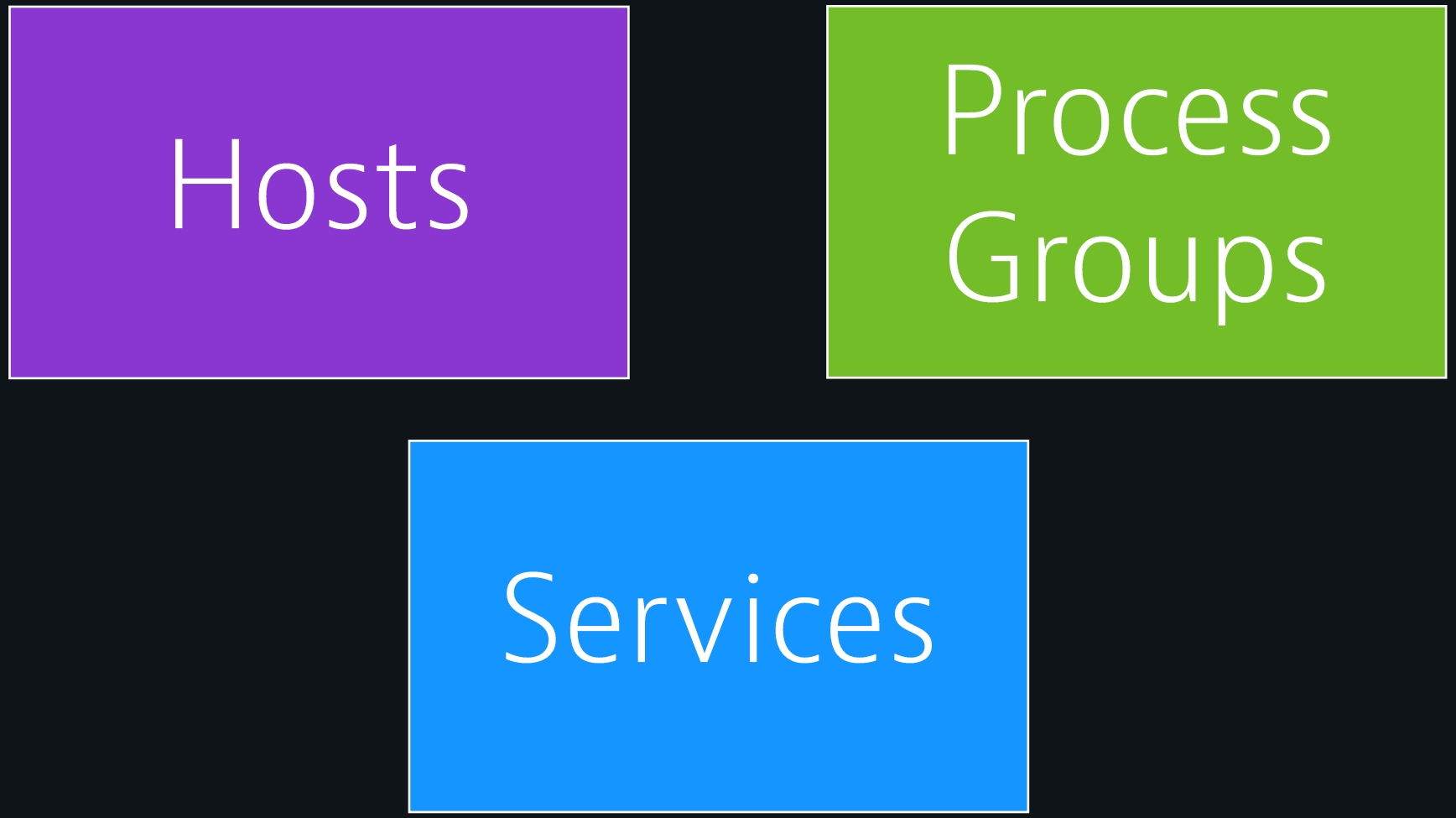
Traversing Your Stack

Dynatrace Training Module

In depth look at the Dynatrace model



Traversing Your Stack

Hosts

What is a Process Group?

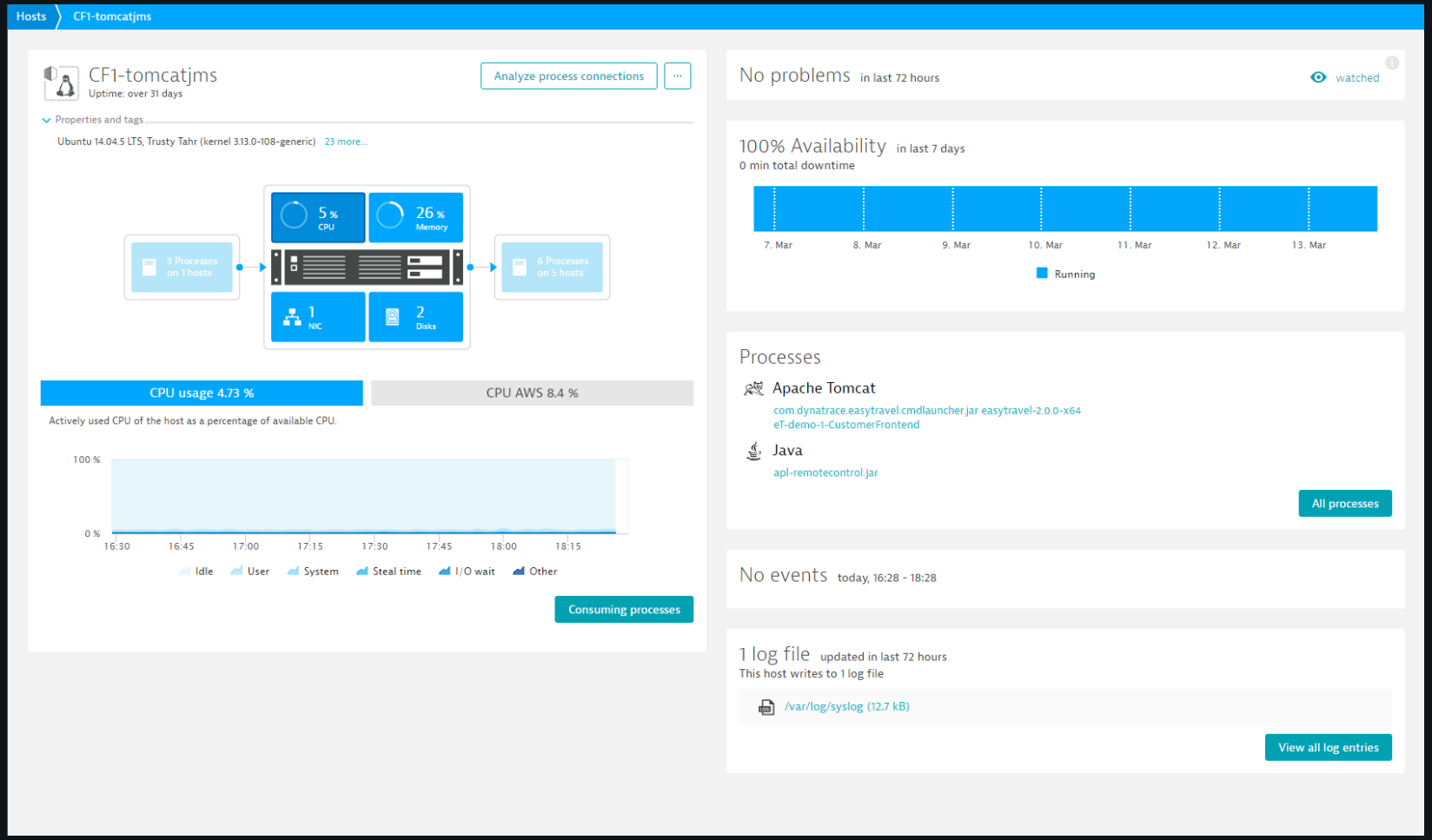
Analyzing Process Groups

What is a Service?

Analyzing Services

Viewing and Filtering

Hosts



How do I analyze Hosts?

Main menu

Hosts

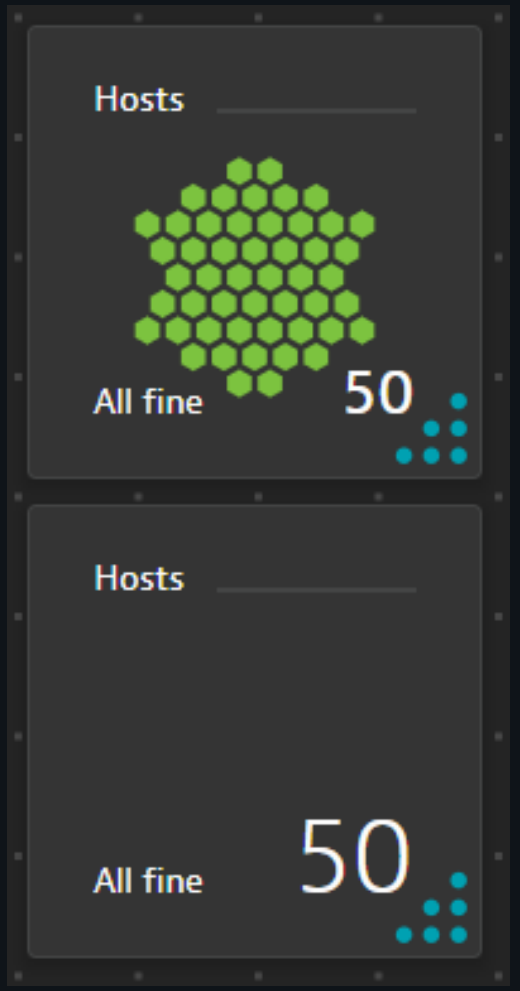
Network

Technologies

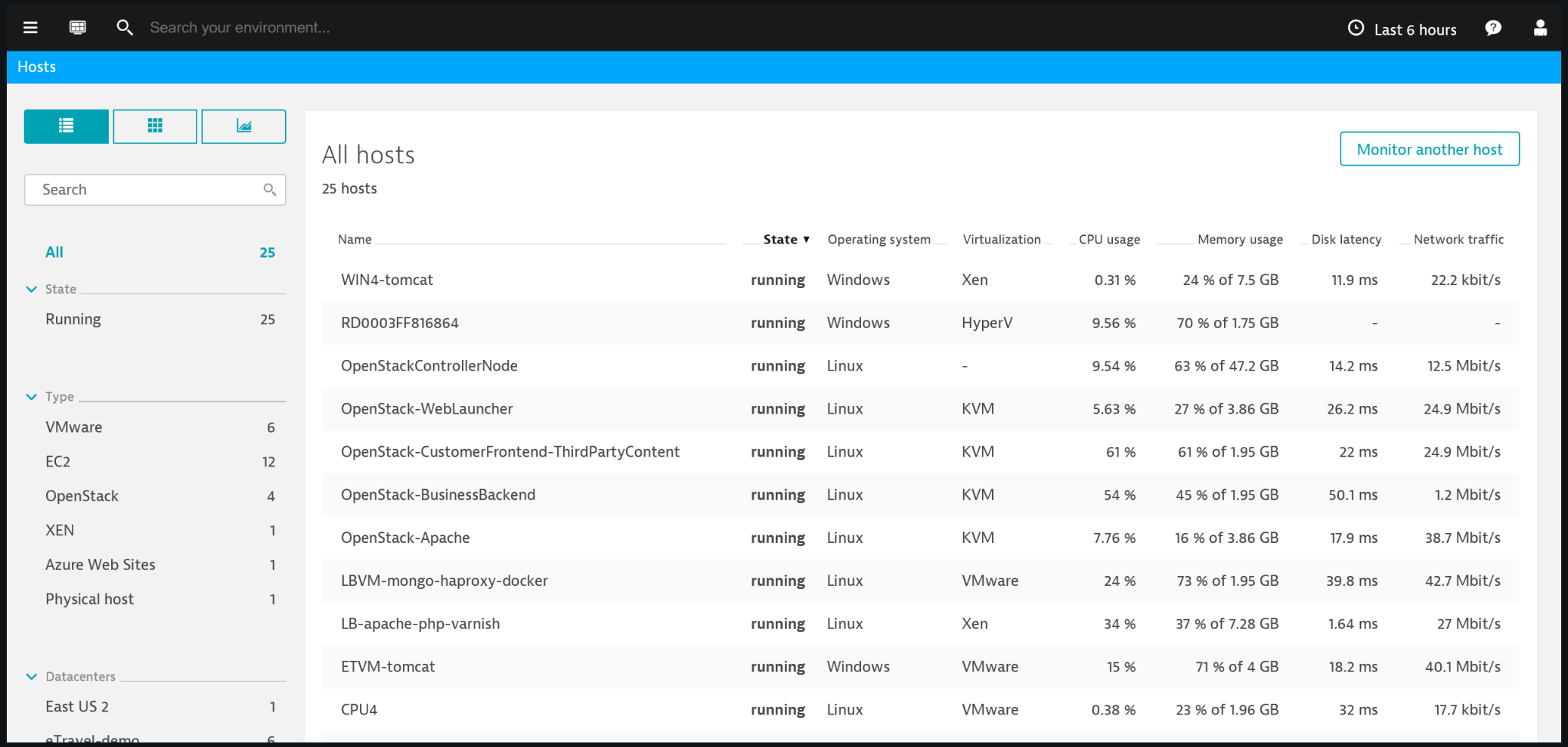
VMware

OR

As a dashboard tile



How do I analyze Hosts?



