



# Windows 10 Multi-Session

Section



# Virtualization Hosts Today

## Windows Server Desktop Experience

Scalable multi-user **legacy**  
Windows environment.

---

Windows Server

Multiple users

Win32

Office 2019 Perpetual

Long-Term Servicing Channel

## Windows 10 Enterprise

Native single-session **modern**  
Windows experience.

---

Windows 10

Single user

Win32, UWP

Office 365 ProPlus

Semi-Annual Channel

# Virtualization Hosts of the Future



## Windows Server RD Session Host

Scalable multi-user **legacy**  
Windows environment.

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Windows Server

Multiple users

Win32

Office 2019 Perpetual

Long-Term Servicing Channel

## Windows 10 Enterprise Multi-session

Scalable multi-session **modern**  
Windows user experience with  
Windows 10 Enterprise security

---

Windows 10

Multiple users

Win32, UWP

Office 365 ProPlus

Semi-Annual Channel

## Windows 10 Enterprise

Native single-session **modern**  
Windows experience.

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Windows 10

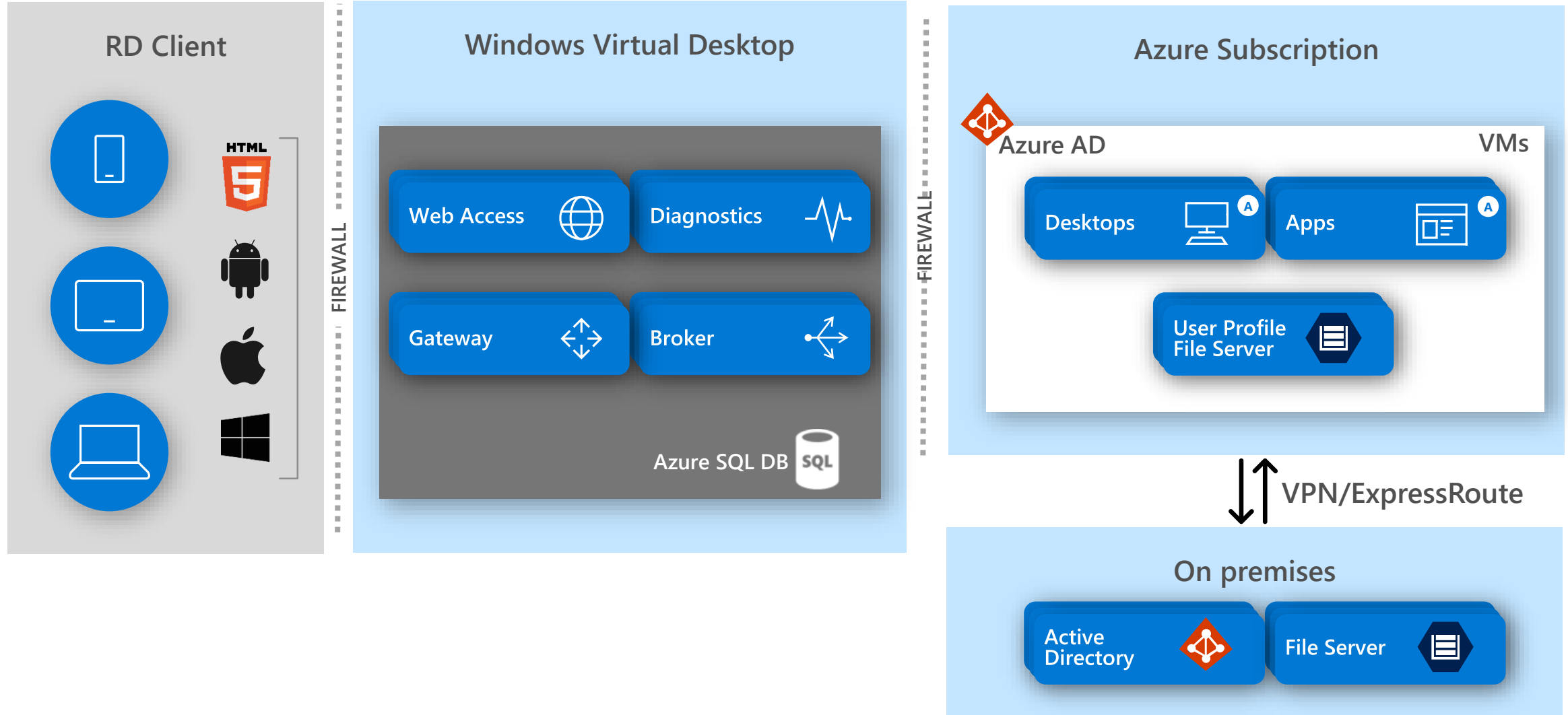
Single user

Win32, UWP

Office 365 ProPlus

Semi-Annual Channel

# Windows Virtual Desktop



# Windows Virtual Desktop

## High Level Architecture

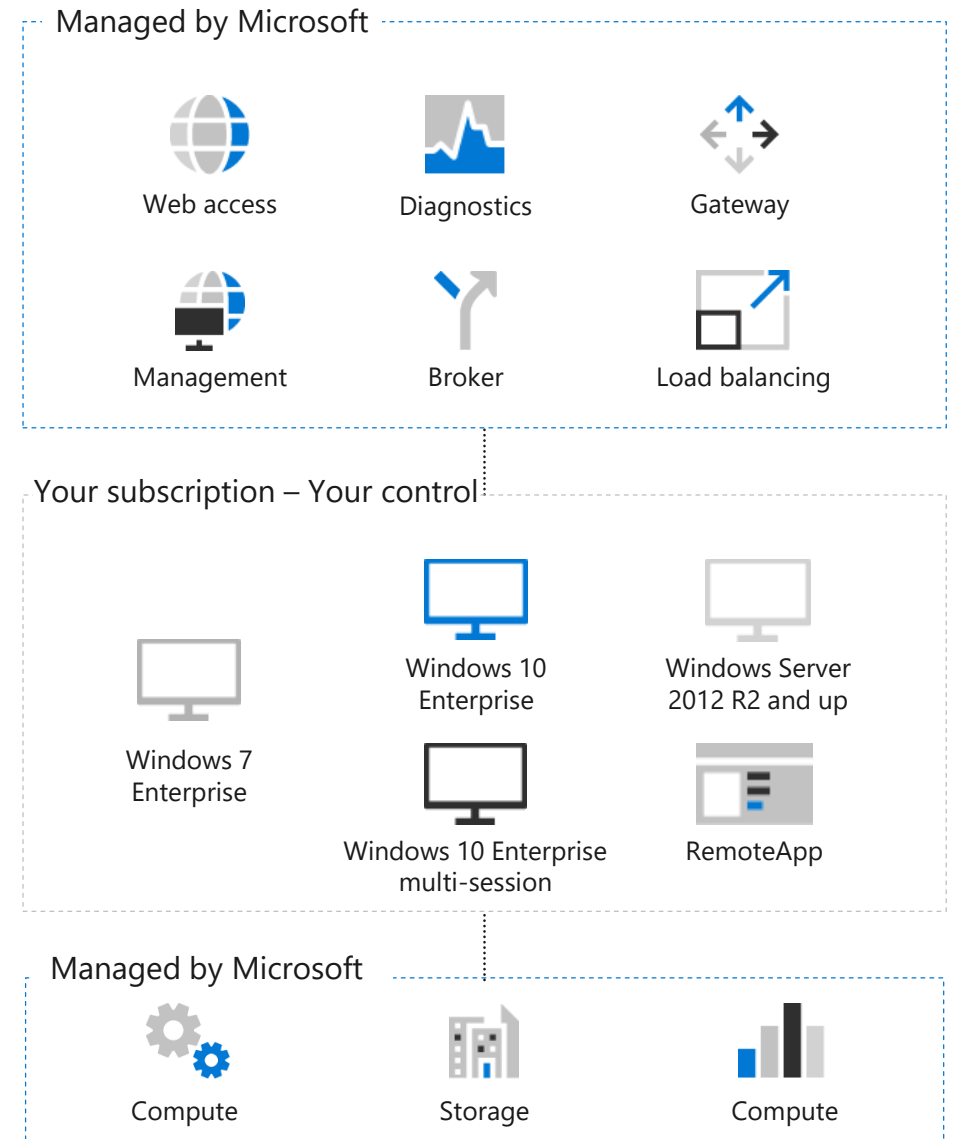
Use Azure Active Directory identity management service

