



e-business software

The difference  
is WebSphere.

# PD/PI Positioning

Michael Malzacher - Market Manager WAS

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## Agenda - PD/PI

### Mike Malzacher

- ▶ WebSphere Usability.
- ▶ PD - Positioning to Increase Revenue.
- ▶ Problem Identification/Isolation Process.

### Summary

### Hany Salem

- ▶ The New Log Analyzer

### Eric Labadie

- ▶ OLT, Distributed Debugger

### Lance Buchholz - Wilv Technology



## Agenda - continued

**Leonard Slipp - Sitraka (formerly KL Group)**

▶ **Sitraka JProbe**

**URLs and Contact Information**

The difference  
is WebSphere.



# WebSphere Usability

- ▶ **Renewed Commitment to making WebSphere the Industry Leader in Usability.**
- ▶ **Organization-wide focus on the question - " How can we make WebSphere easier for our Customers to increase their efficiency" and " What changes do we need to make in order to provide Customers with the tools they need for Problem Determination."**
- ▶ **Increased focus on enabling our Customers and Business Partners to deploy WebSphere with minimal startup time and configuration problems**

The difference  
is WebSphere.



## WebSphere Usability - continued

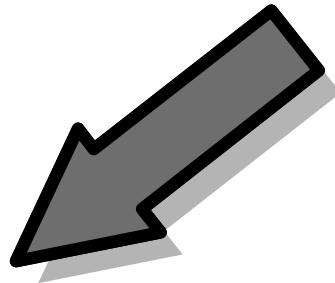
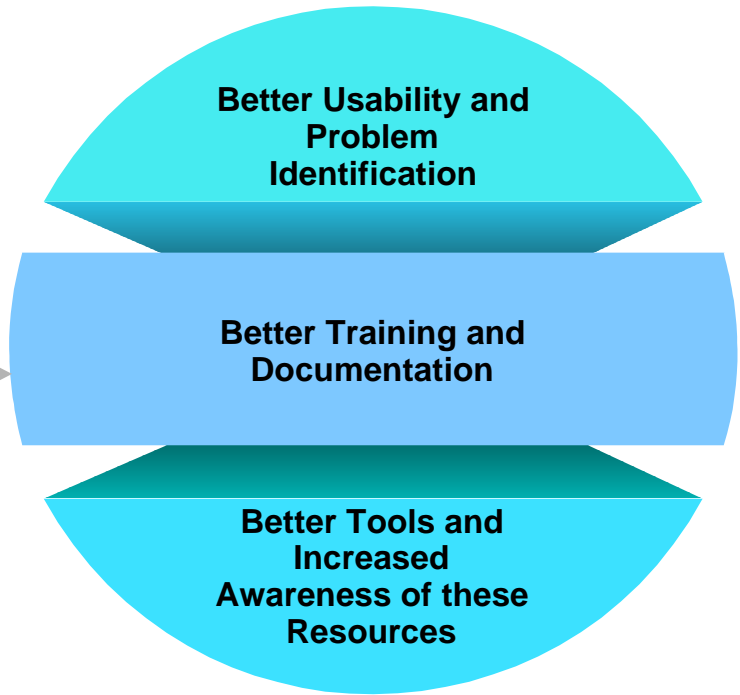
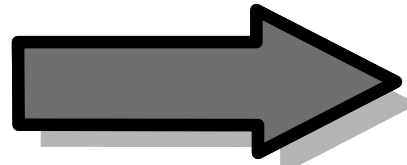
### How are we doing this?

- ▶ Improvement of our existing tools.
- ▶ New third party tools to fill any existing voids with regards to Problem Determination.
- ▶ Working closely with our ISV Business Partners to develop the requirements needed to enable our toolset to perform with maximum efficiency.
- ▶ Establish a single portal for our Customers and Business Partners to get access to WebSphere resources and links to tools.
- ▶ Improvements to documentation and "How to" issues.
- ▶ Focus on education, enablement, and deployment of tools and documentation



# PD - Positioning to Increase Revenue

The difference is WebSphere.



Increased Customer Satisfaction

Increased Customer Enthusiasm

Increased Effectiveness in the Market for Customers and Business Partners

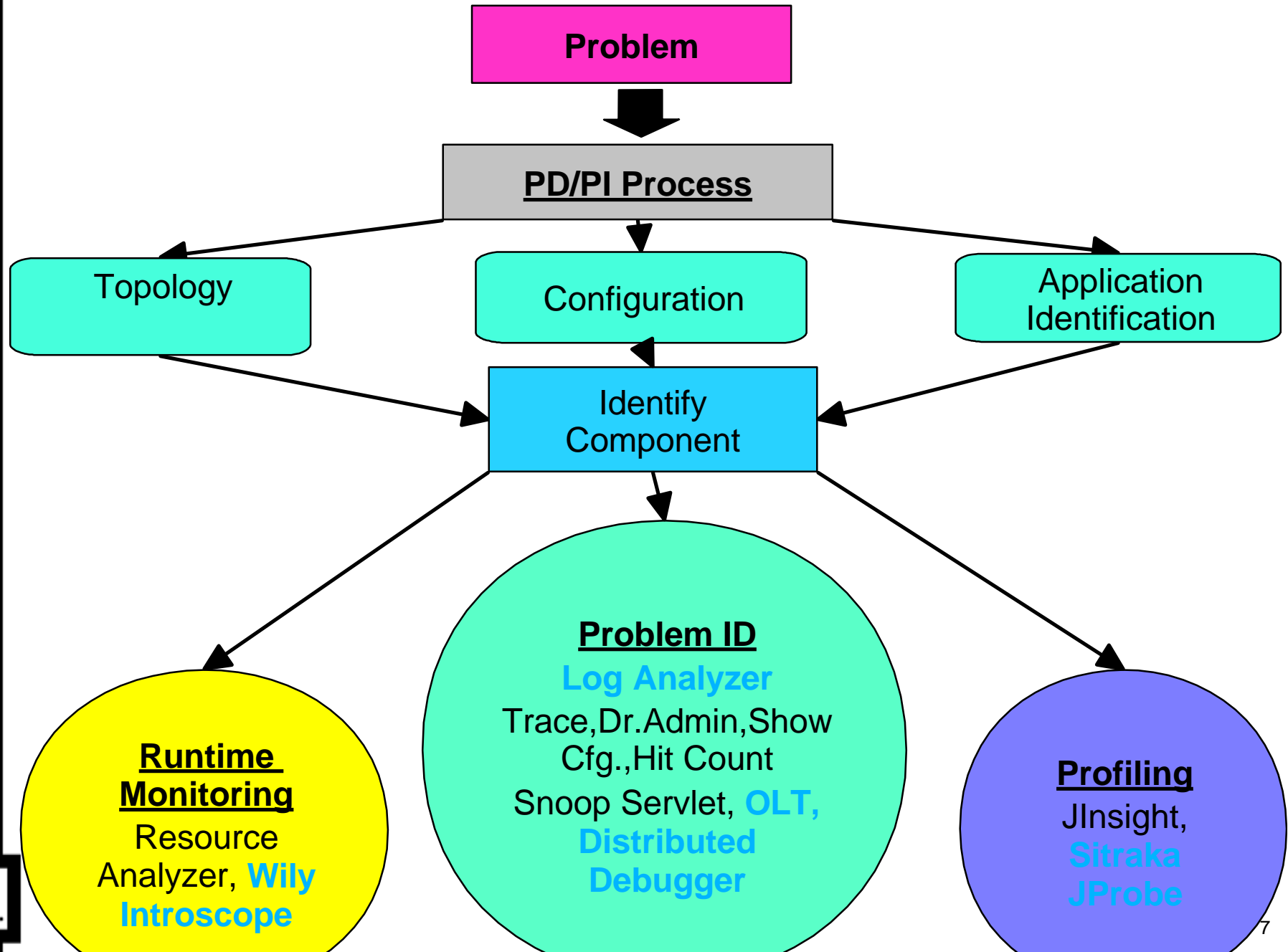


**Increased Revenue for Customers and Business Partners**





# Problem Identification/Isolation



The difference is WebSphere.



