



U.S. GOVERNMENT PRINTING OFFICE
OFFICE OF INSPECTOR GENERAL

**AUDIT REPORT
REPORT NUMBER 14-10**

**Information Technology—
Microsoft Software Licenses
March 27, 2014**

Date

March 27, 2014

To

Chief Information Officer

From

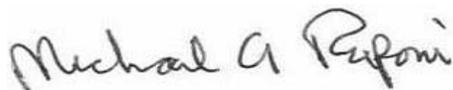
Inspector General

Subject

Audit Report – Information Technology—Microsoft Software Licenses
Report Number 14-10

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 overall body of the report. We consider management’s comments responsive to all recommendations. The recommendations are resolved and will remain open for reporting purposes pending our verification of the completion of the agreed-upon corrective actions.

If you have any questions or comments about this report, please do not hesitate to contact me at (202) 512-0039.



MICHAEL A. RAPONI
Inspector General

Attachment

cc:

Public Printer

Deputy Public Printer

General Counsel

Chief of Staff

Chief Administrative Officer

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Office of Inspector General

Report Number 14-10

March 27, 2014

Information Technology—Microsoft Software Licenses

Introduction

The Office of Inspector General (OIG) completed an audit of GPO's oversight of Microsoft software licensing. The objective of our audit was to identify any major instances of potential duplication and overlap of Microsoft licenses and if duplication did exist, identify which controls could be strengthened to mitigate the condition. This is a follow-on audit related to work we conducted of GPO's Enterprise Architecture in 2012 in which OIG reported that without a matured Enterprise Architecture, GPO assumes a risk in IT investments that are duplicative, not well integrated, costly, not supportive of the Agency's strategic goals and mission, or not responsive to emerging technologies.

In November 2012, GPO issued a purchase order to CDW Government, Inc. in the amount of \$683 thousand for Microsoft Licenses. GPO purchased licenses using a General Services Administration (GSA) Schedule 70 indefinite delivery/indefinite quantity (IDIQ) multiple award schedule, contract number GS-35F-0195J. The purchase order states the contract is year 1 of a 3-year agreement. GPO plans on spending approximately the same amount in each of the 3 years. In fact, Fiscal Year (FY) 2014 included an additional \$69 thousand primarily for Premier Support for the conversion to Office 365.

The purchase order includes Microsoft Office Professional products installed on all GPO computers and additional products. Software products included: (1) Office Professional Plus Software Assurance (SA); (2) Windows Professional SA with Microsoft Desktop Optimization Package (MDOP); (3) Core Client Access Licenses (CAL) SA; and (4) Enterprise CAL SA Step Up from Core CAL. The enterprise products cost approximately \$400 thousand, making up 58.6 percent of the total annual purchase. Examples of other Microsoft products included on the purchase order are Microsoft Project, Microsoft Visio, and Microsoft Visual Studio and various server licenses.

According to GPO policy, Information Technology and Systems (IT&S) is the steward of GPO's information technology (IT) assets and resources. IT&S provides strategy and technical direction, guidance, and policy to ensure that IT resources are appropriately acquired and managed for the GPO. GPO's policy requires that the Chief Information Officer establish operations and computer support as a part of the security program. Operations planning and computer support includes software license management.

To address our objective, we reviewed policies and procedures in place as of February 2014. We reviewed three purchase orders from November 2012 through December 2013 in order to identify the number of licenses and products purchased. We interviewed key officials from the GPO Office of Finance and Administration, the Office of Acquisitions, and IT&S responsible for establishing and monitoring the acquisitions process; and reviewing and approving the purchases. We also reviewed and analyzed applicable contracting documentation, software licensing documentation, and software licensing records.

We conducted this performance 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 provides 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. See Appendix A for details of the audit's objective, scope, methodology, and criteria.

Results in Brief

Generally, GPO has established several effective controls over its Microsoft software management program. However, management could improve program effectiveness by establishing documented procedures that approximate user demand and also strengthen its oversight by periodically monitoring changes in user and device demand.

