

# Azure Virtual Desktop as a gaming console?

Freek Berson  
@fberson



*Workplace Ninja Virtual Edition 2021*



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# About Freek Berson

[www.wpninjas.eu](http://www.wpninjas.eu)

## Focus

Azure Virtual Desktop, RDS, Windows 365  
Bicep and ARM Templates

## From

The Netherlands

## Books

Getting started with Bicep  
AVD Handbook: Security Fundamentals  
AVD migration guide for RDS  
RDS - The Complete Guide



## Awards

Microsoft MVP since 2011

## Hobbies

Spending time with my wife & kids  
Cycling, soccer, traveling (pre COVID-19)

## Contact

@fberson  
[github.com/fberson](https://github.com/fberson)





# Agenda

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## Key takeaways:

- Get familiarized on benefits of GPU in remoting windows!
- Learn about Bicep Templates to deploy to Azure!
- Watching fun demos 😊
- Walk away with the Bicep code!



### INTRODUCTION

What is AVD and what does Windows 365 add?



### USING GPU IN REMOTING WINDOWS

Why and how?



### DEPLOYING OUR SCENARIO USING BICEP

Using Bicep Templates to deploy to Azure



### SCENARIO IN ACTION

Various fun demos!



### TAKEAWAYS & CALL TO ACTIONS

Links to all source code and guidance on getting started!



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# Azure Virtual Desktop

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## Your subscription—your control

### Desktop and remote apps



Full desktop



Remote app



Windows 10 enterprise multi-session



Windows Server 2012 R2 and newer



Windows 10 enterprise



Windows 7 enterprise full desktop

### Management and policies



Image, app, and profile management



User density, VM sizing, and scaling policies



User management and identity



Network policies

## Managed by Microsoft

### Azure Virtual Desktop Service



Clients



Broker



Management



Gateway



Diagnostics



Load balancing

### Azure Infrastructure



Compute



Storage



Networking



HTML5



iOS



Android



Windows




Linux




# Windows 365 – Cloud PC

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- ✓ Leveraging the **AVD Platform**
- ✓ Azure AD Joined **personal desktops**
- ✓ Per-user per-month **fixed license (24/7 access)**
- ✓ **MEM** is used to manage all of your Cloud PCs.
- ✓ **Business** and **Enterprise** editions

**Freek Berson**  
[Reset password](#)

Account | Devices | **Licenses and apps** | Mail | OneDrive

 The trial subscription for Windows 365 Business 4 vCPU, 16 GB, 128 GB Trial expires on 10/1/2021. Buy this subscription so they won't lose access when the trial ends.  
[Buy this subscription](#)

Select location \*  
Netherlands

Licenses (3)


☒ **Microsoft Power Automate Free**  
9999 of 10000 licenses available

☒ **Microsoft Teams Exploratory**  
96 of 100 licenses available


☒ **Windows 365 Business 4 vCPU, 16 GB, 128 GB**  
0 of 1 licenses available


← → ↺ 🏠 <https://windows365.microsoft.com>


Windows 365

 **Welcome Freek Berson**


Quick actions


 Manage your organization  
Manage users and assign licenses for Microsoft 365 products.


 Download Remote Desktop  
Access your cloud PC directly from your device with the Remote Deskto...


 Get more cloud PCs  
Add more cloud PCs to your subscription for you and your team.


**Your cloud PCs**


**VSB\_Policy\_with\_Micro...**  
Last connected 1 day ago  
4 vCPU  
16GB RAM  
128GB Storage

 Restart

 Reset

 Rename

 Troubleshoot

 Open in browser





# WHY: GPU in Remoting Windows

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Many applications benefit from GPU to increase performance and user experience!

