Laboratoires Réunis contributes to roll out mass COVID-19 testing in Luxembourg

Client profile

Laboratoires Réunis is an independent clinical laboratory in Luxembourg with more than 50 years of experience. They provide high-quality testing services with a strong focus on innovation. Their R&D is driven by expert clinicians and scientists who are all committed to keeping their lab at the forefront of research and innovation.

Which technologies?

- AWS serverless computing and microservices

Which services?

- Consulting Services

Which partners?

- AWS

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Philipp Jäggi, Chief Information Officer, Laboratoires Réunis

Summary

Following the first wave of COVID-19 the Government of Luxembourg, the Luxembourg Institute of Health and Laboratoires Réunis worked together to create a mass testing system to reduce the future impact of the pandemic.

The team at Laboratoires Réunis, working together with NTT created a fully digital system to manage the testing process. The multicloud solution ensures that clinical information is securely stored on Laboratoires Réunis's private cloud with the AWS cloud providing the scalability needed for the rest of the solution, in a secure manner.

By leveraging our multicloud expertise they can process 20,000 tests per day with full visibility into the status of every test.

Business need

Preparing for future waves

Rapid and accessible COVID-19 testing is a key strategy for reducing the spread of the virus, and for Luxembourg this was critical in ensuring that it could react quickly to any developments. The country is home to a number of large companies and many people working there travel in from neighbouring countries – France, Belgium and Germany.

Following the initial wave of infections the country needed to ensure that it could minimize the impact of subsequent waves. To do this they needed a strategy to identify as many asymptomatic people as possible. These are people who have the virus but don't present with any symptoms and are therefore more likely to infect other people.

In order to make testing as accessible as possible the Luxembourg Government, the Luxembourg Institute of Health and Laboratoires Réunis worked together to expand their testing capacity. This included creating 17 dedicated COVID-19 testing centers.

These 17 centers have the capacity to conduct 20,000 tests a day with the results available within 24 hours.

Faced with this challenge the team at Laboratoires Réunis realized that not only did they need new processes for testing the samples, but the technology supporting this process needed an innovative approach as well.

"We realized right at the start that we needed a different approach to this challenge and we set about creating a new, completely digital system to meet this specific need," says Philipp Jäggi, Chief Information Officer at Laboratoires Réunis.

Solution

Partnering to support public health

From the outset of the program the IT team at Laboratoires Réunis had just four weeks to create an entirely new technology solution to enable the mass testing program.

The extraordinary nature of the situation pushed them to create a new and innovative business case. They needed a solution that was able to rise to the unpredictable nature of the situation. The extremely short time frame meant that a public cloud solution was the only way to deliver a suitably scalable and secure solution. Working with their partners, including NTT and AWS, they created a multicloud solution leveraging serverless computing and a microservices-based architecture.

Together with the team at NTT they were able to map their business processes to the architecture, ensuring that they could scale the solution and comply with all relevant privacy and security requirements. This included architecting the backend application logic to ensure that they were able to take advantage of the full capabilities of AWS.

The ability of AWS to deliver a scalable and reliable platform, while ensuring the shortest time to market at a reasonable cost were key factors in determining the choice of platform. By embracing a serverless architecture it was possible to deploy a highly scalable solution without having to invest in new hardware. This ensured that the costs were determined by the number of tests being conducted, minimizing unnecessary expenditure.

A key element of the platform was the ability to manage data securely, and at scale. The hybrid solution allowed clinical data to be stored on their secure internal cloud, with all other data securely processed by AWS. At each of the sites, information, including the patients' national health number, is captured via a smartphone app, ensuring that each test can be tracked at every step of the process. Once the results are known the patient receives an SMS with their test results and a link to download an official results document they can take to their doctor, if necessary.

"With a new architecture and accelerated timeframes, we needed to leverage the appropriate AWS services and as a trusted partner NTT, was able help optimize the architecture to take advantage of this," says Jäggi.

Outcomes

Showing the way forward for digital healthcare

Working closely with their partners, Laboratoires Réunis were able to, in just four weeks, deliver a completely new, fully digital system to manage the mass testing program.

When the second wave of infections hit Europe the benefits of this strategy became evident. Luxembourg was able to detect the rise in infections earlier that its neighbours and react quickly to contain the spread of the virus.

"With the rapid turnaround the AWS platform enabled we were able to move faster than other countries to identify infections and reduce their impact," says Jäggi.

Fully digital process

Taking advantage of a multicloud solution they can securely process 20,000 tests per day. This gives the country the ability to quickly identify potential hotspots and act timeously to reduce additional infections.

Setting a global best practise

Through innovative testing and analysis processes they've been able to create a set of best practises for mass COVID-19 testing. This will allow other countries to replicate these processes and leverage the power of technology in their fight against the pandemic.

"We hope that this will provide a blueprint for other countries in Europe, showing how they can effectively do mass testing" says Philipp Jäggi, Chief Information Officer at Laboratoires Réunis.

Partnering for digital health innovation

With the digitisation of healthcare accelerating the partnership between Laboratoires Réunis and NTT has shown how collaboration can deliver rapid solutions to key challenges. This partnership extended beyond Laboratoires Réunis, NTT and AWS, with other commercial, technology and government stakeholders all working together to ensure a successful outcome.

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