

# *Windows Virtual Desktop*

WEWC788 - Windows Virtual Desktop (Fall 2019 & Spring 2020 edition) -  
Technical Deep Dive

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# How did we get here?

Sept 2018

March 2019

Sept 2019

Nov 2019

April/May 2020

## Ignite

Announcing WVD  
Announcing Public Preview

## Ignite The Tour

WVD Public Preview

## GA

WVD (Fall edition) goes GA

## Ignite

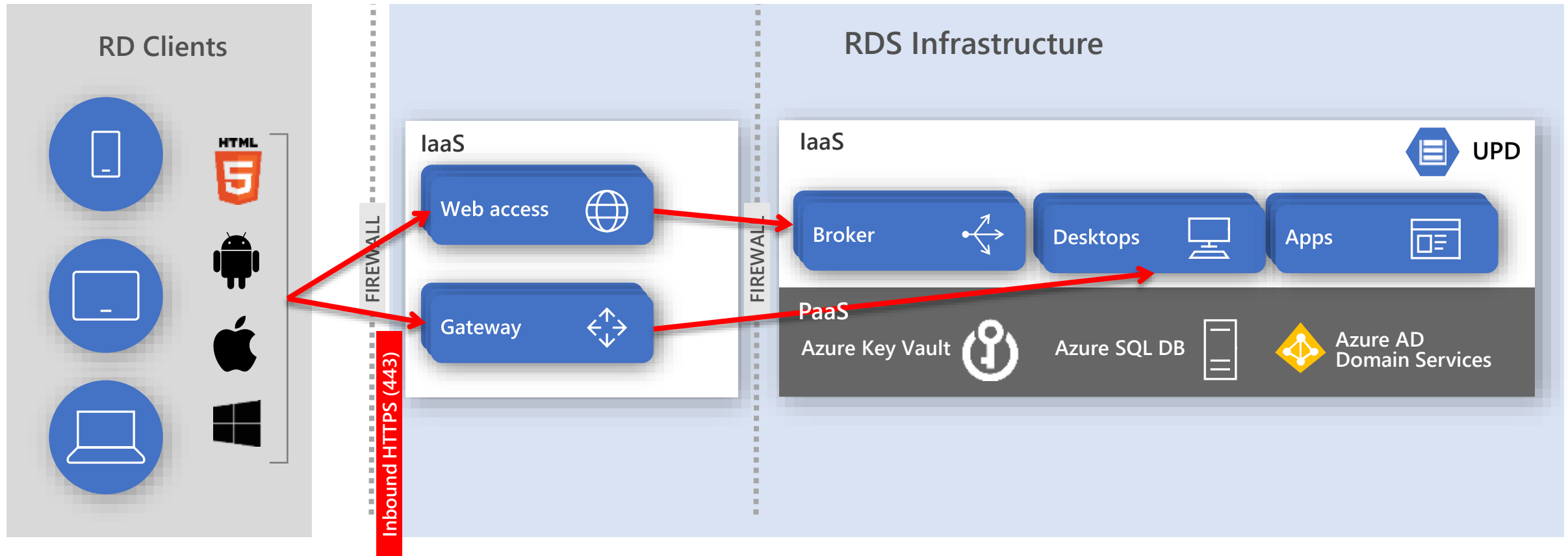
More service regions  
MSIX Preview  
Thin client support

## WVD Spring edition

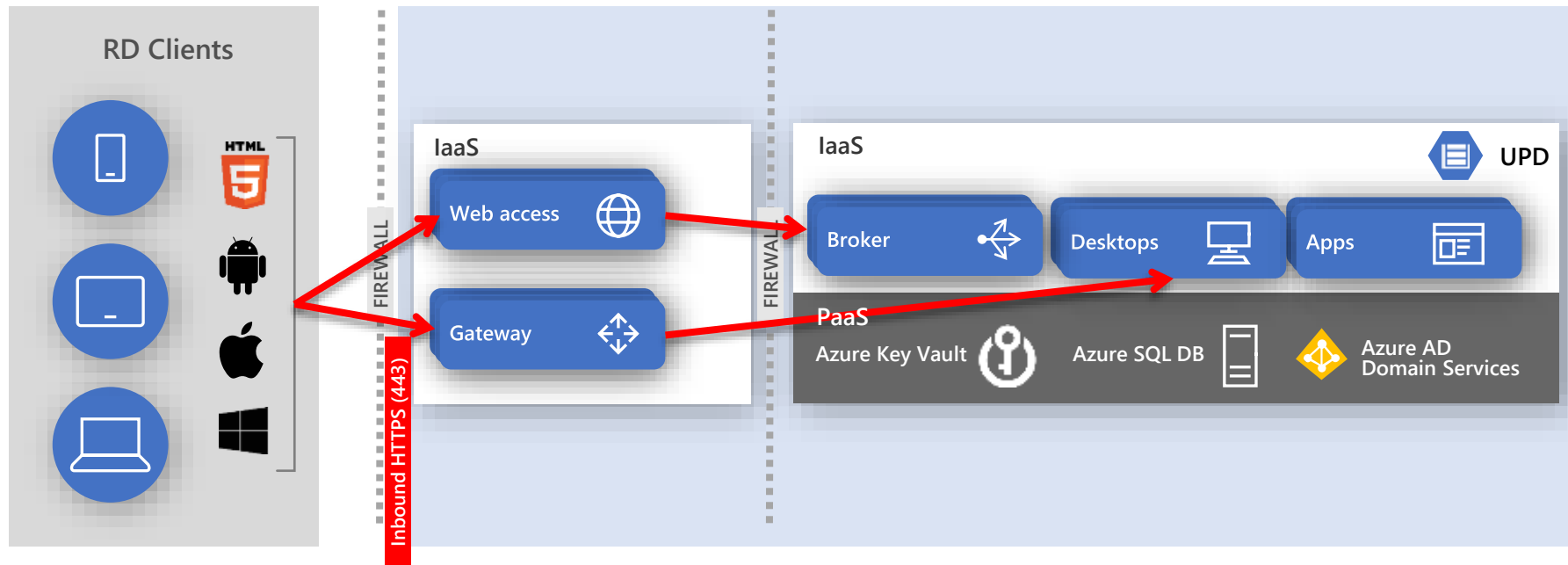
Azure Portal integration  
Azure Files support native AD  
Teams AV Redirection preview

# *History*

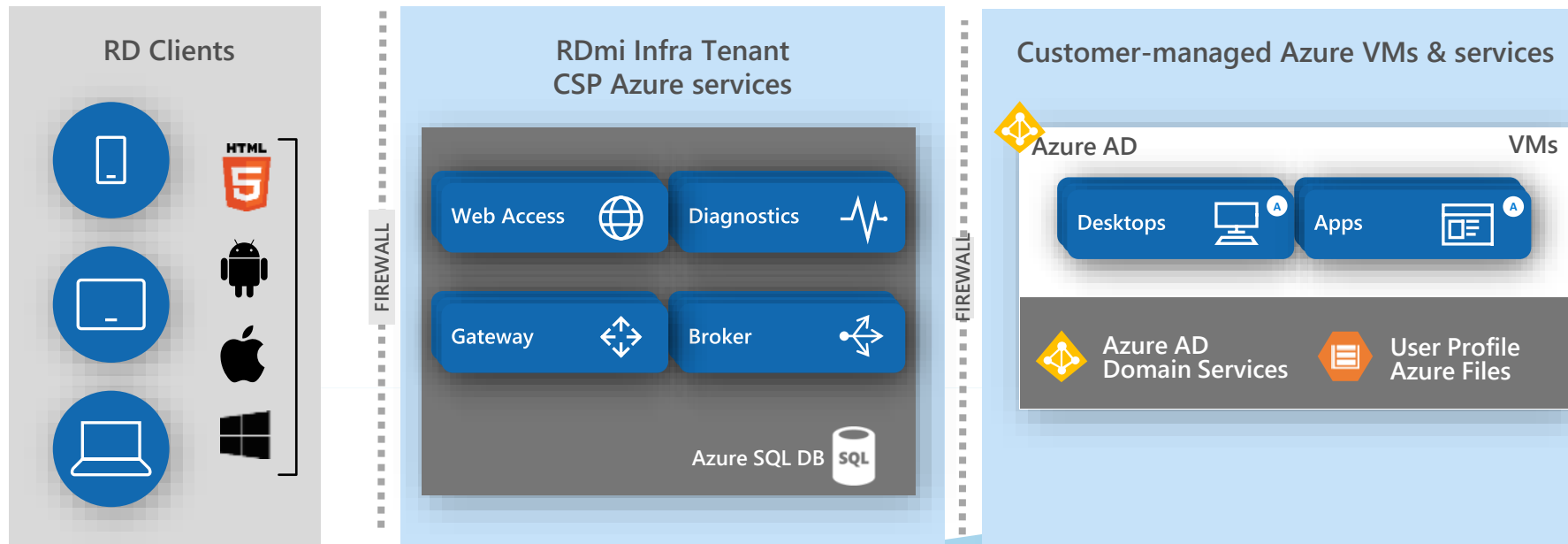
# RDS on Azure IaaS 2019



# RDS



# RDmi \*



\* Remote Desktop modern infrastructure



# Windows Virtual Desktop

# Windows Virtual Desktop

The best virtual desktop experience, delivered on Azure



The only multi-user Windows 10 experience



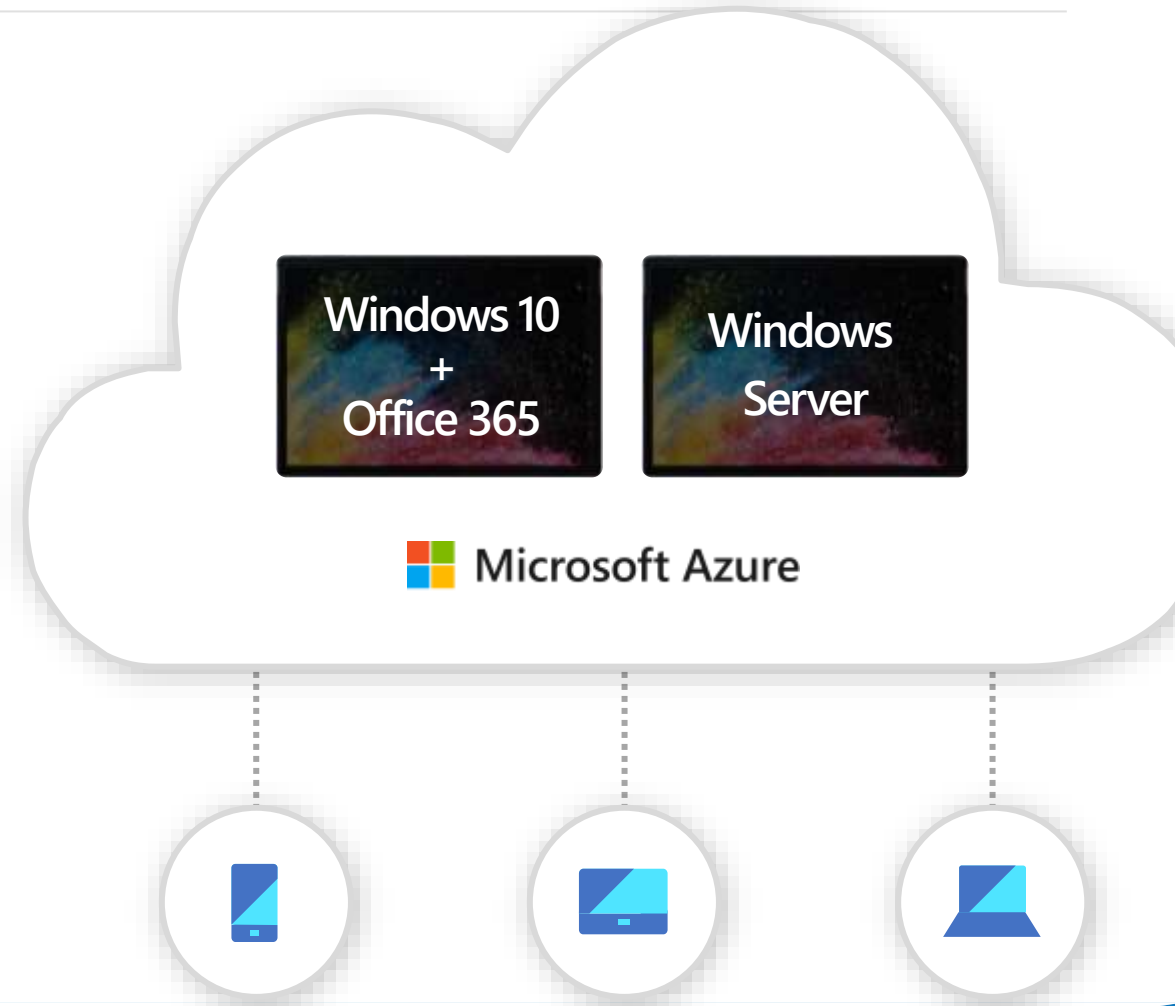
Optimized for Office 365 ProPlus



Migrate RDS Apps & Desktops

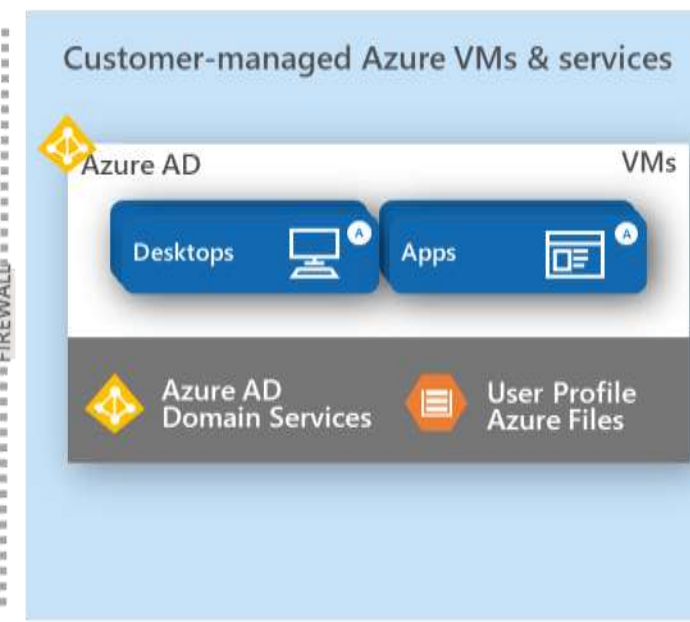
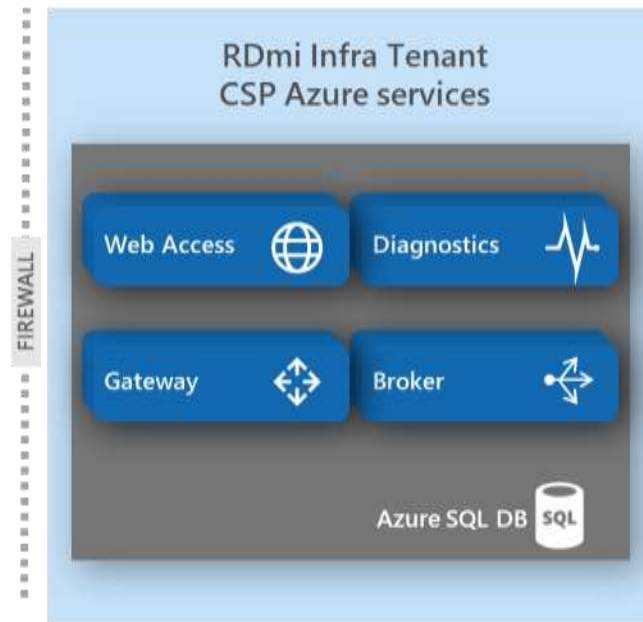


