



SmartCloud Application Performance Management

End to End Application Performance Management & Monitoring

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Innovate2013

The IBM Technical Summit

開發者大會





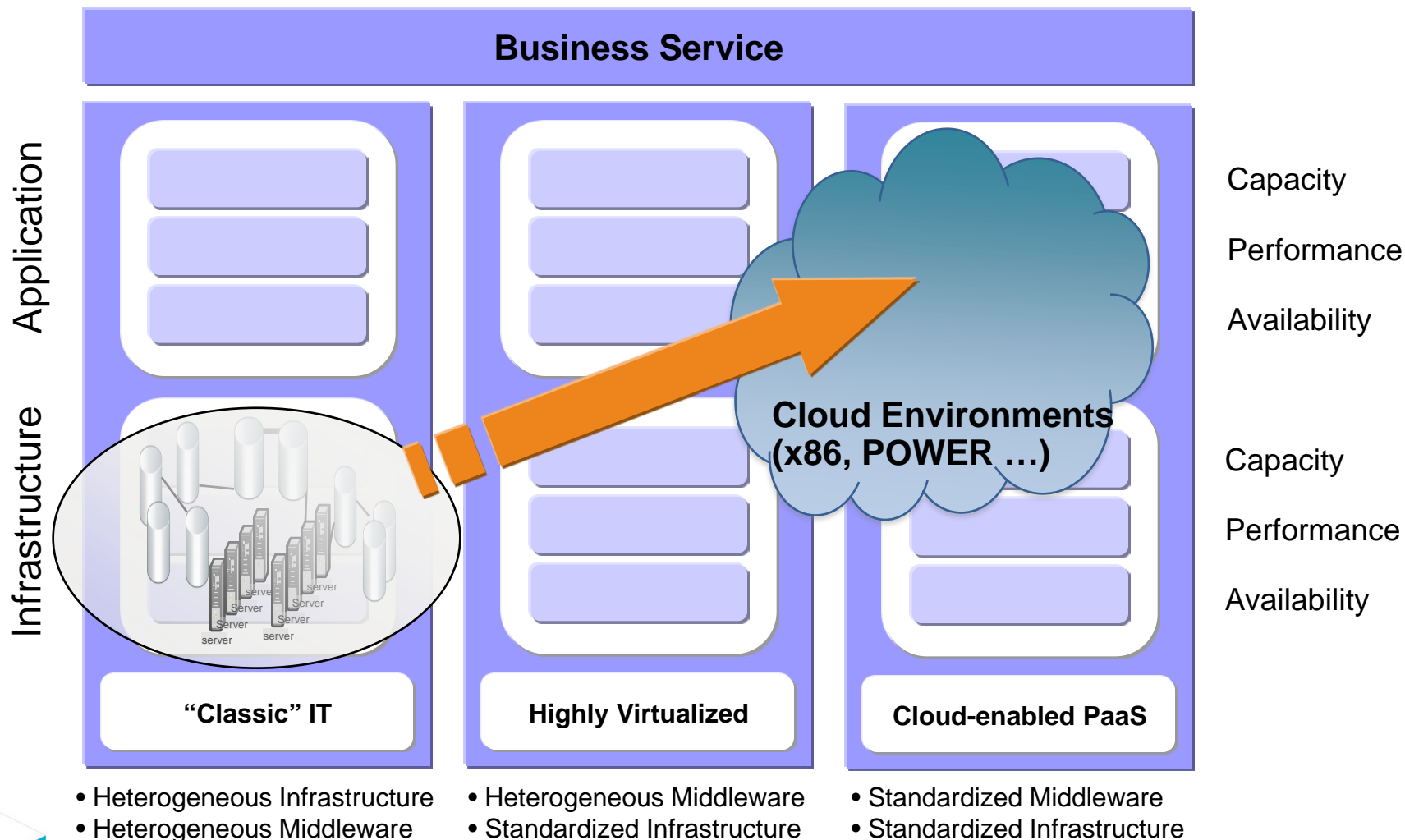
Agenda

- 迎面而來的挑戰
- **Application Performance Management 概觀**
- **IBM SmartCloud APM 解決方案**



雲端服務帶來的管理挑戰

Cloud drives increased need to manage at the application and service level



Innovate2013

The IBM Technical Summit

企業面臨排山倒海而來的挑戰



- **Velocity of change** (快速變化) : drives the need for increased visibility into the application & IT infrastructure
- **Monitoring IT resources alone** (單一資源監控): provides an incomplete view of application performance and makes problem isolation and resolution a complex, expensive task
- **Lack of visibility** (欠缺視覺化管理) : into end-user experience, component relationships and service levels in **dynamic environments**, such as cloud
- **Performance and availability** (效能與可用性) issues for multi-platform composite applications
- **Lack of drilldown capability** (無法深入診斷) : to find the root cause of problems
- **Increased risk** (風險提高) : of revenue loss and brand damage





