

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



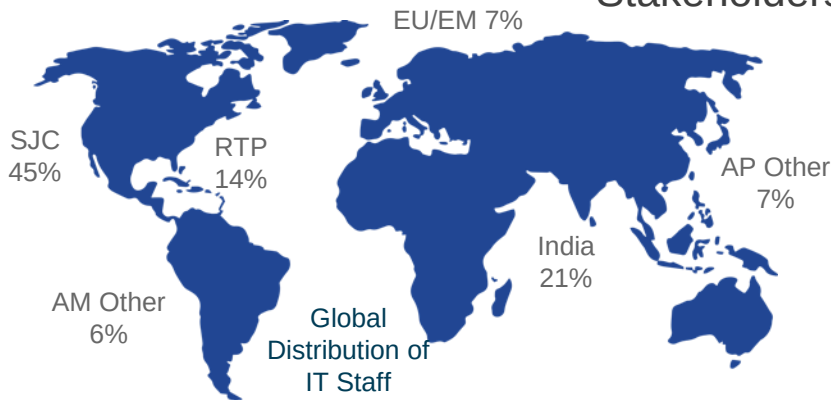
4.8 Billion
DNS Requests
Per Day



13,630
UCS Blades



26
Data Centers



60,900
Virtual Machines



<15 Min
Infra
Provisioning
Time



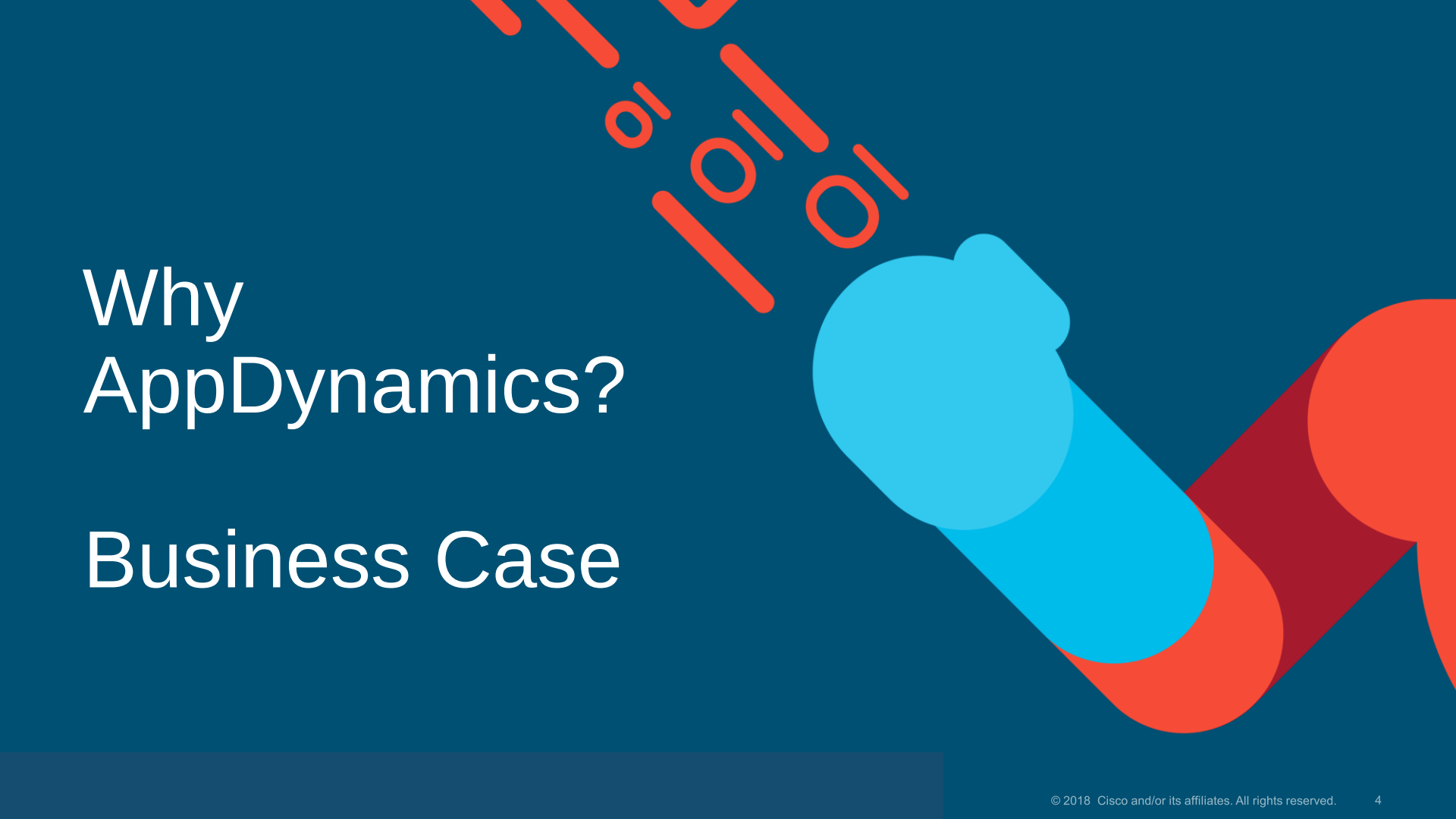
17,000
Containers



98 IT Services
3000 apps



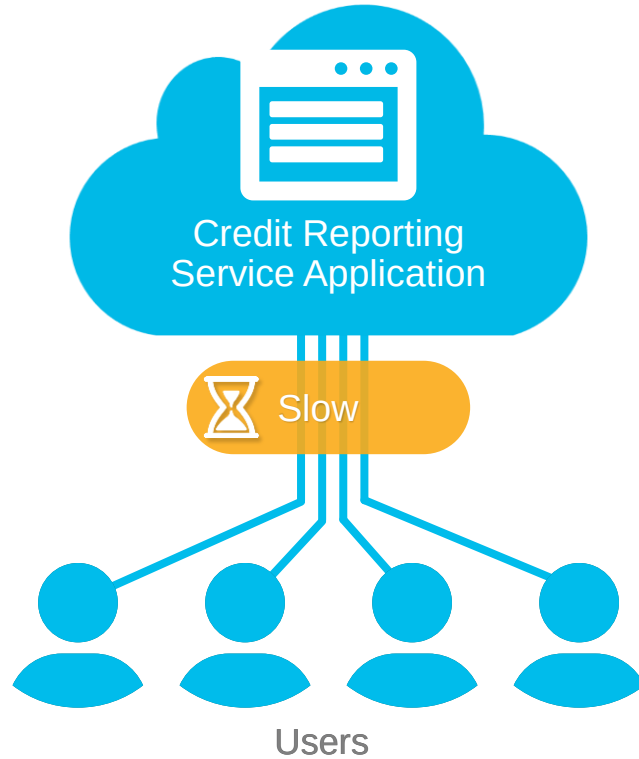
500+
SaaS Apps

An abstract graphic on a dark blue background. In the top right, there are several red diagonal lines and circles, resembling binary code or data flow. Below this, there are large, overlapping circles in light blue and red. A red diagonal line cuts through the lower right portion of the image, passing through the circles.

Why AppDynamics?