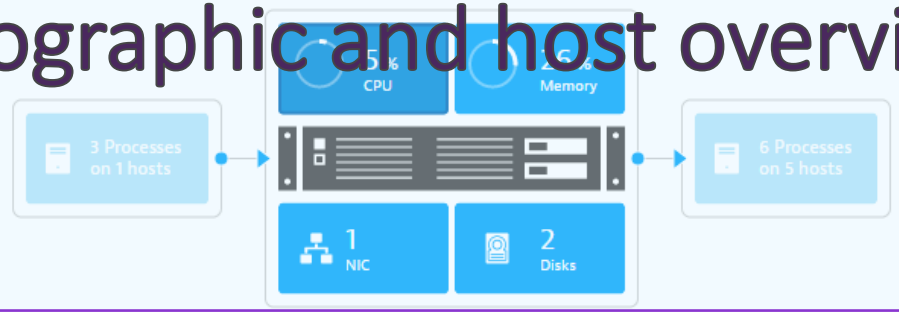
CF1-tomcatjms
Uptime: over 31 days

Analyze process connections ...

Properties and tags

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

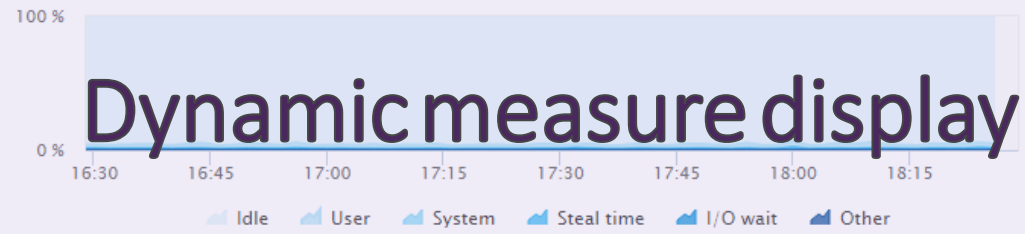
Infographic and host overview



CPU usage 4.73 % | CPU AWS 8.4 %

Actively used CPU of the host as a percentage of available CPU.

Dynamic measure display



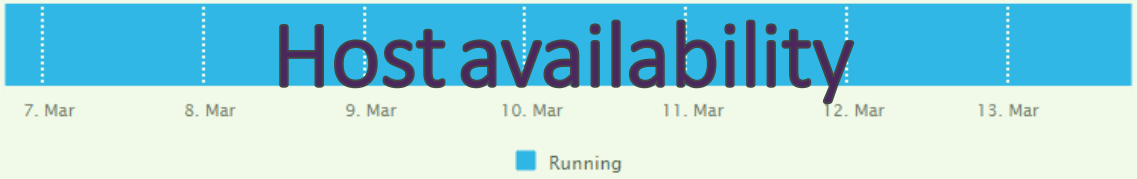
Consuming processes

No problems in last 72 hours watched

Problem history

100% Availability in last 7 days
0 min total downtime

Host availability



Processes

Apache Tomcat
com.dynatrace.easytravel.cmdlauncher.jar easytravel-2.0.0-x64
eT-demo-1-Customer

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

Log files for host

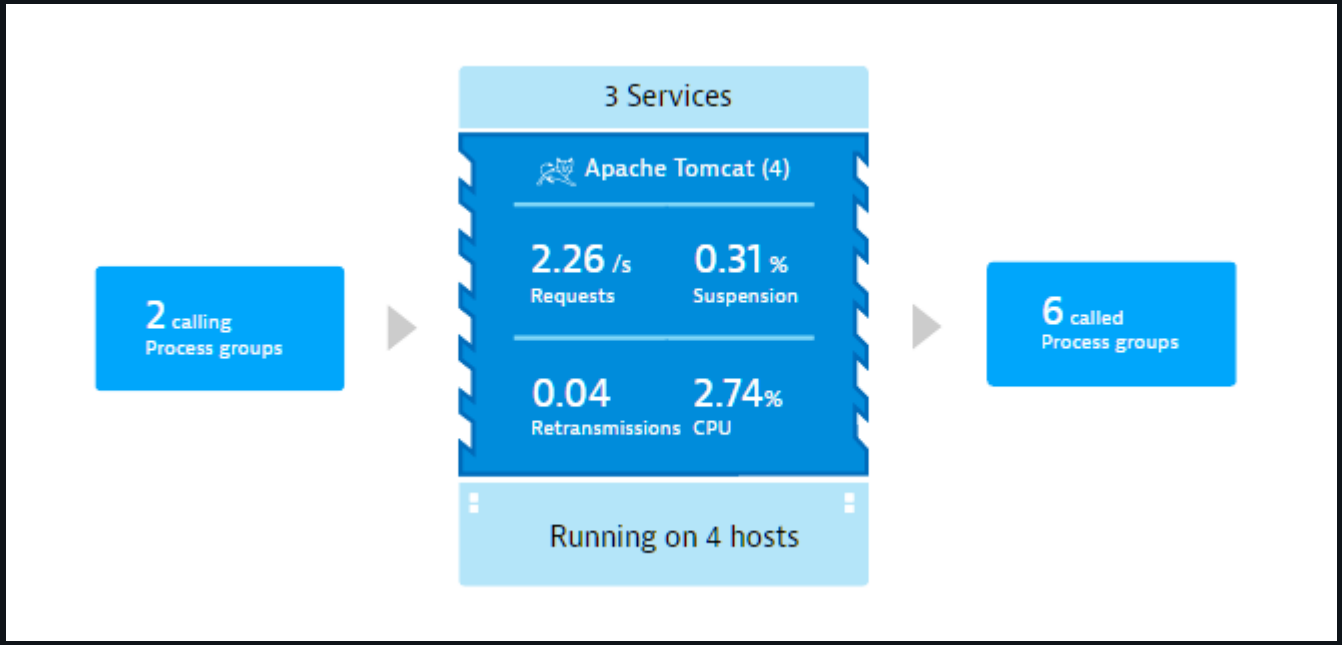
View all log entries

Event Analytics

- Dynatrace detects more than 80 different built-in system event types
  - Including process crashes, deployment configuration changes, and VM motion events

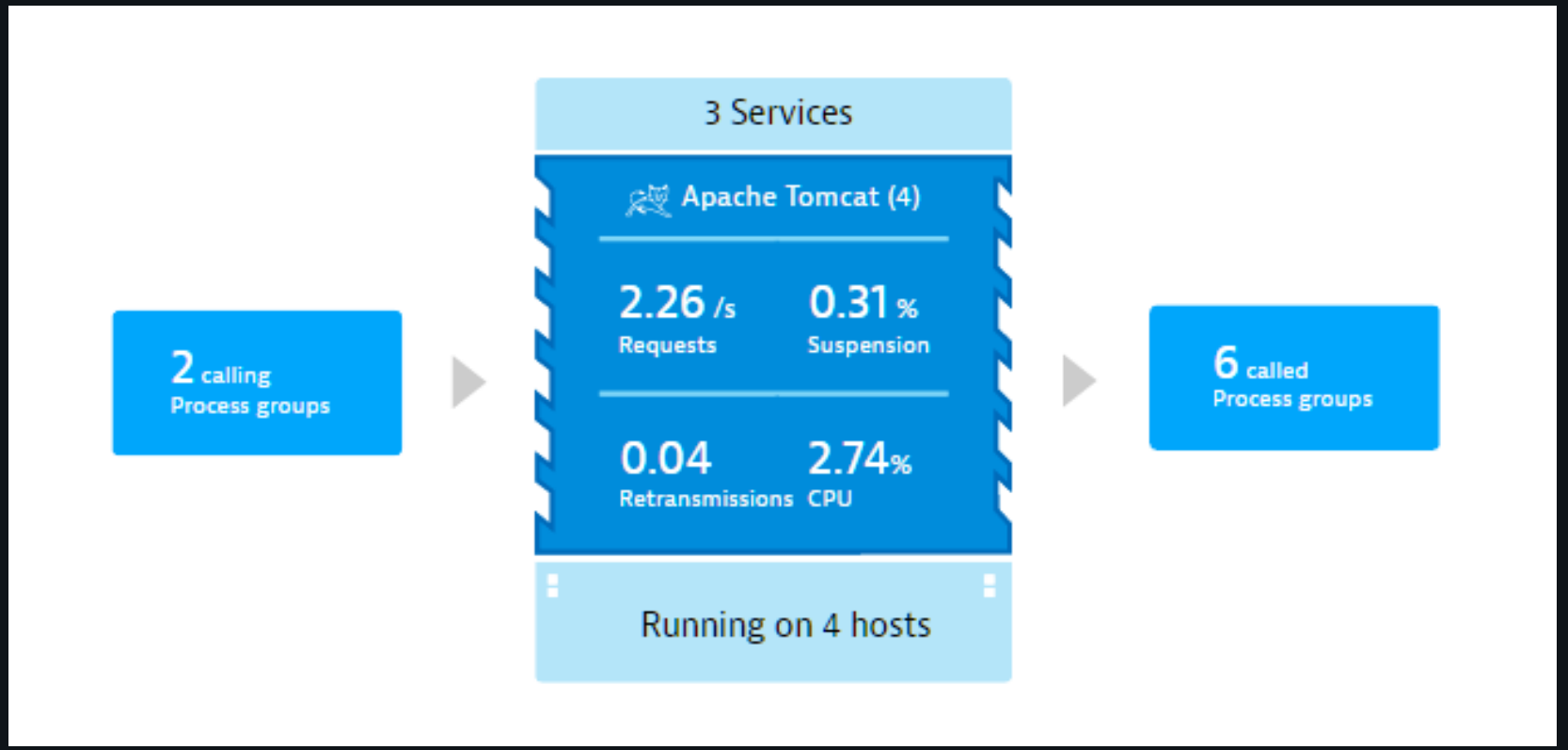
Traversing Your Stack

What is a Process Group?



