



# Getting started with Dynatrace



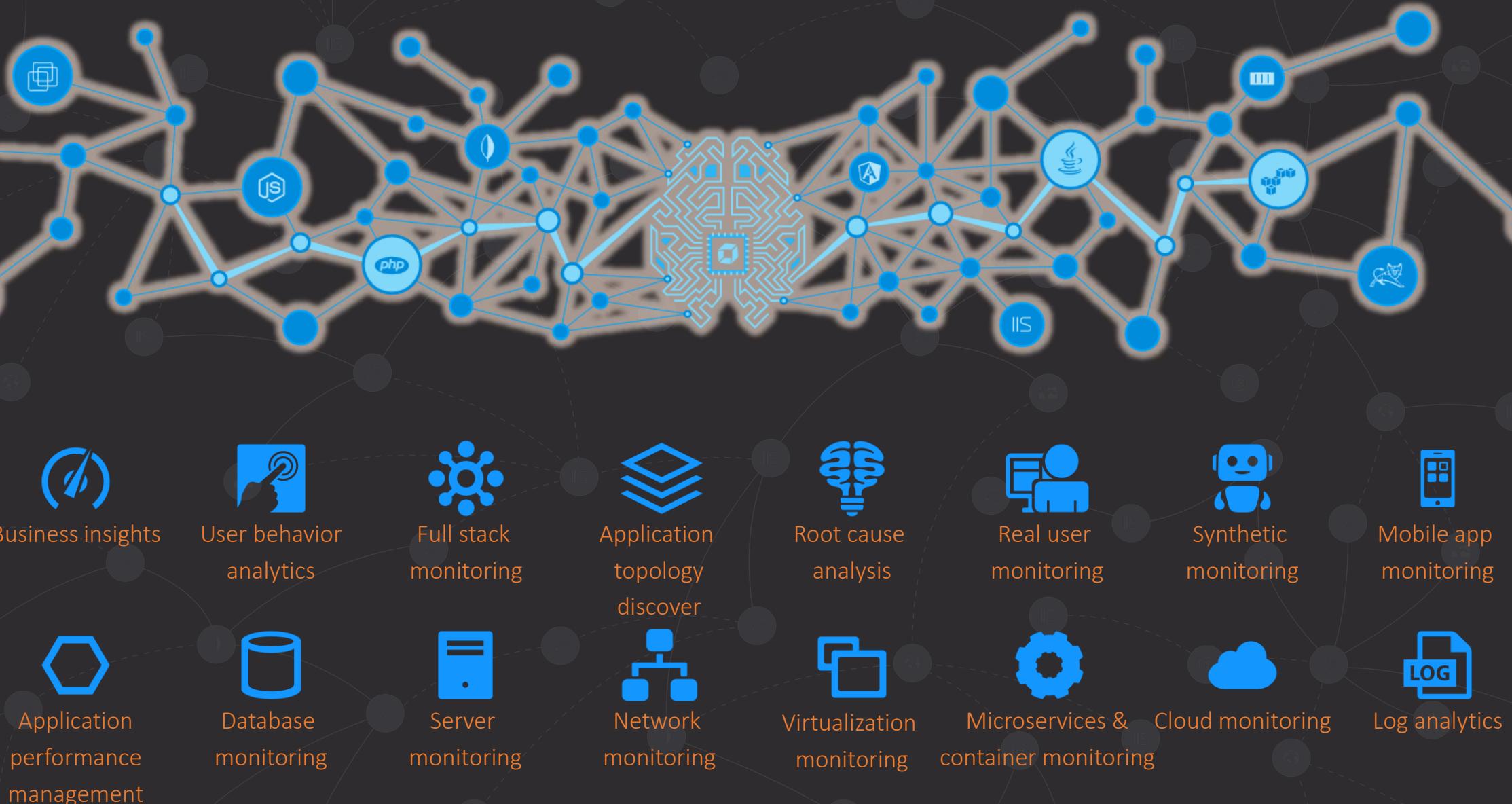
**Christopher Chai**  
*Solution Architect*

# Agenda

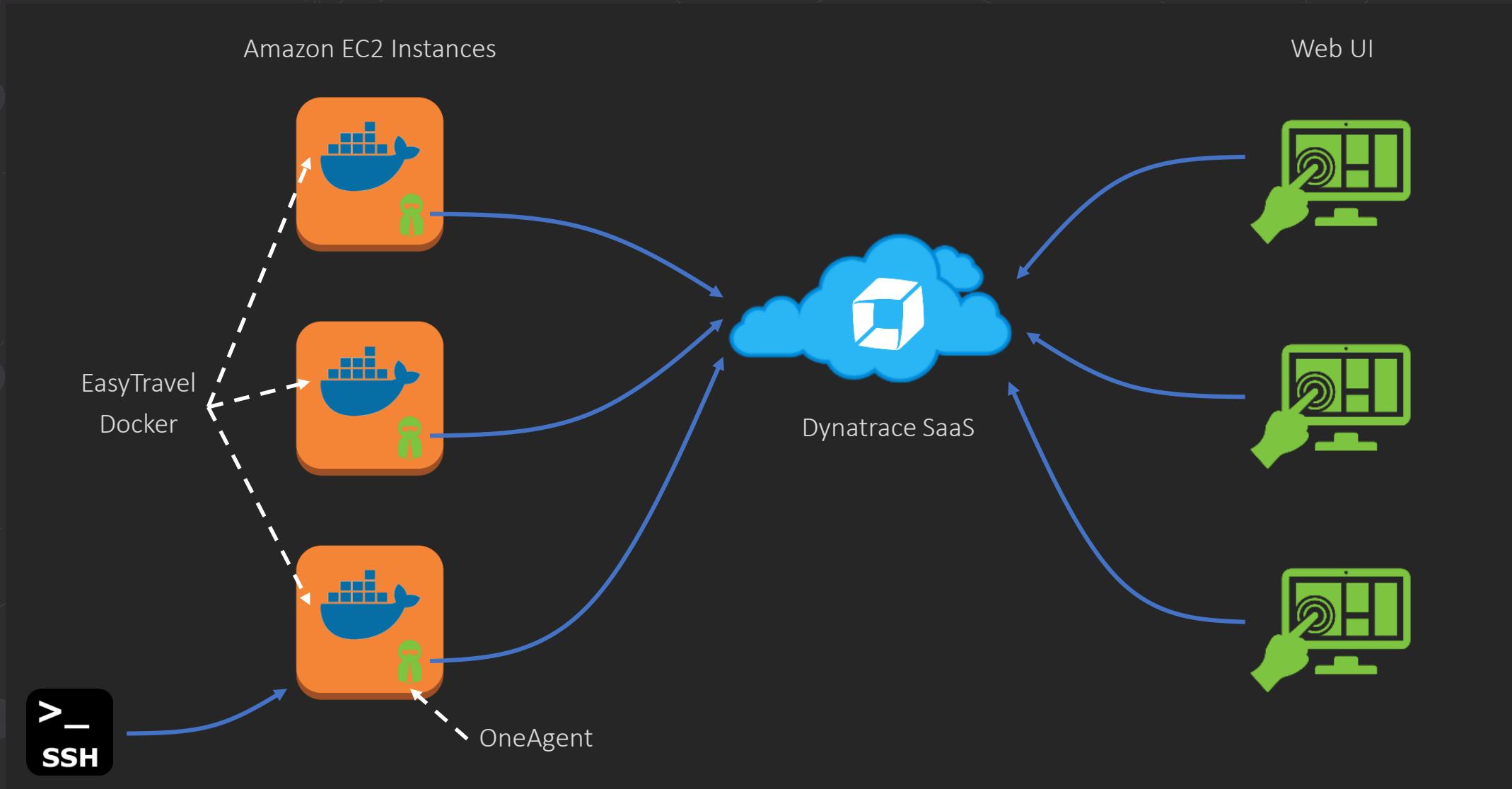
- Installation of OneAgent
- Smartscape Topology
- Host level / Process View / Service View
- Service Analysis
- Diagnostic Tools
- Application / RUM / User Sessions
- Log Analytics
- Docker View
- Synthetic Checks
- Problems (driven by deterministic AI)



# Dynatrace Capabilities



# A general overview...



# Create New Trial / Signup for Dynatrace

1. If you do have an existing account, go to

- <https://account.dynatrace.com>
- Click on Start new trial

1. If you don't have an existing account, go to

- Signup at <https://www.dynatrace.com/trial/>
- Choose AP Southeast Sydney

When chosen, your instance will spin up immediately and you will have access to your instance.

# Existing Dynatrace User

Under License details, click on Start new trial\*

\*Just click once and refresh the page

## License details

[View license quotas & consumption details](#)

### Contact information

[Update your company info](#)

### Payment

[Update your payment info](#)

### User management

[Assign users to groups and invite new users](#)

### Group management

[Assign permissions to groups](#)

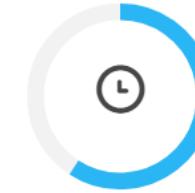
### Help and Support

[Access Help, Answers or Support](#)

## Trial license details

Mar 07, 2016

Trial start date



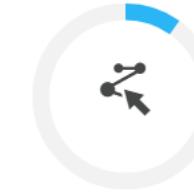
7,694.7 / 12,999  
Host unit hours

Jul 06, 2016

Trial end date



512 / 150,000  
User sessions



8,859 / 90,000  
Synthetic monitors

Trial amount consumed

Trial amount remaining

## Consumption by environment

### Environment

[fib43699](#)

[jjj76589](#)

[uty09914](#)

	Host unit hours	Sessions	Synthetic monitors	Details
<a href="#">fib43699</a>	1,000/1,000	2/50,000	0/30,000	
<a href="#">jjj76589</a>	5,961.7/10,999	341/50,000	57/30,000	
<a href="#">uty09914</a>	733/1,000	169/50,000	8,802/30,000	

All your environment(s) have been deleted.

[Start new trial](#)

[View consumption](#)

# New Dynatrace User

1. Create a Password
2. Enter Account Details as per registration
3. Select AP Southeast Sydney
4. Click on Yes, I agree to the above terms and conditions
5. Create account

[Create account](#)[Account details](#)[Select your region](#)

## Select your region

Dynatrace datacenters are available worldwide. For optimum performance, select the data center where your monitoring data is to be stored.



By checking the "Yes" box below, you agree that your use of the Dynatrace products to which you are requesting access shall be subject to the terms and conditions found at: <https://www.dynatrace.com/company/trust-center/customers/>. If you do not agree to these terms, you should check the "No" box below. If you check the "No" box and click "Cancel", you will be returned to the previous screen, and the requested access will not be granted.

Yes, I agree to the above terms and conditions

No, I do not agree to the above terms and conditions

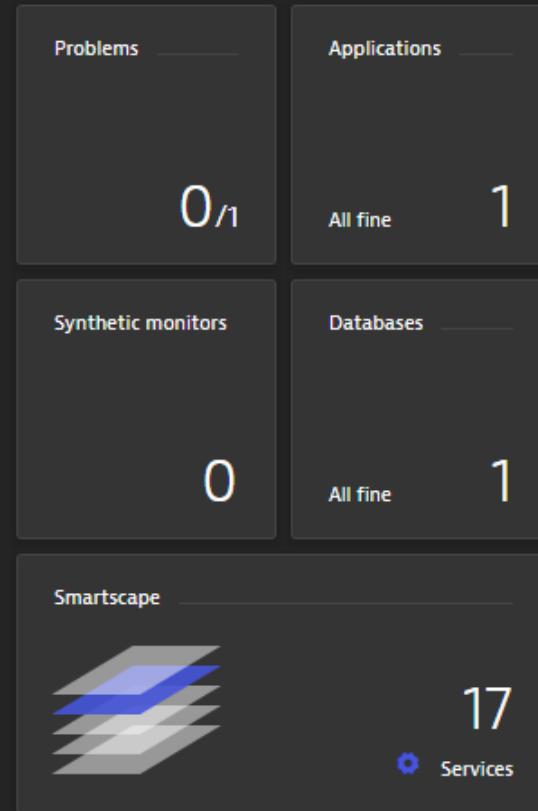
[Cancel](#)[Create account](#)

Region can not be changed later.

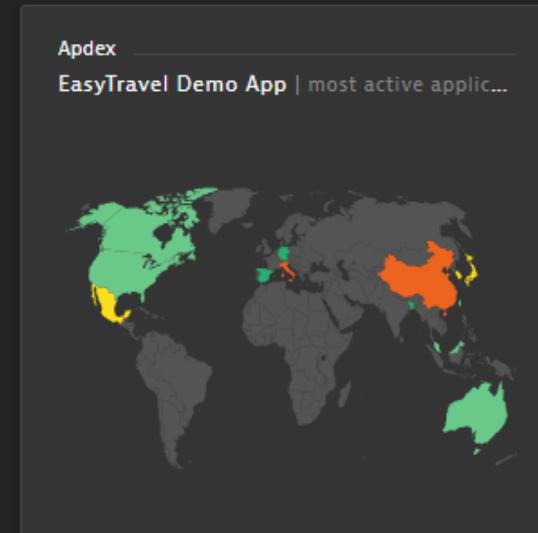
Your instance  
is created  
immediately!

## Home

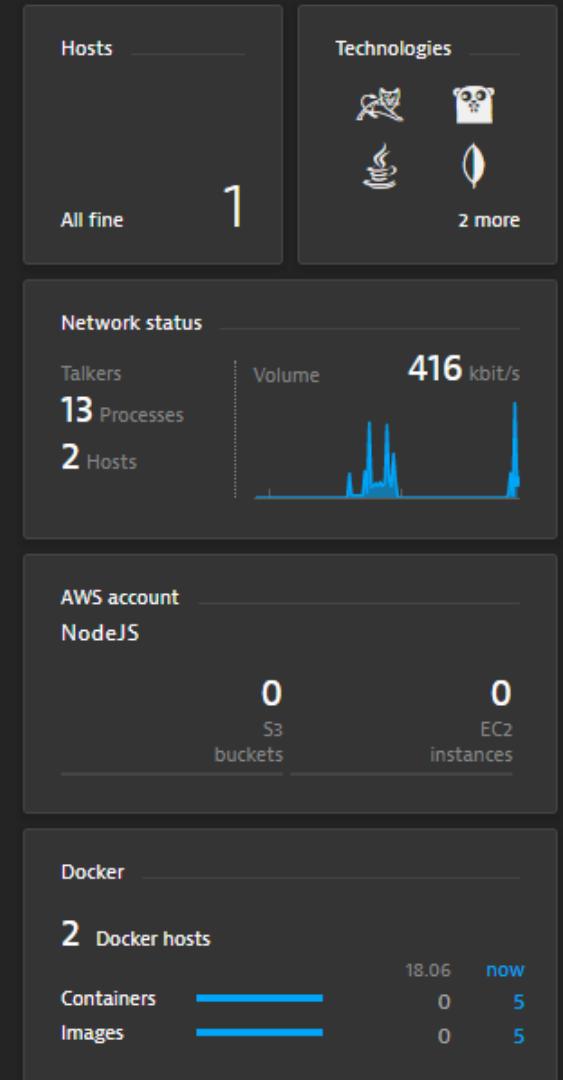
### Quick overview



### Application health

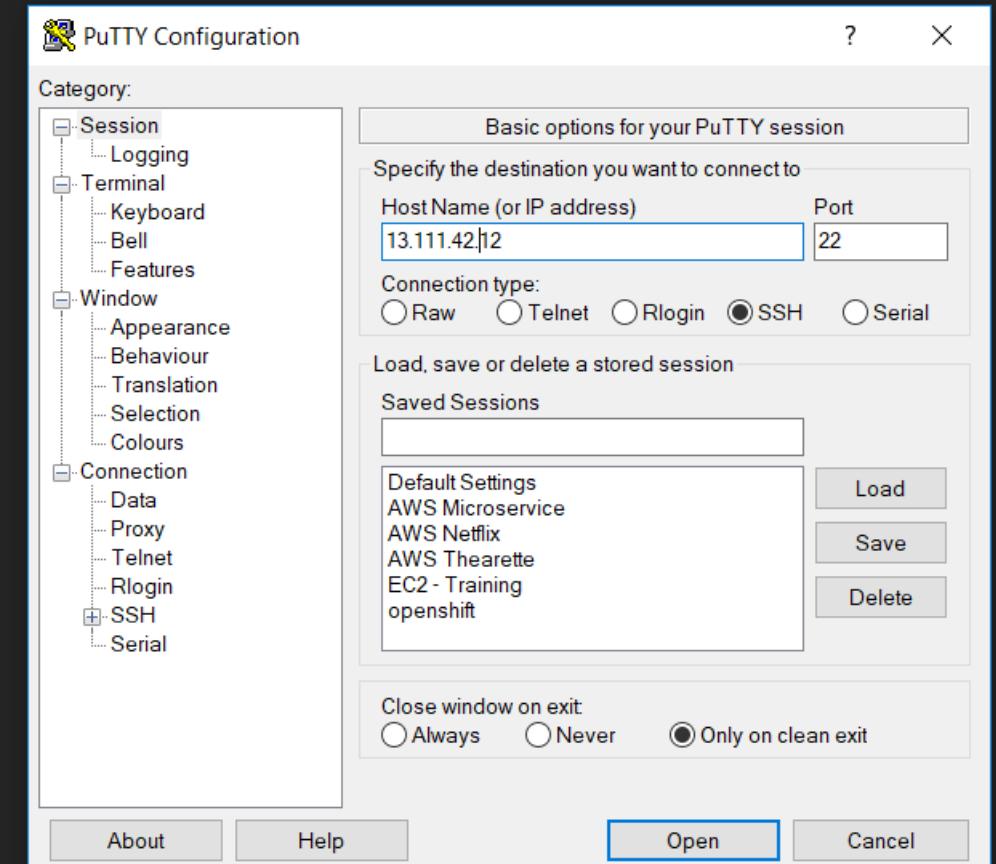


### Infrastructure



# SSH into your instance

1. For Windows, use Putty to SSH into our instance
2. For Mac, use Terminal to SSH into our instance
3. Username: **perform**
4. Password: **perform**



