# Pulse Comes To You 2012
## Business Without **LIMITS**

**Cloud**

Rethink IT and Reinvent Business
**with IBM SmartCloud**

**Pulse Comes to You 2012**
Business without **LIMITS**

Monitoring and Managing your
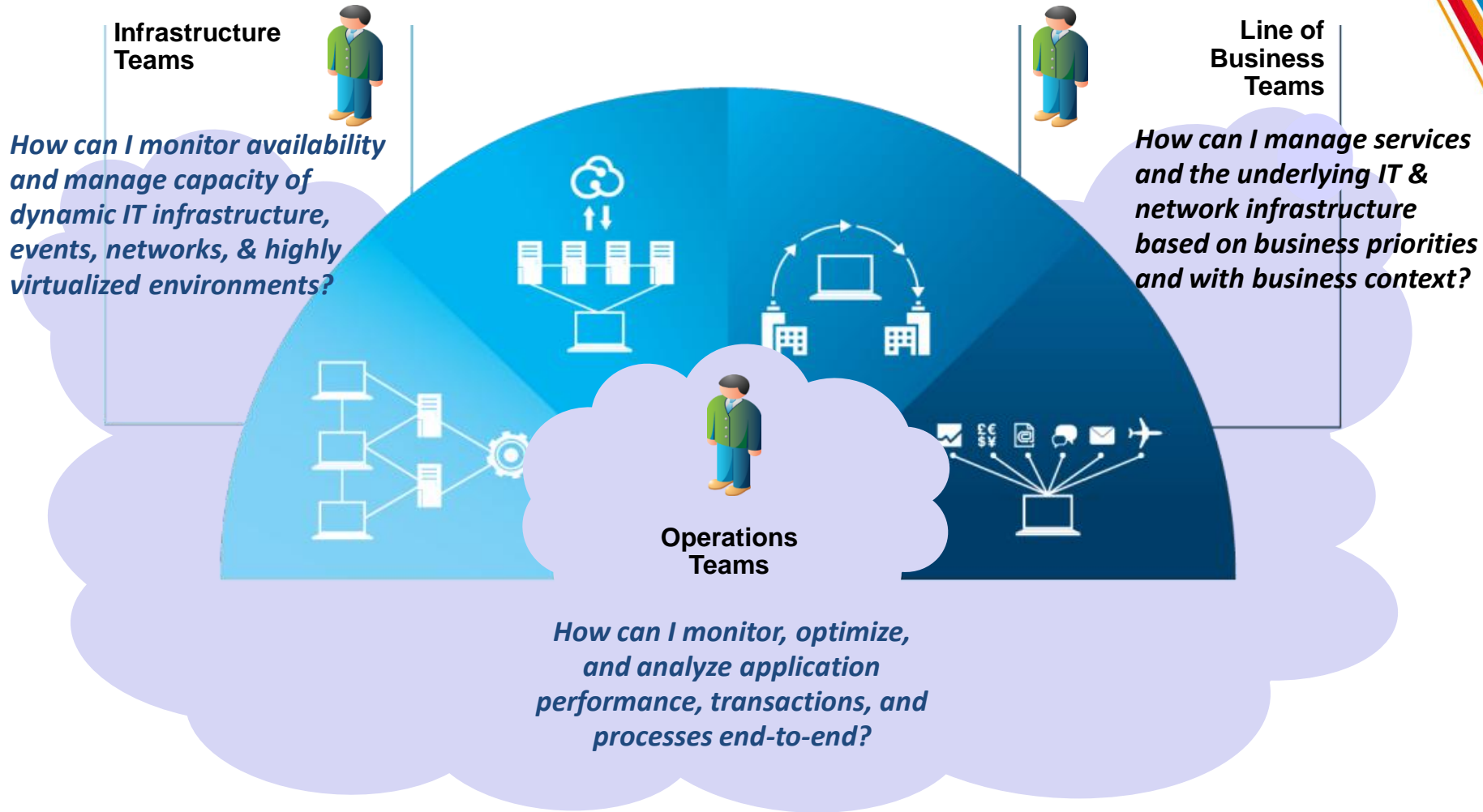Cloud & Shared IT Environment

**Yeo Tze Ping**

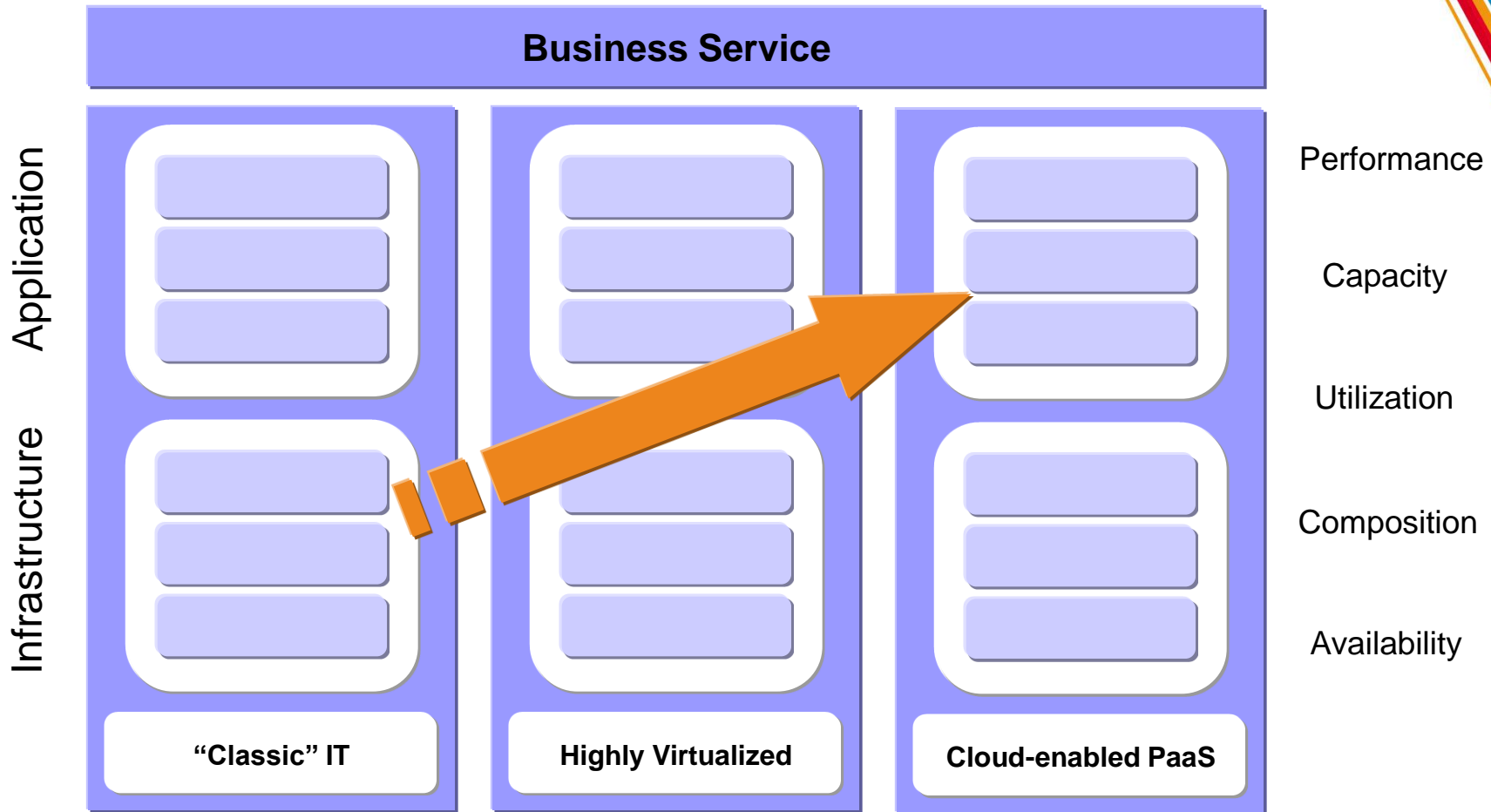**Service Management Solution
Consultant
Tivoli ASEAN**

# Evolving operations management
## Common questions during IT transformation to cloud & shared infrastructure

**Infrastructure Teams**

*How can I monitor availability and manage capacity of dynamic IT infrastructure, events, networks, & highly virtualized environments?*

**Line of Business Teams**

*How can I manage services and the underlying IT & network infrastructure based on business priorities and with business context?*

**Operations Teams**

*How can I monitor, optimize, and analyze application performance, transactions, and processes end-to-end?*

**Pulse Comes to You 2012**

Business without **LIMITS**

# Evolving operations management
## Cloud and shared infrastructure drives increased need to manage at the application and service level



**Business Service**

Application

Infrastructure

Performance

Capacity

Utilization

Composition

Availability

**"Classic" IT**

**Highly Virtualized**

**Cloud-enabled PaaS**

- **Heterogeneous Infrastructure**
- **Heterogeneous Middleware**

- **Heterogeneous Middleware**
- **Standardized Infrastructure**

- **Standardized Middleware**
- **Standardized Infrastructure**

Business without **LIMITS**

**Pulse Comes to You 2012**

# The Cost of Poor Performing Applications
## Impacts customer satisfaction, revenue and productivity

### Online Outage On Black Friday

(AP) High traffic disrupted Wal-Mart Stores Inc.'s Web site for much of Friday, one of the year's busiest shopping days.

