WebSphere Application Server Troubleshooting

Agenda
- Overview of troubleshooting
- How do I troubleshoot?
- Troubleshooting by component
- Diagnosing problems (using diagnosis tools) and Data collection

Overview of troubleshooting and How do I troubleshoot?

Troubleshooting is the process of finding and eliminating the cause of a problem. Whenever you have a problem with your IBM software, the troubleshooting process begins as soon as you ask yourself what happened? A basic troubleshooting strategy at a high level involves:

Recording the symptoms of the problem
Depending on the type of problem you have whether it be with your application, your server, or your tools, you might receive a message that indicates something is wrong. Always record the error message that you see. As simple as this sounds, error messages sometimes contain cryptic codes that might make more sense as you investigate your problem further. You might also receive multiple error messages that look similar but have subtle differences. By recording the details of each one, you can learn more about where your problem exists.

Recreating the problem
Think back to what steps you were doing that led you to this problem. Try those steps again to see if you can easily recreate this problem. If you have a consistently repeatable test case, you will have an easier time determining what solutions are necessary.

How did you first notice the problem?

Did you do anything different that made you notice the problem?

Is the process that is causing the problem a new procedure, or has it worked successfully before?

If this worked before what has changed? The change can refer to any type of change made to the system, ranging from adding new hardware or software, to configuration changes to existing software.

What was the first symptom of the problem you witnessed? Were there other symptoms occurring around that point of time?

Does the same problem occur elsewhere? Is only one machine experiencing the problem or are multiple machines experiencing the same problem?

What messages are being generated that could indicate what the problem is?

Eliminating possible causes
Narrow the scope of your problem by eliminating components that are not causing the problem. By using a process of elimination, you can simplify your problem and avoid wasting time in areas that are not culprits.

Consult the information in this product and other available resources to help you with your elimination process.
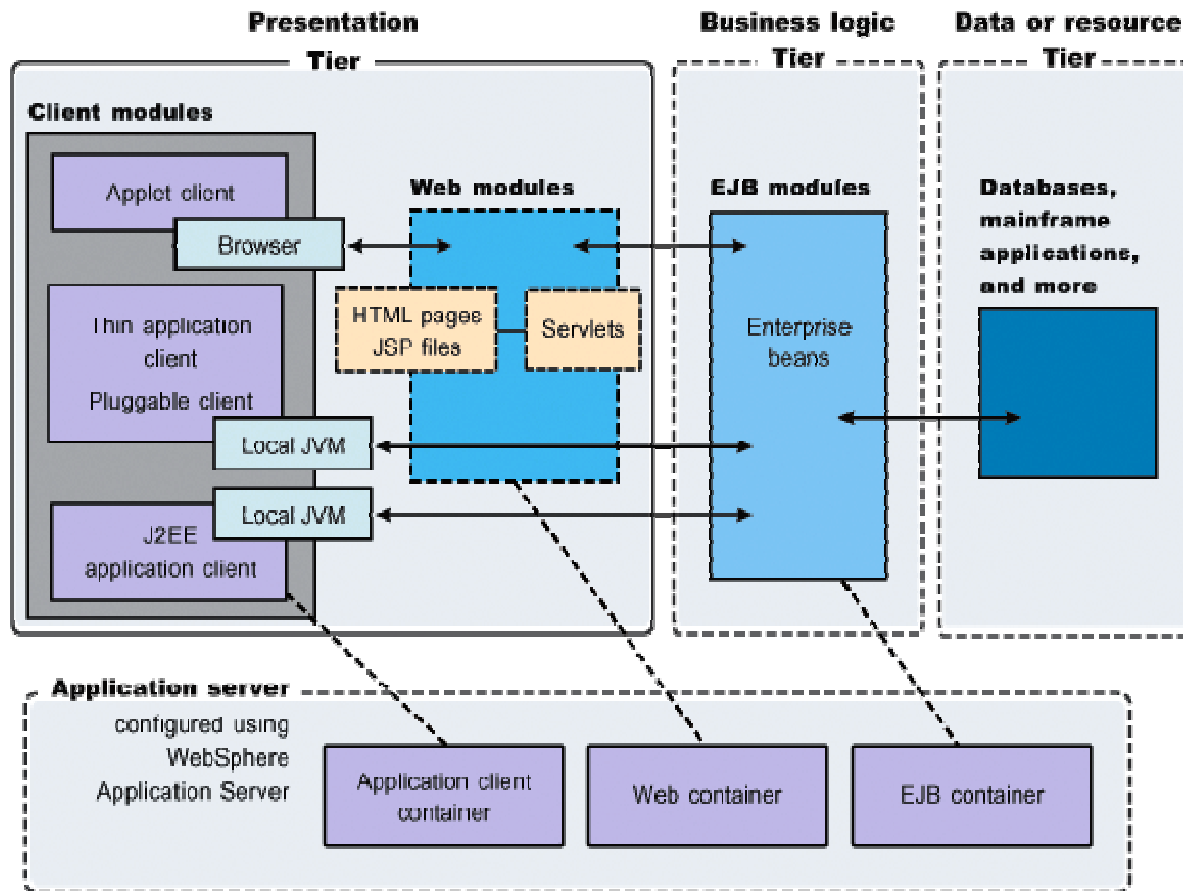
Has anyone else experienced this problem? See the topic on searching knowledge bases. Is there a fix you can download? See the topic on getting fixes.