# Install OneAgent

Click on Deploy Dynatrace ->  
Start Installation -> Linux

Copy Step 1 and Step 3 to your  
Putty / Terminal window

1

## Install Dynatrace OneAgent on your Linux hosts

Choose installer type: **x86/64**

Run the installation script on each Linux machine that you want to monitor.

Enable access to application log-file content on this host for problem analysis. [What insights can Log Analytics provide?](#)

Use this command on the target host:

```
wget -O Dynatrace-OneAgent-Linux-1.145.222.sh "https://age04882.live.dynatrace.com/api/v1/deployment/installer/agent/unix/default/latest?Api-Token=gdRN6ACeRRCPn-17Pzbc&arch=x86&flavor=default"
```

**Copy**

2

Verify signature:

```
wget https://ca.dynatrace.com/dt-root.cert.pem ; ( echo 'Content-Type: multipart/signed; protocol="application/x-pkcs7-signature"; micalg="sha-256"; boundary="--SIGNED-INSTALLER"'; echo ; echo ; echo '----SIGNED-INSTALLER' ; cat Dynatrace-OneAgent-Linux-1.145.222.sh ) | openssl cms -verify -CAfile dt-root.cert.pem > /dev/null
```

**Copy**

3

And run the installer with root rights:

```
/bin/sh Dynatrace-OneAgent-Linux-1.145.222.sh APP_LOG_CONTENT_ACCESS=1
```

**Copy**

Restart the processes that you want to monitor.

**Show deployment status**

# Verify Installation

Once installed,  
Host will appear  
straightaway!

Click on  
Deployment  
Status

Deployment status  
Manage your Dynatrace deployment

Add new host    Install Security Gateway

Recently connected hosts (last 72h)    All hosts    Dynatrace Security Gateways

6 hosts

Search by name, IP

 i-06ee7247066f073b6  
IP address: 172.31.31.223

Disable monitoring    ...

Host is monitored. Dynatrace OneAgent is up-to-date on version 1.147

Automatically detected processes that support Service insights:

 nginx using "dynatrace/easytravel-nginx"  
Process is monitored

 tomcat using "dynatrace/easytravel-backend"  
Process is monitored

 tomcat using "dynatrace/easytravel-frontend"  
Process is monitored

 uemload.jar using "dynatrace/easytravel-loadgen"  
Process is monitored

Disable monitoring    Disable monitoring    Disable monitoring    Disable monitoring

# Start Sample App: Easytravel

## 1. Start EasyTravel Application Server

- Start the application by issuing the following command:
- *cd easyTravel-Docker/*
- *sudo docker-compose up*
- When prompted for password, type **perform**
- Please wait about a minute while the application starts

Check on the status of  
EasyTravel Application on your  
web browser by going to your  
Server IP.

[http://\[YOUR\\_IP\\_ADDRESS\]:80](http://[YOUR_IP_ADDRESS]:80)

The screenshot shows the homepage of the easyTravel website. At the top, there is a navigation bar with links to Home, Special Offers, About, Contact, Terms of Use, Privacy Policy, and a Login button. To the right of the navigation bar are icons for various mobile platforms (Android, iOS, etc.). The main header features a large image of a person's legs and feet resting on a beach chair with a starfish on it, set against a tropical background with palm trees and a blue sky. A yellow diagonal banner across the top right of the image says "Travel to Paris". Below the header, there is a search form titled "Your Journey" with fields for "Trip Destination", "From Date", and "To Date". A note below the fields says "Fill out the boxes above and your results will appear below." and a "Search" button. To the right of the search form is another image of a man and a woman smiling while holding a seashell. Below the search area, there is a section titled "Recommendations" featuring two travel deals. Each deal includes a small image of palm trees on a beach, the destination name ("Assisi - Zamboanga City"), the price ("\$ 959.50"), and a "Book Now" button. A note under each deal says: "If you wish to stay in a hotel that has friendly staff and an inviting ambience that reminds you of home, then head to the Grand Hotel." At the bottom of the page, there is a footer with the easyTravel logo and the word "AMP". Below that is a section titled "FARE TERMS AND CONDITIONS" with a detailed description of fare terms. At the very bottom, there are several logos for accreditation and safety, including VeriSign Secured, TRAVEL GUIDE, VIR, IATA, ARC, ASTA, BBB, and IATA.

easyTravel

Home | Special Offers | About | Contact | Terms of Use | Privacy Policy | Login

Travel to Paris

Your Journey

Trip Destination

From Date

To Date

Fill out the boxes above and your results will appear below.

Search

Recommendations

Assisi - Zamboanga City \$ 959.50

If you wish to stay in a hotel that has friendly staff and an inviting ambience that reminds you of home, then head to the Grand Hotel.

Jun 3 - Jun 5 Book Now

Assisi - Zamboanga City \$ 959.50

If you wish to stay in a hotel that has friendly staff and an inviting ambience that reminds you of home, then head to the Grand Hotel.

Jun 3 - Jun 5 Book Now

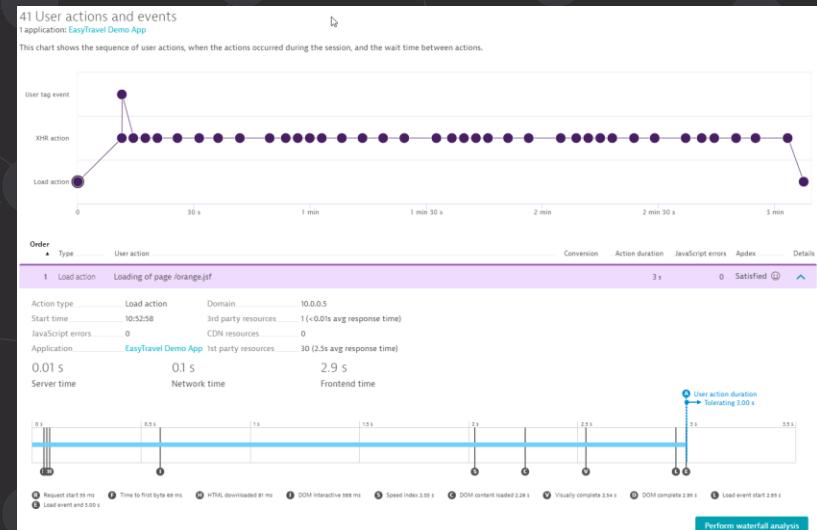
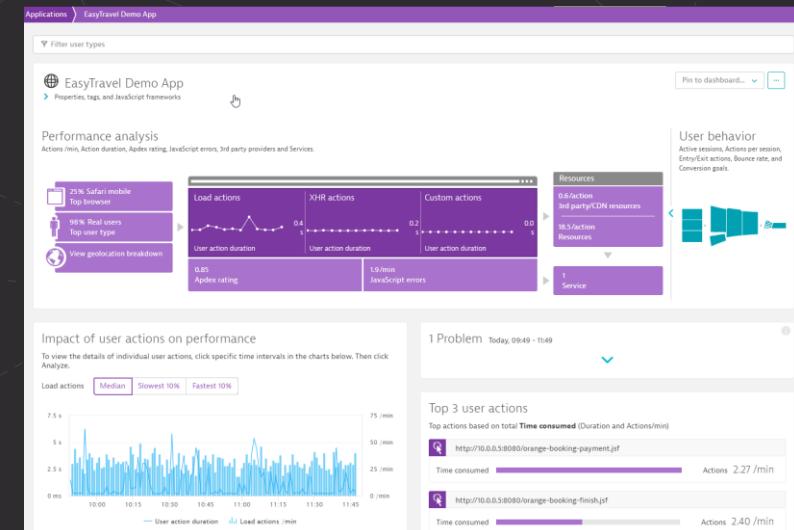
easyTravel AMP

FARE TERMS AND CONDITIONS: Sample round-trip and one-way fares posted on [www.easytravel.com](http://www.easytravel.com) are per person and include all applicable taxes and fees including, but not limited to September 11th Security Fee of up to \$500 for each flight segment originating at a U.S. airport; Passenger Facility Charges of up to \$18, depending on itinerary; Federal Segment Fees of \$3.70 per segment; and foreign and U.S. government-imposed-charges of up to \$400 per international round-trip flight, depending on routing and destination. A flight segment is defined as one takeoff and one landing. Fares are subject to availability and change without notice. If advertised fare is not available for dates chosen, higher fares may be offered. Actual prices may vary based on actual routing, fluctuations in currency (international only), and day of week.

VeriSign Secured TRAVEL GUIDE VIR IATA ARC ASTA BBB IATA

# Validate Dynatrace Monitoring

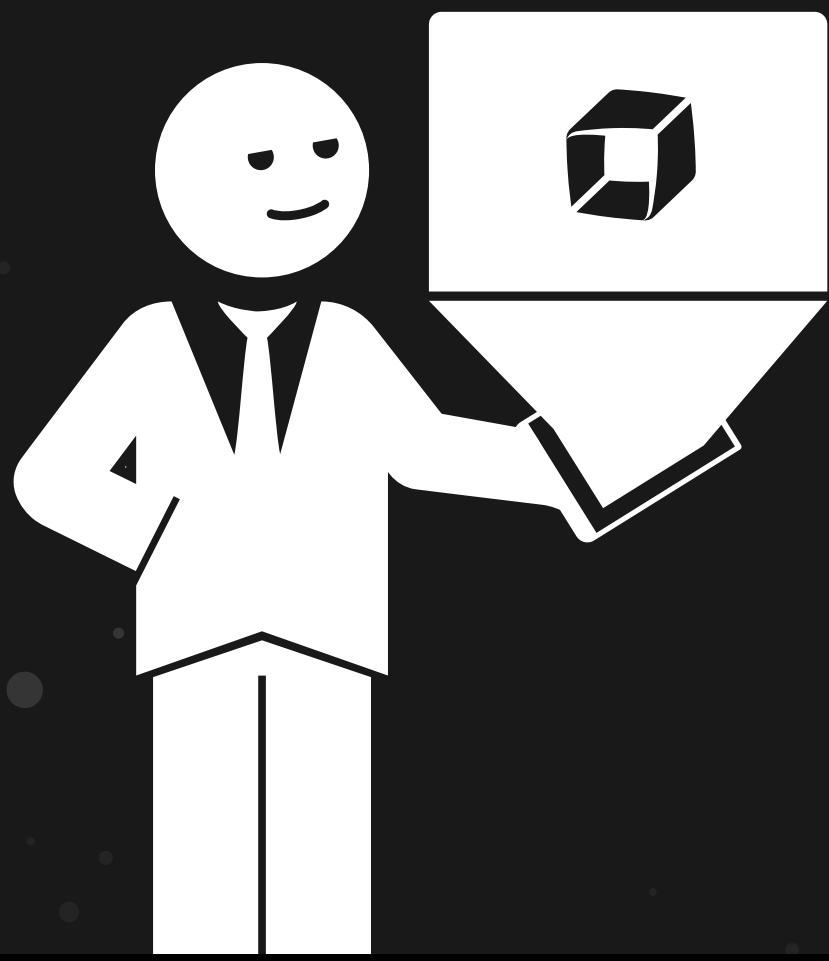
EasyTravel generates artificial transactions. With zero-config you can start exploring some of the great features of Dynatrace. Walk through the easy to navigate menu and see for yourself the power of Dynatrace OneAgent.



Smartscape

Application Overview

User Session



# Smartscape Topology

# Smartscape Topology

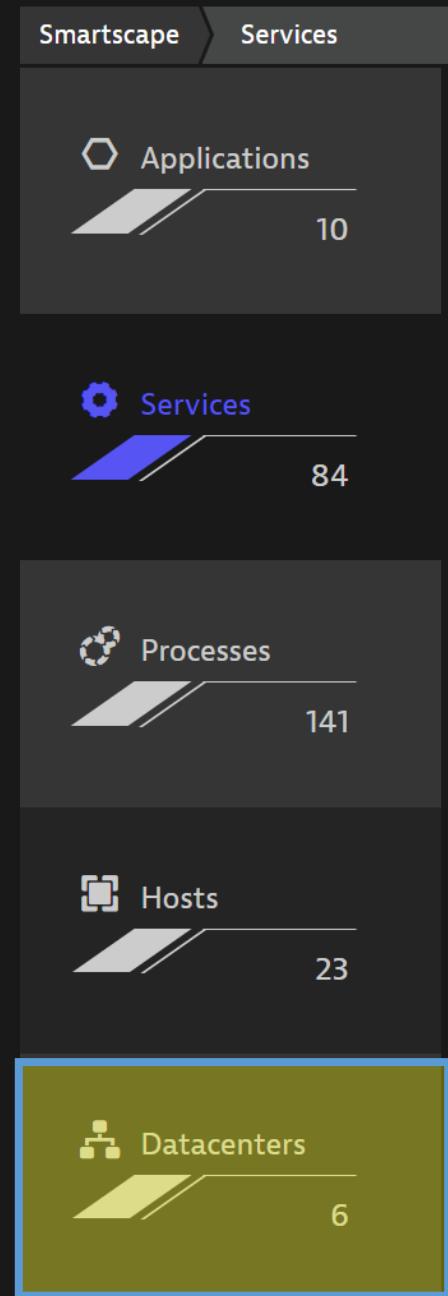
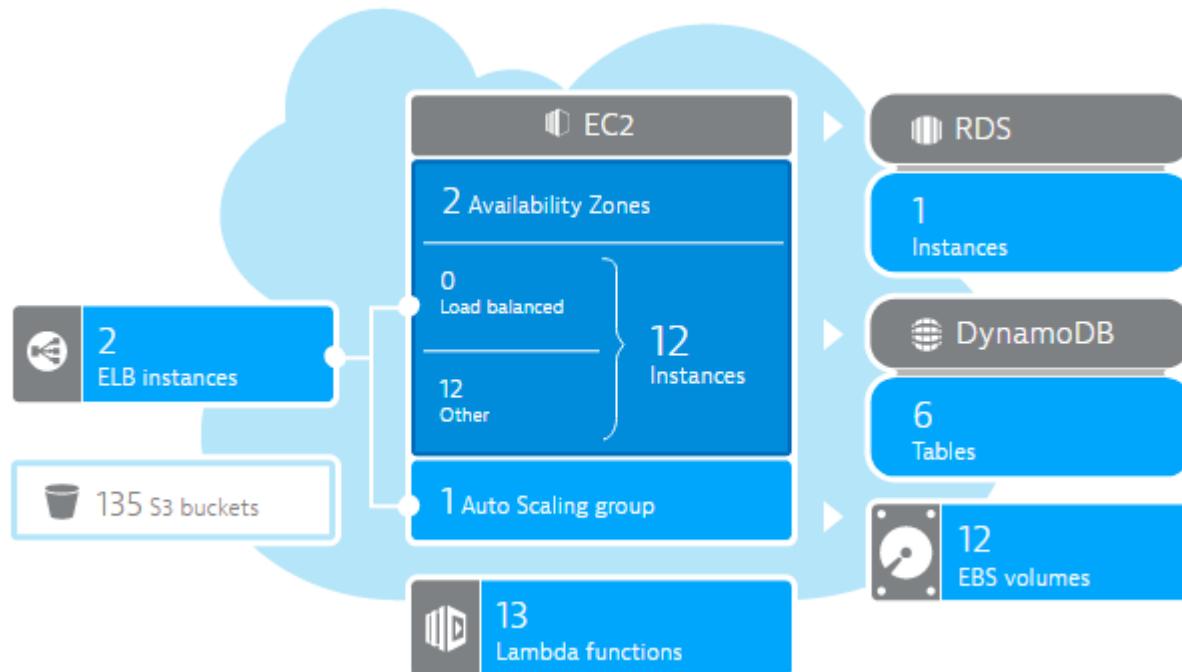
datacenter 

or **data center**

[dey-tuh-sen-ter]

