



Tygart Redefines Government Intelligence Gathering with Cloud Computing



Headquarters:
Fairmont, WV

Industry:
Federal and State Government

Solution:
Digital Media Intelligence

Tygart Company Overview

Since 1992, Tygart has provided a full range of advanced software for digital media intelligence and biometric identification to the U.S. intelligence community, Department of Defense, Department of Justice, and civilian agencies in the public sector. Tygart also supports the operation and maintenance of one of the largest and most widely used biometric systems in the world - the FBI's Integrated Automated Fingerprint Identification System (IAFIS). The company's MatchBox™ software helps identify and track the individuals, events, locations and organizations identified in digital media. MatchBox Media Exploitation (MX) Server, the latest addition to the company product line-up and the first to be powered by Appistry CloudIQ Platform, enables the automatic discovery of faces in collections of digital imagery and video, and allows the entire repository to be biometrically searched.

Challenges

Due to the growing availability of new intelligence sources and enhanced inter-agency collaboration, the expectations of the Tygart user have been rapidly shifting – “Why shouldn't the search for a terrorism suspect be as fast as a Google search?” Tygart quickly realized it would need new technology to address these new customer needs. Therefore, Tygart began to develop MX SERVER, which would be specifically designed to address these more demanding customer requirements. The company recognized that its ability to effectively scale MX SERVER would directly impact its ability to increase the throughput and timeliness of the software's results, in turn determining the competitiveness of its solution. Furthermore, the data deluge wasn't stopping anytime soon, and Tygart was determined to stay one step ahead.

Goals

In seeking out an approach to ensuring MX SERVER's scalability, Tygart recognized the need to allow their developers to continue to focus on delivering world-class media intelligence features. Every hour spent adapting the company's products to be “cloud ready” – so that they could be easily deployed to a commodity computing environment and scale across the resources available – would be an hour taken away from perfecting the algorithms and processes that helped them solve customer problems. They knew they would need to invest to achieve their goals, but Tygart wanted to avoid compromising its developers' focus.

“Increased scalability and efficiency were expected from this implementation, but the sheer horsepower Appistry enabled us to harness, and the ease with which we were able to do so, has been a surprise to all of the partners and players involved.”

John Waugaman
CEO, Tygart

Tygart identified the following additional objectives to guide their search for a solution:

- **Achieve massive scalability:** Processing digital media such as video and photographs can be data-intensive and easily consumes large amounts of available processing power. The ability to scale as needed for intensive periods of processing was a major goal of the project. Furthermore, Tygart’s customers needed to be able to incrementally scale, to have the option to start small and grow over time, or easily add resources in a time of emergency, in order to meet the agency’s mission.
- **Future proof the product line:** Tygart saw clouds clearly on the horizon and sought a way to cloud-enable its product line, allowing itself and its customers to be in alignment with an increasing emphasis on cloud computing adoption by the U.S. Federal Government. Specifically, they sought a solution that would allow MX SERVER to be easily deployed in a private cloud environment today, while ensuring the ability to deploy in public and even hybrid cloud configurations later, based on the needs of their customer.
- **Simplify deployment and operation:** Tygart could not fix its scalability challenge at the expense of increasing the complexity of its solution for customers. They needed to ensure the ability to quickly and easily deliver the solution. “It used to be that implementation cycles in government were very lengthy,” said John Waugaman, Chief Executive Officer of Tygart. “But when you are talking about going head-to-head with terrorists, deployments need to happen in 90 days or less, and within that timeframe they have to be efficient, scalable and display high performance.” Furthermore, because their customer considered total cost of ownership (TCO) in the purchase process, Tygart needed to ensure that the system would be easy for Tygart’s customers to manage – the customer had to be comfortable with the cloud computing environment if Tygart was to sell its solution.

In addition, the company knew it needed a solution offering quick time-to-market. The most elegant solution in the world wouldn’t help them if it took years to develop. Because its customer’s needs were changing so rapidly, Tygart felt the window of opportunity would close if they couldn’t act fast.

Solution

Rather than hand-crafting a distributed computing solution, Tygart chose Appistry CloudIQ Platform upon which to build MX SERVER, saving many months of development and millions of dollars.

With Appistry CloudIQ Platform, Tygart was able to deliver an MX SERVER product able to:

- Readily scale-out across available compute resources, from a handful of servers to hundreds or thousands of processing cores
- Automatically configure new resources as they become available, dramatically simplifying the management of very large scale implementations
- Enable agency customers to deploy in private data centers or public clouds

Appistry CloudIQ Platform allowed Tygart developers to focus on the business value of MX SERVER, while the platform ensured the scalability of the end solution. Because the Appistry platform is infrastructure independent, Tygart also gained the ability to deploy their solution on any cloud or virtualized infrastructure – public as well as private – future-proofing their technology and giving customers the flexibility to choose the deployment environment that best suits their needs.

Results

Tygart's partnership with Appistry enabled the company to meet all of its objectives for delivering MX SERVER.

"The architecture of Tygart's MX SERVER was built completely around Appistry CloudIQ Platform," said Waugaman. "Increased scalability and efficiency were expected from this implementation, but the sheer horsepower Appistry enabled us to harness, and the ease with which we were able to do so, has been a surprise to all of the partners and players involved."

"We were also pleased with the openness of the Appistry platform, which allowed us to easily increase information sharing and permitted us to leverage other digital media management platforms. This enabled us to be streamlined and efficient in the customers' overall architecture. That's an extra we didn't expect."

Specific benefits the company has seen include

- Tygart was able to deliver its MX SERVER product ahead of schedule and under budget, and well within the market window the company had identified.
- The CloudIQ-powered MX SERVER achieves a 60x acceleration in processing time, translating into the potential savings of millions of dollars for Tygart customers. For example, the processing of a large image repository that once took 2 weeks of an expensive video analyst's time now can be accomplished in about an hour with MX SERVER.
- Because MX SERVER runs on low-cost commodity hardware as opposed to the "big iron" systems traditionally employed, customers can get up and running more quickly and can save money while increasing performance.

Looking to the Future

Tygart is well-positioned to help government agencies harness the power of the cloud to solve the most mission-critical of challenges – preventing terrorism at home and abroad.

"It's exciting to see how government is an early adopter when it comes to cloud computing – that's a paradigm shift. We're fighting a very agile, ever-changing enemy that is dispersed and loosely organized. It's ironic that these are the same characteristics that make cloud computing so powerful, and are leading to the obsolescence of the accepted metabolized cycle of ingesting, processing and managing digital media for intel purposes," said Waugaman.

"Our customers ask us to continue pushing the envelope to bring them better, faster, cheaper and more convenient solutions to win the digital media management side of the war on terror, without compromising security. We know now that cloud computing is a critical path component to a winning enterprise strategy to digital media and identity management. We're glad to have Appistry as a part of our team."

For More Information

For more information, visit www.appistry.com, or call 888-APP-0111 (888-277-0111).