Provide virtualization infrastructure as a managed service

Deploy and manage virtual machines in Azure subscription

Manage using existing tools like Configuration Manager or Microsoft Intune

Connect easily to on-premises resources



# Requirements

Azure Subscription

Azure Active Directory setup

- Full admin rights
- Azure AD Connect
- ADFS (optional for SSO)
- ADDS (optional)

Domain controller

Optional: Networking/on-premises connectivity – express route, VPN, etc.

Entitlement check (licensing)

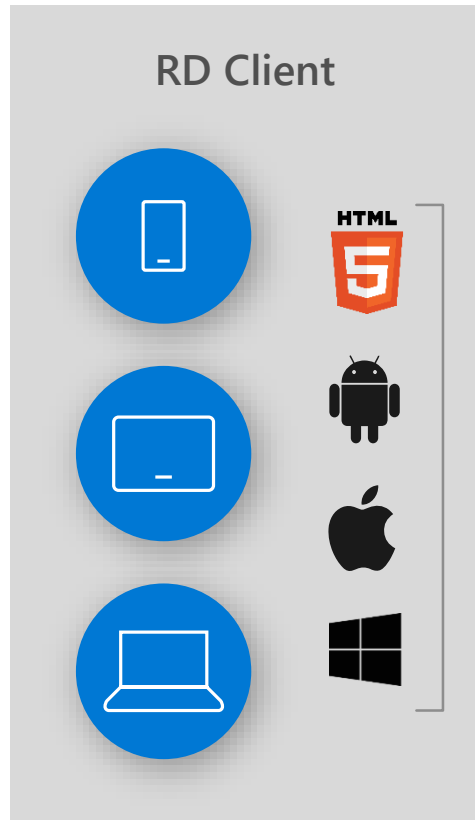
# WVD Architecture Overview

Section

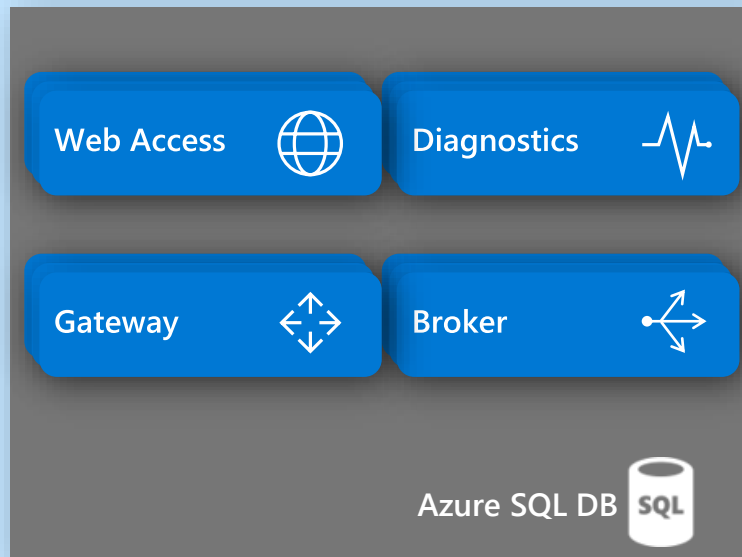


# Administrators

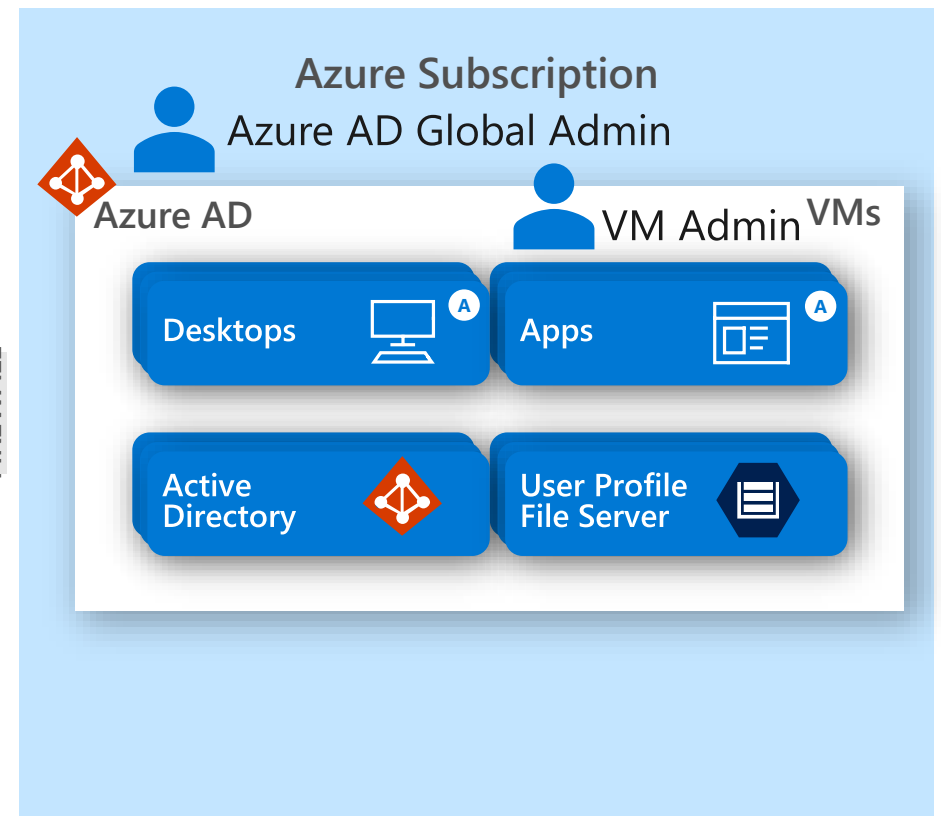