The Walt Disney Co. also had problems handling the rush of online activity Friday, while Amazon.com Inc.'s site had brief disruptions a day earlier due to a Thanksgiving Day sale on Microsoft Corp.'s Xbox 360 video game machines.

### Computer Glitch Delays IRS Rebate Checks

#### Computer glitch dumps kids from state health insurance

By DEBORAH CIRCELLI
Staff writer

DAYTONA BEACH — Computer errors in a state health insurance

.. issues with application performance are impacting corporate revenues by up to 9%."
"Poor application performance translates to lost revenue, research shows", Network World 08/06/2008

""Nearly 60% of survey respondents reported the inability to identify issues before end users are impacted…"
*"Poor application performance translates to lost revenue, research shows", Network World 08/06/2008*

### InformationWeek

**BestBuy.com Experiences Overnight Web Site Outage, According To Monitoring Service**

*December 15, 2006, Information Week*

BestBuy's Web site response times have been climbing as holiday shopping has become more December, according to WebSitePulse.com.

By Charles Babcock
InformationWeek

Last Updated: Monday, 3 January, 2005, 18:31 GMT

✉ E-mail this to a friend    🖶 Printable version

### System glitch hits HSBC customers

HSBC customers faced chaos in the UK on the New Year public holiday as the bank suffered a major breakdown in services.

A computer glitch meant customers were unable to get money from cash machines or use credit cards and Switch
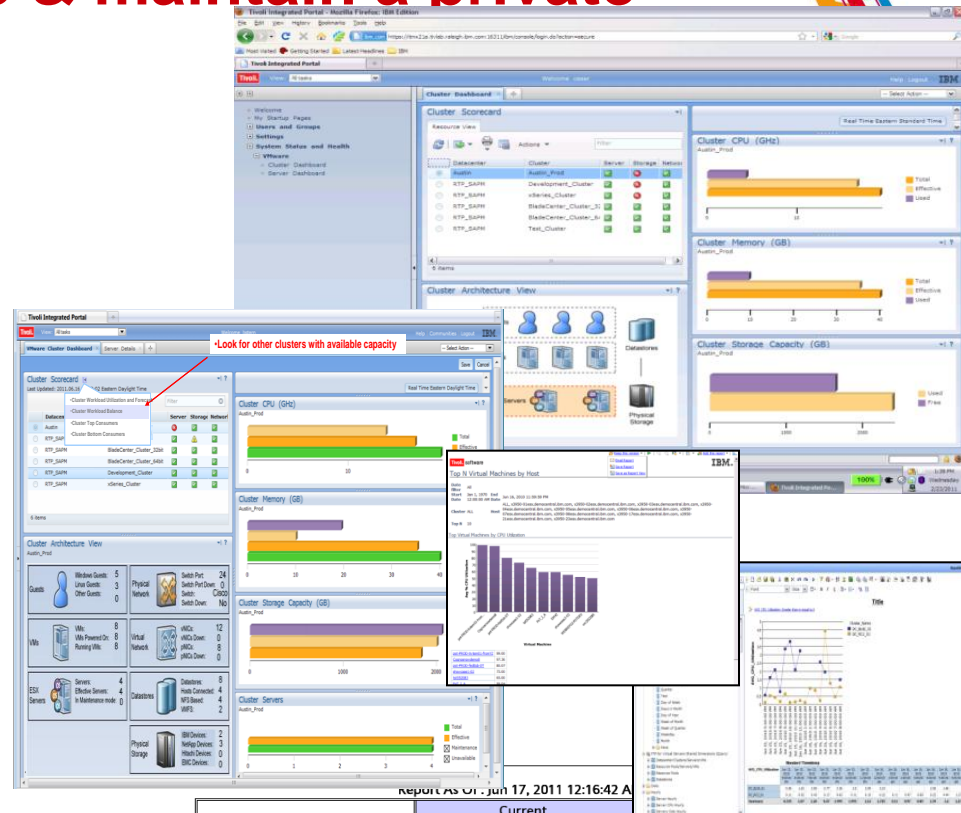
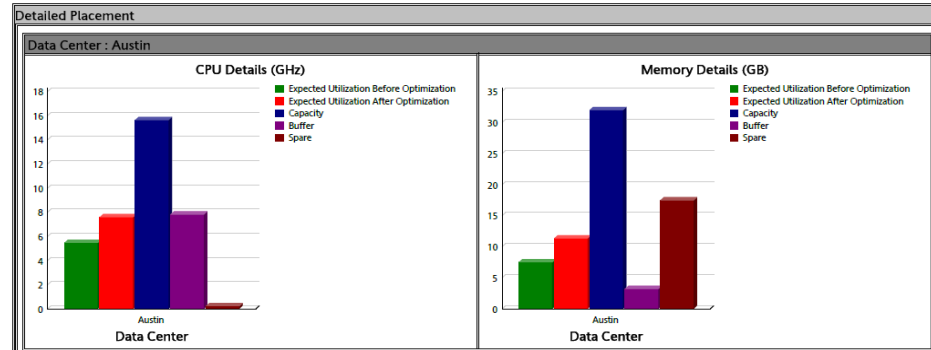Bargain hunters may have been hit by HSBC's problems

ess their personal accounts

**"Organizations spend 54% of each outage detecting and identifying."**
**– EMA Decreasing IT Operational Costs by Accelerating Problem Resolution, EMA March 2009**

the glitch was the most seriou s history, but most problems

## Pulse Comes to Yo

**MITS**

# Key capabilities to optimize & maintain a private cloud

➤ **Health dashboards** to provide an instant, consolidated glimpse into cloud health

➤ **Topology views** of the key interrelated components of the cloud

➤ **Reports** on the health trends of cloud components and workloads

➤ **What-If** capacity planning scenarios

➤ **Policy-Based** optimization to put workloads where they'll perform best, not just where they'll fit

➤ **Performance Analytics** for right-sizing of virtual machines

➤ **Integration** with other Service Management functions

**Pulse Comes to You 2012**

**VMware Cluster Dashboard** ✕  ＋                                    --- Select Action

[Select time range ▼]

## Scorecard Widget                                    ?

Last Update: 10/3/11 12:15 PM

Filter [                    ]

| | Datacenter | Cluster | Server | Storage | Network |
|---|---|---|---|---|---|
| ◉ | Austin | Austin_Prod | ❌ | ❌ | ✅ |
| ○ | RTP_SAPM | Test_Cluster | ⚠️ | ⚠️ | ✅ |
| ○ | RTP_SAPM | BladeCenter_Cluster_32bit | ⚠️ | ✅ | ✅ |
| ○ | RTP_SAPM | Development_Cluster | ⚠️ | ✅ | ✅ |
| ○ | RTP_SAPM | BladeCenter_Cluster_64bit | ✅ | ✅ | ✅ |
| ○ | RTP_SAPM | xSeries_Cluster | ✅ | ✅ | ✅ |

6 items

## Cluster Architecture View                          ?

Austin_Prod

**Guests**
| | |
|---|---|
| Windows Guests: | 7 |
| Linux Guests: | 5 |
| Other Guests: | 0 |
| Unknown: | 5 |

**Data Stores**
| | |
|---|---|
| Data Stores: | 13 |
| NFS: | 6 |
| VMFS: | 7 |

**VMs**
| | |
|---|---|
| VMs: | 17 |
| Powered On: | 17 |
| Running: | 14 |

**Physical Storage**
| | |
|---|---|
| SAN Volumes: | 0 |
| NAS Volumes: | 24 |
| Total Volumes: | 24 |

**ESX Servers**
| | |
|---|---|
| Servers: | 4 |
| Effective Servers: | 4 |
| Maintenance Mode: | 0 |

**Virtual Network**
| | |
|---|---|
| Physical NICs: | 8 |
| Physical NICs Down: | 0 |

## Cluster Servers                                    ?

Austin_Prod

■ Unavailable
■ Maintenance
■ Effective
■ Total

0   1   2   3   4
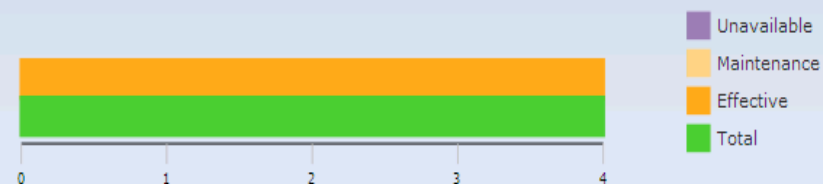
## Cluster CPU (GHz)                                  ?

Austin_Prod

■ Used
■ Effective
■ Total

0          10
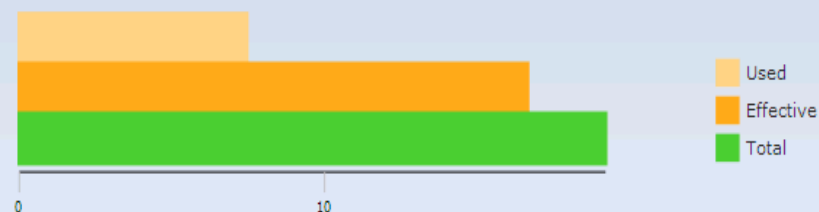
## Cluster Memory (GB)                                ?

