Cisco Connect

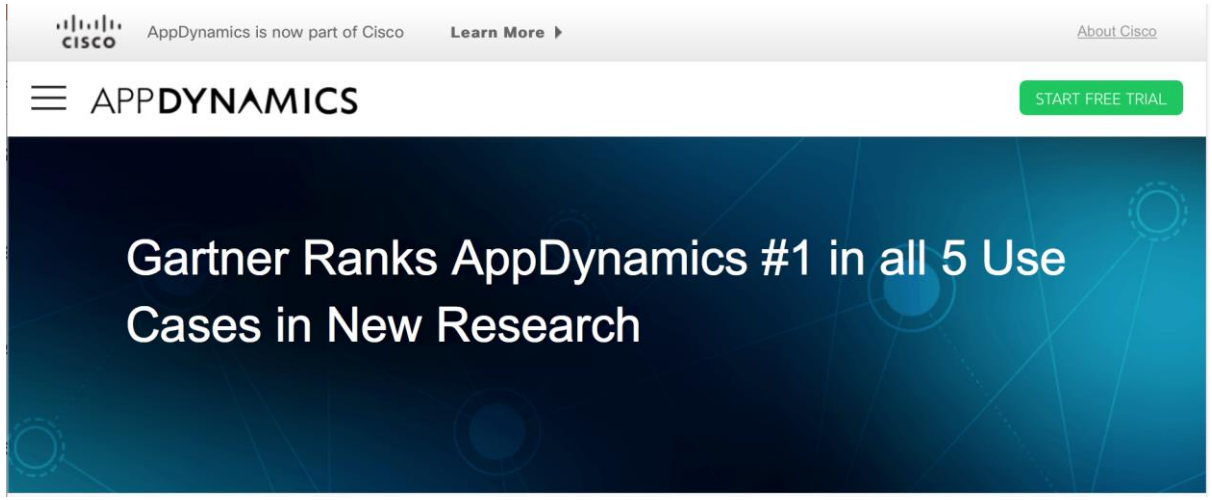
Bled, 11. april 2018

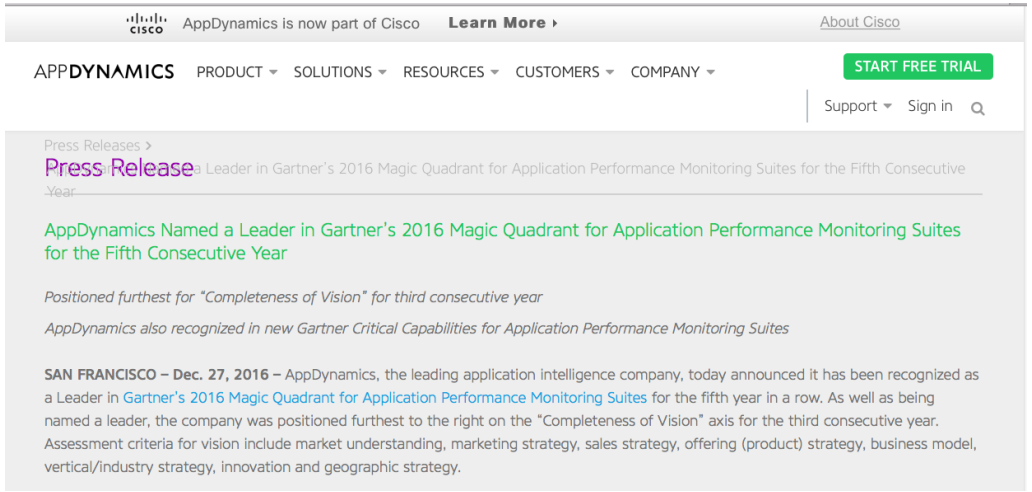
AppDynamics

Josip Zimet

Data Center, Cloud and managed Services SEE

Cisco





Cisco Completes Acquisition of AppDynamics

298 total shares

Together, AppDynamics and Cisco will give customers comprehensive visibility from code to consumer and everything in-between

MARCH 22, 2017

SAN JOSE, Calif. – March 22, 2017 – Cisco (NASDAQ: CSCO) today announced that it has completed the acquisition of AppDynamics, a leader in application and business monitoring. Together, Cisco and AppDynamics will deliver visibility across the network, data center, security and applications and drive digital transformation that improves customer experiences.

Cisco paid approximately $3.7 billion in cash and assumed equity awards.

https://finance.yahoo.com/news/cisco-appdynamics-recognized-leader-gartner-150900779.html

Cisco (AppDynamics) Recognized as a Leader in Gartner's Magic Quadrant for the Sixth Consecutive Year and Placed Highest on the Ability to Execute Axis

Business Wire March 21, 2018

SAN FRANCISCO--(BUSINESS WIRE)--

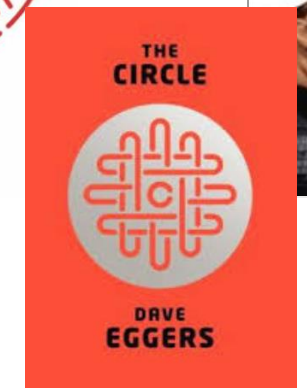
AppDynamics, a Cisco company and the leader in application intelligence, today announced it has been named a leader in Gartner's 2018 Magic Quadrant for Application Performance Monitoring Suites for the sixth year in a row. In addition to being identified as a leader, the company also placed the highest among 15 vendors on the ability to execute axis. From our perspective, this recognition emphasizes AppDynamics' deep understanding of what companies need to be successful as they reshape their businesses to meet consumer expectations for sophisticated, always-on services. We also feel that it reflects Cisco's support in accelerating AppDynamics' time to market and ability to address the market on a global scale.

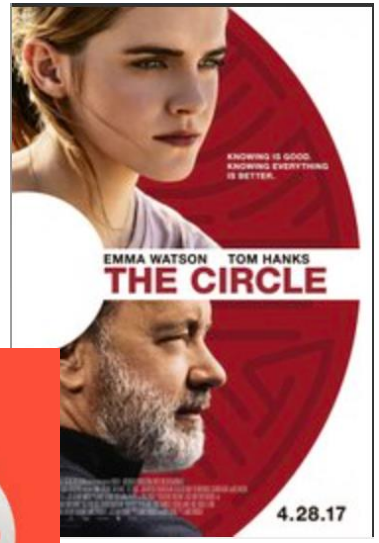
Next Generation of Business iQ: Simplifies Complex Business Problems to Power Data-driven Decisions

Perspica Technologies: Machine Learning Speeds Up Transformation of Data into Real-time Insights

IoT & Network Monitoring: Provides Full Visibility from End-User Interactions on Connected Devices to Microservices Performance Across Multiple Clouds

Developer Toolkit: Improves App Team Collaboration with Development Lifecycle Transparency

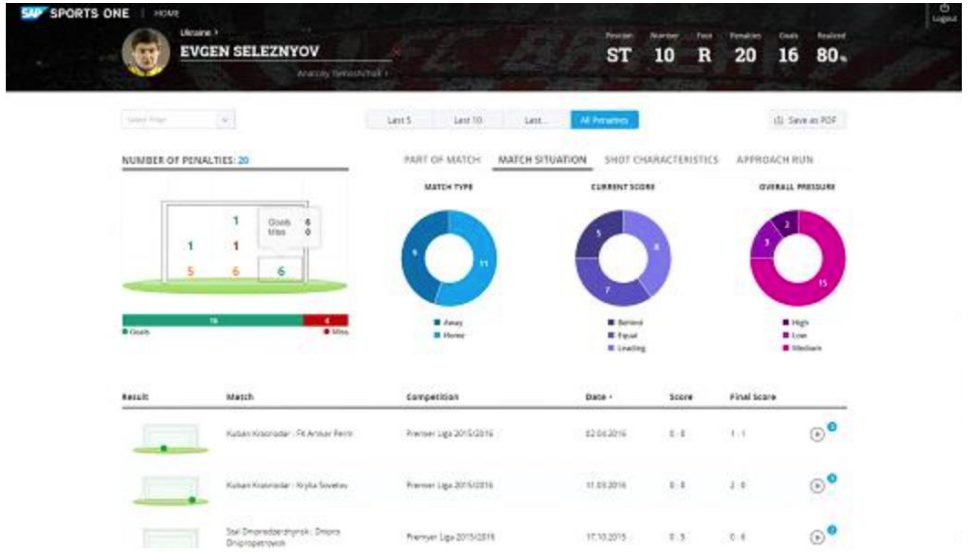




On February 1, 2013, a TV series called *House of Cards* debuted on the video streaming service Netflix [1]. It proved an immediate hit. Two years later, it has a nine out of 10 rating from more than 275,000 reviewers. Those numbers place it in the same category as Avatar and The Sopranos, but this success, some said, was guaranteed in advance. Why?

As New York Times explained: [Netflix] already knew that a healthy share had streamed the work of David Fincher, the director of *The Social Network*, from beginning to end. And films featuring Kevin Spacey had always done well, as had the British version of "House of Cards."

https://thenextweb.com/insider/2016/03/20/data-inspires-creativity/#.tnw_UPbyyoze



'In just 10 minutes, 10 players with three balls can produce over seven million data points,' Oliver Bierhoff explained. *'SAP HANA can process these in real time. With SAP, our team can analyze this huge amount of data to customize training and prepare for the next match.'*

Brazil	Germany
1	7
Date	8 July 2014

The team led by the captain Philipp Lahm focused on their passing speed. In 2010 World Cup the average ball possession was *3.4* seconds per touch and by using the "Match Insights" framework they scaled it down to *1.1* seconds. The improvement was very apparent from their 7-1 victory over the mighty Brazil.

https://confluo.wordpress.com/2016/02/18/sap-had-a-hand-in-germanys-world-cup-title/

Budgeted for digital transformation

$2.1T

Estimated 2019 WW Enterprise spend on digital tranformation technologies

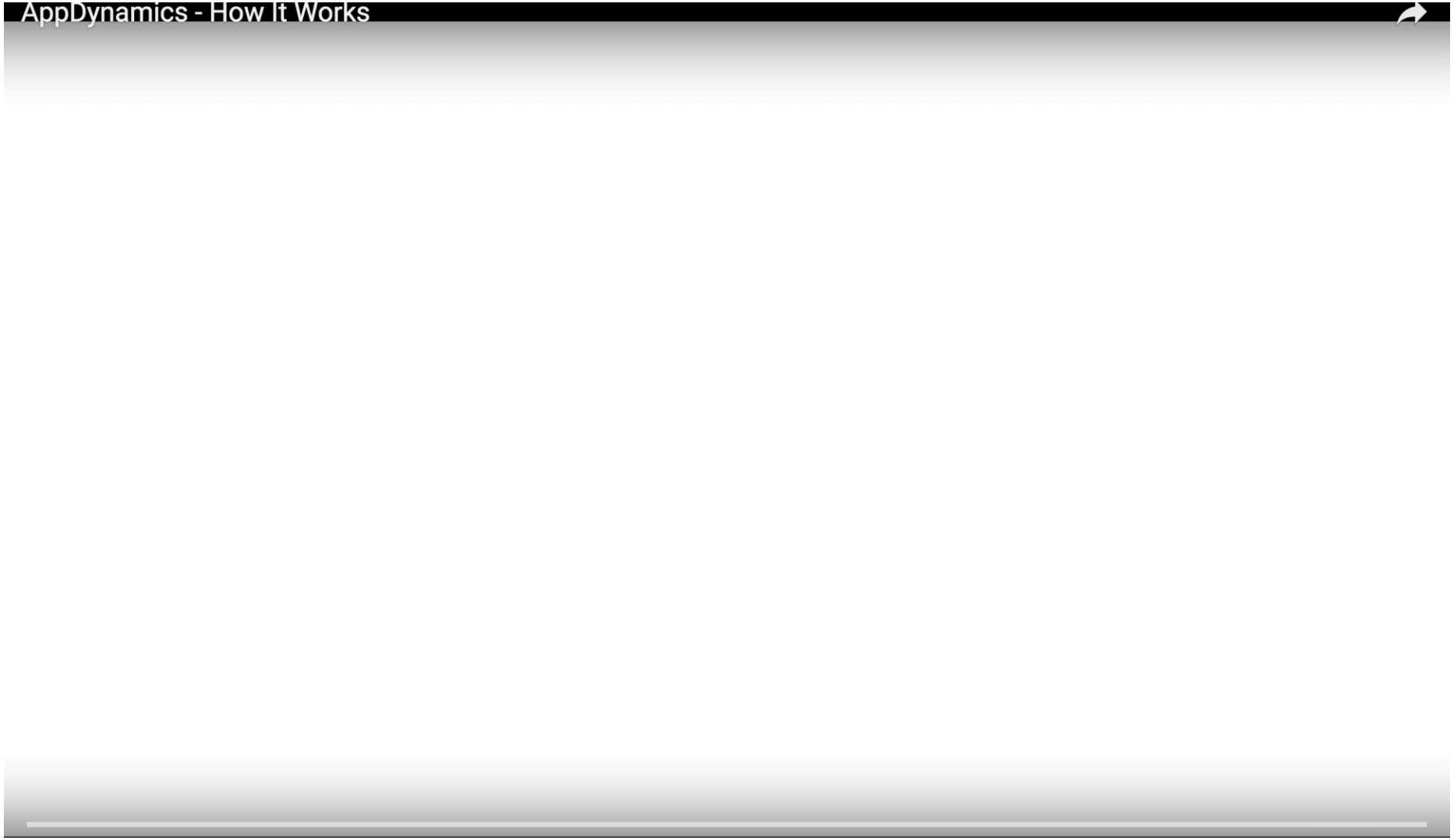
Enterprises lack coherent strategies

73%

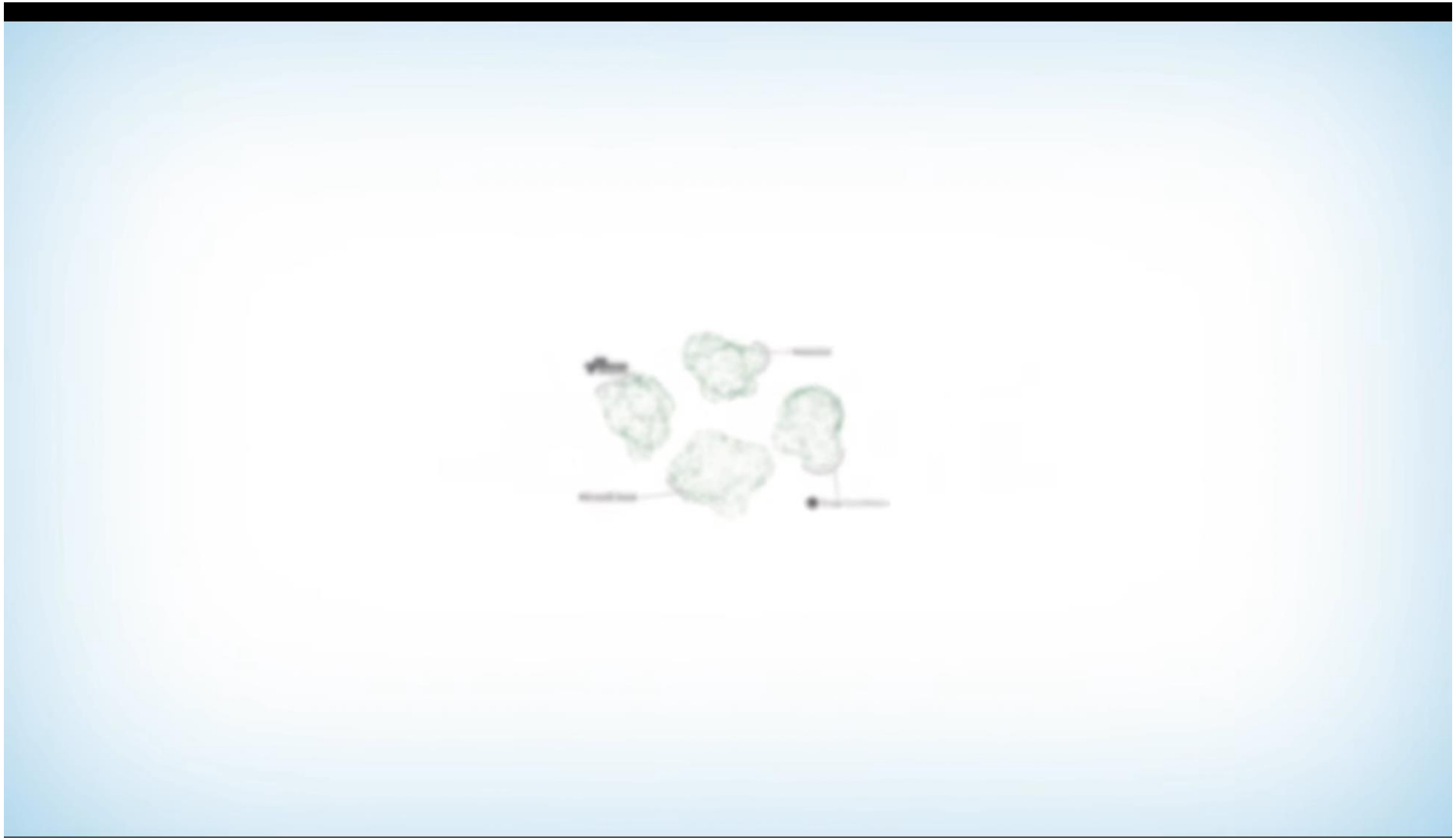
Enterprises polled that didn't have a coherent digital strategy to create customer value


f
t
in

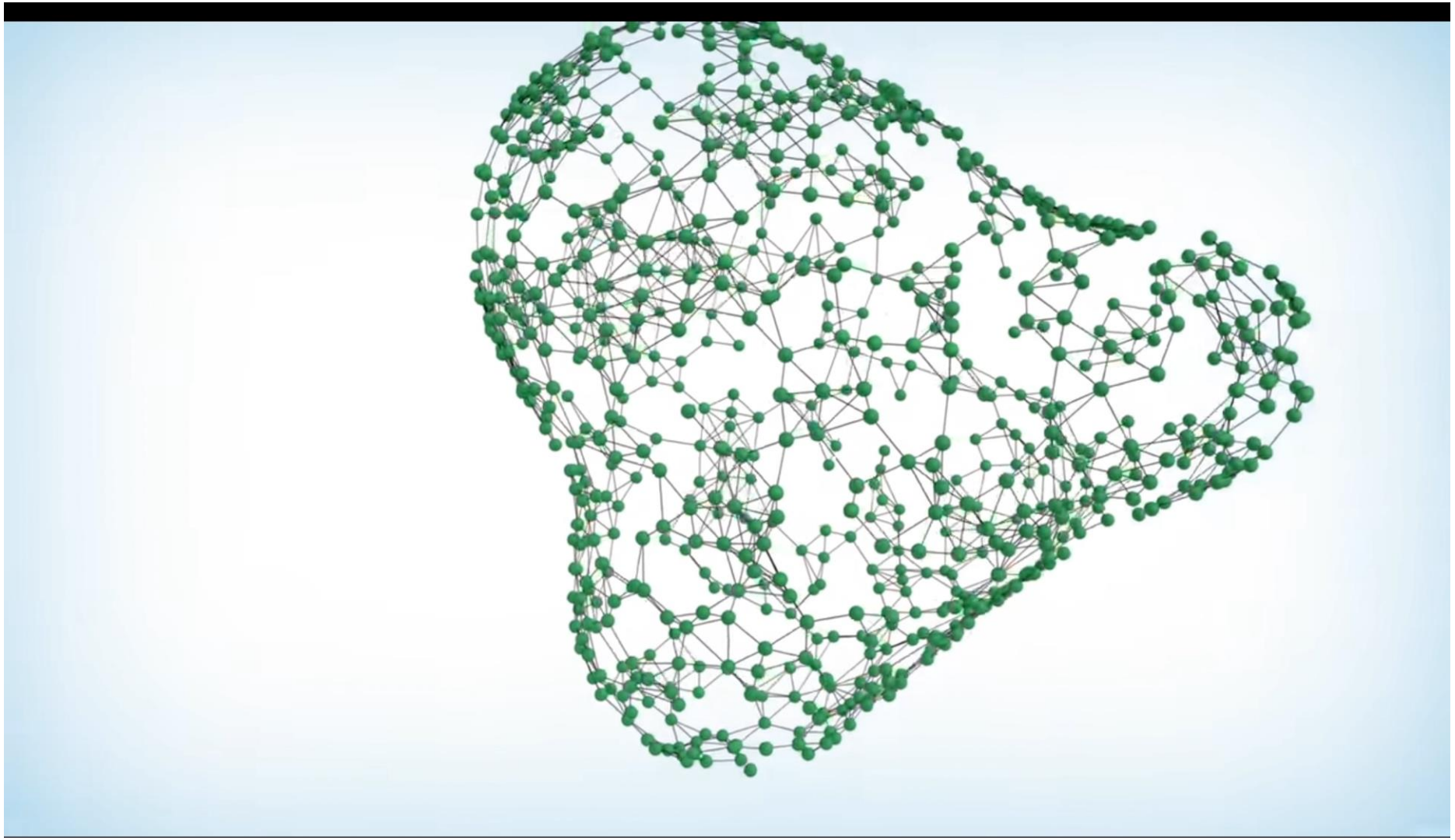
Agents deployed on any cloud



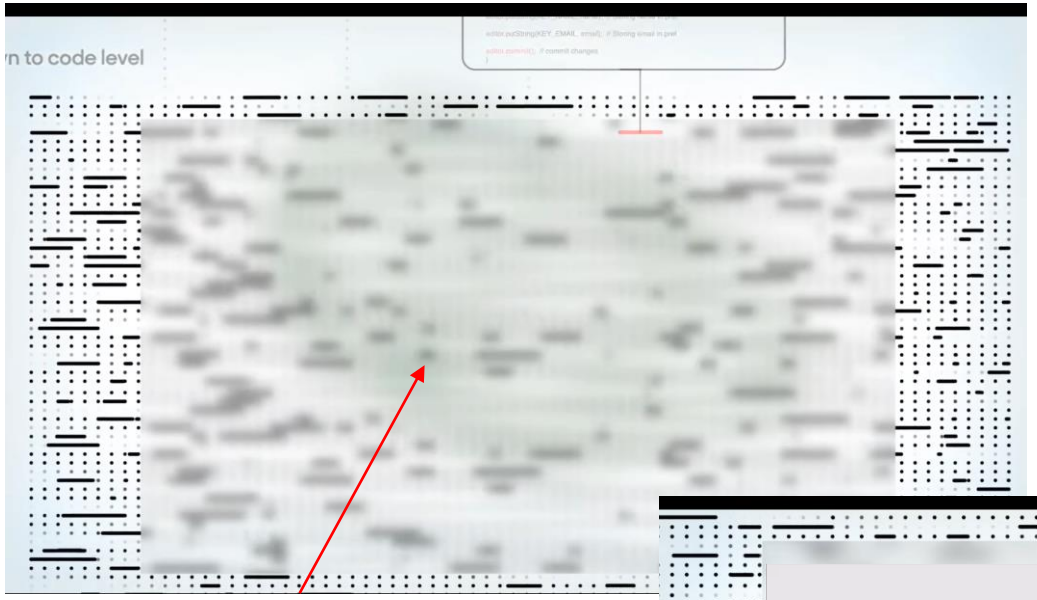
… watch all line of code …



… And automatically discover business transactions (login) …

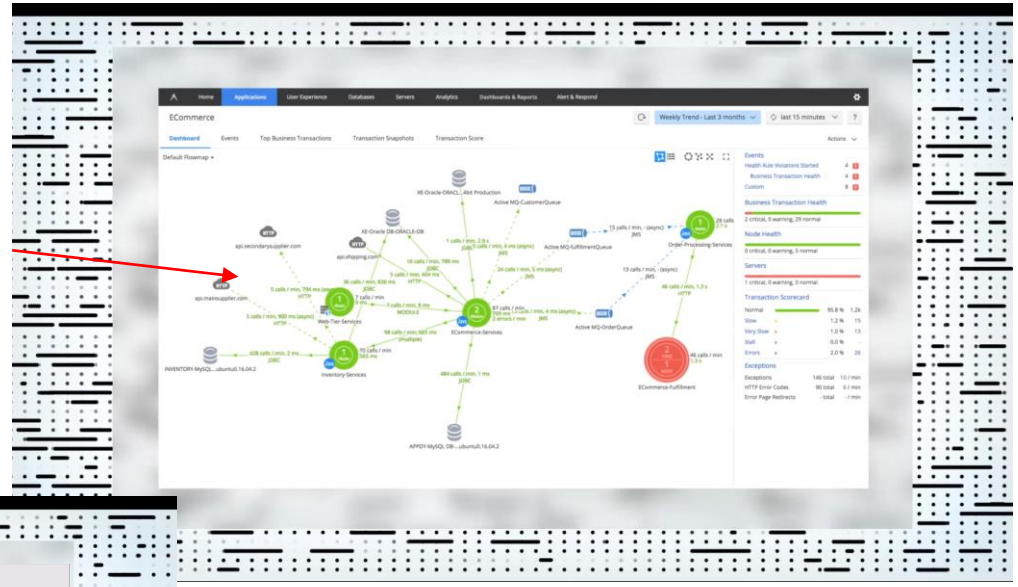


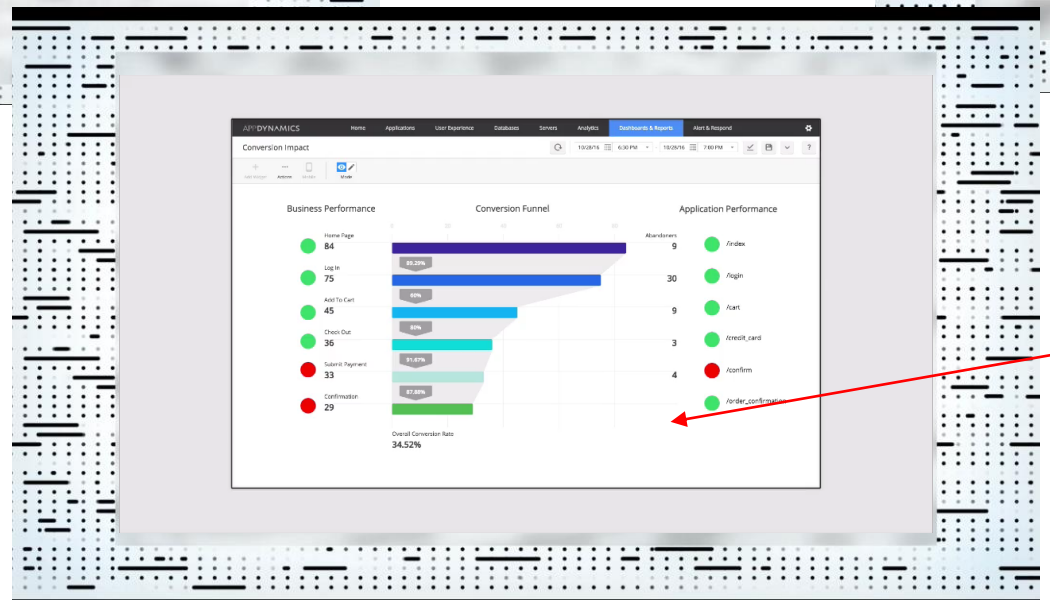
Developers, operations professional and business owners …



Developers are able to quickly diagnose and determine root cause by viewing stack traces, database calls and correlated log statements

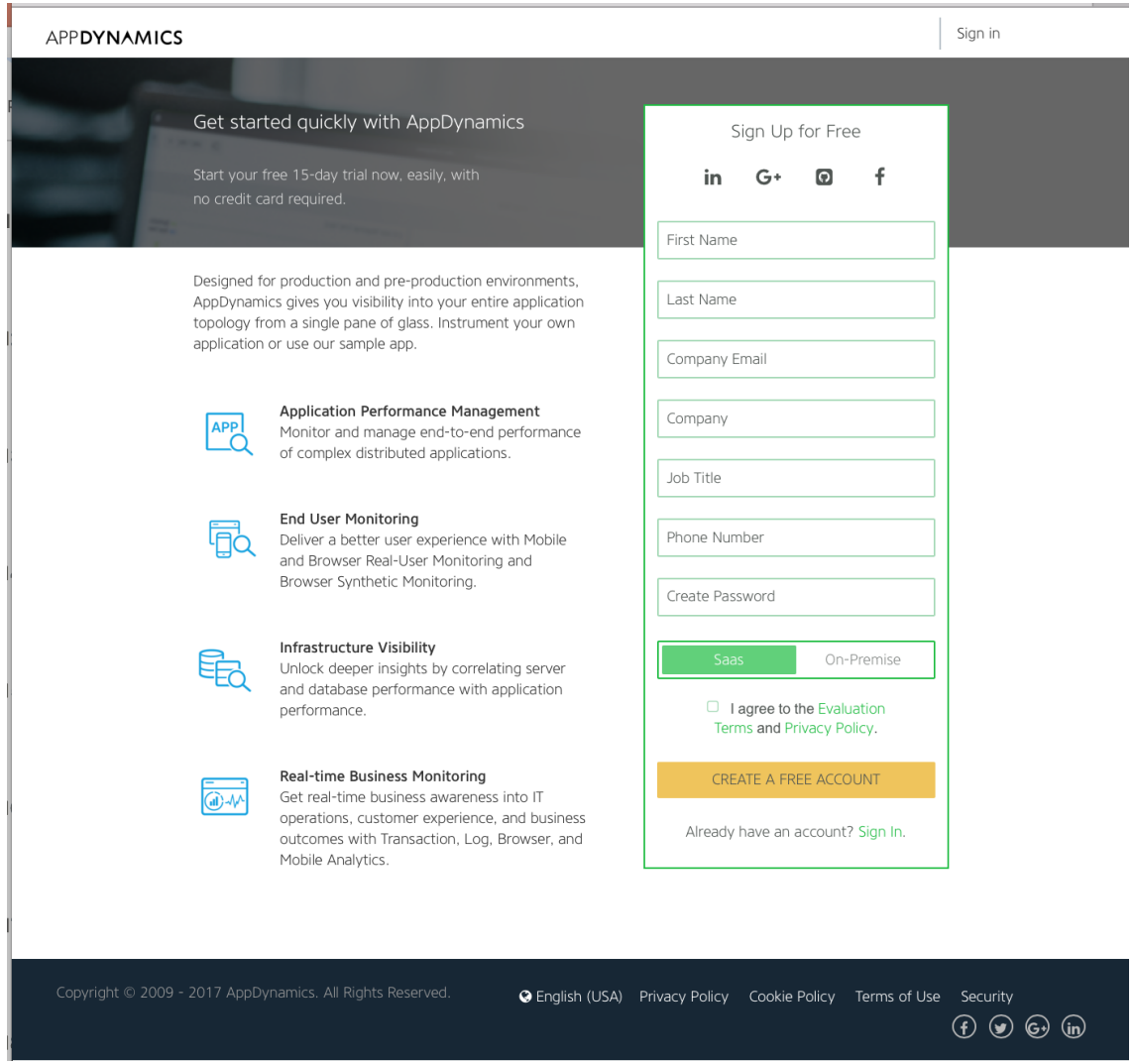
Operations Professionals can focus on end to end business transaction instead of monitoring individual services





