Your journey to cloud in healthcare

Introduction

Optimize the multi-cloud strategy
Cloud accelerates innovation
Cloud delivers enhanced security
The cloud is here: Now make the most of it

As the cloud becomes more prevalent, healthcare leaders are finding themselves in a multi-cloud environment, moving beyond basic infrastructure on demand to strategic innovations such as running real-time data analytics for the management of chronic disease patients.

At the same time, longstanding security inhibitions are beginning to fade as cloud emerges as an asset rather than a liability for coping with pervasive cybersecurity threats.

Use of the cloud has gone from emerging to common to ubiquitous:

**A multi-cloud strategy** will become the common strategy for 70% of enterprises by 2019, up from less than 10% today (September 2016).

**75% of healthcare professionals** “feel optimistic that cloud technology will lead to improved point-of-care decision making,” according to a HIMSS Media survey.
Your journey to cloud in healthcare

As your organization embraces the cloud, you need to:

1. **Take a deliberate approach** to your enterprise-wide multi-cloud strategy to make the most of your financial and IT resources and optimize your investments.

2. **Realize that a robust data management platform** augmented with unique healthcare APIs and cloud services is needed to leverage advanced predictive analytics, artificial intelligence (AI) and machine learning to improve patient care.

3. **Develop an end-to-end security strategy** that allows you to move to the cloud with confidence.

“I predict that five years from now none of us will have datacenters. We’re going to go out to the cloud to find EHRs, clinical decision support, analytics.”

**John Halamka, MD, CIO**
at Beth Israel Deaconess Medical Center
Optimize the multi-cloud strategy

Multi-cloud is the new normal.

Multiple surveys show that healthcare organizations are operating in a multi-cloud environment.

According to a 2017 HIMSS Media survey: 45% of healthcare professionals said that they are currently or are planning to use some combination of private, public and hybrid cloud.²

According to Gartner: “A multi-cloud strategy will become the common strategy for 70% of enterprises by 2019, up from less than 10% today (September 2016).”³
Nurture your multi-cloud success:

Things to consider

Operating in a multi-cloud environment may be the new normal, but with a deliberate multi-cloud strategy in place, your organization can go beyond grappling with one-off disparate cloud solutions and experience myriad benefits.

The future of your business rides on the IT architecture you define today.

Ultimately, an agile multi-cloud integration architecture should enable you to:

- Manage access to internal and external services to meet your specific needs across applications and workloads.
- Connect on-premise and cloud apps to leverage a single source/view of data.
- Avoid vendor lock-in.

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The IBM Cloud is built for enterprise

What we can do:

1. **Innovate and modernize your applications where you want to**—on our globally available public cloud, or private cloud platform.

2. **Gain the flexibility to move and manage workloads** where you want to with an open, container-based, microservices architecture across public, private and third-party clouds.

3. **Move more to the cloud today**, with deep IBM industry expertise and proven methods to migrate complex apps.

“Many healthcare organizations are running commercial off-the-shelf applications, traditional applications that are handling things such as billing and new innovative applications that are interacting directly with consumers or staff. What can best allow these organizations to host, manage and integrate all of this software? That’s where the real value of the multi-cloud comes in.”

**Kyle Brown,** Distinguished Engineer,
CTO Cloud Architecture, IBM Hybrid Cloud

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The cloud is the ideal platform to support advanced analytics, machine learning and artificial intelligence to glean strategic insights from large volumes of data.

8 out of every 10 respondents in a HIMSS Media survey identified one or more of these clinical initiatives as top strategic use cases of the cloud:

- Connected/remote care
- Clinical and population health analytics
- Patient care coordination
- Patient engagement
- Precision/personalized medicine
Multi-cloud’s data integration challenge

The cloud is the ideal platform to support advanced analytics, machine learning and artificial intelligence to glean strategic insights from large volumes of data.

In the HIMSS Media survey, 75% of cloud adopters report that their cloud initiatives are effective at advancing their organizational goal of increasing the speed and flexibility of developing new services.

“When you have more data available to you—and it is presented in a way that is easy for end-users to digest—you can undertake more complex activities.”

Neal Fishman, Distinguished Engineer and CTO Data-Based Pathology at IBM
Multi-cloud’s data integration challenge

But integration challenges still prevail. The multi-cloud environment – where cloud services from two or more providers are used – demands a platform that can integrate data and analyze across myriad clouds and present that data in a unified, easily accessible view. And that’s not an easy undertaking.

“The cloud is sometimes considered as the ‘poor man’s integration tool’ for those who don’t have the time, money or inclination to integrate their data. The cloud enables you to put all of the data together and layer analytics on top of it.”

Rob Havasy, Senior Director,
Health Information Systems, HIMSS
Making data a competitive advantage:
What’s your strategy?

Transforming data into digital intelligence requires a proactive approach that allows you to integrate, secure and govern all types of data, from any source, across a multi-cloud infrastructure. Healthcare organizations must address three fundamental challenges:

1. **Data Accessibility** — a multi-cloud environment allows data to be created, used and shared anywhere but can also exacerbate siloed data challenges.

