



# Hawaii's Career Acceleration Navigator (HI CAN)

The Aloha State's digital hub for seamlessly connecting UI claimants and jobseekers to high-impact career pathways using personalized, data-driven recommendations.

Category: **Cross-Boundary Collaboration & Partnerships**  
State: **Hawaii**  
Project Initiation Date: **Summer 2021**  
Project Completion Date: **Public Launch in June 2022, with ongoing and continued refinements, additional features, capabilities, and collaborations**

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## Executive Summary

Due to the COVID-19 Pandemic, Hawai'i suffered one of the highest unemployment rates in the nation. Through the National Governor's Association Workforce Innovation Network, Hawai'i convened a cross-agency team to develop a comprehensive and user-friendly online service delivery hub in partnership with Research Improving People's Lives (RIPL). The outcome was HI CAN, a virtual one-stop that leverages cloud technology to provide job seekers with customized pathways to employment and various other support services provided by the State of Hawai'i. DLIR partnered with a non-profit tech for social impact organization, RIPL, to help design and implement HI CAN through an iterative user-centric delivery approach.

HI CAN uses Machine Learning and Artificial Intelligence to deliver data-driven job, career, and training recommendations. It is accessible on the web through search engines and the unemployment insurance (UI) weekly certification page. It provides an integrated experience for UI claimants to automatically fulfill their work search requirements by applying for jobs and tracking their work search activity through a live dashboard. Through the Benefits Finder tool, it can also refer individuals and their families to wraparound social services they may need.

Hawai'i is among the first states to bring together career and social services programs that use data, science (e.g., econometric methods and causal machine learning models), and technology to connect the workforce to career pathways and in-demand jobs. We are leveraging State administrative data to empower Hawai'i jobseekers to find a new job with data-driven recommendations and get back to work with new skills, while seamlessly navigating and accessing government services and systems they need for support along their journey.

Even with the cloud infrastructure in place, the level of data sharing and integration Hawai'i achieved was only possible through a clear vision set out by DLIR leadership and committed buy-in from internal stakeholders and external vendors. High-level buy-in from the Governor's Office and the DLIR Director elevated this initiative as a priority. It helped partners understand the value of this initiative to their work from furthering their agency's mission to simplifying administrative tasks and improving their applications.

## Components of HI CAN

HI CAN includes a suite of data-driven digital resources comprised of user-facing digital services and one internal-facing data infrastructure service designed to integrate with and enhance existing State workforce and UI systems.

For Job Seekers and UI Claimants: Using accurate, region-specific data and artificial intelligence (AI), the Recommendation Engine connects users with available jobs and training opportunities shown to improve earnings. In addition, users can access a work search tracking tool to streamline compliance with UI requirements and the benefits finder that pre-screens residents and surfaces for which government benefits they might be eligible.

The Research Data Lake provides a secure infrastructure for the government to collect, connect, and anonymize State administrative data. It allows policymakers to evaluate program success, assess their impact, and make more informed policy decisions.

## Research Data Lake

RIPL built a secure, cloud-based Research Data Lake (RDL) environment to power HI CAN, which securely houses administrative data from sources including workforce development, unemployment insurance, and wage records. Because cloud technology is a recent development, the government has been slower than the private sector in adopting the technology for data storage and digital service delivery. RIPL partnered with DLIR to implement an RDL that uses best-in-class managed cloud services and components to deliver the technology infrastructure to integrate and anonymize existing government data, create a secure, research-ready environment, and put data visualization and analysis tools at governments' fingertips. RIPL's team of engineers built the infrastructure needed to power the RDL and then worked with DLIR's technical team to hand over ownership of the RDL and train them to ingest data and maintain the system. RDLs are low-cost and meet the highest standards of security for government data. The government retains ownership and total control of its data and has complete transparency of use through automated auditing and logging. The entire process is automated to maximize reliability and minimize cost.

# The Research Data Lake (RDL): A secure pipeline of insights

Controlled by the state, FedRAMP-moderate compliant, fully auditable, and data never leaves government custody.

