Assuring Performance In The Modern Cloud Era

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Agenda

1. Cloud First and Application Experience
2. Full Stack Visibility & Decision Engines
3. Enterprise Agreements, A New Buying Model
Cloud First and Application Experience

Delivering Business Outcomes with the right Application Experience and full stack visibility that customers demand

James Harvey
EMEAR CTO, Transformation Director
Cisco AppDynamics
COVID-19 is intensifying consumer expectations

- Brands must make digital performance a top priority
- New challenges are arising for technologists
- Applications are bridging the gap between brands and their consumers
Consumers expect world-class digital services

Flawless digital performance is now the baseline that brands must out-perform

- 84% of consumers have experienced problems with digital services in the last year
- 76% of consumers say their expectations for application performance are increasing
- 63% of consumers actively discourage others from using a digital service they experienced issues with

It’s all about Applications!

50% growth in apps in the next two years
58% of compute and storage at edge or clouds
47% of apps built as microservices
20% dependencies for each app
Siloed Teams Solve Siloed Problems

Checking the logs

Which customers are affected?

Conversion rates are dropping

Why is this happening?

Database looks fine

Spend is down

This app is horrible!

RETWEETS 140
LIKES 1053

The War Room
Live customer journeys for every business transaction

Move fast,
follow everything and
focus on what matters most

— Lightweight agents
— Deployed throughout application environment
— Auto instrument | auto configure
Live customer journeys for every business transaction

Move fast, follow everything and focus on what matters most

— Every user, every transaction

— Automates discovery and correlation

— Dynamically updated

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Detection of issues before customer notice

Move fast, follow everything and focus on what matters most

— Automatic baselines for every metric

— Machine learning anomaly detection

— Prevent IT alert storms
Application Performance Based Analytics

Feed the business from transaction tracing
Observability Platform

Cisco AIOps strategy started with the acquisition of AppDynamics, then Perspica and now Thousand Eyes

Visibility

- Traditional Business
- User experience
- Application
- Infrastructure
- Network
- Security

Cloud

Insight

- Anomaly Detection
- ML/AI
- Root Cause Analysis
- Dynamic Baseline

Action

- Visualization
- Feedback Loop

- Incident response
- Resource scaling
- Cost optimization
- CI/CD validation
- Network provisioning
- Security enforcement

* Not a general purpose business intelligent (BI) solution, but complementary and focused on business impact analytics.
Observability platform

VISIBILITY

- Actionable Business Insights
- Millions of Metrics
- Network/Internet Monitoring
- Securing your App*

INSIGHT

Application Environments

Cognition Engine

ACTION

- Incident response
- Resource scaling
- Cost optimization
- Migration & Validation
- Production Debugging
- Incident & Problem Management
- Infrastructure Optimization
- Quantify Impact of Change
- Fix it Fast!

* Coming soon!
Unified visibility into the entire enterprise technology stack

Digital Experience
- Browser Real-User Monitoring
- Mobile Real-User Monitoring
- Browser Synthetic Monitoring
- Internet of Things (IoT)

App & Business
- Java
- .NET
- PHP
- C
- Go
- Swift
- Node
- Python

Infrastructure
- Server Visibility
- Database Visibility
- Docker
- Kubernetes
- Mainframe

Network
- Cisco ACI
- Network Visibility

Multicloud
- Pivotal CF
- Azure
- AWS
- Red Hat OpenShift
End to End: from swipe right to the disk array

IWO – Assures Applications are resources correctly and capacity is managed

AppDynamics – Ensures apps are written and Architected Well

Workload Optimization

Mobile App
Web App

Apache
Tomcat
SQL
Tomcat

VM
VM
VM
VM

Hypervisor

Physical Infrastructure

Compute
Network
Storage
Identify High Impact Apps

Move to Cloud based on Migration Strategy

Validate Migration Success

Measure and Optimize
Accelerate your cloud migration with confidence

Assess your cloud server requirements based on current application resources and quickly identify and resolve any performance issues. Understand our entire environment and all of its dependencies to allow for a successful migration.

Detect issues in end user experience

Avoid business impacting problems with an enterprise-grade, unified application performance monitoring platform, that utilises advanced machine learning to ensure better end user experience.

Derisk migration with dependency visibility

Ensure that every application dependency and performance requirement is understood, through dynamic architecture and KPI dashboards, to effectively help prioritize cloud migration plans.

Prove cloud migration success easily

Correlate, compare and contrast in real time, technical and business performance metrics, to validate success at every major milestone.
Migrate with confidence and focus on what’s important

Compare each application release to ensure every change and every new feature drives business outcomes.
The AppDynamics advantage

AppDynamics and AWS together
- Hybrid & Cross cloud
- Cloud migration
- IaaS & cloud native workloads
- Serverless
- Container workloads
- SAP on AWS
- Business performance

AppDynamics and Azure Managed Platforms
- App Services
- Azure Functions
- Service Bus
- Azure SQL
- Cosmos DB

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Digital Transformation

Enabling our customers to Digitally Transform...

