



Secure performance from anywhere

An Azure Virtual Desktop Guide



Enable a secure, remote desktop experience from anywhere

Azure Virtual Desktop (AVD), formerly known as Windows Virtual Desktop, is a fully Cloud-based, comprehensive desktop and app virtualisation service provided by Microsoft and powered by Azure. With built-in security and compliance features, Azure Virtual Desktop provides a secure virtual desktop infrastructure to an organisation's end-users, allowing them to work from a Cloud-based platform that they can access from any device.

With remote working strategies more important than ever, AVD offers an easy way to give your entire team secure access to information and applications they need on their devices, saving time, resources and boosting employee efficiency.

At Bridgeall, we believe that competing in the modern economy requires a modern workplace, and we help our customers realise this vision through services like Azure Virtual Desktop. This guide aims to provide you with everything you need to know about AVD, its business benefits, as well as real use cases to give you a better understanding of the service.

This guide covers

- › Virtual Desktop infrastructure
- › Introducing Azure Virtual Desktop
- › The business benefits
- › Windows 365
- › Azure Virtual Desktop vs Citrix
- › Case studies



Virtual desktop infrastructure

To better understand Azure Virtual Desktop, it's useful to gain some insight into virtual desktop infrastructure (VDI) and how the process works.

VDI refers to the use of virtualisation and virtual machines to provide and manage virtual desktops. Users can access these virtual machines remotely from supported devices and remote locations, and all the processing is completed on the host server.

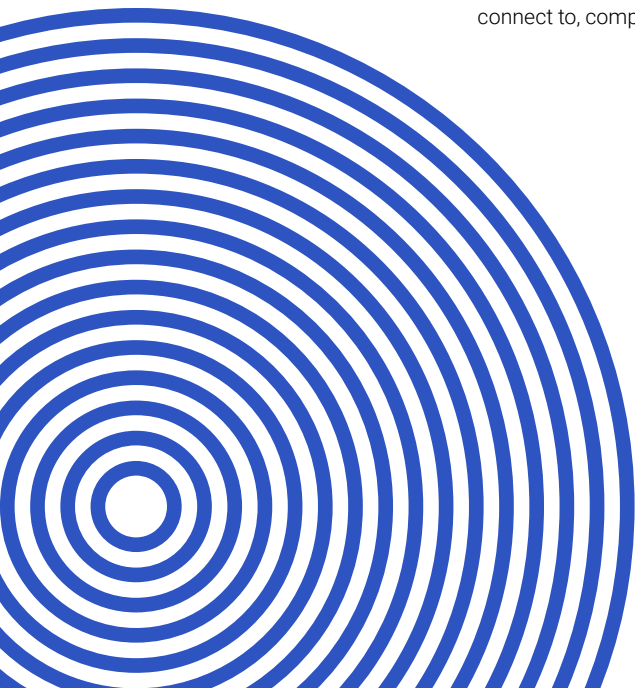
Users typically connect to their desktop instances through a connection broker. This broker is essentially a software layer that acts as the intermediary between the user and server, enabling the orchestration of sessions to virtual desktops or published applications.

VDI is usually deployed in an organisation's data centre and managed by their IT department. While VDI can be hosted on-premises or in the cloud, Cloud-based VDI can offer reduced infrastructure investments with all the core benefits that the cloud provides, which is where AVD comes in.

Virtual Desktop use cases

There are a number of different use cases where virtual desktops can help organisations in modern connected businesses, these include:

- › **High graphics requirements** - Performance for graphics intensive workloads have always been a challenge. With VDI you have the ability to select the right compute level to support a smooth and quick experience for CAD systems and video editing without requiring a high-performance machine.
- › **Sensitive data** – Organisations looking to keep their data secure can use a VDI. You can keep your sensitive data within your network and infrastructure and provide access via a VDI on any device. No data will be on the device, so it's kept secure.
- › **Legacy apps** – VDI offers a great way of providing remote access for legacy on-premise applications.
- › **Enhanced compute required** – There are many scenarios where users require to run intensive jobs on their devices, from running code, queries and a range of scenarios. Rather than buying these users a high-performance device that they only need sometimes, you can provide a pooled VDI setup that they can connect to, complete the task that requires the additional compute and then go back to their own device.