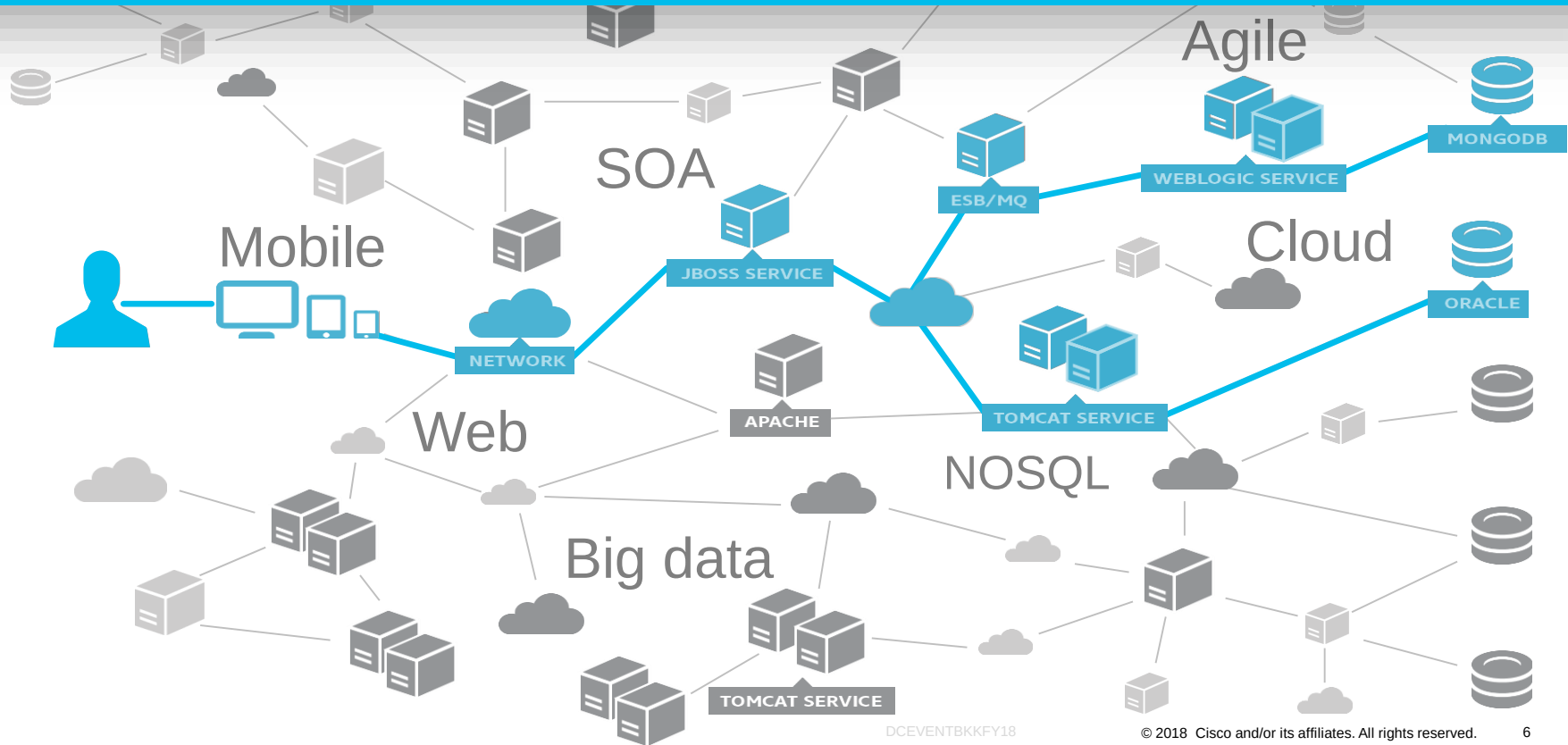
Business Case

Business Impact



The **TRANSACTION**

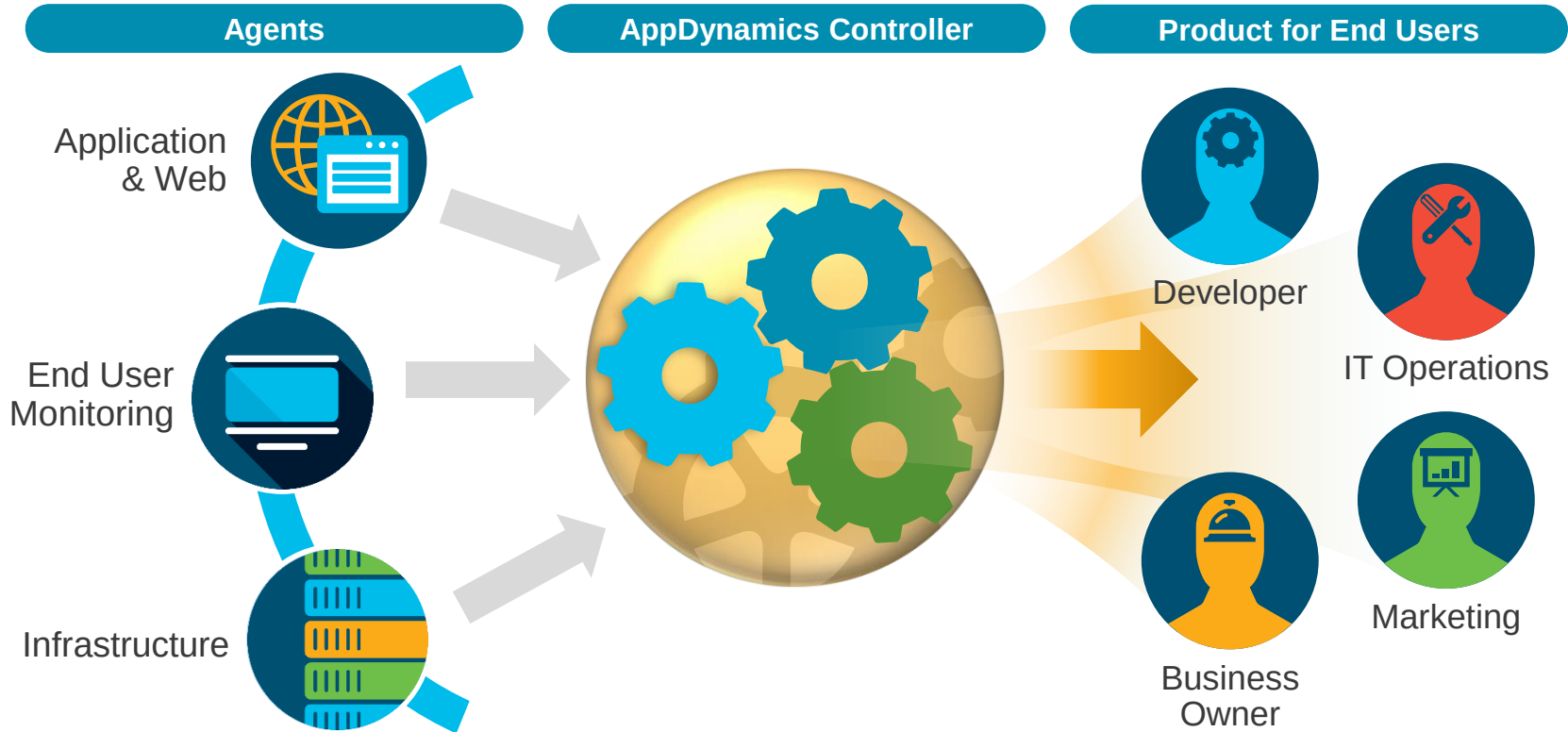
is one of the best measures of
user experience and business impact



