



U.S. GOVERNMENT PUBLISHING OFFICE

OFFICE OF INSPECTOR GENERAL

**Date**

September 29, 2016

**To**

Chief Information Officer

**From**

Inspector General

**Subject:**

Audit Report—Information Technology: Oracle Maintenance and Support Licenses  
Report Number 16-19

Enclosed please find the subject final report. Please refer to the “Results in Brief” for the overall audit results. Our evaluation of your response has been incorporated into the body of the report. We consider management’s comments responsive to the recommendations. The recommendations are resolved and will remain open for reporting purposes pending completion of the proposed actions.

We appreciate the courtesies extended to the audit staff during the course of our review. If you have any questions or comments about this report, please do not hesitate to contact Mr. Phillip M. Faller, Assistant Inspector General for Audits and Inspections at (202) 512-2009 or me at (202) 512-0039.

A handwritten signature in black ink that reads "Michael A. Raponi".

MICHAEL A. RAPONI  
Inspector General

**Attachment**

**cc:**

Director, GPO

Deputy Director, GPO

General Counsel

Chief of Staff

Chief Administrative Officer



U.S. GOVERNMENT PUBLISHING OFFICE

OFFICE OF INSPECTOR GENERAL

**AUDIT REPORT  
REPORT NUMBER 16-19**

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**Information Technology:  
Oracle Maintenance and Support Licenses  
September 29, 2016**

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# Office of Inspector General

Report Number 16-19

September 29, 2016

## Information Technology: Oracle Maintenance and Support Licenses

### Introduction

The Government Publishing Office (GPO) relies on the Oracle, Inc. (Oracle) e-business suite and database software to support key aspects of its mission. GPO is required to maintain and support the e-business suite and database software. That is accomplished through procurement of licenses for the use of maintenance and support products.

The Office of Inspector General (OIG) conducted an audit to assess how GPO determined the number of licenses it purchased, how products were selected, and the extent to which licenses and products were used for maintenance and support of its e-business suite and database software. To accomplish our work, we reviewed applicable policies and procedures in place through August 2016, examined relevant contract documents, compared the number of licenses purchased to the number of users and GPO employees, compared Oracle products identified in the contract with products installed at GPO, reviewed the use of installed products, and interviewed select officials from Mythics, Inc. (Mythics), Oracle, and GPO. We conducted this audit from December 2015 through August 2016 at GPO in Washington, D.C. We performed the audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence that will provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Details of our objective, scope, and methodology are in Appendix A.

### Results in Brief

GPO developed policies that address loading and executing new software, use of system utility software, authorizations required for system changes, and software license management. While policies were established, we noted an absence of procedures, techniques, mechanisms, and oversight for: (1) determining the number of licenses needed, (2) determining Oracle products needed to support and maintain production licenses, and (3) monitoring product use. Our audit revealed differences between the numbers of licenses purchased compared with the number of system users and the total number of GPO employees. We further identified differences between products specified in the contract and products installed on GPO computer systems. We also noted low use of installed products.

Without sufficient procedures, techniques, mechanisms, and oversight that enforce management policy, GPO lacked reasonable assurance funds were and would be spent as intended. GPO expects to spend approximately \$7 million for licenses to maintain and support use of its Oracle-based e-business suite and database between November 2015 and September 2019.

### **Recommendations**

We recommend the Chief Information Officer: (1) document a standard methodology for determining the number of Oracle maintenance and support licenses and products, (2) assess the number of maintenance and support licenses needed and limit the number of licenses to the number of users, and (3) assess the technical requirements necessary to maintain and support Oracle production licenses and limit the purchase of products to technically necessary products.

### **Management's Response**

Management concurred with the recommendations. The complete text of management's response is in Appendix C.

## Background

In October 2015, GPO awarded Mythics a contract to provide 95 Oracle products used for maintenance and support of its Oracle-based e-business suite and database. Table 1 summarizes the number of users, processors, and lines in the contract.

**Table 1: Number of Users, Processors, and Lines Per Item**

	<b>Item Name</b>	<b>CSI No.*</b>	<b>No. of Users</b>	<b>No. of Processors</b>	<b>No. of Lines</b>
1	Oracle User Productivity Kit	18080520	4 to 50		
2	Governance, Risk and Compliance Intelligence	18179376	10 to 200		
3	E-Business Suite Software	14053700	15 to 2,500	4 to 20	150,000 to 900,000
4	Oracle Partitioning, Diagnostics Pack, Database Enterprise Edition (EE)	15402058		2	
5	Server EE 8 8.0	2526077	16		
6	Server 7.1	1066187	14		
7	Oracle Identity and Access Management Suite	15401445	10		
8	Procure to Pay	18757387	200		
9	Oracle Enterprise	15594691	1,840 to 15,000	8 to 20	

\*CSI-Computer System Identification Number.

