

Performance Tuning and Testing for the TMS HTML Browser



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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)

DBMSIND2_RDC_TMS_MT - dbmsind2.dbmsindia.com - Remote Desktop

Oracle Enterprise Manager - Server Properties - Microsoft Internet Explorer

Address: http://dbmsind2.dbmsindia.com:18101/emd/console/ias/oc4j/properties?ctxName1=AS10gR2mt.dbmsind2.dbmsindia.com&type=oc4j&farm=AS10gR2mt.dbmsind2.dbmsindia.com&target=AS10gR2mt.dbmsind2.db

General

Name: opa
 Server Root: E:\Oracle\AS10gR2mt\j2ee\opa\config
 Configuration File: E:\Oracle\AS10gR2mt\j2ee\opa\config\server.xml
 Default Application Name: default
 Default Application Path: application.xml

Default Web Module Properties: global-web-application.xml
 Application Directory: ../applications
 Deployment Directory: ../application-deployments

Multiple VM Configuration

TIP If OC4J is running, newly added OC4J Clusters and associated processes will be automatically started.

Clusters(OC4J)

Cluster(OC4J) Name	Number of Processes
default_island	1

Add Another Row

Ports

TIP Be sure that the port ranges specified below are large enough to accommodate the total number of processes in the Clusters(OC4J) table.

RMI Ports: 12401-12500
 JMS Ports: 12601-12700
 AJP Ports: 12501-12600

RMI-IIOP Ports

IIOP Ports:
 IIOP SSL (Server only):
 IIOP SSL (Server and Client):

Command Line Options

Java Executable:
 OC4J Options: -properties
 Java Options: -server -Xrs -Xms1024m -Xmx1024m -Djava.security.policy=E:\Orac

Environment Variables

Select Name	Value Append
(no environment variables set)	



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)

The screenshot shows the Oracle Enterprise Manager 10g Application Server Control interface. The browser title is 'Oracle Enterprise Manager - Resource Limits and Timeouts - Microsoft Internet Explorer'. The address bar shows the URL: `http://dbmsind2.dbmsindia.com:18101/emd/console/ias/webCache/admin?ctxName1=AS10gR2mt.dbmsind2.dbmsindia.com&type=oracle_webcache&farm=AS10gR2mt.dbmsind2.dbmsindia.com&target=AS10gR2mt.dbmsind2.dbmsindia.com`.

The main content area displays the 'Resource Limits and Timeouts' configuration page. The breadcrumb trail is: `Farm > Application Server: AS10gR2mt.dbmsind2.dbmsindia.com > Web Cache >`. The page title is 'Resource Limits and Timeouts'. A message indicates: 'Configure the maximum thresholds for cache size (memory usage), cached objects, and incoming connections.' The page was refreshed on Jul 7, 2009 at 2:51:45 AM.

Resource Limits

- * Maximum Incoming Connections:
- * Cache Memory Limit(MB):
- Maximum Size of a Single Cached Object (KB):

Leave blank for unlimited single object size

Timeouts

- * Origin Server Timeout (minutes):

Time to wait before returning an error page
- * Keep Alive Timeout (seconds):

Time to keep an inactive connection open

At the bottom of the page, there are links for [Logs](#), [Topology](#), [Preferences](#), and [Help](#). Copyright information is provided: 'Copyright © 1996, 2005, Oracle. All rights reserved. About Oracle Enterprise Manager 10g Application Server Control'.

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

DBMSIND2_RDC_TMS_MT - dbmsind2.dbmsindia.com - Remote Desktop

Oracle Enterprise Manager - Edit Origin Server: dbmsind2.dbmsindia.com:7778 - Microsoft Internet Explorer

Address: http://dbmsind2.dbmsindia.com:18101/emd/console/ias/webCache/admin?ctxName1=AS10gR2mt.dbmsind2.dbmsindia.com&type=oracle_webcache&farm=AS10gR2mt.dbmsind2.dbmsindia.com&target=AS10gR2mt.dbmsind2.dbmsindia.com

ORACLE Enterprise Manager 10g
Application Server Control

Farm > Application Server: AS10gR2mt.dbmsind2.dbmsindia.com > 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: * Capacity:
 * Port: Maximum concurrent connections
 Protocol: Routing Enabled
Controls whether the cache sends requests to this 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: Number of failures before the server is assumed down
 Ping URL: Periodically ping this URL to see if the origin server is back up
 Ping Frequency (seconds): How often to ping origin server

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.

Proxy Web Server
 User:
 Password:
 Confirm Password:

[Logs](#) | [Topology](#) | [Preferences](#) | [Help](#)

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 About Oracle Enterprise Manager 10g Application Server Control

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

The screenshot shows the Oracle Enterprise Manager 10g Application Server Control interface. The browser address bar indicates the URL: `http://dbmsind2.dbmsindia.com:18101/emd/console/ias/webCache/admin?ctb:Name1=AS10gR2mt.dbmsind2.dbmsindia.com&type=oracle_webcache&farm=AS10gR2mt.dbmsind2.dbmsindia.com&target=AS10gR2mt.dbmsind2.dbmsindia.com`.

