



MILogin

MILogin – Michigan’s Digital Identity Program

Category: Cybersecurity

State: Michigan

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Project completion: January 2021

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Executive Summary

Michigan’s digital identity program, branded as MILogin, was deployed in 2014 in Michigan’s private cloud providing foundational identity services for authentication, single sign on, user identity lifecycle management, coarse-grain authorization, multi-factor authentication, and identity proofing. The initial release in 2014 with limited users of Health and Human Services demonstrated the program’s ability to integrate with a critical state service.

Michigan’s digital identity journey is driven to provide an enterprise identity service to all Michigan agencies and provide an enterprise solution that promotes a consistent and secure experience between the state and its residents. MILogin does this by:

- Creating a single identity for public users, business users, and the state’s internal users that enables access to state services across agencies and systems.
- Promoting a One User One Id model, providing public users owning multiple legacy user ids to consolidate them into a single identity.
- Offering identity assurance and multi-factor authentication (MFA) that allows the assurance level and frequency of MFA to be customized by the individual agency application owners.
- Providing inheritable controls for privacy and security laws and policies compliance, including NIST, HIPAA, IRS 1075.
- Delivering a set of identity services for consumption by all agencies that simplify compliance, decrease agency costs, and enable delivery of a consistent experience for the end user.

With the successful completion of MILogin 2.0 in January 2021, **Michigan completed the largest state enterprise identity platform migration of 8 M public users to a cloud Identity Software as a Service (SaaS) model.** This provided elastic scalability needed to maintain growing critical public services, maintained services during unforeseen surges in demand, eliminated maintenance downtime for public services, and provided access to innovation such as passwordless authentication, biometric factors and identity analytics. The cost optimized structure is forecast to yield 35% cost avoidance annually.

Beyond these benefits, the MILogin digital identity program has demonstrated the capability to integrate with both critical and high-volume systems. It continues to deliver value through increased security, no cost basic onboarding and usage to agencies, centralized regulatory compliance, and a consistent user experience. MILogin 2.0 is foundational to the state’s vision to increase digitization to **provide public users a digital wallet to store digital credentials,** enabling passwordless access and interoperability for Michiganders with private and public organizations.

MILogin 2.0 Accomplishments:

- Provides digital identity services to **9 M users**
- Integrated with **over 300 State systems** across 16 agencies
- Migrated ~8 M citizen userids to cloud identity service
- Drove 35% Cost Avoidance using hybrid cloud Vs legacy program
- Performance tested to 6 X concurrent users over legacy system
- Facilitated \$21.1B in Unemployment Benefits to Michiganders since pandemic¹

¹Michigan Labor and Economic Opportunity Weekly Report: Mar 15, 2020 to Feb 28, 2022

Idea

As more state agency services onboard to the state identity program, the number of citizens accessing digital services has increased. The Covid pandemic acted as a catalyst for increased adoption of digital government services. In Michigan, Unemployment Insurance online applications during the pandemic alone surged to 7600% of pre-pandemic volume.

Studies show that 77% of citizens indicated they would use more government services if they were available digitally², yet only about 30% of government organizations assessed said they had digital capabilities to do so in the same manner as the private sector³.

States must be proactive in planning for scaling up identity services to secure access to digital government services, enacting security practices to protect public users' data, and preventing identity fraud. While existing on-premise hosted identity systems are architected to accommodate 100% or 200% surge in user transactions, events such as the pandemic, natural disasters, legislative changes and policy directives can overwhelm them by generating unpredictable and unprecedented need for state services by public users. The state workforce has also shifted to a hybrid model, which generates added demand for digital services over "off state" network paths.

In December 2018, the MILogin citizen user base of ~3 M public users was projected to grow to 8M to 9 M over the next 2 to 3 years. This was due to onboarding of new public services like vehicle registration, driver license and retirement fund services to MILogin, and expansion of existing Health and Human services and Treasury / Taxation portal services. Continuously expanding existing infrastructure and licenses in the state's data centers while maintaining SLAs and costs was not a sustainable option. It was exacerbated by the unpredictable pattern of demand volume for services.

