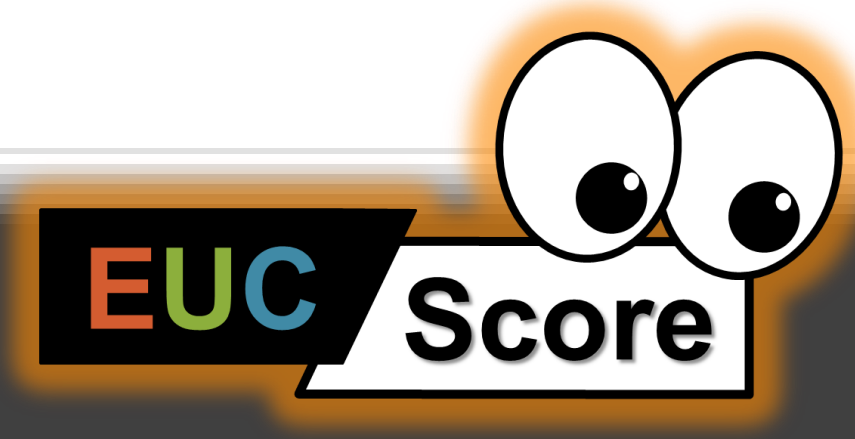


Deep Dive: A Comparison of RDP, HDX, Blast, and PCoIP Under Various DaaS Infrastructure Conditions

E2EMVC 2026, Berlin

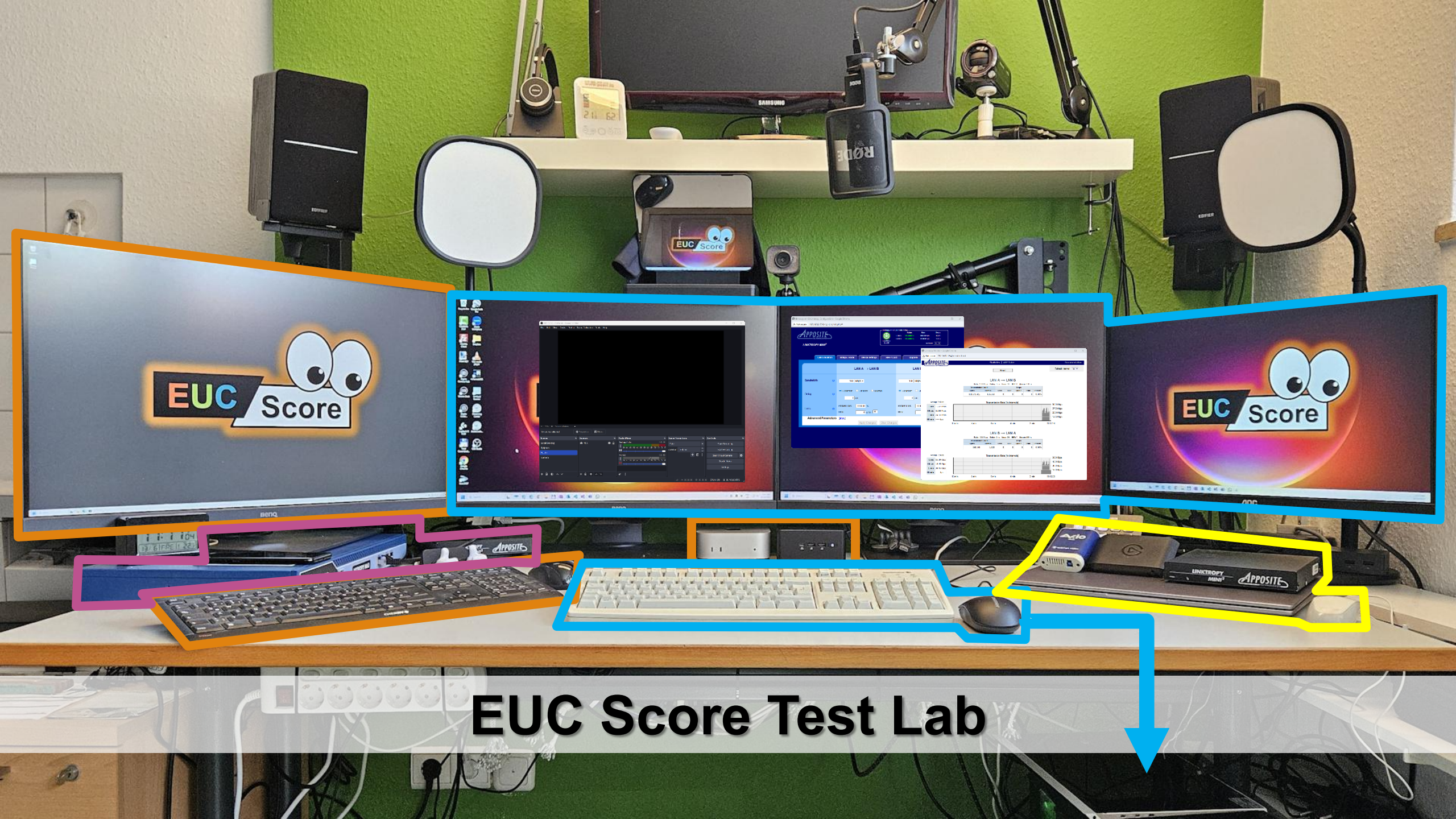
Dr. Benny Tritsch | Independent Performance Data Scientist
info@eucscore.com | https://drtritsch.com | linkedin.com/in/drtritsch

Community Day

When: Thursday, June 25, 2026
Where: Darmstadt, Germany
Sign up: https://www.eucforum.de/

