



System and Application Management Strategy and Directions

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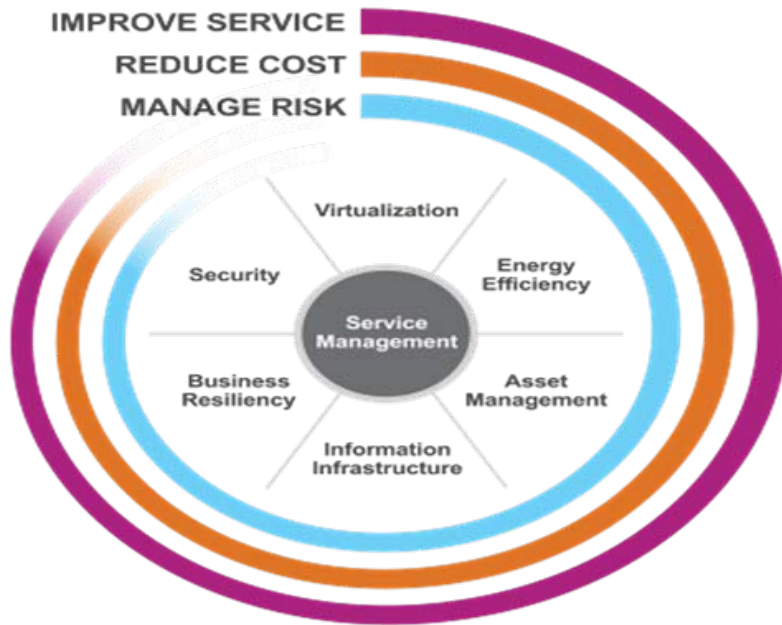
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IBM Service Management Connects all Elements of Dynamic Infrastructure

IBM Service Management enables exploitation of a Dynamic Infrastructure for your business:

- Leverage and integrate IT and 'smart' business assets to deliver next generation services.
- Respond rapidly to change, mitigate risk and support new business opportunities through greater agility
- Deliver higher quality service to customers and business partners at a lower cost
- We are adapting the Tivoli Availability and Performance Management Solutions to the challenges of the Dynamic Infrastructure



IBM Service Management

Enabling quality service delivery and business innovation



Visibility: *See*
your Business

***Respond faster and make better
decisions***



Control: *Manage*
your Business

***Manage risk and
compliance***



Automation: *Improve*
your Business

***Lower costs and build
agility***



Service Availability and Performance Management

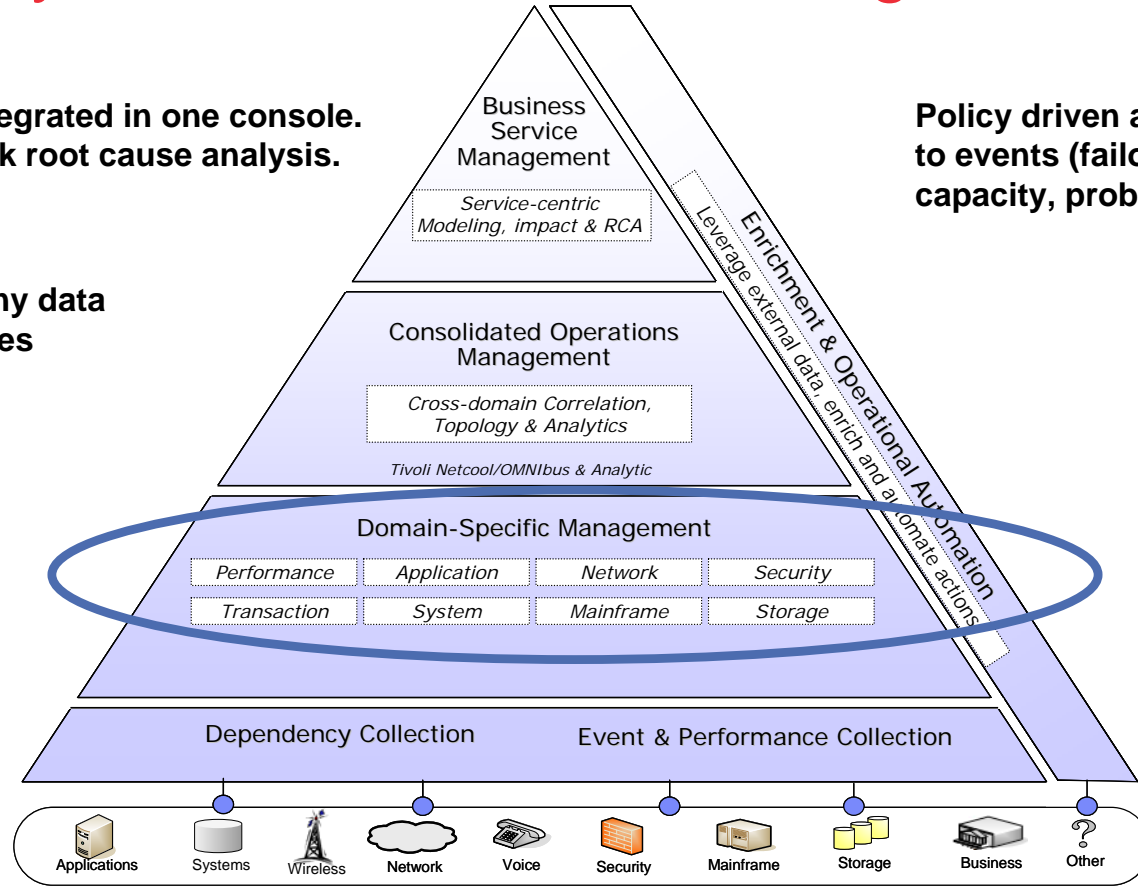
IT Operational and business events integrated in one console.
Launch to operational console for quick root cause analysis.

Policy driven automated response to events (failover, provision new capacity, problem resolution).

Real-time data access, from virtually any data source across organizational boundaries

Consolidated operational view of performance & availability

Complete coverage of over 1000 device types



Align business priorities with performance management

Business Service Management

Align

Prioritize

At a Glance Information about Your Business Needs and any challenges of IT in meeting those needs

Service Management

- Track Key Perf. Indicators
- Align IT Operations with Business Priorities
- Identify Service problems before your customers

- Align IT Operations with Business Priorities
- At a Glance Operations Management with Consolidated Dashboard
- End to End View

Sense

Isolate

Provides the end-user perspective across all resources in the service

Transaction Monitoring for

- Topology Tracking
- End Experience Monitoring

Application Response and Tracking:

- Enable Proactive Response to emerging Problems
- Track End User Response
- Maintain detailed transaction information to speed problem isolation

Diagnose

Repair

Provides the resource specific details in context of the transaction

Application and Resource Monitoring for

- Systems
- Applications
- Networks

Deep dive Diagnosis and granular Resource Mgmt

- Monitor Essential IT Infrastructure
- Manage Risk
- Track Critical Resources for early warning of potential service hits
- Dynamically detect emerging “abnormal” behavior



Macro Trends

1. Predictive Analytics for improved business service availability
2. Synchronous and Asynchronous Transaction Tracking
3. Dynamic Infrastructure drives evolution of virtualized environments and SOA management
4. Convergence, simplification and integration of monitoring technologies
5. Embedded monitoring, agent and agent-less

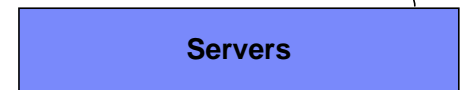
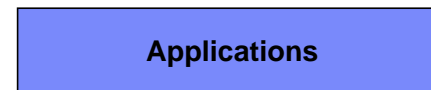
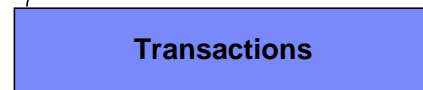


