Microsoft

Azure Virtual Desktop

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Azure Virtual Desktop (AVD):
A cloud VDI solution designed to meet the challenges of remote work

Enable a secure, remote desktop experience from virtually anywhere

Access Windows 11 and Windows 10 from virtually anywhere

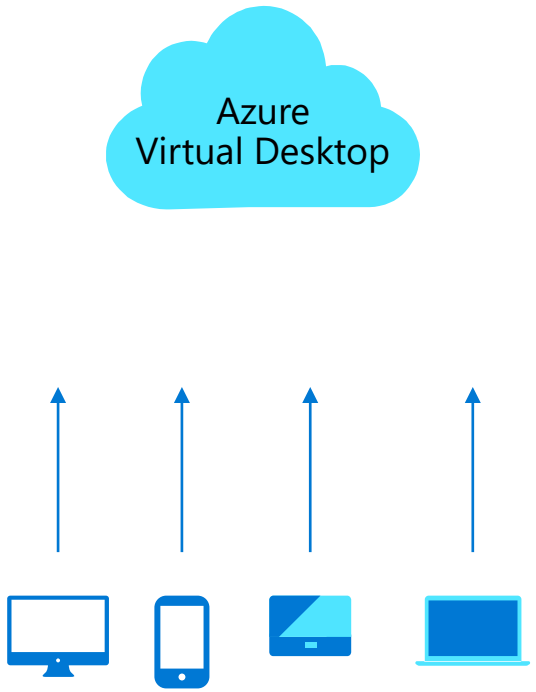
Maintain full control over configuration and management

Get the security and reliability of Azure

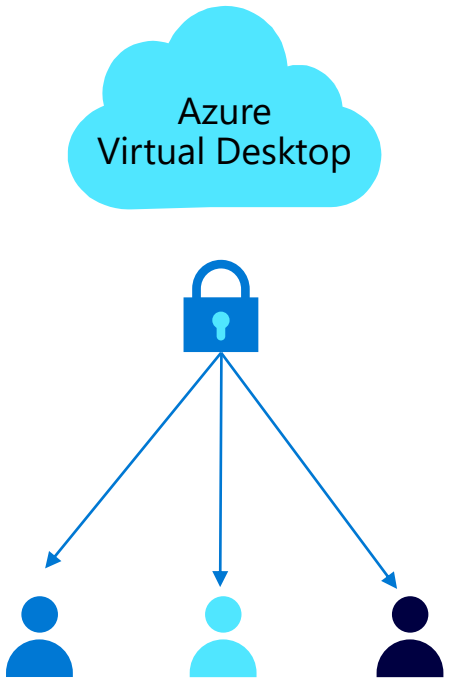
Optimize cost with multi-session and pay for only what you use

Here's what you can do when you run Azure Virtual Desktop on Azure

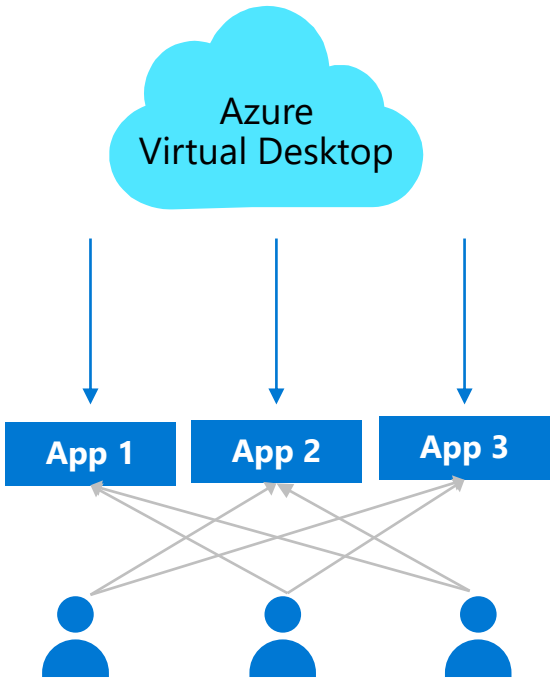
Access your org's apps from anywhere on virtually any device



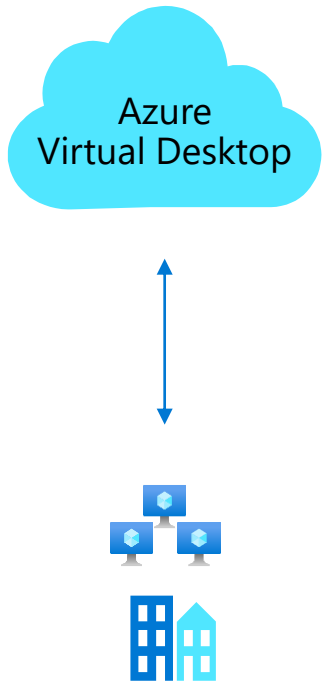
Create secure, customized PC experiences for every user



"SaaSify" your custom apps and stream them to users

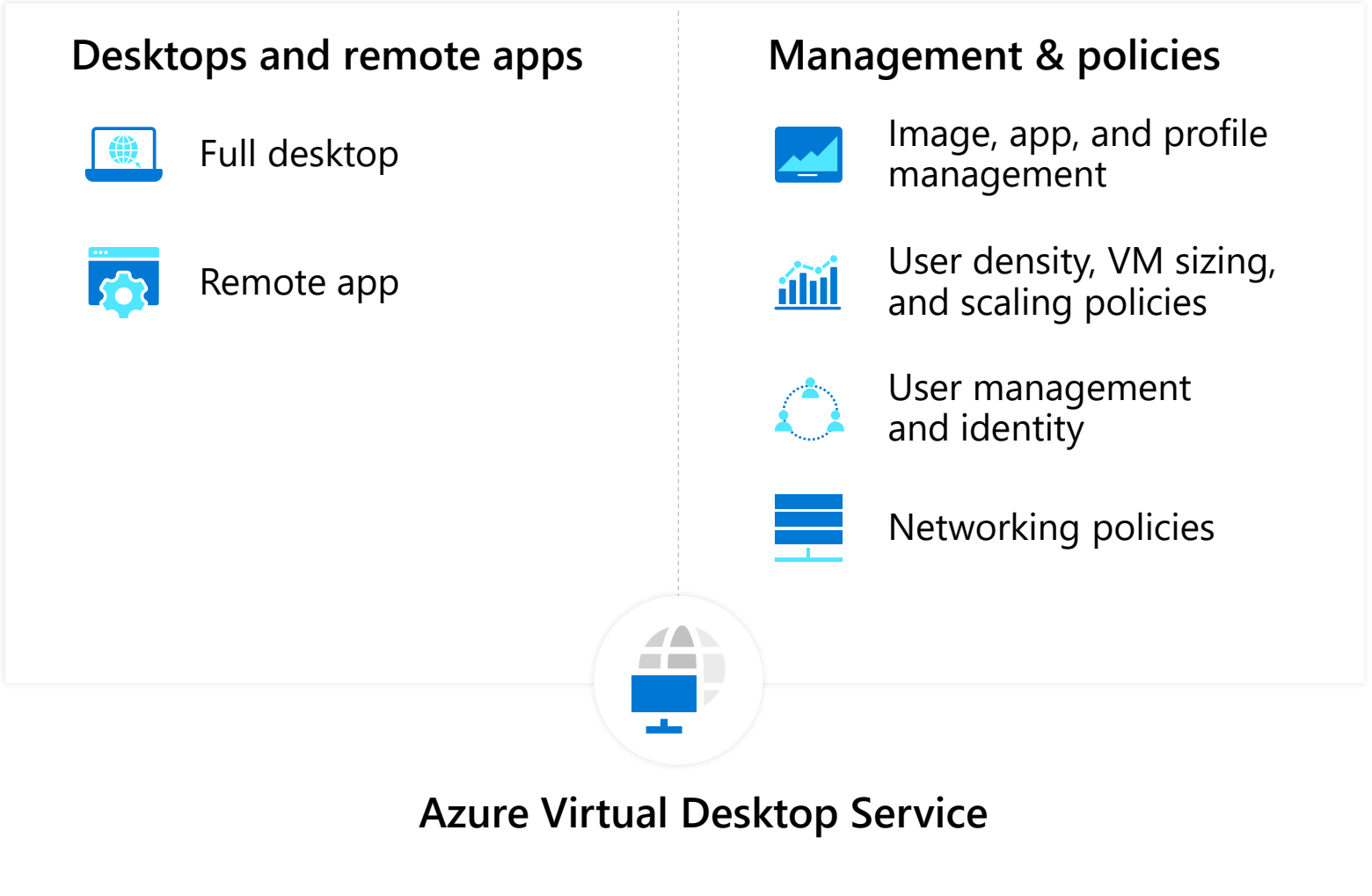


Gain efficiencies by migrating existing VDI to the cloud



Azure Virtual Desktop simplify VDI management

- Provide your employees with a full desktop and access to remote apps
- Focus on policies and controls rather than managing infrastructure
- Connect from any device of your choice