Deploy and scale in minutes





## RDmi



## WVD Fall 2019 edition





# Windows Virtual Desktop (Fall 2019 edition)

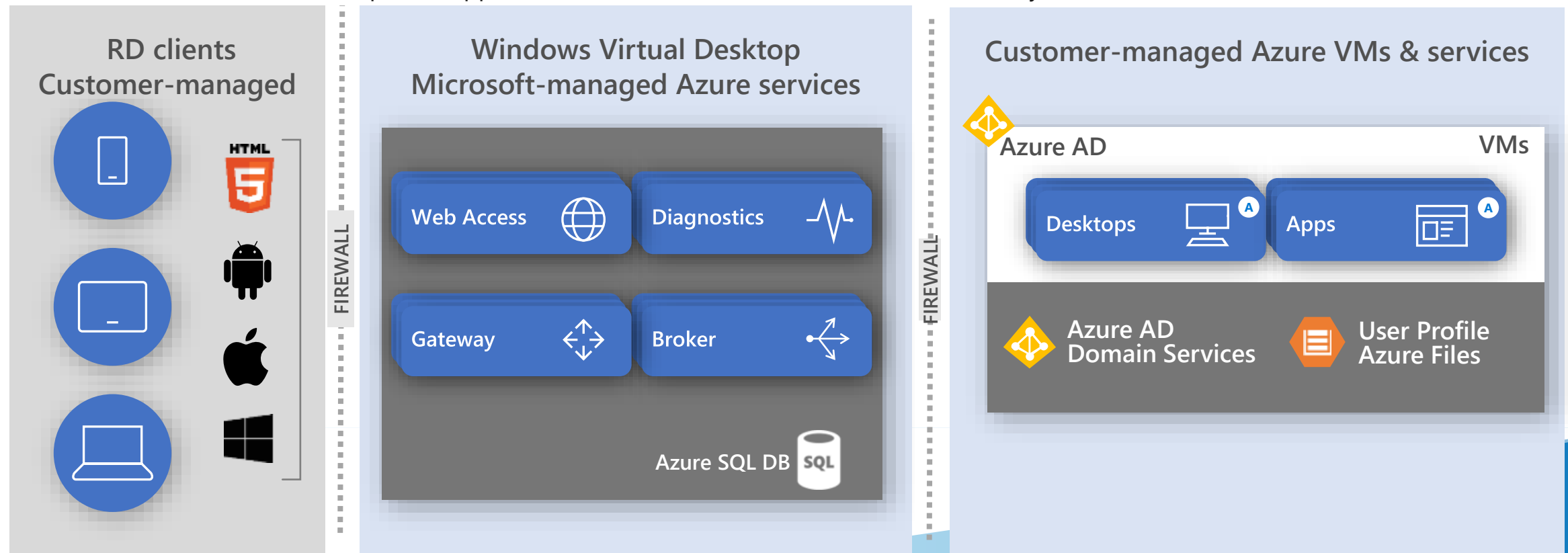
Consists of: **Azure service** to manage connections between **RD clients** and **Customer Managed Azure VMs**

IT admins can:

- Publish remote desktops and apps to end users from pools of single or multi-session VMs in Azure
- Manage and troubleshoot connections between RD Clients and Windows virtual machines

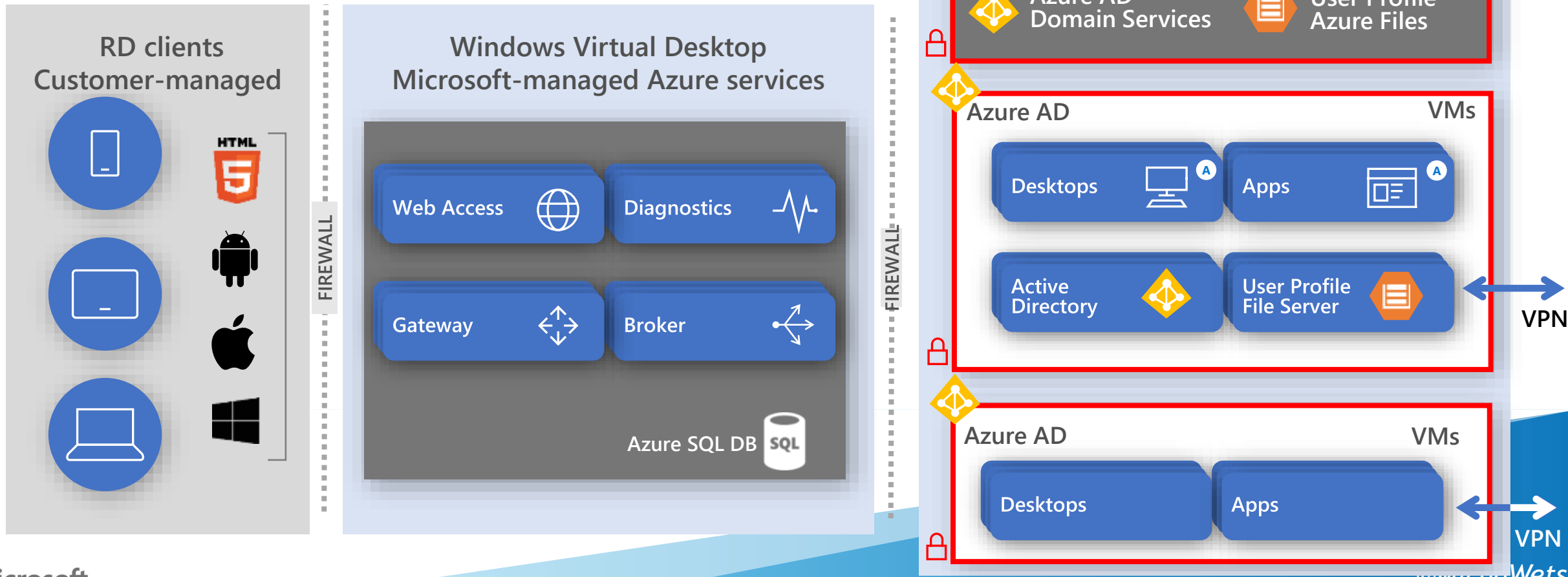
End users can:

- Connect to Windows desktops and applications from their favorite client device from anywhere on the internet

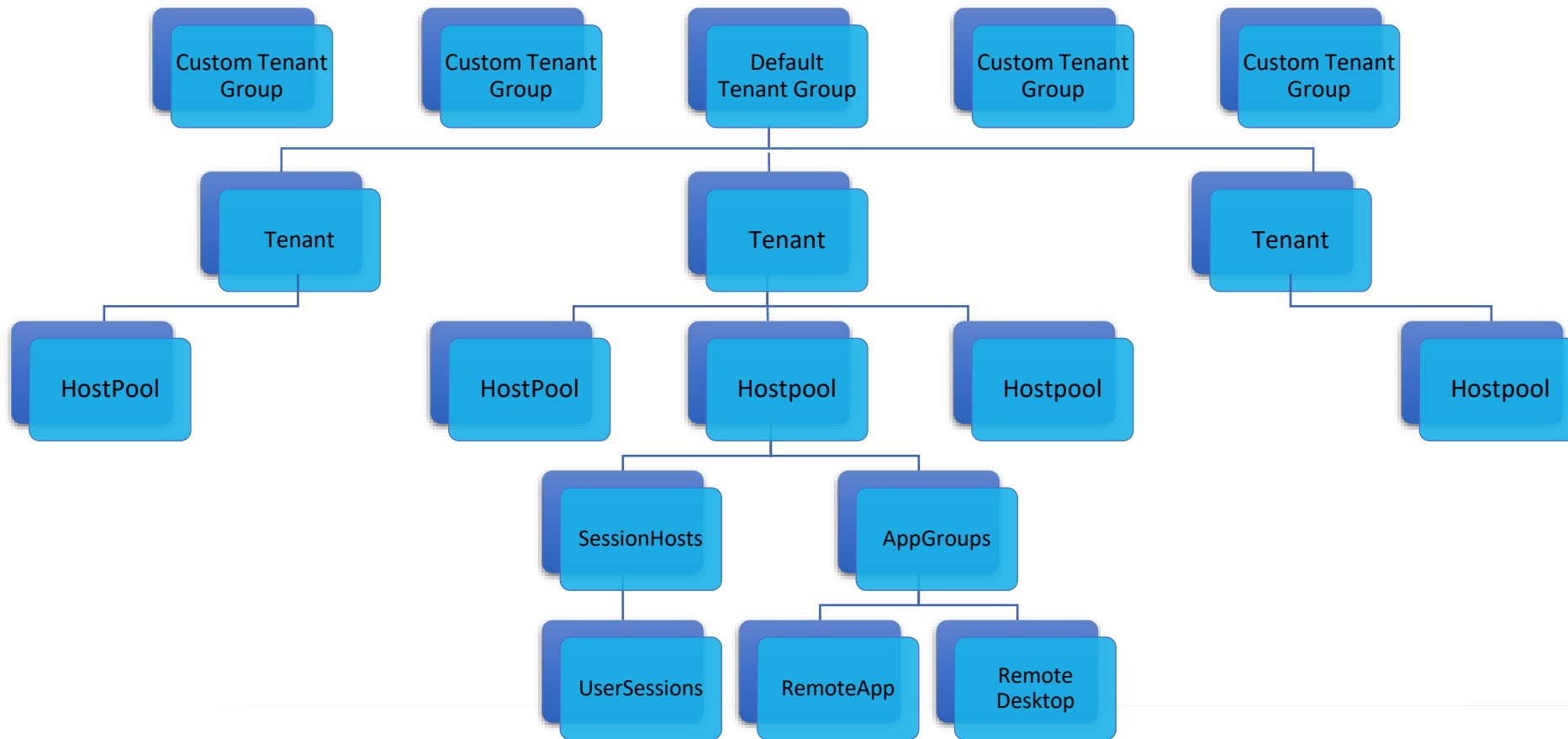


# Multitenancy

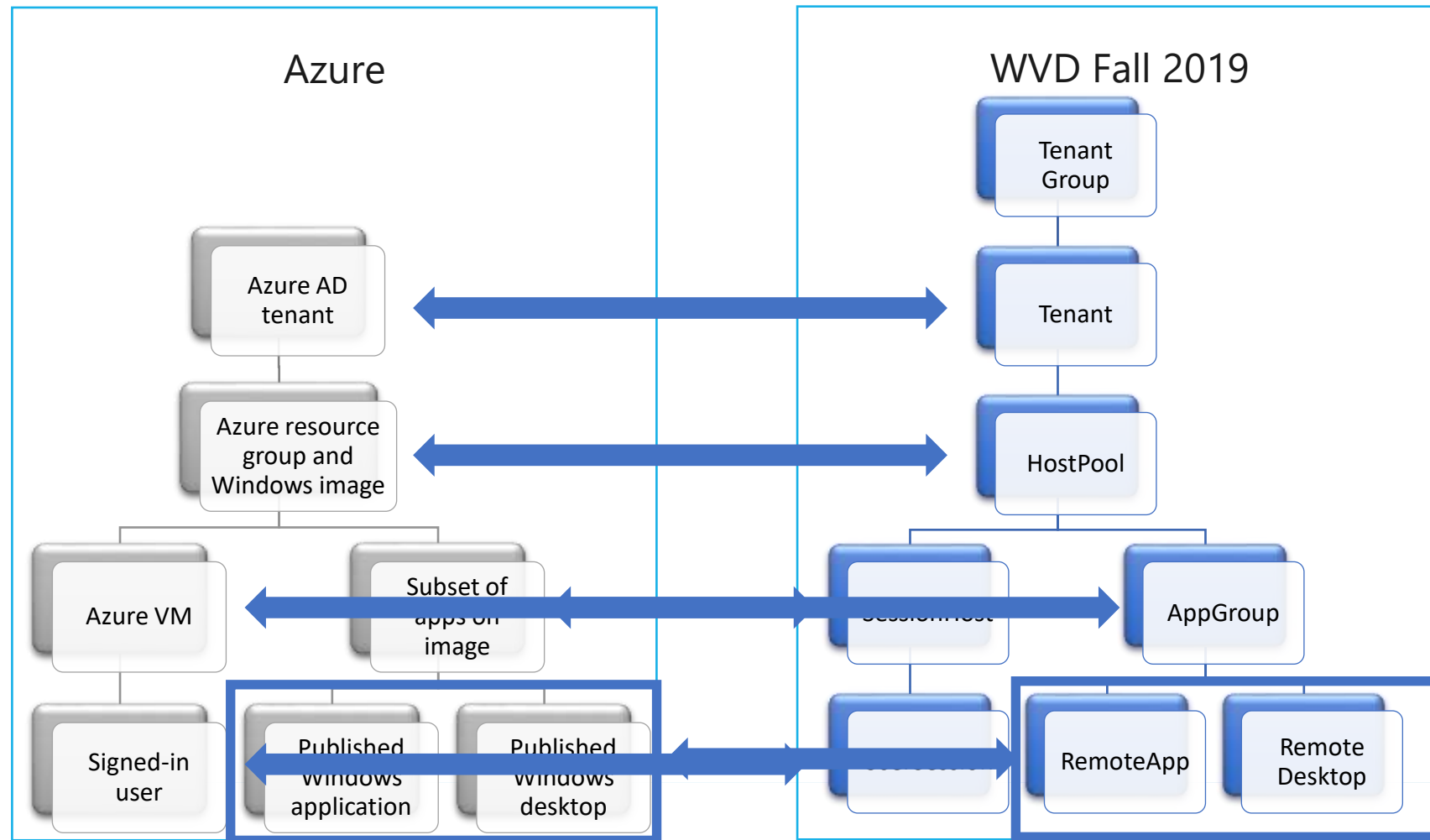
Customer environments are highly isolated  
Different AD configurations in each customer environment  
VPN from tenant environments to on-prem