Solution
Software Quality and Delivery
Buyers
DevOps, AppOps

Solution
Application Performance Management
Buyers
AppOps, ITOps

Solution
Secure App
Buyers
ITOps, AppOps, SecOps

Solution
Infrastructure Optimization
Buyers
ITOps, AppOps, InfraOps

Solution
Network Visibility
Buyers
NetOps, IT Ops

Shift Left

At Cisco, we are “Better Together”
Full Stack Visibility & Decision Engines

Cisco Intersight Workload Optimizer (IWO)

Ajaz Shahid
Technical Solutions Architect
IT Ops teams are feeling the pressure of an always-on digital world...

43% of organizations want to release new changes weekly or even more frequently and be able to restore service between one hour and one day.

Sources: Google; State of DevOps 2019, IDC US, DevOps Survey 2019, July 2019
What do IT infra teams need?

- Comprehensive reach across any infrastructure and any workload
- Unified operations model for IT Ops
- Intelligent automation for real-time
Cisco Intersight - Cloud Operations Platform for Hybrid IT

- Infrastructure Services
- Multicloud Orchestrator & Solution Automation
- Intersight Workload Optimizer
- Intersight Kubernetes Service

Features:
- Simplified Operations
- Continuous Optimization
- Agile Delivery

Scenarios:
- Edge
- Data Center
- Public Clouds
Cisco Intersight Workload Optimizer

Complete visualization for hybrid cloud
Maps interdependencies between apps and infra

Analytics match supply and demand
Always-on analysis: performance, cost, governance

Recommendations are specific and actionable
Triggers actions in over 50+ target types

Simplify resource management with AIOps
Reduce OPEX and preserve capital
Adapt quickly and reduce risk
Cisco Intersight Workload Optimizer

Always simultaneously solving
Performance, cost and compliance

Real-time decision engine
What workload to run where, when and why
Common control plane for hybrid cloud

- Application Resource Management navigates multiple tradeoffs in clouds (Performance, Price & Policy)
- Dynamic cloud/RI optimization & planning
- Scale workloads to meet real-time application demand

TRADEOFFS
- CPU
  - Thread utilization
  - Core utilization
  - Ready queue/wait time
- Network
  - Latency
  - Relationships
  - Bandwidth
  - Geography
- Memory
  - Utilization
  - Swapping
  - Ballooning
- Storage
  - Iops
  - Capacity
  - Throughput
  - Compression
- RESERVED instances
  - Plan new RI purchases
  - Optimize RI utilization
- Application SLAs
  - Response time
  - Transaction rate
- Business policy
  - Data sovereignty
  - Performance guard rails
  - High availability
  - Geo redundancy
  - Licensing
Process Automation vs. Decision Automation

**Process**
- Problems typically addressed after alerting—**reactive**
- Labor intensive
- More data = more noise

**Decision**
- Problems typically addressed before alerting—**preventative**
- Little to no human intervention
- More data = better decisions
Intersight Workload Optimizer Supported Targets

- Compute & Container Platforms
  - Cisco Unified Computing System (UCS)
  - VMware vSphere
  - Kubernetes
  - Citrix XenServer

- Public Clouds
  - Microsoft Azure
  - Amazon Web Services

- Application Performance Management
  - Cisco AppDynamics

- Storage Arrays & Hyperconverged (HCI)
  - Cisco HyperFlex
  - Data Platform
  - Pure Storage
  - Dell EMC
  - Nutanix
  - NetApp
  - Hitachi
Monitor Kubernetes clusters and optimize Kubernetes based applications

• Minimal human intervention – no thresholds to set
• Automated rescheduling of pods assures performance
• Intelligent cluster scaling ensures elastic infrastructure
• Full-stack control unites DevOps and Infrastructure teams
Application Layer

Application performance relies on two interdependent things...

1. Apps are written and architected well
2. Apps get the resources they need when they need them
Application correlated to infrastructure

Correlated data for common view

Data Exchange

Application correlated to business
Public Cloud
Public cloud savings

Automated selection of cloud instances, relational databases, and storage based on workload consumption.

Assures performance
Drives significant cloud bill savings
Minimizes cloud skills gap

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IP Telecom increases resource efficiency in the data center with Cisco Workload Optimization Manager.

- Reduction in resource utilization for Microsoft systems: 15%
- Reduction for VMware systems: 15%
- Reduction in tickets for customer questions and complaints: 30%

“We saw some optimization benefits almost immediately in the PoV. We gained visibility into constraints and resource optimization issues, which we never had insight into before.”

- Filipe Frasquilho, Business Development Manager, IP Telecom
Cisco IT and Workload Optimizer

Challenge:
- Run out of rack space in RTP DC
- Cisco UCS hosts 60,000 VM, 20% YoY growth

Solutions:
- Automatically upsize and downsize

Results:
- Avoided $1 million in DC investment
- Reclaimed 52 TB memory, 4200 vCPUs
- Improved app performance by significantly reduce host connection
Quick Demo of Intersight Workload Optimizer
Enterprise Agreements

A New Buying Model...

Pınar Yıldız Budakoğlu
Software Specialist
Cisco Enterprise Agreement

Cross-portfolio Buying Program

Easy to Buy

Easy to Consume

Easy to Manage