



ON-PREMISE TO CLOUD MIGRATION
FOR SPORTSBOOKS EXPLAINED:

FROM A TO Z

Part 1

“Cloud is not just a technology. It’s the backbone, a foundation. It’s the foundation for an entire betting business. When we talk about the sports betting market, a betting platform has to deliver reliability at split-second speeds and remain fully compliant with each state’s regulatory environment. Servers and their users must physically stay within the state where the transaction originated. While providers need to build a series of proprietary data centers looking for ways to not only scale but also to build the same thing again, at pace, in several other states at the same time.

Cloud is the answer. Cloud migration helps build capacity simultaneously in multiple states, removing the need of setting up hardware or patching software and considerably reducing lead time. Cloud computing also enhances data security and provides high elastic infrastructure. Cloud scales easily when volumes of new users could potentially initiate a performance hit, especially during major sporting events. We still remember the Super Bowl when all the major players, including FanDuel, DraftKings, Penn’s Barstool App, and BetMGM experienced technical issues just before and during the event sustaining a substantial financial loss. If you lose your bettors and their confidence, your competitors are right here to poach them instantly.”

Russell Karp

VP of Media and Entertainment at DataArt

Being an experienced cloud partner with certified architects, developers, data experts, security engineers, and account managers,

DataArt has helped multiple clients implement cloud solutions to drive digital transformation and modernization.

The main benefit of cloud migration is the opportunity to rationalize systems, applications, databases, data sources, and move onto more modern hardware, firmware, and middleware. Since cloud migration provides organizations an opportunity to holistically analyze their technology stack (and business processes), it will identify areas of efficiency and eliminate data redundancy,

improve data quality, and enhance overall data management and reliability.

Fewer systems and more accurate data will expedite updates and enhancements to your product and quickly identify and fix issues. Thus, business operations become easier and cheaper to deliver and support, and more accurate, timely, and secure.



“Many managers and executives are up to the reality that, if they're not relying on cloud to a sufficient degree, they simply don't have enough flexibility to respond to threats like competition and global pandemics. Threats and opportunities are ultimately the same thing, and that is change. The cloud is about flexibility, and one of the facets of flexibility is resilience, and resiliency is a huge theme these days. So, the ability to procure anything from anywhere, at any place, anytime, in any way that you want, is cloud taken to the limit. Anything IT, I should say.”

Peter Vaihansky

Senior VP, Engagement Manager Global AWS Partnership Lead at DataArt.

Why Should You Migrate to Cloud?

ON-PREMISES

9%

Software Licenses

Customization & Implementation

Hardware

IT Personnel

Maintenance

Training

CLOUD COMPUTING

68%

Subscription Fee

Implementation, Customization & Training

Ongoing Costs

- Apply fixes, patches, upgrade
- Downtime
- Performance tuning
- Rewrite customizations
- Rewrite integrations
- Upgrade dependent applications
- Ongoing burden on IT
- Maintain/upgrade hardware
- Maintain/upgrade network
- Maintain/upgrade security
- Maintain/upgrade database