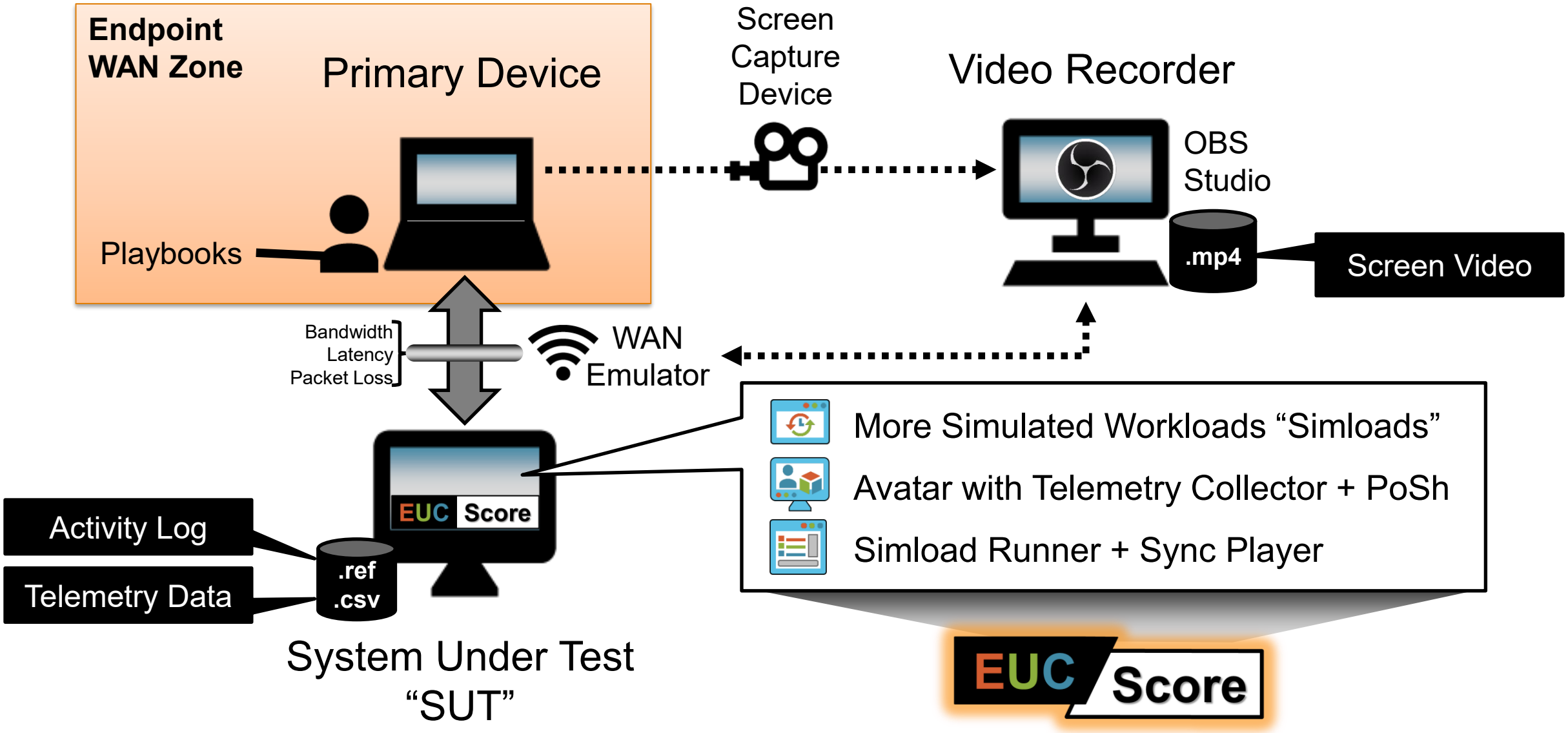
Recent EUC Score Community Tests

- AVD multi-user tests on an E8ds v5 VM with 0, 4, and 8 noisy neighbors, together with Auxilium IT
- Review of HDX Graphics Superresolution Upscaling on a D2s v5 VM, together with Ferroque
- Comparison of SxS RDP, Classic RDP, HDX, Blast, FRP, and PCoIP on Win365 and D8s v5 VMs under different network conditions
- Comparison of SxS RDP, HDX, Blast, FRP, and PCoIP on NV6adsA10 v5 VMs under different network conditions
- Comparison of different Windows OS optimizers on AVD (D8ads v7), together with Markus Zehnle (presented in a separate session)



EUC Score Test Lab

EUC Score Enterprise Test Lab



My WAN Emulator Settings

Name	Bandwidth	Latency	Packet Loss	Identifier
Unconstrained	**100mbps**	**0ms**	**0% (0.01%)**	**100mbps-0ms-0.0**
High packet loss	**100mbps**	**0ms**	**2.0%**	**100mbps-0ms-2.0**
High latency	**100mbps**	**100ms**	**0%**	**100mbps-100ms-0.0**
Low bandwidth	**8mbps**	**0ms**	**0%**	**8mbps-0ms-0.0**
Very high packet loss	100mbps	0ms	5.0%	100mbps-0ms-5.0
Very high latency	100mbps	300ms	0%	100mbps-300ms-0.0
Very low bandwidth	2mbps	0ms	0%	2mbps-0ms-0.0

Community Test Results – The Full Picture

Single View Results

Microsoft Windows 365 | 4 AMD vCPUs [123 test runs]
Microsoft Windows 365 | 8 INTEL vCPUs [117 test runs]
Azure D8ads v7 | AVD | 8 AMD vCPUs | OS Optimizers [108 test runs]
Azure D8s v5 | Windows 11 Cloud PC | 8 INTEL vCPUs [168 test runs]
Azure D2s v5 | Citrix CVAD | 2 INTEL vCPUs | HDX Superresolution [56 test runs]
Citrix for Windows 365 | 8 INTEL vCPUs [181 test runs]
Azure D8s v5 | Citrix CVAD | 8 INTEL vCPUs [167 test runs]
Omnissa Horizon with Windows 365 | 8 INTEL vCPUs [110 test runs]
Azure D4s v5 | Dizzion Cloud Desktop | 4 INTEL vCPUs [30 test runs]
Azure D8s v5 | Dizzion Cloud Desktop | 8 INTEL vCPUs [225 test runs]
Azure D8s v5 | HP Anyware | 8 INTEL vCPUs [96 test runs]

Azure NV6adsA10 | AVD | 6 AMD vCPUs | A10-4Q [157 test runs]
Azure NV6adsA10 | Citrix on AVD | 6 AMD vCPUs | A10-4Q [119 test runs]
Azure NV6adsA10 | Omnissa on AVD | 6 AMD vCPUs | A10-4Q [275 test runs]
Azure NV6adsA10 | HP Anyware | 6 AMD vCPUs | A10-4Q [128 test runs]
Windows 365 GPU Standard | 12 AMD vCPUs | A10-8Q GPU [32 test runs]
Windows 365 GPU Super | 18 AMD vCPUs | A10-12Q GPU [147 test runs]

Side-by-Side View Results

SxS RDP on Win365 under different network conditions | 8 vCPUs [87 comparisons]
SxS RDP on D8adsv7 with different OS optimizers | 8 vCPUs [81 comparisons]
HDX on Win365 under different network conditions | 8 vCPUs [152 comparisons]
HDX on D8sv5 versus HDX on Citrix for Windows 365 | 8 vCPUs [167 comparisons]
HDX on D2sv5 versus HDX Superresolution on D2sv5 | 2 vCPUs [27 comparisons]
HDX on D8sv5 versus SxS RDP on Win365 | 8 vCPUs [98 comparisons]
HDX on D8sv5 versus Classic RDP on D8sv5 | 8 vCPUs [167 comparisons]
Blast on Win365 versus SxS RDP on Win365 | 8 vCPUs [110 comparisons]
FRP on D8sv5 under different network and infra conditions | 8 vCPUs [225 comparisons]
FRP on D8sv5 versus HDX on D8sv5 | 8 vCPUs [168 comparisons]
FRP on D8sv5 versus Classic RDP on D8sv5 | 8 vCPUs [168 comparisons]
PCoIP on D8sv5 under different network conditions | 8 vCPUs [72 comparisons]
PCoIP on D8sv5 versus SxS RDP on Win365 | 8 vCPUs [80 comparisons]

SxS RDP on NV6adsA10 under different network conditions | 6 vCPUs | A10-4Q [114]
HDX on NV6adsA10 under different network conditions | 6 vCPUs | A10-4Q [114]
HDX on NV6adsA10 versus SxS RDP on NV6adsA10 | 6 vCPUs | A10-4Q [157]
Blast on NV6adsA10 under different network conditions | 6 vCPUs | A10-4Q [232]
Blast on NV6adsA10 versus SxS RDP on NV6adsA10 | 6 vCPUs | A10-4Q [156]
PCoIP on NV6adsA10 under different network conditions | 6 vCPUs | A10-4Q [92]
PCoIP on NV6adsA10 versus SxS RDP on NV6adsA10 | 6 vCPUs | A10-4Q [128]
SxS RDP on Win365 GPU Super under diff. network conditions | 18 vCPUs | A10-12Q [86]