GPO did not establish documented procedures. Management stated that the number of Microsoft licenses was determined based on a formula that added the number of GPO employees to the number of contractor employees to the number of kiosks located throughout GPO. A downward adjustment was made to reflect a 15- to 20-percent estimate of employees assigned to Plant Operations. Management also stated that the number of licenses as of February 2014 ensures that all Agency employees have access to a GPO email account in support of GPO's Continuity of Operations Plan.

We believe that GPO's formula may have overestimated demand. As a result, we estimate funds put to better use at \$83 thousand per year for unused Microsoft licenses, or \$250 thousand throughout the 3-year purchase requirement. We calculated that by comparing the 1,800 Core CAL SA and the 1,800 Enterprise CAL SA Step Up from Core CAL purchased user licenses to the estimated actual 1,338 users. We also compared the 1,800 Office Professional Plus and the 1,800 Windows Professional SA with MDOP purchased device licenses to the 1,483 devices in use at the time of our audit. Also, without sufficient monitoring, assurances cannot be provided that assets are adequately safeguarded against unauthorized use of licenses.

Recommendations

We recommended that the Chief Information Officer: (1) document a standard methodology for determining the number of Microsoft licenses that the GPO requires, and (2) periodically monitor user and device demand.

Management's Response

Management concurred with the recommendations and has planned corrective actions. The complete test of the response is included in Appendix C.

Background

GPO acquired Microsoft Licenses using GSA's Federal Supply Schedule. Under the schedule program, GSA enters into IDIQ contracts with commercial firms to provide commercial goods and services Government-wide at stated prices for given periods of time. GSA awarded CDW Government Inc. an Schedule 70 contract, *GSA Contract Number GS-35F-0195J*, an IDIQ multiple award schedule providing general purpose commercial IT equipment, software, and services. Beginning in November 2012, GPO relied on CDW Government Inc. to provide Microsoft software licenses to fulfill its mission. GPO paid the contractor approximately \$683 thousand each year. The period of performance for the first purchase order was November 1, 2012, through October 31, 2013. As of February 2014, GPO is in year 2 of the 3-year agreement. The 3-year total is estimated at approximately \$2 million.

Prior Year Purchases of Software Licenses

From October 2009 through September 2012, GPO relied on Dell Marketing L.P. to provide Microsoft software licenses. GSA awarded Dell Marketing L.P. a Schedule 70 contract, *GSA Contract Number GS-35F-4076D*, which is an IDIQ multiple award schedule providing general purpose commercial IT equipment, software, and services. GPO paid the contractor approximately \$694 thousand each year for a 3-year period. The 3-year contract totaled approximately \$2 million.

Related Audit Work

In 2012, OIG reported that without a mature enterprise architecture, GPO assumes the risk that is duplicative, not well integrated, costly, not supportive of the Agency's strategic goals and mission, or not responsive to emerging technologies.

In 2013, OIG conducted an audit to identify any major instances of potential duplication and overlap of Oracle modules and licenses. We identified instances where GPO paid for both an application user license and processor license for the same Oracle products. We also identified excess user licenses and processor licenses, which may have resulted in cost savings.

Select IT Guidance and Legislation

As a legislative branch agency, GPO is not required to follow executive branch legislation and policy. We believe, however, that the executive branch requirements provide a sound basis for internal controls for any organization. GPO, therefore, incorporated the major requirements in its directives.

Clinger-Cohen Act

Congress enacted the IT Management Reform Act of 1996 (known as the Clinger-Cohen Act¹) 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 Circular No. A-130

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.

¹ 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 P. L. 104-208, September 30, 1996.

Results and Recommendations

While GPO has made progress developing its enterprise architecture, additional oversight in several areas pertaining to Microsoft software licenses is needed. Those oversight areas include: (1) developing written procedures to approximate user demand, and (2) strengthening the monitoring over Microsoft software license utilization. As a result, all of the purchased licenses may not be necessary.

Current License Levels May Exceed Current Needs

Our audit revealed GPO did not install and activate all of the 1,800 Microsoft enterprise software licensed products it purchased. The table below depicts the various enterprise and other software products, costs, and license quantities purchased. The table also illustrates the OIG calculation of the estimated number of licenses required. We did not take exception to other Microsoft software licenses purchased.