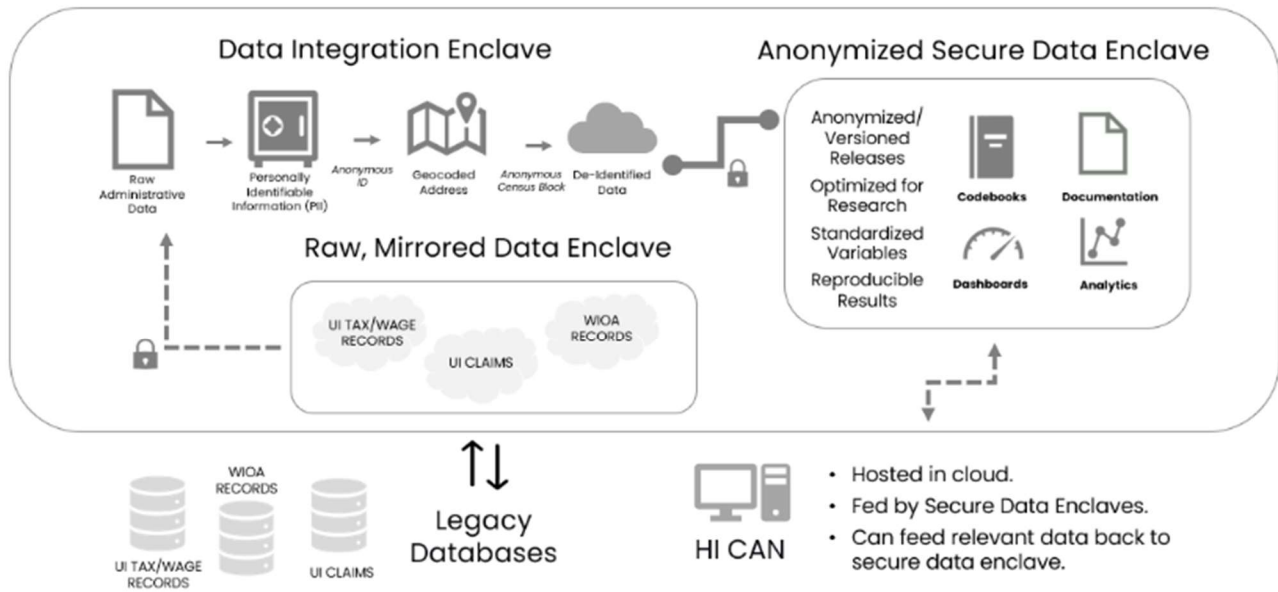


Figure 1: The Research Data Lake collects, stores, and anonymizes Unemployment Insurance data, WIOA records, and other administrative data to power the science behind HI CAN's recommendations

## Recommendation Engine

Hawai'i's new cloud infrastructure enables the State to unlock new valuable insights and leverage government data to its fullest potential. HI CAN uses a combination of Machine Learning, AI, State administrative data, and cloud computing to generate custom recommendations and job matches. HI CAN delivers recommendations with a level of customization that people have become accustomed to with streaming media or shopping online because previous successful career transitions across the State inform them. This capacity enables more excellent future research applications within DLIR and across the State, including measuring the impact of policy and programmatic changes. Within the tool, jobseekers are prompted to provide information about their experience, skills, and education, which inform users' career and job recommendation results.

Figure 2: HI CAN Career Paths page displaying customized career recommendations based on their experience and skills



Figure 3: HI CAN Job Seeker Journey

## Unemployment Work Search Integration and Reporting

HI CAN also provides current UI claimants with a user-friendly employment platform that enables them to automatically fulfill their unemployment insurance work search requirement by applying for jobs and tracking their work search activity through a live dashboard connected to the unemployment insurance system. Once a claimant completes their weekly certification process through the HUI platform, they receive custom job recommendations from HI CAN embedded within their confirmation page, which direct them to HI CAN to continue their job search and update their work search activity. The work search dashboard within HI CAN provides helpful information on qualifying activities, charts that display weekly and overall progress on activity reporting, and a download option to access a digital record of activity.

