



DEPARTMENT OF VETERANS AFFAIRS
OFFICE OF INSPECTOR GENERAL

Office of Audits and Evaluations

DEPARTMENT OF VETERANS AFFAIRS

Lost Opportunities for
Efficiencies and Savings
During Data Center
Consolidation

AUDIT

REPORT #16-04396-44

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Executive Summary

Why the OIG Did This Audit

The VA Office of Inspector General (OIG) conducted this audit to determine whether VA met the data center requirements of the Federal Information Technology Acquisition Reform Act (FITARA). Specifically, the OIG assessed whether VA accurately identified and reported data center inventories, achieved cost savings, and met the Office of Management and Budget's (OMB) Data Center Optimization Initiative (DCOI) targets for data centers at existing VA facilities.¹ The audit team expanded its work to include an additional related issue based on a complaint made to the OIG Hotline in March 2016. A complainant alleged that VA wasted government funds on the transition of a data center from space located at the Office of Information and Technology's (OIT) leased SunGard facilities in Philadelphia, Pennsylvania. The data center was moved to two separate locations—newly acquired leased space in Secaucus, New Jersey, and VA-owned space at OIT's Philadelphia Information Technology Center. The complainant specifically alleged that VA wasted about \$3.9 million in government funds by paying monthly recurring costs totaling about \$391,400 for empty space during the transition, and could pay about an additional \$1.3 million over the life of the new contract for lease costs.

What the OIG Found

VA did not meet the data center consolidation and optimization requirements of FITARA. Specifically, the OIG found VA's implementation of DCOI had the following failings:

- VA did not maintain complete and updated data center inventories. The audit team projected that 860 data centers VA-wide were not reported to OMB.
- A sufficient plan was not included for meeting the consolidation requirement. OMB's fiscal year (FY) 2018 target was 56 closures of tiered data centers and 74 closures of non-tiered centers. VA's planned goal was to achieve 35 tiered closures and 50 non-tiered closures.²
- Its strategic plan for FYs 2017 and 2018 did not include cost savings targets or a sufficient strategy to meet OMB's established overall cost savings target for VA of \$85.35 million by the end of FY 2018.

¹ The DCOI was established in OMB Memorandum M-16-19 to fulfill the data center requirements of FITARA.

² Tiered data centers are defined as those that use each of the following: a separate physical space for information technology infrastructure, an uninterruptible power supply, a dedicated cooling system or zone, and a backup power generator for prolonged power outages. All other data centers are considered non-tiered.

- VA lacked an adequate plan to meet optimization targets for data centers at its existing facilities. OMB's FY 2018 target for energy metering was 100 percent of the gross square floor area of the tiered data centers; however, VA's goal was to have 50 percent energy metered. In addition, VA did not plan on achieving OMB's power usage effectiveness (PUE) target of 1.5 by the end of FY 2018.³

These conditions occurred because the OIT Deputy Chief Information Officer for Service Delivery and Engineering did not effectively communicate DCOI standards and reporting requirements VA-wide to staff responsible for managing data centers to ensure clarity and accountability. The standards and reporting requirements were only provided to OIT staff; therefore, non-OIT staff within VA who were responsible for maintaining IT systems were not notified. Moreover, the National Data Center Program Manager did not implement an effective process to validate if reported VA data center information was accurate. He stated this was due to a lack of personnel available to validate the information. Furthermore, the DCOI strategic plan was incomplete and did not meet all of OMB's requirements for consolidation plans.

As a result, VA lost opportunities to consolidate data centers, increase its operational efficiency, and achieve additional cost savings. Furthermore, VA did not satisfy the data center consolidation strategy provisions of FITARA by meeting OMB's FY 2018 target of \$85.35 million in planned savings and cost avoidances.⁴ Without an accurate inventory of data centers or a credible plan to increase operational efficiency and achieve cost savings, VA will continue to operate in an IT environment that is at greater risk for duplication and waste.

The OIG did not substantiate the allegation that VA wasted government funds when leasing and moving a data center. It found that the data center move from space located at the leased SunGard facilities in Philadelphia, Pennsylvania, to leased space at the TechAnax data center in Secaucus, New Jersey, and VA-owned space at the Philadelphia Information Technology Center was appropriate.

What the OIG Recommended

The OIG recommended the Assistant Secretary for OIT

1. Consults with the Office of Management and Budget for additional guidance on determining whether servers OIT excluded from inventories were subject to the Data

³ PUE is the proportion of total data center energy used by IT equipment.

⁴ The VA Principal Deputy Assistant Secretary contended that OMB agreed that VA's cost savings target and energy metering and PUE goals were not feasible. The OIG has not closed the related recommendation pending receipt of sufficient evidence that OMB agreed VA's cost savings target and energy metering and PUE goals were not practicable.

Center Optimization Initiative guidance in its June 2017 policy memo, *Data Center Development Freeze*,⁵

2. Ensures facility Chief Information Officers effectively communicate Data Center Optimization Initiative requirements to all staff responsible for VA data centers;
3. Develops a mechanism for validating the accuracy and completeness of reported data center information to the Office of Information and Technology's National Data Center Program team;
4. Establishes a process to facilitate a VA-wide inventory of data centers, including those outside the direct control and ownership of the Office of Information and Technology; and
5. Ensures VA's Data Center Optimization Initiative strategic plan is complete and includes a timeline for achieving the Office of Management and Budget's cost savings targets, data center closure targets, and optimization performance metrics for energy metering and power usage effectiveness.

Management Comments

The Principal Deputy Assistant Secretary for Information and Technology concurred with Recommendations 1–4 and requested these recommendations be closed. While OIT provided acceptable action plans for Recommendations 1–4, supporting evidence submitted was not sufficient to close Recommendations 2 and 3. The OIG considers Recommendations 1 and 4 closed.

The Principal Deputy Assistant Secretary did not concur with Recommendation 5 and requested the recommendation be closed. His basis for requesting closure for Recommendation 5 was OIT's assertion that OMB agreed that VA's cost savings target and energy metering and PUE goals were not feasible. However, the Principal Deputy Assistant Secretary did not provide evidence supporting this assertion and the OIG considers the recommendation open pending receipt of sufficient evidence. The OIG will monitor OIT's progress and follow up on implementation of the open recommendations until it completes all proposed actions.

OIT provided some technical comments and appropriate changes were incorporated into the report. Also, while OIT concurred with Recommendations 1–4, they did express concern with aspects of Finding 1. OIT reported it has worked with OMB regarding some issues raised in the

⁵ The OIG directed recommendations in the draft report to Mr. Camilo Sandoval, who was then serving as the Executive in Charge for the Office of Information Technology. Mr. James P. Gfrerer was confirmed as the Assistant Secretary for Information and Technology and Chief Information Officer on January 2, 2019. Recommendations are now directed to Assistant Secretary Gfrerer for implementation.

finding. OMB is expected to issue new guidance during FY 2019 that will impact VA's reporting on data centers, cost savings targets, and reporting requirements related to energy metering. OIT's comments are in Appendix C. The OIG's response starts on page 13.



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Abbreviations

CBOC	Community Based Outpatient Clinic
CIO	Chief Information Officer
DCOI	Data Center Optimization Initiative
FDCCI	Federal Data Center Consolidation Initiative
FITARA	Federal Information Technology Acquisition Reform Act
FY	fiscal year
GAO	Government Accountability Office
IT	information technology
NDCP	National Data Center Program
OIG	Office of Inspector General
OIT	Office of Information & Technology
OMB	Office of Management and Budget
PUE	power usage effectiveness
SCCM	System Center Configuration Manager
VA	Department of Veterans Affairs
VAMC	VA Medical Center
VBA	Veterans Benefit Administration
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network



Introduction

Objective

The OIG conducted this audit to determine whether VA met the data center requirements of the Federal Information Technology Acquisition Reform Act (FITARA). Specifically, OIG assessed whether VA accurately identified and reported data center inventories, achieved cost savings, and met the Office of Management and Budget's (OMB) Data Center Optimization Initiative (DCOI) targets for data centers at existing VA facilities. The audit team expanded its work to include an additional related issue based on a complaint made to the OIG Hotline in March 2016. A complainant alleged that VA wasted government funds regarding the transition of a data center from space located at the Office of Information and Technology's (OIT) leased SunGard facilities in Philadelphia, Pennsylvania. The data center was moved to two separate locations—newly acquired leased space in Secaucus, New Jersey, and VA-owned space at OIT's Philadelphia Information Technology Center. The complainant specifically alleged that VA wasted about \$3.9 million in government funds by paying monthly recurring costs totaling about \$391,400 for empty space, and could pay about an additional \$1.3 million over the life of the new contract for lease costs.

