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**WebSphere** software

## Installation Walkthrough Enabling Object Level Trace in WebSphere AS SE 3.5



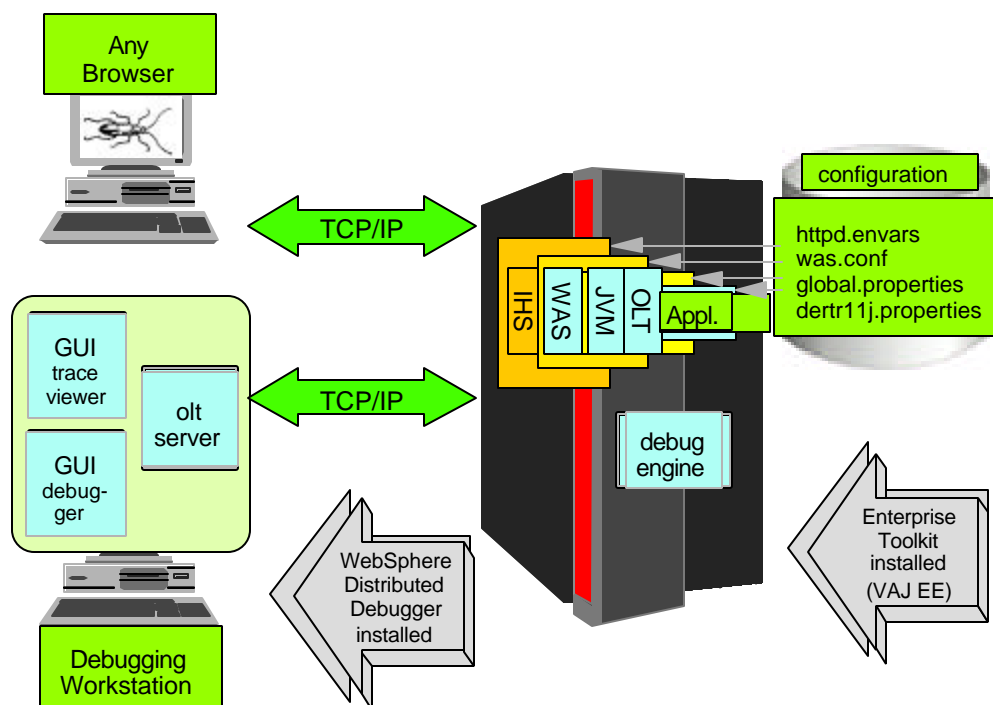
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### Distributed Debugging



## What is Object Level Trace (OLT)?

A tool that provides the capabilities of tracing /debugging multilingual distributed applications from a single workstation. It also provides a graphical representation of the interactions between Client /Server applications (OLT viewer). This tool enhances the capability of the debugger to allow the debugging of distributed applications.

intranet documentation

<http://pconcept.raleigh.ibm.com/whitepapers/DistributedDebugger/DistributedDebugger.htm>



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## Traces & Profilers

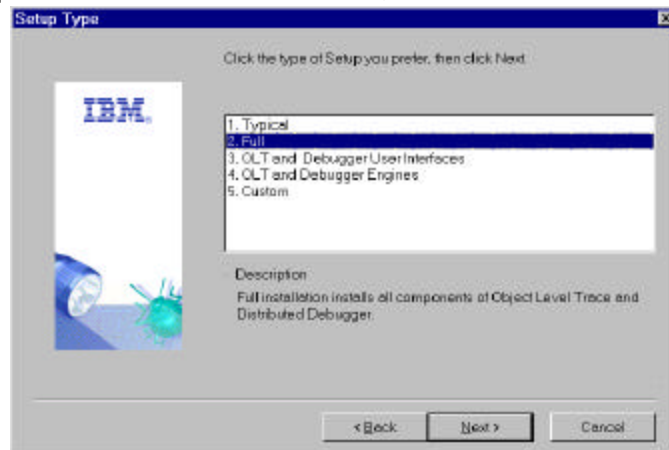
- ▶ Give Your developers seamless and GUIified access to z/OS !!!
  - ▶ OLT, Jinsight, SMB, NFS, FTP
- ▶ OLT is difficult to setup for 3.02, see Appendix
- ▶ OLT is easy to setup for 3.5, just follow PIU
  - ▶ Enable Object Level Trace Property (was.conf)
    - ▶ `objectleveltrace.enabled=true`
    - ▶ `objectleveltrace.host=IPADDRESS_of_tracing_workstation`
    - ▶ `objectleveltrace.port=see_oltcc`
  - ▶ restart the webserver
  - ▶ check ncf log if everything loaded ok