# Summary

- ▶ WebSphere is committed to being the industry leader in Usability.
- ▶ WebSphere is focused on meeting the present and future needs of our Customers and Business Partners. We encourage our Customers and Business Partners to work with us to meet the different requirements to increase Usability and to make Problem Determination easier.
- ▶ We are determined to provide our Customers and Business Partners with the tools they need to deploy WebSphere.





## summary continued

- ▶ I will be the focal point for all PD/PI and Usability related issues. I encourage Customers and Business Partners to contact me with any related information or suggestions so that I can work towards implementing the tools and resources needed to attain the continuing goal of WebSphere being the industry leader in Usability.

### Contact me:

Michael J. Malzacher - Market Manager - WA  
845-433-3467 (T/L 293)

or E-mail me at [mmalz@us.ibm.com](mailto:mmalz@us.ibm.com)

Thank You

# WebSphere LogAnalyzer



Author: Hany Salem

# What is it ?

- The Log Analyzer is a powerful tool that can take our experience after debugging a problem and put it at our customers' fingertips.
- This tool is a GUI that can be used to open the new error file - <install>/logs/activity.log
- The file is parsed and displayed in the GUI
- The user/customer can then select to analyze any or all errors
- The LogAnalyzer compares every error record against an internal set of known problems and displays the results



# What does the GUI Look Like



?

The screenshot displays the IBM Log Analyzer application window. The title bar reads "Log Analyzer". The menu bar includes "File", "Edit", "View", "Record", "Windows", and "Help". Below the menu bar is a toolbar with icons for file operations. The main window is divided into several panes:

- Left Pane (Tree View):** Shows a directory structure under "activity.log" > "Logs". The selected item is "Rec\_0\_com.ibm.ejs.sm.util.debug.DrAd...". Other items include folders for dates and times, and records like "Rec\_1\_com.ibm.servlet.engine.ServletE..." through "Rec\_14 com.ibm.servlet.engine.ServletE...".
- Right Pane (Record View):** Displays details for the selected record. Fields include:
  - Timestamp: 11/13/2000 17:09:29.313000000
  - UnitOfWork:
  - Severity: 3
  - Category: AUDIT
  - FormatWarning:
  - PrimaryMessage:
  - ExtendedMessage: SMTL0018I: DrAdmin available on port 1040
  - RawDataLen: 0
  - RawData:
- Bottom Pane (Symptom View):** Shows analysis results for the selected record. It includes tabs for "Symptom", "ORB Trace", "Minor Code", and "Message ID". The "Symptom" tab is active, showing:
  - Matching String(s): "SMTL0018I"
  - A dashed line separator.
  - Text: "This is a normal message. It indicates that the process is listening on a DrAdmin port. The port number is specified in the message."

At the bottom of the window, a status bar contains three indicators: a checkmark, "Task is completed.", "Analysis has been completed.", and "Advanced analysis was not done."

# How does the LogAnalyzer work ?



- For every known error that we debug, we (support and test teams) generate an analysis file that includes something unique to that situation and add it to our symptom database.
- The LogAnalyzer compares every error record in the activity.log file to the symptom database and displays all the matches in the bottom right hand pane.

# Directions



- Starting WebSphere 3.5 SP2 when a runtime error is generated and it is logged in the logs directory in a file called activity.log.
- The LogAnalyzer is GUI that can be used to open and format the activity.log file.
- To Start the LogAnalyzer, from the bin directory where WebSphere is installed run waslogbr.bat or waslogbr.sh
- Now select File->Open (or Ctrl-O) and choose the activity.log file.
- Right click on the root node of the tree displayed and select Analyze.
- If a particular error is a known error the bottom right hand pane will contain the analysis for it and a check mark is placed next to the error record.
- The analysis typically contains an explanation of the error and how to recover from it.

# Availability ?



- **The LogAnalyzer is a technology preview for WS3.5 SP2. It is NOT shipped with SP2, however, the logging code that generates the activity.log file is.**
- **Customers will have to download the LogAnalyzer from our tools ftp site - after 12/08/2000**

<ftp://ftp.software.ibm.com/software/websphere/info/tools/loganalyzer/>

# activity.log



- **The activity.log file is a new file that is created by the runtime. It resides in the logs directory of where the product is installed.**
- **All application servers including the AdminServer write error records to this file.**
- **The activity.log file is a binary file and cannot be viewed with an ASCII editor. It can be viewed in one of 2 ways:**
  - 1. The LogAnalyzer can format this file for viewing.**
  - 2. If no GUI console is available, you can use showlog.bat or showlog.sh. (however, you do not get the benefits of the LogAnalyzer - e.g. sort or analysis capabilities)**



# showlog



- **showlog.bat** on NT or **showlog.sh** on \*X platforms
- found in `<install>/bin` directory
- **showlog** can be used in lieu of the LogAnalyzer to format the `activity.log` file for viewing when no GUI display capabilities are available.
- **showlog.bat** or **showlog.sh** is only available after R3.5 SP2 is installed
- Usage: `showlog activity.log > log.out`
- `log.out` can now be viewed with a regular text editor.

# Here is what log.out looks like...



## Error Record

```
$LANG = en_US  
$CODESET = Cp1252
```

```
-----  
ComponentId:  
ProcessId: 361  
ThreadId: 514e6b19  
FunctionName:  
ProbId:  
SourceId: com.ibm.ejs.sm.util.debug.DrAdminServer  
Manufacturer: IBM  
Product: WebSphere  
Version: advanced 3.5.2 ptf2b0041.07  
ProcessType:  
ServerName: simpleserver  
ClientHostName:  
ClientUserId:  
TimeStamp: 2000-11-13 17:03:33.515000000  
UnitOfWork:  
Severity: 3  
Category: AUDIT  
FormatWarning:  
PrimaryMessage:  
ExtendedMessage: SMTL0018!: DrAdmin available on port  
1040  
RawDataLen: 0  
-----
```

```
ComponentId:  
ProcessId: 361  
ThreadId: 50ab6b19  
FunctionName:  
ProbId:  
SourceId: com.ibm.servlet.engine.ServletEngine  
Manufacturer: IBM  
Product: WebSphere  
Version: advanced 3.5.2 ptf2b0041.07  
ProcessType:  
ServerName: simpleserver  
...
```

```
....  
ProcessId: 361  
ThreadId: 69ca6b1f  
FunctionName:  
ProbId:  
SourceId: com.ibm.ejs.ras.ATraceableServlet  
Manufacturer: IBM  
Product: WebSphere  
Version: advanced 3.5.2 ptf2b0041.07  
ProcessType:  
ServerName: simpleserver  
ClientHostName:  
ClientUserId:  
TimeStamp: 2000-11-13 17:07:55.372000000  
UnitOfWork:  
Severity: 3  
Category: AUDIT  
FormatWarning:  
PrimaryMessage:  
ExtendedMessage: SRVE0022E: Unable to locate a matching Virtual Host:  
"lkdjlds  
fkgjsdlfkgjsdlfkjg"  
RawDataLen: 0
```

45 records found and printed.