Business owners can monitor real time business performance metrics such as revenue and conversion rate driving better business outcome

https://www.appdynamics.com/free-trial/



Java

.NET

PHP

Node.js

C++

Python

Apache Web Server

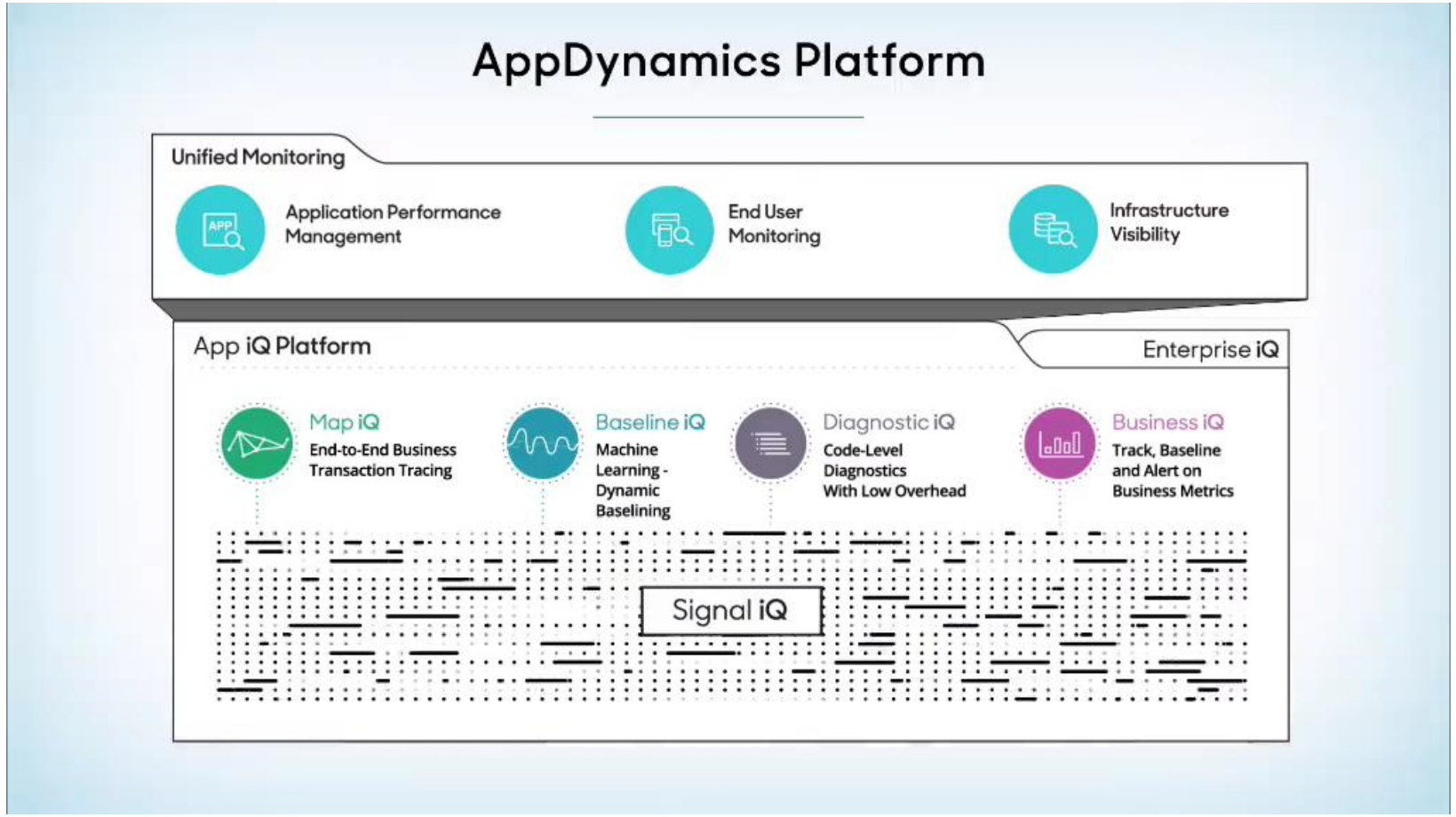
GoLang

iOS

ANDROID

XAMARIN

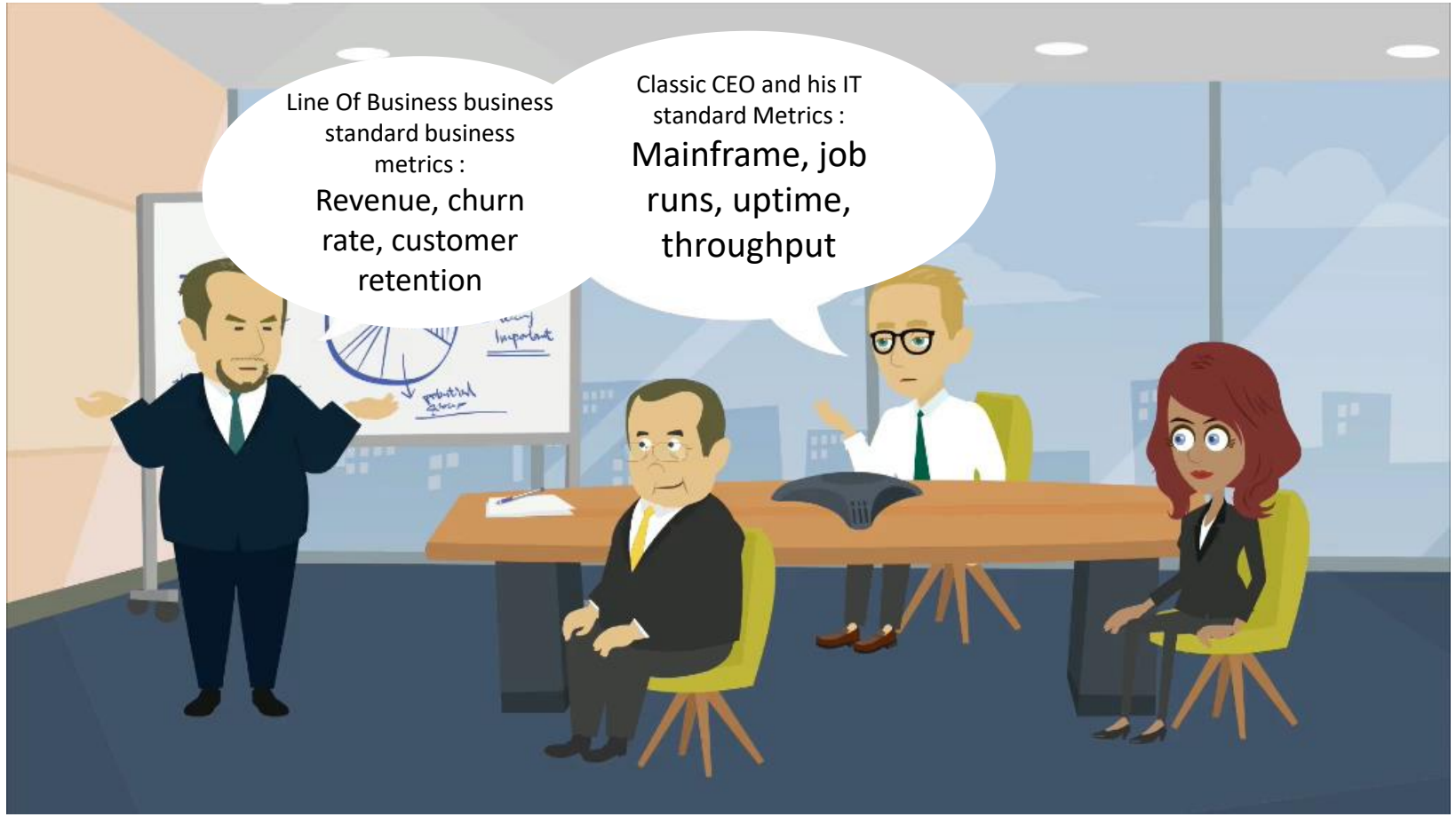
AppD Platform



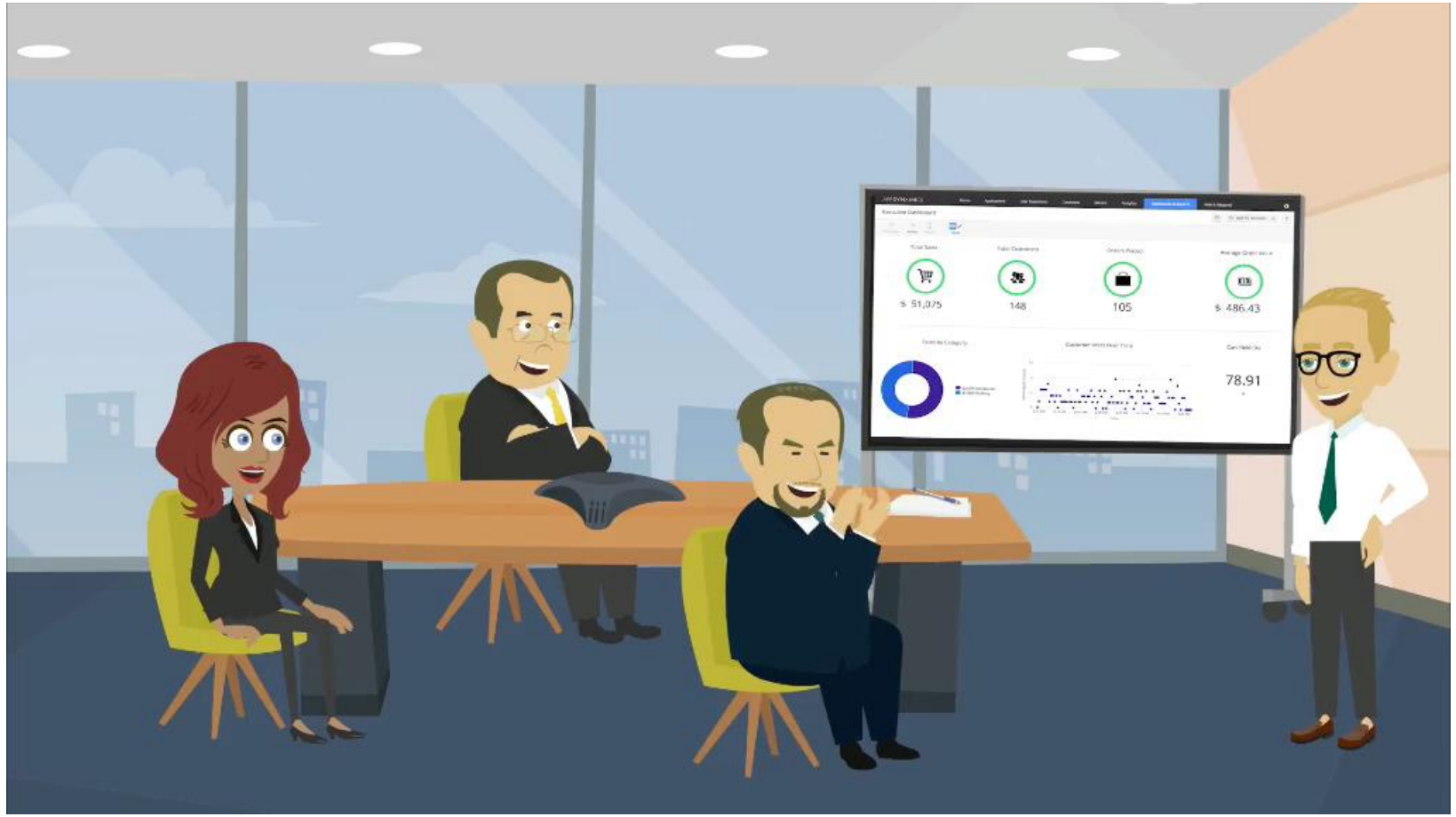
Smart camera

Development Mode

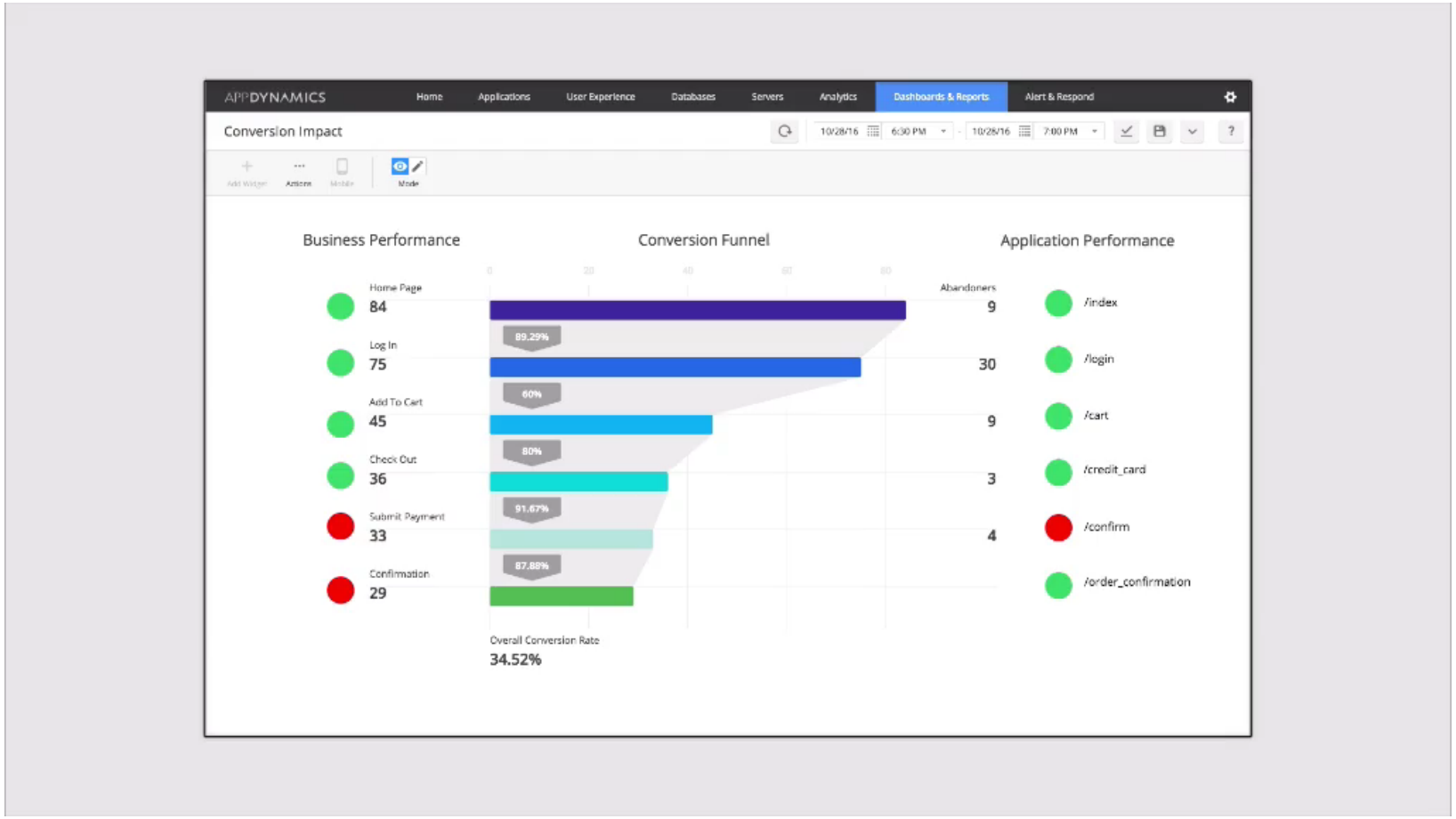
Mean Time Business Awareness



Mean Time Business Awareness



BusinessIQ


APPDYNAMICS
Home
Applications
User Experience
Databases
Servers
Analytics
Dashboards & Reports
Alert & Respond
Conversion Impact
Business Performance
Conversion Funnel
Application Performance
Home Page
84
Log In
75
Add To Cart
45
Check Out
36
Submit Payment
33
Confirmation
29
89.29%
60%
80%
91.67%
87.88%
Abandoners
9
30
9
3
4
/index
/login
/cart
/credit_card
/confirm
/order_confirmation
Overall Conversion Rate
34.52%

APPDYNAMICS

Is your application **fast?**

Map iQ

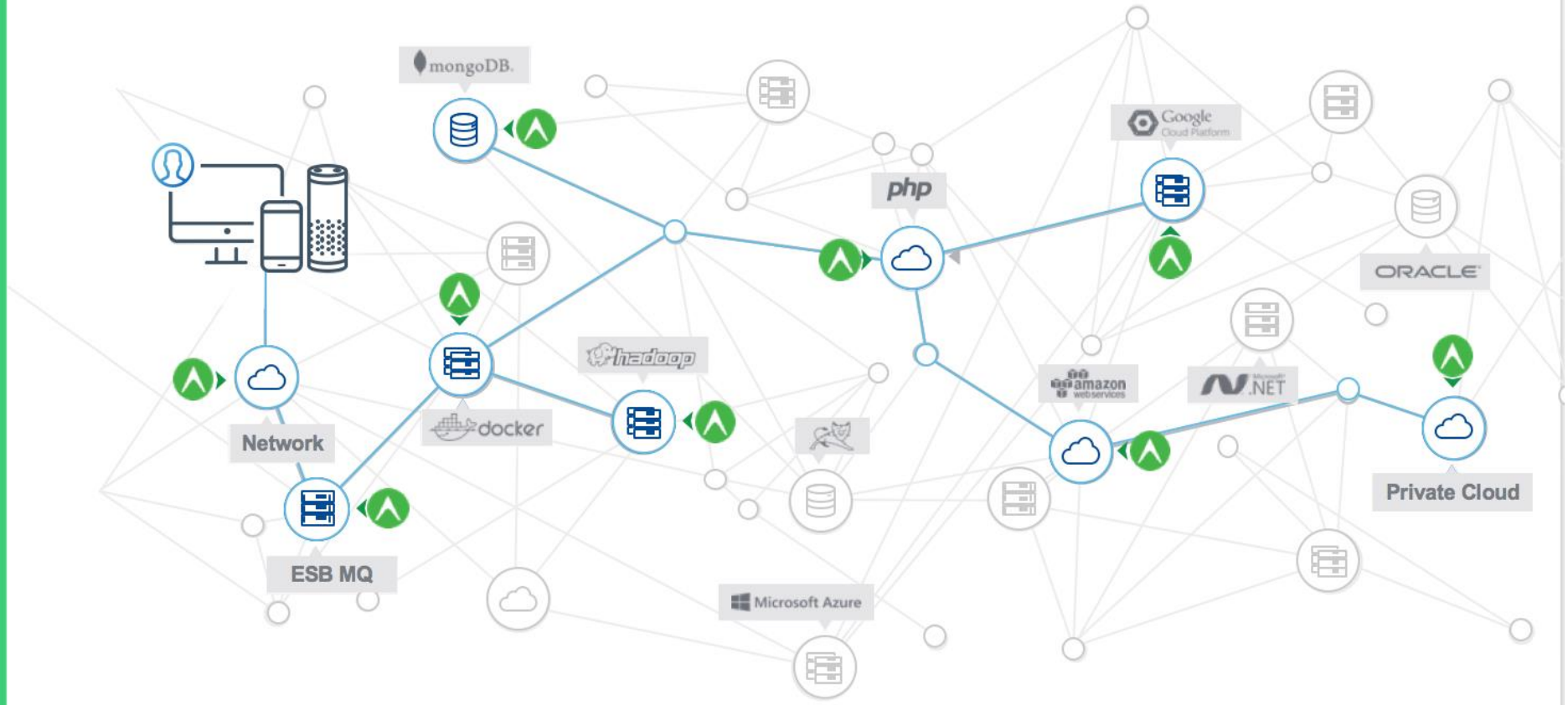
Discovery of your application topology

Baseline iQ

Dynamic baselines and anomaly detection

Diagnostic iQ

Self-learning diagnostics



CISCO

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CISCO

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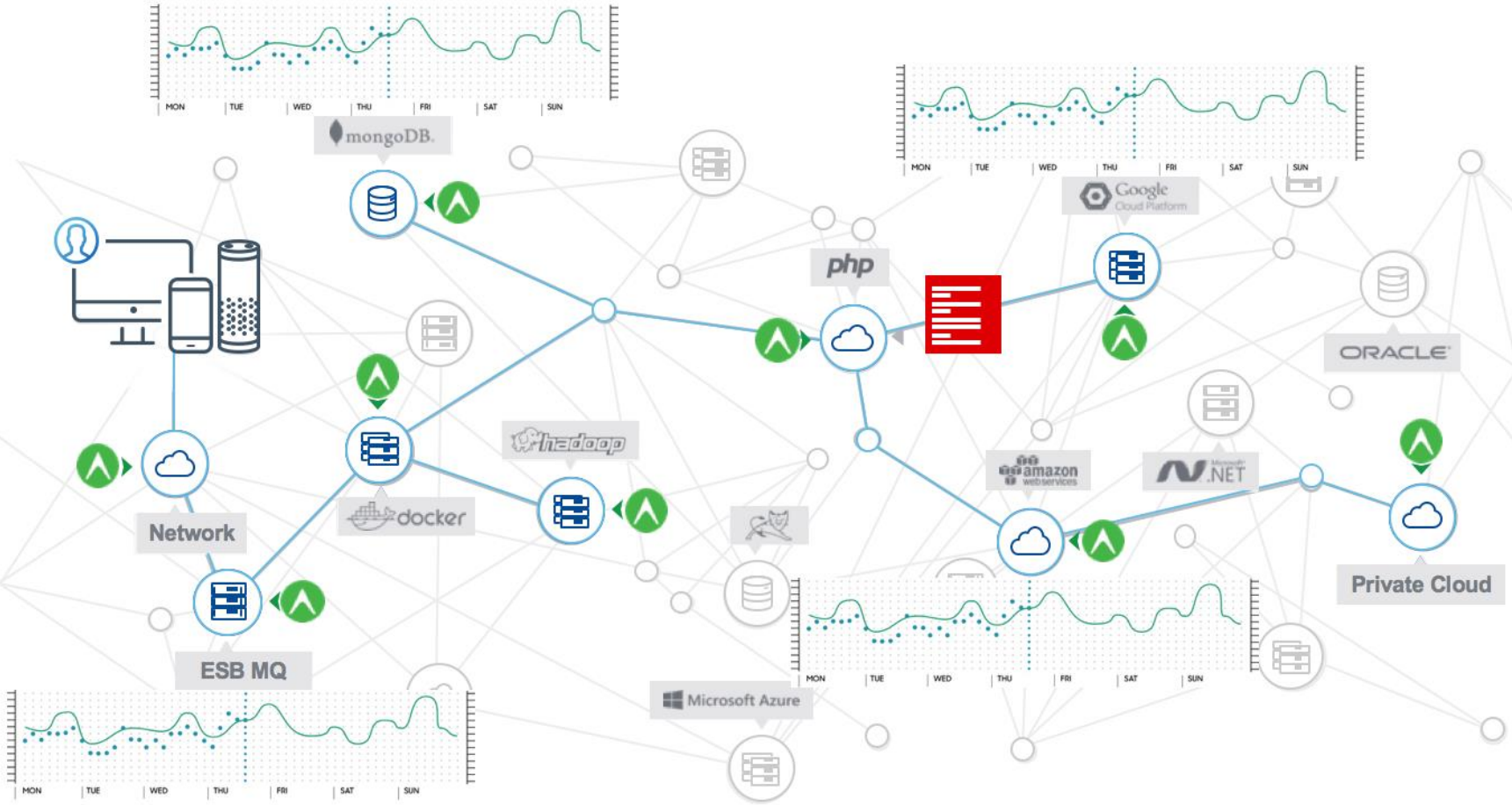

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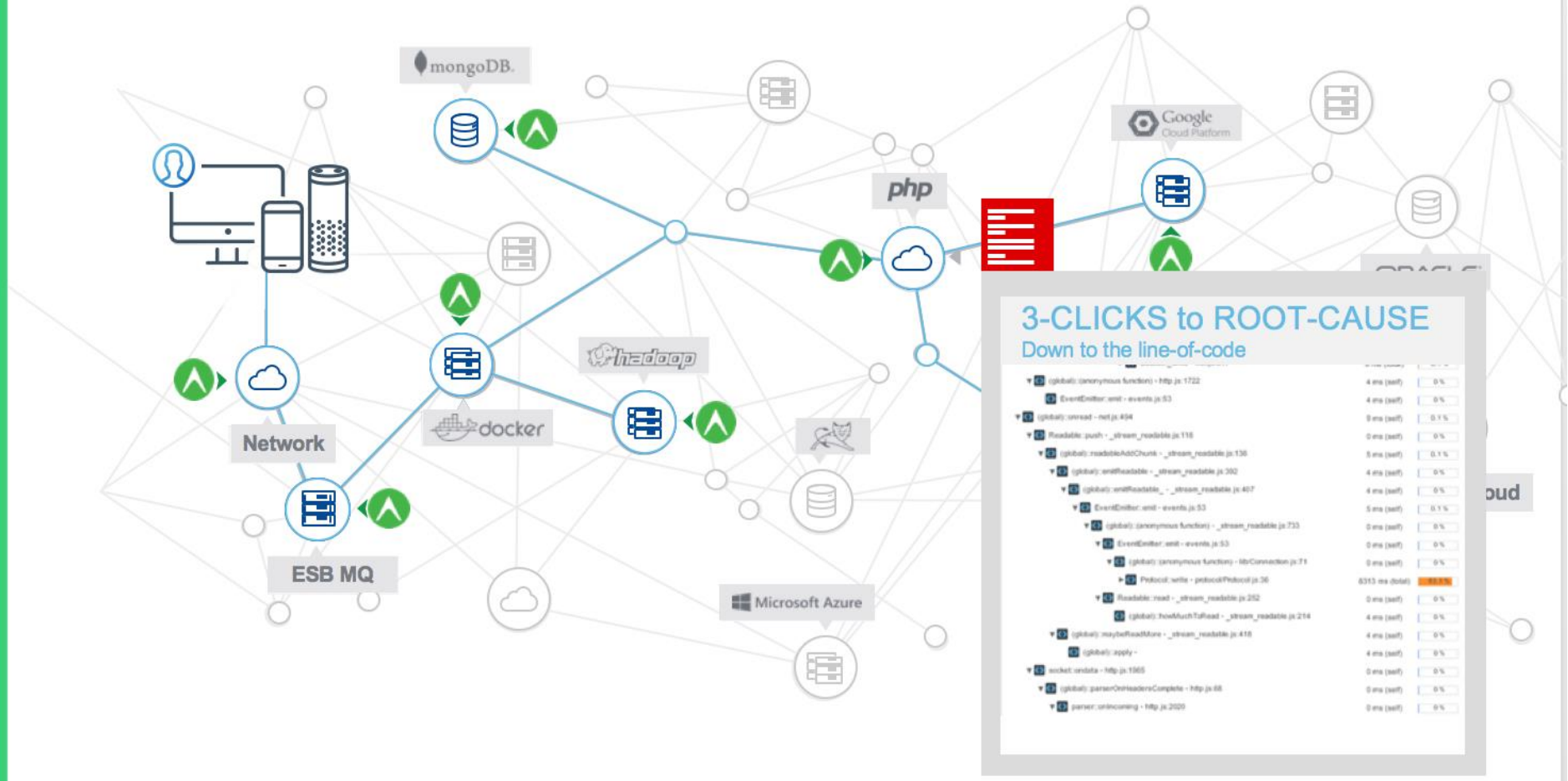


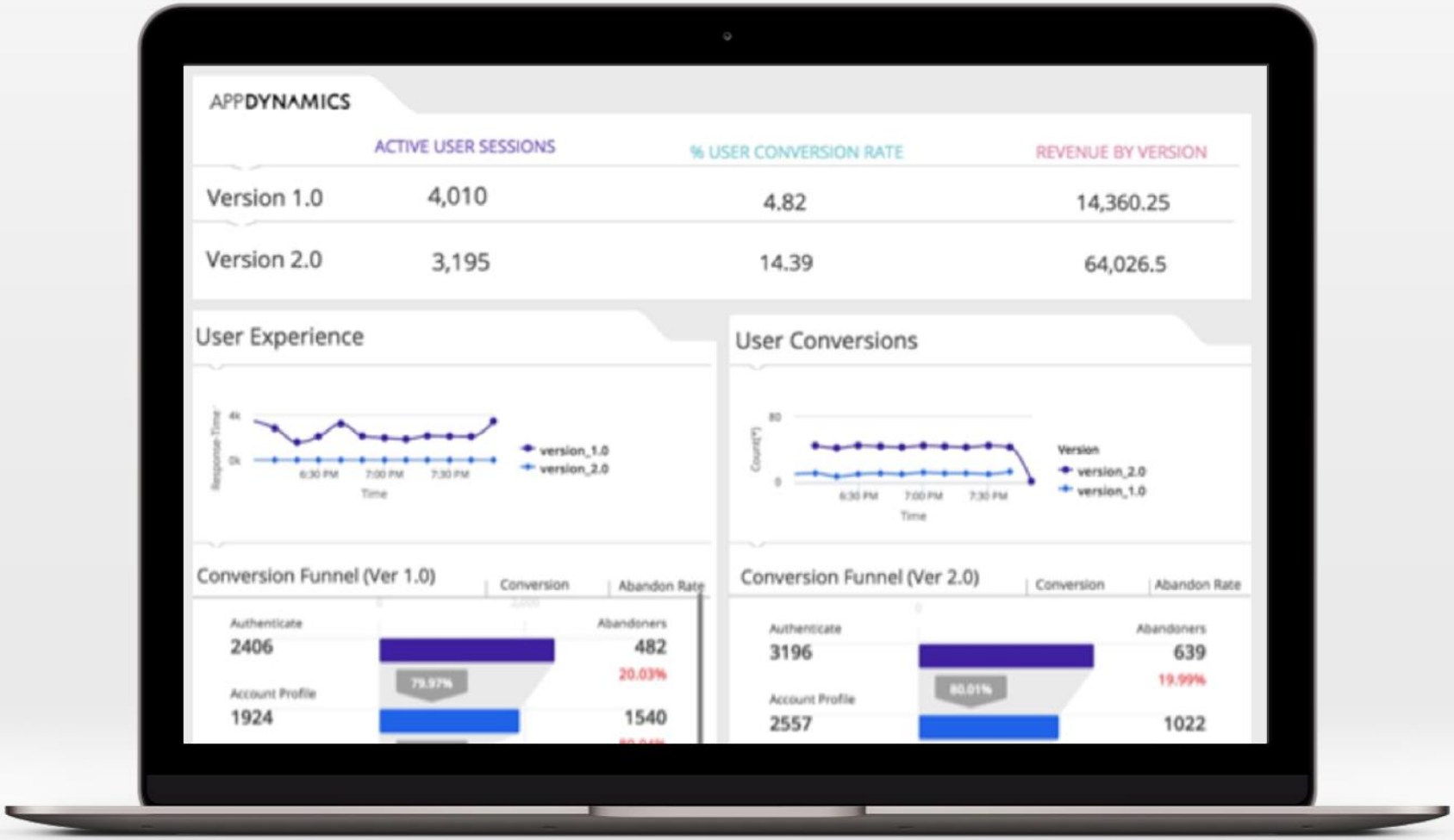
CISCO

APPDYNAMICS

Business iQ

- Increase business velocity
- Business centric dashboards
- Real-time business monitoring

Is your application **useful?**



CISCO

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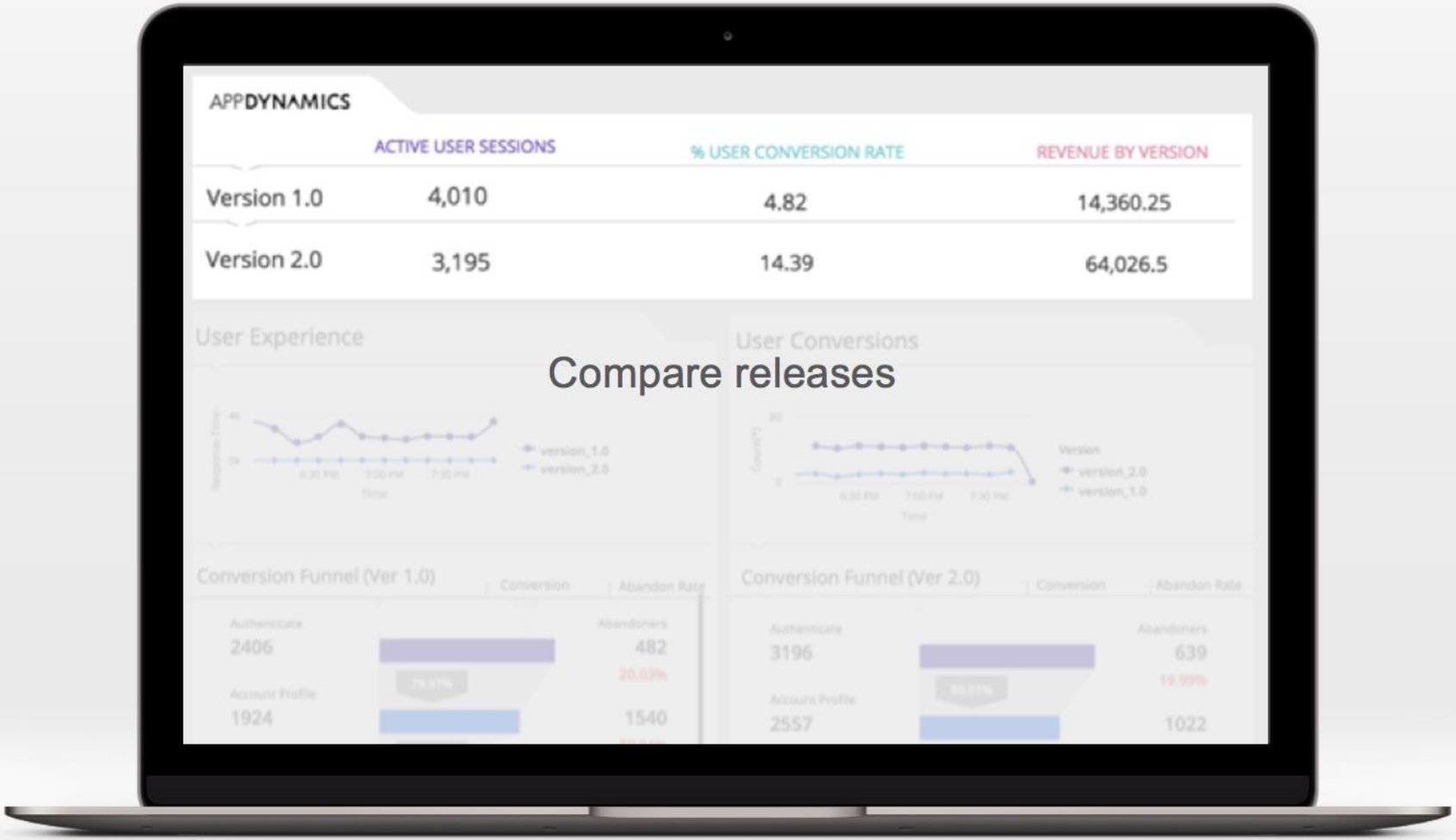