DEMO: GPU vs non-GPU

The screenshot shows a remote desktop session with several overlapping windows. In the foreground, a 'Speedtest' window displays network performance metrics: PING at 2 ms, DOWNLOAD at 13000.41 Mbps, and UPLOAD at 7953.92 Mbps. A large 'GO' button is visible below these metrics. To the right, a 'Remote Desktop' connection window is open, showing connection status and details. The connection is confirmed as good with UDP enabled. It lists client details (version 1.2.2222.0, Windows 10 Pro x64) and network details (UDP transport, 10 ms round-trip time, bandwidth > 231 Mbps, 39 FPS frame rate). Server details include the session type (Remote desktop), gateway name, and remote computer name (wvdfbgp2012-1.wvd.ninja). Other background windows include a SolidWorks CAD application, a Windows taskbar with icons for Google, Windows, Firefox, and Adobe Creative Cloud, and a 3D architectural rendering of a building.

Metric	Value	Unit
PING	2	ms
DOWNLOAD	13000.41	Mbps
UPLOAD	7953.92	Mbps

**Remote Desktop Connection Details:**

- Timestamp (UTC): 2021-08-10T15:27:59.548Z
- Activity ID: 9c51eefc-7771-40ee-949c-302c5a0a0000
- [Client details]
  - Client version: 1.2.2222.0 (x64)
  - Local OS: Windows 10 Pro x64 (10.0, Build 19042)
- [Network details]
  - Transport protocol: UDP
  - Round-trip time: 10 ms
  - Available bandwidth: Greater than 231 Mbps
  - Frame rate: 39 FPS
- [Server details]
  - Remote session type: Remote desktop
  - Gateway name: afdfp-rdgateway-r1.wvd.microsoft.com:443
  - Remote computer: wvdfbgp2012-1.wvd.ninja

Details refresh automatically every second. Press Ctrl+C to copy.



# HOW: GPU in Remoting Windows

## ✓ Choose a GPU enabled SKU

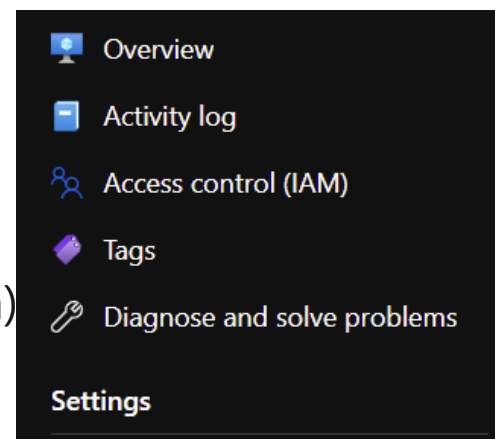
- ✓ NV-series (Nvidia Tesla M60)
- ✓ NVv3-series (Nvidia Tesla M60 + more CPU & mem)
- ✓ NVv4-series (AMD Radeon Instinct MI25)
- ✓ NVv5-series ?

## ✓ Install the GPU Drivers

- ✓ Using Azure VM Extensions
- ✓ Install driver manually
- ✓ Verify installation (device manager)