1. a facility equipped with or connected to one or more computers, used for processing or transmitting data

Related terms: vCenter, zone, Virtual, AWS, Azure, Geo Region



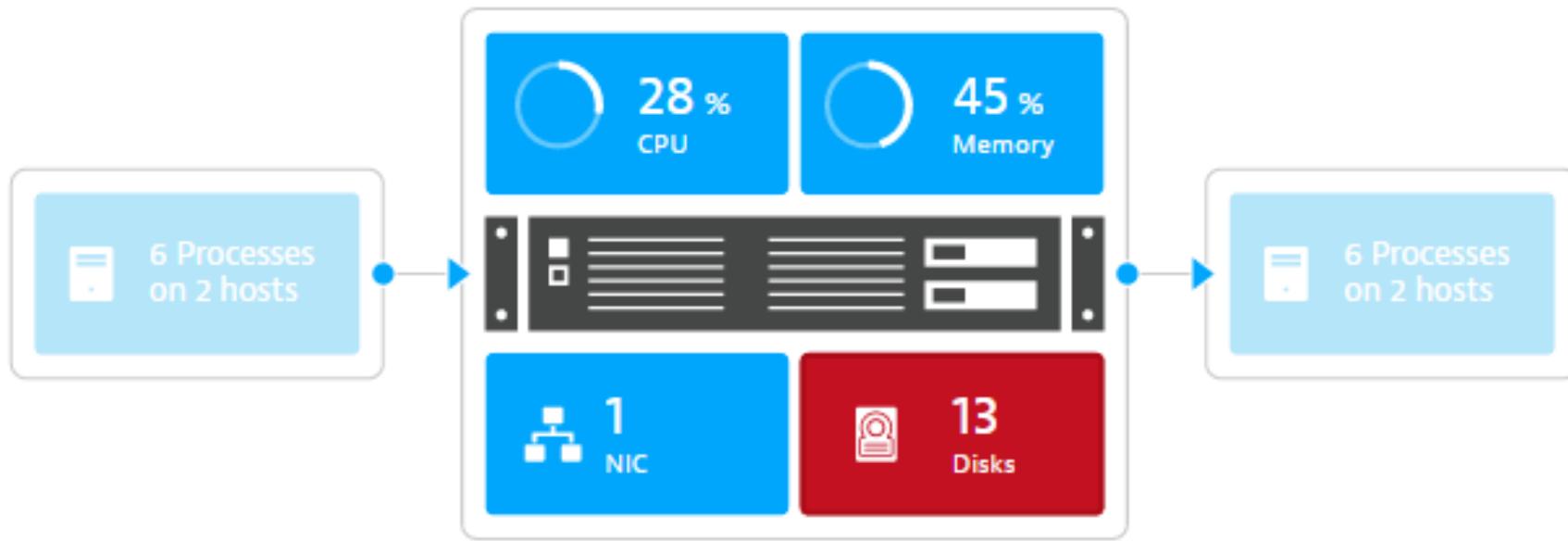
# Smartscape Topology

host 

[host]

1. A physical or virtualized operating system
2. The source of compute, memory, and storage resources

Related terms: CPU, Interface, Virtual, AWS



Applications 10

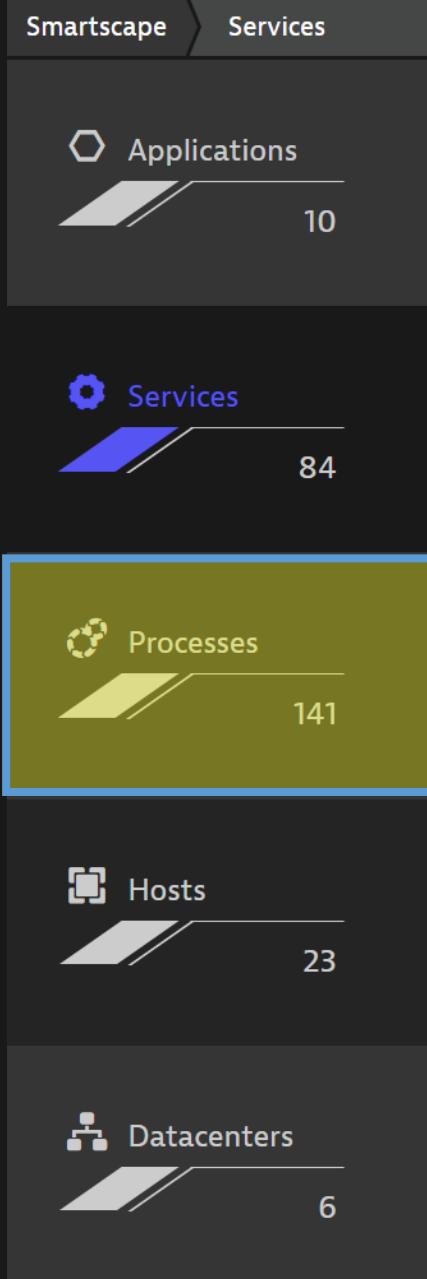
Services 84

Processes 141

Hosts 23

Datacenters 6

# Smartscape Topology

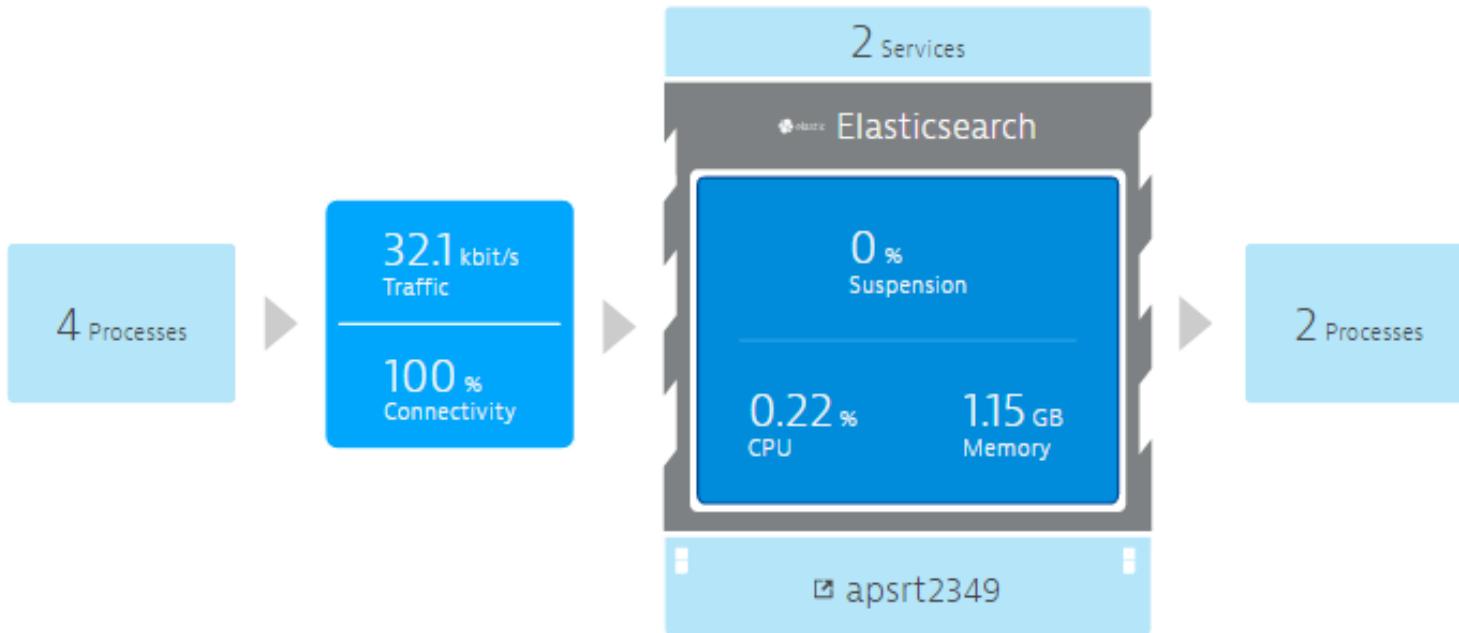


process 

[pros-es; especially British proh-ses]

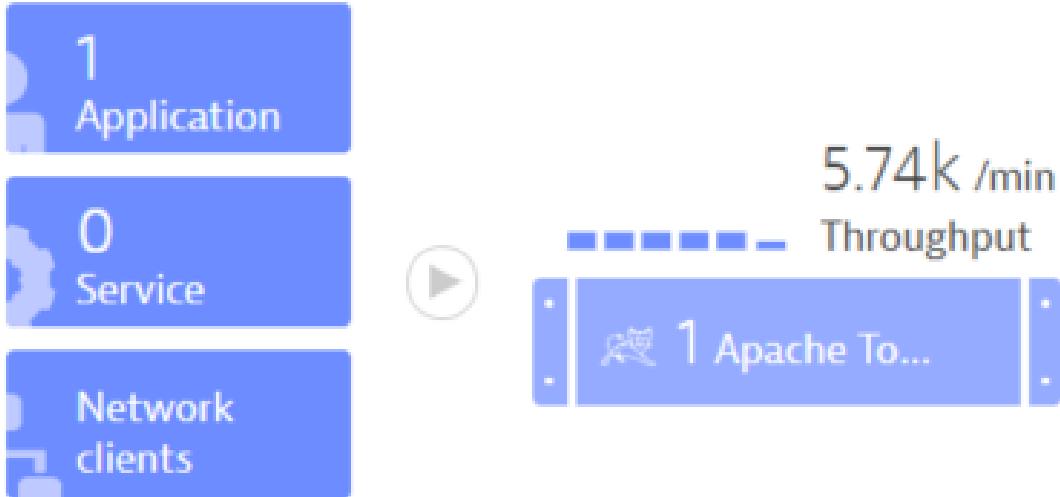
1. A currently executing computer program
2. A means for code to request computing resources

Related terms: Requests, Utilization, PID, Memory



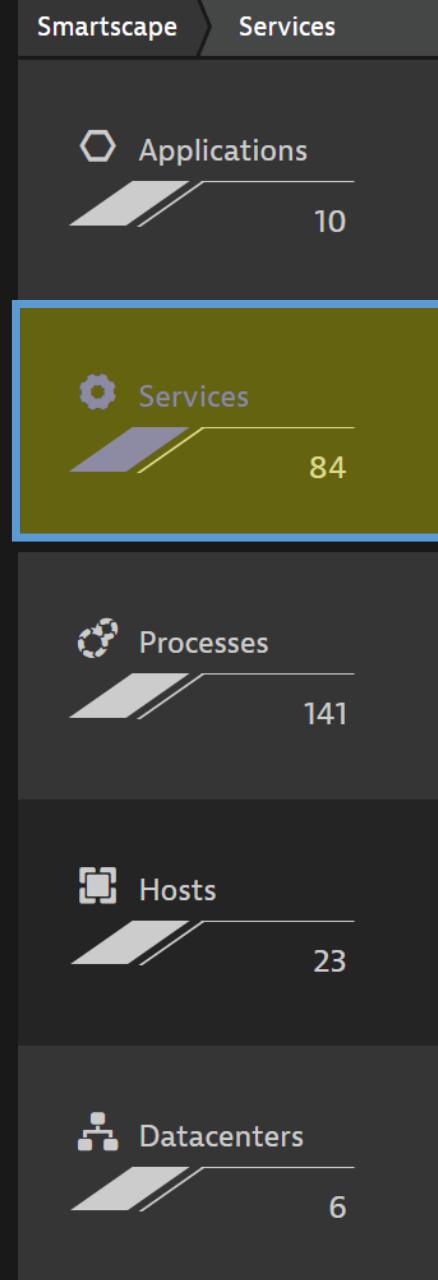
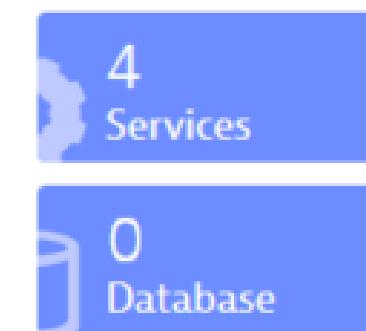
# Smartscape Topology

service  
[sur-vis]



1. A set of code that accepts requests and returns results
2. The result of instrumenting a process
3. The “code layer” which requires “deep dive”

Related terms: Instrument, Web Request, Breakdown, Service Flow, Service Backtrace, Hotspot, PurePath