Introducing Azure Virtual Desktop

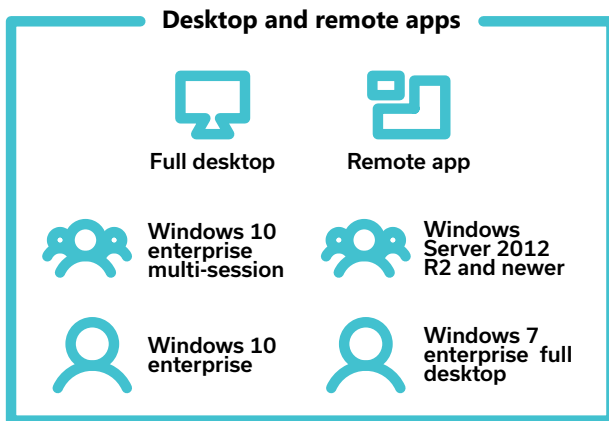
Azure Virtual Desktop is a desktop and app virtualisation service that runs on Microsoft Azure. Instead of logging in to your desktop running locally on a single physical device (e.g. laptop or PC) you access a desktop running remotely in the Cloud via Azure Virtual Desktop (AVD).

AVD can be accessed from any device – Windows, Mac, iOS, Android and Linux – with applications that you can use to access remote desktops and applications, including multi-session Windows 10 and Microsoft 365 apps for enterprise. You can also use most modern browsers to access Azure Virtual Desktop-hosted experiences.

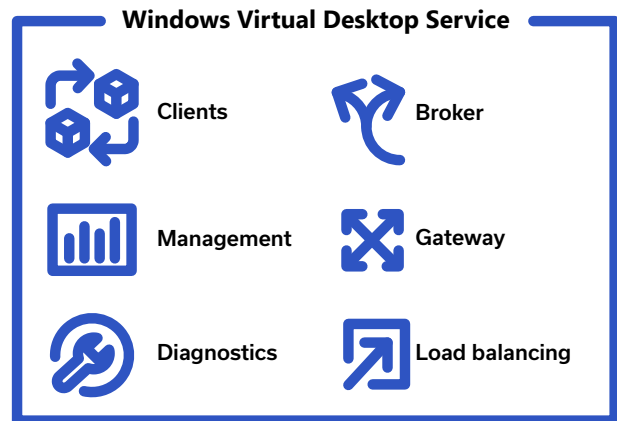
Typically, Azure Virtual Desktop is easier to deploy and manage than traditional Remote Desktop Services (RDS) or VDI environments. With AVD, you don't have to provision and manage servers and server roles such as the gateway, connection broker, diagnostics, load balancing and licensing.

In short, Azure Virtual Desktop provides a managed VDI that is secure, cost-effective and offers a seamless experience that is comparable to a laptop or local desktop.