Data Center Optimization Initiative

In August 2016, OMB initiated DCOI to define a framework for achieving the data center consolidation and optimization requirements of FITARA.⁶ FITARA requires agencies to submit annual reports to OMB that include comprehensive data center inventories, multiyear strategies to consolidate and optimize data centers, performance metrics and a timeline for agency activities, and yearly calculation of investment and cost savings.⁷

Under DCOI, agencies are required to develop and report on data center strategies to consolidate inefficient infrastructure, optimize existing facilities, improve security posture, achieve cost savings, and transition to more efficient infrastructure, such as cloud services and interagency shared services. DCOI superseded OMB's Federal Data Center Consolidation Initiative (FDCCI) that was launched in February 2010 in part to reduce the footprint of federal data centers.⁸

⁶ OMB Memorandum M-16-19, Data Center Optimization Initiative, 2016.

⁷ Federal Information Technology Acquisition Reform Act, Pub. L. 113-291, § 834(b), 128 Stat. 3438, 3444 (2014).

⁸ FDCCI focused on green information technology by reducing the overall energy and real estate footprint of government data centers; reducing the cost of data center hardware, software, and operations; increasing the overall information technology security posture of the Federal Government; and shifting information technology investments to more efficient computing platforms and technologies.

The goal of FDCCI was to assist agencies in identifying their existing data center assets and to formulate consolidation plans that included a technical roadmap and consolidation targets.

GAO Reviews

The Government Accountability Office (GAO) has issued three reports addressing VA's data center consolidation and optimization:⁹

- GAO's September 2014 report, *Data Center Consolidation: Reporting Can Be Improved to Reflect Substantial Planned Savings*, GAO-14-713, found VA investment funding for all phases of its consolidation plan had not been available as initially scheduled. As a result, VA's consolidation plans had to evolve to address the risk of continued funding shortfalls so that progress could continue to be made toward consolidation goals. In addition, GAO found VA did not report all data center consolidation cost savings to OMB in accordance with established guidelines.
- GAO's March 2016 report, *Data Center Consolidation: Agencies Making Progress, but Planned Savings Goals Need to Be Established*, GAO-16-323, found VA did not meet any of OMB's nine metric targets for DCOI. As a result, GAO recommended that VA act to improve progress in meeting established targets, including addressing any identified challenges.
- GAO's May 2017 report, *Data Center Optimization: Agencies Need to Complete Plans to Address Inconsistencies in Reported Savings*, GAO-17-388, found VA's DCOI strategic plan only partially addressed all five elements required by the OMB memo implementing FITARA. The strategic plan did not include the dollar amounts for VA investments in data center consolidation and optimization as required by OMB's guidance. In addition, OMB found VA's Chief Information Officer (CIO) statement was not available publicly on its website. As a result, GAO recommended that the Secretary of VA "take action to complete the missing elements" in its strategic plan, including addressing any identified challenges, and submit the completed strategic plan to OMB.

⁹ On December 10, 2018, the Principal Deputy Assistant Secretary for Information and Technology reported recommendations in GAO reports GAO-14-713, GAO-16-323, and GAO-17-388 have been closed by GAO as implemented.

Results and Recommendations

Finding 1: VA Did Not Meet the Data Center Consolidation and Optimization Requirements of FITARA

The OIG found VA's implementation of DCOI—a key initiative within FITARA—had the following failings:

- VA did not maintain complete and updated data center inventories. The audit team projected that 860 data centers VA-wide were not reported to OMB.
- A sufficient plan was not included for meeting the consolidation requirement. OMB's FY 2018 target was 56 closures of tiered data centers and 74 closures of non-tiered centers. VA's planned goal was to achieve 35 tiered closures and 50 non-tiered closures.¹⁰
- Its strategic plan for FYs 2017 and 2018 did not include cost savings targets or a sufficient strategy to meet OMB's established overall cost savings target for VA of \$85.35 million by the end of FY 2018.
- VA lacked an adequate plan to meet optimization targets for data centers at its existing facilities. OMB's FY 2018 target for energy metering was 100 percent of the gross square floor area of the tiered data centers; however, VA's goal was to have 50 percent energy metered. In addition, VA did not plan on achieving OMB's power usage effectiveness (PUE) target of 1.5 by the end of FY 2018.¹¹

These conditions occurred because the OIT Deputy CIO for Service Delivery and Engineering, who directs all operational and maintenance activities associated with VA's information technology (IT) environment, did not effectively communicate the criteria for identifying and reporting data center inventories VA-wide to ensure clarity and accountability. For example, the Deputy CIO issued an internal action item to OIT leaders and staff providing instructions on DCOI requirements. However, leaders from the Veterans Health Administration (VHA), the Veterans Benefits Administration (VBA), and the National Cemetery Administration, as well as non-OIT staff who were responsible for managing data centers, were not included in the distribution.

In addition, the National Data Center Program (NDCP) Manager, who provided oversight of OIT's data center consolidation process, did not implement an effective process to validate the accuracy of reported VA data center information. The NDCP Manager reported that due to a lack

¹⁰ Tiered data centers are defined as those that use each of the following: a separate physical space for information technology infrastructure, an uninterruptible power supply, a dedicated cooling system or zone, and a backup power generator for prolonged power outages. All other data centers are considered non-tiered.

¹¹ PUE is the proportion of total data center energy used by IT equipment.

of personnel he and his team did not physically validate data centers and instead relied on facility CIOs to report data center information. Furthermore, the VA DCOI strategic plan was incomplete and did not meet all of OMB's requirements for consolidation plans. As a result, VA lost opportunities to consolidate data centers, increase its operational efficiency, and achieve additional cost savings. Without an accurate inventory of data centers or a credible plan to reduce costs and energy usage, VA continued to operate in an environment that was at greater risk for duplication and waste.

What the OIG Did

From February through April 2017, the OIG conducted walkthroughs at 66 VA facilities randomly sampled from a possible 1,138 facilities. From these walkthroughs, it determined whether inventories of data center assets were accurately reported to the NDCP team through the DCOI data center inventory collection site. Details on the OIG's sampling, and the details of the methodology to accomplish that selection are set forth in Appendix B

According to the DCOI definition, a facility could have multiple data centers. During each walkthrough, a combined OIG and OIT team conducted a thorough search of the facility to identify all data centers. The OIG team then compared the identified data centers to the information currently shown in the DCOI collection site.

Finding 1 is based on the following OIG conclusions, discussed more fully in the sections that follow:

- VA did not accurately identify or report data center inventories to OMB.
- VA did not achieve consolidation targets.
- VA did not develop cost savings targets for FYs 2017 and 2018.
- VA will not achieve energy metering and PUE optimization targets.

VA Did Not Accurately Identify or Report Data Center Inventories to OMB

OIT organizations with primary responsibility for operating each data center are required to self-report and upload their data center inventories on a quarterly basis to VA's DCOI Data Center Inventory Collection Site. DCOI defines data centers as rooms with at least one server providing services and categorized data centers into two groups: tiered or non-tiered. DCOI defines tiered data centers as those that use each of the following: a separate physical space for IT infrastructure, an uninterruptible power supply, a dedicated cooling system or zone, and a backup power generator for prolonged power outages. DCOI defines all other data centers as non-tiered. Rooms containing only print servers; routing equipment; switches; security devices, such as firewalls; or other telecommunications components were not considered data centers.

