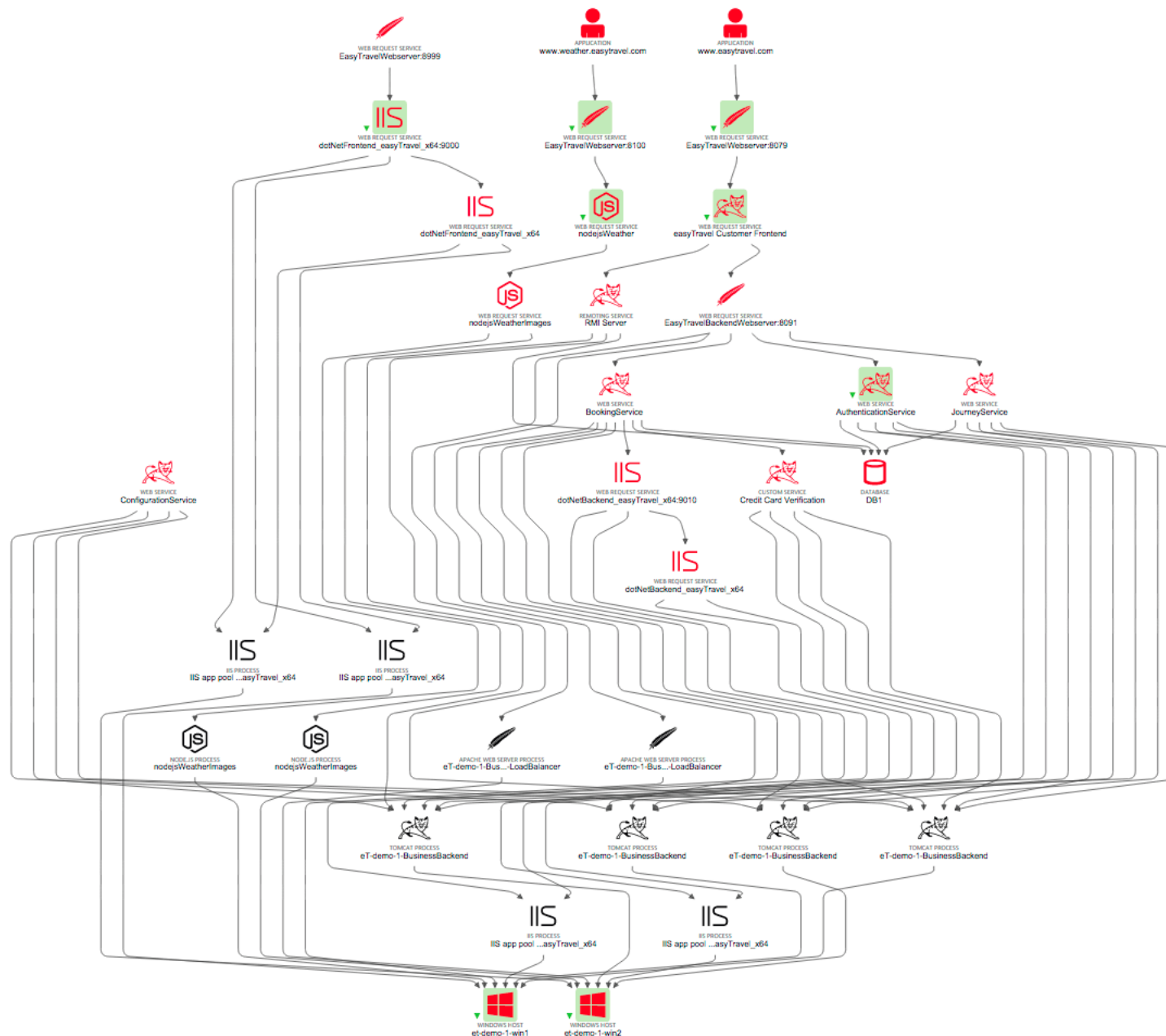
Service method
All methods affected



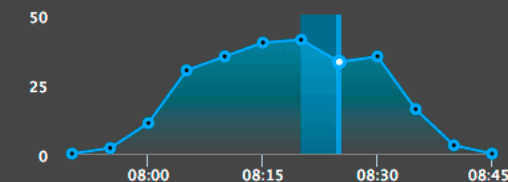
Visual resolution path

Click to see how we figured this out.