Agenda

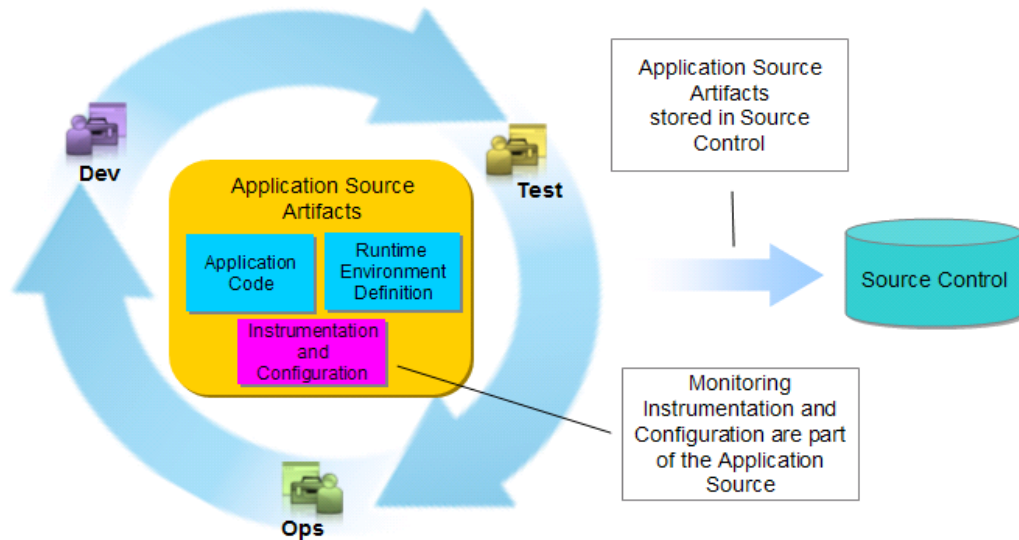
- 迎面而來的挑戰
- Application Performance Management 概觀
- IBM SmartCloud APM 解決方案





APM 確保持續不斷的客戶服務

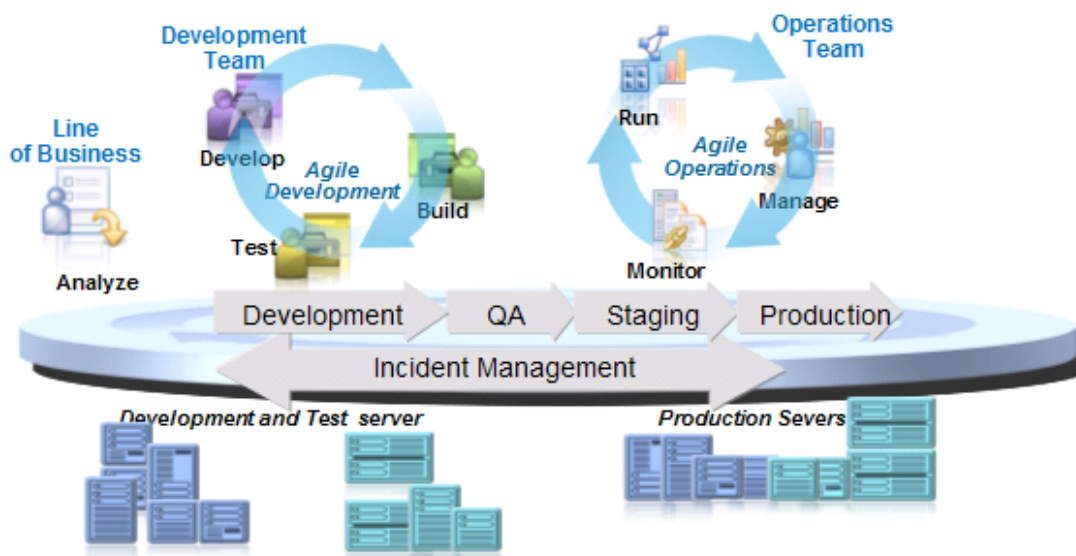
- Define monitoring instrumentation and metric thresholds
 - Improves accuracy and effectiveness of monitoring ultimately reducing time to resolution
 - Day 1 instrumentation of the application for performance and availability.
 - Provide visibility into all the builds and their performance
- Monitoring instrumentation that mirrors what was tested
 - Success rate of production rollouts is improved
 - Eliminates the communication barriers between Developers/Testers/Operators
 - Development has better visibility into production issues