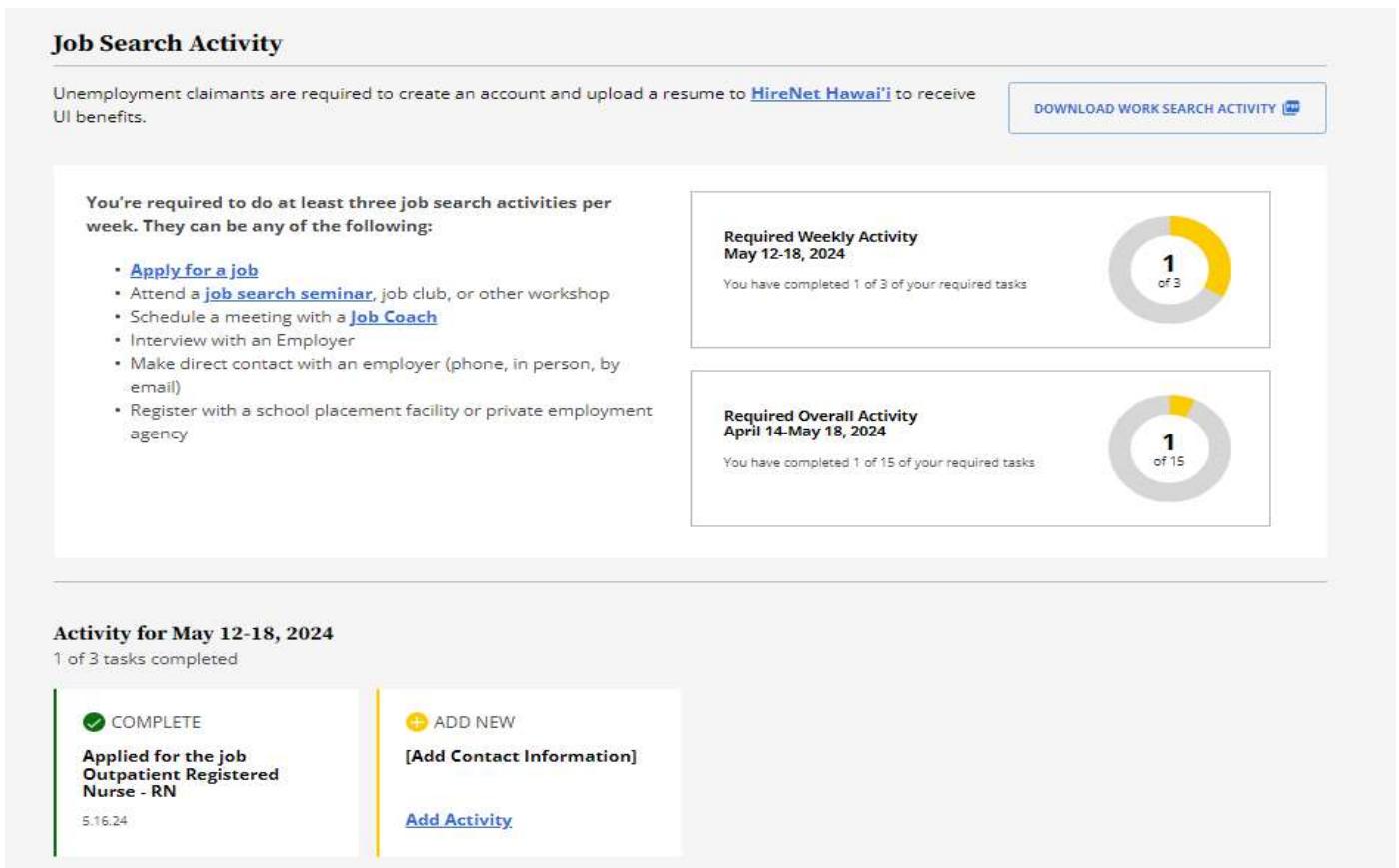


Figure 4: Work Search Activity Dashboard in HI CAN

## Hi, want help with your job search?

Here are some job matches for you

### Banquet Captain (Full-Time)

Highgate Hotels, LP  
Honolulu

HICAN 

### Banquet Porter Captain

Fairmont Orchid, Hawaii  
Kamuela

HICAN 

### Restaurant Executive Chef

Highgate Hotels, LP  
Lahaina

HICAN 

[View more job opportunities](#)