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## OLT preparing the Workstation environment

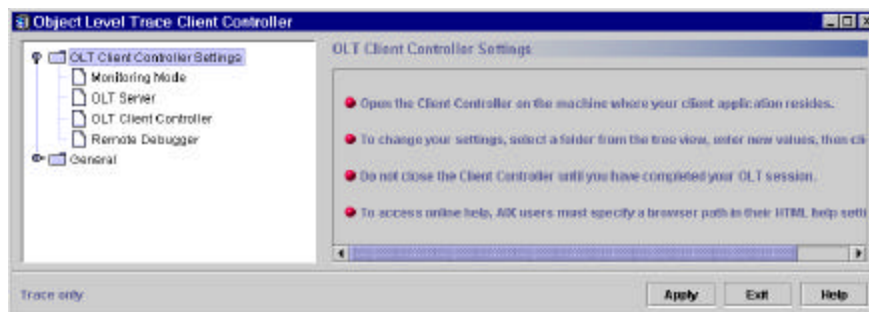
- Install Remote Debugger & ObjectLevelTrace (full mode) from WebSphere Studio or VAJ, reboot



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## OLT preparing the Workstation environment

- Check Workstation Environment with the **oltcc** command



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## Increase the timeout value of your Browser

For Netscape Browsers edit prefs.js in  
../netscape/users/default:  
user\_pref("network.tcptime", 240);

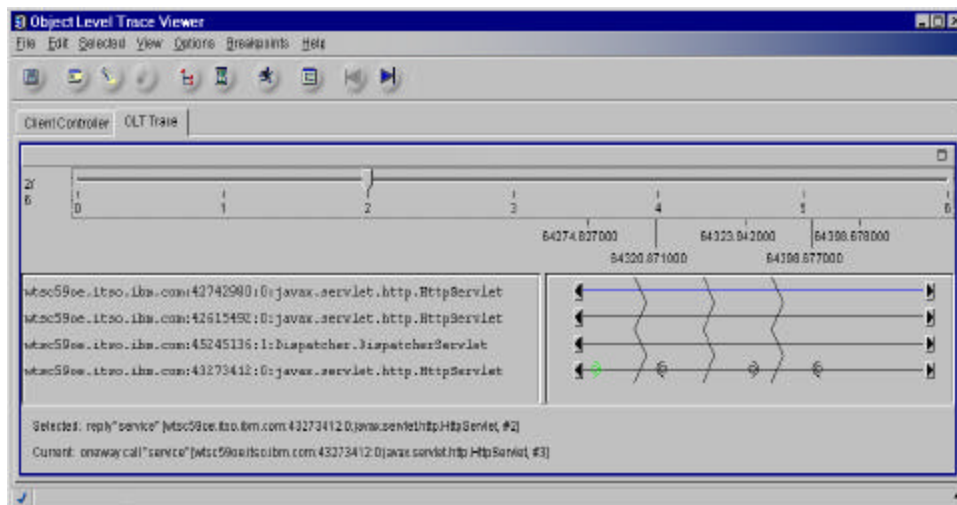


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## tracing now...