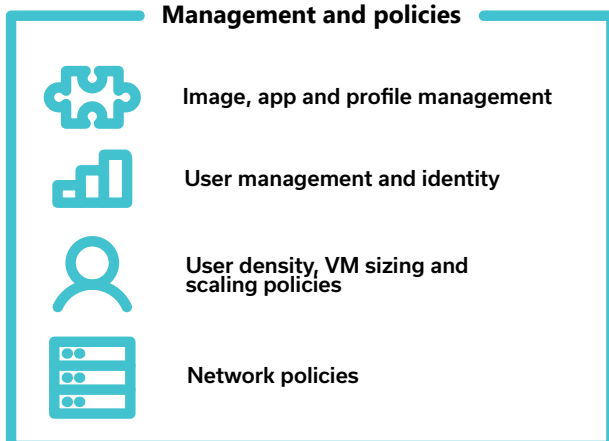
Your subscription - your control



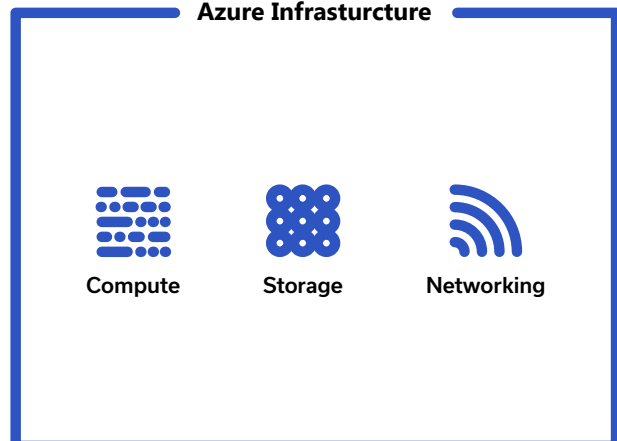
Managed by Microsoft



Management and policies



Azure Infrastructure





Features of Azure Virtual Desktop

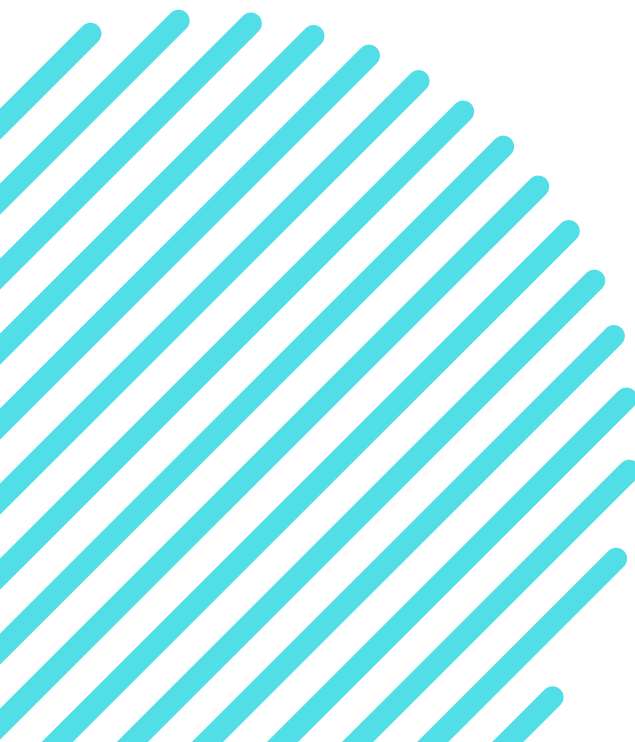
- › **AVD interface** – With Azure Virtual Desktop you get a familiar Windows 11 interface as standard. Helping your users with adoption.
- › **Microsoft Teams** – Microsoft Teams is fully optimised for AVD where other VDIs have historically struggled with Teams.
- › **Full range of compute options** – AVD comes with an impressive range of different GPU options including some graphic optimised options.
- › **Admin capabilities** – Fully manage your resources, licenses and setup with the Azure Virtual Desktop administrator portal. Including a range of reports for monitoring.
- › **Cybersecurity** – Azure Virtual Desktop works well with Defender for Cloud and Data Protection monitoring as standard.

Host pools

A host pool is a collection of Azure virtual machines that are registered to Azure Virtual Desktop as session hosts. You control the resources published to users through application groups.