# WVD Fall 2019 Object Model



# WVD Fall 2019 Object Model



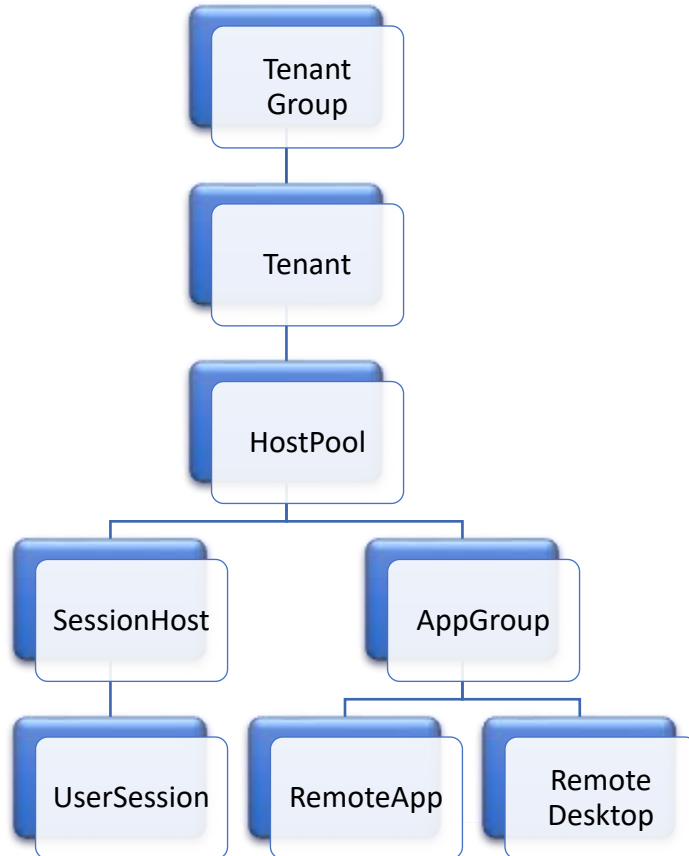
### Requirements

- Azure Active Directory
- Azure Subscription
- Determine your identity strategy (AD, ADDS)
- All associated Azure resources (image, virtual network, storage)
- Required credentials (Azure AD, WVD tenant, Service principle)

# *Windows Virtual Desktop Spring 2020*

# WVD Fall 2019 vs Spring 2020

WVD Fall 2019



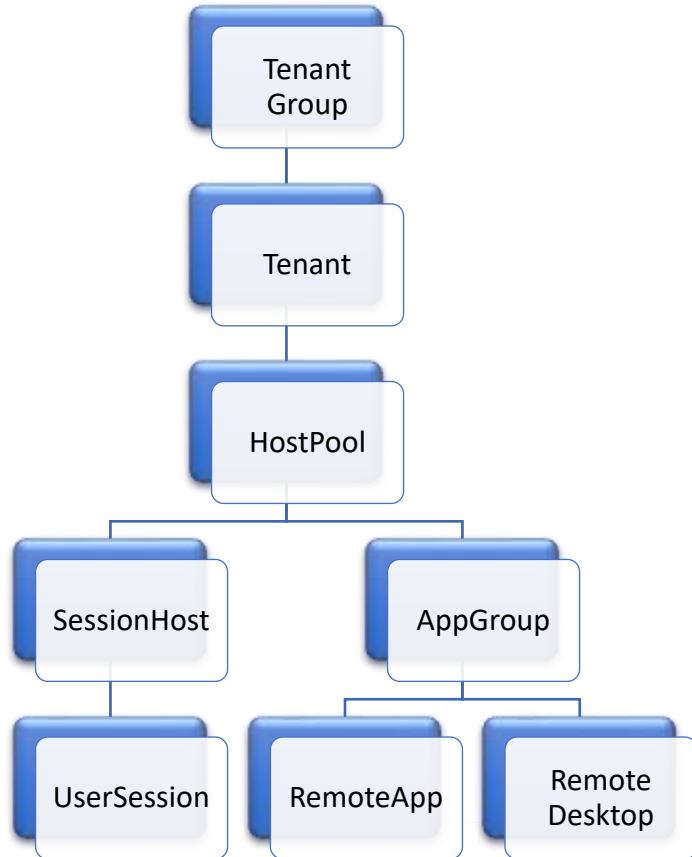
WVD Spring 2020



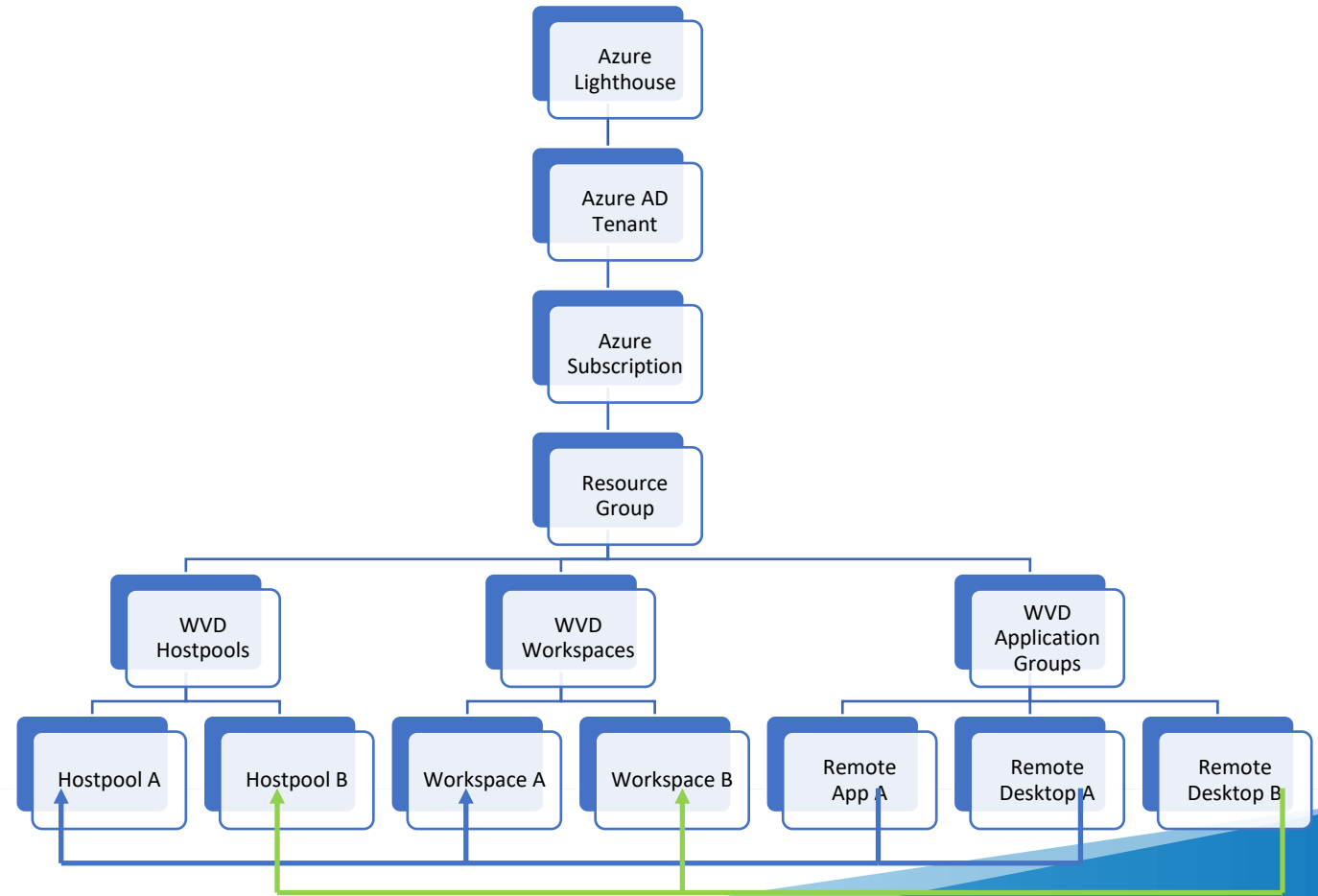


# WVD Fall 2019 vs Spring 2020

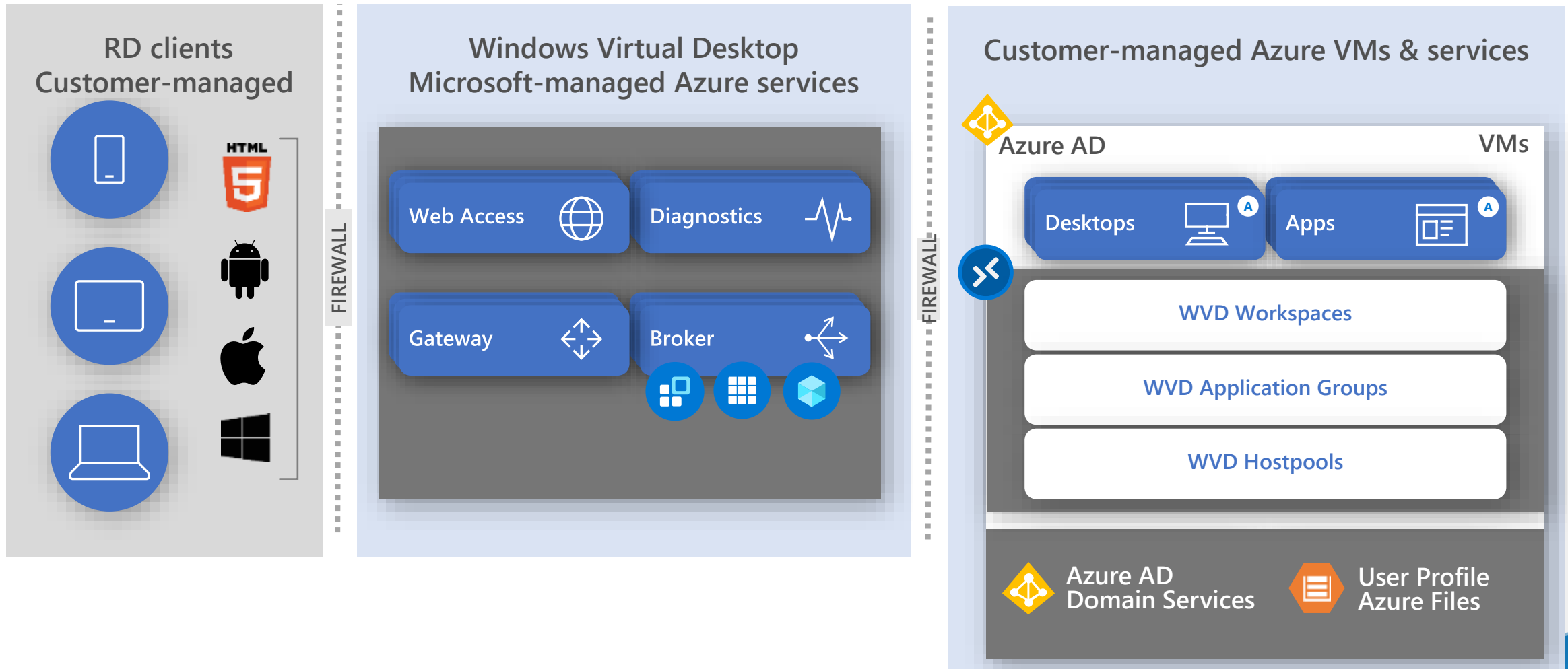
## WVD Fall 2019



## WVD Spring 2020



# Windows Virtual Desktop Spring 2020 edition



# *Workspaces*

# Workspaces

Displays the applications to the users

Collection of Application Groups

Displayed in the WVD clients (Win32, HTML5, MacOS, Thin client, etc)

Remote Desktop Application Group(s)

Linked to the Workspace

Remote App Application Group(s)

Linked to the Workspace

ca-win10-2004-ws | Application groups

Workspace | PREVIEW

Search (Ctrl+ /)

«

+ Add

↺ Refresh

🗑 Remove

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Properties

Locks

Export template

Manage

Application groups

Search by name

<input type="checkbox"/> Name	FriendlyName	Location	Subscription	Resource group	Applications	Users	
<input type="checkbox"/> ca-win10-2004-hp-DAG	My Windows 10 20h1	eastus	Microsoft Azure Sponsorship (1ab54fac-2b...	ca-wvd-arm-test-rg	0	1	...
<input type="checkbox"/> ca-win10-2004-hp-RAPP	-	eastus	Microsoft Azure Sponsorship (1ab54fac-2b...	ca-wvd-arm-test-rg	1	2	...

# Workspaces

ca-win10-2004-ws | Properties

Workspace | PREVIEW

Search (Ctrl+/)

Save Discard

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Properties

Locks

Export template

Manage

Application groups

Monitoring

Diagnostics settings

Support + troubleshooting

New support request

Resource ID

/subscriptions/1ab54fac-2bbe-4282-9c5b-561b8df622ab/resourceGroups/ca-wvd-arm-test-rg/providers/Microsof...