In this environment, Michigan proactively planned **for increased digital services for 9 million users, elastic scalability, stepped up security, elimination of maintenance downtime, reduction in identity fraud**, and industry standard agency application integration capabilities

- Michigan's enterprise digital identity program focused on migrating 8 M public identities to a **cloud identity service** using a Software as a Service or SaaS model. The state no longer needs to stand up super-sized infrastructure for surges, or to pay for unused capacity during low usage periods.
- The relatively stable user base of ~1 M state workers and business users was migrated to the state's Virtual Data Center.

The state also planned to reduce the Total Cost of Ownership (TCO) of MILogin by 35% by taking advantage of lower cloud identity service costs compared to hosting and maintaining expanded on-premise infrastructure.

Cloud identity models also enables organizations to move much more quickly to adopt identity innovation such as passwordless authentication for citizens, without investing and developing such capabilities in-house.



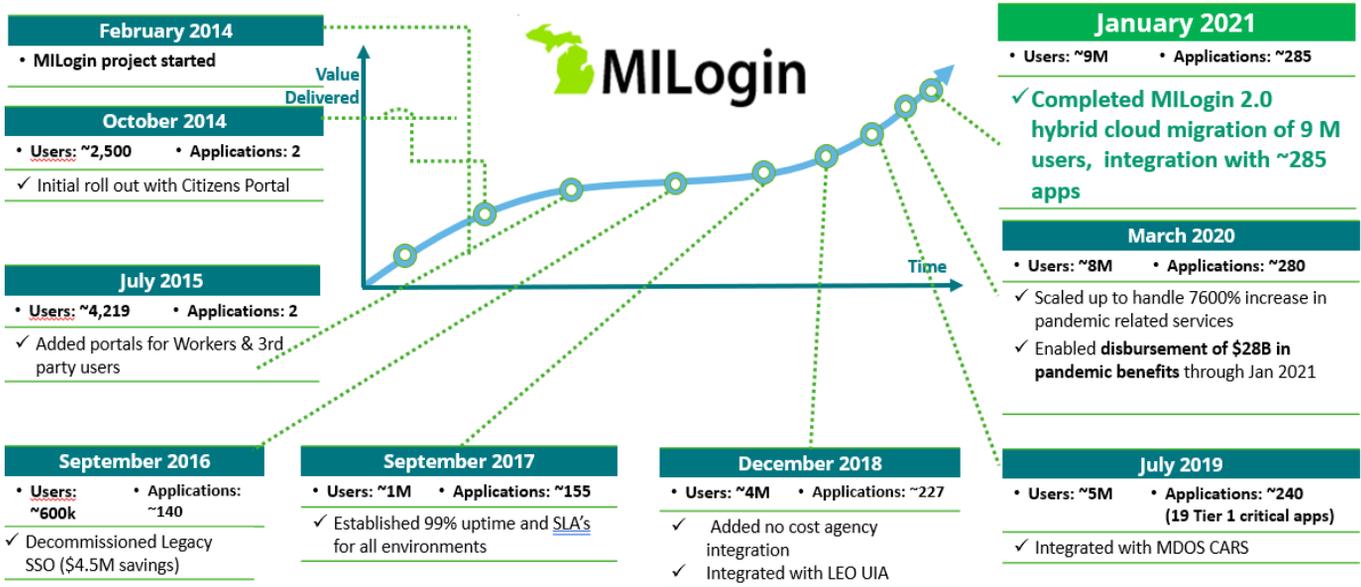
² 2021, Adobe Digital Government Services Survey

³ 2021, Deloitte Digital Government Study

Implementation

MILogin was setup as a state shared service and released the first integration with Michigan Department of Health and Human Services (MDHHS) in 2014. This release established the state's enterprise digital identity foundation, standing up the program's 24x7 private cloud-based infrastructure and support service organizations. The implementations that followed built upon this foundation, resulting in a comprehensive catalog of enterprise digital identity capabilities

State of Michigan Enterprise Digital Identity and MILogin 2.0 Journey



Road Map for Remainder of 2021 and Beyond:

- > Automated Agency Systems Onboarding
- > Enterprise Fraud Analytics
- > Enhance Zero Trust Posture
- > Passwordless Authentication

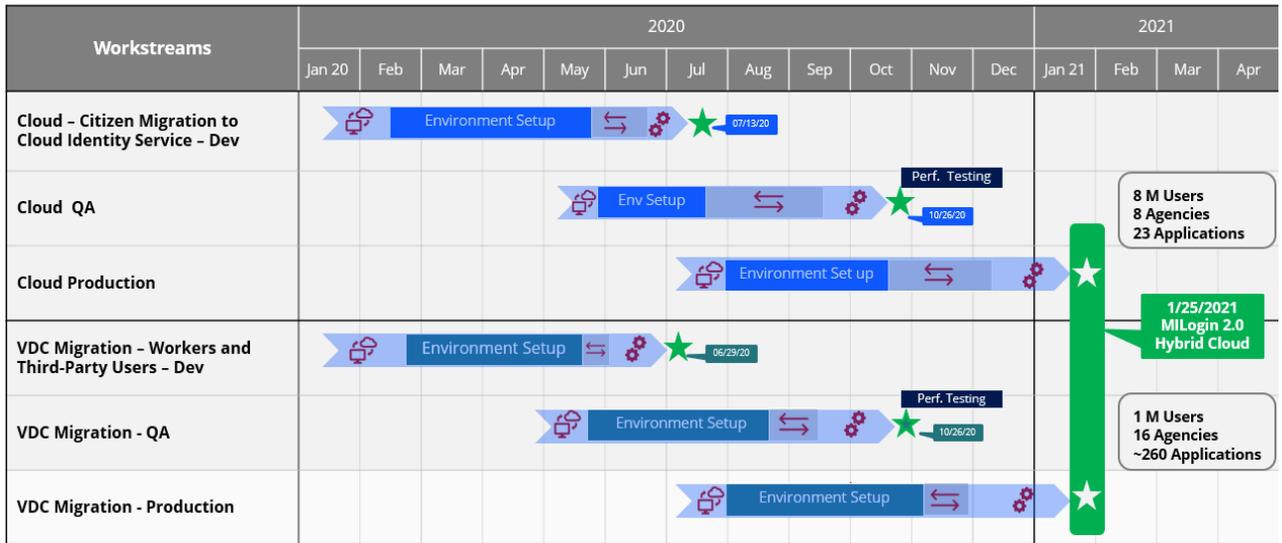
Releases after the initial release has continued to drive adoption, resulting in:

- On-boarding of **~70,000 state workforce users**, including employees and contractors
- Access to applications for **8 M public users**
- Business services access to **~700,000 business users**
- Integration of more than **300 workforce, business and public applications**

MILogin 2.0 Project Management

The MILogin 2.0 project utilized PMO services to kick off the project, monitor progress, outreach communications to agencies, updates to stakeholders and agencies, and testing and deployment planning. An executive dashboard was established to communicate and coordinate testing with 285 system owners across 16 agencies.

MILogin 2.0 Hybrid Cloud, and Virtual Data Center (VDC) Migration Timeline



= Pre-Requisites (Design workshops in 2019, communication to agencies)
 = Agency configuration changes (if needed)
 = Agency Integration testing

MILogin 2.0

Migration of MILogin to hybrid cloud model

The migration of MILogin to hybrid cloud was done by the existing MILogin team augmented with additional resources, for a total of 10 to 15 team members over a period of 14 months, excluding initial workshops & design sessions for ~4 to 6 months. The one-time implementation cost was estimated at \$3.5M. At the onset of the pandemic the team moved to a remote model and was also diverted to pandemic response. Despite this, the team stepped up to maintain the scheduled finish date. The team’s relationships with agencies proved invaluable with addressing technical and business challenges. As part of this migration, 8 M public identities were migrated to Cloud Identity SaaS, and ~1M Worker and Third-Party users were migrated to the State’s Virtual Data Center.

