



Royal Cyber Inc.

Individualized E-business Solution

WebSphere Environment Recommendations



Royal Cyber Inc.

➤ Migration from version 6.1 to 7.0/8.0

- Right now the current version of WebSphere is 6.1.0.33 and support for this version is going to be ended in September 2012.
- If WebSphere can not be migrated right now it should be at least upgraded to version 6.1.0.39

<http://www-01.ibm.com/software/support/lifecycleapp/PLCDetail.wss?synkey=C578916B44100K52-D404295E02966P57-B529169M78514S64>

➤ Remove 32 bit servers from Clusters

- HAManager checks and confirms the connectivity of all coregroups members either they are started or stopped.
- To improve the communication between coregroups, remove servers which are no more being used.

<input type="checkbox"/>	BECV1Server1	CRCORWAS4	Base 6.1.0.33	BECVCluster	✘
<input type="checkbox"/>	KioskosServer1	CRCORWAS4	Base 6.1.0.33	KioskosCluster	✘
<input type="checkbox"/>	MADServer1	CRCORWAS4	Base 6.1.0.33	MADCluster	✘
<input type="checkbox"/>	MQTesterServer1	CRCORWAS4	Base 6.1.0.33	MQTesterCluster	✘
<input type="checkbox"/>	MonSECServer1	CRCORWAS4	Base 6.1.0.33	MonSECCluster	✘
<input type="checkbox"/>	RedFinancieraServer1	CRCORWAS4	Base 6.1.0.33	RedFinancieraCluster	✘
<input type="checkbox"/>	SEC3ProcessServer1	CRCORWAS4	Base 6.1.0.33	SEC3ProcessServerCluster	✘
<input type="checkbox"/>	SEC3Server1	CRCORWAS4	Base 6.1.0.33	SEC3ServerCluster	✘
<input type="checkbox"/>	SEC3Server3	CRCORWAS4	Base 6.1.0.33	SEC3ServerCluster	✘
<input type="checkbox"/>	SEC3Server5	CRCORWAS4	Base 6.1.0.33	SEC3ServerCluster	✘
<input type="checkbox"/>	SEC3Server7	CRCORWAS4	Base 6.1.0.33	SEC3ServerCluster	✘
<input type="checkbox"/>	SEC3Server9	CRCORWAS4	Base 6.1.0.33	SEC3ServerCluster	✘
<input type="checkbox"/>	SECMobile1	CRCORWAS4	Base 6.1.0.33	SECMobileCluster	✘

Total 58 Filtered total: 13

➤ JVM Analysis & recommendation for SEC3ServerCluster

- There were some OOM issues in June 2011 but right now JVM is looking stable

◆ List of Java messages and codes

[Tue Jun 28 09:39:21 2011] JVMDUMP006I Processing dump event "systhrow", detail "java/lang/OutOfMemoryError" - please wait.

User response: Dump agents are set up during JVM initialization. They enable you to use events occurring in the JVM, such as Garbage Collection, thread start, or JVM termination, to initiate dumps or to launch an external tool.

[Tue Jun 28 09:39:21 2011] JVMDUMP032I JVM requested Snap dump using 'D:\WebSphere\AppServer\profiles\corpwasnetwokr64be1\Snap.20110628.093924.6476.0001.trc' in response to an event

[Tue Jun 28 09:39:21 2011] JVMDUMP010I Snap dump written to D:\WebSphere\AppServer\profiles\corpwasnetwokr64be1\Snap.20110628.093924.6476.0001.trc

[Tue Jun 28 09:39:21 2011] JVMDUMP032I JVM requested Heap dump using 'D:\WebSphere\AppServer\logs\heapdump.20110628.093924.6476.0002.txt' in response to an event

[Tue Jun 28 09:39:21 2011] JVMDUMP010I Heap dump written to D:\WebSphere\AppServer\logs\heapdump.20110628.093924.6476.0002.txt