Resource group

ca-wvd-arm-test-rg

Change resource group

Subscription

1ab54fac-2bbe-4282-9c5b-561b8df622ab

Change subscription

Location

eastus

Name

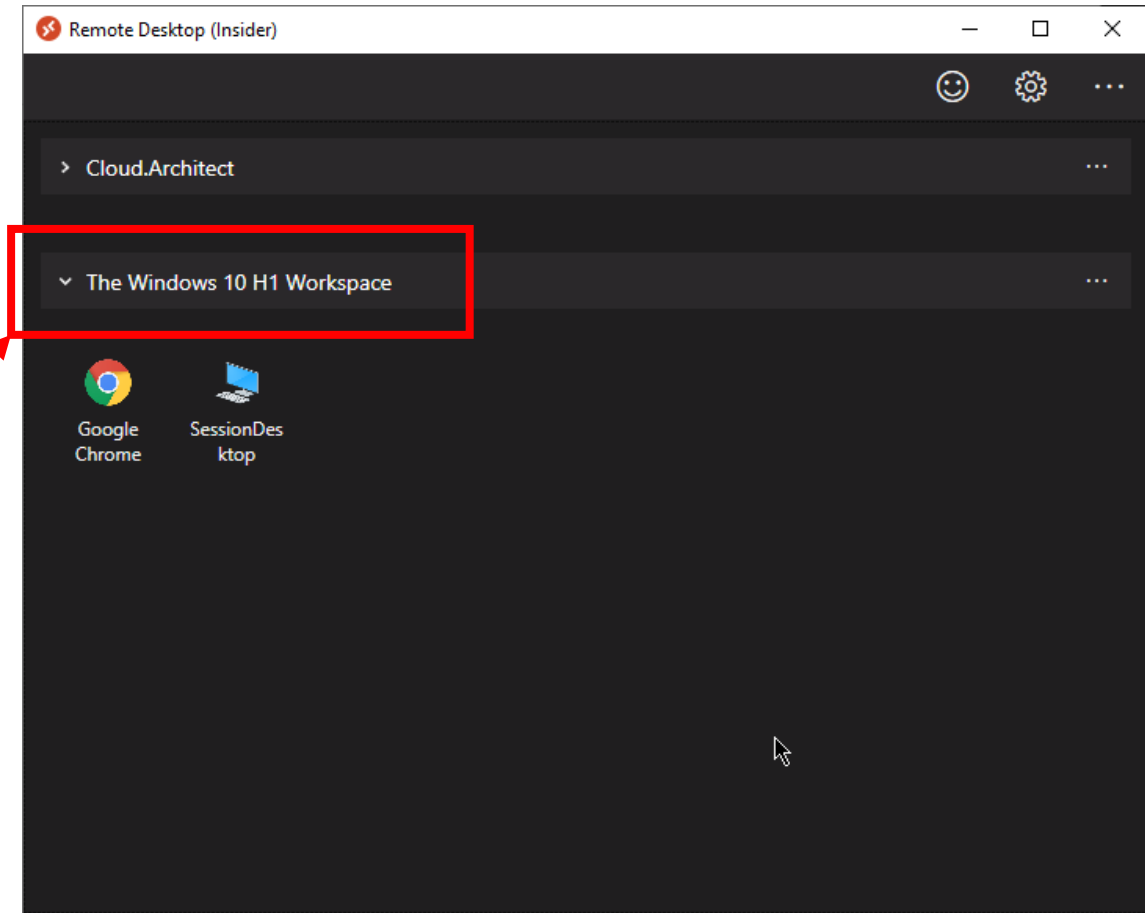
ca-win10-2004-ws

Configuration

Friendly name

The Windows 10 H1 Workspace

Description



# *Hostpools*

# Hostpools

## Collection of VMs

Contains the VMs

Best all the same VM SKU

Best all VMs created from the same image

## Remote Desktop Application Group(s)

Linked to the Hostpools

## Remote App Application Group(s)

Linked to the Hostpools

ca-win10-2004-hp | Session hosts  
Host pool | PREVIEW

Search (Ctrl+/) « + Add Refresh Export to CSV

Search by name Status: 12 selected Drain mode: 2 selected

<input type="checkbox"/>	Name	Status	Drain mode	Active sessions	Resource group	Location	Subscription
<input type="checkbox"/>	ca-win20h1-0	Available	Off	0	ca-wvd-arm-test-rg	West Europe	Microsoft Azure Spons...

Overview  
Activity log  
Access control (IAM)  
Tags  
Diagnose and solve problems

Settings

- Properties
- Locks
- Export template

Manage

- Application groups
- Session hosts



# Hostpools

## Remote Desktop Application Group(s)

Linked to the Hostpools

## Remote App Application Group(s)

Linked to the Hostpools

ca-win10-2004-hp | Application groups

Host pool | PREVIEW

Search (Ctrl+ /)

«

+ Add

Refresh

Remove

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Properties

Locks

Export template

Manage

Application groups

Session hosts

Desktop application group

Click to configure the desktop application group. There can only be one desktop per host pool.

Name	Users
ca-win10-2004-hp-DAG	1

RemoteApp application groups

<input type="checkbox"/> Name	Friendly name	Location	Subscription	Resource group	Applications	Users	
<input type="checkbox"/> ca-win10-2004-hp-RA...		eastus	Microsoft Azure Spons...	ca-wvd-arm-test-rg	1	2	...

# Hostpools

**ca-win10-2004-hp** Host pool | PREVIEW

Search (Ctrl+/) << Registration key Refresh Remove

**Overview**

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

**Settings**

- Properties
- Locks
- Export template

**Manage**

- Application groups

Resource group (change) : [ca-wvd-arm-test-rg](#)

Location : East US

Subscription (change) : [Microsoft Azure Sponsorship](#)

Subscription ID : 1ab54fac-2bbe-4282-9c5b-561b8df622ab

Tags (change) : [Click here to add tags](#)

Host pool type : Pooled

Assignment type : ---

Size : Standard D4s v3 (4 vCPUs, 16 GB memory)

OS disk type : Premium SSD

Documentation

- [Add a RemoteApp application group](#)
- [Add users to a desktop](#)
- [Restart a virtual machine](#)

1 Session hosts

Total active sessions 0

Unavailable 0

## Session host info

Needs to be defined during creation  
Used when adding additional sessionhosts

# *Application Groups*

# Application Groups

Make applications and desktops available

Contains the definition of applications

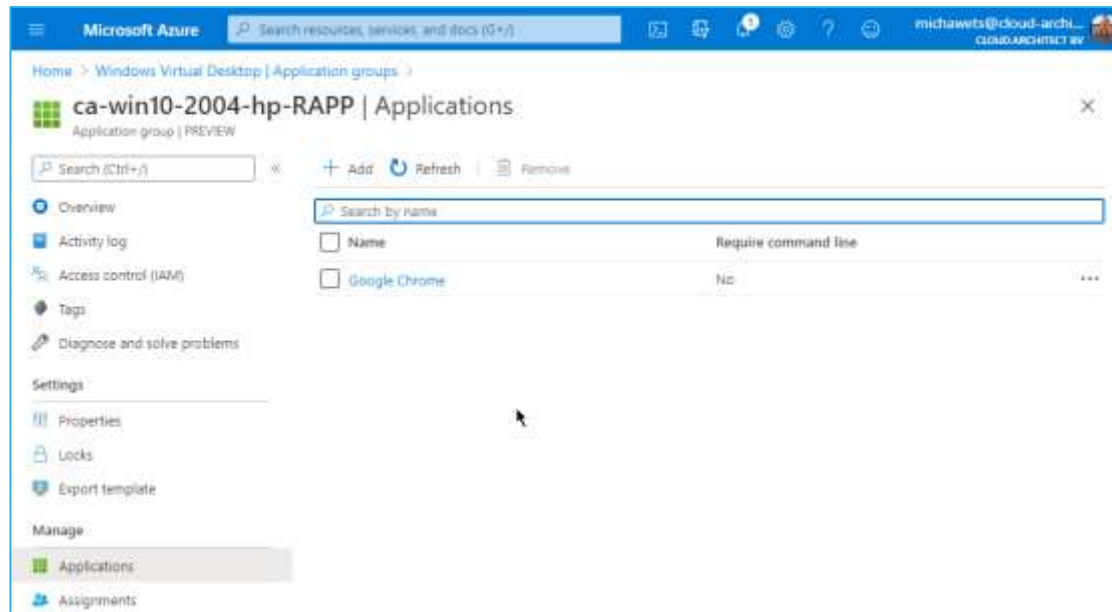
Contains the full desktops

Publish them (assignments) to Azure AD Users **AND GROUPS**

## Remote Desktop Application Group(s)

Linked to the Hostpool

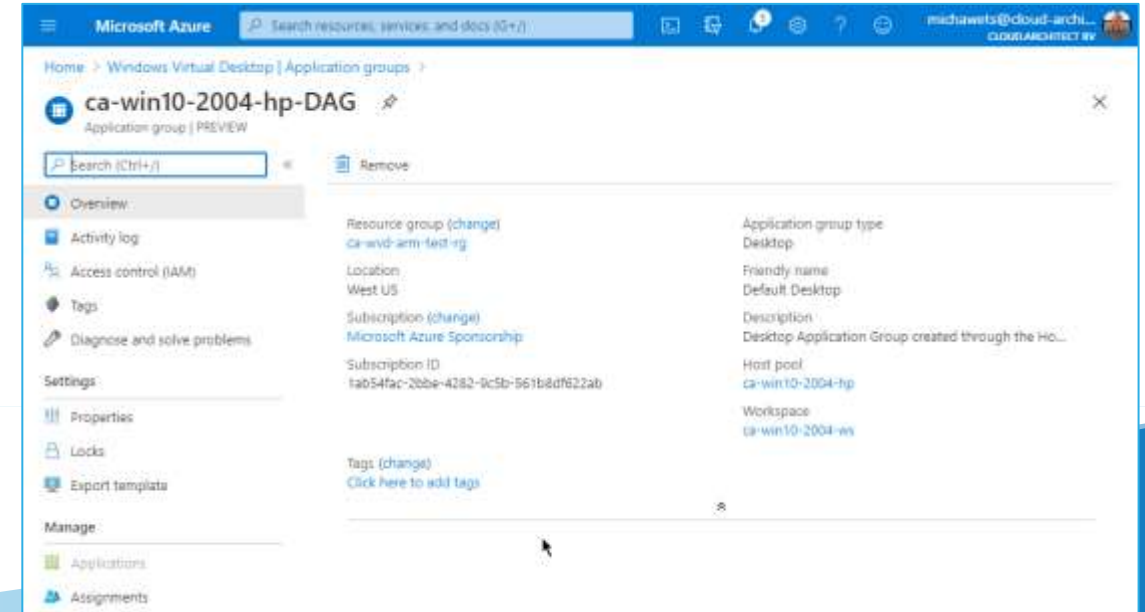
Linked to the Workspace



## Remote App Application Group(s)

Linked to the Hostpool

Linked to the Workspace



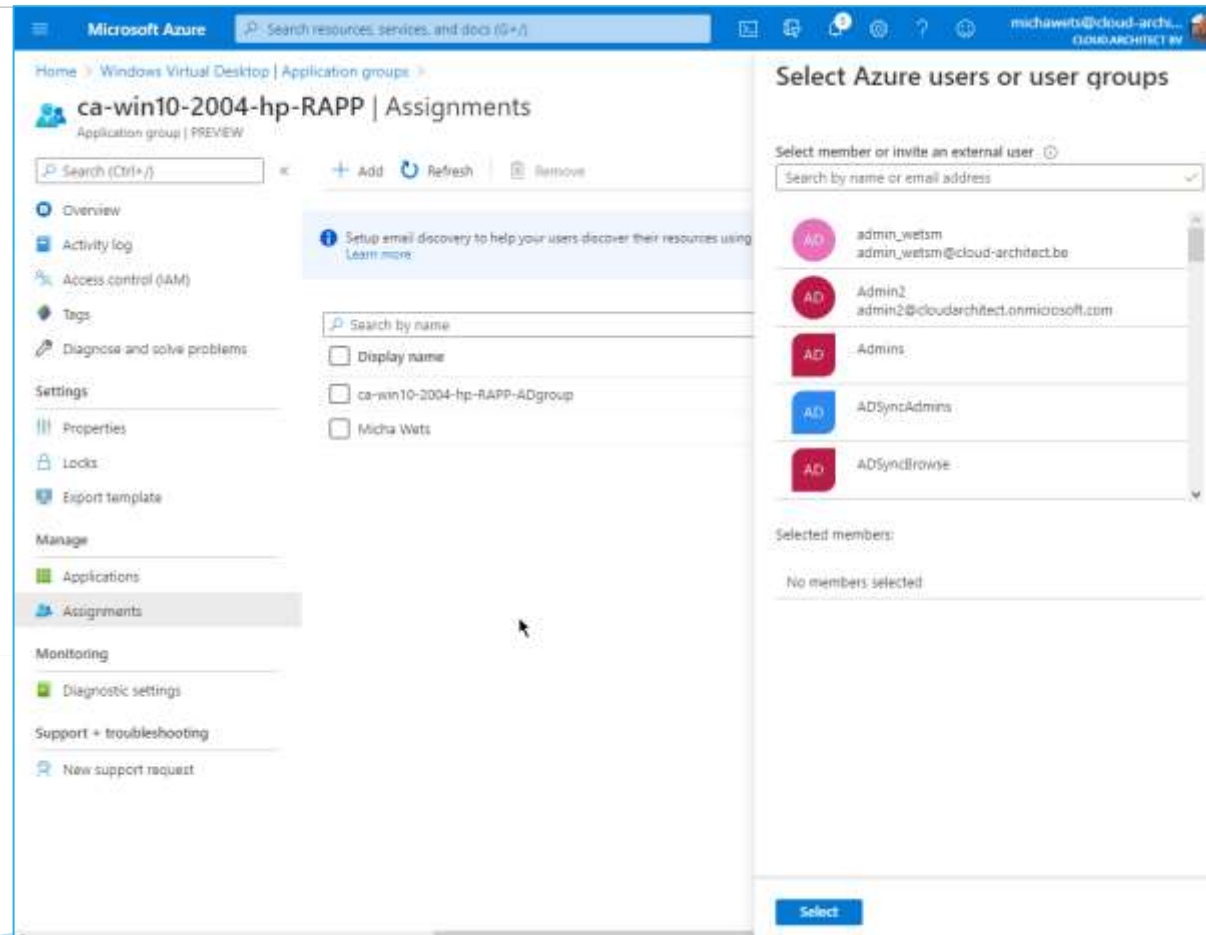
# Application Groups

Make applications and desktops available

Contains the definition of applications

Contains the full desktops

Publish them (assignments) to Azure AD Users **AND GROUPS**





# Demo

## Azure Market Deployment

Create WVD Workspace

Create WVD Hostpool and VMs

## Multi-user Windows 10 experience

- HTML5 Webclient
- Full Desktop





# Modern Workplace



## Virtualization hosts today

Windows Server  
2012 R2 / 2016 / 2019  
RD Session Host

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

---

Windows Server 20xx

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  
2012 R2 / 2016 / 2019  
RD Session Host

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

Windows Server 20xx

Multiple users

Win32

Office 2019 Perpetual

Long-Term Servicing Channel

Windows 10  
Enterprise multi user

Scalable multi-user **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.

Windows 10

Single user

Win32, UWP

Office 365 ProPlus

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# Virtualization hosts of the future



Windows Server  
2012 R2 / 2016 / 2019  
RD Session Host

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

Windows Server 20xx

Multiple users

Win32

Office 2019 Perpetual

Long-Term Servicing Channel

Windows 10  
Enterprise multi user

Scalable multi-user **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.