You can use the WebSphere Application Server Troubleshooting Guide to work through the cause of a problem
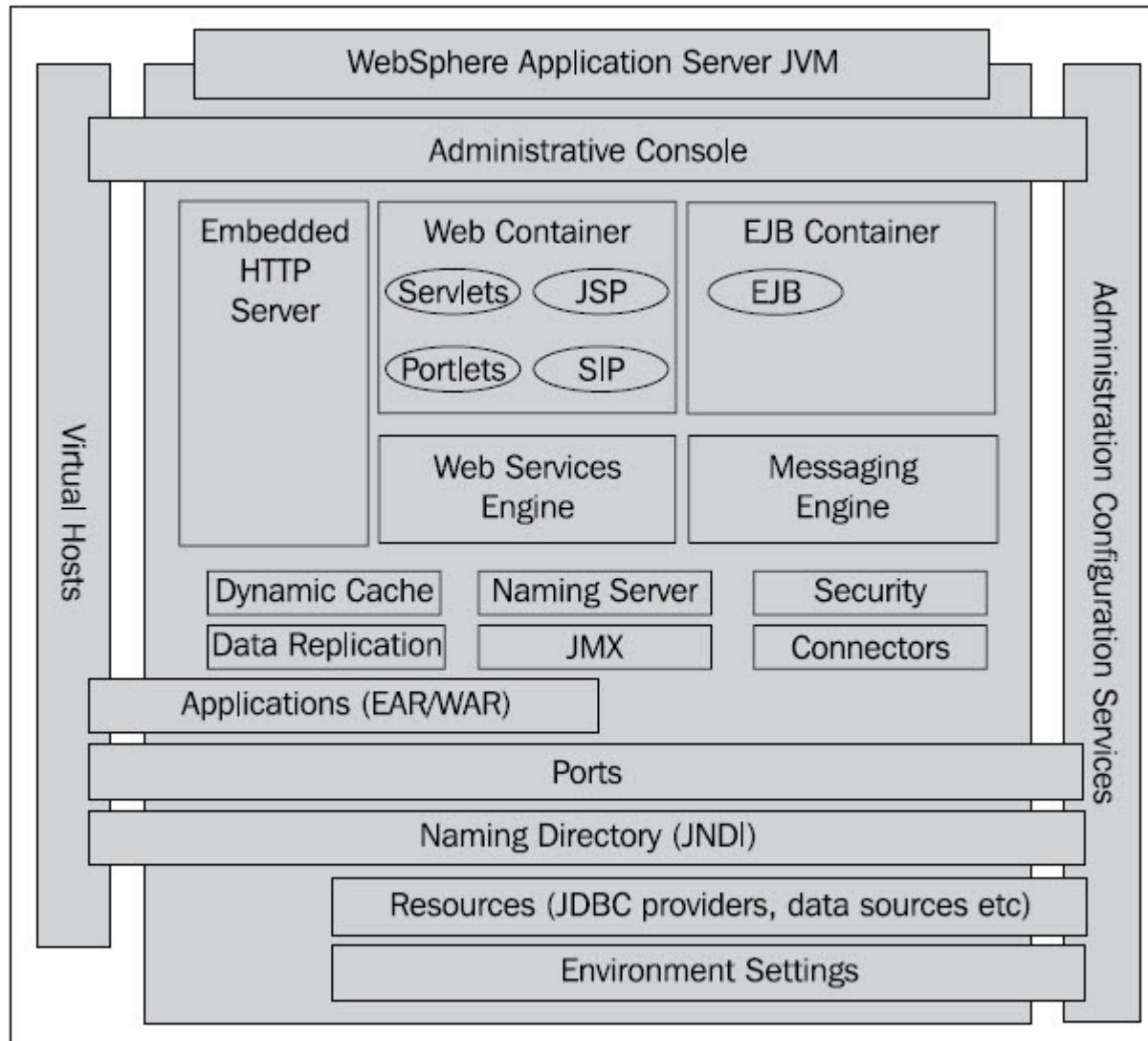
Using diagnostic tools