 WVD Admin



Windows Virtual Desktop



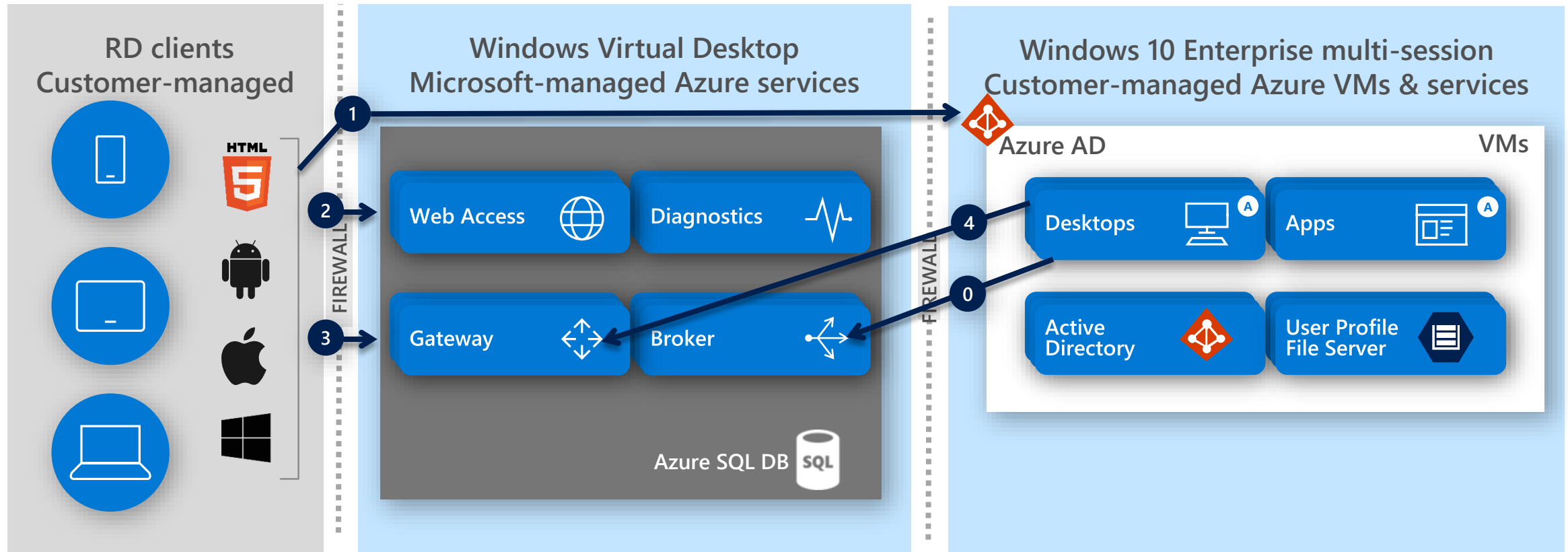
 Subscription Admin





# User Connection Flow

1. User launches RD client which connects to Azure AD, user signs in, and Azure AD returns token
2. RD client presents token to Web Access, Broker queries DB to determine resources authorized for user
3. User selects resource, RD client connects to Gateway
4. Broker orchestrates connection from host agent to Gateway

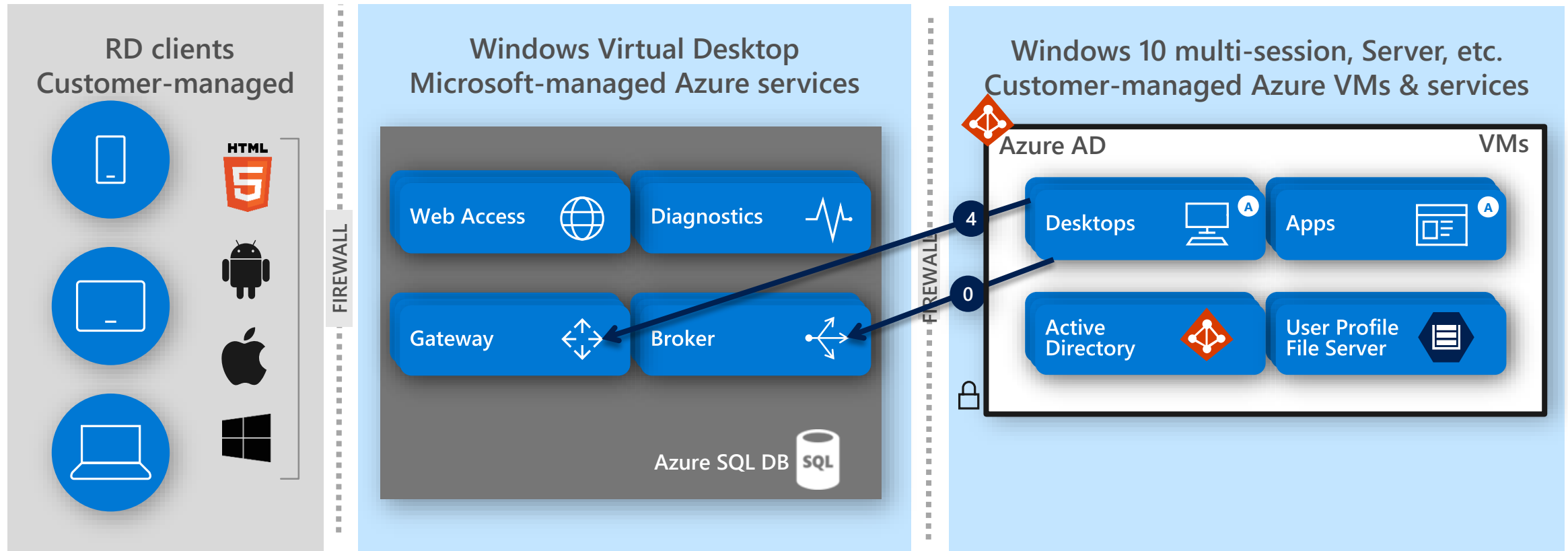


# Improved Isolation: Reverse Connect

Outbound WebSocket connections from customer VMs to Broker and Gateway

Bidirectional communications between VMs and RD infra over https (443)