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



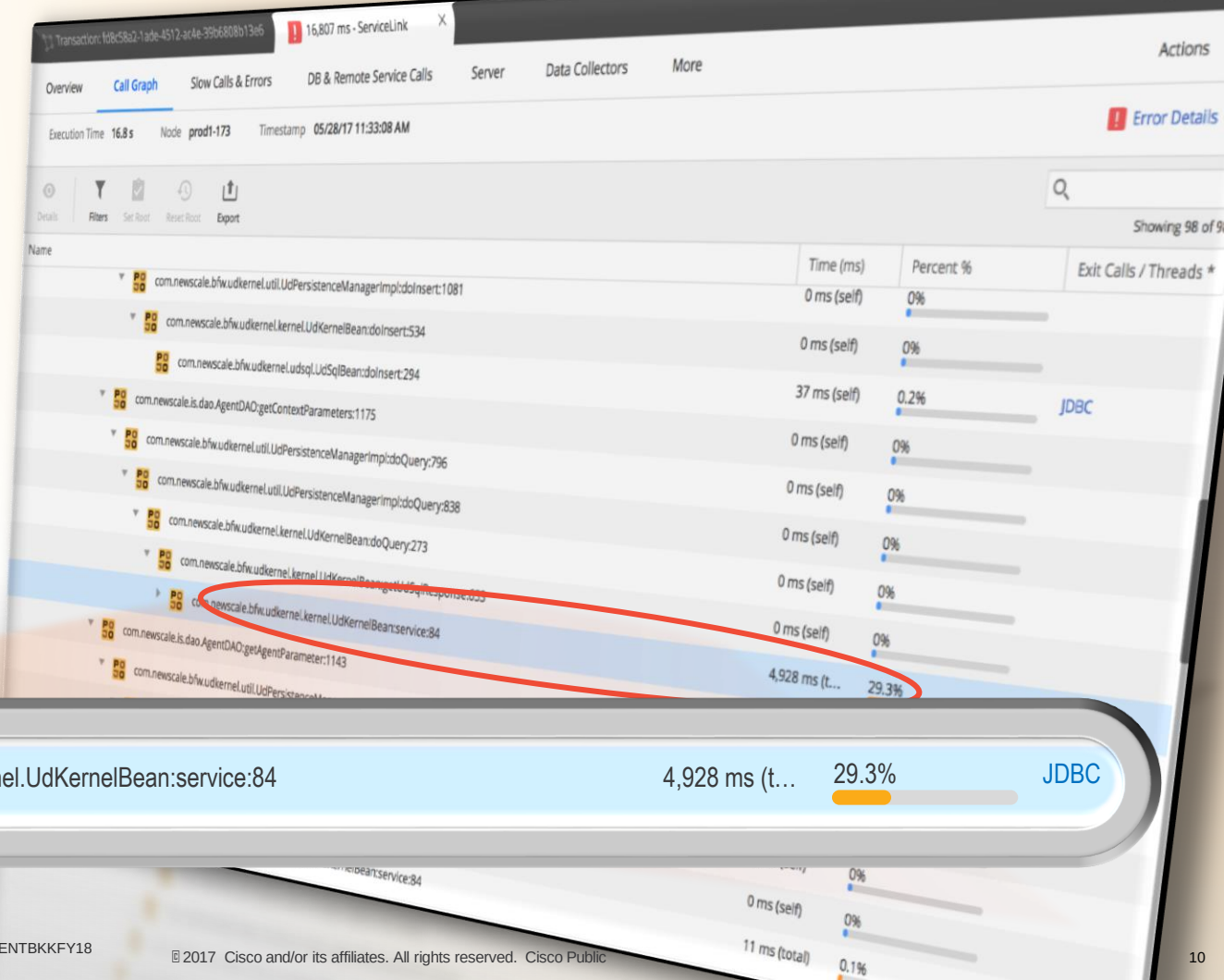
Application / Business iQ

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



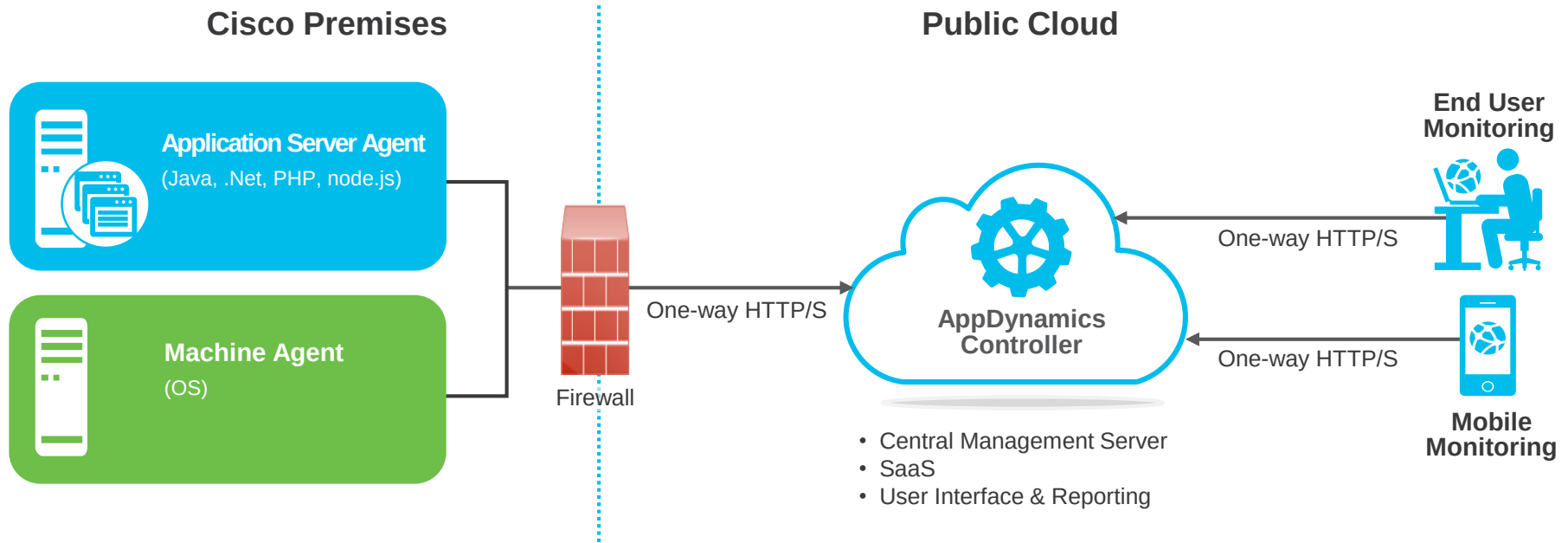
The “How”

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



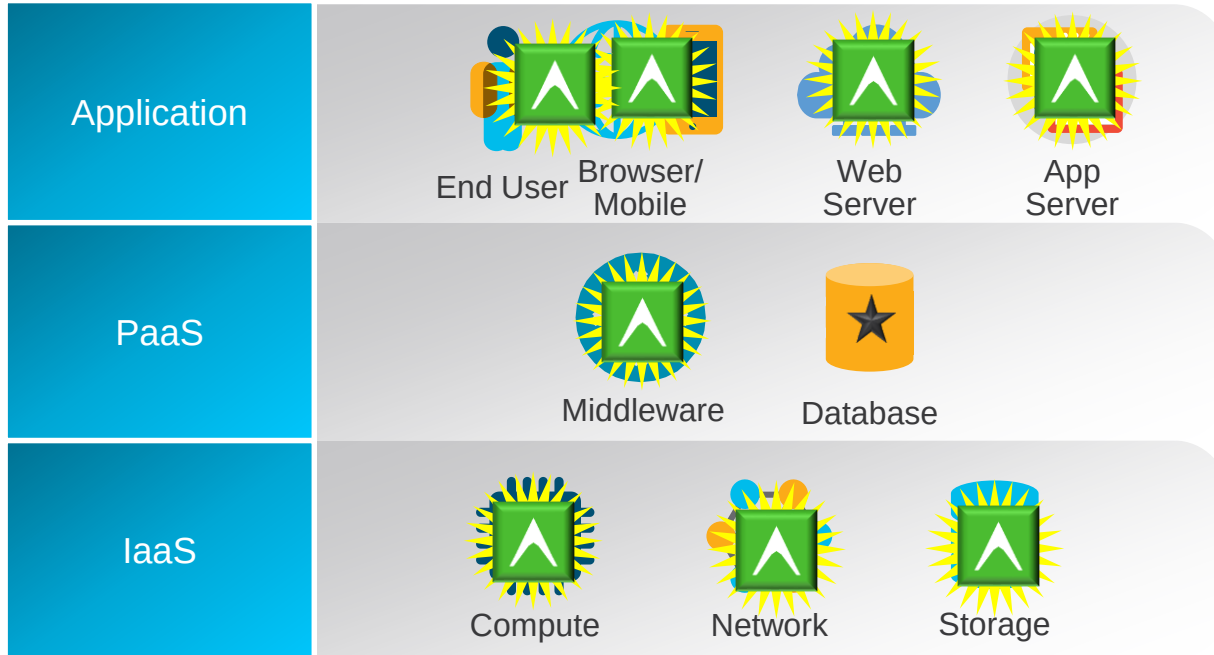
How Cisco IT Uses AppDynamics?