The total award amount is \$7,076,179.44. The contract period is detailed in Table 2.

**Table 2. Contract Period and Amount**

<b>Year</b>	<b>Period</b>	<b>Amount</b>
Base Year	November 1, 2015 to September 30, 2016	\$1,583,488.54
Option Year 1	October 1, 2016 to September 30, 2017	\$1,777,052.28
Option Year 2	October 1, 2017 to September 30, 2018	\$1,830,363.85
Option Year 3	October 1, 2018 to September 30, 2019	\$1,885,274.77

## Previous Audit Work on Software Licensing

In March 2013, OIG reported<sup>1</sup> instances where GPO paid for both an application user license and processor license for the same Oracle products and had excess user licenses and processor licenses, which may have resulted in cost savings. For the period of the audit, GPO executed the following four key purchase orders with Mythics.

<sup>1</sup> OIG Audit Report—Opportunities Exist to Reduce Costs Associated with Oracle Software Licensing, Report Number 13-06, dated March 29, 2013.

**Table 3. Oracle License Agreements Previously Reported**

<b>Purchase Order Number</b>	<b>Purpose</b>	<b>Service</b>	<b>Fiscal Year 2013 Cost</b>
3014792	Stennis (Mississippi) Passport Production	Oracle On Demand (Note 1)	\$583,693
3014770	Washington, D.C., Passport Production, Identity Management, and FDSys*	Internal Oracle Database Enterprise Edition (EE) and Applications (Note 2)	\$680,000
3015018	GPO Business Information System	Oracle On Demand	\$1,055,827
3015200	Support for GPO Business Information System On Demand	Internal Oracle Database Enterprise Edition and Applications	\$921,824
<b>Total Cost</b>			<b>\$3,241,344</b>

\*Federal Digital System.

Note 1. On Demand services refers to a software-as-a-service that allows GPO to have Oracle applications, databases, and supporting Information Technology infrastructure managed by Oracle. The Oracle software is hosted at an Oracle data center in Austin, Texas.

Note 2. Internal services refer to the Oracle software and Information Technology infrastructure managed and hosted by GPO.

OIG made three recommendations and GPO concurred with the recommendations. As of the date of this report, one of the three recommendations remains open. Specifically, we recommended mitigating the risks of potentially investing in duplicative licenses by developing and implementing processes, policies, and procedures to address goals and objectives of software license management program.

In March 2014, OIG reported<sup>2</sup> on GPO's oversight of Microsoft software licensing. We reported: (1) GPO had not install and activate all of the 1,800 Microsoft enterprise software licensed products it purchased, (2) a difference between the 1,338 GPO employees who used Core CAL Per User SA and Enterprise CAL SA Step Up from Core CAL software compared with 1,800 purchased user licenses, (3) a difference between the 1,483 devices in use compared with 1,800 device licenses purchased, (4) the absence of written procedures on how to determine the number of Microsoft software licenses needed in support of GPO's mission, and ( 5) the absence of a record of Microsoft software installations for each employee and each device.

OIG made two recommendations, and GPO concurred with the recommendations. As of the date of this report, both recommendations remain open. We recommended GPO document a standard methodology for determining the number of Microsoft licenses that GPO requires, and we recommended that GPO document a standard methodology for periodically monitoring user and device demand.

<sup>2</sup> OIG Audit Report – Information Technology—Microsoft Software Licenses, Report Number 14-10, dated March 27, 2014.

## **Management Control Guidelines**

GPO requires<sup>3</sup> that management controls must provide reasonable assurance and safeguards to protect assets against waste, loss, unauthorized use, and misappropriation. The guidance states that GPO must maintain effective systems of accounting and management control. The policy also states that internal controls are the organization, policies, and procedures used to reasonably assure that resources are used consistent with agency mission and resources are protected from waste, fraud, and mismanagement.