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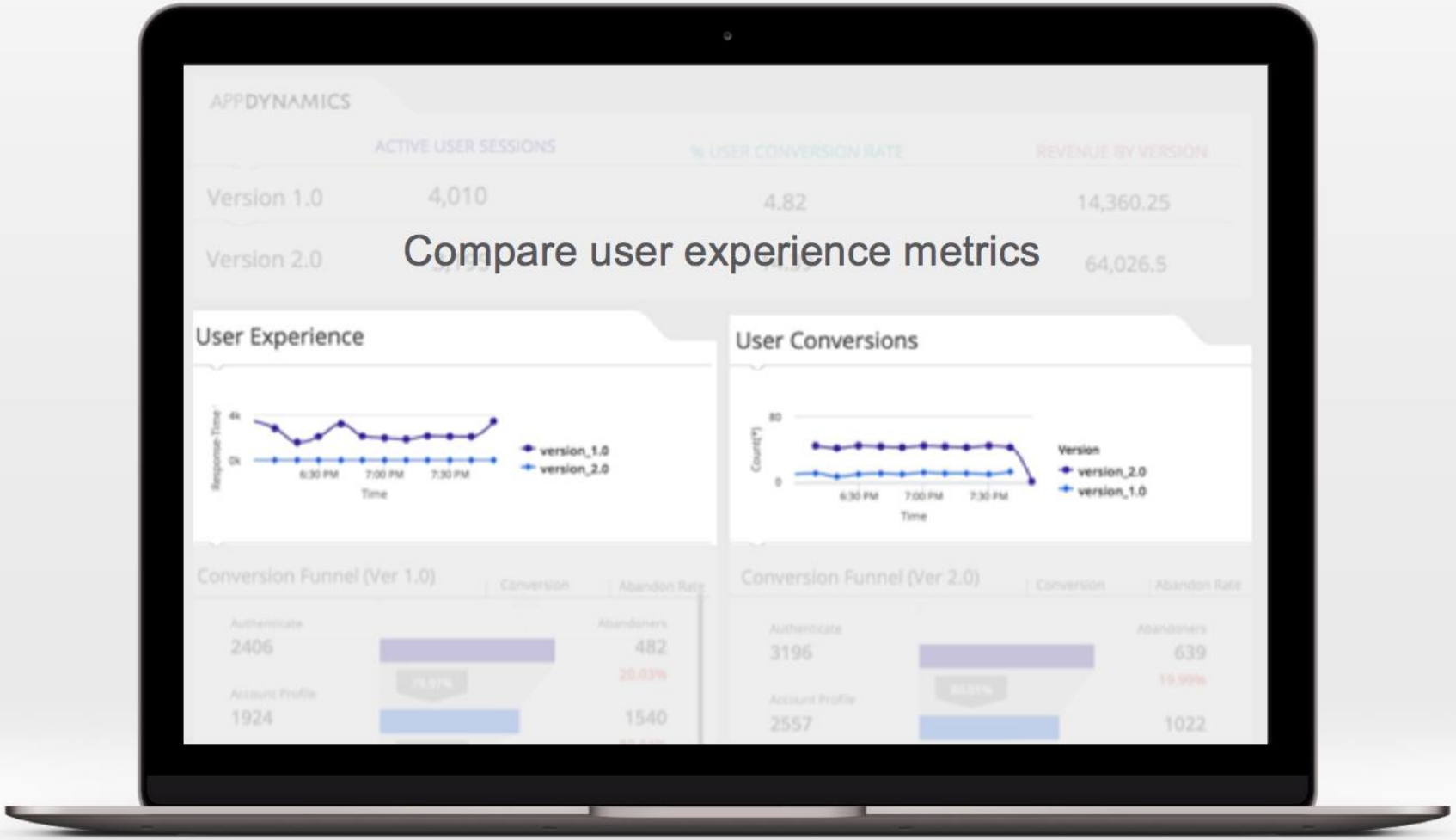

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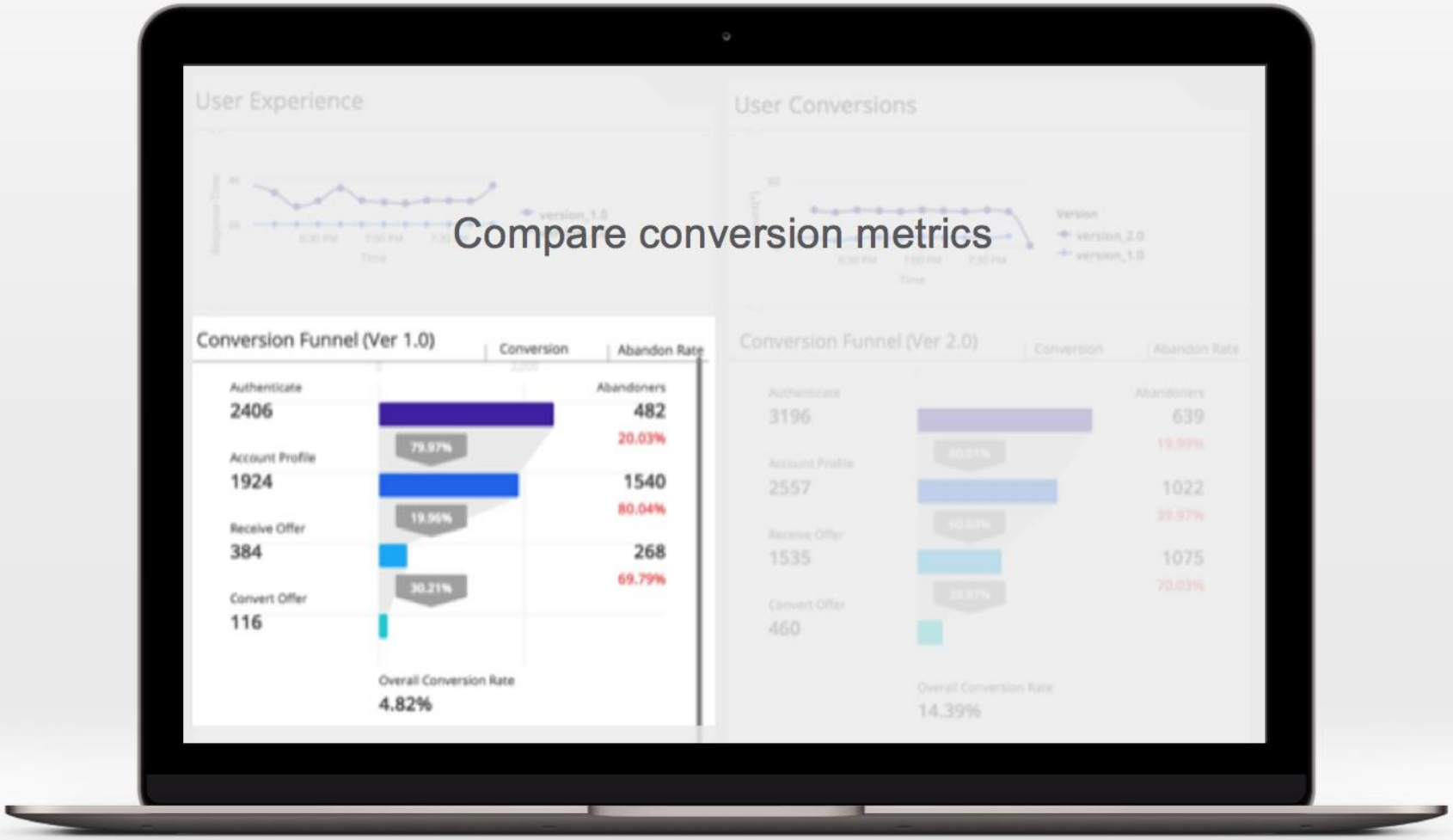

CISCO

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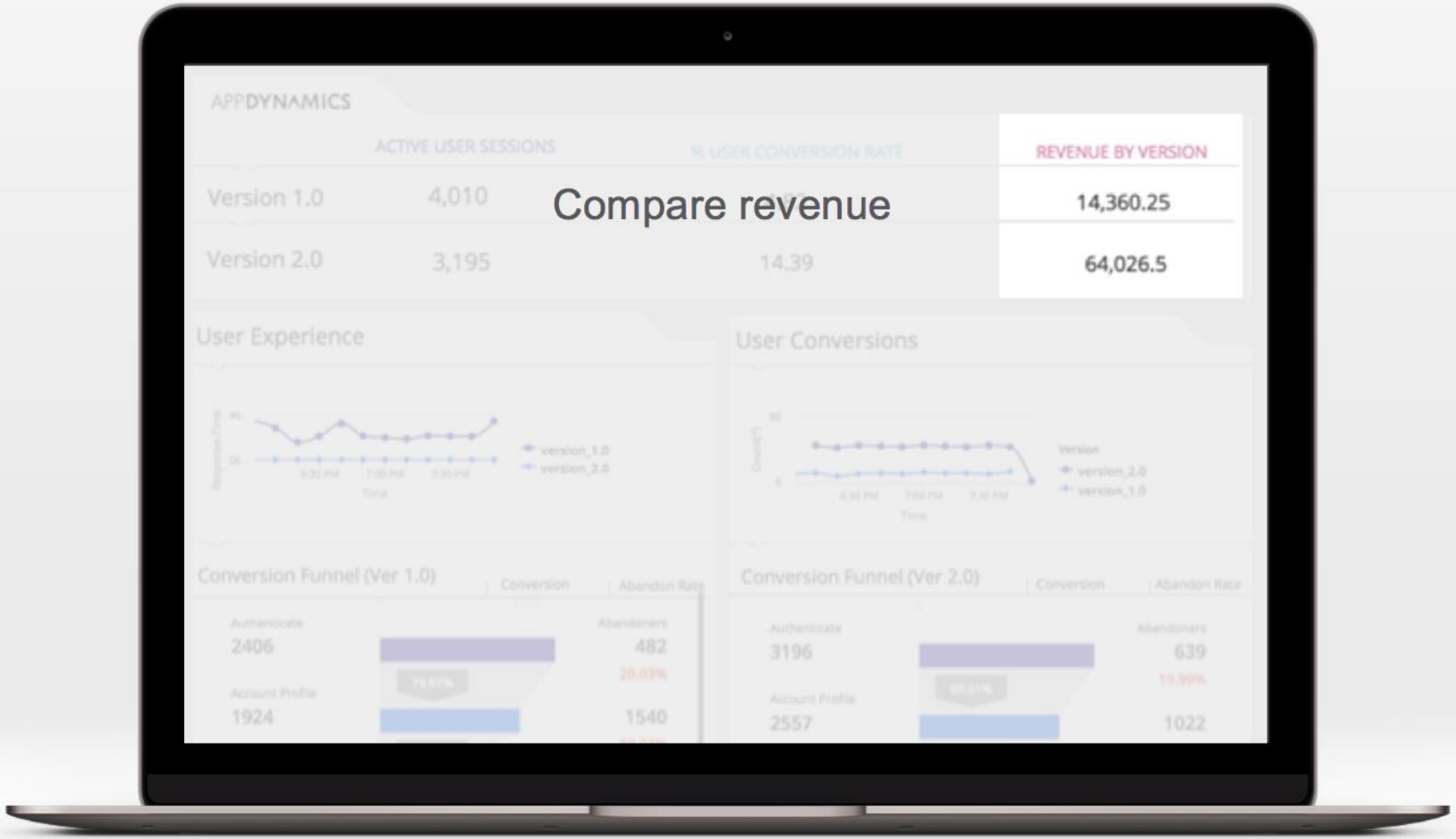

CISCO

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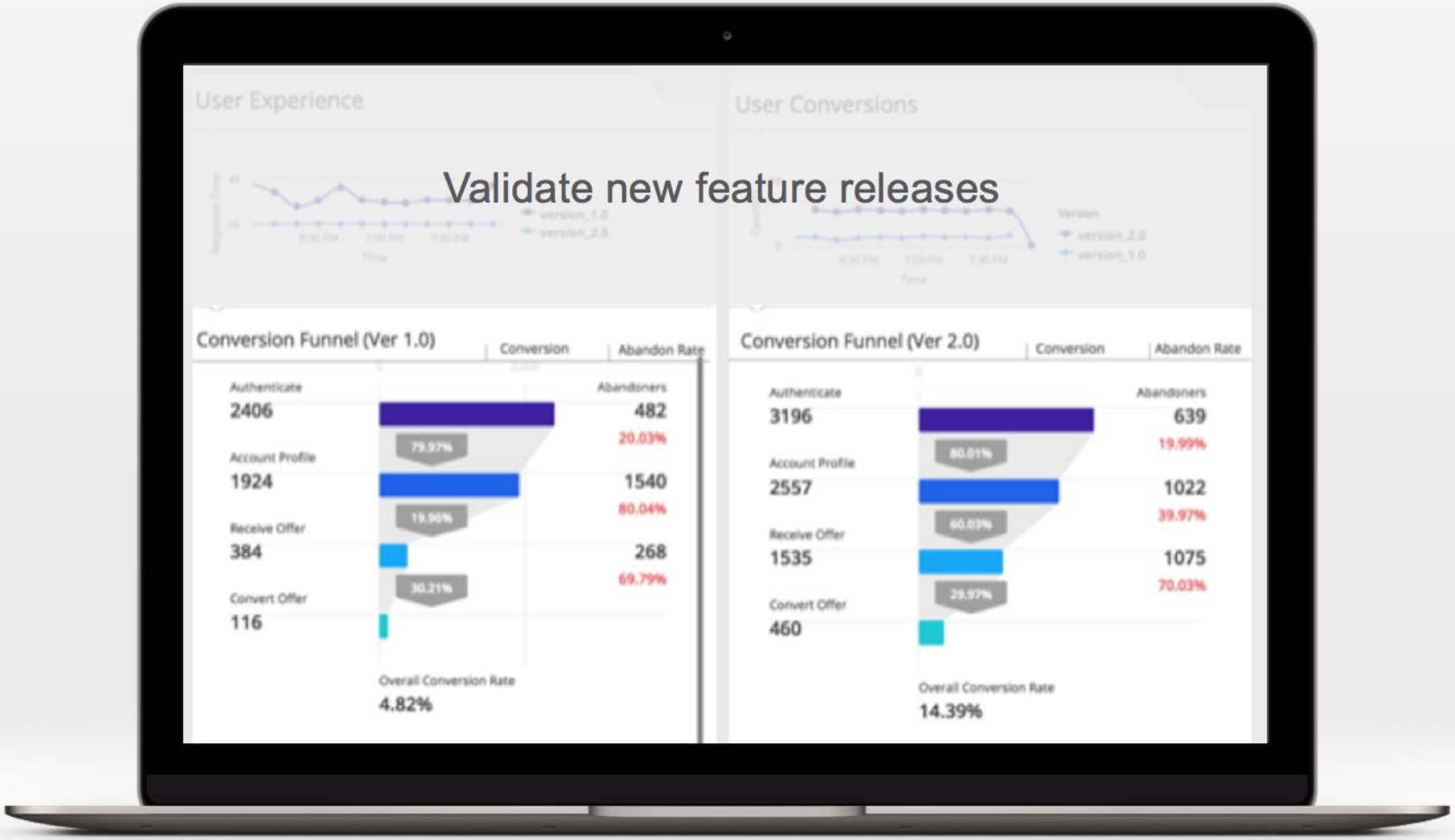
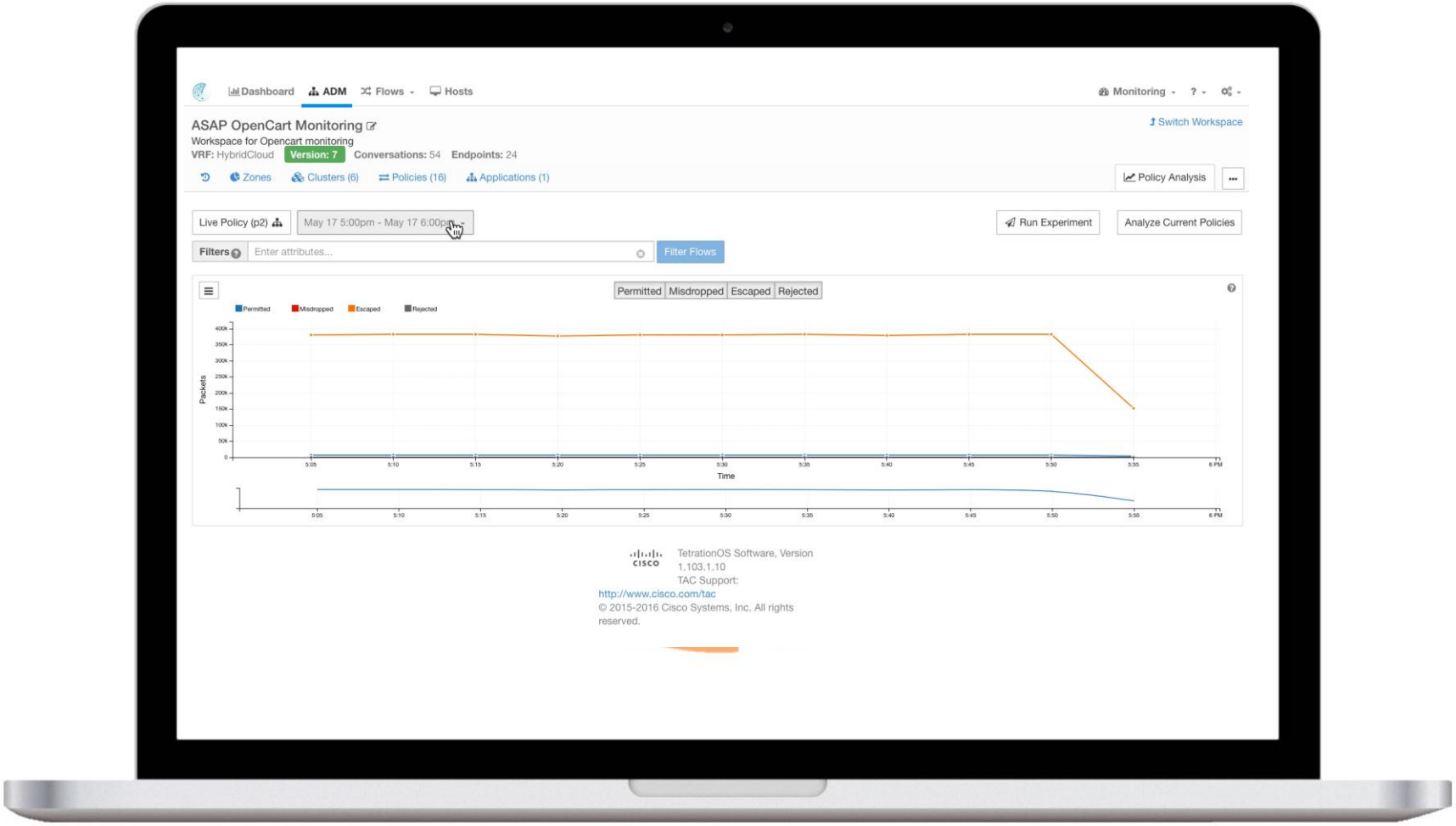


CISCO

Tetration Analytics™

Is your application **secure?**

Auto Generate Whitelist Policies



Whitelist Policy

Application Segmentation

Policy Compliance

cisco

Tetration Analytics™

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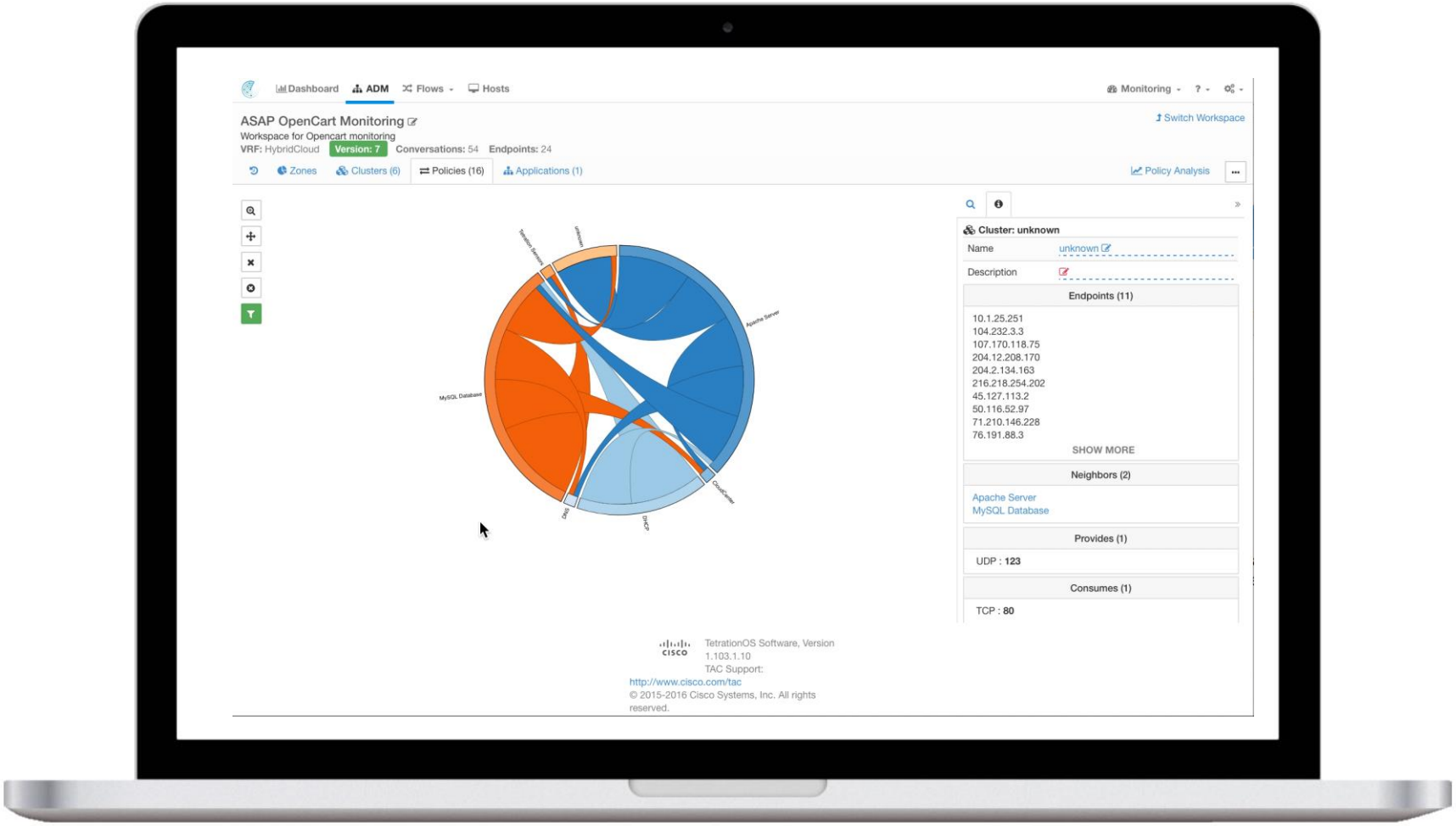
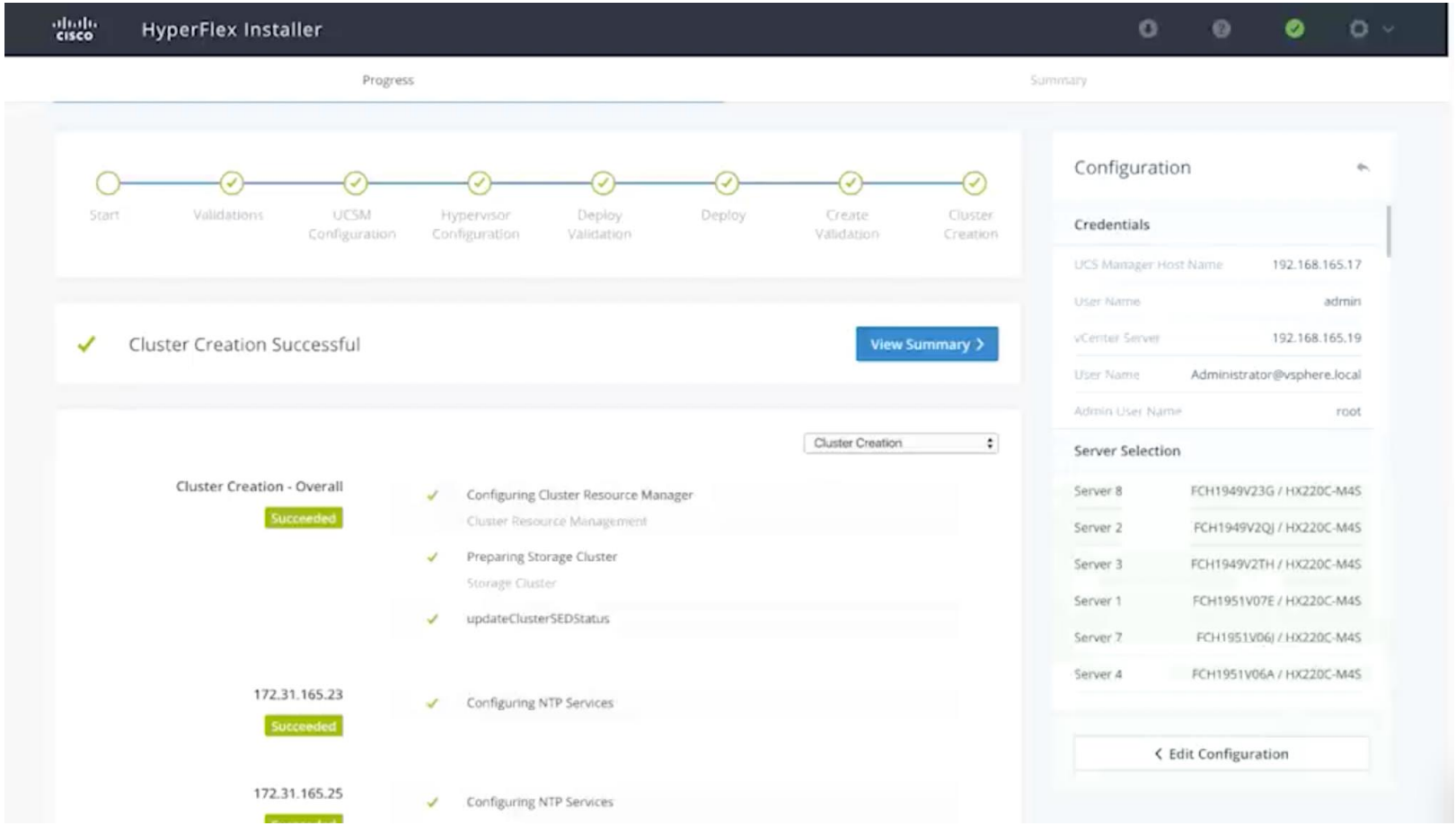


cisco

Model, Deploy and Monitor Applications Across Clouds

Cisco HyperFlex Multicloud Ecosystem

HyperFlex - Hyper converged infrastructure
Quickly deploy HyperFlex with HyperFlex Installer



HyperFlex - Hyper converged infrastructure Monitor HyperFlex health and Performance with HyperFlex Connect

Model App

CloudCenter – Model Application Profile

Deploy App

CloudCenter – Deploy
Multi-Cloud

Monitor App

AppDynamics - Monitor

Nasdaq, Williams-Sonoma, Cisco

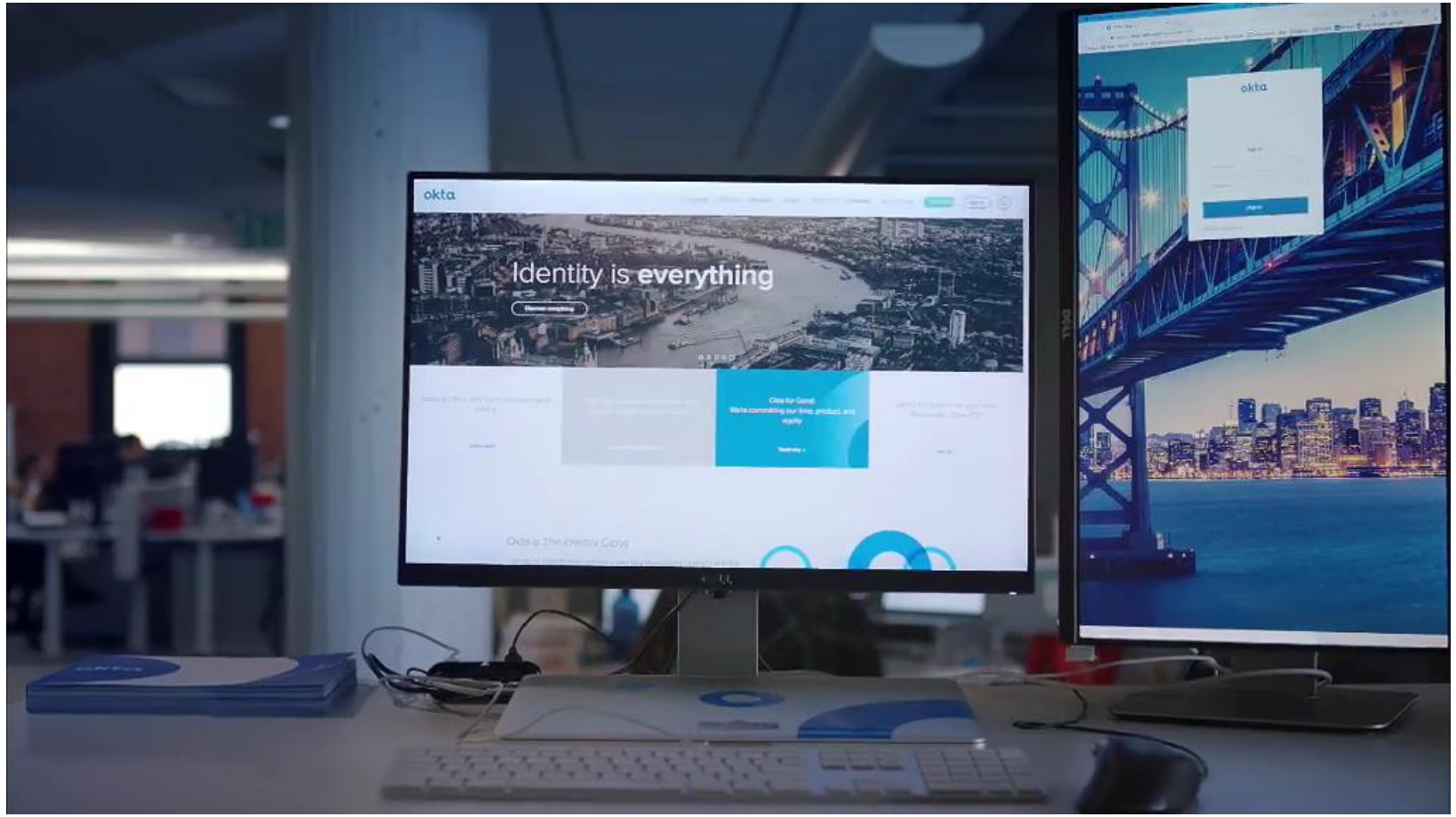
RBS

The Royal Bank of Scotland

JOHN DEERE

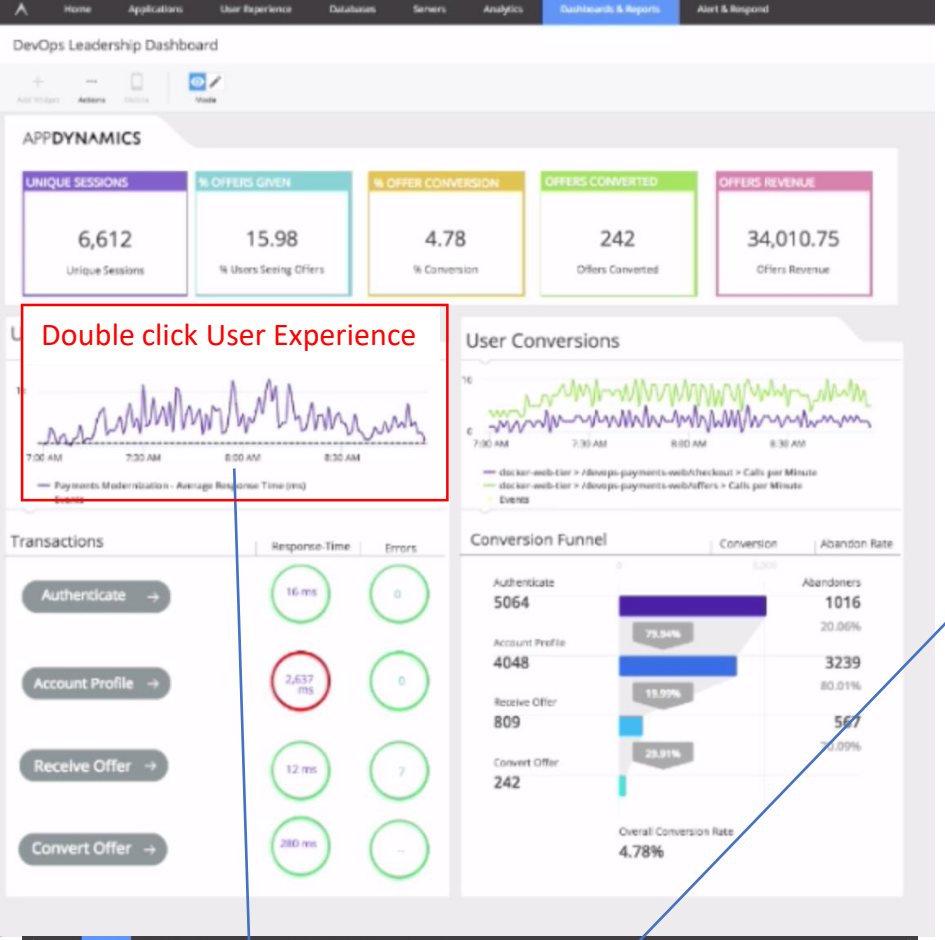
Lloyds Bank

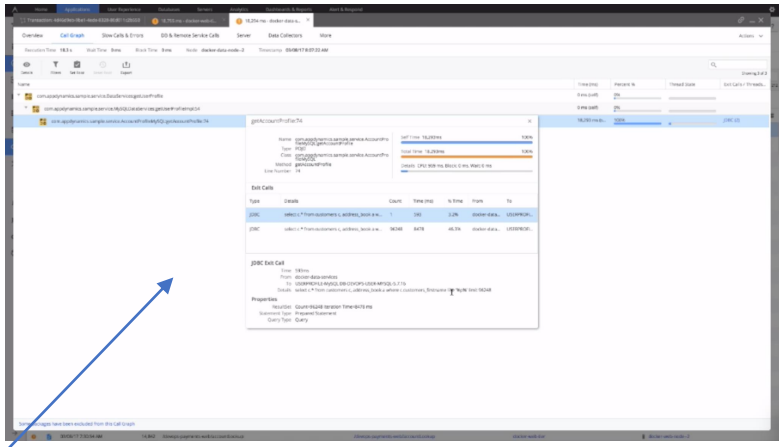
Okta

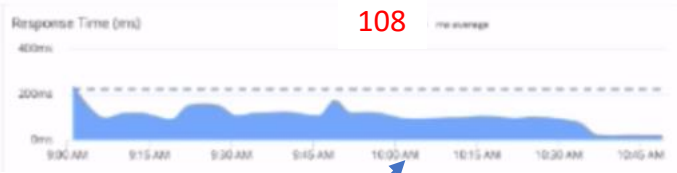


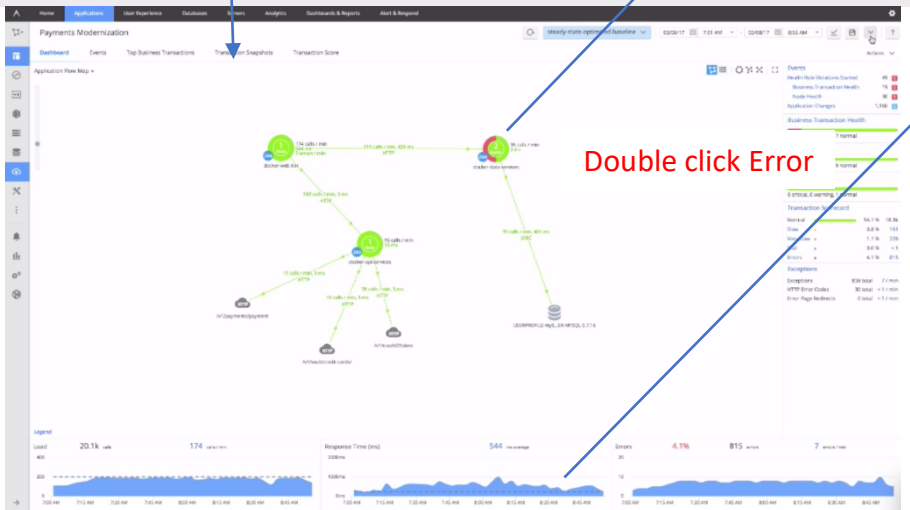
United Airlines

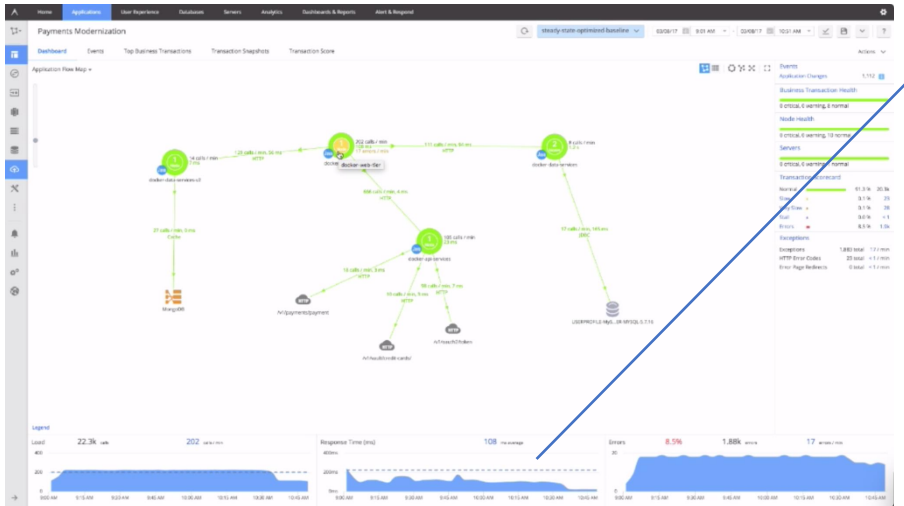
Death by a 1000 queries and it's causing major issue with account lookup function.