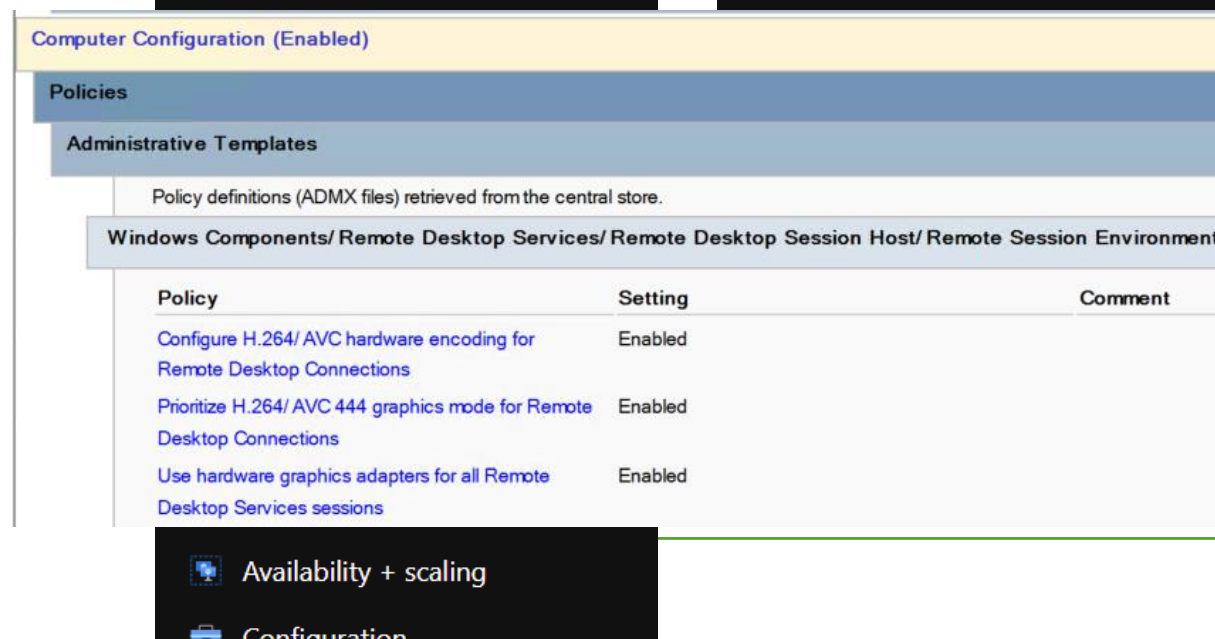
## ✓ Configure GPU remoting

- ✓ GPO, Intune
- ✓ Registry
- ✓ 3rd party



vCPU	Memory GiB	GPU