From the combined OIG and OIT team walkthrough at 66 randomly selected facilities, the OIG determined that VA had not reported 62 of 82 data centers. Because of ineffective communication of DCOI requirements and an ineffective validation process, OIT failed to accurately account for and report data centers to OMB. Based on the inaccurate count of data centers from the sample, the OIG projected there were 860 unreported data centers VA-wide. The OIG team calculated the projected unreported data centers using stratified statistical formulas. See Appendix B for additional details.

Table 1 shows the actual reported and unreported data centers.

Table 1. Reported and Unreported Data Centers

Facility	Sampled facilities	Total data centers identified within sample facilities	VA-reported data centers	Unreported data centers	Projected unreported data centers
VA Medical Centers	14	57	16	41	530
Community Based Outpatient Clinics	46	19	0	19	309
Veterans Integrated Service Network (VISN)	2	1	0	1	16
VA Regional Offices	4	5	4	1	5
Total	66	82	20	62	860*

Source: OIG analysis of unreported data centers

Note: OIG identified unreported data centers during their walkthrough of VA facilities

**OIG projected unreported data centers based on a sampled universe.*

Reasons Data Center Reporting was Inaccurate

The OIG determined that of the projected 860 unreported data centers, 520 were data centers with a single server. DCOI policy defines data centers as rooms with at least one server providing services—whether in a production, test, staging, development, or any other environment. Of the projected 520 unreported single-server data centers, the OIG projected 220 hosted System Center Configuration Management (SCCM). SCCM provides system management capabilities such as patch management software distribution, remote administration, and inventory capabilities. The facility CIO at the first VA facility visited by the audit team told the team that only OIT assets, except SCCM servers, should be reported. However, the audit

team determined remote management servers, such as servers hosting SCCM, should be reported because they meet OMB's classification of physical data centers.

The OIG found inaccurate reporting of data center inventories to OMB occurred primarily for three reasons. First, OIT's Deputy CIO for Service Delivery and Engineering did not effectively communicate DCOI standards and reporting requirements VA-wide to staff responsible for managing data centers to ensure clarity and accountability. For example, the Deputy CIO issued an internal action item in August 2016 to OIT leaders and staff providing guidance that required designated Service Delivery and Engineering staff to update critical data used for OMB's metrics report, collect new information to validate the accuracy of reporting, and identify unreported data centers. However, the leaders from VA's three major service line administrations (VHA, VBA, and the National Cemetery Administration) were not included on the distribution list for the action item. In addition, non-OIT staff within VA's major service line administrations, who were responsible for managing data centers, did not receive guidance on DCOI standards and reporting requirements. Furthermore, the NDCP Manager who was responsible for providing oversight of OIT's data consolidation process did not implement an effective process to validate the accuracy of reported VA data center information. Without an effective validation process, VA did not identify and report on all required data centers.

According to the NDCP Manager, the facility CIOs were responsible for collecting and reporting the data center information. During several site visits from February through April 2017, non-OIT staff told the audit team that they were unsure what defined a data center or what should be reported. This occurred because non-OIT staff with primary responsibility for operating data centers were not included in the validation and reporting process and did not participate in OIT's data calls that provided guidance on DCOI requirements. In addition, the OIG found even some OIT staff were unclear about what defined a data center and what should be reported.

Second, according to OIT's Southeast District Senior Technical Advisor for Service Operations, OIT staff at VA medical facilities have little authority over biomedical engineering and air gap systems, which made reporting difficult.¹² The audit team found systems and data centers managed by non-OIT staff in service lines such as research and development, physical security, and biomedical engineering were not being consistently reported to the NDCP team. The audit team determined that the uncertainty about what defined a data center existed because there was a lack of coordination and communication between the facilities' CIOs and staff responsible for operating each data center. Furthermore, the lack of OIT authority over systems managed by non-OIT staff resulted in data centers not being accurately identified and reported.

¹² Air-gapped connections are connections that do not physically connect to the VA network, but share telecommunications closets and other space within VA facilities.

Third, according to OIT's Deputy CIO for Service Delivery and Engineering, OIT Service Delivery and Engineering organizations designated for each data center were required to consolidate information for all organizations. In addition, OIT Service Delivery and Engineering organizations were required to self-report and upload their data center inventories on a quarterly basis to OIT's DCOI Data Center Inventory Collection Site. However, the audit team determined the OIT's process for validating the accuracy of reported VA data center information was ineffective. OIT relied on facility CIOs to submit accurate data center information to the NDCP team. As a result, the NDCP team did not accurately report a significant number of data centers to OMB as required. The lack of coordination and communication between the OIT and VA officials resulted in missed opportunities to potentially consolidate data centers and achieve additional cost savings.

Data Center Development Freeze Policy Memo

VA's former Acting Assistant Secretary for OIT did not issue guidance that was consistent with DCOI requirements for identifying and reporting data centers. The former Acting Assistant Secretary for OIT issued a policy memo, *Data Center Development Freeze*, on June 19, 2017, which excluded SCCM and other systems hosted on servers from DCOI requirements. According to OIT's Service Operations Program Manager, DCOI policy was broad and open to interpretation. OIT's decision not to include SCCM and other configuration servers was based on the technical use of that type of equipment. According to OIT, configuration servers such as SCCM allow remote management of other devices to reduce network traffic. Also, according to the 2017 policy memo, OIT's National Data Center Operations and Logistics has the authority to decide whether to report servers for the purposes of DCOI.

However, DCOI requires servers that provide services, whether in a production, test, staging, development, or any other environment, be reported. DCOI does not consider print servers; routing equipment; switches; security devices, such as firewalls; or other telecommunications components to be data centers. The OIG determined the OIT policy memo was not consistent with DCOI requirements for reporting data centers because configuration servers such as SCCM met OMB's DCOI classification of physical data centers. DCOI policy does not give agencies latitude to add devices to the list of those not considered data centers. DCOI also does not exclude configuration servers from being reported as data centers. Consequently, OIT was not accurately accounting for and reporting data centers to OMB.

VA Did Not Achieve Consolidation Targets

OMB's target was for VA to close 56 tiered centers and 74 non-tiered centers by the end of FY 2018. From FY 2016 through FY 2018, VA reported closing 21 tiered and 11 non-tiered data centers. Initially, VA's planned target was to close 35 tiered and 50 non-tiered centers by the end of FY 2018; however, according to VA's DCOI strategic plan as of May 9, 2018, VA updated its plan to close a total of 60-plus inventoried data centers, tiered and non-tiered, in FY 2018. Also,

according to VA’s DCOI strategic plan, VA was to meet OMB’s closure targets as part of a two-phase process that extended beyond FY 2018. Phase 1 involved the evaluation of about 20 non-medical, tiered data centers for closure. Phase 2 focused on the reduction of more than 200 tiered data centers currently required to support VA Medical Centers (VAMCs) without reducing services to veterans. At the time of this report’s publication, VA did not have an estimated completion date for Phase 2. Also, Phase 2 data center consolidation projects that address tiered facilities have not been approved and require extensive coordination with customer organizations.

VA Did Not Develop Cost Savings Targets for FYs 2017 and 2018

OMB established a cumulative three-year cost savings target (2016–2018) for VA of \$85.35 million.¹³ However, VA’s DCOI strategic plan did not include planned cost savings targets for FYs 2017 and 2018 or a strategy to meet OMB’s overall cost savings target by the end of FY 2018. In FY 2016, DCOI required agencies to publish an annual strategic plan that described their consolidation and optimization strategy for FYs 2016–2018. According to DCOI, agencies were required to evaluate the costs of operating and maintaining current facilities and to develop year-by-year targets for cost savings and cost avoidance due to consolidation and optimization. Furthermore, VA’s strategic plan was to include year-by-year calculations of target and actual agency-wide spending and cost savings on data centers. Table 2 shows VA’s planned cost savings targets for FY 2016 and the failure to include such estimates for FYs 2017 and 2018.