APM整合各種診斷工具找出問題點

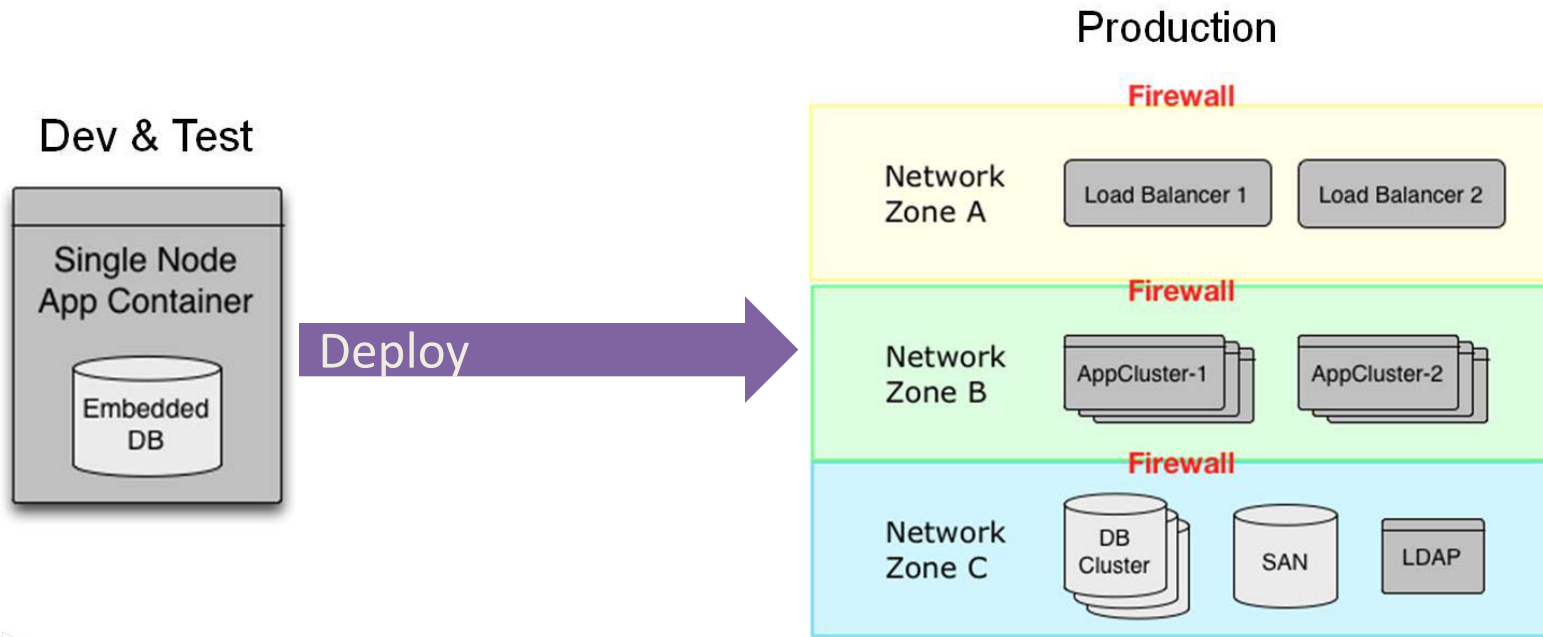
- Application rollouts do not meet performance objectives, leading to:
 - Frequent production rollbacks
 - Poor customer satisfaction
- Long resolution times due to inconsistent diagnostic capabilities across dev/test/production





APM 做不好, 就會需要不斷的救火

- Development & Test environments don't simulate true production environments
- Application performance management tools are different across environments
 - Manual effort required to instrument each environment
- Instrumentation and thresholds are not defined for production by the subject matter experts



APM 管理要件

Maximize Cloud Advantages with Comprehensive APM Management



Attaining the true economic, service delivery, and performance gains cloud & shared infrastructure can provide, requires a broader, more disciplined approach to application and service management

Management Facets in the Cloud

AVAILABILITY

Ensure constant infrastructure availability as demand constantly shifts in dynamic environments

COMPOSITION

Discover in real-time application infrastructure and application dependencies, as they change regularly in cloud & shared environments

PERFORMANCE

Holistic performance management of composite applications across your multi-platform hybrid environment to ensure strong end user experience

UTILIZATION

Optimize the use of your limited resources to maximize efficiency, minimize CAPEX costs, without risking over utilization

