

Cisco IT's Cloud Journey - AppDynamics in Cisco's IT Application Management

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Cisco on Cisco



Agenda

- Why AppDynamics?
- AppDynamics: The APM Solution
- How Cisco IT Uses AppDynamics
- AppDynamics Walkthrough
- Cisco Case Studies
- Lessons Learned



Cisco IT at a Glance



93
Countries



458
Offices



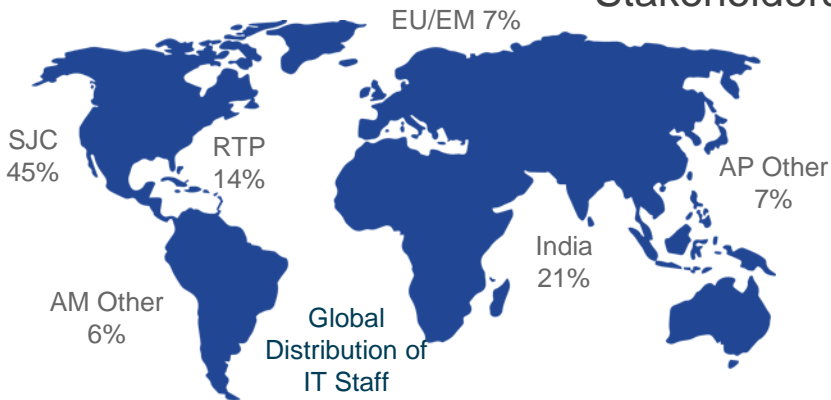
139,317
Connected
Stakeholders



4.8 Billion
DNS Requests
Per Day



13,630
UCS Blades



60,900
Virtual Machines



26
Data Centers



<15 Min
Infra
Provisioning
Time



17,000
Containers



98 IT Services
3000 apps



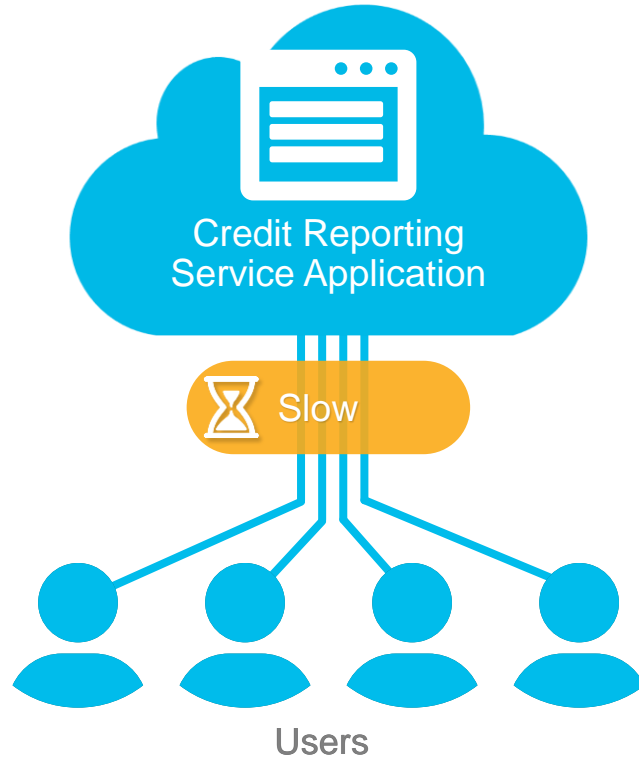
500+
SaaS Apps

The background features a dark blue gradient. In the upper right, there are several orange diagonal lines and circles, resembling binary code. A large, stylized graphic on the right side consists of overlapping shapes in light blue, orange, and red, suggesting a person or a dynamic form.

Why
AppDynamics?