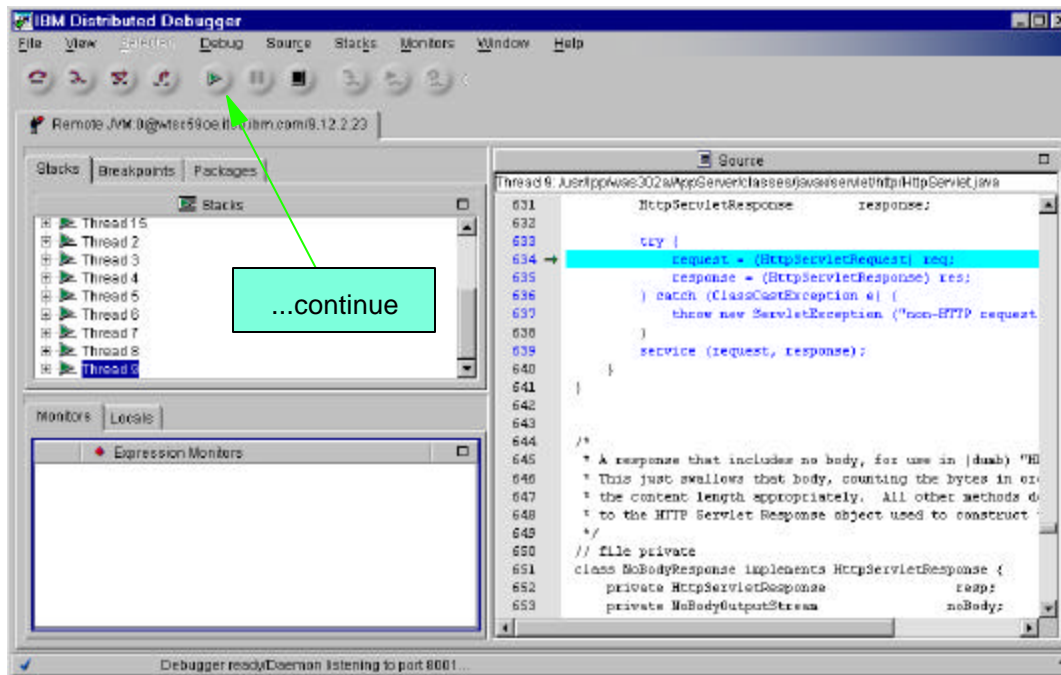


- switch options to online mode
- invoke the buggy servlet from the browser



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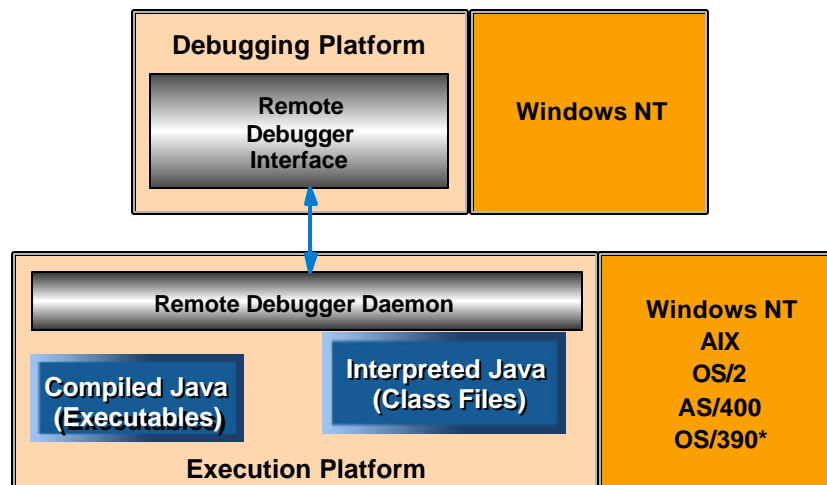
## Debugging



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## Remote Debugger

Debugs applications in runtime, production environment



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## Enabling OLT for WAS 3.02



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## OLT Preparing the Host environment OS/390 & WebSphere 3.02

- Copy trace properties

```
from /usr/lpp/hpj/lib/dertr11j.properties  
to was working directory (was.conf:  
appserver.workingdirectory)
```

- Edit dertr11j.properties in the working directory:

```
#OLT Client Controller Saved Specs V3.0  
#Thu May 11 14:19:56 EDT 2000  
help.path=  
data.ctrlport=5000  
data.ctrlpid=-1  
gen.lookandfeel=com.sun.java.swing.plaf.metal.MetalLookAndFeel  
data.trcport=2102  
help.newsession=0  
data.trcflag=1  
help.browser=  
data.dbghost= IP Address of tracing Workstation  
data.changeount=4  
data.ctrlhost= IP Address of tracing Workstation  
data.dbgport=8001  
data.trchost= IP Address of tracing Workstation  
data.dbgoption=2 Tracing Level 0 - 4
```



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## OLT Preparing the Host environment OS/390 & WebSphere 3.02

- additions in httpd.envvars

```
path:          /usr/lpp/hpj/bin:/usr/lpp/java/J1.1.8/J1.1/bin
libpath:       /usr/lpp/hpj/bin
classpath(begin):
/usr/lpp/hpj/lib/dertrjrt.jar:/usr/lpp/hpj/lib/derdebug.jar::
classpath(end):  /usr/lpp/java/J1.1.8/J1.1/lib/classes.zip
```
- and Inherit Webservers CLASSPATH to was (was.conf)

```
appserver.usesystemclasspath=true
```
- or define classpath in the was.conf

```
appserver.classpath=/usr/lpp/hpj/lib:
```
- restart the webserver
- check ncf log if everything loaded ok
- check ip connections (next foil)



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## ieaabd

A new SAF facility class is defined for ABDUMP, which allows installations to control who may receive key 0-7 ABDUMP dumps. The FACILITY class resource name is IEAABD.DMPAKEY. Users defined with READ access to the resource will have a dump produced. Started Tasks will receive an ABDUMP without being authorized to the resource.