Cisco IT AppDynamics Architecture



Deployment Status

Performance Domains



Current
Implementation



In-Flight / Future
Implementation

Monitored Business Processes



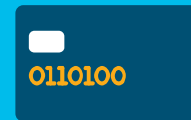
Leasing & Finance



Annuities



Human Resources



Cisco Commerce



Customer Care



Collaboration



Supply Chain



Enterprise Data Services

3855

Licenses Deployed

3088

In Production

767

In Non-Production

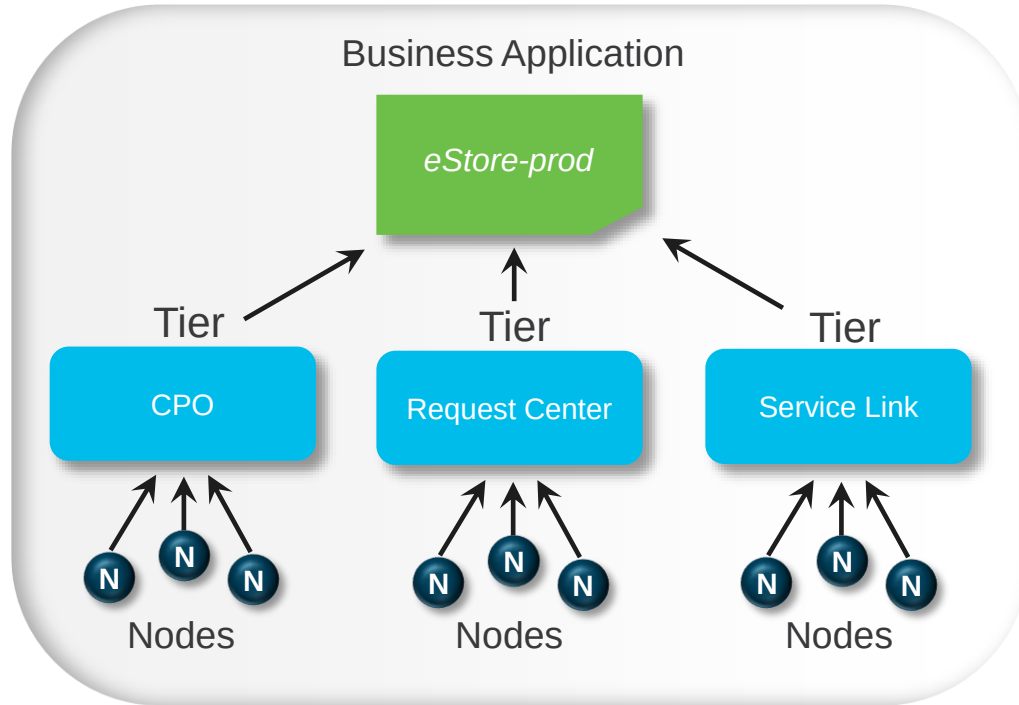
673

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

APPDYNAMICS

Home

Applications

User Experience

Databases

Servers

Analytics

Dashboards & Reports

Alert & Respond

⚙

Home

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

Q estore

X

eStore

eStore-prod

GIT-ES-Prod

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

Q

BNP_LT_MongoDB_POC_Host1

BNP LT mongoDB POC Host2

Servers 150

8 critical, 0 warning, 31 normal

Q

0a40b1aa8ab7

alfcms-app-doc1-01

Analytics

0

Transactions

0

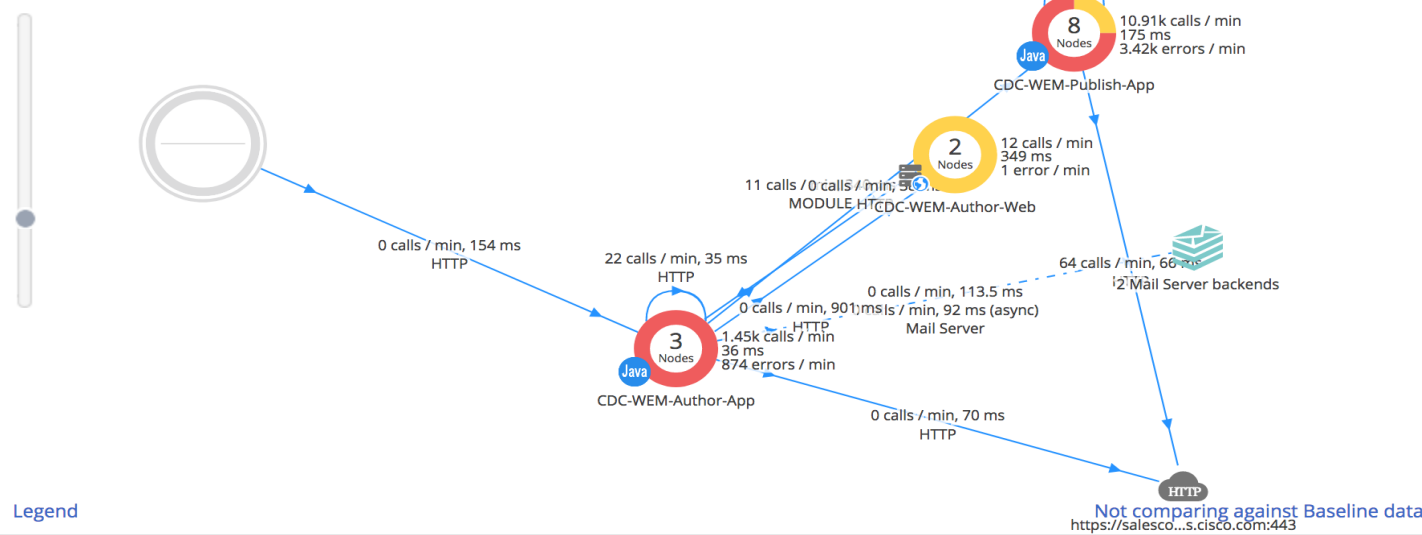
Browser Requests

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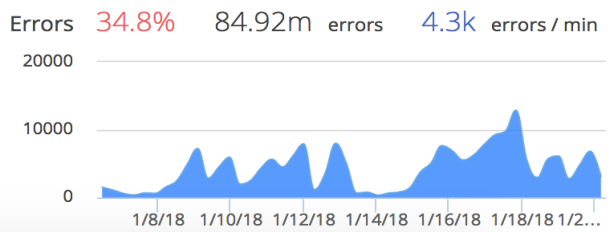
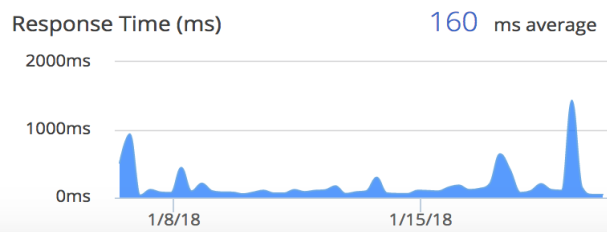
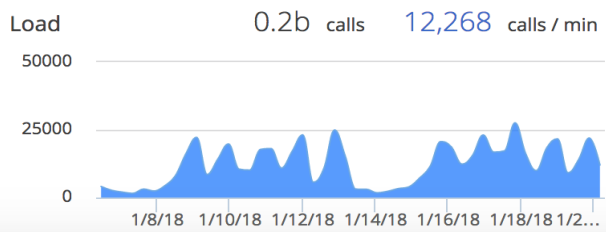
17

The Flow map | Scorecard View

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



Legend



Events

Business Transaction Health

Node Health

Transaction Scorecard

Exceptions

End User Experience

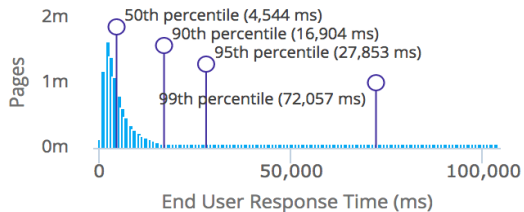
Overview

Geo Dashboard

Browser Snapshots

Usage Stats

End User Response Time Distribution



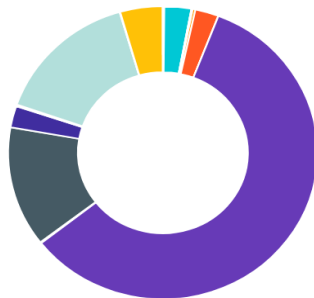
End User Response Time Trend



Browsers

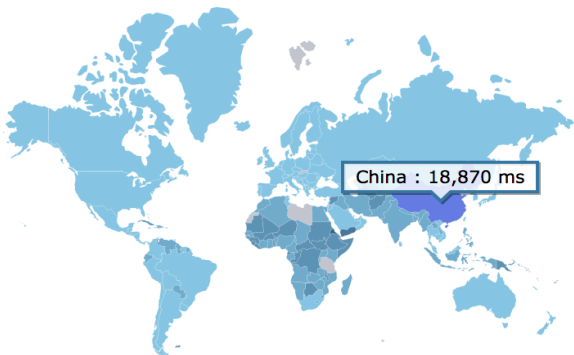
Top Ten

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



End User Response Time

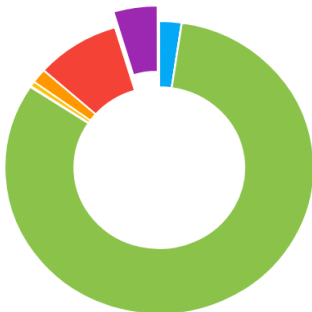
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Devices

