Performance Tuning and Testing for the TMS HTML Browser

Sunil G. Singh, Bill Caulkins, Jose A. Garcia
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Agenda

- JVM Heap Size
- Web Cache
  - Timeouts
  - Origin Servers
  - Rules
- HTTP Server
- Timeout settings
- Registry SharedSection
JVM Heap Size

- Login to AS10g Oracle Enterprise Manager
- Click the MT Instance link
- Click the link for the “opa” component
- Click Administration
- Click Server Properties
- Add "-Xms1024m -Xmx1024m" after "-Xrs" in Java Options field
- Restart “opa” component
### JVM Heap Size (2)

#### General

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Root</td>
<td></td>
</tr>
<tr>
<td>Configuration File</td>
<td></td>
</tr>
<tr>
<td>Default Application Name</td>
<td></td>
</tr>
<tr>
<td>Default Application Path</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Web Module Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Directory</td>
<td></td>
</tr>
<tr>
<td>Deployment Directory</td>
<td></td>
</tr>
</tbody>
</table>

#### Multiple VM Configuration

**TIP:** If OCAJ is running, newly added OCAJ Clusters and associated processes will be automatically started.

<table>
<thead>
<tr>
<th>OCAJ Cluster Name</th>
<th>Number of Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>default_island</td>
<td>1</td>
</tr>
</tbody>
</table>

**TIPS:**

- Ensure that the port ranges specified below are large enough to accommodate the total number of processes in the OCAJ Cluster table.

<table>
<thead>
<tr>
<th>Port Type</th>
<th>Port Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>JMS Ports</td>
<td>12401-12600</td>
</tr>
<tr>
<td>JMX Ports</td>
<td>12401-12600</td>
</tr>
<tr>
<td>RMI Port</td>
<td>12601-12800</td>
</tr>
</tbody>
</table>

#### Command Line Options

<table>
<thead>
<tr>
<th>Option Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Java Options</td>
<td></td>
</tr>
<tr>
<td>OCAJ Options</td>
<td></td>
</tr>
</tbody>
</table>

#### Environment Variables

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Web Cache Timeout

- Login to AS10g Oracle Enterprise Manager
- Click the MT Instance link
- Click the link for the “Web Cache” component
- Click Administration
- Click Resource Limits and Timeouts
- Set Maximum Incoming Connections to 700
- Set Cache Memory Limit (MB) to 500
- Set Maximum Size of a Single Cached Object (KB) to 700
- Set Keep Alive Timeout (seconds) to 0
- Restart “Web Cache” component
Web Cache Timeout (2)

Resource Limits and Timeouts
Configure the maximum thresholds for cache size (memory usage), cached objects, and incoming connections.

Resource Limits
- Maximum Incoming Connections: 700
- Cache Memory Limit(MB): 500
- Maximum Size of a Single Cached Object (KB): 100

Timeouts
- Origin Server Timeout (minutes): 30
- Keep Alive Timeout (seconds): 1

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Web Cache Origin Servers

- Login to AS10g Oracle Enterprise Manager
- Click the MT Instance link
- Click the link for the “Web Cache” component
- Click Administration
- Click Origin Servers
- Click Edit
- Set Capacity to 1000
- Restart “Web Cache” component
Web Cache Origin Servers

Edit Origin Server: dbmsind2.dbmsindia.com:7778

Specify the settings for the origin server. In order for Web Cache to forward requests to an origin server, you must map a site to the server on the Sites page.

- **Host**: dbmsind2.dbmsindia.com
- **Port**: 7778
- **Protocol**: HTTP

Routing Enabled
Checks whether the cache sends requests to the origin server.

Failover
If another cache cluster member repeatedly fails to respond, Web Cache will assume that the cache server process for that member has failed. Then, it will periodically ping the cache server until it receives a response.

- **Failover Threshold**: 5
- **Ping URL**: http://dbmsind2.dbmsindia.com:7778
- **Ping Frequency (seconds)**: 30

Proxy Web Server
Select proxy server for external sites protected by a firewall. If the proxy server does not require a username and password, leave those fields blank.

