



Kyndryl Private Cloud: An Rx for Hybrid Cloud Migration and a Path to Digital Health

Healthcare companies are in transition,

accelerating cloud migration in pursuit of digital innovation and new operating models. Yet their transformation agenda is challenged by security, compliance, and legacy infrastructure constraints that are more burdensome than in other industries.

In all corners of the healthcare sector, as they work to launch a new era of digital health, organizations are trying to capitalize on growing data stores, advanced analytics, and AI. By reenvisioning how services are delivered, the sector is aiming for a standard of care that is more efficient and cost-effective. They're also striving to deliver highly available, personalized patient experiences that result in better outcomes.

“The imperative is to make sure services are available at the right cost point without compromising on quality,” says Anupama (Anu) Ambe, vice president and senior client partner executive in Kyndryl. “Availability has become so much more important—services need to be always on. The last 12 to 18 months has shown us that dependence on these digital platforms for systems of engagement between a patient and a doctor has become all the more critical.”

The cloud is clearly the engine to drive these new digital experiences and reinvent healthcare services—but security and compliance present big hurdles for healthcare.

Payers and providers alike are looking for the right mix of IT resources and specialized domain expertise to modernize and optimize a cloud infrastructure that positions them for competitive advantage. As healthcare organizations dig deeper into hybrid, multicloud environments, they must also weigh how to efficiently architect and maintain a modern IT infrastructure that bridges legacy and on-premises systems with rapidly changing new technologies. And all of this must be done without exposure to security and compliance risks.

Adding to the mix: Organizations are also highly dependent on a third-party ecosystem of foundational tools such as electronic medical record (EMR) software for dictating cloud migration timelines.

“You need to balance out the right pace of transformation,” Ambe says. “It’s like being on a moving bus that’s going faster and faster, and you need to figure out what the right momentum is for what you want to transform.”

For many healthcare providers, the answer lies in finding a partner to help navigate the complex terrain with end-to-end services. These solutions can accelerate modernization and digital healthcare delivery while easing the transition.



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WHAT'S DRIVING THE PARADIGM SHIFT?

The healthcare segment is poised for dramatic change, setting the stage for disruption and the emergence of new operating models. Once a series of fragmented players and activities, the sector is being reshaped as changing consumer expectations pave the way for an integrated ecosystem of researchers, providers, and payers working collaboratively to deliver higher standards of care.

With new technologies at the heart of healthcare's digital transformation, companies must cultivate richer patient engagement that transcends the traditional clinical environment. In addition, such care must be affordably delivered to homes and communities to scale with a growing and aging population.

For the last decade, the healthcare sector has been steadily evolving away from the traditional fee-for-service model to a value-based model that emphasizes more-effective, more-affordable quality patient care. As mandated by the Affordable Care Act, the changes tie payments to better health outcomes and lower costs while promoting expanded access to healthcare across the population. Digital technologies, from cloud platforms to predictive analytics, play a significant role in driving the transition to value-based healthcare, where the ecosystem is focused not just on remediation-based care but also on prevention and wellness.

As part of the shift, the sector needs to mobilize around initiatives that foster preemptive treatment for acute conditions and chronic diseases as well as wellness programs to promote positive behavioral change. In a 2020 study conducted by the [IBM Institute for Business Value](#), 23% of payers and 44% of providers said improving the health and wellness of their targeted populations is among their top priorities.

To do so, players are leveraging technologies such as digital assistants, virtual coaches, wearables, and connected medical devices. These provide a holistic picture of the individual that can be used to predict the onset of dangerously low blood sugar in diabetics, for example, or to alert Parkinson's patients when to medicate based on analysis of their movements. Gamelike interactions, chatbots, and virtual coaches, in concert with wearable devices, support a healthier lifestyle while providing a forum where patients can ask questions, receive encouragement, and alleviate health-induced anxiety.