Windows 10

Single user

Win32, UWP

Office 365 ProPlus

Semi-Annual Channel

Windows 7  
Enterprise

Native single-session  
Windows experience.

Windows 7

Single user

Win32, UWP

Extended Security Updates

# *Master Image*

# Image from OnPrem

The screenshot shows a web browser window displaying the Microsoft Docs page for "Prepare and customize a master VHD image". The browser's address bar shows the URL: docs.microsoft.com/en-us/azure/virtual-desktop/set-up-customize-master-image. The page features a navigation sidebar on the left with a search bar and a list of topics. The main content area includes the article title, a brief description, and sections for "Create a VM" and "Local image creation". The right sidebar contains a feedback section and a list of related articles. Red arrows highlight the navigation path: from "Windows Virtual Desktop" in the top navigation, down to "How-to" in the left sidebar, and finally to "Set up a master VHD image" under the "Customize session host image" category.

Prepare and customize a master VHD image

10/14/2019 • 6 minutes to read • +13

This article tells you how to prepare a master virtual hard disk (VHD) image for upload to Azure, including how to create virtual machines (VMs) and install software on them. These instructions are for a Windows Virtual Desktop-specific configuration that can be used with your organization's existing processes.

## Create a VM

Windows 10 Enterprise multi-session is available in the Azure Image Gallery. There are two options for customizing this image.

The first option is to provision a virtual machine (VM) in Azure by following the instructions in [Create a VM from a managed image](#), and then skip ahead to [Software preparation and installation](#).

The second option is to create the image locally by downloading the image, provisioning a Hyper-V VM, and customizing it to suit your needs, which we cover in the following section.

## Local image creation

Once you've downloaded the image to a local location, open **Hyper-V Manager** to create a VM

# Create VM in Azure, customize, sysprep and capture

Microsoft Azure

Search resources, services, and docs (G+)

Home > New >

## Microsoft Windows 10

Microsoft

Select a software plan

Windows 10 Pro, Version 2004

Create

Start with a pre-set configuration

Windows 10 Enterprise N, Version 1809

Windows 10 Enterprise N 2019 LTSC

Windows 10 Enterprise N 2016 LTSC

Windows 10 Enterprise multi-session, Version 2004

Windows 10 Enterprise multi-session, Version 1909

Windows 10 Enterprise multi-session, Version 1903

Windows 10 Enterprise multi-session, Version 1809

Windows 10 Enterprise 2019 LTSC

Windows 10 Enterprise 2016 LTSC

Overview

Plans

This software is provided under a volume licensing agreement with Microsoft. By clicking Create, I acknowledge that the right to use it will be subject to that agreement.

Learn more

What's new for Business

What's new for IT professionals

Microsoft Azure

Search resources, services, and docs (G+)

Home > New >

## Microsoft Windows 10 + Office 365 ProPlus

Microsoft

Select a software plan

Windows 10 Enterprise multi-session,...

Create

Start with a pre-set configuration

Windows 10 Enterprise multi-session, Version 2004 + Office 365 ProPlus

Windows 10 Enterprise multi-session, Version 1909 + Office 365 ProPlus

Windows 10 Enterprise multi-session, Version 1903 + Office 365 ProPlus

Windows 10 Enterprise multi-session, Version 1809 + Office 365 ProPlus

Overview

Plans

This software is provided under a volume licensing agreement with Microsoft. By clicking Create, I acknowledge that the right to use it will be subject to that agreement.

Useful Links

[Learn more about Windows Virtual Desktop](#)

# Azure Image Builder (Preview)

Use Azure Image Builder



Azure Managed Image



Azure Shared Image Gallery



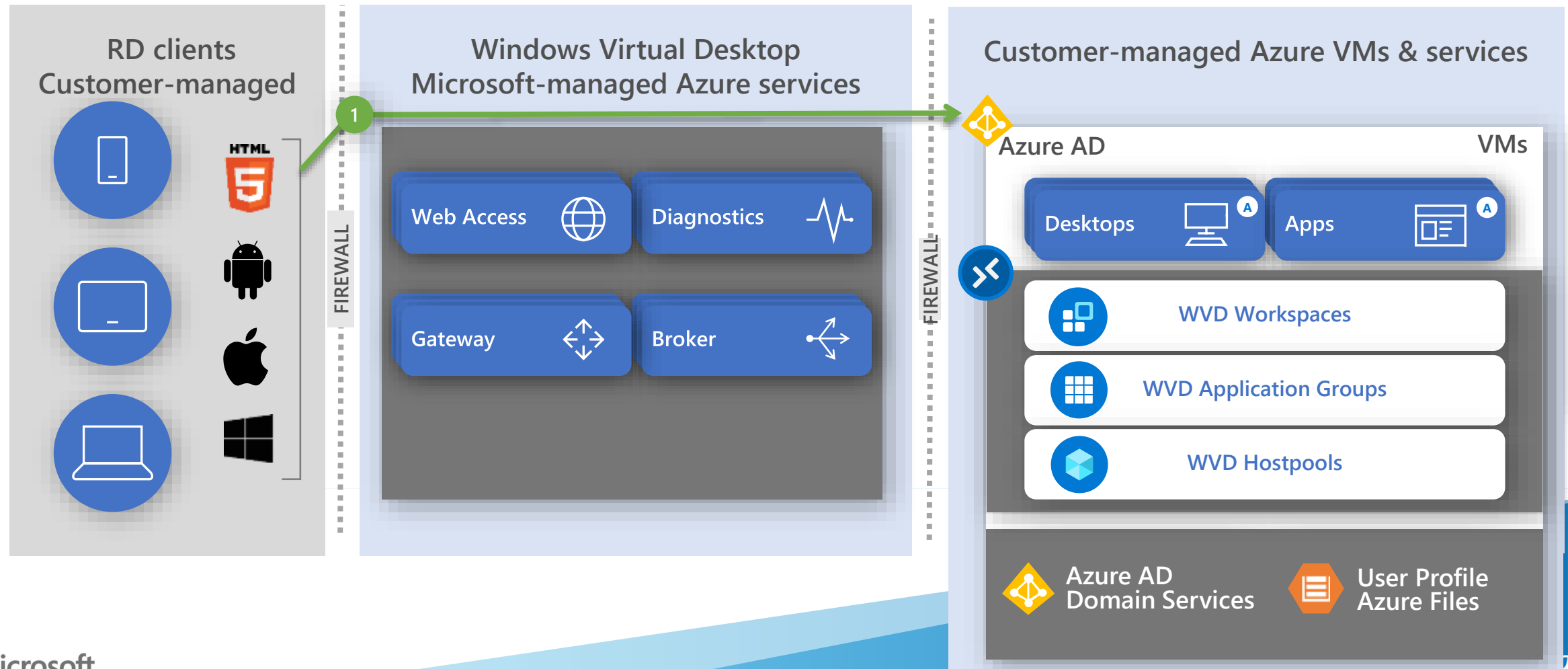
# *Security*

# Azure AD Authentication

RD clients authenticate with Azure Active Directory (AD)

Enables Azure AD security features, such as Conditional Access, Multi-factor Authentication, and Intelligent Security Graph

Maintains app compatibility in the customer's environment where Windows VMs are AD domain-joined

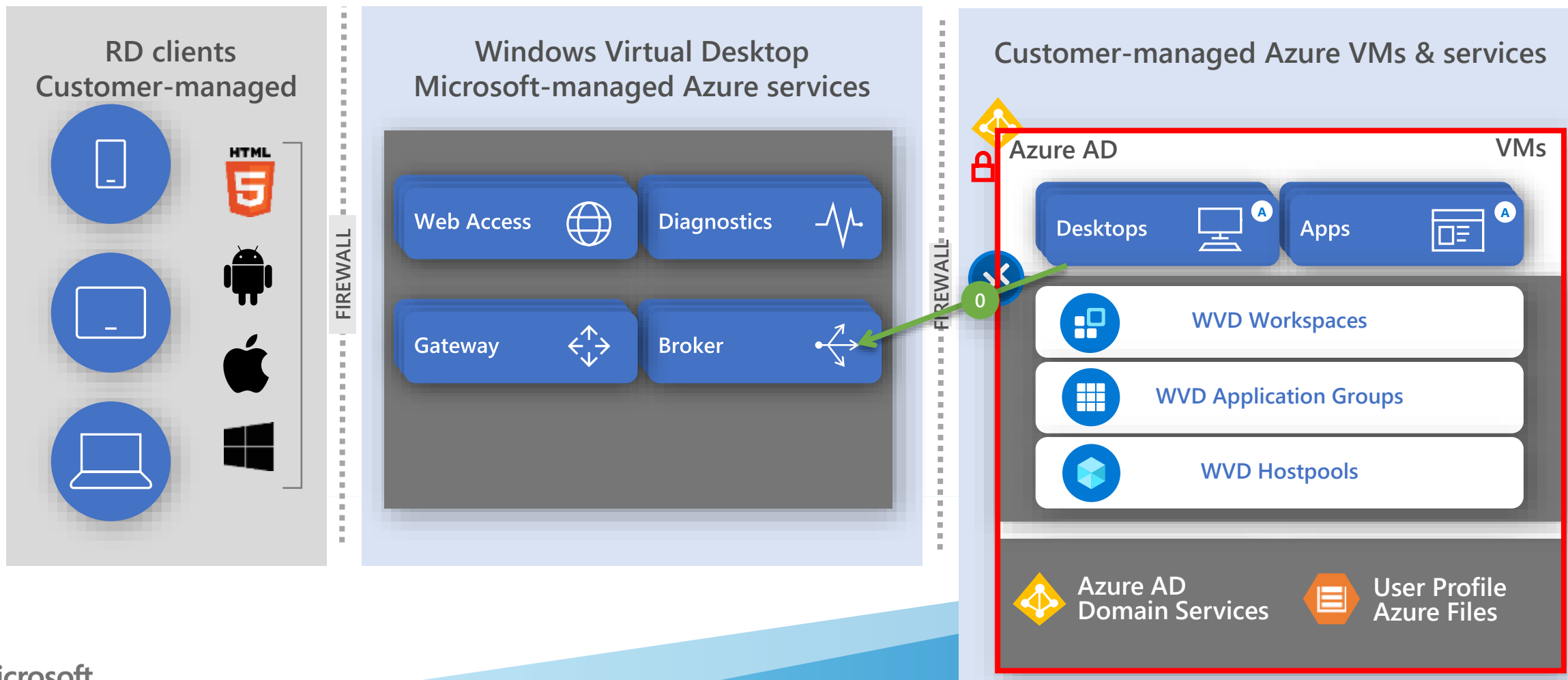


## Improved Isolation: Reverse Connect

Outbound WebSocket connections from customer VMs to Broker and Gateway

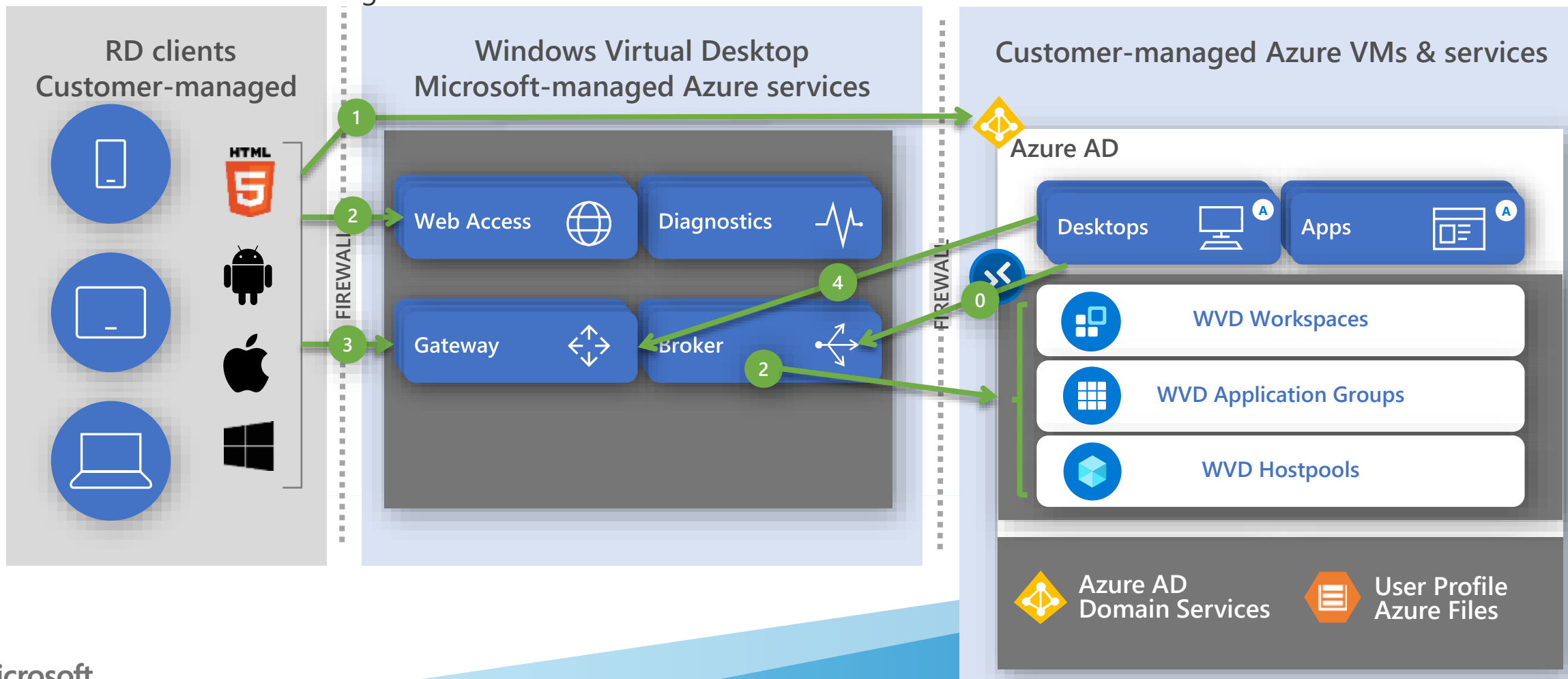
Bidirectional communications between VMs and WVD services over https (443)

No inbound ports need be opened to the customer environment



## 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
- >>> RDP traffic now flowing between RD client and session host VM over connections 3 and 4





# Demo

## Multi User Windows 10

- Visual Studio Code
- Docker

*FSLogix*



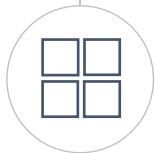
With the acquisition of FSLogix, eligible customers will get access to three core pieces of technology



## Profile & Office 365 Container

Replacement for roaming profiles and folder redirection. Dramatically speeds up logon and application launch times.