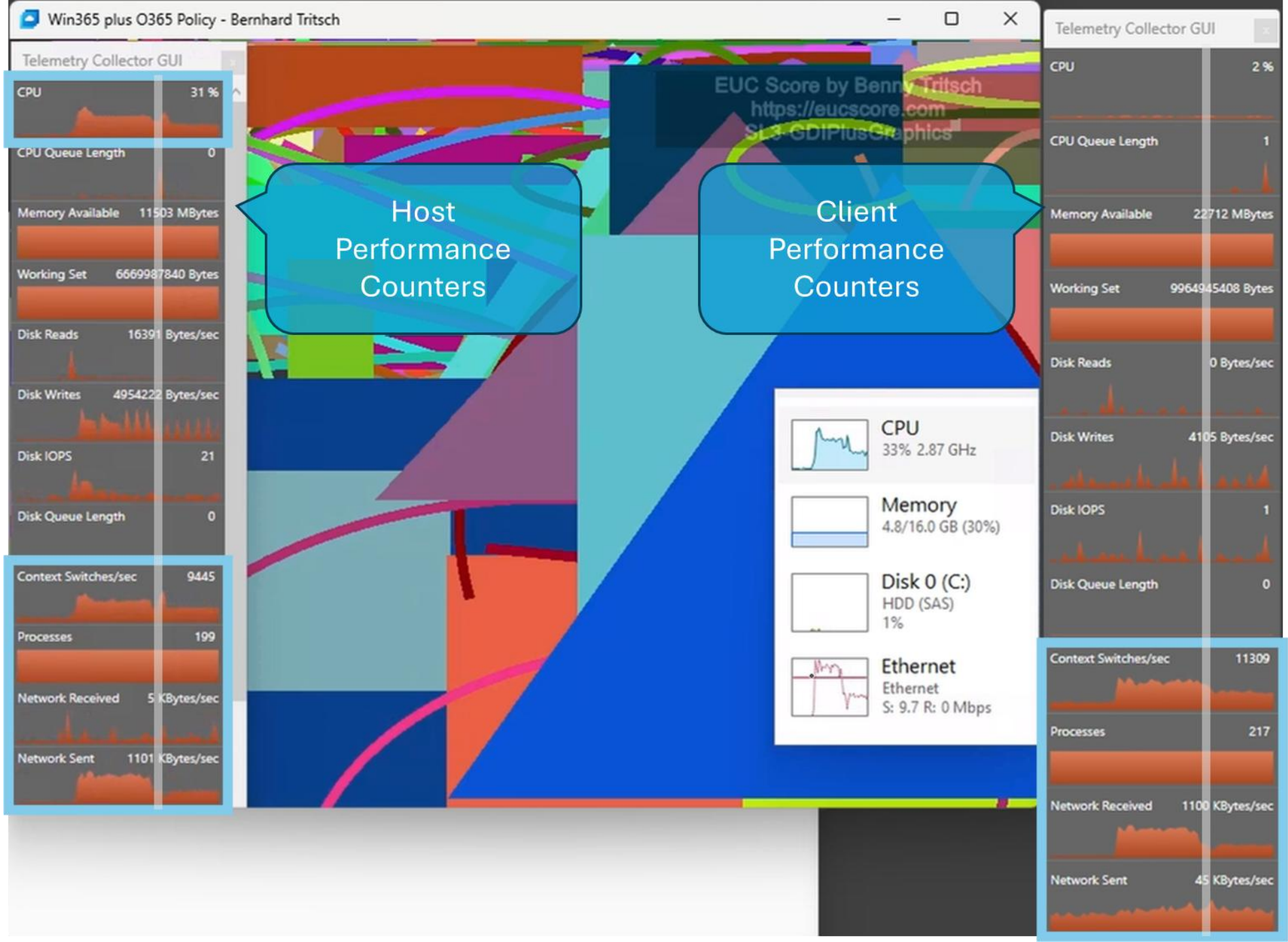
Noisy Neighbors on Multi-User AVD

Score Simloads – Noisy Neighbors

Score Simload / VM Type – Noisy Neighbors	App Dialog	App Start	GDI+ Graphics	GDI+ Rectangles	White Noise	IOPS	User Profile Large	User Profile Small
AVD E8ds v5 – 0 Noisy Neighbors	0.30	0.64	5.28	1.15	40.88	3.69	9.65	3.86
AVD E8ds v5 – 4 Noisy Neighbors	0.31	0.75	9.46	2.46	73.96	5.70	9.57	4.18
AVD E8ds v5 – 8 Noisy Neighbors	0.49	1.88	46.21	12.27	252.8	10.80	31.04	15.03

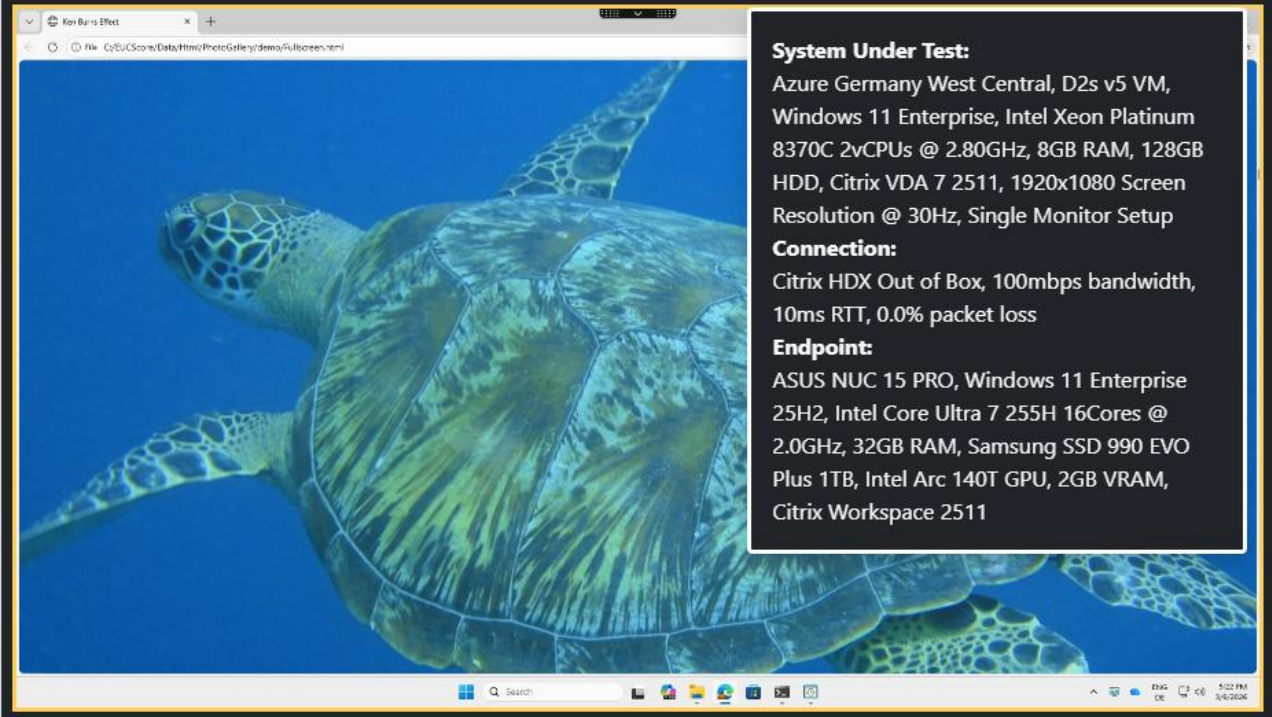
DrTritsch.com

How Screen Resolution Impacts AVD Resource Consumption - And Why Minimized Windows Behave Differently



