



Azure Virtual Desktop: the Linchpin for Modern Digital Workplaces_



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Remote is the 2023 reality of corporate work. Despite some early managerial reluctance and operational challenges, the cohort of remote and hybrid workers has substantially increased over the past two years.

Remote/hybrid workers



Source: Akumina — 2023 State of the Digital Workplace Report $\overline{2}$

The new realities of work, however, have also triggered changes in workplace design. Instead of focusing on the physical premises, leaders now must create virtual employee hubs to maintain operational continuity and strong ties among distributed workers.

In 2022, 52% of organizations¹ were actively planning digital workplace projects, from shaping the business case to gathering requirements and beginning implementation.

The Digital Workplace (DWP) is a collection of operational procedures and cloud-based software solutions that enable more effective, agile, and location-agnostic ways of working.

<u>A digital workplace</u> provides the workforce with anywhere access to familiar business software, core operating systems, and communication tools. Rather than being a standalone solution, a DWP is an ecosystem of apps and business processes, designed to facilitate new modes of

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¹ The State of the Digital Workplace. Reworked. Retrieved January 23rd, 2023. ² <u>Microsoft: A Leader in hybrid work solutions across 23 analyst reports.</u> Microsoft. collaboration: collocated, distributed, async, or joint — at the same location or at different ones.

Microsoft has been a long-standing leader in business software. The company's recent transition to cloud-first offerings, in turn, propelled them to the pedestal of the top digital workplace solutions provider.

Microsoft was voted as a leader in hybrid work solutions across 23 analyst reports in 2022².

Products like Office 365, Microsoft Teams, low-code Power Platform, and Power BI are already empowering global teams to do their best work. Now, leaders are looking to take the next step towards creating remote work infrastructure, capable of supporting the growing number of workers for the long term.

As part of this strategy, 58% of organizations³ expect to have Azure Virtual Desktop technology in production within the next two years — and that is a decision your company may want to consider as well.

³ AVD – Azure Virtual Desktop – Usage Trends and Statistics. eG Innovations. Retrieved January 23rd, 2023.



Retrieved January 23rd, 2023.



Azure Virtual Desktop: the Linchpin for Your DWP_



<u>Azure Virtual Desktop</u> is a cloud-based service provided by Microsoft that allows users to remotely access a Windows-based virtual desktop from anywhere, on any device.

Azure Virtual Desktop provides a fully-managed desktopas-a-service (DaaS) experience, meaning that Microsoft hosts all the infrastructure in its cloud, supplies network resources and required storage/computing capacities. Azure Virtual Desktop also includes native security features such as multi-factor authentication, network isolation, and data encryption to protect user data and comply with regulatory requirements.



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Azure Virtual Desktop: the Linchpin for Your DWP













By hosting computing and storage resources in the Azure cloud, organizations can eliminate the need to maintain and manage physical desktops. Therefore — reduce licensing and IT infrastructure costs, plus maintenance expenses.

Azure Virtual Desktop adopters cut costs by retiring less effective on-premises remote desktop services (RDS) and local servers (required to support them). Extra hardware savings can be generated by introducing a bring-yourown-device (BYOD) policy. Azure Virtual Desktop adoption also minimizes the need for manual deployment and maintenance of operating systems (OS), applications, and software.

With Azure Virtual Desktop, enterprises can achieve up to 34% cost savings.

Forrester: Total Economic Impact of Azure Virtual Desktop

Additionally, managed DaaS solutions reduce the pressure of security management ITSM teams face during the transition to remote or hybrid work. With data breaches and direct cyber-attacks on the continuous rise, cybersecurity is an important element to consider.

Existing VPN vulnerabilities, inconsistent remote security configurations, and legacy intrusion prevention rules comprise a slew of opportunities for exploitation. At the same time, business users are facing an increased rate of social engineering, malware, and ransomware attacks, along with other malicious actions.

Azure Virtual Desktop comes with built-in security solutions for virtual machine (VM) protection against viruses and malware. Users can also configure sensitive data encryption, as well as incorporate extra security facets for network traffic processing. To issue extra data protection on Azure VMs, you can also set up automatic data backups and profit from Azure Site Recovery — a business continuity/disaster recovery (BCDR) solution from Microsoft.

