



Digital transformation drives fleet and passenger growth at JetBlue Airways

Key points

- 1 Airline has been transformed, with a platform for growth, agility and optimal customer experience
- 2 Oracle Private Cloud based on Exadata and ZFS. Designed, implemented and managed by Cintra
- 3 Cintra is JetBlue's strategic Oracle partner, providing Oracle architecture services and Oracle managed services

JetBlue accelerates its expansion strategy, using Oracle private cloud architecture to underpin its commerce platform and aircraft maintenance systems. Designed and managed by Cintra, the business-critical platform is empowering the airline to achieve its vision by enhancing customer experience, enabling agility across operations and supporting growth.



“
 As a business, we’ve grown a lot since the migration to the Cintra-designed Oracle private cloud. We have benefited tremendously from the marked improvement across key operations, which gives us significant confidence that our platform has been well-designed, well-architected and is operationally well maintained and, as a result, able to sustain our rapid growth

”
 Prem Abichandani, Manager of Database Administration, jetBlue

Air travel continues to grow in popularity: passenger numbers in the United States have increased by 42 million since 2010, with more than 762 million journeys now made every year¹.

Despite the continued growth, it’s a tough market that’s sensitive to external factors, including economic conditions, weather and world events. Airlines also face volatile fuel prices, increasing fees, taxation and competition. To be successful, they need to offer high-quality customer experiences and maintain excellent safety, while streamlining operations to be as efficient as possible.

JetBlue: A top-5 airline with ambitious growth plans

JetBlue Airways is the USA’s fifth largest passenger airline, based on available seat miles. Carrying 35 million people per year, it operates an average of 900 flights a day, serving 87 destinations.

To strengthen its global business, JetBlue has an ambitious growth plan for the coming years, including new pricing initiatives, new destinations and over 100 aircraft on order, due to be delivered by 2023². All of this is expected to drive a big increase in passenger numbers.

Digital transformation requirement

To realize these plans, JetBlue needed to transform some of its critical IT foundations to ensure they would support its continuing growth. Most notably, the underpinnings of its aircraft maintenance system needed attention, and there was also a need for a robust platform to underpin a new commerce application.

Enhancing aircraft maintenance

Maintenance systems are critical to any airline’s operations, because they provide the data that proves to the business and the Federal Aviation Administration (FAA) that a given aircraft is fit to fly.

1 Cintra at work: Digital transformation drives fleet and passenger growth at JetBlue Airways. Version 1.0 © CINTRA 2016
www.cintra.com



“

The private cloud is now our enterprise solution – we don't buy one-off Oracle platforms in the traditional server-storage architecture any more. We'd rather have a consolidated footprint. It makes support and visibility in terms of what inventory we have a lot easier and we're working with Cintra to migrate other applications from legacy to the new platform at the moment

”

Prem Abichandani, Manager of Database Administration at JetBlue, explains: “If our maintenance system was down, we'd have to stop flights, because there wouldn't be any data to justify that the aircraft had undergone the necessary maintenance, according to FAA regulations. Grounded planes mean lost revenue and greater costs.”

JetBlue uses the TRAX aircraft maintenance platform, with data stored in an Oracle database. While the airline was very happy with the application's functionality, performance was proving to be a bottleneck, due to constraints of the legacy infrastructure underpinning it.

Following aircraft incidents such as bird-strikes, it was taking days to produce the manifest lockdown reports required by the FAA, during which time an aircraft had to remain grounded. Aircraft maintenance planning queries, which tell the airline which parts to order for a given aircraft, were taking up to 15 minutes per aircraft to execute. For an airline with over 200 aircraft, this was already challenging and with more planes joining the fleet, this level of system performance was fast becoming unacceptable and was not scalable. The legacy infrastructure was also unstable, with JetBlue experiencing frequent system issues; this needed resolving.

New commerce platform to underpin ticket sales

At the same time, the airline was planning the implementation of a new commerce platform to handle its ticket sales and passenger booking services. This would replace the software-as-a-service (SaaS) platform JetBlue had been using.

The new system would give JetBlue greater control over fare sales and enable tailored pricing, meaning it could deliver a better customer experience and benefit from greater agility when reacting to

market conditions and competitor activity. However, switching from SaaS to in-house also transferred responsibility for the availability of this business-critical system from a SaaS provider to JetBlue IT.