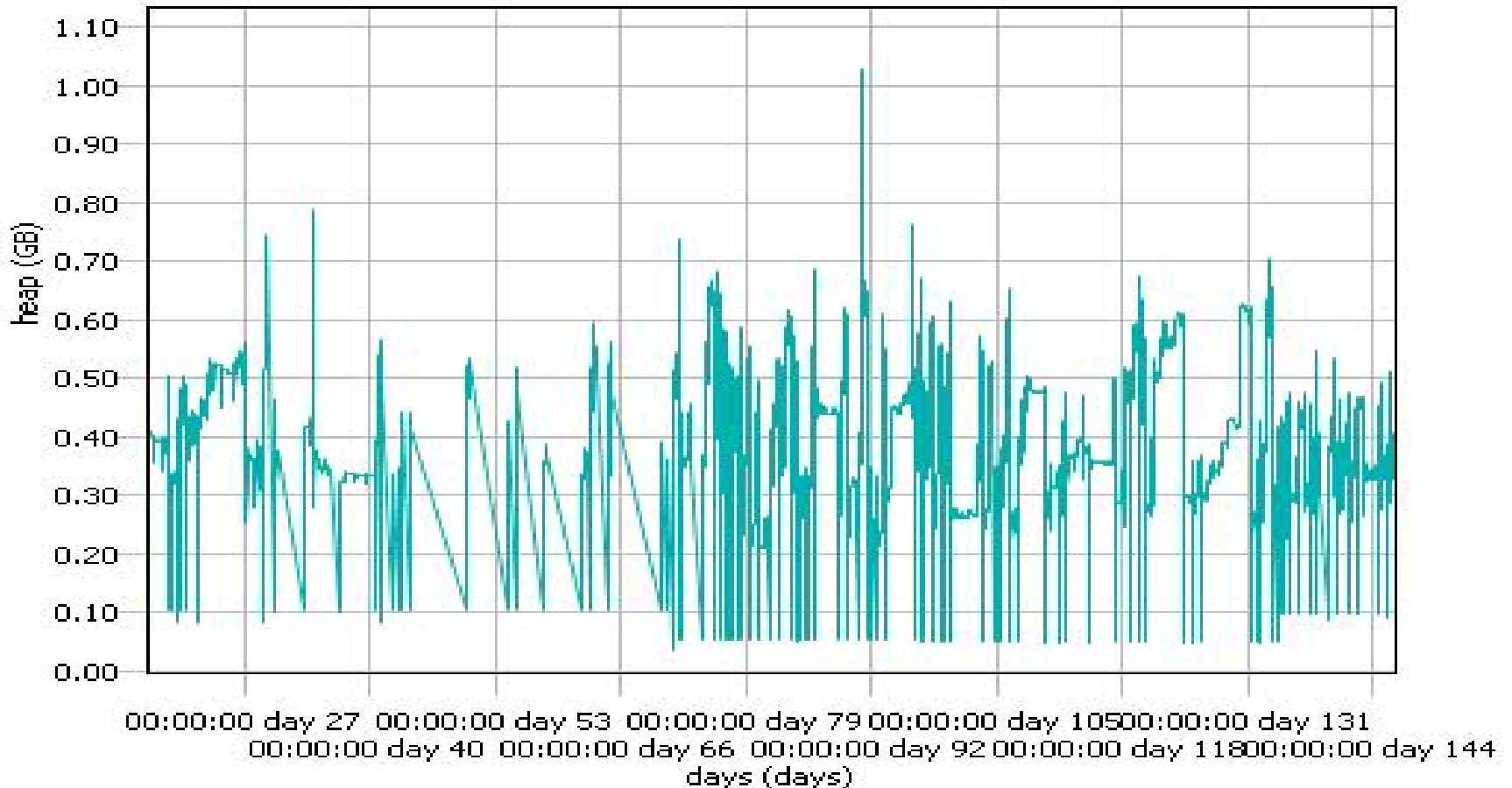
[Tue Jun 28 09:39:21 2011] JVMDUMP032I JVM requested Java dump using 'D:\WebSphere\AppServer\profiles\corpwasnetwokr64be1\javacore.20110628.093924.6476.0003.txt' in response to an event

[Tue Jun 28 09:39:21 2011] JVMDUMP010I Java dump written to D:\WebSphere\AppServer\profiles\corpwasnetwokr64be1\javacore.20110628.093924.6476.0003.txt

[Tue Jun 28 09:39:21 2011] JVMDUMP013I Processed dump event "systhrow", detail "java/lang/OutOfMemoryError".