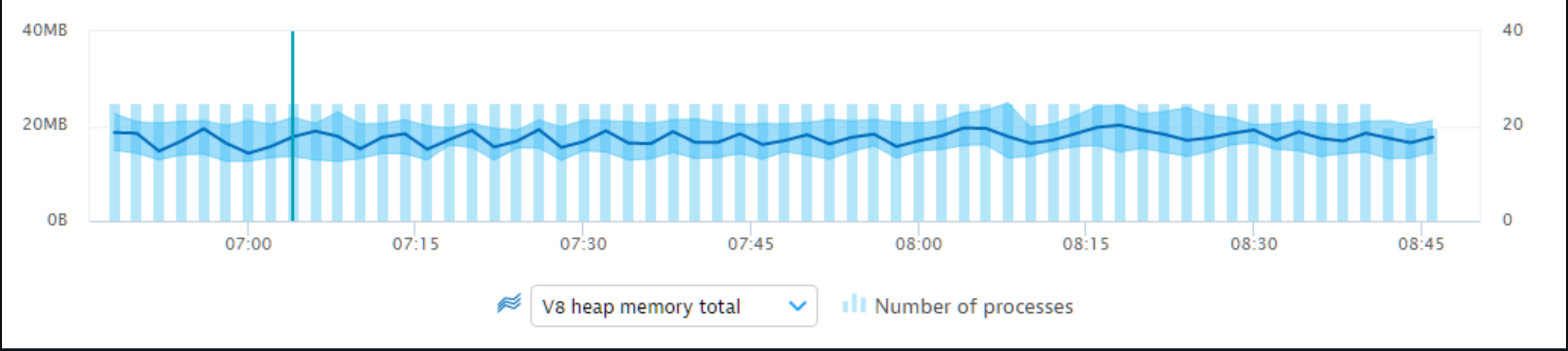
What are process groups

- Cluster of processes that belong together
  - Tomcat cluster, Jboss cluster, WebSphere cluster
- Run the same software
- Contain Services



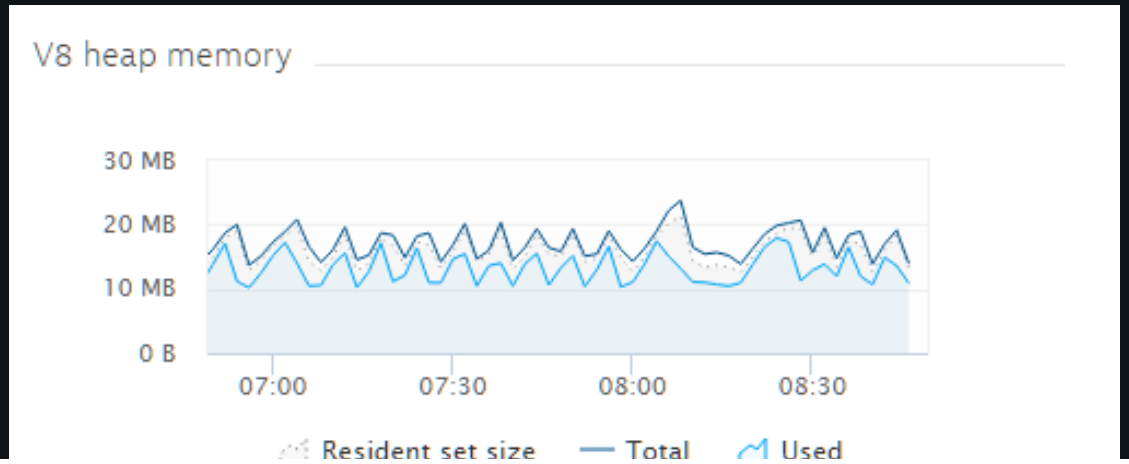
What are process groups

- Should be stable! (Deployment, version upgrade)
- Used as a point of configuration
- Process, Plugin metrics continuity
- Like agent groups, but automatic and for all types of processes



Processes vs Process group instance

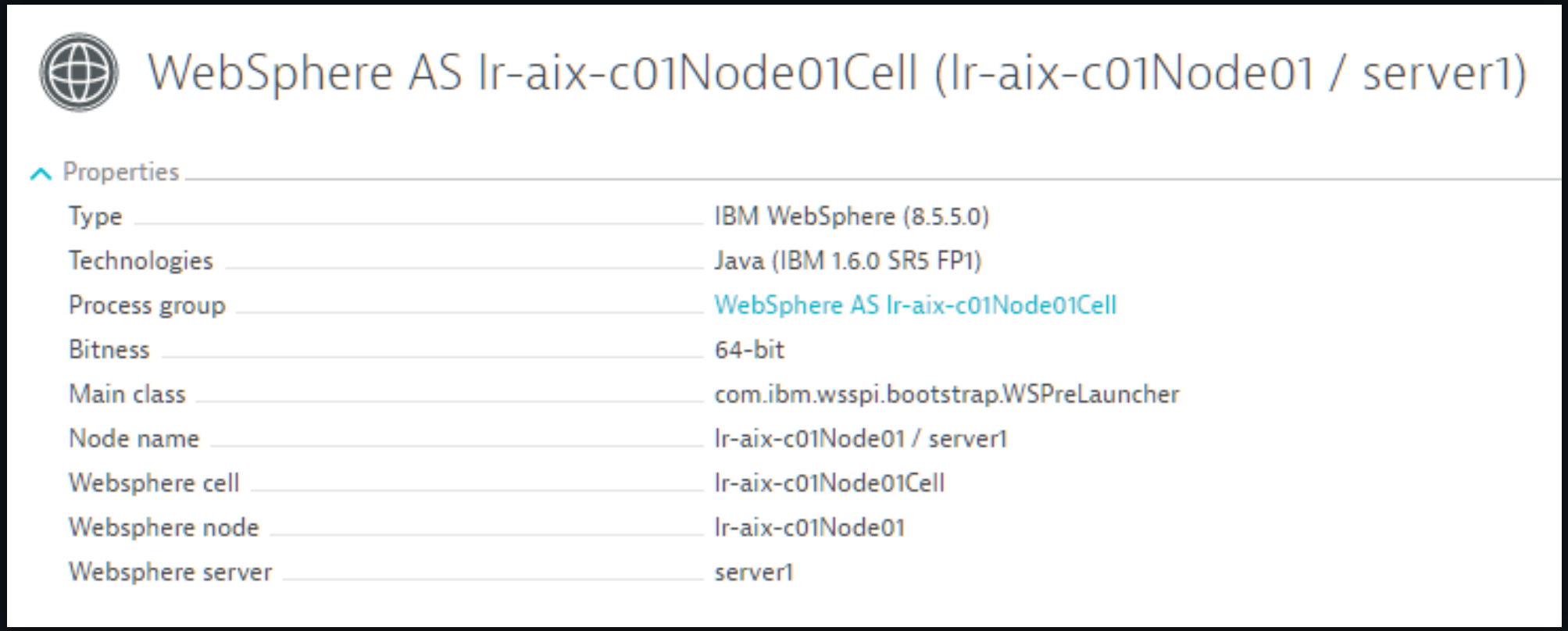
- A process group on a host is a process group instance
- Normally one process with chart continuity (restart, crash redeploy)



Process	CPU ▾	Memory usage	Responsiveness	Worker processes
eT-demo-2-CustomerFrontend on CF4-tomcatjms	4.04 %	555 MB	0.27 ms	1
eT-demo-2-CustomerFrontend on CF2-tomcatjms	3.4 %	583 MB	0.26 ms	1
eT-demo-2-CustomerFrontend on CF1-tomcatjms	3.09 %	655 MB	0.26 ms	1
eT-demo-2-CustomerFrontend on CF3-tomcatjms	2.95 %	573 MB	0.26 ms	1

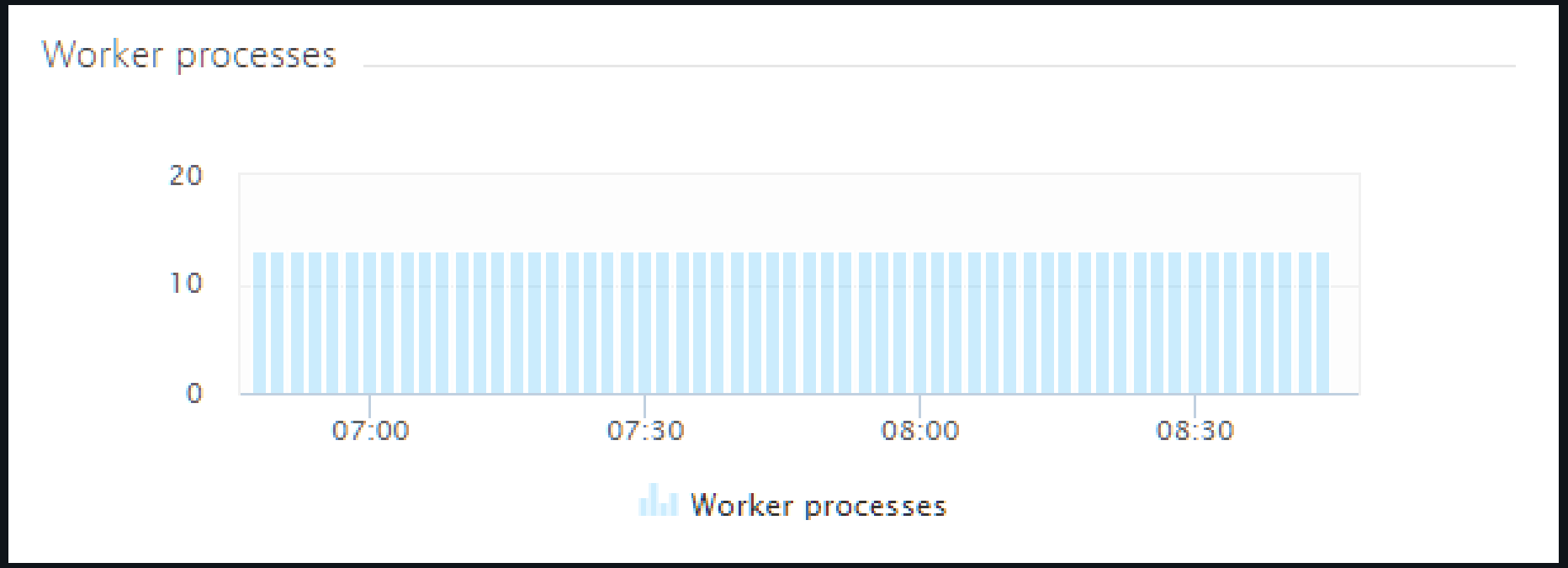
Processes vs Process group instance

- Technology specific – an instance can be a cluster node
- Multiple “nodes” per host possible



Process group instance

- A process group instance can have many processes…
  - Apache HTTP server has many worker processes (instead of threads), so does Node.js
  - An Oracle DB consists of many processes…

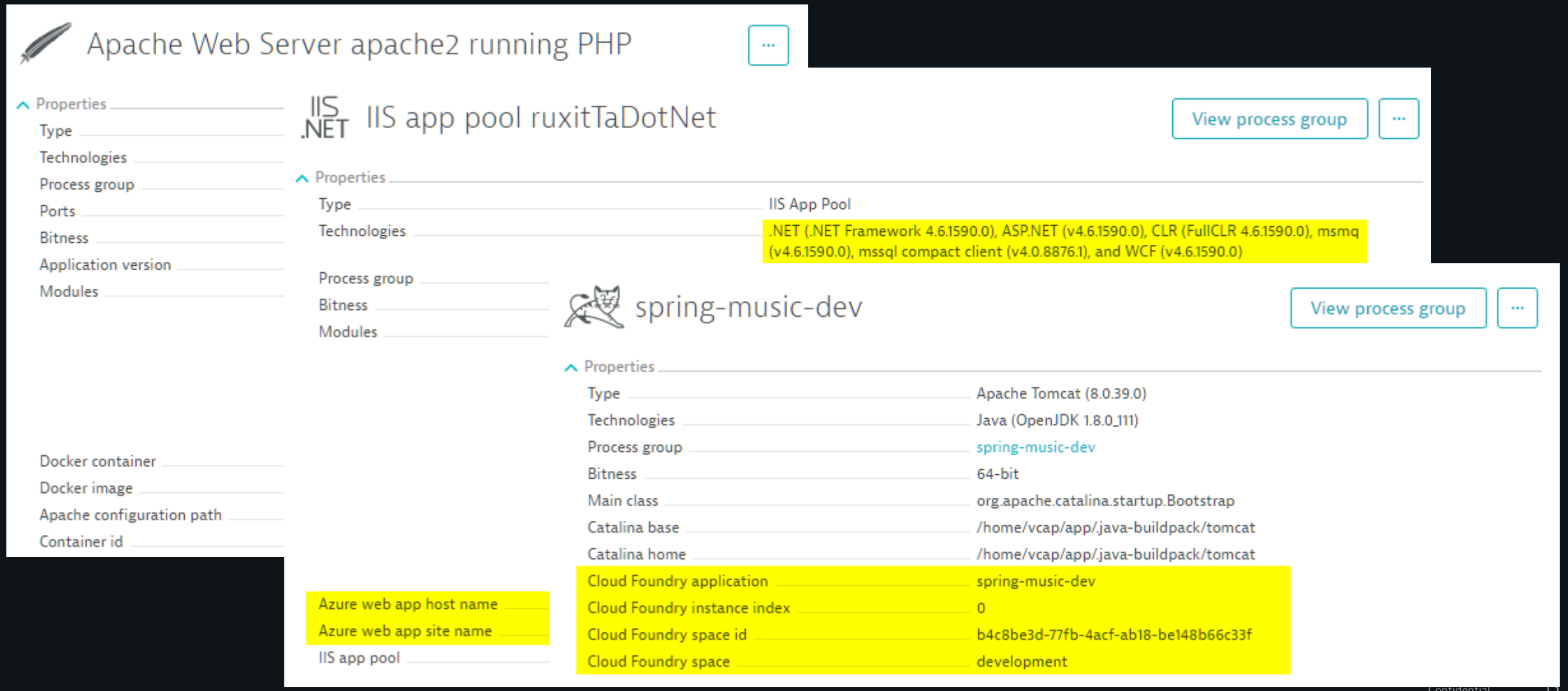


Process group detection

- Lots of built-in rules: Java, Jboss, WebSphere, Node.JS, Apache, Databases….
- Many special rules: Docker, Azure, CloudFoundry, OpenShift, ColdFusion….
- Intention: Stable, meaningful and meta data

- Examples:
  - Java Jar → use Jar-Name
  - Tomcat → use last part of CATALINA_HOME
  - WebLogic → use domain
  - CloudFoundry → apply “CF Application Name”

Process group detection (metadata)



Customize and why?

