Audit Report

Controls Over Retired Business Applications

Table of Contents

Highlights

Objective

Our objective was to assess the effectiveness of the U.S. Postal Service's business application retirement process.

The Postal Service uses a vast network of systems to collect, process, transport, and deliver nearly half of the world's mail. The majority of these systems are classified as business applications because they support essential business functions, such as mail processing and delivery. To improve business operations and reduce cyber risk, the Postal Service invests in new and innovative applications and retires those that are outdated and no longer supported.

We reviewed 13 of the 28 business applications retired during fiscal years (FY) 2018-2020 to determine if they followed requirements for application retirement. We also reviewed the new system retirement process implemented during our audit to evaluate whether it aligned with best practices. Additionally, to determine the effectiveness of the new process, we reviewed the two business applications currently in the retirement phase for FY 2021.

Finding

The Postal Service did not have effective controls in place to ensure applications were retired and secured according to internal policy.

We found the Postal Service did not retire applications and remove their components from the network as required by policy and as defined by their retirement process. Specifically, we identified 10 of 13 retired business applications (77 percent) for which system documentation was incomplete and hardware and user accounts were still active on the network.

"We found the Postal Service did not retire applications and remove their components from the network as required by policy and as defined by their retirement process."

Further, the Corporate Information Security Office conducts weekly security reviews to identify vulnerabilities on the network. During these weekly reviews, they identified security risks such as administrative accounts and servers associated with retired applications on the network. The Information Security Office then selected a sample of 125 of the total 4,336 retired applications within the application management database and found that all had active components on the network. In May 2020, the Information Security Office presented this data to the Information Technology (IT) Performance Achievement group for remediation. As of April 2021, the Information Security Office identified active components on the network for the remaining 4,211 applications. However, the IT Performance Achievement group has not developed a plan to review and remove the identified retired application components.

This occurred because the IT Performance Achievement group did not prioritize removal of retired application components from the network.

In January 2021, the Postal Service implemented a new system retirement process that aligned with best practices. However, we found the process did not include effective controls to ensure retirement tasks are completed by their due dates. Specifically, of the two applications in the retirement phase, one application exceeded its due date by 31 days with about 57 percent of the tasks being incomplete. This occurred because the new process did not include steps to follow-up with task owners to ensure they were completing tasks by the due dates.

Retired applications with active components remaining on the network increases the risk that a threat actor could exploit vulnerabilities and gain access to Postal Service systems and sensitive data.

During our audit, the IT Performance Achievement group implemented a formal process to ensure completion of retirement tasks by their due dates. The new process started in April 2021 and includes weekly meetings with all stakeholders, weekly reports with updates on tasks statuses and due dates, and coordination with task owners to prepare timelines to avoid missed deadlines.

Recommendation

We recommended management develop a formal plan with target dates to review and remove active components for all applications retired before January 2021.

Transmittal Letter

July 7, 2021

MEMORANDUM FOR: MARC D. McCRERY
                              VICE PRESIDENT, TECHNOLOGY APPLICATIONS

Erica Wallace

FROM: Erica Wallace
                         Acting Deputy Assistant Inspector General
                          for Inspection Service and Cybersecurity & Technology

SUBJECT: Audit Report – Controls Over Retired Business Applications
                         (Report Number 20-289-R21)

This report presents the results of our audit of Controls Over Retired Business Applications.

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Laura Roberts, Acting Director, Cybersecurity & Technology, or me at 703-248-2100.

Attachment

cc: Corporate Audit Response Management
     Postmaster General

Results

Introduction/Objective

This report presents the results of our self-initiated audit of Controls Over Retired Business Applications (Project Number 20-289). Our objective was to assess the effectiveness of the U.S. Postal Service's business application retirement process. See Appendix A for additional information about this audit.

Background

The Postal Service uses a vast network of people and technologies to collect, process, transport, and deliver nearly half of the world's mail. The Postal Service relies on about 32,000 facilities connecting with hundreds of systems to support mail processing and delivery, technology operations, and customer service.[1] These systems are classified into four categories: Business Applications, Mail Processing Applications, Content Websites, and Infrastructure Services.[2] The majority are business applications which support essential business functions such as human resources, finance, and marketing.

With one of the world's largest information technology (IT) infrastructures, the Postal Service is continuously leveraging technology to improve business operations. To reduce cyber risk and manage future innovations, the Postal Service invests in new and innovative applications.

Application retirement plays a vital role in consolidating and modernizing application portfolios. Some reasons for embracing application retirement strategies include:

- Cost Reduction – Retiring applications and removing hardware and software eliminates recurring costs such as licensing and maintenance.

- Application Consolidation – Removing redundant applications streamlines reporting and ensures unsupported software is not running on the network.