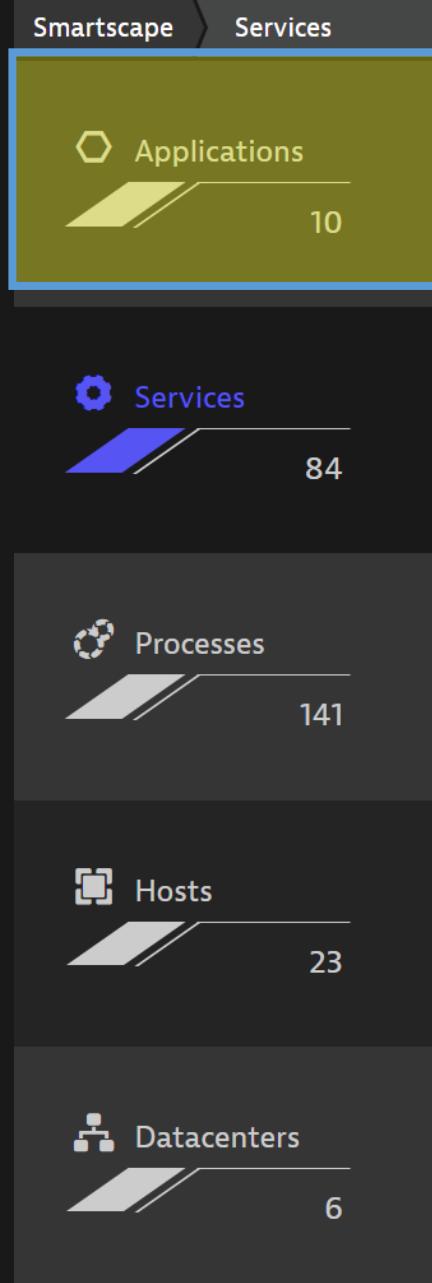
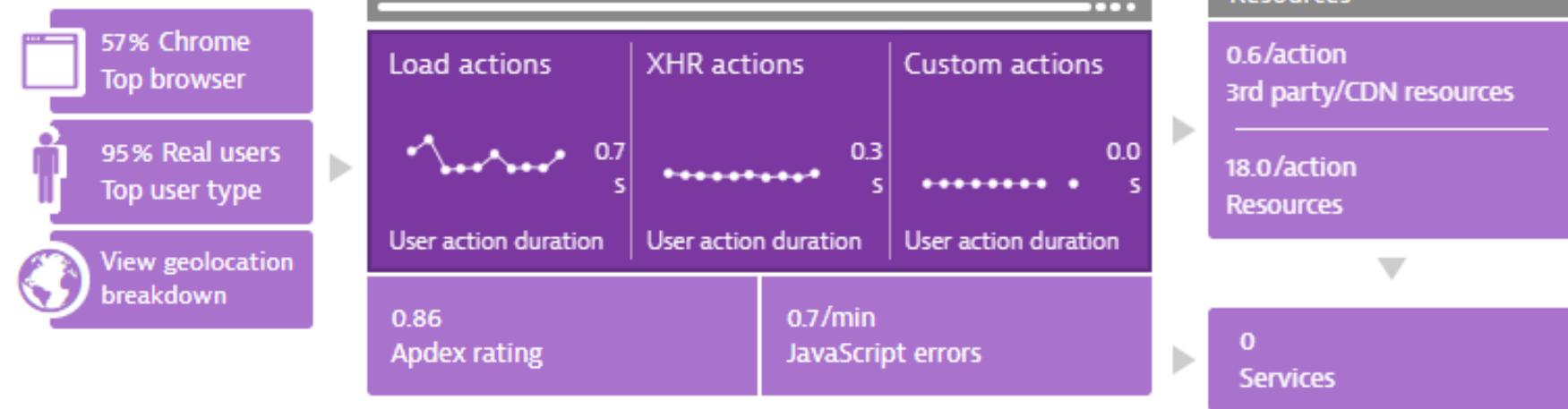


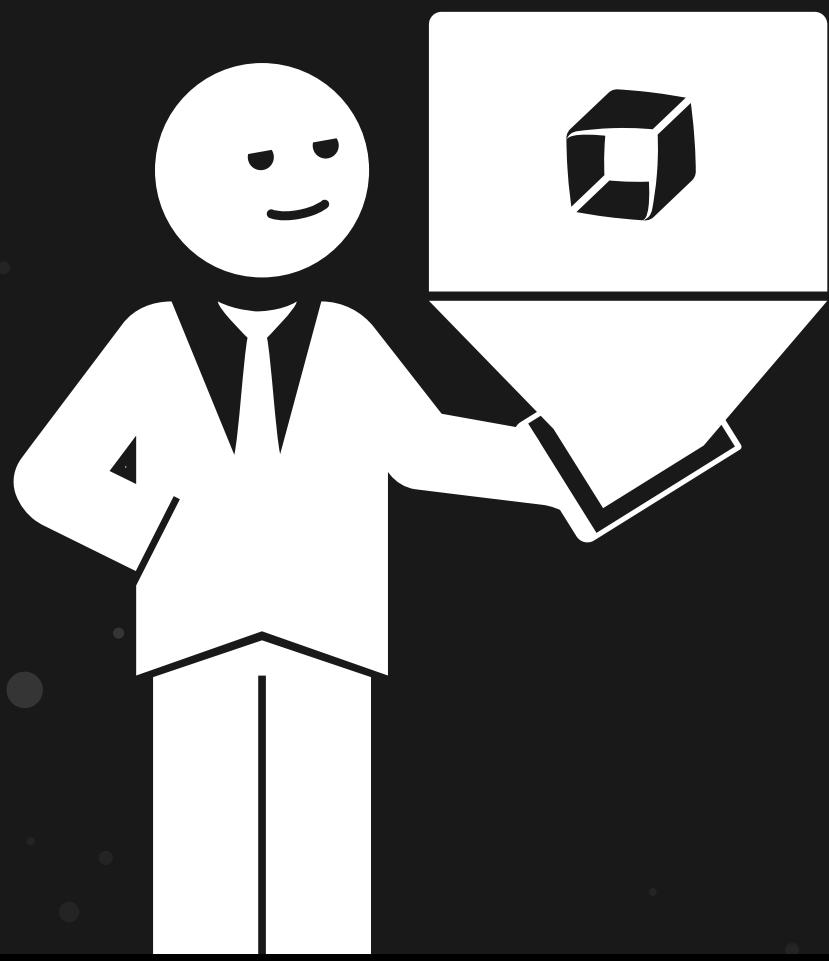
# Smartscape Topology

application   
[ap-li-keɪ-shuh n]

1. User experience as measured at the endpoint, such as a browser or mobile device
2. How software is presented to the end user

Related terms: Browser, User Action, Session, JavaScript, Waterfall





# Host View

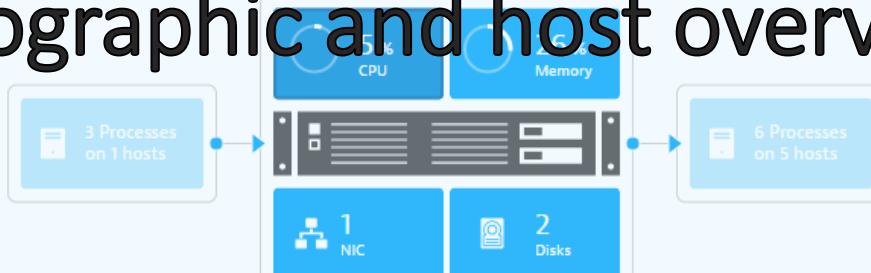
 CF1-tomcatjms  
Uptime: over 31 days

Analyze process connections ...

Properties and tags

Ubuntu 14.04.5 LTS, Trusty Tahr (kernel 3.13.0-108-generic) 23 more...

## Infographic and host overview



3 Processes on 1 hosts

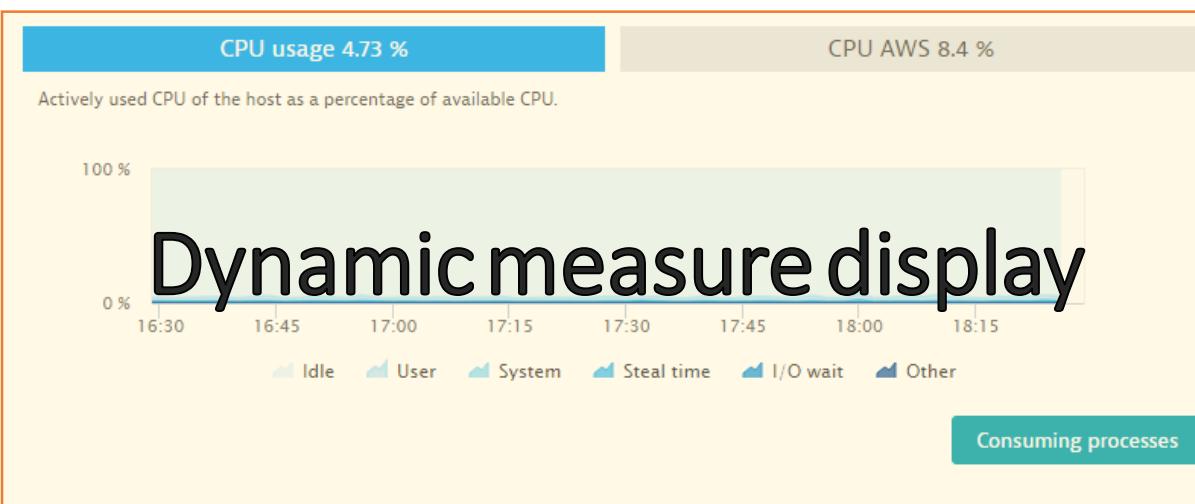
5 CPU

6 Memory

1 NIC

2 Disks

6 Processes on 5 hosts

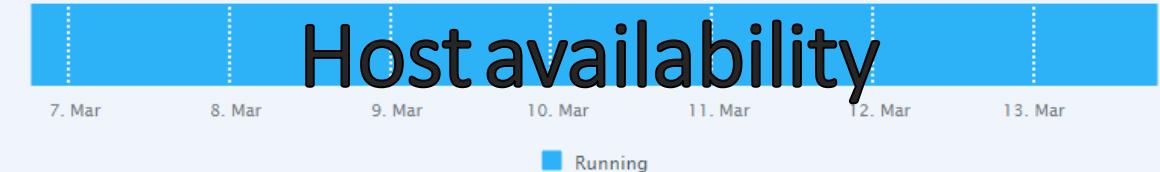


No problems in last 7 hours

## Problem history

1 watched

100% Availability in last 7 days  
0 min total downtime



### Processes

 Apache Tomcat

com.dynatrace.easytravel.cmdlauncher.jar easytravel-2.0.0-x64  
et-demo-1-CustomerHome

 Java

apl-remotecontrol.jar

## Detected Processes

All processes

No events today, 16:28 - 18:28

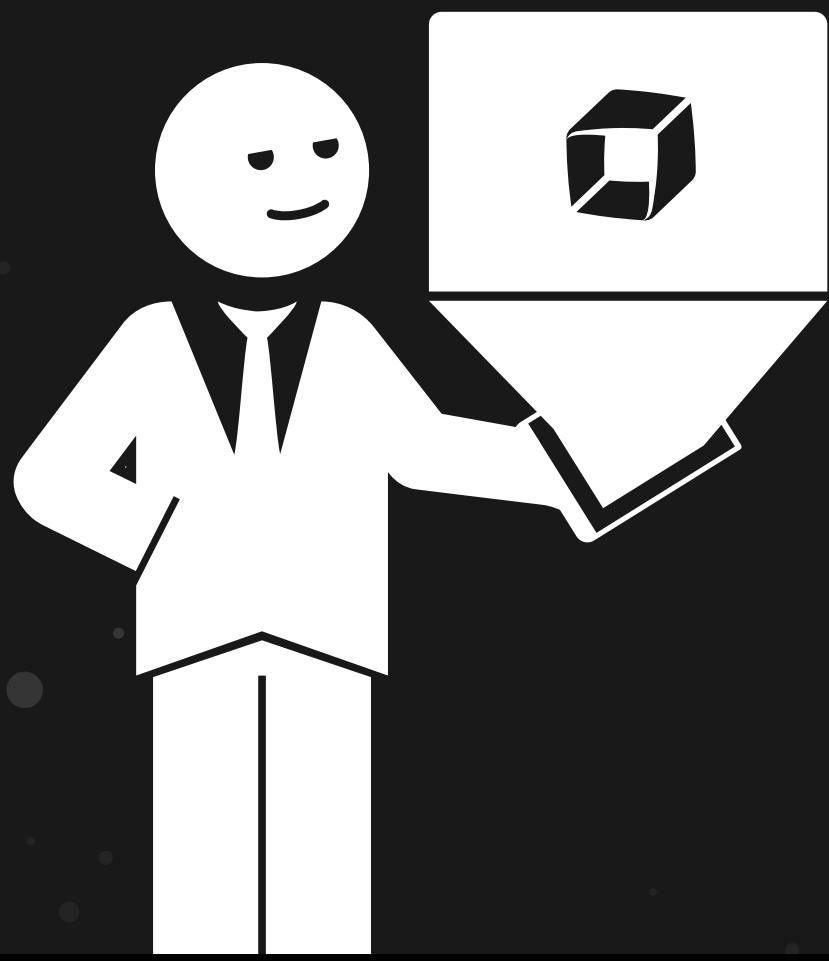
## Event logger

1 log file updated in last 72 hours  
This host writes to 1 log file

 /var/log/syslog (12.7 kB)

## Logfiles for host

View all log entries



## Process View



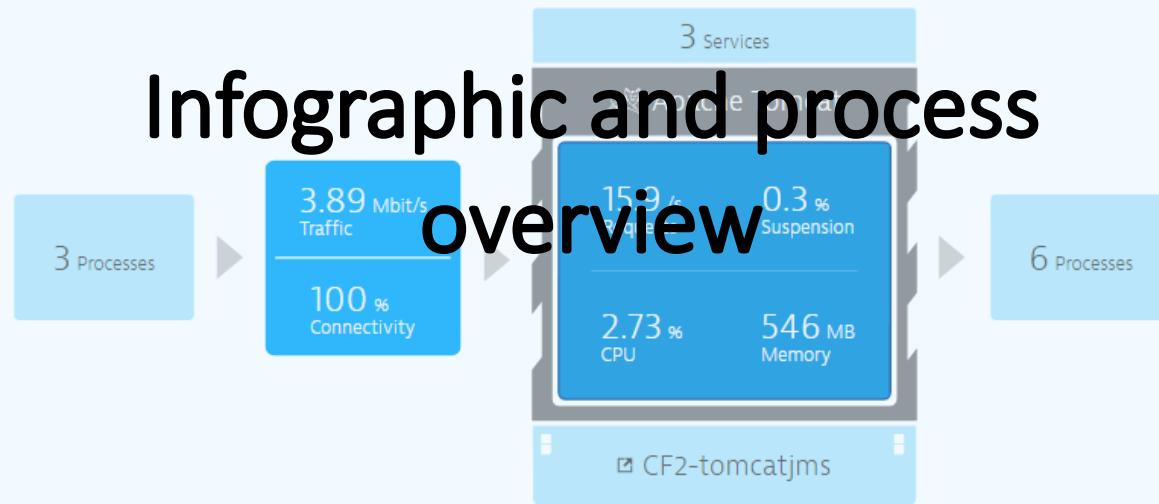
eT-demo-1-CustomerFrontend

Analyze process connections

...