Table 1. Microsoft Software Licenses (Purchase Order Executed in November 2012)

Software Product Description	Unit Price (Dollars)	License Quantity Purchased	Amount Paid (Dollars)	Estimated Number of Licenses Required
Enterprise Products				
Office Professional Plus SA	\$89.79	1,800	\$161,622	1,483
Windows Professional SA w/MDOP	39.63	1,800	71,334	1,483
Core CAL per User SA	34.11	1,800	61,398	1,338
Enterprise CAL SA Step Up from Core CAL per User	58.60	1,800	105,480	1,338
Other Products				
Project Professional w/Project Server CAL SA	175.06	50	8,753	No Exception
Visio Professional SA	89.79	50	4,489.50	No Exception
Visual Studio Ultimate w/MSDN License/SA	4,150.36	4	16,601.44	No Exception
Visual Studio Ultimate w/MSDN SA	1,930.91	2	3,861.82	No Exception
Exchange Server Enterprise SA	683.56	4	2,734.24	No Exception
Lync Server Enterprise License/SA	1,595	2	3,190	No Exception
Project Server SA	831.28	1	831.28	No Exception
Sharepoint Server SA	831.28	2	1,662.56	No Exception
SQL Enterprise 2Core SA	2320.15	24	55,683.60	No Exception
Windows Remote Desktop Services Device CAL SA	14.30	75	1,072.50	No Exception
Core Infrastructure Suite (Contains Windows Server and System Center Suite) Datacenter 2CPU License/SA	1,637.67	15	24,565.05	No Exception
Core Infrastructure Suite (Contains Windows Server and System Center Suite) Standard 2CPU License/SA	396.97	400	158,788	No Exception
Office 365 Plan G3 Subscription per User Special Promo	11.04	50	552	No Exception
Total			<u>\$682,618.99</u>	

In November 2012, GPO purchased 4 Microsoft enterprise products for approximately \$400 thousand and 13 other software product licenses for approximately \$282 thousand, for a total purchase amount of approximately \$682 thousand. The purchase was renewed in December 2013, and GPO plans on renewing the purchase again in November 2014.

The enterprise software products GPO purchased consist of: (1) Office Professional Plus SA, (2) Windows Professional SA with MDOP, (3) Core CAL per User SA, and (4) Enterprise CAL SA Step Up from Core CAL per User. A brief description of each software product follows.

- *Office Professional Plus SA.* This product is a software package consisting of: (1) Word, (2) OneNote, (3) PowerPoint, (4) Excel, (5) Outlook, (6) Publisher, and (6) Access. SA is the maintenance package that offers product support and software upgrades.
- *Windows Professional SA with MDOP.* This product is Microsoft's operating system software that communicates with the hardware and allows the programs to run. SA is the maintenance package for the operating system and MDOP enhances application deployment and compatibility.
- *Core CAL per User SA.* Client Access Licenses (CALs) are licenses issued per user that allow the computer to talk to various servers and access the information they contain. This is a package of server licenses, including licenses for the Windows Server, SharePoint, and Exchange Server. "Per User" means that the licenses are purchased so that each user can access server software from an unlimited number of devices. SA is the maintenance package.
- *Enterprise CAL SA Step Up from Core CAL per User.* This software provides rights to several server products and online services that the core CAL does not provide. It also includes more advanced features to include support for Office 365 cloud services.

Core CAL and Enterprise CAL SA Per User License Demand

Our analysis revealed a total 1,338 GPO employees (calculated as shown on Table 2 below) use Core CAL Per User SA and Enterprise CAL SA Step Up from Core CAL compared with 1,800 purchased user licenses.

To determine use of the software, we surveyed Plant Operations, Security and Intelligent Documents, and Security Services for an estimated number of users of the four enterprise software products. In most cases, all other GPO Business Units could have an operational need to license its employees. The table below depicts our analysis based on the survey responses.

Table 2: Analysis of User License Demand

Business Unit	Employees in Business Unit	Employees Using Enterprise Software	Employees Not Using Enterprise Software
Plant Operations	859	400	459
Security and Intelligent Documents	144	80	64
Security Services	61	45	16
All other Units	<u>813</u>	<u>813</u>	<u>0</u>
Total	<u>1,877</u>	<u>1,338</u>	<u>539</u>

We estimate funds put to better use to be as much as \$42,832 (1,800 purchased licenses less 1,338 GPO employees using the enterprise software multiplied by the cost of the two licenses per user of \$92.71) per year, or \$128,496 over the 3-year purchase order period. Officials stated that GPO paid for 200 software user licenses for contractors, but no documentation was available for our review. Our estimate does not include any software licenses that may be required for GPO contractors.