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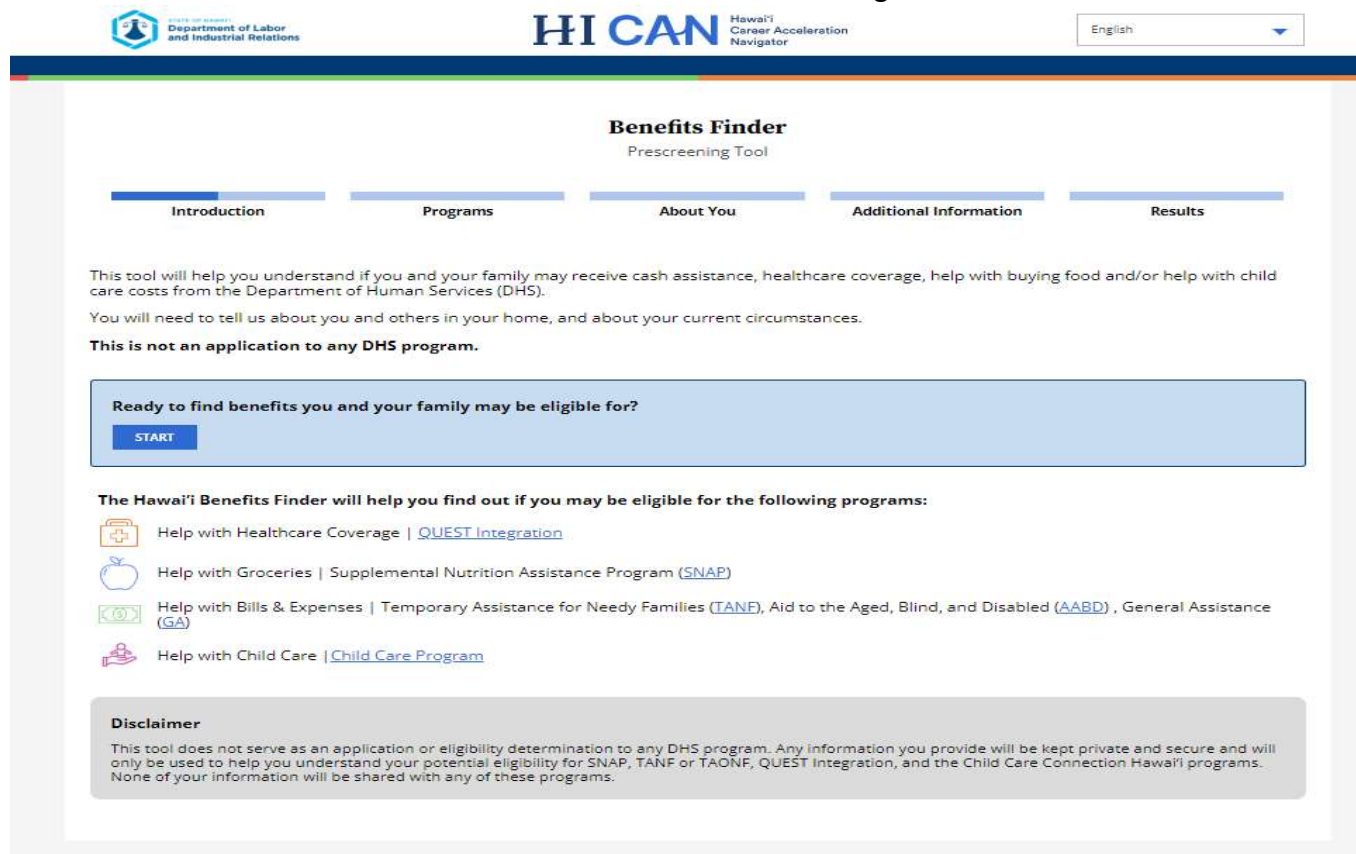
Hawai'i Career Acceleration Navigator delivers data-driven career recommendations for you to find new career paths that may use your skills in a new way, boost your income, or for which there are many jobs available. When you find a new career that interests you, you can see available jobs and training programs within that career.

[Visit Us](#) 

Figure 5: Job recommendation integration within UI certification confirmation page

## Benefits Finder Pre-Screening Tool

Since January 2023, RIPL has partnered with the State of Hawai'i to explore approaches toward furthering the State's efforts to route and proactively inform residents about what State-provided supports they may be able to receive across agencies. After months of collaboration, discovery, and user research, RIPL, DLIR, and Hawai'i's Department of Human Services designed and developed the Benefits Finder, a digital tool to help Hawai'i residents quickly understand their eligibility for a set of health and human services programs through a single digital prescreening form. The Benefits Finder uses simple, supportive language and can be completed in under five minutes. It is a tool available within the Hawai'i Career Acceleration Navigator.