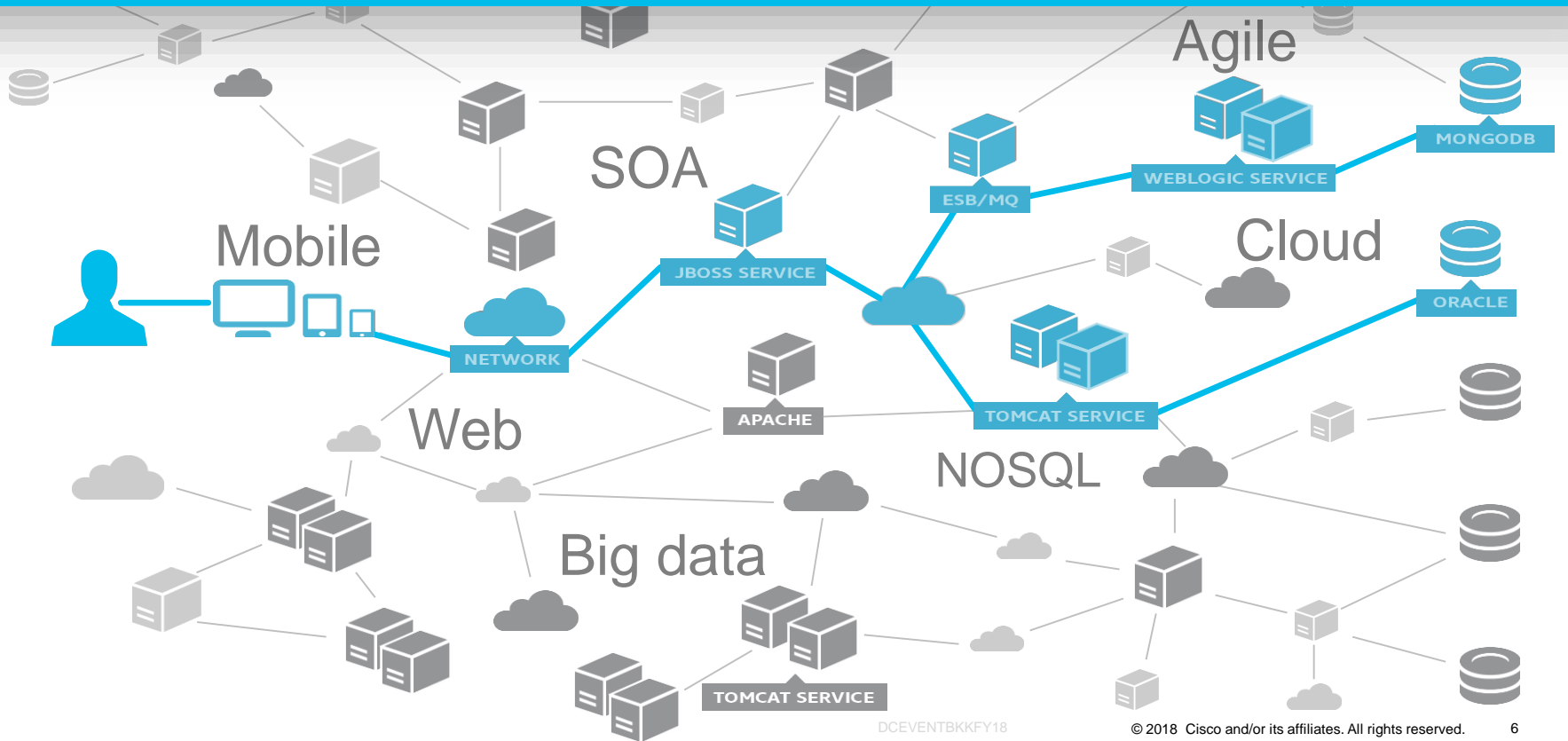
Business Case

Business Impact



The TRANSACTION

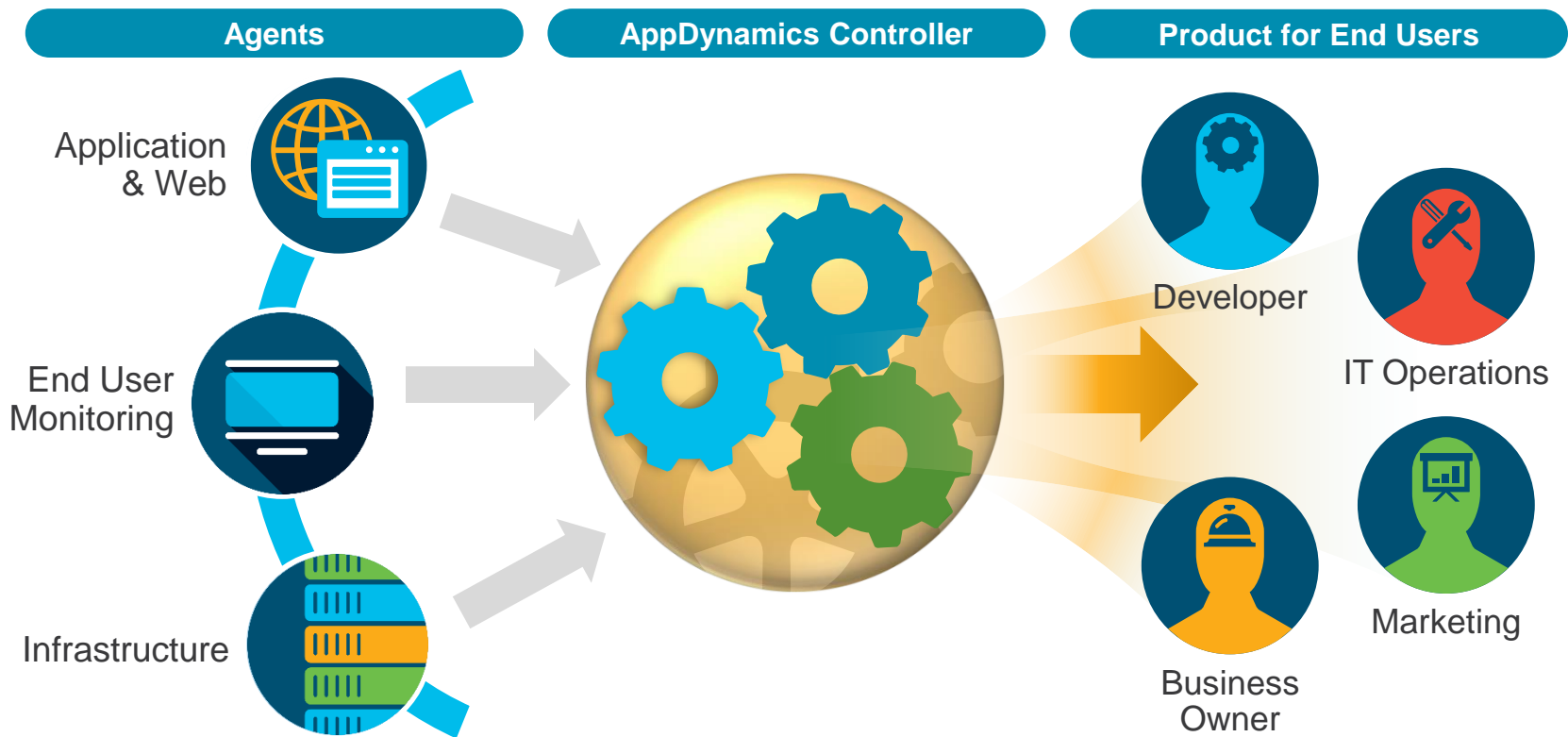
is one of the best measures of user experience and business impact



AppDynamics

The APM Solution

AppDynamics Components



The AppDynamics Solution

Application & Web Server Monitoring

- End-to-End Transaction Tracing
- Real-Time Visibility
- Detect Issues. Identify root cause



End User Monitoring

- Browser, Mobile Real User Monitoring
- End User Global Experience
- Synthetic Monitoring



Infrastructure Monitoring

- Application and Infrastructure Correlation
- Server Monitoring
- Database Monitoring



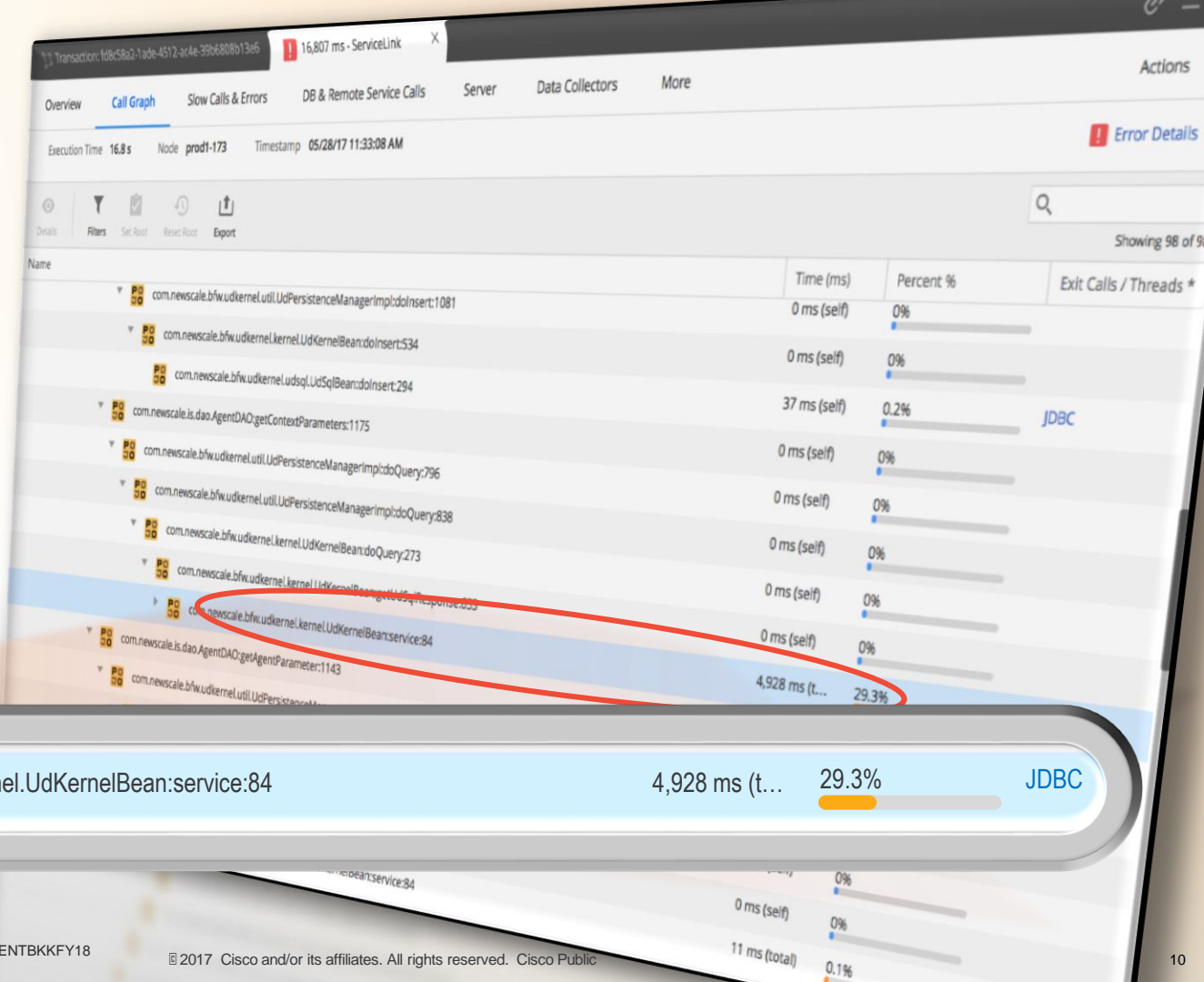
Application / Business iQ

- Transaction Analytics: Performance and Business
- Log Analytics
- Browser and Mobile Analytics: Contextual data



