

# Modernizing healthcare IT with Microsoft Azure Virtual Desktop

A guide to technology that transforms the daily routines of healthcare practitioners



Built on the Microsoft secure cloud, Microsoft Azure Virtual Desktop enables scalable, context-aware desktop experiences designed around how clinicians actually work. This guide shares a [practical framework for deploying Microsoft Azure Virtual Desktop in healthcare](#) to transform daily routines for healthcare practitioners and reduce infrastructure complexity for IT.

## About this guide

**Healthcare organizations are under growing pressure to modernize IT environments without disrupting care.**

Clinicians need fast, secure and flexible access to digital tools, yet many are still tethered to an aging virtual desktop infrastructure (VDI) that limits mobility, fragments workflows and complicates support.

Microsoft Azure Virtual Desktop (AVD) offers a modern alternative. Built on Microsoft's secure cloud, Microsoft Azure Virtual Desktop enables scalable, context-aware desktop experiences designed around how clinicians actually work. It supports persistent roaming, location-aware printing, simplified

endpoint management and hybrid care models — all while reducing infrastructure complexity for IT.

**This guide shares a practical framework for deploying Microsoft Azure Virtual Desktop in healthcare, built on four pillars: infrastructure modernization, workflow mapping, security integration and operational oversight.**

Real-world scenarios highlight how Microsoft Azure Virtual Desktop transforms daily routines — from nurses tapping into personalized desktops across units to physicians prescribing medication remotely from mobile devices.

We also explore common challenges like network readiness, application

integration, change management and cost control — and how to address them with the right strategy.

**NTT DATA brings deep healthcare experience, a center of excellence (CoE) delivery model, and a proven approach to aligning Microsoft Azure Virtual Desktop with clinical priorities. We can help organizations move beyond the desktop and design virtual workspaces built for modern care.**

## What we're seeing in the field

The role of healthcare IT extends well beyond managing servers and software. It's about keeping pace with evolving changes in technology while also supporting the unpredictable, high-pressure world of clinical care.

Through our partnerships with healthcare clients, we've identified two common, overlapping challenges that IT departments often face.

### Technical complexities

Traditional on-premises VDI environments, while effective in centralized control, often present limitations in scalability, maintenance and modernization. IT teams are burdened with:

- Hardware lifecycle management and refresh planning
- Time-consuming patching and image updates
- Security vulnerabilities at the endpoint and network edge
- Infrastructure sprawl and rising maintenance costs
- Inflexibility in responding to usage spikes or new workload requirements

### Clinical workflows

Even the most robust technical environments may still underdeliver if they don't support the workflows of healthcare professionals. Clinicians consistently report to us that too much of their valuable time is spent wrestling with technology instead of delivering patient care. They struggle with:

- Slow logins and session delays
- Inconsistent user experiences and difficulty accessing specialized apps
- Repetitive logins and loss of context
- Lack of location awareness
- Printing failures
- Limited mobile and remote-access capabilities

### We are also frequently seeing fragmented and inconsistent access methods to critical applications supporting care.

Microsoft and Epic (one of the world's leading EHR solutions) are working closely with early adopters that want to run Epic Hyperdrive on Azure Virtual Desktop in their

organization. However, clinicians rely on more than their core EHR systems to deliver quality care.

While platforms like Epic, Oracle Health (formerly Cerner), MEDITECH, Allscripts (now Veradigm) and NextGen Healthcare serve as a digital backbone, they are only part of a broader healthcare ecosystem of applications that providers frequently depend on.

### Frequently used desktop apps in healthcare

Core electronic health records (EHR)

Medical transcription tools (for example, Dragon, MModal, Olympus)

Workforce management solutions (for example, Kronos Timekeeping)

Analytics and reporting systems

Other integrated revenue cycle systems (for example, coding)

Department-specific applications:

- Radiology and cardiology PACS
- Pharmacy
- Blood bank
- Laboratory
- Labor and delivery
- Emergency department
- Surgery
- Oncology
- Intensive care unit (ICU)
- Outpatient clinics
- Rehabilitation
- Infectious disease
- Pediatrics
- Admissions
- Dietary
- Hospital administration

Enterprise productivity software:

- Microsoft Office / Microsoft 365
- Microsoft Teams
- Email
- Web browsers

Security and compliance tools:

- Endpoint protection
- Encryption
- Patch management

Note: This list is not meant to be exhaustive or comprehensive. It is merely illustrative and should not be considered a complete representation of all possibilities.