A host pool can be one of two types:

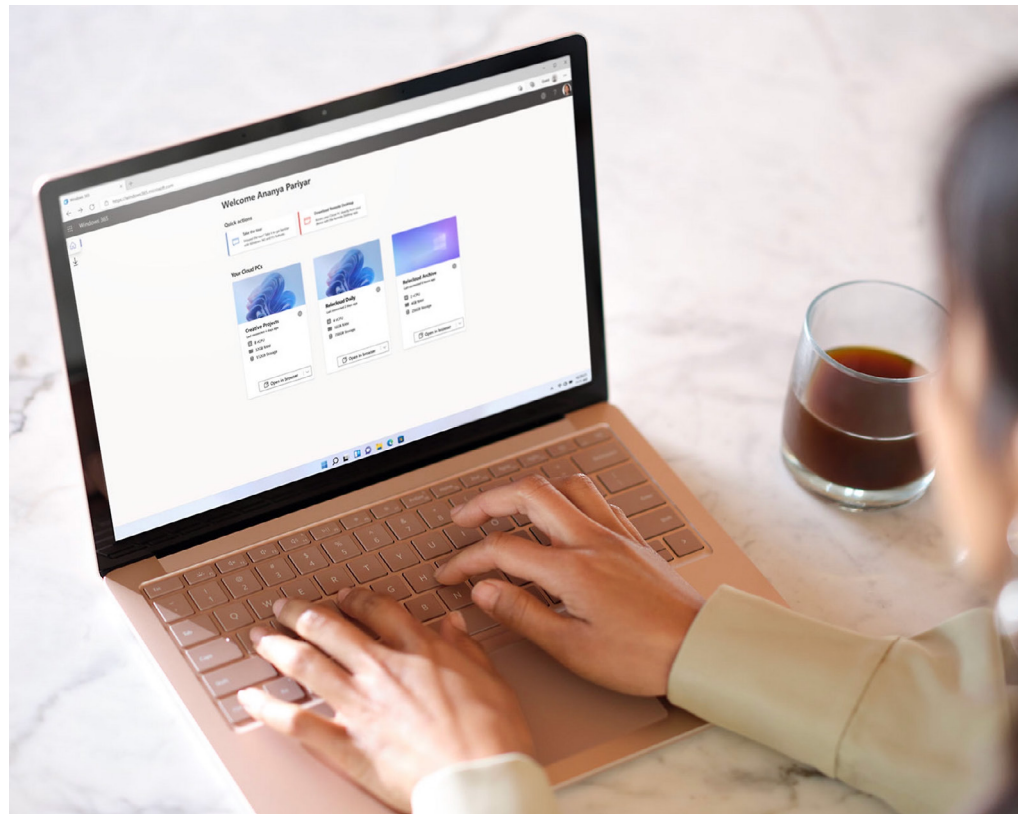
- › Personal, where each session host is assigned to an individual user. Personal host pools provide dedicated desktops to end-users that optimize environments for performance and data separation.
- › Pooled, where user sessions can be load balanced to any session host in the host pool. There can be multiple different users on a single session host at the same time. Pooled host pools provide a shared remote experience to end-users, which ensures lower costs and greater efficiency.





Windows 365

Windows 365 is built on Azure Virtual Desktop, but it simplifies the virtualization experience -- handling all the details for you. Windows 365 is a service from Microsoft that allows you to access a cloud PC via a browser. It allows businesses to spin up a cloud PC in minutes and provide access to their Microsoft 365 suite but via any device. Windows 365 is part of the Azure Virtual Desktop and Windows 11 technology stack. Let's take a closer look at Windows 365 and how it adds to the Azure Virtual Desktop experience.



