



BENCHMARK COMPARISON TEST WITH JINITIATOR 1.3.1.23 AND JAVA PLUG-IN 1.5.0_05 – PERFORMANCE WHITEPAPER

As a global leader in e-business applications, Oracle USA is committed to delivering high performance solutions that meet our customers' expectations. Business software must deliver rich functionality with robust performance. This performance must be maintained at volumes that are representative of customer environments.

Oracle USA benchmarks demonstrate our software's performance characteristics for a range of processing volumes in a specific configuration. Customers and prospects can use this information to determine the software, hardware, and network configurations necessary to support their processing volumes.

The primary objective of our benchmarking effort is to provide as many data points as possible to support this important decision.

OVERVIEW

This project compared the performance aspects of the application run, once using Jinitiator 1.3.1.23 and another time using the new J2SE Java Plug-in 1.5.0_05 on the same environment. We have done the comparison test for multiple users by running the Order to Cash cycle for 50 users. We have also done a few comparisons as well for a single user.

The workflow consisted primarily of Supply Chain Management functionality, focused on Order Management and Shipping. The majority of the work was associated with On-line Order Entry, Picking Release and Ship Confirm, focused on the 11.5.10 (base) version of the Oracle E-business Suite.

The environment that was used to perform the test was originally on Jinitiator 1.3.1.18. The comparison in this project needed to be done between Jinitiator 1.3.1.23 and the J2SE Plug-in 1.5.0_05.

Hence, The project was divided into 2 main tasks:

Task 1: Upgrade the environment to Jinitiator 1.3.1.23, run the Order to Cash Cycle for 50 users, and obtain the required results for multiple and single users. Details of upgrading an environment to a later version of Jinitiator is described in detail in the document [Upgrading Oracle Jinitiator with Oracle Applications 11i](#)

Task 2: Upgrade the same environment to Plug-in J2SE 1.5.0_05, run the Order to Cash Cycle for 50 users, and obtain the required results once again for multiple and single users. The environment needed to be upgraded to Developer 6i Patchset 17 (6.0.8.26.x). It was originally on Developer 6i 15 (6.0.8.24.x). This requirement was noted in the upgrade document [Upgrading Sun J2SE \(Native Plug-in\) with Oracle Applications 11i](#) which describes the upgrade process in detail.

Details of the upgrades, the results, and the tasks performed are outlined in the following sections.

BENCHMARK PROFILE

In February 2006, Oracle USA, Inc. conducted a benchmark in Redwood Shores, CA to measure an online performance comparison test of Oracle Applications Release 11iR10, once using Jinitiator 1.3.1.23, and another time using the Java Plug-in 1.5.0_05 using Oracle10g™ on 2 IBM AIX machines, one for the DB server, and one for the Apps server, both with 4 CPUs at 1.45 GHz, and 15 GB of memory.

HARDWARE ALLOCATED

The hardware that was allocated consists of 2 IBM AIX machines, one for the DB server, and one for the Apps server, both with 4 CPUs at 1.45 GHz, and 15 GB of memory. Hardware allocated appears in Table 1 below.

Component	CPUs	Memory	OS
DB server	4 CPUs at 1.45 GHz	15 GB	AIX 5L ML-3
Apps server	4 CPUs at 1.45 GHz	15 GB	AIX 5L ML-3

Table 1: Hardware Allocated

SOFTWARE UTILIZED

The software that was utilized is explained in detail in Table 2 below.

Product	Version
Oracle's E-Business Suite	11.5.10
Oracle Database	10gR1 (10.1.0.4.0)
Mercury Interactive LoadRunner	8.0
Operating System	AIX 5L ML-3
Jinitiator	1.3.1.23
Java Plug-in	1.5.0_05

Table 2: Software Utilized

UPGRADING ORACLE JINITIATOR WITH ORACLE APPLICATIONS 11I

The following patches and files were applied to upgrade the environment used to Jinitiator 1.3.1.23:

1) Apply Interoperability Patch 4551339 along with jinit13123.exe.

2) We retrieve jinit13123.exe from patch 4624920. The file is renamed from the original name to jinit13123.exe, and copied to the web server in the '[COMMON_TOP]/util/jinitiator' directory.

Before applying the patch:

- Shutdown Apache (on normal mode) by running adapcctl.sh stop or adstpall.sh <apps_user>/<apps_pwd>.