The Government Accountability Office (GAO) *Standards for Internal Controls in the Federal Government*, September 2014, require ongoing monitoring in the course of normal operation and the use of control activities. Control activities are the policies, procedures, techniques, and mechanisms that enforce management's directives and address related risks.

Congress enacted the Information Technology (IT) Management Reform Act of 1996 (known as the Clinger-Cohen Act<sup>4</sup>) to address long-standing problems related to Federal IT management.

The Clinger-Cohen Act requires that the head of each Federal agency implement a process that maximizes the value of agency IT investments and assesses and manages acquisition risks. A key goal of the Act is to ensure that agencies implement IT projects at acceptable costs and within reasonable timeframes. The Clinger-Cohen Act also requires that Government agencies improve their methodologies for defining customer requirements, improving business practices, and managing IT projects within budget and on schedule.

Office of Management and Budget (OMB) Circular No. A-130, Revised, *Management of Information Resources*, dated November 28, 2000, requires that agencies establish and maintain a capital planning and investment control process linking mission needs, information, and IT in an effective and efficient manner.

## **Software License Standards**

GPO Directive 825.33B, *Information Technology Security Program Statement of Policy*, May 24, 2011, establishes a set of controls to safeguard agency IT processes and information, and also assigns responsibilities and accountability to reasonably assure the protection of system resources against fraud, waste, abuse, disaster, mismanagement, or compromise. GPO's policy, in part, states that the Chief Information Officer establishes operations and computer support as a part of the

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<sup>3</sup> GPO Instruction 825.18A, *Internal Control Program*, dated May 28, 1997.

<sup>4</sup> Public Law No. 104-106, Division E, February 10, 1996. The law, initially titled the *Information Technology Management Reform Act of 1996*, was subsequently renamed the Clinger-Cohen Act of 1996 in Public Law No. 104-208, September 30, 1996.

security program. Operations planning and computer support addresses loading and executing new software, use of system utility software, authorizations required for system changes, and software license management.

GPO Directive 705.31A, *GPO Enterprise Architecture Policy*, December 16, 2013 requires that the Chief Information Officer issue just one authoritative GPO enterprise architecture. The program helps maximize the business value of GPO's investment in IT and minimize the amount of unnecessary redundancy resulting from disparate planning, development, and IT acquisitions.

## Results and Recommendations

While GPO has established policies for operations planning and computer support that include software license management, there was an absence of documented procedures, techniques, mechanisms, and oversight requirements that enforce the policy. Below are the details pertaining to the comparison of purchased licenses to user accounts<sup>5</sup> and GPO employees, installed maintenance and support products, and product use.

### Comparison of Purchased Licenses, User Accounts, and GPO Employees

Our analysis of the 95 products specified in the contract revealed 21 instances where the number of purchased licenses exceeded the number of users and 20 instances where purchased licenses exceeded the number of GPO employees. The table below details the comparison of the number of purchased licenses, user accounts, and number of GPO employees by product.

**Table 4. Detailed Comparison of Purchased Licenses, User Accounts, and GPO Employees**

Item Name	CSI No.**	CSI Line No.	No. of Purchased Licenses	No. of User Accounts	No. of GPO Employees*
Oracle Self-Service Tutor for Applications - Employee Perpetual	14053700	6	2400	1,230	1,744
Learning Management - Trainee Perpetual	14053700	15	2500	1,230	1,744
Oracle Time and Labor - Person Perpetual	14053700	32	2500	1,230	1,744
iLearning - Trainee Perpetual	14053700	33	2500	1,230	1,744
Oracle iRecruitment - Person Perpetual	14053700	34	2500	1,230	1,744
Oracle Real Application Clusters - Named User Plus Perpetual	15594691	1	2100	1,230	1,744
Oracle Partitioning - Named User Plus Perpetual	15594691	2	1900	1,230	1,744
Oracle Advanced Security - Named User Plus Perpetual	15594691	3	2100	1,230	1,744
Oracle Label Security - Named User Plus Perpetual	15594691	4	2100	1,230	1,744
Oracle Data Profiling and Quality - Named User Plus Perpetual	15594691	5	2500	1,230	1,744
Oracle Database Vault - Named User Plus Perpetual	15594691	6	2500	1,230	1,744
Oracle Diagnostics Pack - Named User Plus Perpetual	15594691	10	1840	1,230	1,744
Oracle Tuning Pack - Named User Plus Perpetual	15594691	11	1940	1,230	1,744
Change Management Pack - Named User Plus Perpetual	15594691	12	2000	1,230	1,744
Configuration Management Pack - Named User Plus Perpetual	15594691	13	2040	1,230	1,744
Provisioning and Patch Automation Pack for Database - Named User Plus Perpetual	15594691	14	2040	1,230	1,744
Oracle Internet Application Server Enterprise Edition - Named User Plus Perpetual	15594691	20	2340	1,230	1,744
Configuration Management Pack for Oracle Middleware - Named User Plus Perpetual	15594691	22	2500	1,230	1,744
Oracle Identity and Access Management Suite - Employee User Perpetual	15594691	25	2450	1,230	1,744
Oracle Database Enterprise Edition - Named User Plus Perpetual	15594691	30	1708	1,230	1,744
Diagnostics Pack for Internet Application Server - Named User Plus Perpetual	15594691	47	2500	1,230	1,744