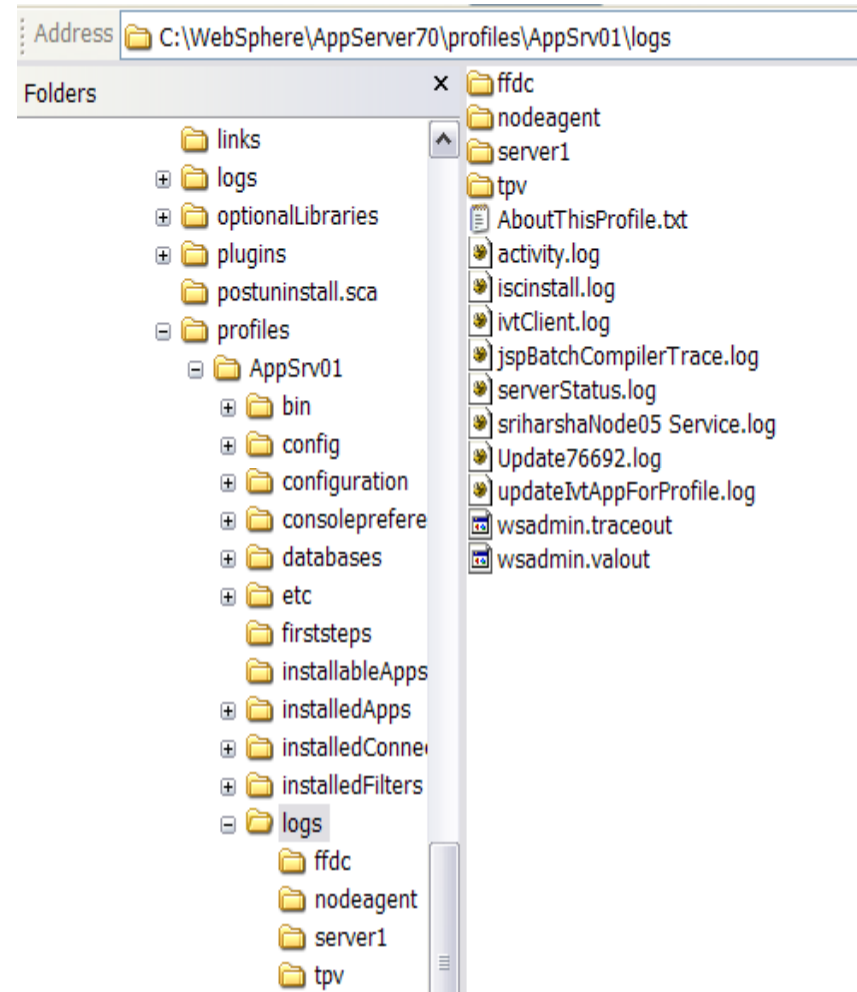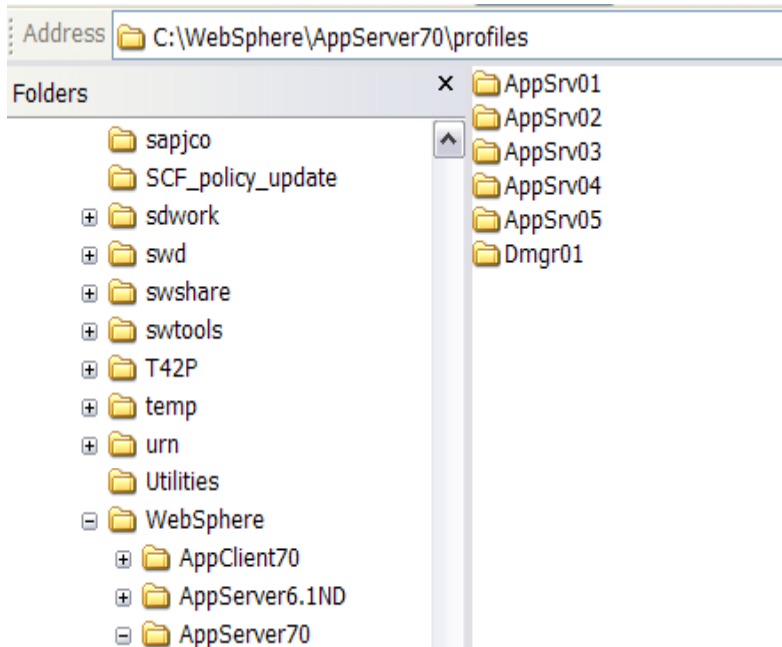As a more advanced task, there are various tools that you can use to analyze and diagnose problems with your system

