Business Service Diagnostics for SAP

Benjamin Alloul
ALM / IT Excellence Presales
Field Service Software – EMEA
What do you see here?
The end-user sees Business Services accessed thru a diverse set of UIs.

His main concerns are functionality and usability.

But to derive value out of the services, he expects performance and availability.

IT the contract with the Business Units on a set of KPIs formalized in a Service Level Agreement.
IT sees a complex and layered service architecture

- Are customers affected?
- Are transactions failing?
- Is authentication server slow?
- Can I find the problem? Did we record everything?
- Are business apps slow?
- What’s mainframe response time?
- Are web services down?
- What about the web servers?
- How is database response?
- Are 3rd parties meeting SLAs?

Network | Router | Firewall | Switch | Load Balancer | Web Servers | Portal | App Server | Mainframe | Database | Web Services
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
End User | | | | | | | | | | |
SAP ERP | SAP BO XI | SAP CRM | | | | | | | | |
SAP BO XI | | | | | | | | | | |
Web Services | | | | | | | | | | |
Databases | | | | | | | | | | |
3rd Party Applications | | | | | | | | | | |

With CA Application Performance Management
End-to-End View of Business Services

Understand End-User experience; establish SLAs

Monitor all business transactions through the IT infrastructure; measure response and SLAs

Conduct problem triage; diagnose root cause

End User
WAN/WWW
Router
Firewall
Switch
Load Balancer
Web Servers
Portal
App Server
WAN/WWW
Router
Firewall
Switch
Load Balancer
Web Servers
Portal
App Server

## Application Performance Management
### What do we aim to deliver?

Application Performance Management yields (Various synonyms):

- Reduced risk
- Increased efficiency
- Improvement of mean time to resolution
- Ability to plan capacity
- Optimized IT performance
- Improved business performance
- Increased customer satisfaction
- Increased availability

- **Private Enterprise**
  - Reduced costs and increased revenue equal higher profits

- **Public / Non Profit Services**
  - Reduced costs while maintaining or increasing current service levels

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[Image]: Refer to the original document for images.

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Application Performance Management
A safe investment thru reduction in costs

The Four TCO Categories for SAP implementations

<table>
<thead>
<tr>
<th>COST CATEGORY</th>
<th>CONTRIBUTION TO TCO</th>
<th>SAP APPLICATION ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtime</td>
<td>30 %</td>
<td>Planned and <strong>unplanned downtime</strong> Users affected</td>
</tr>
<tr>
<td>Operation</td>
<td>40 %</td>
<td>SAP maintenance <strong>Support</strong> Deployment Maintenance Process and planning Upgrades Energy consumption</td>
</tr>
<tr>
<td>Administration</td>
<td>10 %</td>
<td>Asset management Firmware upgrades Procurement Training (IS, end-user)</td>
</tr>
<tr>
<td>Hardware / Software</td>
<td>20 %</td>
<td>Hardware, software Additional management software Supplies</td>
</tr>
</tbody>
</table>

Source: Alinean/Gartner model with adapted contribution values for SAP implementations
Application Performance Management
A safe investment thru reduction in costs

Cost per Application Downtime/Hour for SAP applications

<table>
<thead>
<tr>
<th>APPLICATION TYPE</th>
<th>COST PER DOWNTIME HOUR BY APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trading</td>
<td>$600 000</td>
</tr>
<tr>
<td>Retail / Point of Sale (POS)</td>
<td>$400 000</td>
</tr>
<tr>
<td>ERP</td>
<td>$120 000</td>
</tr>
<tr>
<td>Supply Chain Management (SCM)</td>
<td>$120 000</td>
</tr>
<tr>
<td>Line of Business Applications</td>
<td>$120 000</td>
</tr>
<tr>
<td>Scientific / Technical</td>
<td>$85 000</td>
</tr>
<tr>
<td>Collaboration and Messaging</td>
<td>$60 000</td>
</tr>
<tr>
<td>Infrastructure / Productivity Tools</td>
<td>$42 000</td>
</tr>
</tbody>
</table>