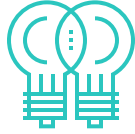
Ongoing Costs

- Subscription fee

Business Benefits



New betting markets and gambling



Better opportunities for innovation



Constant access to data



State-specific compliance with local laws and regulations



Increased collaboration



Cost optimization



Enhanced security



Mobility

Technical Benefits



High elastic infrastructure



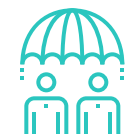
Streamlined development of new features



Automatic software updates



Enhanced performance



Disaster assistance



Autonomy for developers

The Cloud Migration Process

Step 1

Create a cloud migration strategy

Select a cloud deployment model

Step 2

Step 3

Select your service model

Define KPIs

Step 4

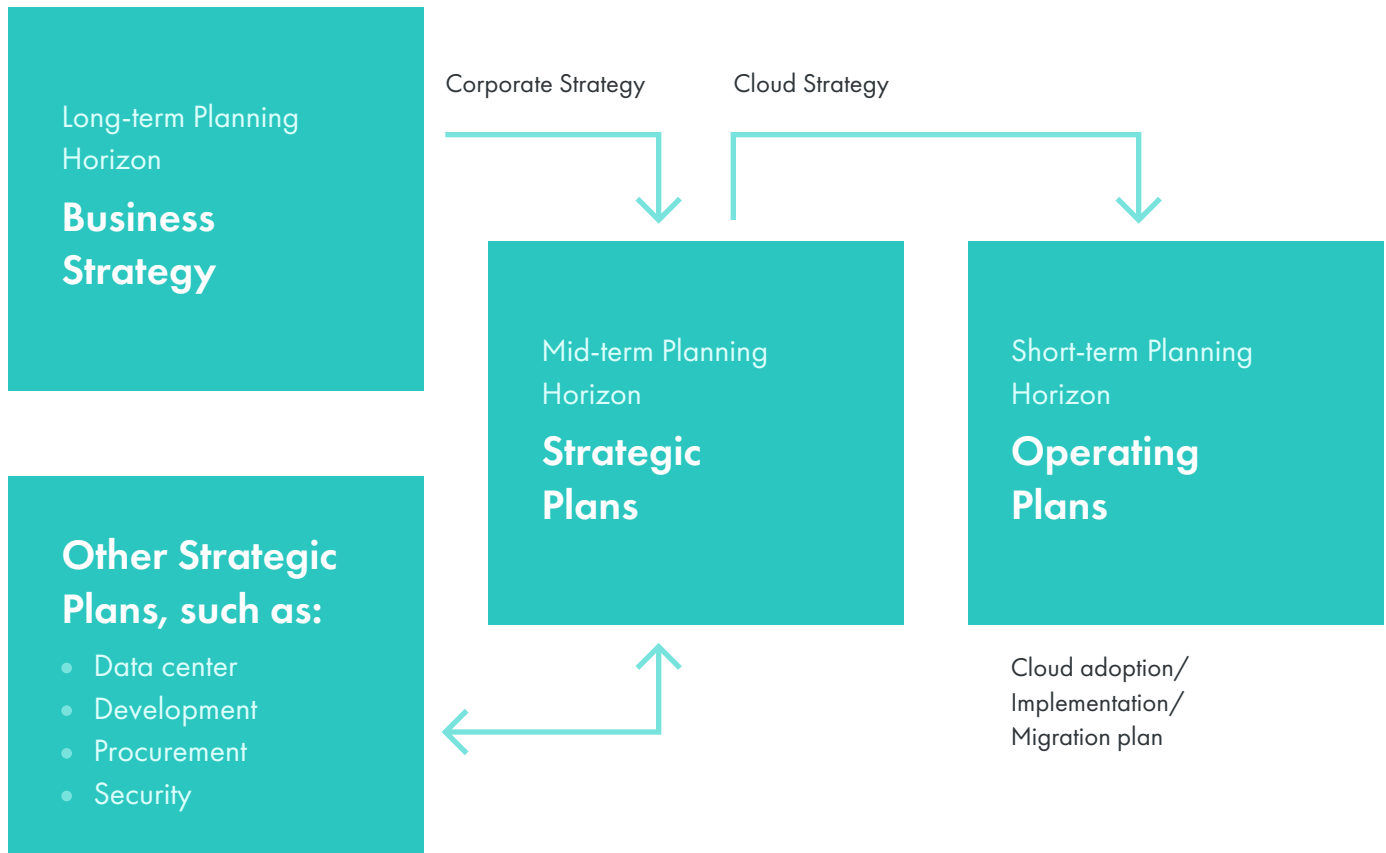
Step 5

Move to the cloud

#1 Cloud Migration Strategy

	Strategy Type	Duration	Description
Level 1	Long-term business strategy	Five years or longer	This level is expressed in terms of business goals, business transformation, and business outcomes.
Level 2	Mid-term strategic plans	Two to five years	This is where cloud strategy fits as well as data center and security strategy.
Level 3	Short-term operating plans	One to two years	At this stage, you start cloud migration and implementation activities.

Cloud Strategy in Context



What Is the Current State of Cloud Adoption?



Build

- Gather your cloud team



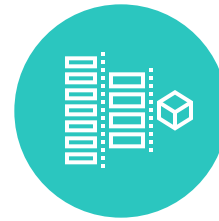
Audit

- Architecture
- Infrastructure
- Applications
- Data



Consult

- IaaS/PaaS
- Tech stack
- People/skills
- Priorities
- Dependencies
- Milestones



Plan

- Define scope
- Determine acceptance criteria
- Build backlog
- Plan iterations and checkpoints

Cloud Migration Team

Role

Description

Project Manager

Is responsible for planning, overseeing and leading projects from ideation to completion.