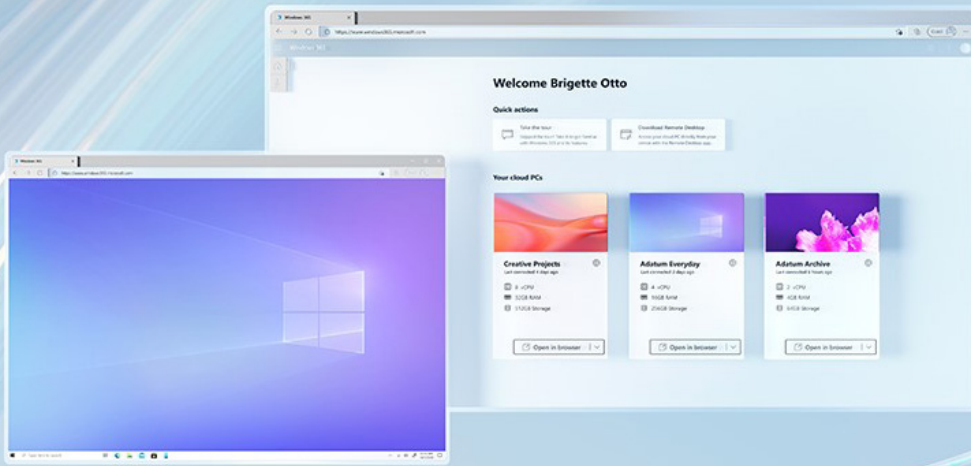
What is Windows 365?

Windows 365 is a virtualization solution or put differently a cloud service where you can log in and access a cloud PC. This cloud PC has Windows 11 and includes Microsoft 365. Each Cloud PC is assigned to an individual user and completely secure. You can then access this Cloud PC on any device.

Windows 365 provides a simple provisioning process whereby you simply add a Windows 365 license to a user in Azure Active Directory and the solution is automatically spun up for them.

Windows 365 comes with Endpoint Management and Intune integration to help support better device management, admin support and provisioning.

Windows 365 offers fixed-price licensing (through Microsoft 365) for different Cloud PC sizes. When you assign a license to a user, you need to select one of several size options. Each has a different number of CPUs, RAM, and storage, and is intended to support different usage scenarios. Assess your business requirements to determine which sizes make sense for your users.



Why use Windows 365?

This allows organisations to provide digital services to a wide range of stakeholders that might need them but giving these stakeholders a company device might not make sense. For example, Non-Executive Directors, Volunteers, Temporary workers or Trustees, could greatly benefit from this new service.

In many cases Windows 365 is a more cost-effective solution to alternative desktop virtualization offerings subject to your requirements.

Windows 365 Business or Enterprise?

There are two versions of Windows 365 available, Business and Enterprise. As with most Microsoft products, Enterprise has more control, more features and is better embedded across the wider Microsoft Stack.

Windows 365 Business is also capped at 300 seats, so large organisations will struggle to utilise this. Windows 365 Business also provisions a standard Cloud PC with default settings, where Enterprise provides full customisation options.

For some organisations Windows 365 provides a more flexible and simpler virtualisation solution than Azure Virtual Desktop but with less control and flexibility. Your requirements will drive what route is best. The licensing model is quite different so again both routes should be equally considered.

Why move to Cloud?

Simply put, moving desktops to cloud is the next step in the evolution of digital transformation. Similar to scaling enterprise web-based applications to your employees and customers, you can now quickly deploy desktops with the same potential for scalability. If you've already migrated your applications and data to the cloud, why not host the desktops there too?

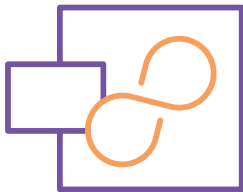
Centralisation keeps everything congregated and increases performance potential. With software now defining the desktop, you free up your dependency on rigid hardware and diminishing product lifecycles. While traditional VDI achieves this, deploying a cloud desktop platform is much easier from a configuration and deployment perspective. Plus, you benefit from the power, security, and scalability of Azure.

Thanks to Azure Virtual Desktop you not only have access to desktops and apps through the cloud, but you have access to your on-premise solutions.



The business benefits of Azure Virtual Desktop

Nowadays, companies are undergoing digital transformation to become more agile, and AVD provides greater flexibility for an agile workforce at home, in the office or on the go. Users can access their expected desktop experience regardless of location while also having a familiar and efficient user experience (UX), and the benefits don't just stop there.