All of these connected devices and increased interactions are creating a deluge of data that can drive more personalized, precision-based care. Emerging artificial intelligence (AI), machine learning (ML), and advanced analytics tools are being directed to solve healthcare delivery problems across the ecosystem. Healthcare providers, for instance, are leveraging big data and AI-driven intelligence to improve patient diagnosing, create individualized treatment plans, guide clinical trials, and accelerate drug delivery, among myriad emerging use cases. For their part, organizations on the payer side of the healthcare ecosystem are leveraging intelligent tools and modern IT infrastructure to improve operational performance and to enable rapid response to future global health emergencies.

Many of these same technologies, coupled with cloud infrastructure and videoconferencing capabilities, are helping healthcare providers transition to telehealth services—a shift accelerated by COVID-19 but destined to be a staple of postpandemic care. Well-designed telehealth services provide robust medical guidance and effective patient/physician interaction, minimizing in-office and hospital visits and helping providers and payers reduce costs.



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CHALLENGES TO CLOUD MIGRATION

Cloud is at the center of the digital health care revolution, but healthcare companies face a litany of challenges as they navigate a complex hybrid and multicloud landscape, punctuated by security and compliance risks.

Many in this sector have embraced a mix of public and private cloud services. According to an [IBM/Forrester report](#), sensitive systems such as electronic health records (EHR) and financial and accounting systems are more likely to remain on-premises whereas client-facing applications are moving to cloud-native platforms. Back-office systems such as enterprise resource planning (ERP) and supply chain management (SCM), which are less sensitive to data latency issues, are being relocated to public clouds. Add multicloud to the mix, and healthcare organizations find themselves struggling to integrate data and tools while instituting proper security governance across diverse environments.

The need for scalability and enhanced cybersecurity is fueling cloud adoption—60% of the respondents to the survey on which the IBM/Forrester report is based said cybersecurity and risk management are the driving force for migration, right behind the increase in IT infrastructure demands (61%). At the same time, however, requirements to protect patient data to comply with federal regulations can be burdensome in the public cloud—a major obstacle cited by 88% of the survey respondents. Although cloud vendors have addressed some compliance challenges, each public cloud vendor supports its own shared-responsibility framework, creating confusion about how to best comply with regulatory mandates.

Security creates another set of challenges, because the healthcare sector is now a favorite target of data breaches and cyberattacks, a scenario that escalated with COVID-19. The [2020 Healthcare Data Breach Report](#) reported a 25% year-over-year spike in data breaches, with the number of incidents doubling since 2014 and with more than 29 million healthcare records having been compromised. Hospitals and healthcare companies are seeking offsite record backup and other forms of resilience in light of more frequent and sophisticated ransomware attacks. “It’s not always about having the best security detection systems but making sure the entire organization is prepared to recover,” Ambe says.

As healthcare companies move forward with modernization and cloud migration, many are struggling to define a migration strategy. In fact, 83% of the respondents to the Forrester/IBM survey said it was difficult to map out a well-defined migration strategy, leading to widely varied paths and a fits-and-starts process that can undermine success. Companies in this space have long-standing partnerships with hardware and software vendors, sinking hundreds of man-hours and millions of dollars into customizations built around these mission-critical systems. When a firm is developing a business case for cloud, those systems must be considered, because their timeline for migration impacts the firm’s ability to execute cloud transformation.

“These custom, off-the-shelf applications are not transforming at the same pace,” says Ambe. “Unless your EMR provider or pharmacy or lab system moves their architecture to be cloud-native-friendly, it’s hard to make it happen, because simply moving workloads to public data centers doesn’t provide the same benefits.”

Getting started with Kyndryl Private Cloud

Healthcare companies eyeing Kyndryl Private Cloud should consider several factors as they evaluate offerings and potential partners:

Stay technology-agnostic. The modern IT environment is heterogeneous, not standard. Look for a partner that can align with the right set of hardware, software, virtualization, and cloud providers.

Seek out the right talent mix. Technical expertise in areas such as AI and DevOps is important to this journey, but so are experts that understand business process transformation. Look for partners that can deliver on the promise of new operating models that make the company more agile and secure.