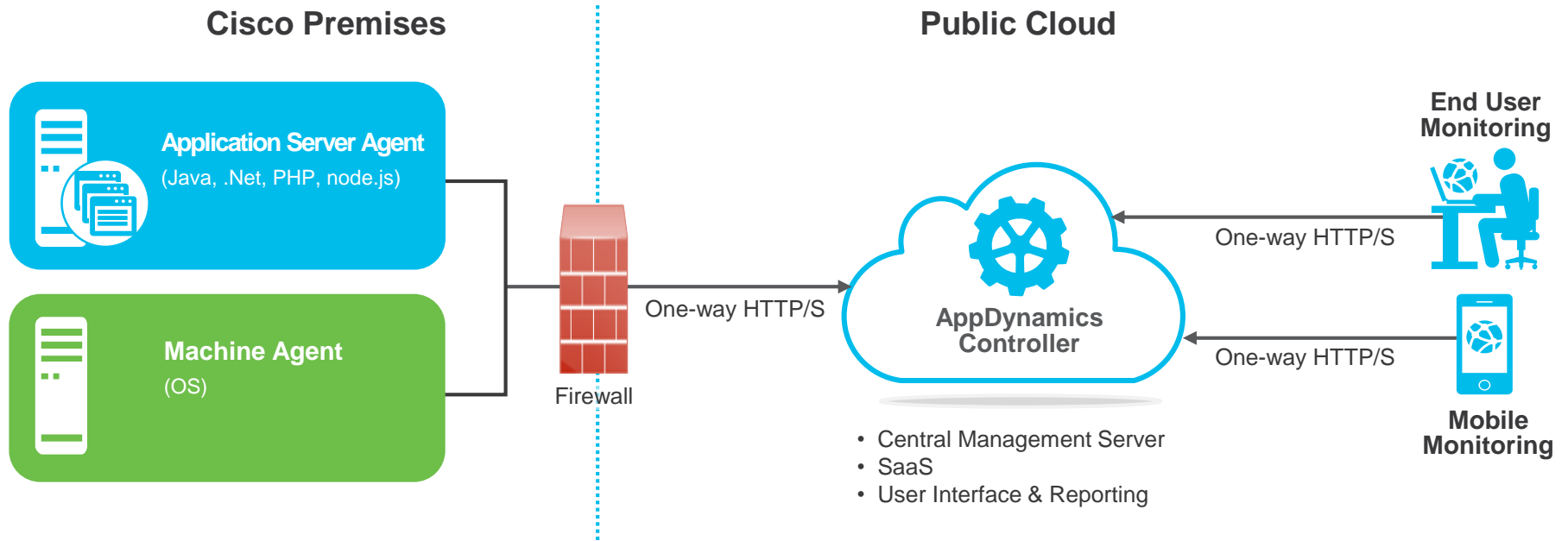
The “How”

- Byte Code Injection
- Deep Dive Analysis
 - Slow, Stalled, Error
 - Health Rule Violation



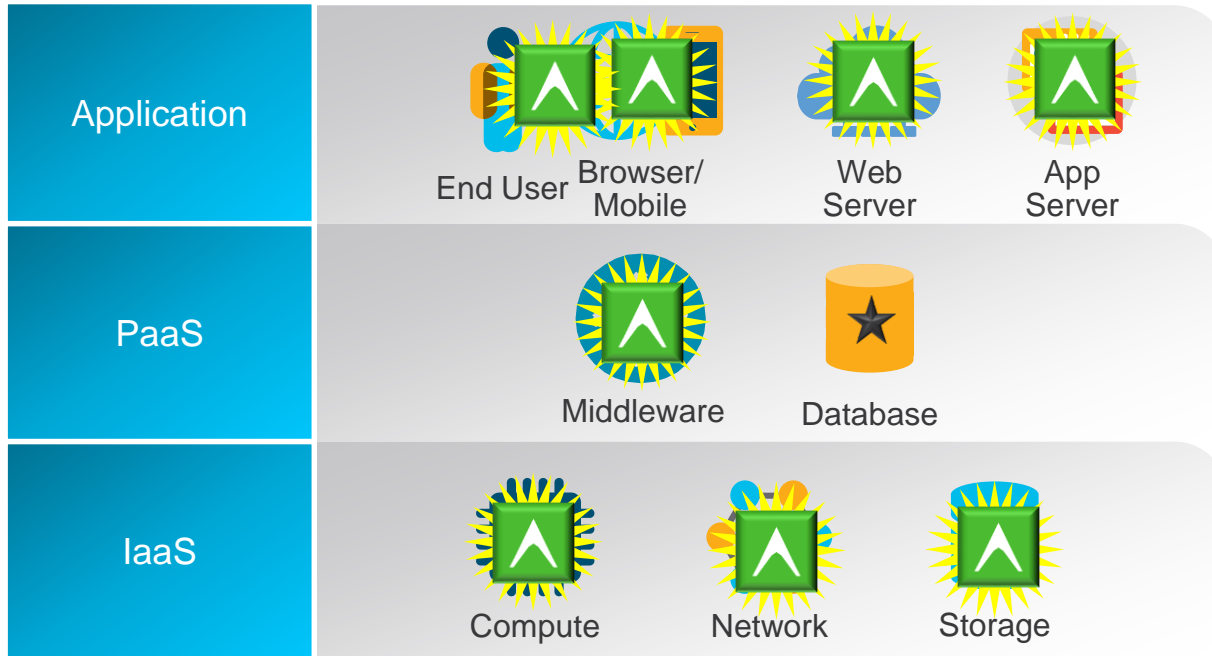
How Cisco IT Uses AppDynamics?



Cisco IT AppDynamics Architecture



Deployment Status

Performance Domains



-  Current Implementation
-  In-Flight / Future Implementation

Monitored Business Processes



Leasing & Finance



Annuities



Human Resources



Cisco Commerce



Customer Care



Collaboration



Supply Chain



Enterprise Data Services

3855

Licenses Deployed

3088

In Production

767

In Non-Production

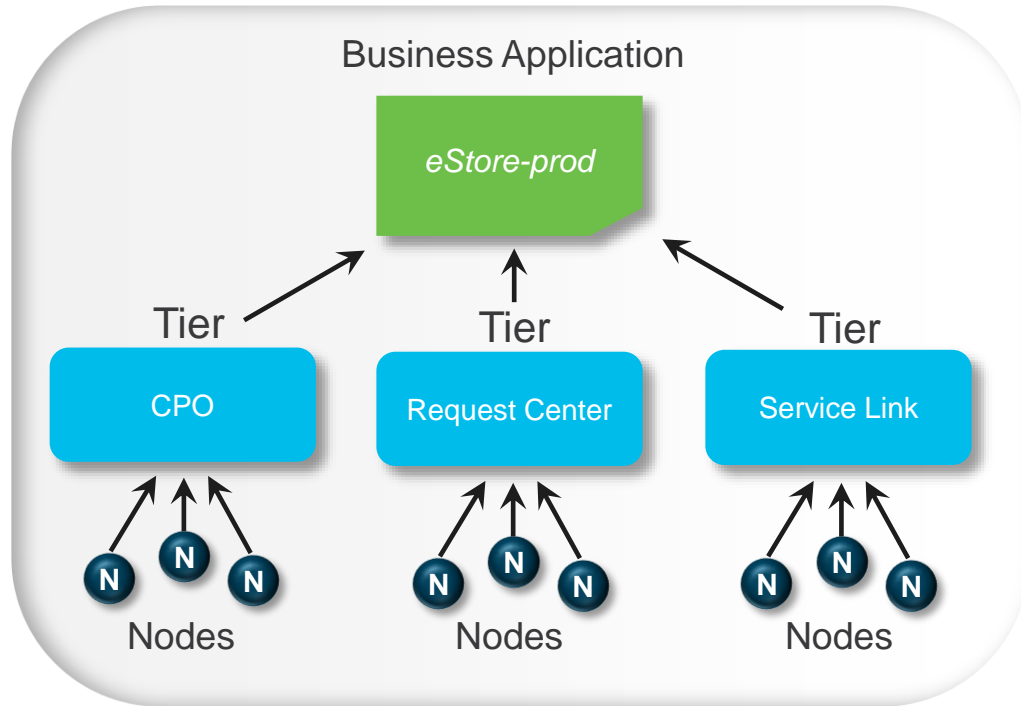
673

P1 & P2 Apps

AppDynamics

Walkthrough

Step 1 - Application Modeling on AppDynamics – A Prototype






Business Application —
a top-level container in AppDynamics that comprises of set of inter related services/applications called Tiers

Tier —
an individual service/application that connects one or more nodes. It generally interacts with other tiers to serve the business purpose

Node —
an individual application server or JVM on which you have installed an AppDynamics agent