The page title is "ORACLE Enterprise Manager 10g Application Server Control". The breadcrumb navigation is: `Farm > Application Server AS10gR2mt.dbmsind2.dbmsindia.com > Web Cache > Rules >`.

The main heading is "Edit Rule: cache compress css". Below this, there is a description: "Rules instruct the cache how to react to each request. A rule has two parts: Selector and Instructions. First the request is compared with the Selector. If there is a match, then the cache follows the instructions honored."

The "General" tab is selected. The "Name" field contains "cache compress css". The "Site" is set to "All Sites" and the "Enabled" checkbox is checked. The "Description" field contains "This rule caches all .css files. Netscape has known issu".

The "Selector" section shows "Match URL By" set to "File Extension" with a value of "*.css". There is a link to "Show HTTP Methods and Parameters".

The "Instructions" section has two sub-sections:

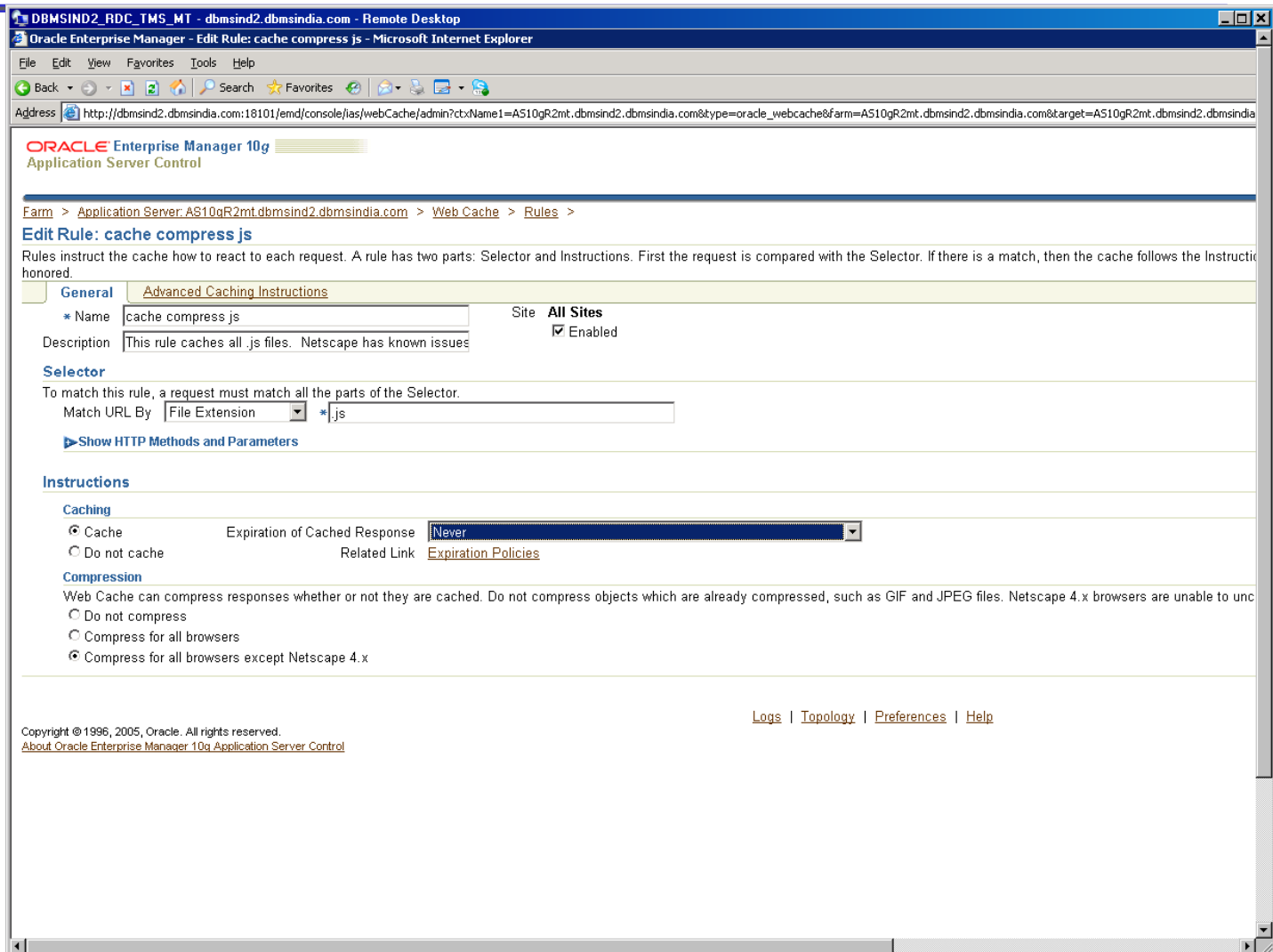
- Caching:** The "Cache" radio button is selected. The "Expiration of Cached Response" dropdown is set to "Never". There is a "Related Link" to "Expiration Policies".
- Compression:** The "Compress for all browsers except Netscape 4.x" radio button is selected.