6	56	1
12	112	2

New resource

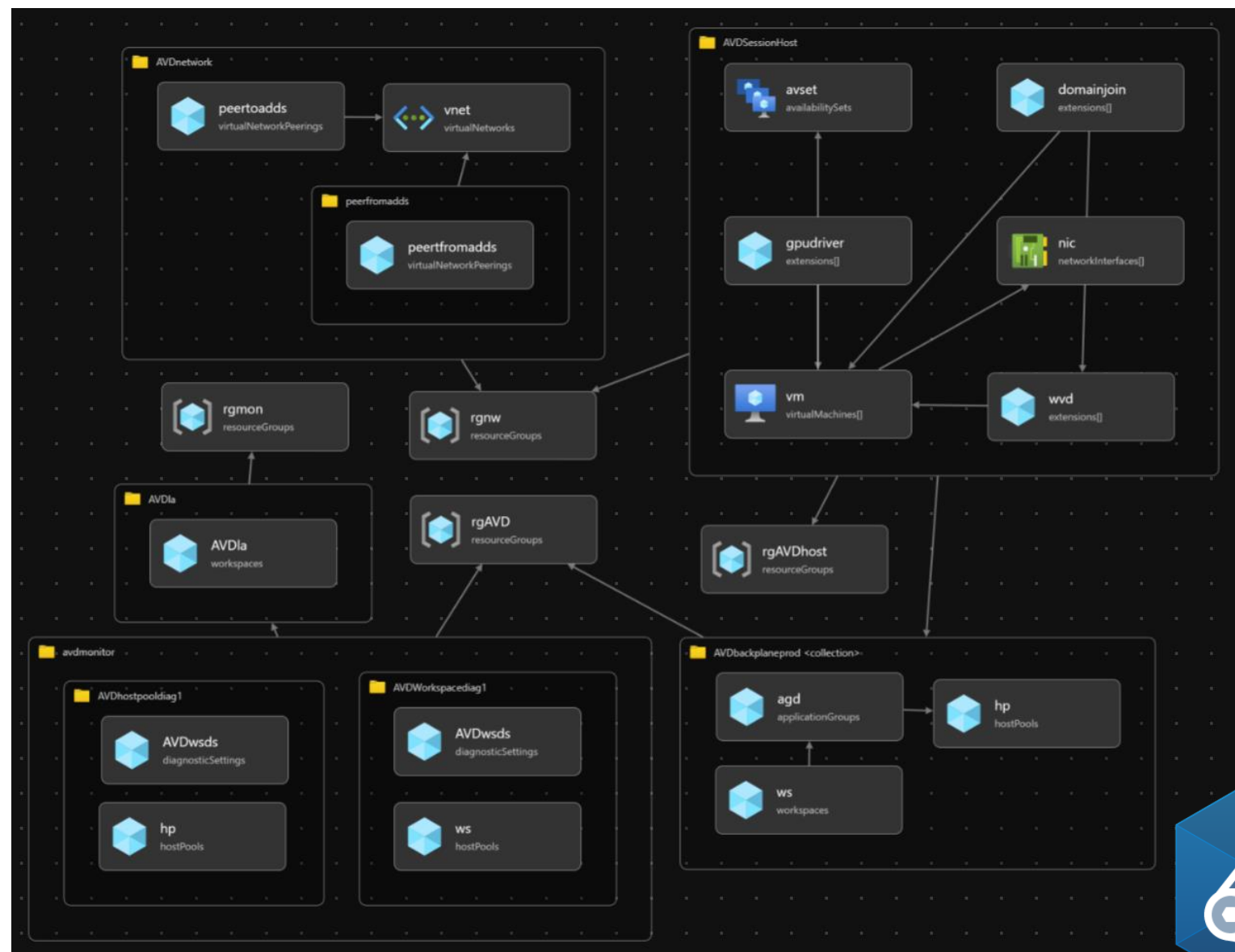
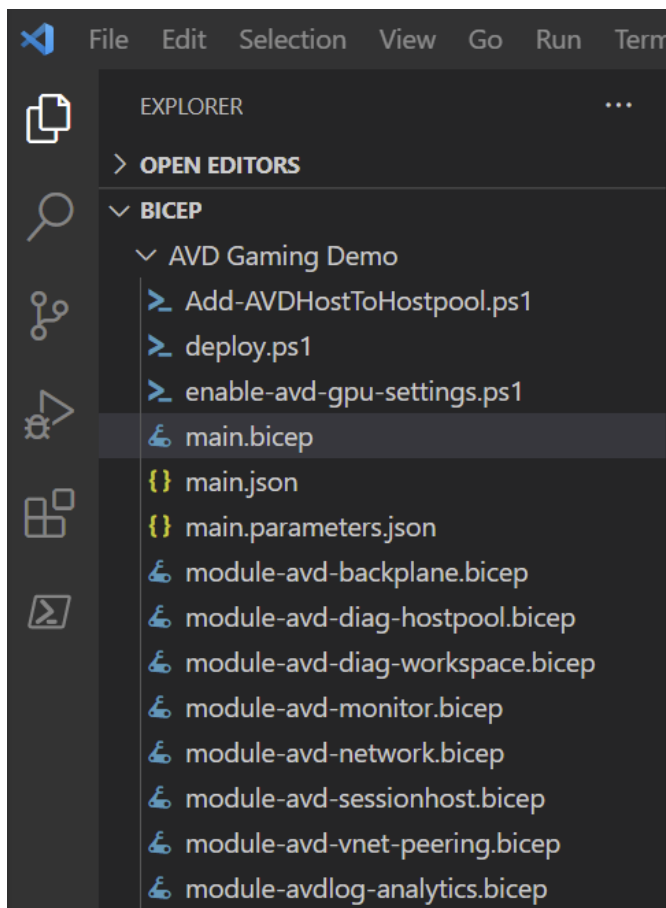