AppDynamics Home Page

Home

 last 15 minutes  

Overview Unified Monitoring Getting Started

Recently Visited

-  EndpointMessageListener:ISEEOutboundQue...
-  EndpointMessageListener:ISEEOutboundQue...
-  Business Transactions
-  Tiers & Nodes
-  ServiceLink - Dashboard
-  RequestCenter - Dashboard
-  prod1-171 - Dashboard
-  Tiers & Nodes
-  eStore-prod - Dashboard

Applications 344

90 critical, 17 warning, 237 normal









-  eStore
-  eStore-prod
-  GIT-ES-... Devices-eStore-p



User Experience

Browser Apps 23

-  ANNUITY-p
-  ASDC
-  CCW
-  CCW_NGW
-  CCW_Renewals_NonProd
-  CdrSearch-prod

Mobile Apps 0

No Mobile Apps

[Get Started](#)



Databases 13

0 critical, 0 warning, 13 normal

-  BNP_LT_MongoDB_POC_Host1
-  BNP LT mongoDB POC Host2

Servers 150

8 critical, 0 warning, 31 normal

-  0a40b1aa8ab7
-  alfcms-app-doc-01

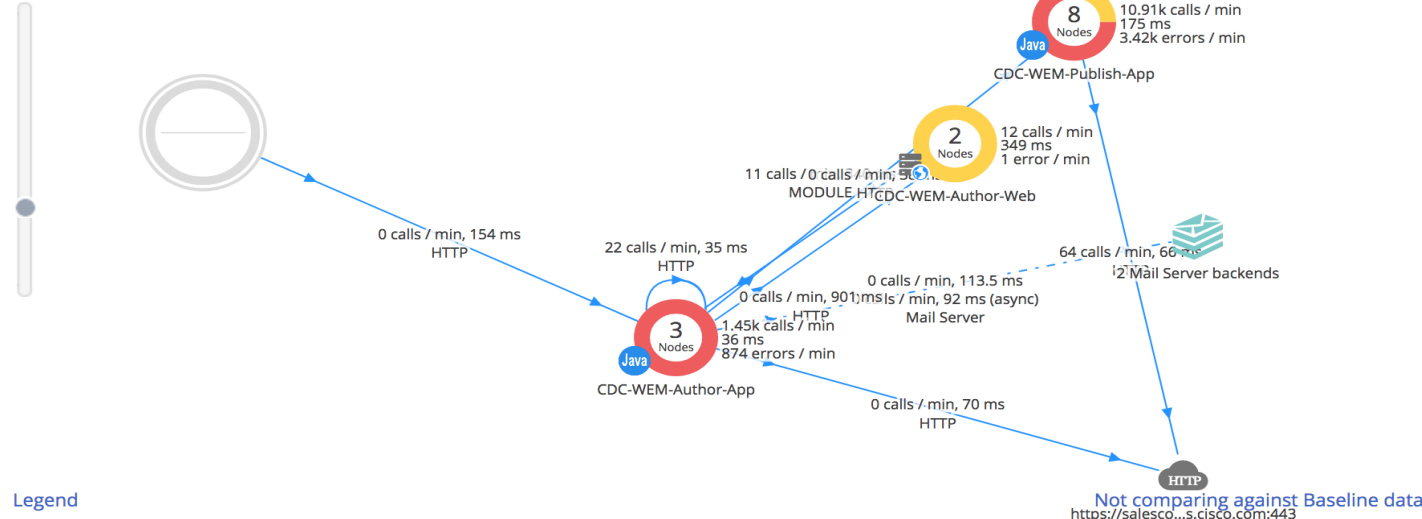
Analytics

 0 Transactions

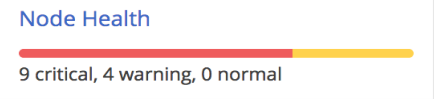
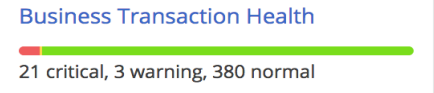
 0 Browser Requests

The Flow map | Scorecard View

Application Flow Map 3 Item(s) not shown in flowmap



Events

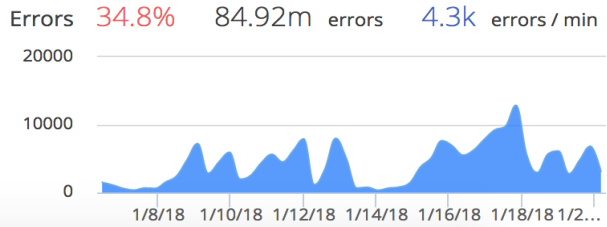
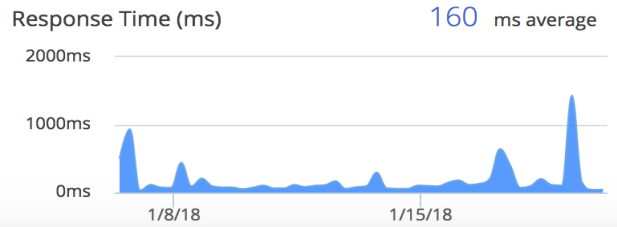
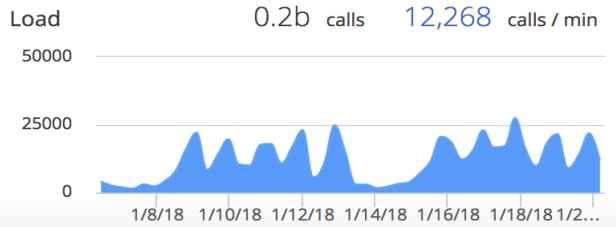


Transaction Scorecard

Normal		65.1 %	0.2b
Slow		0.1 %	0.2m
Very Slow		0.1 %	0.2m
Stall		0.0 %	10.3k
Errors		34.8 %	84.9m

Exceptions

Exceptions 18,492,041 975 /



End User Experience

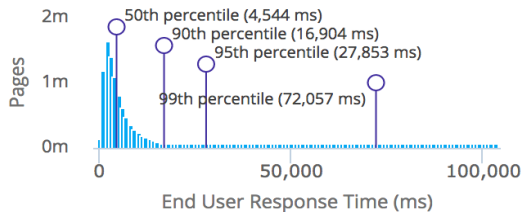
Overview

Geo Dashboard

Browser Snapshots

Usage Stats

End User Response Time Distribution



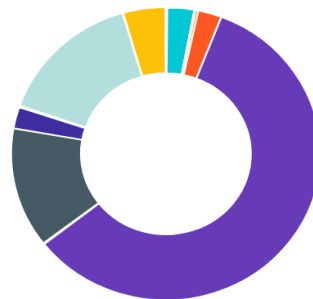
End User Response Time Trend



Browsers

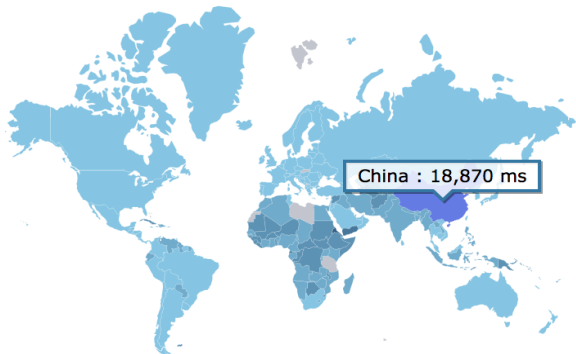
Top Ten

- Chrome
- Firefox
- Internet Explorer
- Android Mobile
- Safari
- Edge
- iOS Mobile
- iOS Chrome
- iOS App Web View
- Liebao browser



End User Response Time >

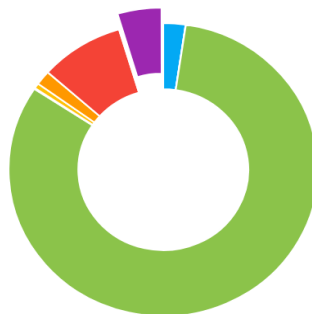
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Devices

Top Ten

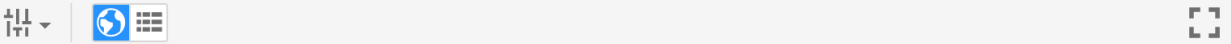
- Windows
- Mac
- Android
- iOS - iPhone
- Linux
- iOS - iPad
- Unknown
- Windows Mobile
- BlackBerry
- Samsung