CAPACITY

Proactively manage capacity to meet your needs today while confidently understanding and supporting your needs tomorrow

Smarter Planet



VISIBILITY

Predict & resolve application problems before client impact



CONTROL

Effectively manage application changes, compliance & risk



AUTOMATION

Scale to peaks in demand while reducing administrative costs



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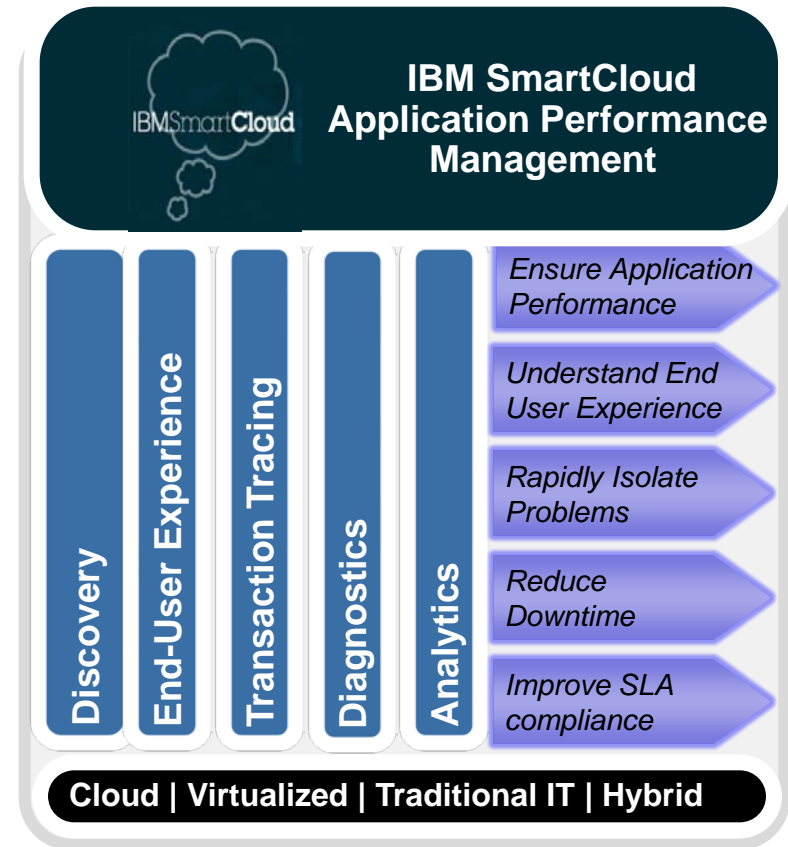


IBM SmartCloud Application Performance Management



Intelligently managing your critical applications in cloud and hybrid environments

- Comprehensive solution that offers the right visibility, control and automation for critical applications
- Modular design to get started quickly and add capabilities as they are needed.
- Analytics to improve capacity utilization and optimize performance
- Single, integrated reporting analytics tool, based on Cognos, making it simple and easy to customize reports
- Delivers breadth of domain coverage in combination with a single trusted source of information for more accurate and faster problem diagnostics
- Entry Edition available for mid market clients



Solutions Roll into SmartCloud APM



SmartCloud Application Performance Management

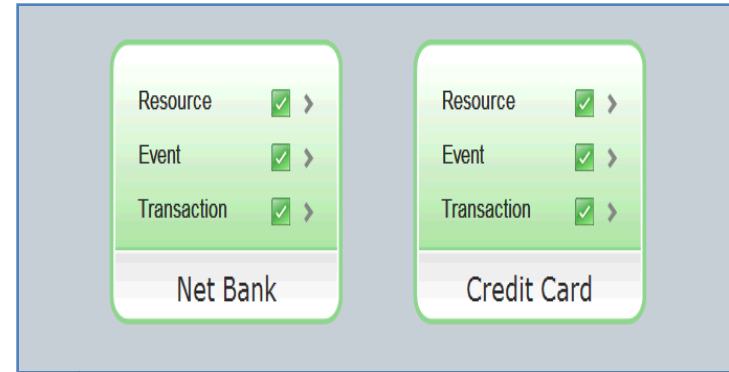
<i>Diagnostics and Analytics</i>		<i>End User Experience Transaction Tracking</i>
ITCAM for Applications <i>OS, Virtualization, App Server, ESB, DB, SOA, DataPower</i>	ITCAM for Microsoft Applications <i>Microsoft Applications – OS, Virtualization, App Server, DB</i>	ITCAM for Transactions <i>Robotic, Transaction Tracking, Web Response, ISM</i>



Dramatically Improved User Interface!



