



Lightning-fast query processing and lower cost

The Ministry of Interior, State of Qatar,
can now better serve its constituents

by Catherine Palmer
6-minute read

The Ministry of Interior, State of Qatar, provides services to just about every citizen and business in Qatar to help keep the country running smoothly. “We interact with almost the entire population,” says Azeem Mohammed, Database Administrator for IBM Db2 for z/OS at the Ministry.

According to Mohammed, increasing database workloads were causing performance issues with the Ministry’s IBM® Db2® for z/OS database and driving up operational costs. “Our application has a good number of resource-intensive queries that were



running for a long time,” he says. Plus, these queries were using a significant amount of memory and CPU, taxing the Ministry’s IBM z/OS® platform.

Because it relies heavily on its Db2 for z/OS database, the Ministry needed to find a way to address operational concerns.

“Our Db2
for z/OS
database
is capable
of doing
everything.”

Azeem Mohammed, Database
Administrator for IBM DB2 for z/OS,
Ministry of Interior, State of Qatar

Average latency
has decreased by

98%

from minutes to seconds

Reports that previously
took 20 minutes to run
now take

40

seconds

Offloading resource-intensive jobs

Due to its operational challenges, the Ministry sought out alternative approaches to managing its Db2 for z/OS workloads. In 2016, it began a workload assessment of the [IBM Db2 Analytics Accelerator for z/OS](#). “Our goal was to find a way to offload most of the CPU-consuming queries to the Db2 Analytics Accelerator to address operational concerns. For some applications, we made minor changes, and for other applications, we were able to run with no changes,” says Mohammed. In 2017, the Ministry began implementing the Db2 Analytics Accelerator for z/OS 5, connecting it to its production system.



When IBM Db2 Analytics Accelerator 7 was released, the Ministry decided to upgrade to take advantage of the enhanced capabilities and performance of the new version. “We had some

complex queries, complex statistics and analytics, fancy dashboards, which we were not able to produce for our internal customers,” says Mohammed. “We were relying on workarounds

like moving tables and data.”

IBM Services® helped the Ministry migrate to the new version of the Db2 Analytics Accelerator.

Version 7 of the Db2 Analytics Accelerator includes an advanced data synchronization technology called Integrated Synchronization. This feature, which replaces Change Data Capture, supports a deeper integration between Db2 for z/OS and the Db2 Analytics Accelerator. This results in reduced latency between the two database engines so queries and jobs can now run against the most current transactional data.

The new version of the Db2 Analytics Accelerator has helped reduce the amount of SQL tuning required. “We spend less time tuning complex SQL queries,” says Mohammed. “The results are amazing without any tuning. It’s very easy from the operational side.”

“The speed of the Db2 Analytics Accelerator for z/OS is absolutely amazing.”

Azeem Mohammed, Database Administrator for IBM DB2 for z/OS, Ministry of Interior, State of Qatar

Blazing speed and cost efficiency

After migrating to the newer version of the Db2 Analytics Accelerator, Mohammed says that “Queries run magnitudes faster. Queries that used to take 20 minutes finish in seconds. Batch programs that used to take hours finish in minutes.”

This speed helps Mohammed and his team respond to Ministry requests more quickly. Many reports require several iterations, and if each iteration takes 20 minutes, it can take several hours to a day for the staff to complete one report. “Now, if a manager asks for a report in an hour, I can deliver it,”

says Mohammed. “The speed of the Db2 Analytics Accelerator for z/OS is absolutely amazing.”

The Integrated Synchronization feature has decreased data replication latency from three minutes to about three seconds. This means that dashboards using the Db2 Analytics Accelerator are now displaying data in near real-time. Since the Integrated Synchronization technology relies on IBM z Systems® Integrated Information Processor (zIIP) technology, the general processor CPU utilization on the Ministry’s z/OS system has dropped, reducing processing costs.

The Ministry plans to continue to take advantage of the speed and performance of the Db2 Analytics Accelerator for z/OS by adding more tables and queries in the future. It’s important for the Ministry to keep its Db2 for z/OS database running smoothly. When asked about the types of workloads that can benefit from the Db2 for z/OS database and the Db2 Analytics Accelerator, Azeem responded, “Our Db2 for z/OS database is capable of doing everything.” He said the Ministry is exploring using the Db2 Analytics Accelerator for data analytics and machine learning workloads.



About the Ministry of Interior, State of Qatar

The State of Qatar is an independent, sovereign country located in the middle of the west coast of Arabian Gulf. It has approximately 2.5 million citizens. [The Ministry of Interior](#) (external link) is a government agency that provides services to all of the citizens and businesses in Qatar. For citizens, it delivers services such as passports, visas and car registrations. For businesses, it offers registration and licensing.

Solution components

- IBM® Db2® Analytics Accelerator for z/OS®
- IBM Services®

© Copyright IBM Corporation 2021. IBM Corporation, IBM Software Group, New Orchard Road, Armonk, NY 10504

Produced in the United States of America, October 2021.

IBM, the IBM logo, ibm.com, IBM Services, IBM z Systems, Db2, and z/OS are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions. THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. IBM products are warranted according to the terms and conditions of the agreements under which they are provided.