## Why the traditional model isn't working

**Traditional on-premises virtual desktop infrastructure (VDI) platforms were built around centralized control, strong security and simplified IT management. And while those priorities still matter, this model is becoming harder to reconcile with the fast-paced, mobile nature of modern clinical work.**

Rising hardware and licensing costs are making it increasingly difficult to scale or maintain these environments — especially when trying to keep up with the evolving demands of clinicians who need reliable, flexible access from anywhere.

### The reality of legacy VDI

In our work with hospitals, we're seeing the same limitations surface time and time again when it comes to traditional on-premises VDI.

**Rising costs are a major concern.** Licensing and maintenance renewal fees have skyrocketed, with vendors pushing multiyear agreements that lock organizations into inflexible contracts.

**Scaling is difficult.** When demand spikes — whether it's flu season, a new department or an unexpected surge — IT is left trying to stretch fixed infrastructure that wasn't built to flex without major capital spend.

**Maintenance is a burden.** Patching, image management, provisioning — these all take time, expertise and resources that healthcare IT teams are already stretched thin on.

**Security grows more complex.** Every new connection expands the attack surface, and without modern monitoring tools, staying ahead of compliance and cybersecurity threats becomes a full-time job.

**It's also not built for change.** Want to onboard a new clinic? Test a new app? Shift clinical priorities? Legacy VDI makes it harder to move fast — and in healthcare, speed can't be optional.

### The bottom line

While traditional VDI once offered a revolutionary leap in centralization and control, today it's often the thing slowing transformation down. It sacrifices clinician productivity, agility and scalability in environments that demand all three.

## What Microsoft Azure Virtual Desktop does differently

**Microsoft Azure Virtual Desktop is redefining the clinical workspace by bringing flexibility, mobility and context-awareness to the desktop experience, enabling healthcare organizations to align technology more naturally with the way clinicians work.**

What makes Microsoft Azure Virtual Desktop so compelling for healthcare isn't just the technology — it's how well the technology adapts to the realities of care delivery. In environments where demand can change in an instant, Microsoft Azure Virtual Desktop flexes with you. Whether it's handling the morning surge in clinician logins or scaling back after hours, it responds in real time, eliminating the need to overprovision.

Security is also designed in, not bolted on. With integration into the security stack of Microsoft Azure, organizations can enforce smart policies based on location, device type or user behavior. Multifactor authentication and zero trust principles help keep sensitive patient data protected, even when clinicians are moving between devices or locations.

And because it's built on the cloud-native backbone of Microsoft Azure, Microsoft Azure Virtual Desktop brings a level of resilience that's hard to match with on-premises systems. High availability, built-in disaster recovery and fine-tuned performance aren't technical checkboxes: they are essential to keep critical systems running during emergencies and unplanned disruptions.

### A platform that supports both care and cost efficiency

Conversations with our clients reveal a growing pressure to do more with less. Traditional virtual desktop platforms like VMware and Citrix are being reevaluated, as their rapidly increasing licensing fees are making them cost prohibitive.

Microsoft Azure Virtual Desktop is emerging as a leading modern alternative. It reduces licensing complexity, minimizes capital investments and gives IT teams greater control over budgeting through predictable, cloud-based pricing.

Strategically, healthcare executives are increasingly favoring cloud-native solutions like Microsoft Azure Virtual Desktop because of their long-term financial sustainability, simplified licensing models and predictable scalability. This shift goes beyond cost control — it's enabling organizations to reinvest savings into clinical innovation, enhanced patient experiences and other high-impact initiatives.

## A strategic framework for Microsoft Azure Virtual Desktop deployments

### Bringing technology and clinical reality together

**Deploying Microsoft Azure Virtual Desktop in healthcare is about rethinking how technology supports care delivery.**

We've seen firsthand that the full potential of Microsoft Azure Virtual Desktop is unlocked only when its design is rooted in the day-to-day realities of clinicians, nurses and frontline staff.

We don't approach Microsoft Azure Virtual Desktop as a generic IT project. At NTT DATA, we see it as an opportunity to transform care delivery — creating a smarter, more flexible workspace that truly benefits healthcare.