- Includes Office 365 Container, which roams Office cache data (Outlook OST, OneDrive cache, Skype for Business GAL, etc.) and Windows Search DB with user in virtual desktop environments.



## App Masking

Minimize number of gold images by creating a single image with all applications. Excellent app compatibility with no packaging, sequencing, backend infrastructure, or virtualization.

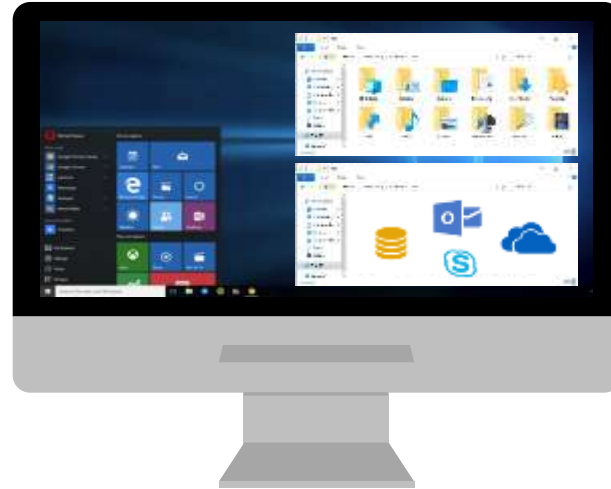


## Java Redirection

Helps protect the enterprise from vulnerabilities of multiple installed versions of Java by mapping specific versions to individual apps or websites.



# FSLogix Technologies: Container technology



Container

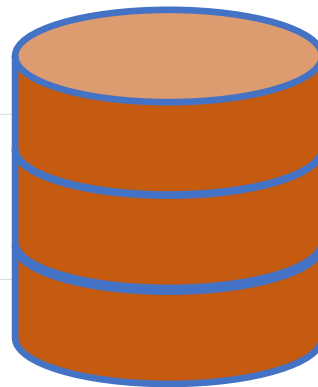


App Masking



Java Redirection

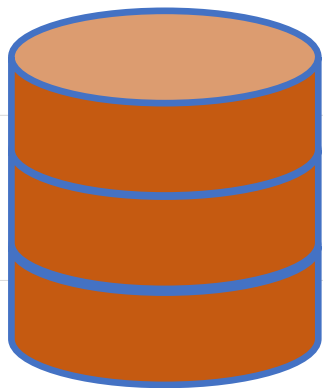
SMB Storage



# FSLogix Technologies: Container technology



SMB Storage



Places entire user profile in network-based container.

Extremely fast logon times.

Filter driver causes profile to appear local – broader application support

Reduces network and filesystem load.

Uses native Windows VHD capabilities–no hypervisor.

Very easy to deploy and manage.

Completely seamless end-user experience.

Works with other application management platforms.

Easy to test, implement, and manage.

# FSLogix Technologies: Application Masking

---



Container



App Masking



Java Redirection



# FSLogix Technologies: Application Masking

---



Application Management without sequencing, snapshotting, packaging, or virtualization.

All apps installed in base image.

- Excellent app compatibility
- Only apps a user is entitled to are revealed.
- App entitlements can be changed in real time.

Massively reduce the number of gold images that must be maintained

# FSLogix Technologies: Java Redirection



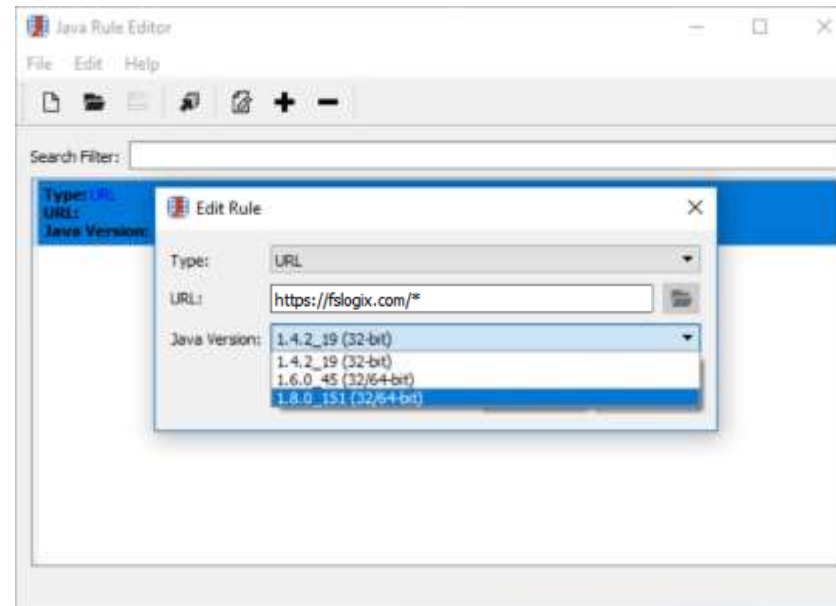
Container



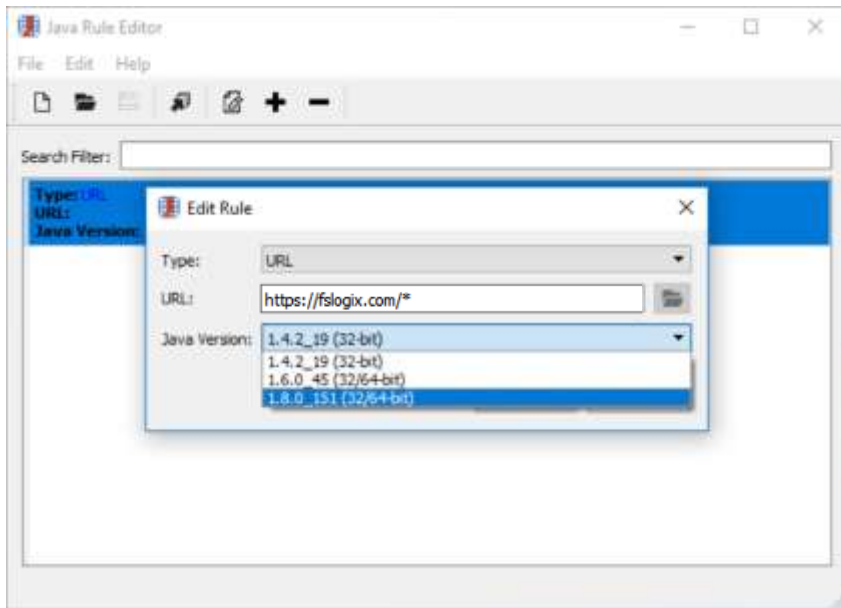
App Masking



Java Redirection



# FSLogix Technologies: Java Redirection



Securely collocate multiple version of Java on same base image

Run each app or website with specific version of Java required for full functionality

Uses FSLogix App Masking to hide unused versions of Java when not needed



Demo












FSLogix:  
AppMasking

# *Management*

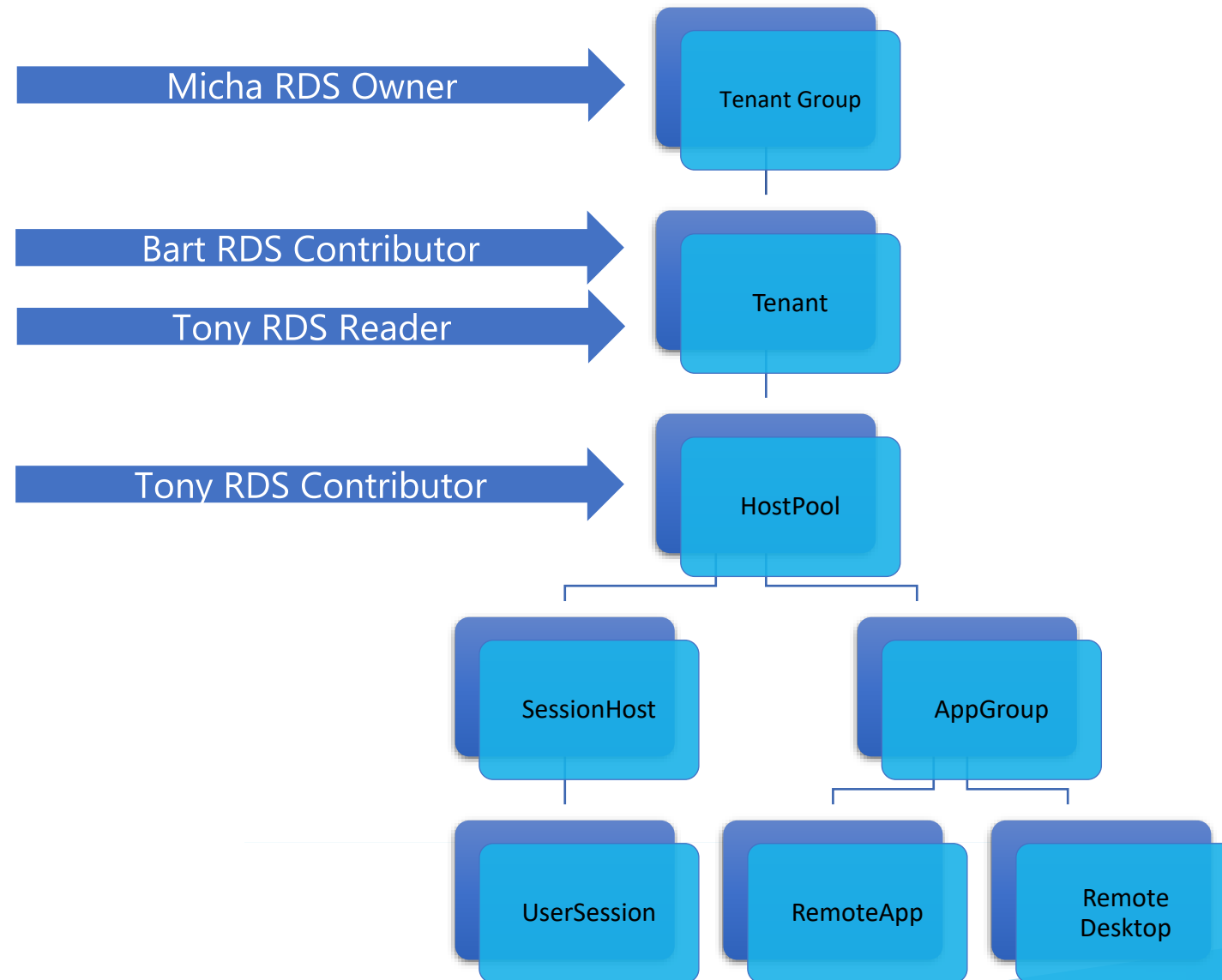
Fall 2019 edition



## WVD Fall 2019 Builtin roles

	Create (New-Rds*)	Read (Get-Rds*)	Update (Set-Rds*)	Delete (Remove-Rds*)	Authorize (* -RdsRoleAssignment)
RDS Owner					
RDS Contributor					
RDS Reader					
RDS Operator					
	(Diagnostic activity)				

## WVD Fall 2019 Role Model



# *Management*

Spring 2020 edition



### Principal

Azure AD user, group, or app  
Example: admin1@cloud-architect.be

### Role

Set of capabilities  
Example: Contributor

### Scope

Object instance  
Example: ca-win10-2004-hp

### Assignment

Principal + Role + Scope

Example:  
admin1 + Contributor + ca-win10-2004-hp

# WVD Spring 2020 → Azure RBAC

Microsoft Azure | Search resources, services, and docs (G+)

Home > Windows Virtual Desktop | Host pools > ca-win10-2004-hp | Access control (IAM)

Search (Ctrl+/) « + Add Edit columns Refresh Remove Got feedback?

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Settings Properties Locks Export template

Manage Application groups Session hosts

Monitoring Diagnostic settings

Support + troubleshooting New support request

Check access **Role assignments** Deny assignments Classic administrators Roles

Manage access to Azure resources for users, groups, service principals and managed identities at this scope by creating role assignments. [Learn more](#)

Number of role assignments for this subscription 13 / 2000

Name Type Role

Search by name or email All 2 selected

Scope Group by All scopes Role

7 items (4 Users, 3 Service Principals)

<input type="checkbox"/>	Name	Type	Role	Scope
<input type="checkbox"/>	Cloud.Architect BVE admin@CloudArchitect BV	User	Contributor	Subscription (Inherited)
<input type="checkbox"/>	Bart Roels (Guest) @micro...	User	Contributor	This resource
<input type="checkbox"/>	CA-Automation_Z1	App	Contributor	Subscription (Inherited)
<input type="checkbox"/>	MyAzureDevOpsSPI	App	Contributor	Subscription (Inherited)
<input type="checkbox"/>	Micha Wets michawets@clou...	User	Owner	Management group (Inhe...