Composite Application Management

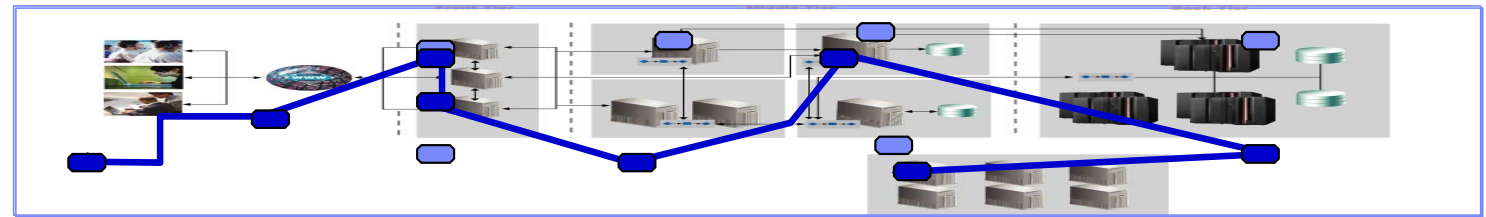
- Monitor application response to ensure business expectations are met
- Understand transaction flows over complex topologies
- Monitor infrastructure performance and availability
- Diagnose application performance issues
- Increase application availability and customer satisfaction
- Reduce Mean Time to Failure (MTTR) and increase Mean time Between Failure (MTBF)



IT Staff



IT Customer



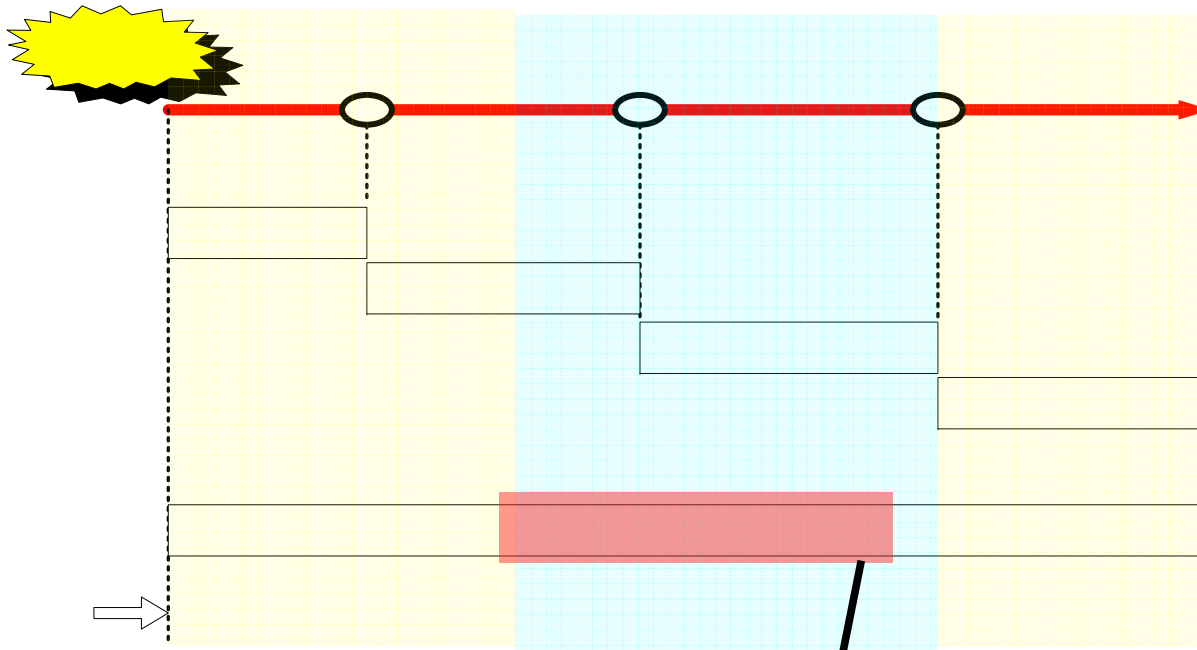


Trend:

Predictive Analytics for improved
business service availability



Mean Time To Repair and Mean Time Between Failure



Availability and response time monitoring
Fault Isolation
Diagnosis
Repair/test/re-deploy

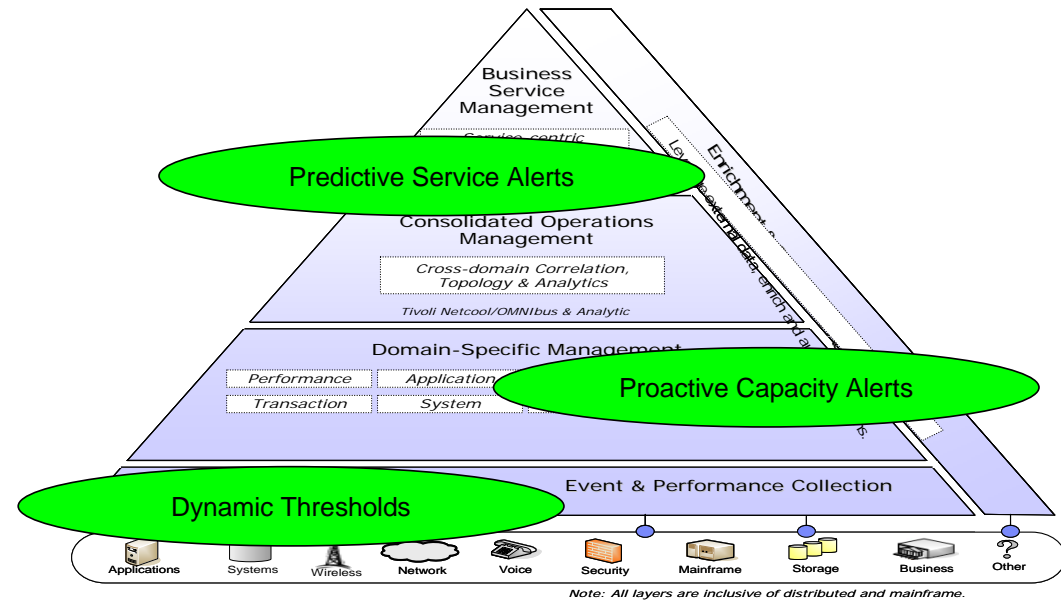
Predictive Analytics



Predictive Analytics Built *into* the Solution, not *onto*

Tivoli Solution

- ✓ **Predictive Analytics across all layers:** Built-in PA span all levels of technology stack!
- ✓ **Broad collection/integration:** Largest available experience library of collectors, integrations, and run-books!
- ✓ **Robust domain experience:** Invest more intelligence up-front!
- ✓ **Efficient & scalable:** Collect the right data, not just lots of data!
- ✓ **Robust visibility:** Get the metrics that matter most, more frequently!
- ✓ **Maximum intelligence:** Nimble approach to collecting & storing data for maxim Intel



Add Predictive Capabilities into the data you are already collecting, distributed across the solution to provide maximum value with minimum extra effort



Expanding Predictive Analytics Across Portfolio

Continue Growing our Predictive Capabilities Throughout the Solution

All Available Today

Predictive Analytics:

Service Availability & Performance Management

- ✓ Predictive service impact, Root Cause Analysis, SLA tracking & event/performance mgmt.
- ✓ Broad predictive collection & experience across: mainframe, power, virtualized, SOA...
- ✓ Common warehouse & Visual, Navigation, Single Sign-On, Process automation
- ✓ Broad integrations across IBM & 3rd party collection



Roadmap to Predictive Leadership

Multi-layer Approach

- ✓ Assures predictive value at any phase of customer maturity.
- ✓ Maximizes scalability to manage any size environment
- ✓ Maximizes Out Of The Box Intel, while minimizing collection of irrelevant data
- ✓ Simple, Flexible Solution that improves your costs

- ✓ Extended analytics for metric forecasting
- ✓ Additional domains including security and storage

- ✓ Robust CMDB integration
- ✓ Run Book Automation
- ✓ Extended 3rd party agent library
- ✓ Performance Management Database





Trend: Synchronous and Asynchronous Transaction Tracking

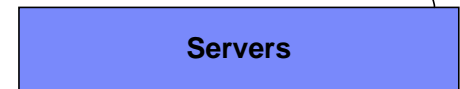
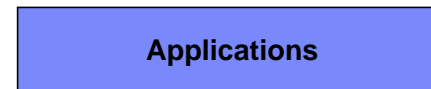
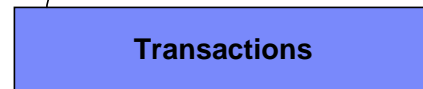