- Take the guesswork out of end user experience management with smart drill downs.
- Easy to understand dashboards track availability, performance, and capacity.
- Role-specific screens for both Operators and Application Development teams.
- Built on best practices, yet easily customizable with a wide variety of widgets.
- Runs on smart devices.



Application Discovery : Agentless Transaction Tracking



Rapid end-to-end visibility without any instrumentation

Simple

✓ Quick and easy to deploy

- Install ITCAM for Transactions 7.3
- One simple network configuration change enables tracking of an entire network segment
- No impact to any production servers or applications

Efficient

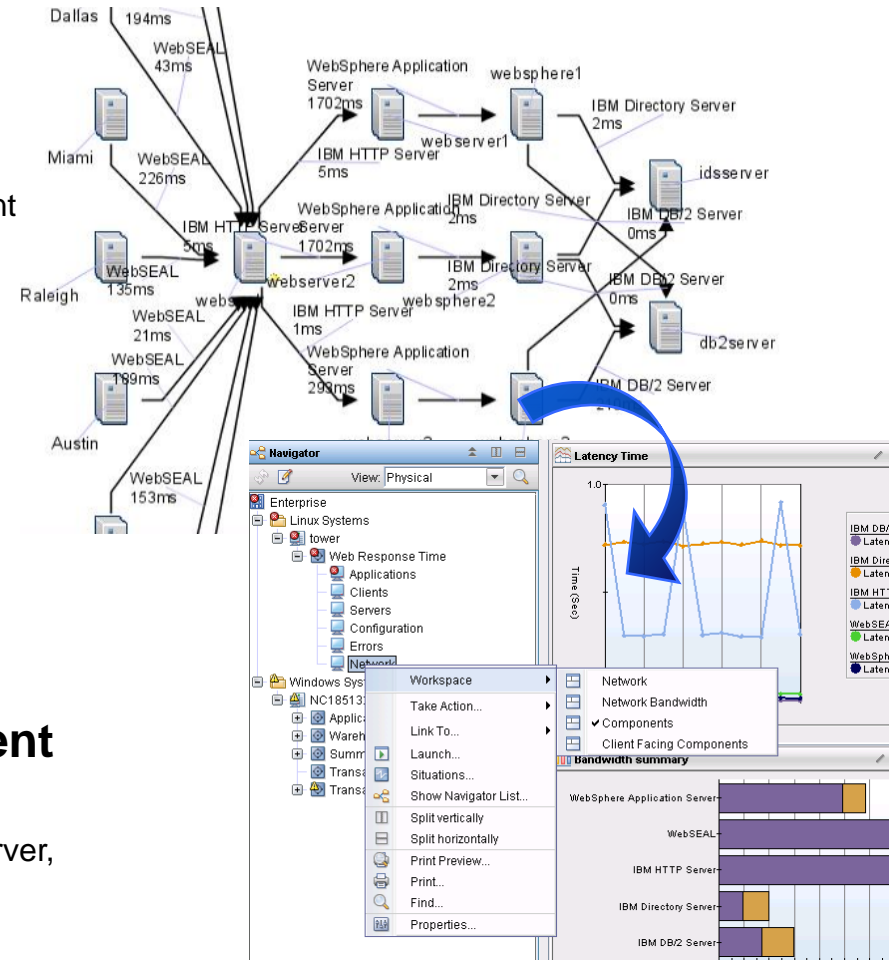
✓ Immediate value, immediate visibility

- Server and component topology plus performance metrics
- Hotspot analysis on baselined deviations
- Understand client impact

Configurable

✓ Customize for your environment

- Add custom network applications
- Build dedicated environment topology per server, per technology





