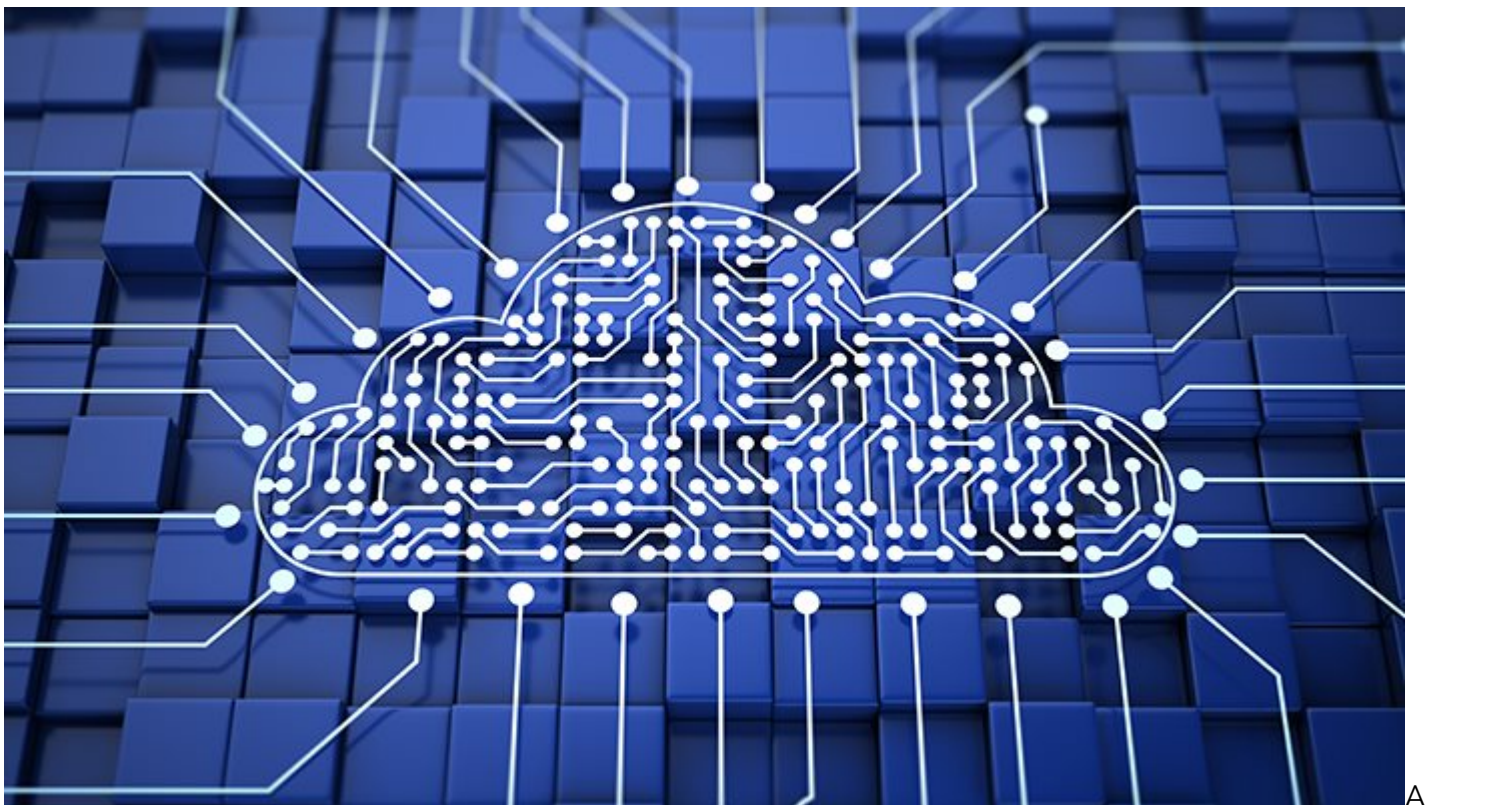
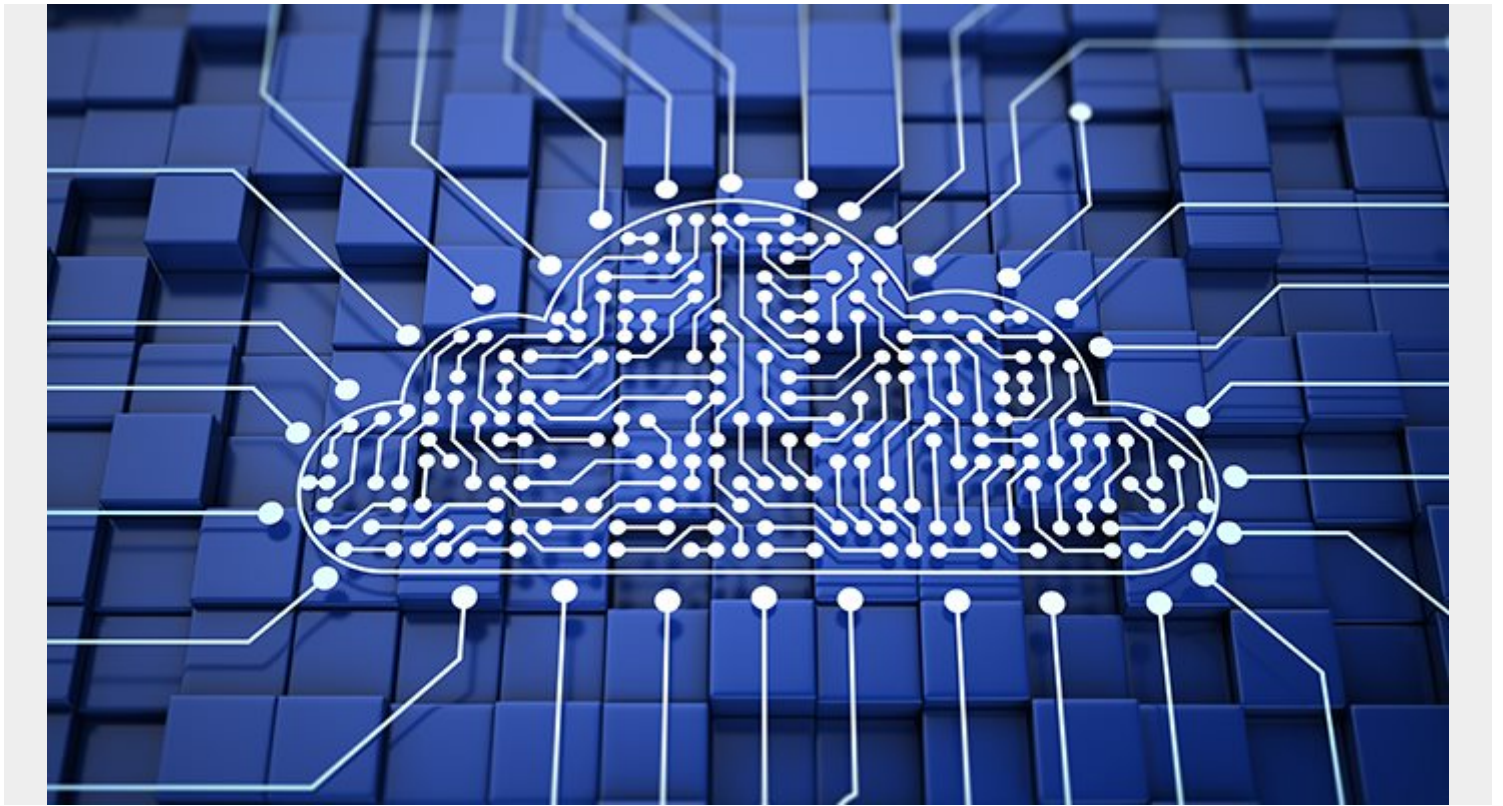