**Table 2. FYs 2016 through 2018 Cost Savings Targets
(Dollars in Millions)**

Fiscal years	Planned	Achieved	Overall OMB target
2016	\$3.7	\$3.8	
2017	\$0	\$0	
2018	\$0	\$0	
Total	\$3.7	\$3.8	\$85.35

Source: VA’s DCOI Strategic Plan

During an interview with the NDCP Program Manager, he stated that he was not sure how to measure cost savings associated with consolidation because he was not sure the beginning phases of the data consolidation would reduce the footprint or increase efficiency. He cited VA

¹³ Agency Strategic Plans & Agency-Specific Cost Savings Targets, DATACENTERS.CIO.GOV, <https://datacenters.cio.gov/agency-strategic-plan/> (web page last visited September 26, 2018).

Regional Offices as an example. Specifically, the leased space is a sunk cost that cannot be recouped, as it is part of the whole building lease and data center energy usage in those facilities is minimal. The costs associated with dismantling and moving a data center are greater than the savings. Also, according to VA's DCOI strategic plan, near-term consolidation efforts would result in additional costs such as hardware and software procurement, installation, and shipping.

VA also does not anticipate reporting cost savings until funding for planned DCOI-related projects has been approved. The NDCP Program Manager stated that while there may be cost savings in the long term, they are hard to quantify. According to VA's DCOI strategic plan, the implementation of DCOI-related projects may not result in cost savings and avoidance until later in their lifecycle—FY 2019 or later. While the OIG acknowledged the NDCP Program Manager's concerns, VA was required to implement a plan that would achieve OMB's cumulative three-year cost savings target (2016–2018) of \$85.35 million by the end of FY 2018. According to the Principal Deputy Assistant Secretary for Information and Technology, during the course of this audit VA has been in discussion with OMB and reports that OMB has agreed that the \$85.35 would not be feasible to achieve. The OIG is awaiting confirmation of any agreement or understanding between VA and OMB.

VA Will Not Achieve Energy Metering and PUE Optimization Targets

VA's DCOI strategic plan did not align with OMB's FY 2018 optimization target for energy metering and PUE. According to VA's strategic plan, OMB's FY 2018 target was 100 percent for energy metering and a PUE that was less than or equal to 1.5.¹⁴ However, VA's planned goal was to have 50 percent of the gross square floor area of tiered data centers energy metered by the end of FY 2018.¹⁵ In addition, VA did not plan on achieving OMB's PUE target of 1.5 by the end of FY 2018. According to VA's DCOI strategic plan, PUE will not be achieved because data center infrastructure management software tools have not been fully integrated VA-wide and instructions to responsible VA organizations for how to conduct requirements analyses, engineer solutions, program funds, implement solutions, and report results have not been distributed.

In October 2016, according to VA's DCOI strategic plan, VA began a comprehensive energy metering project to implement data center infrastructure management software tools across agency-owned tiered data centers. The software is intended to help VA automate the collection of energy usage information, which is required to calculate PUE—the proportion of total data center energy used by IT equipment. The software will assist VA with establishing PUE baselines and making energy enhancement decisions aimed at meeting targets. VA's DCOI

¹⁴ OMB Memorandum M-16-19 defined energy metering as the percent of total gross floor area in a tiered data center that has power metering and the PUE target of 1.5 as the proportion of total data center energy used by IT equipment.

¹⁵ "Total gross floor area" is defined as total square footage available for IT equipment and includes all associated corridors, walkways, and air circulation requirements.

strategic plan indicated that testing and implementation of the software was expected to begin in the fourth quarter of FY 2017. OMB required agencies to install and monitor energy metering tools in all tiered data centers by September 30, 2018. The audit team found that most of the VA facilities it visited did not have power metering capability and did not report PUE.

According to OIT's Service Operations-Infrastructure Operations Project Manager, small-scale hardware for energy metering has been procured and installed for two pilot sites at the St. Petersburg OIT field office and the VA Palo Alto Health Care System. VA is collecting data to populate the database for the enterprise data center infrastructure management tool. OIT's Project Manager also indicated that baseline energy information for PUE is currently being collected by automated energy logger equipment at the one pilot site.

There are several reasons why VA has not made progress in meeting OMB targets associated with energy metering and PUE. According to OIT's Project Manager, results for PUE reporting at the pilot locations will not be available until baseline information is available and tracking/trending of the energy usage can occur. In addition, VA continues to invest in more efficient physical infrastructure equipment and implement data center best practices for operation to increase efficiency in data center spaces. Furthermore, according to VA's updated DCOI strategic plan, the validity and effectiveness of optimization metrics such as energy metering and PUE are currently being discussed within OMB working groups.

Conclusion

The OIG found that VA faced several challenges in identifying data centers VA-wide, establishing a sufficient plan to achieve cost savings and avoidance targets, and meeting optimization metrics and closures. The audit team projected 860 data centers VA-wide were not reported to OMB. Also, the audit team found VA's strategic plan was inconsistent with DCOI requirements due to missing and incomplete information. For example, the strategic plan did not include year-by-year targets for cost savings and cost avoidance due to consolidation and optimization for FYs 2016–2018 as required by DCOI. Without an accurate inventory of data centers or a credible plan to increase operational efficiency and achieve cost savings, VA will continue to operate in an IT environment that is at greater risk for duplication and waste. Furthermore, VA did not satisfy the data center consolidation strategy provisions of FITARA by meeting OMB's FY 2018 target of \$85.35 million in planned savings and avoidances.

Recommendations 1–5

The OIG recommended the following:

1. The Assistant Secretary for Information and Technology consults with the Office of Management and Budget for additional guidance on determining whether servers the Office of Information Technology excluded from inventories were subject to the Data Center Optimization Initiative guidance in its June 2017 policy memo, *Data Center Development Freeze*.¹⁶
2. The Assistant Secretary for Information and Technology ensures the facility Chief Information Officers effectively communicate Data Center Optimization Initiative requirements to all staff responsible for VA data centers.
3. The Assistant Secretary for Information and Technology develops a mechanism for validating the accuracy and completeness of reported data center information to the Office of Information and Technology National Data Center Program team.
4. The Assistant Secretary for Information and Technology establishes a process to facilitate a VA-wide inventory of data centers, including those outside the direct control and ownership of the Office of Information Technology.
5. The Assistant Secretary for Information and Technology ensures VA’s Data Center Optimization Initiative strategic plan is complete and includes a timeline for achieving OMB’s cost savings targets, data center closures targets, and optimization performance metrics for energy metering and power usage effectiveness.

Management Comments

The Principal Deputy Assistant Secretary for Information and Technology concurred with Recommendations 1–4 and requested these recommendations be closed. The Principal Deputy Assistant Secretary did not concur with Recommendation 5 and requested the recommendation be closed.

For Recommendation 1, the Principal Deputy Assistant Secretary reported that OIT evolved its data center inventory collection methods to become more accurate and efficient for both VA and OMB. He reported this new program was designed to collect relevant information necessary to properly analyze and determine whether servers are subject to DCOI, and that OIT consulted with OMB throughout the process. The Principal Deputy Assistant Secretary reported this recommendation has been implemented and requested it be closed.

¹⁶ The OIG directed recommendations in the draft report to Mr. Camilo Sandoval, who was then serving as the Executive in Charge for the Office of Information Technology. Mr. James P. Gfrerer was confirmed as the Assistant Secretary for Information and Technology and Chief Information Officer on January 2, 2019. Recommendations are now directed to Assistant Secretary Gfrerer for implementation.

For Recommendation 2, the Principal Deputy Assistant Secretary reported that OIT revamped the VA data center consolidation and optimization program. He also reported that OIT's new program focused on educating area managers, formerly known as Facility CIOs, and staff responsible for VA data centers on how to effectively communicate DCOI standards and reporting requirements to non-OIT staff. The Principal Deputy Assistant Secretary reported this recommendation has been implemented and requested it be closed.