Abichandani explains the challenge: “If there's any impact to that platform, customers can't make bookings. Two things can then happen: people call our support center, which results in a flood of calls to make bookings, or they go to a different airline, which is lost revenue for us.”

Both the TRAX maintenance system and the commerce platform therefore needed robust IT foundations that JetBlue could confidently rely on.

Selecting a Managed Services partner

With stabilising the aircraft maintenance platform identified as the immediate priority, JetBlue went to market to find a partner to take over management of the critical system's underpinnings and improve its availability.

It selected Cintra, for a number of reasons:

- Cintra had many years' experience of managing the underpinnings of the TRAX fleet management system in the airline industry
- TRAX regarded Cintra as its go-to Oracle partner, and JetBlue's system ran on an Oracle architecture
- Cintra demonstrated strong architecture capabilities, with a track record of designing, building and managing business-critical enterprise-grade Oracle environments, based on proven blueprints
- Cintra is a strategic Oracle Partner with specialized skills around Oracle's Engineered Systems and cloud architecture design expertise



Rapid stabilisation

Cintra reviewed the existing architecture to identify areas that could be improved quickly within the constraints of the existing platform. This delivered better stability within weeks, meaning JetBlue was able to turn its attention to its longer-term strategic roadmap that would transform performance of the maintenance system and enable the rollout of the new commerce platform.

Creating a Oracle Private Cloud

With both systems built around Oracle databases, and given that Oracle Database runs best on Oracle hardware, Cintra recommended the adoption of an Oracle private cloud, based on Oracle Engineered Systems.

This would enable JetBlue to operate these two critical systems from a single, consolidated private cloud environment, thereby making optimal use of its infrastructure and streamlining management. This private cloud platform would then become the enterprise-wide home for all Oracle-based systems at JetBlue.

Rapid and low-risk delivery

With high performance and availability, a necessity, Cintra designed a dual-active site, private cloud architecture for JetBlue, using Oracle Engineered Systems, including Exadata and ZFS Storage Appliances. The architecture was based on Cintra's architecture blueprints, where every element of the solution was already proven by Cintra.

This blueprinted approach led to a rapid delivery, with Cintra's architects and engineers implementing the new private cloud platform in JetBlue's data centers, configuring the platform and working with the maintenance and commerce solution vendors to optimize the applications on the new platform.

Within six months, JetBlue was ready to go live with its new commerce platform on the private cloud. The aircraft maintenance platform followed shortly afterwards.

Instant impact

The Oracle private cloud environment has delivered transformational change for JetBlue, with a significant increase in service levels across the board, now backed by formalized SLAs. There have been double-digit increases in performance and an overall rise in confidence as a result of the operational excellence delivered by Cintra's Managed Services team on the private cloud platform.

Category	Task / Transaction	HP/EMC Legacy Run Time	Oracle on Oracle Run Time	Improvement
TRAX	Mx Planning Query - Single Aircraft	5 minutes	15 seconds	X20
TRAX	Mx Planning Query - Entire Fleet	30 minutes	5 minutes	X6
TRAX	E/C Compliance Print	20 minutes per AC	1 minutes per EC	X20
TRAX	A/C Component Print	15 minute per AC	5 minutes per AC	X3
TRAX	Application Release Upgrade	135 minutes	45 minutes	X3
TRAX	AC Records Lockdown	48 hours	6 hours	X12
Database	Data pump Export	12 hours	2 hours	X4
Database	RMAN Backup	14 hours	2 hours	X7
Database	Physical Database Cloning	48 hours	6 hours	X12
Database	Logical Database Cloning	NA	15 minutes	New Capability
Database	Database Statistics Collection	20 hours	2 hours	X10

Abichandani adds: "As a business, we've grown a lot since the migration to the Cintra-designed Oracle private cloud. We have benefited tremendously from the marked improvement across key operations, which gives us significant confidence that our platform has been well-designed, well-architected and is operationally well maintained and, as a result, able to sustain our rapid growth."

“

The great thing about Cintra is the team works as though they're an extension of the JetBlue team. It doesn't feel like you're dealing with a third party and being pushed through additional processes. Cintra conforms to our rules, regulations, ways of working and policies

”

“

Cintra's team has also been easily accessible in terms of the demands that we have. We get a lot of last-minute requests and they've been very accommodating, as opposed to other support organizations that can have a lot of process around how requests flow through. When we deal with Cintra, there's a lot more acceptance of the way that we operate, especially in a project setting where a lot of unplanned events come up

”

Further benefits

Commerce transformation

The successful launch of the new commerce platform has given JetBlue more control over what products it can offer its customers – and enabled it to get new offerings to market more quickly than it could previously. A large proportion of its \$5.8 billion revenue now comes through the platform running on the Cintra-managed Oracle private cloud.