AMADEUS SHAPES THE FUTURE OF TRAVEL WITH DEVOPS AND CLOUD



global leader in the travel industry, Amadeus IT Group is the connection point conducting over 90% of global transactions between travel buyers, providers, and sellers. Our systems are relied on by over 700 airlines, almost 600,000 hotel properties, and hundreds of airport operations, ground handling, cruise, rail, ferry, and car rental companies, and even travel insurance providers. We operate in more than 190 countries worldwide, processing more than 3.9 million net bookings per day and over 55,000 transactions per second at peak. Amadeus systems support our customers with:

- Handling bookings and ticketing
- Managing flight check-ins
- Processing boarding passes to facilitate aircraft boarding
- Delivering passenger manifests to government agencies before planes leave their gates
- Ensuring correct plane fueling levels
- Managing flight, hospitality, and baggage schedules
- Distributing data
- Billing and other financial transactions
- And much, much more...

To keep everyone and everything moving across the globe and many different time zones, these services must operate at always-on, near real-time speeds. And, that requires robust IT infrastructure to support the high-speed digital demands of today's travel. With travel transactions driven by online and mobile customer behaviors growing at double-digit rates, we are constantly working to ensure our infrastructure can support this growth.

It's my responsibility to keep the workloads that support all of these transactions on track in the face of rapid growth and increasing customer expectations. Control-M has helped me successfully deliver against our goals for nearly 18 years.