At the bottom of the page, there is a footer: "Copyright © 1996, 2005, Oracle. All rights reserved. About Oracle Enterprise Manager 10g Application Server Control". There are also links for "Logs", "Topology", "Preferences", and "Help".



Web Cache Rule – cache compress js

- Click cache compress js
- Set Expiration of Cached Response to Never
- Click OK



The screenshot displays the Oracle Enterprise Manager 10g interface for editing a Web Cache Rule. The browser window title is "Oracle Enterprise Manager - Edit Rule: cache compress js - Microsoft Internet Explorer". The address bar shows the URL: `http://dbmsind2.dbmsindia.com:18101/emd/console/has/webCache/admin?ctxName1=AS10gR2mt.dbmsind2.dbmsindia.com&type=oracle_webcache&farm=AS10gR2mt.dbmsind2.dbmsindia.com&target=AS10gR2mt.dbmsind2.dbmsindia.com`.

The page title is "ORACLE Enterprise Manager 10g Application Server Control". The breadcrumb navigation is: `Farm > Application Server: AS10gR2mt.dbmsind2.dbmsindia.com > Web Cache > Rules >`. The current page is "Edit Rule: cache compress js".

Rules instruct the cache how to react to each request. A rule has two parts: Selector and Instructions. First the request is compared with the Selector. If there is a match, then the cache follows the Instructions honored.

General | Advanced Caching Instructions

* Name: `cache compress js` Site: **All Sites**
Description: `This rule caches all .js files. Netscape has known issues` Enabled

Selector
To match this rule, a request must match all the parts of the Selector.
Match URL By: `File Extension` * `.js`
[▶ Show HTTP Methods and Parameters](#)

Instructions

Caching
 Cache Expiration of Cached Response: `Never`
 Do not cache Related Link: [Expiration Policies](#)

Compression
Web Cache can compress responses whether or not they are cached. Do not compress objects which are already compressed, such as GIF and JPEG files. Netscape 4.x browsers are unable to uncompress compressed objects.
 Do not compress
 Compress for all browsers
 Compress for all browsers except Netscape 4.x

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[Logs](#) | [Topology](#) | [Preferences](#) | [Help](#)



Web Cache Rule – cache compress 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

The screenshot shows the Oracle Enterprise Manager 10g console interface for editing a Web Cache Rule. The browser address bar shows the URL: `http://dbmsind2.dbmsindia.com:18101/emd/console/ias/webCache/admin?ctxName1=AS10gR2mt.dbmsind2.dbmsindia.com&type=oracle_webcache&farm=AS10gR2mt.dbmsind2.dbmsindia.com&target=AS10gR2m`.

The page title is "ORACLE Enterprise Manager 10g Application Server Control". The breadcrumb navigation is: `Farm > Application Server: AS10gR2mt.dbmsind2.dbmsindia.com > Web Cache > Rules >`.

The rule being edited is "cache compress html". The "General" tab is selected, showing the following configuration:

- Name:** cache compress html
- Site:** All Sites
- Description:** This rule caches all .htm and .html files. This file format i
- Enabled:**

The "Selector" section is configured as follows:

- Match URL By:** Regular Expression
- Match URL:** `\.(html|htm)$`

The "Instructions" section is configured as follows:

- Caching:**
 - Cache
 - Expiration of Cached Response: Expires: As Specified in HTTP Header, Refresh: Immediately
 - Do not cache
- Compression:**
 - Compress for all browsers
 - Compress for all browsers except Netscape 4.x
 - Do not compress

At the bottom of the page, there is a copyright notice: "Copyright © 1996, 2005, Oracle. All rights reserved. About Oracle Enterprise Manager 10g Application Server Control".