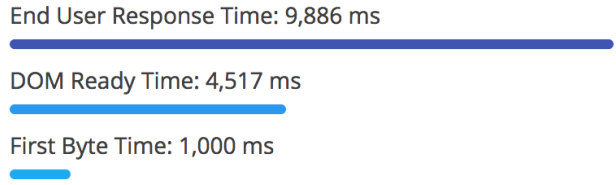
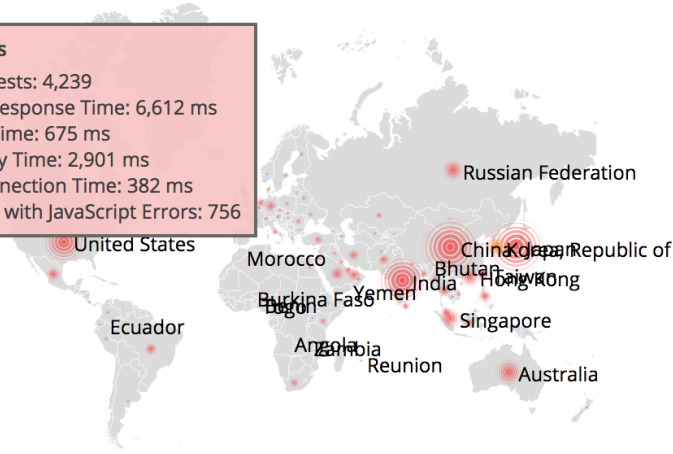
Top 5 Countries by Total Page Requests

United States	3,797,403 ...
India	2,335,926 ...
China	1,266,192 ...

End User Experience



United States
Page Requests: 4,239
End User Response Time: 6,612 ms
First Byte Time: 675 ms
DOM Ready Time: 2,901 ms
Server Connection Time: 382 ms
Page views with JavaScript Errors: 756



Highest End User Response Time

Togo	135,828 ms
Morocco	75,483 ms

Highest Total Page Requests

China	8,228 reqs
Japan	7,649 reqs

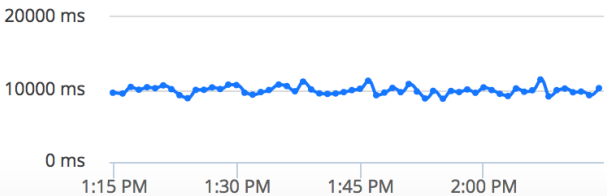
Page Requests

44.46k total 741 /min



End User Response Time

9,886 ms average



JavaScript Errors

18.5% 8,207 total 137 /min



Policies , Rules and Actions – Autonomous Operations

APPDYNAMICS Home Applications User Experience Analytics Dashboards & Reports

Policies CVC-SUM...

Create Edit Delete Copy | Enable Disable

Name ↑	Trigger	Enabled	Action
Agent stopped ...	Health Rule Violation Events: Health Rule Violation Started - Warning, Health Rule ...		
Business Trans...	Health Rule Violation Events: Health Rule Violation Started - Critical, Health Rule Vi...		
Business Trans...	Health Rule Violation Events: Health Rule Violation Started - Critical, Health Rule Vi...		