Consider scalability and risk. The partner’s ability to run an environment at scale is critical for the transition from capital expenditure (CapEx) to an operating expenditure (OpEx) model. Make sure the company and managed service are equipped to keep up with your specific scalability needs.

For more information on Kyndryl Private Cloud, visit <https://bit.ly/kyndrylprivatecloud>.

Complicating matters: the shortage of in-house cloud skills. With budgets tight and increased competition for talent, internal IT organizations are struggling to cover the bases with the requisite AI, ML, automation, data management, DevOps, and security expertise. These experts can ensure a smooth migration to cloud and maintain efficient operations, all while directing attention to new digital innovation efforts.

The reality underscores the growing need for assistance with cloud migration, including management services and best practices to reduce cost and complexity and to mitigate any risk of business disruption. “You have to have people who can help with the strategy, the consulting, and the ability to chart a multiyear road map,” Ambe adds. “The level of complexity becomes that much more, because your solutions need to be that much more secure.”

KYNDRYL PRIVATE CLOUD: THE BEST OF BOTH WORLDS

So how can healthcare companies “go cloud” and gain the agility and unified management advantages without exposing themselves to security and compliance risks? The answer lies in Kyndryl Private Cloud,¹ a solution that melds the benefits of cloud and on-premises models to give healthcare companies the right start on digital innovation.

The Kyndryl Private Cloud solution delivers dedicated on-premises deployment of storage, compute, network, and management services in an extendable software stack that spans private as well as public cloud resources. The model blends the security, latency advantages, and controls of an on-premises environment with the efficiencies, flexibility, and scalability of the cloud—without undue compliance and security risks and unencumbered by the headaches of day-to-day infrastructure management.

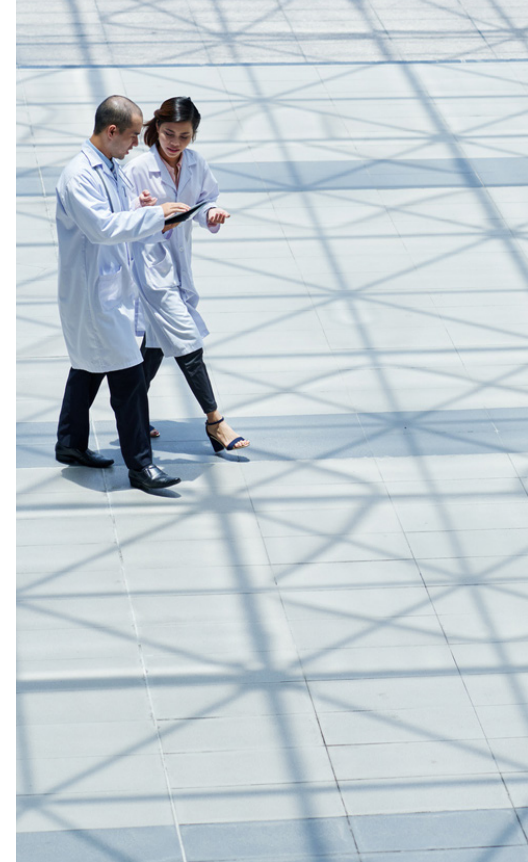
¹ Kyndryl was spun-off of IBM IT infrastructure services in 2021. Kyndryl’s global base of customers includes 75 of the Fortune 100 companies. With 88,449 skilled professionals operating from over 100 countries, Kyndryl is committed to the success of our customers, collaborating with them and helping them to realize their ambitions.

Kyndryl’s solution shifts healthcare organizations away from the traditional CapEx model to an OpEx consumption model popularized by public cloud. This gives them the flexibility to pay for only the resources used without having to make significant up-front investments in hardware and storage infrastructure. In addition, security, along with compliance with data privacy and data residency regulations, is seamlessly controlled on a local basis or on-premises as part of the Kyndryl Private Cloud model, ensuring that all industry-required standards are adhered to.