## Principal

Azure AD user, group, or app  
Example: \*\*\*\*@microsoft.com

## Role

Set of capabilities  
Example: Contributor

## Scope

Object instance  
Example: ca-win10-2004-hp

## Assignment

Principal + Role + Scope

Example:  
Bart Roels + Contributor + ca-win10-2004-hp

# WVD Management options



## Management Fall 2019

- Powershell cmdlets  
Microsoft.RDInfra.RDPowerShell
- REST API
- Management UI (Github)
- ~~Diagnostics UI (Github)~~  
Log Analytics

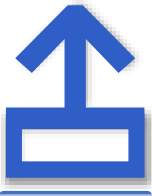


## Management Spring 2020

- Powershell cmdlets  
**Az.DesktopVirtualization**
- **Azure Management** REST API
- Management ➔ Azure Portal
- Log Analytics

# *Deployment*

## WVD Deployment options



### Out-Of-The-Box

- Azure Marketplace
- ARM templates



### Self Build

- Azure DevOps
- Azure Automation



### Hosting partners

Leverage multitenancy support to scale the number of customers



# *How to connect*



- » Windows Desktop client

(Windows 7, Windows 10 and Windows 10 IoT Enterprise)

- » Webclient (HTML5)

- » Android Client

- » macOS Client

- » iOS Client

## Joint solution

Windows 10 and Office 365 ProPlus experience to mobile Firstline workers on their Samsung mobile devices

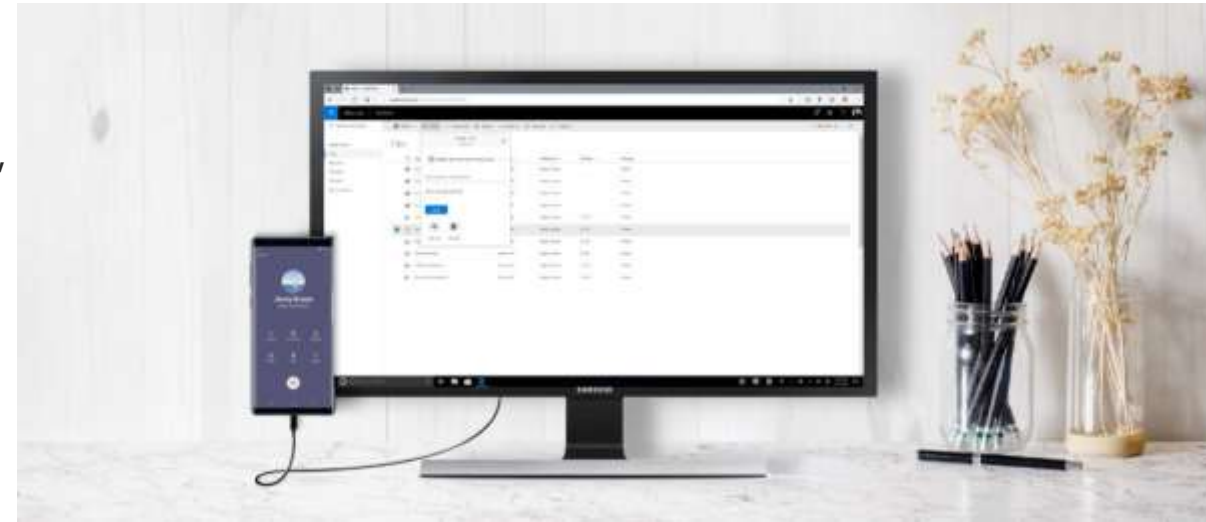
## Benefits



Full screen Windows 10 and Office 365 ProPlus experience from Samsung DeX-enabled mobile devices, providing the **Windows Virtual Desktop experience on an Android endpoint**

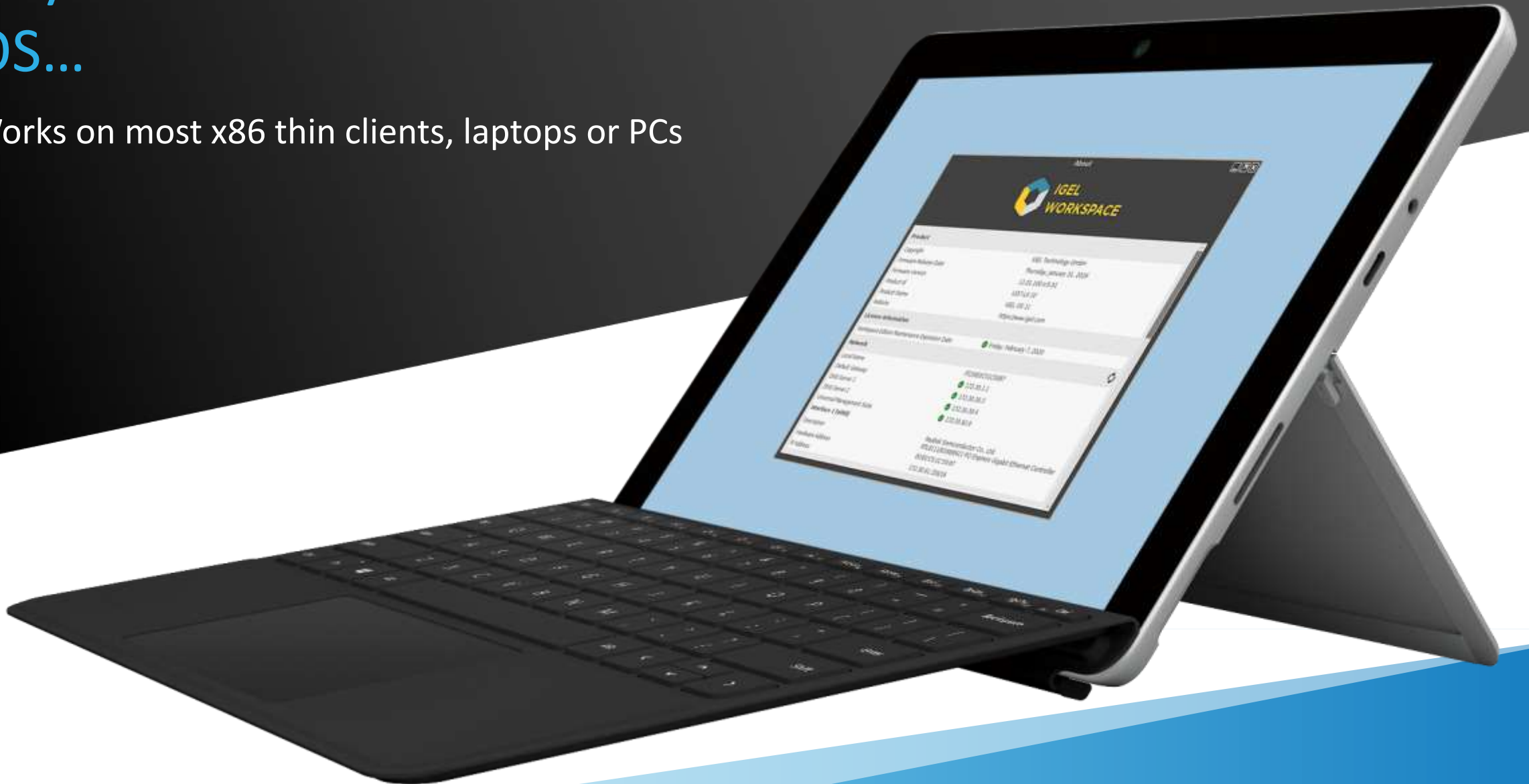


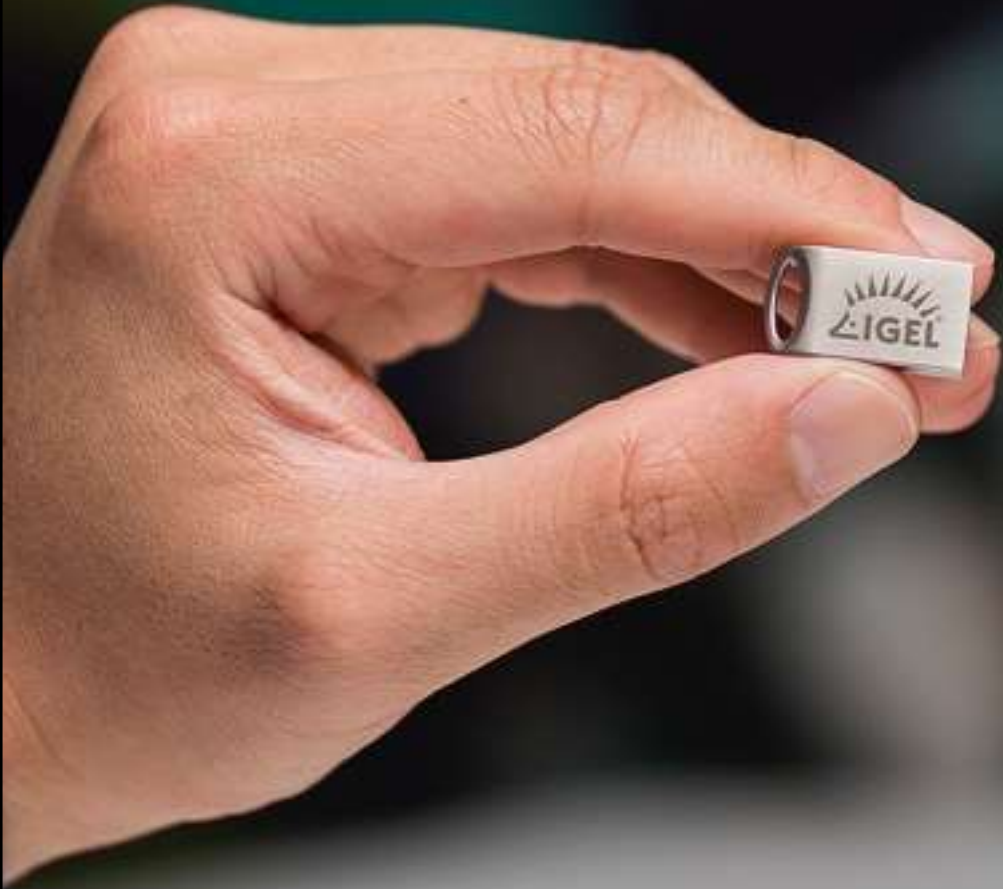
Enhanced mobility and productivity with **small and big screen experience**, allowing customers to seamlessly switch from one application to another



# Any Device can become an IGEL OS...

Works on most x86 thin clients, laptops or PCs





# UD POCKET

- **Next Generation OS** for Cloud workspaces on USB
- **Dual boot or convert**



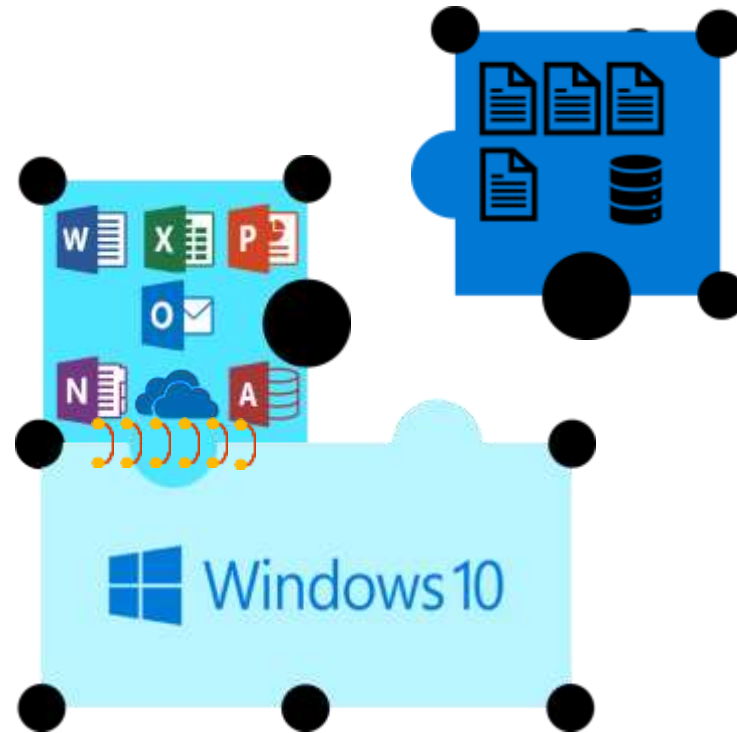
**Demo**

Igel OS on HyperV

# *Coming & New features for Windows Virtual Desktop*







FSLogix separates the user profile layer from the virtual machine

MSIX separates the **application layer** from the virtual machine



FSLogix separates the **user profile layer** from the virtual machine



# MSIX App Attach

All **benefits of MSIX** (declarative install, simple deployment, per user, OS Managed)



Native format is MSIX (**no re-packaging**)

MSIX Apps can be **stored off the windows disk**

Remotely **mount the apps** to the VM on-demand

Apps groups are assigned to users, and **available instantly**

**Looks and feels local** to the user and to windows

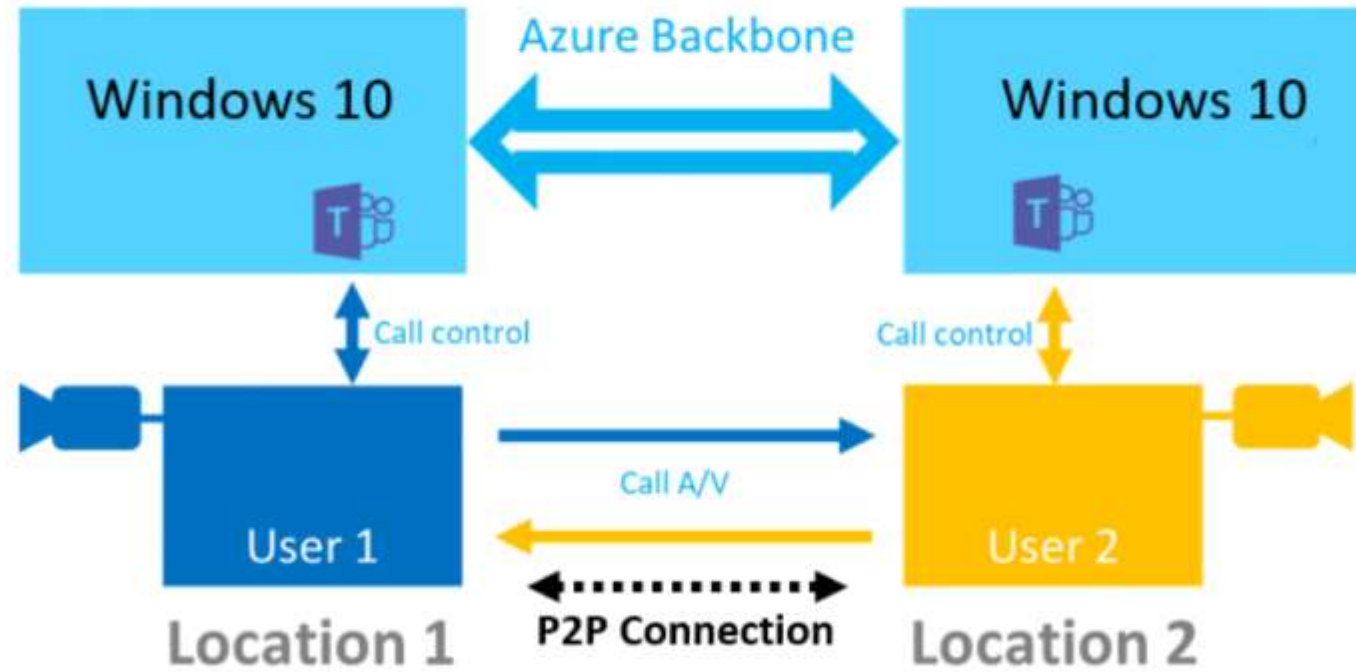
 IN PREVIEW

# Windows Virtual Desktop media optimization for Microsoft Teams is now available in preview

**Published date:** May 29, 2020

Media optimization for Microsoft Teams is now available for [Windows client for Windows Virtual Desktop](#). Media optimizations require Windows Desktop client version 1.2.1026.0 or later.