Austin_Prod

■ Allocated
■ Used
■ Effective
■ Total

0   10   20   30   40
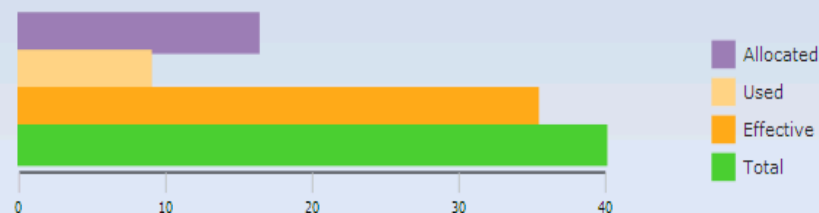
## Cluster Storage Capacity (GB)                      ?

Austin_Prod

VMware Cluster Dashboard ✕ | **Storage Details** ✕ | +
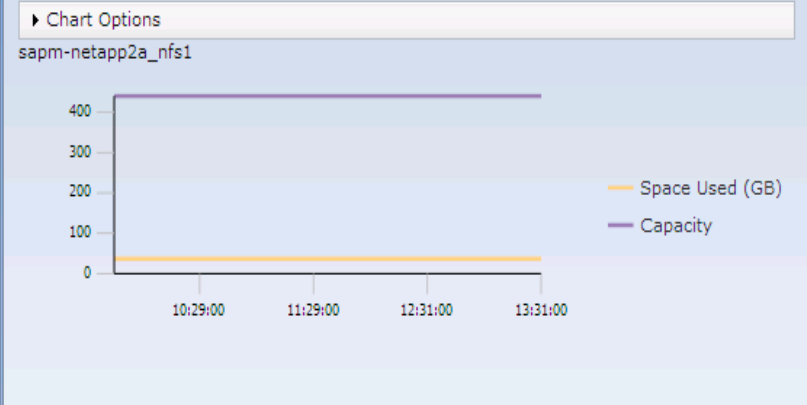
--- Select Action -

## Austin_Prod : Austin

Real Time - Last 4 Hour(s) Eastern Daylight Time ▼

### Data Stores ?

| | Name | Status | Used Space(%) | Used(GB) | Total Capacity (GB) | Percent Overcommitted |
|---|---|---|---|---|---|---|
| ◉ | sapm-netapp2a_nfs1 | ✅ | 9% | 36.67 | 440 | -70.81 |
| ○ | sapm-netapp2_nfs | ✅ | 61% | 365.5 | 600 | — |
| ○ | LinZigZagPart09 | ✅ | 58% | 117.11 | 203 | — |
| ○ | sapm-netapp1_home | ✅ | 2% | 1.4 | 95.61 | — |
| ○ | sapm-netapp2a_nfs2 | ✅ | 21% | 32.82 | 160 | — |

13 items

### Data Store Metrics ?

▶ Chart Options

sapm-netapp2a_nfs1

```
400
300
200
100
  0
     10:29:00   11:29:00   12:31:00   13:31:00
```
— Space Used (GB)
— Capacity

### Virtual Machines ?

| | VM Name | Server | Overall Status | Provisioned (MB) | Committed (MB) |
|---|---|---|---|---|---|
| ◉ | sapm-Tuning-g | absm-365b.tivlab.raleigh.ibm. | ✅ | — | 2,048 |
| ○ | sapm-rhx32d | absm-365b.tivlab.raleigh.ibm. | ✅ | 256 | 256 |
| ○ | SAPM-Tuning-f | absm-365b.tivlab.raleigh.ibm. | ✅ | — | 256 |
| ○ | SAPM-Tuning-a | absm-365b.tivlab.raleigh.ibm. | ✅ | 352 | 352 |
| ○ | sapm-rhx32m | benblade06.tivlab.raleigh.ibm | ✅ | — | 2,048 |

5 items

### Virtual Machine Metrics ?

▶ Chart Options

sapm-Tuning-g

```
2000
1000
   0
     10:23:00   11:23:00   12:24:00   13:24:00
```
— Provisioned
— Committed (MB)
— Uncommitted (MB)
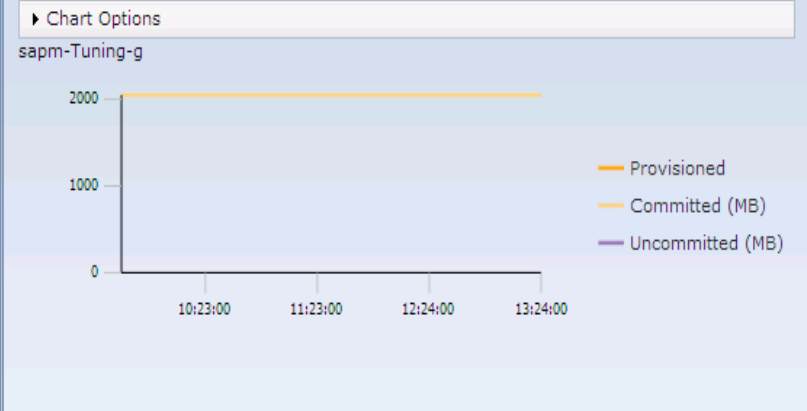
### Volumes ?

| | Volume Type | Name | Size(GB) | Status | Used Space(%) | Used(GB) | Read Latenc |
|---|---|---|---|---|---|---|---|
| ◉ | NAS | sapm-netapp2a:/vol1 | 440 | ✅ | 17.4 | 76.8 | 215.5 |

### Volume Metrics ?

▶ Chart Options

sapm-netapp2a:/vol1

```
10
```
Percentage of

App Summary     **Cluster A Storage**
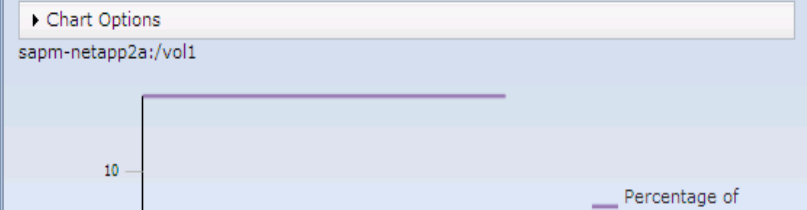
## Datastores

Space Used

| Datastore Name | Status | Percent Space Used | | Space Used (GB) | Accessible | Commands Aborted | Total Latency | Queue Latency |
|---|---|---|---|---|---|---|---|---|
| RTPdatastore00 | ❌ | ▓▓▓▓▓ | 82% | 500 | Yes | | | |
| RTPdatastore12 | ❌ | ▓▓▓▓ | 68% | 250 | Yes | | | |
| RTPdatastore25 | ✅ | ▓▓ | 31% | 100 | Yes | | | |
| RTPdatastoreA | ✅ | ▓▓ | 40% | 700 | Yes | | | |
| RTPdatastore56 | ✅ | ▓▓▓ | 49% | 450 | Yes | | | |

750GB
500GB
250GB
0

1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00
1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00

🟦 RTPdatastore00    🟩 RTPdatastore12
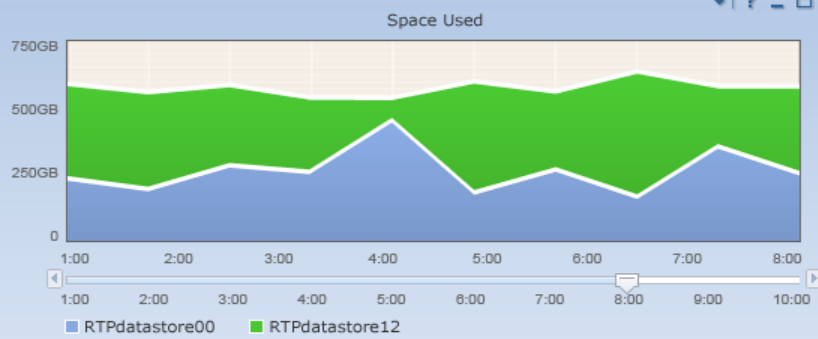
## Situation Event List

| Severity | Situation Name | Display Item | Date/Time |
|---|---|---|---|
| ❌ Critical | RTP_DB_Conn... | | December 10, 2010 02:26 PM EST |
| ⚠ Unavail... | RTP_DB_Time... | | December 10, 2010 10:16 AM EST |

## TADDM Change History

| Change | Date | Attribute | Old | New |
|---|---|---|---|---|
| Created | Friday, Aug 20, 2010 4:40 PM EST | | | |
| Created | Monday, Aug 16, 2010 6:30 AM EST | | | |
| Created | Tuesday, Aug 10, 2010 7:20 AM EST | | | |

## Volumes

Percent Space Used

| Volume Name | Datastore Name | Size | Status | Percent Space Used | | Space Used | Read Latency | Write Latency | Total Ops |
|---|---|---|---|---|---|---|---|---|---|
| VM001RTP | RTPdatastore00 | 400 | ❌ | ▓▓▓▓▓ | 82% | 500 | | | |
| VM002ATL | RTPdatastore12 | 100 | ❌ | ▓▓▓▓ | 68% | 250 | | | |
| VM056CHI | RTPdatastore25 | 800 | ✅ | ▓▓ | 31% | 100 | | | |
| VM298DAL | RTPdatastoreA | 200 | ✅ | ▓▓ | 40% | 700 | | | |
| VM887BOS | RTPdatastore56 | 700 | ✅ | ▓▓▓ | 49% | 450 | | | |

100%
50%
25%
0%

1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00
1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00