For Recommendation 3, the Principal Deputy Assistant Secretary reported that since the OIG conducted its audit, OIT developed a mechanism for validating the accuracy and completeness of reported data center information to OMB. He also reported OIT developed a user-friendly tool to collect input for the data center inventory, making it easier for staff to report. In addition, the new program focused on educating area managers and non-OIT stakeholders on federal data center inventory requirements to further improve accuracy and efficiency of reported data center information. The Principal Deputy Assistant Secretary reported this recommendation has been implemented and requested it be closed.

For Recommendation 4, the Principal Deputy Assistant Secretary reported that during the period the OIG conducted its audit, OIT worked across the department to revamp the program to collect a VA-wide inventory of data centers. He also reported VA's data center inventory collection methods have evolved to become more accurate and efficient for both VA and OMB. The updated process to collect inventory is inclusive of data centers that are both within and outside the direct control and ownership of OIT. The Principal Deputy Assistant Secretary reported the new process resulted in OIT and non-OIT staff collectively adding over 1,000 computer rooms to VA's inventory, many of which are maintained by non-OIT staff and contain servers that exclusively support clinical care. He reported many of these clinical server rooms will not be subject to many of the consolidation requirements due to OMB's modified definition of a data center. The Principal Deputy Assistant Secretary reported this recommendation has been implemented and requested it be closed.

For Recommendation 5, the Principal Deputy Assistant Secretary did not concur with the recommendation. He reported OMB agreed that VA's cost savings target of \$85.35 million would not be feasible to achieve and that the costs associated with capturing power consumption across VA would surpass any potential savings. The Principal Deputy Assistant Secretary also reported that updated OMB guidance for data center optimization will show modified metrics for energy metering, and no metrics associated with consolidation, optimization, or energy efficiency. As OIT does not agree with the recommendation, the Principal Deputy Assistant Secretary requested it be closed.

OIT also provided some technical comments and expressed concerns with certain aspects of this finding. OIT reported they have worked with OMB regarding some issues the OIG team raised in its finding, and OMB is expected to issue new guidance in FY 2019 that will affect VA's

reporting on data centers, their cost savings targets, and their reporting requirements related to energy metering. OIT's full comments are included in Appendix C.

OIG Response

The Principal Deputy Assistant Secretary for Information and Technology's planned corrective actions are responsive to Recommendations 1–4. OIT provided sufficient evidence to close Recommendations 1 and 4 and the OIG considers them closed. The evidence submitted in response to Recommendations 2 and 3 was not sufficient to close these recommendations.

The Principal Deputy Assistant Secretary's basis for requesting closure for Recommendation 5 was OIT's assertion that OMB agreed the cost savings target and energy metering and PUE goals were not feasible. However, the Principal Deputy Assistant Secretary did not provide evidence supporting this assertion and the OIG considers the recommendation open pending receipt of sufficient evidence. Pending updated policy from OMB, the OIG considers Recommendation 5 open. The OIG will monitor OIT's progress and follow up on implementation of the open recommendations until all proposed actions are completed.

Regarding OIT's technical comments, appropriate changes were incorporated into the report. Also, while OIT expressed concern with aspects of Finding 1, the OIG believes the provided action plans are acceptable and meet the intent of Recommendations 1–4. If OMB issues new guidance in FY 2019 that shows VA will have no metrics associated with consolidation, optimization, or energy efficiency, the OIG will evaluate the policy and determine if Recommendation 5 can be closed.

Finding 2: VA Did Not Waste Funds on Data Center Move and New Lease

The OIG did not substantiate the allegation that VA wasted government funds when leasing and moving a data center. The audit team found that the data center move from space located at the leased SunGard facilities in Philadelphia, Pennsylvania, to leased space at the TechAnax data center located in Secaucus, New Jersey, and VA-owned space at the Philadelphia Information Technology Center was appropriate under the circumstances. The move was precipitated by the expiration of a three-year lease with SunGard in March 2014. A transition period to migrate IT systems and equipment located at SunGard to TechAnax was required to avoid disruption in mission-critical operations. In addition, according to the sole-source justification, any break in service would result in an unacceptable threat to the security posture as well as the inability to continue essential operations and functions. While additional costs were incurred from the move, the OIG did not substantiate the allegation that VA wasted about \$3.9 million in government funds by paying monthly recurring costs totaling about \$391,400 for empty space at the TechAnax data center. The OIG also did not substantiate that the monthly recurring costs for the new lease would result in about \$1.3 million in additional costs over the life of the contract.

What the OIG Did

The OIG conducted a site visit to the SunGard facilities to assess the merits of the allegations. The audit team interviewed VA's Division Chief, Facilities Management, at the SunGard data center and reviewed *Homeland Security Presidential Directive 20*; *Federal Preparedness Circular 65*; *National Security Presidential Directive 51*; and Federal Acquisition Regulation 6.302, *Circumstances Permitting Other Than Full and Open Competition*. The audit team also reviewed VA contracts with both SunGard Availability Services LP and with TechAnax LLC, which is a service-disabled, veteran-owned small businesses located in Secaucus, New Jersey, providing data center hosting space and associated support and transition. Furthermore, the audit team reviewed the VA Director of Procurement Services' source selection decision supporting the action to extend SunGard's period of performance for up to 23 months for continuation of data center hosting and associated support services to allow for the migration to TechAnax. In addition, the audit team reviewed invoices related to data center hosting support services, as well as transition and migration planning and execution.

Finding 2 is based on the following OIG conclusions, discussed more fully in the sections that follow:

- The data center move was appropriate under the circumstances.
- VA did not waste about \$3.9 million by paying for empty space.

The Data Center Move was Appropriate Under the Circumstances

The audit team determined that OIT's relocation of IT systems and equipment physically located at the SunGard facility in Philadelphia to leased space at TechAnax located in Secaucus and the Philadelphia Information Technology Center was appropriate. VA's three-year lease with SunGard expired on March 31, 2014.

To avoid disruptions in mission-critical operations when SunGard's contract expired, a sole-source contract was awarded on April 1, 2014, to SunGard Availability Services LP. According to the contract, VA needed to extend SunGard's data center and services to permit Region 4 sufficient time to complete the requirements for a fully competitive procurement for data center hosting services.

According to VA's Director of Procurement Services in a memo dated June 22, 2015, a request for proposal for new data center hosting space and associated support services was released on February 3, 2015. As stated in the memo, the request for proposals for the new data center space and hosting service was released as a competitive acquisition conducted through the Federal Business Opportunities website as a total service-disabled, veteran-owned small business set-aside. Also, the memo indicated the request for proposal closed on March 6, 2015, and VA received three timely responses. TechAnax was awarded the new contract on June 23, 2015.

Modification of Sole-Source Justification

In September 2016, VA's Director for Procurement Services approved a proposed sole-source action for a firm-fixed-price modification to extend the period of performance for the SunGard contract awarded April 1, 2014, for up to 23 months for data center hosting and associated support services. According to the justification, VA began implementing planning and processing steps necessary for the physical migration from SunGard to TechAnax after TechAnax was awarded the contract. This included procuring critical path items and network circuits for the new data center location. However, VA experienced unanticipated delays during the migration planning and processing, which required extending the period of performance. Delays occurred when significant information gaps in data were identified. These information gaps included identification of actual IT equipment that was operational in the data center hosting space, ownership of these systems, and connectivity details of the systems.

VA Did Not Waste About \$3.9 Million by Paying for Empty Space

The audit team determined VA did not waste about \$3.9 million in government funds by paying monthly recurring costs totaling about \$391,000 for empty space leased at TechAnax. The audit team found VA paid about \$18.5 million (\$10.5 million for SunGard and \$8 million for TechAnax) from June 2015 through May 2017. The cost of the TechAnax facility was more than \$100,000 less per month than the SunGard facility. The payment for space at both the SunGard and TechAnax data center locations was necessary to ensure systems and applications were

functioning in support of mission-critical operations. The interruption of crucial services would have led to a significant loss of service that affected veterans due to the unavailability of critical systems.