Business Analysts

Conducts research and analysis to develop solutions to business problems and help introduce these systems to businesses and their clients.

Solution Architect

Is responsible for designing the cloud architecture – platforms, servers, storage, content delivery, and networks.

Software Developer

Develops and deploys solutions on cloud platforms.

QA

Tests software to detect bugs and errors. Checks whether a product complies with the requirements.

#2 Overview of Cloud Deployment Models

Details	Private	Public	Hybrid
Description	Is is type of cloud computing used exclusively by one business or organization	It is the most popular model where you buy a "server slice" in a cloud computing environment shared with other clients	It combines a public cloud with a private cloud. It ensures that two platforms interact seamlessly with data
Advantages	<ul style="list-style-type: none"> - Bespoke and flexible development - High scalability - High security, privacy, and reliability 	<ul style="list-style-type: none"> - Hassle-free infrastructure management - High scalability - Reduced costs - 24/7 uptime - Agile for innovation - Reduced complexity 	<ul style="list-style-type: none"> - High scalability - High security, privacy, and reliability - Policy-driven deployment
Disadvantages	<ul style="list-style-type: none"> - Considerable expense on hardware, software, and staff training - Minimal mobile access 	<ul style="list-style-type: none"> - Minimal technical control - Decreased security 	<ul style="list-style-type: none"> - Potential for high TCO - Added complexity - Strong compatibility and integration are required

Cloud Migration Categories

	Rehost (lift & shift)	Refactor	Rearchitect	Rebuild
Description	• Redeploy as-is to cloud	• Redeploy as-is to cloud	• Redeploy as-is to cloud	• Redeploy as-is to cloud
Drivers	<ul style="list-style-type: none"> • Reduce Capex • Free up data center space • Quick cloud ROI 	<ul style="list-style-type: none"> • Faster, shorter, updates • Code portability • Greater cloud efficiency (resources, speed, cost) 	<ul style="list-style-type: none"> • App scale and agility • Easier adoption of new cloud capabilities • Mix technology stacks 	<ul style="list-style-type: none"> • Reduce Capex • Free up data center space • Quick cloud ROI
Technologies	IaaS	Containers PaaS	PaaS Serverless Microservices	
Development Approach / Organization	Waterfall Bigger teams	Lean Adjunct teams	Agile & DevOps Smaller autonomous teams	

#3 Types of Cloud Computing Services

Type	Description	Example
IaaS	Infrastructure as a service offers essential computing resources — physical or virtual servers, operating system software, storage, networking infrastructure, data center space — on demand, on a pay-as-you-go basis.	<ul style="list-style-type: none"> - Microsoft Azure - Amazon Web Services (AWS) - Cisco Metacloud - GCP
PaaS	Platform as a service is a model where a third-party provider delivers hardware and software tools for developing, running, and managing applications to users over the internet.	<ul style="list-style-type: none"> - AWS Elastic Beanstalk - Google App Engine - Snowflake
FaaS	Function as a service is a type of serverless computing that enables cloud customers to develop applications and deploy functionalities and only be charged when the functionality executes.	<ul style="list-style-type: none"> - Amazon Lambda - Google Cloud Functions - Microsoft Azure Functions - IBM Cloud Functions

On-Premises	IaaS	PaaS	FaaS
Functions	Functions	Functions	Functions
Application	Application	Application	Application
Runtime	Runtime	Runtime	Runtime
Containers	Containers	Containers	Containers
Operating System	Operating System	Operating System	Operating System
Hardware	Hardware	Hardware	Hardware