# DEMO: Deploying the scenario with Bicep

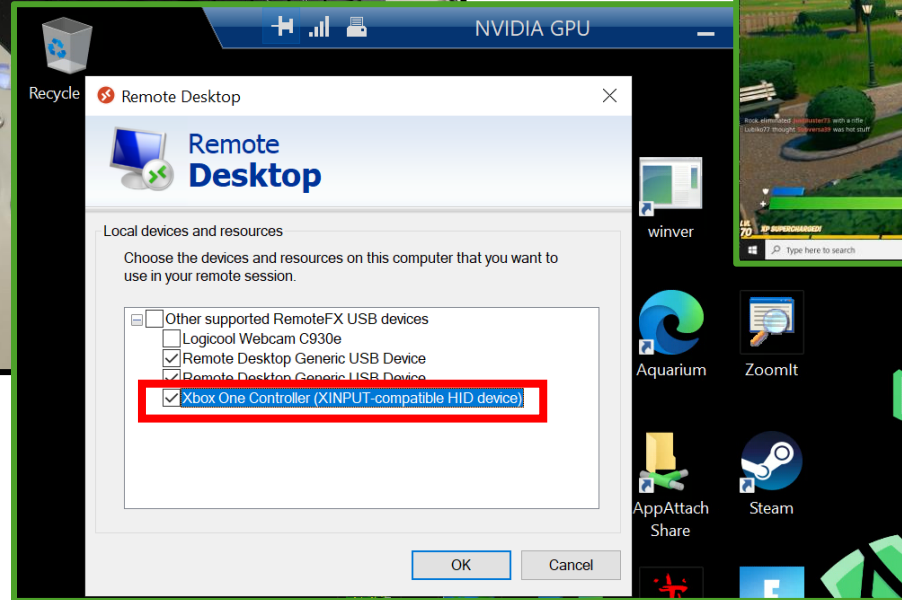
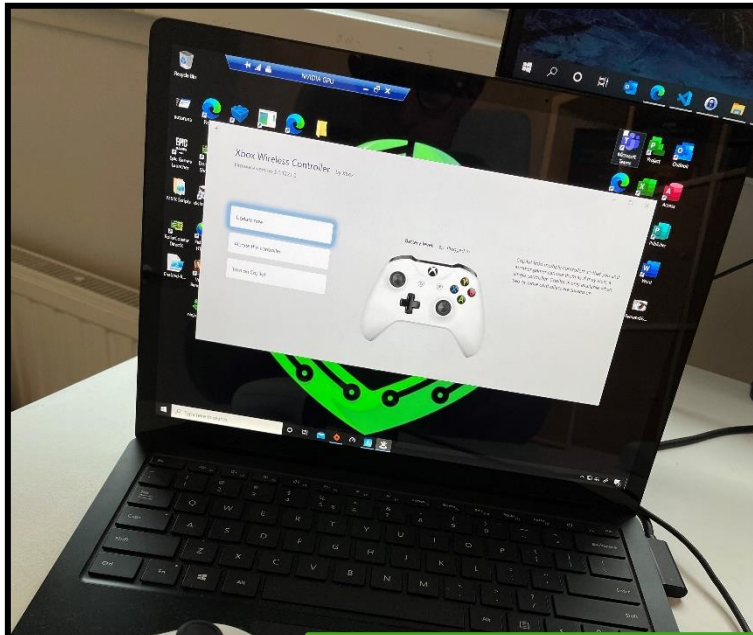
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@fberson: Tweet about this session and win a copy of the book 'Getting started with Bicep'

# DEMO: AVD Gaming console

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# AVD Multimedia Redirection (preview)

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The image compares two scenarios of AVD Multimedia redirection. Both scenarios show a Windows 10 desktop with a 'Saona Island' background image and a 'CPU Intel(R) Xeon(R) Platinum 8171L' task manager window. The left scenario, 'AVD Multimedia redirection enabled', shows a task manager window with low CPU usage (37%) and a smooth video experience. The right scenario, 'AVD Multimedia redirection disabled', shows a task manager window with high CPU usage (17%) and a video that stutters, indicated by a white circle around the video player.