2. **Data Quality** — a trusted analytics foundation requires data management and governance strategy that removes duplicate data, standardizes data, eliminates incorrect and incomplete data, and reconciles data across multiple systems.

3. **Data-Driven Culture** — most organizations face talent shortages with skills ranging from data novice to data scientist. A strong data foundation combined with the right self-services tools will support data-driven discovery and business decision-making.

“In a multi-cloud environment, you have to “really think carefully about how you’re going to structure the connection between these clouds. There needs to be an in-depth planning exercise that makes data available to where it needs to be. To accomplish this, the processing will happen on data from a local standpoint singularly within the cloud, but yet that data from an enterprise standpoint has to be managed and distributed across many clouds.”

**Kyle Brown**, Distinguished Engineer, CTO Cloud Architecture, IBM Hybrid Cloud

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The IBM Cloud is data and AI ready

IBM can help you make the most of data in a multi-cloud environment by:

1. **Pushing actionable data** to the right users by processing it locally on individual clouds and then managing and distributing it across multiple clouds.

2. **Enabling collaboration** between data scientists, application developers and domain experts to continuously refine and improve models and rapidly deploy them in new applications, at scale.

3. **Empowering your data scientists** to leverage the best open-source tools to build, train and deploy models.

“At IBM, we take a multi-cloud approach. We think about everything from the perspective of you’re building a platform that has to be able to create a bridge to connect many different clouds. To do this, we create data standards among many different cloud members and work very closely with other cloud solutions so that data can be exchanged seamlessly. This gives you more opportunity to unlock the value in your data as you move toward advanced analytics and artificial intelligence.”

**Kyle Brown,** Distinguished Engineer, CTO Cloud Architecture, IBM Hybrid Cloud
Live chat with an expert at IBM on our website to learn more.
Visit www.ibm.com/industries/healthcare
Cloud delivers enhanced security

75% of current cloud users investing in cloud to reduce security risks report cloud has been highly effective in mitigating those risks.
Discover cloud’s security advantages

Cloud has traditionally been perceived as a security liability, but it is now being seen as an asset.

Working in a cloud environment helps organizations make better use of IT staff. Essentially, what was formerly addressed by your IT department is now outsourced. “Healthcare providers, including larger hospitals, may now use their IT and cybersecurity staff to focus on other initiatives and projects. This is essential, since IT and cybersecurity talent can be in short supply and many healthcare providers may be resource constrained.”

Lee Kim, Director,
Privacy and Security, HIMSS North America
Security in a multi-cloud world

As the number of multi-cloud apps and workloads grow, so does the degree of IT integration. This means more potential connection points of security risk and failure.

Your best option to secure your multi-cloud IT is a software-defined approach to business continuity and resiliency, which presents several benefits:

1. Visibility with automation and orchestration:
   By linking automation and orchestration in a central dashboard, you can gain visibility, manage resiliency and vastly reduce recovery-time objectives.

2. Proactive management with insights:
   Integrating diagnostic, predictive and key threat data will allow you to make better proactive decisions.
Security in a multi-cloud world

“It is really no different than what you would do in our own data center. You need to treat and manage all of this data as if it’s all in your own data center.”

Mari Heiser, Distinguished Engineer CTO, Cloud Security at IBM

3. A single view: A single interface and set of tools lets you control all replication and recovery processes.

4. Flexibility: As your business and regulatory conditions change, so might your data protection policies. A software-defined approach can adapt.
The IBM Cloud is secure to the core

“We do everything with security in mind and provide the full range of services that you need. If you need consulting services, they are available. If you need risk assessment services, that’s available. If you need PHI assessment, we can handle that. So we can be your one-stop shop to help you regardless of whether you have all of your things in IBM’s cloud or on other vendors’ clouds. We don’t care. No matter what, we can help you.”

Mari Heiser, Distinguished Engineer CTO, Cloud Security at IBM

Our cloud platform is “secure to the core” as data protection is a front-of-mind issue during every phase of development. But in a multi-cloud environment, you need to protect data as it moves across clouds from several vendors. We can help here as well – as we work closely with you to develop broad enterprise security strategies. We offer:

Consulting services that can help you develop security framework, protect personal health information and even design your applications if needed.

Around-the-clock security monitoring to ensure that no malicious players are attacking your infrastructure.

Expertise offered through consultants who truly understand security, risk and privacy – and the important differences between these concepts.
Thriving in a multi-cloud world with IBM

Healthcare organizations should take advantage of the benefits of a multi-cloud environment, but its complexity requires healthcare organizations to develop a strategic plan that addresses those issues. Equally important, healthcare organizations need to partner with a cloud provider that understands the multi-cloud world and has a platform that can:

1. **Build and connect** cloud applications.

2. **Unlock the value of your data** – and then use it to implement the advanced analytics, artificial intelligence and machine learning initiatives that can support success population health and precision medicine programs.

3. **Do all of this with confidence**, knowing that your data is always protected.

IBM can help your organization go beyond merely surviving in a multi-cloud world. We can help you purposefully leverage the cloud, enabling you to tap into a variety of advanced technologies and achieve the digital transformation required to move your organization forward.
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