The screenshot shows the 'Benefits Finder' interface. At the top, there are logos for the Department of Labor and Industrial Relations and HICAN (Hawai'i Career Acceleration Navigator), along with a language dropdown menu set to 'English'. The main heading is 'Benefits Finder' with the subtitle 'Prescreening Tool'. Below this is a progress bar with five steps: 'Introduction', 'Programs', 'About You', 'Additional Information', and 'Results'. The 'Introduction' step is currently active. The text explains that the tool helps users understand eligibility for cash assistance, healthcare coverage, food help, and child care costs from the Department of Human Services (DHS). It includes a disclaimer: 'This is not an application to any DHS program.' A prominent blue box asks 'Ready to find benefits you and your family may be eligible for?' with a 'START' button. Below this, a list of programs is provided with icons: 'Help with Healthcare Coverage | QUEST Integration', 'Help with Groceries | Supplemental Nutrition Assistance Program (SNAP)', 'Help with Bills & Expenses | Temporary Assistance for Needy Families (TANF), Aid to the Aged, Blind, and Disabled (AABD), General Assistance (GA)', and 'Help with Child Care | Child Care Program'. A final disclaimer states that the tool is not an application and that information is kept private.

Figure 6: The Benefits Finder is a prescreening tool that helps Hawaii residents quickly understand their eligibility for health and human services programs and where to enroll in programs that can provide essential support

## Implementation

HI CAN was implemented on the AWS cloud using the following infrastructure and application services:

<i>AWS Service</i>	<i>Infrastructure code (Terraform)</i>	<i>Application (Python code)</i>
<i>S3</i>	X	X
<i>Lambda</i>	X	X (service communication, self-invoking lambdas for longer-running jobs)
<i>Cloud Front</i>	X	
<i>WAF</i>	X	
<i>DynamoDB</i>	X	X
<i>ElasticSearch</i>	X	
<i>Kinesis Firehose</i>	X	X
<i>SES</i>	X	
<i>Translate</i>	X	X
<i>CodeBuild</i>	X	
<i>API Gateway</i>	X	
<i>KMS</i>	X	
<i>VPD</i>	X	
<i>CloudWatch</i>	X	X
<i>Secrets Manager</i>	X	

**Figure 7: AWS infrastructure and application services used to implement HI CAN**

The RDL deployment in Hawai'i inherits all of the physical and data center security controls that AWS has developed to meet the highest data security standards. AWS's industry leadership in security and compliance ensures data protection, cutting-edge security capabilities, and services to increase privacy and access, and extensive auditing features provide you with complete visibility into how your data are used, including:

- Network firewalls that let you create private and secure networks.
- Data encryption services that can provide scalable and efficient encryption features and flexible key management.
- A security assessment service that automatically assesses applications for vulnerabilities or deviations from best practices.
- Connectivity options that enable private, dedicated connections to the secure enclave from defined locations, such as your office network.
- Identity and access control tools that let you define, enforce, and manage user access policies across your account, including multi-factor identification.
- Inventory and configuration management tools allow you to track and manage your permissions and data changes over time.
- Monitoring and logging tools that deliver transparency for secure and confident governance, aggregated logs for compliance reporting, and auditing of your system.