The foundation we use is based on four pillars:

1. Infrastructure modernization
2. Workflow mapping
3. Security integration
4. Operational oversight

### Four pillars of a successful Microsoft Azure Virtual Desktop deployment in healthcare

#### 1. Infrastructure modernization

- Use native Microsoft Azure capabilities like autoscaling and availability zones to stay responsive while managing costs.
- Tailor host pools for different clinical roles — radiology's needs aren't the same as the needs of administrative staff.
- Integrate Microsoft FSLogix for seamless profiles and efficient app layering, so every session feels consistent and reliable.

#### 2. Workflow mapping

- We start with discovery sessions to understand how each department works: who's logging in where, and which devices are used, and how often.
- Then, we design session policies based on that behavior, building in roaming, print redirection and contextual awareness from day one.

- No more treating clinical nuances as edge cases — they're the standard.

#### 3. Security integration

- Role-based access, conditional access and endpoint protections all work together to reflect clinical risk as well as IT policy.
- We leverage Microsoft Defender and Microsoft Sentinel to keep environments safe and compliant without slowing anyone down.
- And we keep you aligned with HIPAA, HITECH and GDPR as well as local, state and regional regulations throughout.<sup>1</sup>

#### 4. Operational oversight

- We leverage our CoE to regularly update best practices across all client deployments.
- We define KPIs that actually matter — like login times, session stability and clinician satisfaction.
- We use Microsoft Azure Monitor and Log Analytics to gain visibility and respond before issues impact care.
- And we stay in sync with frontline teams, building in feedback loops that help us fine-tune performance as needs evolve.

### Our role: turning framework into action

We bring healthcare expertise and cloud engineering together to guide you through every phase:

#### • Assessment and roadmap

We don't start with assumptions. We assess your current environment, pain points and goals, then create a roadmap that prioritizes quick wins and facilitates long-term value.

#### • Design and build

We architect Microsoft Azure Virtual Desktop environments that are scalable, secure and tailored to how your clinicians work.

#### • Deployment and optimization

From pilot to full rollout, we ensure the experience is smooth, measurable and clinically aligned.

#### • Continuous partnership

We don't walk away after a go-live. We remain as your strategic partner, monitoring, improving and supporting as your needs grow.

<sup>1</sup> HIPAA: Health Insurance Portability and Accountability Act  
HITECH: Health Information Technology for Economic and Clinical Health (HITECH Act)  
GDPR: General Data Protection Regulation



### **A clear step forward**

We do more than deploy desktops: we help healthcare organizations modernize with purpose. Our framework turns Microsoft Azure Virtual Desktop into an enabler of better care, more agile operations and a workspace clinicians can trust.

Legacy VDI platforms often slow down the very people they're meant to support. By contrast, Microsoft Azure Virtual Desktop delivers a modern, secure and scalable alternative — recognized by industry experts as a clear step forward in healthcare IT.

With Azure Virtual Desktop, clinicians gain reliable, on-demand access to desktops, productivity tools, and clinical systems across a variety of endpoints. Whether on-site or remote, they can work seamlessly and securely, with the flexibility to adapt to the dynamic needs of patient care.

### **Lessons learned from deploying Microsoft Azure Virtual Desktop in healthcare**

While electronic health records (EHRs) are foundational to patient care, real-world clinical workflows span a much broader landscape of applications, devices, user roles and physical locations.

Success in modernizing healthcare IT isn't just measured by how well an organization delivers an EHR — it's about how efficiently it supports the totality of the care experience from login to logout, across departments and across time.

**At NTT DATA, our teams have implemented and managed VDI solutions across a variety of healthcare environments, from regional clinics to large-scale enterprise hospital systems. These are the recurring lessons we've learned:**

#### **Persona mapping is essential**

We've found that successful deployments start with a deep understanding of clinical roles, mobility needs and departmental workflows.

#### **Integration pertaining to apps that are not developed by Microsoft, requires planning**

In our implementations, we've learned that many critical healthcare applications aren't cloud-native. Early and proactive vendor engagement is essential to ensure compatibility, performance and a seamless user experience.

### **Microsoft FSLogix tuning impacts everything**

We carefully tune Microsoft FSLogix policies and storage strategies to ensure optimized profile load times, session stability and overall user satisfaction.