The audit team also determined the monthly recurring cost for the TechAnax space would not result in about \$1.3 million in additional lease costs over the life of the contract. While the OIG determined VA made lease payments for both facilities for 22 months, VA reported delays in the migration from SunGard to TechAnax were due to issues related to the physical infrastructure required to operate a high availability environment within the TechAnax facility. These changes were necessary to ensure continuity of operations.

Conclusion

The OIG did not substantiate the allegation. The data center move from space located at the leased SunGard facilities in Philadelphia, Pennsylvania, to two separate locations was appropriate. While additional costs were incurred from the move, the VA had not wasted about \$3.9 million in government funds by paying monthly recurring costs totaling about \$391,400 for empty space at the TechAnax data center.

The OIG also did not substantiate that the monthly recurring costs for the new lease would result in about \$1.3 million in additional costs over the life of the contract. VA's paying for space at both the SunGard and TechAnax data center locations simultaneously was necessary to ensure systems and applications were functioning in support of mission-critical operations. In addition, any interruption of crucial services would have led to a significant loss of service that would affect veterans. Accordingly, OIG made no recommendations.

Appendix A: Scope and Methodology

Scope

The OIG conducted its audit from September 2016 through November 2018. The audit focused on determining the accuracy of VA's data center inventory at select facilities and VA's processes for planning data center consolidation, and calculating cost savings realized from those consolidation efforts. This included information and processes established under OMB's February 2010 Federal Data Center Consolidation Initiative (FDCCI) that was superseded by DCOI in August 2016.

Methodology

To accomplish the audit objectives, the audit team conducted site visits to a random sample of VHA and VBA facilities. At each facility visited, the audit team interviewed officials and staff who were responsible for data center reporting and toured the facility to identify all data centers that met DCOI criteria. In addition, the audit team reviewed OIT's FY 2016 data center submissions to OMB. The audit team also reviewed OMB implementation guidance for FDCCI, the National Defense Authorization Act, DCOI, and the National Institute of Standards and Technology Special Publication pertaining to security and privacy controls for federal information systems.

Fraud Assessment

The audit team assessed the risk that fraud, violations of legal and regulatory requirements, and abuse could occur during this audit. The audit team exercised due diligence in staying alert to any indicators of fraud and violations of legal requirements by taking actions such as the following:

- The team visited VA facilities to identify any unreported data centers. While visiting facilities, the audit team discussed procedures used to identify and report data centers with individuals responsible for reporting data centers.
- OIG staff also interviewed individuals responsible for submitting VA data center information to OMB and evaluating procedures for ensuring the accuracy of those submissions.

The audit team did not identify any instances of fraud during this audit.

Data Reliability

The audit team obtained several computer-generated items for this audit. Specifically, the OIG obtained spreadsheets from OIT showing VA's progress toward completion of OMB-mandated

milestones. However, the audit team was unable to trace data contained in the spreadsheets to supporting documentation. In addition, the audit team obtained several spreadsheets from OIT with VA's data center inventory. To test for data reliability, the audit team visited a sample of facilities and identified data centers at each facility. The audit team found that, while all data centers on the inventory did exist, there were additional data centers not included on OIT's data center inventory. Therefore, the audit team did not use OIT's spreadsheets to support its findings, conclusions, or recommendations in the audit report. To validate costs associated with the OIG Hotline allegation, the audit team obtained VA's Financial Management System records for the data center contracts. The audit team compared the contract costs to the financial records—VA disbursements. The disbursements were consistent with the contracted costs.

Government Standards

The OIG's assessment of internal controls focused on those controls relating to its audit objectives. It conducted this performance audit in accordance with generally accepted government auditing standards. These standards require that the OIG plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for its findings and conclusions based on its audit objective. The OIG believes that the evidence obtained provides a reasonable basis for its findings and conclusions based on its audit objective.

Appendix B: Statistical Sampling Methodology

To determine whether there were unreported data centers, the audit team visited a random sample of VHA and VBA facilities.

Population

To identify the audit population, the audit team used VA’s facility location directory to identify all VHA medical facilities and VBA regional benefits offices. Using the VAMCs as central focal points, the audit team divided the country into 142 clusters that included 1,144 unique VHA and VBA facilities. The audit team excluded the National Cemetery Administration from the population because there was only one facility nationwide with a server listed. In addition, the audit team excluded Vet Centers and facilities located in the Pacific and Virgin Islands due to their remote locations. This reduced the population to 140 clusters and 1,138 VA facilities. To determine whether VA’s data center universe was accurate, the audit team visited a random sample of 66 unique VHA and VBA facilities from February 13 through April 7, 2017. The sample focused on determining whether OIT, VHA, and VBA officials were properly identifying and reporting all data centers.

Sampling Design

The audit team stratified the population by dividing the 142 clusters into three unique strata. The first stratum included non-reporting VAMCs based on VA’s data center inventory listing. From this stratum, the OIG selected two clusters that included 20 VA facilities. The second stratum included VBA and VHA facilities. From this stratum, the three selected clusters included 17 VA facilities. The third stratum represented the remaining clusters. From this stratum, the OIG selected five clusters that included 27 VA facilities. Table B.1. shows the three strata and the number of clusters selected for review, and Table B.2. shows the 10 clusters and details the facilities visited within each stratum.

Table B.1. Summary of Clusters Selected for Random Sample Review

Strata	Universe count	Universe percentage	Number of sample units	Sample percentage
Non-reporting VAMCs	10 Clusters	7%	2 Clusters	20%
VBA facilities	48 Clusters	34%	3 Clusters	30%
Other	82 Clusters	59%	5 Clusters	50%

Source: VA OIG analysis performed in consultation with the Office of Audits and Evaluations statistician

Table B.2. VA Facilities Selected for Review

Stratum	Facility name	Cluster
Non-reporting	<ul style="list-style-type: none"> • VA Northern Indiana Health Care System Fort Wayne Campus • VA Northern Indiana Health Care System Marion Campus • Goshen VA Outpatient Clinic • Muncie/Anderson VA Outpatient Clinic • Peru Community Based Outpatient Clinic (CBOC) • South Bend VA Outpatient Clinic 	Northern Indiana VAMC
Subtotal	Six Facilities	
Non-reporting	<ul style="list-style-type: none"> • Portland Health Care System • Vancouver Campus • Bend CBOC • Community Resource and Referral Center • Fairview Clinic • Hillsboro CBOC • Lincoln City Clinic • Loren R Kaufman VA Clinic • Newport CBOC • North Coast Clinic • Salem CBOC • West Linn CBOC • VISN 20, Northwest Network • Portland Regional Benefit Office 	Portland VAMC
Subtotal	14 Facilities	
VHA and VBA facilities	<ul style="list-style-type: none"> • Brooklyn Campus • Manhattan Campus • Harlem Community Clinic • Staten Island Community Clinic • New York Regional Benefit Office 	New York Harbor VAMC
Subtotal	Five Facilities	
VHA and VBA facilities	<ul style="list-style-type: none"> • W.G. (Bill) Hefner VAMC • Charlotte CBOC • Charlotte Health Care Center • Kernersville Health Care Center • Winston-Salem Regional Benefit Office 	Salisbury VAMC
Subtotal	Five Facilities	
VHA and VBA facilities	<ul style="list-style-type: none"> • Washington DC VAMC • Charlotte Hall, MD CBOC • Community Resource and Referral Center • Fort Belvoir Community Clinic • Southeast Washington, DC, CBOC • Southern Prince George's County CBOC • Washington DC National Capital Regional Benefits Office 	Washington, DC, VAMC
Subtotal	Seven Facilities	