### WebRTC Enabled: Peer-to-peer Teams on WVD



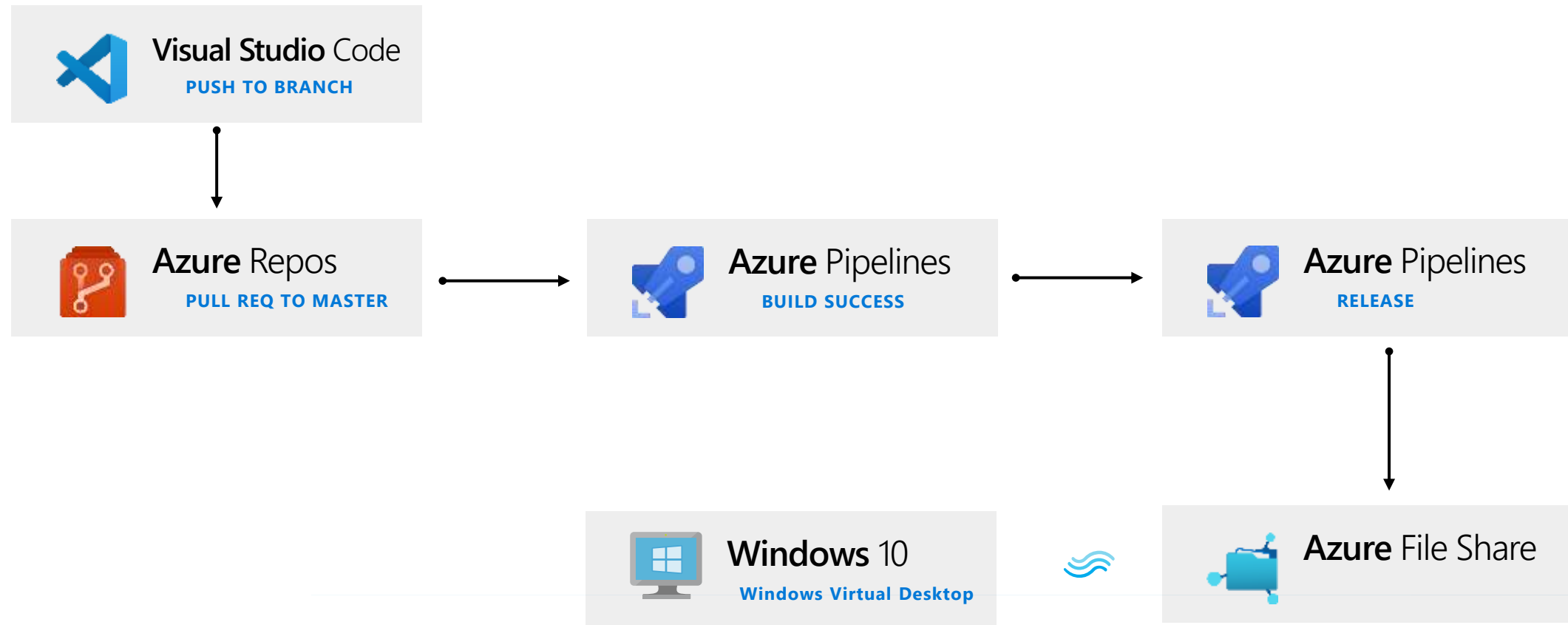


Demo

MSIX App Attach







# Utilizing Azure DevOps CI/CD pipelines



# Automatic MSIX App Attach script for WVD - Marcel Meurer

ITProCloud.de

HomeAboutShow all tagsAzure WebApp (3)Azure VM (2)PowerShell (7)Type and enter...

## ITProCloud Blog

This is my personal website, which I maintain to support the cloud community. ITProCloud.de is the label I use for tests and demonstrations. ITProCloud.de is not a company in the business sense.

### Automatic MSIX App Attach script for Windows Virtual Desktop

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## Automatic MSIX App Attach script for WVD

Microsoft provides a preview of MSIX app attach for Windows Virtual desktop. MSIX app attach gives you the possibility to only have a few amounts of images and connect your application to them - without installing. That sounds a little bit like App-V, and from a user perspective, this is slightly comparable:

You cannot see the application in the file system from outside the app. If you open the app and if you browse to the application folder, you can see this folder. The attaching and links in the start menu "feels" like the use of modern apps from the marketplace. And indeed: The application links in the start menu didn't refer to the exe-files in the program folder.

<https://blog.itprocloud.de/Automatic-MSIX-app-attach-scripts/>

@MarcelMeurer



# Automatic MSIX App Attach script for WVD - Marcel Meurer

The image displays two Windows File Explorer windows. The top window shows the 'packages' directory, and the bottom window shows the 'scripts' directory. Both windows are part of a larger application window titled 'Z:\packages'.

**Top Window: Z:\packages**

Address bar: This PC > msix-packages (\\cawvdarmmsixfilessa.file.core.windows.net) (Z:) > packages

Left sidebar: MyProfileShare (P:), msix-packages (\\cawvdarmmsixfiles...), cert, packages (selected), scripts

Name	Date modified	Type	Size
NotepadPlusPlus.7.7.1.vhd	26/04/2020 19:50	Hard Disk Image F...	57.484 KB
NotepadPlusPlus.7.7.1_7.7.1.0_x64__f58xhvsvdakmj.msix	26/04/2020 19:50	MSIX File	6.717 KB

**Bottom Window: Z:\scripts**

Address bar: This PC > msix-packages (\\cawvdarmmsixfilessa.file.core.windows.net) (Z:) > scripts

Left sidebar: Videos, Windows (C:), Temporary Storage (D:), MyProfileShare (P:), msix-packages (\\cawvdarmmsixfiles...), cert, packages, scripts (selected)

Name	Date modified	Type	Size
AppAttach.json	26/04/2020 19:50	JSON Source File	1 KB

1 item | 1 item selected 651 bytes

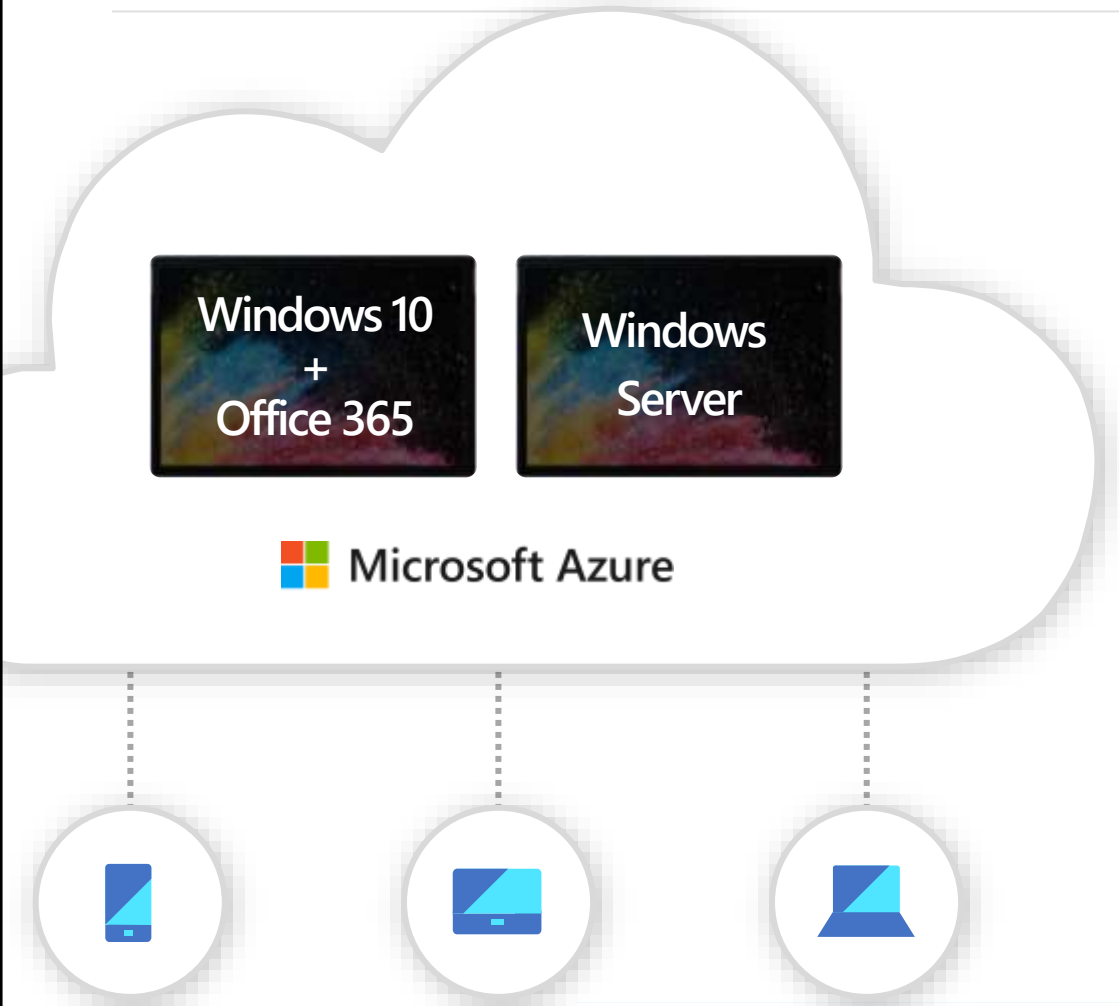


**Demo**

Azure DevOps for MSIX App Attach updates



## More on the roadmap



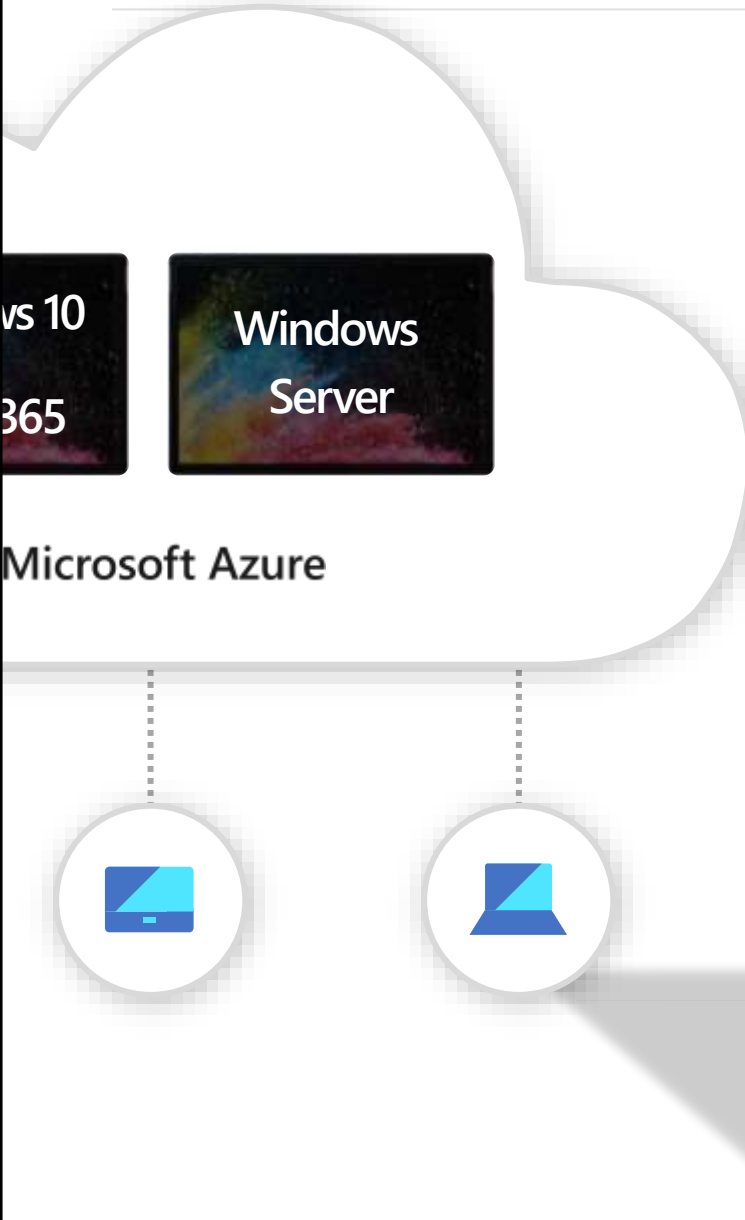
- **Available now:**

- **Thin Client** support
- Azure Files with native Active Directory support

- **Available soon:**

- Convert-UPDProfile & Convert-RoamingProfile
- MSIX App Attach
- More Azure Regions for Metadata & ARM objects
- More Azure Regions for the service
- Scaling for Spring 2020 update

## More on the roadmap



### Roadmap:

<https://www.microsoft.com/en-us/microsoft-365/roadmap?filters=Windows%20Virtual%20Desktop>

Windows Virtual Desktop: Customers can scale session hosts using Azure Automation with Spring update	In development	Q3 CY2020
Windows Virtual Desktop: Latency improvement in United Kingdom (UK)	In development	Q3 CY2020
Windows Virtual Desktop: Latency improvement in France	In development	Q3 CY2020
Windows Virtual Desktop: Latency improvement in Germany	In development	Q3 CY2020
Windows Virtual Desktop: Latency improvement in Norway	In development	Q3 CY2020
Windows Virtual Desktop: Latency improvement in Korea	In development	Q3 CY2020
Windows Virtual Desktop: Latency improvement in South Africa	In development	Q3 CY2020
Windows Virtual Desktop: Latency improvement in United Arab Emirates	In development	Q3 CY2020

# *Licensing*

# Most customers are already eligible for WVD



## Client

Customers are eligible to access Windows 10 single and multi session and Windows 7 with Windows Virtual Desktop (WVD) if they have one of the following licenses\*:

- Microsoft 365 E3/E5
- Microsoft 365 A3/A5/Student Use Benefits
- Microsoft 365 Business Premium \*\*
- Windows 10 Enterprise E3/E5
- Windows 10 Education A3/A5
- Windows 10 VDA per user



## Server

Customers are eligible to access Server (2012 R2 and up) workloads with Windows Virtual Desktop (WVD) if they have one of the following licenses:

- RDS CAL license with active Software Assurance (SA)



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

Take advantage of options such as [one-year or three-year Azure Reserved Virtual Machine Instances](#), which can save up to 72 percent versus pay-as-you-go pricing. [Now with monthly payment options!](#)

\* Customers can access Windows Virtual Desktop from their non-Windows Pro endpoints if they have a Microsoft 365 E3/E5/F1, Microsoft 365 A3/A5 or Windows 10 VDA per user license.

\*\* Microsoft 365 Business Premium was previously named Microsoft 365 Business prior to 21 April 2020.

# *Windows Virtual Desktop*

WEWC788 - Windows Virtual Desktop (Fall 2019 & Spring 2020 edition) -  
Technical Deep Dive

Micha Wets - Microsoft MVP | Cloud.Architect | ASPEX | MC2MC | Technine

Bart Roels - Partner Technology Strategist | Microsoft