Problem Evolution



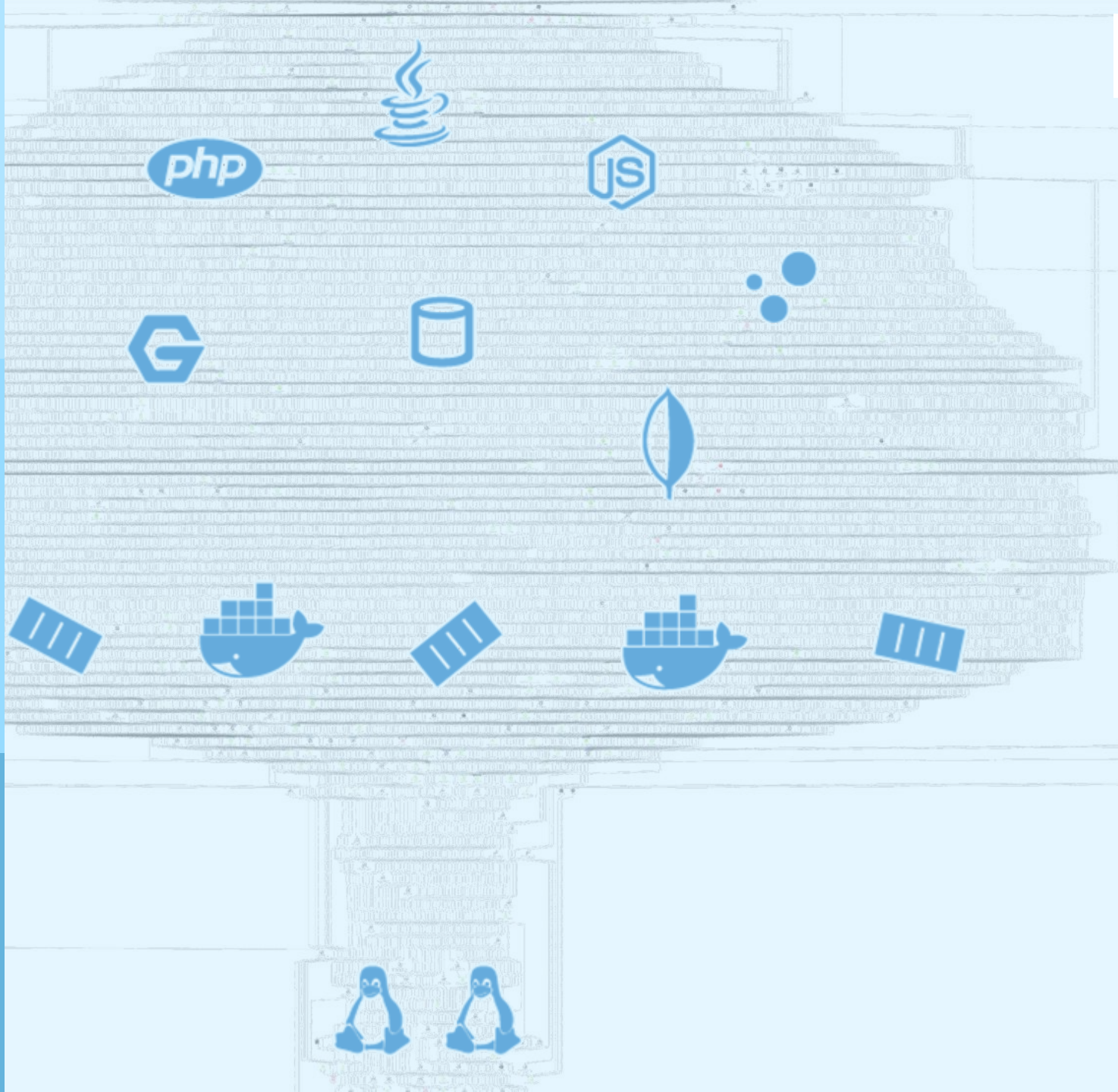
2015-05-28 08:20 - 08:25 33 ongoing events in 22 components
Trend ▲ 0 ▼ 8

- Application
www.easytravel.com
▶ User action duration degradation
- Application
www.weather.easytravel.com
▶ User action duration degradation
- Custom service
Credit Card Verification
▶ Service Credit Card Verification slow down
- Database
DB1
▶ Service method Query slow down
▶ Service DB1 slow down
- Remoting service
RMI Server
▶ Service RMI Server slow down
- Web request service
dotNetBackend_easyTravel_x64
▶ All dynamic requests slow
- Web request service
dotNetBackend_easyTravel_x64:9010
▶ All dynamic requests slow
- Web request service
dotNetFrontend_easyTravel_x64
▶ All dynamic requests slow
- Web request service
dotNetFrontend_easyTravel_x64:9000
▶ All dynamic requests slow