Composite Application Management

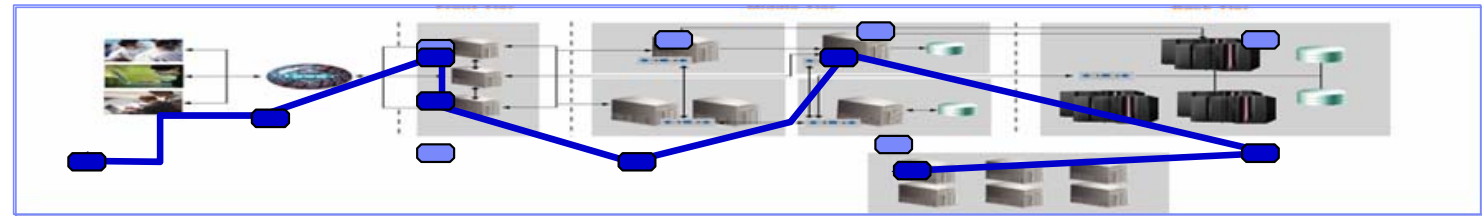
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IT Staff



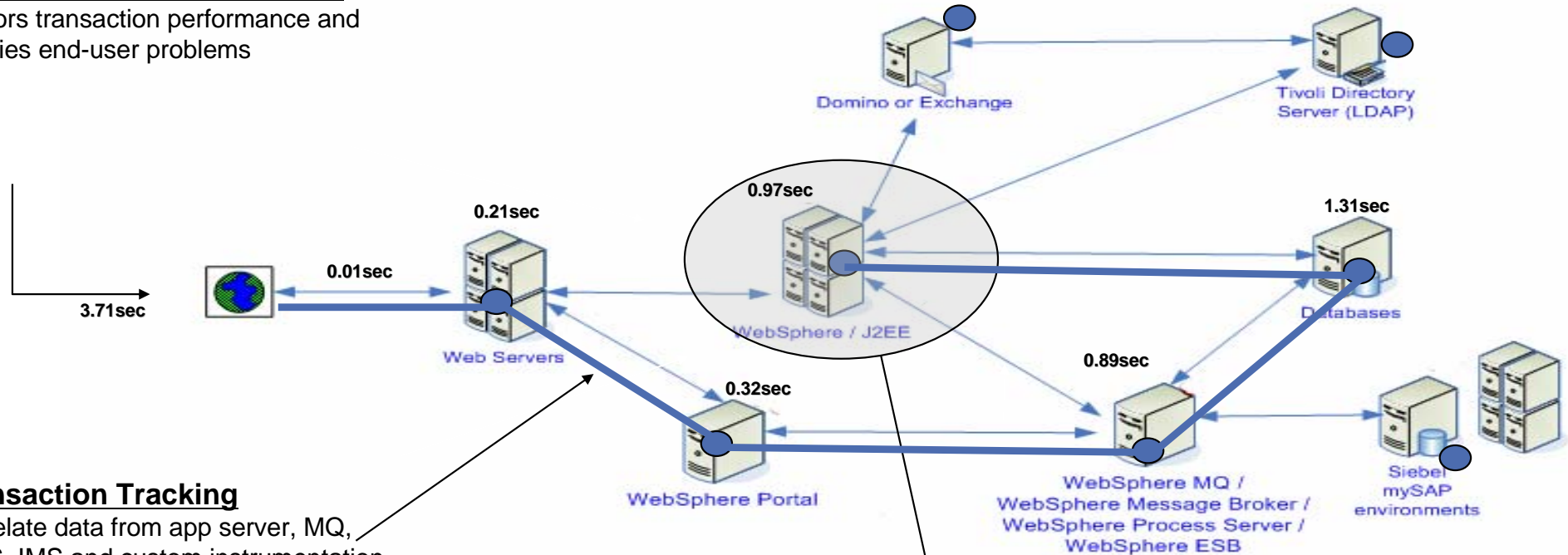
IT Customer



End-to-End Monitoring, Tracking and Diagnosis

Response Time Measurement

Monitors transaction performance and identifies end-user problems



Transaction Tracking

Correlate data from app server, MQ, CICS, IMS and custom instrumentation to show topology and isolate problems

Deep Dive diagnostics

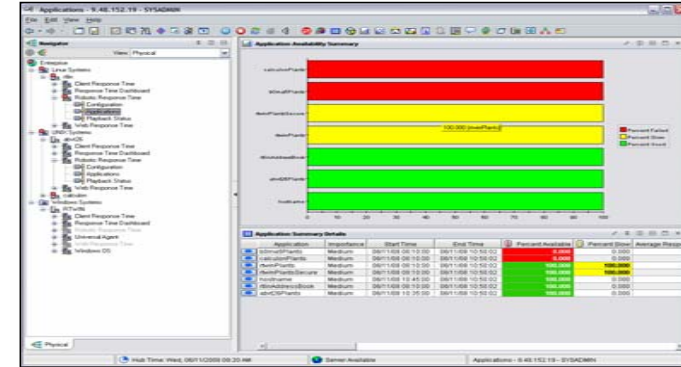
Launch in context to SME capabilities including SME level tracking within specific domain



Response Time Monitoring

Real End User Transactions

- **Web Response Time Monitoring**
 - Reports end user experience for web applications
 - Appliance mode eliminates overhead at the server
- **Client Response Time Monitoring**
 - Monitors real user client desktop Windows applications and transactions