J2EE application components

WebSphere Application Server Internals

WebSphere installation structure

Folders   ✕

- 📁 sapjco
- 📁 SCF_policy_update
- ⊞ 📁 sdwork
- ⊞ 📁 swd
- ⊞ 📁 swshare
- ⊞ 📁 swtools
- ⊞ 📁 T42P
- ⊞ 📁 temp
- ⊞ 📁 urn
- 📁 Utilities
- ⊟ 📁 WebSphere
  - ⊞ 📁 AppClient70
  - ⊞ 📁 AppServer6.1ND
  - ⊟ 📁 AppServer70

- 📁 AppSrv01
- 📁 AppSrv02
- 📁 AppSrv03
- 📁 AppSrv04
- 📁 AppSrv05
- 📁 Dmgr01

Folders   ✕

- 📁 links
- ⊞ 📁 logs
- ⊞ 📁 optionalLibraries
- ⊞ 📁 plugins
- 📁 postuninstall.sca
- ⊟ 📁 profiles
  - ⊟ 📁 AppSrv01
    - ⊞ 📁 bin
    - ⊞ 📁 config
    - ⊞ 📁 configuration
    - ⊞ 📁 consoleprefere
    - ⊞ 📁 databases
    - ⊞ 📁 etc
    - 📁 firststeps
    - 📁 installableApps
    - ⊞ 📁 installedApps
    - ⊞ 📁 installedConne
    - ⊞ 📁 installedFilters
    - ⊟ 📁 logs
      - 📁 ffdc
      - 📁 nodeagent
      - 📁 server1
      - 📁 tpv

- 📁 ffdc
- 📁 nodeagent
- 📁 server1
- 📁 tpv
- 📄 AboutThisProfile.txt
- 📄 activity.log
- 📄 iscinstall.log
- 📄 ivtClient.log
- 📄 jspBatchCompilerTrace.log
- 📄 serverStatus.log
- 📄 sriharshaNode05 Service.log
- 📄 Update76692.log
- 📄 updateIvtAppForProfile.log
- 📄 wsadmin.traceout
- 📄 wsadmin.valout

How do I troubleshoot?