Rapid End-to-End Visibility

Visibility

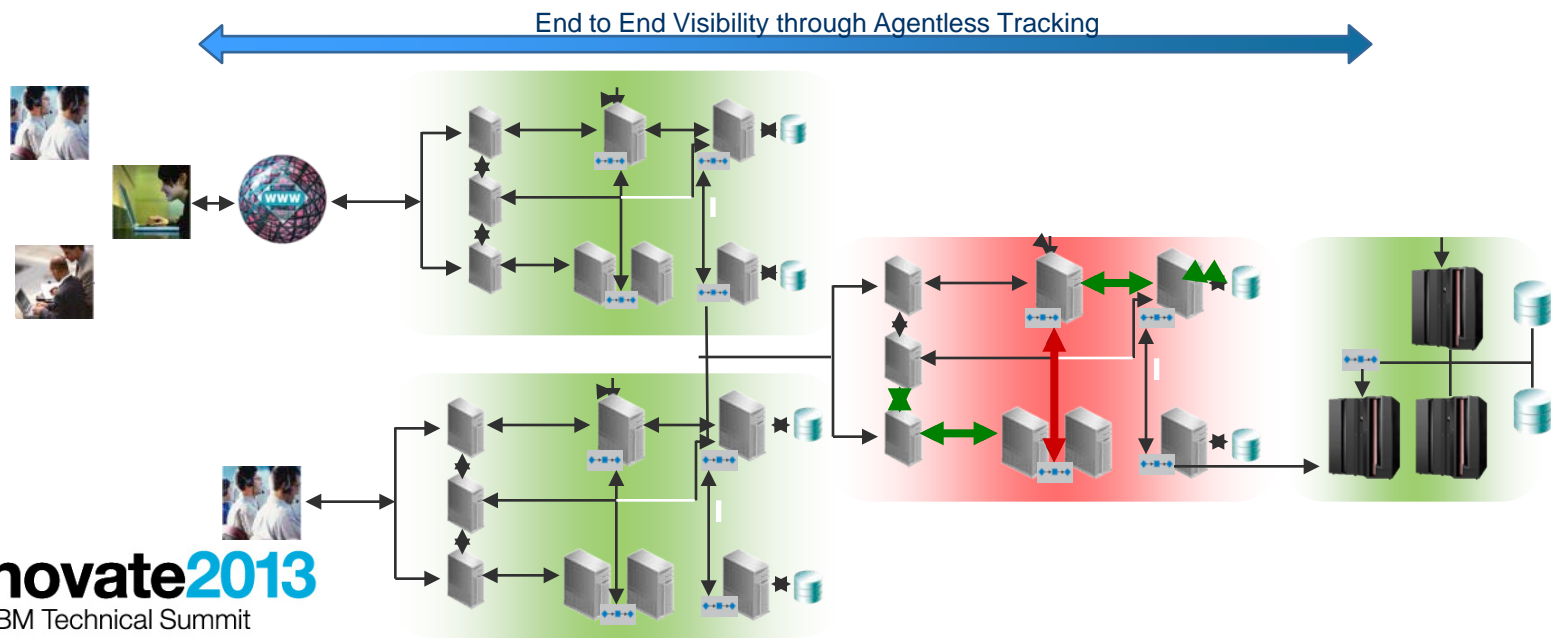
✓ Rapid visibility of end-to-end application

- Build up a view, one network segment at a time
- Understand relationships, volume and bottlenecks
- Real application topology from network traffic

Strategic

✓ Provides platform on which to invest further monitoring

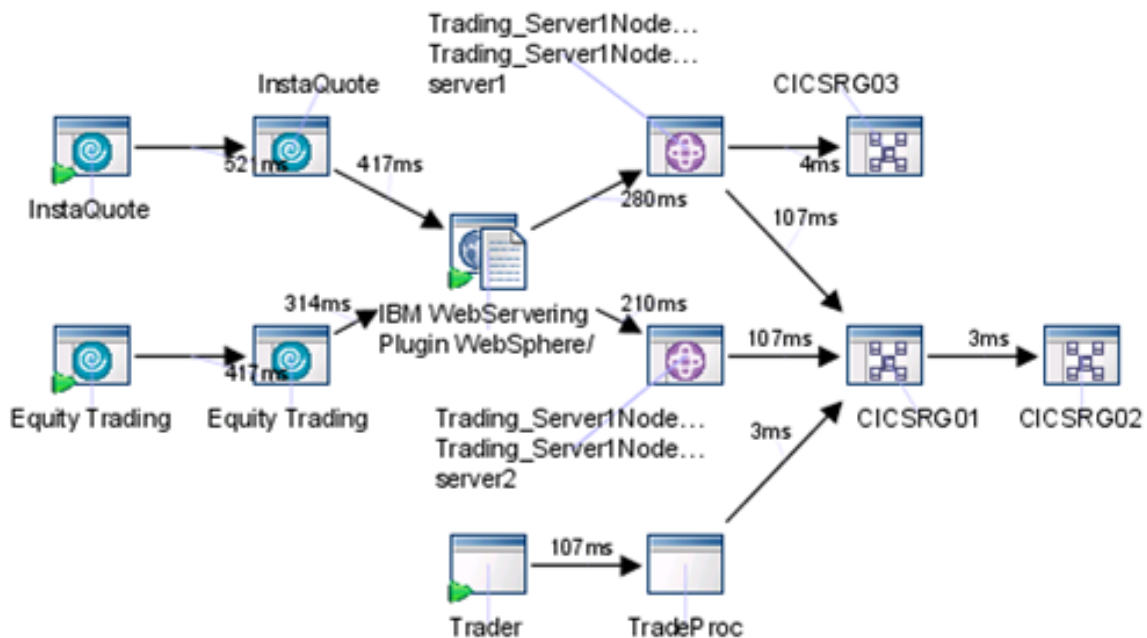
- Use bottleneck analysis to identify priority targets for agent deployment
- Iterate through environments/servers in prioritized order