~

# Symptomdb.xml



- **symptomdb.xml is an xml database that is shipped with the LogAnalyzer. It contains pairs of**
  - 1. Matching Strings and**
  - 2. Reason for Error and Recovery steps**
- **Since we will grow the symptom database (symptomdb.xml) all the time we will post the latest file on our public ftp site at <ftp://ftp.software.ibm.com/software/websphere/info/tools/loganalyzer/symptoms/adv/symptomdb.xml>**
- **Customers will be able to download it and analyze their own problems by using the self update feature in the LogAnalyzer**
- **To do that: select File->Update database and the latest symptomdb.xml file will be downloaded from our ftp site and installed on the local customer system.**



e-business software

# Object Level Trace and Distributed Debugger for the WebSphere 3.5 family

The difference  
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Author: Eric Labadie



# Purpose

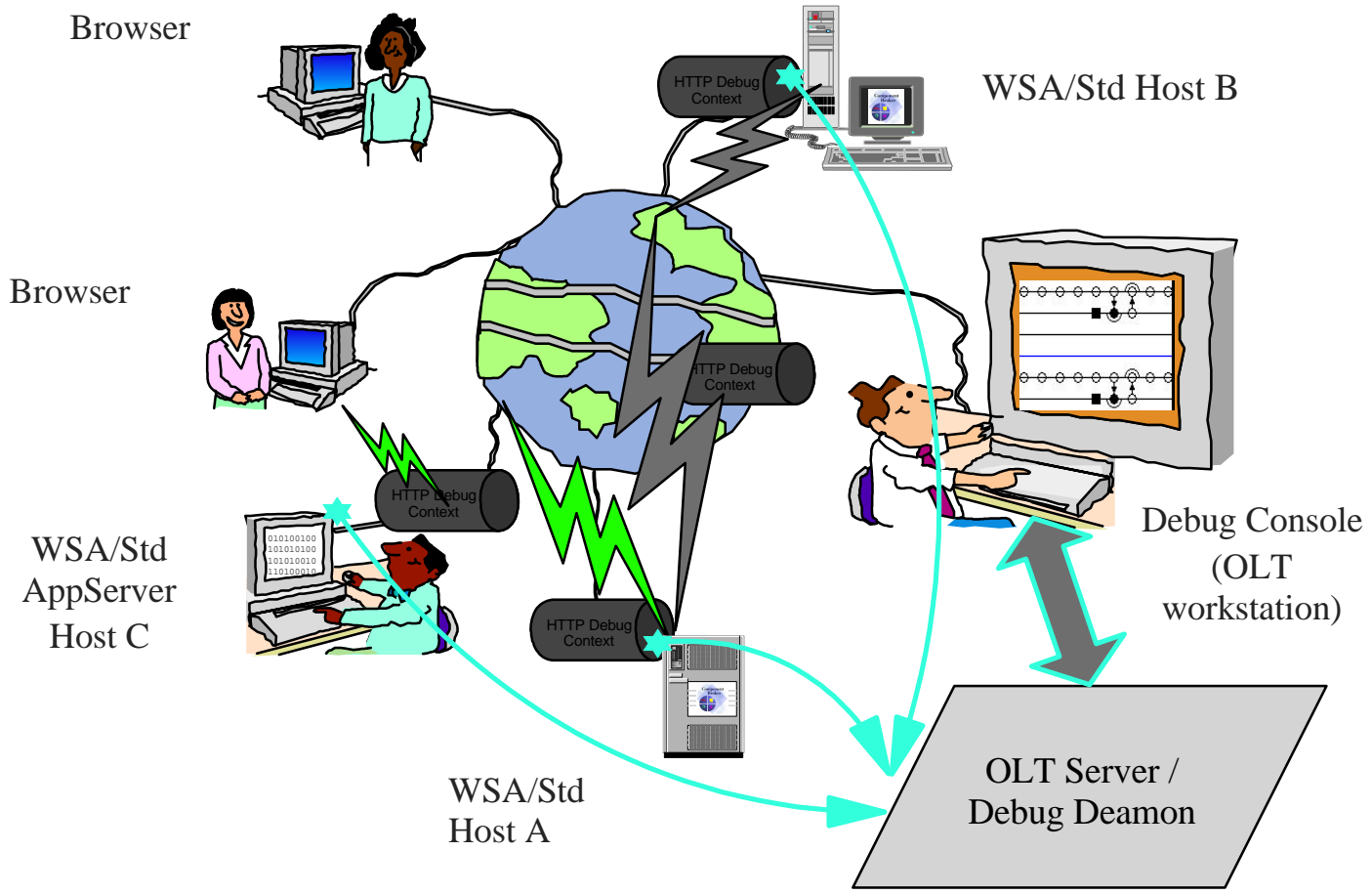
- Provides user with the ability to debug and visually trace multilingual, distributed, concurrent applications from a single workstation
- Provides multilingual support for:
  - Java / JSPs
  - Visual Age C++
  - ActiveX (MS VisualC++)
- Displays a graphical representation of the interactions between a client and the objects servicing that client

The difference  
is WebSphere.



# OLT Deployment - The Big Picture

The difference is WebSphere.

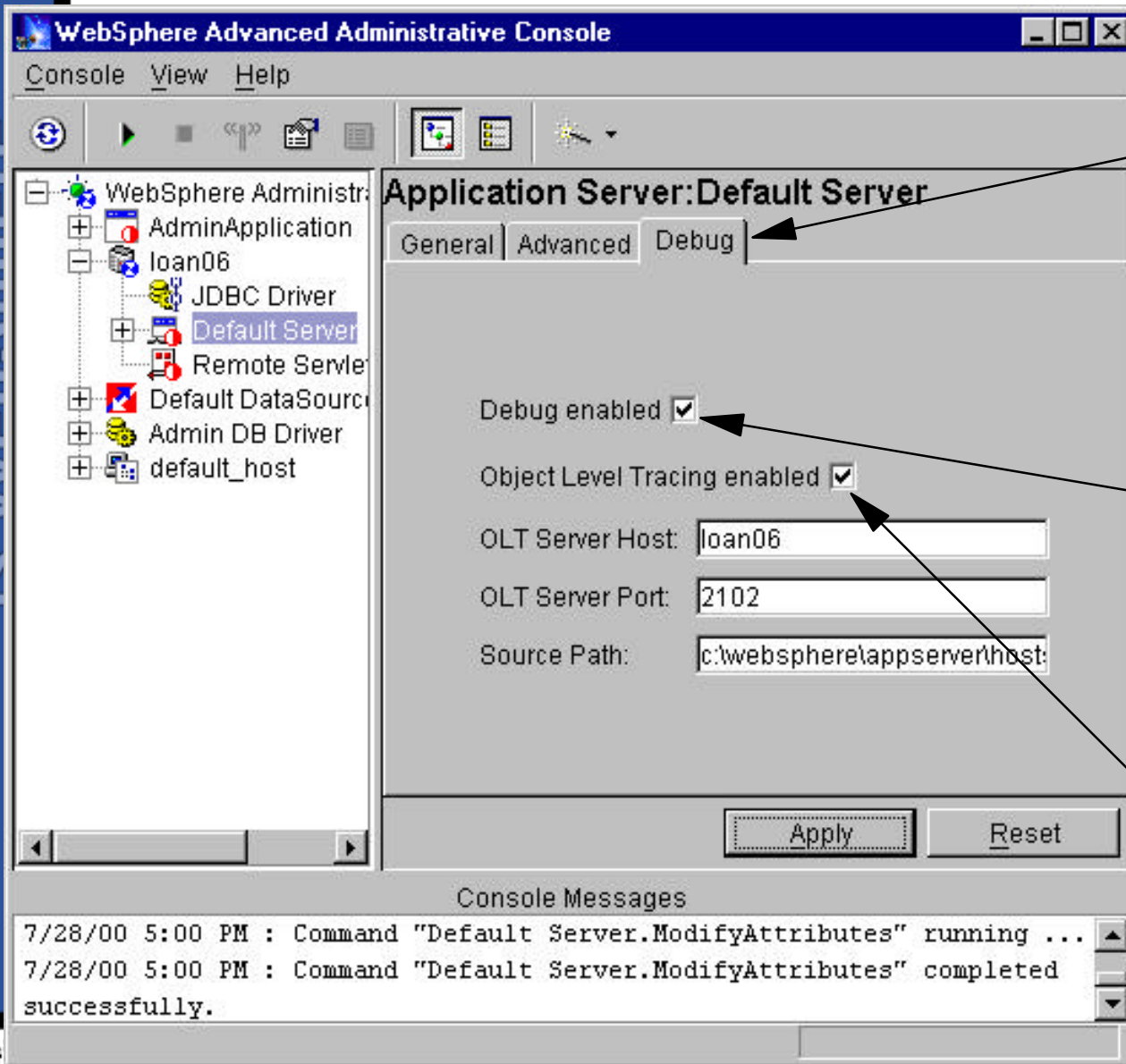


# Recent updates/changes in 3.5

- Usability improvements
- Distributed and remote OLT Client Controller functionality
- Multi-programmer tracing support
- Full integration with Websphere Studio as well as Websphere AE/SE/EE
- JDK 1.2.2 JAVA debugging support
- Better documentation 3.5.3
- Addtional platforms support
- Problem fixes...