应用及服务

进程及容器

主机



2015-10-22 00:00 - 06:00 No ongoing events
Trend ▲ 182 ▼ 170

Database

Service slow down

Database

Service method Commit slow down

Service slow down (x2)

Database

Service method Query slow down (x2)

Service slow down (x2)

Linux host

Disk slow on

Other process

docker

TCP connectivity rate for process docker on host

has decreased to 95 % (x2)

TCP connectivity rate for process docker on host

has decreased to 95 % (x22)

TCP connectivity rate for process docker on host

has decreased to 95 % (x2)

Other process

docker

TCP connectivity rate for process docker on host

has decreased to 0 % (x2)

TCP connectivity rate for process docker on host

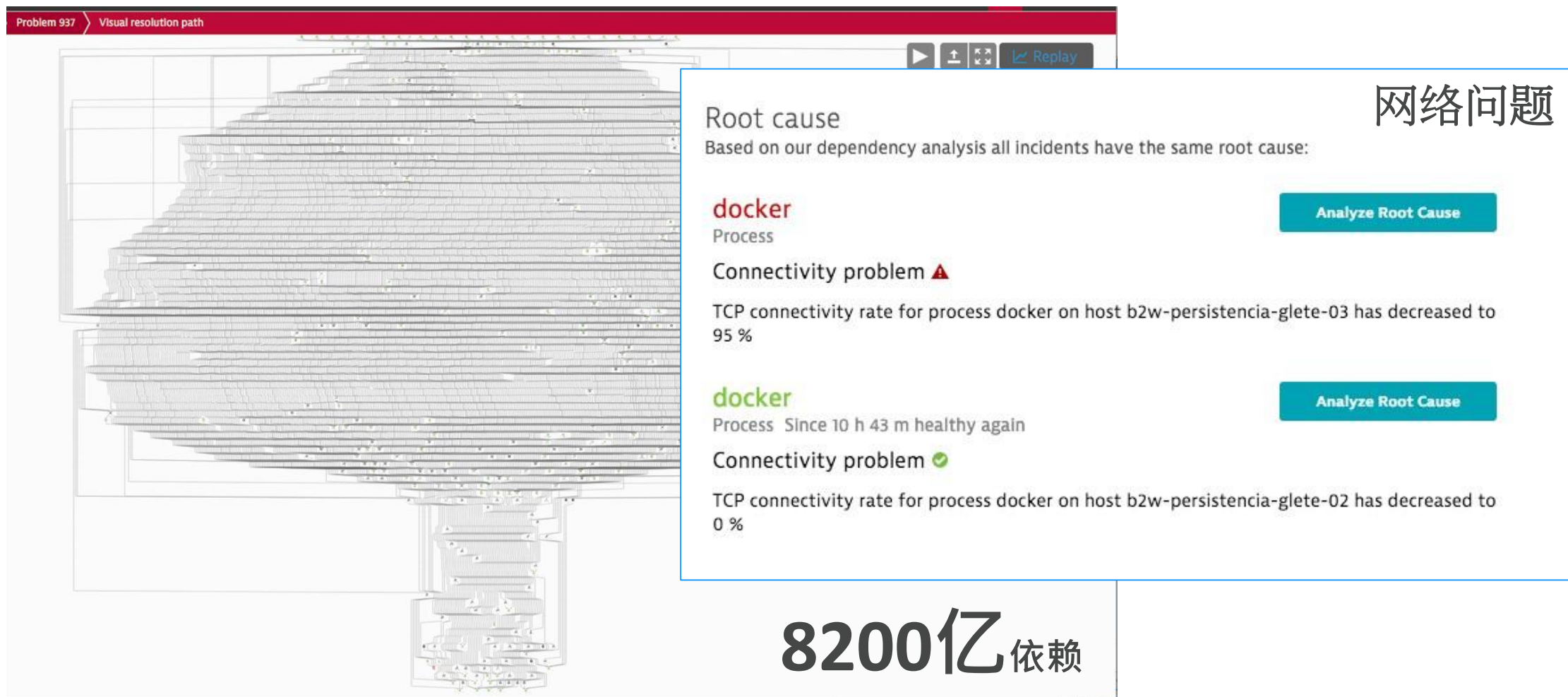
has decreased to 0 % (x16)