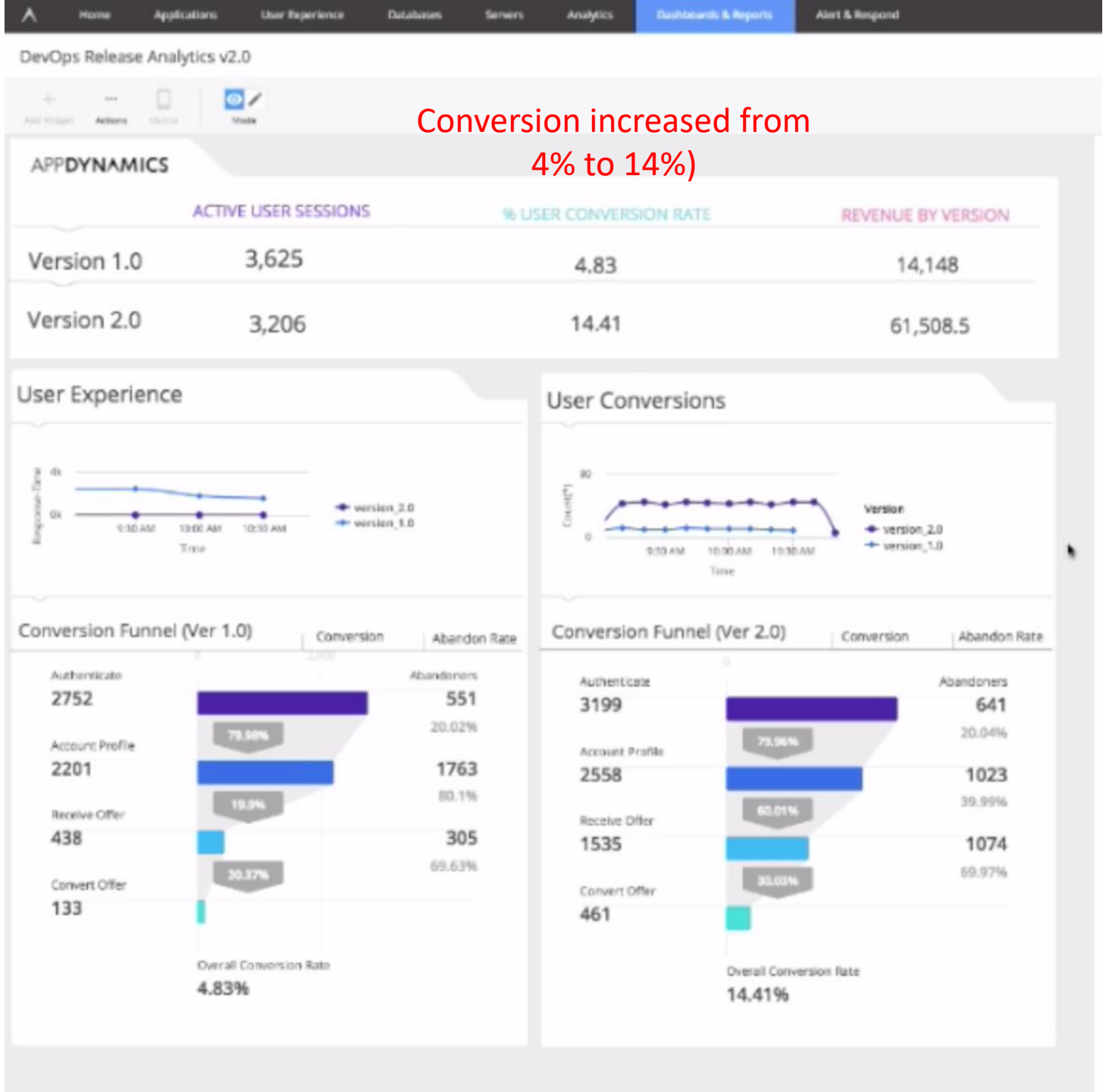




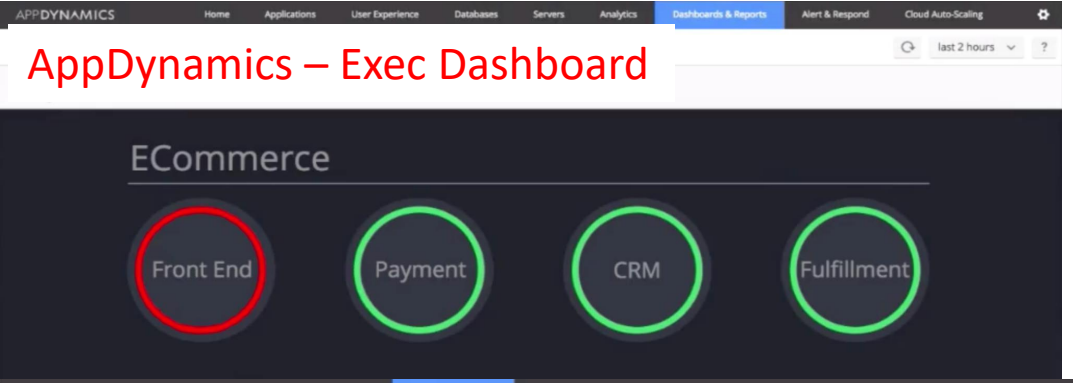
Fewer users pushed to version 2 (3206)

Conversion increased from 4% to 14%)

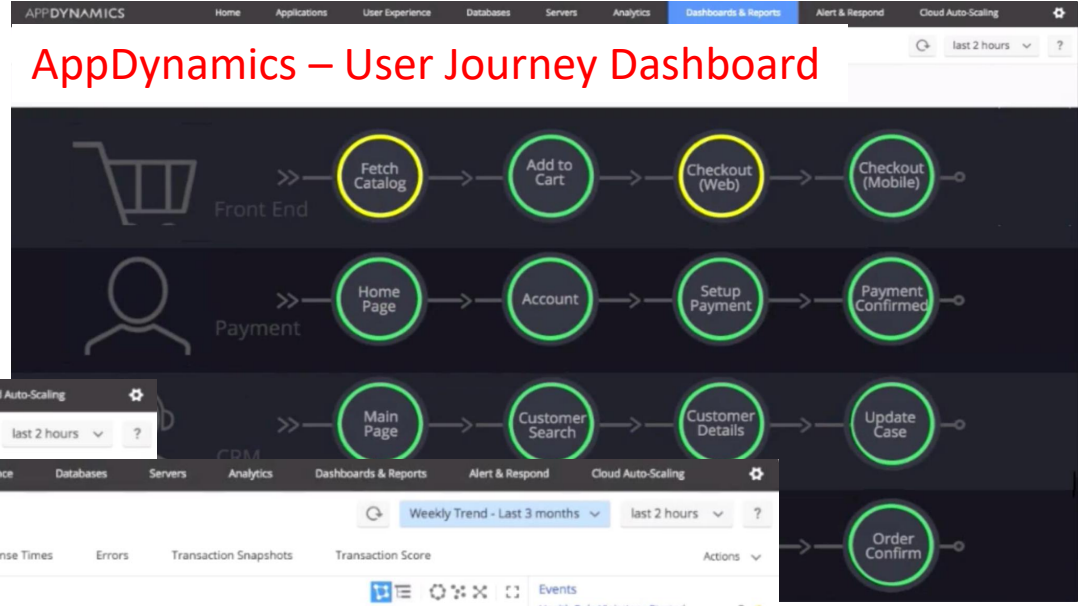
Revenue increased 4X

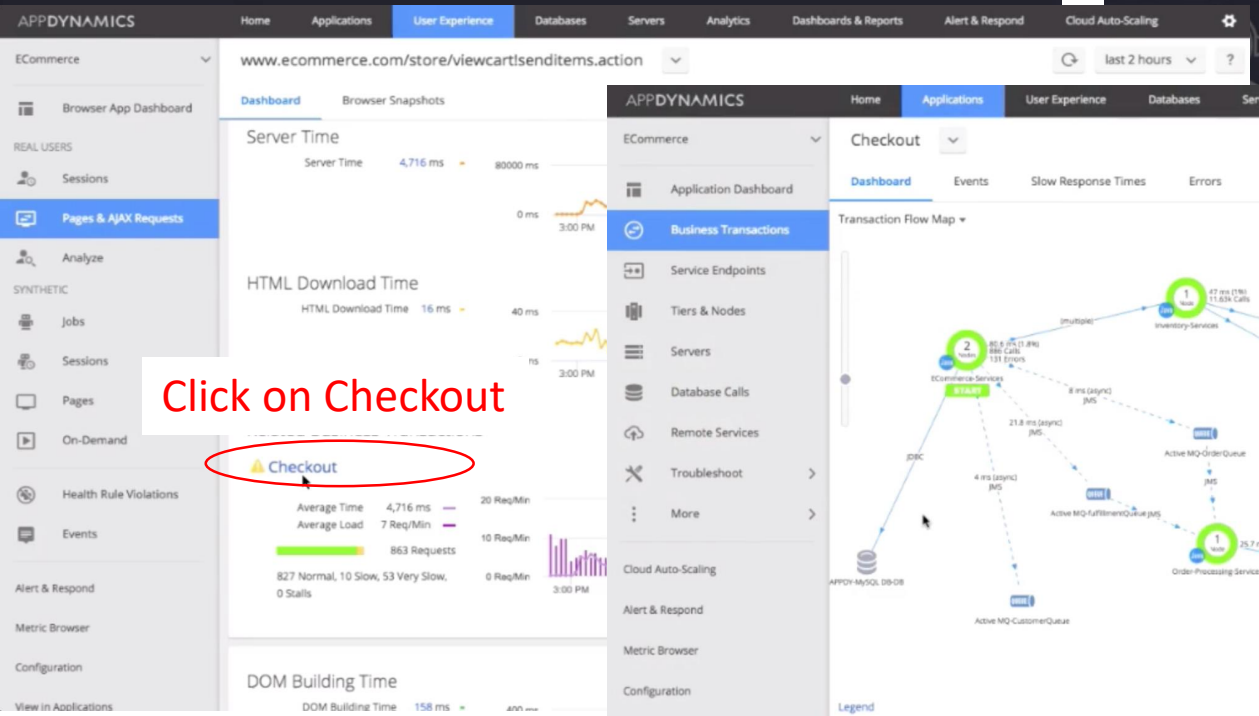


AppDynamics – Exec Dashboard

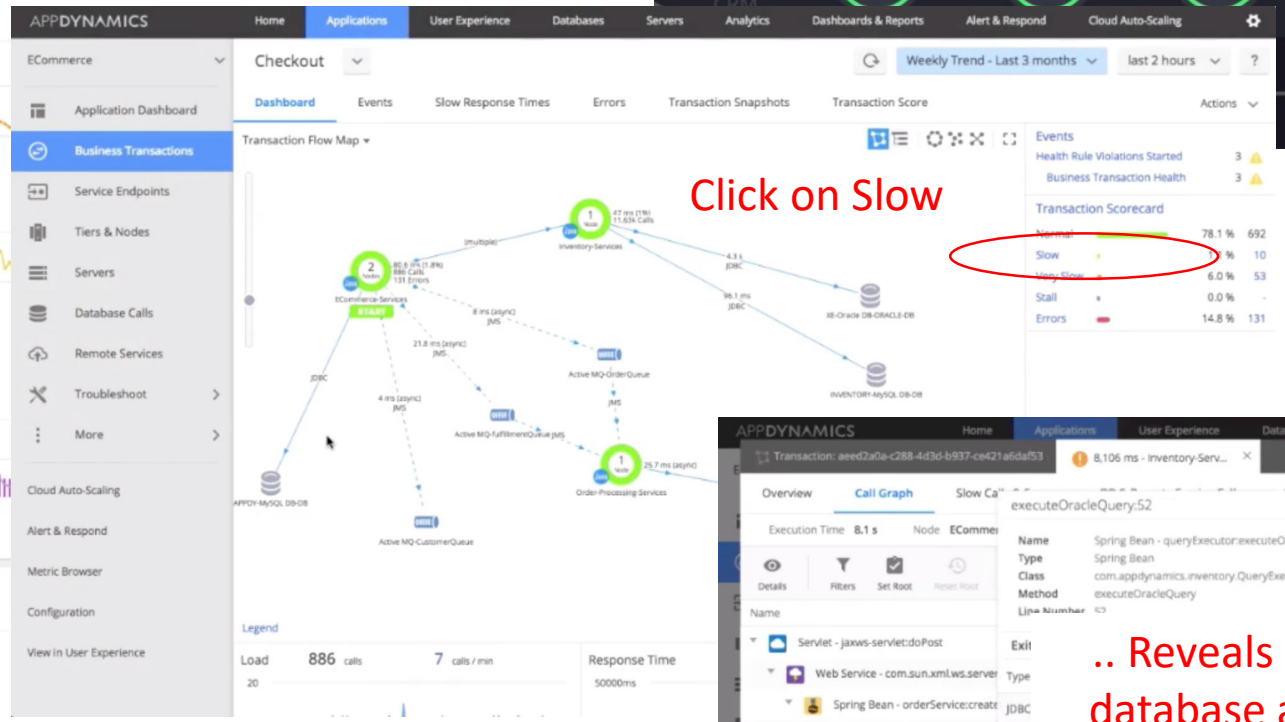


AppDynamics – User Journey Dashboard

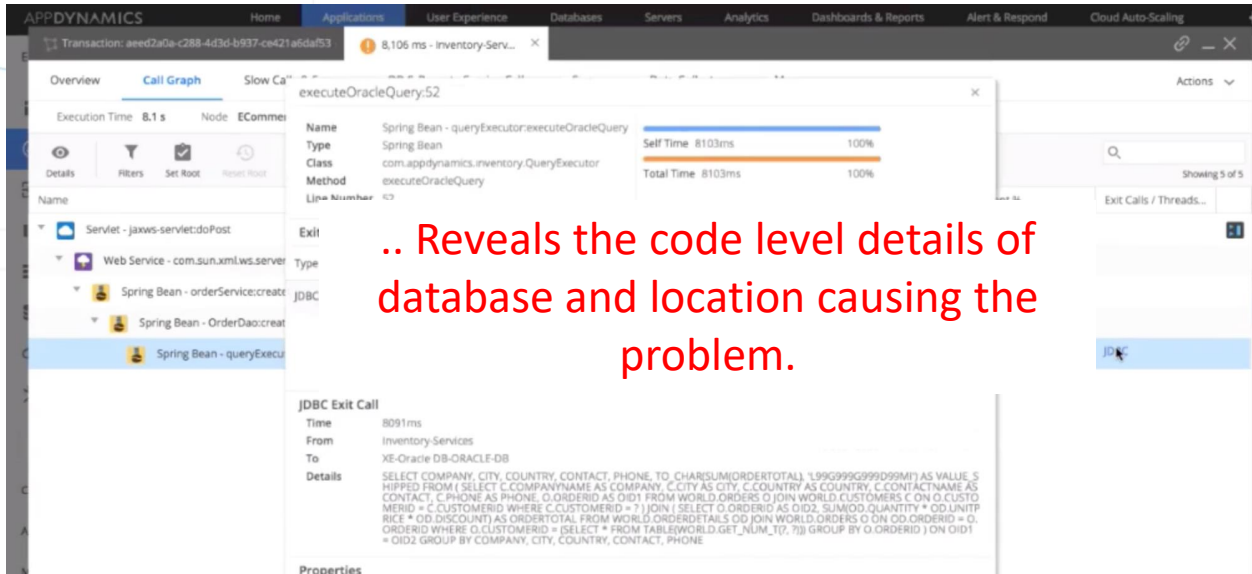




Click on Checkout

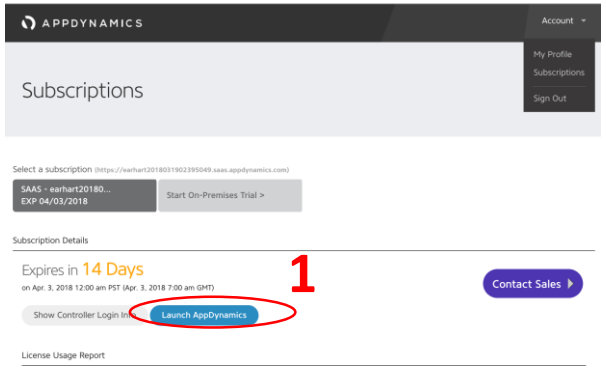


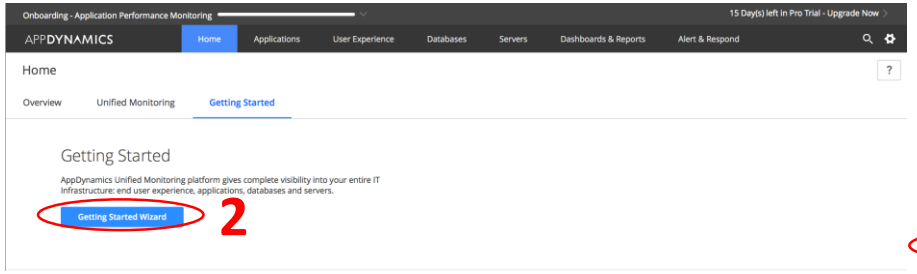
Click on Slow

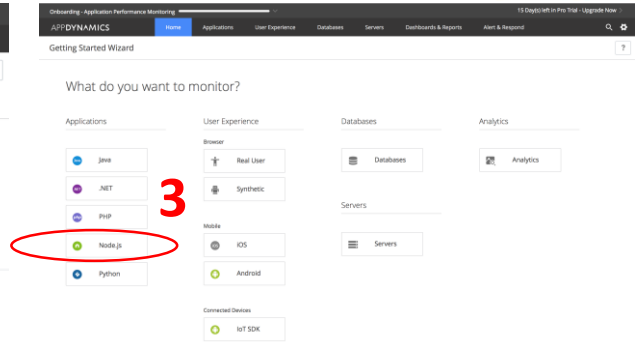


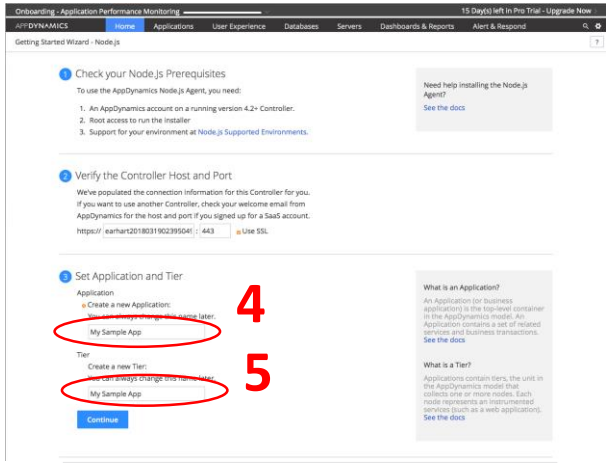
.. Reveals the code level details of database and location causing the problem.

https://learninglabs.cisco.com/labs/tags/AppDynamics/page/1










```
JZIMET-M-C099:coding jzimet$ cd appd-101-sample-code/
JZIMET-M-C099:appd-101-sample-code jzimet$ ls
README.md        app.js          client.js       node_modules    package.json
JZIMET-M-C099:appd-101-sample-code jzimet$ nano app.js
```

6

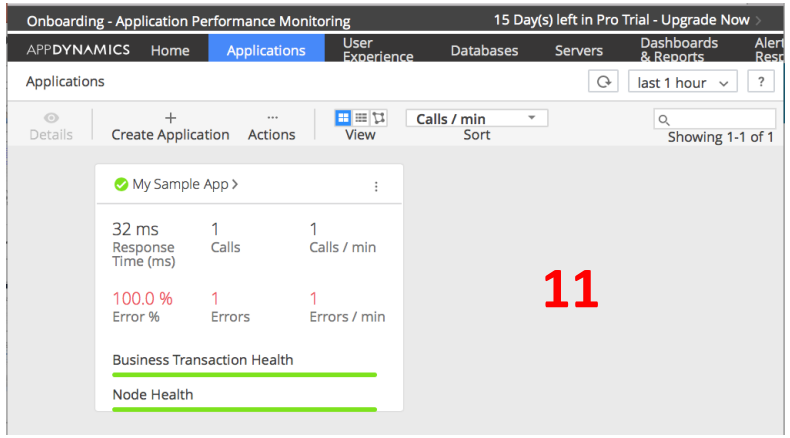
7

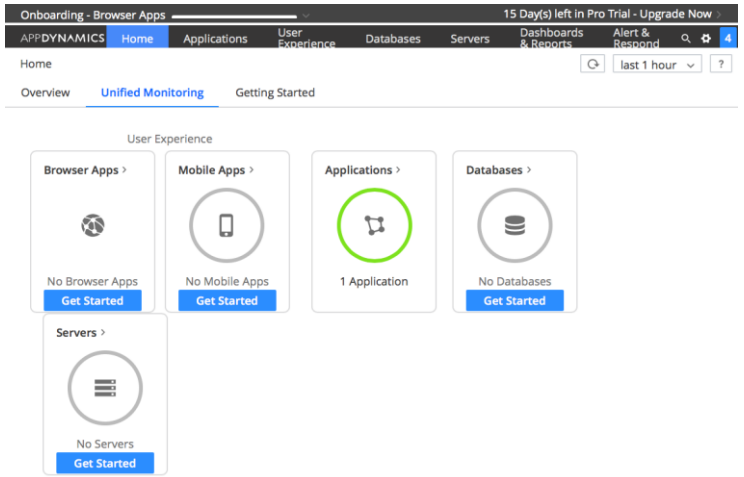
```
JZIMET-M-C099:appd-101-sample-code jzimet$ npm start

> app-dynamics-sample-app@1.0.0 start /Users/jzimet/coding/appd-101-sample-code
> node app.js

Example app listening on port 3000!
```

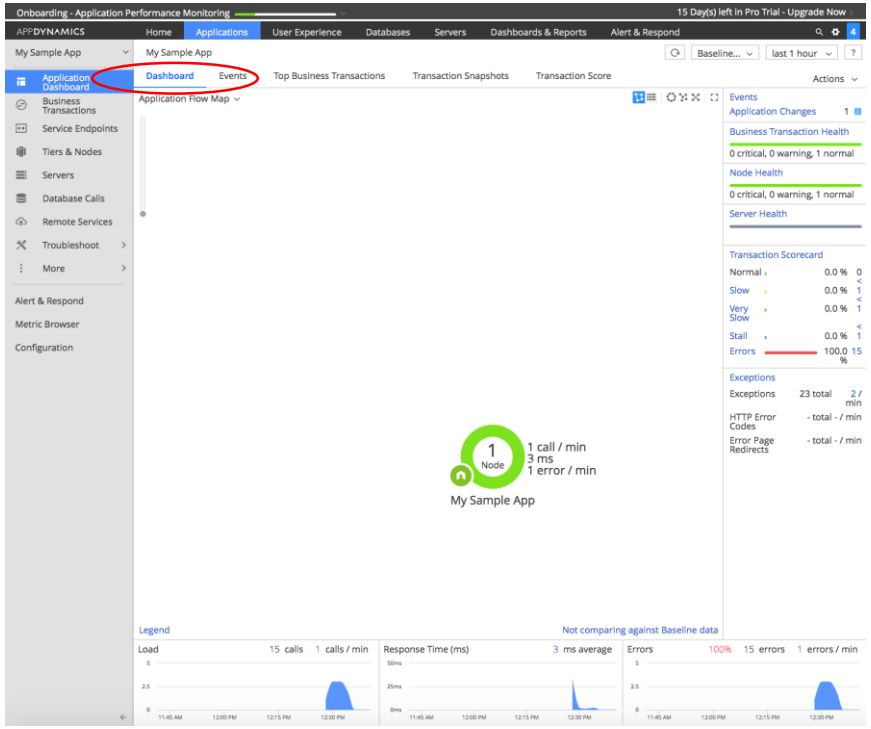
8

```
JZIMET-M-C099:~ jzimet$ curl -v http://localhost:3000/500
*   Trying ::1...
* Connected to localhost (::1) port 3000 (#0)
> GET /500 HTTP/1.1
> Host: localhost:3000
> User-Agent: curl/7.43.0
> Accept: */*
>
< HTTP/1.1 500 Internal Server Error
< X-Powered-By: Express
< Content-Type: text/html; charset=utf-8
< Content-Length: 25
< ETag: W/"19-+xaJTnb0d6oL12z3HaWvea4U5O0"
< Date: Mon, 19 Mar 2018 10:40:55 GMT
< Connection: keep-alive
```

9




Onboarding - Browser Apps
15 Day(s) left in Pro Trial - Upgrade Now
APPDYNAMICS
Home
Applications
User Experience
Databases
Servers
Dashboards & Reports
Alert & Respond
Home
last 1 hour
Overview
Unified Monitoring
Getting Started
User Experience
Browser Apps
No Browser Apps
Get Started
Mobile Apps
No Mobile Apps
Get Started
Applications
1 Application
Databases
No Databases
Get Started
Servers
No Servers
Get Started


Onboarding - Application Performance Monitoring
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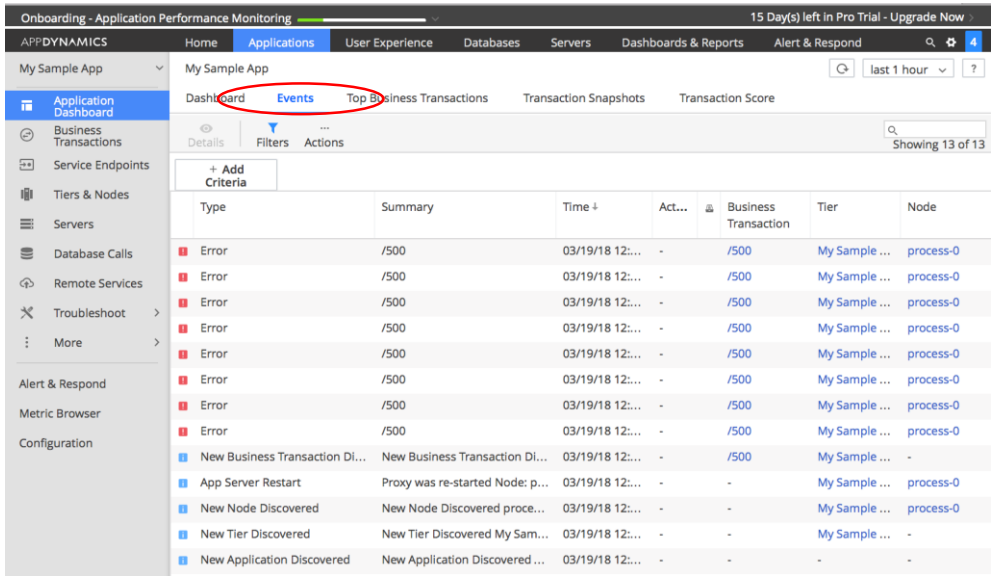
APPDYNAMICS
Home
Applications
User Experience
Databases
Servers
Dashboards & Reports
Alert & Respond
My Sample App
Application Dashboard
Business Transactions
Service Endpoints
Tiers & Nodes
Servers
Database Calls
Remote Services
Troubleshoot
More
Alert & Respond
Metric Browser
Configuration
My Sample App
Baseline...
last 1 hour
Dashboard
Events
Top Business Transactions
Transaction Snapshots
Transaction Score
Actions
Application Flow Map
Events
Application Changes
Business Transaction Health
0 critical, 0 warning, 1 normal
Node Health
0 critical, 0 warning, 1 normal
Server Health
Transaction Scorecard
Normal
Slow
Very Slow
Stall
Errors
Exceptions
Exceptions
HTTP Error Codes
Error Page Redirects
1 Node
1 call / min
3 ms
1 error / min
My Sample App
Legend
Not comparing against Baseline data
Load
Response Time (ms)
Errors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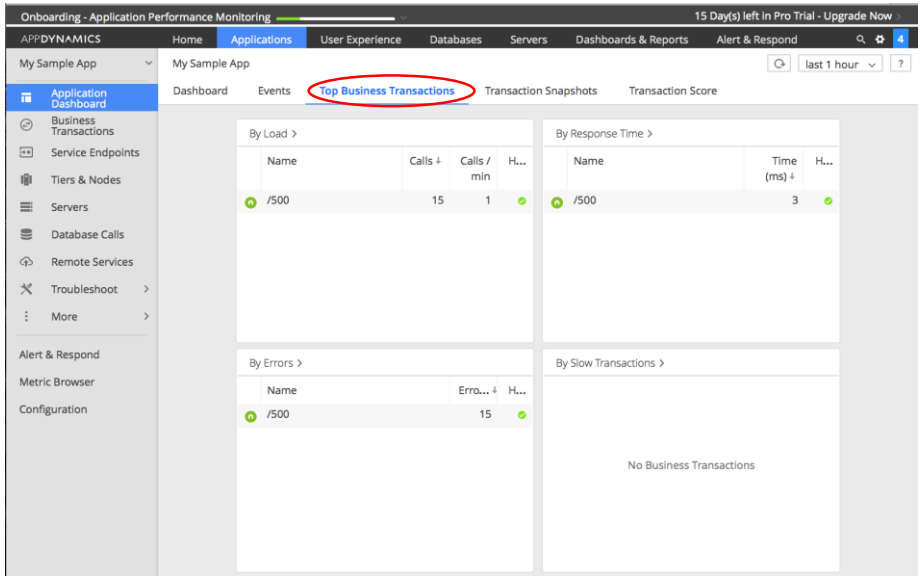
APPDYNAMICS
Home
Applications
User Experience
Databases
Servers
Dashboards & Reports
Alert & Respond
My Sample App
Application Dashboard
Business Transactions
Service Endpoints
Tiers & Nodes
Servers
Database Calls
Remote Services
Troubleshoot
More
Alert & Respond
Metric Browser
Configuration
My Sample App
last 1 hour
Dashboard
Events
Top Business Transactions
Transaction Snapshots
Transaction Score
Details
Filters
Actions
Showing 13 of 13
+ Add Criteria
Type
Summary
Time
Act...
Business Transaction
Tier
Node
Error /500 03/19/18 12:... - /500 My Sample ... process-0
New Business Transaction Di... New Business Transaction Di... 03/19/18 12:... - /500 My Sample ... -
App Server Restart Proxy was re-started Node: p... 03/19/18 12:... - - My Sample ... process-0
New Node Discovered New Node Discovered proce... 03/19/18 12:... - - My Sample ... process-0
New Tier Discovered New Tier Discovered My Sam... 03/19/18 12:... - - My Sample ... -
New Application Discovered New Application Discovered ... 03/19/18 12:... - - - -