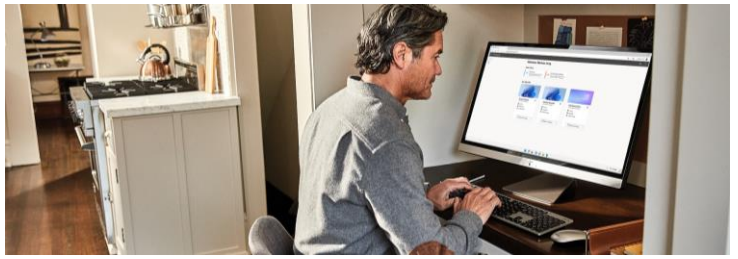
Azure Virtual Desktop unlocks hybrid work scenarios

Data security

Improve regulatory compliance and IP protection via data centralization and a reduced threat surface

High-capacity computing

Cloud-scale compute and storage to support specialized workloads like design and development



BYOPC programs

Enable secure virtual desktops, even on personal devices

Disaster recovery

Help ensure continuity and access for your workforce and company data even in the most challenging circumstances

Temporary workforces

Simplify and accelerate the onboarding and offboarding process for elastic workforces

Mergers & acquisitions

Provide seamless transitions and access for growing businesses

Many customers are already eligible for Azure Virtual Desktop

Azure Virtual Desktop Licensing Requirements

Client

Customers are eligible to access Windows 11 and Windows 10 single and multi-session and Windows 7 with Azure Virtual Desktop if they have one of the following licenses*:

- **Microsoft 365 E3/E5**
- **Microsoft 365 A3/A5/Student Use Benefits**
- **Microsoft 365 F3**
- **Microsoft 365 Business Premium**
- **Windows 11 and Windows 10 Enterprise E3/E5**
- **Windows 11 and Windows 10 Education A3/A5**
- **Windows 11 and Windows 10 VDA E3/E5**

Server

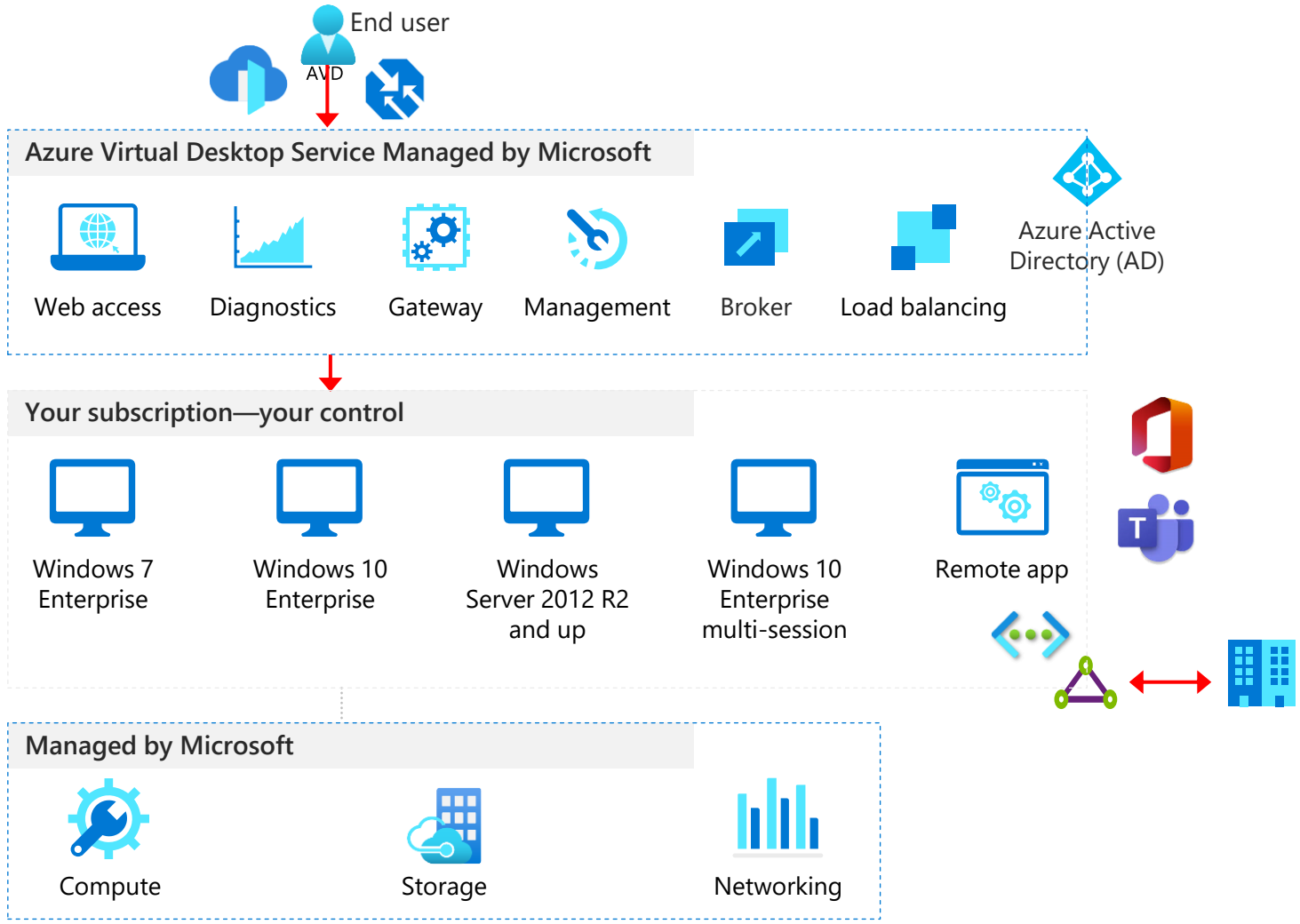
Customers are eligible to access Server workloads with Azure Virtual Desktop if they have one of the following licenses:

- **RDS CAL license with active Software Assurance (SA) or RDS User Subscription Licenses**

Customers pay for the virtual machines (VMs), storage, and networking consumed when the users are using the service

**Customers can access Azure Virtual Desktop from their non-Windows Pro endpoints if they have a Microsoft 365 E3/E5/F3, Microsoft 365 A3/A5 or Windows 11 and Windows 10 VDA per user license. Source: [Azure Virtual Desktop Prerequisites]*

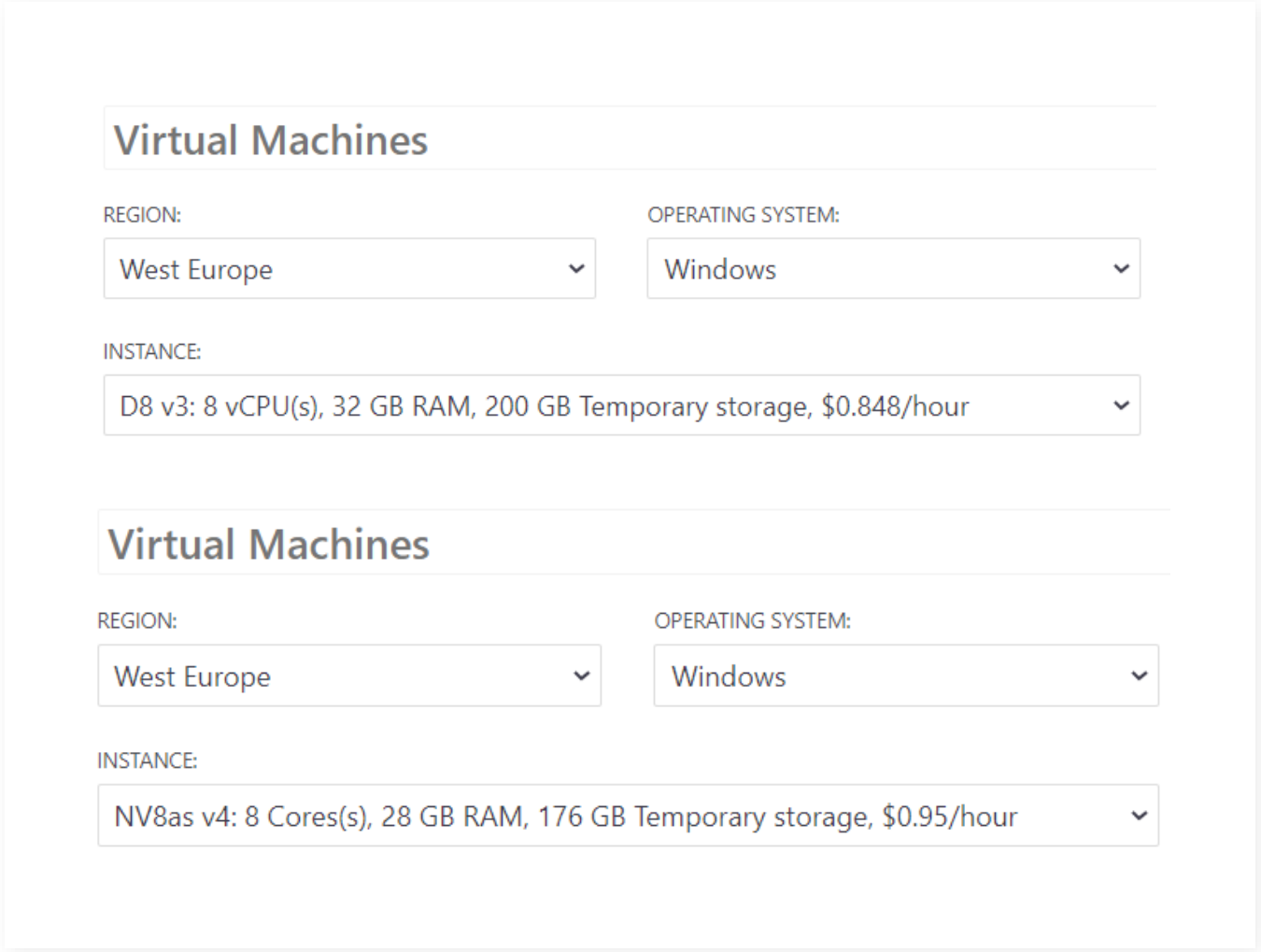
Azure Virtual Desktop – Architecture



Azure Virtual Desktop - Virtual Machines

Azure offers many different virtual machine types, where the D, F, and N (with GPU) series are the most used with Azure Virtual Desktop