Diagnosing problems with message logs

Message reference

You can log WebSphere Application Server system messages from a variety of sources, including application server components and applications. Messages logged by application server components and associated IBM products start with a unique message identifier that indicates the component or application that issued the message.

The message identifier can be either 8 or 9 characters in length and has the form:
CCCC1234X
where: CCCC is a four character alphabetic component or application identifier.
 1234 is a four character numeric identifier used to identify the specific message for that component.

X is an optional alphabetic severity indicator. (I=Informational, W=Warning, E=Error)To view the messages generated by WebSphere Application Server components, select the Reference view of the information center navigation and expand the topic Messages

Troubleshooting by component

Web module or application server hangs

WebSphere Application Server Logs a warning message in the System.Out log file that indicates the name of the thread that is hung and how long it has already been active.

The following messages is written to the log:
WSVR0605W: Thread **threadname** has been active for **hangtime** and may be hung. There are **totalthreads** threads in total in the server that may be hung.

WSVR0606W: Thread **threadname** was previously reported to be hung but has completed. It was active for approximately **hangtime**. There are **totalthreads** threads in total in the server that still may be hung.

WSVR0607W: Too many thread hangs have been falsely reported. The hang threshold is now being set to **thresholdtime**.

where: **threadname** is the name that appears in a JVM thread dump, **hangtime** gives an approximation of how long the thread has been active and **totalthreads** gives an overall assessment of the system threads.

Web Container troubleshooting tips

SRVE 1234X

JSP engine troubleshooting tips

JSPG 1234X

HTTP session manager troubleshooting tips

SESN1234X

Naming services component troubleshooting tips

NMSV1234X

Enterprise bean and EJB container troubleshooting tips

CNTR1234X

JDBC and data source troubleshooting tips

J2CA1234X

DSRA1234X

Troubleshooting transactions

WTRN1234X

WebService trouble shooting

WSWS1234X

Security trouble shooting

SECJ1234X , CWSCJ1234X

[9/25/12 11:03:32:906 EDT] 00000009 ApplicationMg A   WSVR0200I: Starting application: ivtApp
[9/25/12 11:03:32:906 EDT] 00000009 ApplicationMg A   WSVR0203I: Application: ivtApp Application build level: WASX.SERV1 [qq0723.30]
[9/25/12 11:03:33:156 EDT] 00000008 ApplicationMg A   WSVR0200I: Starting application: query
[9/25/12 11:03:33:171 EDT] 00000008 ApplicationMg A   WSVR0204I: Application: query Application build level: Unknown
[9/25/12 11:03:33:703 EDT] 0000000a webcontainer I com.ibm.ws.webcontainer.WSWebContainer initialize SRVE0161I: IBM WebSphere Application Server - Web Container. Copyright IBM Corp. 1998-2008
[9/25/12 11:03:33:703 EDT] 0000000a webcontainer I com.ibm.ws.webcontainer.WSWebContainer initialize SRVE0162I: Servlet Specification Level: 2.5
[9/25/12 11:03:33:703 EDT] 0000000a webcontainer I com.ibm.ws.webcontainer.WSWebContainer initialize SRVE0163I: Supported JSP Specification Level: 2.1
[9/25/12 11:03:33:734 EDT] 00000009 AbstractEJBRu I   WSVR0037I: Starting EJB jar: ivtEJB.jar
[9/25/12 11:03:33:734 EDT] 00000008 AbstractEJBRu I   WSVR0037I: Starting EJB jar: querybean.jar
[9/25/12 11:03:33:765 EDT] 00000008 EJBContainerI I   CNTR0167I: The server is binding the com.ibm.websphere.ejbquery.QueryHome interface of the Query enterprise bean in the querybean.jar module of the query application. The binding location is: com/ibm/websphere/ejbquery/Query
[9/25/12 11:03:33:796 EDT] 00000008 AbstractEJBRu I   WSVR0057I: EJB jar started: querybean.jar
[9/25/12 11:03:33:812 EDT] 00000009 AbstractEJBRu I   WSVR0057I: EJB jar started: ivtEJB.jar
[9/25/12 11:03:33:875 EDT] 00000008 ApplicationMg A   WSVR0221I: Application started: query
[9/25/12 11:03:34:015 EDT] 0000000a WASSessionCor I SessionContextRegistry getSessionContext SESN0176I: Will create a new session context for application key admin_host/FileTransfer
[9/25/12 11:03:34:265 EDT] 0000000a servlet   I com.ibm.ws.webcontainer.servlet.ServletWrapper init SRVE0242I: [filetransfer