- Test coordination team used Power BI dashboards to work with 16 agencies and ~285 system owners to track validation progress and issues. Total agency testing effort was 5,300 hours.
- Continuous user migration of ~9 M identities decreased the Production cutover window of 280 applications to less than an hour

MILogin Advisory Board

A MILogin Advisory Board was constituted, comprising multiple agency business leadership and DTMB General Managers assigned to agencies, chaired by DTMB. The MILogin Advisory Board serves as the forum to provide short term MILogin project updates, MILogin strategic roadmap updates, service offering portfolio, drive consensus on policy, and provide key performance indicators. The MILogin Advisory Board provides guidance on MILogin roadmap prioritization, agency roadmaps and direction, inter agency communications and operational priorities.

Impact

With the successful completion of MILogin 2.0, Michigan's digital identity program has delivered on the State's vision to provide an enterprise digital solution that is elastically scalable, zero maintenance downtime, hybrid cloud-based SaaS solution platform that will enable growth in digital government service delivery. Adoption of the hybrid cloud platform is

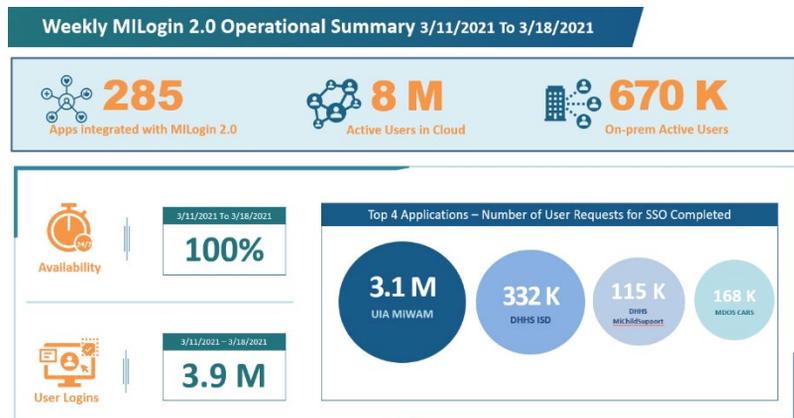
- Forecasted to yield an annual \$2M in cost avoidance on infrastructure and license costs, paying for program costs in less than 2 years.
- Reducing the cost of citizen Multi Factor Authentication (MFA) by 91% compared to legacy MFA costs in 2016. No cost to agencies for Citizen MFA, lower barrier to adoption.
- Providing identity innovation such as passwordless authentication to public users, planned for FY23, which is estimated to reduce Help Desk costs by \$1.75M to \$2.5M per year.

In addition, the no cost onboarding of up to 200 agency applications provides enterprise cost savings estimated at \$2M.

Beyond these financial benefits, the deployment of MILogin to a hybrid cloud model provides the state with elastic scalability to absorb surges in demand for digital services. The solution platform has already seamlessly handled a user surge 25% higher than pandemic peak surge.

Operational & Security Impacts:

- 99.9% uptime SLA with 2hr RPO⁴ and 2hr RTO⁵
- **No scheduled downtime** for public services
- Performance tested to 150,000 concurrent users per hour
- Reduces fraudulent traffic from bots, low reputation clients
- Repels credential stuffing and brute force attacks