### **Printing still matters**

While clinical processes have largely been digitized, we understand seamless printing workflows are crucial in care delivery and require careful redirection planning. Misrouted print jobs can disrupt critical tasks like printing patient wristbands, prescriptions, medical records or discharge summaries.

### **Session resilience is underrated**

Our clients have shared that even the best workflows fall short if you can't keep your session active while roaming. Session interruptions or unexpected disconnects significantly disrupt care. Ensuring robust session reliability, with rapid reconnection capabilities, is essential for maintaining clinical continuity and productivity.

### **Naming conventions affect EHR workflows**

From our experience in the field, we've seen how device-naming conventions can have a significant impact on EHR functionality. All major EHR systems use back-end configuration tables for mapping frontend (user) device names, workstation IDs or terminal aliases to specific locations, departments, default printers and even user-specific views like patient lists or department-specific dashboards. Because some legacy systems impose character limits, we strongly recommend engaging clinical analysts early in the deployment process to avoid unforeseen issues during implementation.

#### **Measuring login times: what clinicians really experience**

In healthcare, "login time" starts well before an application opens. For clinicians, it begins the moment they approach a workstation or cart and includes every step from powering on the device to accessing the first patient record. Our experience shows that optimizing just the virtual desktop load times isn't sufficient. True workflow transformation requires a comprehensive rethinking of the entire access experience.

## Real-world scenarios: a day in the life

**To truly understand the difference Azure Virtual Desktop makes in healthcare, it helps to step into the daily routines of those delivering care.**

Whether it's a nurse moving between patient rooms or a physician responding to an urgent need after hours, Microsoft Azure Virtual Desktop quietly supports their work behind the scenes — making access faster, workflows smoother and technology feel invisible.

The following real-world scenarios show how Microsoft Azure Virtual Desktop transforms care delivery through secure, responsive and context-aware virtual desktop access, right when and where it's needed most.

### Scenario 1: A nurse's shift made easier with Microsoft Azure Virtual Desktop

It's the start of the shift. A nurse taps her badge at a shared workstation in the nurses' station, and within seconds, her Microsoft Azure Virtual Desktop session launches, preloaded with the tools she uses every day. Her EHR, medication management, schedules and secure messages are all right where she left them. It's a clean session, set up just how she likes it.

Later, she moves to a different floor and taps in at another workstation. Instantly, her session picks up where she left off — no loading screens, no wasted time. Even the notes she was charting are still open.

When she needs to print discharge instructions at the bedside, Microsoft Azure Virtual Desktop routes the job to the closest nurses' station printer automatically. No manual selections, no IT calls. The system understands where she is and does the work for her.

During lunch, a secure Teams message alerts her to a patient concern. She logs in from a lounge terminal, checks the message and takes action — no need to fully reauthenticate or relaunch applications. Her session is persistent, fast and secure.

At the end of her shift, one simple logoff wraps it all up. Her session closes securely, system logs are updated and back-end resources are freed.

### What's happening behind the scenes

- Session persistence keeps her workflow moving with minimal logins.
- Context awareness routes print jobs and maps devices based on location.
- Security controls validates devices and enforces conditional access policies.

- Microsoft FSLogix profiles maintain a familiar desktop experience as she roams.
- Cloud scalability ensures speed and reliability, even at peak hours.

This isn't hypothetical — it's happening now in hospitals using Microsoft Azure Virtual Desktop with the right strategy in place.

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**When healthcare IT meets clinical reality, the results are clear: fewer delays, fewer support tickets and more time where it counts: with patients.”**

### Scenario 2: A physician responds after hours, from anywhere

It's after hours, a physician has wrapped up for the day and is home when she gets a secure notification — one of her patients is experiencing worsening nausea and needs a medication refill.

She pulls out her smartphone and opens the Microsoft Azure Virtual Desktop app. With a quick tap and multifactor authentication, her familiar desktop session loads, just like it would at the hospital. The physician is greeted with the same layout, same shortcuts, same clinical applications.

Within moments, she's inside the EHR. She reviews the patient's chart, verifies the prescription, and clicks “Refill.” No VPN. No need to call in or drive back to the facility. Just a fast, secure and compliant way to take care of the patient without missing a beat.

Minutes later, the patient's pharmacy has the updated prescription, and the physician logs off knowing care didn't have to wait until morning.