ACTION TEMPLATES

Email Templates

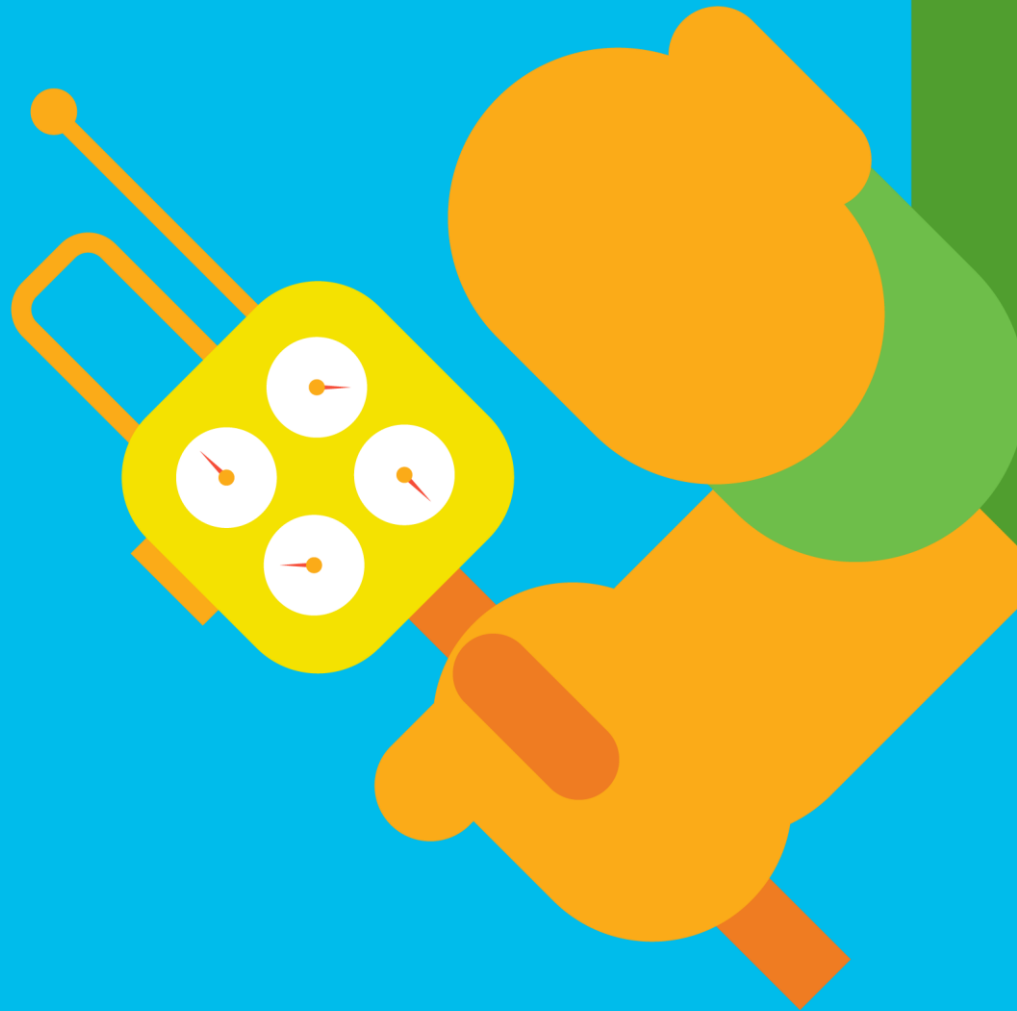
UTTER Downward Templates

AppDynamics

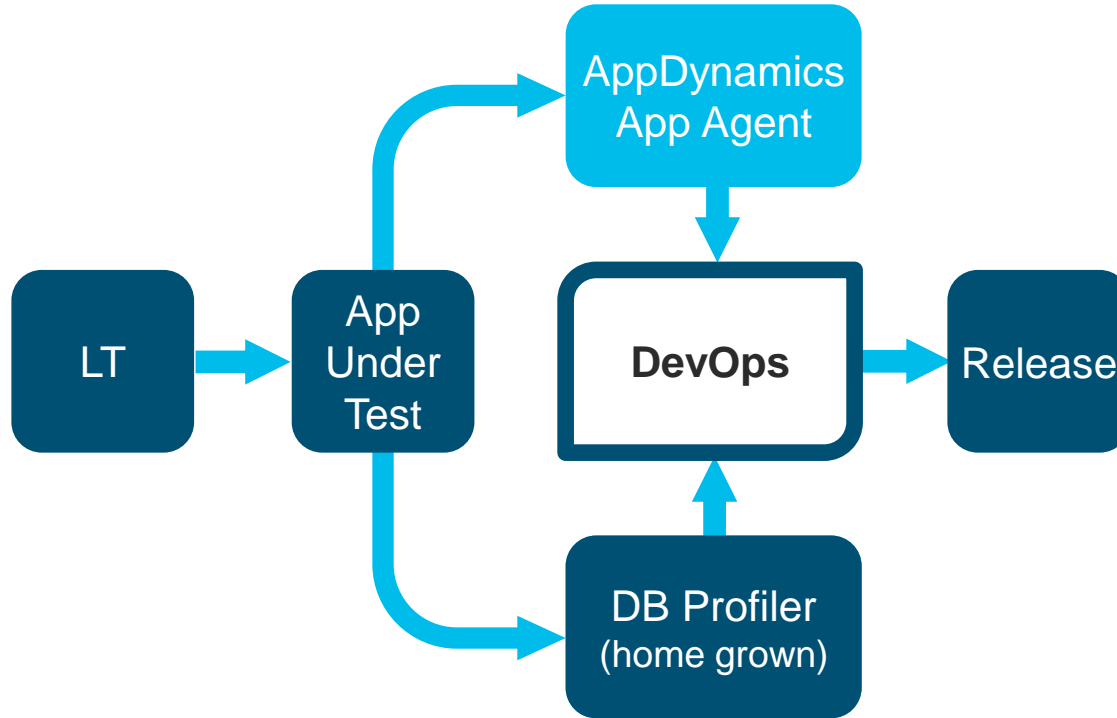
Case Studies in Cisco IT

Application Developers

- Quality & Speed



Quality Shift-Left



Outcomes



Defects Reduction



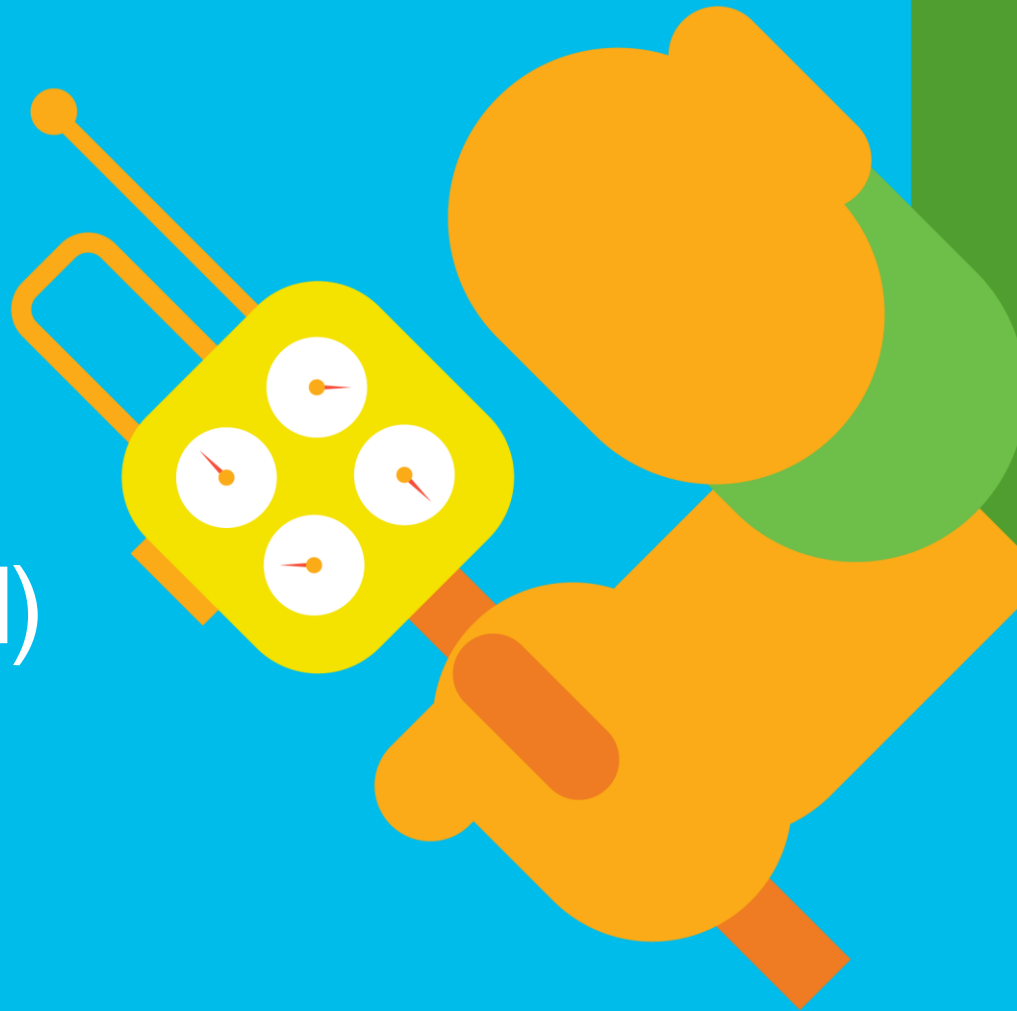
Quality Code



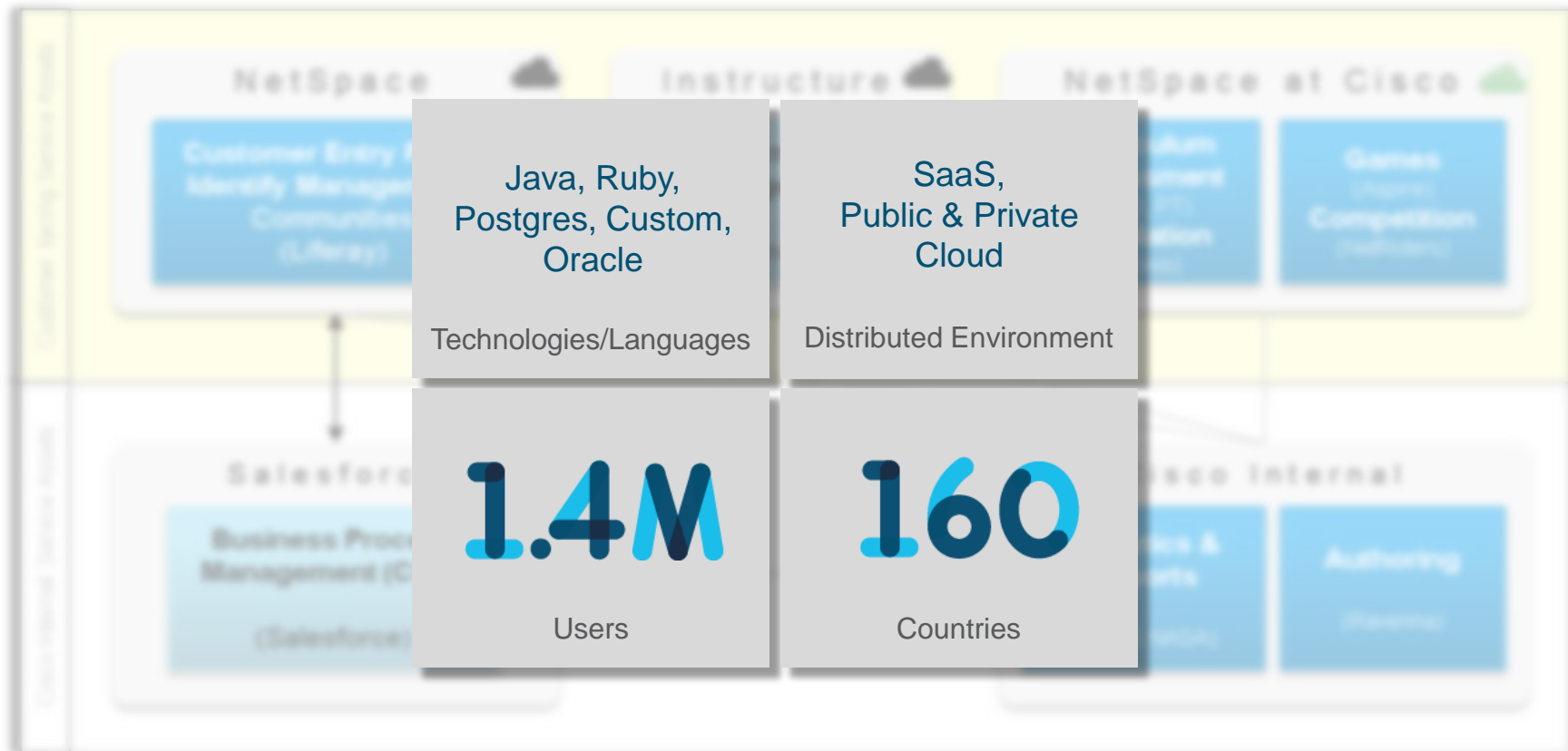
Lower Dev Cost

Cisco Networking Academy (NetAcad)