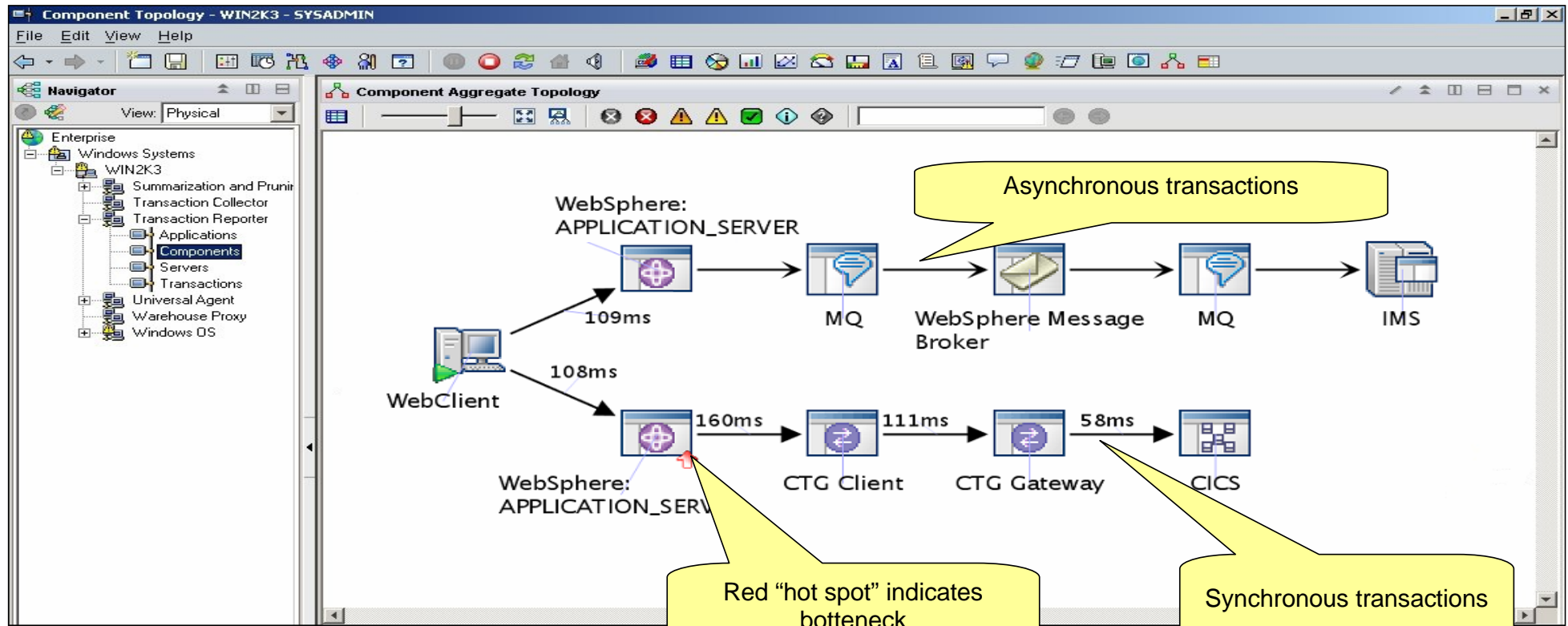


Robotic Transactions

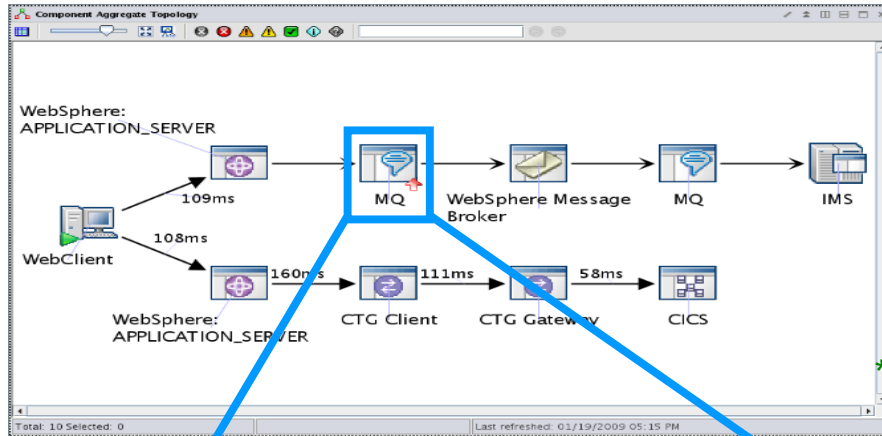
- **Robotic Response Time Monitoring**
 - Periodic testing of business transactions
 - Record and execute a set of user defined steps
- **Internet Service Monitoring**
 - Periodic testing of service availability
 - Simple and lightweight



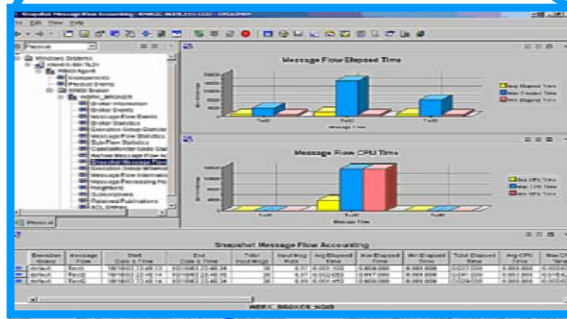
Transaction Tracking Topology



Deep-dive diagnostics



ITCAM* for Transactions



OMEGAMON XE for Messaging

- Launch in context into appropriate Subject Matter Expert (SME) tool via dynamic workspace links
- Launch destinations depend on type on data source. E.g:
 - MQ -> OMEGAMON XE for MSG
 - WAS -> ITCAM for WS
 - CICS -> OMEGAMON for CICS
 - IMS -> OMEGAMON for IMS
- Where appropriate, will drill down to specific workspace (ie. In MQ, Queue Manager drilldown links to the Queue Manager Status Workspace for the specific Queue Manager).

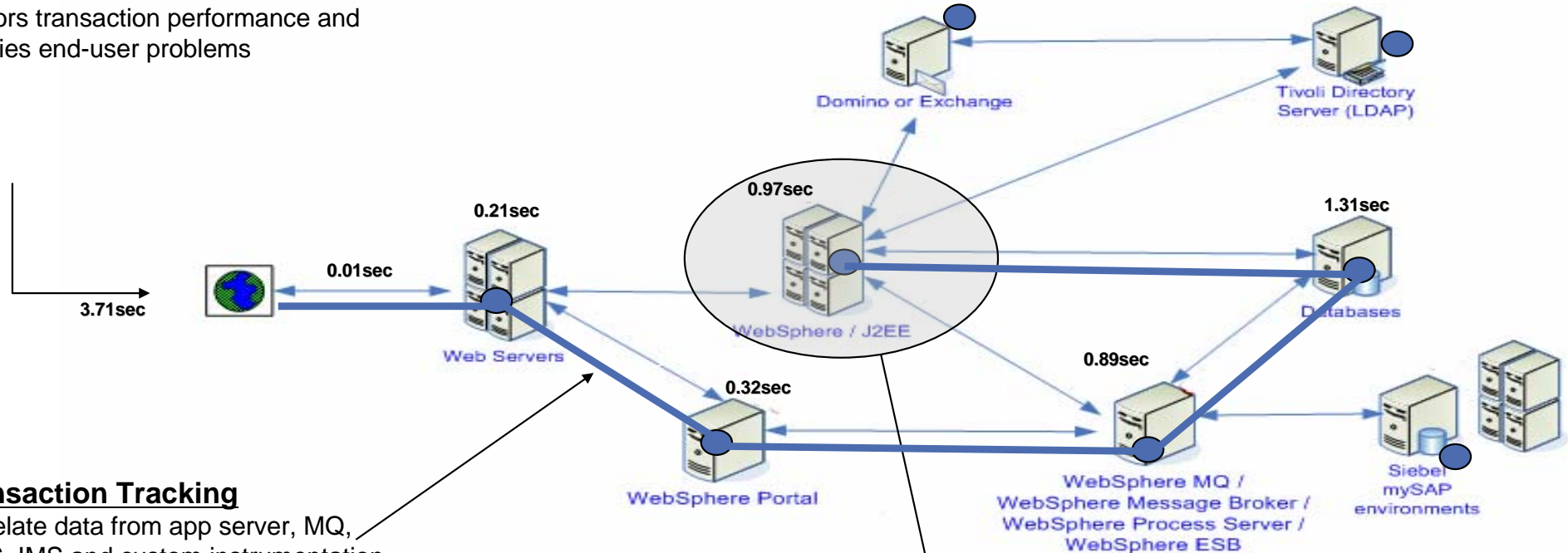
* ITCAM = IBM Tivoli Composite Application Manager



End-to-End Monitoring, Tracking and Diagnosis

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Correlate data from app server, MQ, CICS, IMS and custom instrumentation to show topology and isolate problems

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Trend:

Convergence, simplification and integration of monitoring technologies

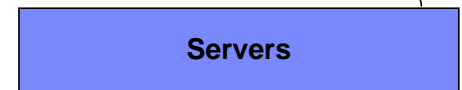
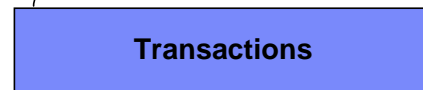