🟧 VM001RTP
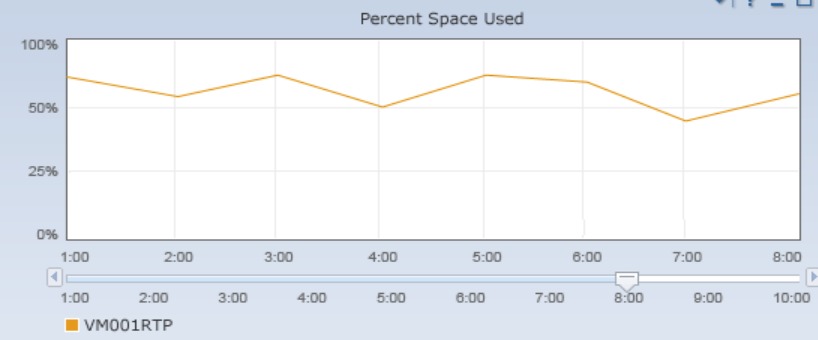
# VMware VI Balanced and Unbalanced Clusters

## CPU Utilization

Avg CPU Utilization

- Avg CPU Utilization
- Mean
- Statistical Minimum
- Statistical Maximum

Cluster Name

BladeCenter_Cluster_32bit, BladeCenter_Cluster_64bit, Development_Cluster, Test_Cluster, xSeries_Cluster

## Memory Utilization

Avg Memory Utilization

- Avg Memory Utilization
- Mean
- Statistical Minimum
- Statistical Maximum

Cluster Name

BladeCenter_Cluster_32bit, BladeCenter_Cluster_64bit, Development_Cluster, Test_Cluster, xSeries_Cluster
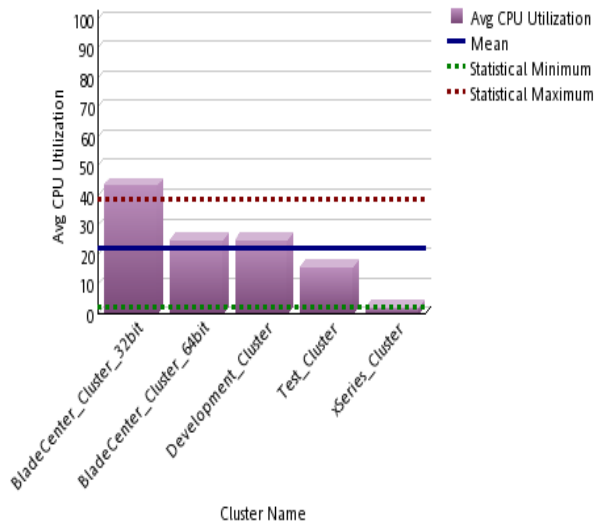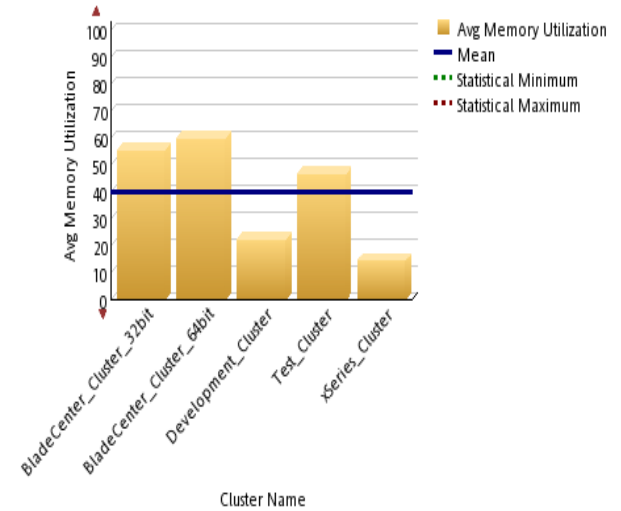
## Datastore Space Utilization

Avg Datastore Utilization

- Avg Datastore Utilization
- Mean
- Statistical Minimum
- Statistical Maximum

eCenter_Cluster_32bit, eCenter_Cluster_64bit, Development_Cluster, Test_Cluster, xSeries_Cluster

Tivoli.

View: All tasks

Welcome bstern

Help | Communities | Logout

IBM.

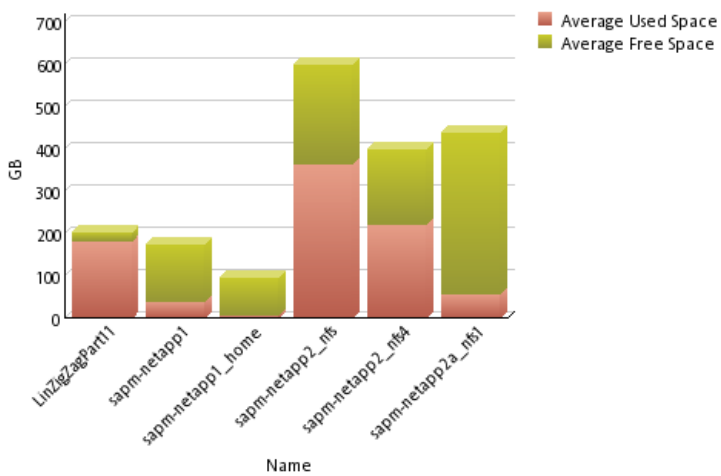Common Reporting

--- Select Action ---
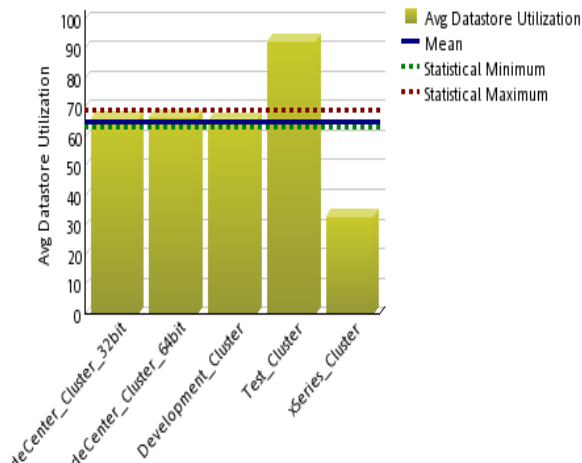
# Work with reports

Viewer - VMware VI Datastore Capacity and Performance Trend
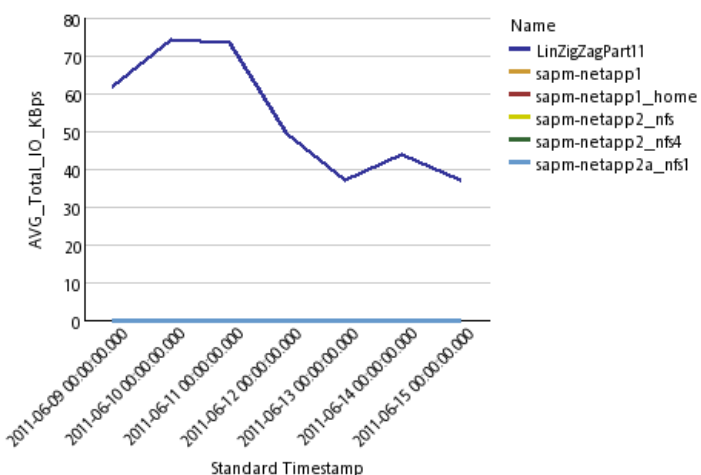
tipadmin     About

Keep this version     Add this report

## Capacity
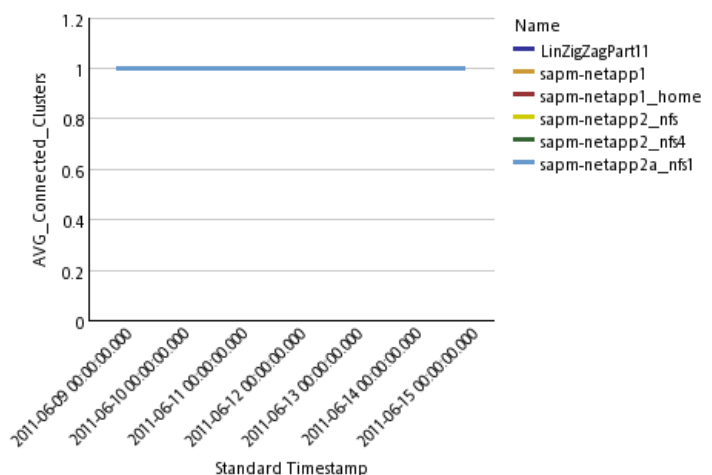


## % Used
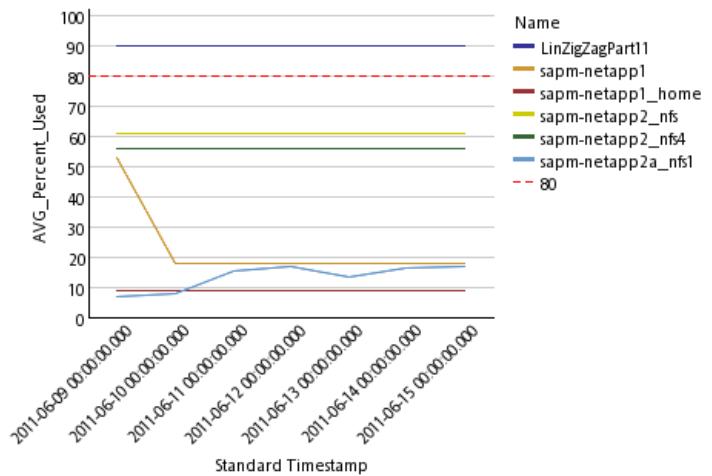


## Total I/O



## Number of Connected Clusters



Number of Connected Host Servers

Number of Connected VMs

| VMware Cluster Dashboard × | Storage Details × | **PlanningCenter** × | + |

--- Select Action --

# PlanningCenter

ⓘ Any change in steps 1 to 4 needs a re-generation of the plan in step 5 to view the latest recommendation.