\*Staffing levels were taken from 2015 Pay Period 19 (Week Ending October 3, 2015).

\*\*CSI-Computer System Identification Number.

<sup>5</sup> User accounts include both GPO employees and contractors.

In addition, of the 95 products specified in the contract, 13 products were listed twice and 4 were listed 3 times. Nine products in Table 4 were listed at least two times and two were listed three times. . The duplication adds to the number of purchased licenses.

Oracle officials stated that most licenses supporting GPO's operations were Enterprise License Agreements<sup>6</sup> requiring a license for each GPO employee and contractor.

GPO and Mythics officials stated that the agency purchased Oracle licenses as a bundled package more than 10 years ago, which included certain discounts and price increase limitations for future use of the products. The bundled purchase obligated GPO to maintain the license level or become subject to licenses repricing and the loss of various discounts. Furthermore, Oracle Software Technical Support Policies state that if a reduction in the subset of licenses on a single order is terminated or the level of support reduced, then the remaining licenses on that license order will be priced at Oracle's list price for support in effect at the time of termination or reduction. Because of that policy, Mythics and Oracle officials suggested that GPO receive a better value by maintaining its licenses level.

#### Installed Maintenance and Support Products

An inventory<sup>7</sup> of installed products disclosed that of 95 Oracle products specified in the contract, 7 were installed. Of those seven products, four were identified as fully (F) licensed and three as having a shared (S) license. An additional six products were identified as being installed but inactive (U). The remaining 82 products were not shown as installed. The product inventory is detailed in Table 5.

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<sup>6</sup>An Enterprise License Agreement is an agreement to license the entire population of an entity (employees, on-site contractors, off-site contractors) accessing a software or service for a specified period of time for a specified value.

<sup>7</sup> At the request of the OIG, a database query was developed and executed by Salient CRGT, formally CRGT, a GPO contractor that provides onsite Oracle software support.

**Table 5. Installed Oracle Products**

<b>Item Name</b>	<b>License Status</b>
Advanced Pricing - Electronic Order Line Perpetual	S
Configurator - Processor Perpetual	S
Inventory Management - Inventory/Shipping User Perpetual	F
Purchasing - Purchasing User Perpetual	F
iStore - Processor Perpetual	F
iSupport - Processor Perpetual	S
Order Management - Order Management User Perpetual	F
Warehouse Management - Inventory/Shipping User Perpetual	U
Time and Labor - Person Perpetual	U
Sourcing- Purchasing User Perpetual	U
Learning Management - Trainee Perpetual	U
iSupplier Portal - Purchasing User Perpetual	U
Balanced Scorecard - Application User Perpetual	U

The following command was used to identify the inventory.

```

/*_QUERY TO SEE WHICH APPLICATIONS ARE----- LICENSED, SHARED OR UNLICENSED *//SELECT
fa.application_short_name "SHORT_NAME",
fa.application_name,fpi.patch_level,decode(fpi.status,'I','FULLY INSTALLED (LICENSED)','S','SHARED
INSTALL(LICENSED)','N','INACTIVE (UNLICENSED)','CUSTOM') "STATUS" FROM fnd_application_all_view
fa, fnd_product_installations fpi WHERE 1=1 AND fa.application_id = fpi.application_id order by 4, 2

```

**Product Utilization**

A “utilization analysis”<sup>8</sup> was performed to determine the extent installed products specified in the contract were used from January 5, 2016, through May 19, 2016. Details of that analysis are provided in Table 6.