Composite Application Management

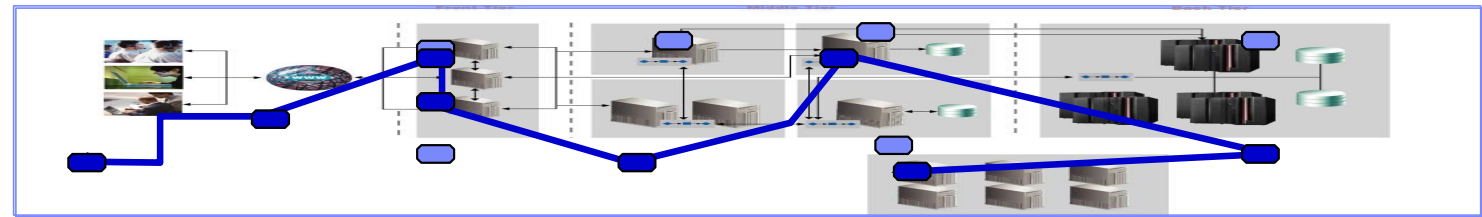
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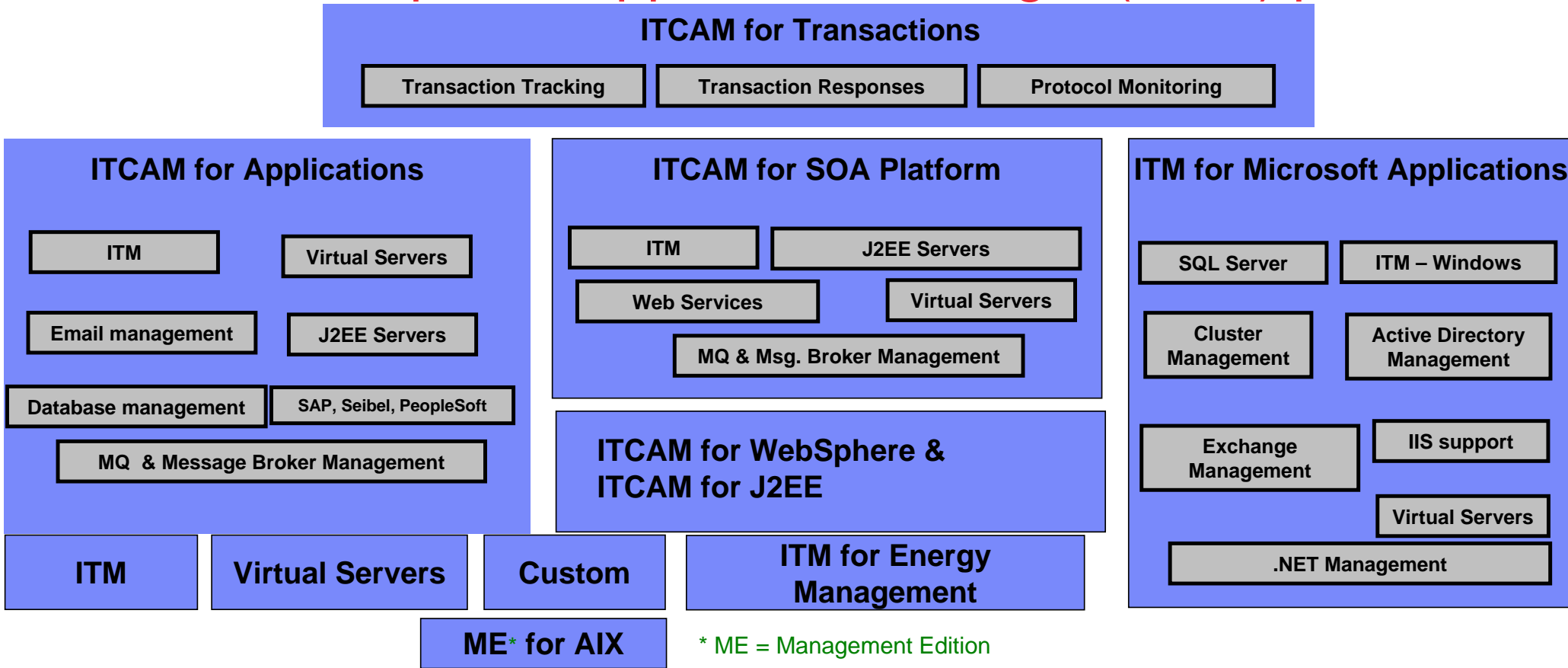
IT Staff



IT Customer



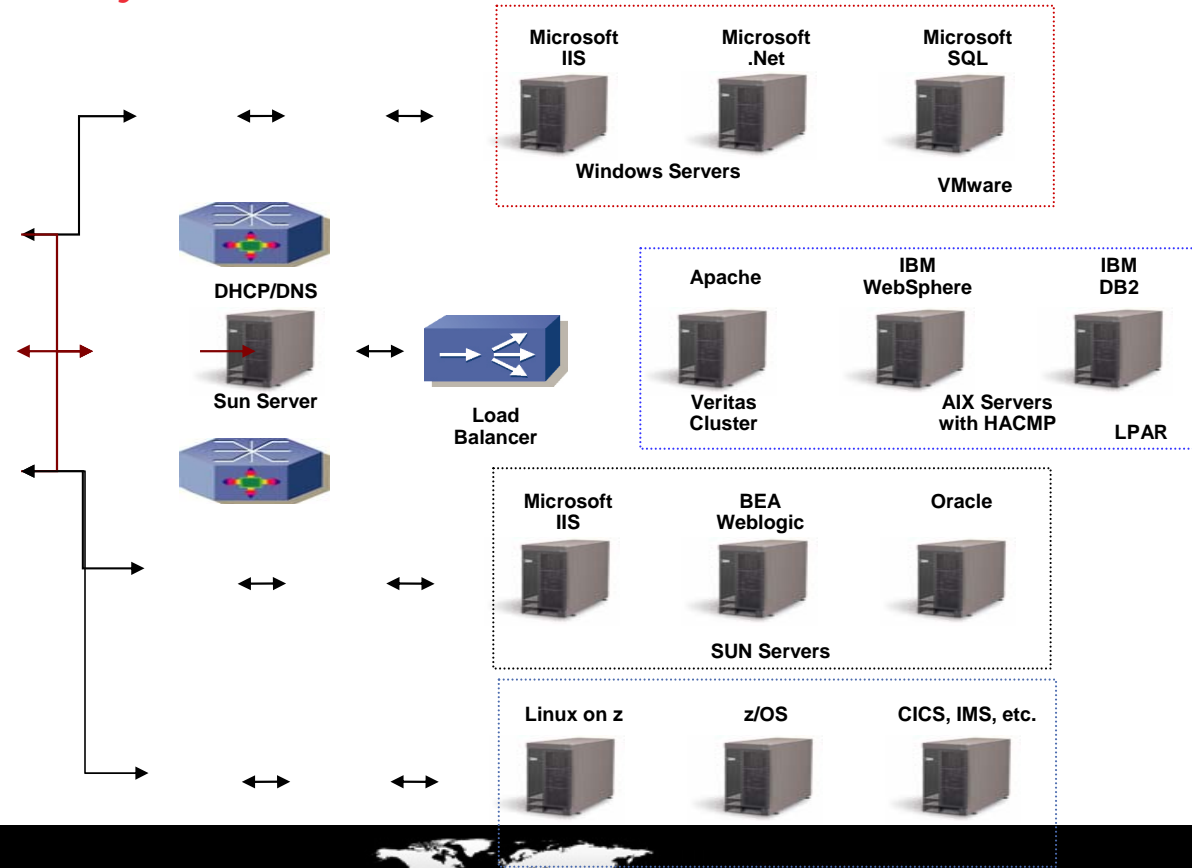
ITM & IT Composite Application Manager (CAM) portfolio



Resource Monitoring with ITM, ITCAM

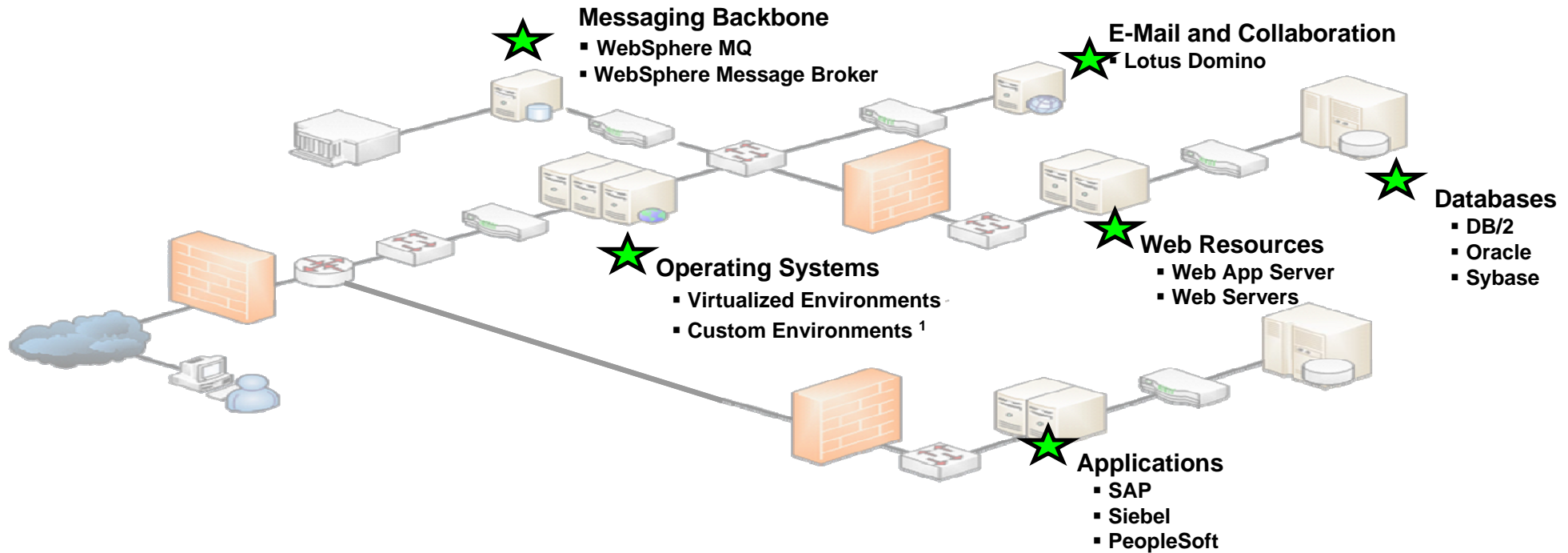
Gain Visibility into Core Resources in your Dynamic Infrastructure