- Enable 'Maintenance Mode' from adadmin, (Select menu option 5 Change Maintenance Mode, followed by menu option 1 Enable Maintenance Mode).

Apply patch 4551339 using adpatch utility.

After applying the patch:

- Disable 'Maintenance Mode' from adadmin, (Select menu option 5 Change Maintenance Mode, followed by menu option 2 Disable Maintenance Mode).

- Restart Apache (on normal mode) by running adapcctl.sh start or adstrtal.sh <apps_user>/<apps_pwd>.

Some additional patches might be required, depends on the environment, the list of additional patches are outlined in the document [Upgrading Oracle Jinitiator with Oracle Applications 11i](#)

3) After applying the patch, we run the jinit.sh script from the <patch_top>/<interop_patch_number>/find/patch/115/bin/ directory, against the web node of your middle tier as outlined in the

jinit.sh 13123

UPGRADING SUN J2SE (NATIVE PLUG-IN) WITH ORACLE APPLICATIONS 11I.

The environment again, was upgraded to the new J2SE Java plug-in 1.5.0_05. The environment was also upgraded to Developer 6i Patchset 17 (6.0.8.26).

The following patches and files were applied to the environment:

1) Apply Interoperability Patch 4377566 along with j2se15005.exe

2) File j2se15005.exe is downloaded from Sun Microsystems's website at <http://java.sun.com/j2se/1.5.0/download.jsp>. The downloaded file has to be renamed from its original name to j2se15005.exe and copied to the web server in the '[COMMON_TOP]/util/jinitiator' directory.

The Interop patch 4377566 upgrades the environment to J2SE 1.5.0_05

Before applying the patch:

- Shutdown Apache (on normal mode) by running adapcctl.sh stop or adstpall.sh <apps_user>/<apps_pwd>.

- Enable 'Maintenance Mode' from adadmin, (Select menu option 5 Change Maintenance Mode, followed by menu option 1 Enable Maintenance Mode).

Apply patch 4377566 using adpatch utility.

After applying the patch:

- Disable 'Maintenance Mode' from adadmin, (Select menu option 5 Change Maintenance Mode, followed by menu option 2 Disable Maintenance Mode).

- Restart Apache (on normal mode) by running adapcctl.sh start or adstrtal.sh <apps_user>/<apps_pwd>.

3) Upgrade Oracle Developer 6i Patchset 15 (6.0.8.24.x) to Developer 6i Patchset 17 (6.0.8.26.x).

The patches listed below were applied to the environment.

Certified patches:

- Developer 6i Patch 4183804
- Apps Interop Patch 4138754

UPGRADING SUN J2SE (NATIVE PLUG-IN) WITH ORACLE APPLICATIONS 11I. CONT.

Some additional patches might be required, depends on the environment, the list of additional patches are outlined in the document [Upgrading Sun J2SE \(Native Plug-in\) with Oracle Applications 11i](#)

4) Apply patch 4005717 on top of Developer 6i Patchset 17 (6.0.8.26.x).

5) Apply patch 4147636 that solved an error with Shipping Transaction screen where the items were not open to be queried.

6) After applying the patch, we run the `txkSetPlugin.sh` script from the `<patch_top>/<interop_patch_number>/fnd/bin/` directory (Where '`<patch_top>`' is the directory in which we unzipped the patch). The version of the Jinitiator to be set is provided. The command will be like the following:

```
txkSetPlugin.sh 15005
```

SUMMARY OF RESULTS

MULTIPLE USERS TEST

Order to Cash Cycle: 50 users

As outlined earlier, the workflow consisted primarily of Supply Chain Management functionality, focused on Order Management and Shipping. The majority of the work was associated with On-line Order Entry, Pick Release and Ship Confirm. The Order to Cash cycle test was conducted for 50 users. The results were obtained from vmstats reports and are displayed in Table 3 below.

