

Olympic & Paralympic Games Tokyo 2020

Accelerating the delivery of high-quality applications
supporting athletes, Organizing Committees and a
global fanbase of billions



At a glance

To advance the technologies that deliver the Olympic and Paralympic Games, Atos and delivery partner Micro Focus accelerated the development, testing and integration of mission-critical applications using Micro Focus LoadRunner.

Outcomes

- Migrated development and testing to the cloud environment for Tokyo 2020 Games.
- Delivered 200,000+ hours of testing to help ensure success of Tokyo 2020 Games and beyond.
- Increased volume of data by 30% during testing, supporting more digital connections than originally planned.
- Decreased number of physical servers by 50%.



Reaching out to a global audience

As the long-term Worldwide IT Partner for the Olympic Games, Atos is helping the International Olympic Committee (IOC) achieve success in its ongoing digital transformation. Tokyo 2020—the 10th consecutive Olympic Games and 7th Paralympic Games with Atos as Worldwide IT Partner—was the most digitally connected Games ever, reaching a global audience of more than 3 billion viewers in 2021.

For Atos and the IOC, Tokyo 2020 was the culmination of years of innovation and hard work to bring real-time data to fans for a truly personalized experience. Ensuring a safe, secure, sustainable and digitally enabled Games required Atos to build and test hundreds of critical IT applications.

Marc Gutierrez, Major Events CTO at Atos, explains: "Each edition of the Games demands a comprehensive program of building and testing software to ensure faultless reliability and performance. We have to define and execute an intelligent strategy to evaluate the applications in multiple scenarios, as well as working with multiple other IOC and OCOG partners to integrate their software and support their testing programs."

For almost 20 years, Atos has used Micro Focus software to plan and manage testing, to align teams, and to provide consistent reporting and statistics to stakeholders. As part of the ongoing evolution of the Olympic Management System (OMS) and Olympic Diffusion System (ODS), Atos has adopted a build-once, use-many-times model in which cloud native- applications are delivered using Agile and DevOps practices. To support these changes in the run-up to Tokyo 2020, Atos upgraded from Micro Focus Performance Center to Micro Focus LoadRunner for testing.

"Preparations for Tokyo 2020 were significantly disrupted by the Covid-19 pandemic, requiring the IOC, OCOG and its partners to carry out complex rescheduling at short notice," says Gutierrez. "Our Micro Focus tools helped more than 200 Atos team-members across three dedicated locations to adapt to these challenges and support the IOC and Tokyo 2020 Organizing Committee in delivering a successful Games."

Managing quality across multiple partners

The most important applications for the Olympics are grouped into two key sets: the Olympic Management System and Olympic Diffusion System. OMS helps the organizing committee to manage all aspects of setting up and running the Games, including: accreditation of staff, workforce management, competition schedules, athlete entries and qualifications, and the portal for recruiting volunteer workers from the local population. ODS collects and processes the results information in real time in Tokyo venues, to then deliver them through multiple channels: ready-to-use web widgets, data feeds, mobile and web apps, and the all-important commentator information system for broadcasters.

OMS and ODS are both critical for the Games. Without the Olympic Management System, the complex logistics required to stage what is the world's largest sporting event would not function. And without the Olympic Diffusion System, the global audience would not receive any official results.

"Reliability and security are critical for OMS, while availability and performance are the most critical attributes for ODS, which is responsible for providing information to global broadcasters, journalists and fans," says Gutierrez. "We have to be able to deliver updates to commentators in less than 0.3 seconds, and to global web users in less than two seconds."

OMS and ODS undergo changes for every new edition of the Games: for example, to support new events such as the mixed-team events that made their debut at Tokyo 2020. To manage and test all changes to ensure that the applications meet the IOC's rigorous SLAs, Atos uses the LoadRunner SaaS solution.

"We use Micro Focus LoadRunner for defining test cases, automating tests and tracking defects, helping to keep teams aligned," says Gutierrez.

In addition to managing all the regular changes that take place from one edition of the Games to another, the most recent cycle saw Atos drive a significant modernization program. Against a backdrop of introducing DevOps and a cloud-native architecture, Atos adopted a microservices approach to break down what

were previous monolithic applications. The company has implemented a total of 586 containerized microservices, enabling it to complete the containerization of ODS. The project is ongoing and will be finished before the next Olympic Winter Games in Beijing.

"The move to microservices and containerization is making it faster and easier to maintain and evolve the applications," says Gutierrez. "Naturally, this significantly increased the integration and testing work, but with the Micro Focus solutions we were able to increase the volume of data by 30 percent during testing in anticipation of the need to support more connections than originally planned."

Moving from an on-premises deployment of Micro Focus Performance Center to Micro Focus LoadRunner will further improve flexibility for Atos. "LoadRunner makes it easy to test performance from different locations around the globe," says Gutierrez. "This means we can look at the actual response times from our apps depending on geography, which is critical in supporting an event like the Olympics."

Delivering successful events

The adoption of a build-once, use-many-times model, supported by Micro Focus technologies, has enabled Atos to decrease the number of physical servers it uses by more than 50%, cutting power usage and emissions. This also limited the need to build infrastructure in Tokyo, which was particularly beneficial in light of Covid-19-related countermeasures. Those countermeasures led to a late spike in demand for systems access from broadcasters working remotely. Atos was easily able to scale up the testing and delivery to meet this need.

"The flexibility and resilience of Micro Focus tools helped us to take the complex rescheduling of the Tokyo 2020 Games in our stride," says Gutierrez. "Managing the Cloud Orchestration the delivery model of these tools made easier to coordinate the work of remote teams."

The combined effect of adopting microservices and CI/CD practices has enabled Atos to increase efficiency and achieve three-times faster delivery without extra costs or resources. As the company ramps up its preparations for both Beijing 2022 and Paris 2024, automated testing using the LoadRunner SaaS solution will allow many more hours of testing with the same staff resources. "We'll be doing 100,000 hours of testing for Beijing, and at least 200,000 hours for Paris," says Gutierrez. "Previously, testing was limited by the number of people we had, but with the Micro Focus LoadRunner SaaS solution we'll be able to achieve higher quality faster, and with the same resources. We'll also be able to add bugs to the backlog faster and fix them sooner."

LoadRunner SaaS solution supports the Agile practices adopted by the IOC from 2017 onwards. Overall quality and delivery speed have improved significantly since then, as all partners have been able to work much more closely together. With shorter development cycles, apps meet requirements more precisely, ultimately increasing customer satisfaction.

"The success of Tokyo 2020 was testament to the quality of work executed by Atos, the IOC, the OCOG and the other partners," says Gutierrez. "The Micro Focus tools helped us to coordinate all the complex development and testing of the critical software assets that underpin the delivery of the Games. We look forward to continuing our close relationship with Micro Focus to keep improving delivery speed and application quality, which will help us to ensure the success of the upcoming Games in Beijing and Paris. "

Who Is Atos?

Atos is a global leader in digital transformation with 107,000 employees and annual revenue of €11 billion. The group provides tailored end-to-end solutions for all industries in 71 countries and is a global pioneer in decarbonization services and products. Across the world, Atos enables its customers and employees—and members of societies at large—to live, work and develop sustainably, in a safe and secure information space.



Marc Gutierrez
Major Events CTO, Atos

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Integrated third-party solutions

- GitLab
- Jenkins CloudBees Flow

Host environment

- On-premises
- LoadRunner SaaS solution

Development methodology

- Agile/DevOps

About Atos



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The [purpose of Atos](#) is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

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