Source: IDC/Alinean - * SAP solutions are ERP applications

**Alternative formula:**
Downtime cost per hour = (Productivity impact to SAP end-user in %) x End-user burdened salary + costs for production stop, delivery bottlenecks, contract penalty, loss of reputation, etc.
Application Performance Management
Managing Risk: Minimizing Downtime

Reactive Management

- "HELP!"
- Customer
  - Customer calls Help Desk
- Service Desk
  - Verifies application issue, notifies Ops
- Ops
  - Collection of evidence, diagnosis, reassignment
  - Rollout Fix

Proactive Management

- Service Desk
- IT App Owner
- Network Manager
- App Server Admin
- Transaction Server Admin
- Java App Developer
- Ops
  - Detects problem
  - Rollout fix. Verifies applications are back to normal
- Ops
  - Diagnosis and review, final assessment
- Development
  - Diagnosis and review, final assessment
- Ops
  - Collection of evidence, diagnosis, reassignment

Problem Detected

Problem Solved

Reactively vs. Proactively

Customer calls Help Desk vs. Ops detects problem

Problem reported to Help Desk vs. Problem detected by Ops

Ops receives problem vs. Ops detects problem

Ops fixes the issue vs. Ops rollouts fix and verifies applications are back to normal
CA Wily APM solution Produces Real Impact on Business Success

- Reduce Downtime by 70%
- Reduce application performance delays by 71%
- Reduce MTTR for applications by 50%
- Reduce application associated helpdesk calls by 20%

APM Improves IT Economics and Drives Business Value

- Monitor all customer transactions & manage SLAs
  - Understand business impact of successful & failed transactions
  - Proactively identify problems before customers are impacted
SAP Solution Manager Root Cause Analysis (RCA) with CA Wily Introscope Right To View (RTV)
SAP Solution Manager
Application Lifecycle Management for SAP Solution

SAP® Solution Manager

Provides tools, content and best practices during the complete life-cycle

Is mandatory for all Business Suite 2005 and beyond customers
SAP Solution Manager
Application Lifecycle Management for SAP Solution

- Solution Documentation
- Solution Implementation
- Template Management
- Test Management
- Change Control Management
- Application Incident Management
- Technical Operations
- Business Process Operations
- Maintenance Management
- Upgrade Management

- Central monitoring & Alerting
- Central administration tools
- Integrated or 3rd party service desk (example: CA Service Desk Manager 12.1SP3 +)
- Involvement of partners in problem resolution
- Provide root-cause analysis for complex landscapes with diverse business solutions and technology stacks
End to End Root Cause Analysis
Example Use Cases

Why does our system not work correctly anymore since last week? We didn’t change anything.

Users complain about application performance. How do I find the Root Cause?

Do I have a resource bottleneck in my solution?

What are the configuration differences between QA and production environment?

Does the system run more stable since we applied the last changes?

Did we change any technical configuration parameters?
SAP Solution Manager Technical Operation
What is the Process Behind …

End-to-End Monitoring & Alerting

Proactive real-time monitoring

Reactive handling of critical events

Technical Administrator

- System, DBMS and Host Monitoring
- Connection Monitoring
- Process Integration Monitoring
- Business Intelligence Monitoring (BW & BO XI)
- Solution Manager Self-Monitoring

- Unified Alert Inbox
- Alert correlation and propagation
- Central Template Maintenance
- Open data provider and alert consumer

End-to-End Diagnostics

Lower mean time to problem resolution

Key User / Admin

- E2E Change Analysis
- E2E Workload Analysis
- E2E Exception Analysis
- E2E Trace Analysis

Technical Administration

Optimize excellence of technical operations

Technical Administrator

- Task Inbox
- Down Time and Work Mode Management
- IT Calendar
- Notification Management
- Central Tool Access

Technical Reporting

Prove Value to Business

- Early Watch Alert
- CA Wily Reporting
- Introscope Dashboards
- BW Reporting

Incident
CA Application Performance Management
End-to-End View of Business Services

Understand End-User experience; establish SLAs

Monitor all business transactions through the IT infrastructure; measure response and SLAs

Conduct problem triage; diagnose root cause

Understanding End-User experience is crucial in ensuring that business transactions are monitored for response and SLAs.