Top Ten

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



Top 5 Countries by Total Page Requests

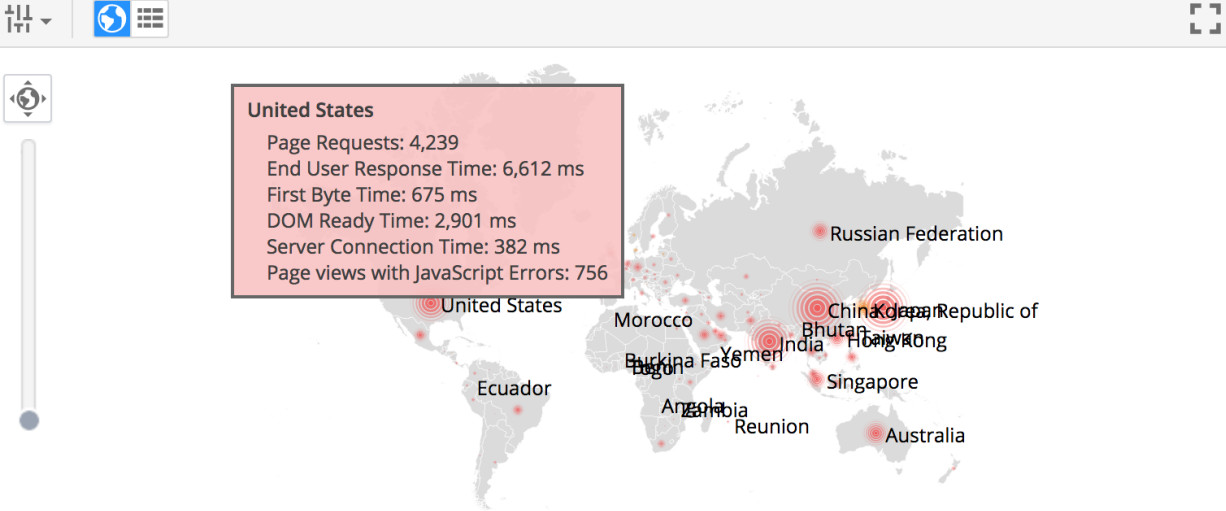
United States	3,797,403 ...
India	2,335,926 ...
China	1,266,192 ...

End User Experience

Overview **Geo Dashboard** Browser Snapshots Usage Stats

  World

View **Real User** ▾



End User Response Time: 9,886 ms

DOM Ready Time: 4,517 ms

First Byte Time: 1,000 ms

Highest End User Response Time ▾ 

Togo	135,828 ms
------	------------

Morocco	75,483 ms
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Highest Total Page Requests 

China	8,228 reqs
-------	------------

Japan	7,649 reqs
-------	------------

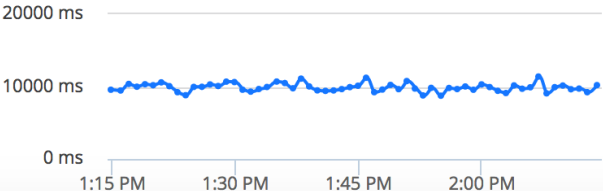
Page Requests

44.46k total 741 /min



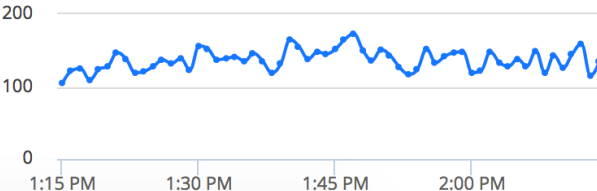
End User Response Time

9,886 ms average



JavaScript Errors

18.5% 8,207 total 137 /min



Policies , Rules and Actions – Autonomous Operations

APPDYNAMICS

HomeApplicationsUser ExperienceAnalyticsDashboards & Reports

Policies

Health Rules

Actions

Email Digests

ACTION TEMPLATES

Email Templates

HTTP Request Templates

Policies

CVC-SUM...

Create

Edit

Delete

Copy

Enable

Disable

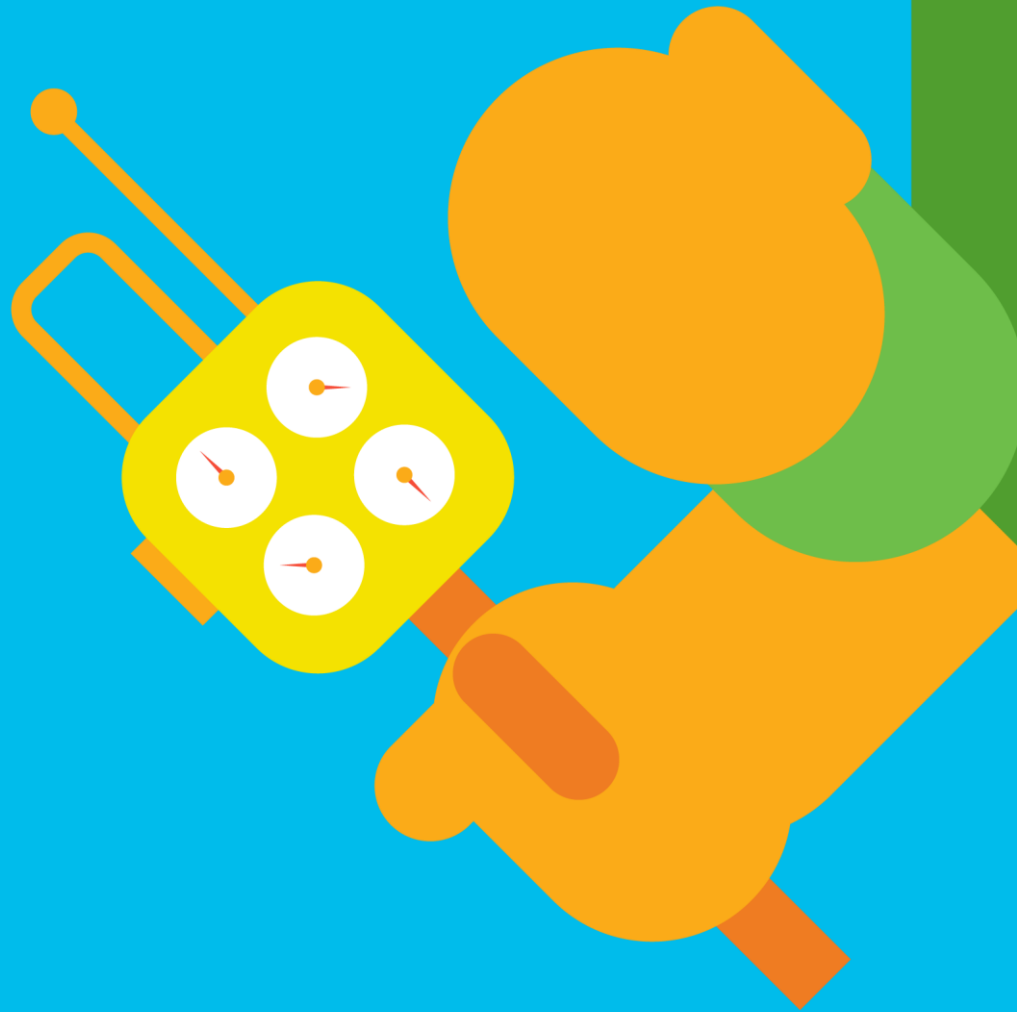
	Name ↑	Trigger	Enabled	Action
	Agent stopped ...	Health Rule Violation Events: Health Rule Violation Started - Warning, Health Rule ...		
	Business Trans...	Health Rule Violation Events: Health Rule Violation Started - Critical, Health Rule Vi...		
	Business Trans...	Health Rule Violation Events: Health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