## Step 1: Snapshot config data.

Load the latest configuration data for physical servers and virtual machines for analysis. You can change this data for what-if analysis.

[ Load Config ]

## Step 2: Set analysis time period.

Set the time period for which the measurement data in the warehouse can be analyzed corresponding to the virtual machines loaded in **Step 1**. The measurement data is federated from the warehouse.

[ Set Time ]

## Step 3: Scope the infrastructure for analysis.

Click **Define Scope** to go to an expert mode page where you can select the subset of physical servers that you want to be part of this analysis. Default scope includes all physical servers loaded in **Step 1**.

**Advanced options:**
While scoping you can also edit the current configuration on the Edit Current Environment page to add new attributes or clean the data for physical servers and virtual machines, if required.

[ Define Scope ]

## Step 4: Analyze virtual machine characteristics

Analyze the warehouse data within the time limit set in **Step 2**, to compute the VM-level sizing estimates using default settings (average daily utilization).

**Advanced options:**
Experts can customize sizing on the Edit Current Environment page. While on this edit page, you can trigger several custom actions to characterize virtual machines based on measurement data.

[ Size VMs ]

Current Environment Report

## Step 5: Generate optimization plan.

ⓘ Any change in steps 1 to 4 needs a re-generation of the plan in step 5 to view the latest recommendation.

Generate a recommended environment using default settings (minimize systems, over-write existing recommendations).

**Advanced options:**
Custom settings can be made on the Edit Recommended Environment Settings page where experts can select optimization strategies, such as applicable business and technical policies, optimization goals and so on.

[ Generate Plan ]

Optimized Plan Report

# Plan for Growth Factors for CPU, Memory, etc.



**Step 4: Size Virtual Machines**

Size VMs

Current Topology

Analyze the warehouse data within the time limit set in **Step 2**, to compute the VM level sizing estimates using default settings (average daily utilization).

**Advanced options:**
Experts can go do custom sizing in Current Environment > Edit page. While on this edit page, several custom actions can be triggered to characterize virtual machines based on measurement data.

•2. Advanced option:

•Get into expert mode to create custom usage profile of VMs

Edit Current Environment

View: Virtual Machines Utilization

•1. Auto-sized VMs

Views ▼ | Actions ▼ | Reports ▼ | | | | Filter

| | Host Name | VM Name | Physical Server | Recommended Reservation CPU[MHz] | Recommended Reservation Memory[MB] | Expected Storage Usage [Kbps] | Expected Network Usage [Kbps] | CPU Deviation | Memor |
|---|---|---|---|---|---|---|---|---|---|
| ☐ | Unavailable | sapm-rhx32m (RedHat 6) | absm-365b.tivlab.r aleigh.ibm.com | 790 | 3105 | | 3.5 | STABLE | STAE |
| ☐ | sapm-tuning-f.tivlab.raleigh.ibm.com | SAPM-Tuning-f | absm-365b.tivlab.r aleigh.ibm.com | 140 | 317 | | 2.38 | STABLE | STAE |
| ☐ | Unavailable | SAPM-rhx32i | absm-365b.tivlab.r eigh.ibm.com | 429 | 1149 | | 2.9 | STABLE | STAE |
| ☐ | sapm g.tivla .com | | sm-365b.tivla eigh.ibm.com | | | | 3.21 | STABLE | STAE |
| ☐ | Unavailable | sapm-rhx32d | absm-365b.tivla aleigh.ibm.com | | | | 1.78 | UNSTABLE | STAE |
| ☐ | Unavailable | sapm-rhx32a | absm-365b.tivla aleigh.ibm.com | | | | 1.91 | STABLE | STAE |
| ☐ | tbsmdemo.tivlab.r aleigh.ibm.com | tbsmdemo | absm-365b.tivla aleigh.ibm.com | | | | 11.8 | STABLE | STAE |
| ☐ | Unavailable | Test_VM | absm-365b.tivla aleigh.ibm.com | | | | 15.0 | | |
| ☐ | Unavailable | sapm-rhx32e | absm-365b.tivla aleigh.ibm.com | | | | 1.9 | STABLE | STAE |
| ☐ | Unavailable | absm-rhx32r (RedHat 6) | absm-365b.tivla aleigh.ibm.com | | | | 1.82 | STABLE | STAE |
| ☐ | Unavailable | sapm-rhx32b | benblade06.tivlab.r aleigh.ibm.com | 3014 | 385 | | 1.84 | UNSTABLE | STAE |
| ☐ | Unavailable | sapm-rhx32c | benblade06.tivlab.r aleigh.ibm.com | 2066 | 345 | | 1.78 | STABLE | STAE |
| ☐ | sapm-tuning-c.tivlab.raleigh.ibm .com | SAPM-Tuning-c | benblade07.tivlab.r aleigh.ibm.com | 471 | 433 | | 3.17 | STABLE | STAE |
| ☐ | sapm-tuning- | SAPM-Tuning-a | benblade07.tivlab.r | 147 | 456 | | 5.76 | STABLE | STAE |

•3. Apply growth profile

**Edit Recommended Reservation Size** ✕

○ Absolute Value   ● Growth

CPU Demand: `20` %
Memory Demand: `15` %
Storage Demand: ` ` %
Network Demand: ` ` %

☑ Apply to all Servers in View

Save   Cancel

1 - 18 of 18 items        5 | 10 | 25 | 50 | 100 | All        1

# Rules for Optimization

**Step 5: Generate Optimization Plan**

[Generate Plan]

Recommendation Topology

Recommendation Report

ℹ Generate a recommended environment using default settings.

**Advanced options:**
Custom settings can be made in Recommended Environment > Edit Settings page where experts can select optimization strategies, such as applicable business and technical policies, optimization goal etc.

📋 Any change in steps 1 to 3 needs a re-generation of the plan in step 4 to view the latest recommendation.

## Recommendation Generation

**Step 1: Select rules to apply in optimization**

▼ Colocation/Anti-colocation

| Active | Rule Instances |
|--------|----------------|
| ☐ | ▸ Do not colocate VMs with DB2 and WAS |
| ☐ | ▸ Seperate High and Low Critical VMs |

◂

▼ Boundary

| Active | Rule Instances |
|--------|----------------|
| ☐ | ▸ Create a Boundary for Critical VMs |
| ☐ | ▸ Create a Boundary for Win2003 32-bit VMs |

◂

▼ Utilization

| ctive | Rule Instances |
|-------|----------------|
| ] | ▸ Provide 50% more CPU for Critical VMs |
| ] | ▸ Use 20% for growth on MQ servers |

◂

**Step 2: Select optimization goal**

⦿ Minimize systems
◯ Balance server utilization

**Step 3: Select options**

⦿ Keep existing recommendations
◯ Ignore existing recommendations

•Choose rules

•for what-if scenario

Click opens settings page in new tab – enables edits on optimization strategies. Will also link to a Rule Editor.

•Out of the box rules

•Create custom rules

•Colocation/Anti-colocation

•Boundary Rules

•Utilization Rules

14

Keep this version ▼   ▶   Add this

**IBM® Tivoli®**

## Capacity Planner Optimized Environment Plan

**Report As Of : Oct 3, 2011 4:48:22 PM**

▷ About this report

|  | Current | | Recommendation | |
|---|---|---|---|---|
| **Physical Servers** | 16 | | 7 | |
| **Virtual Machines** | 53 | | 41 | |
|  | **CPU (GHz)** | **Memory (GB)** | **CPU (GHz)** | **Memory (GB)** |
| **Total Capacity** | 132.32 | 171.79 | 109.30 | 99.81 |
| **Total Reservation** | 2.96 | 0.00 | 39.67 | 58.11 |
| **Total Unused Capacity** | 87.72 | 163.42 | 22.13 | 31.72 |
| **Capacity Efficiency Index** | 95.12 | | 31.78 | |

Headroom values are not accounted in the summary table capacity calculations.

**Detailed Placement**

**Data Center : Austin**                    **Capacity Efficiency Index :** 46



CPU Details (GHz)

- Expected Utilization Before Optimization
- Expected Utilization After Optimization
- Total Capacity
- Headroom
- Unused Capacity

Austin

Data Center



Memory Details (GB)

- Expected Utilization Before Optimization
- Expected Utilization After Optimization
- Total Capacity
- Headroom
- Unused Capacity