Onboarding - Application Performance Monitoring
15 Day(s) left in Pro Trial - Upgrade Now
APPDYNAMICS
Home
Applications
User Experience
Databases
Servers
Dashboards & Reports
Alert & Respond
My Sample App
Application Dashboard
Business Transactions
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Servers
Database Calls
Remote Services
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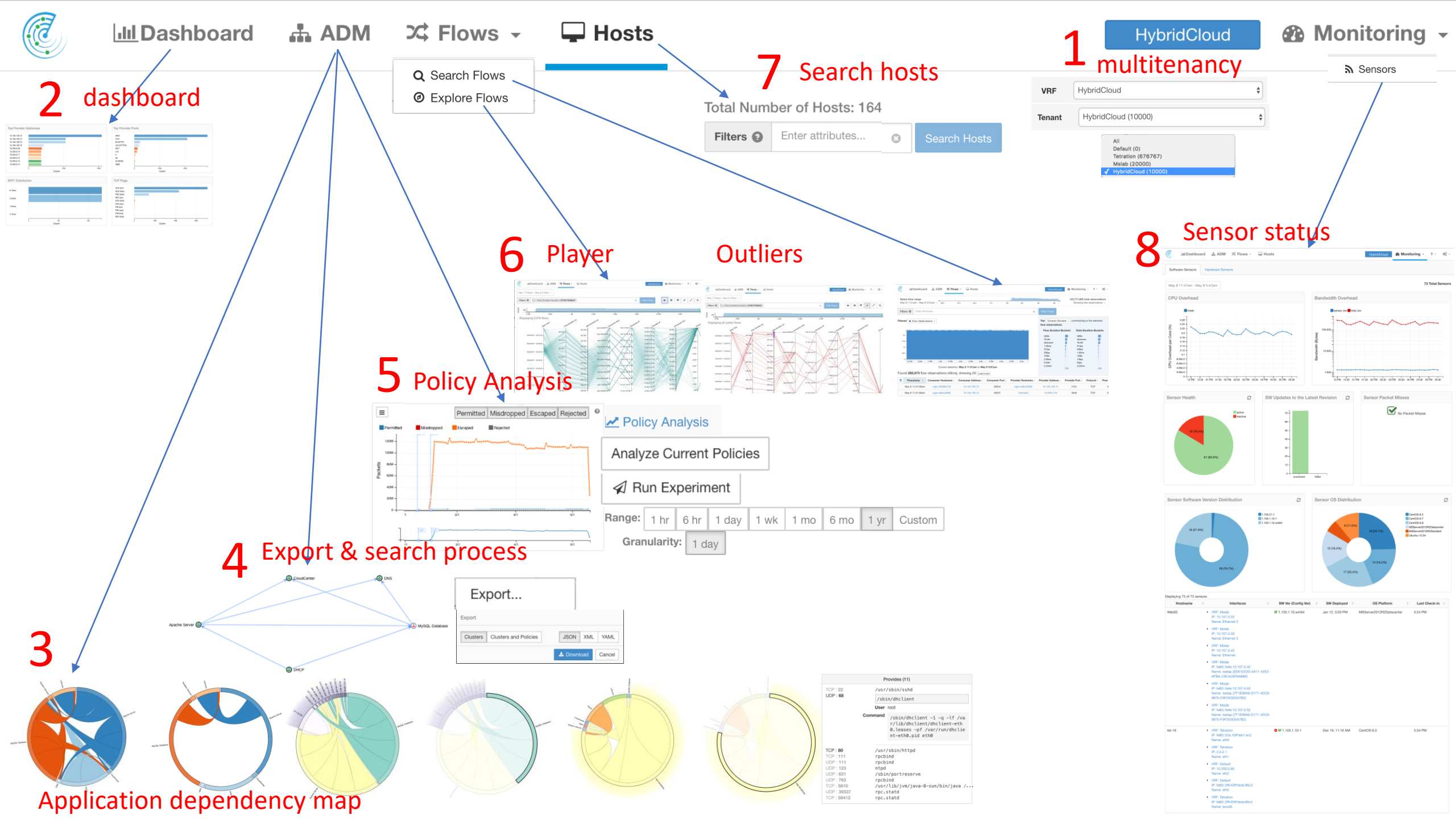
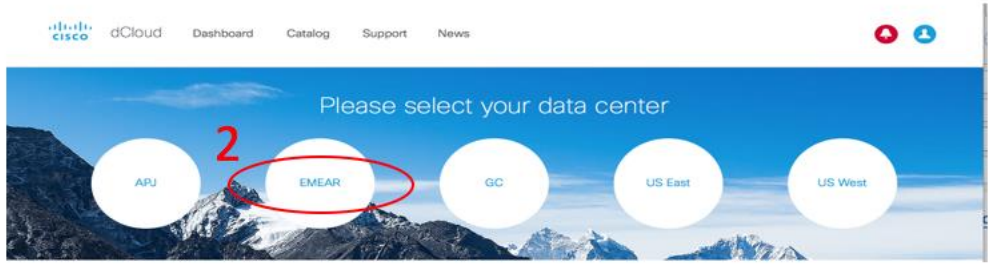
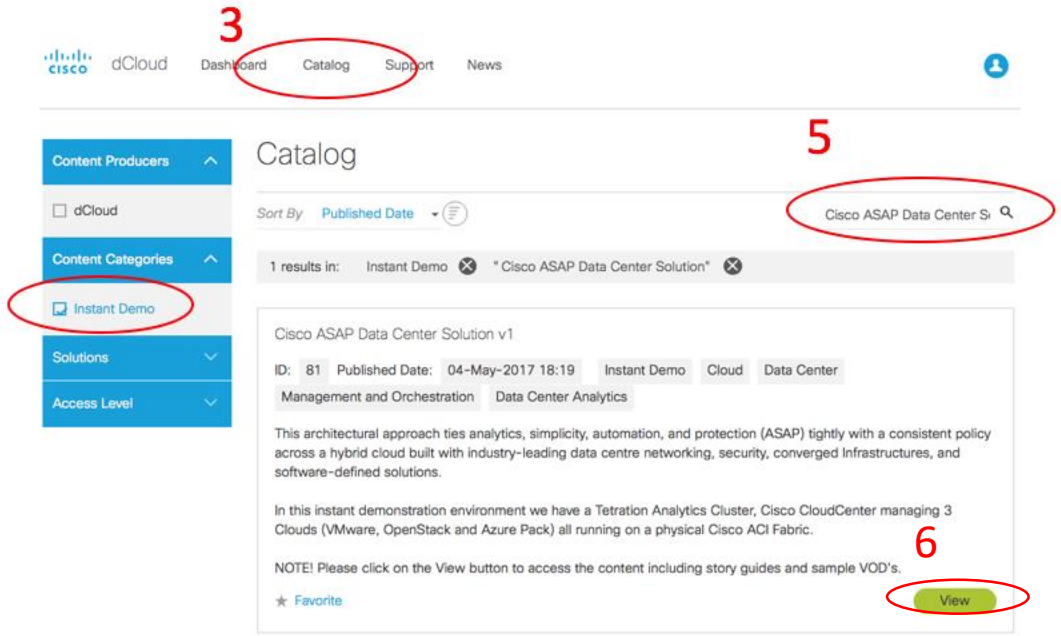
More
Alert & Respond
Metric Browser
Configuration
My Sample App
last 1 hour
Dashboard
Events
Top Business Transactions
Transaction Snapshots
Transaction Score
By Load
Name
Calls
Calls / min
/500 15 1
By Response Time
Name
Time (ms)
/500 3
By Errors
Name
Erro...
/500 15
By Slow Transactions
No Business Transactions

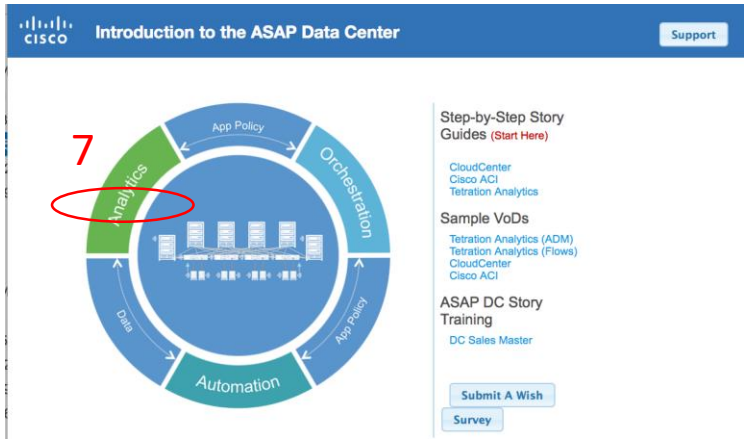
Cisco
Connect

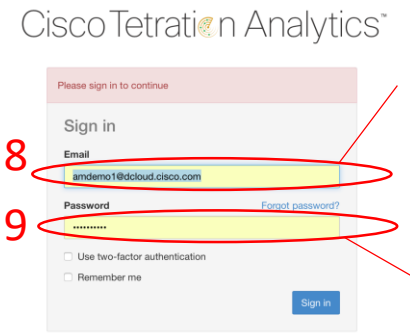

Dashboard
ADM
Flows
Hosts
HybridCloud
Monitoring
Search Flows
Explore Flows
Sensors
1 multitenancy
VRF
HybridCloud
Tenant
HybridCloud (10000)
All
Default (0)
Tetration (676767)
Mslab (20000)
HybridCloud (10000)
2 dashboard
7 Search hosts
Total Number of Hosts: 164
Filters
Enter attributes...
Search Hosts
6 Player
Outliers
8 Sensor status
5 Policy Analysis
Permitted
Misdropped
Escaped
Rejected
Policy Analysis
Analyze Current Policies
Run Experiment
Range:
1 hr
6 hr
1 day
1 wk
1 mo
6 mo
1 yr
Custom
Granularity:
1 day
4 Export & search process
CloudCenter
DNS
Apache Server
MySQL Database
DHCP
Export...
Clusters
Clusters and Policies
JSON
XML
YAML
Download
Cancel
3
Application dependency map
Provides (11)

https://dcloud.cisco.com



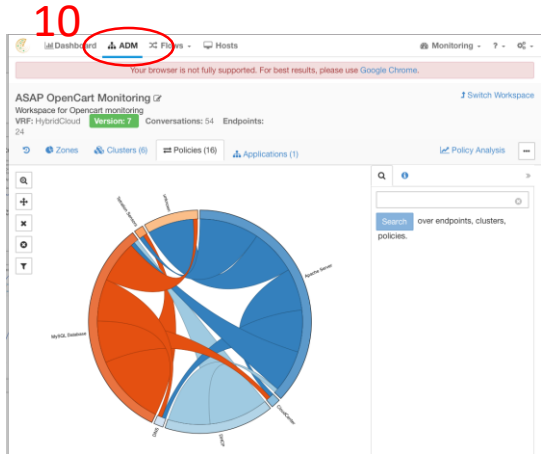




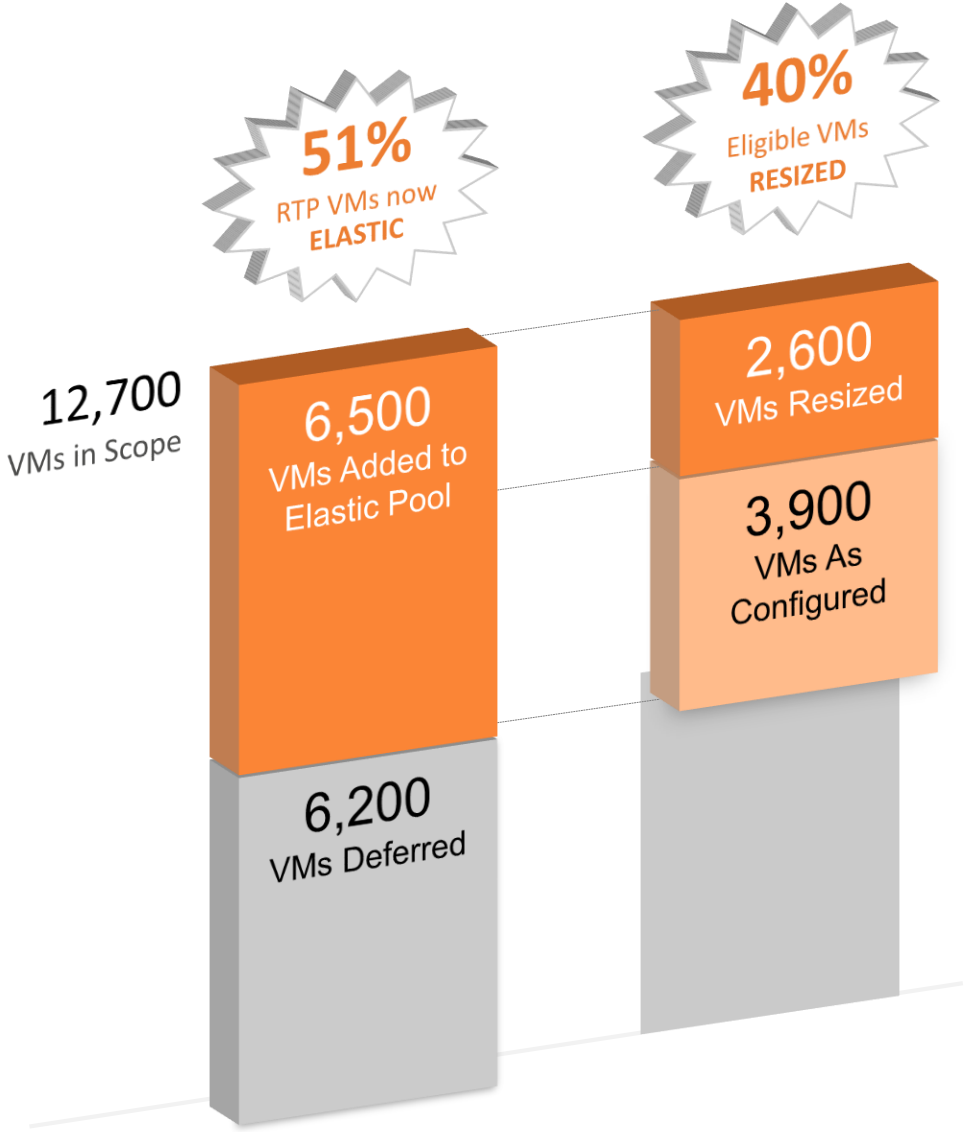


Username : amdemo1@dcloud.cisco.com

Password : C1sco12345



Cisco Story



Outcomes

20GB+ per VM
Average resize memory recovered

2,200+ new VMs
Equivalent capacity recovered

50% Reduction
Of over-provisioned memory

80% less contention
Among Virtual Clusters

$1 Million+
Cost avoidance

600+ VMs upsized
Automatically since Feb 10, with *no downtime*

4,200 vCPUs
Recovered

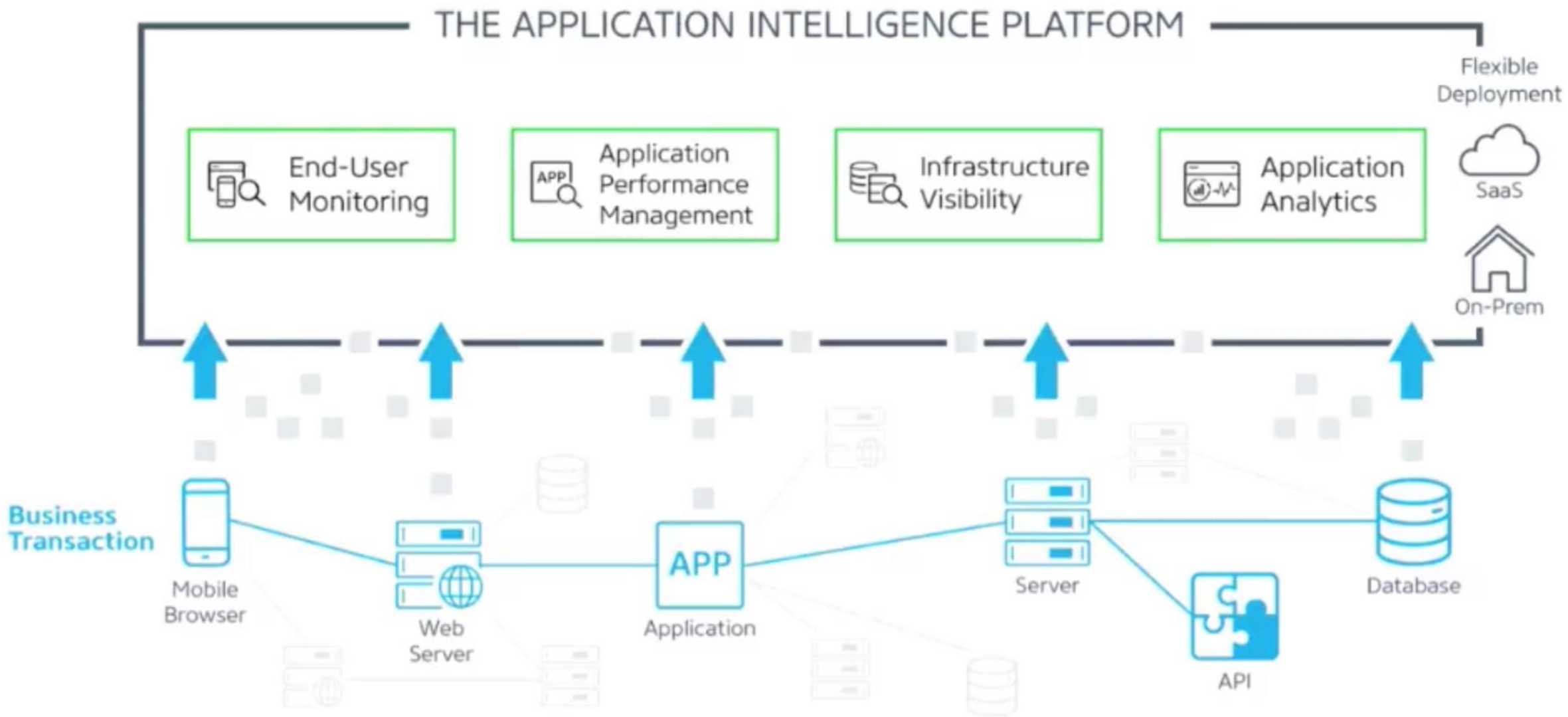
NEXT STEPS

Q3 RCDN & ALLN

e eStore option

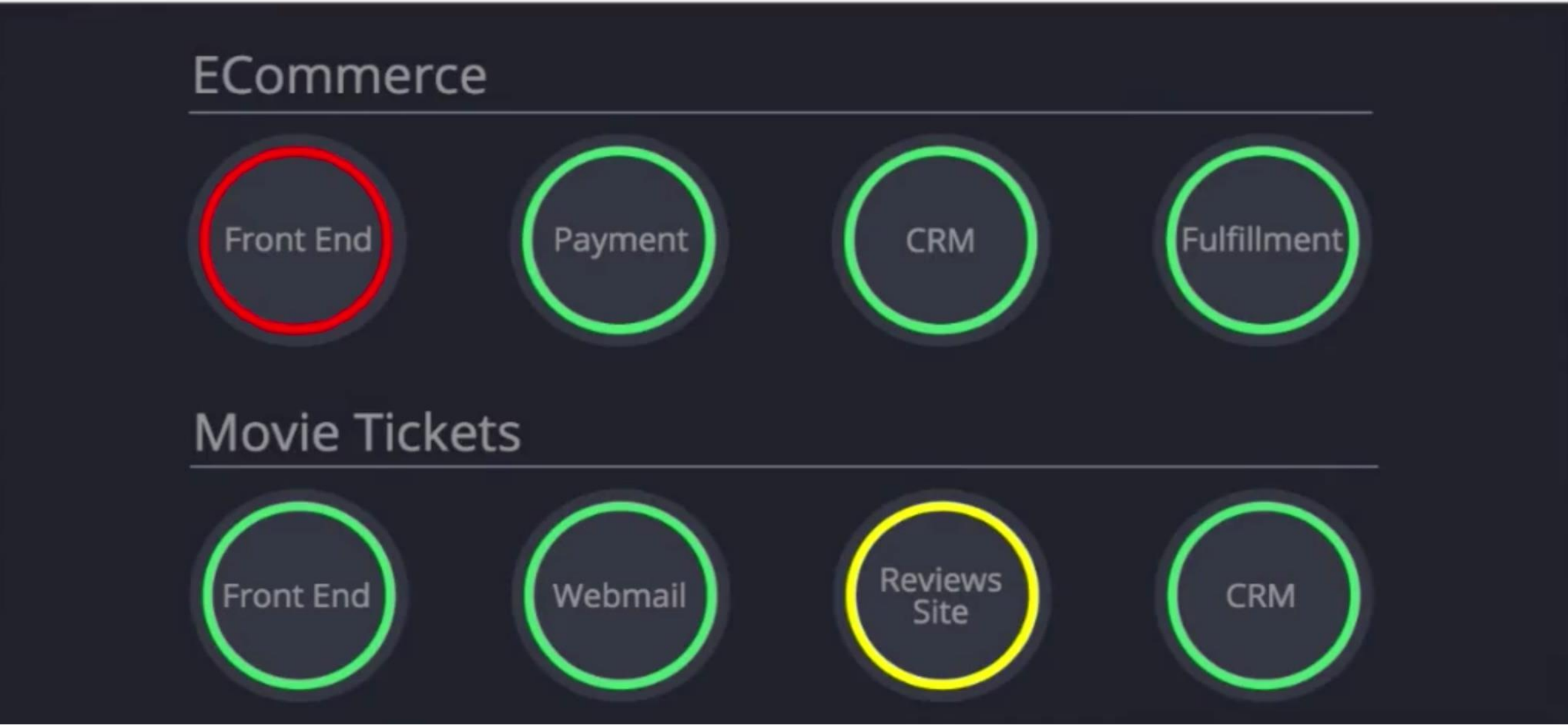
Example 1

Application Intelligence Platform Architecture



AppDynamics – Exec Dashboard

Executive summary of key components of two enterprise applications. Drilling Down into Front End …



AppDynamics – User Journey Dashboard

… reveals user Journey. Checkout is critical to driving conversions. Drilling down into Checkout …

APPDYNAMICS | Home | Applications | User Experience | Databases | Servers | Analytics | Dashboards & Reports | Alert & Respond | Cloud Auto-Scaling

ECommerce

www.ecommerce.com/store/viewcart!senditems.action

last 2 hours

Browser App Dashboard

REAL USERS

Sessions

Pages & AJAX Requests

Analyze

SYNTHETIC

Jobs

Sessions

Pages

On-Demand

Health Rule Violations

Events

Alert & Respond

Metric Browser

Configuration

Dashboard | Browser Snapshots | Analyze

Summary

Time to Service End User Request = 5142 ms

END USER RESPONSE TIME
5,142 milliseconds

LOAD
865 Reqs 7 Req / min

CACHE HIT
0 % Cache Hits

PAGE VIEWS WITH JS ERRORS
- Errors - Errors / min

... reveals detailed timing and navigation data for checkout. Scroll down to Checkout Details.

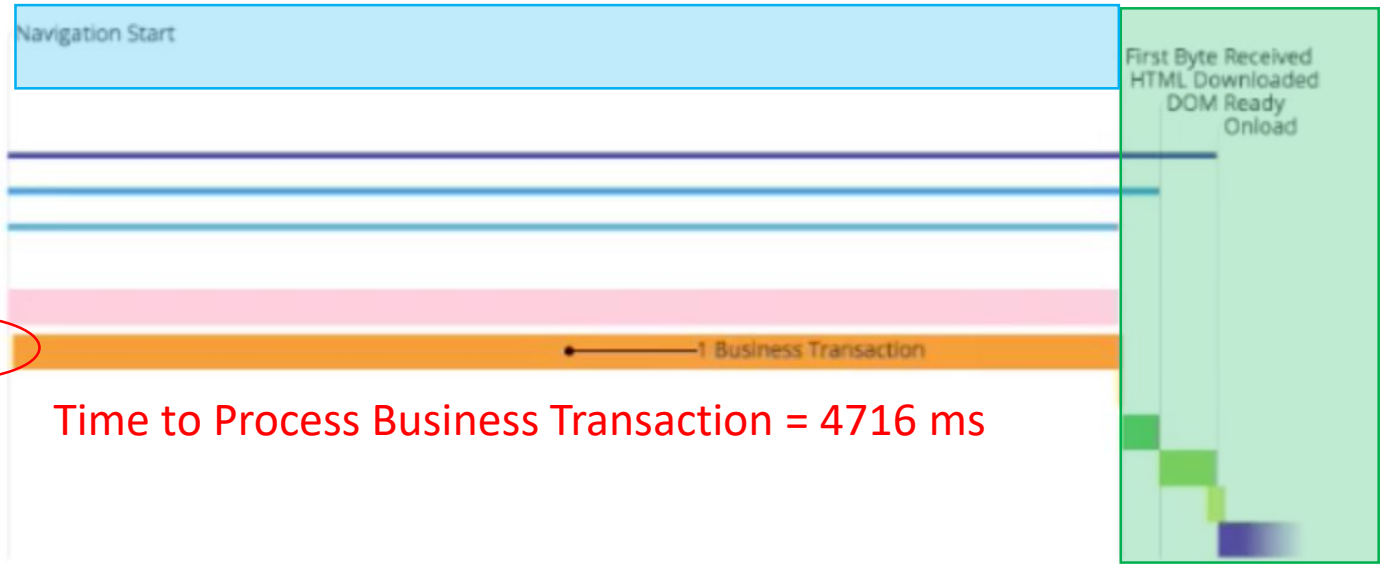
Timing Breakdown

Server-Side Events 4716 ms

Client-Side Events 426 ms

Trends/ Details

End User Response Time	5142 ms
DOM Ready Time	4897 ms
First Byte Time	4723 ms
Server Connection Time	0 ms
Response Available Time	4723 ms
Server Time	4716 ms
HTML Download Time	16 ms
DOM Building Time	158 ms
Resource Fetch Time	244 ms
Onload	
Post Page Load	



Time to Process Business Transaction = 4716 ms

APPDYNAMICS | Home | Applications | User Experience | Databases | Servers | Analytics | Dashboards & Reports | Alert & Respond | Cloud Auto-Scaling

ECommerce

www.ecommerce.com/store/viewcart!senditems.action

last 2 hours

Browser App Dashboard

REAL USERS

Sessions

Pages & AJAX Requests

Analyze

SYNTHETIC

Jobs

Sessions

Pages

On-Demand

Health Rule Violations

Events

Alert & Respond

Metric Browser

Configuration

View in Applications

Dashboard | Browser Snapshots | Analyze

Server Time

Server Time 4,716 ms

HTML Download Time

HTML Download Time 16 ms

Checkout details. Drill Down to Checkout …

Related Business Transactions

Show Business Transactions Without Load

Checkout

Average Time 4,716 ms

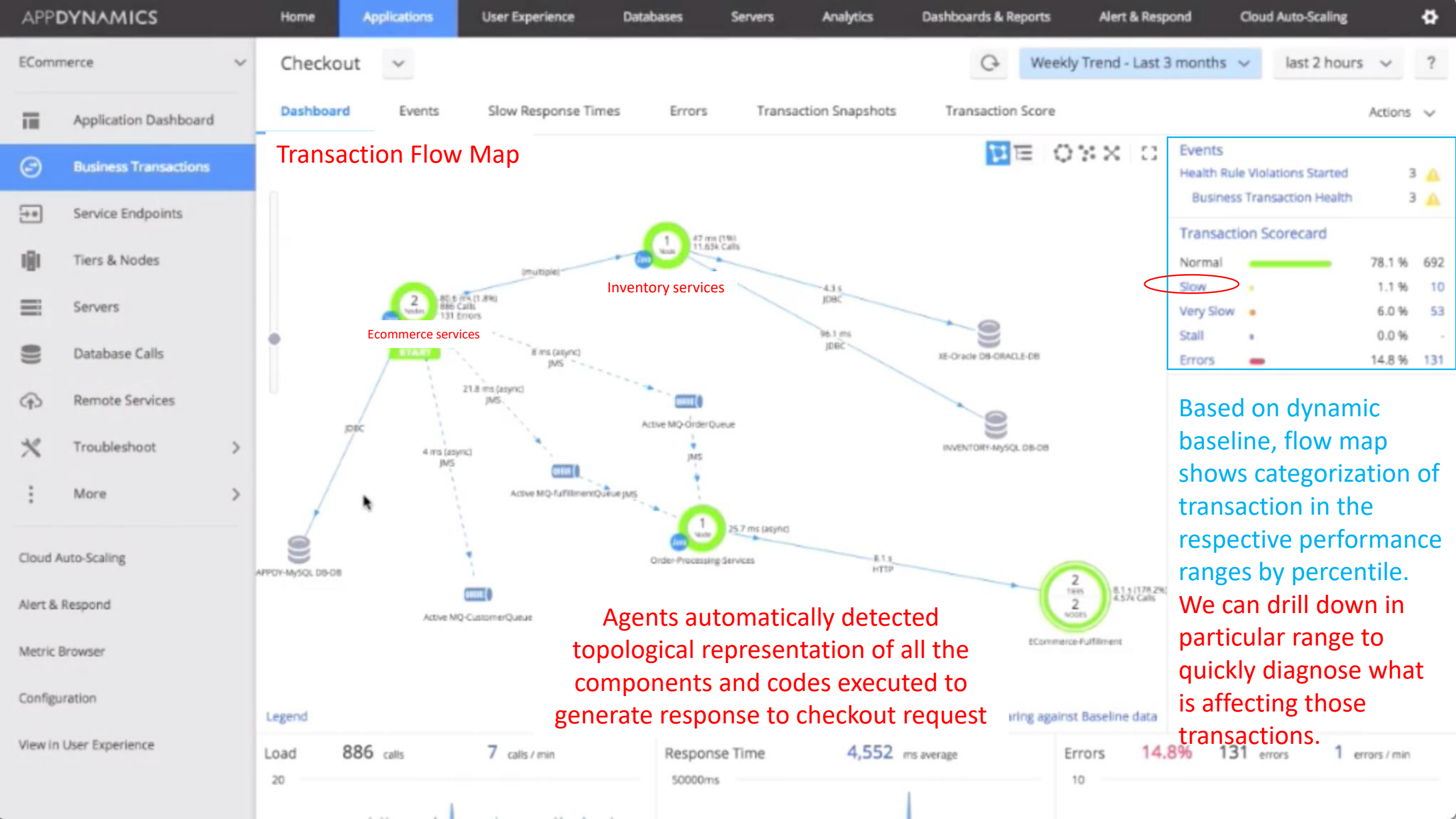
Average Load 7 Req/Min

863 Requests

827 Normal, 10 Slow, 53 Very Slow, 0 Stalls

DOM Building Time

DOM Building Time 158 ms



Agents automatically detected topological representation of all the components and codes executed to generate response to checkout request

Based on dynamic baseline, flow map shows categorization of transaction in the respective performance ranges by percentile.

We can drill down in particular range to quickly diagnose what is affecting those transactions.