Office Professional Plus SA and Windows Professional SA w/MDOP Device License Demand

Our analysis revealed a total 1,483 devices are in use compared with 1,800 device licenses purchased.

Representatives of CDW Government Inc. stated that Office Professional Plus SA and Windows Professional SA with MDOP Device licenses were purchased based on the number of devices throughout the Agency. A comparison of devices listed in an IT&S inventory documentation disclosed that GPO has 1,483 computers assigned to its employees, contractors, and kiosks.

We estimate funds put to better use to be as much as \$41,026 (317 multiplied by \$129.42 per device license), or \$123,078 over the 3-year period.

Written Procedures to Determine the Number of Licenses

GPO did not have written procedures on how to determine the number of Microsoft software licenses it needs in support of its mission. Establishing written procedures helps ensure consistent and accurate compliance needed to achieve high levels of accuracy in determining the number of licenses process, especially in light of any future employee turnover. Procedures also become the basis for training and informing employees. Written procedures for all aspects of the process should consist of defining the process and individual tasks associated with the process and procedures for and examples of filing and completing required paper work.

GPO could also not provide a documented analysis supporting user demand for its user and device licenses was determined. Officials explained they determined the number of enterprise licenses by first adding GPO's 1,879 employees as of August

2013 to the 200 contractors and then adding 75 kiosks. This totaled 2,154 enterprise users. GPO adjusted the 2,154 count by reducing the amount by 15 percent to estimated plant employees without computers. The result was rounded to the nearest hundred to arrive at 1,800 licenses.

Officials stated they took into consideration that every employee and contractor is issued an Active Directory user account and email account in order to support of GPO's Continuity of Operations Plan. However, GPO Directive 825.40, *Continuity of Operations Plan—Employee Policy*, dated November 21, 2008, states that employees not directed to work at an alternate site must remain informed of the operating status, whether at home or at a designated evacuation site. Methods of staying informed include, but are not limited to, the GPO Web site or by calling a GPO published phone number for a recorded message.

Monitoring Current License Levels Could Be Strengthened

While GPO provided us with several reports matching host names to various operating systems and a count of the number of operating systems deployed, GPO did not have a record of Microsoft software installations for each employee and each device. Without such a record, ensuring that GPO makes necessary adjustments reflecting changes in demand could be difficult.

Furthermore, periodic comparison of purchased licenses with users and devices reduces the risk of misuse. Monitoring and other verifications (for example, random spot checks) provide positive assurance to management and other interested parties that reported assets do in fact exist, and in the quantities (such as count) recorded in management systems.

Management Control Guidelines

GPO requires² 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*, November 1999, require ongoing monitoring in the course of normal operation. Internal controls are performed continuously and ingrained in an Agency's operations. GAO's standards include regular management and supervisory activities, comparisons, reconciliations, and other actions people take in performing their duties. The GAO standards require use of control activities described as the

² GPO Instruction 825.18A, *Internal Control Program*, dated May 28, 1997.

policies, procedures, techniques, and mechanisms that enforce management's directives, such as the process of adhering to requirements or budget development and execution. They help ensure that actions are taken to address risks. Control activities are an integral part of an entity's planning, implementing, reviewing, and accountability for stewardship of Government resources and achieving effective results.

OMB Circular No. A-123, *Management's Responsibility for Internal Control*, December 21, 2004 (Circular A-123), requires that managers develop and maintain effective internal controls. Effective internal controls provide assurance that significant weaknesses in the design or operation of internal controls that could adversely affect an agency's ability to meet its objectives would be prevented or detected in a timely manner.

GPO's 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 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 8, 2008, states that the Chief Information Officer issues 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.

Recommendations

We recommended that the Chief Information Officer:

1. Document a standard methodology for determining the number of Microsoft licenses that GPO requires.

Management's Response

Concur. IT&S will develop a standard method for use with the FY15 budget process.