Stratum	Facility name	Cluster	
Other	<ul style="list-style-type: none"> Durham VAMC Hillandale Road Outpatient Clinics I & II Raleigh II CBOC Raleigh CBOC Greenville Health Care Center CBOC 	<ul style="list-style-type: none"> Morehead City CBOC Blind Rehabilitation Outpatient Clinic Brier Creek Dialysis Clinic VISN 6, VA Mid-Atlantic Health Care Network Raleigh III CBOC 	Durham VAMC
Subtotal	10 Facilities		
Other	<ul style="list-style-type: none"> Augusta VAMC Uptown Augusta VAMC Downtown Aiken, South Carolina, CBOC 	<ul style="list-style-type: none"> Athens, Georgia CBOC Statesboro, Georgia, Telehealth Clinic 	Augusta VAMC
Subtotal	Five Facilities		
Other	<ul style="list-style-type: none"> Hampton VAMC Albemarle Primary Outpatient Clinic 	<ul style="list-style-type: none"> Virginia Beach CBOC Chesapeake CBOC 	Hampton VAMC
Subtotal	Four Facilities		
Other	<ul style="list-style-type: none"> James A. Haley Hospital Primary Care Annex Brooksville CBOC 	<ul style="list-style-type: none"> Lakeland CBOC New Port Richey CBOC Zephyrhills CBOC 	Tampa VAMC
Subtotal	Six Facilities		
Other	<ul style="list-style-type: none"> Ann Arbor Hospital Flint CBOC 	<ul style="list-style-type: none"> Jackson CBOC Toledo CBOC 	Ann Arbor VAMC
Subtotal	Four Facilities		
Total	66 Facilities		

Source: VA OIG analysis of VHA and VARO facilities

Weights

The OIG calculated all projections in this report using weighted sample data. Weighted sample data are the result of assigning a weight to each sample item to adjust the sample item to represent the population from which the sample was drawn. Sampling weights are computed by taking the product of the inverse of the probabilities of selection at each stage of sampling. For example, the OIG calculated the projected data centers by summing the sampling weights for all sample records that contained the error—1,138 (population) / 82 (sample size) = 13.87 (sampling weights) x 62 (unreported data centers) = 860 (projected data centers).

Projections and Margins of Error

The margins of error and confidence intervals are indicators of the precision of the projections. If the OIG repeated this audit with multiple samples, the confidence intervals would differ for each sample but would include the true population value 90 percent of the time. Table B.3. shows different projections for different types of data centers not reported.

Table B.3. Summary of Non-reported Data Centers

Type of Error	Projection (percent)	Margin of error (percent)	90% Confidence interval lower limit (percent)	90% Confidence interval upper limit (percent)	Count from Sample	Unreported data centers in sample
Data centers	860	189	671	1,050	82	62
Non-tiered VA medical facilities	530	151	379	681	59	41
CBOCs	309	111	198	420	19	62
Non-tiered VISN not reported	16	28	1	44	59	1
Non-tiered RBO not reported	5	8	1	13	59	1

Source: VA OIG Analysis performed in consultation with the Office of Audits and Evaluations statistician

Appendix C: Management Comments

Department of Veterans Affairs Memorandum

Date: December 10, 2018

From: Principal Deputy Assistant Secretary for Information and Technology (005A)

Subj: OIG Draft Report, Audit of VA's Data Center Consolidation – Project Number
2016-04396-DV-0182

To: Assistant Inspector General for Audits and Evaluations (52)

Thank you for the opportunity to review the Office of Inspector General (OIG) draft report, “VA’s Data Center Consolidation.” The Office of Information and Technology submits the attached written comments. If you have any questions, contact me at (202) 461-6910 or have a member of your staff contact Eddie Pool, Executive Director, Infrastructure Operations, IT Operations and Services, Office of Information and Technology, at (512) 326-6001.

(Original signed by)

Dominic Cussatt

Attachment

For accessibility, the original format of this appendix has been modified to comply with Section 508 of the Rehabilitation Act of 1973, as amended.

**Office of Information and Technology
Comments on OIG Draft Report
VA's Data Center Consolidation (Project No. 2016-04396-DV-0182)**

OIG Recommendation 1: We recommended the Executive in Charge for the Office of Information and Technology consult with the Office of Management and Budget for additional guidance on determining whether servers the Office of Information and Technology excluded were subject to the Data Center Optimization Initiative guidance in its June 2017 policy memorandum, "Data Center Development Freeze".

November 2018 Comments: Concur. Shortly after the referenced June 2017 policy memorandum was published, the Office of Information and Technology (OIT), in concert with the Office of Management and Budget (OMB), evolved its data center inventory collection methods to become more accurate and efficient for both the Department of Veterans Affairs (VA) and OMB. This new program was designed to collect relevant information necessary to properly analyze and determine whether servers are subject to the Data Center Optimization Initiative (DCOI). Throughout this process, VA consulted with OMB.

More so, VA worked with OMB to adopt a categorization process to ensure non-severable infrastructure or computer equipment solely purposed for providing onsite direct patient care are properly categorized and reported to OMB. It is with this effort that OMB has modified the definition of a data center, as stated in the November 2018 Integrated Data Collection (IDC). To support the above comments, find the attached briefing to OMB from November 2017, "OMB Brief 11-2017..." as well as the modified definition of a data center as stated in the November 2018 IDC instructions on page 14, "OMB IDC Instructions...".

Status: Complete. OIT holds this recommendation has been implemented and requests closure.

OIG Recommendation 2: We recommended the Executive in Charge for Office of Information and Technology ensure the facilities' Chief Information Officers effectively communicate Data Center Optimization Initiative requirements to all staff responsible for VA data centers.

November 2018 Comments: Concur. OIT revamped the VA data center consolidation and optimization program. OIT's new program focuses on educating Area Managers (formerly known as Facility Chief Information Officers) and staff responsible for VA data centers on the DCOI requirements. To do this, the team responsible for developing the new program intimately worked with Area Managers across the VA enterprise to gain insight into challenges faced by Area Managers to effectively communicate DCOI standards and reporting requirements to non OIT staff. For supporting documentation, see attachment "Memo – New Program, Artifact Rec 2".

Status: Complete. OIT holds this recommendation has been implemented and requests closure.

OIG Recommendation 3: We recommended the Executive in Charge for the Office of Information and Technology develop a mechanism for validating the accuracy and completeness of reported data center information to the Office of Information and Technology National Data Center Program team.

November 2018 Comments: Concur. Since the audit took place in 2016, OIT developed a mechanism for validating the accuracy and completeness of reported data center information to OMB. This upgraded methodology was designed to meet OMB reporting requirements for the data center inventory and collect relevant information to properly analyze, validate, and categorize computer rooms. This included leveraging feedback from Area Managers (formerly known as Facility Chief Information Officers) to build a user-friendly tool to collect input for the data center inventory, making it easier for staff to report. The new

program also focused on educating Area Managers and non-OIT stakeholders on federal data center inventory requirements to further improve accuracy and efficiency of reported data center information. To illustrate this effort, please see the attachment, “Draft VA Inventory – June, Artifact Rec 3”. Note, this is not a current version of VA’s inventory and should not be used for formal analysis. This artifact merely illustrates the new mechanism for validating the accuracy and completeness of reported data center information. In addition, see the attachment “Memo – New Program, Artifact Rec 3”.

As a result of this new program, VA was able to leverage the accurate inventory to make informed decisions on consolidating and optimizing data centers. For example, VA closed 78 data centers in FY 2018, a significant increase from the 24 data centers closed in FY 2017.

Status: Complete. OIT holds this recommendation has been implemented and requests closure.

OIG Recommendation 4: We recommended the Executive in Charge for the Office of Information and Technology, in conjunction with VA’s Administrations, establish a process, to facilitate a VA-wide inventory of data centers, including those outside the direct control and ownership of the Office of Information Technology.

November 2018 Comments: Concur. During the two-year period that the VA Office of Inspector General (OIG) took to conduct this audit, OIT worked across the department to revamp the program to collect VA-wide inventory of data centers. VA’s data center inventory collection methods have evolved in order to become more accurate and efficient for both VA and OMB. The updated process to collect inventory is inclusive of data centers that are both within and outside the direct control and ownership of OIT.