Because the N series VMs (aka.ms/GPUOptimizedVMSizes) have a GPU, they not only offer better graphical performance, but also offload the CPU significantly. Even if you have a moderately graphically intense workload,
it'll help increase your density with a minimal increment in cost



Investigate if the N series lowers the average cost per user for your workload

Azure Virtual Desktop – OS disk

OS disk type

Each Azure Virtual Desktop VM needs an OS disk. The disc type can be configured by the system admin during setup or at any point.

The table below compares the different options at a high level (more details here (aka.ms/AzureManagedDiskTypes)

	Premium SSD	SSD	HDD	Ephemeral Disk
SLA + HA	●●●	●●	●●	●
IOPS & throughput	●●	●●	●	●●●
Flexibility	●●●	●●	●●	●
Low cost	●	●●	●●●	●●●●●

✓ Use Ephemeral disks (free) to save costs if your scenario allows it

Azure Virtual Desktop – Storage on Azure NetApp Files (ANF)

Simple to manage

- Native Azure service for easy deployment & scalability
- Single shared platform for FSLogix profile, MSIX App Attach containers, and generic file shares

Lower TCO

- PaaS service
- No VMs resources required on Azure IaaS
- Integrated Snapshot Backup & DR

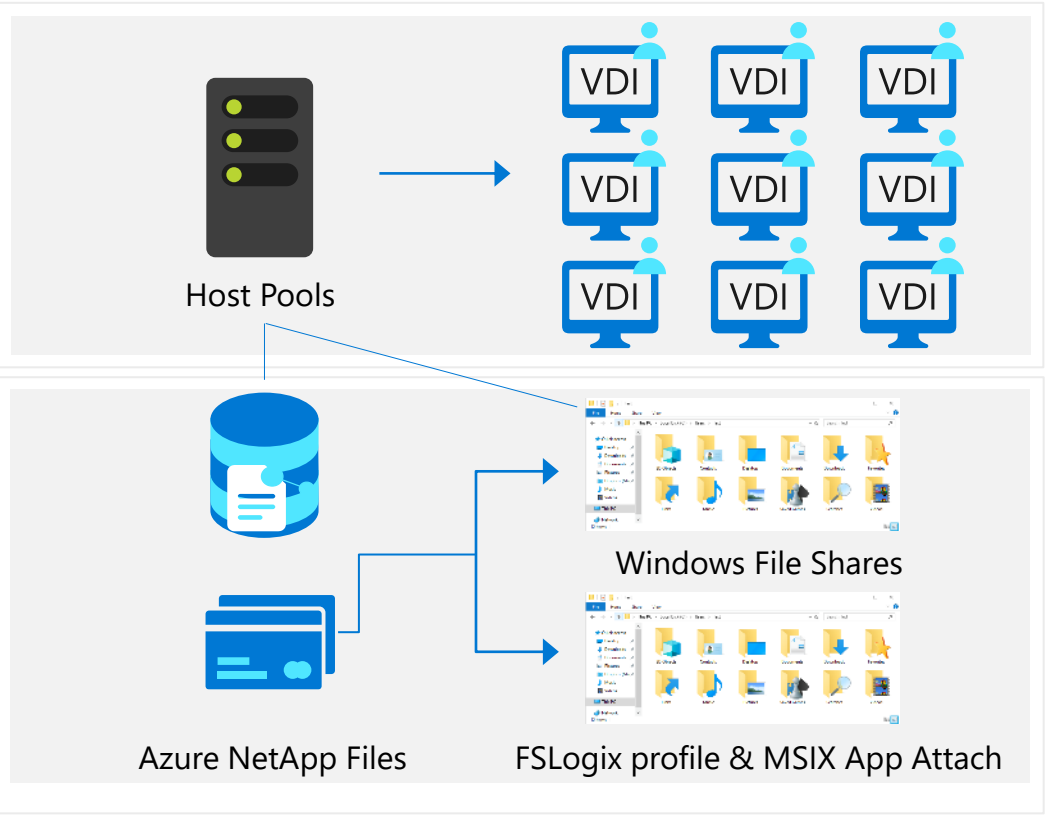
Enterprise performance

- High IOPs w/ low latency
- Online scalability of capacity and performance (e.g., burst for login storms)

Maximum compatibility

- SMB (all versions) support
- Native Active Directory Domain Services (non-AAD) support
- Full NTFS ACLs support

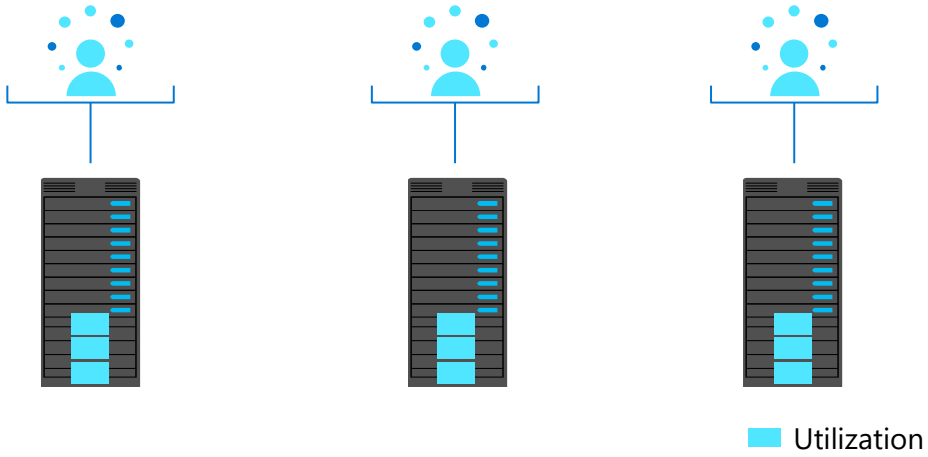
Azure Virtual Desktop on Azure architecture



Virtual Desktop Infrastructure on Azure NetApp Files solutions
https://aka.ms/ANF-solutions#virtual-desktop-infrastructure-solutions

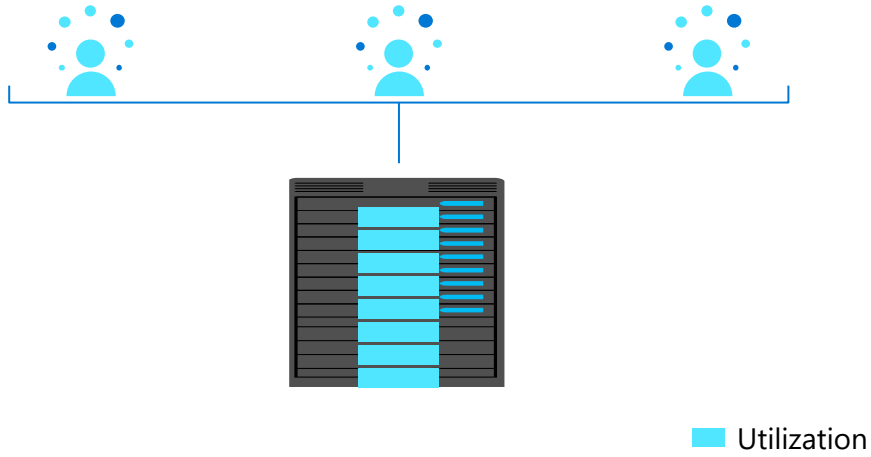
AVD user experience

Personal desktops



- Ideal for **single-session** users with **heavy performance** requirements
- Choose the right VM to run robust biz. apps like CAD, SAP and others
- Always-on experience and single state retention