**Using RACF to Control Access to Program Dumps** RACF allows you to control access to program dumps selectively. To achieve this control, you can protect program dumps using a data set profile, or one of two FACILITY class profiles named IEAABD.DMPAUTH or IEAABD.DMPAKEY.

### Protecting Program Dumps Using the FACILITY Class

Your installation can control the dumping (with SYSUDUMP, SYSABEND, and SYSMDUMP statements) of address spaces that contain controlled programs by defining the profile IEAABD.DMPAUTH in the FACILITY general resource class. To control the dumping (with SYSUDUMP, SYSABEND, and SYSMDUMP statements) of address spaces whose task is running

in a TCB key less than 8, the profile IEAABD.DMPAKEY must be defined in the FACILITY general resource class. IBM recommends that the profile be defined with UACC(NONE). Then PERMIT specific users via UACC(READ).

```
define to RACF (see INFOAPAR OW27748)
RDEFINE FACILITY IEAABD.DMPAUTH UACC(READ)
RDEFINE FACILITY IEAABD.DMPAKEY UACC(READ)
```



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## check ncf.log

```
Instantiate: com.ibm.servlet.engine.webapp.DefaultErrorReporter
Thread-4 ServletInstan A Loading.servlet:."ErrorReporter"
Thread-4 WebGroup A
ÝServlet.LOG":."com.ibm.servlet.engine.webapp.DefaultErrorReporter: init"
Thread-4 ServletInstan A Servlet.available.for.service:."ErrorReporter"
```



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## check ip connections

TSO

netstat

EZZ2587I	WEBFISH	00007128	0.0.0.0..9876	0.0.0.0..0	Listen
EZZ2587I	WEBFISH	000073C4	9.12.2.23..3566	9.12.2.144..5000	SynSent
EZZ2587I	WEBFISH	00007129	0.0.0.0..9843	0.0.0.0..0	Listen
EZZ2587I	WEBFISH	0000712A	0.0.0.0..2903	0.0.0.0..0	Listen

or

OMVS

WUNDERL:/web/fish/pub: >onetstat | grep FISH

WEBFISH	00008A42	9.12.2.23..3193	9.12.2.144..5000	SynSent
WEBFISH	00007128	0.0.0.0..9876	0.0.0.0..0	Listen
WEBFISH	00007129	0.0.0.0..9843	0.0.0.0..0	Listen
WEBFISH	0000712A	0.0.0.0..2903	0.0.0.0..0	Listen

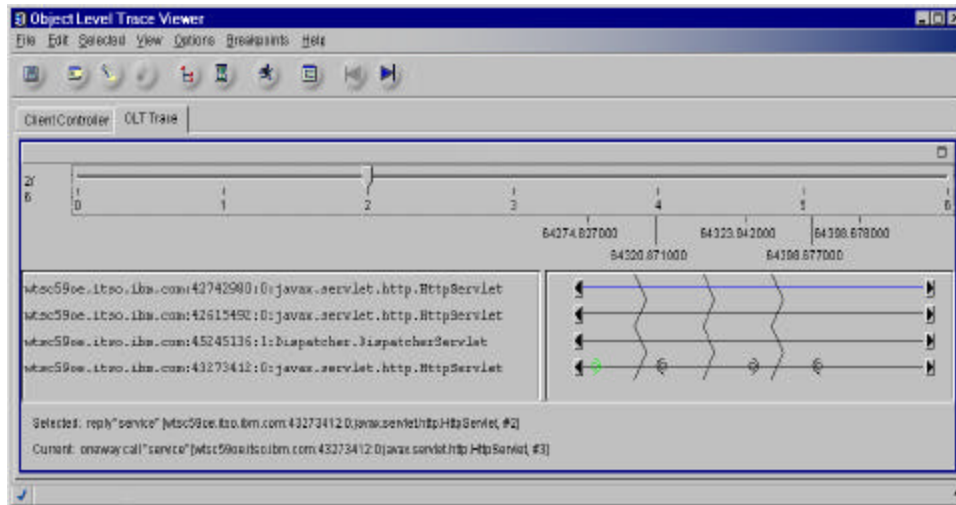


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## tracing now...