**Table 6. Product Utilization**

<b>Item Name</b>	<b>Last Usage Date</b>	<b>User Count</b>
Advanced Pricing - Electronic Order Line Perpetual	No Report for the Period	-
Configurator - Processor Perpetual	No Report for the Period	-
Inventory Management - Inventory/Shipping User Perpetual	May 19, 2016	372
Purchasing - Purchasing User Perpetual	May 19, 2016	300
iStore - Processor Perpetual	February 16, 2016	1,230
iSupport - Processor Perpetual	No Report for the Period	-
Order Management - Order Management User Perpetual	May 19, 2016	53

The following command was used to identify the product utilization.

```

/*_QUERY TO SEE WHICH APPLICATION IS LINKED TO WHICH RESPONSIBILITY AND WHICH USERS ARE
USING THAT RESPONSIBILITY *//select distinct fu.user_name--, fr.responsibility_name from
fnd_responsibility_tl fr, fnd_application_tl fa, apps.fnd_user_resp_groups fug,fnd_user fu
where 1=1 AND fr.application_id=fa.application_id AND fr.responsibility_id=fug.responsibility_id AND
fug.user_id = fu.user_id AND fu.end_date is null AND fa.application_name = 'Business Online' order by 1

```

<sup>8</sup> At the request of the OIG, a database query was developed and executed by Salient CRGT, formally CRGT, a GPO contractor that provides onsite Oracle software support.

## Certification of Technical Requirements and Accuracy

On October 29, 2015, GPO certified the technical requirements and accuracy for the brand name acquisition. The certification was based on an Oracle-provided product list. GPO accepted the listing without performing an analysis.

The GPO Publication 805.33, *Materials Management Acquisition Regulation (MMAR)*, May 15, 2003,<sup>9</sup> states that technical and requirements personnel are responsible for providing and certifying as accurate and complete necessary data to support their recommendation for other than full and open competition.

### **Recommendations**

We recommend the Chief Information Officer:

1. Document a standard methodology for determining the number of Oracle maintenance and support licenses and products.

**Management's Response.** The Chief Information Officer will conduct an overall review of the Oracle licensing modules and counts on an annual basis and document the review's methodology. The complete text of management's response is in appendix C.

### **Evaluation of Management's Response**

Management's actions are responsive to the recommendation. We consider the recommendation resolved but will remain open pending our confirmation of the final actions.

2. Assess the number of maintenance and support licenses needed and limit the number of licenses to the number of users.

**Management's Response.** The Chief Information Officer reemphasized GPO's intent to conduct an overall review of the Oracle licensing modules and counts and make the information available to Acquisition during the current contract and the awarding of a new contract. The complete text of management's response is in appendix C.

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<sup>9</sup> Part 6—Competition Requirements, Subpart 6-3—Other Than Full and Open Competition, Section 6.303-1 (a)(3)(b)—Requirements, May 15, 2003.

### **Evaluation of Management's Response**

Management's actions are responsive to the recommendation. We consider the recommendation resolved but will remain open pending our confirmation of the final actions.

3. Assess the technical requirements necessary to maintain and support Oracle production licenses and limit the purchase of products to technically necessary products.

**Management's Response.** The Chief Information Officer concurred with the recommendation to re-evaluate license counts during the renewal process and to limit purchases of licenses to achieve savings where economically feasible. The complete text of management's response is in appendix C.

### **Evaluation of Management's Response**

Management's actions are responsive to the recommendation. We consider the recommendation resolved but will remain open pending our confirmation of the final actions.

## **Appendix A – Objective, Scope, and Methodology**

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We performed fieldwork from December 2015 through August 2016 at the GPO Central Office in Washington, D.C. We conducted the audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence that will provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

### **Objective**

The objective of the audit was to assess how GPO determined the number of licenses it purchased, how products were selected, and the extent licenses and products were utilized for maintenance and support of its e-business suite and database software.

### **Scope and Methodology**

To meet our objective we:

- Reviewed policies and procedures related to contracting.
- Interviewed GPO officials to gain an understanding of GPO's policies, procedures, systems, and processes related to accounting for licenses.
- Interviewed key employees at GPO, Mythics, and Oracle to gain an understanding of software license requirements.
- Reviewed contract files for GPO's maintenance and support contract.
- Reviewed Oracle licenses and products support by Oracle support and maintenance contract.
- Reviewed GPO's current contract for maintenance and support of its Oracle licenses.
- Analyzed GPO current employees level verses GPO Oracle licenses being supported in the contract.
- Analyzed product utilization.