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Make sure you have the Debug pane selected

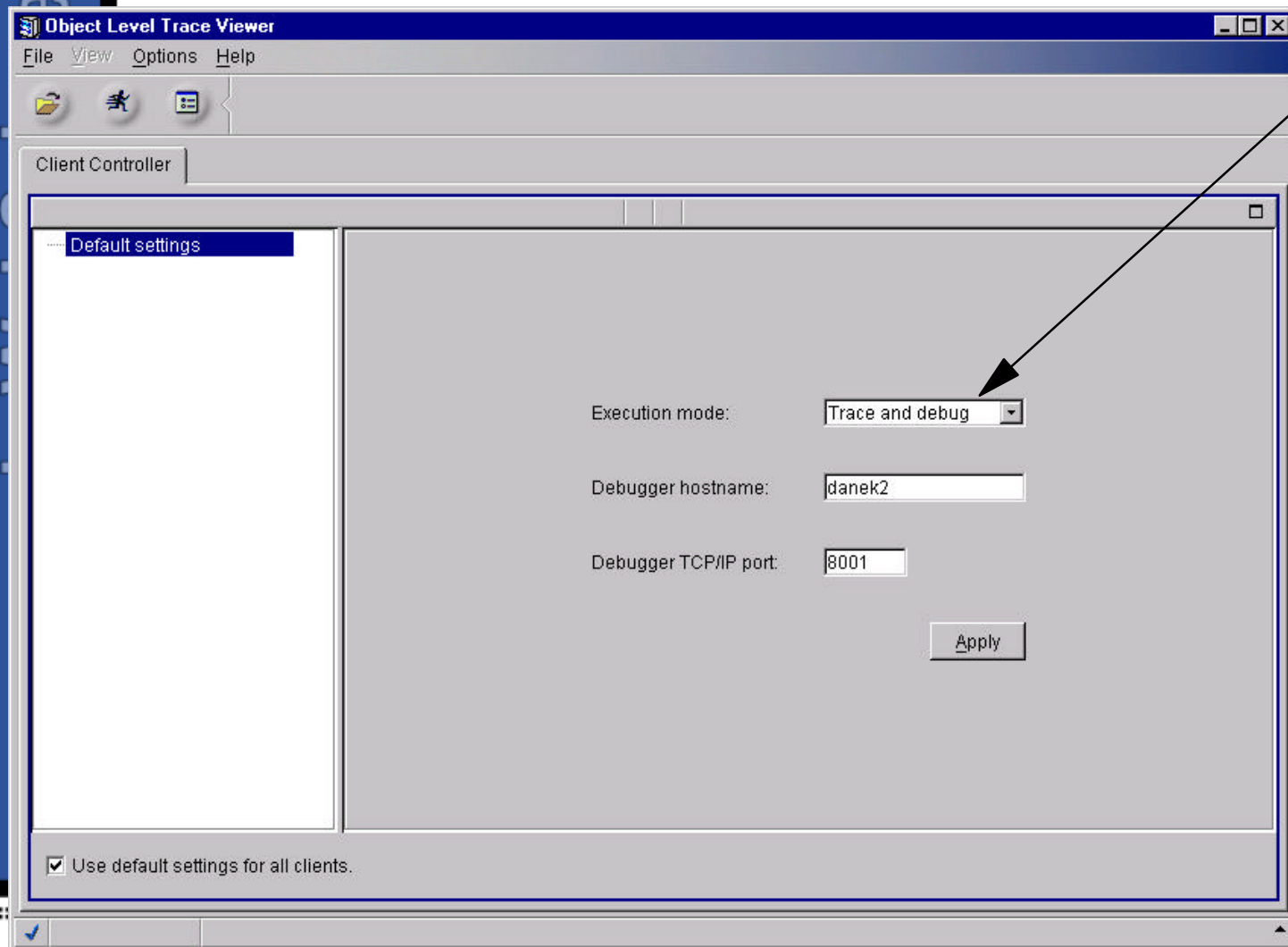
Debug enabled will tell the AppServer that when you start it to run it under a debuggable JVM.

Object Level Tracing enabled will tell the AppServer to call the OLT Runtime APIs