Austin

Data Center
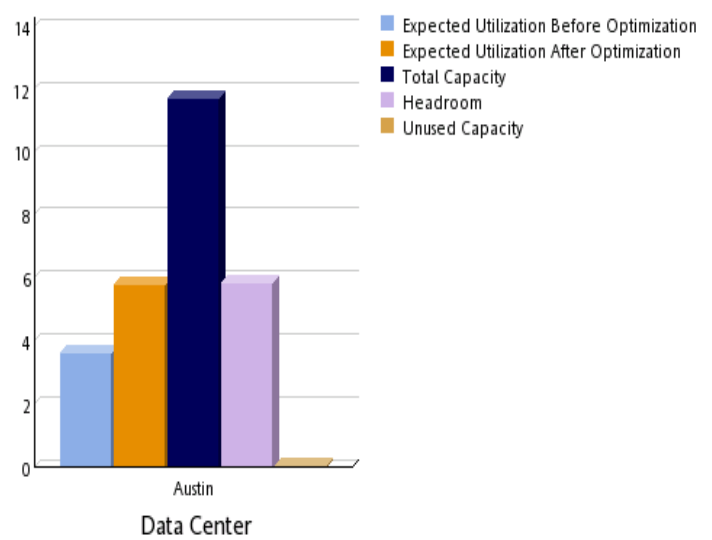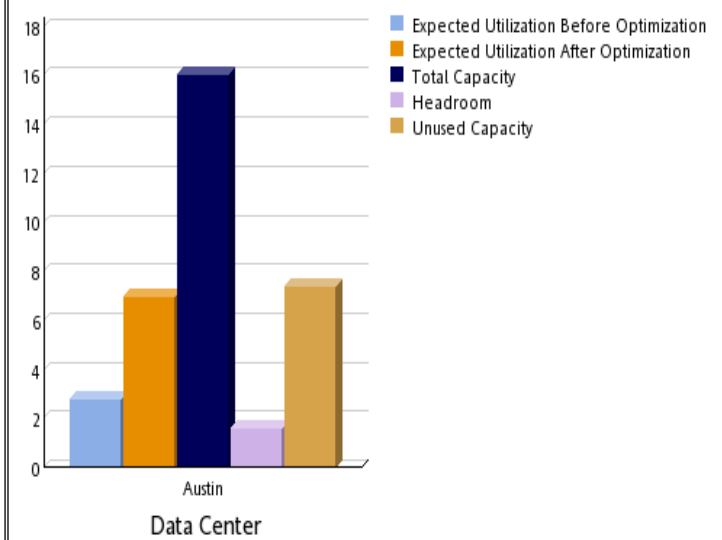
# IBM SmartCloud Monitoring: Optimize your infrastructure performance and maximize ROI

- **Provides greater visibility resource health**
  - Track service levels & performance, and predict problems before clients are impacted
  - Understand performance and capacity today, and know what it will look like months from now

- **Lowers total cost of operations**
  - Optimize workload placement to wring maximum capacity and performance out of your investment
  - Freedom from expensive hypervisor or OS lock-in with a heterogeneous infrastructure monitoring solution

- **Optimizes performance**
  - Built-in performance analytics for right-sizing of virtual machines and resource optimization
  - Real-time proactive & predictive alerts help identify and fix problems quickly

**SmartCloud Monitoring**

Health Dashboards | Capacity Analytics | Performance Optimization

*Increased Density*

*Reduced Risk*

*Minimized Outages*

*Optimized Workload Placement*

*Improved Service Levels*

**Virtual Machines** | **Storage** | **Networks**

**Pulse Comes to You 2012**

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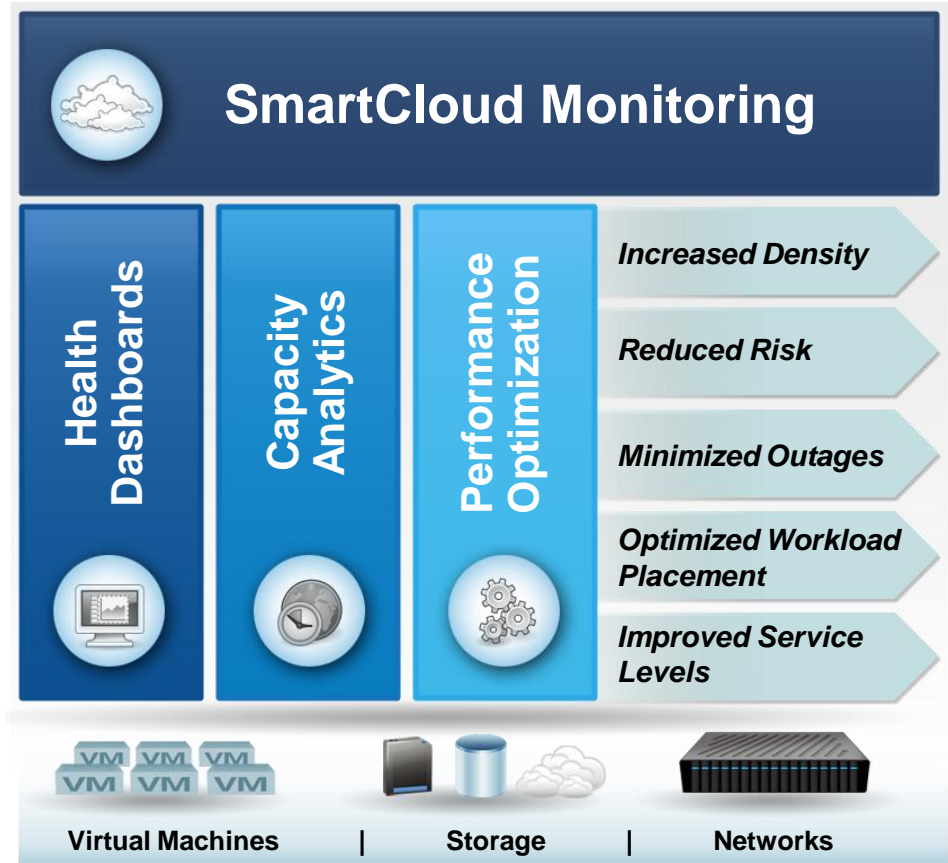
# The Business Challenge

*When there's a problem, the business needs to know which customers, users, and businesses are being impacted.*

How much is this incident costing the business?

How long has this been happening?

Are premium customers being well served?

How many customers are active or stopped using services?

**BUSINESS**

**CUSTOMERS**

Which customers and users were affected?

How many/what transactions succeeded/failed?

What does "slow" mean?

Internet / intranet

Firewall

Web servers

Apps
SAP, Siebel, Oracle, J2EE,.Net

Middleware

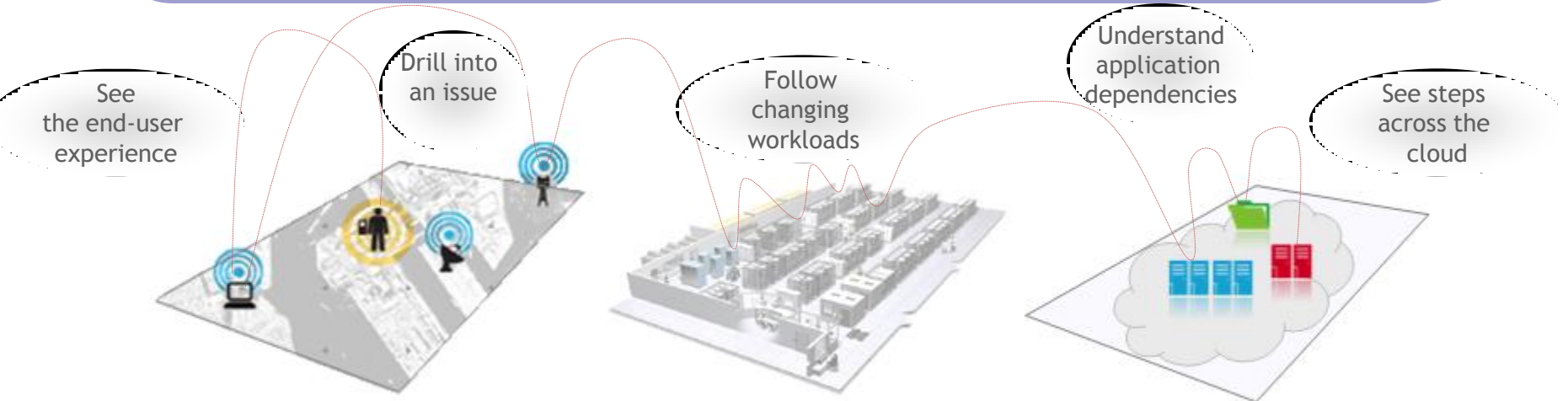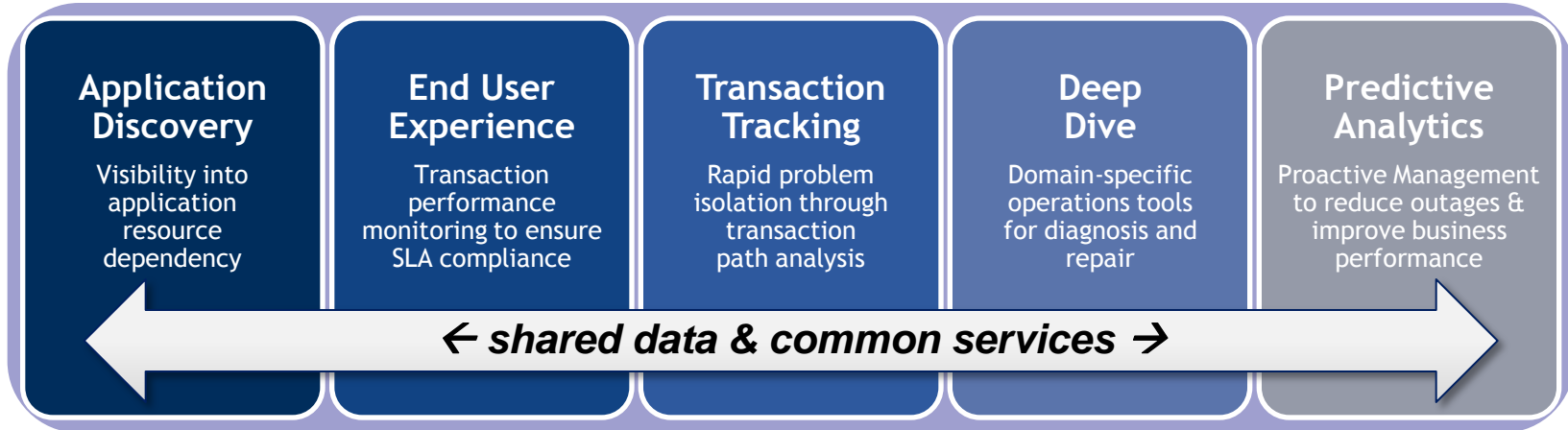JMS   MQS   CICS