Pooled desktops

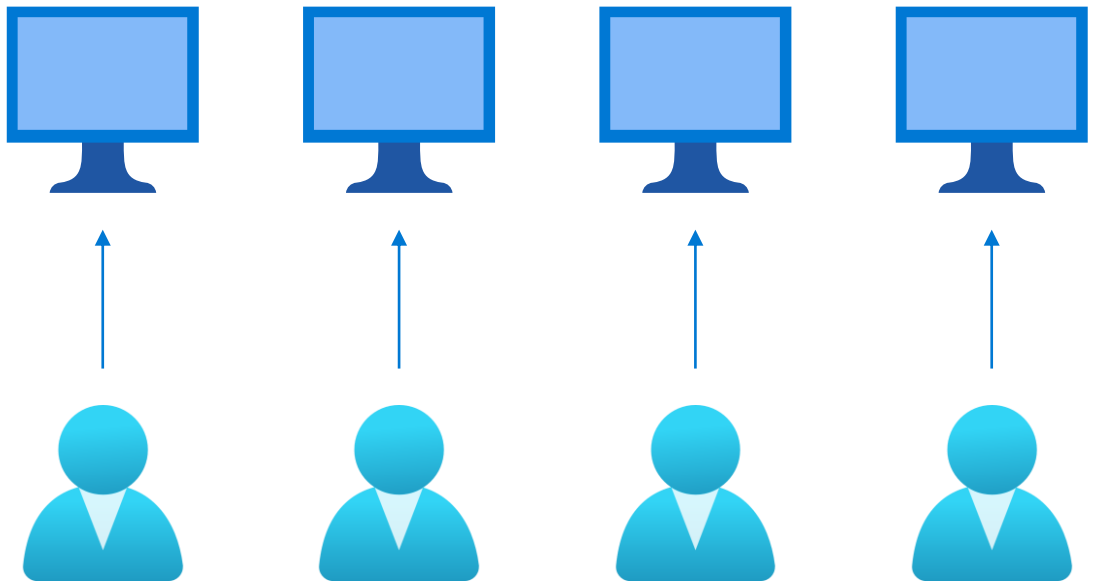


- Ideal for **multi-session** users and certain **single-session** with **light – medium** workloads with basic business requirements
- Choose the right VM to run most business apps

Azure automation – Automate your Azure management tasks and orchestrate actions across external systems from within Azure

Pay only for the virtual machines (VMs), storage, and networking consumed when the service is in use

AVD user experience – Personal host pools

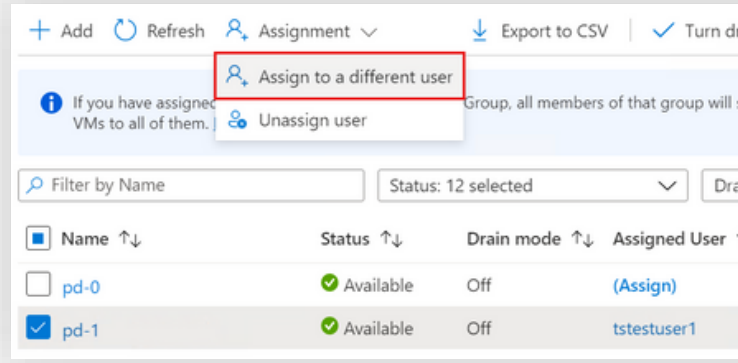


Each virtual machine is assigned to a single user

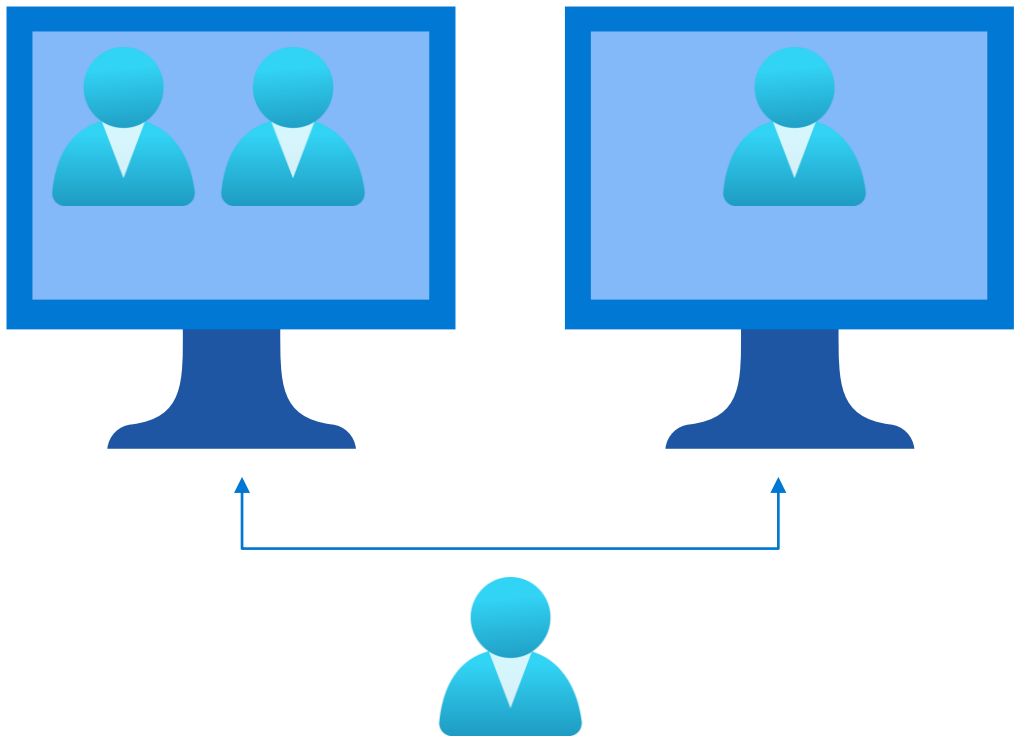
The user will always log onto that VM

Use existing tools and methodology to manage the estate

Simple to set up



AVD user experience – Pooled host pools

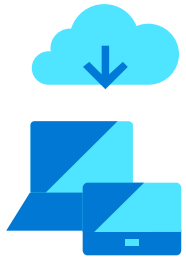


- Users can log onto any virtual machine
- One or more users can log onto the VM
- More automation needed
- Requires more effort to set up
- Better management if done right
- Tends to be about half the cost of Personal host pools

AVD user profile management with FSLogix

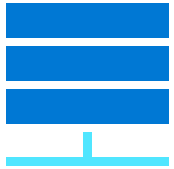
Persistent desktop experience

Users can customize their desktop and have a persistent experience every time they log in



Faster login and application launch

Optimized profile containers have much shorter launch times than roaming profiles and folder redirection



Multiple storage options available

Store profile containers in Azure Files, Azure NetApp Files or File Server VMs

Migrate existing user profiles

Perform mass conversions of user profiles from various types to FSLogix based profile containers at scale

AVD apps with FSLogix and MSIX app attach

Minimize number of master images by creating a single image with all applications

Why App Masking with FSLogix?

- Excellent app compatibility with no packaging, sequencing, backend infrastructure, or virtualization
- Control app licensing costs by limiting access to specific users
- Reduce the amount of host pools

Why MSIX?

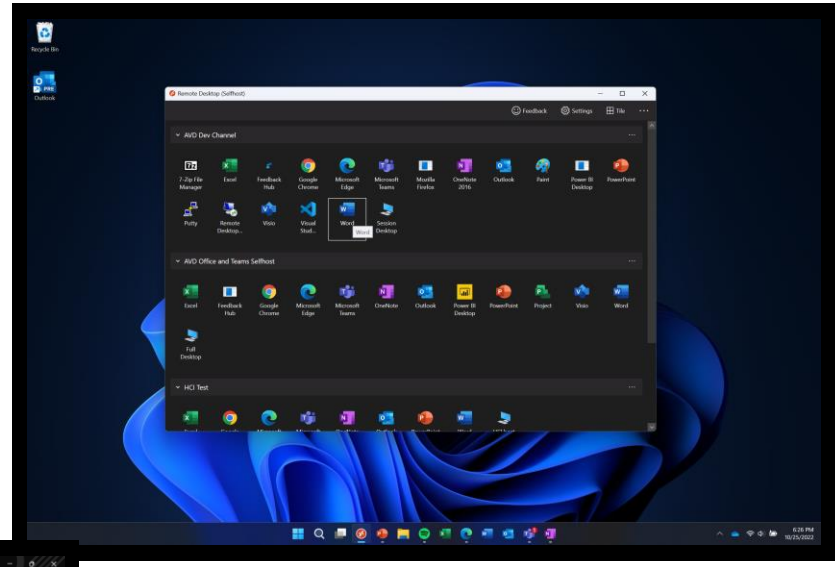
- Single format for physical and virtual environments
- Doesn't require packaging to be delivered
- Clean install/uninstall
- Secured by default
- Optimized storage and network bandwidth

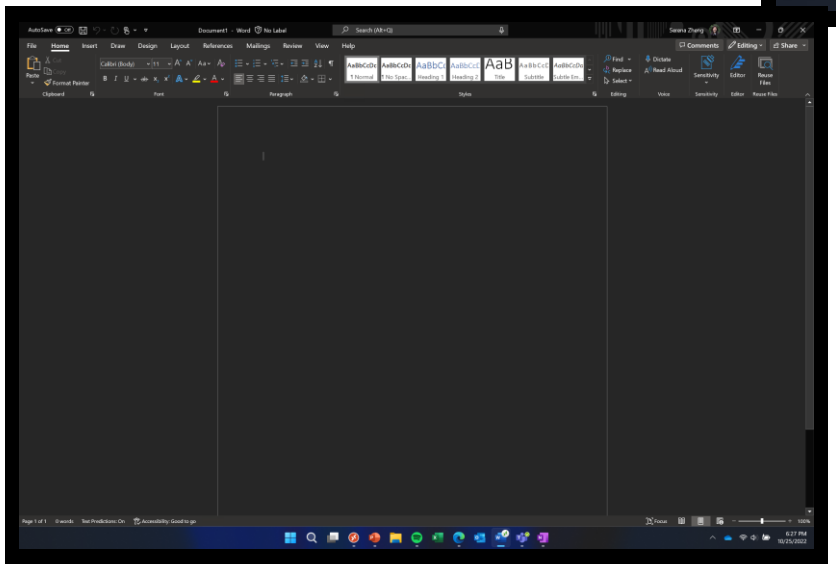
Why MSIX app attach?