# Usability improvements in OLT Client Controller

- First you must make sure you are in Trace and Debug execution mode

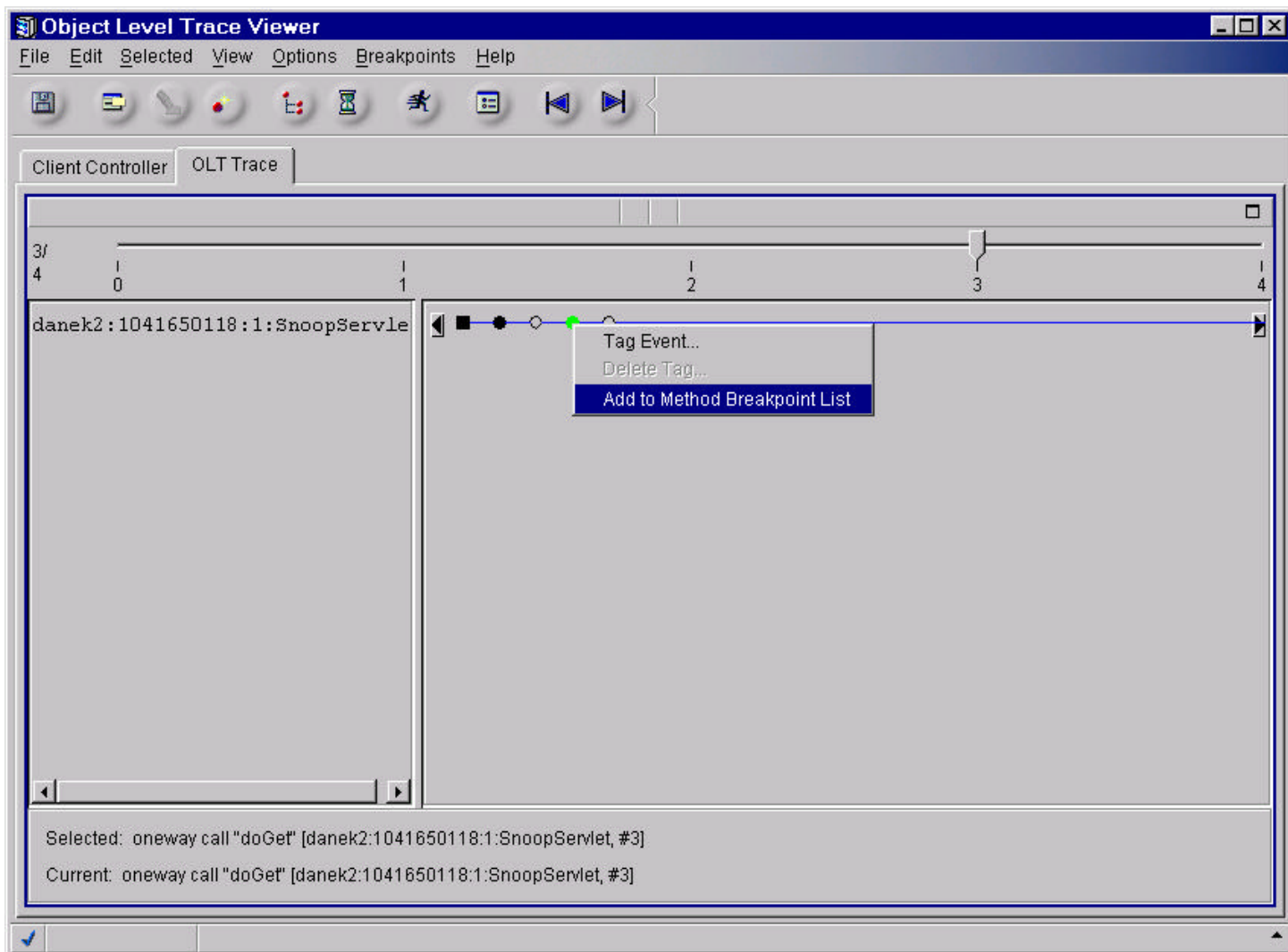


Make sure your execution mode is set like this before you start your application

The difference

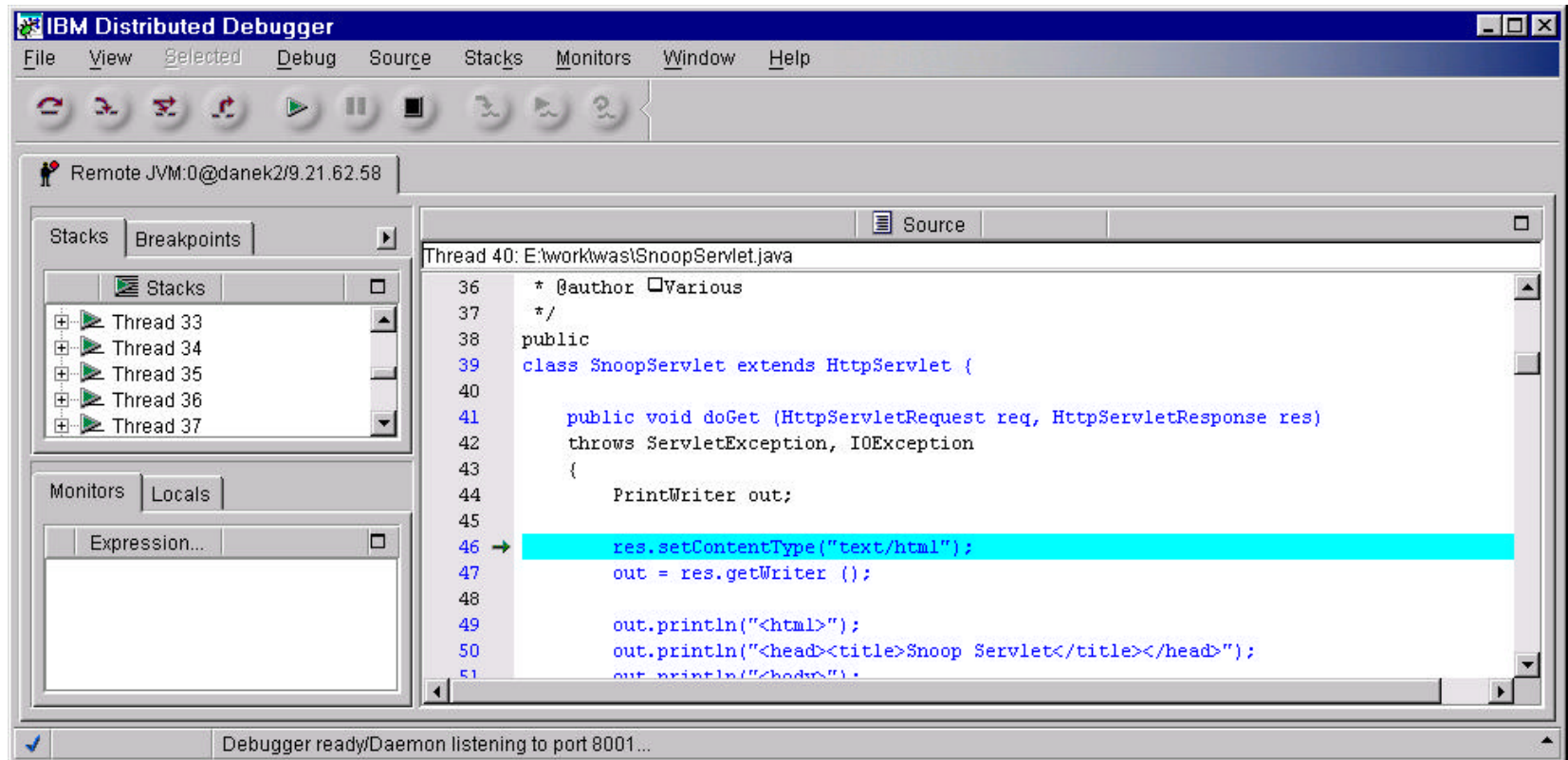
# Using OLT To Execute Distributed Applications

- First you need to create a method breakpoint within OLT
- To do this, right click on a debuggable (shaded) method that has already been traced and add to the method breakpoint list



# Using OLT To Execute Distributed Applications

- Now rerun your app and the debugger will launch automatically and put you into the method you selected



# Platforms coverage for WebSphere 3.5

|                        | AIX                     | AS/400 | OS/390                                        | Solaris           | Win NT/ | HP                | Linux                      | Linux /390                 |
|------------------------|-------------------------|--------|-----------------------------------------------|-------------------|---------|-------------------|----------------------------|----------------------------|
| OLT Tracing support    | X                       | X      | X (3.02 level)<br>3.5 1st quarter 2001        | X                 | X       | X                 | X                          | X                          |
| JAVA Debugging support | JAVA debugging in 3.5.3 | X      | X 3.02<br>3.5 JAVA debugging 2nd quarter 2001 | No JAVA debugging | X       | No JAVA debugging | JAVA Limited functionality | JAVA Limited functionality |

The difference is WebSphere.



X=supported

# Known limitations

- Support for JSP 0.91 and JSP 1.0 but not for JSP1.1. Also no JSP imbedded JAVA debugging.
- JAVA debugging is not supported on Solaris and HP in 3.5
- Modification of the content of a variable while debugging is not supported.
- Very sensitive to the JDK level and functionality provided for their sun.debug.tools.\* APIs

# Future directions

- For the release 4.0, we are moving the JAVA debugger technology to the JPDA architecture which is officially supported by all the JDK provider (SUN, HP and IBM). We will be able to provide JAVA debugging functionality on ALL the supported platforms.

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# Related URLs

- **Internal**

- ▶ <http://pconcept.raleigh.ibm.com>

- White Paper->Distributed Debugger

- **External**

- [http://www-4.ibm.com/software/webserver/appserv/doc/v35/ae/infocenter\(3.5.3\)](http://www-4.ibm.com/software/webserver/appserv/doc/v35/ae/infocenter(3.5.3))

- Section 7 will be added related to OLT. Also, some samples will be provided

The difference  
is WebSphere.

# wily introscope

Performance Management for IBM WebSphere

Wily Technology, Inc.