Backend

Mainframe

Database

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# Application Performance Management

**Insights required to optimize performance, manage risk, and reduce costs in your application environment**

| Application Discovery | End User Experience | Transaction Tracking | Deep Dive | Predictive Analytics |
|---|---|---|---|---|
| Visibility into application resource dependency | Transaction performance monitoring to ensure SLA compliance | Rapid problem isolation through transaction path analysis | Domain-specific operations tools for diagnosis and repair | Proactive Management to reduce outages & improve business performance |

← *shared data & common services* →

See the end-user experience

Drill into an issue

Follow changing workloads

Understand application dependencies

See steps across the cloud

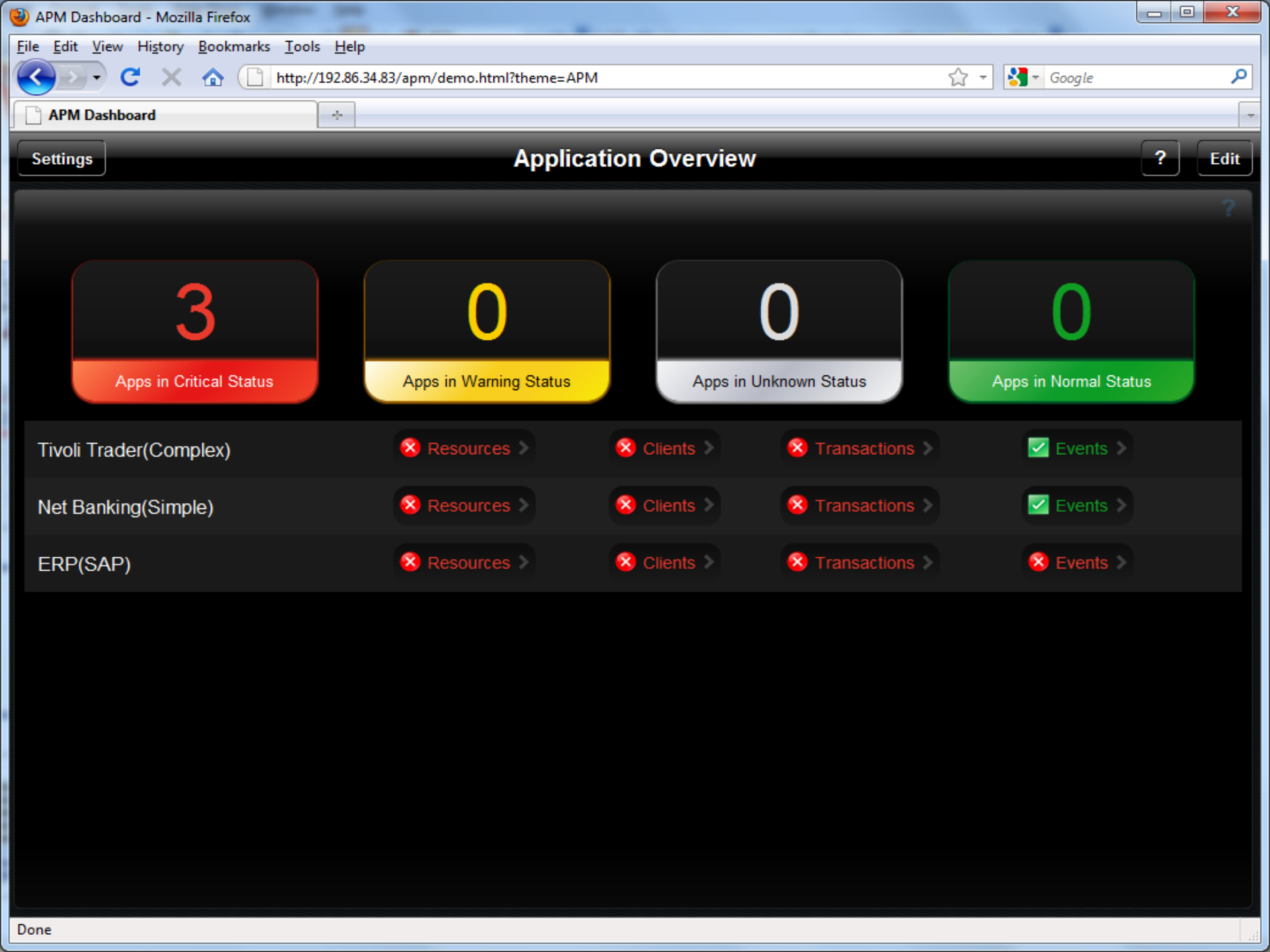*Mobile devices & smart endpoints*

*Highly virtualized applications, storage & networks*

*Private, public & hybrid clouds*

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File   Edit   View   History   Bookmarks   Tools   Help

http://192.86.34.83/apm/demo.html?theme=APM

Google

APM Dashboard

Settings

**Application Overview**

?   Edit

?

**3**
Apps in Critical Status

**0**
Apps in Warning Status

**0**
Apps in Unknown Status

**0**
Apps in Normal Status

| Tivoli Trader(Complex) | ❌ Resources › | ❌ Clients › | ❌ Transactions › | ✅ Events › |
| Net Banking(Simple) | ❌ Resources › | ❌ Clients › | ❌ Transactions › | ✅ Events › |
| ERP(SAP) | ❌ Resources › | ❌ Clients › | ❌ Transactions › | ❌ Events › |

Done

Back

# Tivoli Trader(Complex) - Clients Dashboard

?

## Client Status Summary   ?

**100%**

■ Critical: 4   ■ Warning: 0   ■ Normal: 0

## Overall Volume   ?

10

0

14:50                          15:50
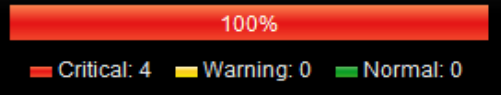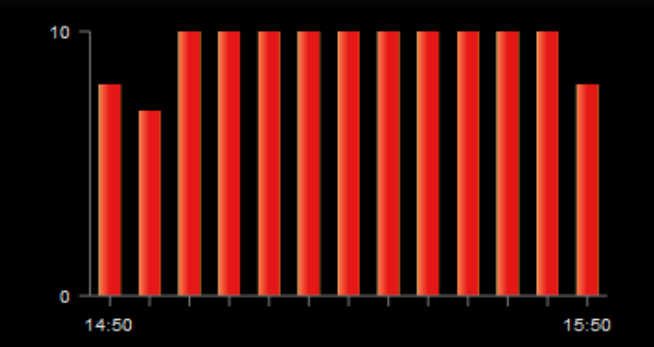
## Overall Response Time (seconds)   ?

0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00

14:50                          15:50
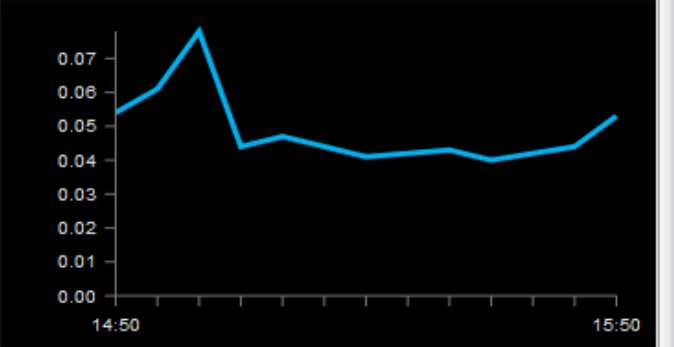
## Top 10 Clients   ?

| Client Group | Status | Transaction Volume | | Failed (%) | | Slow (%) | | Response Time (sec) | | Timestamp |
|---|---|---|---|---|---|---|---|---|---|---|
| Raleigh | ❌ Critical | | 2 | | 100.00 | | 0.00 | | 0.036 | 15:50 |
| New York | ❌ Critical | | 2 | | 100.00 | | 0.00 | | 0.047 | 15:50 |
| Austin | ❌ Critical | | 3 | | 100.00 | | 0.00 | | 0.037 | 15:50 |
| Los Angeles | ❌ Critical | | 2 | | 100.00 | | 0.00 | | 0.100 | 15:50 |

Done

http://192.86.34.83/apm/demo.html?theme=APM

Google

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**Tivoli Trader(Complex) - Resource Dashboard**