- switch options to online mode
- invoke the buggy servlet from the browser



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## netstat now

### tracing

Hostside, Netstat

WEBFISH	000E5E99	0.0.0.0..9876	0.0.0.0..0	Listen
WEBFISH	000E5E9B	0.0.0.0..3219	0.0.0.0..0	Listen
WEBFISH	000ED3D5	9.12.2.23..2564	9.12.2.144..2102	Establish
WEBFISH	000E5E9A	0.0.0.0..9843	0.0.0.0..0	Listen
WEBFISH	000ED743	9.12.2.23..3441	9.12.2.144..5000	SynSent

### tracing and debugging

Hostside, onetstat

WEBFISH	00105D82	9.12.2.23..1039	9.12.2.23..2099	Establish
WEBFISH	00105CE5	9.12.2.23..1947	9.12.2.144..2102	Establish
WEBFISH	00105955	0.0.0.0..1039	0.0.0.0..0	Listen
WEBFISH	00105953	0.0.0.0..9876	0.0.0.0..0	Listen
WEBFISH	00105954	0.0.0.0..9843	0.0.0.0..0	Listen
WEBFISH	0010AB9B	9.12.2.23..3752	9.12.2.144..5000	SynSent
WEBFISH	00105D85	9.12.2.23..1039	9.12.2.23..2100	Establish
WEBFISH1	00105D3D	0.0.0.0..2035	0.0.0.0..0	Listen
WEBFISH1	00105D81	9.12.2.23..2099	9.12.2.23..1039	Establish
WEBFISH1	00105D83	9.12.2.23..2100	9.12.2.23..1039	Establish
WEBFISH1	00105D4A	9.12.2.23..2035	9.12.2.144..1074	Establish
WEBFISH1	00105D44	9.12.2.23..2038	9.12.2.144..8001	FinWait2



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## workstation netstat

```
Command Prompt
TCP    tot26:1093      wtec59.itec.ibm.com:telnet ESTABLISHED
TCP    tot26:1202      www.fish.com:3679      ESTABLISHED
TCP    tot26:1235      ips-ehni-b.ehningen.de.ibm.com:80 CLOSE_WAIT
TCP    tot26:1236      ips-ehni-b.ehningen.de.ibm.com:80 CLOSE_WAIT
TCP    tot26:1237      ips-ehni-b.ehningen.de.ibm.com:80 CLOSE_WAIT
TCP    tot26:2102      www.fish.com:3634      ESTABLISHED
TCP    tot26:8001      www.fish.com:3680      CLOSE_WAIT
TCP    tot26:1025      0.0.0.0:0              LISTENING
TCP    tot26:1025      localhost:1026          ESTABLISHED
TCP    tot26:1026      localhost:1025          ESTABLISHED
TCP    tot26:1033      0.0.0.0:0              LISTENING
TCP    tot26:1033      localhost:1035          ESTABLISHED
TCP    tot26:1035      localhost:1033          ESTABLISHED
TCP    tot26:1061      0.0.0.0:0              LISTENING
TCP    tot26:1195      localhost:2202          ESTABLISHED
TCP    tot26:1196      localhost:2202          ESTABLISHED
TCP    tot26:2202      localhost:1195          ESTABLISHED
TCP    tot26:2202      localhost:1196          ESTABLISHED
UDP    tot26:135       *:*:
UDP    tot26:523       *:*:
UDP    tot26:nbname     *:*:
UDP    tot26:nbdatagram *:*:
UDP    tot26:1061      *:*:

C:\>
```



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## New AS

```
D J,WEBF*
IEE115I 12.58.12 2000.303 ACTIVITY 969
  JOBS      M/S      TS USERS      SYSAS      INITS      ACTIVE/MAX VTAM      OAS
00011      00042      00005      00029      00025      00005/00030      00038
  WEBFISH   WEBFISH   WEBSRV   IN   SO   A=0078   PER=NO   SMC=000
                                     PGN=N/A   DMN=N/A   AFF=NONE
                                     CT=098.176S   ET=661.124S
                                     WUID=STC06180   USERID=WEBSRV
                                     WKL=WRKLOAD1   SCL=FAST   P=2
                                     RGP=RGROUP2   SRVR=NO   QSC=NO
                                     ADDR SPACE   ASTE=01671E00
  WEBFISH1  *OMVSEX   WEBSRV   OWT   AO   A=0072   PER=NO   SMC=000
                                     PGN=N/A   DMN=N/A   AFF=NONE
                                     CT=001.312S   ET=443.242S
                                     WUID=STC06169   USERID=WEBSRV
                                     WKL=SYSTEM   SCL=SYSOTHER   P=1
                                     RGP=N/A   SRVR=NO   QSC=NO
                                     ADDR SPACE   ASTE=01671C80
```



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## ps -ef

### What is it ?

```
STC 67110587 67110577 - 12:50:49 ? 0:01  
/usr/lpp/java18/J1.1/bin/mvs/native_threads/java  
com.ibm.debug.engine.Jde -ju
```



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## restore

- problem found ?
- restore your configuration files
- restart the web server



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