➤ JVM Analysis and recommendation

- JVM heap used after GC



➤ JVM Analysis and recommendation

- JVM should be monitored by time.

#150 Thu Oct 13 21:31:25 2011 Fri Oct 14 22:11:45 2011	No Java heap exhaustion found	No action required. Recommended maximum Java heap size is 665,007,552 or greater (percentage error(%): 0.12902577)
#151 Fri Oct 14 22:12:22 2011 Sun Oct 16 21:37:31 2011	No Java heap exhaustion found	No action required. Recommended maximum Java heap size is 656,091,584 or greater (percentage error(%): 0.12248634)
#152 Sun Oct 16 21:38:19 2011 Mon Oct 17 22:03:47 2011	No Java heap exhaustion found	No action required. Recommended maximum Java heap size is 687,263,424 or greater (percentage error(%): 0.11836632)
#153 Mon Oct 17 22:04:30 2011 Mon Oct 17 22:12:20 2011	No Java heap exhaustion found	No action required. Recommended maximum Java heap size is 265,371,296 or greater (percentage error(%): 9.938447)
#154 Mon Oct 17 22:12:44 2011 Mon Oct 17 22:26:47 2011	No Java heap exhaustion found	No action required. Recommended maximum Java heap size is 487,664,800 or greater (percentage error(%): 5.2551947)
#155 Mon Oct 17 23:07:35 2011 Tue Oct 18 12:15:54 2011	No Java heap exhaustion found	There seems to be a steady increase in Java heap usage. (ratio(%): 2024.0366 with percentage error(%): 0.15241055)

➤ Analysis & recommendations for Thread pools

- Max Default thread pool needs to be increased from 5 to 20
- Max WebContainer thread pool needs to be increased from 30 to 70

Data sources

Data sources > wasDBSEC3 > Connection pools

Use this page to set properties that impact the timing of connection management tasks, which can affect the performance of your application. Consider the default values carefully; your application requirements might warrant changing these values.

Configuration

General Properties

Scope
cells:corpwasNetwork:nodes:rcorwasbe264be

Connection timeout
15 seconds

Maximum connections
50 connections

Minimum connections
10 connections

Reap time
180 seconds

Unused timeout
200 seconds

Aged timeout
0 seconds

Purge policy
EntirePool

Apply OK Reset Cancel

Additional Properties

- [Advanced connection pool properties](#)
- [Connection pool custom properties](#)

Select	Name	Value
	am.home	D:/IBM
	com.ibm.websphere.ejbcontainer.initializeEJBsAtStartup	true
	com.ibm.websphere.webservices.http.connectionTimeout	15
	com.ibm.websphere.webservices.http.maxConnection	50

➤ Analysis & recommendation for Datasource stmt cache

- Right datasource statements are getting discarded from cache. It needs to be increased for increase the performance

jdbc/wasDBSEC3 CloseCount	jdbc/wasDBSEC3 AllocateCount	jdbc/wasDBSEC3 PoolSize	jdbc/wasDBSEC3 FreePoolSize	jdbc/wasDBSEC3 PrepStmtCacheDiscardCount
16.00	526385.00	10.00	10.00	1746.00
16.00	525740.00	10.00	10.00	1741.00
16.00	524869.00	10.00	10.00	1732.00
16.00	524410.00	10.00	10.00	1730.00
16.00	523907.00	10.00	9.00	1724.00
16.00	523194.00	10.00	8.00	1716.00
16.00	522585.00	10.00	10.00	1709.00
16.00	521973.00	10.00	9.50	1704.00
16.00	521455.00	10.00	10.00	1701.00
16.00	520828.00	10.00	10.00	1697.00
16.00	520407.00	10.00	10.00	1695.00
16.00	519690.00	10.00	10.00	1688.00
16.00	518694.00	10.00	10.00	1682.00
16.00	518154.00	10.00	10.00	1677.00
16.00	517428.00	10.00	10.00	1668.00