AppDynamics

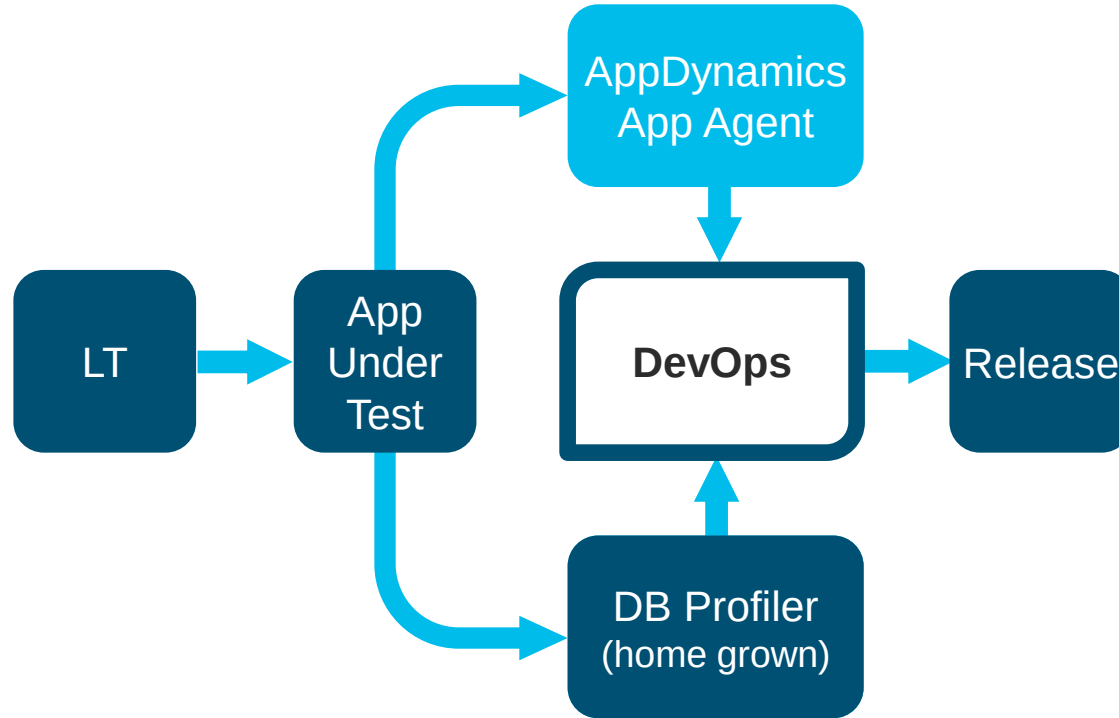
Case Studies in Cisco IT

Application Developers

- Quality & Speed



Quality Shift-Left



Outcomes



Defects Reduction



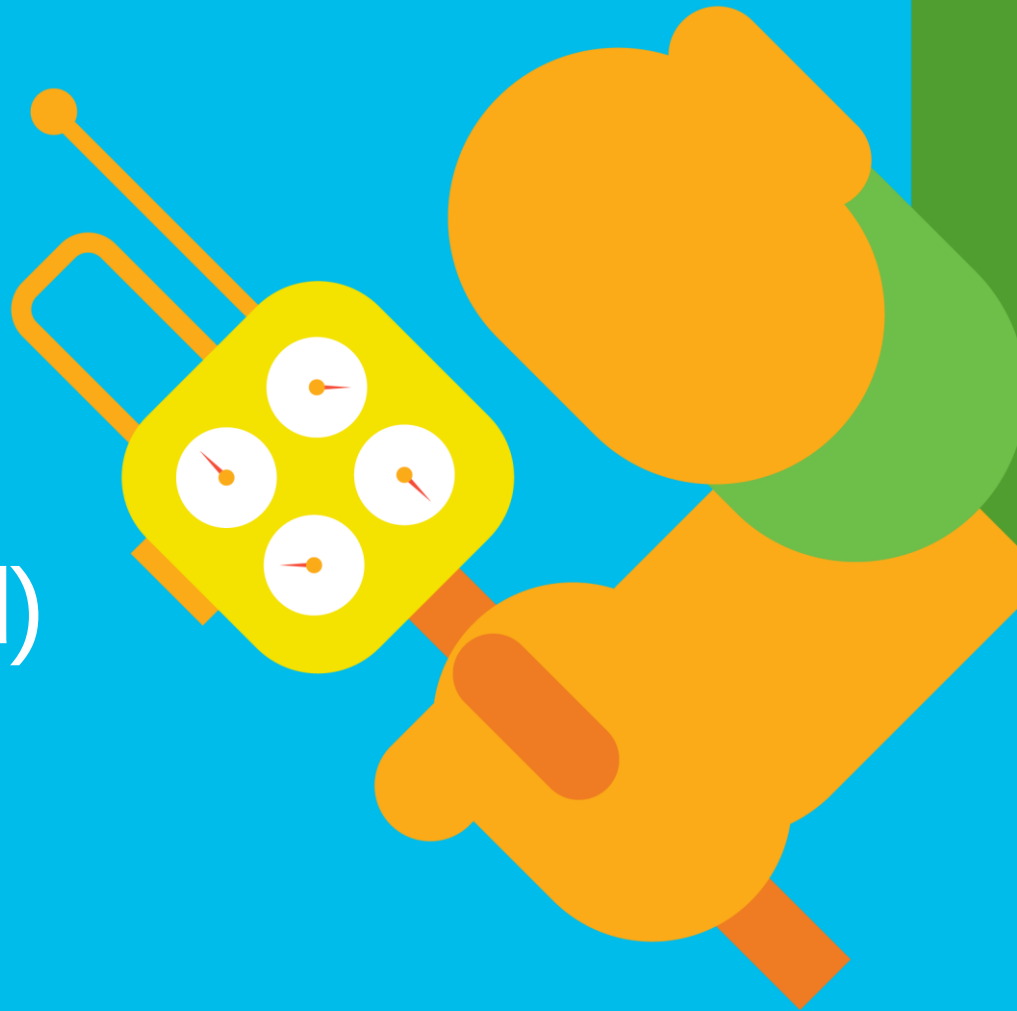
Quality Code



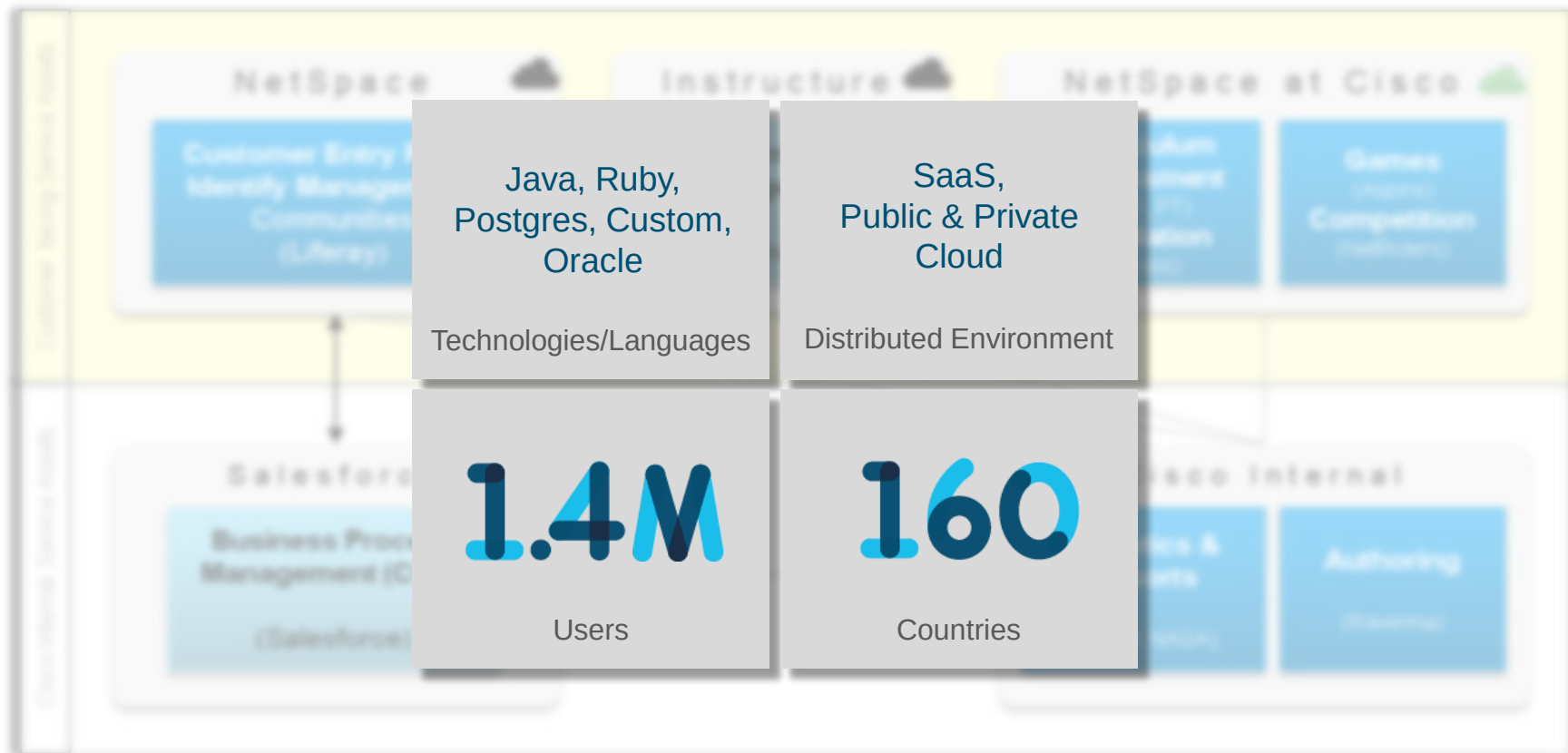
Lower Dev Cost

Cisco Networking Academy (NetAcad)