Problem Isolation Through Transaction Tracking

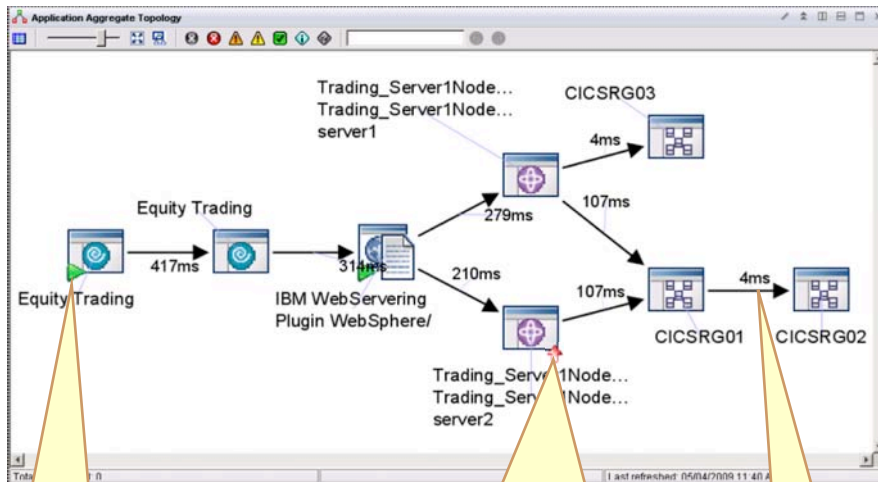
- Unified, end-to-end transaction tracking
- Heterogeneous environments
 - fully integrated across distributed and System z



- Support for asynchronous transactions
- Extensible, modular framework
- Integrated response time and transaction tracking



Get More Detail by Selectively Adding Data Collectors



Red "hot spot" indicates bottleneck

Green arrow indicates start node

Synchronous transactions

IBM WAS WebSphere 6/7/8 tracking supported using ITCAM for AD – distributed and z/OS. Supporting HTTP, EJB, RMI/IIOP, JAX-RPC/WS, CICS, IMS, MQ, JMS, JDBC, LDAP and JNDI connections

Other JEE Non-WAS JEE support (Weblogic, JBoss, Tomcat, SAP NetWeaver, Oracle App Server) using ITCAM for AD

MQ 5/6/7 MQ 5.3 and up tracked by ITCAM for Transactions natively – distributed and z/OS

CTG CICS Transactions Gateway (CTG) 7.1+

CICS CICS 2.3+ transactions and services, including any CICS hosted applications

- CICS->DB2, CICS → IMSDB
- CICS 4.1 SOAP support

IMS IMS 8.1+, including OTMA, IMS Connect and IMS Batch

WMB WebSphere Message Broker v6.0+ (distributed), supporting HTTP, SOAP, MQ

Tuxedo Tuxedo Server (FML32 over ATMI) v9/10

Microsoft Microsoft .NET ASMX, WCF, ADO, ODBC and LDAP

ARM ARM 2.0/4.0 instrumentation supported

Siebel Siebel SARM

SOA Integrated Service Tracking support through ITCAM for SOA: WebSphere ESB, WebSphere Process Server, Datapower

TTAPI Customer instrumentation possible through our published Transaction Tracking API (TTAPI). Current language bindings include:

- C, C++, Java (distributed)
- C, C++, Java, COBOL, PL/I, Assembler
- .NET



APM Dashboard – Application Overview



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首頁 Tivoli Integrated Portal APM Dashboard 問題清單 - 運算系統事業群

Application Overview

Settings ? Edit

Apps in Critical Status	Apps in Warning Status	Apps in Unknown Status	Apps in Normal Status
0	1	0	0

SimpleTrade

- Resources >
- Clients >
- Transactions >
- ⚠ Events >

APM Dashboard – Resource Dashboard



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SimpleTrade - Resource Dashboard