**AVD Multimedia redirection enabled**  
Less remote CPU usage  
Local GPU leveraged  
Smooth experience

**AVD Session**  
Standard\_D4s\_v3  
YouTube video in Edge  
at 4k 2160P

**AVD Multimedia redirection disabled**  
High remote CPU usage  
Local GPU not leveraged  
Video stutters

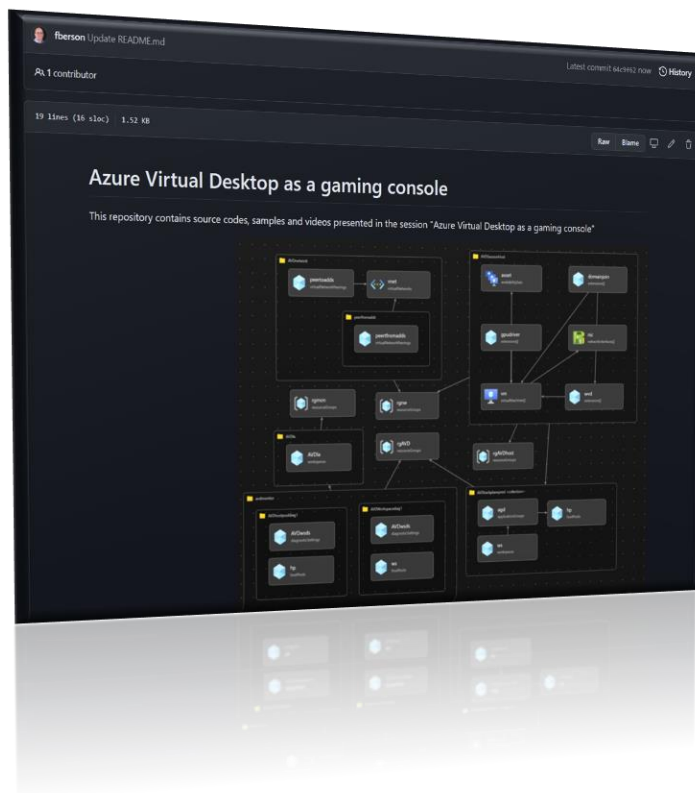


<https://www.youtube.com/watch?v=i1Z4EuPDoCw>

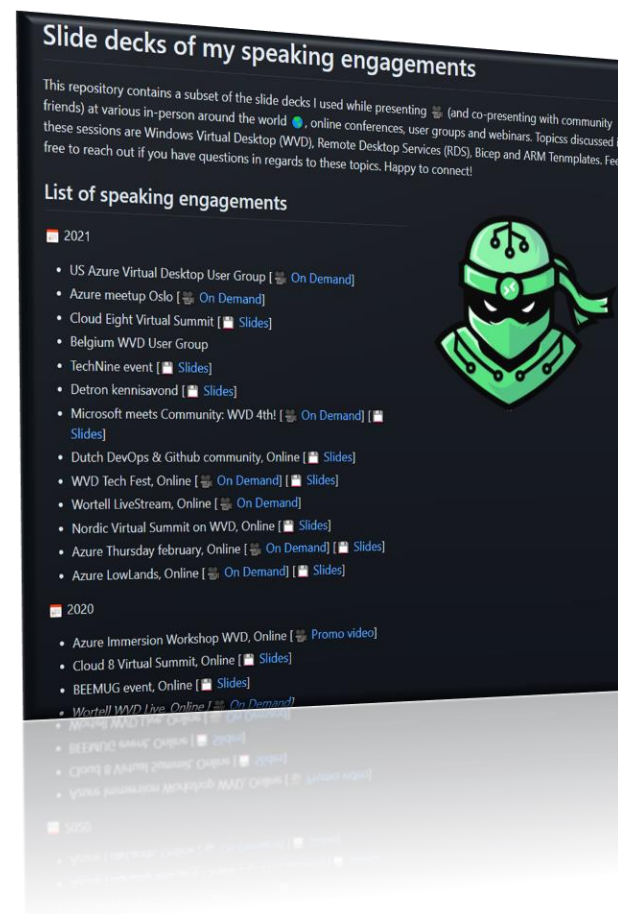


# Call to action!

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<https://bit.ly/3AAcwfW>



<https://github.com/fberson/Slidedecks>



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**Thank You**



Freek Berson  
@fberson  
freek@wortell.nl  
TheMicrosoftPlatform.net



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