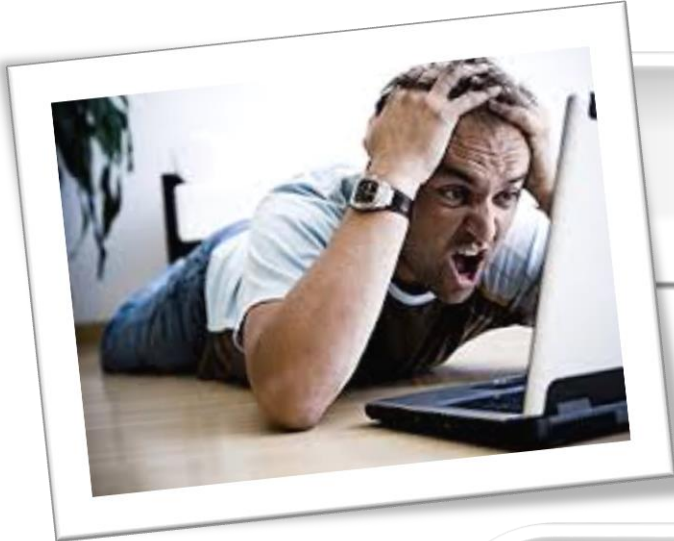
- End User Monitoring



NetAcad



NetAcad Challenges

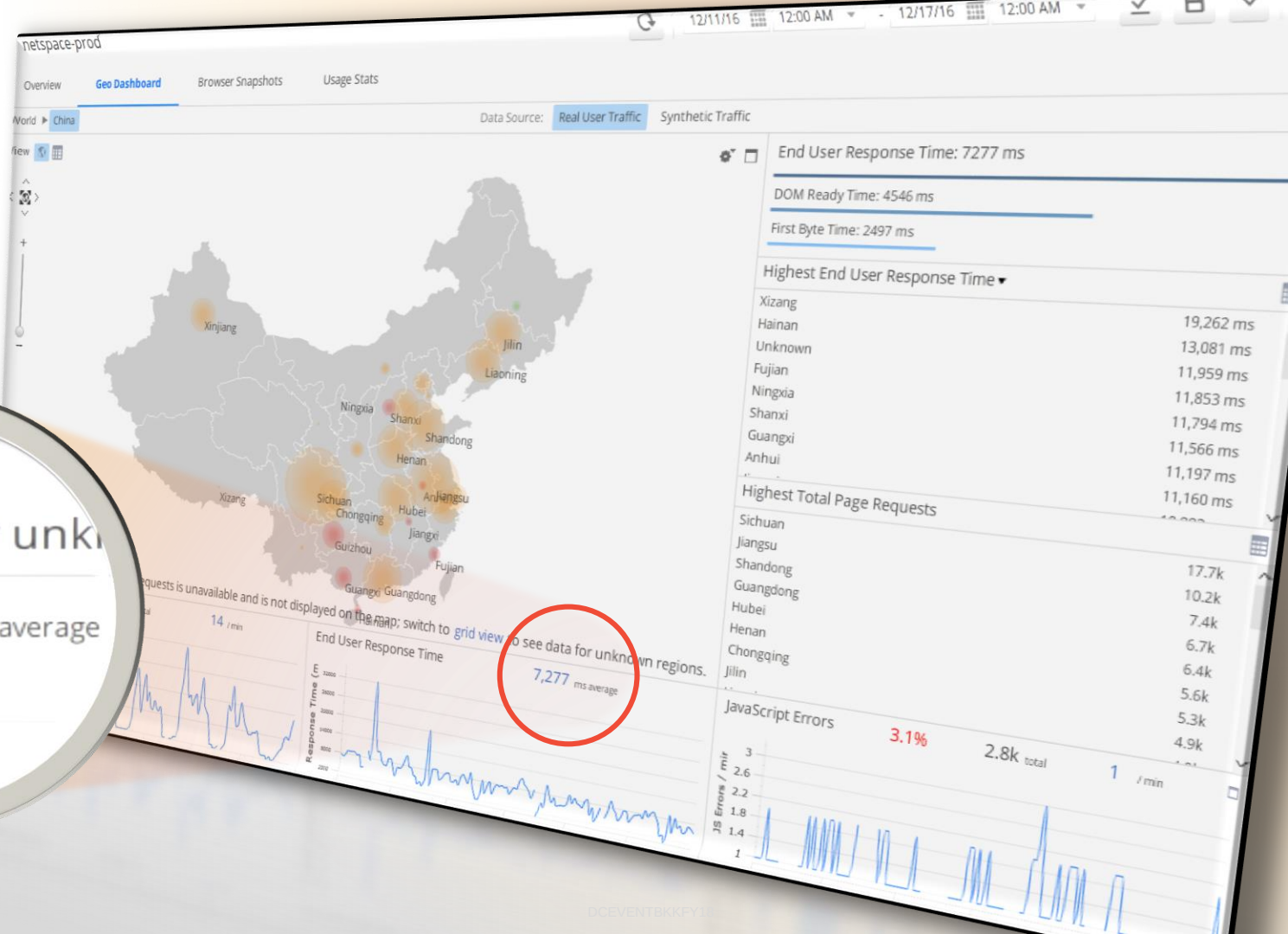


Frustrated Users



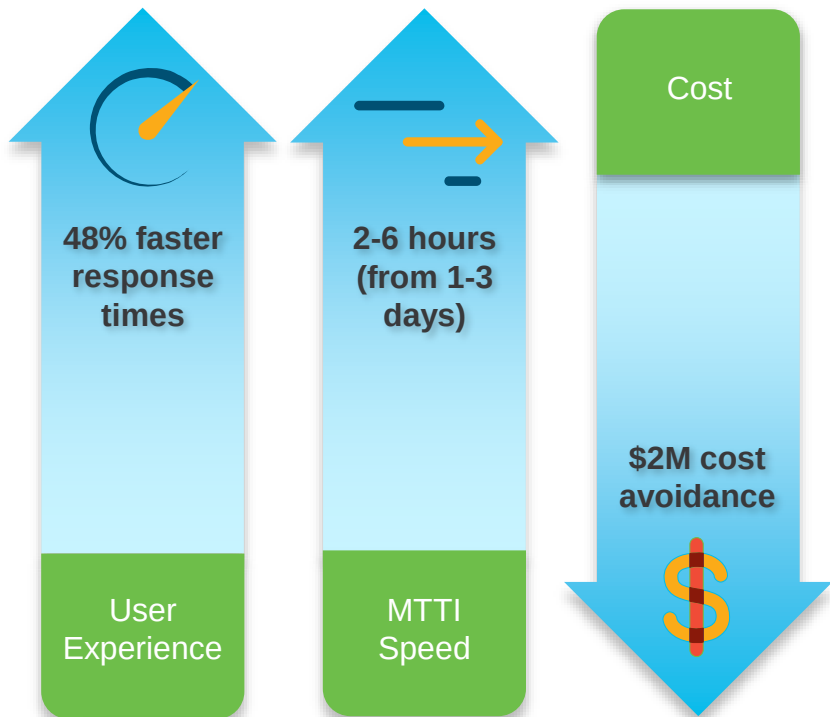
**Support Team:
Stumped**

NetAcad: EUM



NetAcad: Value Realized

Operational Metrics



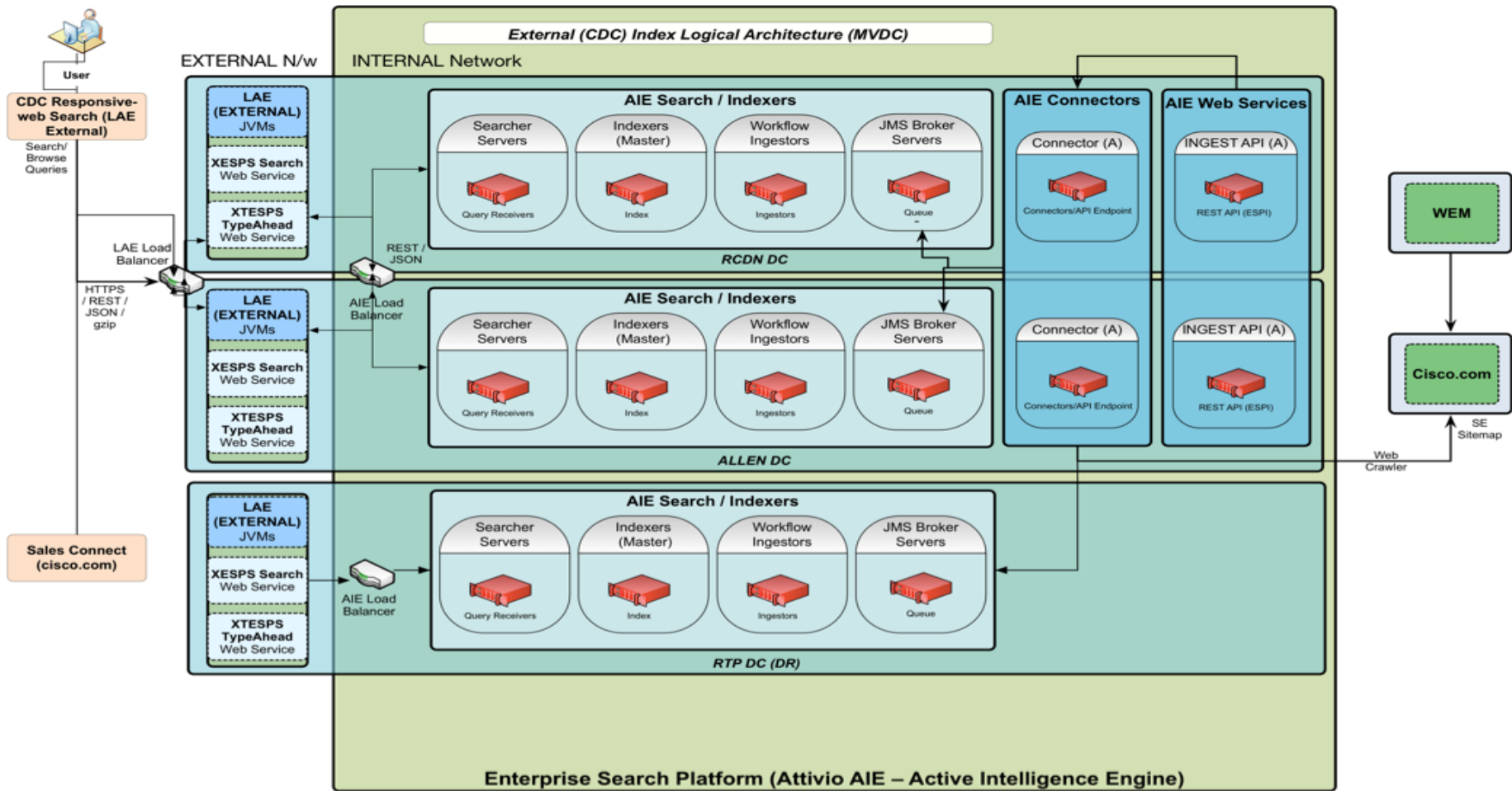
Business Metrics



Cisco OneSearch

- Complexity





The Complexity Battle



45 Websites

15M

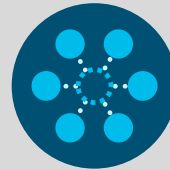