Lance Buchholz

*Manager, Business Development*

*Lance@wilytech.com*

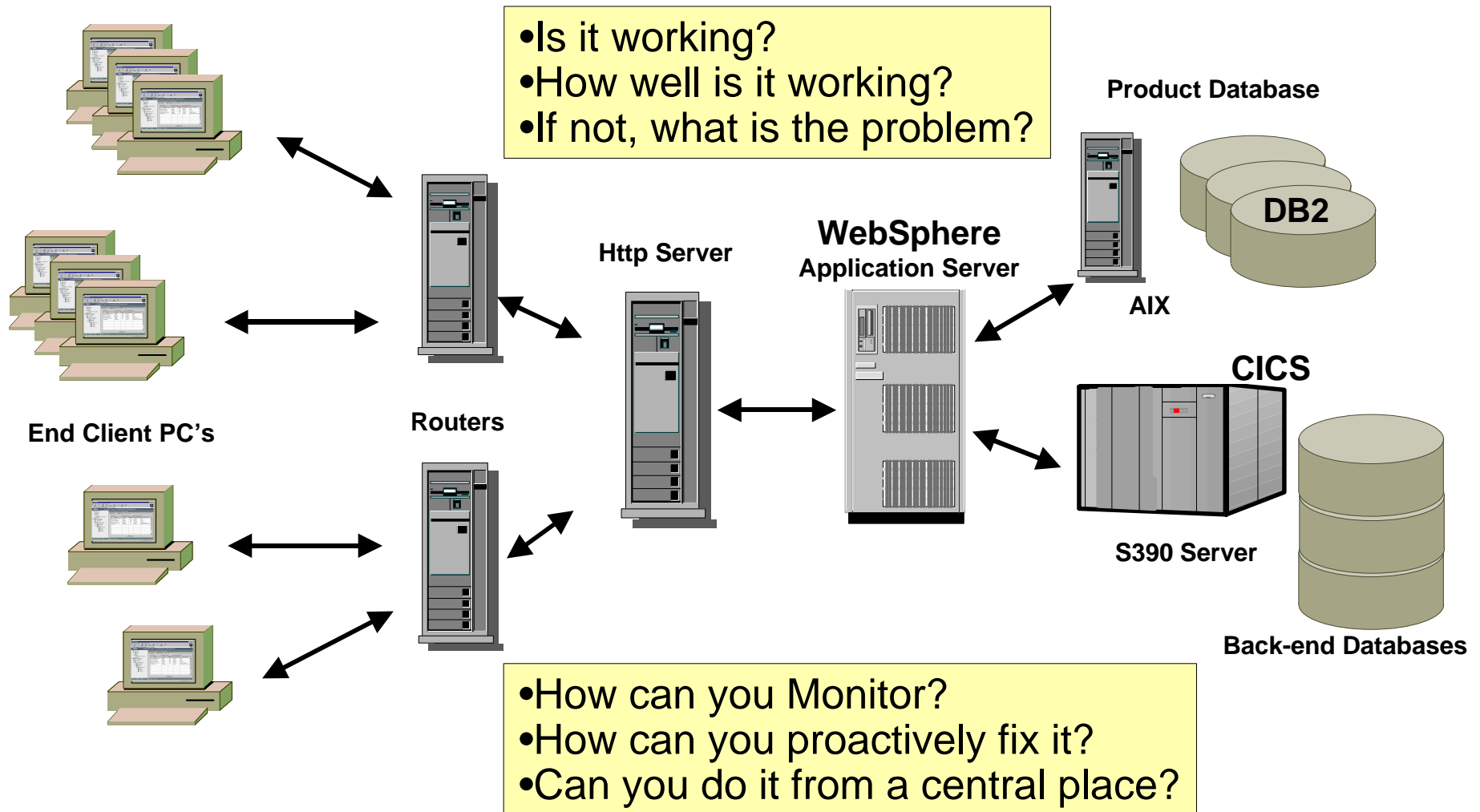
*(650) 227-7607*

*(888) GET - WILY*

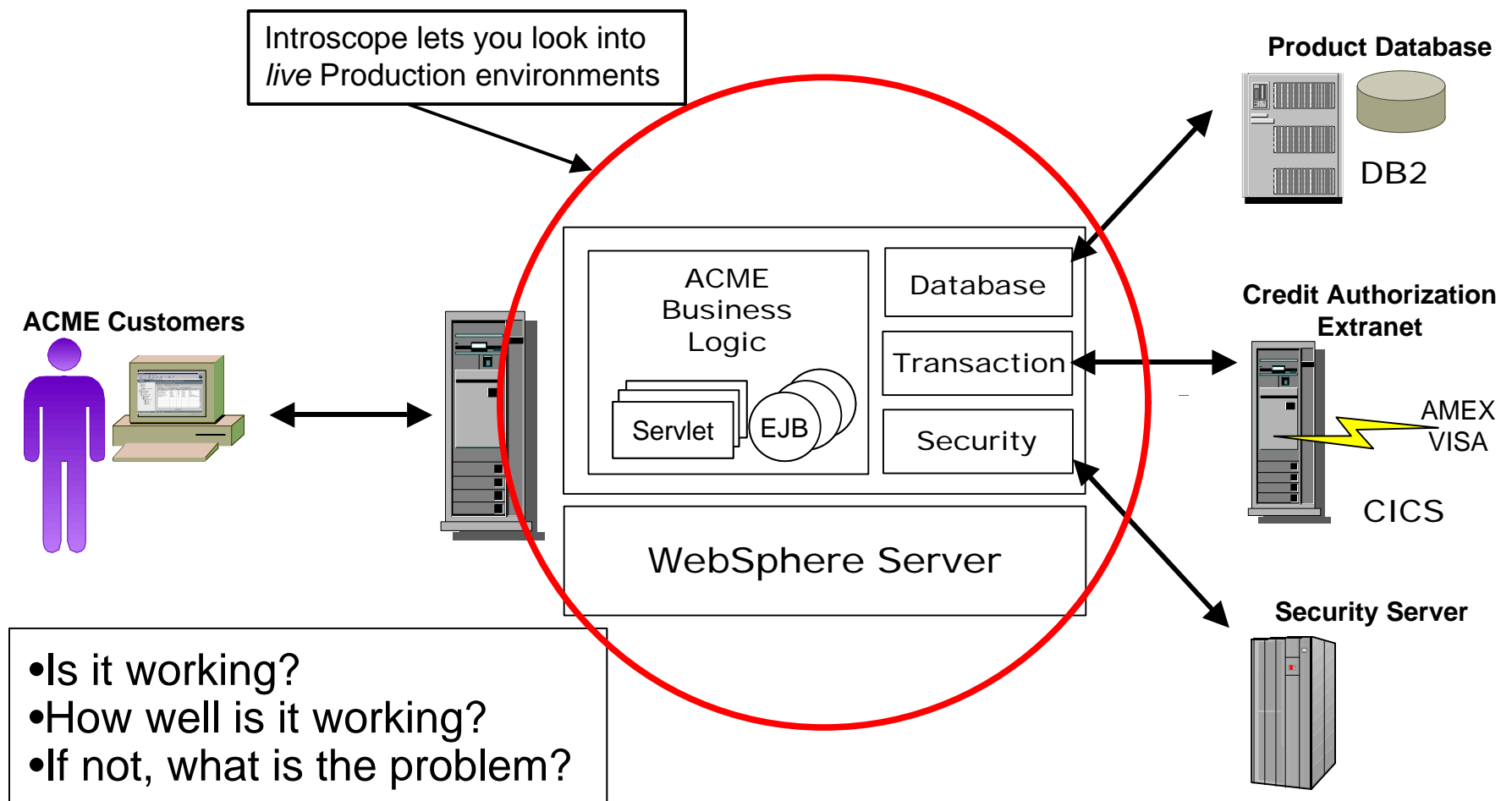




# The Management Problem



# Problem Example - ACME.COM



# Introducing Introscope V2

## Web Application Component Monitor

- Realtime Application Server performance
- Isolates problems & bottlenecks to specific components

## Alert & Event Manager

- Custom policies for alerts, events, & thresholds
- Supports Alerts to TME, eMail, & Paging

## Historical Performance & Fault Reporting

- Web Site Capacity Planning
- Trend analysis & Event reporting

Introscope also integrates well with Tivoli TME!