## **Management Controls Reviewed**

We determined that the following internal controls were relevant to our audit objective:

Program Operations – Policies and procedures GPO management implemented to reasonably ensure contracts are properly awarded.

Compliance with Laws and Regulations – Policies and procedures that management implemented to reasonably ensure that resource use is consistent with laws and regulations.

The details of our examination of management controls, the results of our examination, and noted management control deficiencies are contained in the report narrative. Implementing the recommendations in this report should improve those management control deficiencies.

## **Computer-Generated Data**

We made software queries of the Oracle database. The results were used to identify use of installed software Oracle products and to produce a list of installed Oracle products in the database. The information was provided by GPO through the contractor using Structured Query Language (SQL) commands. No additional testing of the Oracle products took place.

## **Appendix B - Acronyms and Abbreviations**

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CAL	Client Access Licenses
GAO	Government Accountability Office
GPO	Government Publishing Office
IT	Information Technology
MMAR	Materials Management Acquisition Regulation
OIG	Office of Inspector General
OMB	Office of Management and Budget
SA	Software Assurance
SQL	Structured Query Language

## Appendix C – Management’s Response

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ANDREW M. SHERMAN  
Chief of Staff



Date: September 28, 2016

To: Inspector General (IG)

Subj: Draft Report—Information Technology: Oracle Maintenance and Support Licenses,  
Report Number 16-19

From: Chief of Staff

Thank you for the opportunity to review the subject report. Management concurs with the report’s recommendations, as follows:

Recommendation #1: Document a standard methodology for determining the number of Oracle maintenance and support licenses and products.

**Response:** Concur.

An ongoing review for determining the number of Oracle maintenance and support licenses and products continues to be a necessary process. To facilitate transparency of this process, the CIO will conduct an overall review of the Oracle licensing modules and counts on an annual basis by June 30 of each year. The methodology for the review and the results will be documented.

Recommendation #2: Assess the number of maintenance and support licenses needed and limit the number of licenses to the number of users.

**Response:** Concur.

As stated in the response to recommendation #1, an overall review of the Oracle licensing modules and counts will be conducted on an annual basis by June 30 of each year. The results of this annual review will be documented and made available to Acquisitions as allowed by the current contract and when the current Oracle contract term ends and the acquisition is posted by GPO Acquisitions for competition to award a new contract.

The objective of this process should be to limit the number of maintenance and support licenses to the number of users. However, in view the characteristics of the market for Oracle production licenses, this exercise may not always result in the reduction of licenses if cost savings are not possible. The goal of this process should be to provide the Agency with the best price possible regardless of the number of modules or quantity. If it is less costly for GPO to keep the existing licensing model in place because of the bundled price discounts, then there would be no reduction. If cost reductions are offered as a result of lowering the number of maintenance and support licenses to only those needed and limit the number of licenses to the number of users, then the CIO agrees that it should be changed to achieve a cost reduction.

Recommendation #3: Assess the technical requirements necessary to maintain and support Oracle production licenses and limit the purchase of products to technically necessary products.

**Response:** Concur.

The CIO concurs with the recommendation for re-evaluating license counts as part of the lifecycle support process during the periodic license renewal process, and that the objective should be to limit the purchase of products to technically necessary products. However, in view of the characteristics of the market for Oracle production licenses, restricting the purchase to necessary products may actually compel the Government to forego discounts and raise software costs. Additionally, it may restrict the efficiencies gained by bundling additional products for near term projects as part of those discounts. Where economically feasible, the CIO will limit purchases of licenses to achieve savings.

If you need additional information, please do not hesitate to contact me on 2-1100.



ANDREW M. SHERMAN

cc: Director  
Deputy Director  
General Counsel  
Chief Administrative Officer  
Chief of Acquisitions Services  
Chief Information Officer

## **Appendix D - Status of Recommendations**

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<b>Recommendation</b>	<b>Resolved</b>	<b>Unresolved</b>	<b>Open/ECD*</b>	<b>Closed</b>
1	X		9/30/17	
2	X		9/30/17	
3	X		9/30/17	

\*Estimated Completion Date.

## **Appendix E – Report Distribution**

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Director, GPO

Deputy Director, GPO

General Counsel

Chief of Staff

Chief Administrative Officer

## **Major Contributor to the Report**

Freddie Hall – Lead Auditor