- Dynamic application delivery
- Only authorized users can see or access apps running on multiple user instances
- MSIX apps behave like natively installed apps

AVD Remote App Streaming

Migrate Windows apps to Azure and remotely stream them to your employees or customers with Azure Virtual Desktop





AVD security

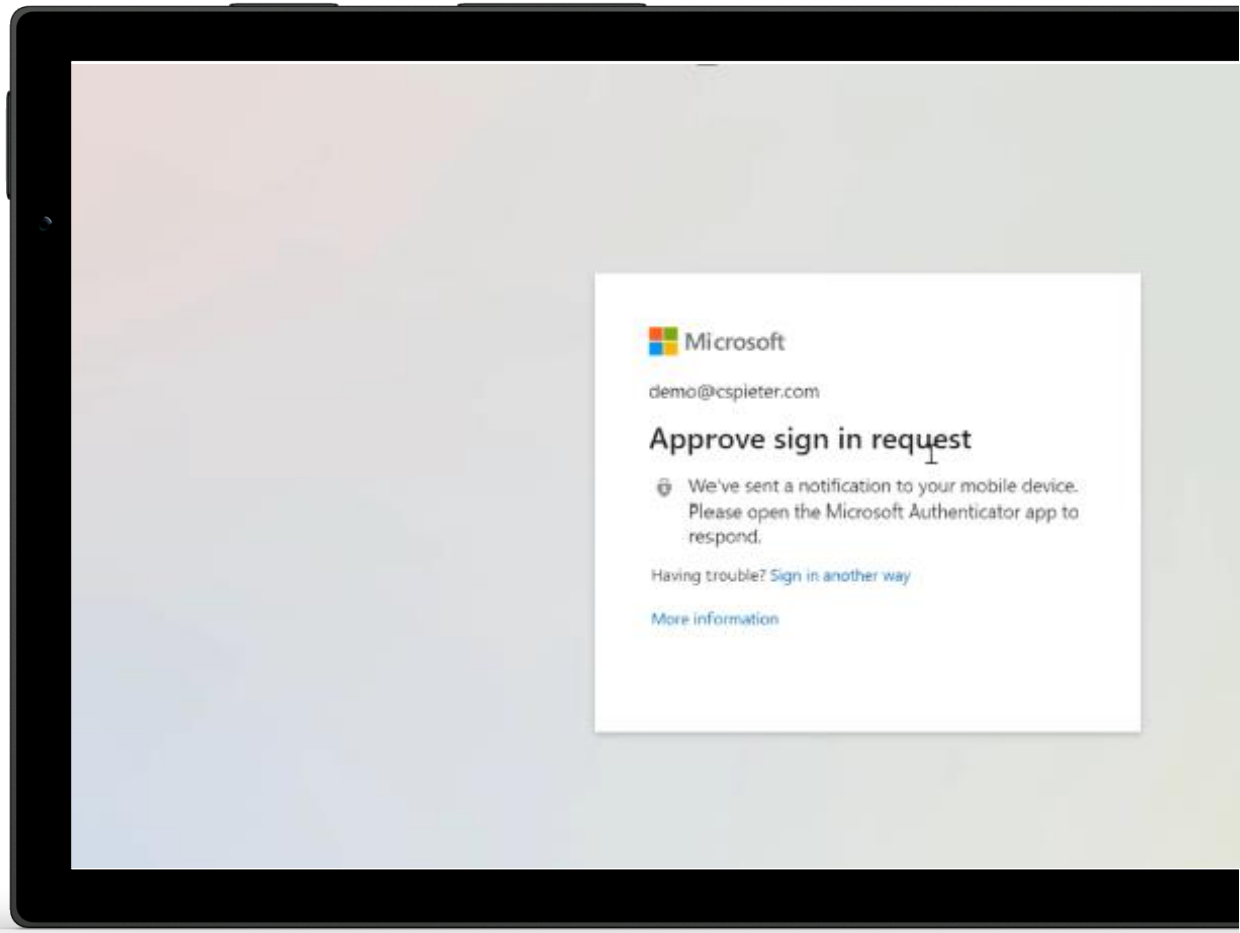
Identity

Require Multifactor Authentication

Activate Azure MFA for Azure Active Directory (AD) accounts

Enable Conditional Access

Configure a Conditional Access policy and target Azure Virtual Desktop



aka.ms/mfaAVD

AVD security

Infrastructure

Enable Azure Defender and Microsoft Defender for Cloud (formerly Azure Security Center)

Provides threat and vulnerability management assessments

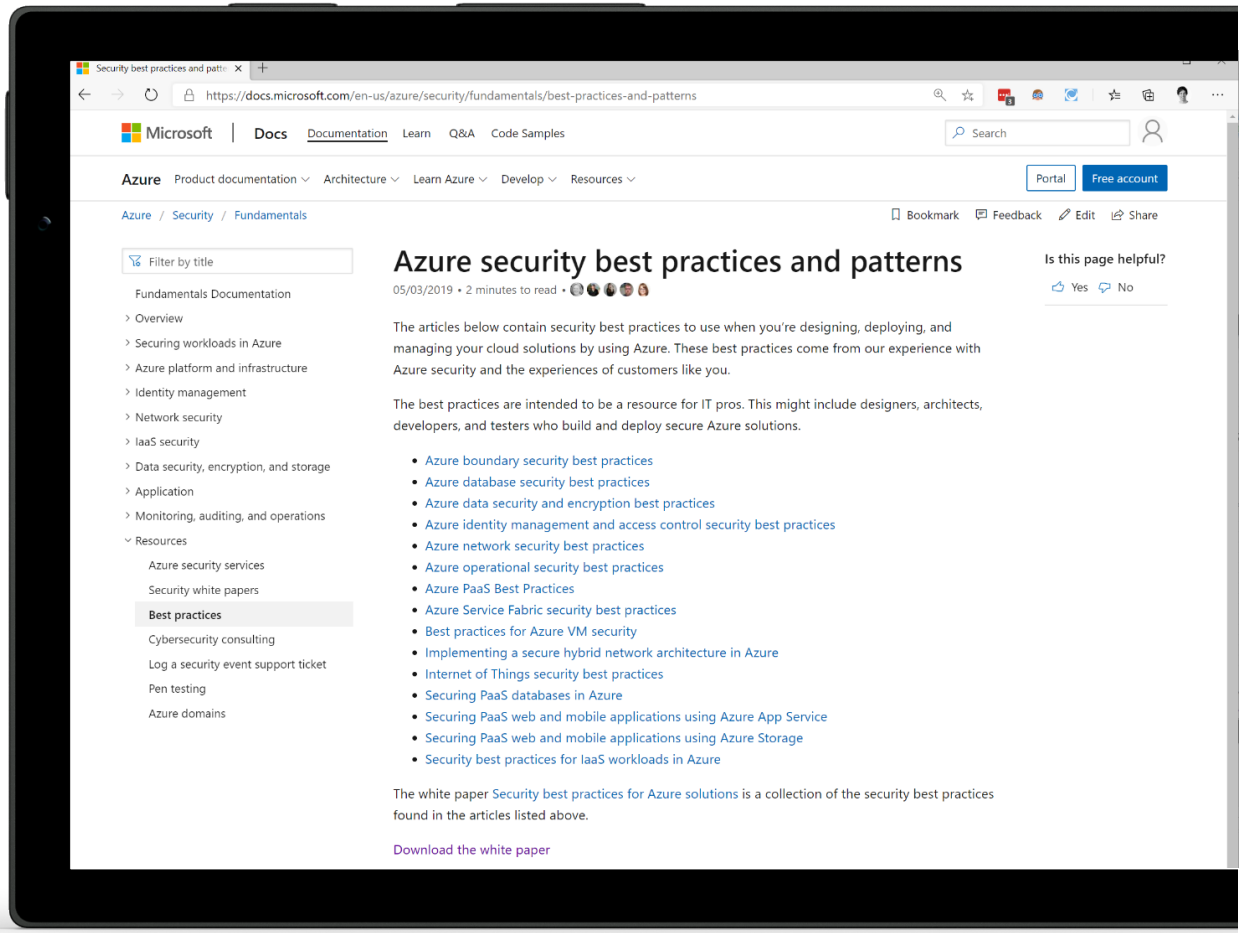
Operationalize your Secure Score

Secure Score provides recommendations and best practice advice for increasing your security posture