Properties

## Infographic and process overview



System performance  
AppServer metrics

JVM metrics

Further details

CPU



View detailed CPU breakdown

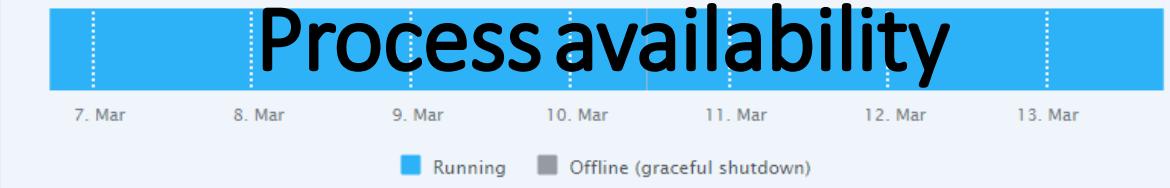
No problems in last 72 hours

## Problem history

watched

99.9% Availability in the last 7 days

6 min total downtime Last downtime on 10-03-2017 10:28 - 10:35



No events today, 15:31 - 17:31

## Event logger

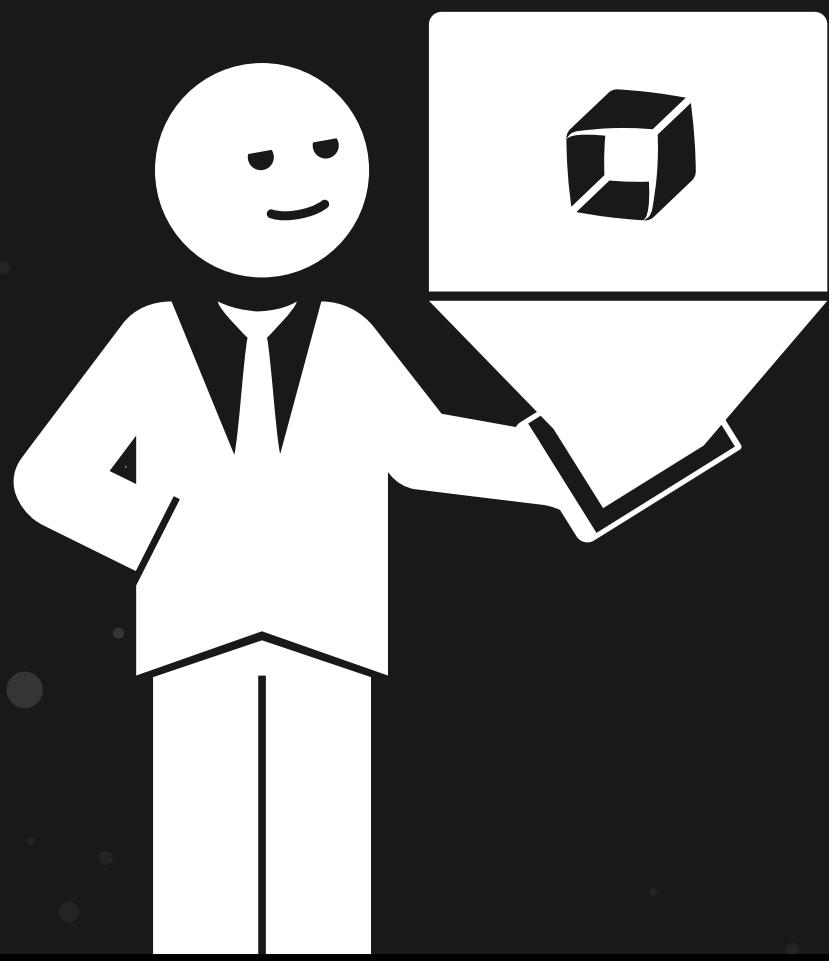
1 log file updated in last 72 hours

This process writes to 1 log file on CF2-tomcatjms

Can't see important log entries? [Configure more log files](#)[/home/labuser/livetecheasyTraffic/1000syslog/CustomerFrontend.log \(15.8 MB\)](#)

## Logfiles for process

[View all log entries](#)



# Service View

 easyTravel Customer Frontend  
Seen recently

Properties and tags

# Infographic and Service overview



1 Application  
0 Service  
0 Network clients  
5.47k /min Throughput  
4 Services  
1 Apache To...  
0 Database

Smartscape view ...

3 Problems in last 72 hours

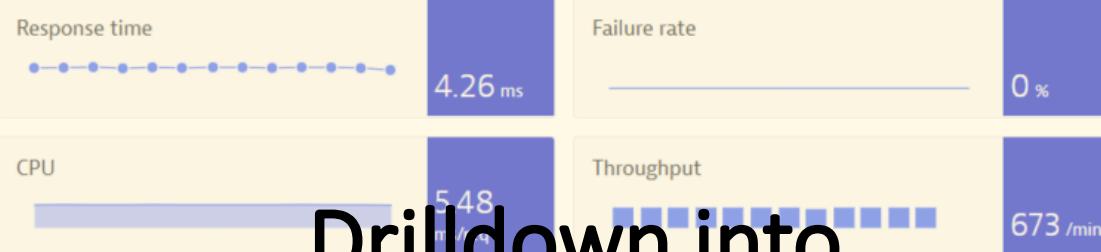
# Problem history

Current hotspots

High consumption of service resources 33 % /orange-booking-payment  
Slow response time 242 ms /CalculateRecommendations

# Hotspot Analysis

Dynamic web requests



Response time: 4.26 ms  
Failure rate: 0 %  
CPU: 5.48 m/s  
Throughput: 673 /min

View dynamic requests

# Drilldown into Service Details

Resource requests

0.06 ms Response time	0 % Failure rate	0.21 ms/req CPU	4.79k /min Throughput
-----------------------	------------------	-----------------	-----------------------

View resource requests

Understand dependencies Today, 09:03 - 11:03

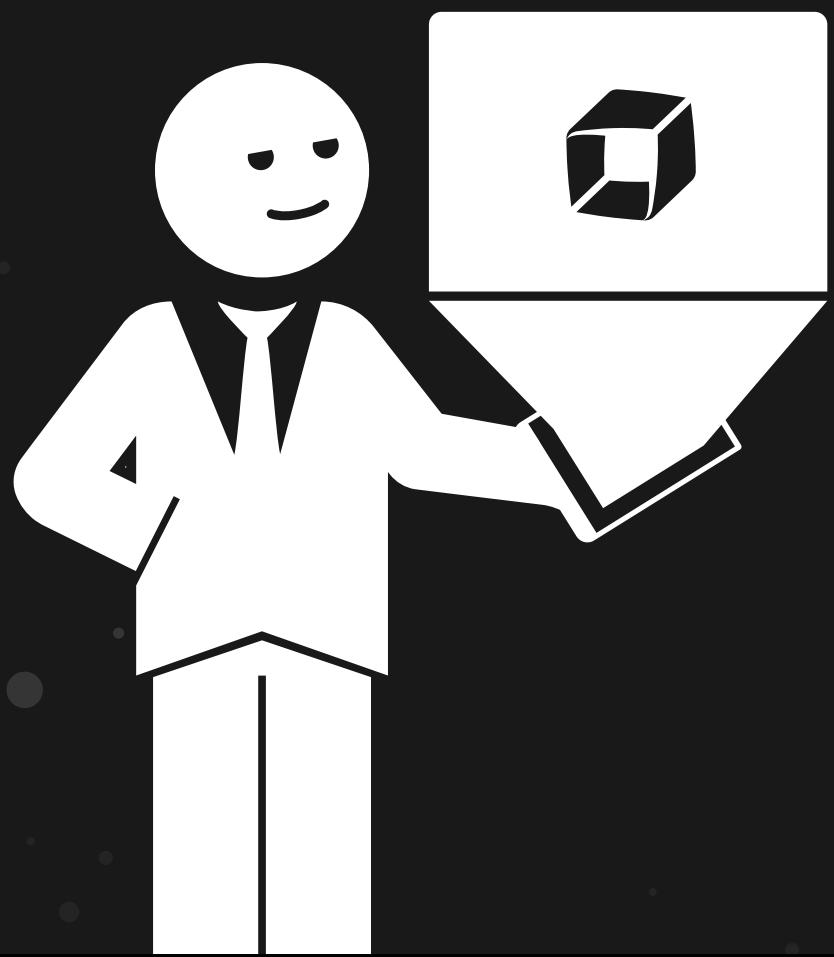
Understand all dependencies and response time contributions  
[View service flow](#)

Understand which entities and related dependencies this service depends on  
[Analyze backtrace](#)

# Drilldown into Dependencies

No events Today, 09:03 - 11:03

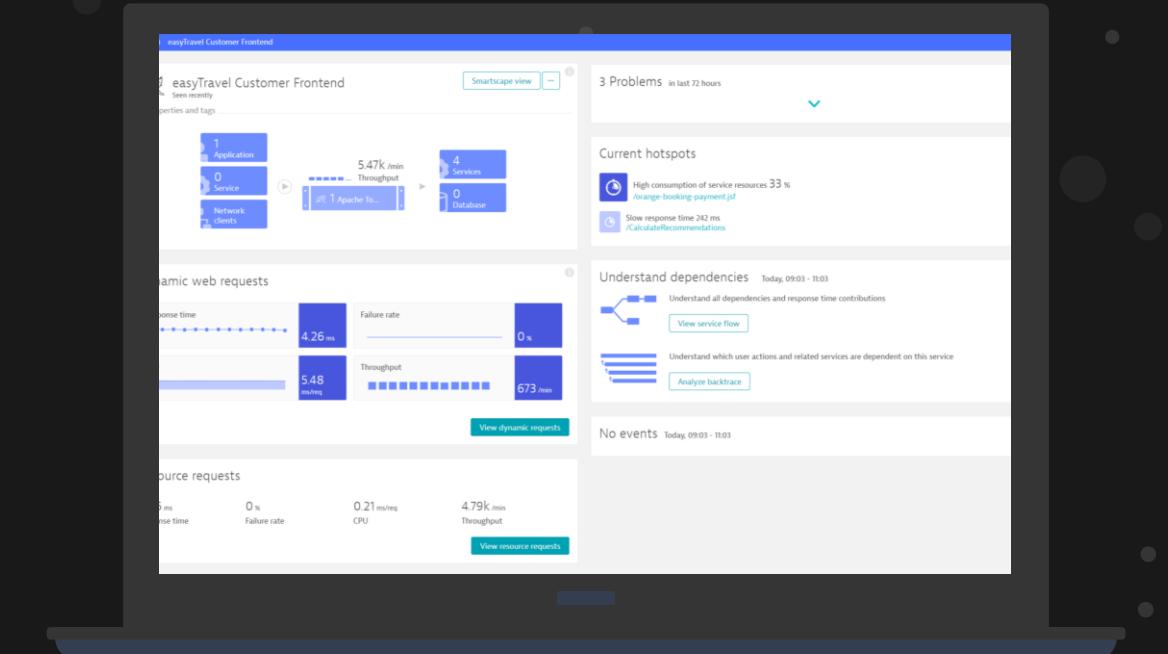
# Event logger



# Service Analysis

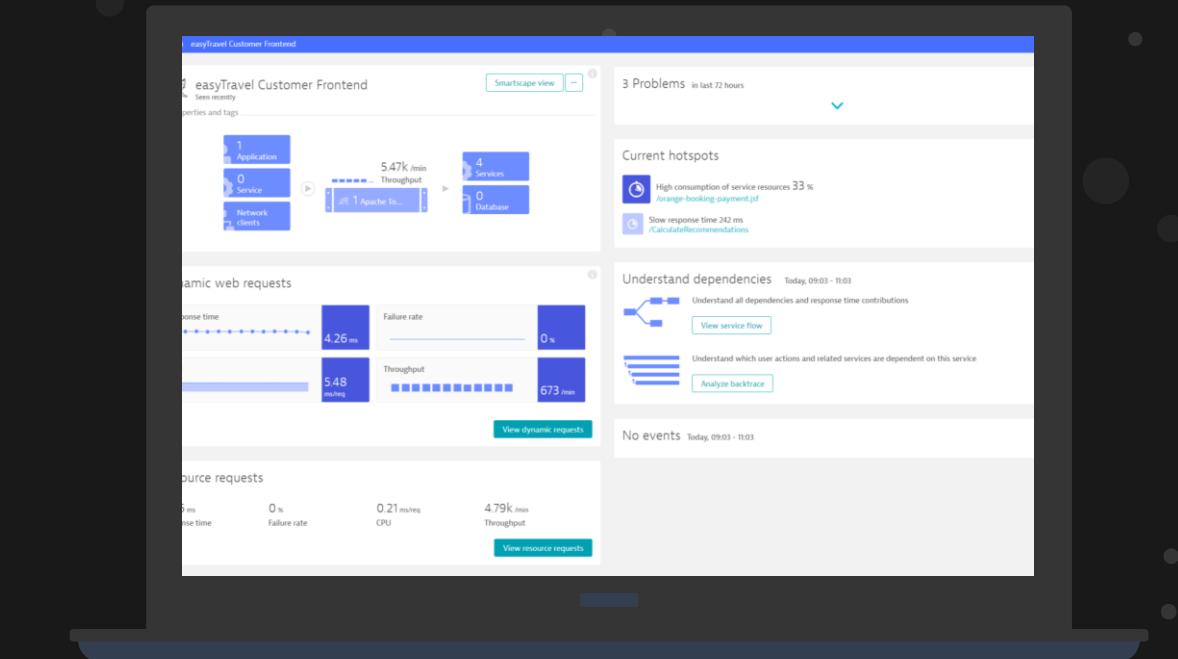
# Service Analysis

- Various view for analysis
  - Service Flow
  - Response Time Hotspots
  - Compare
- Able to filter every view dynamically
- Dynamic changes when abnormal performance is detected (AKA ‘Problems’)



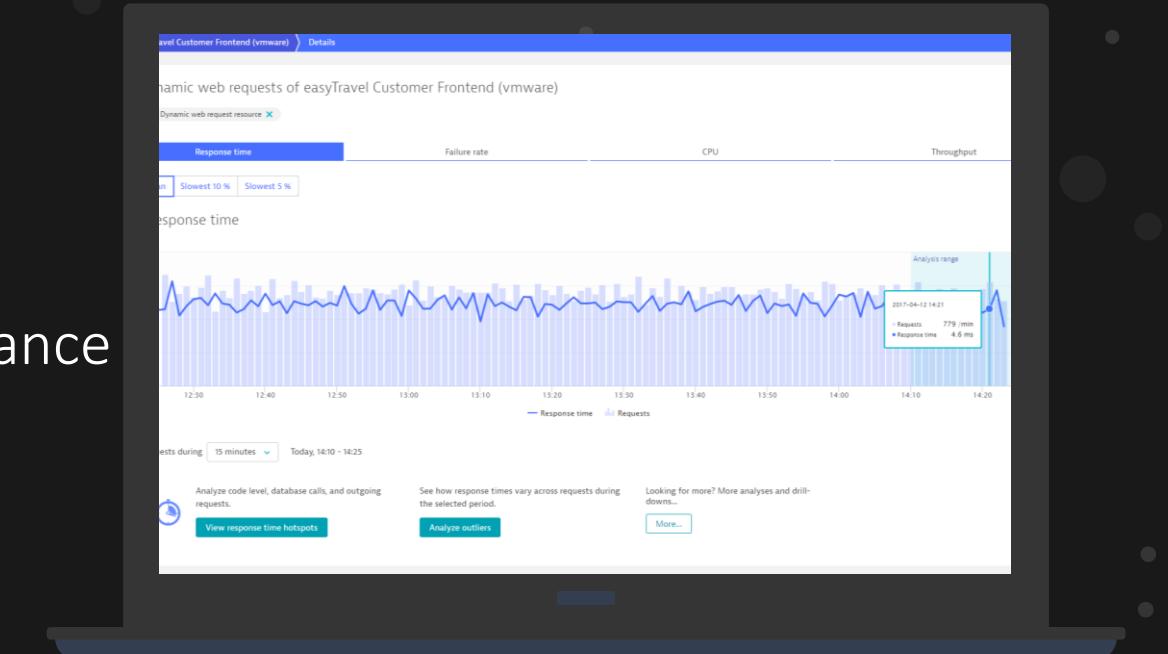
# Service Analysis

- Various view for analysis
  - Service Details
  - Service Flow
  - Service Backtrace
  - Response Time Distribution
  - Response Time Hotspots
  - Failure Analysis
  - PurePaths
  - Compare
- Able to filter every view dynamically
- Dynamic changes when abnormal performance is detected (aka ‘Problems’)



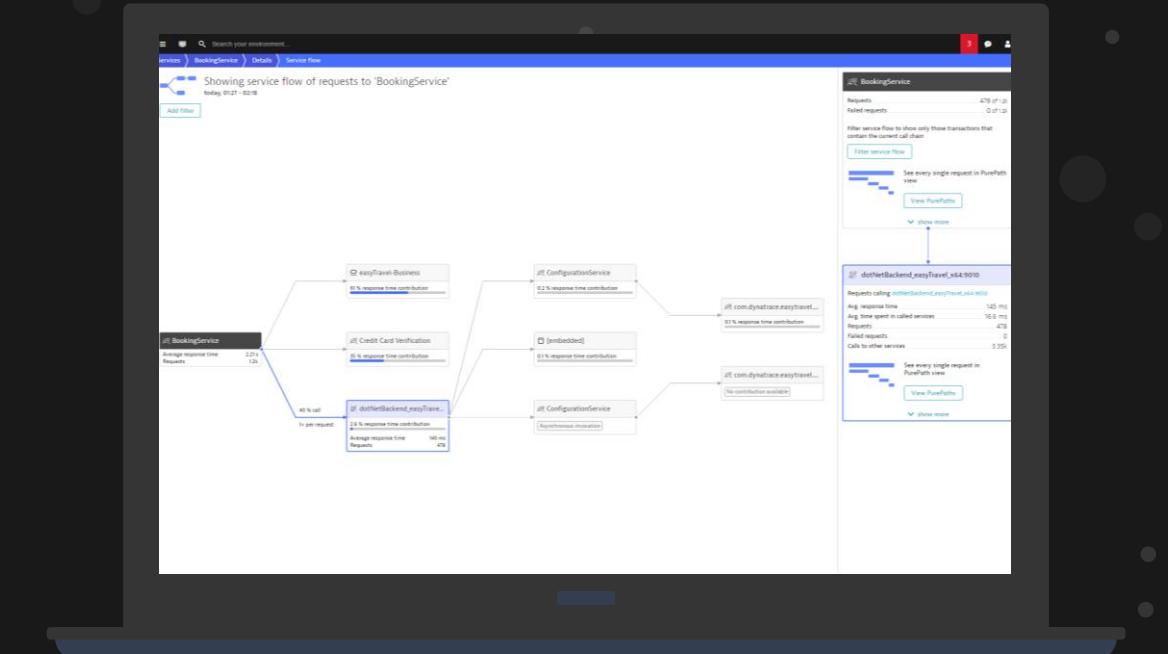
# Service Analysis – Service Details

- What is it?
  - Detailed overview of a service's performance
  - Starting point for further analysis
- When would I use it?
  - Understand the overall performance over time
  - Beginning manual hotspot and failure analysis
  - Landing view for several problem root causes