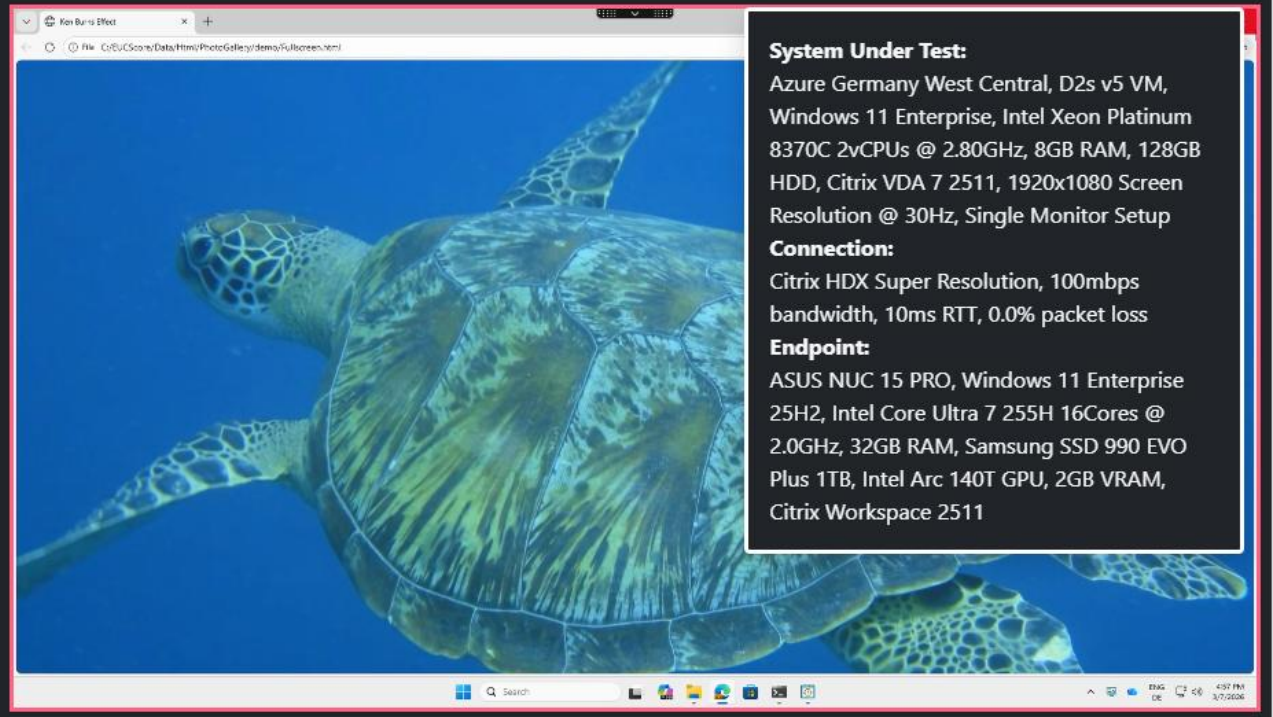
HDX Superresolution Upscaling

SL1-MSEdgePhotoGalleryJS on Azure D2s v5 | 2 vCPUs (Intel) | HDX OOB (100mbps, 10ms RTT, 0.0%)

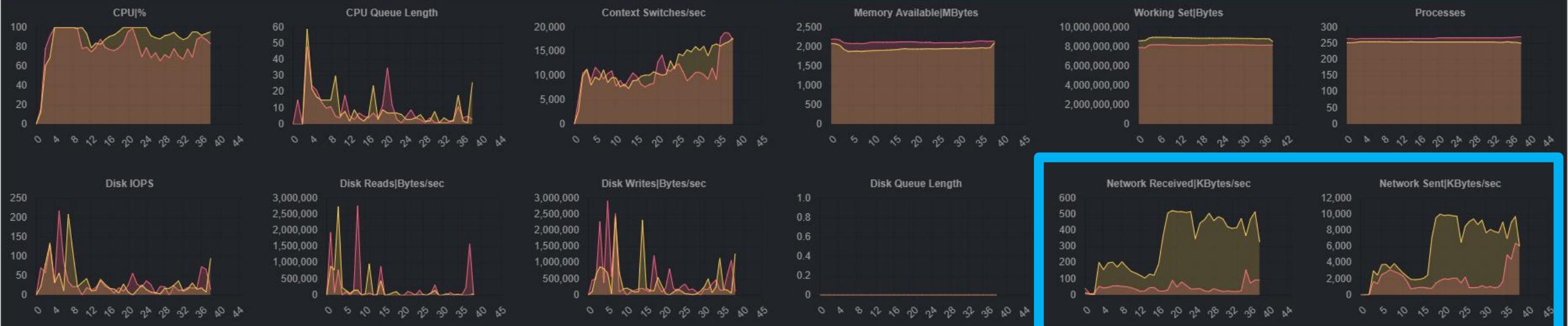


System Under Test:
Azure Germany West Central, D2s v5 VM, Windows 11 Enterprise, Intel Xeon Platinum 8370C 2vCPUs @ 2.80GHz, 8GB RAM, 128GB HDD, Citrix VDA 7 2511, 1920x1080 Screen Resolution @ 30Hz, Single Monitor Setup
Connection:
Citrix HDX Out of Box, 100mbps bandwidth, 10ms RTT, 0.0% packet loss
Endpoint:
ASUS NUC 15 PRO, Windows 11 Enterprise 25H2, Intel Core Ultra 7 255H 16Cores @ 2.0GHz, 32GB RAM, Samsung SSD 990 EVO Plus 1TB, Intel Arc 140T GPU, 2GB VRAM, Citrix Workspace 2511

SL1-MSEdgePhotoGalleryJS on Azure D2s v5 | 2 vCPUs (Intel) | HDX SuperRes2 (100mbps, 10ms RTT, 0.0%)