Managed by you
 Managed by the platform provider

Review of the Top Cloud Providers

Details	AWS	Azure	Google Cloud Platform
Coverage	77 availability zones within 24 geographic regions	Presence in 60+ regions across the world	Presence in 24 regions and 73 zones. Available in 200+ countries and territories
Years on the market	15 (2006)	11 (2010)	13 (2008)
Strengths	<ul style="list-style-type: none">• Dominant market position• Extensive, mature offerings• Support for large organizations• Global reach• Flexibility and a wider range of services	<ul style="list-style-type: none">• Second largest provider• Integration with Microsoft tools and software• Broad feature set• Hybrid cloud• Support for open source	<ul style="list-style-type: none">• Commitment to open source and portability• Flexible contracts• DevOps expertise• Complete container-based model• Cost-efficient
Compliance	70+ compliance offerings	90+ compliance offerings	50+ compliance offerings
Pricing	Charges per hour	Charges per minute	Charges per minute
Clients	<ul style="list-style-type: none">• FanDuel• NASCAR• NHL• NFL• Ferrari• Sportradar• Sportsbet	<ul style="list-style-type: none">• Fujifilm• Novibet• BMW• Renault Sport Formula• One Team• viaSport	<ul style="list-style-type: none">• LeoVegas Group AB• FOX Sports• Sirplay• MLB

#4 Establishing Cloud KPIs

Key performance indicators (KPIs) are any metrics that you gather to assess how your in-progress migration is doing against your expectations. KPIs help detect visible or invisible problems that may be obstructing migration.

Category	Sample KPI
User experience	Page load time, Lag, Response time, Session duration
Application/component performance	Error rates, Throughput, Availability
Infrastructure	CPU usage %, Disk performance, Memory usage, Network throughput
Business engagement	Number of odds made, Conversions and conversion percentage (%), Engagement rates

#5 Moving to the Cloud

- 1 Designing the optimal cloud infrastructure
- 2 Compelling a pilot project in parallel with the legacy processes to test the system
- 3 Improving infrastructure based on the pilot project feedback and outcomes
- 4 Moving the system components to the cloud
- 5 Configuring the CI/CD pipelines, cloud monitoring, logging, and alerting solutions
- 6 Setting up monitoring tools and enhance security

Part 2

Challenges of Migrating to the Cloud

Companies unaware of the mistakes made in their cloud adoption will overspend by 20 to 50%.

Cloud Adoption Do's and Dont's

CLOUD ADOPTION DONT'S

Don't limit yourself to a single cloud project

Don't neglect well-architected frameworks

Don't re-create your on-prem setup in the cloud

Don't carry an on-prem mindset to the cloud

Don't neglect disaster recovery for cloud infrastructure

Don't let stakeholders dally with their role in cloud adoption

Don't let cloud automation be an after-thought

CLOUD ADOPTION DO'S

→ Think about cloud holistically, start adopting it with your future potential needs in mind

→ Consider, implement, and align with well-architected practices from day one and as cloud adoption progresses

→ Try exclusive capabilities and technologies cloud has to outperform on-prem setups

→ Abandon your "pet" attitude to resources, and adopt a true cloud-oriented "cattle" mindset

→ Implement at least a basic DR strategy and test it — for the sake of business continuity

→ Align cloud adoption goals and priorities and stick to a company-wide strategy

→ Design and plan for automation from the very beginning of your cloud journey

CHALLENGE #1

Security Threats

SOLUTION

- Encryption
- Auditing of user activity
- Cloud backups
- Employee training
- Multifactor authentication
- Data classification isolate individual workloads to minimize any damage an attacker could cause

NORTH AMERICA

46%

of U.S. organizations store customer data in the cloud

Enterprise-level companies are more likely to suffer from external attacks, such as phishing, ransomware, and targeted attacks on cloud infrastructure than insider data theft.

	SMALL (1–100 employees)	MEDIUM (101–1000 employees)	LARGE (1000+ employees)
Phishing attacks	30%	38%	52%
Ransomware or other malware attacks	15%	23%	35%
Accidental data leakage	15%	14%	21%
Targeted attacks on cloud infrastructure	13%	14%	21%
Account compromise	13%	15%	20%
Data loss	14%	11%	15%
Data theft by insiders	12%	9%	9%
Data theft by hackers	6%	4%	12%
Supply chain compromise	6%	2%	11%

CHALLENGE #2

SOLUTION

Uncertain Migration Financial Costs

- Create a well-laid migration plan
- Optimize your cloud costs with the best DevOps practices
- Assess what resources you are using
- Take advantage of autoscaling
- Move infrequently accessed storage to cheaper tiers
- Set alerts for crossing predetermined spend thresholds
- Invest in reserved instances
- Leverage spot instances

CHALLENGE #3

Incompatibility of the existing architecture

SOLUTION

- Conduct a root cause analysis
- Resolve tech debt
- Phase cloud migration
- Figure out interdependent parts
- Create profound documentation
- Adopt microservices architecture
- Apply Infrastructure as code (IaC) approach