- **User**
- **Password**
- **Confirm Password**
Web Cache Rules

- Login to AS10g Oracle Enterprise Manager
- Click the MT Instance link
- Click the link for the "Web Cache" component
- Click Administration
- Click Rules
Web Cache Rule – cache compress css

- Click cache compress css
- Set Expiration of Cached Response to Never
- Click OK
Web Cache Rule – cache compress js

- Click cache compress js
- Set Expiration of Cached Response to Never
- Click OK
Web Cache Rule – cacheCompress.html

- Click cache compress html
- Choose Match URL By "Regular expression" with value: \.\.(html|htm)$
- Set Expiration of Cached Response to Expires: As Specified in HTTP header, Refresh: Immediately
- Click OK
HTTP Server  httpd.conf

- Backup and edit the file 
  `<drive>:\Oracle\AS10gR2mt\Apache\Apache\conf\httpd.conf`
- Set MaxKeepAliveRequests to 0
- Set KeepAliveTimeout to 900
- Set MaxSpareServers to 100
- Set MaxRequestsPerChild to 0
- Set MaxClients to 600
Registry: SharedSection

- Run Regedit
- Navigate to HKEY_LOCAL_MACHINE -> System -> CurrentControlSet -> Control -> Session Manager -> Subsystems -> Windows
- Change SharedSection value to 1024,3072,4096,4096
Lite Browser Timeout – bc4j.xcfg

- Change Lite Browser timeout to 60 minutes.
- Backup and edit file
  `<drive>:\oracle\as10gr2mt\j2ee\opa\applib\oracle\pharma\opa\bc4j\common\bc4j.xcfg`:

- Change line
  `<jbo.ampool.maxinactiveage>120000</jbo.ampool.maxinactiveage>` to
  `<jbo.ampool.maxinactiveage>3600000</jbo.ampool.maxinactiveage>`
<xml version='1.0' encoding='UTF-8'?>
<BC4JConfig>
  <AppModuleConfigBag>
    <AppModuleConfig name="OracleAppModuleLocal">%BC4J: LITE_BROWSER_TIMEOUT-LITE_BROWSER_TIMEOUT--bc4j.xcfg
    <DeploymentLocation>LOCAL</DeploymentLocation>
    <Jbo.empool.connectionstrategyclass>oracle.pharma.opa.bc4j.fwk.OperaConnectionStrategy</Jbo.empool.connectionstrategyclass>
    <Jbo.poolmaxavailablesize>200</Jbo.poolmaxavailablesize>
    <JDBCName>sun5x12_rejndrup</JDBCName>
    <ApplicationName>oracle.pharma.opa.bc4j.OperaAppModule</ApplicationName>
    <Jbo.msexpoolsizex>0</Jbo.msexpoolsizex>
    <Jbo.msexpoolsizexy>200</Jbo.msexpoolsizexy>
    <Jbo.empool.sessioncookiefactoryclass>oracle.pharma.opa.bc4j.fwk.OperaSessionCookieFactory</Jbo.empool.sessioncookiefactoryclass>
    <ApplicationName>oracle.jbo.commen.JboInitialContextFactory</ApplicationName>
    <Jbo.poolmaxavailablesize>200</Jbo.poolmaxavailablesize>
    <Jbo.server.internal_connection>external_local</Jbo.server.internal_connection>
    <TransactionFactory>oracle.pharma.opa.bc4j.fwk.OpsTransactionFactory</TransactionFactory>
    <Jbo.empool.minavailablesize>0</Jbo.empool.minavailablesize>
    <Jbo.empool.maxavailablesize>0</Jbo.empool.maxavailablesize>
    <Jbo.empool.pollinterval>150000</Jbo.empool.pollinterval>
    </ AppModuleConfig>
  </ AppModuleConfigBag>
  <ConnectionDefinition name="sun5x12_rejndrup">
    <ENTRY name="JDBC_PORT" value="1523"/>
    <ENTRY name="JDBC_DRIVER" value="true"/>
    <ENTRY name="HTTP_HOST" value="host"/>
    <ENTRY name="username" value="sun5x12_rejndrup"/>
    <ENTRY name="STDB" value="sun5x12_rejndrup"/>
    <ENTRY name="JdbcDriver" value="oracle.jdbc.driver.OracleDriver"/>
    <ENTRY name="password"/>
    <![CDATA[null]]>
    <ENTRY name="ORACLE_JDBC_TYPE" value="thin"/>
    <ENTRY name="DeployPassword" value="true"/>
  </ConnectionDefinition>
</BC4JConfig>
Lite Browser Timeout – web.xml