This has empowered the airline to push ahead with its vision for 'Fare Families', where customers can choose from different ticket options based on their individual needs. As well as enhancing the customer experience, this initiative is expected to boost operating income (which in 2014 was \$515 million) by \$200 million by 2017³.

Moreover, by establishing its own private cloud platform to underpin its commerce platform, JetBlue now retains more revenue from each ticket sale.

Fleet maintenance transformation

Aircraft maintenance planning query execution has been cut from 15 minutes

per aircraft to 2 minutes for the entire fleet of 200 aircraft. For its in-house aircraft management and maintenance teams, this has removed a huge bottleneck they faced when planning maintenance and fleet movements.

And from a regulatory perspective, JetBlue is working towards improvements to creating the manifest lockdown reports it needs to provide the FAA. Initial improvements on the new platform have decreased the time taken from days to hours, with further improvements being worked on to further decrease the process from hours to minutes, thereby improving efficiency and drastically reducing the impact events such as bird strikes have.

These transformations mean JetBlue can grow its fleet in a sustainable way, knowing it has systems that can scale to support the associated maintenance activities.

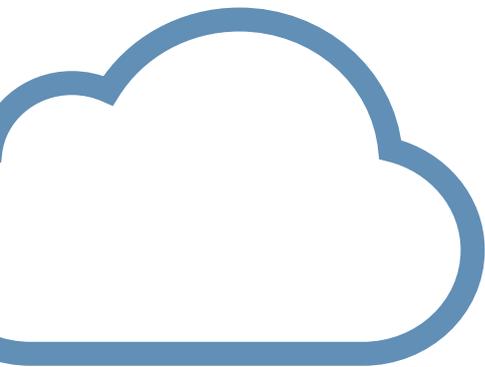
Sustainable IT operations

As predicted, the new private cloud architecture is helping JetBlue streamline its IT operations by consolidating its Oracle-based systems into a single, high-performance environment.





If our maintenance system was down, we'd have to stop flights, because there wouldn't be any data to justify that the aircraft had undergone the necessary maintenance, according to FAA regulations. Grounded planes mean lost revenue and greater costs



Abichandani says: "The private cloud is now our enterprise solution – we don't buy one-off Oracle platforms in the traditional server-storage architecture any more. We'd rather have a consolidated footprint. It makes support and visibility in terms of what inventory we have a lot easier and we're working with Cintra to migrate other applications from legacy to the new platform at the moment."

Ongoing support

Following successful delivery of the Oracle private cloud, Cintra took on sole responsibility for the support of the critical environment, proactively maintaining and upgrading it to ensure high levels of availability, security and performance across both the maintenance and commerce applications.

And as well as the further migration work, Cintra has been working with JetBlue on its adoption of further cloud-based strategies.

Abichandani concludes: "The great thing about Cintra is the team works as though they're an extension of the JetBlue team. It doesn't feel like you're dealing with a third party and being pushed through additional processes. Cintra conforms to our rules, regulations, ways of working and policies.

"Cintra's team has also been easily accessible in terms of the demands that we have. We get a lot of last-minute requests and they've been very accommodating, as opposed to other support organizations that can have a lot of process around how requests flow through. When we deal with Cintra, there's a lot more acceptance of the way that we operate, especially in a project setting where a lot of unplanned events come up."

About JetBlue Airways

JetBlue is New York's Hometown Airline™, and a leading carrier in Boston, Fort Lauderdale-Hollywood, Los Angeles (Long Beach), Orlando, and San Juan. JetBlue carries more than 35 million customers a year to 96 cities in the U.S., Caribbean, and Latin America with an average of 900 daily flights.

1 <http://data.worldbank.org/indicator/IS.AIR.PSGR>

2 <http://investor.jetblue.com/~media/Files/J/Jetblue-IR/Annual%20Reports/2014-ar-10-k.pdf>

3 <http://investor.jetblue.com/~media/Files/J/Jetblue-IR/Annual%20Reports/2014-ar-10-k.pdf>

To find out more about Cintra and how we can help you:



USA: +1 (212) 481-6501

UK: +44 (0)845 121 3242

Email: info@cintra.com

www.cintra.com