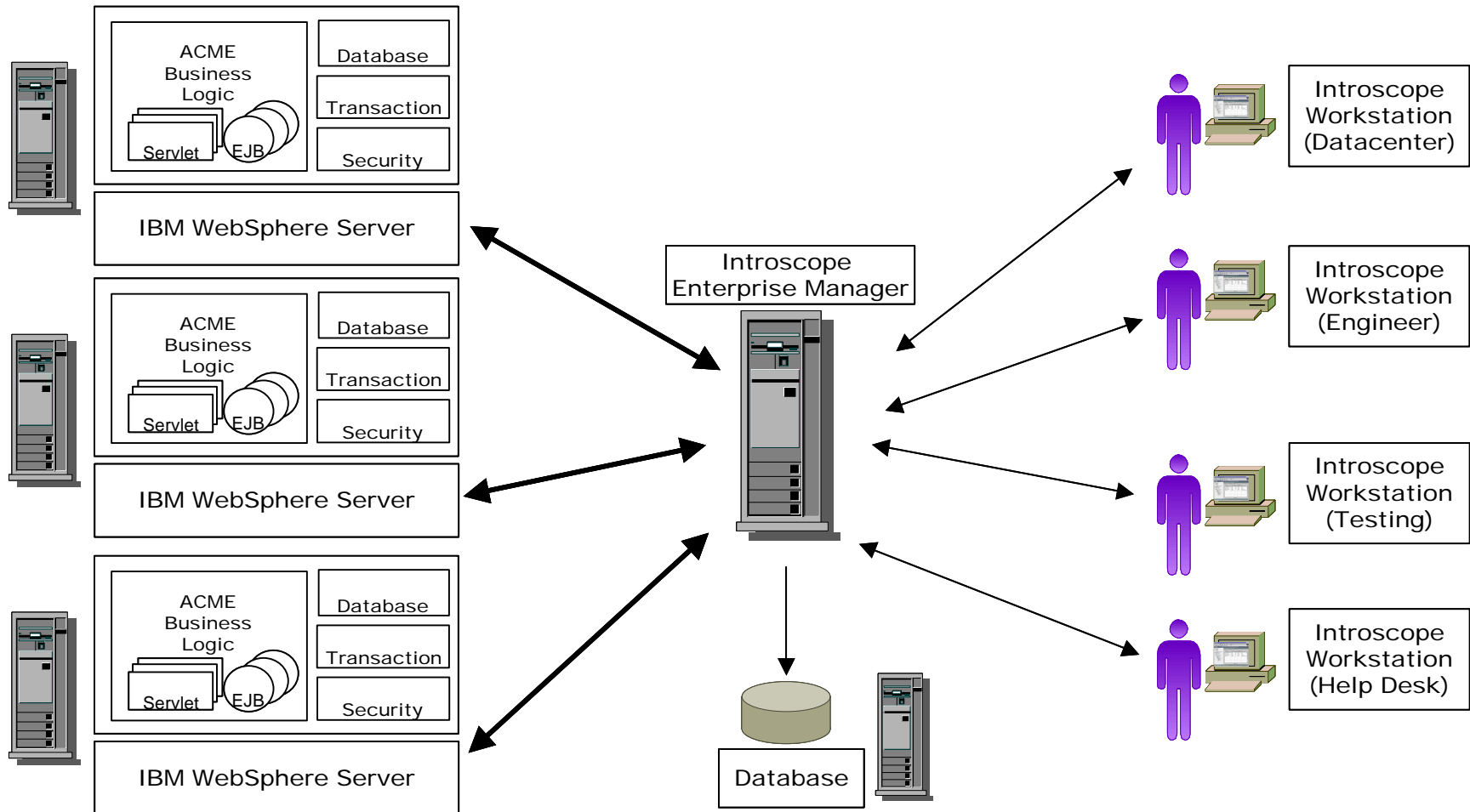
# wily introscope

***Only*** Introscope lets you

- Monitor **live** production Java web applications
  - See inside **3<sup>rd</sup> Party** Components
  - Create **Easy-to-Understand** Dashboards
- So that you can
- See & fix problems before customers see them
  - Optimize your live production system

Only Introscope solves the *live* Web App visibility problem

# Introscope Architecture



Sample Dashboard

The screenshot displays the Introscope Workstation interface. The main window, titled "Console - Introscope Workstation", features a menu bar with "Workstation", "Edit", "Manager", "Dashboard", and "Help". Below the menu bar are several tabs: "Example 4 EJB [not editable]", "Example 5 JDBC [not editable]", "My Dashboard 1", "Example 1 Agents [not editable]", "Example 2 Sockets Bandwidth [not editable]", and "Example 3 Servlets [not editable]".

The dashboard contains several performance charts:

- Servlet Performance:** A bar chart showing response times. The x-axis ranges from 0 to 28. A red vertical line is positioned at 14. Below the chart, it reads "MRMACKAY[...]Servlets:Average Response Time (ms) = 14".
- DatabaseQueries:** A gauge chart showing queries per second. The scale ranges from 0 to 5, with a needle pointing to 3. Below the gauge, it reads "MRMACKAY[...]JDBC:Queries Per Second = 3".
- Output Bandwidth:** A line chart showing bandwidth over time. The y-axis ranges from 72k to 84k.
- Responses Per Second:** A line chart showing responses per second over time. The y-axis ranges from 24 to 28.

An "Explorer - Introscope Workstation" window is open in the foreground, showing a tree view of the system structure. The tree includes nodes for "jdbc1", "open", "sample1", "tour", "Sockets", "Port 8008", and "Port 8008". The right pane of the Explorer shows a chart for "MRMACKAY|WebSphere |1403|Sockets|Port 8008" with a y-axis from 0 to 80k and a time axis from 12:56:00 to 13:00:30. The chart shows a fluctuating blue line representing output bandwidth.

The system tray at the bottom of the screen shows the Start button, several "Introsco..." icons, "Console ...", "LoadGen", "Explore...", "Start We...", "WebLogi...", and the system clock displaying "12:55 PM" on "Wed, May 31, 2000".

# Why Introscope?

- **Live** Component Level Application Monitoring
  - Extremely low overhead
  - See problems before your customers do
- No Source Code Needed
  - Manage any Java component without needing source (i.e. 3<sup>rd</sup> party object code)
  - **Zero** development costs
- Create and transfer **your** custom dashboards
  - Transfer expert knowledge to customers and/or other IS teams

Introscope can monitor **your** application in minutes!


# Introscope 2.0 Features

- Advanced Dashboard User Interface
- Customizable: monitor any method call
- Wily PowerPacks give app-specific metrics & views
  - **IBM WebSphere Server**
  - **JDBC, Sockets, Servlets, Memory, EJB's, API's**
- Wily SmartTrigger™ Alert System– send warnings when certain thresholds are exceeded
- Tested & available on AIX, S390, NT, AS400, UNIX, LINUX
- Managed platform only requires JVM 1.1.3 or higher





# ntroscope Monitors...

|  | Managed Components                                                                                                                                                                                | Data Coverage                                                                                                                                                      |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Java Web Applications</p> <p>WebSphere</p> <p>Any 3rd Party Java code</p>      | <p>Enterprise Java Beans<br/>Session &amp; Entity Beans</p> <p>Servlets</p> <p>Specific Method Tracing</p>                                                                                        | <p>Response Times<br/>Transaction Rates</p> <p>Track individual JDBC, RMI,<br/>File System, and Socket<br/>activity on specific EJBs,<br/>Servlets, or Methods</p> |
| <p>Java Virtual Machines</p>                                                      | <p>JVM Memory Usage<br/>Garbage Collection<br/>System Messages<br/>Optional Exception Tracing<br/>JDBC activity<br/>File System Throughput<br/>Network &amp; Socket Activity<br/>RMI Requests</p> | <p>Track internal JVM<br/>performance, memory usage,<br/>as well as the external factors<br/>such as disk, database,<br/>network and RMI<br/>dependencies.</p>     |

Use Introscope to find the exact problem component

# Near Zero Overhead

- Lightweight traces on heavyweight API
  - Sockets, JDBC, RMI, etc.
- Asynchronous sampling in Agent
- Minimal Agent bandwidth
  - Typically less than 500 bytes per second
- Result: minimal performance hit
  - Typically less than 5%

Optimized for managing applications *in production*

# Help Available to IBM Field Teams

## Getting the Product – [www.wilytech.com](http://www.wilytech.com)

- IBM INTERNAL USE trial license available now
- Introscope training for SEs, Global Services, FTSS, Demos
- Introscope collateral available for your customers

## Helping with Customers

- Performance support on WebSphere Application rollouts
- Java performance Crit-Sit support
- Sales call support