APPDYNAMICS | Home | Applications | User Experience | Databases | Servers | Analytics | Dashboards & Reports | Alert & Respond | Cloud Auto-Scaling

ECommerce

- Application Dashboard
- Business Transactions
- Service Endpoints
- Tiers & Nodes
- Servers
- Database Calls
- Remote Services
- Troubleshoot
- More

Cloud Auto-Scaling

Alert & Respond

Metric Browser

Configuration

View in User Experience

Checkout

last 2 hours

Dashboard | Events | Slow Response Times | Errors | Transaction Snapshots | Transaction Score

All Snapshots | Slow and Error Transactions | Diagnostic Sessions | Periodic Collection

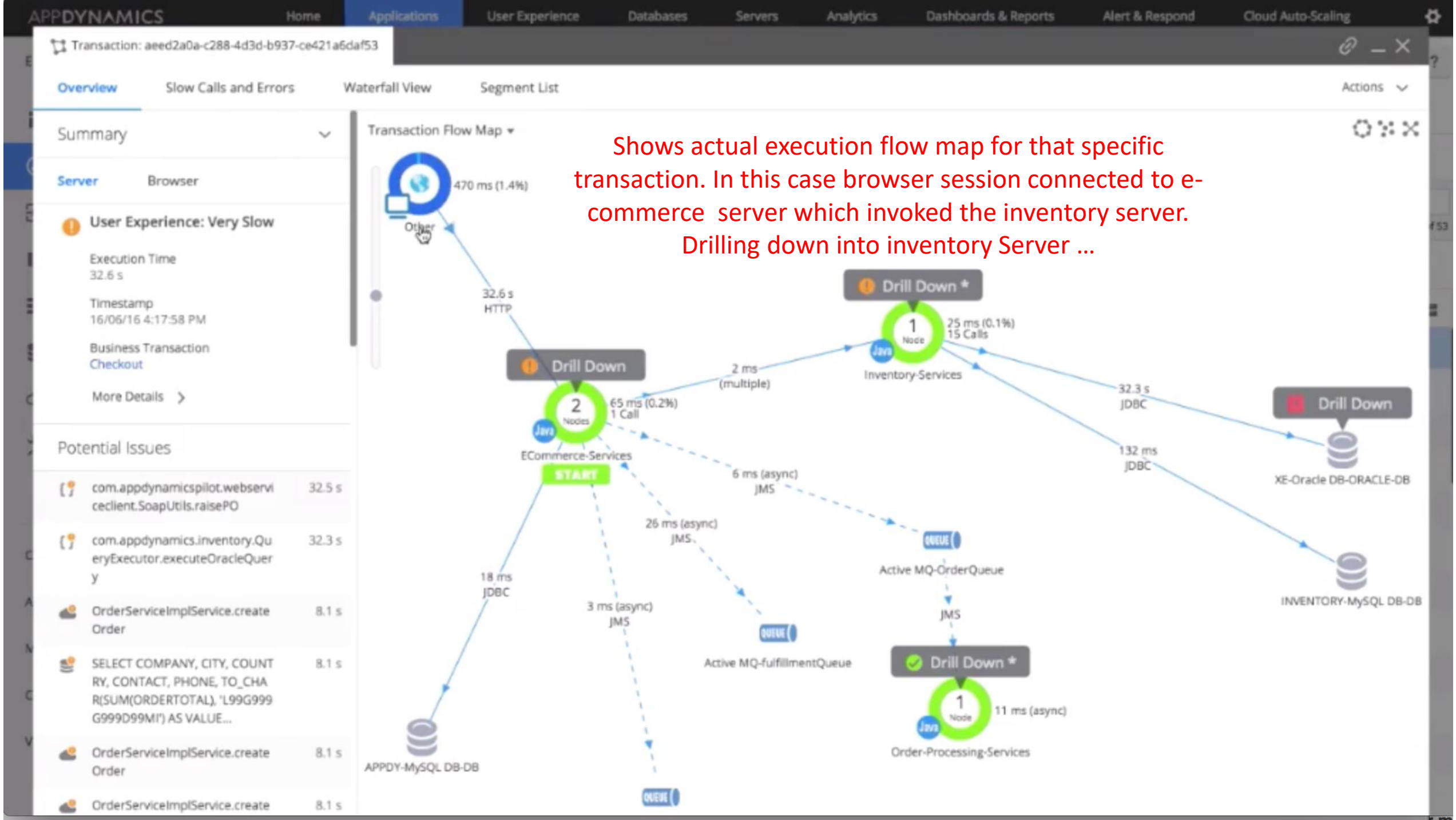
Details | Filters | Analyze | Actions | Configure

Showing 53 of 53

Add Criteria | User Experience: (1) Very Slow | Business Transaction: (1)

Time	Exe Time (ms)	URL	Business Transaction	Tier	Node
16/06/16 4:17:58 PM	32,581	/appdynamicspilot/ViewCartIsendItem...	Checkout	ECommerce-Services	ECommerce_WEB2_...
16/06/16 4:17:48 PM	57,364	/appdynamicspilot/ViewCartIsendItem...	Checkout	ECommerce-Services	ECommerce_WEB1_...
16/06/16 4:16:29 PM				ervices	ECommerce_WEB1_...
16/06/16 4:15:31 PM				ervices	ECommerce_WEB1_...
16/06/16 4:13:09 PM				ervices	ECommerce_WEB2_...
16/06/16 4:12:55 PM	24,820	/appdynamicspilot/ViewCartIsendItem...	Checkout	ECommerce-Services	ECommerce_WEB2_...
16/06/16 4:12:50 PM	41,381	/appdynamicspilot/ViewCartIsendItem...	Checkout	ECommerce-Services	ECommerce_WEB2_...
16/06/16 4:11:50 PM	57,532	/appdynamicspilot/ViewCartIsendItem...	Checkout	ECommerce-Services	ECommerce_WEB2_...
16/06/16 4:09:45 PM	40,963	/appdynamicspilot/ViewCartIsendItem...	Checkout	ECommerce-Services	ECommerce_WEB1_...
16/06/16 4:08:47 PM	41,111	/appdynamicspilot/ViewCartIsendItem...	Checkout	ECommerce-Services	ECommerce_WEB1_...
16/06/16 4:05:52 PM	41,026	/appdynamicspilot/ViewCartIsendItem...	Checkout	ECommerce-Services	ECommerce_WEB2_...
16/06/16 4:05:40 PM	24,704	/appdynamicspilot/ViewCartIsendItem...	Checkout	ECommerce-Services	ECommerce_WEB2_...

Drilling down into a transaction with very slow user experience we see individual snapshots of each transactions


APPDYNAMICS
Home
Applications
User Experience
Databases
Servers
Analytics
Dashboards & Reports
Alert & Respond
Cloud Auto-Scaling
Transaction: aeed2a0a-c288-4d3d-b937-ce421a6daf53
Overview
Slow Calls and Errors
Waterfall View
Segment List
Actions
Summary
Server
Browser
User Experience: Very Slow
Execution Time
32.6 s
Timestamp
16/06/16 4:17:58 PM
Business Transaction
Checkout
More Details
Potential Issues
com.appdynamicspilot.webservi ceclient.SoapUtils.raisePO 32.5 s
com.appdynamics.inventory.Qu eryExecutor.executeOracleQuer y 32.3 s
OrderServiceImplService.create Order 8.1 s
SELECT COMPANY, CITY, COUNT RY, CONTACT, PHONE, TO_CHA R(SUM(ORDERTOTAL), 'L99G999 G999D99MI') AS VALUE... 8.1 s
OrderServiceImplService.create Order 8.1 s
OrderServiceImplService.create 8.1 s
Transaction Flow Map
Shows actual execution flow map for that specific transaction. In this case browser session connected to e-commerce server which invoked the inventory server. Drilling down into inventory Server …
470 ms (1.4%)
Other
32.6 s
HTTP
Drill Down
2
Nodes
65 ms (0.2%)
1 Call
ECommerce-Services
START
2 ms
(multiple)
Drill Down *
1
Node
25 ms (0.1%)
15 Calls
Inventory-Services
32.3 s
JDBC
Drill Down
XE-Oracle DB-ORACLE-DB
132 ms
JDBC
INVENTORY-MySQL DB-DB
6 ms (async)
JMS
26 ms (async)
JMS
QUEUE
Active MQ-OrderQueue
JMS
18 ms
JDBC
3 ms (async)
JMS
QUEUE
Active MQ-fulfillmentQueue
Drill Down *
1
Node
11 ms (async)
Order-Processing-Services
APPDY-MySQL DB-DB
QUEUE

APPDYNAMICS | Home | Applications | User Experience | Databases | Servers | Analytics | Dashboards & Reports | Alert & Respond | Cloud Auto-Scaling

Transaction: aeed2a0a-c288-4d3d-b937-ce421a6daf53

Overview | Slow Calls and Errors | Waterfall View | Segment List | Actions

Summary

Server | Browser

User Experience: Very Slo

Execution Time
32.6 s

Timestamp
16/06/16 4:17:58 PM

Business Transaction
Checkout

More Details

Potential Issues

com.appdynamicspilot.webse
ceclient.SoapUtils.raisePO

com.appdynamics.inventory.C
eryExecutor.executeOracleQu
y

OrderServiceImplService.creat
Order

SELECT COMPANY, CITY, COU
RY, CONTACT, PHONE, TO_CH
R(SUM(ORDERTOTAL), 'L99G9
G999D99MI') AS VALUE...

OrderServiceImplService.create 8.1 s
Order

OrderServiceImplService.create 8.1 s

Transaction Flow Map

470 ms (1.4%)

Select a Call to Drill Down into

Drill Down | Show: All Calls | Originating From: Show all

Exe Time (ms)	Called from	Exit Calls	Start Time
0	ECommerce-Services [HT	No Exit Calls Made	16/06/16 4:17:58 PM
19	ECommerce-Services [We	Exit Calls Made: 6 JDBC calls (3.2 ms avg, 12 ms max)	16/06/16 4:17:58 PM
13			4:17:58 PM
1	ECommerce-Services [HT	No Exit Calls Made	16/06/16 4:17:58 PM
8106	ECommerce-Services [We	Exit Calls Made: 8 JDBC calls (1013 ms avg, 8091 ms max)	16/06/16 4:17:58 PM
16	ECommerce-Services [We	Exit Calls Made: 6 JDBC calls (2.3 ms avg, 7 ms max)	16/06/16 4:18:06 PM
1	ECommerce-Services [HT	No Exit Calls Made	16/06/16 4:18:06 PM
8084	ECommerce-Services [We	Exit Calls Made: 8 JDBC calls (1009.9 ms avg, 8066 ms max)	16/06/16 4:18:06 PM

Close

.. shows code path of transactions and drill down show ...

Drill Down

XE-Oracle DB-ORACLE-DB

INVENTORY-MySQL DB-DB

APPDY-MySQL DB-DB

11 ms (async)

Order-Processing-Services

APPDYNAMICS | Home | Applications | User Experience | Databases | Servers | Analytics | Dashboards & Reports | Alert & Respond | Cloud Auto-Scaling

Transaction: aeed2a0a-c288-4d3d-b937-ce421a6daf53 | 8,106 ms - Inventory-Serv...

Overview | Call Graph | Slow Calls & Errors | DB & Remote Service Calls | Server | Data Collectors | More | Actions

Execution Time 8.1 s | Node ECommerce_WS_NODE | Timestamp 16/06/16 4:17:58 PM

Details | Filters | Set Root | Reset Root | Export

Showing 5 of 5

Name	Time (ms)	Percent %	Exit Calls / Threads...
Servlet - jaxws-servlet:doPost	3 ms (self)	0%	
Web Service - com.sun.xml.ws.server.InvokerTube$2:invoke:149	0 ms (self)	0%	
Spring Bean - orderService:createOrder:27	0 ms (self)	0%	
Spring Bean - OrderDao:createOrder:59	0 ms (self)	0%	
Spring Bean - queryExecutor:executeOracleQuery:52	8,103 ms (se...	100%	JDBC

.. Slow JDBC flow contributed to poor performance. Finally drilling down into the JDBC call …

APPDYNAMICS | Home | Applications | User Experience | Databases | Servers | Analytics | Dashboards & Reports | Alert & Respond | Cloud Auto-Scaling

Transaction: aeed2a0a-c288-4d3d-b937-ce421a6daf53 | 8,106 ms - Inventory-Serv...

Overview | Call Graph | Slow Ca | Actions

Execution Time 8.1 s | Node ECommer

Details | Filters | Set Root | Reset Root

Showing 5 of 5

Name | Exit Calls / Threads...

- Servlet - jaxws-servlet:doPost
  - Web Service - com.sun.xml.ws.server
    - Spring Bean - orderService:create
      - Spring Bean - OrderDao:creat
        - Sprin

JDBC

executeOracleQuery:52

Name	Spring Bean - queryExecutor:executeOracleQuery
Type	Spring Bean
Class	com.appdynamics.inventory.QueryExecutor
Method	executeOracleQuery
Line Number	52

Self Time 8103ms 100%

Total Time 8103ms 100%

Exit Calls

Type	Details	Count	Time (ms)	% Time	From	To
JDBC	SELECT COMPANY, CITY, COUNTRY, CONTACT,...	1	8091	99.8%	Inventory-S...	XE-Oracle D...

.. Reveals the code level details of database and location causing the problem.

JDBC Exit Call

Time	8091ms
From	Inventory-Services
To	XE-Oracle DB-ORACLE-DB
Details	SELECT COMPANY, CITY, COUNTRY, CONTACT, PHONE, TO_CHAR(SUM(ORDERTOTAL), 'L99G999G999D99MI') AS VALUE_SHIPPED FROM (SELECT C.COMPANYNAME AS COMPANY, C.CITY AS CITY, C.COUNTRY AS COUNTRY, C.CONTACTNAME AS CONTACT, C.PHONE AS PHONE, O.ORDERID AS OID1 FROM WORLD.ORDERS O JOIN WORLD.CUSTOMERS C ON O.CUSTOMERID = C.CUSTOMERID WHERE C.CUSTOMERID = ?) JOIN (SELECT O.ORDERID AS OID2, SUM(OD.QUANTITY * OD.UNITPRICE * OD.DISCOUNT) AS ORDERTOTAL FROM WORLD.ORDERDETAILS OD JOIN WORLD.ORDERS O ON OD.ORDERID = O.ORDERID WHERE O.CUSTOMERID = (SELECT * FROM TABLE(WORLD.GET_NUM_T(?, ?))) GROUP BY O.ORDERID) ON OID1 = OID2 GROUP BY COMPANY, CITY, COUNTRY, CONTACT, PHONE

Properties

Query Type	Query
Statement Type	String
Session Id	139

APPDYNAMICS | Home | Applications | User Experience | Databases | Servers | Analytics | Dashboards & Reports | Alert & Respond | Cloud Auto-Scaling

Home

last 2 hours

Overview | Unified Monitoring | Getting Started

Recently Visited

- ECommerce - Dashboard
- Checkout - Transaction Snapshots
- Checkout - Dashboard
- www.ecommerce.com/store/viewcartisendite...
- AppDynamics - User Journey Dashboard
- AppDynamics - Exec Dashboard

Applications 7

2 critical, 1 warning, 4 normal

- AppDynamicsPCFOpsMetrics_AppD
- ECommerce
- ECommerce-Fulfillment
- Movie Tickets Online
- MyDistributedApp

User Experience

Browser apps 3

- ECommerce
- Movie Tickets Online
- Online_Retail

Mobile apps 2

- EcommAndroid
- Ecommerce-iOS

AppDynamics provide comprehensive platform for monitoring performance of complex distributed applications from native mobile and browser based applications all the way to back end server side applications written in different languages using wide variety of infrastructure, network and databases providing advanced application analytics capabilities for capturing the business outcomes achieved through the applications

Databases 8

0 critical, 0 warning, 8 normal

- E-Commerce MySQL
- E-Commerce Oracle
- MovieTicketsOnline MSSQL

Servers 16

1 critical, 0 warning, 13 normal

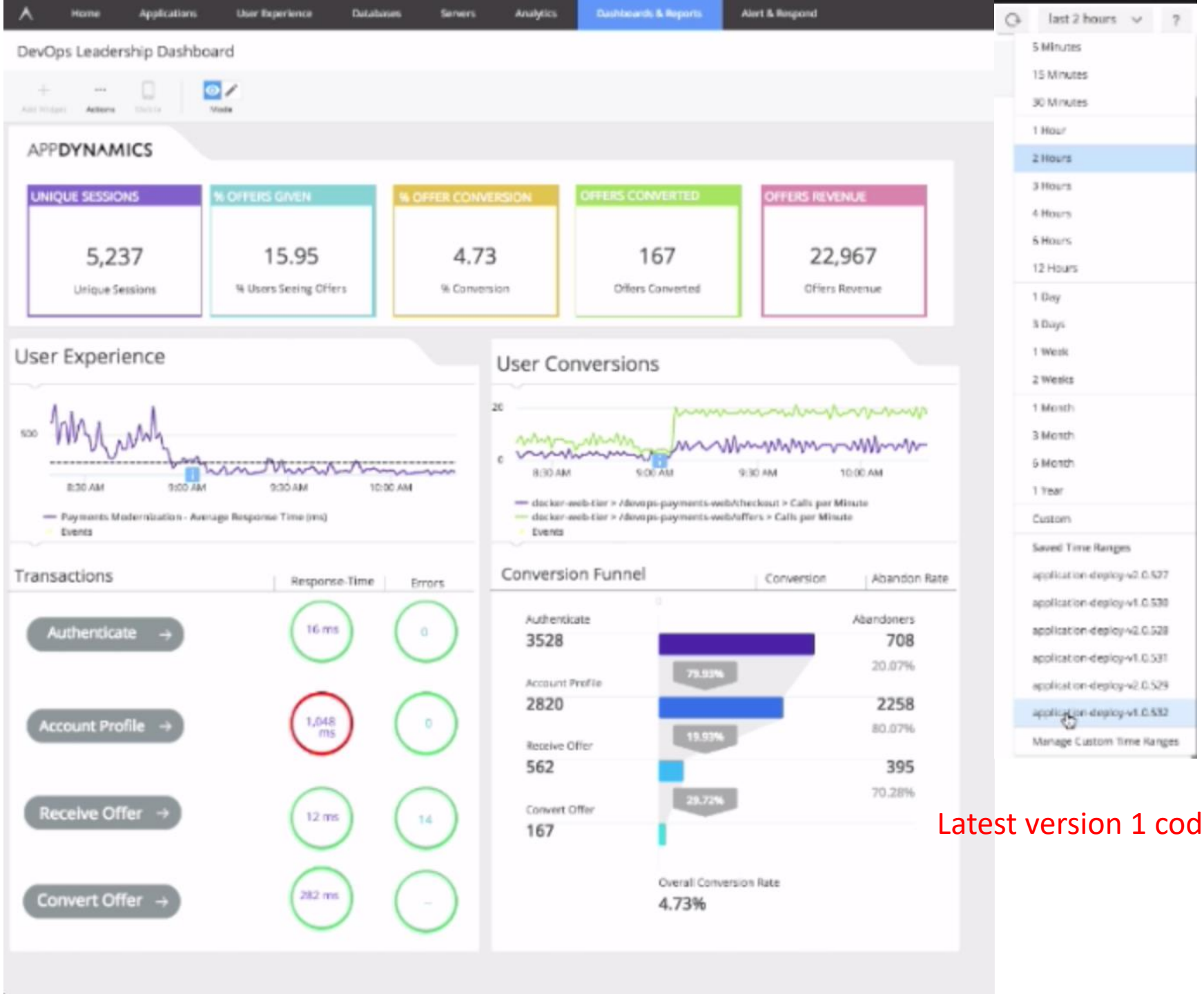
- Commerce
- ECommerce-lbr

Analytics

10.8k Transactions

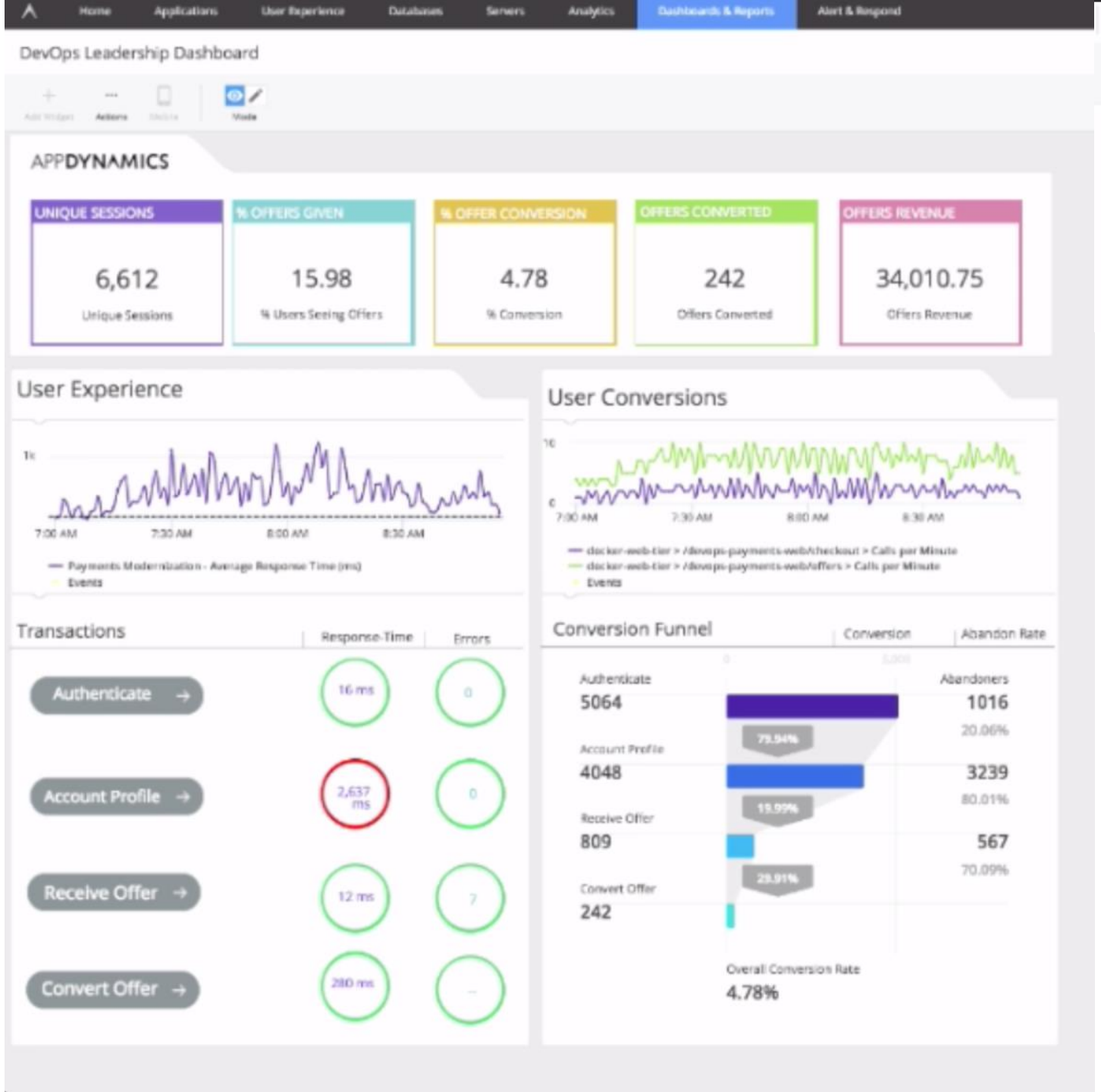
0.1m Log Events

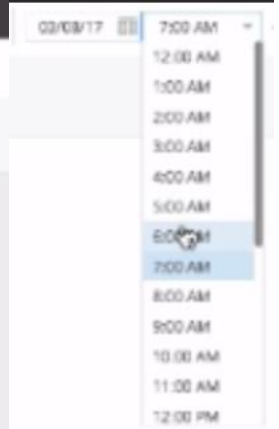
Example 2



Latest version 1 code release

Tools in place are siloed and unconnected. Marketing teams might have visibility into conversions with google analytics and they can't connect that data with what is happening with IT and understand how new releases or application performance affects business conversion.



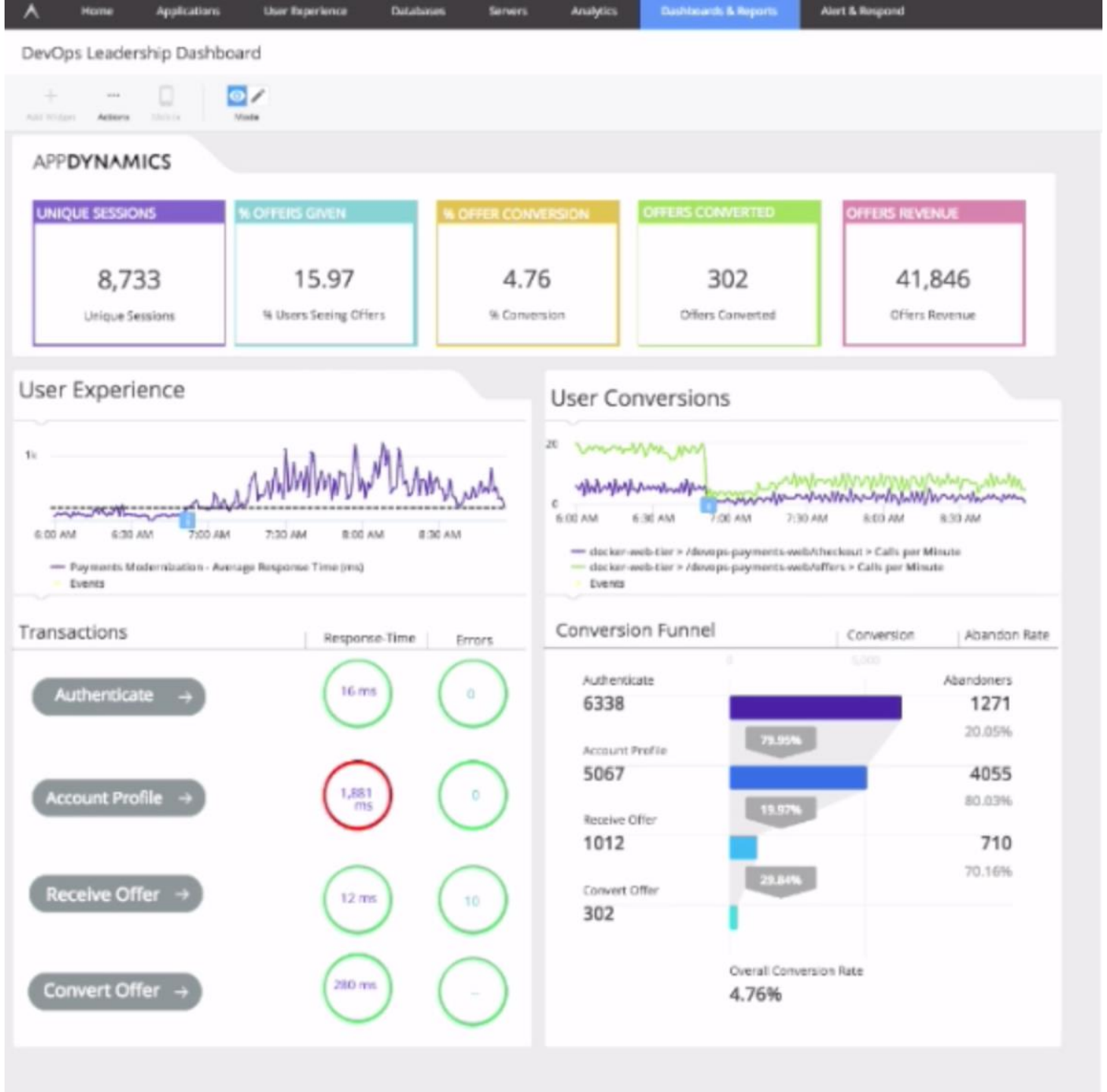


Jump back 1 hour
Start time = 6 AM

Lack of real time visibility in terms of business conversion, user experience and application health

1. two primary functions for generating revenue : online store and providing 3rd party marketing offers to it's user.

2. Break down organizational boundaries end enable all teams to understand how they can contribute to business goals.

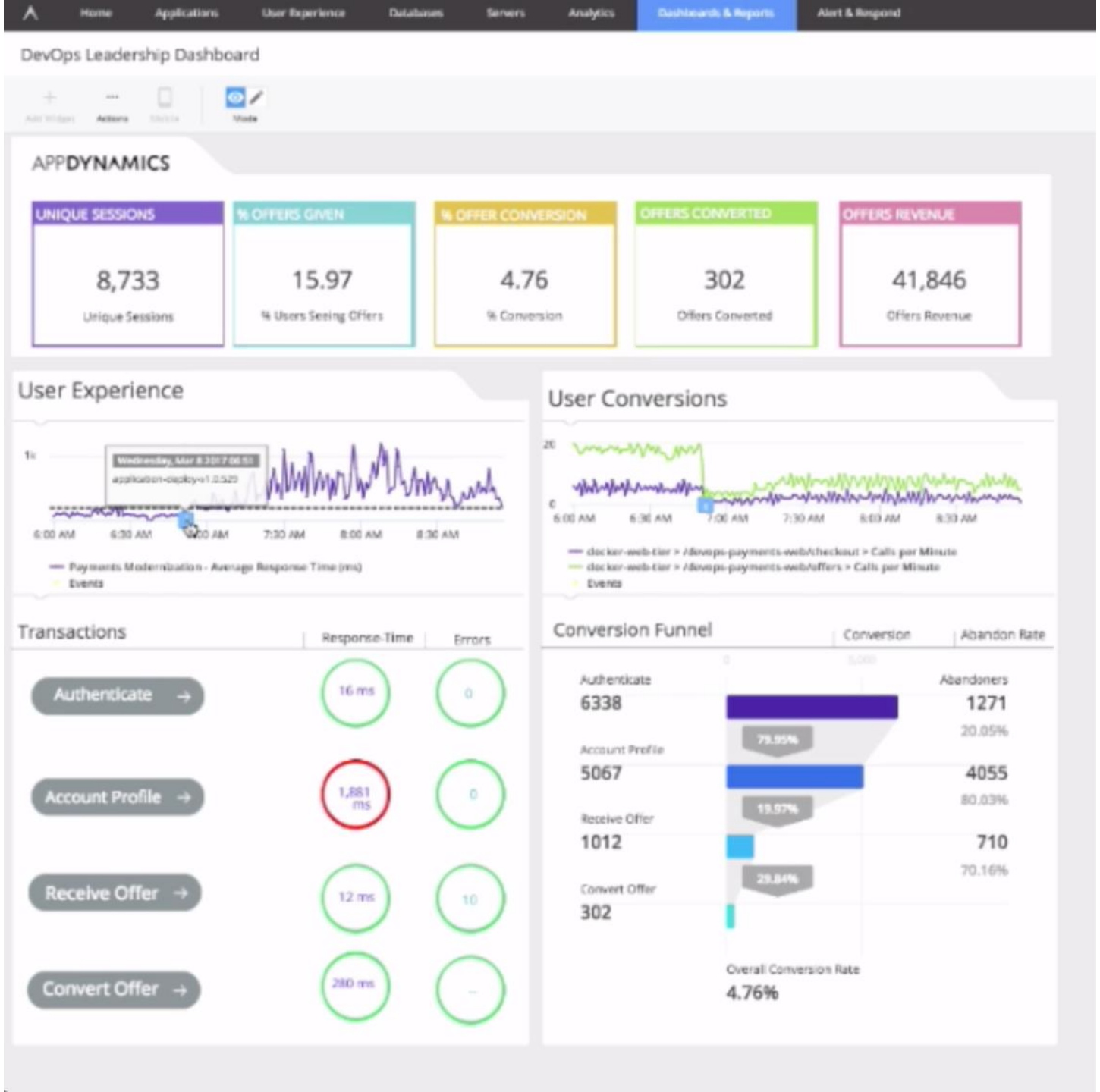


3. Real time visibility into marketing offers subsystem.

4. Track key business performance indicator : Number of active users, percentage of users that are receiving and converting on marketing offers and overall revenue generated

5. Integration with CI platform (Jenkins). Operations team can see when dev or release team push new version of application

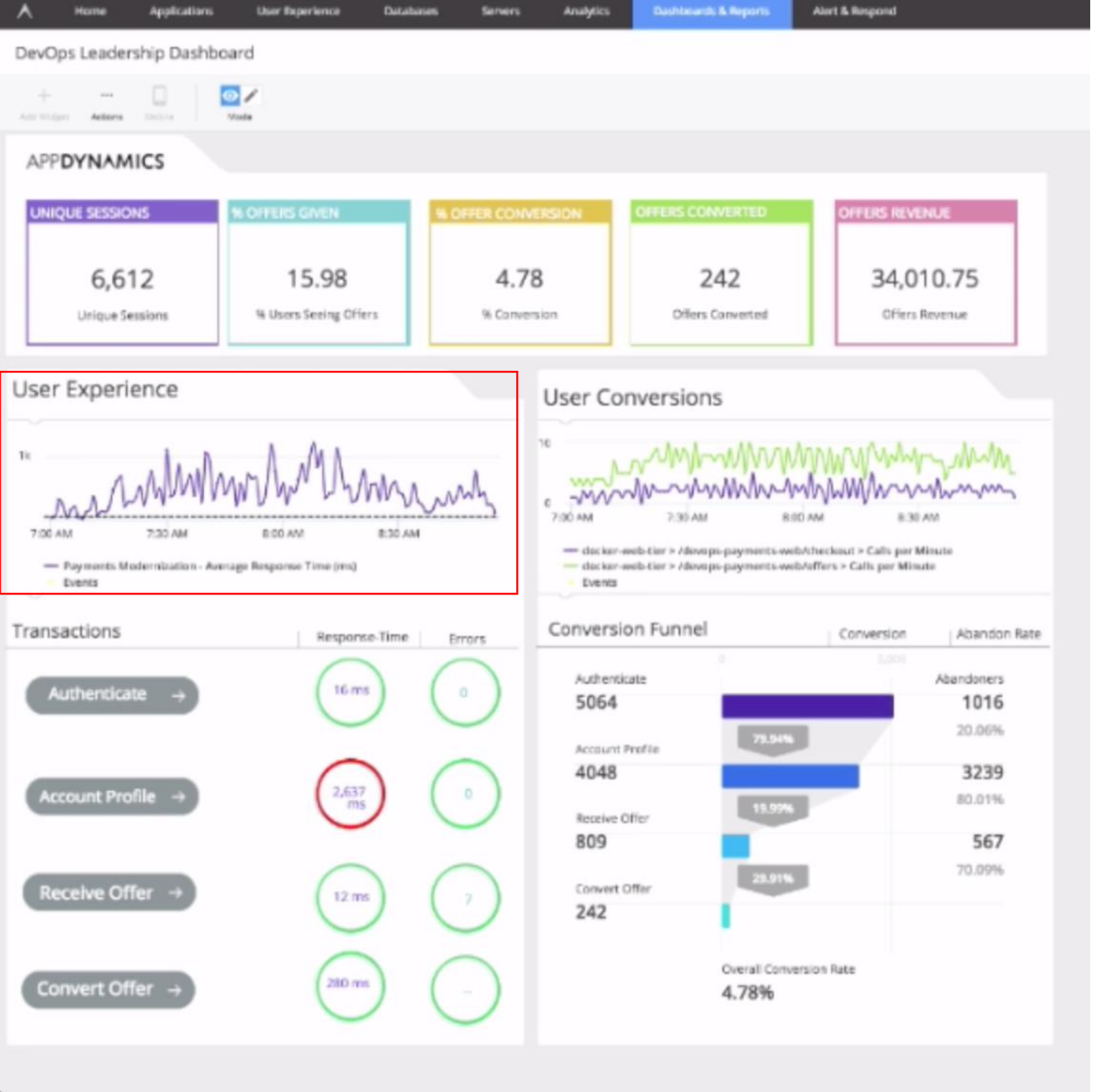
6. New release push has major impact on user experience and user conversion