Because much of the security processes are automated, Azure Virtual Desktop adopters see a significant (up to 78%⁴) reduction in security access and patch management post-adoption. Current users also noted on the lower frequency of security responses for Azure Virtual Desktop compared to on-premises VD deployments.

With Azure Virtual Desktop, your company can reduce software deployment, maintenance, and support costs, as well as streamline security management, while delighting employees with superior collaboration experience.

⁴ The Total Economic Impact[™] Of Microsoft Azure Virtual Desktop. Forrester. Retrieved February 21st, 2023

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Source: Verizon 2022 Data Breach Investigation Report 📝











Azure Virtual Desktop: Main Use Cases_



Main Use Cases_



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Standardized Digital **Employee Experience**

Workforce productivity boost

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Optimize Operating Costs

Being a cloud-native product, Azure Virtual Desktop adoption allows you to shift from CAPEX to OPEX. Instead of investing in corporate hardware (server, employee devices) upfront, you can provision extra capacities ondemand in a matter of minutes. Metered service usage also allows you to exercise granular controls over service costs, as well as trim software/hardware maintenance expenses.

Infopulse recently helped a telecom company optimize its hardware costs as part of a wider IT infrastructure transformation initiative. The company successfully migrated to the Microsoft Azure Cloud platform and

adopted many of its DWP solutions, including Azure Virtual Desktop. To ensure efficient resource usage, we helped the telecom repurpose outdated hardware as thin clients for accessing Azure Virtual Desktop, which resulted in both short-term and long-term gains.

The telecom company instantly benefited from ondemand performance scalability with Azure Virtual Desktop, as well as obtained an ongoing reduction in maintenance costs. In the future, the telecom can also easily accommodate higher performance requirements without investing in device upgrades.



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A typical payback period for Azure Virtual Desktop enterprise users stands at three months — while total **ROI can reach** up to 210%.







Enhance Business Continuity

Virtual desktop solutions enable employees to log in to their workstations from anywhere — a home office, a local branch, a client site, or an open field. Using Azure Virtual Desktop, you can provide your workforce with access to mission-critical on-premises apps and locallyhosted data at any time, from any location.

Uninterrupted access to essential work tools is one of the key principles of <u>business continuity planning (BCP)</u> — a set of operational provisions and IT infrastructure configurations, aimed at ensuring constant access to work systems, rapid recovery in case of an unplanned disaster, and persistence in business operations.

Azure Virtual Desktop has BCP controls, which allow preserving customer metadata during regional outages. In such cases, Azure Virtual Desktop service components automatically fail over to a secondary selected site and continue to operate as usual.

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Improve Security and Compliance

Compared to on-premises VD deployments, Azure Virtual Desktop comes with a great range of configurations for ensuring security and access management policies standardization across the organization. Azure Virtual Desktop natively integrates with other cloud solutions, namely <u>Azure Active Directory (AD)</u> — an identity and access management solution — <u>Azure Activity log</u> — a log monitoring service — <u>Microsoft Intune</u>, and <u>Microsoft</u>. <u>Defender</u> among other cloud-enabled security tools.

Separately or combined, these allow your teams to establish homogenous corporate policies for accessing VMs and VDs, as well as individual applications hosted on them. Depending on the compliance requirements in your industry, you may also consider enabling conditional access to various Azure Virtual Desktop environments. To further protect your Azure Virtual Desktop session hosts, configure a Network Security Group (NSG) and attach it to their subnets. Alternatively, Azure Firewall or a third-party solution can be used to establish a guarded perimeter around your Azure Virtual Desktop environment.

With the above practices, you can safeguard Azure Virtual Desktop against internal and external threats, as well as control user accesses in Azure Virtual Desktop sessions.









Standardize Digital Employee Experience

Digital employee experience (DEX) is a core differentiating factor of modern workplaces. Convenient work apps, multiple communication touchpoints within the organization, personal productivity tools, fast IT support, and issue resolution contribute to workforce efficiency.