➤ Analysis of logs

- In logs, following exception is happening continuously, application code needs to be checked for nullpointerexception at `net.bac.sbe.web.common.database.dao.RetirementDAO.getRetirementFundClientInformation(RetirementDAO.java:474)`
- [10/17/11 9:05:07:604 CST] 00000048 ExceptionUtil E CNTR0020E: EJB threw an unexpected (non-declared) exception during invocation of method "getRetirementFundBalance" on bean "BeanId(SbeBackEndEAR#SbeBackEndEJB.jar#RetirementFundSessionService, null)".
Exception data: `java.lang.NullPointerException` at `net.bac.sbe.web.common.database.dao.RetirementDAO.getRetirementFundClientInformation(RetirementDAO.java:474)`
- Stack Dump = `javax.naming.NameNotFoundException: Name "wasDBSFIR" not found in context "corpwasNetwork/clusters/SEC3ServerCluster/jdbc"` at `com.ibm.ws.naming.ipbase.NameSpace.lookupInternal(NameSpace.java:1095)`
- Stack Dump = `java.io.FileNotFoundException: D:\WebSphere\AppServer\profiles\corpwasnetwokr64be1\installedApps\corpwasNetwork\SbeBackEndEAR.ear\SharedLibrary\jakarta-oro.jar (The system cannot find the file specified.)`
at `java.util.zip.ZipFile.open(Native Method)`

➤ Analysis of Http Server Logs

- Following Error messages were seen in error logs continuously
- **SSL0271I:** SSL Handshake Failed, client closed connection without sending any data
 - **Reason:** A connection was received on an SSL port, but the client closed the connection without beginning the handshake
 - **Solution:** If the message occurs intermitantly, it's probably normal, due to things like users cancelling page loads and browser or system crashes. If the message occurs in bursts, it might indicate a denial of service attack in progress
- **SSL0273I:** Non-SSL request received on connection configured for SSL
 - Reason: A connection was received on an SSL port, but the data received was not SSL, and looked like a normal non-SSL request
 - Solution: Verify that the port in question is intended to be configured for SSL. Look for bad links to the page in question, that should use https: but instead use http:
- **SSL0227E:** SSL Handshake Failed, Specified label could not be found in the key file
 - Log file name: SSL_3DSecurecrcorfront120111020
 - Kdb needs to be checked for the certificate of secure.credomatic.com

➤ Analysis of Plug-in logs

- Following messages were found continuously happening in plug-in logs
 - Tue Oct 18 12:59:44 2011] 00002b60 000022d0 - ERROR: ws_common: websphereHandleRequest: Failed to execute the transaction to 'crcorwas5_SEC3Server10'on host 'crcorwas5'; will try another one
 - [Tue Oct 18 12:59:54 2011] 00002b60 00002184 - ERROR: ws_common: WebsphereGetStream: Failed to connect to app server on host 'crcorwas5', OS err=10061
 - [Tue Oct 18 12:59:54 2011] 00002b60 00002184 - ERROR: ws_common: websphereExecute: Failed to create the stream
 - [Tue Oct 18 12:59:54 2011] 00002b60 00002184 - ERROR: ws_server: serverSetFailoverStatus: Marking crcorwas5_RedFinancieraServer2 down
 - [Tue Oct 18 12:59:54 2011] 00002b60 00002184 - ERROR: ws_common: websphereHandleRequest: Failed to execute the transaction to 'crcorwas5_RedFinancieraServer2'on host 'crcorwas5'; will try another one
- Recommendation: servers which are not more required needs to be removed other wise plugin will keep sending request to stopped servers which will create extra overhead on Http servers.

➤ Analysis of Http Configuration file

- Checked configuration of Http Server for following and no issue found
 - SSLV3 Ciphers
 - Trace methods
 - Directory indexing
 - Other Vulnerability issues
- Settings for Thread Limit and ThreadPerChild is also fine but it needs to be monitored through ***mod_status***
- Migration should be considered from v6.1 to v7.0
 - Http Server v7.0 has a lot of new features and also supports monitoring of threads and users through `mod_mpmstats`

Email

Information Desk

info@royalcyber.com

Technical Support

support@royalcyber.com

for more info

55 Shuman Blvd, Naperville, IL
60540, USA.

Web

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

Call

+1.630.355.6292

Thank you!