How a Utility Improved Revenue Collection with a Move to Cloud

Moving from on-premises servers to the cloud brings Jackson, Miss., higher reliability and performance.

Water and sewer services provide a core source of ongoing revenue for municipalities. When billing problems create delays and reductions in those revenues, other government services and projects feel the impact. That was the case for the Jackson, Miss., utility, the Water Sewer Business Administration (WSBA).

In 2018, WSBA lost a significant amount of monthly revenue because of an aging server infrastructure. WSBA couldn't reliably issue accurate and timely bills, couldn't always detect unexpectedly high usage levels that might indicate a leak and experienced delays in identifying payment delinquencies that would prompt a shutoff notice.

Billing issues negatively impacted relationships with residents, who sometimes weren't billed for months, then received a high accumulated bill. Utility staff were often overwhelmed by customer calls and the workarounds needed to identify the problem, enter bill adjustments and create payment plans. Collection efforts increased as residents began to distrust any bills they received and some chose not to pay them.

Aging Servers Couldn't Keep Up

A fundamental challenge for WSBA was that aging servers couldn't always process the data collected from metering systems. The city has an advanced network that connects 60,000 smart water meters to access customer usage data. This data is transferred by an overnight batch process into the Oracle Customer Care and Billing (CCB) application, the core billing system used by the utility. An on-premises server infrastructure hosted the CCB application as well as two other utility applications: Oracle Customer Self-Service (CSS) and Oracle Business Intelligence (BI) Publisher.

Jackson's servers were at maximum performance and running out of storage capacity. Batch processes ran up to eight hours, an unacceptable amount of time. Employee overtime costs added up as IT staff often had to free storage space on servers so the batch processes could run successfully. Frequent server crashes raised concerns that the infrastructure could soon fail completely.

Choosing the Move to Cloud

In 2019, a team from the city's IT department and WSBA recognized a new infrastructure was needed to host the billing system applications. The team explored multiple options including deploying new on-premises servers, using a local hosting provider or moving to a general cloud platform. After a full evaluation, the team chose Oracle Cloud Infrastructure (OCI) to host the billing system applications.

"We had a good relationship with Oracle for applications, so that made us more comfortable with the idea of hosting them on the Oracle cloud," says Jerrica Sims, IT manager for the city of Jackson.

Because the Jackson team didn't have in-house expertise to make a move to cloud, they chose Mythics, an Oracle Platinum Partner, to provide services for the cloud implementation design, application migration and on-call management of the new system. The consulting

firm Expert Professional Solutions, In[...] Jackson WSBA during the technical [...] that contributed to the project's success.

Jackson's choices made for a dramatic turnaround.

"After the move we were able to collect $10 million more than the previous year because of more accurate and timely bills," says Carla Dazet, deputy director of public works administration for the city of Jackson.

Strong Financial, Operational and Customer Service Benefits

Moving the billing system applications to OCI allowed Jackson WSBA to realize benefits for revenue collection and cost control, as well as improvements in IT operations and customer service.

Increased revenue collection and better customer communication. Hosting the Oracle utility applications in the cloud improves the flow of data from customer to ledger, eliminating many error-prone, manual processes to verify and adjust the data in customer bills. Real-time dashboards provide financial transparency for utility accounts, allowing customer service staff to provide accurate information and immediate assistance to residents. WSBA can also implement new billing rates within weeks instead of the months-long period required in the past.

Lower IT infrastructure costs. The cloud implementation reduces Jackson's infrastructure costs when compared to the capital and operating expenses of the on-premises server hardware, software and maintenance contracts. The fast and reliable batch processes mean the city no longer incurs costs for IT staff overtime.

Jackson also reduces IT costs and staff burden by using the cloud to host smaller applications associated with the billing system.

"We can use the cloud scalability to avoid the costs of buying, racking and maintaining large-capacity servers just to host small applications," says Sims.

Higher infrastructure performance and reliability. The move to OCI reduced the run time of nightly batch jobs from an average of 5 hours to 40 minutes. Users experience faster response from the billing and customer service applications, and applications integrated with CCB also operate with faster performance. System uptime increased from 60 percent to 100 percent, which benefits the work of utility staff, especially for serving customers.

Moving the CSS app to the cloud reduced the frequent server outages experienced by customers trying to use the portal.

"The mayor's office would get calls when this happened, so availability of this application is a key part of rebuilding customer trust in our billing operations," says Dazet.

Flexibility During the Pandemic

With the utility's servers and applications hosted in OCI, most Jackson staff were able to work remotely during the time of COVID-19 stay-at-home orders.

"Our previous server infrastructure didn't have the capacity to support a fully remote workforce," says Sims. "And for IT, we no longer have to rely on physically getting to a server in order to see and resolve an issue."

The pandemic prompted Jackson to deploy new ways to serve customers, such as installing kiosks to accept cash payments.

"We couldn't have supported kiosks with our old system design," says Dazet. "Now kiosks will give us a better way to serve customers who need this payment option and eliminate the need to have staff on-site simply to accept cash."

A New Foundation

By moving its Oracle-based billing system and related applications to Oracle Cloud Infrastructure, WSBA gained more than a new server infrastructure. The city now has a foundation that supports timely revenue collections to deliver vital services — and prepares WSBA for future technologies and business demands.

This piece was developed and written by the Government Technology Content Studio, with information and input from Oracle and Mythics.