Follow Azure best practices

Secure surrounding infrastructure with documented best practices

aka.ms/AzureSecureBP



AVD security

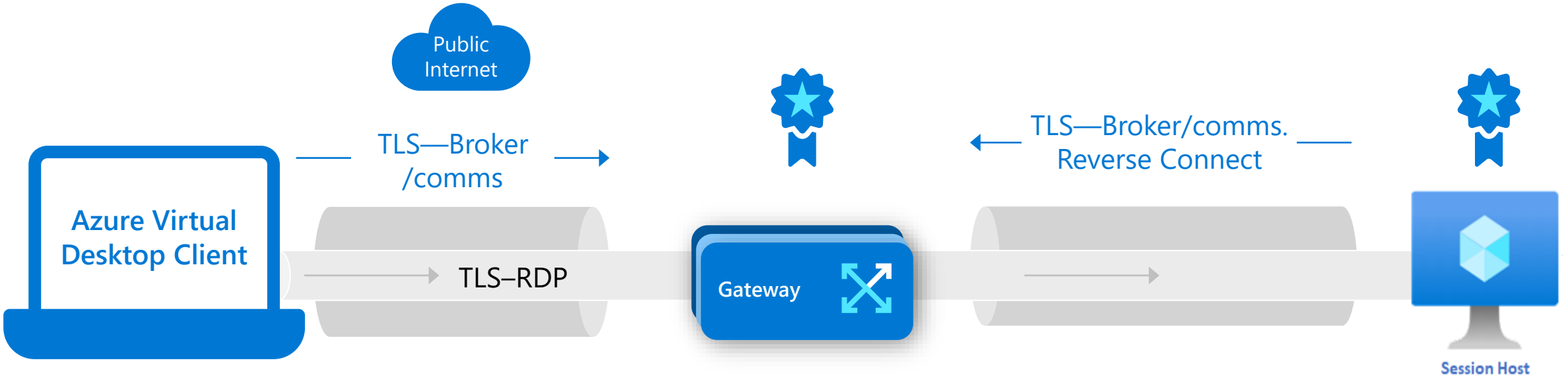
Network

Reverse Connect

Disable all inbound traffic

Encryption

Secures all traffic

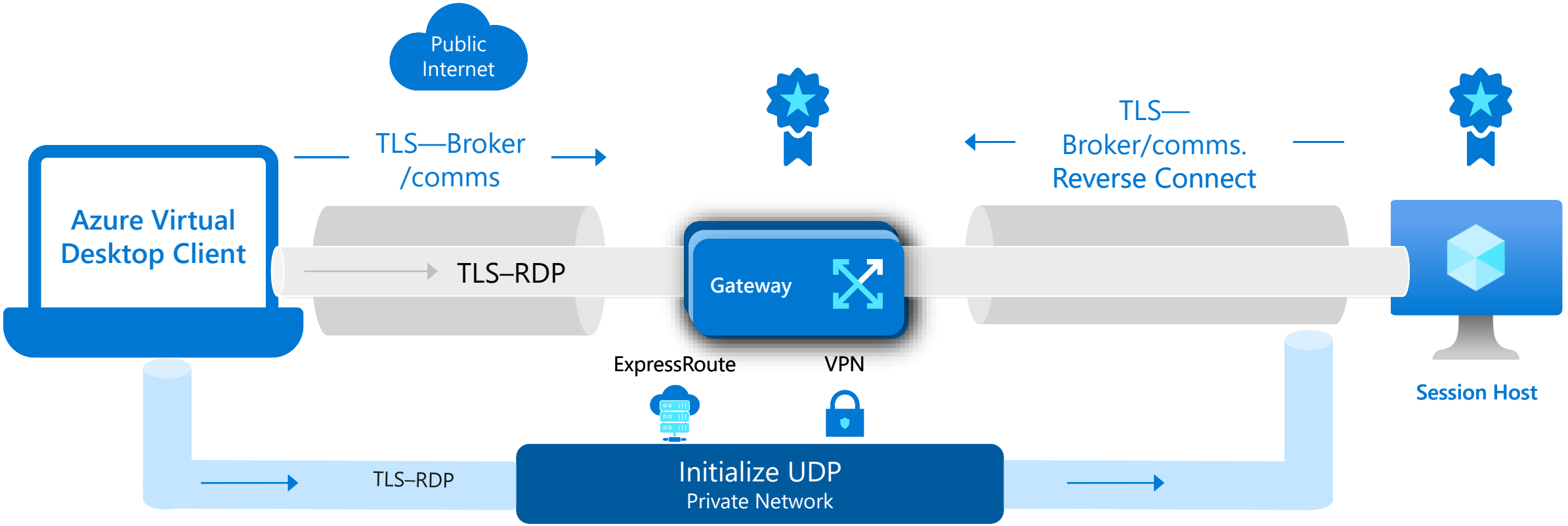


AVD security

Network

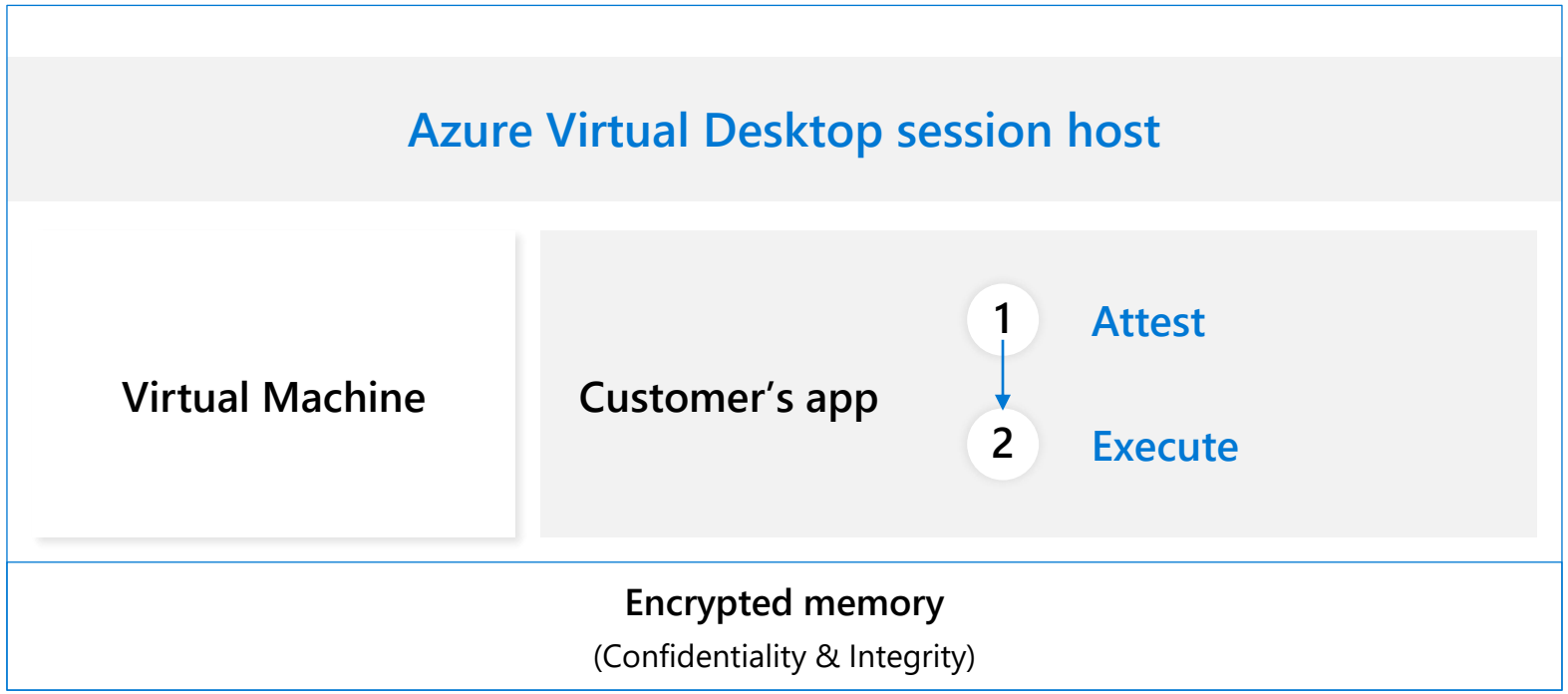
RDP Shortpath for managed networks

Redirects just the RDP traffic across your managed network directly and privately to the Azure Virtual Desktop VMs on your Virtual Network