Productivity

Employees require constant connectivity, flexibility and specialised resources for their roles in order to stay productive and Azure Virtual Desktop provides the tools to do this.

With AVD users can access their desktop from any internet-connected location using a company issued or personal device. Seamless integration with Microsoft 365 apps for enterprise, Windows 10 and Microsoft Teams, also helps end users to be productive with the desktop experience they're used to.



Infrastructure and licensing costs

Upgrading and refreshing infrastructure can be a costly exercise but by using AVD, your business can start to see cost savings almost straight away. To start, hosting on Azure greatly reduces the infrastructure needed, mainly servers and the physical space to house them in.

Labour savings will also be significant as there will be reduced requirement for full-time employees to maintain such a vast infrastructure. Some of the labour savings will come from needing less help desk support staff since desktops are created virtually using the latest versions thus avoiding installation issues associated with older versions.

There are also savings to be made when it comes to licensing. Azure Virtual Desktop is included in some Windows and Microsoft 365 license packages where you only pay for when you're using it.



Employee costs

Infrastructure isn't the only place you'll notice a reduction in spend. With employees being able to work from anywhere, you can evaluate if you really need your existing office space or want to downsize.

Companies that allow employees to bring their own device, can utilise the budget towards other areas in the business. You can further maximise the use of your virtual machines through the exclusive Windows 10 multi-session capability, which enables multiple concurrent users on each virtual machine.



Scalability

A company that wants, or needs, to grow quickly can do so with AVD. Rapid increases in hiring don't need to be hindered by new infrastructure setup or device procurement in a bring your own device (BYOD) setting. For company-issued devices, the processes of creating an image, app packaging, and app deploying aren't necessary. Conversely, a business that is going through a re-organisation can easily downsize the number of users on AVD, and if it was a BYOD environment, it need not be stuck with devices and servers that will soon become outdated.

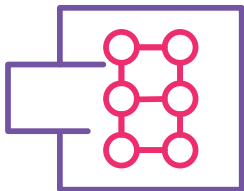


Security

Azure Virtual Desktop includes many features that help keep applications and data secure. Since the desktop on AVD will always be up to date, it will have the latest in security features that Microsoft has to offer. Traditionally, larger companies would defer security updates or take time to fully roll them out, leaving users vulnerable for attack but with AVD updates happen automatically. The service has many built-in advanced security features, such as Reverse Connect, which reduce the risk involved with having remote desktops accessible from anywhere.

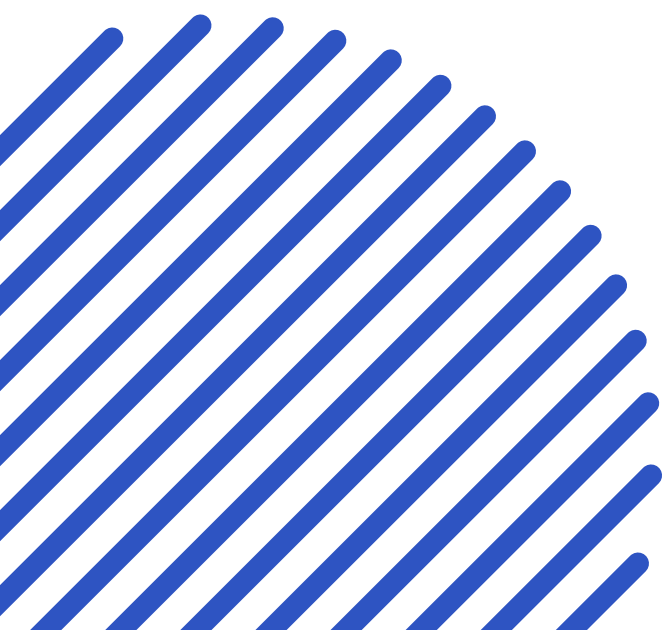
You can easily apply the right access controls to users and devices with Azure Active Directory Conditional Access. Reduce vulnerabilities and help keep your virtual desktops secure by leveraging reverse connections and security solutions like Azure Firewall, Azure Sentinel, and Azure Security Centre.