## What's powering this experience

- Secure mobile access via Microsoft Azure Virtual Desktop and Microsoft Azure AD MFA ensures compliance without sacrificing convenience.
- Consistent desktop experience across devices eliminates learning curves or hunting for apps.
- No VPN required, reducing support needs and streamlining after-hours workflows.
- Cloud availability ensures access to anything, even from personal devices.
- EHR performance optimized for Microsoft Azure Virtual Desktop keeps clinical apps responsive on mobile.

In moments like this, Microsoft Azure Virtual Desktop empowers providers to act fast, supporting continuity of care while preserving work-life balance.



The result? Better patient outcomes and a better experience for the physician.”

## Challenges and considerations: what it really takes to make Microsoft Azure Virtual Desktop work

**Microsoft Azure Virtual Desktop offers clear benefits for healthcare, but realizing its full value takes more than flipping a switch. It requires thoughtful planning, integration with existing systems and a deep understanding of clinical realities.**

Here are some common hurdles — and how we overcome them as a trusted implementation partner.

### Network sensitivities

Microsoft Azure Virtual Desktop relies on stable, low-latency connections. We create low-latency, high-resiliency network paths using Microsoft Azure regions and ExpressRoute, and we use monitoring tools to ensure consistent performance, even in remote clinics.

### Hybrid complexity

Many healthcare apps are still on-premises. We ensure seamless access to these on-premises EHRs using contextual authentication and device trust controls.

### Endpoint readiness

Not every device is Microsoft Azure Virtual Desktop-ready. We assess clinical workstations, thin clients and mobile endpoints, helping plan for upgrades or quick fixes that won't disrupt care.

### Change management

Microsoft Azure Virtual Desktop is a shift for both clinicians and IT. We guide teams with training, intuitive rollouts and support that respects clinical workflows, not just technical milestones.

### Cost control

Cloud costs can escalate quickly. We use autoscaling, policy-based power plans and Nerdio-backed management insights to keep spending predictable and aligned with actual usage.

### Licensing and compliance

Navigating Microsoft licensing in healthcare can be complex. We simplify it, ensuring you're covered and compliant with HIPAA, HITECH and more.

### Clinical acceptance

We provide training and go-live floor support tailored to clinical workflows.

## What we bring to the table

Implementing desktops is relatively easy, but we're designing solutions for how people actually work. With deep healthcare experience and hands-on Microsoft Azure Virtual Desktop expertise, we help connect design decisions to real-life outcomes. The result? Less friction, more uptime and a deployment that actually makes life easier for clinicians and IT alike.

## Microsoft Azure Virtual Desktop is driving the next generation of healthcare IT

**Microsoft Azure Virtual Desktop serves as a foundational platform for driving healthcare transformation.**

Microsoft Azure Virtual Desktop provides the elasticity and manageability required by modern IT departments while meeting the real-time access demands of clinicians. From persistent sessions and location-aware printing to centralized control and enhanced security, Microsoft Azure Virtual Desktop unlocks new levels of efficiency and clinician satisfaction.

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When implemented with an understanding of both infrastructure and clinical workflows, Microsoft Azure Virtual Desktop enables organizations to deliver secure, scalable and user-friendly access to the full spectrum of healthcare applications.”

### Industry trends and strategic outlook

As healthcare continues its shift toward cloud adoption, key industry trends are driving IT leaders to rethink traditional infrastructure models.

**Analyst reports consistently highlight Microsoft Azure Virtual Desktop as a strategic choice for organizations aiming to enhance their security posture through centralized management, continuous compliance monitoring and granular conditional access controls.**

Alongside the rising importance of cloud-first approaches, AI integration and rigorous compliance standards, Microsoft Azure Virtual Desktop positions healthcare organizations to stay agile, secure and prepared for future innovations in patient care delivery.