- Not perfect for unknown technologies and frameworks
- Everything looks the same
- Customer specific naming needed

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Hosts

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Analyzing Process Groups

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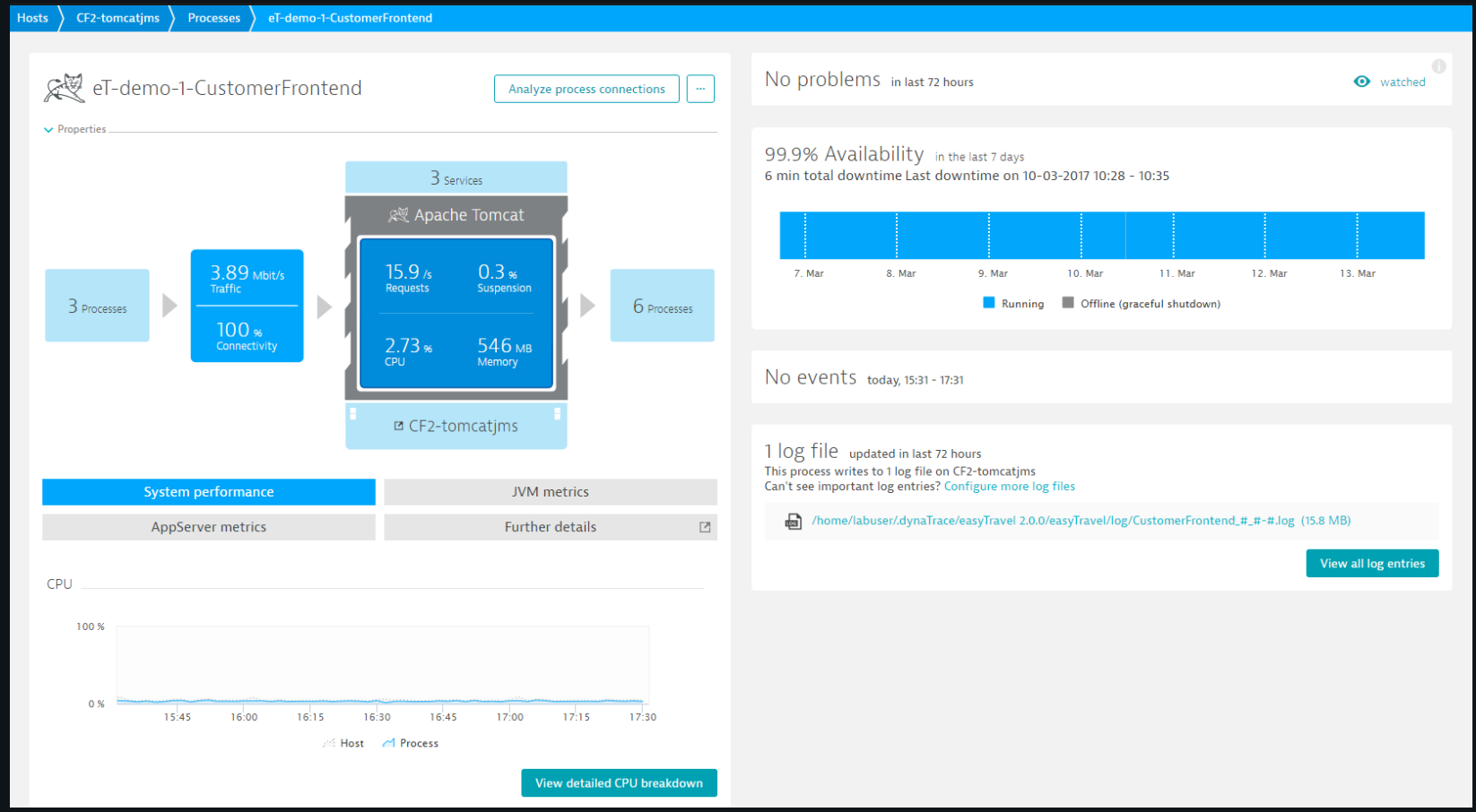
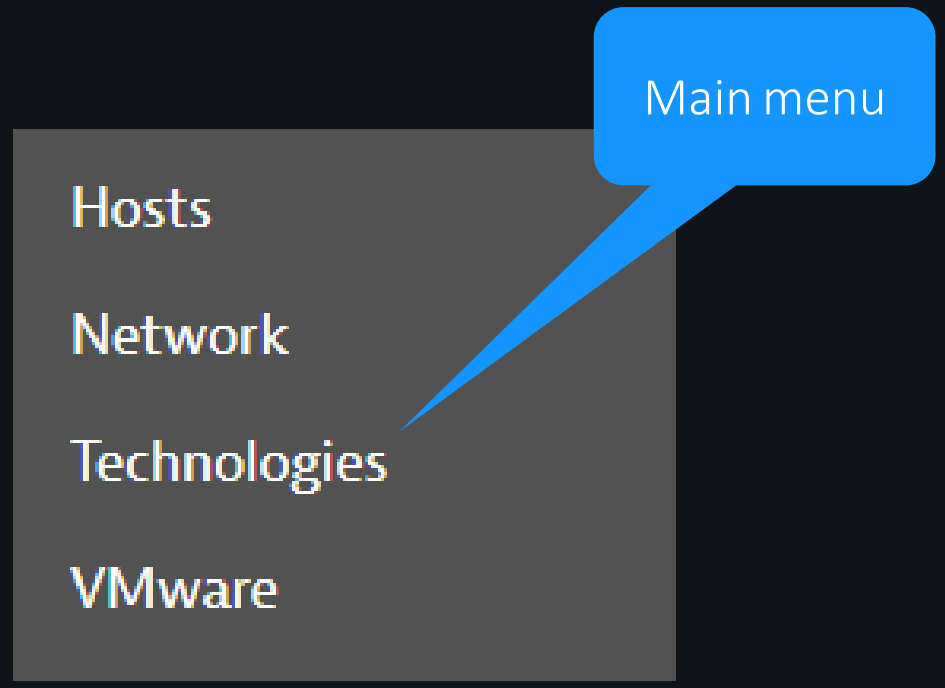
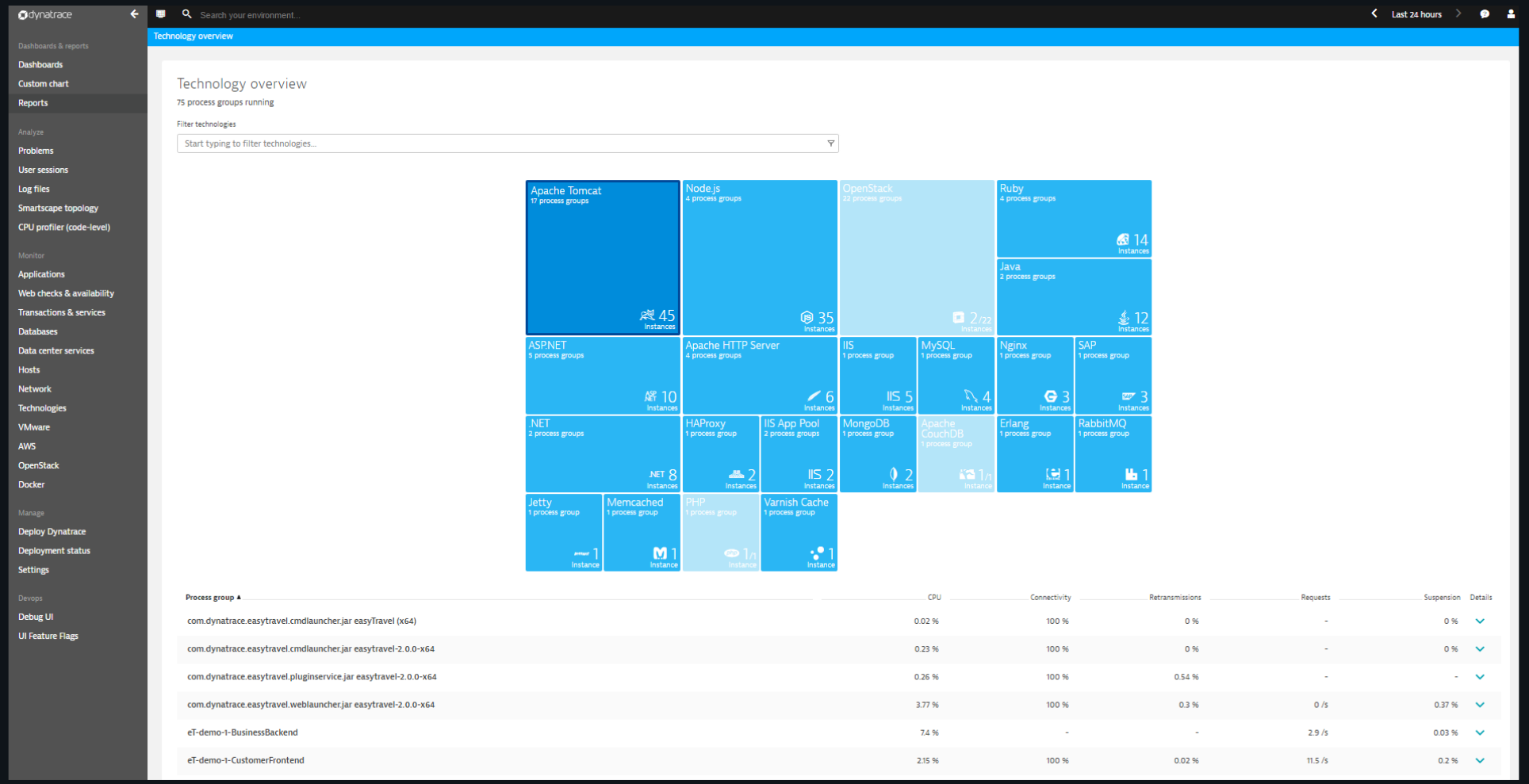
Analyzing Process Groups



How do I analyze Process Groups?