No inbound ports need be opened to the customer environment

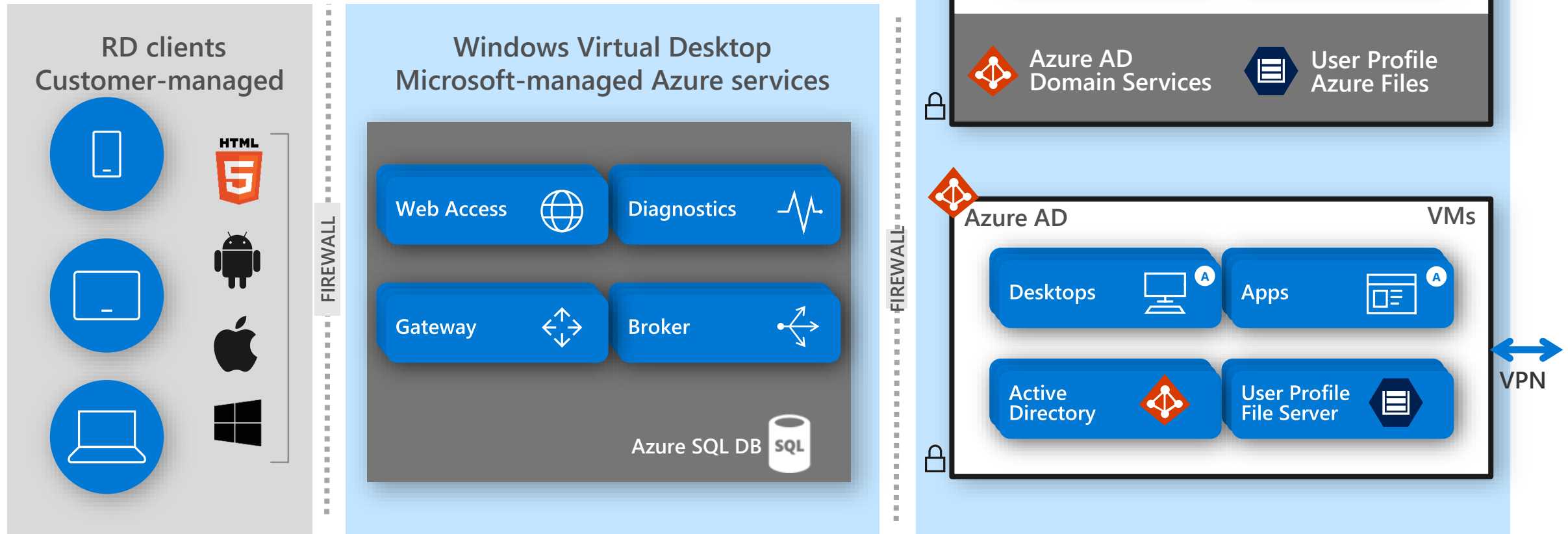


# Multitenancy

Customer environments are highly isolated

Different AD configurations in each customer environment

VPN from tenant environments to on-prem



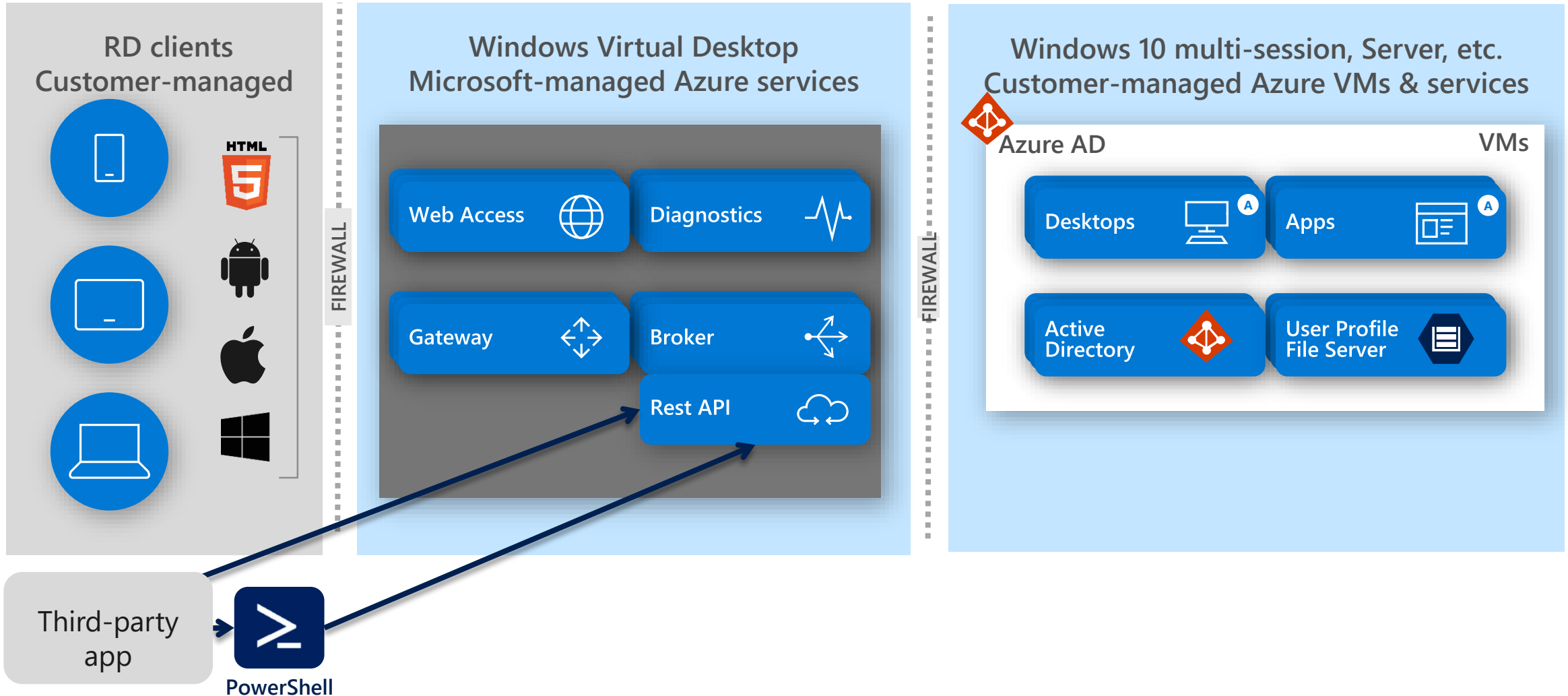
# HostPool flexibility

- RemoteApp and desktop app groups
- Set different load balancing algorithms
- Single or multi-session session host VMs
- Pooled or personal session host VMs
- Windows Server 2016/19 or Windows 10/7 VMs

# Extensible Platform

Third-party apps can use PowerShell or REST API to extend Windows Virtual Desktop platform

Examples: Deployment automation, VM scaling & provisioning, Web UI to configure, monitor, and troubleshoot, etc.



# Download

- Azure Files official documentation  
[aka.ms/WVDazurefiles](https://aka.ms/WVDazurefiles)
- Full walkthrough  
[aka.ms/WVDazurefilesblog](https://aka.ms/WVDazurefilesblog)
- FSLogix agent  
[aka.ms/FSLogix\\_download](https://aka.ms/FSLogix_download)

# Create WVD GitHub Template

<https://aka.ms/wvdgithub>

Custom deployment

Deploy from a custom template

resources

Edit template

Edit parameter...