- WAN/WWW
- End User
- Router
- Firewall
- Switch
- Load Balancer
- Web Servers
- Portal

Network Front End

Conduct problem triage; diagnose root cause

Network Back End

SAP ERP
SAP BO XI
SAP CRM
Database
Web Services
Databases
3rd Party Applications

Middleware

Conduct problem triage; diagnose root cause

Take Action: Tracking and monitoring performance issues can help in understanding the impact on the business.

Conduct problem triage; diagnose root cause

Conduct problem triage; diagnose root cause

31% - Customer Experience (Business Processes/Trading)
**End to End Root Cause Analysis**

**Application Overview**

**E2E Workload Analysis**
- identify general performance bottlenecks in complex landscapes
- review most important KPI’s cross all technologies
- drill down to product specific workload KPI’s

**E2E Change Analysis**
- review statistical change data cross all technologies
- based on daily configuration snapshots
- compare configurations between systems
- drill down to change reporting for a detailed change history

**E2E Exception Analysis**
- review statistical exception data cross all technologies
- perform exception trend analysis or review exception after changes
- jump to component specific E2E Exception Analysis (ST22, NWA,...)

**E2E Trace Analysis**
- isolate one single user request through a complex system landscape
- identify the problem causing component (performance and functional)
- jump to detailed component specific E2E Trace Analysis (SQL, ABAP, J2EE trace,...)

**System, Host & Database specific RCA tools**
- Safe and remote enabled access to File system, OS and DB
- Links to read-only monitoring and administration tools
- CA Wily Introscope for performance analysis and monitoring
End to End Root Cause Analysis
SAP BusinessObjects XI 3.1 – Example Dashboard

SAP Business Objects Enterprise - Web Intelligence
Web Application

Open Document (Average Response Time)
Displaying Top 5

Open Document (Concurrent Invocations)
Displaying Top 5

Open Document (Stall Counter)
Displaying Top 5

Refresh Document (Average Response Time)
Displaying Top 5

Refresh Document (Concurrent Invocations)
Displaying Top 5

Refresh Document (Stall Counter)
Displaying Top 5

View life - performance data
Jump to more detailed dashboards
Check documentation about performance metrics shown in the dashboards
CA Wily Introscope is a performance management solution that enables you to monitor complex applications in production environments 24x7.

- Real time (15 s) monitoring using
  - Dashboards
  - Investigator

- Dynamic transaction tracing

- Dynamic byte code instrumentation for
  - J2EE
  - .Net

- Static instrumentation for C/C++ based products available

- Delivered with standard instrumentation and standard dashboards for SAP & Partner products
Solution Manager Root Cause Analysis (Introscope RTV)
The SAP Active Global Support Standard for RCA
Solution Manager Root Cause Analysis (Introscope RTV)
Supported products with SAP Solution Manager Diagnostics EhP1

**SAP Technology**
- NetWeaver AS 6.40/7.0x/7.1x (ABAP and J2EE)
- NetWeaver Portal incl. Trex and KMC (Knowledge Management Component)
- Enterprise Search / TREX 7.0x/7.1x/7.2 (Search)
- NetWeaver BW 3.1/3.5/7.0x/7.1x
- NetWeaver XI / PI 3.x/7.0x/7.1x
- NetWeaver CE 7.1x
- Mobile Infrastructure
- Web Dispatcher 7.10 (supported by Workload Analysis and Change Analysis only)
- NetWeaver MDM 5.5 SP6 P1 / 7.1 P2 (supported by Workload Analysis and Change Analysis only)

