



Illinois Department of
Innovation & Technology

Illinois IES: Recharged for Residents

Enterprise Technology Management

State of Illinois
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EXECUTIVE SUMMARY

The Integrated Eligibility System (IES) in Illinois is a public benefits eligibility and case management system that is a joint initiative between the Illinois Department of Healthcare and Family Services (HFS) and the Illinois Department of Human Services (DHS), with technical support provided by the Illinois Department of Innovation & Technology (DoIT). Eligible Illinoisans may apply for case, medical, and Supplemental Nutrition Assistance Program (SNAP) benefits online. Three million Illinoisans depend upon the 24-hour availability of the system. The “refresh” of the platform was driven by an increasingly unreliable infrastructure supporting the application, software, hardware, and Commercial-Off-The-Shelf (COTS) products that required modernization. While the time was right for modernization, the update also presented an opportunity for the application to come into compliance with federal systems and best practices.

IDEA

The IES Technical Refresh Project was executed as a necessity to resolve issues with instability of the existing legacy environments, reduce unexpected downtimes, resolve security Plan of Action and Milestones (POAMS), and maintain Federal Centers for Medicare & Medicaid Services (CMS) Authority to Connect (ATC) to the CMS data sharing hub. In addition, the legacy environment hardware had become unstable, and the system was at significant risk of not recovering in the event of a planned or unplanned outage. The legacy servers were out of support and could not be patched or securely maintained.

The plan was to build the IES environments on new hardware in DoIT’s VMWare Cloud Foundation (VCF) and upgrade the COTS products to current vendor supported versions. The versions of COTS in the legacy environment were beyond end of life. These new environments would enhance the IES maintenance and operation capabilities by increasing the number of environments for development and testing. The redesign of environments on new hardware and software in the VCF would also allow for easier maintenance with less impact to the 24 x 7 access for the public-facing Application for Benefits Eligibility (ABE) portal and critical IES operations.

From a business perspective, there was significant risk in continuing to run critical systems in the legacy environment which housed unstable, unreliable hardware and infrastructure, beyond end-of-life COTS and other software versions no longer supported. Adding to this risk were the critical POAMS reported to CMS and the possible inability for Illinois to maintain its ATC to the CMS data sharing hub. This hub is critical to IES as it provides verification of lawful presence, proof of identification, employment status, etc., allowing for the accurate determination of eligibility and level of benefits for Illinois residents. Technical Refresh has helped ensure no disruption in communications with more than three million SNAP, cash, and medical recipients across the state.

The IES Technical Refresh Project was undertaken with a desire to avoid impact to end users. As a result, legacy system modernization efforts revolved around infrastructure, databases, servers, COTS products, and security rather than application functionality. This approach allowed Illinois to transition through this modernization effort with zero impact or change to all end users and the two state agencies providing services to Illinois residents. The methodologies utilized can easily transfer to other states seeking to achieve similar upgrades to software, infrastructure, testing, deployment and security best practices with minimal disruption to daily service.

IMPLEMENTATION

The project management approach was a hybrid between the waterfall and agile methodologies. Multiple work streams were executed to complete infrastructure and database buildouts, COTS procurement and installation, environment deployments, and validation across business units. A dedicated Project Management Office was established to ensure that all milestones were accomplished timely, and to ensure communication channels between technical experts, program managers, and executive leadership remained open and frequent.

The goals of the IES Technical Refresh Project were multi-faceted and primarily designed to provide a stable environment to house the critical IES system utilized by thousands of residents in Illinois each day.

Specifically, the project was intended to accomplish the following:

- Improve hardware infrastructure and allow for server hardening
- Complete all necessary COTS software infrastructure upgrades
- Enhance disaster recovery capabilities
- Provide environment improvements for release testing
- Resolve POAMs and security findings
- Satisfy CMS ATC compliance

Throughout project implementation, there were multiple conversations and meetings to ensure all issues, risks, and goals were accomplished:

- Morning stand-ups to facilitate discussion of critical and pressing issues that needed immediate resolution.
- Daily technical meetings to facilitate resolution of all technical issues and to ensure next project milestone steps were being followed.
- Weekly scheduled touchpoints to ensure overall project milestones were being met.
- Bi-weekly executive leadership meetings to bring awareness of key decision points, such as project scope, issues, risks, and budget.