Learn more

BASICS

\* Subscription

Microsoft Azure Internal Consumption

▼

\* Resource group

rg-win10desktop

Create new

▼

\* Location

(US) East US 2

▼

SETTINGS

\_artifacts Location ⓘ

https://raw.githubusercontent.com/Azure/RDS-Templates/master/wvd-templates/Cr...

\_artifacts Location Sas Token ⓘ

Rdsh Image Source ⓘ

Gallery

▼

Vm Image Vhd Uri ⓘ

Rdsh Gallery Image SKU ⓘ

Windows-10-Enterprise-multi-session-with-Office-365-ProPlus

▼

Rdsh Custom Image Source Name ⓘ

Rdsh Custom Image Source Resource Group ⓘ

Rdsh Name Prefix ⓘ

vm-wvdhost

\* Rdsh Number Of Instances ⓘ

5

✓

Rdsh VM Disk Type ⓘ

Premium\_LRS

▼

Rdsh Vm Size ⓘ

Standard\_D4s\_v3

Enable Accelerated Networking ⓘ

false

▼

Rdsh Use Managed Disks ⓘ

true

▼

Storage Account Resource Group Name ⓘ

\* Domain To Join ⓘ

contoso.com

✓

\* Existing Domain UPN ⓘ

admin@contoso.com

✓

\* Existing Domain Password ⓘ

.....

✓

Ou Path ⓘ

OU=wvd,DC=contoso,DC=com

\* Existing Vnet Name ⓘ

vn-sharedservices

✓

New Or Existing Vnet ⓘ

existing

▼

\* Existing Subnet Name ⓘ

sn-wvd

✓

\* Virtual Network Resource Group Name ⓘ

rg-wvdspoke

✓

Rd Broker URL ⓘ

https://rdbroker.wvd.microsoft.com

Existing Tenant Group Name ⓘ

Default Tenant Group

\* Existing Tenant Name ⓘ

contoso

✓

\* Host Pool Name ⓘ

Developers

✓

Enable Persistent Desktop ⓘ

false

▼

Default Desktop Users ⓘ

\* Tenant Admin Upn Or Application Id ⓘ

admin@contoso.onmicrosoft.com

✓

\* Tenant Admin Password ⓘ

.....

✓

Is Service Principal ⓘ

false

▼

Aad Tenant Id ⓘ

Location ⓘ

[resourceGroup().location]

# Deploy Management UI

DIY





# Prerequisites

Contributor on the subscription

Global Admin on Azure AD Tenant

Owner / Contributor on subscription

RD Owner or RD Contributor on the  
WVD Tenant



# Deploy

- GitHub

`aka.ms/managementUI`

# Operation in Management UI

DIY



# If management UI failed to deploy

- GitHub

[aka.ms/manuibootcamp](https://aka.ms/manuibootcamp)



# Deploy Diagnostics UI

DIY





# Prerequisites

WVD deployment (tenant & hosts)

RD Owner or RD Contributor on the WVD Tenant

Global Admin on Azure AD Tenant

Owner on Azure subscription



# Deploy

- GitHub

[aka.ms/diagnosticsUI](https://aka.ms/diagnosticsUI)

- Create AD Application
- Create an Azure Log Analytics workspace
- Deploy

[aka.ms/diagnosticsUIdeploy](https://aka.ms/diagnosticsUIdeploy)

# If diagnostic UI failed to deploy

- GitHub

[aka.ms/diaguibootcamp](https://aka.ms/diaguibootcamp)





# FSLogix Profile Container on Azure NetApp Files

Demo

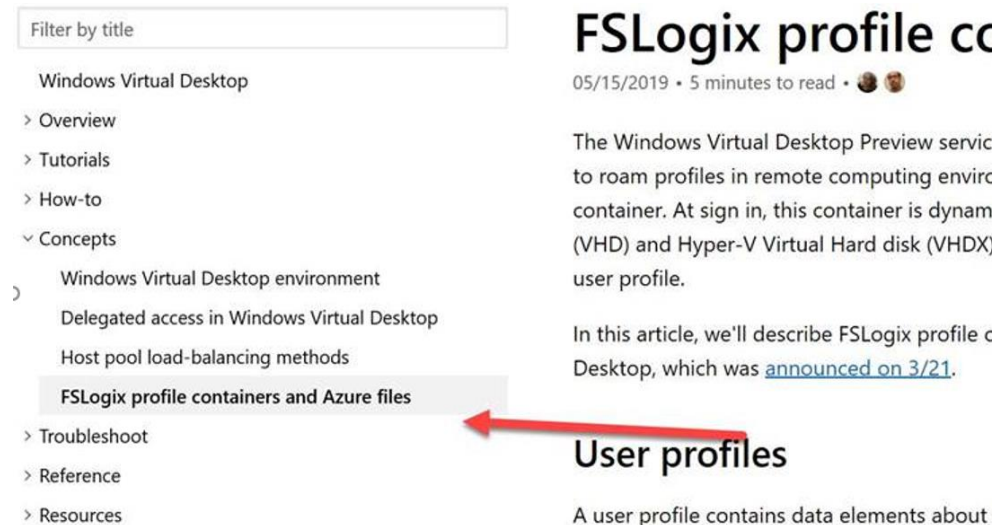


# Deploy

- Register for Azure NetApp Files

<https://docs.microsoft.com/en-us/azure/azure-netapp-files/azure-netapp-files-register>

- How to setup Azure NetApp Files with WVD



The screenshot shows the Microsoft Docs interface. On the left is a navigation pane with a search bar labeled 'Filter by title'. Below it, the 'Windows Virtual Desktop' section is expanded, showing a list of topics: Overview, Tutorials, How-to, Concepts, Windows Virtual Desktop environment, Delegated access in Windows Virtual Desktop, Host pool load-balancing methods, **FSLogix profile containers and Azure files** (highlighted with a red arrow), Troubleshoot, Reference, and Resources. The main content area on the right displays the article 'FSLogix profile containers and Azure files', dated 05/15/2019, with a 5-minute read time. The article text describes the Windows Virtual Desktop Preview service and its use of FSLogix profiles. Below the article title, the heading 'User profiles' is visible, followed by the start of a paragraph: 'A user profile contains data elements about'.

Filter by title

Windows Virtual Desktop

- > Overview
- > Tutorials
- > How-to
- ▼ Concepts
  - > Windows Virtual Desktop environment
  - > Delegated access in Windows Virtual Desktop
  - > Host pool load-balancing methods
  - FSLogix profile containers and Azure files**
  - > Troubleshoot
  - > Reference
  - > Resources

## FSLogix profile containers and Azure files

05/15/2019 • 5 minutes to read • 🌟🌟

The Windows Virtual Desktop Preview service allows you to roam profiles in remote computing environments. At sign in, this container is dynamic (VHD) and Hyper-V Virtual Hard disk (VHDX) user profile.