**SAP Business Solution**
- SAP xMII 11.5, 12.0
- SAP ME 5.1
- SAP GRC Access Control 5.2, 5.3
- SAP Business Objects Strategy Management 7.0, 7.5
- SAP eSourcing 4.2, 5.0, 5.1
- SAP ePOS 3.1, SAP POS 2.1, SAP POS 2.0
- Adobe DS 7.0 / 7.01, 7.02, 7.10, 7.11
- SAP BCM 5.5, 6.0 (with SP20)
- SAP BO BPC 5.1, 7.0 for Microsoft, 7.0 for NetWeaver
- SAP BusinessObjects Enterprise XI R2, 3.0, 3.1
- SAP BO FC 10.5, 7.0, 7.5
- SAP BO PCM 11.3
- SAP BO Intercompany 5.1
- SAP Convergent Charging 1.0, 2.0

- SAP ECC 5.0/6.0
- SAP CRM 4.0/CRM5.0/CRM5.2/CRM 2007
- SAP SRM 6.0

REF. SAP NOTE : 1010428
Solution Manager Root Cause Analysis (Introscope RTV)
Supported products with SAP Solution Manager Diagnostics EhP1

**Supported partner products**
- SAP Alloy 1.0
- SAP Central Process Scheduler by Redwood 1.0/7.0
- SAP Connect by Adobe 7.0
- SAP Enterprise Inventory Optimization by SmartOps 6.3 (E2E WA, EA, CA)
- SAP Invoice Capture Center by OpenText 5.2
- SAP Price and Margin Management by Vendavo 6.7, 7.0, 7.5 (E2E WA, CA)
- SAP REACH Compliance by Technidata 1.0, 1.1, 2.0, 3.0
- SAP Real Time Offer Management by Ingeneo 7.0
- SAP Talent Organization by Nakisa 2.0 (E2E WA)
- SAP Talent Visualization by Nakisa 2.0 (E2E WA)
- SAP Talent Planning by Nakisa 2.0 (E2E WA)
- SAP Vendor Invoice Management by OpenText 5.2
- SAP Workforce Scheduling & Optimization by Clicksoftware 1.0 (E2E WA)
- Triple Point Technologies CSL 7.2 (E2E WA, EA, CA)
- Vertex O-Series 4.0, 4.1, 5.0
- SAP Asset and Liabilities Management by Sungard (Focus ALM) 6.1, 7.0
- Triple Point Technologies CSL 5.6
- SAP Archiving & Document Access by OpenText 9.5.1, 9.6.0, 9.6.1 (SP20)

**Others**
- SAP Microsoft DUET
- SAP Business ByDesign

REF. SAP NOTE: 1293438
If I get this great product with Solution Manager Root Cause Analysis, why should I spend money on SAP Extended Diagnostics by CA-Wily?

Because it all comes down to managing risk in a holistic way
CA Application Performance Management
Full End-to-End View of Business Services

Understand End-User experience; establish SLAs
Monitor all business transactions, both SAP and non SAP, through the IT infrastructure; measure response and SLAs
Conduct problem triage; diagnose root cause for the full landscape

End User
WAN/WWW
Router
Firewall
Switch
Load Balancer
Web Servers
Portal
App Server
Seibel
Custom JEE Application
Mainframe
Database
3rd Party Applications
Web Services / ESB / TIBCO
Databases
SAP Extended Diagnostics by CA Wily
Compared to Solution Manager Diagnostics (Introscope RTV)

**CA Wily Introscope Right To View (RTV) license**
- ...included in SAP Solution Manager license
- ...includes license of Wily Introscope for SAP delivered instrumentation and dashboards (read-only)
- ...valid only for components delivered by SAP

**SAP Extended Diagnostics by CA Wily license**
- ...needs to be purchased separately
- ...extends license for creating instrumentation or dashboards for custom code
- ...configurable alerting and integration
- ...extends to 3rd party application platforms