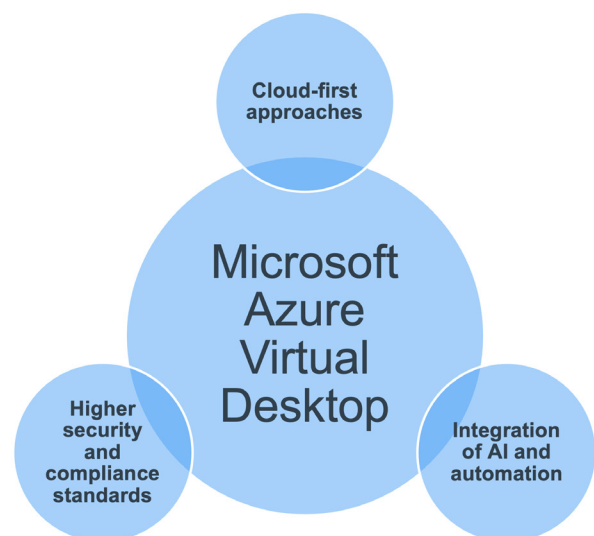
By implementing Microsoft Azure Virtual Desktop, healthcare providers not only meet today's stringent security requirements but also gain the flexibility, scalability and operational efficiencies essential for future growth.

Organizations that delay modernization may face escalating operational costs, security vulnerabilities and reduced competitiveness, while those that proactively adopt Microsoft Azure Virtual Desktop can expect measurable improvements in clinician experience, reduced IT overhead and readiness for evolving care models such as telehealth and mobile healthcare.

### Operational and financial impact

Adopting Microsoft Azure Virtual Desktop not only improves user experience but also delivers tangible bottom-line benefits:

- **Lower IT support costs:** Centralized control and automation reduce support tickets and manual configuration.
- **Faster onboarding:** Quickly provision virtual desktops for temporary staff, students or traveling clinicians.
- **Improved compliance posture:** Granular control and visibility make audits and policy enforcement more manageable.
- **Cloud flexibility:** Easily scale resources up or down based on census, seasonal staffing or new care models like telehealth.





## Why partner with us

With a proven track record in healthcare virtualization, NTT DATA designs Microsoft Azure Virtual Desktop around your clinical reality. In addition to technical implementation, our approach includes:

- **A center of excellence (CoE) framework**

We operate with a defined CoE strategy, aligning skilled engineers to critical domains such as service delivery, imaging management, application packaging, virtual desktop infrastructure, storage, hypervisor and networking — ensuring every layer of your cloud desktop environment is aligned and optimized.

- **Collaborative client partnerships**

We bring both technical expertise and business acumen to our engagements. As a trusted partner, we drive digital transformation collaboratively, bridging clinical priorities with strategic IT objectives.

- **Innovation at our core**

Our organization is an innovation engine that brings together R&D, service delivery, consulting, operations and product development into a focused team dedicated to virtual workspace excellence.

- **Real-world clinical experience**

We've worked with all major EHR platforms and understand the clinical and technical workflow demands.

- **Healthcare-ready customization**

We understand the complexities of hospital departments, hostname device mappings within EHRs, and contextual session control. Our team builds logic, triggers and automation tailored to your environment — not just generic solutions.

- **Built for modern care models**

Whether your goal is mobility, modernization or simplification, we offer the frameworks, tools, deep healthcare industry knowledge and advanced Microsoft expertise to help you succeed.

## Our joint value with Microsoft

NTT DATA and Microsoft bring a shared commitment to healthcare transformation. Microsoft provides the cloud platform, global infrastructure and continuous innovation behind Microsoft Azure Virtual Desktop. NTT DATA connects that technology to the realities of care, deploying, optimizing and aligning Microsoft Azure Virtual Desktop to your unique workflows.

### **Together, we help clients move faster, respond smarter and deliver better care.**

This partnership gives you direct access to deep Microsoft engineering and real-world deployment expertise for clinical-grade use cases.



## Let's redefine what's possible with Microsoft Azure Virtual Desktop

**Our healthcare-focused experts design, deploy and optimize virtual desktop environments that elevate the clinician experience while meeting the highest standards for security and compliance.**

### Ready to take the next step?

Let's begin with a strategic assessment of your current virtualization or EHR access environment. We'll help you identify opportunities for improvement, streamline workflows and chart a clear path to a more agile, secure and clinician-friendly IT landscape.

## NTT DATA services

Connect with NTT DATA to explore how your organization can unlock the full potential of Microsoft Azure Virtual Desktop. Our services, workshops and assessments cover:

- Cloud strategy and readiness
- Microsoft Azure Virtual Desktop architecture and design principles
- Security, identity and access management
- Application delivery and optimization
- User experience and persona design
- Operations and cost management
- Migration planning and execution
- Support model and skill development

**Contact us today** to schedule your discovery session — and empower your teams with a virtual desktop strategy built for modern healthcare.

### Learn more about NTT DATA

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