TroubleShooting: Classloader problems for WebSphere Application Server

Troubleshooting connection pooling (J2C) problems in WebSphere Application Server

TroubleShooting: EJB Container problems

TroubleShooting: Java Transaction Service (JTS) problems

TroubleShooting: JNDI and naming problems

TroubleShooting: Object Request Broker (ORB) problems

Problem Determination Tools in IBM Support Assistant 5.0 Tech Preview

Garbage Collection and Memory Visualizer (GCMV)
IBM Portal Log Analyzer
Memory Analyzer
Pattern Modeling and Analysis Tool for Java Garbage Collection (PMAT)
Profile Port Checker
Thread and Monitor Dump Analyzer (TMDA)
WebSphere Application Server Configuration Visualizer

IBM Support Assistant Workbench
Download IBM Support Assistant Workbench to simplify your software support! You can benefit from concurrent search, media viewer, guided troubleshooter, data collectors, service request submission, and other features.

Update: Health Center 2.0 provides several major enhancements
The IBM Monitoring and Diagnostic Tools for Java - Health Center is a free low-overhead diagnostic tool for monitoring an application running on an IBM Java Virtual Machine. Version 2.0 offers several new features.

[IBM Support Assistant Data Collector](#)

IBM Support Assistant Data Collector is a quick way for you to gather diagnostic files such as log files, configuration files or to run traces. This is an automated data collector that is reliable, accurate and saves you time.

[IBM Support Assistant Lite](#)

IBM recommends using IBM Support Assistant Lite to quickly collect diagnostic files, such as log files, configuration files or to run traces. This automated data collection is reliable, accurate and saves you time. Just download it for your product, extract the package and go!

MustGather: Read first for WebSphere Application Server

[Collect troubleshooting data for problems with IBM WebSphere Application Server.](#)

Troubleshooting and support

http://www14.software.ibm.com/webapp/wsbroker/redirect?version=compass&product=was-express-dist&topic=welc6toptroubleshooting

For list of message reference see

http://www14.software.ibm.com/webapp/wsbroker/redirect?version=compass&product=was-express-dist&topic=welc_ref_trb_msg

Contacting WebSphere support:

WebSphere support is based 5 Queue Model
- No personal queues

For US Customers	For Worldtrade customer
WASADM,103	WOTADM,103
WASCET,103	WOTCET,103
WASIHS,103	WASIHS,103
WASWEB,103	WOTWEB,103
WASSDK,103	WOTSDK,103

Use below URL or callcenter or ICSW and search for CRF724
To determine component wise break down
https://techlink.austin.ibm.com/crf/

Collaboration:
For details about how to use add bluegroups see:
https://w3.webahead.ibm.com/w3ki/display/swcc/SWG-CC-All
If you have problems with the large bluegroup you can use
SWG_CC_WebSphere_Application_Server instead