CHALLENGE #5

Business Downtime

SOLUTION

- Configure live migration
- Design your cloud infrastructure with high availability and disaster recovery in mind
- Spread your services across multiple availability zones
- Choose the right partner and the right plan e.g., 24/7 support and SLAs with guaranteed uptime and back-ups
- Make sure your disaster recovery is aligned with business objectives

CHALLENGE #7

Company-Wide Cloud Adoption Resistance

SOLUTION

- Make sure your leadership understands the business need and objectives for the migration
- Have your leadership communicate the business case to the organization
- Invest in expert training and resources

CHALLENGE #4

Data Loss

SOLUTION

- Configure back-up of migrated data
- Migrate data in increments
- Use multiple cloud providers
- Implement managed file transfer for data migrations

CHALLENGE #6

Vendor Lock-In

SOLUTION

- Design your application to be portable and aligned with open-source standards Maximize portability of your data: avoid proprietary formatting, standardize the documentation, categorization, and indexing of data
- The agreement with your provider should consider a multi-cloud strategy
- Implement DevOps tools and processes

CHALLENGE #8

Internal Cloud Skills Shortage

SOLUTION

- Cultivate cloud skills internally
- Build a culture of continuous learning
- Align the training strategically with your business goals
- Make training relevant to each employee's role and operational environment
- Find a reliable technical partner to implement your cloud migration

DataArt Is a Reliable Technical Partner

As a trusted partner of major cloud providers, DataArt has a many-year experience innovating in cloud and reviving businesses with cloud transformations. Engage our experts to assess your existing on-premises infrastructure before migrating to cloud or identify under-utilized resources that prevent higher performance of your cloud solutions.

Partnership with Top Cloud Providers



DataArt is an Advanced Consulting Partner in Amazon Partner Network (APN)



DataArt is a Microsoft Gold Partner and Azure Consulting Partner



DataArt is a Google Cloud Premier Partner

Sports Betting Expertise



Sportsbook



Casino Operator



Gaming Content Provider



Platform Provider



Lottery Operator



Bingo Company



Regulator



Marketing Platform Provider

OUR EXPERTISE

- Platforms
- Data Visualization
- Remote Gaming Servers
- Game Development
- Game Migration
- Integrations
- RegTech
- Compliance
- Cryptocurrency
- Virtual Reality
- Platforms
- Platforms



Cloud Migration Success Story

Infrastructure Localization & Migration for US Sportsbook

Solutions provided:

- Deploying state-specific compliant solutions of a sportsbook **platform with 100+ components**
- Migrating the core capabilities of a sportsbook platform to **data centers in 10+ states**
- Implementing **Infrastructure as Code** approach
- Setting up **continuous integration, continuous delivery, and deployment**

Results:

Thanks to the streamlined workflow and massive automation, now the **onboarding time** for the new data center is **only two days**.

Why Clients Choose Us

25+

years in operation

22

worldwide locations

6000+

professionals



In-depth industry competence & extensive domain knowledge



Compliance with Federal, State, and local laws & regulations



Flexible engagement models



Unparalleled ability to ramp up teams of all sizes

If you need a free consultation on your technology challenges, [contact us](#)



Russell Karp



Vice President, Media & Entertainment

New York, USA

Russell Karp leads strategic and business development at DataArt's Media and Entertainment Practice. In his 20+ years of technology and business consulting, Russell has spent most of his career implementing feature-rich, complex media platforms. He specializes in strategy, solution architecture, managing large-scale projects, and client relationships, with a focus on media and entertainment.



New York, USA

475 Park Avenue South
(between 31 & 32 streets)
Floor 15
New York, NY 10016,
USA

+1(212)378-4108
New-York@dataart.com



London, UK

55 King William Street
3rd floor
London, EC4R 9AD,
United Kingdom

Tel.: +44 (0) 2070999464
Fax: +44 (0) 2076919406
UK-Sales@dataart.com



Zug, Switzerland

Zugerbergstrasse 36a
Zug 6300,
Switzerland

+41 (0) 415880158
CH-Sales@dataart.com



Munich, Germany

Barer Str. 1
Munich 80333,
Germany

+49 (89) 745 390 23
DE-Sales@dataart.com