Web searches



6 Sub-systems

357

JVMs



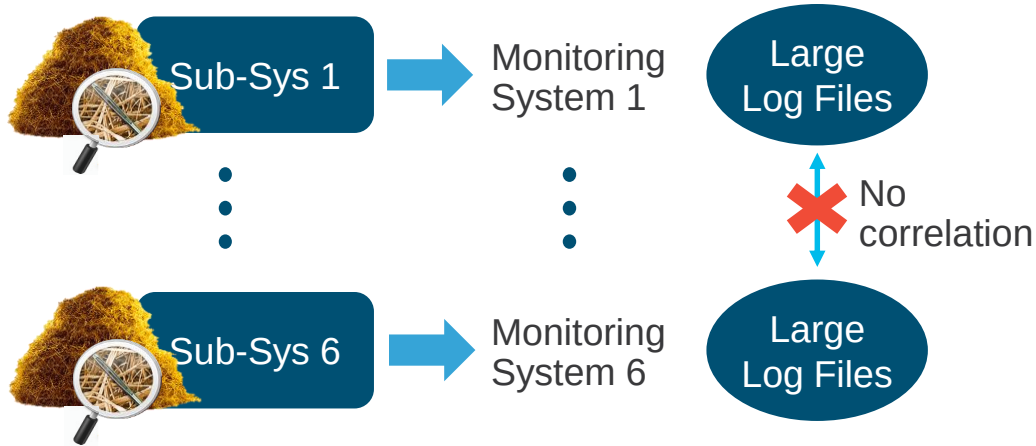
Distributed



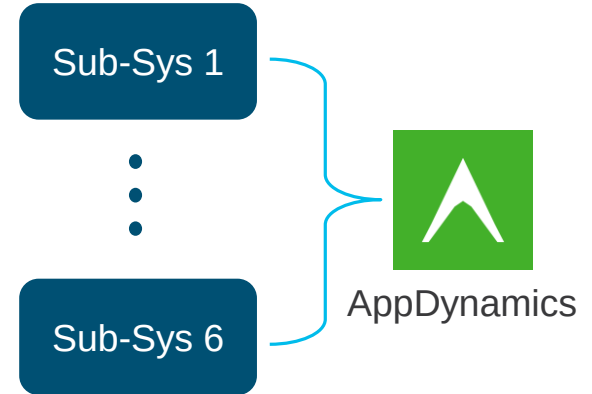
Heterogeneous

Monitoring Solutions

Siloed Monitoring Solution



Single Monitoring Solution



Lessons Learned

Not Yet Another Tool

One “complete stack” Deployment

Health Rules Fine Tuning

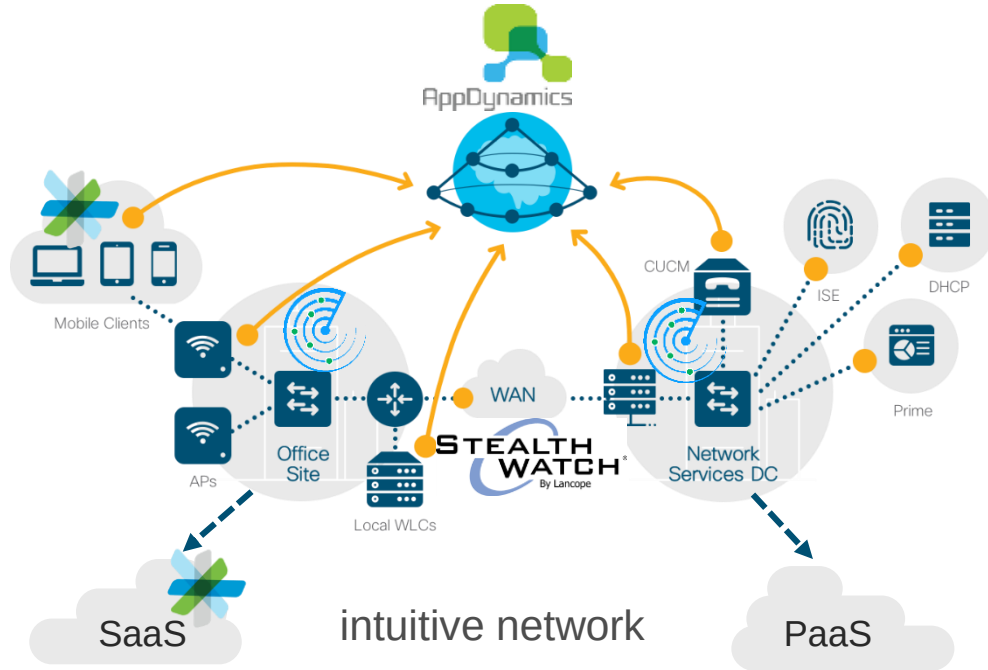
Effective Adoption

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