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>



Lite Browser Timeout – bc4j.xcfg

```

bc4j.xcfg - WordPad
File Edit View Insert Format Help
[Icons]

<?xml version = '1.0' encoding = 'UTF-8' ?>
<BC4JConfig>
  <AppModuleConfigBag>
    <AppModuleConfig name="OpaRootAppModuleLocal">
      <jbo.ampool.maxinactiveage>3600000</jbo.ampool.maxinactiveage>
      <AppModuleJndiName>oracle.pharma.opa.bc4j.OpaRootAppModule</AppModuleJndiName>
      <DeployPlatform>LOCAL</DeployPlatform>
      <jbo.ampool.connectionstrategyclass>oracle.pharma.opa.bc4j.fwk.OpaConnectionStrategy</jbo.ampool.connectionstrategyclass>
      <jbo.poolmaxavailablesize>200</jbo.poolmaxavailablesize>
      <JDBCName>sun5x12_rejndrup</JDBCName>
      <ApplicationName>oracle.pharma.opa.bc4j.OpaRootAppModule</ApplicationName>
      <jbo.maxpoolsize>0</jbo.maxpoolsize>
      <jbo.ampool.maxavailablesize>200</jbo.ampool.maxavailablesize>
      <jbo.ampool.sessioncookiefactoryclass>oracle.pharma.opa.bc4j.fwk.OpaSessionCookieFactory</jbo.ampool.sessioncookiefactoryclass>
      <java.naming.factory.initial>oracle.jbo.common.JboInitialContextFactory</java.naming.factory.initial>
      <jbo.poolminavailablesize>0</jbo.poolminavailablesize>
      <jbo.server.internal_connection>bc4j_internal</jbo.server.internal_connection>
      <jbo.ConnectionPoolManager>oracle.jbo.server.ConnectionPoolManagerImpl</jbo.ConnectionPoolManager>
      <TransactionFactory>oracle.pharma.opa.bc4j.fwk.OpaDatabaseTransactionFactory</TransactionFactory>
      <jbo.ampool.minavailablesize>0</jbo.ampool.minavailablesize>
      <jbo.ampool.monitorsleepinterval>120000</jbo.ampool.monitorsleepinterval>
    </AppModuleConfig>
  </AppModuleConfigBag>
  <ConnectionDefinition name="sun5x12_rejndrup">
    <ENTRY name="JDBC_PORT" value="1529"/>
    <ENTRY name="ConnectionType" value="JDBC"/>
    <ENTRY name="HOSTNAME" value="opasun5"/>
    <ENTRY name="user" value="rejndrup"/>
    <ENTRY name="ConnectionName" value="sun5x12_rejndrup"/>
    <ENTRY name="SID" value="sun5x12"/>
    <ENTRY name="JdbcDriver" value="oracle.jdbc.driver.OracleDriver"/>
    <ENTRY name="password">
      <![CDATA[{904}05FB828C5AF68AB5E07720220818A94B7D1F2C47D61925CEDF]]>
    </ENTRY>
    <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

```
web.xml - WordPad
File Edit View Insert Format Help
[Icons]
<?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>
  <servlet>
    <servlet-name>uix</servlet-name>
    <servlet-class>oracle.cabo.servlet.UIXServlet</servlet-class>
    <init-param>
      <param-name>oracle.cabo.servlet.pageBroker</param-name>
      <param-value>oracle.pharma.opa.uix.OpaPageBroker</param-value>
    </init-param>
    <!-- Specify the PageFlowEngine -->
    <init-param>
      <param-name>oracle.cabo.servlet.event.PageFlowEngine</param-name>
      <param-value>oracle.pharma.opa.uix.OpaPageFlowEngine</param-value>
    </init-param>
    <init-param>
      <param-name>oracle.cabo.servlet.loggedInKey</param-name>
      <param-value>oracle.pharma.opa.loggedInIn</param-value>
    </init-param>
    <init-param>
      <param-name>oracle.cabo.servlet.io.FileUploadManager</param-name>
      <param-value>oracle.pharma.opa.uix.fileupload.OpaFileUploadManager</param-value>
    </init-param>
    <load-on-startup>1</load-on-startup>
  </servlet>
  <servlet-mapping>
    <servlet-name>uix</servlet-name>
    <url-pattern>*.uix</url-pattern>
  </servlet-mapping>
  <servlet-mapping>
    <servlet-name>uix</servlet-name>
    <url-pattern>/uix/*</url-pattern>
  </servlet-mapping>
  <session-config>
    <session-timeout>60</session-timeout>
  </session-config>
  <mime-mapping>
    <extension>html</extension>
    <mime-type>text/html</mime-type>
  </mime-mapping>
</web-app>
```

Registry – SharedSection

The screenshot shows the Windows Registry Editor with the following table of registry values:

Name	Type	Data
(Default)	REG_SZ	(value not set)
Debug	REG_EXPAND_SZ	
Kmode	REG_EXPAND_SZ	%SystemRoot%\system32\win32k.sys
Optional	REG_MULTI_SZ	Posix
Posix	REG_EXPAND_SZ	%SystemRoot%\system32\psxss.exe
Required	REG_MULTI_SZ	Debug Windows
Windows	REG_SZ	

An "Edit String" dialog box is open, showing the following details:

- Value name: Windows
- Value data: jectDirectory=\Windows SharedSection=1024,3072,4096,4096 windows=



Question and Answers

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Biographies

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- 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.

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- 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.