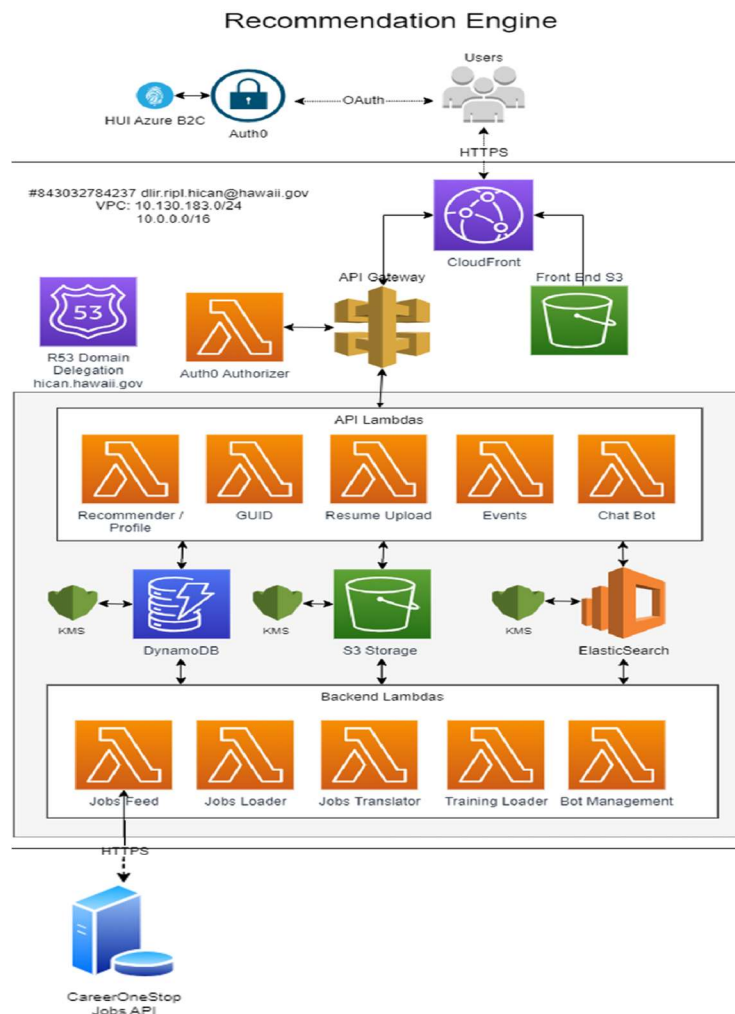


Figure 8: Architecture Diagram

## Impact

HI CAN currently serves 13% of newly unemployed Hawai'i workers:

- 9,392 site visits by 4,270 registered users.
- A March 2024 update to integrate DOORS recommendations into the weekly certification flow doubled user enrollment and usage.
- 81% of surveyed HI CAN users (n=189) would be likely or very likely to recommend HI CAN to a friend.

1,255 unemployed Hawai'i workers connected to in-demand jobs:

- Primary users of HI CAN are transitioning from customer service, administration, retail and inventory management, and food service.

Next steps to measure impact and expand opportunity:

- The ReadyHire employer-facing tool will launch in Winter 2024. It will match HI CAN users actively seeking employment with employers looking to open jobs that align with their skill profile.
- First causal estimates of job placement and earnings available Winter 2024.

**UI certification integration went live here.**

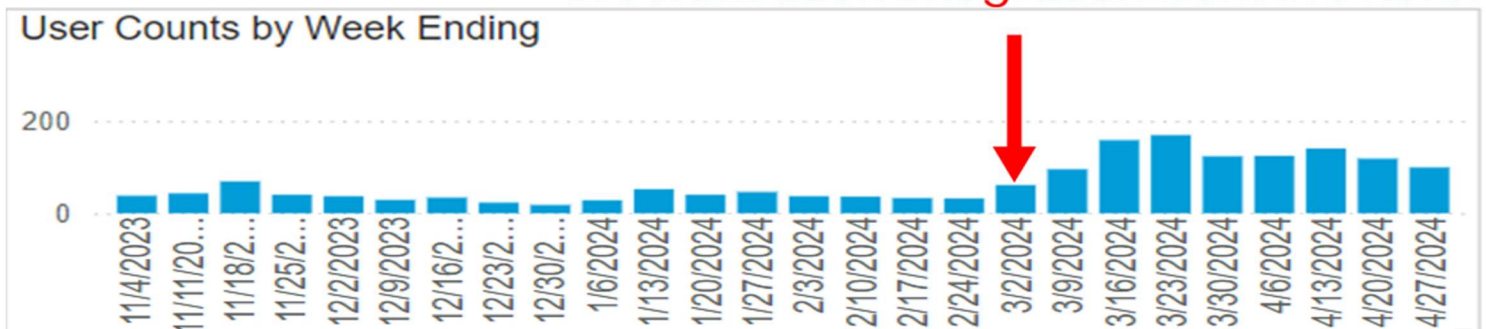


Figure 9: Weekly user count increases with the release of the UI certification integration