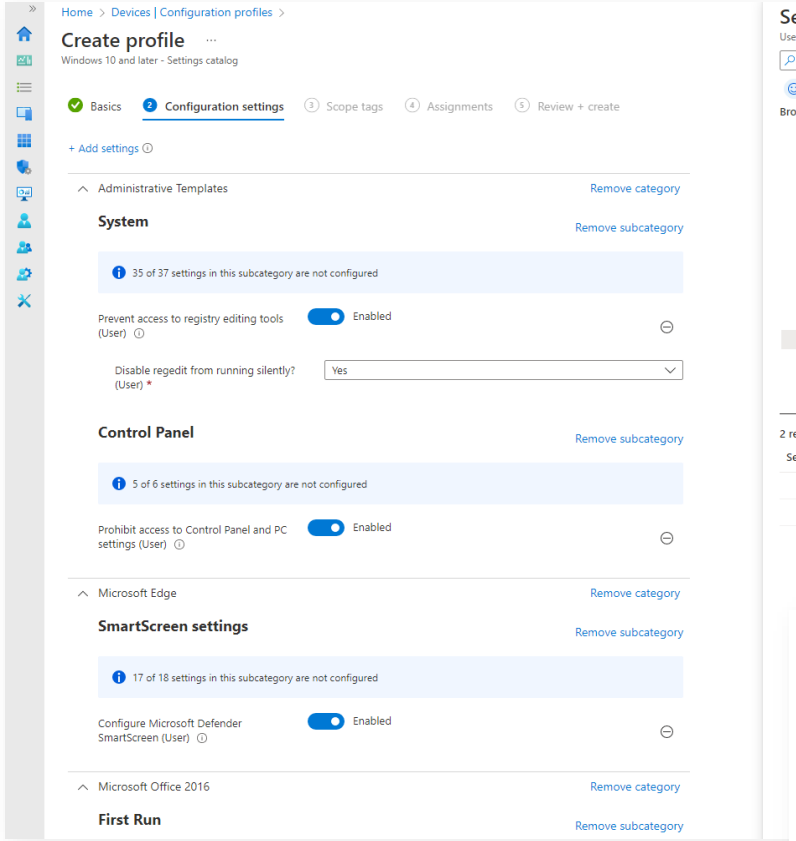
AVD security – Confidential VMs

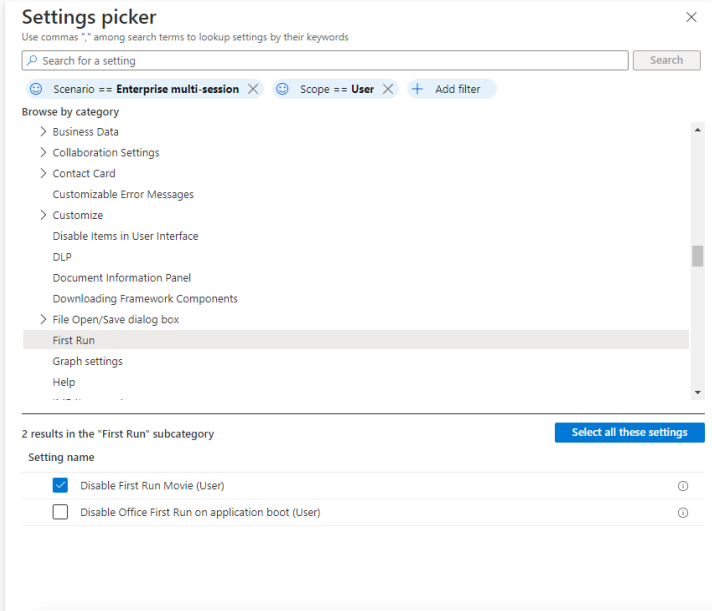
Confidential Virtual Machines ensure workloads running on a user's virtual desktop are encrypted in memory, protected in use, and backed by hardware root of trust

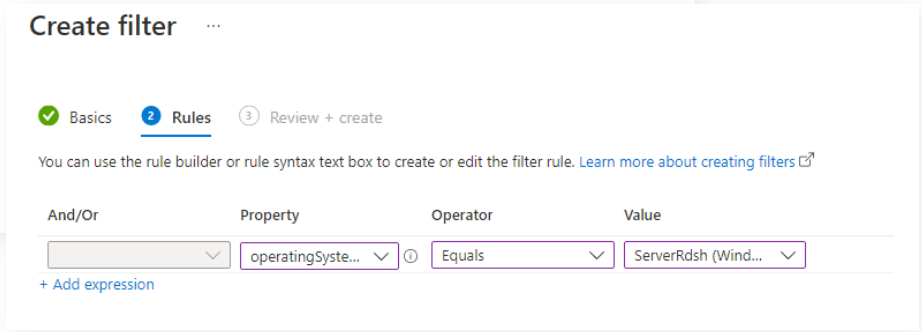


AVD management – Microsoft Intune/Microsoft Endpoint Manager

Microsoft Intune/MEM provides a familiar and powerful interface for configuring secure and compliant session host VMs







AVD management – Master Image

The master image can be managed by already existing processes and technologies, including:

- Azure Update Management
- MEM
- Third-party

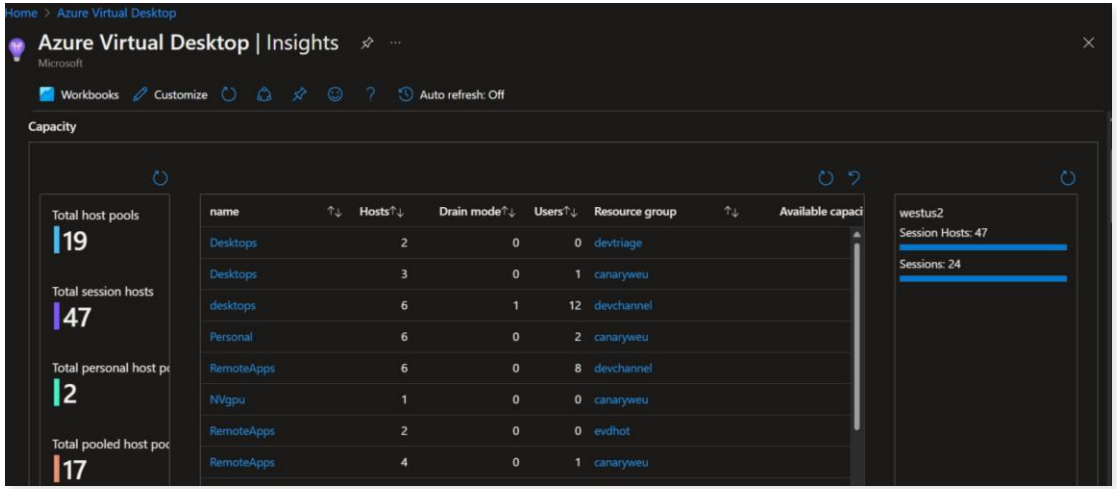
A “best practices” document helps to configure a golden image for Azure Virtual Desktop

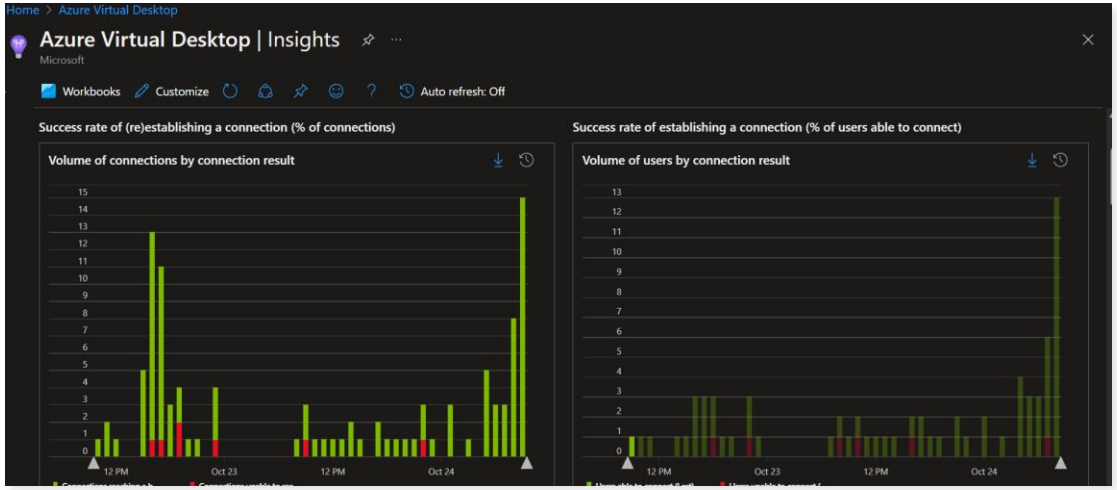
Application-masking technology helps to minimize the number of golden images and simplify app image management

Preparing a Master Image

AVD management – Insights

- Azure Virtual Desktop Insights provides native monitoring for Azure Virtual Desktop deployments
- Insights allows IT administrators and other users to understand the user experience and diagnostic output in their environment.
- Insights provides visibility into performance characteristics of Azure Virtual Desktop without requiring an investment in third-party monitoring software.
- Insights also exposes diagnostic output from Log Analytics that would otherwise require manual querying or data extraction





