

# Alstom gives its engineers the means to access 3D data and applications from anywhere thanks to telework

## The world's largest employer of engineers offers remote staff a high-performance workspace experience with Citrix

French multinational transport specialist Alstom offers a full range of solutions from high-speed trains, underground trains, trams and e-buses, to integrated systems, customized services and infrastructure, digital mobility and signaling solutions. To respond to all these markets, the company employs more than 75,000 people across 105 sites in 60 countries. It had a turnover of more than 15 billion euros in 2019/2020 and has 280 clients in its B2B portfolio.

The group is one of the world's largest employers of engineers. 18,000 engineers are employed by the group, 1,500 of whom work on critical on-site projects using Computer Aided Design (CAD) tools. As a result of the COVID-19 health crisis, everything ground to a halt. Mehdi Belahcen, Compute & Cloud Manager at Alstom, says: "The cost of an engineer who cannot work is €800 per day. That's before you factor in the penalties imposed for late delivery of a product." Remote capabilities therefore become critically important.

### Shifting to a virtual, cloud-based CAD experience

The company's in-house CAD tool, DMA, requires powerful graphics workstations and a low-latency, high-performing local network, which is why the tool was deployed across 23 different sites, enabling on-site engineers to interact with the application. In March 2020, the group's technical director began to look for a way to guarantee business continuity going forward. Alstom approached its IT provider, DXC, and decided on the Citrix on Microsoft Azure solution.

"We have worked with Citrix on various requirements related to latency-sensitive applications for many years but had never deployed its solutions for pure 3D CAD before," explains Belahcen.

# ALSTOM

**Industry**  
Transport

#### Citrix products

- Citrix Virtual Apps and Desktops
- Citrix ADC

#### Key Benefits

- Citrix solutions provide huge operational scalability for Alstom
- CAD activity was virtualized for remote workers within four days
- Remote latency times are practically the same as on-site

DXC, a Citrix center of excellence, suggested harnessing an existing server fleet in the Alstom data center and another in Microsoft Azure, which was already used by the multinational. In just four days, the Citrix on Azure solution was up and running for the European engineers. It was fully operational two weeks later, following team training. The 1,000 European CAD engineers have therefore been able to work from home since mid-March 2020, using their own computers, retaining the same flexibility and speed that they enjoy on site. Such is the success of the operation that it was replicated in just 10 days in Bangalore, India. The 500 engineers there have been able to work remotely for nearly a year achieving the same output as their European colleagues.

### Virtualization delivered in the SaaS model

Belahcen also decided to deliver [Citrix Virtual Apps and Desktops](#) as a service in the Citrix cloud. This layer concerns the back end, virtualizing the workstations and applications on any type of device including server clients and on any network. The Azure cloud hosts the front-end resources consumed by users. To enable communication, connections are deployed between the front and back end, as well as a security layer. Users have to enter their name, password and a code that is received by text message. [Citrix ADC](#) is used to secure and optimize the network. The 3D traffic is compressed, making it easy for engineers working remotely with a slow connection to handle graphical data.

### Provision of on-demand resources

While the employees are very happy with the new infrastructure, it has also given rise to significant financial benefits. The Citrix MCS (Machine Creation Services) module allows Alstom to deliver on-demand resources, such as the creation of 1,500 virtual machines in Azure in just a few minutes. The company can also select operating times for these virtual machines in this public cloud, allowing a pay-per-use charge to be levied and ensuring a reduction in Alstom's carbon footprint. In fact, in an environment relying on a traditional data center, VDIs are always running. With Citrix, they consume power only when in use.

According to Belahcen: "This scalability is essential. I can scale the virtual 3D machines up or down by simply changing a value in an Excel file." Alstom now has an agile IT infrastructure with a stable solution that will be retained after lockdown. Such has been its popularity that external partners have also chosen to adopt it.

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**Mehdi Belahcen**  
Compute & Cloud Manager  
Alstom

### ‘Anytime, anywhere, any device’ strategy

As part of its ATAWAD strategy (anytime, anywhere, any device), Alstom is currently working toward replacing its computers with virtual machines or VDIs (Virtual Desktop Infrastructure). As the internet is the most appropriate connection because the network is rarely lost, the strategy comes into its own here, without overlooking security.

Alstom now has a high-performing, scalable infrastructure capable of adapting to any situation. And, who knows? This environment may one day host virtual reality remote working.

**“Thanks to the Citrix solutions, our 1,000 European CAD engineers have been able to work from home since mid-March 2020, working on projects from their own computers yet retaining the same flexibility and speed that they enjoy on site.”**

**Mehdi Belahcen**  
Compute & Cloud Manager  
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