- Risk Reduction – Retiring outdated applications reduces the risk of not having personnel or vendors with the skills to administer and support them.[3]

The Postal Service's decision to retire an application is influenced by several factors, such as contract renewal, technology enhancements, or new business requirements. During fiscal years (FY) 2018-2020, the Postal Service retired about 28 business applications.[4]

> " *While conducting weekly security reviews of the network, the Corporate Information Security Office (CISO) identified several security risks associated with retired applications.* "

While conducting weekly security reviews of the network, the Corporate Information Security Office (CISO) identified several security risks associated with retired applications. See Figure1 for these security risks.

Figure 1. Retired Application Security Risks

Source: Application Retirement Chief Information Office (CIO) Update May 1, 2020.

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1   *Postal Facts 2020 Companion,* 2020.
2   Software programs that access, process, and store data; supports mail processing equipment; websites that contain data and downloadable files; and services that supports management of the IT environment, respectively.
3   *A Practical Guide to Legacy Application Retirement: Archiving Data with the Informatica® Solution for Application Retirement*, September 2013.
4   Enterprise Information Repository, January 2021.

As a result, in January 2020, they started an application retirement campaign to enhance the cybersecurity posture; and assess, remediate, and retire applications by:

- Developing a process to identify and remediate active components on the network.

- Identifying the application retirement process owner.

- Securing technology through remediation efforts.

- Automating the application retirement process to enable productivity and data integrity.

- Developing step-by-step processes to raise knowledge and awareness.[5]

On May 1, 2020, the CISO presented the results of their application retirement campaign to the Chief Information Office, Vice President of IT, and Business Services Organization. The campaign identified areas for improvement in the application retirement process through collaboration with other IT teams, and the need for a formal review process.

The IT Performance Achievement group owns the application retirement process and, in January 2021, implemented an automated application retirement solution outlining the processes, standards, roles, and activities required to retire an application. Additionally, they are responsible for reviewing and removing components from the network for retired applications.

Finding #1: Application Retirement Process

The Postal Service did not have effective controls to ensure management retired and secured applications according to internal policy. We found the Postal Service did not retire applications and remove their active components from the network according to policy[6] and as defined by the system retirement process.[7] Specifically, we identified 10 of 13 retired business applications

(77 percent) with incomplete system documentation and 93 components, such as hardware and user accounts, that were still active on the network.

During their campaign, the Information Security Office reviewed a sample of 125 of 4,336 applications in retirement status in the application management database. They found that all 125 applications had active components on the network. For example, they identified active user accounts, which an attacker could exploit to gain direct access to the application server. As of April 2021, the Information Security Office identified active components for the remaining 4,211 applications; however, the IT Performance Achievement group has not developed a plan to review and remove the components. According to the Postal Service's System Retirement Process,[8] management should review all application components before retiring an application.

This occurred because the IT Performance Achievement group did not prioritize the review and removal of retired application components from the network. Applications that are not properly retired with active components remaining on the network increases the risk that a threat actor could exploit vulnerabilities and gain access to Postal Service systems and sensitive data.

> "*Applications that are not properly retired with active components remaining on the network increases the risk that a threat actor could exploit vulnerabilities and gain access to Postal Service systems and sensitive data.*"

Recommendation #1
We recommend the **Vice President, Technology Applications**, develop a formal plan with target dates to review and remove active components from the network for applications retired before January 2021.

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5   *Application Retirement, CIO Update*, May 2020.
6   Handbook AS-805-A, *Information Resource Certification and Accreditation Process*, 4-9, Phase 9 – Retire, March 2021.
7   USPS *System Retirement Process*, Version 7.7.2, October 2018.
8   USPS *System Retirement Process*, Version 7.7.2, October 2018.

Finding #2: New Application Retirement Process

The IT Performance Achievement group implemented a new automated application retirement process to strengthen controls and provide greater visibility into retirement activities. We found the new process aligns with best practices.[9] For example, the process:

- Establishes ownership over retirement policies and processes.

- Appoints an individual to validate that all tasks were completed before retiring an application.

- Uses ServiceNow[10] to streamline and track retirement tasks.

> "*The IT Performance Achievement group implemented a new automated application retirement process to strengthen controls and provide greater visibility into retirement activities.*"

Although the new process aligns with best practices, we found the process does not include effective controls to ensure retirement tasks are completed by their due dates. Specifically, of the two applications in the new retirement process, one exceeded its planned end date by 31 days with about 57 percent of the tasks incomplete. According to the new System Retirement Process,[11] all retirement tasks must be completed by the assigned due dates. This occurred because the new process did not include steps to follow-up with task owners to ensure they were completing tasks by their due dates.

During our audit, we confirmed the IT Performance Achievement group took corrective action by implementing a formal process[12] to ensure completion of retirement tasks by their due dates. The new process began in April 2021 and includes recurring weekly meetings with all stakeholders, generation of weekly reports with statuses and due dates, and coordination with task owners to prepare timelines to avoid delays and missing deadlines. Therefore, we will not be issuing a recommendation for this finding.

Management's Comments

Management agreed with our findings and recommendation in the report.

Regarding recommendation 1, management stated they will develop a plan to review and remove active components from the network for applications retired prior to January 2021. The target implementation date is July 16, 2021.