AVD management – Autoscale for cost and performance optimization

Autoscale enables your Azure Virtual Desktop workloads to be performance and cost-effective by starting and stopping session host virtual machines based on schedule and demand

Optimizes compute costs by turning off session host virtual machines when not needed

Doesn’t cost extra to use

Is easy to configure and doesn’t require additional management overhead

Can be configured using the Azure Portal or REST API

Is completely supported by Microsoft

AVD resilience – Availability Zones for Azure Virtual Desktop

Ability to equally distribute session hosts equally across all availability zones selected (in regions where AZ's are supported)

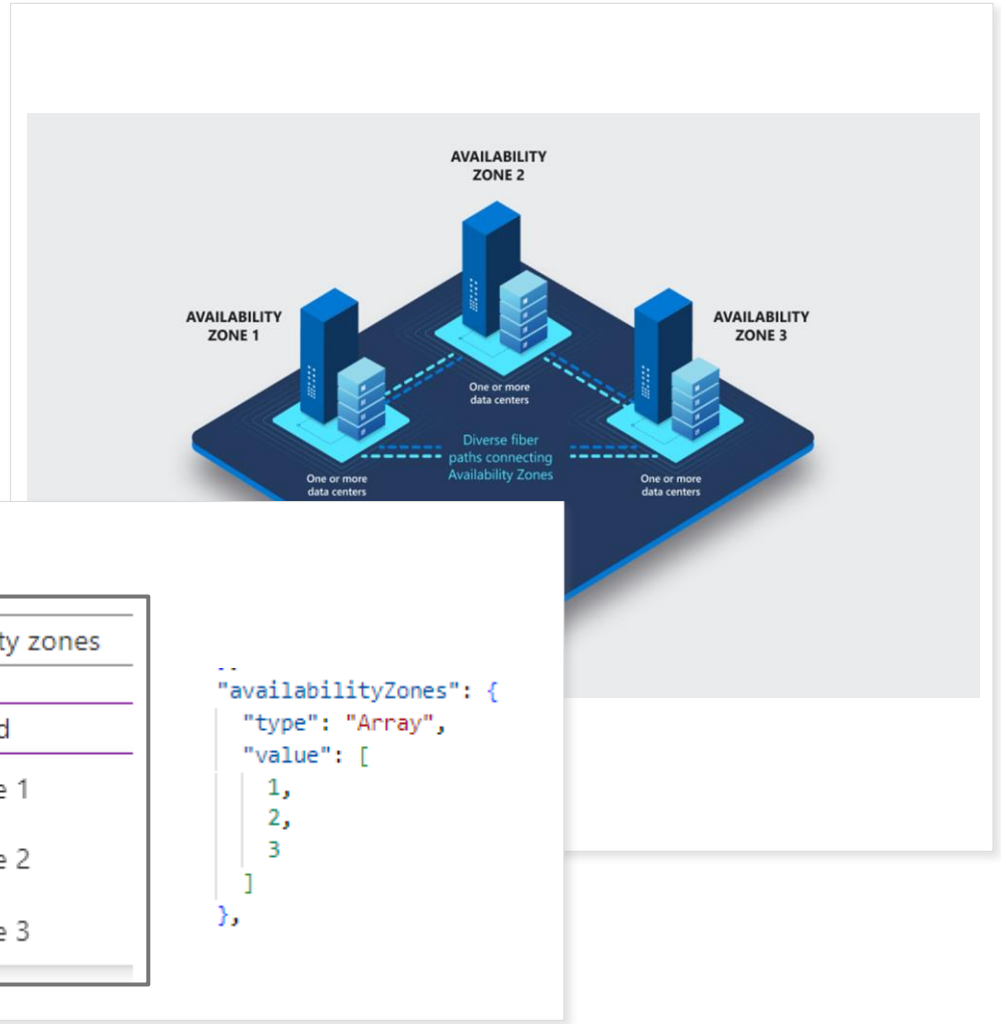
Supports both new host pool creation and add session hosts to host pools

Increases resiliency of overall host pool and reduces the blast radius of an AZ outage

Deployment

In portal select any number of AZ's

In JSON define the AZ's required in the new array



Generally Available

AVD BCDR – Recommendations for Personal host pools

- Use Azure Site Recovery
- Keep profiles local
- User installed apps

AVD BCDR – Recommendations for Pooled host pools

- Replicate images using Azure Compute galleries
- Backup and/or replicate FSLogix Profile disks
- Don’t protect Microsoft 365 disks
- Have cold VMs ready in secondary location
- Automate all the things

Azure Virtual Desktop for Azure Stack HCI

Cloud-based VDI

Simplify your VDI deployment – No need to manage brokers, gateways, or underlying servers and storage

Windows 11 multi-session

Get Windows 10 & Windows 11 multi-session or single-session support

Achieve high utilization & lower operation costs

Performance

Enjoy optimized Microsoft 365/Teams experiences

Use RDP Shortpath for low latency user access

Run graphic-intensive workloads with GPU support

Full control

Satisfy data locality requirements with efficient, performant on-premises storage and DR

Scale across cloud and on-premises

Manage and scale deployments across both Azure and Azure Stack HCI through a single management experience

Optimize for cost

Use existing eligible Windows licenses

Save with Windows 11 and Windows 10 multi-session support

Citrix + Azure Virtual Desktop

Delivering enterprise value and unified management around Azure Virtual Desktop

Workspace Experience

Include Azure Virtual Desktop workloads within Citrix Workspace for central access to all apps, desktops, and files

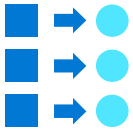


Image Management

Simplify management by layering OS, apps, and user data on Azure Virtual Desktop resources and rapidly provisioning updates

Hybrid Cloud Journey

Accelerate the move to Azure for on-prem customers by enabling management of on-prem and Azure Virtual Desktop workloads from one console

Environment Management

Optimize host performance, accelerate application delivery, and enhance scalability for Azure Virtual Desktop

VMware Horizon Cloud on Microsoft Azure

Extending Azure Virtual Desktop capabilities to Horizon Cloud

- Broad endpoint support with enhanced remote experience
- Global brokering with cloud-optimized architecture
- Real-time audio video and peripheral support
- Enhanced user environment management
- Flexible desktop options and configurations
- Hybrid environment support

Azure Virtual Desktop

Azure Virtual Desktop ISV partner environment

Rich ISV partner ecosystem allows you to further enhance your Azure Virtual Desktop experience

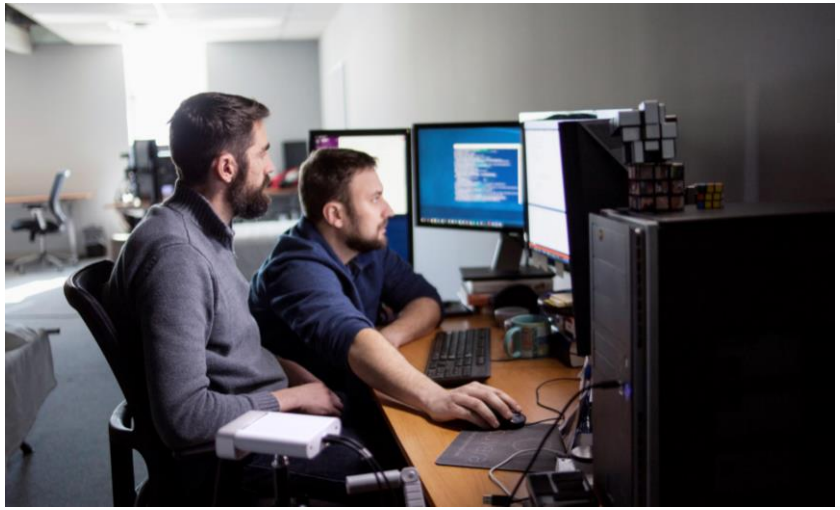
Category	Description
Customer environment assessment	Assess resource utilization of apps/users/OS, baseline user experiences, and recommend sizing for Azure Virtual Desktop *Example – Lakeside*
Diagnostics & end user experience monitoring	Assess, monitor, and manage end user experiences with GUI enabling reactive troubleshooting as well as predictive troubleshooting leveraging AI/ML *Example – Sepago*
Application layering	Enable dynamic provisioning of apps during boot/log on time based on user profile *Example – Liquidware*
Management	Deployment and configuration *Example– Nerdio, NetApp (CloudJumper)*
Printing	Remove the need for print server infrastructure *Example – PrinterLogic*
App compatibility assessment/remediation	Assess app compatibility for layering new packaging *Example – PolicyPak*

Please explore our rich partner environment – https://docs.microsoft.com/en-us/azure/virtual-desktop/partners

Finding the right Microsoft solution for your needs

Windows 365

- Secure work on personal PCs
- Onboard and offboard employees
- Simple to buy, deploy, and manage
- No employee or IT special skills or training
- Quickly scale and resize



Azure Virtual Desktop

- Shift on-prem VDI to the cloud
- Leverage existing VDI infra and expertise
- Enable remote app streaming and non-persistent desktops

Microsoft Azure

Thank You