In this article, we'll describe FSLogix profile containers and Azure files, which was [announced on 3/21](#).

### User profiles

A user profile contains data elements about

# Azure Files and FSLogix Profiles

## Abstraction

Why are profiles?  
What is Azure Files?

## History

UPD  
Performance / S2D

## Why Azure Files

Cost vs S2D  
Performance = S2D

## What is coming

DC  
Azure AD



# Migrating Existing VDI/RDS environment to Azure

Section



# What are the pre-reqs to migrating RDS to Azure

## Azure Subscription

- ✓ Initial account setup including active directory

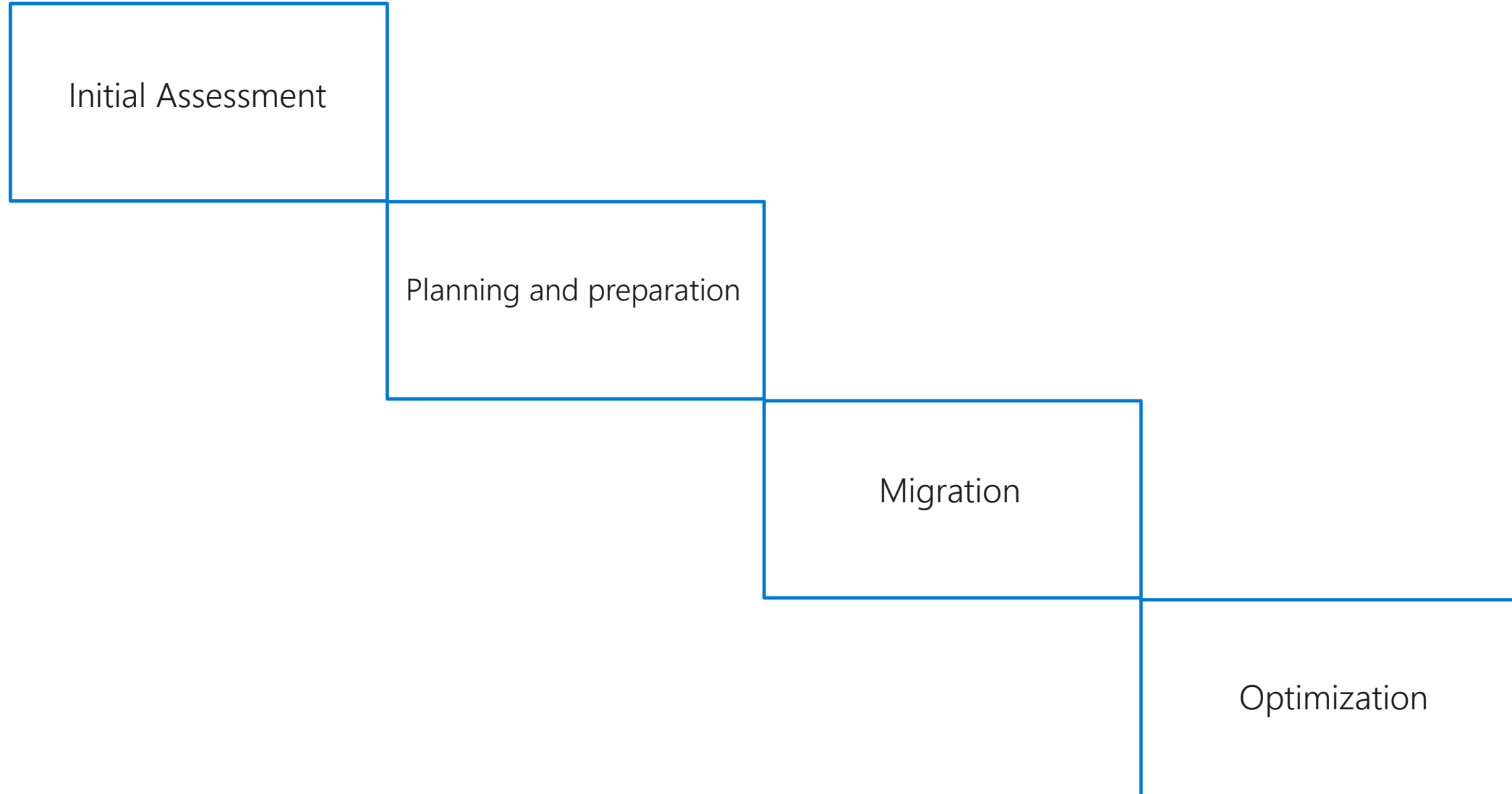
## Licensing

- ✓ For RDS on Azure: Windows Server and RDS CALs/SALs
- ✓ For WVD: M365 E3/ E5/ F1, Windows E3/ E5/ A3/ A5 + [WS and RDS CALs/ SALs if RDSH workload]

## Existing VM Image

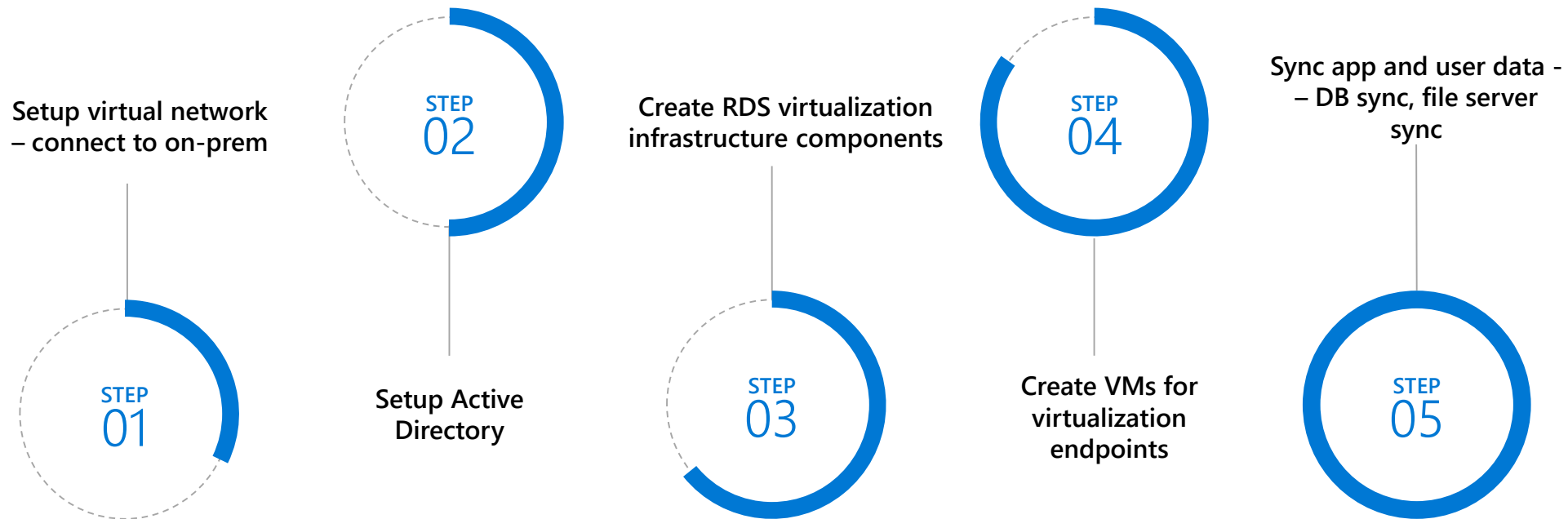
- ✓ Desktop and app images to host on Azure VMs

# Migration Process of RDS workloads to Azure



# Migration Process – Migration

In this step, the customer will perform the actual migration:



Note: ASR is the only Microsoft tool that performs this migration and it supports client SKUs, as well.