7. Majority of users authenticate and begin to sign in account profile and there is 80% abandon rate in funnel before user receive marketing offer

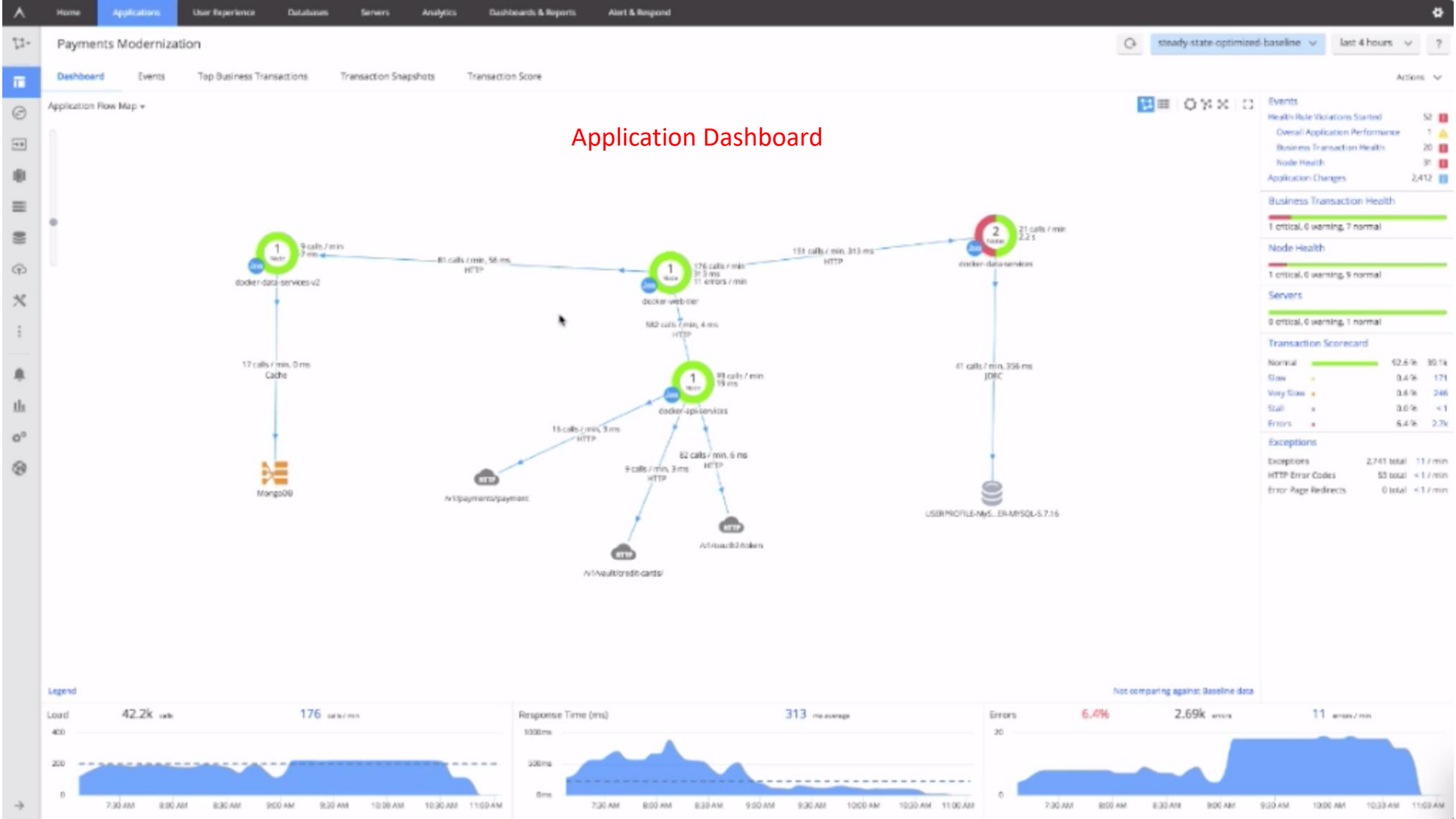
8. There is critical issue affecting response time with account profile

9. IT needs to investigate problem which seams driving down business conversion

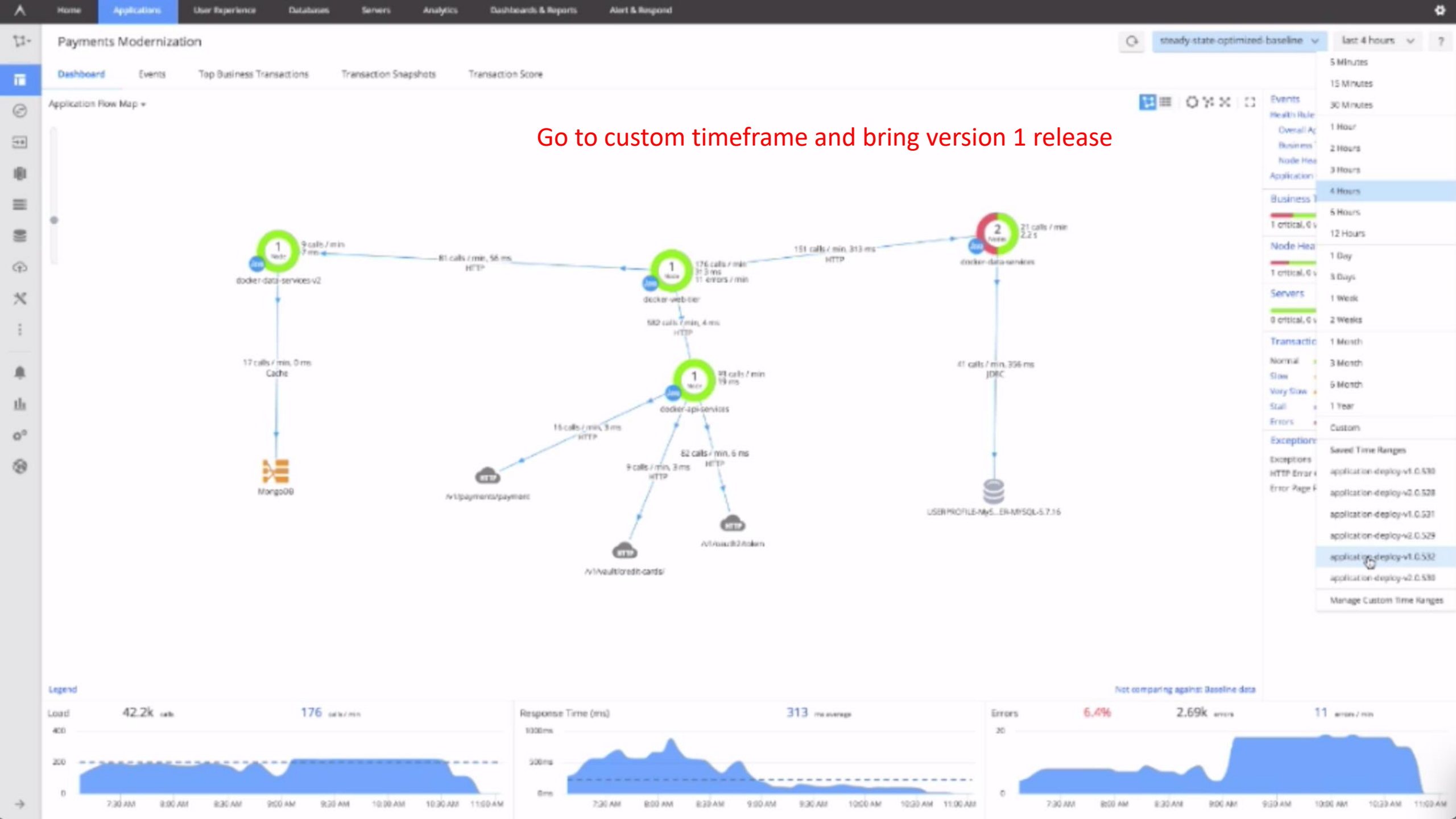


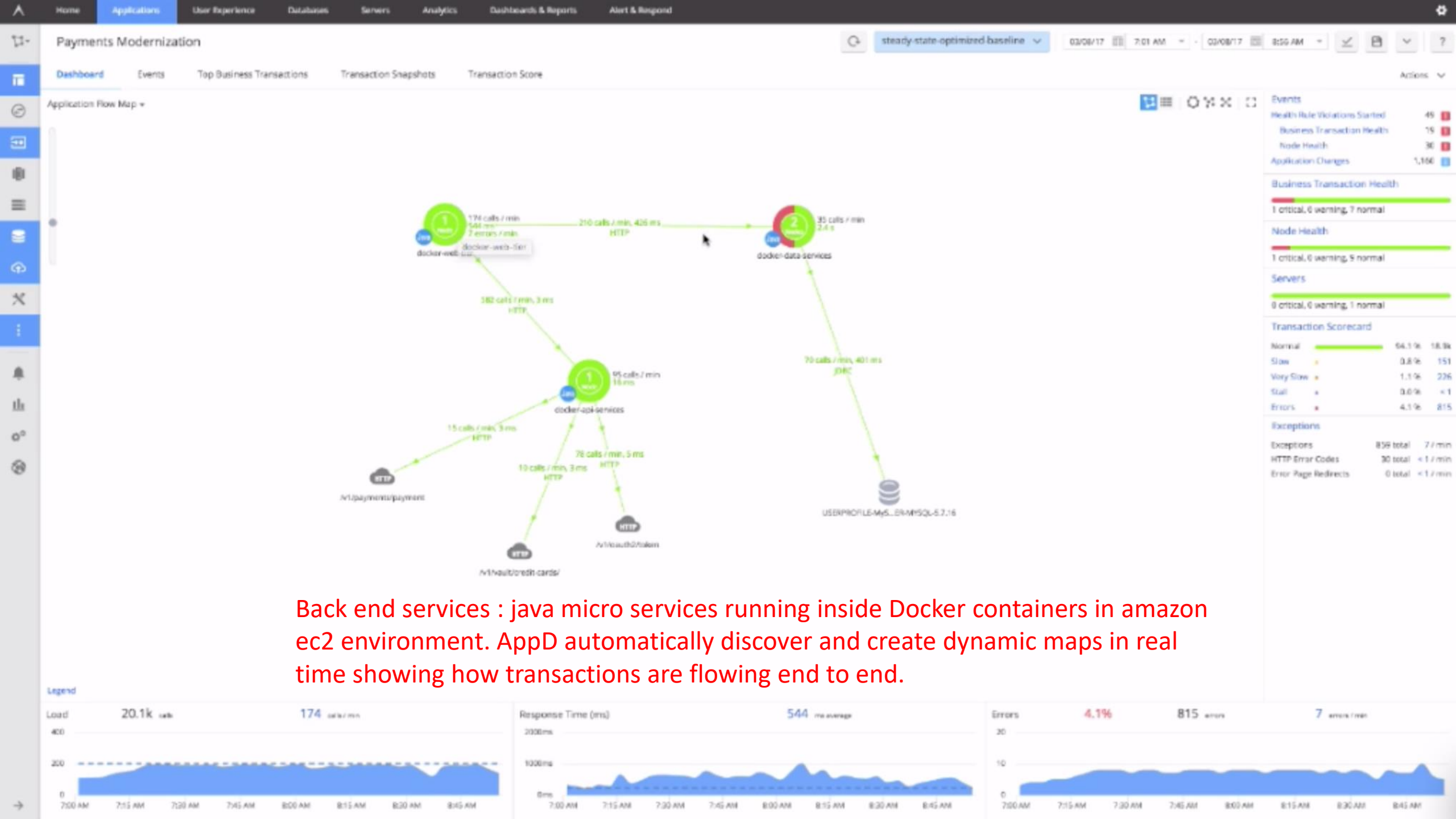
Double click User Experience

Application Dashboard

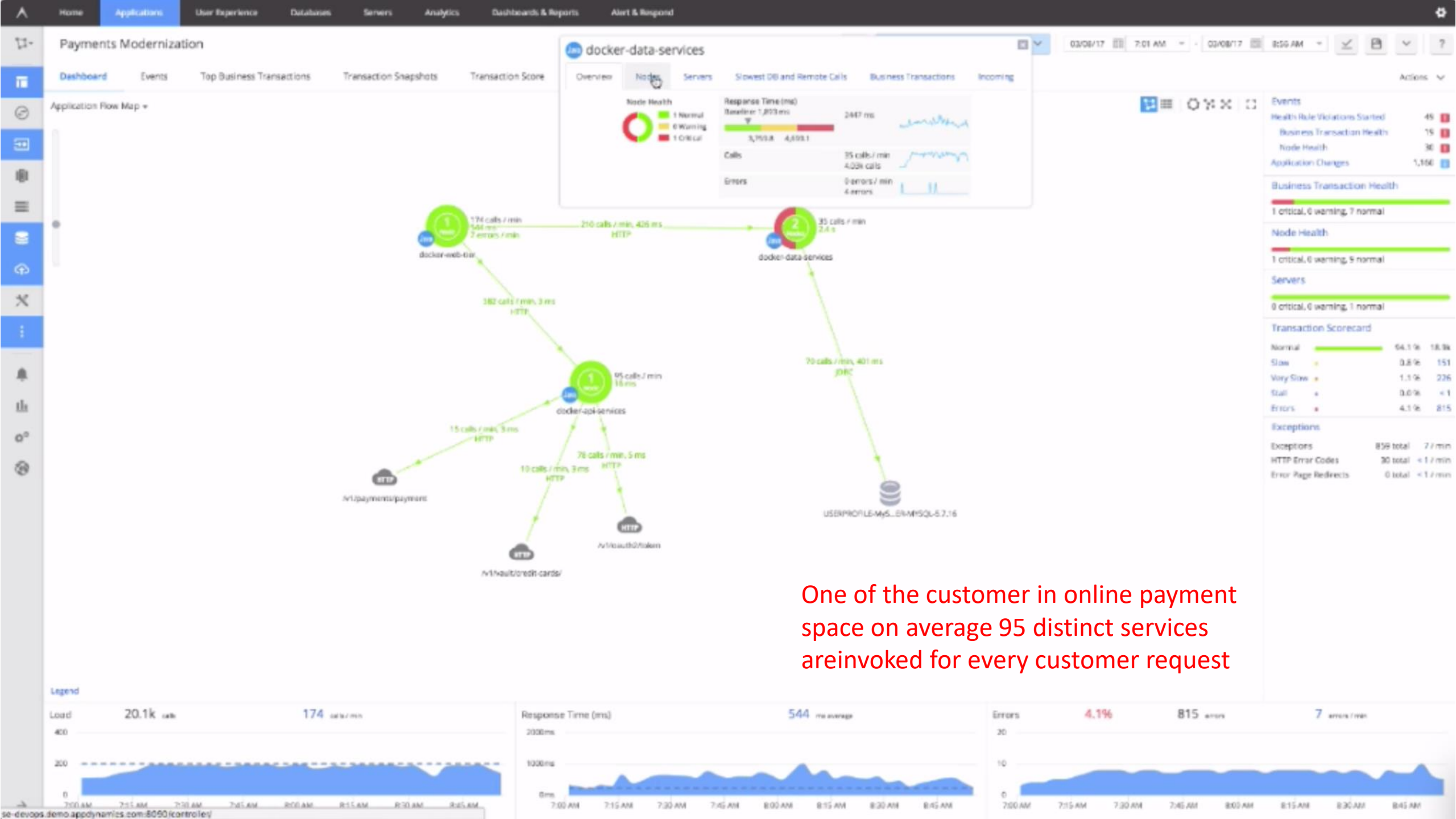


Go to custom timeframe and bring version 1 release

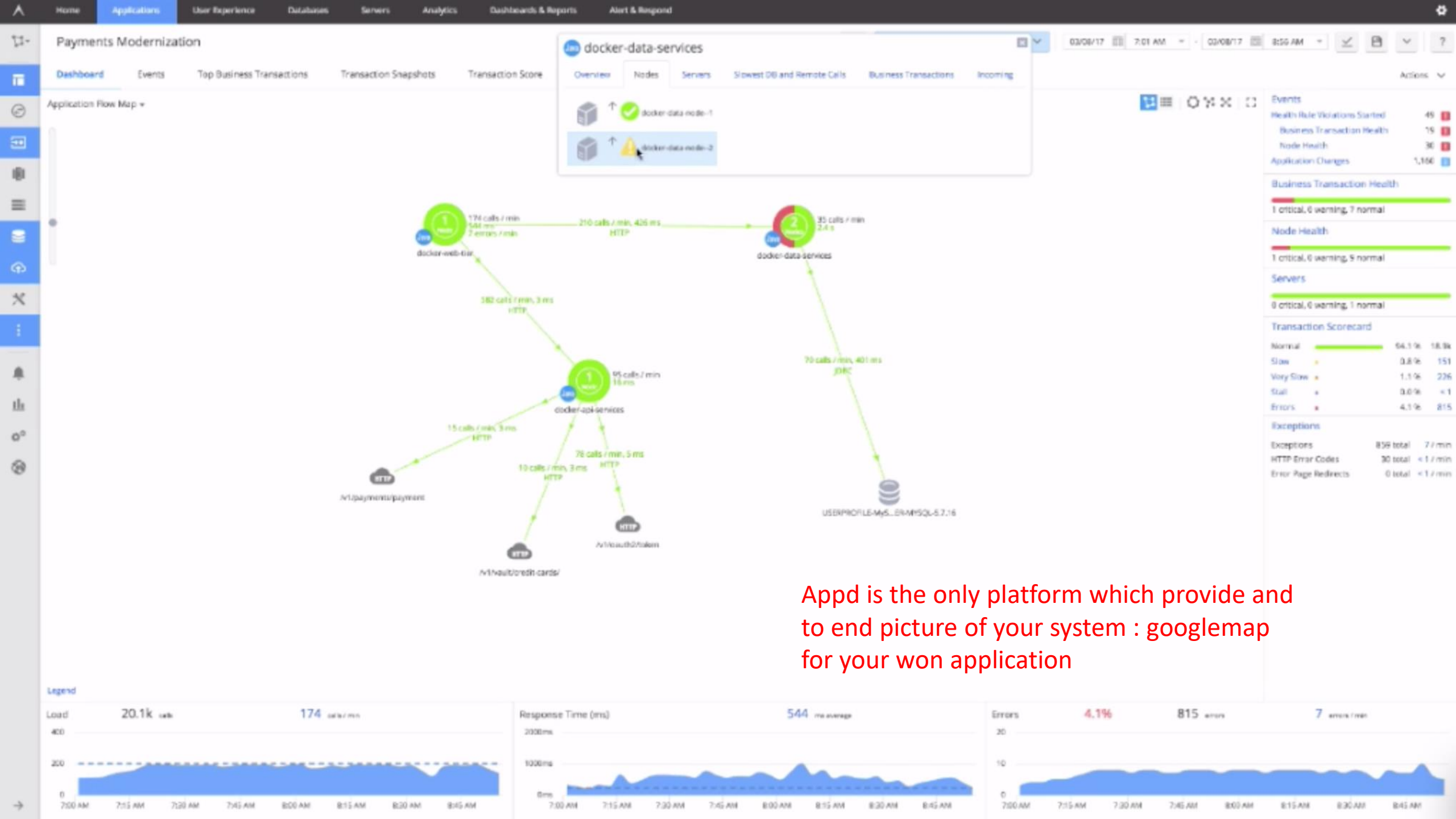




Back end services : java micro services running inside Docker containers in amazon ec2 environment. AppD automatically discover and create dynamic maps in real time showing how transactions are flowing end to end.



One of the customer in online payment space on average 95 distinct services areinvoked for every customer request



Appd is the only platform which provide and to end picture of your system : googlemap for your won application

Home | Applications | User Experience | Databases | Servers | Analytics | Dashboards & Reports | Alert & Respond

Payments Modernization

Dashboard | Events | Top Business Transactions | Transaction Snapshots | Transaction Score | Actions

Application Flow Map

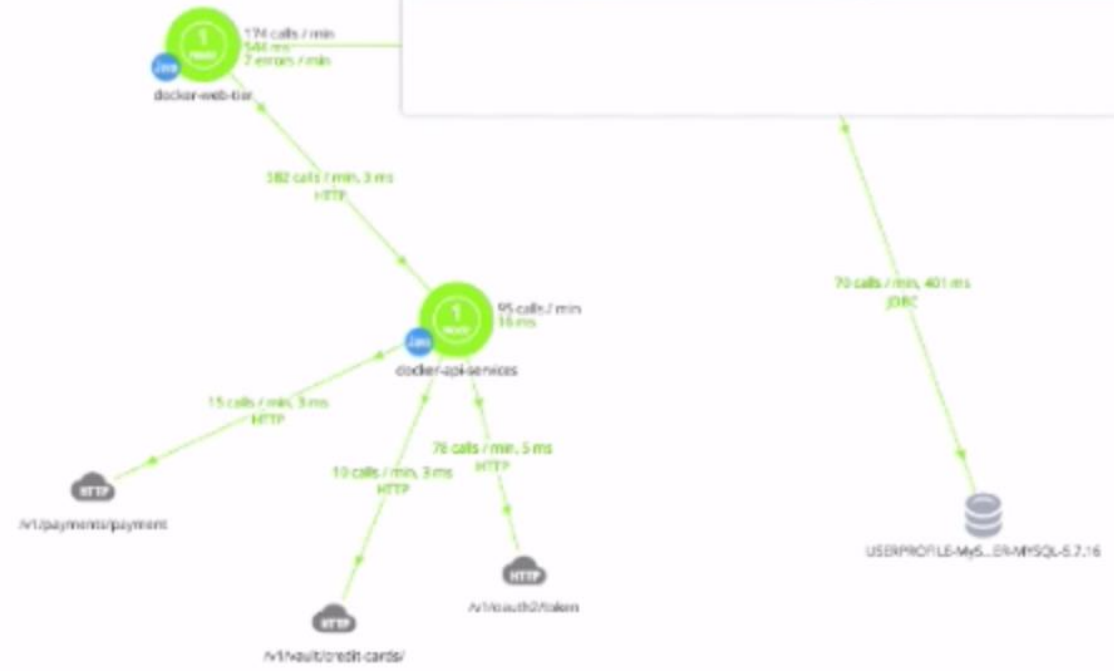
docker-data-services

Overview | Nodes | Servers | Slowest DB and Remote Calls | Business Transactions | Incoming

Breakdown of calls by Business Transaction

View Business Transaction Dashboard

Name	Res...	Calls	Call...	Erro...	Erro...
/devops-payments-web/account/Lookup					
docker-web-tier → [HTTP] → docker-data-services	2447	4001	30	4	0



Events
- Health Rule Violations Started 49
- Business Transaction Health 19
- Node Health 30
- Application Changes 1,166

Business Transaction Health
1 critical, 0 warning, 7 normal

Node Health
1 critical, 0 warning, 9 normal

Servers
0 critical, 0 warning, 1 normal

Transaction Scorecard

Normal	94.1%	18.3k
Slow	3.8%	151
Very Slow	1.1%	226
Stall	0.0%	< 1
Errors	4.1%	815

Exceptions

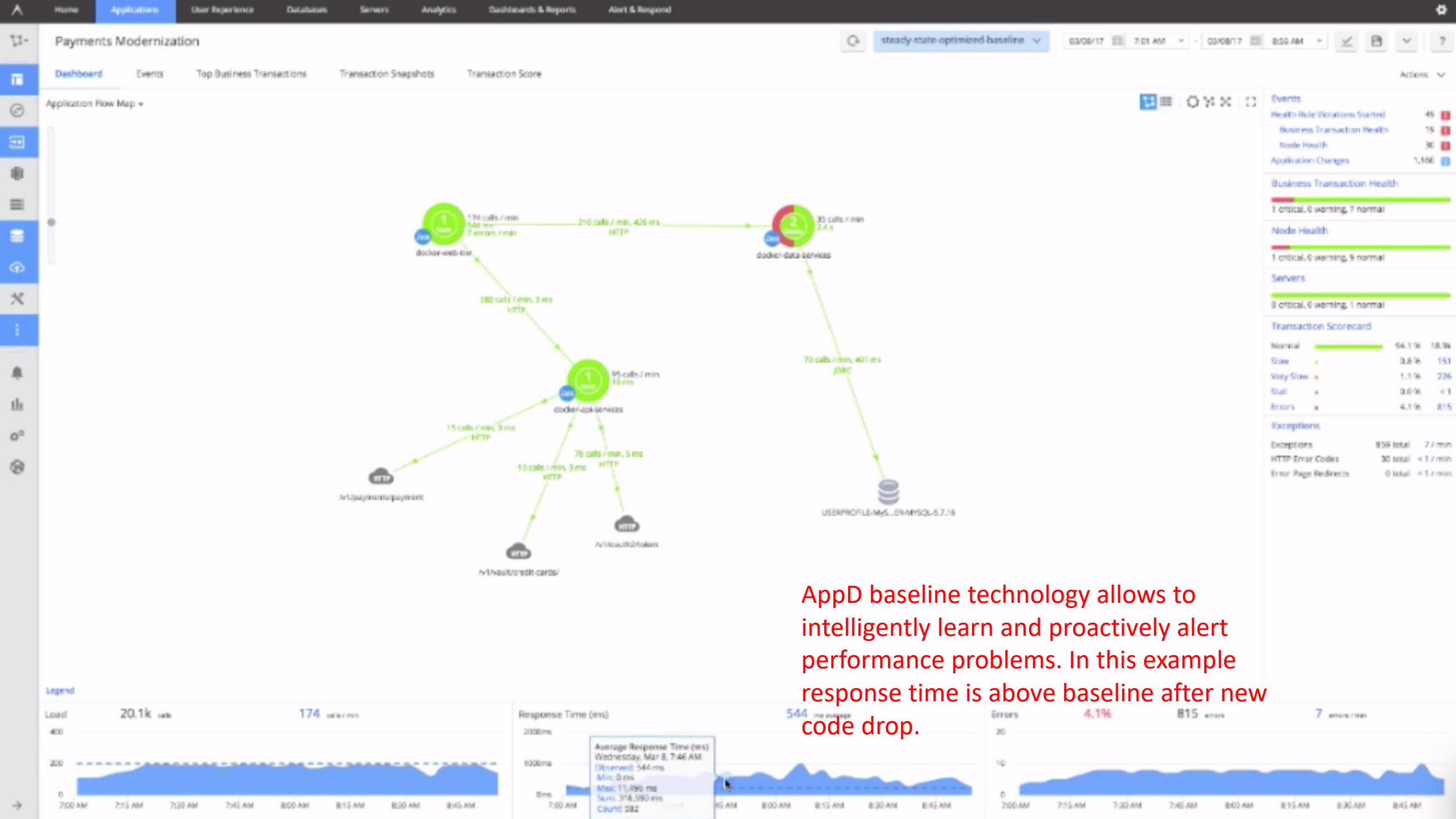
Exceptions	859 total	7 / min
HTTP Error Codes	30 total	< 1 / min
Error Page Redirects	0 total	< 1 / min

Legend

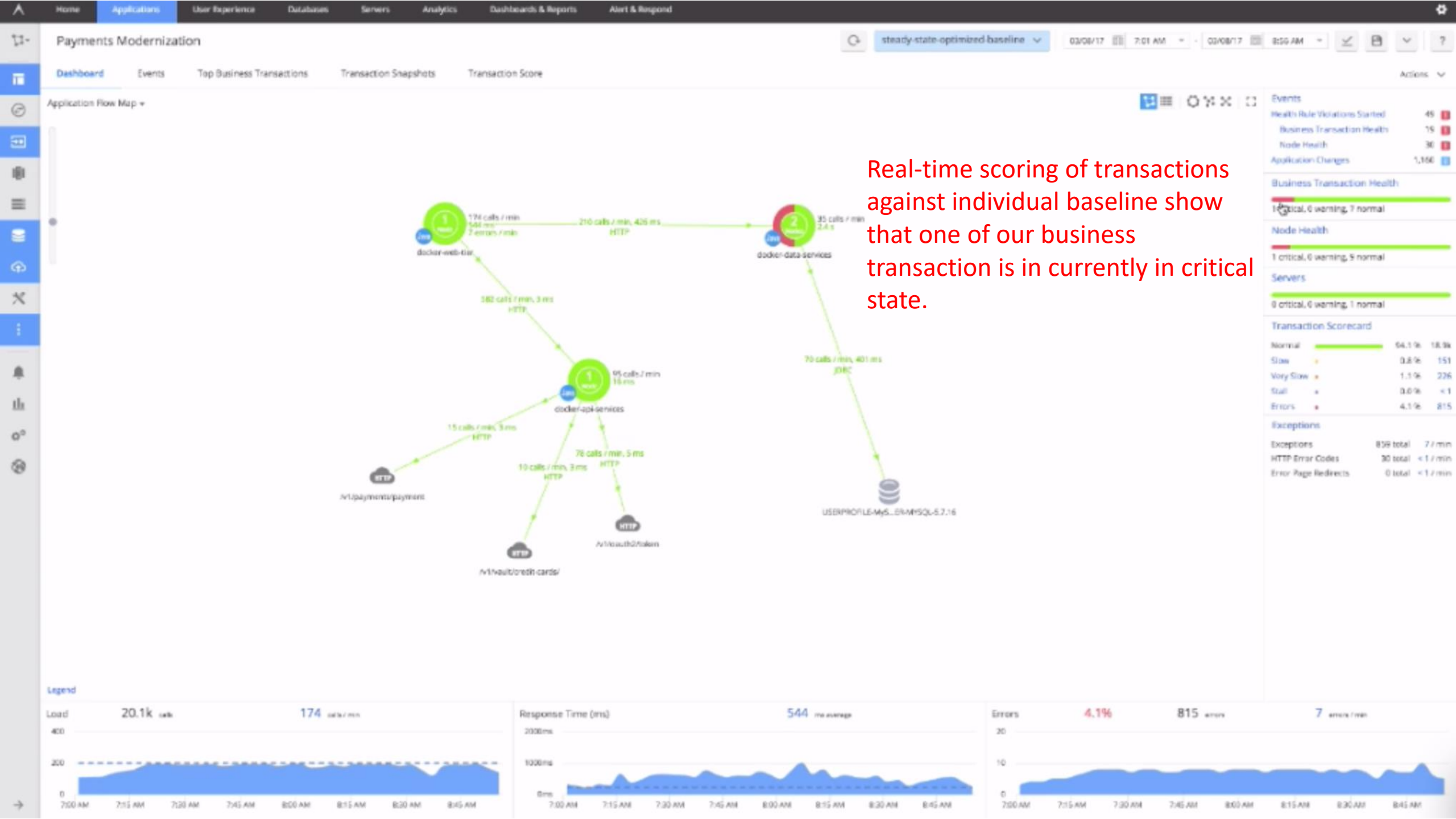
Load 20.1k calls 174 calls / min

Response Time (ms) 544 ms average

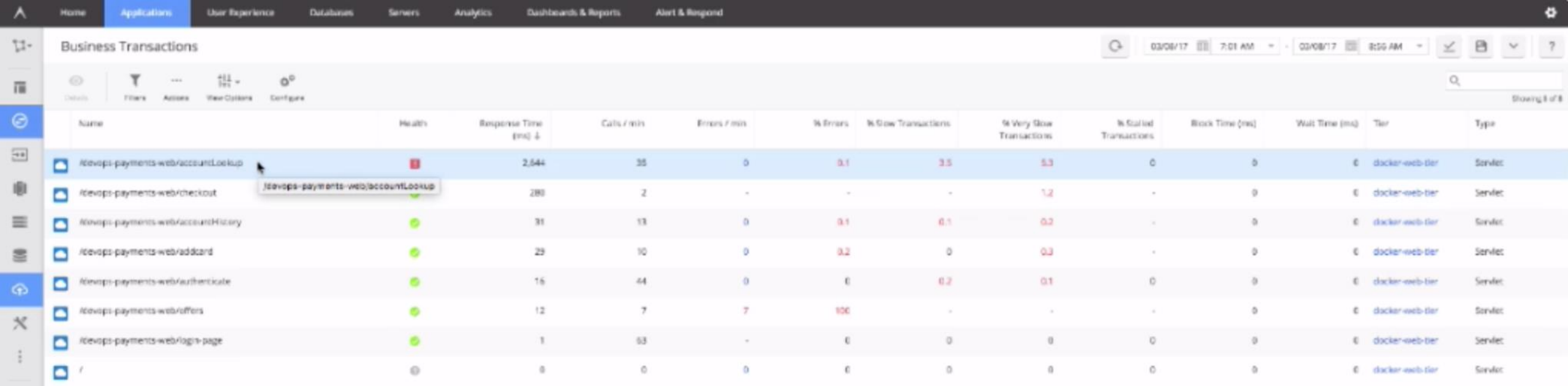
Errors 4.1% 815 errors 7 errors / min



AppD baseline technology allows to intelligently learn and proactively alert performance problems. In this example response time is above baseline after new code drop.