- Maintain Visibility into all critical resources
 - OS, Middleware, Applications
 - J2EE Application Servers and WebServers
 - Virtual Hypervisors
 - System z and z/OS
 - ERP, CRM
 - CICS, IMS
 - MQ, Message Broker
 - E-Mail and Collaboration
 - Databases
- Leverage Predictive Infrastructure
 - Dynamic Thresholds
 - Proactive Capacity Monitoring
- Resource Details Enable:
 - Risk Management
 - Problem Diagnosis
 - Capacity Planning



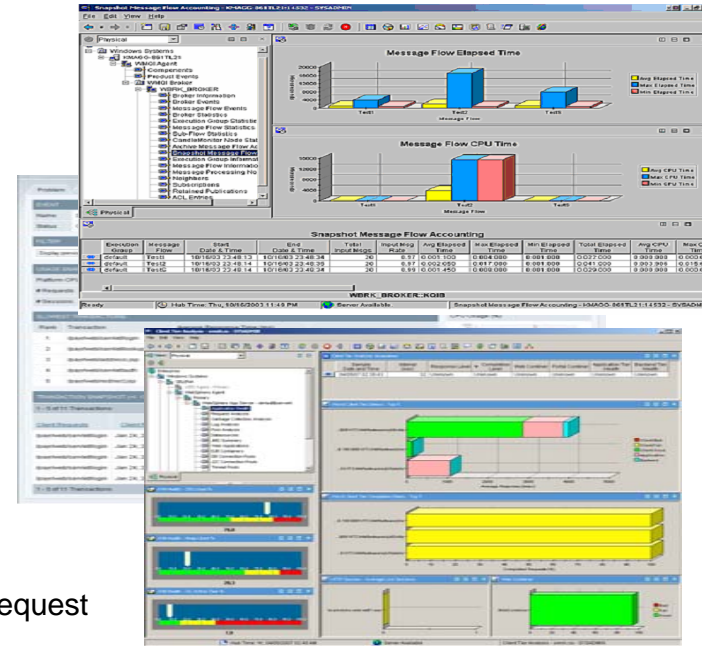
ITCAM for Applications

Managing Applications and Application Infrastructure



ITCAM for WebSphere / J2EE

- Monitor high-level application health status
 - Tier by tier analysis
 - Correlation to remote EJB containers
- Identify J2EE/J2SE performance problems
 - Slow or Hung requests
 - Intermittent application slow downs
- Monitor essential application resources
 - Throughput
 - Heap Usage
 - CPU usage
 - Garbage Collection
- Real time deep dive diagnosis
 - Display all in-flight requests, as well as details for a single request
 - Memory leak analysis
 - Method and stack “traces” to display the detailed execution flow of a request
 - Lock Contention Analysis on serialized methods
- Link with CICS and IMS deep dive diagnosis



Throughput

Health

Resources

Alerts &
Take ActionsProblem
DeterminationMemory
AnalysisApplication
Trace



Trend:

Dynamic Infrastructure drives evolution of virtualized environments and SOA management

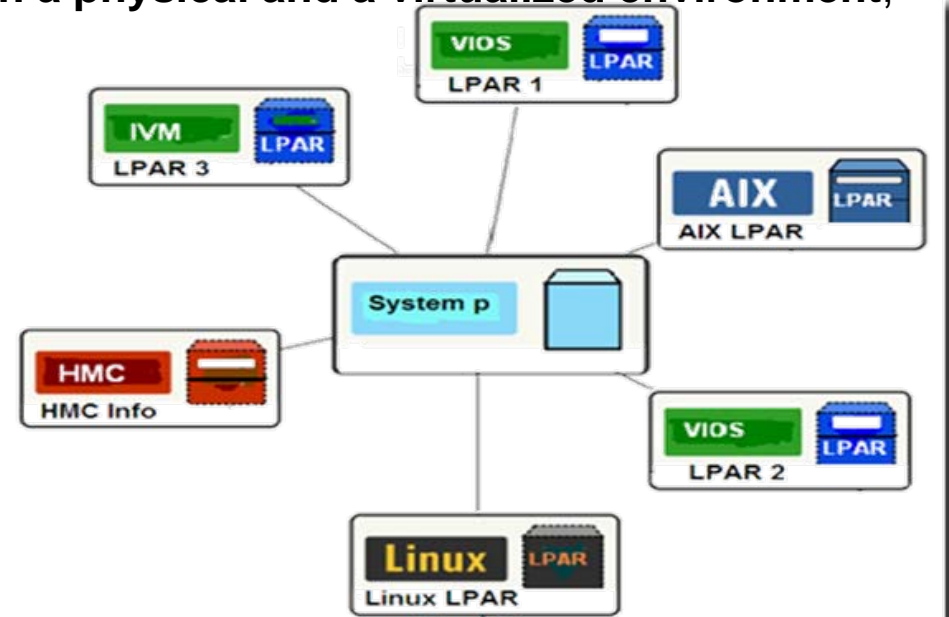
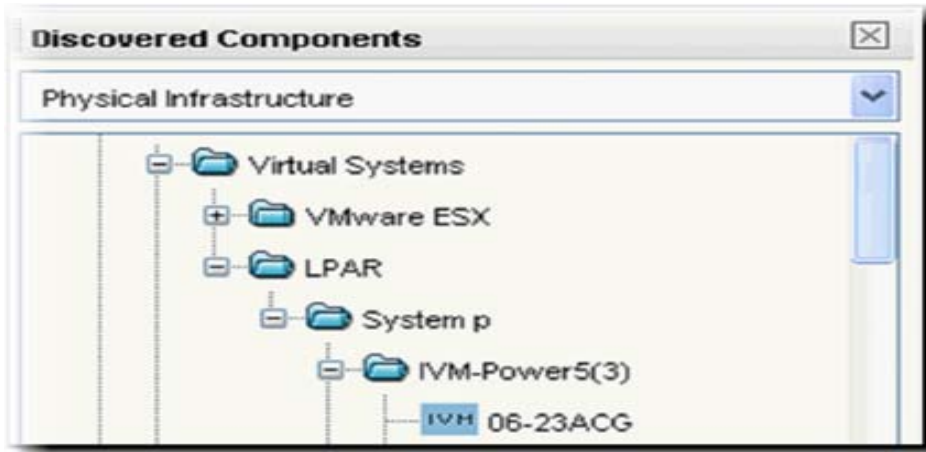


Consolidation of Resources – Getting Started

What are the critical virtualized components?