# Migration

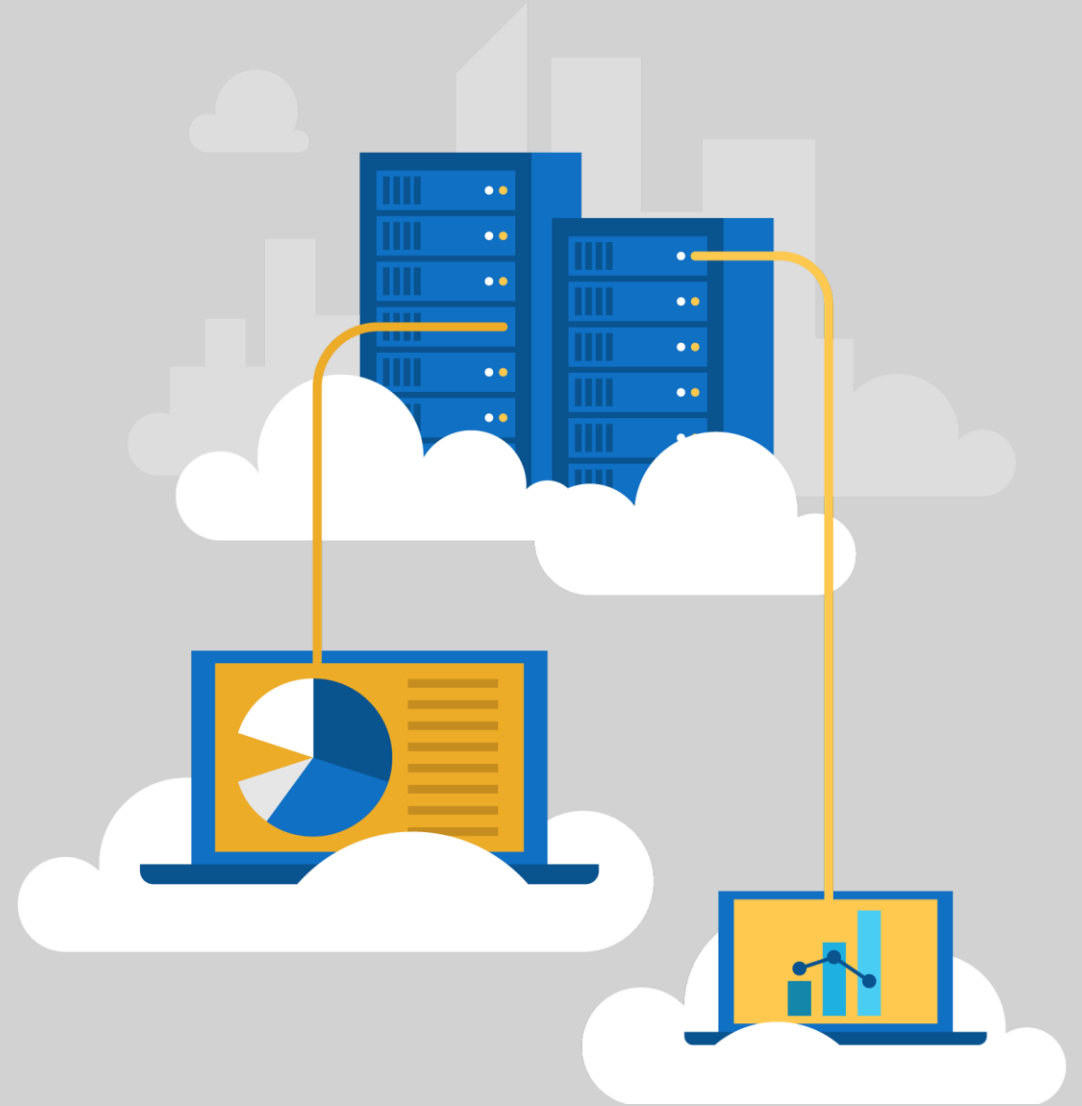
- Azure Site Recovery
- Azure File Sync for profiles
  - Convert the profiles (tool coming for UDP to FSLogix)