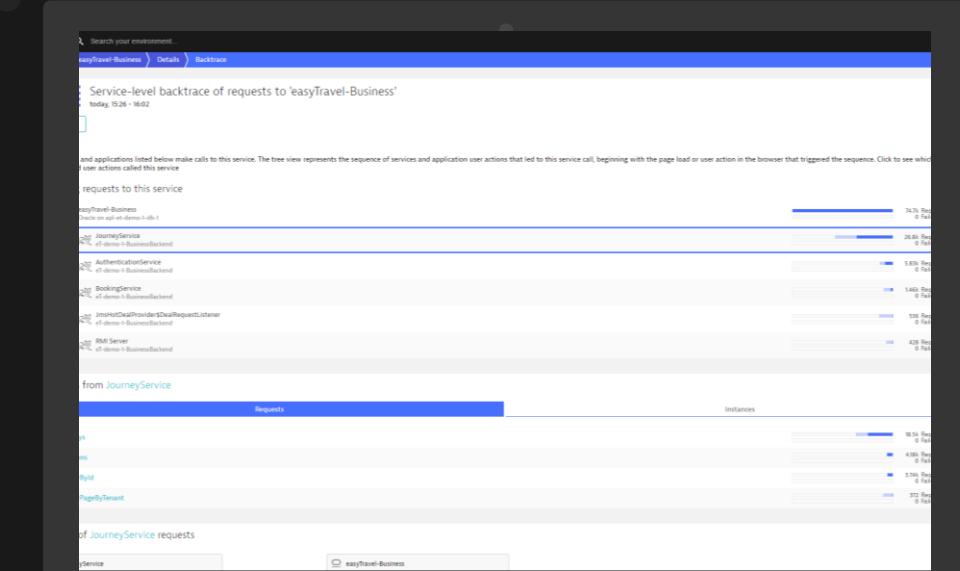
# Service Analysis – Service Flow

- What is it?
  - Overview of all services and queues that a selected service makes requests to and the time spent within those services
- When would I use it?
  - Understand the call chain sequence of a service
  - View all the response time contributors for a service



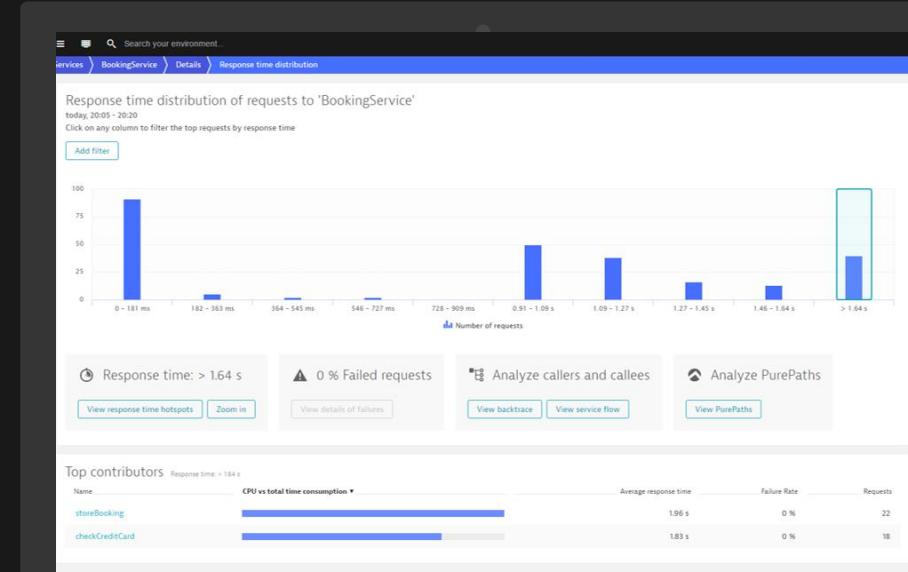
# Service Analysis – Service Backtrace

- What is it?
  - A view that shows information about who makes calls to a particular service
- When would I use it?
  - Understand what services call the selected service
  - Analyze the performance of a service from the perspective of the calling clients.



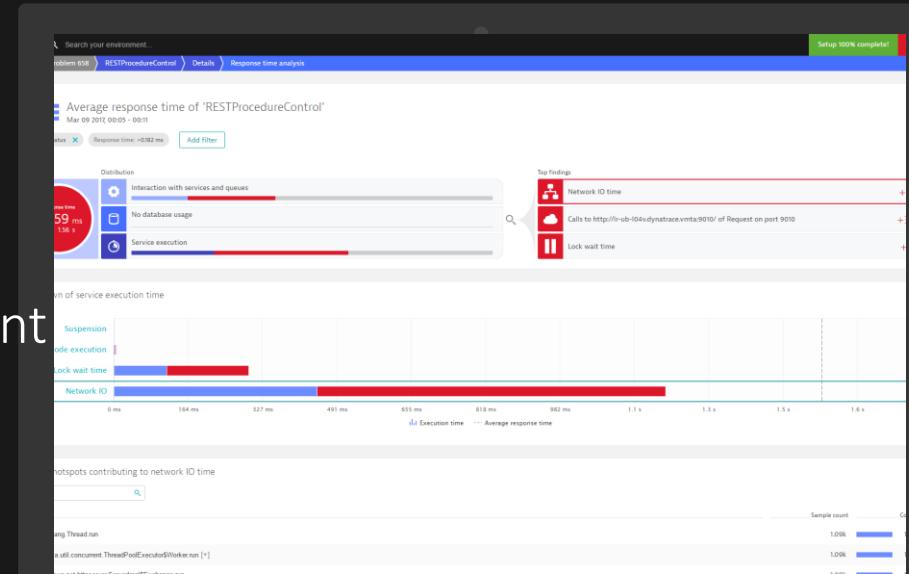
## Service Analysis – Response Time Distribution

- What is it?
  - A feature that allows you to quickly view the variance in request duration
- When would I use it?
  - Easily view performance outliers and pick them out for deeper analysis
  - Quickly view changes in performance duration during problems vs normal behavior



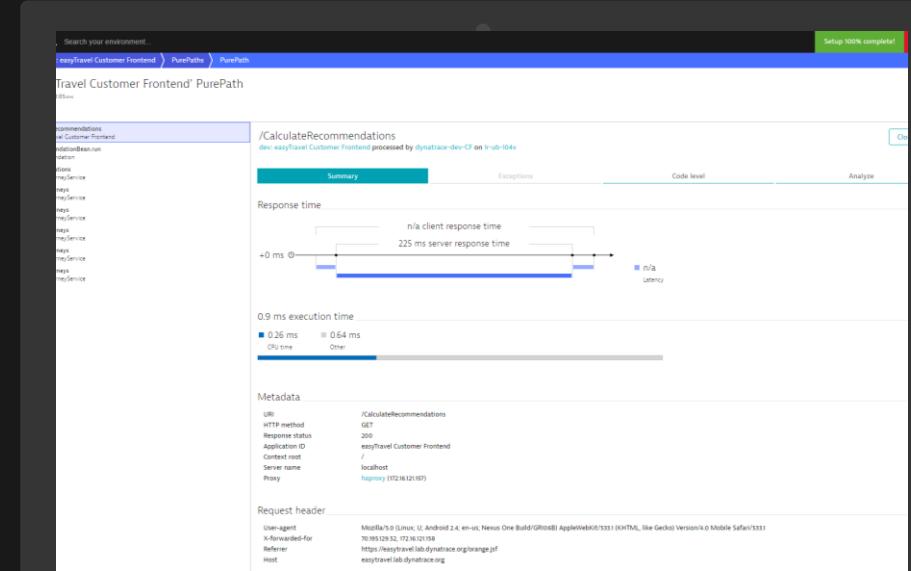
## Service Analysis – Response Time Hotspots

- What is it?
  - A feature that allows you to breakdown time spent on any service or even individual requests
- When would I use it?
  - Performance analysis of any instrumented service
  - Understand total impact of code, DB queries, calls to other services
  - Analyzing performance degradation during problems related to a service or request



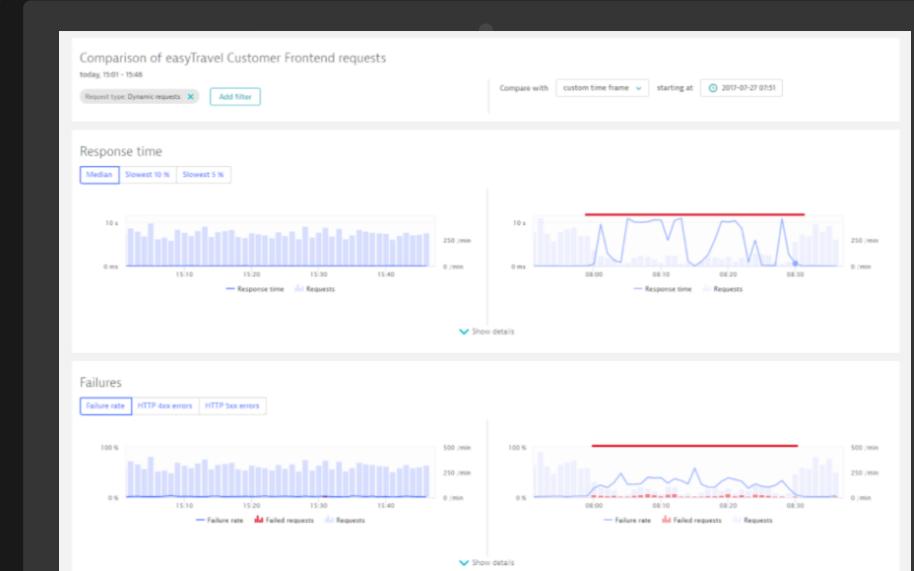
# Service Analysis - PurePaths

- What is it?
  - Deep dive breakdown of a single transaction.
  - Waterfall breakdown of where time is spent



## Service Analysis - Compare

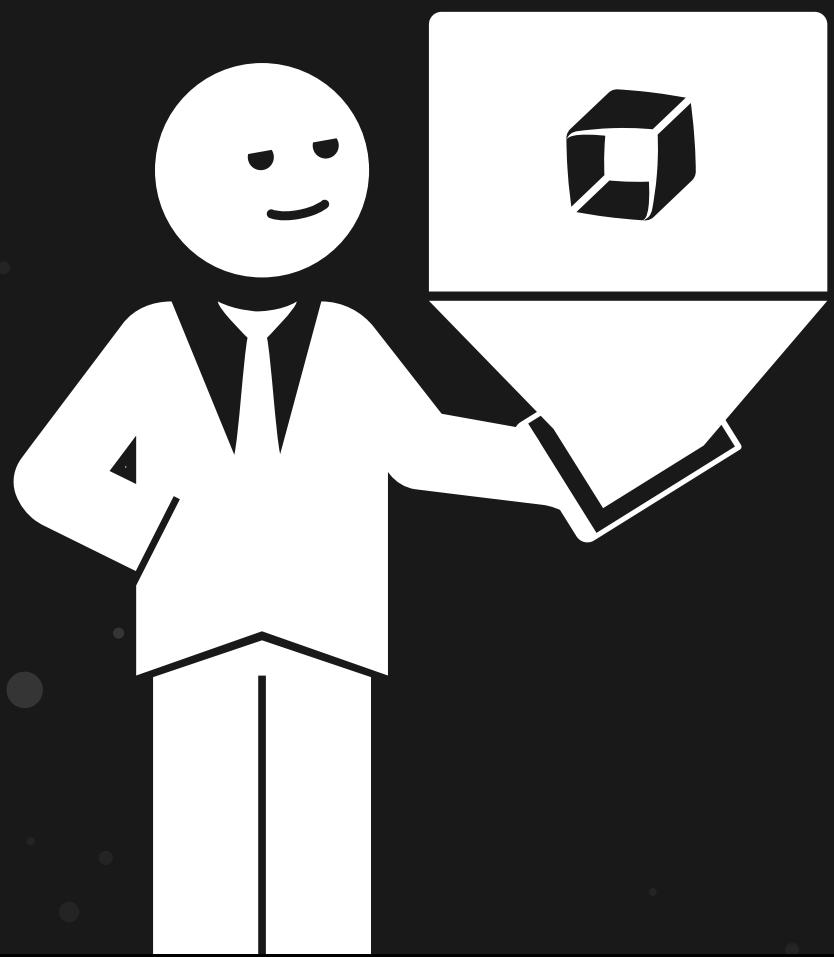
- What is it?
  - Compare view enables you to compare critical service-request metrics across two time frames
- When would I use it?
  - View performance metrics for Requests, Attributes, or Instances
    - Response time
    - Failures
    - CPU
    - Load



# Service Analysis – Failure Analysis

- What is it?
  - View the details of failures occurring at any instrumented tier
- When would I use it?
  - Ad hoc failure analysis of any instrumented service
  - Analyzing failure rate increase during problems related to a service or request