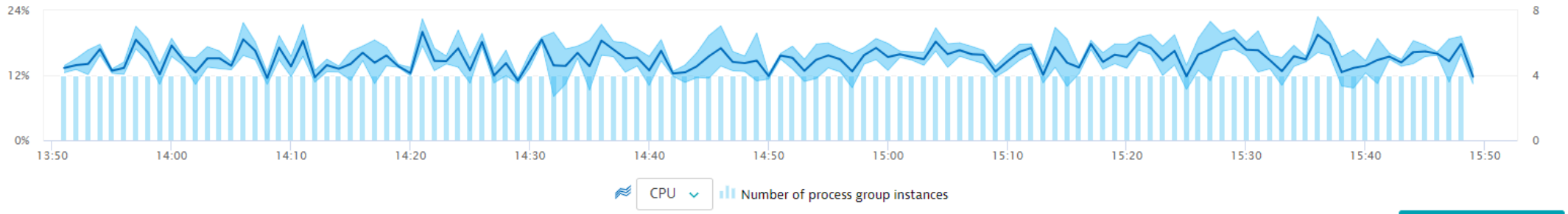


Technologies Monitoring



Process Group View

com.dynatrace.easytravel.pluginservice.jar easytravel-*-x*	0.93 %	100 %	0.73 %	0.02 %	6.55 /s
com.dynatrace.easytravel.weblauncher.jar easytravel-*-x*	5.52 %	100 %	0.33 %	-	-
com.dynatrace.easytravel.weblauncher.jar easytravel-*-x*	4.26 %	100 %	0.08 %	-	-
eT-demo-1-BusinessBackend	12 %	100 %	0.37 %	0.05 %	4.14 /s



Process group details

eT-demo-1-CustomerFrontend	3.26 %	100 %	0.13 %	0.42 %	14.3 /s
eT-OpenStack-BusinessBackend	40 %	100 %	0.53 %	-	11.1 /s
eT-OpenStack-CustomerFrontend	6.85 %	100 %	0.04 %	0.28 %	54.8 /s

Process Group View

Hosts › CF2-tomcatjms › Processes › eT-demo-1-CustomerFrontend

eT-demo-1-CustomerFrontend

Analyze process connections ···

Properties

3 Services

3 Processes

3.89 Mbit/s Traffic

100 % Connectivity

0.3 % Suspension

2.73 % CPU

546 MB Memory

6 Processes

CF2-tomcatjms

Infographic and process overview

No problems in last 72 hours

watched

Problem history

99.9% Availability in the last 7 days

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

7. Mar 8. Mar 9. Mar 10. Mar 11. Mar 12. Mar 13. Mar

Running Offline (graceful shutdown)

Process availability

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/dynaTrace/easyTravel 2.0.0/easyTravel/log/CustomerFrontend_#_#.log (15.8 MB)

View all log entries

Log files for process

System performance | JVM metrics

AppServer metrics | Further details

CPU

100 %

0 %

15:45 16:00 16:15 16:30 16:45 17:00 17:15 17:30

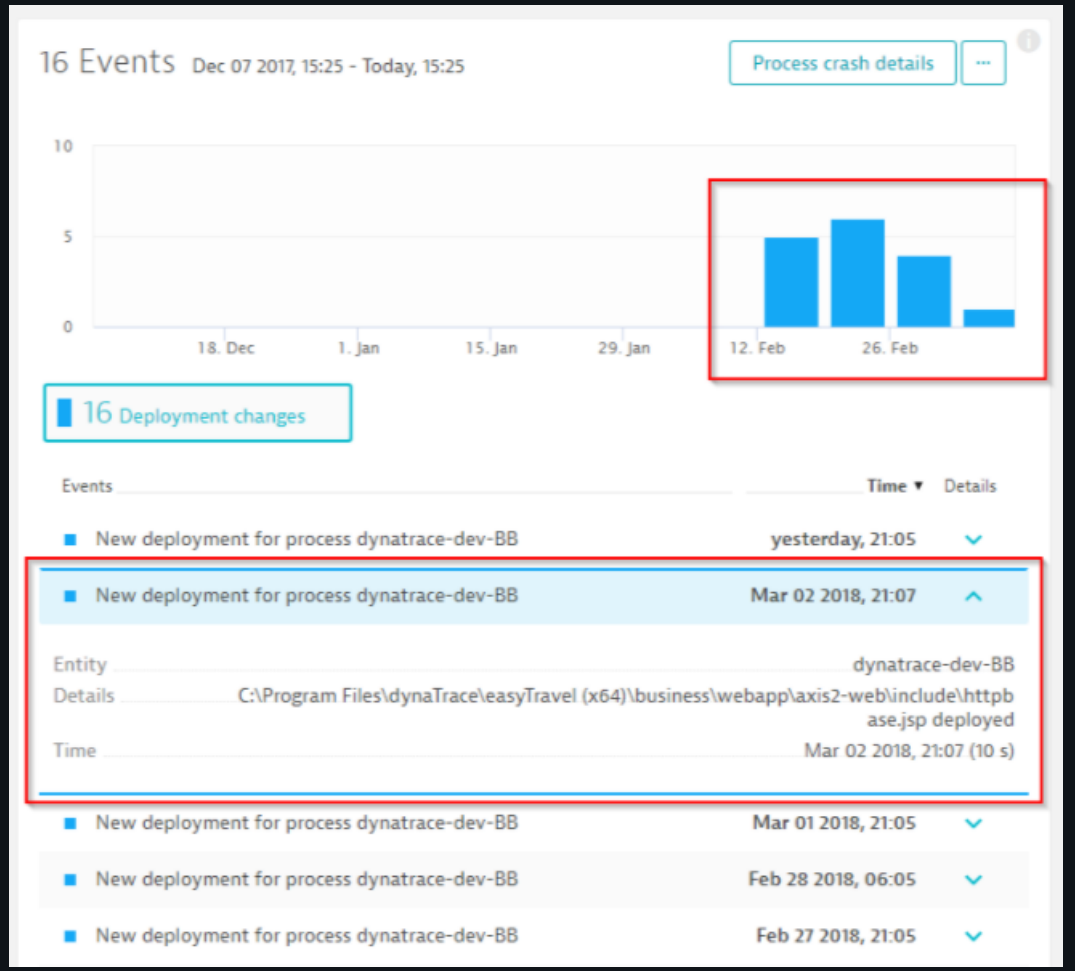
Host Process

View detailed CPU breakdown

Dynamic measure display

Event Analytics

- The Dynatrace events-analytics engine can process thousands of individual events, even over large analysis time frames
- Event analysis offers convenient drill-down and filtering options that make it easy to focus on specific points in time where high event activity occurred and then filter those events based on event type
- Most importantly, these events are those that Davis is monitoring for identifying problems and potential root causes



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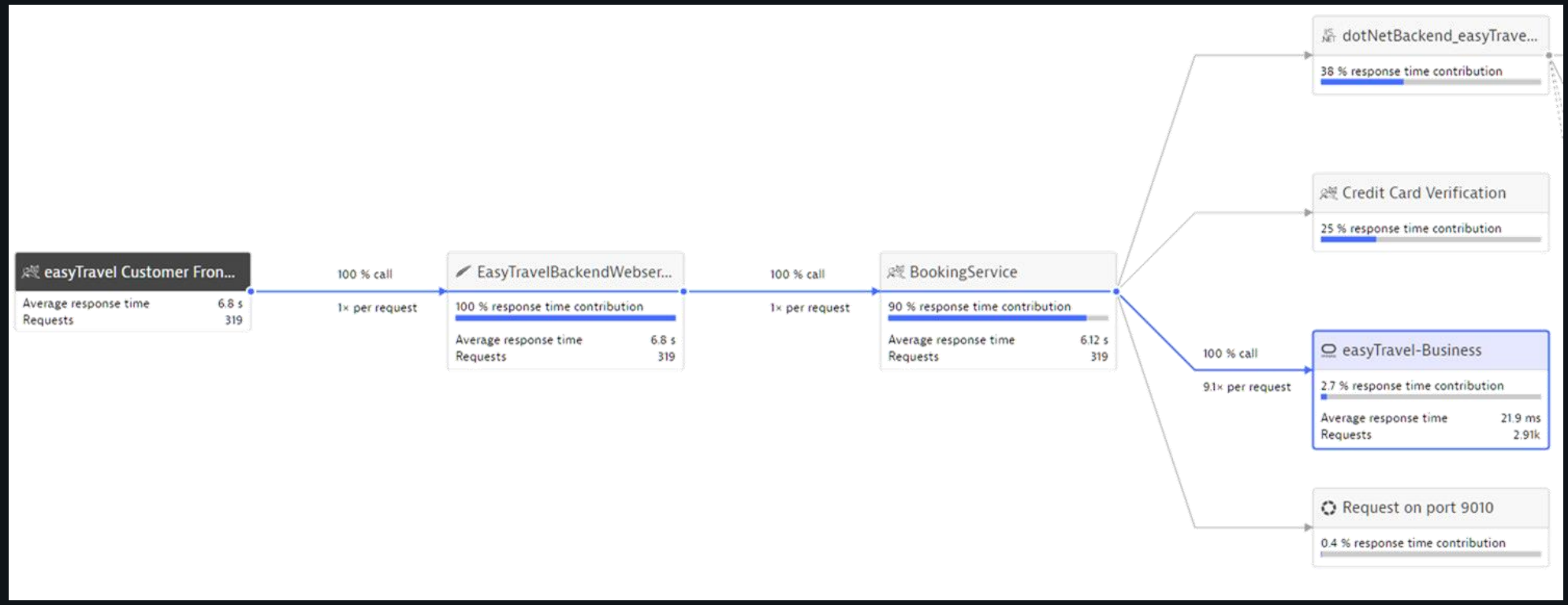
What is a Service?

What are services

- Web applications consist of web pages that are served by web servers and web containers, for example Tomcat
- The web requests that are sent to a specific Tomcat server are an example of a server-side service
- Web and mobile applications are built upon services that process requests

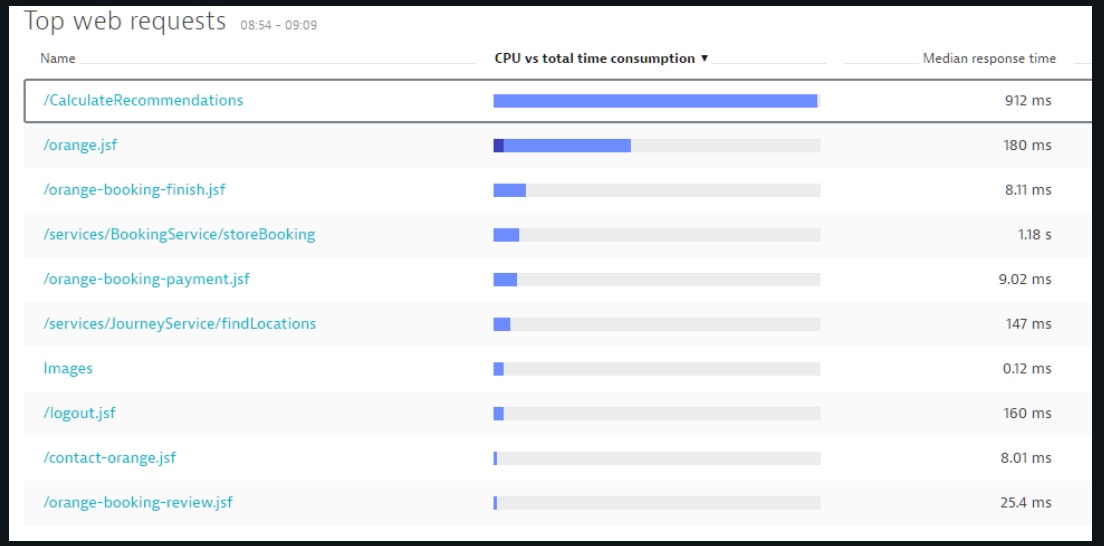
What are services

- Such "server-side services" can take the form of web services, web containers, database requests, custom services, and more
- Services may in turn call other services



