Performance management for the J2EE™ platform

Introducing Borland Optimizeit™ ServerTrace

mika.reivari@borland.com

Agenda

- The importance of performance management for J2EE systems
- Critical business need for managing J2EE performance
- Implementing an effective performance management strategy for J2EE
- Borland solution for streamlining J2EE performance management

The importance of performance management for J2EE systems

The real cost of business downtime

<table>
<thead>
<tr>
<th>Event</th>
<th>Cause</th>
<th>Cost</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merritt</td>
<td>Incorrect debiting of POS</td>
<td>Embarrassment/loss of integrity;</td>
<td>Tearing Down the Wall, Teresa</td>
</tr>
<tr>
<td>Dev. Bank of Singapore</td>
<td>Due to a system overload</td>
<td>interest charges</td>
<td>Lanowitz, Gartner, 2002</td>
</tr>
<tr>
<td>AT&amp;T</td>
<td>Software upgrade</td>
<td>$40 million in rebates</td>
<td></td>
</tr>
<tr>
<td>AT&amp;T</td>
<td>Forced to file SLAs with the FCC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eBay</td>
<td>Operating system failure</td>
<td>Free month of service to users;</td>
<td>eBay</td>
</tr>
<tr>
<td>Charles Schwab &amp; Co.</td>
<td>Operator error</td>
<td>Actual cost much greater in terms of lost sales</td>
<td>Charles Schwab &amp; Co.</td>
</tr>
<tr>
<td>Hershey Foods</td>
<td>Application rollout</td>
<td>Delayed shipments; 12% decrease in 3Q99 sales; 19% drop in net income from 3Q98</td>
<td>Hershey Foods</td>
</tr>
<tr>
<td>eBay</td>
<td>Operator error</td>
<td>Cost: $3 million to $5 million revenue, 26% decline in stock price</td>
<td>eBay</td>
</tr>
</tbody>
</table>

What happens when you roll out a new application?

- We cross our fingers and toes: 12%
- It meets all tested and expected response time measurements: users are happy: 14%
- We hear: “It worked fine in testing”: 34%
- Our IT department is overwhelmed with calls: 15%
- We just add bandwidth to get rid of the problem: 9%
- Our tools did not identify what was wrong: 9%
- Our company loses revenue, time, and resources: 7%

Critical business need for managing J2EE performance

Source: Tearing Down the Wall, Teresa Lanowitz, Gartner, 2002
J2EE platform – solid technology but presents performance challenges

- J2EE technology
  - De facto standard for 65-75% enterprises worldwide *
  - Most enterprises are either in development stage or in QA testing
- J2EE system
  - Multi-tiered and multi-layered
  - System performance management is needed throughout the process

J2EE system architecture

Need to look inside the black box

J2EE system performance management is often fraught with process inefficiencies

Complexity of Performance Management for J2EE

Time consuming, inefficient process

Implementing an effective strategy for J2EE performance management

Fixing J2EE system performance issues is often a costly, time-consuming process that reduces time to market:

“The average time of resolving a performance problem from the time the trouble ticket is pulled is 25.8 hours”

Manage Java apps for premium performance, Newport Group Inc, January 2003
J2EE system performance needs

- Visibility inside the J2EE “black box”
- Easy-to-understand performance information
  - High-level component information
  - Code-level granularity to pinpoint root cause
- Meaningful system diagnostics information that test engineers can pass to developers for action
- Accurate feedback so developers can locate and fix issues

Iterative performance testing

- Profile code early in development to catch issues
- View performance of the entire J2EE system
- Perform load testing
- Establish performance baseline
- Review the effect of code changes on performance
- Isolate and pinpoint problems
- Minimize performance problems by proactively managing performance
- Establish performance behavior trends

The right tool for the right team

- Developers need VM-level information to identify performance issues at the code-level related to threads, objects, Java methods, memory leaks in the code, etc.
- Test teams need system-level performance information to understand J2EE system performance issues at the component level related to Web pages, business logic, messaging, and database connectivity
- Complete compatibility between code-level performance tool and J2EE performance tool makes it easier for developers to switch between tools to resolve performance issues efficiently
- Unambiguous, actionable diagnostics information about performance problems is essential for quick time-to-resolution

Steps to effective performance management

1. Invest in performance management software
2. Implement performance management throughout the application lifecycle
3. Tighten application lifecycle processes

Borland Solution: Optimize™ ServerTrace

Looking inside the black box
Borland® Optimizeit™ ServerTrace

Optimizeit ServerTrace delivers end-to-end performance management for J2EE applications:

- System Dashboard
- Component Health Views
- Automatic Application Quality Analyzer
- Diagnostic snapshots and XML reporting

Features and Benefits

- J2EE System Dashboard
  Provides a single J2EE centric overview
- Component Health Views
  Detailed view of all J2EE components including EJB™, JDBC®, JMS, JSP™, JNDI, Java™ Virtual Machine
- Automatic Application Quality Analyzer
  Catch problems before they occur using predictive analysis capabilities
- Diagnostic snapshots and XML reporting
  Communication framework for test teams and developers to achieve quick resolution of problems

The System Dashboard

Easy-to-understand performance data quickly diagnoses J2EE system bottlenecks

System Composite

Drill-down capabilities make it easier to pinpoint the exact cause and location of J2EE performance bottlenecks

Value Proposition

- Business Benefits
  - Reduce time to market, improve productivity, and minimize production disasters
  - Improve technical and organizational efficiency for solving performance problems
  - Maximize ROI in hardware and software investments
  - Meet or exceed SLA targets
- Streamline performance management
  - Quick isolation of J2EE system performance issues with relevant diagnostics information:
    - enables appropriate development group to quickly fix problems
    - eliminates finger pointing between groups
    - supports test groups in delivering higher value

ROI Benefits

“At Digital Rum, J2EE performance is mission critical. Thanks to Optimizeit ServerTrace we were able to increase our performance throughput between 2 and 4 times and solve problems that previously took over a day in just 15 minutes! By testing our applications in staging we are able to deploy with the confidence that everything is behaving as expected – if you are serious about J2EE performance, this is a must-have tool!”

- Mike Mason, Head of Infrastructure, Digital Rum
### Summary

- Poor performance impacts business success
- Managing J2EE performance is complex
- Implementing an effective strategy
  - Invest in performance management software
  - Implement performance management throughout the application lifecycle
  - Tighten application lifecycle processes
- Borland Optimizet ServerTrace provides a comprehensive solution

### Application Lifecycle Fit

- Integrates with:
  - JBuilder
  - Optimizet Suite
- Use with load testing tools
  - LoadRunner
- Integrates with:
  - JDataStore
  - Borland Enterprise Server