Kyndryl Private Cloud accelerates cloud transformation, by providing an elastic-cloud-like experience on-premises for those workloads that aren’t a fit for public cloud—for example, those with strict security requirements or data transfer latency constraints. The service automatically scales up and dials back resources, based on workload demands, while providing a seamless and consistent approach to IaaS across hybrid clouds. Instead of using the multitenant architecture of public cloud, Kyndryl Private Cloud delivers a fully managed, single-tenant environment that elevates cybersecurity by physically isolating workloads on physical servers or virtual machines, with “air gaps” between the client and management infrastructure.

IT management, an ongoing struggle for many healthcare IT departments, is also simplified in this model. Provisioning, updating, patching, and other routine management tasks are automated and orchestrated as part of the service, lessening the burden on internal IT departments and enabling them to pursue higher-value innovation efforts. A self-service portal offers additional simplification, automating time-consuming maintenance functions.

Combined with IBM Cloud Satellite, Kyndryl Private Cloud enables on-premises workloads to run in tandem with public cloud workloads from a single pane of glass, delivering a unified and consistent approach to IaaS across the hybrid landscape.



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Consider the benefits of running the EPIC EHR system in Kyndryl Private Cloud: Healthcare companies benefit from the simplicity of a fully managed solution, with performance exceeding public cloud and data security being on par with on-premises—without a huge capital investment and free from the grind of infrastructure management.

With Kyndryl Private Cloud, healthcare entities can fast-track the shift to the cloud and stay focused on innovation. “Essentially, you are creating a commercial structure which is OpEx; you’re providing the talent, which takes care of monitoring and day-to-day headaches; and you serve as system integrator across known providers, whether it’s hardware, software, or virtualization,” Ambe says. “This isn’t a standard managed service where I manage your backup or server. This is end-to-end.”

THE PARTNER ADVANTAGE

Given the complexities and what’s at stake, it’s critical for healthcare organizations to align with the right partner to help drive IT modernization and ease the pain of cloud migration and integration. An IDC 2021 worldwide services report estimates that three-quarters of customers undergoing digital transformation are seeking vendors that can offer end-to-end services to ease the challenge of cloud migration and the management of hybrid multicloud IT infrastructure.

With decades of managed services experience and more than 21,000 clients, Kyndryl is well positioned to deliver Kyndryl Private Cloud as a flexible usage-based consumption model offering a variety of compute services, including bare-metal servers and general-purpose virtual instances to support a range of data analytics and high-performance applications. Customers can specify their choice of products to run on the provided infrastructure, from bare metal to virtual machines, through the orchestration platform. Clients can also work with Kyndryl for tailored services designed specifically for their needs.

As part of Kyndryl Private Cloud, Kyndryl works with healthcare companies on a migration road map that specifies the optimal path for moving legacy applications to the cloud, including rehosting systems in a “lift and shift” capacity or modernizing legacy systems with new cloud-native approaches and business models.

The platform supports a usage-based consumption model that offers flexible terms, and with its cloudlike pricing structure, organizations benefit from the flexibility of pay-per-use models with the predictability of traditional enterprise license agreements. “This is an evolving industry, because you’re trying to create a consumption-based model on-premises,” Ambe explains. “The question is, Can the company providing the service take on the risk associated with that as-a-service model? It’s taken us a few years to get there, but this is not a lease model in disguise. This is a true as-a-service consumption-based model.”

Another key differentiator for Kyndryl is the scale and scope of in-house talent, deployed across 115 countries and having delivered for hundreds of clients for years at scale. With IT talent at a premium—especially across key cloud competencies such as security, containerization, DevOps, and cloud management—healthcare organizations can immediately benefit from Kyndryl’s top-drawer talent pool, as opposed to finding and budgeting for their own bench of hard-to-find experts.

THE BOTTOM LINE

The healthcare sector is at a crossroads, striving to deliver personalized and efficient care but scrambling to modernize IT infrastructure to support the transformation. Kyndryl Private Cloud blends the best of cloud as well as on-premises environments, helping accelerate the shift and usher in a new era of digital healthcare.

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