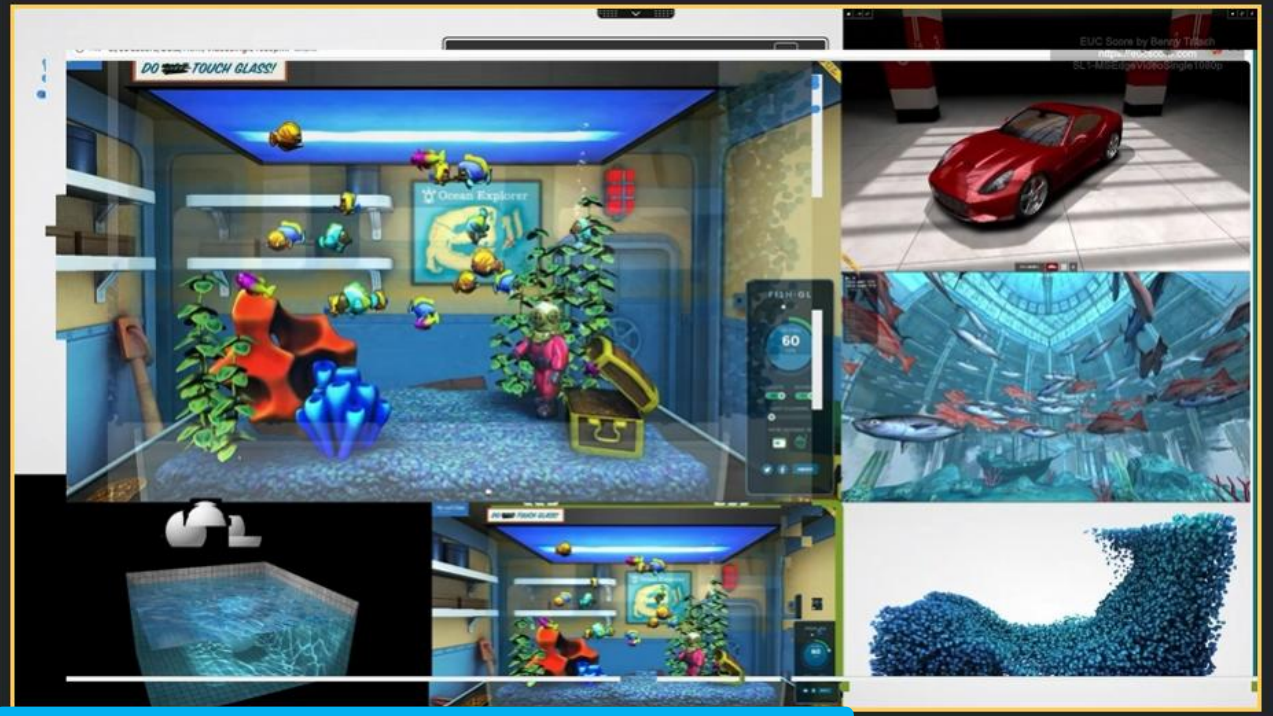


System Under Test:
Azure Germany West Central, D2s v5 VM, Windows 11 Enterprise, Intel Xeon Platinum 8370C 2vCPUs @ 2.80GHz, 8GB RAM, 128GB HDD, Citrix VDA 7 2511, 1920x1080 Screen Resolution @ 30Hz, Single Monitor Setup
Connection:
Citrix HDX Super Resolution, 100mbps bandwidth, 10ms RTT, 0.0% packet loss
Endpoint:
ASUS NUC 15 PRO, Windows 11 Enterprise 25H2, Intel Core Ultra 7 255H 16Cores @ 2.0GHz, 32GB RAM, Samsung SSD 990 EVO Plus 1TB, Intel Arc 140T GPU, 2GB VRAM, Citrix Workspace 2511



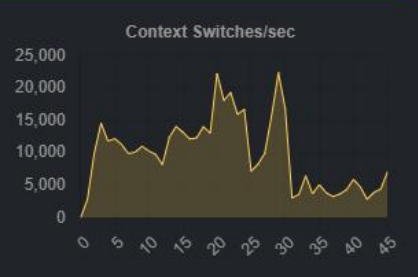
00:00:38 00:00:45 Help Report

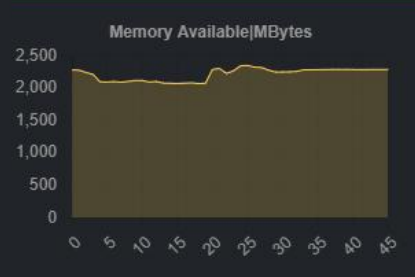
SL1-MSEdgeVideoSingle1080p on Azure D2s v5 | 2 vCPUs (Intel) | HDX SuperRes2 (100mbps, 10ms RTT, 0.0%)

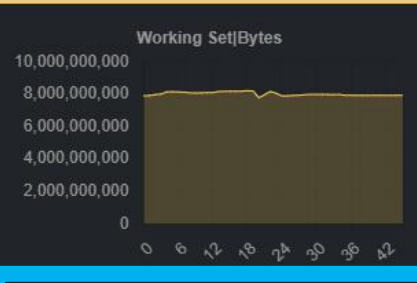


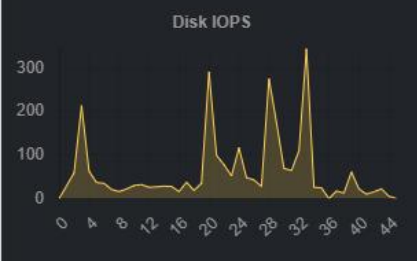
SL1-MSEdgeVideoSingle1080p on Azure D2s v5 | 2 vCPUs (Intel) | HDX SuperRes2 (100mbps, 10ms RTT, 0.0%)

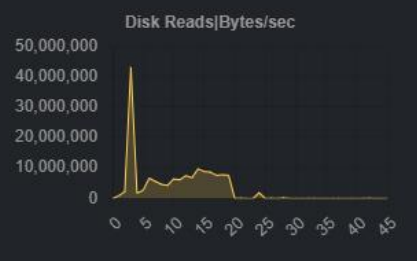
```
00:00:00.000  Date: 2026/03/07 | Time: 17:02:19.844 | AppName: msedge.exe
00:00:00.000  Simload: SL1-MSEdgeVideoSingle1080p | Computername: FSI-DE-8WD46 | Username: BennyTritsch
00:00:00.000  Number of Monitors: 1 | Default Monitor: 1 (0 0 1920 1080)
00:00:00.000  Pre-Simload countdown screen was visible for 1 sec
00:00:00.000  Delay between Simload start time and activity log start time: 1.185 sec
00:00:01.219  Initialize settings
00:00:02.635  App launch time: 1108 ms
00:00:02.910  Run action initiated
00:00:03.918  Video size is 100%
00:00:30.204  Set video to fullscreen
```