**SAP Extended Diagnostics by CA Wily** includes the following
- CA Wily Introscope – All Base Components (Enterprise Manager, Agent, Workstation)
  - Main documentation
  - Agent files
  - EPAgent
  - DotNetAgent incl. Leakhunter
- CA Wily Introscope – Application Server Components
  - Power Packs and Portal Manager packages for IBM WebSphere, Oracle BEA WebLogic, Oracle DBMS
- CA Wily Introscope – Integrations (**CA Service Center Manager**, Integration SDK)
- **Add-ons and Platform Support for Introscope and CEM** (Change Detector, Oracle DB, Web Servers, Service Quality Manager, CA SiteMinder,…)

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*SAP Expo '11* Milano: 1 marzo 2011 | Roma: 3 marzo 2011
CA Wily Introscope Right To View (RTV) license

- Only pre-defined dashboards and reports can be used

SAP Extended Diagnostics by CA Wily license

- Along with existing ones, dashboards can be created from the customers viewpoint
- Reports can be created from perspectives desired by the customer
  - e.g., A report for use in capacity planning
  - e.g., A report for use in SLM
- Any Language can be used with both dashboards and reports

Root Cause Analysis is speeded up by customizing to each SLA objective and user KPIs

Utilization as a operational base platform
SAP Extended Diagnostics by CA Wily
Example: Business Process Views Dashboard
Let's conclude..
SAP Extended Diagnostics by CA Wily
Problems and provided Solution Enablers

**Problems**

- Lack of standard diagnostics tools and processes makes it virtually impossible to detect, diagnose and resolve system, application issues in a timely and efficient manner
- Lack of proper monitoring and diagnostics capabilities results in IT SLA violations
- Poor system performance results in negative business implications
- Frequent system problems increase operating costs
- Slow technical issue resolution can result in extended down-time, sub-optimal performance
- Too many tools for monitoring makes ongoing diagnostics cumbersome and time-consuming
- Reactive problem solving, putting out fires instead of avoiding them

**Solution Enablers**

- Achieves visibility into performance and availability of back-end systems behind the monitored applications
- Provides alerts when SLA thresholds are approached or breached
- Enables the monitoring of non-SAP applications that are connected to SAP systems
- Provides proactive system monitoring to proactively address potential issues before they occur
- Provides granular diagnostics down to code level for all applications in IT environment
- Provides centralized solution integrated into Solution Manager for proactive management of SAP applications as well as other applications
- Enables proactive issue resolution with end-to-end visibility into IT environment to accelerate time-to-realization
## SAP Extended Diagnostics by CA Wily

How SAP Customers Have Achieved Benefits From SAP Extended Diagnostics

<table>
<thead>
<tr>
<th>Reference Customers</th>
<th>Solutions Implemented</th>
<th>Benefits Realized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qantas</td>
<td>CA Wily Application Performance Management solution to monitor the 33 different applications that are key to Qantas’ online offering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Qantas can identify issues with its web applications up to five times faster</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Increased availability and an improved online experience for customers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- A more reliable online presence helps protect the airline’s competitive advantage, reputation and revenues</td>
<td></td>
</tr>
<tr>
<td>Starwood</td>
<td>SAP Extended Diagnostics Application by CA-Wily</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Starwood used CA Wily Introscope to bring simultaneous visibility into both legacy systems and new SOA applications</td>
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</tr>
<tr>
<td></td>
<td>- 4-5% estimated improvement in overall web application availability</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Achieved greater than 99.99% uptime for critical applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Successful transition from hosted legacy applications to internally managed web services</td>
<td></td>
</tr>
<tr>
<td>Dow Corning</td>
<td>SAP Extended Diagnostics Application by CA-Wily</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dow Corning chose the SAP Extended Diagnostics application by CA Wily to provide 24x7 application monitoring, proactive incident detection, and troubleshooting</td>
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<tr>
<td></td>
<td>- Enables IT staff to efficiently maintain high availability of global SOA and Java-based applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Reduces support costs and makes service-level agreements easier to meet with 24x7 live views of application performance and proactive incident detection</td>
<td></td>
</tr>
</tbody>
</table>
Benjamin Alloul
ALM / IT Excellence Presales
Field Service Software – EMEA
Benjamin.Alloul@sap.com