### **IBM Relationship Manager**

Lance Buchholz  
Lance@wilytech.com  
Tel (650) 227-7607

### **Wily Introscope Sales**

sales@wilytech.com  
Tel (650) 227-7600  
1-888-GET-WILY



Leonard Slipp  
JProbe Product Manager

leonard.slipp@sitraka.com

<http://www.sitraka.com/jprobe>

# Sitraka (formerly KL Group)

- Founded in 1989 (as KL Group)
- Leadership in Java development tools
- **sitraka software** *The Java Advantage*
- **sitraka mobility** *Mobile Workflow*
- A “Java Innovator” (Information Week)
- First integrated performance tools for VisualAge for Java and WebSphere
- IBM PartnerWorld Commercial Member

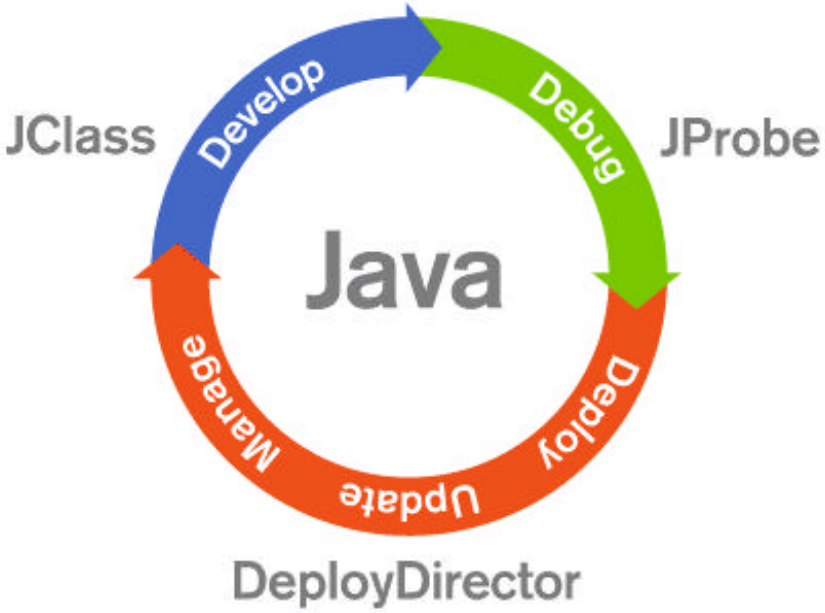




sitraka

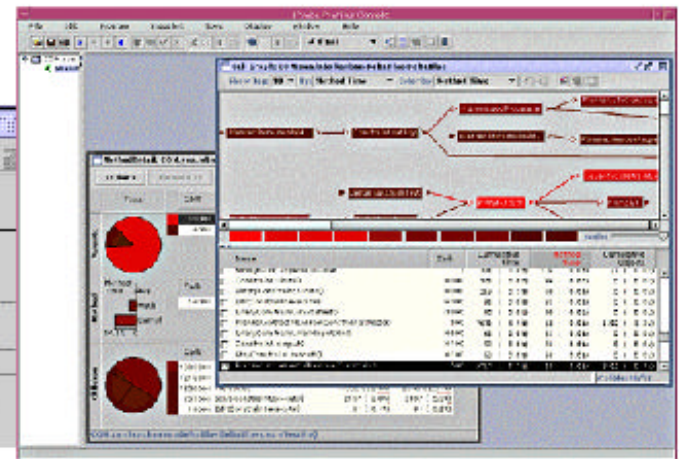
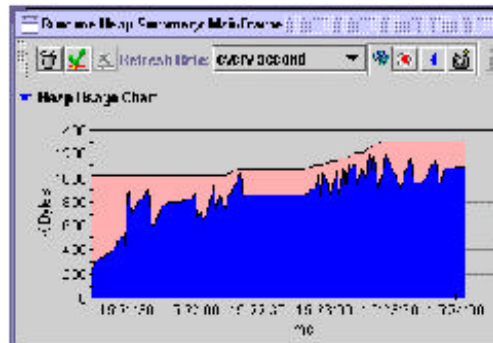
software

the Java™ advantage



# JProbe<sup>tm</sup>

- Helps developers eliminate performance bottlenecks, loitering objects, threading problems, and measure test coverage
- Helps Enterprise IT build faster, more reliable e-business applications



# JProbe<sup>tm</sup>

## JProbe Profiler with Memory Debugger

*Debug performance bottlenecks  
and loitering objects*

## JProbe Threadalyzer

*Hunt down deadlocks, stalls and  
race conditions*

## JProbe Coverage

*Track down and quantify  
untested code*



The image displays four screenshots from the JProbe software interface. The top screenshot shows a call graph with nodes and arrows. The middle screenshot shows a table of performance metrics with columns for Method, Count, Time, etc. The bottom-left screenshot shows a code editor with red and blue annotations. The bottom-right screenshot shows a thread analyzer window with a list of threads and their states.



# JProbe<sup>tm</sup> ServerSide Edition

- WebSphere Application Server support
- Easy configuration with JProbe Launchpad
- Filters out WAS infrastructure classes
- Analyze specific Servlets, JSPs and EJBs
- Remote Analysis

# JProbe<sup>tm</sup>

## Platform Support

- WebSphere 3.02 /3.5 on NT and Solaris
- VisualAge for Java 3.02/3.5
- IBM Alliance Agreement
  - IBM JVM 1.3 on NT & Linux
  - IBM JVM 1.3 on AIX 4.3.3 and AIX - 5L
  - IBM JVM 1.3 on OS/390 and Linux on 390

# JProbe<sup>tm</sup>

## Essential tools for enterprise Java development

- Improve performance and reliability of Java applications
- Eliminate problems before they crash mission-critical business applications
- Develop applications cost-effectively
- Deploy on time

# JProbe<sup>tm</sup>

## **JProbe Information**

<http://www.sitraka.com/software/jprobe/>

## **JProbe Integration Portal**

<http://www.sitraka.com/software/support/jprobe/j2ee/>

## **On-line JProbe demo video**

<http://www-4.ibm.com/software/events/demos/>

## **Sales Support Contact**

direct@sitraka.com      (800) 663-4723

(416) 594-1026



# Related Tools and URLs.

## Tool

## Description

[jdbctest.java](#)

Tests JDK settings and database connectivity.

<ftp://ftp.software.ibm.com/software/websphere/info/tools/jdbctest>

[Dr. Admin Trace Function](#)

Thread Stack Dumps on the Server.

<http://www-4.ibm.com/software/webservers/appserv/doc/v35/ae/infocenter/index.html>

[OLT](#)

Object Level Trace.

[Distributed Debugger](#)

Debugging of Application Level Problems.

## URLs - continued

Resource Analyzer

Provides Monitoring and Tuning support to enhance Performance

[http://www-4.ibm.com/software/webservers/appserv/download\\_ra.html](http://www-4.ibm.com/software/webservers/appserv/download_ra.html)

HitCount Servlet, Snoop Servlet

App.Server Problems

Profiler

JInsight

AIX Platform - Profiler

<http://www.research.ibm.com/jinsight/docs/refman/creation.htm>

Optimizelt

Profiler

<http://water.raleigh.ibm.com/reports/Was35x/Was35Optit40.pdf>

LogAnalyzer

Error Analysis

<ftp://ftp.software.ibm.com/software/websphere/info/tools/loganalyzer/>  
<ftp://ftp.software.ibm.com/software/websphere/info/tools/loganalyzer/symptoms/adv/symptomdb.xml>

<ftp://ftp.software.ibm.com/software/websphere/info/appserv/v35/ee/cborbdet.pdf>

## URLs - continued

Wily Technology - Introscope  
[www.wilytech.com](http://www.wilytech.com)

Performance Monitoring To

Sitraka - JProbe

JAVA Profiler

<http://www.sitraka.com/sitraka/>

Detailed documentation on integrating JProbe with WebSphere

<http://www.sitraka.com/software/support/jprobe/tsjprobeappservers.html>