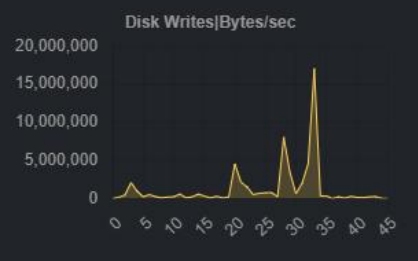


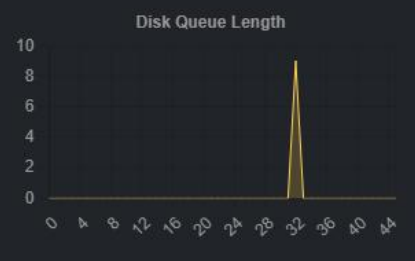


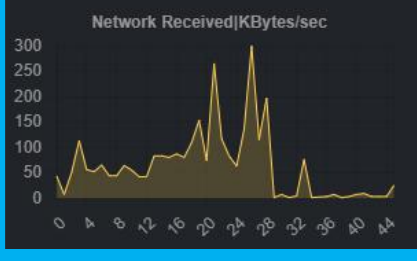


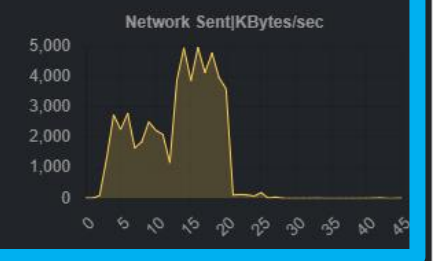






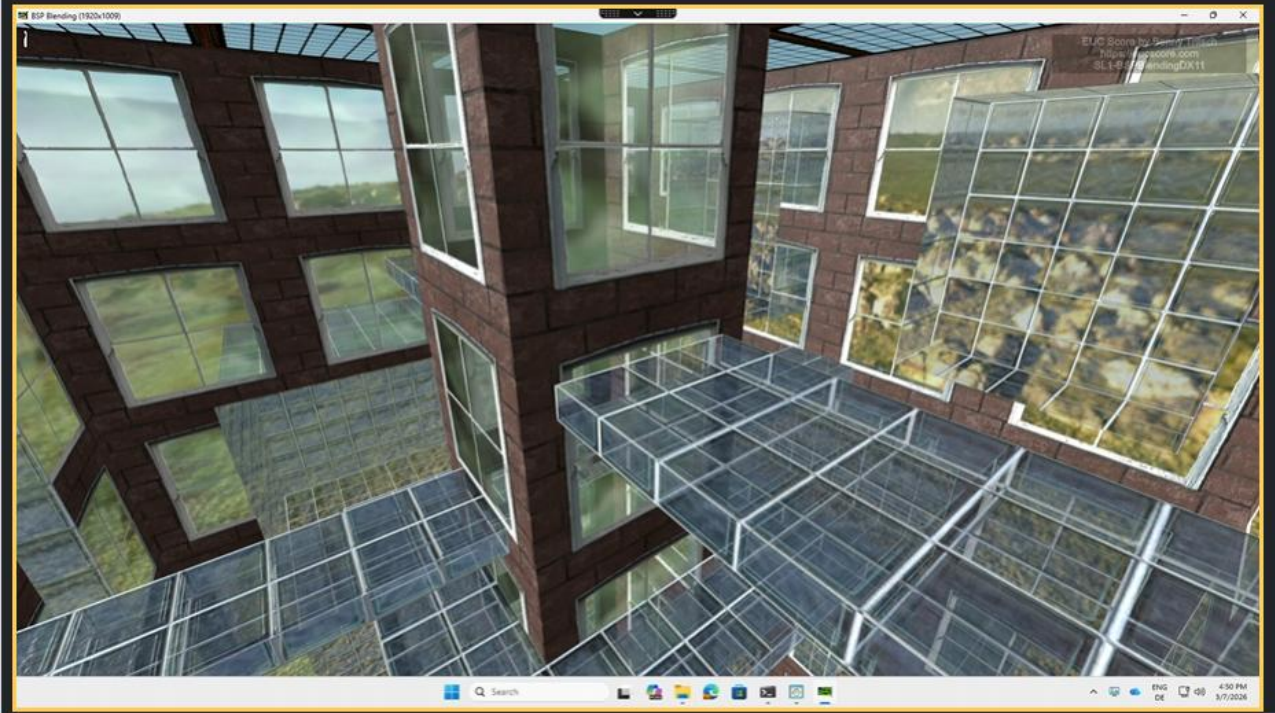






00:00:45 00:00:45 Help Report

SL1-BSPBlendingDX11 on Azure D2s v5 | 2 vCPUs (Intel) | HDX SuperRes2 (100mbps, 10ms RTT, 0.0%)



SL1-BSPBlendingDX11 on Azure D2s v5 | 2 vCPUs (Intel) | HDX SuperRes2 (100mbps, 10ms RTT, 0.0%)

00:00:00.000	Date: 2026/03/07 | Time: 16:49:16.388 | AppName: BSPBlendi
00:00:00.000	Simload: SL1-BSPBlendingDX11 | Computername: FSI-DE-8W
00:00:00.000	Number of Monitors: 1 | Default Monitor: 1 (0 0 1920 1080)
00:00:00.000	Pre-Simload countdown screen was visible for 1 sec
00:00:00.000	Delay between Simload start time and activity log start time:
00:00:10.168	App launch time: 9014 ms
00:00:19.760	Run action initiated
00:00:22.015	Press down arrow
00:00:30.896	Press down arrow
00:00:34.179	Press down arrow
00:00:36.375	Press down arrow
00:00:37.499	Press left arrow
00:00:38.645	Press down arrow
00:00:39.789	Press left arrow
00:00:40.960	Press down arrow
00:00:42.104	Press up arrow
00:00:43.261	Press up arrow
00:00:44.427	Press left arrow

System Under Test:
Azure Germany West Central, D2s v5 VM, Windows 11 Enterprise, Intel Xeon Platinum 8370C 2vCPUs @ 2.80GHz, 8GB RAM, 128GB HDD, Citrix VDA 7 2511, 1920x1080 Screen Resolution @ 30Hz, Single Monitor Setup

Connection:
Citrix HDX Super Resolution, 100mbps bandwidth, 10ms RTT, 0.0% packet loss

Endpoint:
ASUS NUC 15 PRO, Windows 11 Enterprise 25H2, Intel Core Ultra 7 255H 16Cores @ 2.0GHz, 32GB RAM, Samsung SSD 990 EVO Plus 1TB, Intel Arc 140T GPU, 2GB VRAM, Citrix Workspace 2511

SL1-BSPBlendingDX11

SL1-BSPBlendingDX11: Open the local Humus BSP Blending DirectX 11 application. The synthetic user presses the arrow keys every second to move randomly in the scene. App: BSPBlending.exe

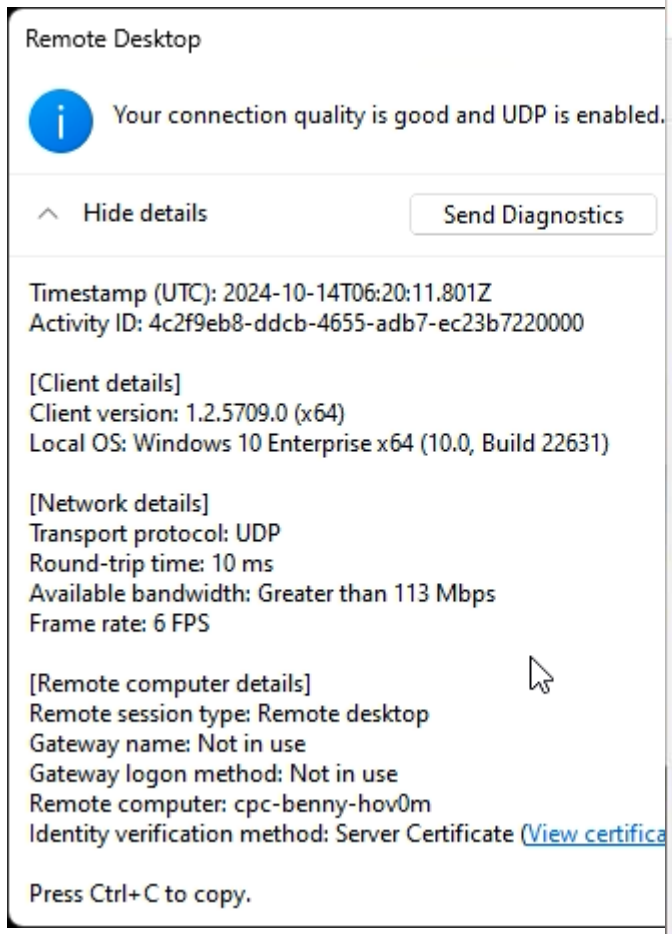
Finding Collection time for telemetry data is 74 seconds instead of 45 seconds. he total outbound network traffic is 15MBytes.

