CASE STUDY

How Red Hat Integration with SECTION6 Agile Integration Services helps make SmartGate even smarter_

When any traveller enters or leaves New Zealand, their passage through the country's borders is facilitated by open-source software which powers the SmartGate automated self-service border control system. In a recent upgrade, the New Zealand Customs Service selected Red Hat Integration and solution provider SECTION6's Agile Integration services to boost SmartGate and today enjoys an efficient and scalable system which meets escalating (pre-COVID) demand for rapid processing of everyone entering or leaving the country.

The New Zealand Customs Service (NZCS) protects and promotes New Zealand through world-class border management. NZCS provides border services that protect the country and advance the economy; promote international trade, collect Crown revenue, and prevent dangers, hazards, and threats from entering New Zealand. The Crown agency is responsible for ensuring that lawful travellers and items can move across the border as smoothly and efficiently as possible and operates in every location in New Zealand where there are international departure and arrivals.

Situation

Prior to the upgrade, SmartGate was powered by software provided by another country's border agency and included bespoke proprietary middleware components integrated with core legacy applications. The software had a significant IT footprint which had evolved organically to include multiple applications built with traditional technologies.

These applications were delivered and operated using a traditional waterfall approach.

Under this model, it was increasingly difficult and costly to deliver business value at the rate of innovation demanded by NZCS as it sought to modernise border management.

The monolithic nature of the applications and the proprietary vendor/technology stacks were not suited to the desired agile approach which facilitates iterative delivery of dependable, automated processes including continuous delivery and DevOps.

Lacking the resilience necessary for a crucial service, it was deemed a critical risk that stood in the way of NZCS' ambitions for the SmartGate program, necessitating an upgrade.

Solution

With Red Hat Integration at its core, SECTION6 applied DevOps techniques to upgrade SmartGate and established a template for a modern application delivery framework within NZCS' environment. This reduced time to value for new business applications and services and provides a rapid feedback loop.

The supporting Red Hat software is distributed across multiple geographical locations including airports and national data centres and must remain operational for extended periods even in the event of network failures or backend application outages. Given that New Zealand is a desirable travel location with historically growing arrival numbers, scalability is essential to handle anticipated (and even unanticipated) workload expansion.

Other factors considered in the selection of Red Hat Integration included the necessity for adaptability to allow dynamic changes to processing parameters based on location, direction, nationalities, or other metrics as required.

Finally, as SmartGate is itself an automated solution demonstrating the value and efficiency of hands-off processing, NZCS has selected software that is easy to automate while taking advantage of modern DevOps processes, reducing operational costs.

Results

The upgraded SmartGate touches many people, with beneficiaries including the New Zealand public and international travellers to and from our country. Streamlined, accelerated processing of passengers allows for rapid traveller growth in airports – bound to return as COVID vaccines emerge - while creating a much-enhanced traveller experience.

Delivering significantly lower costs than competing products, the Red Hat solution is lightweight with modern capabilities which have resulted in a highly available, distributed and fault-tolerant solution based on cloud-native application principles..

This means passengers are processed automatically even if parts of the system are degraded or offline.

With the new systems, NZCS has seen efficiency gains which equip it to handle increasing passenger movements in and out of New Zealand, without dramatic increases in staff numbers. In fact, the new generation software is behind a 27% increase in passenger numbers processed trouble-free by SmartGates.

With average passenger processing time reduced by 40% compared to the previous solution, SmartGate is more efficient, 'busting' queues and enhancing the traveller experience.

This has seen a simultaneous 13% reduction in manual processing; the value of the desired and delivered flexibility is clear in NZCS boosting the number of passport nationalities processed at SmartGates.

Modern methods and modern software means making changes and updates faster and with ease. For example, the time taken for software changes and Biometric Algorithm updates is dramatically reduced, delivering the agility sought in delivering better customer experiences with fine-tuning and constant improvements.

With a more robust and resilient system, border operations staff are confident in executing their mandate, free from onerous manual processing due to system outages. A further benefit is the new system's improved accessibility to other NZCS software and the external systems of other local and international agencies.

Greater intelligence in complex operations is further enhanced by monitoring and business intelligence infrastructure introduced through the project. The result is the exposure of previously inaccessible information and trends (such as processing failures for passports from certain countries or specific passport series, statistics, and aggregated behaviour for classes of passengers, impact on processing time for new questions).

This has provided NZCS with new capabilities that enable swift and informed decisions based on insights gained from more effective use of data.

The project has clearly demonstrated the value of working in an agile, collaborative way in the public service. The outstanding success achieved has prompted the establishment of an agile delivery framework for use by teams across the wider organisation, with agile and DevOps practices accelerating and de-risking other pieces of work at NZCS.

SECTION6 provides DevOps services for the development and operations of business-critical and mission-critical software applications and their platforms.

Software has become more complex, not less. And organisations like the New Zealand Customs Service rely more and more on their software to succeed in their mission. Because of this, you need to address the creation and support of software holistically—connecting the software application to the platform that plans, builds, deploys, tests, monitors, and operates it.

SECTION6 does this through DevOps services that combine agile delivery methods with automation of the software development and software operation life cycles—delivering both the software application and the development and operational platform. In this way, your application is built to be reliable, scalable, secure and adaptable, now and into the future. What organisations need to stay on mission.

Your mission is SECTION6's mission.

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