# Optimization

Section

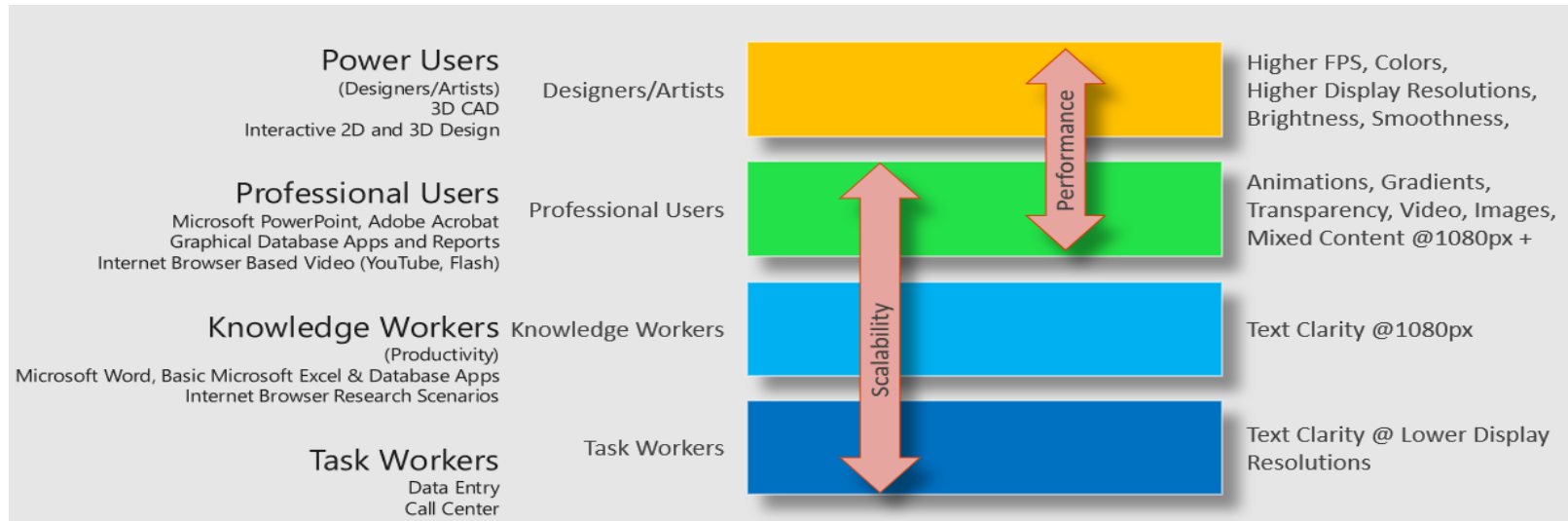
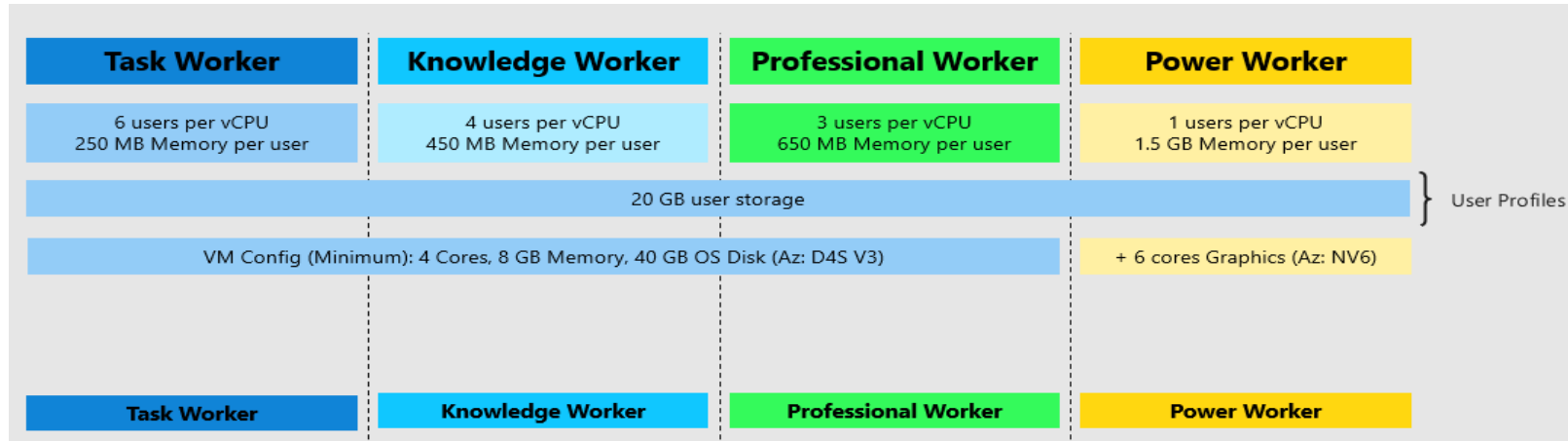


# VM Sizing

Section



# Recommended VM sizing based on user personal



# Session Load Balancing

Demo



# Load Balancing

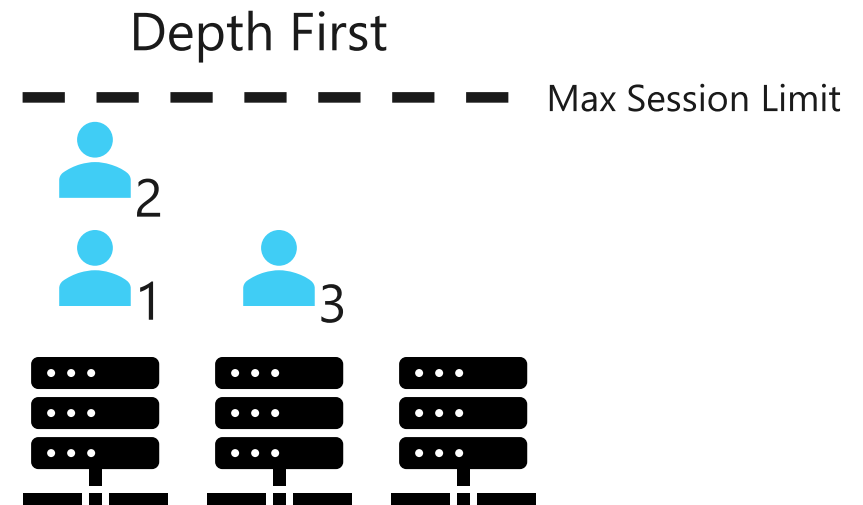
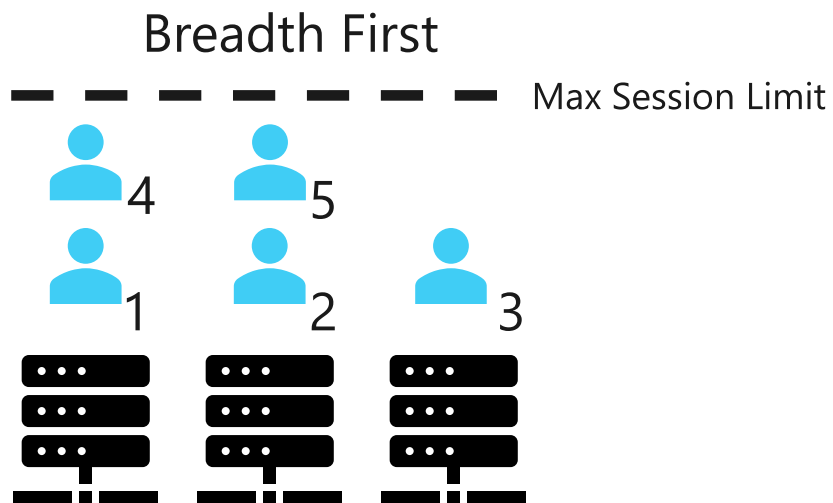
- Load Balancing Options

- Breadth-First load balancing

- Set-RdsHostPool <tenantname> <hostpoolname> -BreadthFirstLoadBalancer
    - Set-RdsHostPool <tenantname> <hostpoolname> -BreadthFirstLoadBalancer -MaxSessionLimit ###

- Depth-first load balancing

- Set-RdsHostPool <tenantname> <hostpoolname> -DepthFirstLoadBalancer -MaxSessionLimit ###



# Session Host Scaling

Demo



# Deploy

- GitHub

[aka.ms/wvdsclning](https://aka.ms/wvdsclning)

# Scaling Session Hosts

## Benefits

## Current state

- VM / Task Scheduler

### Setup

- Setup Config.json

- Time bound / session count

## Future

- Azure Automation

- Service component in WVD

- Event based

## Alternatives

- PS / APIs





# Windows Virtual Desktop Clients

Section



# Connectivity

## Remote Desktop Client (RDClient)

Preferred

Win 10\7

Start menu integration / Notifications

## Web Client

Requires HTML5 compatibility

Minimum integration with OS

## Mobile Clients

Mac OS

iOS

Android