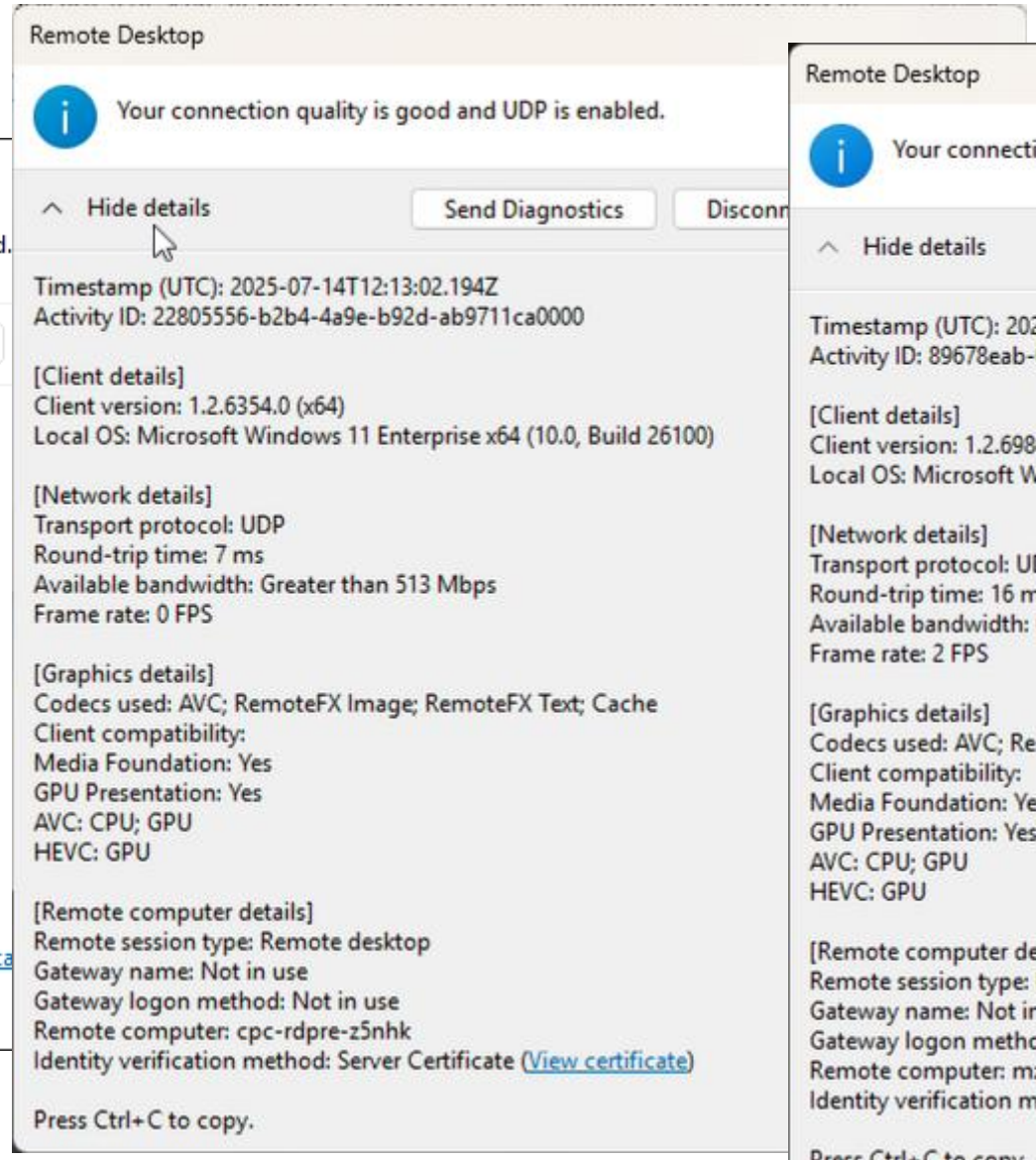
Screen Recording	System and User Activities
Recording of a screen video, captured either directly or using a frame grabber.	Visulization of timestamped activities in the reference file created by the Simload.

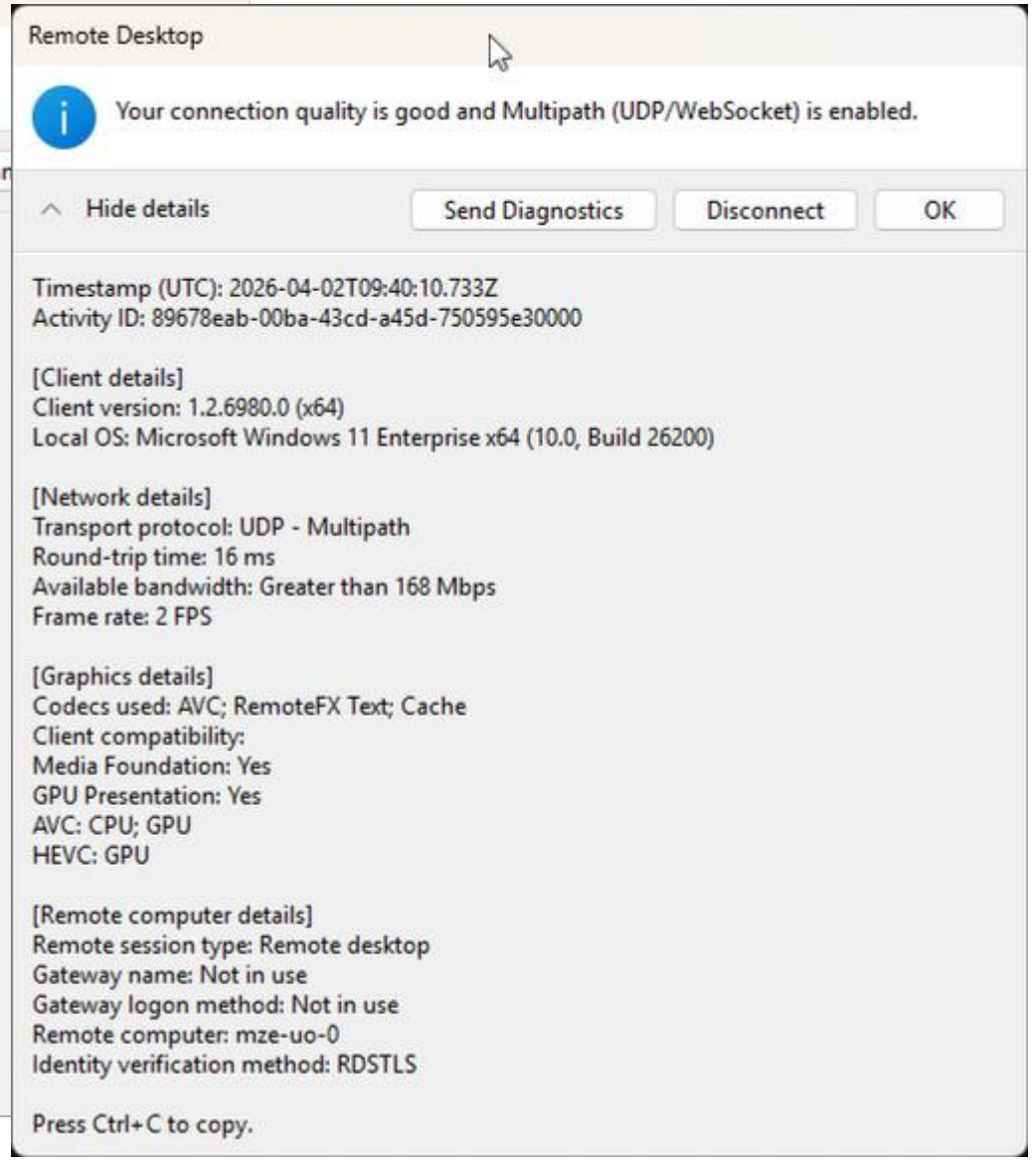
00:00:45 00:00:45 Help Report

Remoting protocol analysis in Azure VMs with 8 vCPUs

Silent Update of the SxS RDP Protocol







Query Session

SxS RDP Session

[User Sessions]
Session1: SessionName=Services, UserName=N/A, SessionID=0, State=Disconnected
Session2: SessionName=Console, UserName=N/A, SessionID=1, State=Connected
Session3: SessionName=**rdp-sxs250225880#0, UserName=BernhardTritsch, SessionID=3, State=Active**
Session4: SessionName=31C5CE94259D4006A9E4, UserName=N/A, SessionID=65536, State=Listen
Session5: SessionName=RDP-Tcp, UserName=N/A, SessionID=65537, State=Listen
Session6: SessionName=rdp-sxs250225880, UserName=N/A, SessionID=65538, State=Listen