Item	Jinitiator 1.3.1.23	Java plug-in 1.5.0_05
Total Duration	30 minutes	30 minutes
Max Running Vusers	50	50
DB server Memory consumption	5.45 GB	5.44 GB
DB server CPU utilization	17%	17%
Apps server Mem consumption	6.1 GB	6.1 GB
Apps server CPU utilization	16%	17%

Table 3: Order Cash results for 50 users

SINGLE USER TEST

Client CPU/Memory Statistics

The Client side memory footprint and the Client side CPU for the Java Plug-in 1.5.0_05 and Jinitiator 1.3.1.23 were taken from the Task Manager for the `ieexplore.exe` processes running the Plug-in and the Jinitiator for two data points, Sales Orders, and Invoice Workbench. We did this by recording the CPU and Memory footprints of the Internet Explorer before and after opening the Sales Orders and Invoice Workbench screens. The Virtual Memory and Memory usage were included.

Memory Usage

Memory Usage for Sales Orders and Invoice Workbench is showed in Table 4 below.

Item	Jinitiator 1.3.1.23		Java plug-in 1.5.0_05	
	Memory Usage		Memory Usage	
	Before	After	Before	After
Sales Orders	9,272K	55,532K	9,272K	57,572K
Invoice Workbench	9,272K	54,756K	9,272K	56,812K

Table 4: Memory Usage

CPU Time

CPU time for Sales Orders and Invoice Workbench is showed in Table 5 below.

Item	Jinitiator 1.3.1.23		Java plug-in 1.5.0_05	
	CPU time		CPU time	
	Before	After	Before	After
Sales Orders	0:00:00	0:00:15	0:00:00	0:00:16
Invoice Workbench	0:00:00	0:00:13	0:00:00	0:00:15

Table 5: CPU Time

Network Traffic Statistics

Network traffic statistics (roundtrips and bytes) for the Java Plug-in 1.5.0_05 and Jinitiator 1.3.1.23 were taken too, for two data points, apply the Order to Cash cycle as a single user, and enter an invoice in the Invoice Workbench. We get those statistics by launching Apps with the parameter `netStats=true` when launching the Forms in socket mode. The Apps link should look like the following when submitted:

```
http://crmperf14.us.oracle.com:8002/dev60cgi/f60cgi?netStats=true&config=socket
```

Network Traffic Statistics Continued

We have applied 5 rounds of Netstats tests. The bytes and App turns were very close in the 5 rounds. However, they were a little lower for the favor of the Plug-in in the last 3 rounds. Table 6 shows the results gathered in Round 5.

Round 5 of Netstats tests

	Jinitiator 1.3.1.23	Java plug-in 1.5.0_05
Order to Cash Cycle		
Sales Orders		
Main Menu	24550:29	24426:29
Open Sales Orders form	77457:34	77333:34
Open Line Items tab	84649:39	84518:39
Book Order	111010:62	110867:62
Pick Release		
Main Menu	117198:72	117061:72
Open Pick Release form	133810:75	133673:75
Execute Pick Release	135921:92	135781:91
Ship Confirm		
Open Transactions	185459:101	185301:100
Open Shipping Transactions	206194:106	206017:105
Open Delivery tab	219196:108	219020:107
Ship Confirm Action	226502:118	226326:117
Receivables Insert		
Main Menu	235201:134	235015:134
Open Transactions page	329168:140	328828:139
Fill up Transactions page	330566:143	330362:143
Open Lines page	345848:147	345647:147
Complete Lines information	350149:160	349948:160
Invoice Workbench		
Main Menu	357651:183	357473:184
Open Invoices Workbench	421059:192	420718:189
Fill Invoice	425681:219	425427:217
Click Distributions	452913:222	452659:220

Table 6: Round 5 of Netstats results

Comparison of JAR file downloads

The console output, for the Jinitiator, and the plug-in was captured and compared (line by line). The JAR file downloads for both were identical. The comparison results are shown below, and snapshots of the Java Console of Jinitiator 1.3.1.23 and the Java Applet Cache Viewer for the Java Plug-in 1.5.0_05 are shown in Figure 1 and Figure 2.

Jinitiator 1.3.1.23 JAR files:

The following files were extracted from the Java Console.

```
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndforms.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndformsi18n.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndewt.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndswing.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndbalishare.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndaol.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndctx.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndlist.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndutil.jar
```

Java Plug-in 1.5.0_05 JAR files:

The following files were extracted from the Java Applet Cache Viewer.

```
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndaol.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndbalishare.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndctx.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndewt.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndforms.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndformsi18n.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndlist.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndswing.jar
http://star.us.oracle.com:8000/OA_JAVA/oracle/apps/fnd/jar/fndutil.jar
```



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