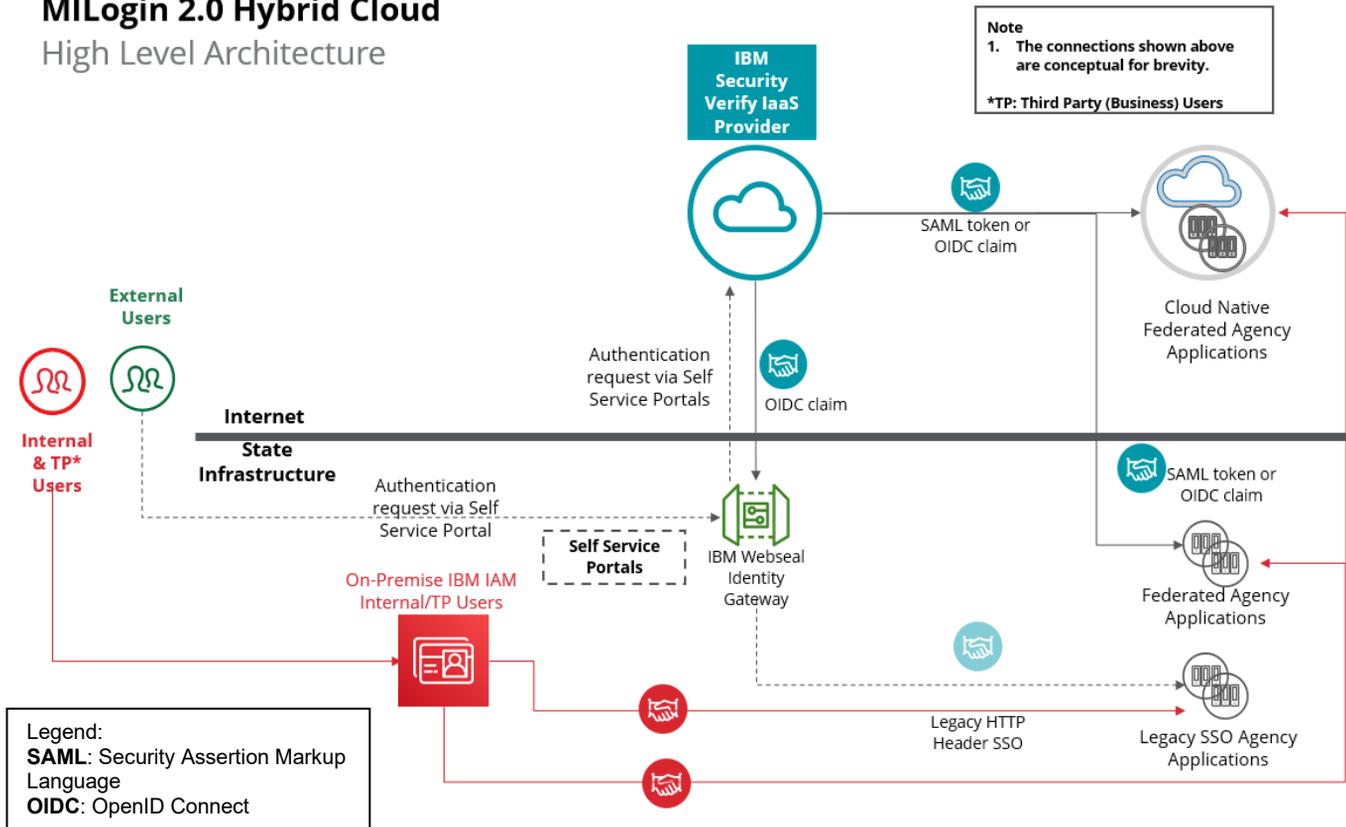
Further capabilities are planned to implement a holistic solution that performs User Behavior Analytics, detects anomalous user behavior, and automatically steps up authentication to reduce fraudulent users from transacting with state services.

The hybrid cloud platform provides access to identity innovation such as passwordless authentication for public users, additional MFA factors including biometrics, and identity analytics without investing in developing such capabilities in-house. Passwordless authentication for public users is planned for FY23. It will improve user experience, increase public engagement and reduce account abandonment, while improving security by reducing the potential for password-based attacks.

Impact (Continued)

Public services are also increasingly isolated from service outages on on-premise user directory, and authentication services, improving availability of public services during state maintenance or service impacts, as outlined in the MILogin 2.0 Hybrid Cloud Architecture diagram below:

MILogin 2.0 Hybrid Cloud High Level Architecture



Further isolation of public services is planned in FY23 with containerized deployment of Self-Service portal for citizens.

The successful completion of MILogin 2.0 has catalyzed state's vision to create a MILogin.Next version roadmap spanning FY23 to FY25 with initiatives to:

- Improve public user experience and privacy by issuing digital identity credentials to a digital wallet owned by the user, enable passwordless authentication, conduct a Usability Study and address recommendations to refresh Self Service portals
- Add projects to align with Zero Trust principles; plan for further improvements to security with continuous authentication and device id management
- Drive further cost savings with containerized deployment of on-premise components, chatbots and increased self-service to drive down help desk usage