- End User Monitoring



NetAcad



NetAcad Challenges

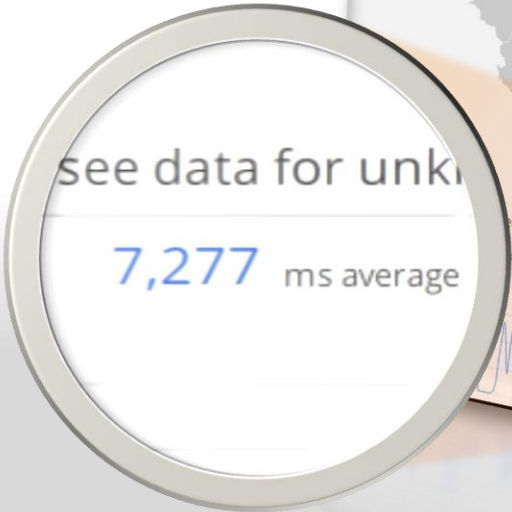
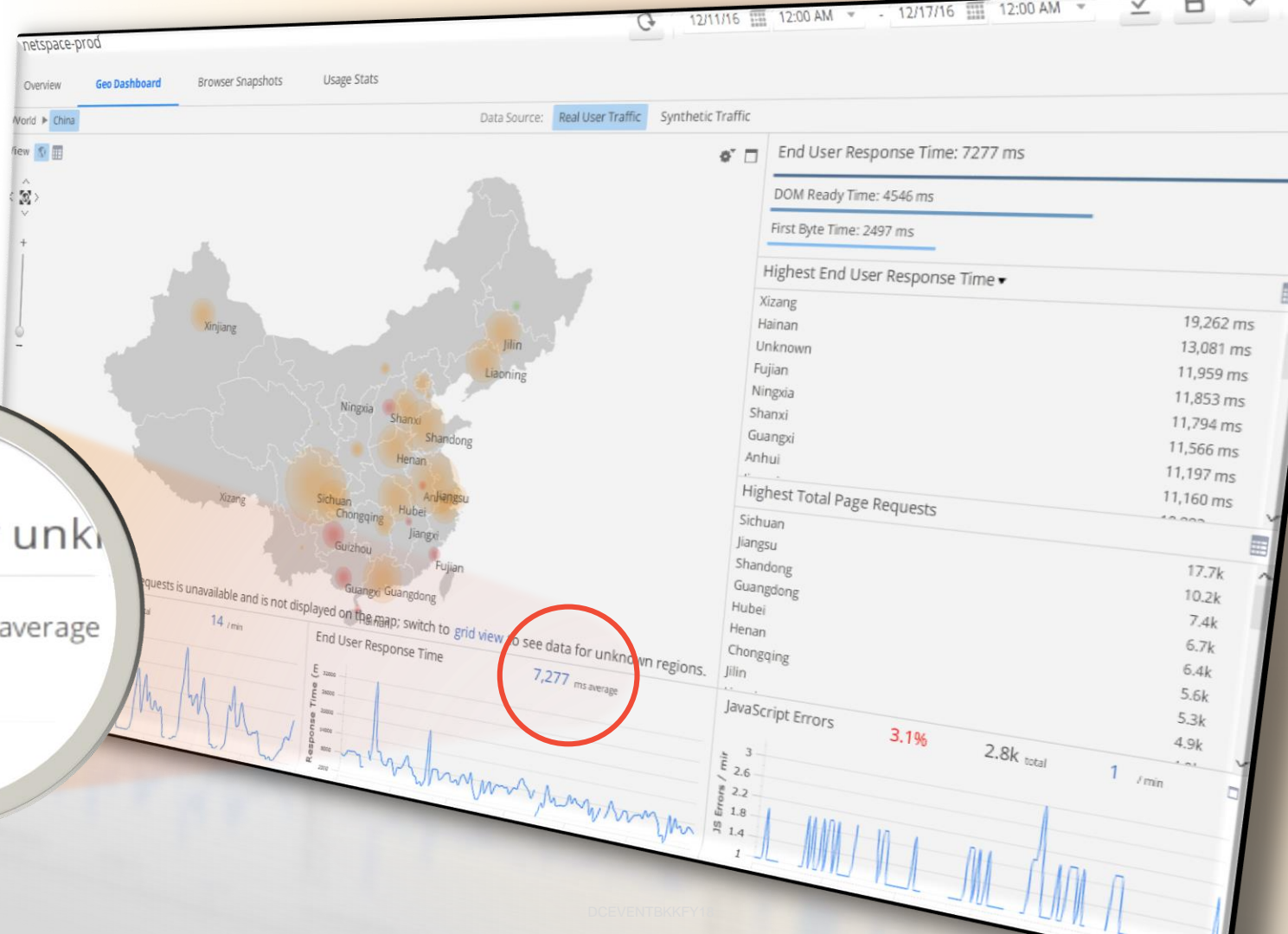