Visualize Resources, Configurations, Relationships and Changes

A single pane of glass to see all the resources in **both a physical and a virtualized environment**, their configurations, their relationships and changes that have occurred over time

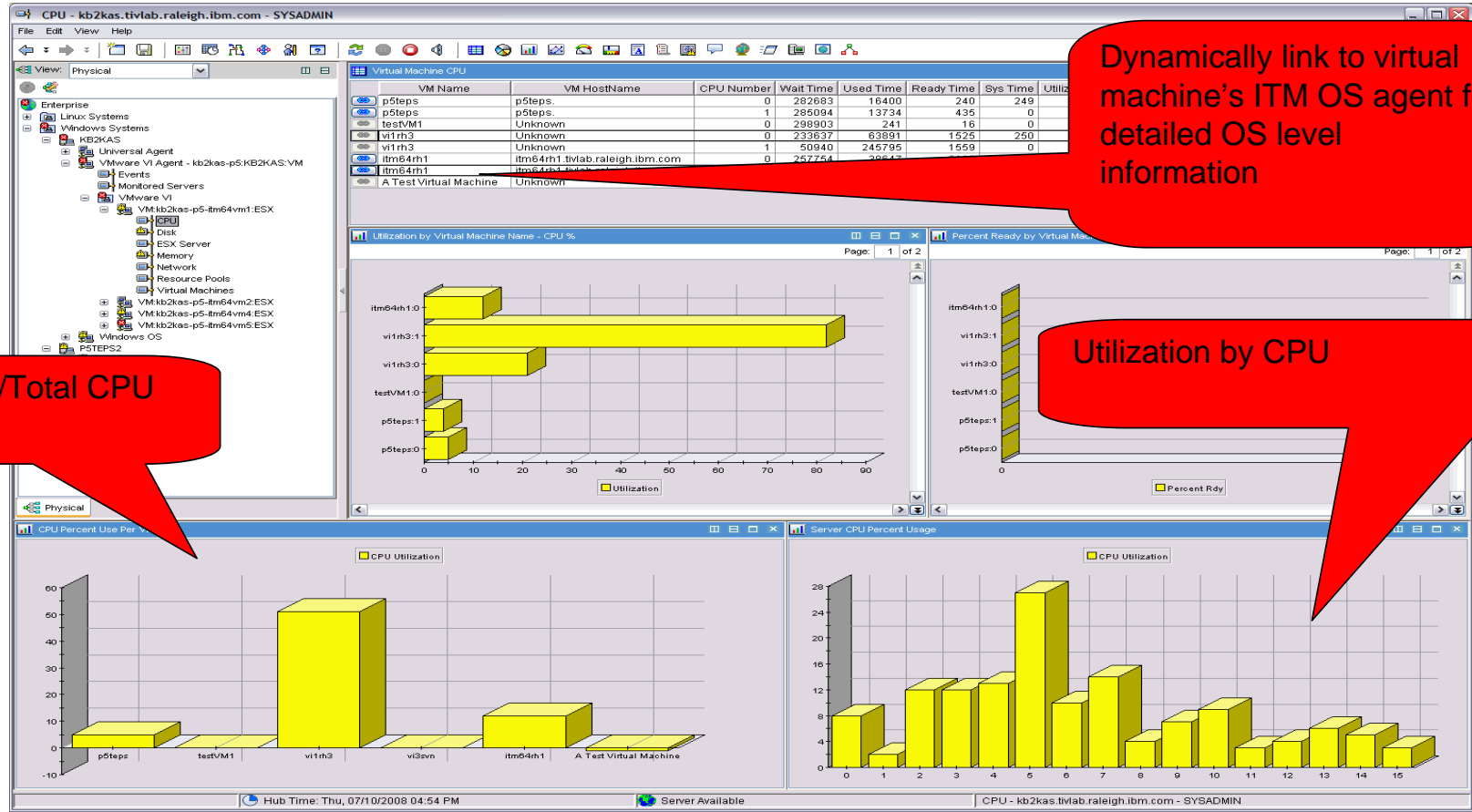


Utilization Monitoring & Reporting-Server Consolidation & Optimization

- Report on utilization to identify patterns of utilization for a particular virtual resource, server, cluster over a period of time (peak vs non peak).
- Monitor historical and projected utilization for CPU, Memory, Storage & Network
- Platforms supported:
 - AIX / IBM System P
 - VMware
 - Solaris Containers
 - Microsoft Virtual Server & Hyper - V
 - z/VM



Hypervisor CPU Utilization



Dynamically link to virtual machine's ITM OS agent for detailed OS level information

VM Utilization/Total CPU

Utilization by CPU



IT CAM for SOA Enables End to End Performance Management

- Service problem identification & resolution**
 - ▶ Content-rich views, topology and cross-workspace linkages enable drill-down from services to application components and IT resources to identify the source of bottleneck or failure
- Service Management Automation**
 - ▶ Built-in and extensible alerts, situations, workflows enable powerful automation scenarios
 - ▶ Managed mediation primitives for WebSphere ESB enable control of services
- Heterogeneous SOA Platform Support**
 - ▶ SOA Platform support covers IBM WebSphere Application Server, WebSphere ESB, WebSphere Process Server, WebSphere DataPower, WebSphere Message Broker, MQ, Microsoft .NET, JBOSS, CICS, SAP and BEA WebLogic
- Integrated Console**
 - ▶ Service views, alerts and automation included within Tivoli Enterprise Portal, the integration point for ITCAM, OMEGAMON, and ITM
- Life-cycle Management**
 - ▶ Web Services Navigator provides deep understanding of service flows and relationships
 - ▶ WebSphere Service Registry and Repository integration supports SOA Governance
- Support for ISM strategy**
 - ▶ Discovery Library Adapters add discovered Service information to CCMDDB
 - ▶ Additional DLAs provided for BPEL and WSRR



IT Operations



Web Services Expert



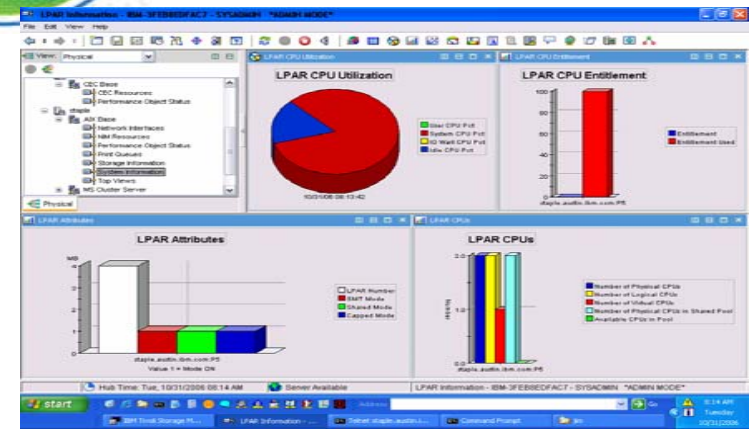
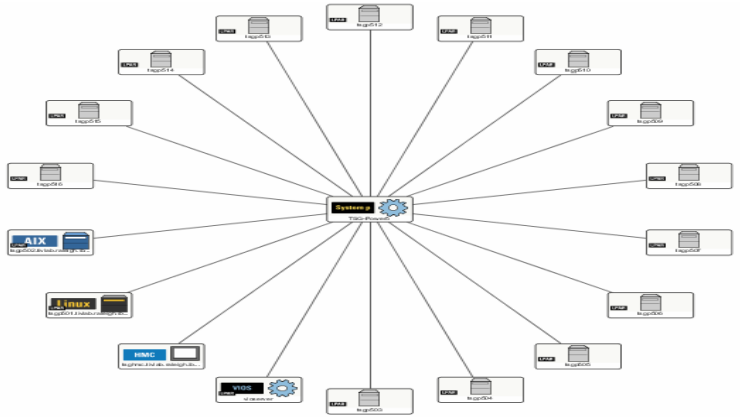


Trend: Embedded Monitoring, Agent based or Agent-less

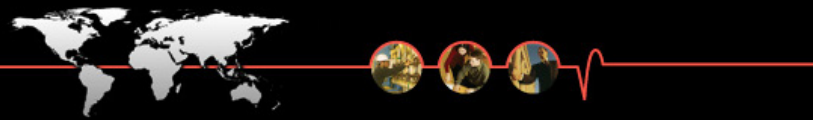
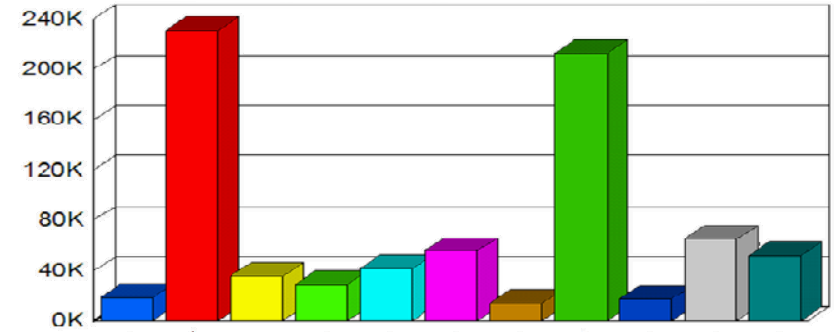