Azure Virtual Desktop is a great solution for organisations looking to provide virtualised desktops and applications. It provides a wide range of performance optimisation, security, resiliency and automation capability.



Improve resiliency and protect against outages

As part of Azure Virtual Desktop, you can help keep your team running during outages by leveraging built-in Azure Site Recovery and Azure Backup technologies. Mitigate downtime and prepare for planned maintenance with personalised alerts and guidance through Azure Service Health. Putting Azure Virtual Desktop clearly in the middle of your business resiliency strategy.





Azure Virtual Desktop Licensing

Azure Virtual Desktop licensing is completely tailored to you and split into two main areas:

- › Users – Each user requires an AVD license to access it.
- › Resource – On top of the user licenses you also have to select a compute resource from within Azure.

User licensing

When looking at user licensing for AVD there are a number of different bundles available from Microsoft that include AVD user licenses as standard. This is the first place to check, these come in two versions:

License types	Bundles
Bring your own license for Windows 11 or Windows 10 - Access Windows 11 and Windows 10 Enterprise desktops at no additional cost if you have an eligible Windows or Microsoft 365 license.	You are eligible to access Windows 11 and Windows 10 with Azure Virtual Desktop if you have one of the following per user licences*: <ul style="list-style-type: none">› Microsoft 365 E3/E5› Microsoft 365 A3/A5/Student Use Benefits› Microsoft 365 F3› Microsoft 365 Business Premium› Windows 11 & Windows 10 Enterprise E3/E5› Windows 11 & Windows 10 Education A3/A5› Windows 11 & Windows 10 VDA per user
BYOL for Windows Server - Access desktops powered by Windows Server Remote Desktop Services desktops at no additional cost if you are an eligible Microsoft Remote Desktop Services (RDS) customer.	You are eligible to access Windows Server 2016 and newer desktops if you have an: <ul style="list-style-type: none">› RDS Client Access Licence (CAL) licence with active Software Assurance (SA) (per-user or per-device)› RDS User Subscription Licence› RDS Subscriber Access Licence (SAL) (per-user)**

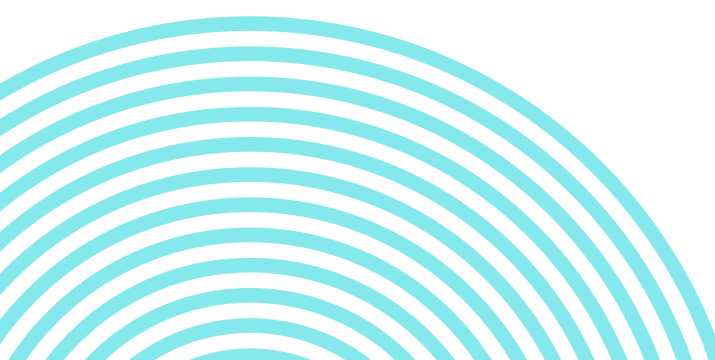




Azure Virtual Desktop vs Citrix – why is it better - why should you move from Citrix

A common question heard around the subject of AVD is, do I still need Citrix? We've listed some differences to help with your decision.