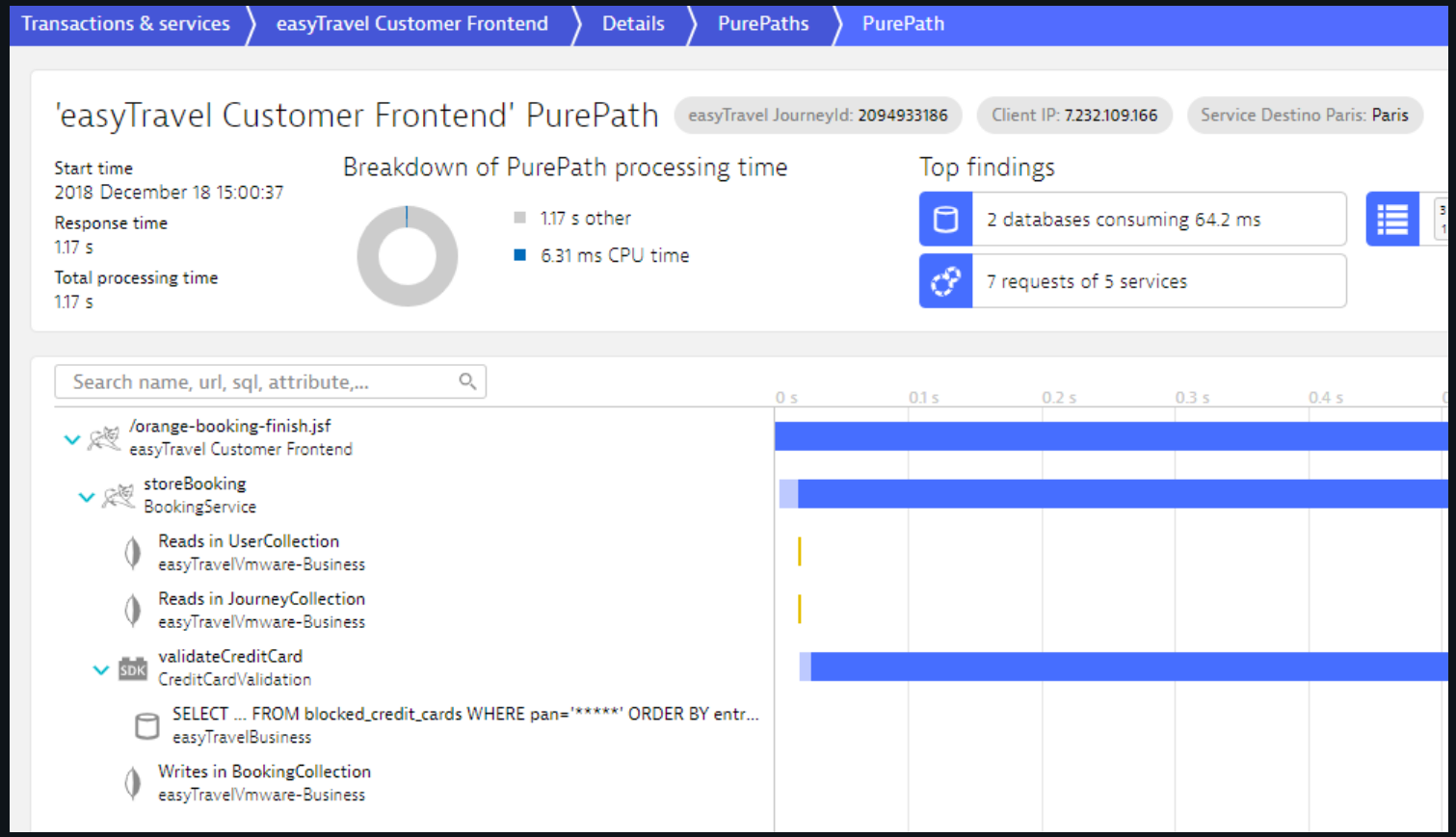
What are services

- Dynatrace monitoring of services extends all the way down to the monitoring of discrete methods
- By monitoring the performance of individual methods, we can offer you deeper insight into the performance of the services that drive your application
- Code level information is collected for each request
- Services are aggregated data of underlying PurePaths



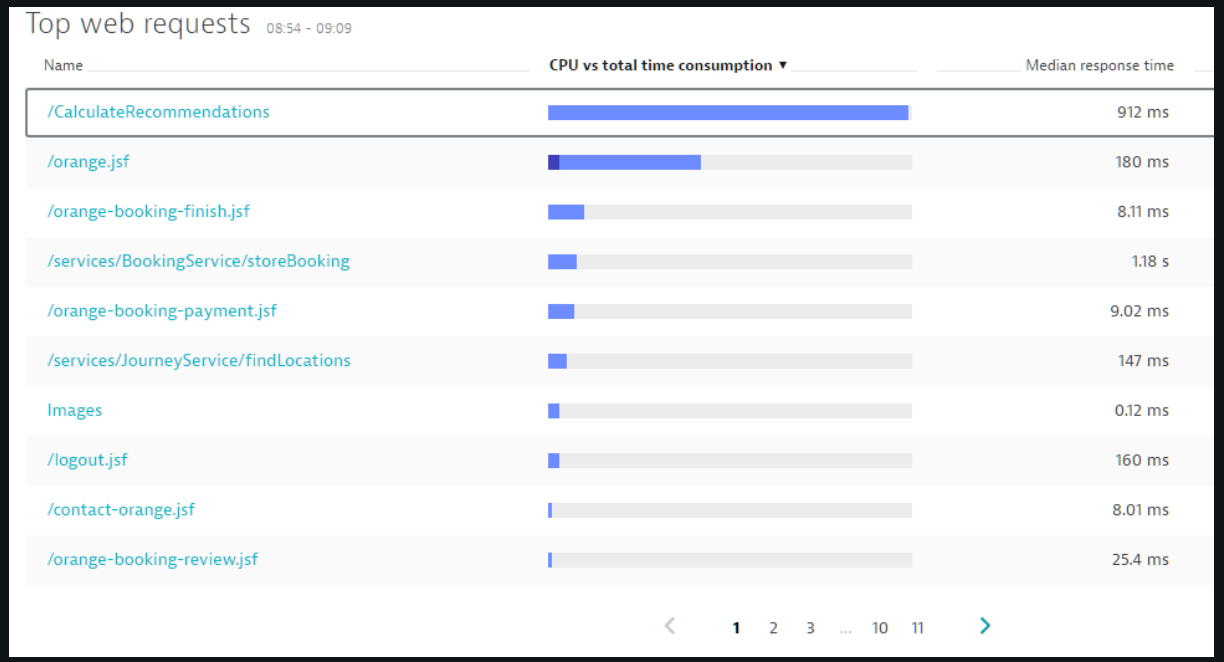
What is a PurePath?

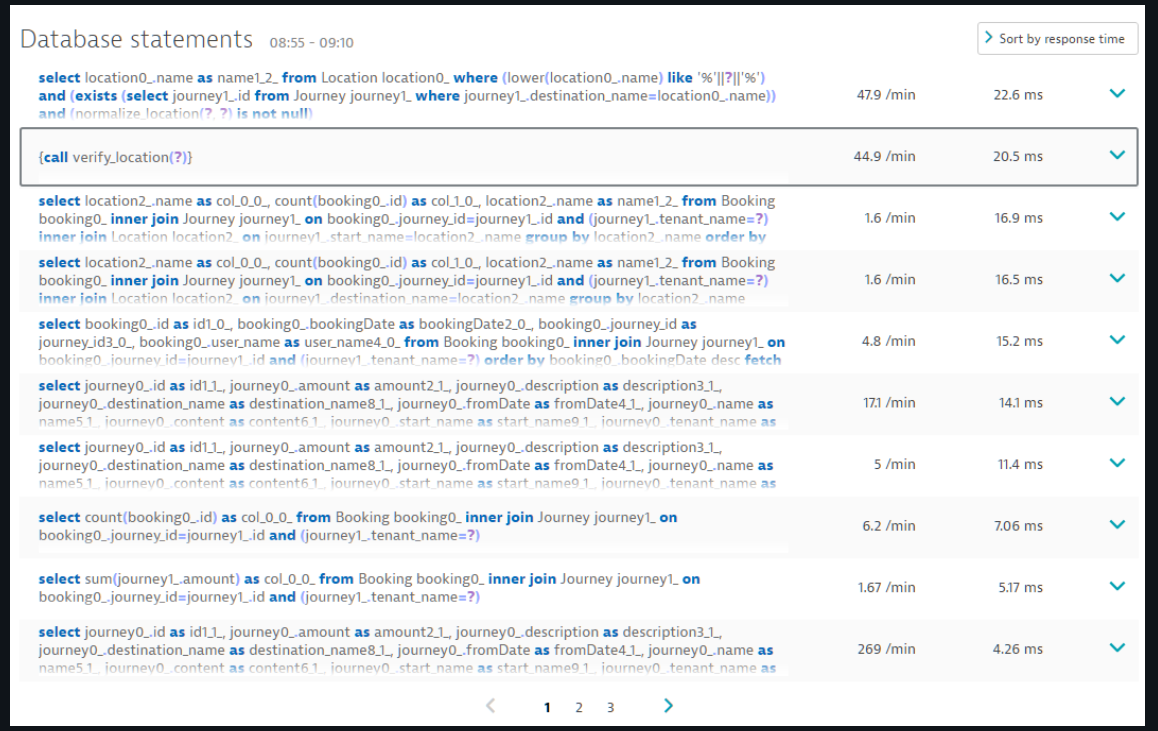
- Timing and code level data context
- Recorded for every service
- More information later



Why Services?

- Dynatrace needs to monitor each tier in your application
- Needs to baseline at every tier!
- Baselining, and fault domain isolation work on Services and Service requests, “not” on PurePath