- Change Lite Browser timeout to 60 minutes
- Backup and edit file
- `<drive>:\oracle\as10gr2mt\j2ee\opa\applications\tms\tmsUix\WEB-INF\web.xml:
- Change line `<session-timeout>20</session-timeout>` to `<session-timeout>60</session-timeout>`
Lite Browser Timeout – web.xml

```xml
<?xml version="1.0" encoding="windows-1252"?>
<!DOCTYPE web-app PUBLIC "-//Sun Microsystems, Inc.//DTD Web Application 2.3//EN" "http://java.sun.com/dtd/web-app_2_3.dtd">
<web-app>
<description>Empty web.xml file for Web Application</description>
<service>
  <servlet-name>UIX</servlet-name>
  <servlet-class>oracle.cobo.servlet.UIXServlet</servlet-class>
  <init-param>
    <param-name>oracle.cobo.servlet.pageBrowser</param-name>
    <param-value>oracle.cobo.ops.uix.OpaPageBrowses</param-value>
  </init-param>
</service>
<!-- Specify the PageFlowEngine -->
<init-param>
  <param-name>oracle.cobo.servlet.event.PageFlowEngine</param-name>
  <param-value>oracle.pharma.ops.uix.OpaPageFlowEngines</param-value>
</init-param>
<init-param>
  <param-name>oracle.cobo.servlet.loggedInKey</param-name>
  <param-value>oracle.pharma.ops.loggedIn</param-value>
</init-param>
<init-param>
  <param-name>oracle.cobo.servlet.FileUploadManager</param-name>
  <param-value>oracle.pharma.ops.uix.fileupload.OpaFileUploadManager</param-value>
</init-param>
</web-app>
```

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Registry – SharedSection

![Registry Editor](image)

- **Name**: (Default)  
  - **Type**: REG_SZ  
  - **Data**: (value not set)
- **Name**: Debug  
  - **Type**: REG_EXPAND_SZ  
  - **Data**: %SystemRoot%\system32\win32k.sys
- **Name**: Known  
  - **Type**: REG_MULTI_SZ  
  - **Data**: Postk
- **Name**: Required  
  - **Type**: REG_EXPAND_SZ  
  - **Data**: %SystemRoot%\system32\psxs.exe
- **Name**: Windows  
  - **Type**: REG_MULTI_SZ  
  - **Data**: Debug Windows

**Edit String**

- **Value name**:  
  - Value data:  
    - `jetDirectory=\Windows \sharedSection=1024,3072,4096,4096\Windows-`
Question and Answers

Sunil G. Singh
singh@clinicalserver.com
+1-860-983-5848

Bill Caulkins
bill.caulkins@clinicalserver.com
+1-919-741-6028

+ Jose Garcia
jgarcia@clinicalserver.com
+1-347-452-9501
Biographies

Sunil G. Singh, President & CEO, DBMS Consulting, Inc.

- Sunil is a Global Oracle Health Sciences deployment expert for DBMS Consulting. He has been an active member of the OCUG community since 1996 and is extremely grateful for this opportunity to make these presentations at OCUG 2009.

Bill Caulkins, Director, Global Application Development and Deployment, DBMS Consulting, Inc.

- Bill has worked with Oracle databases since 1987 as an application developer, database administrator, systems analyst, and project manager. He has worked in the pharmaceutical industry since 1991, primarily in the clinical trials arena. His interests and areas of expertise include information sharing, data integration, performance tuning, and getting the most out of PL/SQL. He enjoys implementing solutions which enable people to focus more of their time on business challenges, and less of their time on technology.

Jose Garcia, Vice President, DBMS Consulting, Inc.

- Jose is the VP of systems architecture and performance/capacity planning for DBMS Consulting. He is responsible for developing methodologies and standards and best practices for architecting high throughput enterprise class Oracle RDBMS based solutions. He is also responsible for developing methodologies for the troubleshooting of performance problems on Oracle RDBMS based systems. Jose has over 13 years of experience assisting clients in both the health and financial services sectors.