	AVD	Citrix
Implementation/ set up	<p>Low cost</p> <p>All you'll need is an Azure subscription (as this is where AVD is hosted), fewer days of consultancy, and a Microsoft 365 license, or separate Azure Virtual Desktop license.</p>	<p>High cost</p> <p>Requires multiple on-premise servers to be built first, a Windows Server operating system, the Windows RDS calls, Citrix on top and then consultancy for the setup.</p> <p>You'll also need Office Pro Plus, hardware and ongoing specialist support services for a Citrix environment.</p>
Licensing	<p>Low cost and included in Microsoft 365</p> <p>You don't need a server or Citrix licence costs, so AVD works out cheaper per user.</p>	<p>High cost</p> <p>Requires server and additional Citrix license costs.</p>
Accessibility/ organisation size	<p>Any</p> <p>AVD offers a faster and more affordable setup for all size without requiring advanced IT intervention.</p>	<p>Enterprise</p> <p>While Citrix has many advanced features, the cost of implementation and maintenance is high. However, not all businesses (especially small ones) require or want to pay for these capabilities.</p>
Desktop experience	<p>Good</p> <p>AVD provides a standard Windows 10 desktop experience. From a usability perspective this is useful for users who are already familiar with Windows 10.</p>	<p>More complex</p> <p>Citrix users are presented with a Windows Server operating system. For users acquainted to Windows 10, this is a different experience which can prove challenging. It is possible to configure Windows 10 desktops on Citrix, but this can incur additional costs.</p>
Admin experience/ capability	<p>Easy</p> <p>With Microsoft Azure Virtual desktop, IT administrators can centrally administer the infrastructure from the cloud.</p>	<p>Easy</p> <p>Simplified administration is provided through a unified Citrix Cloud console.</p>
Security	<p>Stronger security</p> <p>AVD provides adequate security measures based on the strong security features of the Azure cloud</p>	<p>Strong security</p> <p>Citrix provides extensive enterprise security features, including FIPS compliance, Common Criteria certification, Microsoft Credential Guard compliance, multi-factor authentication, smart card integration, ICA proxy, and more.</p>
Performance	<p>Stronger for – Teams, Office/Microsoft 365</p> <p>AVD provides the best Office 365 pro plus and only multi-session Windows 10/11.</p>	<p>Good control</p> <p>Good bandwidth control when paired with SD-WAN but additional license required.</p>





Azure virtual desktop case studies



V.Ships

With the shift to remote working as a result of the Covid-19 pandemic, coupled with the poor performance of the existing Citrix RDS environment, we worked with V.Ships for the rapid deployment of a stable, low latency virtualised solution for their business.

To tackle this problem the Bridgeall Cloud Services team reviewed the available infrastructure and networking options, agreeing a design that delivered the lowest latency regional availability of AVD combined with an optimum end user experience.

The Microsoft AVD solution we delivered provided V.Ships global offices and users with secure, unhindered access to key company applications and a virtual desktop with minimal latency, maximum scalability and exceptional levels of performance and reliability.

By maximising their existing Microsoft 365 licensing, the solution also delivered significant cost savings compared to the company's existing Citrix licensing commitments. The desktop administration and management delivered from a single console also provided sufficient improvements in help desk effort and support costs.



Edinburgh Military Tattoo

Due to the rapid move to home working as a result of Covid-19, The Royal Edinburgh Military Tattoo (REMT), required a solution that would allow staff to access key business systems and continue to operate on a business-as-usual basis.

An Azure Virtual Desktop (AVD) solution was delivered to the REMT management & sales teams to facilitate remote working during the Covid-19 pandemic. AVD delivered a low risk, predictable and rapid desktop migration enabling a bring your own device strategy and use of cost-efficient staff devices.



What's next?

Azure Virtual Desktop - Briefing

Book a briefing and discover how your organisation can benefit from Azure Virtual Desktop.

[FIND OUT MORE >](#)

Azure Virtual Desktop - Proof of Concept

In our Azure Virtual Desktop proof of concept, we get you up and running with a pilot project. We will then provide access to the trial environment with agreed application and desktops made available for you to try out and experience.

[FIND OUT MORE >](#)

Since 2003 Bridgeall has delivered advisory, development, implementation and support services to our clients on 100's of successful projects. We are a multiple Microsoft Solutions partner and ISO9001, ISO27001 and Cyber Essentials accredited.

WE'LL HELP YOU BUILD YOUR MODERN INTELLIGENT WORKPLACE QUICKLY AND SECURELY.



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