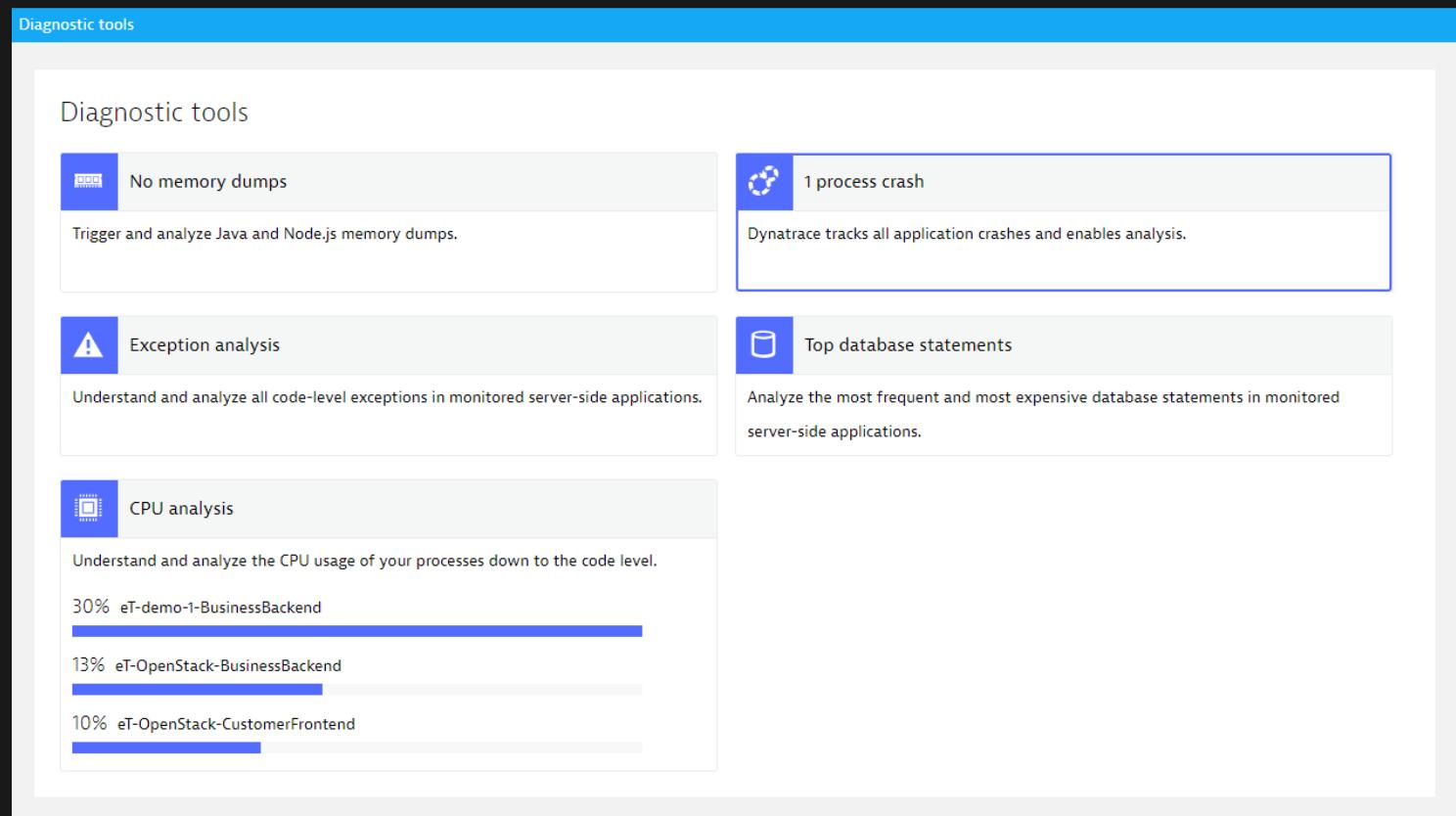
The screenshot shows a failure analysis report for the 'easyTravel Customer Frontend' service, specifically for the 'Images' component. The main summary indicates 4.3k failed requests over a period from Mar 13 21:11 to Mar 13 21:41. A prominent red bar chart shows that 100% of these failed requests were due to HTTP 500 errors. Below this, a table lists 'Requests that failed with HTTP 500' for the 'Images' service. Further down, a section titled 'Root causes for requests to Images that failed with HTTP 500' details that 100% of the failures were caused by failed service calls to 'CouchDB\_ET' on port 5984 with a 'java.net.ConnectException'. It also provides specific exception details, including 'Connection refused (Connection refused)' and stack traces for 'java.net.PlainSocketImpl.socketConnect' and 'org.apache.http.conn.PooledPlainConnectionSocketFactory.connectSocket'.

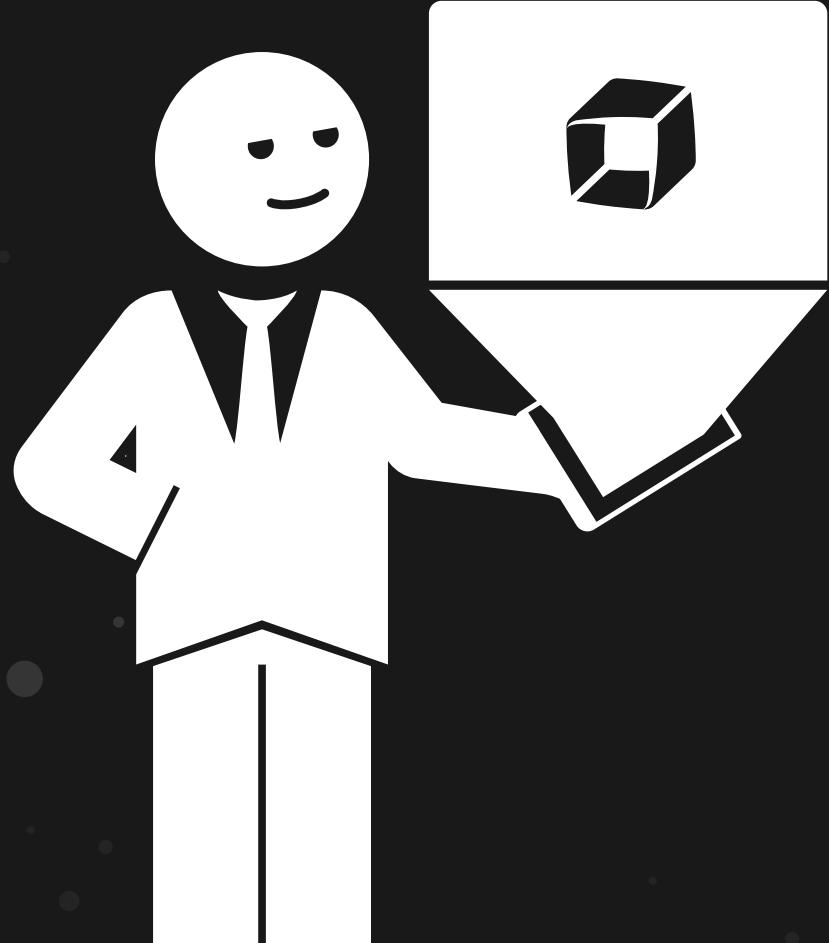


# Diagnostic Tools

# Diagnostic Tools Overview

- Memory Dump
- Crash Processes
- Exception Analysis
- Top Database Statements
- CPU Analysis

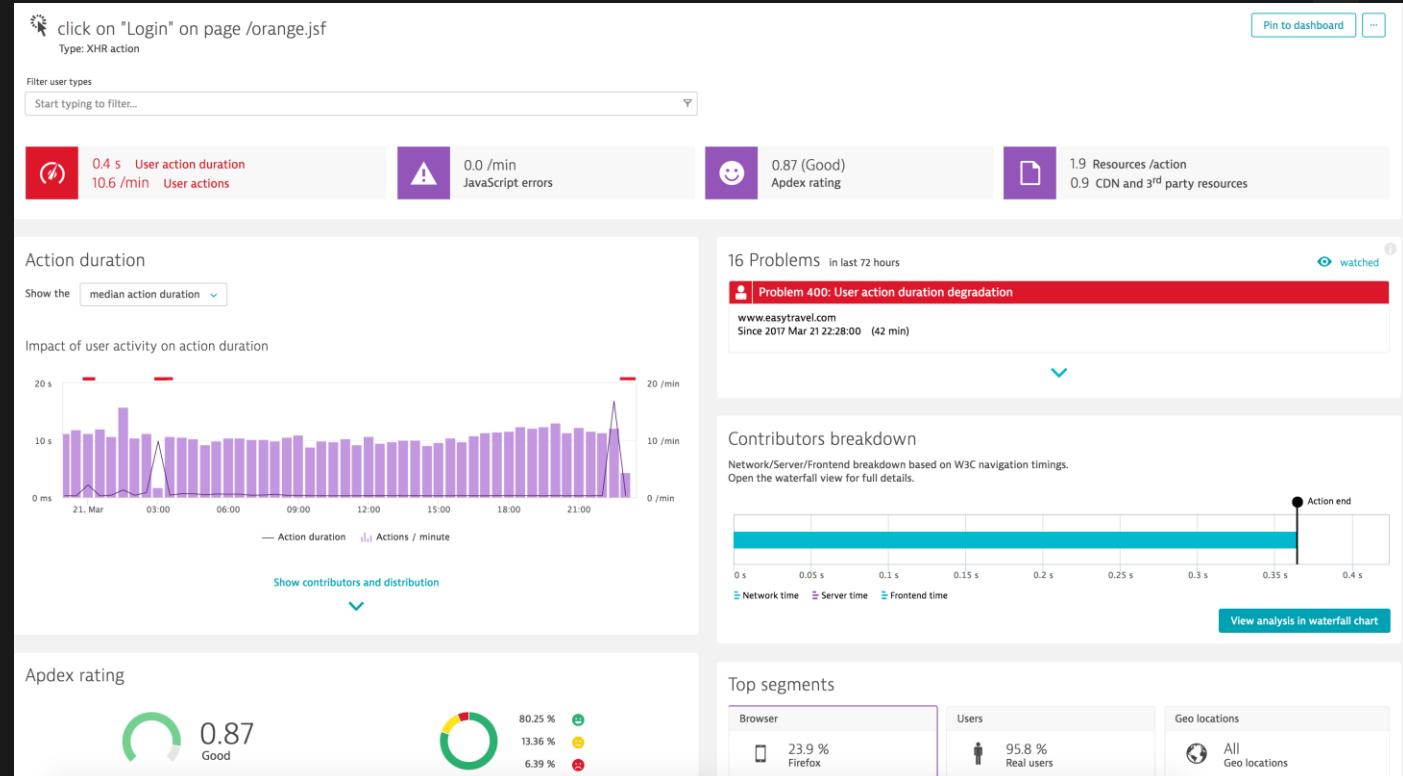




# Application Analysis

# Performance Analysis Overview

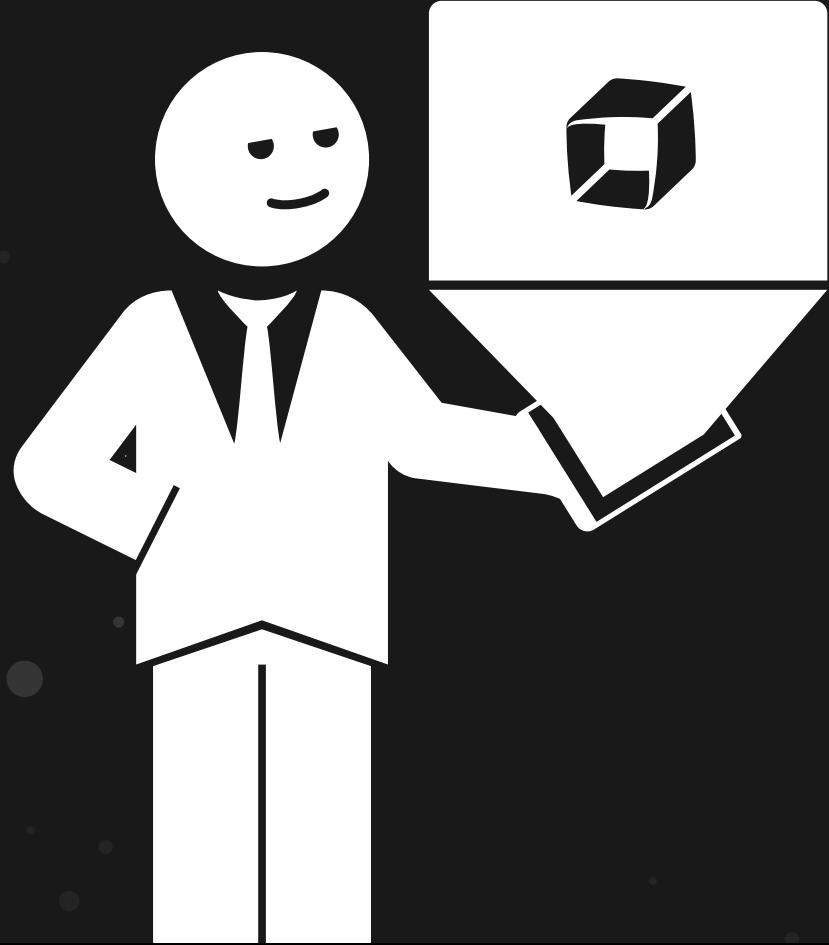
- Action duration vs load
- Contributor breakdown & waterfall analysis
- Problem correlation & filtering
- Segmentation analysis
- Resources
- Top web request contributors
- JavaScript impact & analysis
- Mark as a Key Request



# User Behavior Overview

- New Vs Returning Users
- Geographic breakdown
- Active Sessions
- Bounce rate
- Entry Actions vs Exit Actions
- Conversion goals

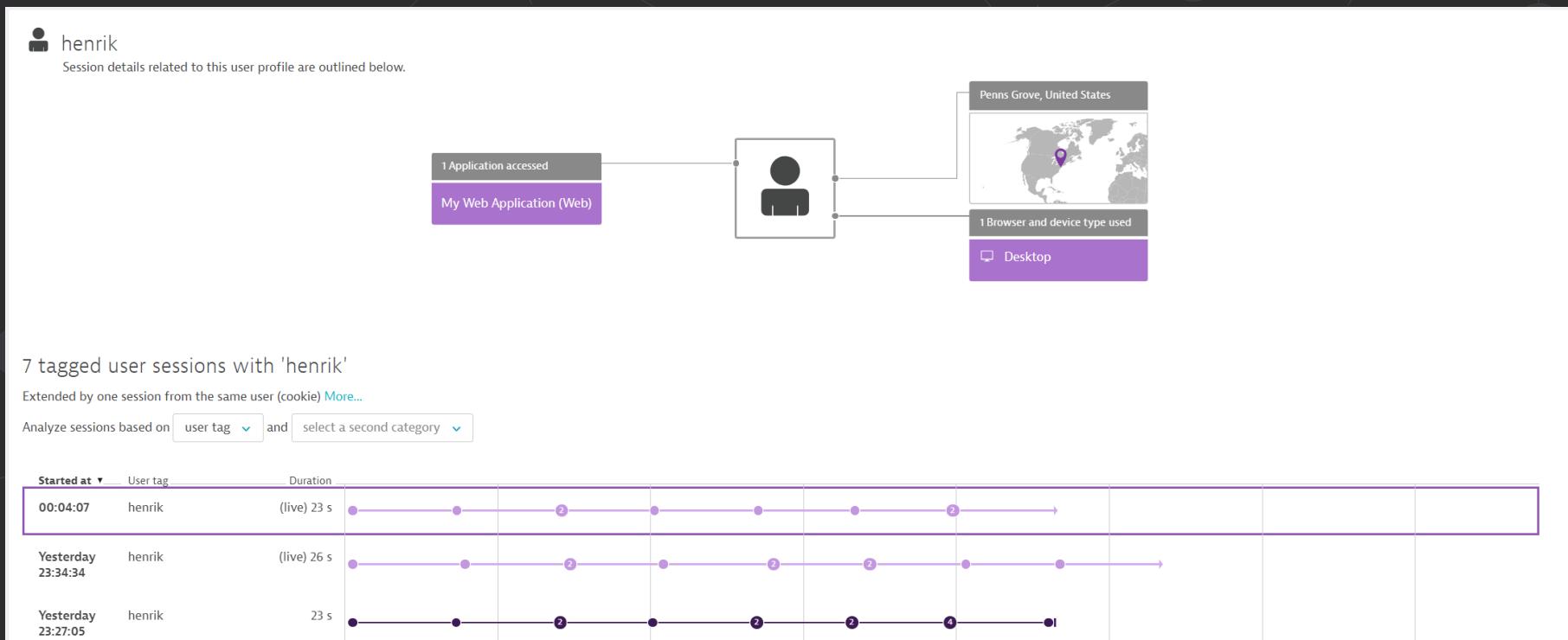


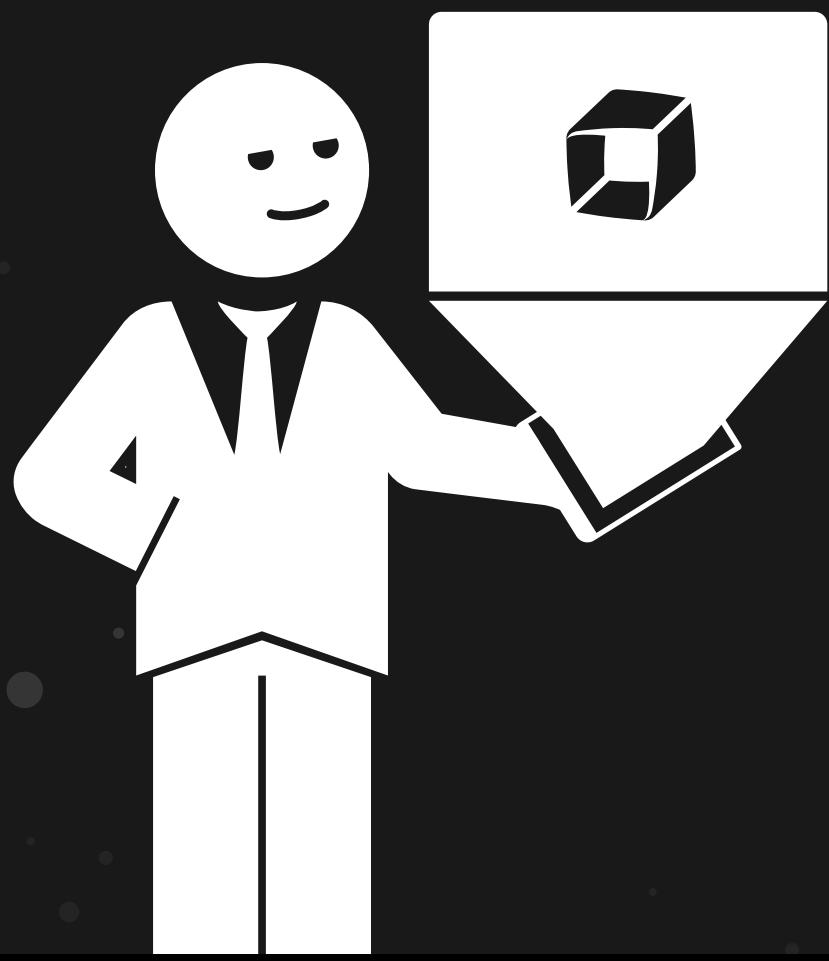


# User Sessions

# Application Setup - User Tagging

1. Identify CSS selector in Easytravel
  - Use “Inspect” to identify CSS to extract
  - Use `#loginForm\j_idt40` for tagging rule
2. Login to EasyTravel and proceed with booking a travel package

