Cloud Computing Proves Value in Unemployment Crisis

Since March 2020, the Unites States has experienced the highest volume of unemployment insurance (UI) claims ever filed. This has strained unemployment systems beyond their capacity—leaving many unemployed claimants struggling to file their claims and receive their benefits. The fact is that state unemployment systems had not been stress tested to handle such a sudden and massive increase in volume. No UI agency was staffed or sized to handle an immediate 100-fold increase in volume.

In North Carolina, for example, initial claims activity went from roughly 3,000 a week to 300,000. The business disruption is unprecedented. Never have unemployment insurance systems seen an increase this large over many months, much less in one week's time. The unemployment insurance provisions of the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) are designed to provide fast relief directly to those who are eligible and need help. As one of the most efficient stimulus programs, UI is proven to provide $10 of economic benefit for each dollar of benefit paid.

As always, UI benefits are paid to individuals who are unemployed due to no fault of their own. The CARES Act provides three separate programs, all under the UI umbrella. At a high level (see the US DOL web site here for complete details), these programs are as follows:

- **Pandemic Unemployment Assistance (PUA)**: A program for individuals not otherwise eligible for UI benefits (e.g., self-employed, independent contractors, service industry workers).
- **Pandemic Emergency Unemployment Compensation (PEUC)**: A program that provides extended coverage for claimants that may have exhausted their regular UI benefits.
- **Federal Pandemic Unemployment Compensation (FPUC)**: A program that provides an additional $600 weekly benefit to qualified individuals. (similar to the Federal Additional Compensation (FAC) payment during the great recession).

These programs mean there are far more individuals now eligible for UI benefits. The additional eligibility adds to an increase in claims volume over and above the extraordinary increase in traditional unemployment. What does this mean? Many states are struggling to keep up with the volume. The struggles come from three areas:

1. **UI Agency Staffing:** State UI agencies were staffed to handle a near all-time low unemployment rate.
2. **Call Center Volume:** A flood of calls came into the UI agency call centers to ask questions, not just file claims.
3. **Dated UI Systems:** Old or poorly engineered systems were overwhelmed by the increase in volume.

UI Agency Staffing

State UI agency staffing is driven by a formula from the US Department of Labor (US DOL). As the unemployment rate decreases, the funding for state administration of the programs decreases. States reduce staff in accordance with the decrease in administrative funding. With the surge in unemployment, states have rapidly hired workers, but there is a steep learning curve for new employees to learn the nuances of the various UI programs. Retired UI workers have also been called on by states to return to help fill some of the knowledge gap.

Call Center Volume

Call centers have been swamped. The details of the UI programs are difficult for many in the general public to understand, leaving people with questions. The process issues were compounded by states being unsure of US DOL guidance on eligibility, funding, and reporting requirements of the CARES Act. The US DOL quickly scrambled to react to the new legislation, but the needed policy guidance could not be published until the directives were released on April 4th, 5th and 10th. Meaning states still needed to train staff, update policies, and change computer systems to align with the new policies

Dated UI Systems

The third area many states struggled with was their computer systems failing under the load of the huge increase in volume. Systems simply froze or locked people out as the volume overwhelmed capacity. The systems in Michigan and Florida have been especially troubled. With systems failing, even more people flooded the call center lines.

While all states struggled with the increase in call volume and the lack of clarity of the new programs, some states' computer systems carried on with no or only minor outages. Three states with resilient computer systems are Texas, North Carolina, and South Carolina.

After some initial volume-related issues, Texas Workforce Commission (TWC) moved their front-end systems into the cloud to allow them to handle the large spike in claims volume. TWC is primarily on a mainframe system and is planning on modernizing their entire unemployment insurance computer system. The cloud, however, allowed TWC to effectively manage the front-end volume through virtual server scaling. In an interview with KVUE, TWC reported that server capacity had recently doubled from five to 10. They expect to expand to 20 servers soon.

Commission Executive Director Ed Serna said, "Our system runs on a mainframe computer, proved to be very stable, but very, very difficult to update and modify as needed. We know that the numbers are going to continue to grow. We're going to continue to improve and continue to work to get those expanding numbers addressed," said Serna. "Our IT department is working 24 hours every day."

Both North Carolina and South Carolina operate in a secure FedRAMP AWS environment that allowed the systems to scale with the volume increases. Early volume issues were addressed as server capacity was added. Additional automatic scaling processes kicked in as the systems were challenged with 100x increases in activity.

The South Carolina Department of Employment and Workforce (SC DEW) implemented their claims system in August of 2017, it was immediately challenged by hurricane Irma. That also stressed the new South Carolina UI system, but to a much smaller extent than the pandemic issues. Like all states, SC DEW has needed to react to the staffing and call center issues caused by the pandemic. Many aspects of the pandemic programs require manual validation of information, which takes staff time, and this work is in addition to answering calls. The system's scalability and automation, however, has put SC DEW significantly ahead of most states in keeping up with processing.

SC DEW is implementing a new UI system with a high level of automation which is able to automatically adjudicate many regular UI claims. This helps offset some work as staff tries to catch up with the dramatic increase in claim activities, and address claims from the pandemic programs that require staff actions to complete.

North Carolina Division of Employment Security (NC DES), which is in a computer system consortium with South Carolina, has also escaped many of the system issues states face. This is true even though North Carolina has experienced one of the highest increases in claims volume in the country. NC DES has hired new staff, called back retirees, and extended operational hours; however, after some initial volume issues, the system has been up and taking claims correctly.

This of course did not happen by magic. Srini Madala is the chief technical architect for the system in use in both North Carolina and South Carolina. "The application was designed to be scalable on multiple levels. From the first day of testing, we benchmarked against volumes many times higher than ever was anticipated. At times we simulated a year of claims volume being filed over just a few days." said Madala. "Being in the cloud allows on-demand capacity to be accessed in a fraction of the time of legacy systems."

While states cannot control federally influenced staffing levels or manual verification requirements passed down from Washington D.C., cloud computing overall has again proven to be a resilient tool used to flatten the IT processing curve. Cloud computing provided Texas, North Carolina, and South Carolina the ability to scale their computer systems to handle the unprecedented increase in volume. As a result, these UI agencies can focus on paying benefits, getting the right information out to their citizens, and addressing the huge call center volumes. One less thing to worry about today is a good thing.

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