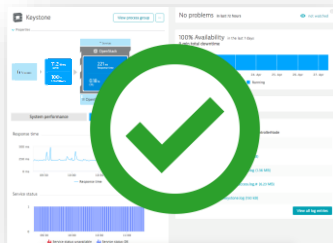
TCP connectivity rate for process docker on host

has decreased to 9 % (x2)

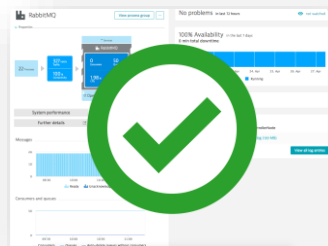
TCP connectivity rate for process docker on host

你能大海捞针吗？

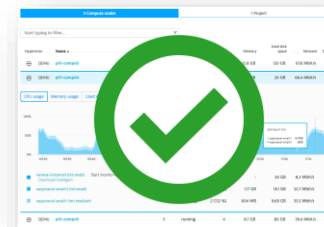




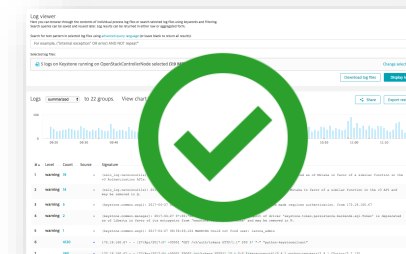
OpenStack 服务可用性/性能



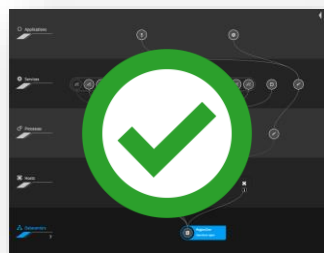
配套服务



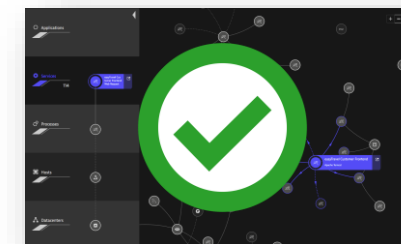
资源能力与使用情况



日志分析



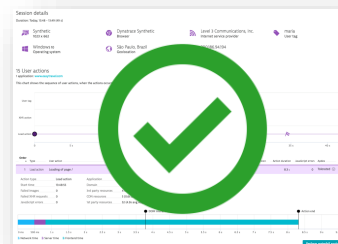
依赖



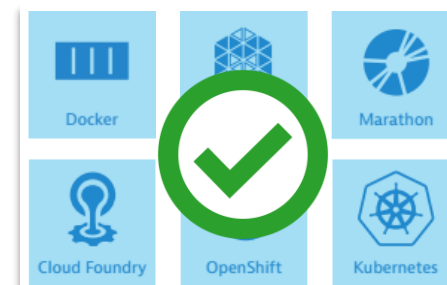
运行在顶部的应用程序



度量/事件/数据的相关性



真实用户监控，用户体验影响 \$



PaaS

更好的数据令 Dynatrace 人工智能可行

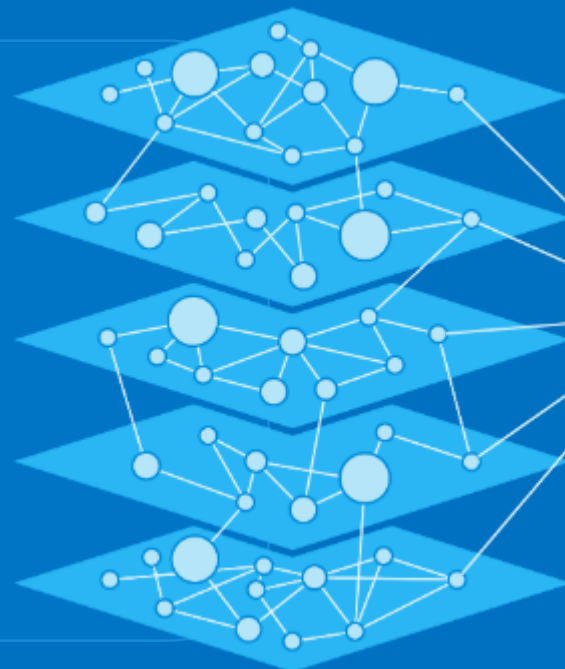
100% 高保真数据

端到端的连接

高级分析

可操作的见解

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



自动化的工作流程

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!



没有监察生活就
像一盒巧克力。
你永远不知道你
得到了什么。

Wilson Lai

Director of Sales Engineering