

STATE OF FLORIDA AUDITOR GENERAL

Information Technology Operational Audit

Report No. 2018-072
December 2017

NORTHWEST FLORIDA STATE COLLEGE



Sherrill F. Norman, CPA
Auditor General

Board of Trustees and President

During the period May 2017 through August 2017, Dr. Devin Stephenson served as President of Northwest Florida State College and the following individuals served as Members of the Board of Trustees:

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Vacant ^a	Okaloosa
Vacant ^b	Walton

^a Position vacant from 10-16-16, through 8-25-17.

^b Position vacant from 1-1-16, through 8-25-17.

The team leader was Vikki Mathews, CISA, and the audit was supervised by Heidi Burns, CPA, CISA.

Please address inquiries regarding this report to Arthur Hart, CPA, Audit Manager, by e-mail at arthart@aud.state.fl.us or by telephone at (850) 412-2923.

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NORTHWEST FLORIDA STATE COLLEGE

SUMMARY

This operational audit focused on evaluating selected information technology (IT) controls applicable to the Ellucian Banner® Enterprise Resource Planning (Banner® ERP) system and the Ellucian Luminis Platform software (portal). As summarized below, our audit disclosed areas in which improvements in Northwest Florida State College (College) controls and operational processes are needed.

Finding 1: College IT security controls related to user authentication, user account management, and logging and monitoring need improvement to ensure the confidentiality, integrity, and availability of College data and IT resources.

BACKGROUND

The Northwest Florida State College (College) is under the general direction and control of the Florida Department of Education, Division of Florida Colleges, and is governed by State law and State Board of Education rules. A Board of Trustees (Board) governs and operates the College. The Board constitutes a corporation and is composed of members appointed by the Governor and confirmed by the Senate. The College President serves as the executive officer and the corporate secretary of the Board, and is responsible for the operations and administration of the College.

The College uses the Ellucian Banner® Enterprise Resource Planning (Banner® ERP) system for the recording, processing, and reporting of finance, human resources, and student-related transactions. In addition, the College maintains and manages the network domain, application and database servers, and database management system supporting the Banner® ERP system and the Ellucian Luminis Platform software (portal) application and servers.

FINDING AND RECOMMENDATION

Finding 1: Security Controls – User Authentication, User Account Management, and Logging and Monitoring

Security controls are intended to protect the confidentiality, integrity, and availability of data and information technology (IT) resources. Our audit procedures disclosed that certain security controls related to user authentication, user account management, and logging and monitoring need improvement. We are not disclosing specific details of the issues in this report to avoid the possibility of compromising the confidentiality of College data and related IT resources. However, we have notified appropriate College management of the specific issues.

Without appropriate security controls related to user authentication, user account management, and logging and monitoring, the risk is increased that the confidentiality, integrity, and availability of College data and related IT resources may be compromised.

Recommendation: We recommend that College management improve certain security controls related to user authentication, user account management, and logging and monitoring to ensure the confidentiality, integrity, and availability of College data and IT resources.

OBJECTIVES, SCOPE, AND METHODOLOGY

The Auditor General conducts operational audits of educational entities to provide the Legislature, Florida's citizens, public entity management, and other stakeholders unbiased, timely, and relevant information for use in promoting government accountability and stewardship and improving government operations.

We conducted this IT operational audit from May 2017 through August 2017 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for the audit findings and our conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for the audit findings and our conclusions based on our audit objectives.

This IT operational audit focused on evaluating selected IT controls applicable to the Banner® ERP system and portal during the period May 2017 through August 2017. The overall objectives of the audit were:

- To evaluate the effectiveness of selected IT controls in achieving management's control in achieving management's control objectives in the categories of compliance with controlling laws, administrative rules, and other guidelines; the confidentiality, integrity, availability, relevance, and reliability of data; and the safeguarding of IT resources.
- To identify statutory and fiscal changes that may be recommended to the Legislature pursuant to Section 11.45(7)(h), Florida Statutes.

This audit was designed to identify, for the IT systems and controls included within the scope of the audit, deficiencies in management's internal controls; instances of noncompliance with applicable governing laws, rules, or contracts; and instances of inefficient or ineffective operational policies, procedures, or practices. The focus of this audit was to identify problems so that they may be corrected in such a way as to improve government accountability and efficiency and the stewardship of management. Professional judgment has been used in determining significance and audit risk and in selecting the particular IT controls, legal compliance matters, and records considered.

As described in more detail below, for the IT systems and controls included within the scope of this audit, our audit work included, but was not limited to, communicating to management and those charged with governance the scope, objectives, timing, overall methodology, and reporting of the audit; obtaining an understanding of the IT systems and controls; exercising professional judgment in considering significance and audit risk in the design and execution of the research, interviews, tests, analyses, and other procedures included in the audit methodology; obtaining reasonable assurance of the overall sufficiency and appropriateness of the evidence gathered in support of the audit findings and our conclusions; and reporting on the results of the audit as required by governing laws and auditing standards.