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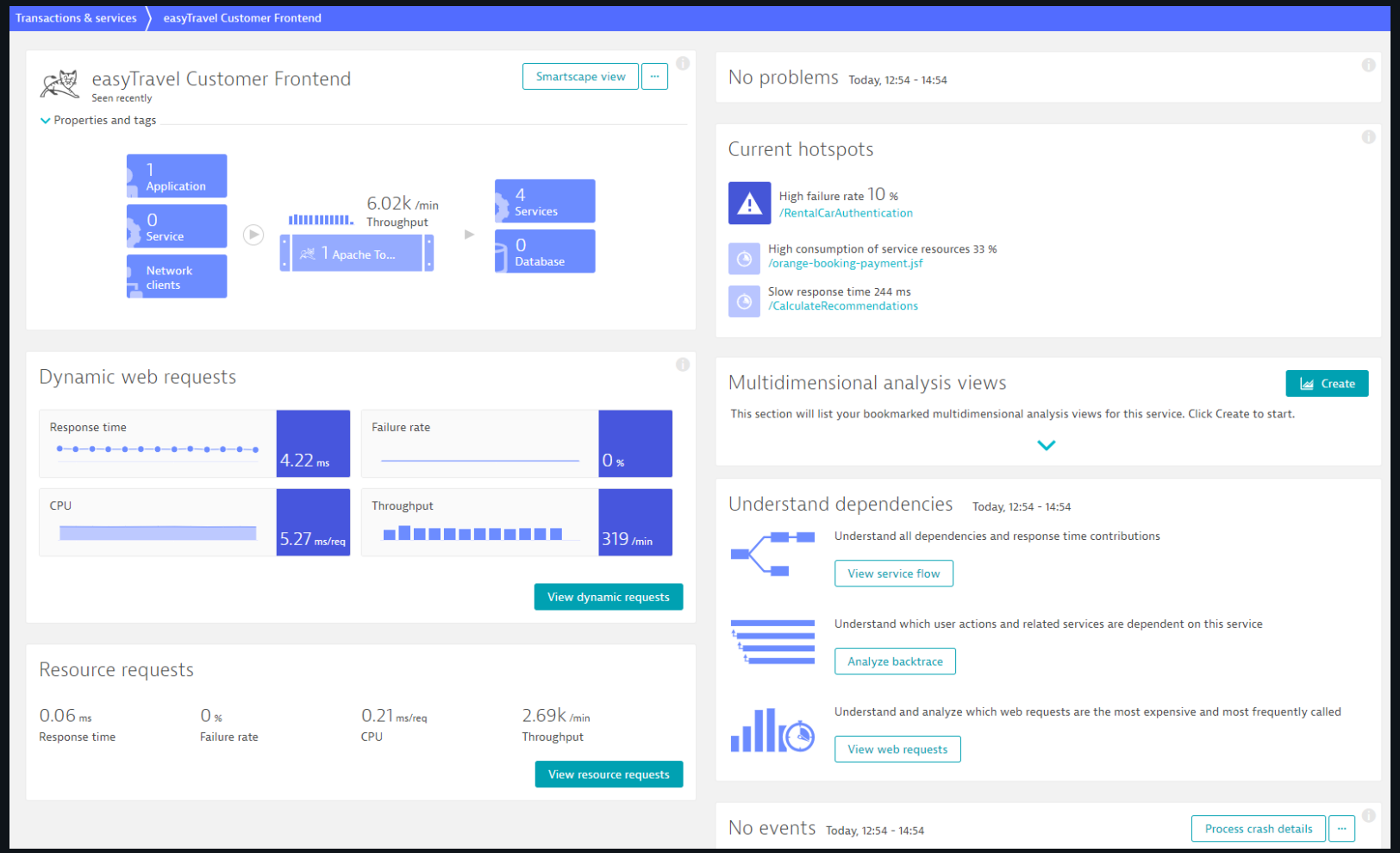
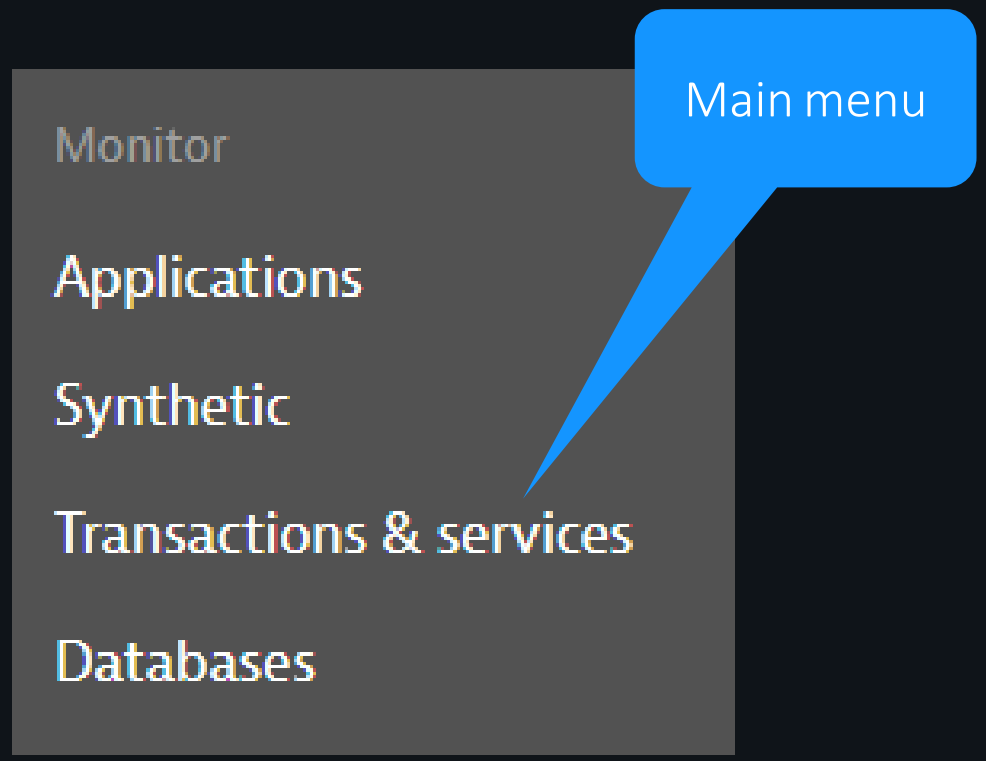
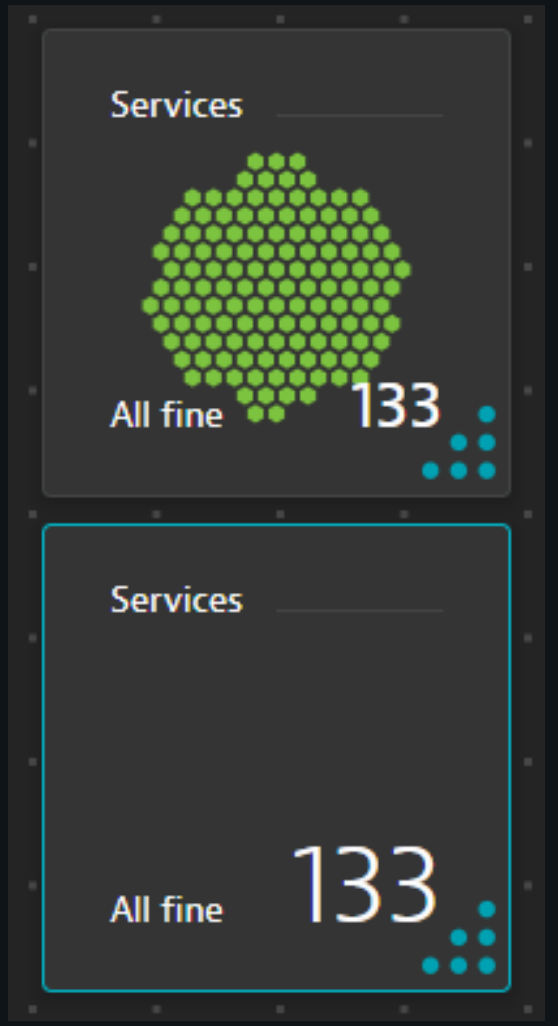


How do I analyze Services?