60% of business leaders indicate that improving EX is a top IT priority over the next 12 months.

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In fact, 81% of employees⁵ admit that switching between applications (let alone workstations) negatively affects their productivity. DWP solutions aim to standardize the operational and informational environment for your employees, regardless of their location and work preferences — and consolidate access to key work tools.

With Azure Virtual Desktop, you can create a set of standard resource provisioning scenarios for different employee groups. Additionally, you can also provide personalized access to additional resources in a matter of minutes to meet the needs of dynamic users. For example, you can provide users with extra VMs to run ML/DL model experiments, render 3D video, or obtain access to a macOS, supported by Azure Virtual Desktop along with Windows, Android, iOS, and HTML5.

Flexible Azure Virtual Desktop configuration allow administrators to choose whether they want to optimize costs — by having a group of employees share one VM — or boost performance by having a dedicated VM for heavy-loaded applications.

Explore how Infopulse can help your company implement digital workplace and collaboration solutions /1

⁵ <u>2023 State of the Digital Workplace & Modern Intranet Report.</u> Akumina. Retrieved January 23rd, 2023.



Boost Workforce Productivity

As mentioned earlier, a digital workplace is an ecosystem of tools and processes. It is not surprising that 80% of organizations⁶ intend to use other DWP technologies in conjunction with Azure Virtual Desktop.

Soundly, this is easy to do since Azure Virtual Desktop has native integrations with all Office applications, as well as video and audio communication tools. Azure Virtual Desktop can be also connected with OneDrive for seamless document exchanges and collaboration. At the same time, Azure Virtual Desktop allows for the easy sharing of virtual desktops and applications, making it easier for teams to collaborate in real-time.

With Azure Virtual Desktop, users continue to work in a familiar environment, while obtaining the extra benefits of easy access to extra applications, services, and computing resources.

⁶ AVD – Azure Virtual Desktop – Usage Trends and Statistics. eG Innovations. Retrieved January 23rd, 2023.









Azure Virtual Desktop Implementation Best Practices_





Though Azure Virtual Desktop implementation tops leaders' agenda, certain reluctance remains.

An eG Innovations survey of 500 global IT professionals found that adopters report the following barriers to adoption:

What is the biggest challenge in an Azure Virtual Desktop deployment?



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Issues with end-user experience (slow log-on or application loading times), as well as cloud cost optimization top the list, followed by security concerns and migration planning difficulties.

Each of the above concerns is valid, yet addressable. Based on past client projects, our Microsoft Azure consultants have developed a **three-step Azure Virtual Desktop adoption framework** that mitigates the above challenges.

1. Assess

To gain measurable ROI, you have to formalize a business case first. Azure Virtual Desktop is a potent solution, but not a "silver bullet". You have to evaluate your operating processes and end-user requirements first to determine which setup fits your business best.



Azure Virtual Desktop decision matrix

Role	On-s
Entry-level workers Operational support staff, handling a limited number of workflows, applications	Front
Specialists Mid-level professionals and knowledge workers, performing more complex tasks	IT sta engir
Managers & C-Suite Senior users, board members, and corporate leadership	Finar mana
External Workforce Independent contractors and services providers, engaged on a temporary, as-needed basis	Temp interi

VDI is a good fit

ite	Off-site	Remote/Hybrid
t-desk personnel	Call center specialists	Junior sales associates
aff, digital artists, CAD neers	Sales specialists, field engineers	Software implementation consultants, customer success specialists, market executives
ncial teams, marketing agers, HR leaders	All senior remote workers	Board members, investors and other company stakeholders
oorary contractors, im managers	IT consultants, freelance web developers, UX designers	Professional services providers









Among user groups, you will also have to determine the following needs:



Based on the above, you will be able to estimate how many VMs you will need to provision in Azure to accommodate current user needs (and keep extra room for upscaling).

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Special hardware requirements

Extra GPU capacities for power users, running analytics, ML, or 3D rendering projects.



Standard and custom app sets

Types of applications provisioned by default to various user groups, plus select applications, required by certain users only.