Evaluation of Management's Response

Management's planned action is responsive to the recommendation. The recommendation is resolved but will remain open for reporting purposes pending the completion of the proposed process.

2. Document a standard methodology for periodically monitoring user and device demand.

Management's Response

Concur. IT&S will develop a process to monitor user and device demand for Microsoft licenses.

Evaluation of Management's Response

Management's planned action is responsive to the recommendation. The recommendation is resolved but will remain open for reporting purposes pending the completion of the proposed process.

Appendix A - Objectives, Scope, and Methodology

We performed the audit from May 2013 through March 2014 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 objectives.

Objectives

Our objective was to identify any major instances of potential duplication and overlap of Microsoft licenses, and, if any existed, determine which controls could be strengthened to mitigate the condition.

Scope and Methodology

To meet our objectives, we performed the following:

- We reviewed Federal and GPO policies and procedures related to software licenses; GAO's *Standards for Internal Controls in the Federal Government*; GPO directives; and applicable standard operating procedures.
- We reviewed previous audit reports.
- We analyzed contracting and purchase documents, financial records, and software licensing documents.
- We interviewed key management officials from business units responsible for establishing and monitoring acquisition of Microsoft software licenses, and reviewing and approving the purchases.

We conducted an examination across GPO to identify major software license contracts in effect for FY 2013 and those contracts were included in our audit. We also obtained financial information for FY 2013 and FY 2014.

Management Controls Reviewed

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

Program Operations – Policies and procedures management implemented to reasonably assure that software license management program met GPO's objectives.

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

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

Appendix B – Glossary of Terms

CAL – Client Access License

Core CAL – a single license that provides rights equivalent to multiple licenses. Microsoft's Core Cal Suite includes 6 products including: Windows Server Cal, Microsoft SharePoint Server Cal, etc.

Enterprise CAL Suite Step Up – Includes the Core CAL along with a 5 additional products for archiving, Lync Servers, etc. The products in the Core CAL are a prerequisite to the Enterprise CAL.

MDOP – Microsoft Desktop Optimization Pack – available to SA subscribers, this pack enhances application deployment and compatibility.

Office Professional Plus – Software package including Word, PowerPoint, Outlook, Excel, OneNote, Access, Publisher, InfoPath, SharePoint Workspace, and Communicator

SA – Software Assurance is a maintenance offer that provides benefits such as product support and software upgrades

Appendix C – Management’s Response



U.S. GOVERNMENT
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Date: March 21, 2014
TO: Inspector General (IG)
FROM: Chief Information Officer (CIO)
SUBJECT: IT&S Response on Draft OIG Report 14-10 (dated March 6, 2014):
Draft Report – Information Technology—Microsoft Software Licenses

Introduction

The Office of the Inspector General (OIG) issued Draft Report 14-10 on March 6, 2014 concerning Information Technology (IT) Microsoft Software Licenses.

This document is the official GPO Information Technology and Systems (IT&S) response to that OIG draft report in general and the recommendations contained in that Report in particular.

IT&S Response to OIG Recommendations

Recommendation #1: We recommended that the Chief Information Officer document a standard methodology for determining the number of Microsoft licenses that GPO requires.

IT&S Response: Concur.

Comments: A standard methodology will be developed for use with the FY15 budget process.

Expected Date of Disposition: 9/1/2014

Recommendation #2: We recommended that the Chief Information Officer periodically monitor user and device demand for Microsoft licenses.

IT&S Response: Concur.

Comments: A process to monitor user and device demand for Microsoft license will be developed.

Expected Date of Disposition: 9/1/2014

Thank you for the opportunity to comment on the draft report. If you have any questions or comments about this response, or would like to discuss further, please do not hesitate to contact me at (202) 512-1040.



Charles E. Riddle, Jr
Chief Information Officer

cc:
Public Printer
Deputy Public Printer
General Counsel

Appendix D - Status of Recommendations

Recommendation	Resolved	Unresolved	Open/ECD*	Closed
1	X		9/1/14	
2	X		9/1/14	

*Estimated Completion Date.

Appendix E – Final Report Distribution

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Major Contributors to the Report

Patricia M. Bach, Senior Auditor