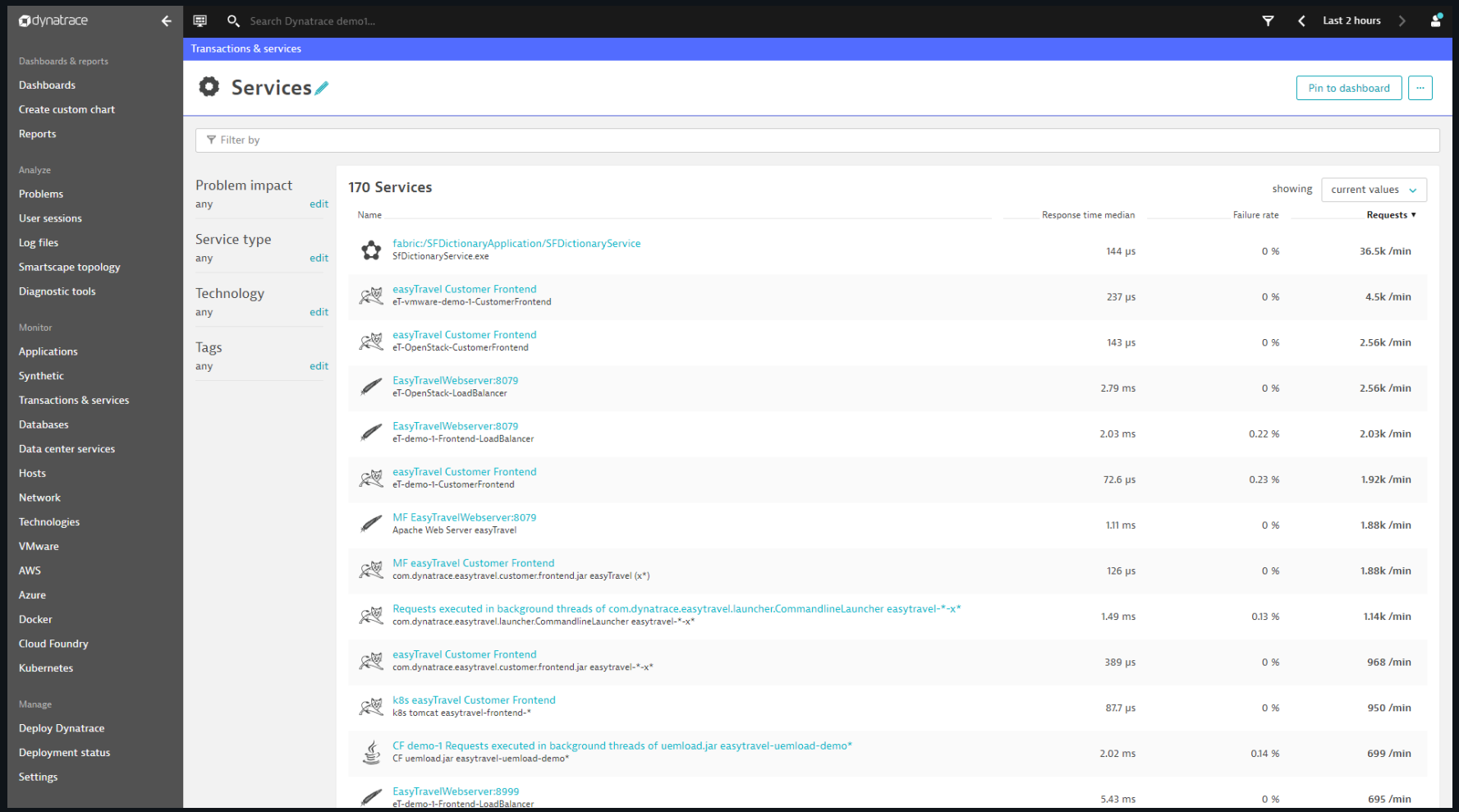


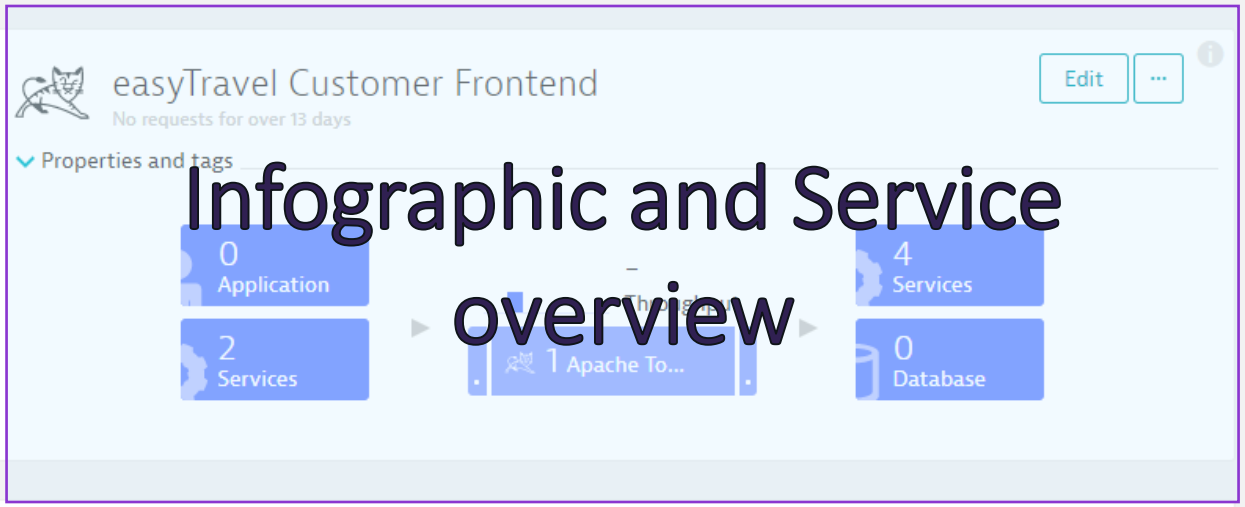
OR

As a dashboard tile

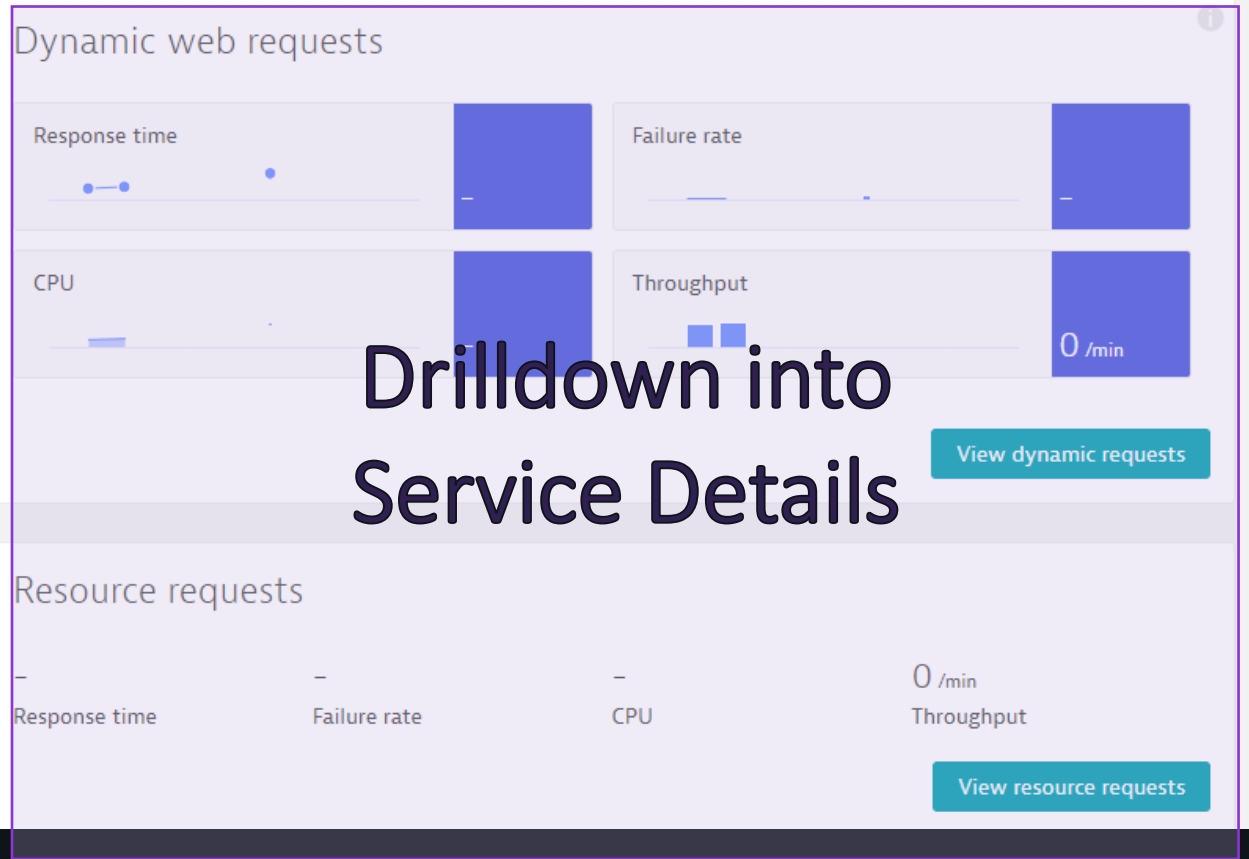


Services Monitoring





Infographic and Service overview



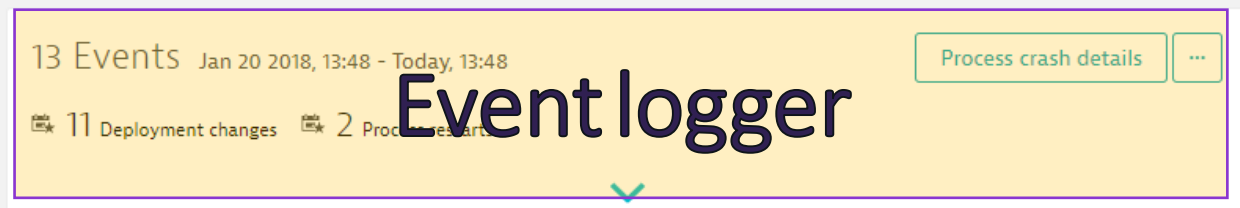
Drilldown into Service Details

Problem History

Hotspot Analysis

Multi-dimensional Analysis Views

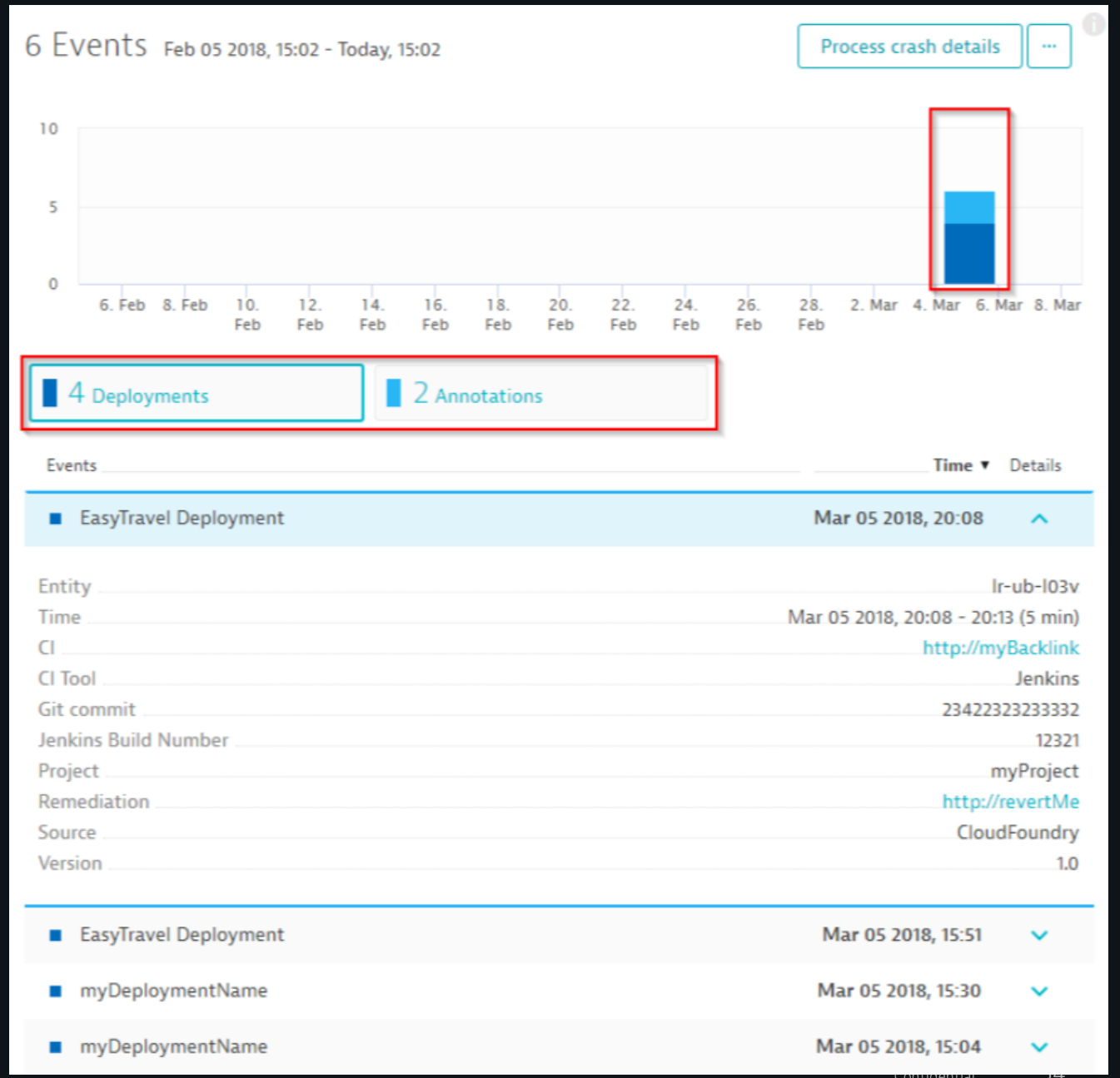
Drilldown into Dependencies



Event logger

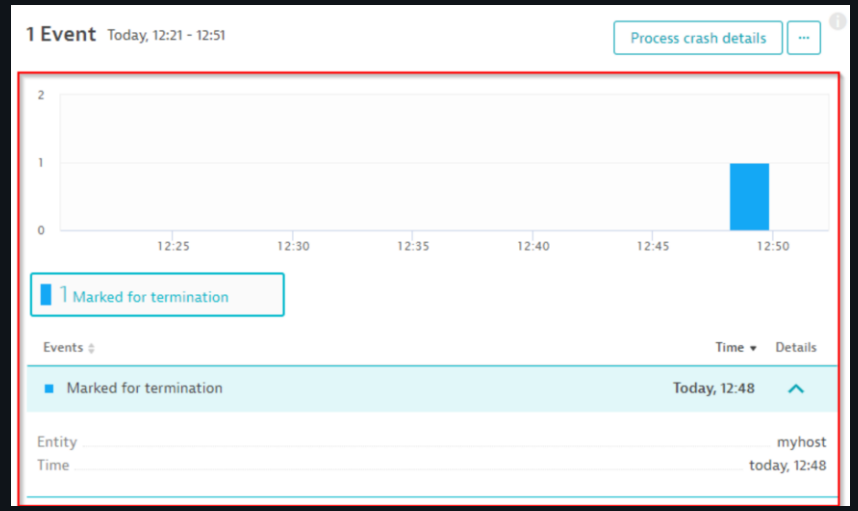
Event Analytics

- You can have custom events pushed into Dynatrace
- One popular use case is to have your continuous integration (CI) and build toolchain automatically report meta-information about software deployments
- Each custom event includes a set of custom key-value properties that your toolchain can use to report important context information



Custom Event – Marked for Termination

- Modern service infrastructure depends heavily on IT's ability to dynamically scale the number of hosts up or down, depending on the expected workload. Cloud providers, such as AWS, Azure, and GCP, help to automate the process of upscaling or downscaling compute power by providing autoscaling groups.
- Beyond cloud provider solutions, there are multiple additional frameworks and tools that help IT departments to dynamically adapt their compute power dynamically.
- To account for cases when Dynatrace cannot detect Auto-scaling events, you can inform Dynatrace Davis that a host is planned for shutdown or will be terminated within the next 60 minutes



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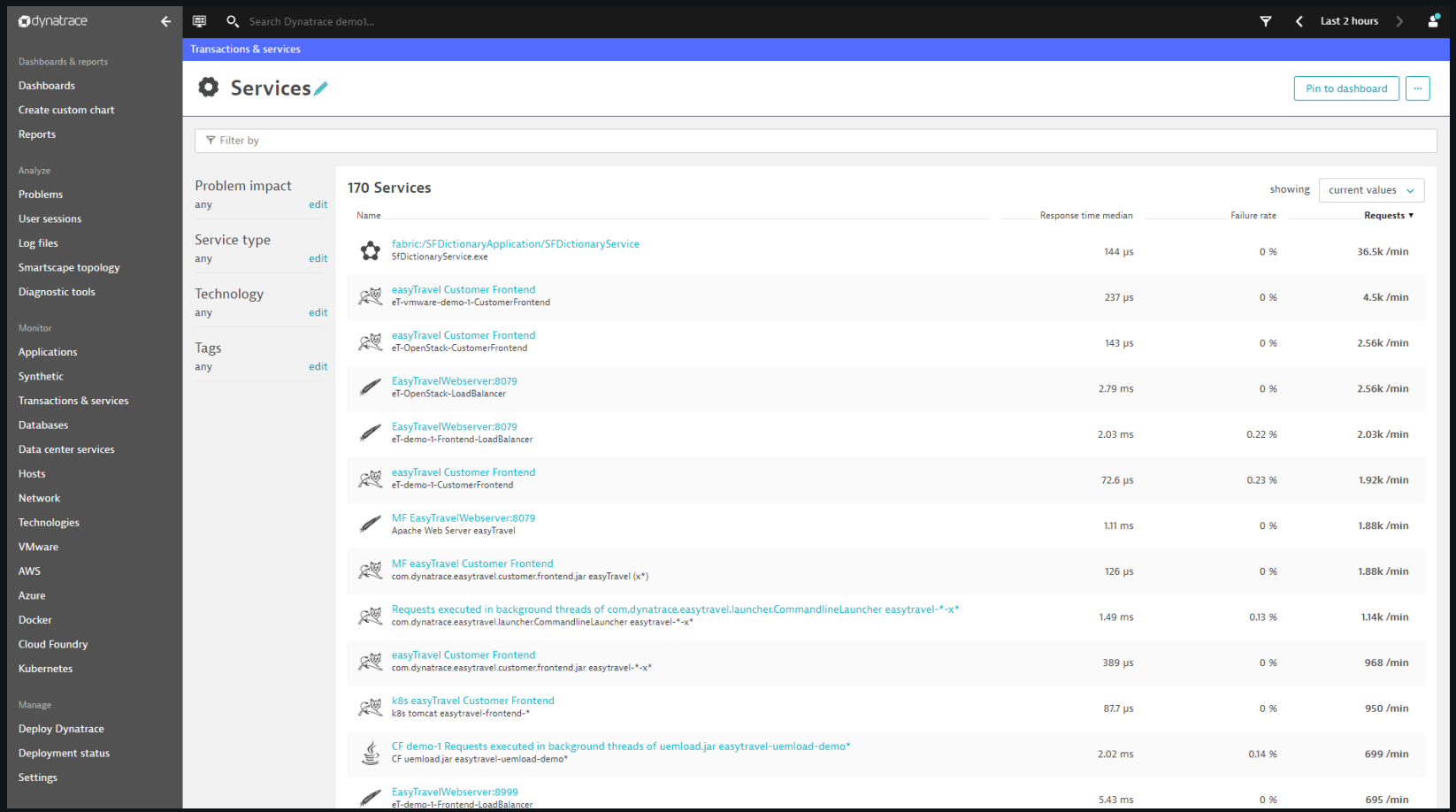

Questions?

Simply smarter clouds