Management Edition for AIX

- Pre-packaged Systems Management providing:
 - **Discovery** via TADDM 7.1
 - **monitoring, performance tracking** via ITM 6.2
 - **usage accounting** via IUAM 7.1
- Integrated with the AIX 5.3 TL5 OS

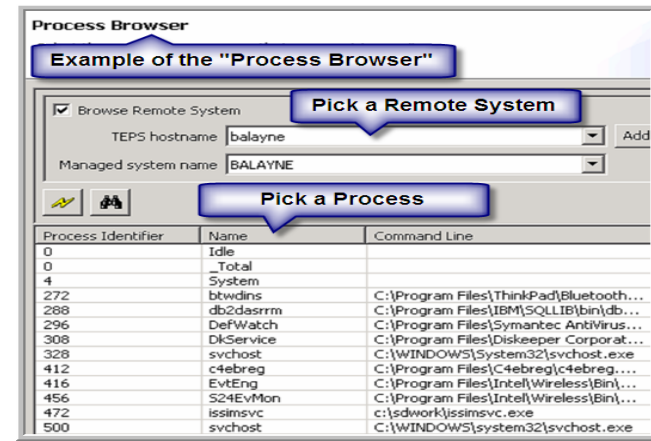
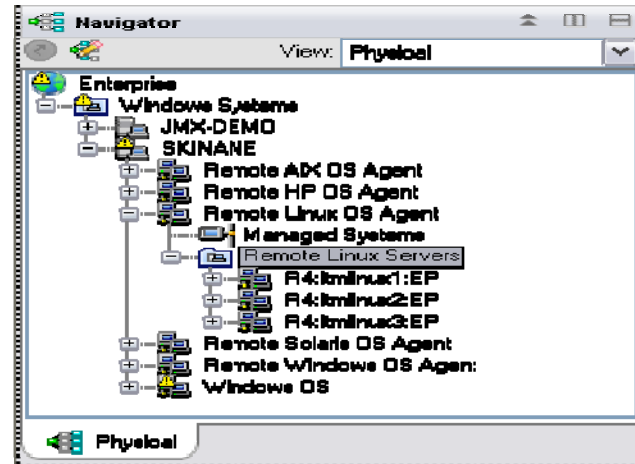


IT Expenses by Account

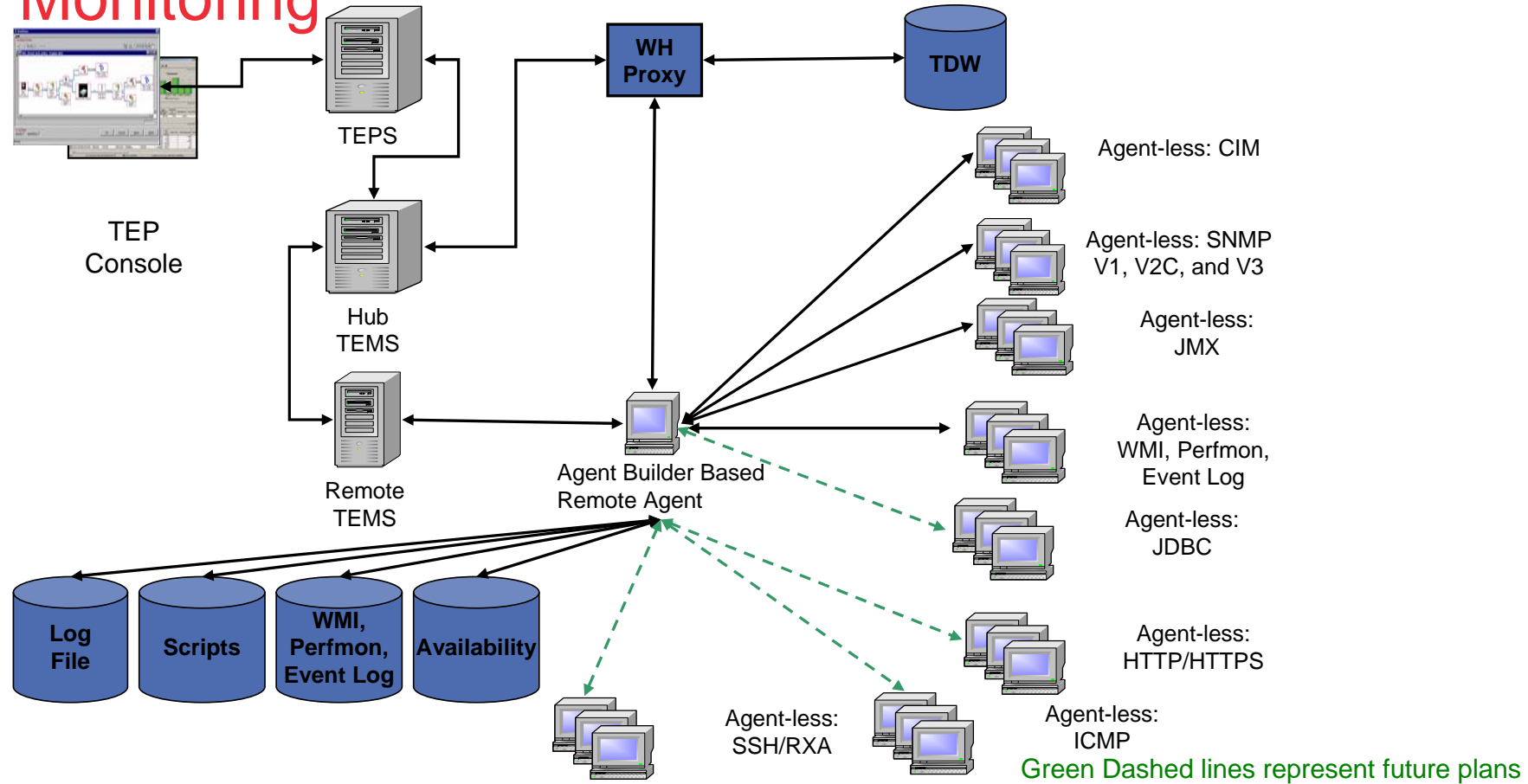


Custom Remote Monitoring option

- Remote Agents are developed with the Agent Builder wizard
- Native and Remote Agents integrate directly into the TEP
- Each system appears and is treated individually even though they are monitored by a single agent
- In addition to native agents, ITM now provides remote monitoring option for
 - Windows OS
 - AIX OS
 - HP OS
 - Linux OS
 - Solaris OS
- Out Of the Box Situations for
 - Disk Utilization
 - Memory Utilization
 - CPU Utilization
 - Network Utilization



Remote Monitoring



Pulse

Comes to You 2009

IBM



Managing the World's Infrastructure

Summary



Macro Trends

1. Predictive Analytics for improved business service availability
2. Synchronous and Asynchronous Transaction Tracking
3. Dynamic Infrastructure drives evolution of virtualized environments and SOA management
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<http://www.ibm.com/developerworks/wikis/display/tivolimonitoring/home>

Tivoli. Distributed Monitoring and Application Management

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blocha	30	0	11 days ago
gjab	27	1	27 days ago
L...	10	0	132 days ago

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Monthly Spotlight

- **Examples of the Deployment and Configuration of the IBM Tivoli Monitoring Firewall Gateway Feature:** The purpose of this paper is to provide three real-world examples of how the Firewall Gateway feature works as part of IBM Tivoli Monitoring V6.1, Fix Pack 1. On finishing this document, the reader will be able to understand what the firewall gateway feature is and identify which monitoring agents should use the gateway feature.
- **ITCAM for Transactions v7.1 Architecture, Design and Deployment Planning Podcast Series:** Listen to various IBM Business Partners, Clients and SMEs discuss how to plan and prepare for successful architecture, design, deployment and operationalizing the IBM Tivoli Composite Application Manager for Transactions v7.1 product.
- **Best Practices Integration of IBM Tivoli Monitoring and IBM Tivoli Business Service Manager for Databases: A Dashboard for Database Administrators:** This document presents a solution showing the integration of IBM® Tivoli® Monitoring with IBM Tivoli Business Service Manager (TBSM) within the context of database administration. This document describes a detailed, step-by-step solution showing vital KPI (key Performance Indicators) for databases such as DB2, MSSQL, and Oracle.
- **Best Practices for Optimizing Managing Server Performance:** This document provides best practices for optimizing managing server performance.



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