DoIT, HFS and DHS executives, IES technical teams and management, procurement teams from the three agencies, and internal and vendor project management resources came together during the duration of the project to keep the project moving forward and meeting milestones. This project was a true collaboration of many internal and external stakeholders. The internal stakeholders brought funding from state and federal coffers to make the project a financial possibility.

The IES Technical Refresh Project was originally divided into ten phases. After completing Phase 1 and a portion of Phase 2, the planning for Phase 3 revealed that many of the original planned phases had interdependencies that needed to be executed concurrently. The decision was quickly made to execute all remaining technical components as part of Phase 3.

IMPACT

The IES Technical Refresh Project completely replaced the outdated legacy systems through which the agencies managed the mission critical SNAP, cash, and medical assistance benefits essential to three million customers across the state. The legacy systems were unstable and repeatedly suffered

unexpected downtimes which negatively affected residents' ability to apply for and manage their benefits.

The legacy system was also not able to meet disaster recovery failover timelines that were critical to the business needs. This gap was represented in multiple audit findings. The team was tasked with building IES Tech Refresh environments on new hardware in DoIT's VCF and upgrading COTS products to current vendor supported versions. These new environments enhanced the IES maintenance and operations capabilities by increasing the number of environments for testing. The redesign of environments on new hardware and software in the VCF allows for easier maintenance with less impact to IES operations.

Environmental Improvement:

- The volume of environments available for the state to conduct development and testing has increased from seven legacy environments to twelve environments.
- Once on the new web application servers, the state was able to apply security hardening to lower the risk of compromise.
- Decommissioning of the legacy IES servers closed vulnerabilities for out-of-support operating systems, as well as missing updates and security patches.
- Upgrade of the application to a newer version of Java allowed for fixes and upgrades that were not previously possible.
- COTS software products, which support multiple functions in the application, can now be updated as needed.
- The IES is now in a much better position to be compliant with current and future DoIT enterprise security software and federal security and privacy compliance requirements, including Illinois' zero trust strategy and federal multi-factor authentication requirements.
- The modernization of IES puts the system in a much better position for future transition to a cloud solution supported by a vendor.

Enhanced Disaster Recovery Capabilities:

- The state has achieved an eight-hour recovery time objective for the IES application and has improved the ability to failover in the event of a disaster or major outage.

From a security and compliance standpoint, completion of the IES migration project reduced the number of security vulnerabilities dramatically. At the time of decommissioning of the legacy IES, server vulnerabilities included missing patches and upgrades. The modernized IES environment, supported by over 450 AIX, Linux, and Windows servers, combined with multi-factor authentication has already resolved two critical, two high, and seven moderate federal CMS POAMs, and three state audit findings. This is a significant result of the new infrastructure.

As part of the IES Technical Refresh Project, all IES system components are supported. The state has already developed detailed plans for future infrastructure upgrades, regularly scheduled patching maintenance, security vulnerability remediations, as well as application deployments through the end of 2025. Illinois is in constant contact with vendor supported tools to ensure that licensing and upgrades are consistently maintained to allow for a secure and supported system.

As the state looks ahead, the stage is set for continued improvement as shown in the below objectives:

- Executing a full application failover/disaster recovery to the state's data center by Q4 in 2025
- Ensuring IES infrastructure is ready for cloud migration to prepare for 2026-2027

- Employing near real-time visual reporting capabilities for managers and key business leaders to improve decision making
- Introducing a new enterprise solution to replace mainframe-based Content Manager to enhance scalability and stability for correspondence storage.
 - Utilizing Hyperscience Intelligent Optical Character Recognition (iOCR) to enhance the automated scanning process for forms and other correspondence received from citizens in support of their benefits eligibility redeterminations process
 - Expanding the use of Artificial Intelligence (AI) tools, including machine learning capabilities to assist case workers with case error reduction efforts
 - Conducting a full database failover exercise, covering all databases, IES and ABE applications, and COTS components, in late 2025.

The IES Technical Refresh project has improved the state’s ability to effectively support the needs of Illinois residents by replacing unstable, outdated, and unsupported COTS and other software and hardware products, many of which were beyond end of life. This improves the system's security posture in line with DoIT's zero trust policy and helps assure the ability to meet federal security and privacy standards to maintain the application’s ATC to the federal data sharing hub.

For the 3 million Illinoisans who depend upon the public-facing Application for Benefits Eligibility (ABE) portal and 24 x7 access to the benefits eligibility and case management system known as the Integrated Eligibility System (IES), a seamless and transparent upgrade of supporting software and infrastructure was crucial and was accomplished while applications remained up, running and available.