Amadeus runs [Control-M](#) to automate over 300,000 jobs every day, of which tens of thousands are considered mission-critical. To handle this growth, our ops teams and 5,000+ developers are re-organizing into [DevOps](#) teams and are moving our technology and applications to a private cloud, which we call Amadeus Cloud Services (ACS). We are making the transition to the private cloud using Control-M as a core technology platform along with Docker, Kubernetes, and OpenShift.

Keeping workloads humming

Our workflows support critical, time-sensitive services, and on-time completion is a business imperative. Even a small delay on our part could seriously affect the business of our customers.

For example, a slowdown in boarding pass processing or late delivery of passenger manifests might delay a flight's departure. That creates a domino effect as a delayed takeoff turns into a late arrival at the destination. If no arrival gate is available, more delays occur and passengers may miss connecting flights. A change in flight crew may be necessitated causing even more disruption. The end result is high customer dissatisfaction levels and costly rebooking activities.

File transfers are a major part of keeping flights on schedule. We serve hundreds of airlines, including major carriers such as Lufthansa, British Airways, Qantas, and Southwest. Each one has hundreds of flights daily. Every flight involves hundreds of data points. We have approximately 30,000 file transfer jobs and the number of data points we move every day is growing exponentially.

As with workflows, timely completion of file transfers is essential. For example, when an airline increases fares, it reports the increase to a publisher such as Airline Tariff Publishing Company (ATPCO), which distributes it to all interested entities including Amadeus. Our systems must then update the fare price database to put the higher fares into effect. Failing to meet our service level agreements (SLAs) for this update could result in tickets being erroneously sold at the lower price, causing the airline to lose revenue.

The level of workload and file transfer automation provided by Control-M has enabled Amadeus to successfully meet stringent SLAs for nearly two decades despite rapid growth and the skyrocketing demand for greater mobility and faster transaction speeds. Additionally, we've been able to absorb significant growth without a corresponding increase in resources.

Increasing development agility

Digital technologies have completely redefined and transformed the travel industry. Consumers are constantly demanding new and enhanced services. Our job is to ensure that our customers can meet their customers' demands and excel in a highly competitive marketplace. For me, that means streamlining and speeding the process of defining and deploying workloads all while keeping my eye on transaction costs and ways to continue driving that down.

Early on, defining and deploying jobs was a manual process. We built an in-house tool so developers could enter job definitions. Our scheduling team then copied the definitions into Control-M. As we evolved our process, we developed a tool that permitted developers to specify jobs using XML. The tool converted the XML into Control-M and loaded it into the Enterprise Manager. However, because we did not have the resources necessary to support and evolve the tool, we were unable to gain wide adoption by our 5,000+ developers.

Last year we replaced that homegrown tool by expanding our Control-M environment. We're now migrating applications using Control-M, which enables developers to take full ownership of their applications.

These newly implemented Control-M capabilities allow us to:

- Eliminate the manual request process, significantly reducing time to resolution.
- Empower our developers to adopt a Jobs-as-Code approach where the jobs can be built, tested and debugged in code and stored within their existing CD/CD pipeline. The result is greater agility and faster delivery of new services and enhancement of existing ones.

With these new capabilities, we estimate that we will save at least 20% of the time it now takes to define and move workloads from development to production. Considering the number of jobs we handle, the savings will be substantial. To speed the process even further, we plan to more fully automate the business process of moving workloads from development through test and into production.

Heading into the cloud

As we move into the future, every action we take has to focus on ensuring the continued stability and high performance of the services we deliver. That's easier said than done, of course. At Amadeus we continue to look towards technology and strong partners to help us as we work to improve our business to serve our customers.

As mentioned before, a key path to our success lies in moving to our private cloud. Over time, we plan to transition all our applications from today's VM-based environment to ACS.

Control-M is a key vehicle in our cloud journey. It facilitates the process of migrating workloads to the cloud. What's more, it enables us to manage both VM-based and cloud-based processes from the same platform—a capability that is essential to getting us through the transition. Our approach is to deploy Control-M agents to the cloud as part of the Docker image while keeping the Control-M servers on premises, at least for the near future.

With the changes we've implemented already, Amadeus is able to process more than 49,000 end-user transactions per second and maintain more than 220 million lines of code, all while performing more than 5,500 IT changes and more than 540 application software loads monthly - driving per transaction costs down and delivering an average availability of 99.99%.

BMC has constantly evolved Control-M to keep pace with technology innovation. The BMC staff provides training and technical support when we need it and listens to us when we suggest product improvements. That's why we have every confidence that Control-M will continue to help us meet the workload automation challenges we face as we move to cloud.

Learn more about how **Control-M** can empower your **DevOps** and **Cloud** journey.



Plus, check out this [short video](#) from the 2017 DevOps Enterprise Summit in London, where our developers share more about why Control-M is a critical part of our DevOps strategy.