It was out of this successful effort that OIT and non OIT staff collectively reported over 1,000 computer rooms to VA’s inventory; many of which are computer rooms maintained by non OIT staff and contain servers that exclusively support clinical care. However, many of these clinical server rooms will not be subject to many of the consolidation requirements due to OMB’s modified definition of a data center as stated in OIT’s comments to Recommendation 1.

Please see the two attachments to support this claim, “Draft VA Inventory...” and “OMB Brief 11-2017...”. Note, the attached spreadsheet is not a current version of VA’s inventory and should not be used for formal analysis. This artifact merely illustrates the new mechanism for validating the accuracy and completeness of reported data center information.

Status: Complete. OIT holds this recommendation has been implemented and requests closure.

OIG Recommendation 5: We recommended the Executive in Charge for the Office of Information and Technology ensure VA’s Data Center Optimization Initiative strategic plan is complete and establish a timeline that clearly defines how VA plans to achieve OMB’s \$85.35 million cost savings and data center closures targets, and optimization performance metrics for energy metering and power usage effectiveness.

November 2018 Comments: Non-concur. During monthly program update meetings held between OIT and OMB, OIT discussed the feasibility and financial impact associated with meeting OMB FY2017 and FY2018 targets for cost savings, data center closures, energy metering, and power usage effectiveness (PUE).

Given VA’s environment, the majority of VA’s data center closures are due to consolidation efforts (i.e. moving servers from one room to another) rather than the elimination of physical space. OMB agreed that the target of \$85.35M would not be feasible for VA to achieve; therefore, VA’s Data Center Optimization Initiative strategic plan does not include a path to meet this target.

When discussing energy metering and PUE goals, OMB agreed that the costs associated with capturing power consumption across VA would surpass any potential savings. Updated OMB guidance for data center optimization will show modified metrics for energy metering, and no metrics associated with consolidation, optimization, or energy efficiency. OMB provided VA with highlights from the new guidance, attached.

Status: OIT does not agree with this recommendation and requests closure.

OIT Comments on the OIG Draft Report Findings:

General Comment: There are references to Service Delivery and Engineering (SDE) throughout the draft report. Please note that SDE has undergone transformation and is now IT Operations and Services (ITOPS).

OIG Finding: Page 2, Paragraph 2, “GAO’s September 2014 report, “Data Center Consolidation: Reporting Can Be Improved to Reflect Substantial Planned Savings, GAO-14-713,” found VA investment funding for all phases of their consolidation plan had not been available as initially scheduled. As a result, VA’s consolidation plans had to evolve to address the risk of continued funding shortfalls so that progress could continue to be made toward consolidation goals. In addition, GAO found VA did not report all data center consolidation cost savings to OMB in accordance with established guidelines.”

Comments: The recommendation in this report has been closed as implemented by GAO. VA reports data center consolidation cost savings and avoidances to OMB in accordance with established guidance. OIT requests that the draft report be updated to reflect this.

OIG Finding: Page 2, Paragraph 4, “GAO’s May 2017 report, “Data Center Optimization: Agencies Need to Complete Plans to Address Inconsistencies in Reported Savings, GAO-17-388,” found VA’s DCOI strategic plan only partially addressed all five elements required by the OMB memorandum implementing FITARA. The strategic plan did not include the dollar amounts for their investments in data center consolidation and optimization as required by OMB’s guidance. In addition, OMB found VA’s Chief Information Officer (CIO) statement was not available publicly on their website. As a result, GAO recommended that the Secretary of VA take action to complete the missing elements in their respective strategic plan, including addressing any identified challenges, and submit their completed strategic plan to OMB.”

Comments: The recommendation in this GAO report has been closed as implemented by GAO. VA completed the missing elements in the DCOI strategic plan, including addressing identified challenges and explanations for unmet planned values, and submitted the completed DCOI plan to OMB. OIT requests that the draft report be updated to reflect this.

OIG Finding: Page 3, Paragraph 1. Finding 1: VA Did Not Meet the Data Center Consolidation and Optimization Requirements of FITARA

The OIG found VA’s implementation of the DCOI (a key initiative within FITARA) did not:

- Include accurate data center inventories. The audit team projected that 860 data centers VA-wide were not reported to OMB.

Comments: Non-concur with this finding. In September 2017, the Office of Information Technology (OIT) evolved its data center inventory collection methods to become more accurate and efficient for both the Department of Veterans Affairs (VA) and the Office of Management and Budget (OMB). The improved data collection methodology was designed to meet the OMB inventory mandate and collect relevant information necessary to properly analyze and categorize reported computer rooms in support of VA’s data center consolidation strategy. The revamped program focused on educating Area Managers

(formerly known as Facility Chief Information Officers) and key stakeholders on the federal data center inventory requirements. Additionally, the new program used feedback from Area Managers to build a user-friendly tool to collect data center inventory. It was out of this effort that VA collected over 1,000 computer rooms, many of which were inappropriately categorized as data centers under OMB's Memo M-16-19. As a result, it was decided by both OMB and VA to not report that number for the Integrated Data Collection (IDC) DCOI Inventory. Under OMB's Memo M-16-19, many reportable computer rooms containing servers exclusively supporting clinical care are currently subject to the same consolidation or optimization requirements as traditional data centers. To address this challenge, OIT worked with OMB to adopt a categorization process to ensure non-severable infrastructure or computer equipment solely purposed for providing onsite direct patient care are properly categorized and reported to OMB, and excluded from certain OMB metrics. Additionally, this collaborative effort between OIT and OMB included a joint visit to the Sacramento VA Medical Center for a tour to illustrate the way in which certain rooms are treated for optimization and consolidation benchmarks or metrics. Because of the efforts described above, VA has an accurate inventory and OMB is issuing new guidance to adjust reporting requirements to align with the Federal environment.

- Include a sufficient plan for meeting the consolidation requirement. OMB's FY 2018 target was 56 closures of tiered data centers and 74 closures of non-tiered centers. However, VA's planned goal was to achieve 35 tiered closures and 50 non-tiered closures.

Comments: Non-concur with this finding. These conditions occurred because the definition of a data center was flawed for medical centers and optimization objectives were not obtainable. In partnering with the Veterans Benefits Administration and Veterans Health Administration, the Office of Information Technology (OIT) led the effort to achieve the Office of Management and Budget (OMB) goals. The VA exceeded its goals to achieve a total of 68 closures by closing 78 data centers in FY 2018, the number of closures is significantly higher than the 24 data centers closed in FY 2017.

- Include cost savings targets in its strategic plan for FYs 2017 and 2018 or a sufficient strategy to meet OMB's established overall cost savings target for VA of \$85.35 million by the end of FY 2018.

Comments: Non-concur with this finding. During monthly program update meetings held between Office of Information and Technology (OIT) and the Office of Management and Budget (OMB), OIT discussed the feasibility and financial impact associated with meeting OMB FY2017 and FY2018 targets for cost savings. Given VA's environment, the majority of VA data center closures are due to consolidation efforts (i.e. moving servers from one room to another) rather than the elimination of physical space. OMB agreed that the target of \$85.35M would not be feasible for VA to achieve. OMB will work with agencies to update cost savings targets in FY2019.

- Include a sufficient plan to meet optimization targets for data centers at existing VA facilities. OMB's FY 2018 target for energy metering was 100 percent of the gross square floor area of the tiered data centers⁷. VA's planned goal was only to have 50 percent energy metered. In addition, VA does not plan on achieving OMB's power usage effectiveness (PUE) target⁸ of 1.5 by the end of FY 2018.

Comments: Non-concur with this finding. This recommendation should be removed. The Office of Information and Technology (OIT) never agreed with the Office of Management and Budget (OMB) power metering requirements since monitoring every server from computer rooms across the VA would cost the government more money than it would save. New OMB guidance for FY 2019 will remove the power metering objective from reporting requirements.

OIG Contact and Staff Acknowledgments

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