Transaction Performance

Response time 1.059s

Requests 2

Percent failed

Percent slow

Transaction status 2

Client status 1

HTTP

Web server status Running

Web server name TradeIHS

Request rate(/sec) 0.016

Failed requests rate(/min) 0.000

Server failures rate(/min) 0.000

Failed login rate(/min) 0.000

WAS

Server status Connected

Worst Avg response time(ms) 0

JVM memory used(KB) 114,301

JVM CPU used(%)

DB Conn pool used(%)

Heap used(%)

Worst request completion(%)

MQ

Queue manager status Running

Channel initiator status Running

Command server status Running

High depth queue count 0

DLQ depth 0

XMITQ depth 0

Count of channels not running 0

Count of indoubt channels 0

Count of server connections 2

Count of WMQ events not reset 0

Critical MQ errors 0

DB2

Instance status Active

DB lowest BP hit ratio(%) 99.55%

DB highest failed SQL stmts(%) 1.99%

DB highest table space(%)

DB highest sort overflows(%)

Sort heap used(%)



APM Dashboard – Transaction Dashboard

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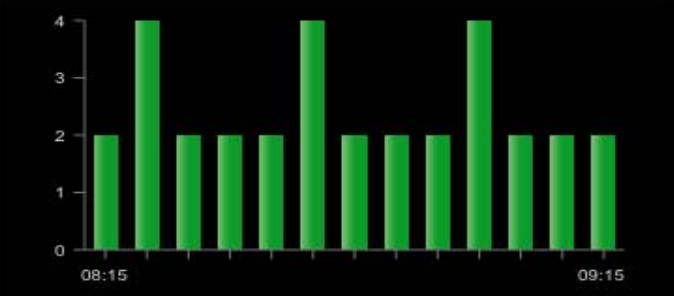
Back

SimpleTrade - Transaction Dashboard

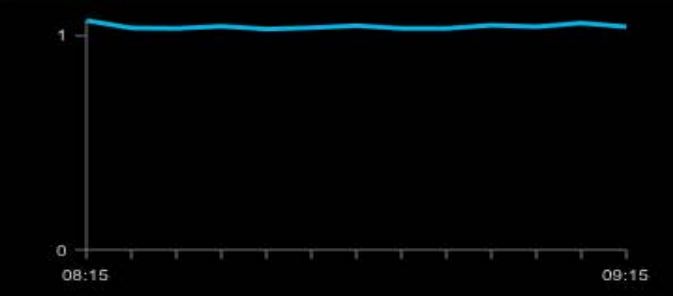
Transaction Status Summary

Loading...

Overall Volume



Overall Response Time (seconds)



Top 10 Transactions

Transaction	Status	Transaction Volume	Failed (%)	Slow (%)	Response Time (s)	Timestamp
SimpleTrade2	Good		1	0.00	2.054	09:15
SimpleTrade	Good		1	0.00	0.030	09:15

APM Dashboard – Event Dashboard



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首頁 Tivoli Integrated Portal APM Dashboard 問題清單 - 運算系統事業群

Back SimpleTrade - Event Dashboard ?

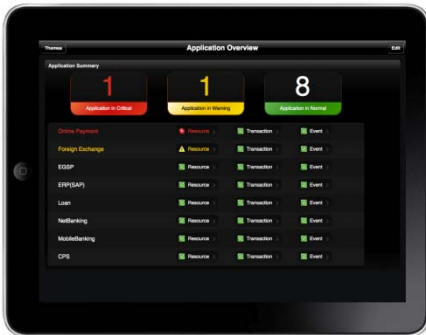
Event Status

Event Severity Summary (Total: 2)

Situation Name	Status	Severity	Display Item	Source	Timestamp
UDB_DB_SQL_Fail_High_2	Open	Warning	TRADEDB	db2inst1:sysappdemosles:UD	2013/1/21 上午7:35:33
WASAppHealthGood	Open	Informational	APMPoCEAR	sysappdemosl:sysappdemosles:K...	2013/1/21 上午8:57:33



Makes it easier than ever to **optimize end user performance**, **prevent outages** and **diagnose failures** in your applications!



See Value Quickly

Web-based, out-of-the box dashboards

- ✓ Based on IBM best practices
- ✓ Works on **iPad!**

It's easy to get started with new **agentless** transaction tracking!



Comprehensive Coverage

Supports the latest IBM and non-IBM middleware; **DataPower**, **DB2**, **SAP**, etc.

Beta of IBM BPM in progress!

Monitor traditional and cloud-based applications – supports **virtualization technologies** from IBM, VMware, and Open Source.



Leverage IBM Expertise

Expert Advisor guides user to possible root causes and recommends actions.

Impact analysis dashboards **easily pinpoint user** affected by failed transactions.