See Appendix B for management's comments in their entirety.

Evaluation of Management's Comments

The U.S. Postal Service Office of Inspector General (OIG) considers management's comments responsive to the recommendation in the report.

All recommendations require OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective action is completed. Recommendation 1 should not be closed in the Postal Service's follow-up tracking system until the OIG provides written confirmation that the recommendation can be closed.

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9   Gartner Article, *"Decommissioning Applications: The Emerging Role of the Application Undertaker"*, Stefan Van Der Zijden, Bill Swanton, and Deacon D.K Wan, Dated: September 18, 2019.
10 A tool for Change, Incident, Problem, Release, Configuration, and Service request management.
11 New EIR Retirement Workflow Process Within ServiceNow, January 2021.
12 USPS CIO Enterprise Information Repository Retirement Process, April 2021.

Appendices

Click on the appendix title below to navigate to the section content.

Appendix A: Additional Information

Objective, Scope, and Methodology

Our scope included business applications retired during FYs 2018-2020. During this period, the Postal Service retired 40 applications, including 28 classified as business. We selected a judgmental sample of 13 of the 28[13] retired business applications for further review. We based our sample on the business impact criticality level[14] (high, moderate, and low). We also reviewed the two business applications retired after implementation of the new system retirement process effective January 13, 2021.

To accomplish our objective, we:

- Interviewed Postal Service personnel to gain an understanding of their application retirement process.

- Reviewed Postal Service retirement policies, processes, and procedures to identify controls over retiring business applications.

- Analyzed retired business applications to verify retirement activities were performed according to internal policy.

  - Reviewed retirement phase documentation stored in the Technology Solutions Life Cycle Artifacts Library.[15]

  - Observed the CISO discovery process for identifying components on the network.

- Evaluated the new system retirement process to determine if it aligned with industry best practices.

We conducted this performance audit from September 2020 through July 2021 in accordance with generally accepted government auditing standards and included such tests of internal controls as we considered necessary under the circumstances. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. We discussed our observations and conclusions with management on June 16, 2021, and June 16, 2021 and included their comments where appropriate.

We assessed the reliability of data from the Postal Service's application management database by comparing our data extractions with data provided by the Postal Service. We also assessed the results of the CISO discovery process through observation and review of documentation. We determined that the data were sufficiently reliable for the purposes of this report.

Prior Audit Coverage

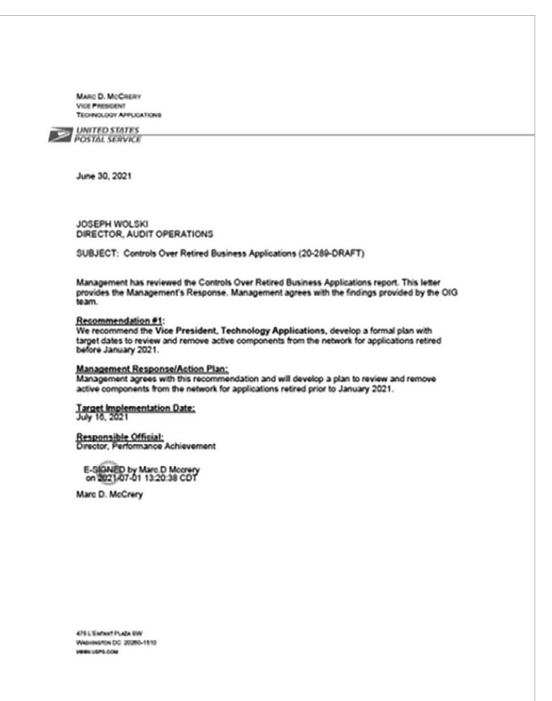The OIG did not identify any prior audits or reviews related to the objective of this audit issued within the last five years.

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13 Enterprise Information Repository, January 2021.
14 Used to determine the security requirements for protecting an information resource and the need for continuous availability.
15 A document repository which contains finalized project deliverables for all Technology Solutions.

Appendix B: Management's Comments

MARC D. McCRERY
VICE PRESIDENT
TECHNOLOGY APPLICATIONS

🦅 UNITED STATES
POSTAL SERVICE

June 30, 2021

JOSEPH WOLSKI
DIRECTOR, AUDIT OPERATIONS

SUBJECT: Controls Over Retired Business Applications (20-289-DRAFT)

Management has reviewed the Controls Over Retired Business Applications report. This letter provides the Management's Response. Management agrees with the findings provided by the OIG team.

Recommendation #1:
We recommend the **Vice President, Technology Applications**, develop a formal plan with target dates to review and remove active components from the network for applications retired before January 2021.

Management Response/Action Plan:
Management agrees with this recommendation and will develop a plan to review and remove active components from the network for applications retired prior to January 2021.

Target Implementation Date:
July 16, 2021

Responsible Official:
Director, Performance Achievement

E-SIGNED by Marc D Mccrery
on 2021-07-01 13:20:38 CDT

Marc D. McCrery

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