Real-time scoring of transactions against individual baseline show that one of our business transaction is in currently in critical state.



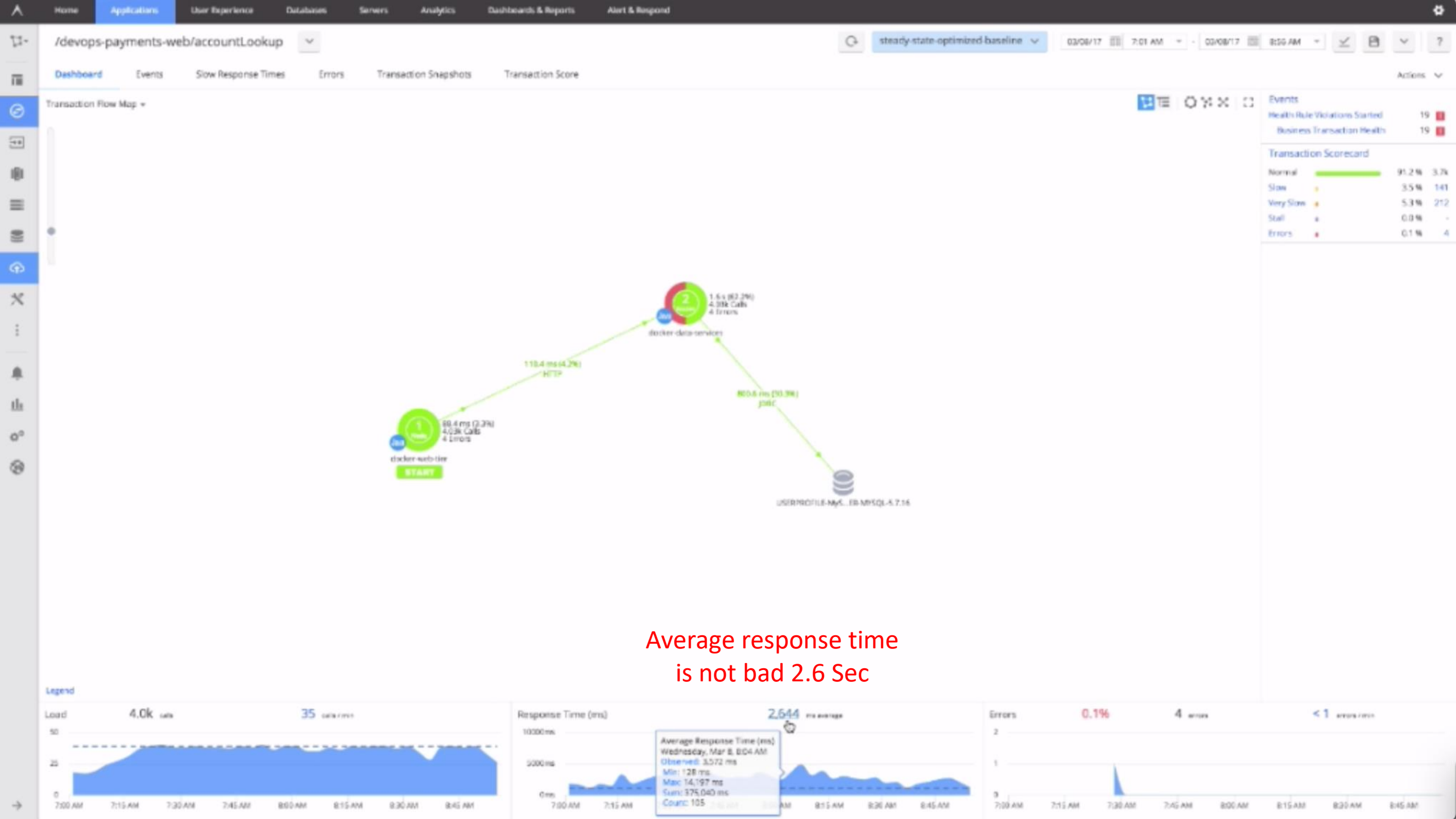
AppD automatically discovers and categorize incoming requests into appropriate business transactions. This is critical because allows us to place emphasize on what is really important – how users experiencing and using site. Users are locking into their account information's, checking out, looking account history … Each busines stransaction represent different work in system and each one is baseline individually. If there is problem appd tell us exact business function (transaction) which is degraded. We can drill in ...

When we drill down into account lookup transaction appd shows us end to end transaction. Front end web tier

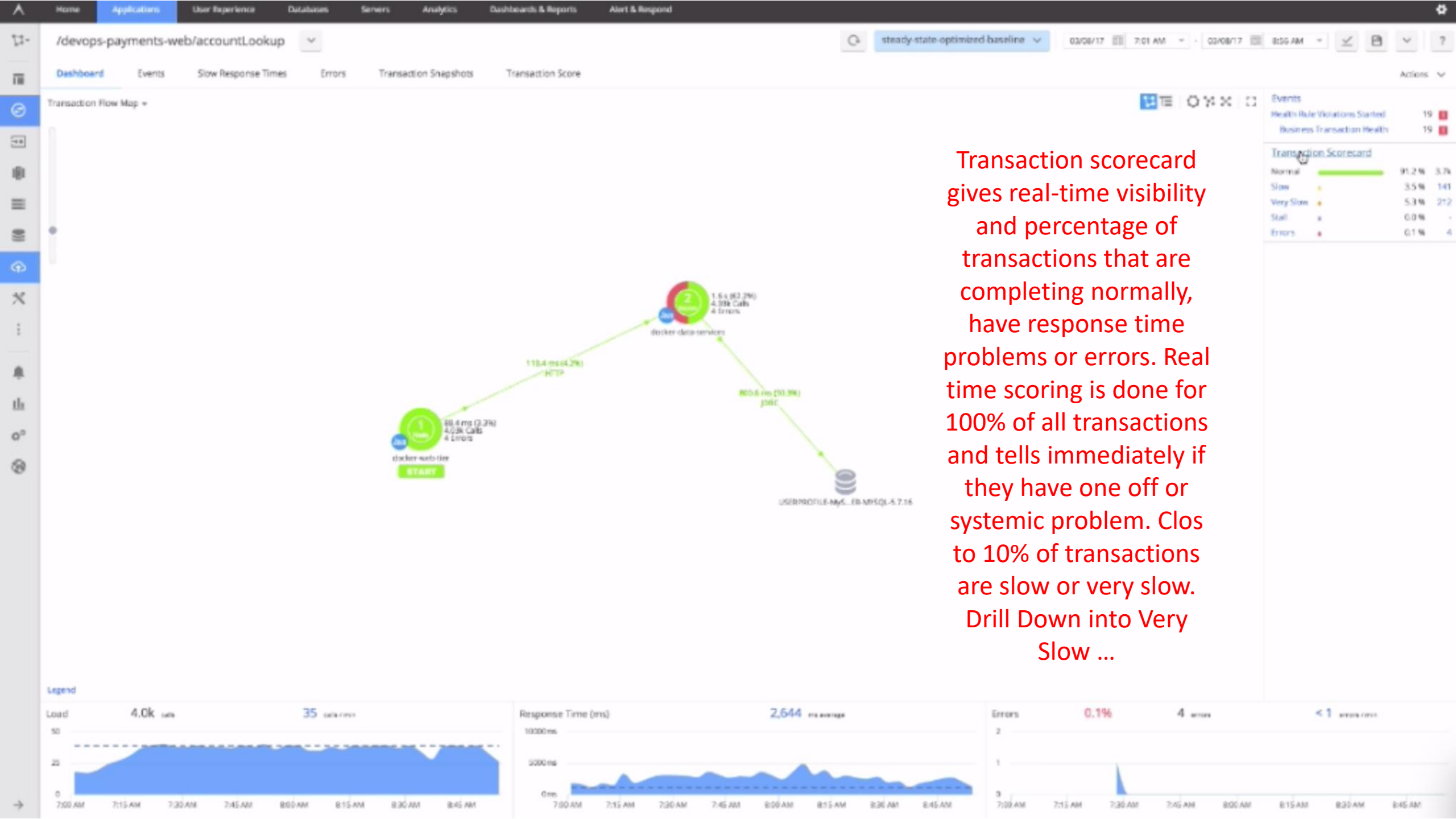
Back end data service running a docker

MySQL database

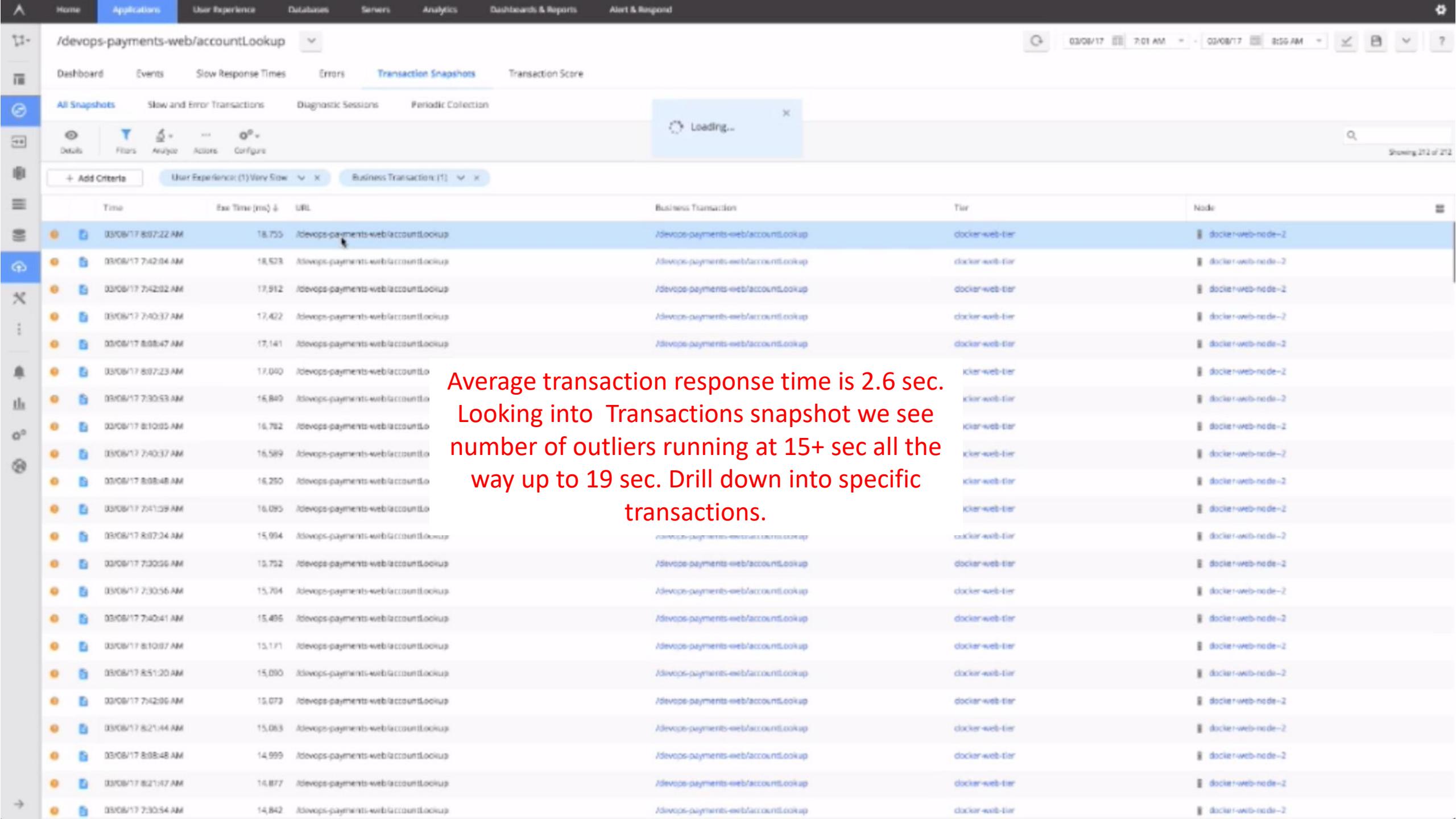
.. and understand what is happening with that transactions. If we need to engage support or dev team we can go to right team who owns account lookup service as opposed to get all dev team involved in war room.



Average response time
is not bad 2.6 Sec



Transaction scorecard gives real-time visibility and percentage of transactions that are completing normally, have response time problems or errors. Real time scoring is done for 100% of all transactions and tells immediately if they have one off or systemic problem. Clos to 10% of transactions are slow or very slow. Drill Down into Very Slow …


Home
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/devops-payments-web/accountLookup
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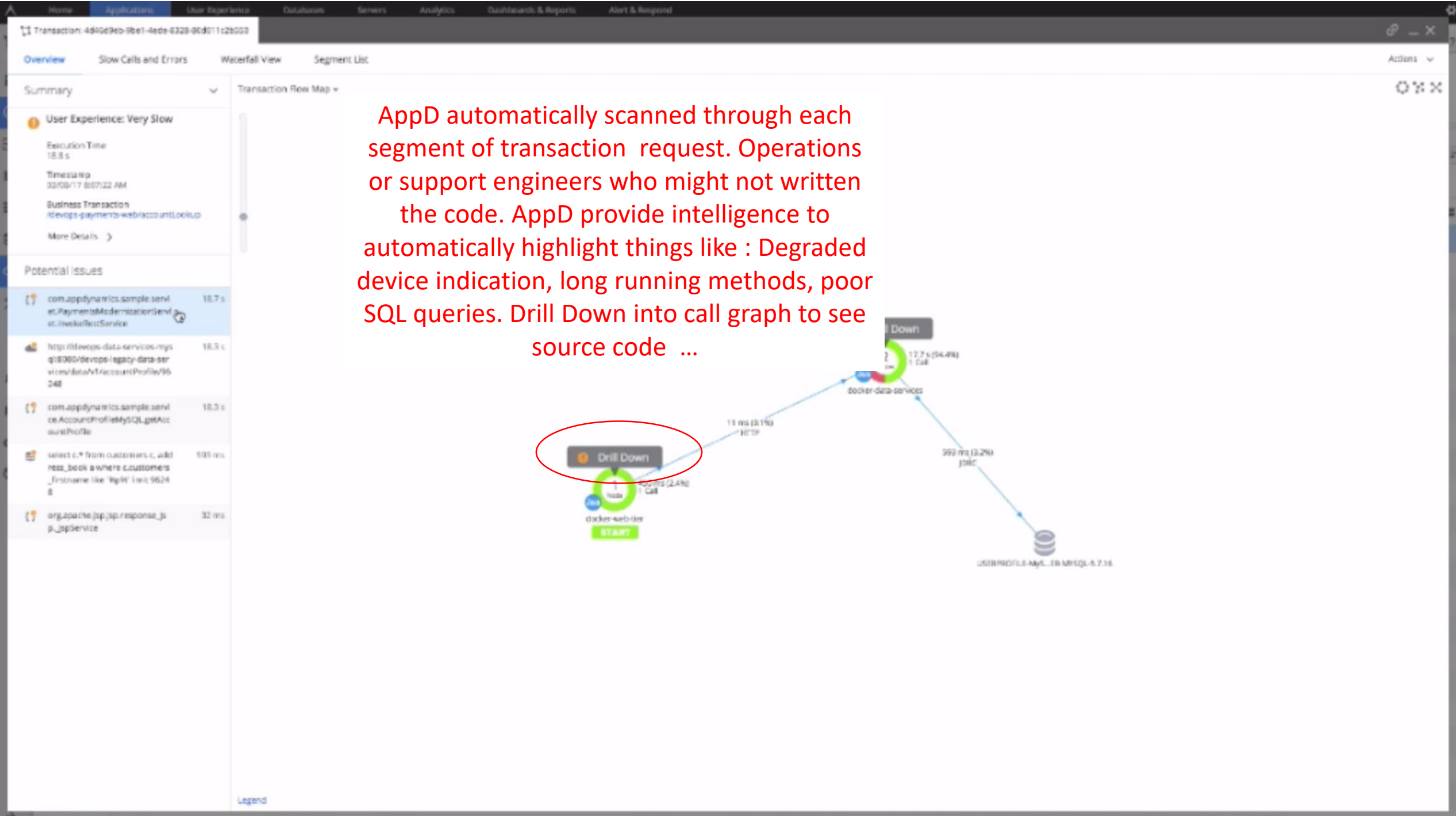
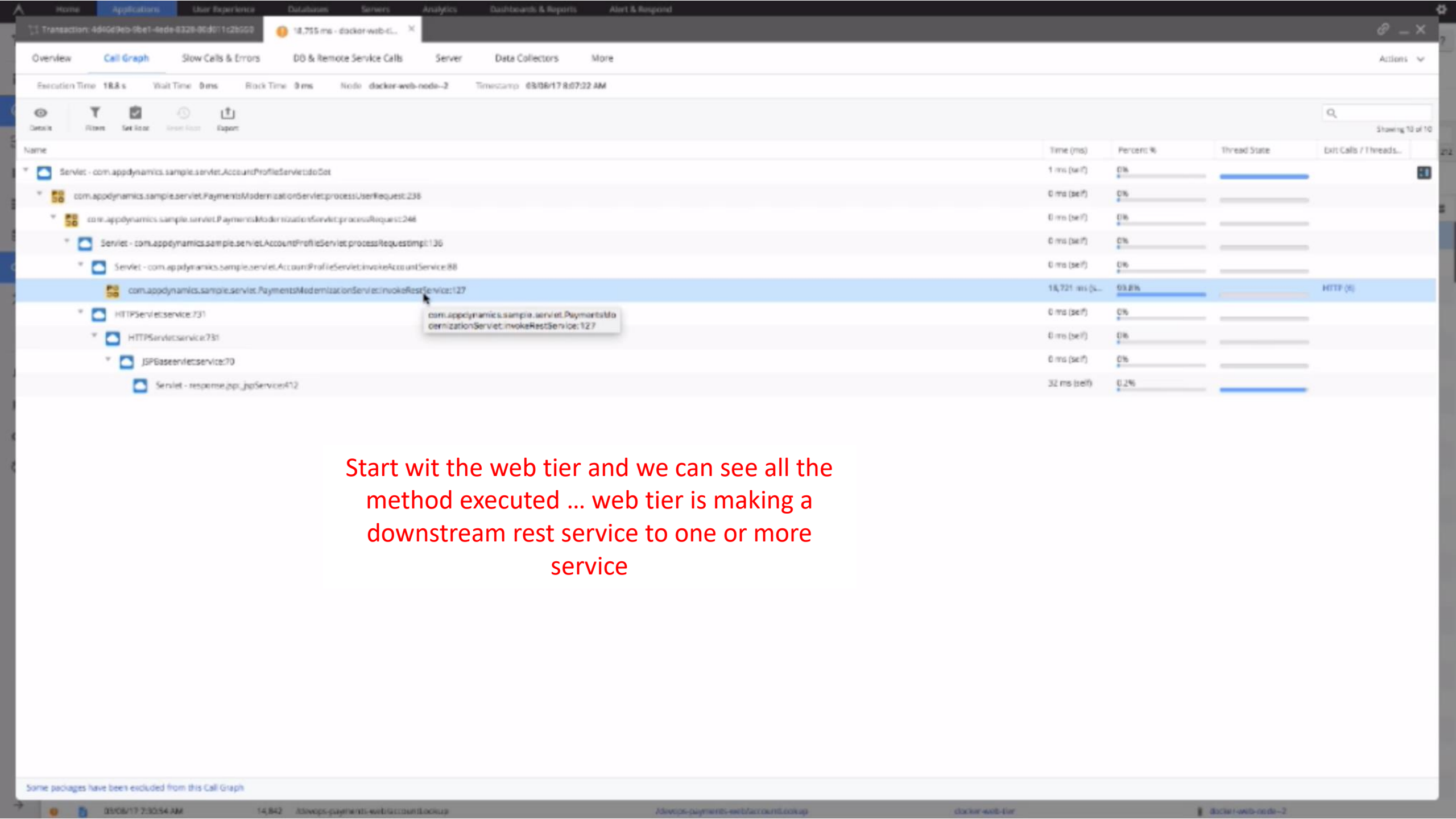
Slow Response Times
Errors
Transaction Snapshots
Transaction Score
All Snapshots
Slow and Error Transactions
Diagnostic Sessions
Periodic Collection
Loading...
Details
Filters
Analyze
Actions
Configure
+ Add Criteria
User Experience: (1) Very Slow
Business Transaction: (1)
Time
Exe Time (ms)
URL
Business Transaction
Tier
Node
Average transaction response time is 2.6 sec. Looking into Transactions snapshot we see number of outliers running at 15+ sec all the way up to 19 sec. Drill down into specific transactions.

AppD automatically scanned through each segment of transaction request. Operations or support engineers who might not written the code. AppD provide intelligence to automatically highlight things like : Degraded device indication, long running methods, poor SQL queries. Drill Down into call graph to see source code …





Start wit the web tier and we can see all the method executed … web tier is making a downstream rest service to one or more service

We can drill into http calls and see that one call is critically degrades. 98% of time or 18 sec spent calling account profile services. Drill Down into the call.

Overview | Call Graph | Slow Calls & Errors | DB & Remote Service Calls | Server | Data Collectors | More | Actions

Execution Time 18.3 s Wait Time 0 ms Block Time 0 ms Node docker-data-node-2 Timestamp 09/08/17 8:07:22 AM

Details | Filters | Set Root | Reset Root | Export

Showing 3 of 3

Name	Time (ms)	Percent %	Thread State	Exit Calls / Threads...
com.appdynamics.sample.service.DataServicegetUserProfile	0 ms (self)	0%		
com.appdynamics.sample.service.MySQLDataServicegetUserProfileImpl:54	0 ms (self)	0%		
com.appdynamics.sample.service.AccountProfileMySQLgetAccountProfile:74	18,293 ms (s...	100%		JDBC (2)

com.appdynamics.sample.service.AccountProfileMySQLgetAccountProfile:74

Looking into the code running at downstream service code stack is very simple and we spent a lot of time to get account profile method at line 74.

It seams we are making two distinct calls back to mySQL database. Drilling into a call …

Some packages have been excluded from this Call Graph

Overview | Call Graph | Slow Calls & Errors | DB & Remote Service Calls | Server | Data Collectors | More

Execution Time 18.3 s Wait Time 0 ms Block Time 0 ms Node docker-data-node-2 Timestamp 09/08/17 8:07:22 AM

Name	Time (ms)	Percent %	Thread State	Exit Calls / Threads...
com.appdynamics.sample.service.DataServicesgetUserProfile	0 ms (self)	0%		
com.appdynamics.sample.service.MySQLDataServicesgetUserProfileImpl:54	0 ms (self)	0%		
com.appdynamics.sample.service.AccountProfileMySQLgetAccountProfile:74	18,293 ms (s...	100%		JDBC (2)

getAccountProfile:74

Name com.appdynamics.sample.service.AccountProfileMySQL.getAccountProfile
Type POJO
Class com.appdynamics.sample.service.AccountProfileMySQL
Method getAccountProfile
Line Number 74

Self Time 18,293 ms 100%
Total Time 18,293 ms 100%
Details CPU: 909 ms, Block: 0 ms, Wait: 0 ms

Exit Calls

Type	Details	Count	Time (ms)	% Time	From	To
JDBC	select c.* from customers c, address_book a w...	1	593	3.2%	docker-data...	USERPROFL...
JDBC	select c.* from customers c, address_book a w...	96248	8478	46.3%	docker-data...	USERPROFL...

JDBC Exit Call
Time 593 ms
From docker-data-services
To USERPROFILE-MySQL DB-DEVOPS-USER-MYSQL-5.7.16
Details select c.* from customers c, address_book a where c.customers_firstname like '%p%' limit 96248

Properties
ResultSet Count=96248 Iteration Time=8478 ms
Statement Type Prepared Statement
Query Type Query

Some packages have been excluded from this Call Graph

AppD captured initial SQL query and dev team let a poor written query using a wildcard in production. Query returns over 96k results. Code is iterating through retrieving and processing every results one at a time. We call this death by a 1k queries and it's causing major issue with account lookup function.

Home | Applications | User Experience | Databases | Servers | Analytics | Dashboards & Reports | Alert & Respond

Transaction: 4d46d9eb-9be1-4ede-8328-80d011c2b509 | 18,755 ms - docker-web-c... | 18,204 ms - docker-data-s...

Overview | Call Graph | Slow Calls & Errors | DB & Remote Service Calls | Server | Data Collectors | More

Execution Time 18.3 s | Wait Time 0 ms | Block Time 0 ms | Node docker-data-node-2 | Timestamp 09/06/17 8:07:22 AM

Details | Filters | Set Root | Reset Root | Export

Copied to clipboard

http://ha-devops.demo.appdynamics.com:8090/controller/#/location=APP_SNAPSHOT_VIEWER&requestGUID=4d46d9eb-9be1-4ede-8328-80d011c2b509&application=7&sdTime=Custom_Time_Range.BETWEEN_TIMES.1488986842741.1488986842741.60&tab=35522457&dashboardMode=force

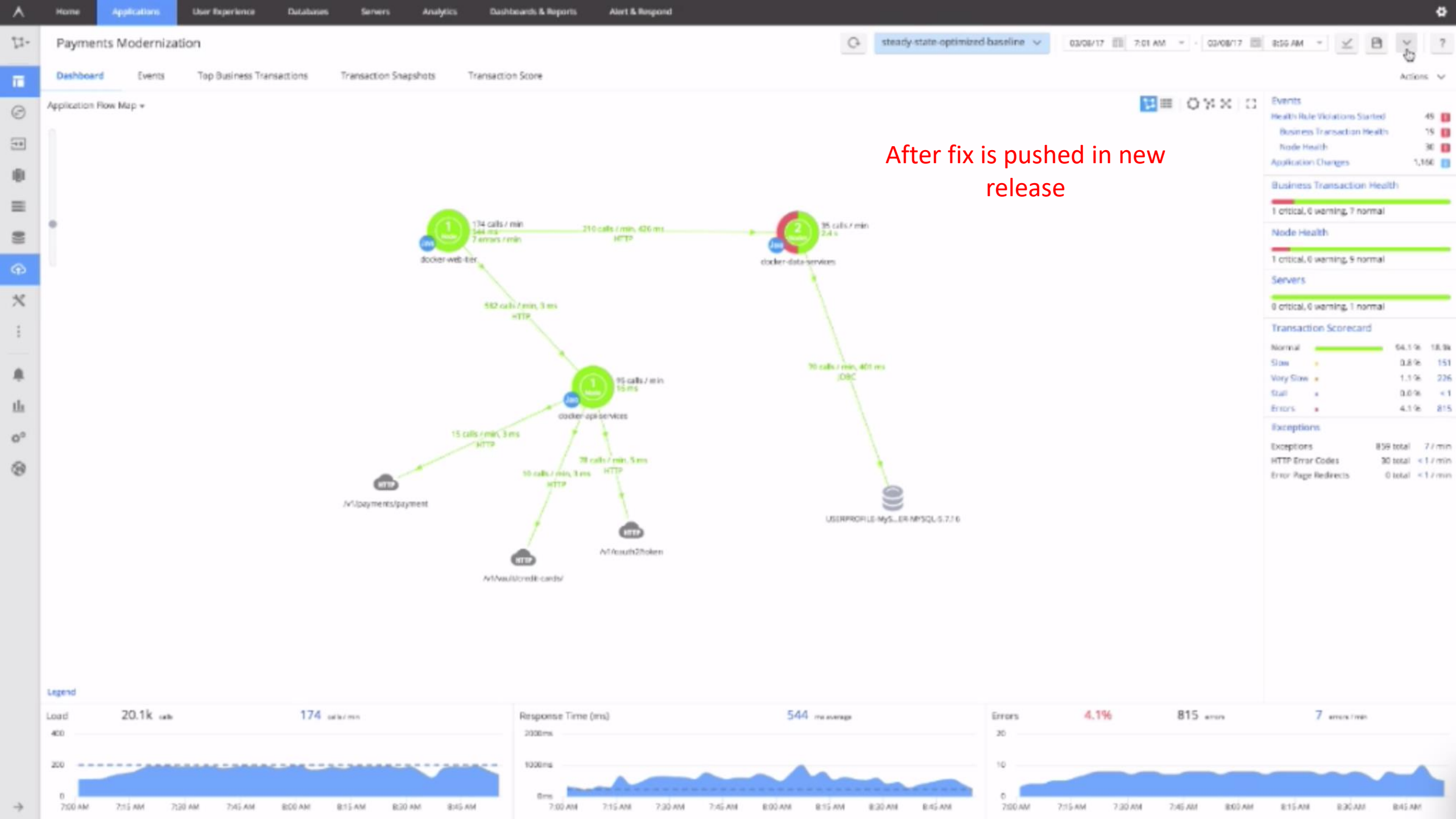
Showing 3 of 3

Name	Time (ms)	Percent %	Thread State	Exit Calls / Threads...
com.appdynamics.sample.service.DataServicegetUserProfile	0 ms (self)	0%		
com.appdynamics.sample.service.MySQLDataServicegetUserProfileImpl:54	0 ms (self)	0%		
com.appdynamics.sample.service.AccountProfileMySQLgetAccountProfile:74	18,293 ms (s...	100%		JDBC (2)

We can easily grab a link and share findings with teams

Some packages have been excluded from this Call Graph

09/06/17 7:30:54 AM | 14,842 | /devops-payments-web/account.cocsup | /devops-payments-web/account.cocsup | docker-web-tier | docker-web-node-2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Transaction Score
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After fix is pushed in new release
docker-web-tier
docker-data-services
docker-api-services
/v1/payments/payment
/v1/oauth2/token
/v1/vault/credit-cards/
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Exceptions
Legend
Load
Response Time (ms)
Errors

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Payments Modernization

steady-state-optimized baseline

Dashboard | Events | Top Business Transactions | Transaction Snapshots | Transaction Score

Application Flow Map

174 calls / min
544 ms
7 errors / min
docker-web-tier

210 calls / min, 426 ms
HTTP

95 calls / min
2.4 s
docker-data-services

182 calls / min, 3 ms
HTTP

95 calls / min
15 ms
docker-api-services

15 calls / min, 3 ms
HTTP

10 calls / min, 3 ms
HTTP

78 calls / min, 5 ms
HTTP

70 calls / min, 401 ms
JDBC

/v1/payments/payment

/v1/oauth2/token

/v1/vault/credit-cards/

USERPROFILE-MyS...ER-MYSQL-5.7.16

Legend

Load 20.1k calls 174 calls / min

Response Time (ms) 544 ms average

Errors 4.1% 815 errors 7 errors / min

Events
Health Rule
Business
Node Hea
Application

Business T
1 critical, 0

Node Hea
1 critical, 0

Servers
0 critical, 0

Transactio
Normal
Slow
Very Slow
Stall
Errors

Exceptions
Exceptions
HTTP Error
Error Page

5 Minutes
15 Minutes
30 Minutes
1 Hour
2 Hours
3 Hours
4 Hours
6 Hours
12 Hours
1 Day
3 Days
1 Week
2 Weeks
1 Month
3 Month
6 Month
1 Year
Custom
Saved Time Ranges
application-deploy-v1.0.530
application-deploy-v2.0.528
application-deploy-v1.0.531
application-deploy-v2.0.529
application-deploy-v1.0.532
application-deploy-v2.0.530
Manage Custom Time Ranges

We can verify fix

Payments Modernization

Dashboard | Events | Top Business Transactions | Transaction Snapshots | Transaction Score

Application Flow Map

docker-web-tier

docker-data-services

docker-data-services-v2

docker-api-services

MongoDB

/v1/payments/payment

In version two we added new architectural component docker data services version 2 which calls into a back end mongo instance. We moved account functionality form mySQL to Mongo

Response time is now below baseline which improve overall user experience.

Events

Business Transaction Health

Node Health

Servers

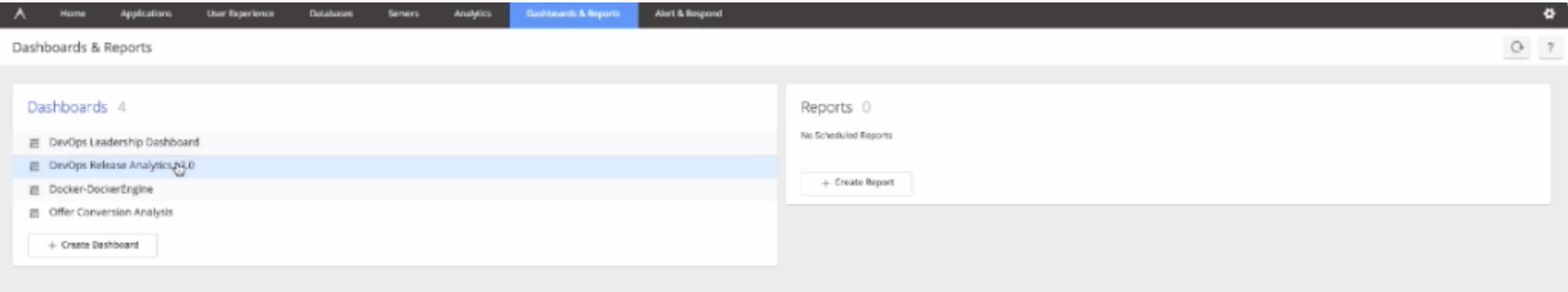
Transaction Scorecard

Exceptions

Load 22.3k 202

Response Time (ms) 108

Errors 8.5% 1.88k 17



Jump into release analytics dashboard

Fewer users pushed to version 2 (3206)

Conversion increased from 4% to 14%)

Revenue increased 4X