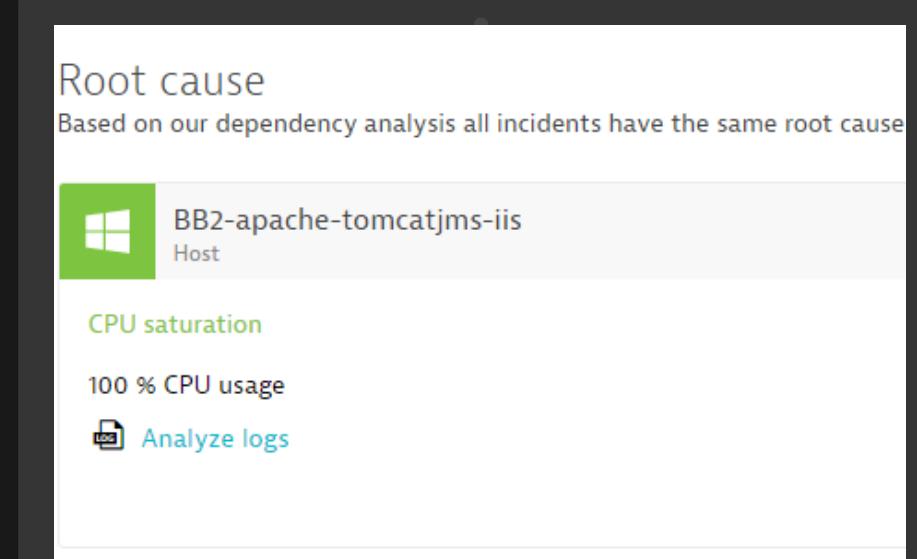


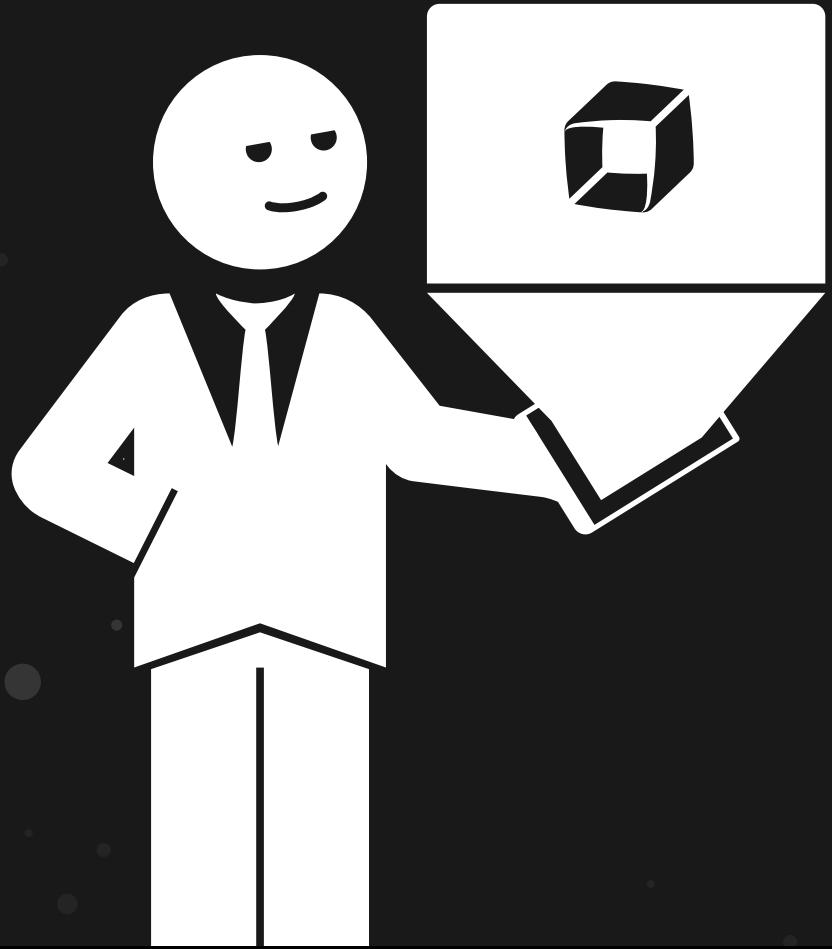


# Log Analytics

# Why Log Analytics?

- Use log content as monitoring data source
  - Search inside of log messages using query strings
  - Generate problem notifications based on patterns
- Enhance troubleshooting
  - Use log information within root cause drill down
  - Add more context with event logs
- Lots of applications rely on logging for diagnostics
  - Provide DevOps with information they are used to having
  - Easy insights into unsupported technologies

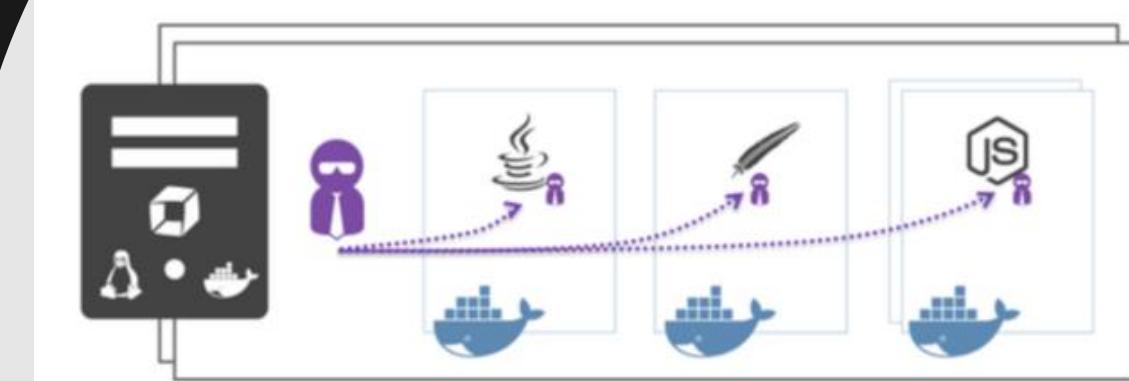




# Docker

# Docker Monitoring Made Easy

- Automatically monitor your containerized applications and services
- No modification of Docker images, run commands or creation additional containers necessary
- Simply install Dynatrace OneAgent on Docker host
- Automatic detection of the creation and termination of containers and containerized applications and services



# Docker Monitoring

Now access your Docker monitoring menu option and you will see the power of automatic instrumentation at work.

Search your environment...

## Docker

Docker

Images: 2 Docker images

2 Containers

1 Docker host

Services: 13 Dockerized services, 53 /min Requests

Top 3 containers by resource consumption:

1. eureka, 486 MB memory
2. hello-netflix-oss, 439 MB memory

Latest container started: hello-netflix-oss started from image netflixoss/hello-netflix-oss:1.0.28

Top 3 active images with running containers:

1. netflixoss/eureka, 1 container
2. netflixoss/hello-netflix-oss, 1 container

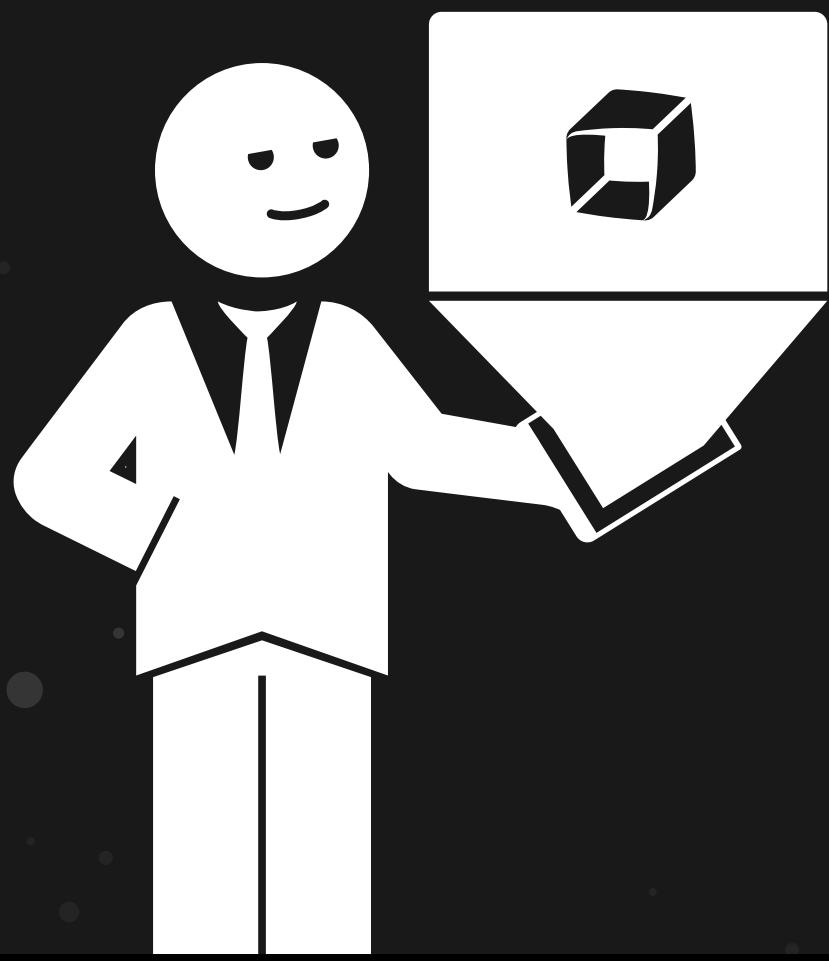
Average number of running containers

last 7 days

2 Containers running on hosts  
+2 Compared to Sat, Mar 18

### 1 Docker host

Name	CPU usage	Memory usage	Disk latency	Network traffic	Number of containers	State
ip-172-31-50-26.ec2.internal	16 %	65 % of 3.86 GB	1.26 ms	294 kbit/s	2	Running



# Synthetic

# Synthetic Monitoring

- Runs synthetic tests against your portal
- Record the tests easily with browser plugin
- Simulate and tests load from various endpoints worldwide
- Monitors performance and availability of websites

Synthetic

6 Synthetic monitors

Filtered by: Start typing to filter synthetic monitors...

Name	Creation date	Device profile	Type of synthetic monitor	Availability	Performance
easyTravel demo booking	Sep 07 2017	Desktop	Browser clickpath	75.28 %	Duration: 23.05 s
EasyTravel Landing Page - BB - Chrome Agent	Oct 27 2017	backbone - Chrome	Classic	90.43 %	Response time: 12.68 s
EasyTravel Purchase Transaction - BB - Chrome Agent	Oct 27 2017	backbone - Chrome	Classic	82.02 %	Response time: 35.49 s
www.easytravel.com	Sep 07 2017	Desktop	Browser	100 %	Duration: 5.51 s
www.vmware.easytravel.com	Sep 07 2017	Desktop	Browser	100 %	Duration: 5.85 s
www.weather.easytravel.com	Sep 07 2017	Desktop	Browser	100 %	Duration: 4.61 s

Create a synthetic monitor

All

Status

Type of synthetic monitor

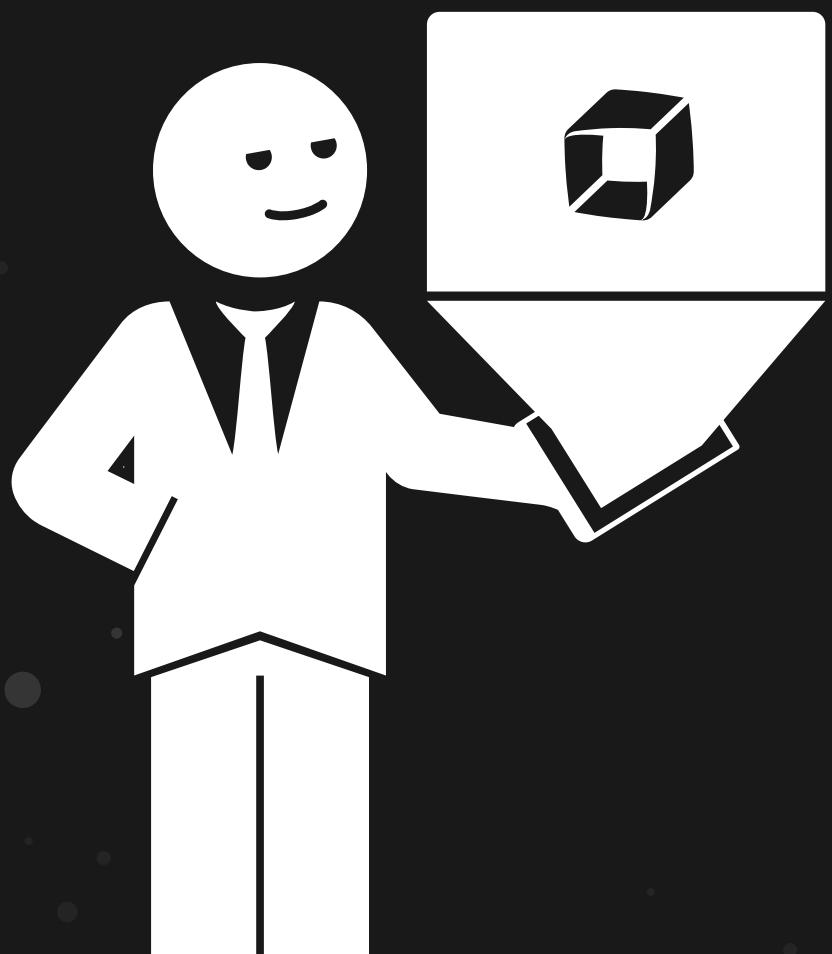
- Browser
- Browser clickpath
- Classic

Device profile

- backbone - Chrome
- Desktop

Monitored location

- Atlanta internap
- Dublin (Amazon)
- Gdańsk
- Portland (Amazon)
- San Francisco Centurylink Co...



Problems resolved with  
*Deterministic AI*

# Deterministic AI for Root Cause Analysis

- Based on different algorithms & statistical models
  - Graph Ranking Methodology & Graph DB
  - Multidimensional baselining
  - Correlational rules and techniques
- AI-powered causation engine pinpoints root causes automatically
- <https://www.dynatrace.com/news/blog/artificial-intelligence-dynatrace/>