2. Configure

Azure Virtual Desktop license is included with Windows and Microsoft 365, meaning you do not need to purchase it as an add-on (in most cases). However, you will have to pay for the Azure infrastructure, required to host your Azure Virtual Desktop deployment. It includes:

- Virtual machines 0
- Cloud storage 0
- Networking resources 0
- Other components 0

Use <u>Azure pricing calculator</u> to model the approximate TCO. During the configuration stage, you can further optimize your spending by creating a flexible schedule for workloads first. Do not rush to reserve one or threeyear Azure VM instances. Instead, test on-demand usage scenarios first to understand your resource consumption patterns.

Implement server performance monitoring using Azure Monitor to better understand workload distribution, mitigate peak load, and address resource shortages. With the help of monitoring tools, you can identify which users or applications consume the most resources. Then create appropriate provisioning plans. Once you better understand VD usage patterns, consider re-evaluating the decision to utilize the reserved instances.

Separately, you will have to implement a proper network topology for Azure Virtual Desktop to ensure undisrupted connectivity between on-premises, multi-cloud, edge, and global users. The tools at your disposal include Azure <u>Virtual Network</u> service, <u>Azure Virtual WAN</u>, <u>Network</u> Security Group (NSG), and Application Security Group (ASG) among others.







Reference Azure Virtual Desktop Network Layout for Hub & Spoke Scenario with Hybrid Connectivity



Separately, be sure to configure network performance monitoring to record bandwidth demands and traffic trends for VDs. If needed, consider implementing load balancing to further optimize resource usage and reduce latency.

If the latter is your concern, select the closest region for VM instances. Azure has data centers in approximately 65 regions — the most out of all cloud services providers. The number continues to expand. Sites in Poland, Spain, Italy, Austria, Taiwan, and New Zealand among others are due to open this year.









3. Secure

Azure Virtual Desktop brings desktop experience to multiple user devices — a delightful factor for users and an extra nuisance for your security team. To avoid security mishaps, you will have to establish clear userlevel policies and security procedures for various activities.

Remember: Though Azure Virtual Desktop streamlines a lot of deployment and maintenance, configuration and security remains a joint responsibility. Azure Virtual Desktop users have to implement recommended security and IAM practices to ensure the utmost endpoint protection.

Microsoft established a <u>security baseline for Azure</u> <u>Virtual Desktop</u> — a set of must-do practices for each deployment. These include recommendations on

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network configurations, user and application identity management, conditional access to data and resources, data protection, as well as proper privilege management controls. None of these recommendations can be neglected.

We also recommend implementing log collection and analysis for Azure Virtual Desktop to ensure the timely detection of abnormal user behavior or intrusion attempts. Log data also helps your security teams perform security incident analysis to determine the root cause of the issue. They then mitigate such vulnerabilities. Additionally, data from the Azure Monitor service can notify you about suspicious resource consumption patterns, which can be indicative of a breach.

Separately, you should consider securing session hosts in Azure Virtual Desktop environments. Tools like Azure Security Center and Windows Defender ATP can perform vulnerability assessments for server and desktop OS respectively.





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Adopt Azure Virtual Desktop with Infopulse_





Proper solution architecture is the key requirement for successful virtual desktop infrastructure deployment.

From gathering requirements to use case formalization to subsequent infrastructure design and testing, you need to

Infopulse team can help you:



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weigh up carefully all the decisions made.

Contact us for a personalized consultation $\overline{\nearrow}$

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About Infopulse

Infopulse, part of the leading Nordic digital services company Tietoevry, is an international vendor of services in the areas of Software R&D, Application Management, Cloud & IT Operations, and Cybersecurity to SMEs and Fortune 100 companies across the globe. Founded in 1991, the company has a team of over 2,300 professionals and is represented in 7 countries across Europe and the Americas.

Infopulse is trusted by many established brands, such as Allianz Bank, BICS, Bosch, British American Tobacco, Credit Agricole, Delta Wilmar, ING Bank, Microsoft, Offshore Norge, OLX Group, OTP Bank, SAP, UkrSibbank BNP Paribas Group, Vodafone, Zeppelin Group, and others.

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