?   Edit

## Transaction Performance    ?

| Response time | 0.053 |
| Requests | 9 |

Percent failed

| 0 | 50 | 100 |

Percent slow

| 0 | 50 | 100 |

Transaction status    1

Client status    4

## WAS Cluster    ?

| Server status | 2 | 2 | | Average response tim | 1 | 1 |
| Server JVM CPU | 2 | | Request completion | 1 | 1 |
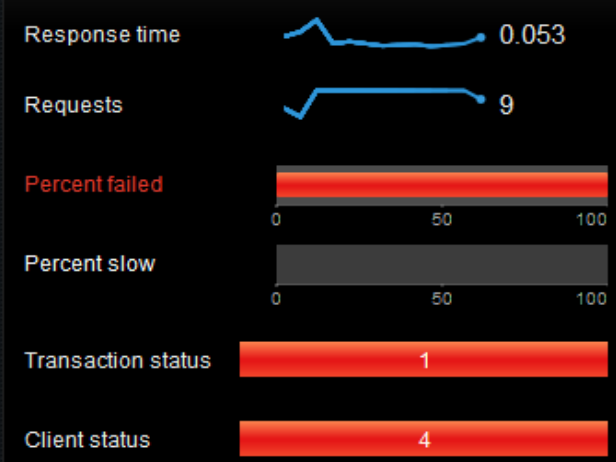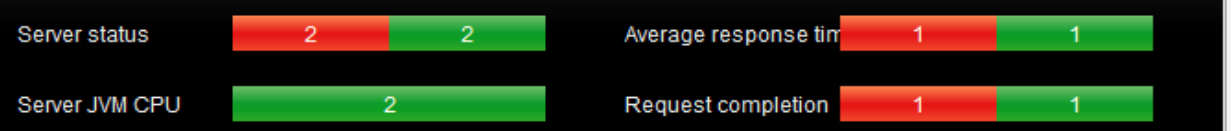
### Top 5 Servers With Highest Average Response Time

| Server Instance | Server Name | Request Detail | Avg Response Time(ms) |
|---|---|---|---|
| node3server1:v52540034f9e9:KYNS | server1 | /tt20web/app | 3,446 |
| node4server1:v52540034f9e9:KYNS | server1 | /tt20web/trade | 45 |

## HTTP Cluster    ?

| Server status | 2 |
| Failed requests rate | 2 |
| Server failures rate | 2 |
| Failed login rate | 2 |

## DB2 HA    ?

| Instance status | 2 | | DB Failed SQL stmts | 1 | 1 |
| DB BP hit ratio | 1 | 1 | DB Deadlock | 2 | |
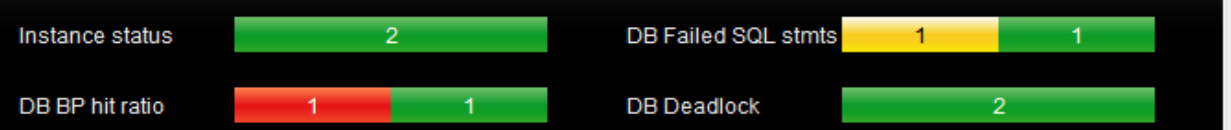
### Top 5 Sort Heap Used:

| Instance Name | Sort heap used(%) |
|---|---|
| DB2INST2:v52540074d57c:\ | ✓ 4.55% |
| DB2INST3:v52540074d57c:\ | ✓ 3.22% |

### Top 5 Connections:

| Instance Name | DB Name | Connections |
|---|---|---|
| DB2INST2:v52540074d57c:UD | TRADEDB | 199 |
| DB2INST3:v52540074d57c:UD | TRADEDB | 7 |

Done

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APM Dashboard

Back   **DB2 HA - Detail**   ?

## DB2 Instances

| Instance Name | Instance status |
|---|---|
| DB2INST3:v52540074d57c:UD | ✅ |
| DB2INST2:v52540074d57c:UD | ✅ |

## Top 5 Table Space Utilization   ?

| DB name | TableSpace name | TableSpace used(%) | |
|---|---|---|---|
| TRADEDB | USERSPACE1 | | 100.00% |
| TRADEDB | SYSCATSPACE | | 58.12% |
| TRADEDB | SYSTOOLSPACE | | 2.05% |
| TRADEDB | TEMPSPACE1 | | 0.00% |
| TRADEDB | SYSTOOLSTMPSPACE | | 0.00% |

## Top 5 Lock List In Use P

| DB name | |
|---|---|
| TRADEDB | |
| | 0 |

## Bottom 5 Buffer Pool Hit Ratio   ?

| DB name | | Buffer pool hit ratio(%) |
|---|---|---|
| TRADEDB | | 79.99% |

0   25   50   75   100
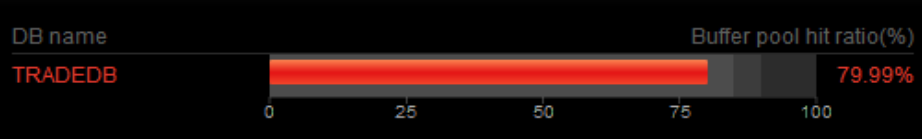
## Top 5 Sort Overflows Pe

| DB name | |
|---|---|
| TRADEDB | |
| STOREDB | |
| | 0 |

## Log Utilization   ?

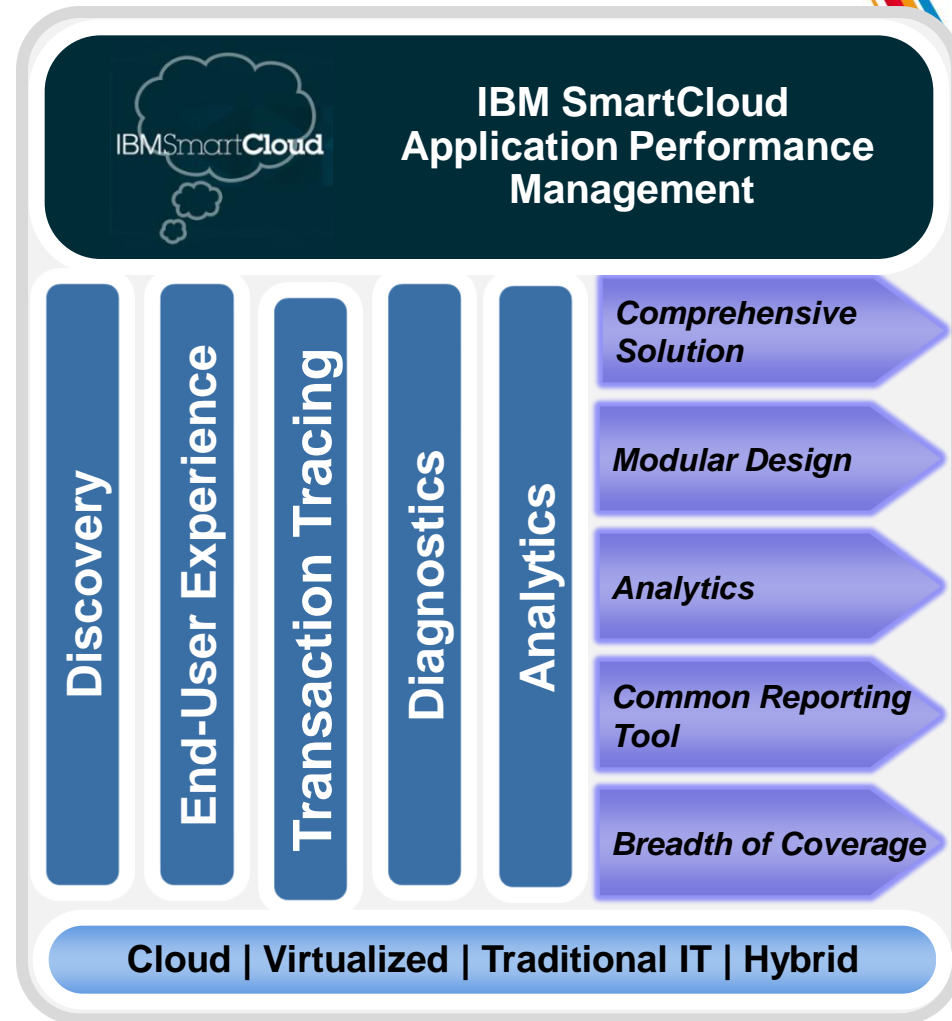| DB name | Log utilization | |
|---|---|---|
| TRADEDB | | 4.10% |

## Reorg Required Table

| DB name |
|---|
| TRADEDB |
| STOREDB |

Done

# IBM SmartCloud Application Performance Management

**A single solution that intelligently manages Performance, Availability, and Capacity for complex application infrastructures in cloud and hybrid environment.**

- 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

- Common reporting tool, based on Cognos, makes reporting simple and easy to customize

- 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

IBMSmartCloud

**IBM SmartCloud Application Performance Management**

Discovery

End-User Experience

Transaction Tracing

Diagnostics

Analytics

*Comprehensive Solution*

*Modular Design*

*Analytics*

*Common Reporting Tool*

*Breadth of Coverage*

**Cloud | Virtualized | Traditional IT | Hybrid**

*www.ibm.com/Tivoli/APM*

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# How are the Solutions Related?

**SmartCloud Application Performance Management**

*Add End User Experience*
*Add Application Server*
*Add ERP (SAP, Peoplesoft)*

**SmartCloud Application Performance Management Entry Edition**

*Add Web Server*
*Add MS Applications*
*Add Database*
*Add ISM*

**SmartCloud Monitoring**

*OS and Virtualization visibility*

**Each SmartCloud solution licensed by OS instance**

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# IBM APM ROI

| Task | Before IBM APM | After IBM APM | Improvement |
|------|----------------|---------------|-------------|
| MTTR application and services problems<br>*Large Food Service and Facilities Mgmt Provider* | 8hr/incident | 1hr/incident | $1.1M/yr |
| End user monitoring<br>*Large Chemical Company* | 77% user satisfaction<br>99% availability | 86% user satisfaction<br>99.7% availability | 9%<br>.7% |
| e2e application and service monitoring<br>*Logistics Company* | 97%  uptime | 99.7% uptime | 2.7% |

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