Frustrated Users

**Support Team:
Stumped**

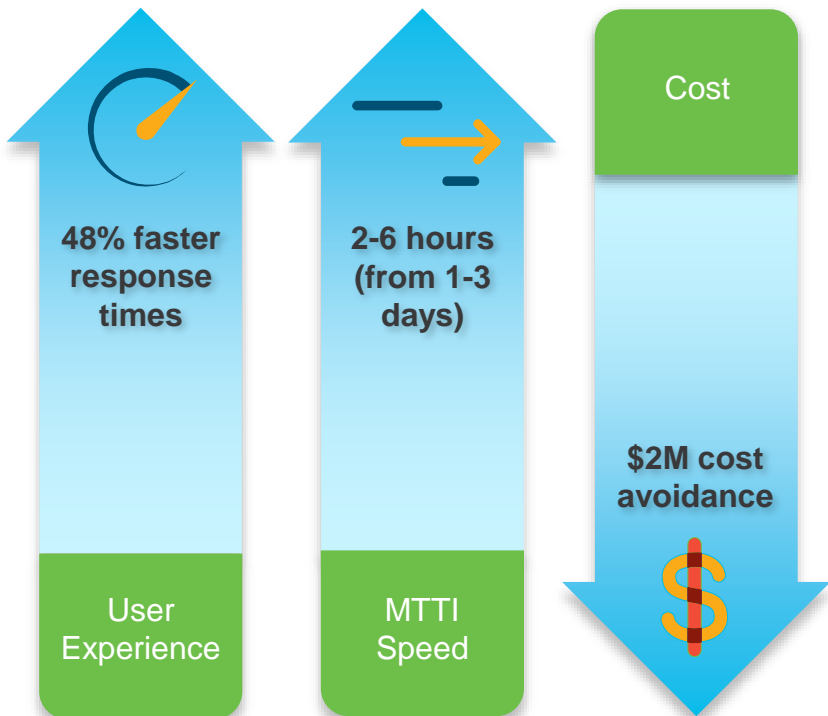


NetAcad: EUM



NetAcad: Value Realized

Operational Metrics



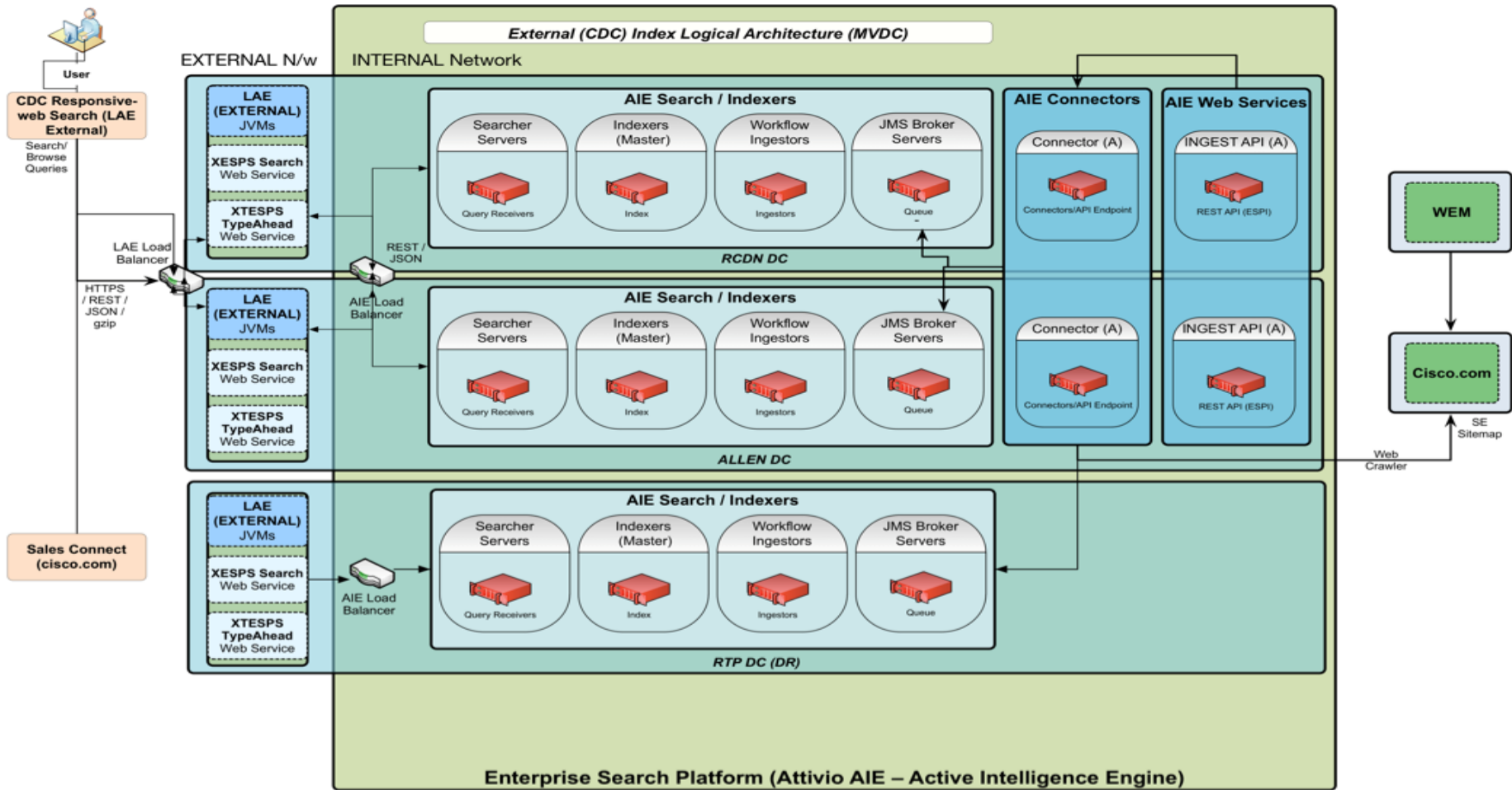
Business Metrics



Cisco OneSearch

- Complexity





The Complexity Battle



45 Websites

15M

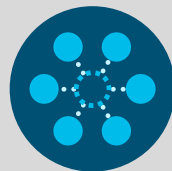
Web searches



6 Sub-systems

357

JVMs



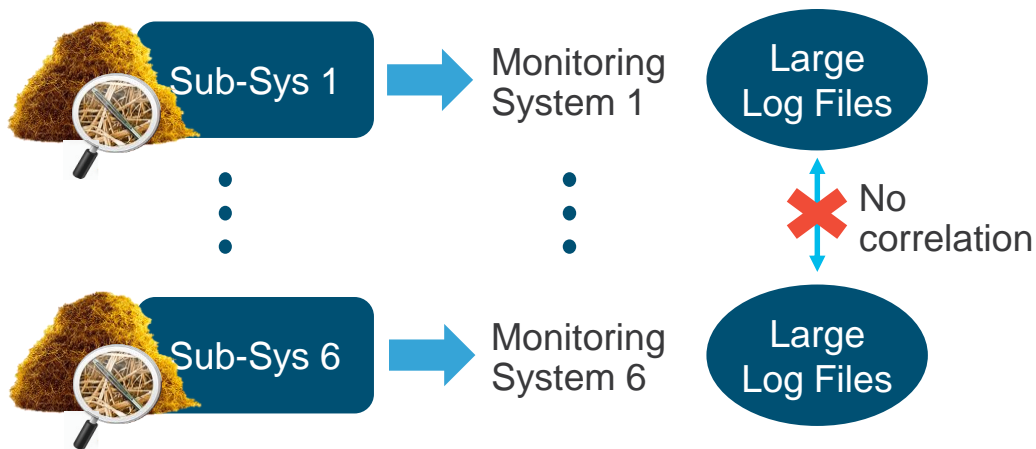
Distributed



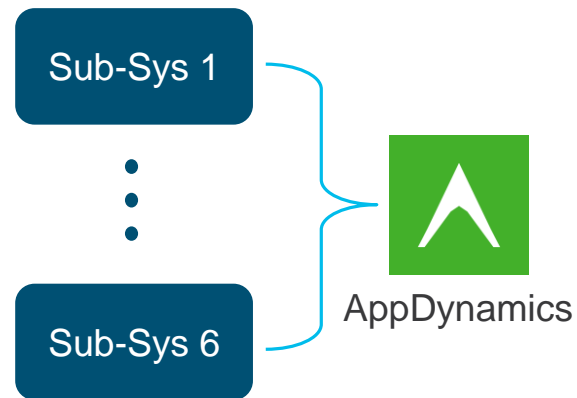
Heterogeneous

Monitoring Solutions

Siloed Monitoring Solution



Single Monitoring Solution



Lessons Learned

Not Yet Another Tool

One “complete stack” Deployment

Health Rules Fine Tuning

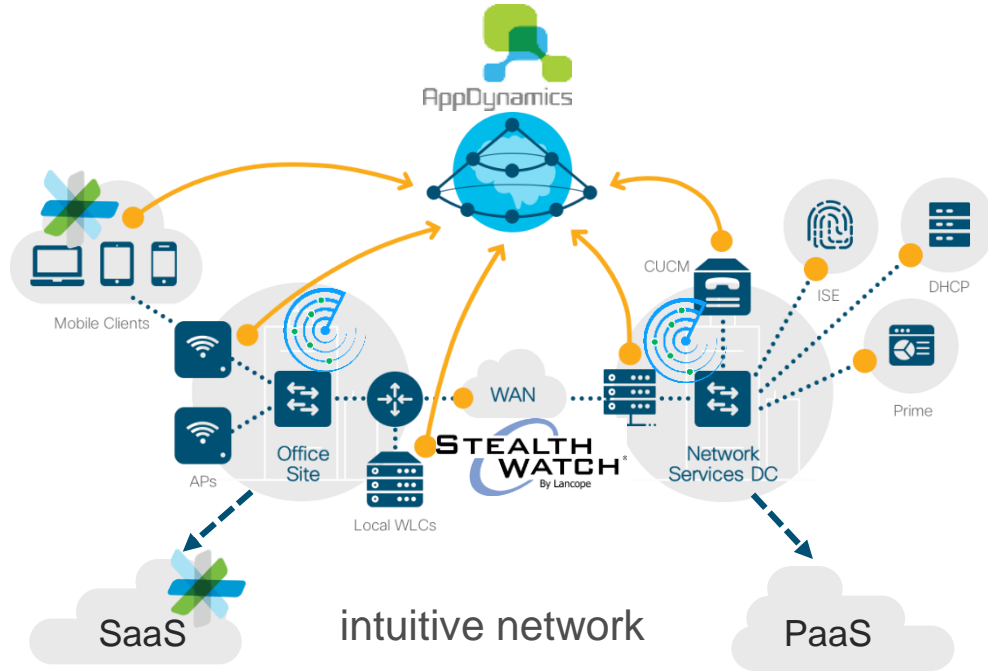
Effective Adoption

RBAC – Controller Overload

Cisco IT Vision

Self-Driving Operations

End to end visibility



Business Performance
Self Defending



Self Provisioning
Self Driving and Healing
Operations



Thank you