HDX Session

[User Sessions]
Session1: SessionName=Services, UserName=N/A, SessionID=0, State=Disconnected
Session2: SessionName=**Console, UserName=BernhardTritsch, SessionID=6, State=Active**
Session3: SessionName=31C5CE94259D4006A9E4, UserName=N/A, SessionID=65536, State=Listen
Session4: SessionName=RDP-Tcp, UserName=N/A, SessionID=65537, State=Listen
Session5: SessionName=rdp-sxs250225880, UserName=N/A, SessionID=65538, State=Listen

Windows 11 VMs, 8 vCPUs, 32GB RAM

Sync Player Clip	Settings	Observation
HDX on D8sv8 versus RDP Classic on D8sv8 under Different Network Conditions		
NotepadMove	**HDX** vs **RDP Classic**	**Light, 100mbps, 0ms, 5.0%**: [Very high packet loss rate] Smooth animation in the HDX session (yellow) and freeze frames in the RDP session (red).
MSEdgeVideoGrid9	**HDX** vs **RDP Classic**	**Medium, 2mbps, 0ms, 0.0%**: [Very low bandwidth] Block artifacts in the HDX session (yellow) and low frame rate in the RDP session (red).
RollercoasterDX9	**HDX** vs **RDP Classic**	**Heavy, 2mbps, 0ms, 0.0%**: [Very low bandwidth] Block artifacts in the HDX session (yellow) and low frame rate in the RDP session (red).
Blast on Win365 versus SxS RDP on Win365 under Different Network Conditions		
MSEdgeGifScroll2	**Blast** vs **SxS RDP**	**Heavy, 100mbps, 0ms, 0.0%**: Higher network bandwidth, higher CPU requirements and more context switches in the RDP session (red).
NotepadMove	**Blast** vs **SxS RDP**	**Light, 100mbps, 0ms, 2.0%**: [High packet loss rate] The Blast session (yellow) shows no quality degradation despite the packet loss. The RDP session (red) shows sporadic freeze frames or stutters.
MSEdgeGifScroll2	**Blast** vs **SxS RDP**	**Heavy, 100mbps, 0ms, 2.0%**: [High packet loss rate] Smoother animation, less stuttering, less context switches per second, and lower network consumption in the Blast session (yellow).
MSEdgeGifScroll2	**Blast** vs **SxS RDP**	**Heavy, 100mbps, 100ms, 0.0%**: [High latency] Smoother animation, less stuttering, less context switches per second, and lower network consumption in the Blast session (yellow).
MSEdgeGifScroll2	**Blast** vs **SxS RDP**	**Heavy, 8mbps, 0ms, 0.0%**: [Low bandwidth] Significantly better user experience in the Blast session (yellow) when the network bandwidth is limited to 8mbps.

Remoting protocol analysis in Azure VMs with A10-4Q GPU

Windows 11 VMs with GPU

Sync Player Clip	Settings	Observation
HDX on NV6adsA10 versus SxS RDP on NV6adsA10 under Different Network Conditions		
Plot3dOpenGL	**HDX** vs **SxS RDP**	**Graphics, 100mbps, 0ms, 2.0%**: [High packet loss rate] Almost similar user experience on both sides, but CPU and network bandwidth requirements are significantly higher in the RDP session (red).
MSEdgePhotoGalleryJS	**HDX** vs **SxS RDP**	**Heavy, 100mbps, 100ms, 0.0%**: [High latency] Similar user experience on both sides, but significantly higher offload of GPU 3D capacity in the RDP session (red).
MSEdgeVideoGrid9	**HDX** vs **SxS RDP**	**Heavy, 8mbps, 0ms, 0.0%**: [Low bandwidth] High frame rate in the HDX session (yellow).
Blast on NV6adsA10 versus SxS RDP on NV6adsA10 under Different Network Conditions		
Plot3dOpenGL	**Blast** vs **SxS RDP**	**Graphics, 100mbps, 0ms, 2.0%**: [High packet loss rate] Slightly better performance in the Blast session (yellow), but CPU and network bandwidth requirements are significantly higher in the RDP session (red).
MSEdgePhotoGalleryJS	**Blast** vs **SxS RDP**	**Heavy, 100mbps, 100ms, 0.0%**: [High latency] Similar user experience on both sides, but significantly higher offload of GPU 3D capacity in the RDP session (red).
TessMarkOpenGL	**Blast** vs **SxS RDP**	**Graphics, 8mbps, 0ms, 0.0%**: [Low bandwidth] Smoother animation in the Blast session (yellow), but CPU and network bandwidth requirements are significantly higher in the RDP session (red).
PCoIP on NV6adsA10 versus SxS RDP on NV6adsA10 under Different Network Conditions		
Plot3dOpenGL	**PCoIP** vs **SxS RDP**	**Graphics, 100mbps, 0ms, 2.0%**: [High packet loss rate] Very low refresh rate in the PCoIP session (yellow), almost unusable.
FurMarkOpenGL	**PCoIP** vs **SxS RDP**	**Graphics, 100mbps, 100ms, 0.0%**: [High latency] More stuttering in the PCoIP session (yellow).
TessMarkOpenGL	**PCoIP** vs **SxS RDP**	**Graphics, 8mbps, 0ms, 0.0%**: [Low bandwidth] Sporadic compression artifacts, higher CPU consumption and higher network consumption in the PCoIP session (yellow).

Test Results – Summary

- Microsoft constantly improves **SxS RDP** (silent updates)
- Noisy neighbors on **multi-user AVD** increase app response time
- **HDX Superresolution Upscaling** reduces network requirements by using endpoint capabilities
- Omnissa **Blast** performance is better than expected
- Out-of-Box **HDX** prioritizes screen refresh rate over image quality
- Great Dizzion **FRP** performance, not so good HP **PCoIP** results

Call to Action

If you want to learn more about EUC Score, send me an email

info@eucscore.com

EUC Score

https://eucscore.com

NOTE: The EUC Score toolset is free for community benchmarking tests when the results are made freely available to the public

EUC Score Links

https://eucscore.com

Home Page

https://eucscore.com/freeware

Freeware Download

- Blog articles: https://drtritsch.com
- Toolset documentation: https://docs.eucscore.com
- Test Methodology: https://eucscore.com/methodology.html
- Simload Gallery: https://eucscore.com/gallery.html
- Test Results (Sync Player): https://eucscore.com/results
- Terminology (Glossary): https://eucscore.com/terminology.html
- Lab Equipment: https://eucscore.com/equipment.html

Thank You

Benny Tritsch | info@eucscore.com