This audit included the selection and examination of IT system controls and records. Unless otherwise indicated in this report, these items were not selected with the intent of statistically projecting the results,

although we have presented for perspective, where practicable, information concerning relevant population value or size and quantifications relative to the items selected for examination.

An audit by its nature does not include a review of all records and actions of College management and staff and, as a consequence, cannot be relied upon to identify all instances of noncompliance, fraud, abuse, or inefficiency.

In conducting this audit we:

- Interviewed College staff and reviewed documentation applicable to College operations for the Banner® ERP system infrastructure to obtain an understanding of:
 - The network architecture and IT infrastructure for platforms hosting the Banner® ERP system and portal.
 - The Banner® ERP system portal.
 - Authentication controls applicable to the College's IT infrastructure, including selected hardware, operating systems, network, and database related to the Banner® ERP system and portal.
 - System software and network infrastructure component change control procedures and processes related to the Banner® ERP system and portal.
 - Application change control procedures and processes related to the Banner® ERP system.
 - Logging and monitoring of security events and privileged administrative actions for the Banner® ERP system, portal, and supporting infrastructure.
- Evaluated the effectiveness of logical access controls, including periodic reviews for the servers, network domain, and database supporting the Banner® ERP system and portal.
- Examined and evaluated the appropriateness of administrative privileges for the College's network domain as of May 31, 2017.
- Examined and evaluated the appropriateness of accounts and associated administrator access privileges granted as of May 19, 2017 to:
 - 71 accounts assigned to application servers.
 - 39 accounts assigned to the database server.
 - 95 accounts assigned to the portal servers.
 - 32 accounts assigned to the portal administrative server.
 - 32 accounts assigned to the portal central authentication server.
- Examined and evaluated the appropriateness of services enabled on the application, portal, and database servers as of May 24, 2017. Specifically, we examined and evaluated:
 - 30 services on the application servers.
 - 10 services on the database server.
 - 175 services on the portal servers.
 - 60 services on the portal administrative server.
 - 58 services on the portal central authentication server.
- Examined and evaluated the appropriateness of accounts and privileges granted to the database as of May 16, 2017. Specifically, we examined and evaluated:

- 58 accounts that were assigned selected administrative privileges.
- 14 accounts with database privileges that allow direct database sign-on and the ability to read any data.
- Evaluated user authentication controls related to the College's IT infrastructure supporting the Banner® ERP system and portal.
- Evaluated the effectiveness of the College's logging and monitoring controls, including the Banner® ERP system and the supporting IT infrastructure.
- Evaluated the effectiveness of the College's change management controls related to the authorization, testing, and approval of Banner® ERP system changes.
- Evaluated the effectiveness of system software and network infrastructure component change control procedures related to the College's IT infrastructure applicable to the Banner® ERP system and portal.
- Communicated on an interim basis with applicable officials to ensure the timely resolution of issues involving controls and noncompliance.
- Performed various other auditing procedures, including analytical procedures, as necessary, to accomplish the objectives of the audit.
- Prepared and submitted for management response the findings and recommendations that are included in this report and which describe the matters requiring corrective actions. Management's response is included in this report under the heading **MANAGEMENT'S RESPONSE**.

AUTHORITY

Section 11.45, Florida Statutes, provides that the Auditor General may conduct audits of the IT programs, activities, functions, or systems of any governmental entity created or established by law. Pursuant to the provisions of Section 11.45, Florida Statutes, I have directed that this report be prepared to present the results of our IT operational audit.



Sherrill F. Norman, CPA
Auditor General

MANAGEMENT'S RESPONSE



NORTHWEST FLORIDA STATE COLLEGE

100 College Boulevard • Niceville, FL 32578-1295 • (850) 678-5111 • www.nwfsc.edu

December 18, 2017

Ms. Sherrill F. Norman, CPA
Auditor General
Suite G74, Claude Pepper Building
111 West Madison Street
Tallahassee, FL 32399-1450

Dear Ms. Norman,

We are pleased to respond to the preliminary and tentative audit findings and recommendations concerning the Office of the Auditor General's information technology operational audit of Northwest Florida State College (NWFSC). Our response is below:

Finding 1: Security Controls – User Authentication, User Account Management, and Logging and Monitoring

Recommendation: We recommend that College management improve certain security controls related to user authentication, user account management, and logging and monitoring to ensure the confidentiality, integrity, and availability of College data and IT resources.

Response: NWFSC management agrees with the findings and recommendation and we have taken corrective actions to improve security controls. NWFSC IT will continue to monitor and improve security measures to ensure the confidentiality and security of data stored in NWFSC IT systems.

If you have any questions or require additional information, please contact Cole Allen, Chief Information Officer, at 850-729-5332.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Stephenson", written over a horizontal line.

Dr. Devin Stephenson
President
Northwest Florida State College

OFFICE OF THE PRESIDENT | DR. DEVIN STEPHENSON

NWF State College Fort Walton Beach Campus • (850) 863-6500 Chautauqua Center, DeFuniak Springs • (850) 892-8100
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