

# **EUC** Score Introduction











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**EUC** Score measures and quantifies **perceived end-user experience** in Windows remoting and digital workspace environments, both on premises and in the cloud – fast, precise, repeatable and intuitive

# From a User's Perspective: EUC Quality Criteria

	<b>Boot and logon duration</b>	Measure boot time + logon time + user session load time until it is ready for user interaction. Includes identity management and authentication methods.
	<b>Application and content load time</b>	Measure time from user starting an application until the content appears and the application is ready for user input, including access to the storage system.
	<b>User input delay (“Lag”)</b>	Measures responsiveness of graphical elements after user-initiated triggers = “time from mouse click to screen update” (lag, latency, system response time).
	<b>Graphics APIs supported</b>	Detect incompatibilities when running graphics applications using the DirectX, OpenGL, Vulkan and WebGL APIs.
	<b>Media formats supported</b>	Detect incompatibilities when opening media files, such as MP4, MPEG, MOV, WMV or AVI.
	<b>Distortion of media</b>	Measure media and screen output quality. Detect image, animation, and audio/video compression and decompression artifacts and anomalies.
	<b>Screen refresh rate</b>	Measure the number of times per second that the desktop or application can draw consecutive images on the screen and in the host frame buffer (frames per sec = fps).
	<b>Endpoint specs and quality</b>	Determine the number of pixels and density as well as the screen's visual dimensions – frame buffer requirements grow with resolution and screen number. Plus periphery!
	<b>Application reliability and stability</b>	Detect application hangs, freezes, crashes or unhandled exceptions. Measure consistency, dependability and robustness of applications.
	<b>Session consistency and resilience</b>	Preserving user state across subsequent sessions. Measure session disruptions, hangs, disconnects/reconnects, availability, timeouts and redundancy.

# Six Benefits of Using EUC Score

Diagnose end-user pain symptoms and solve IT support sorrows with proactive synthetic testing



## Identify potential pain

Pre-production capabilities, performance and load testing



## Examine existing pain

Ad-hoc diagnostics in production environments



## Prevent new pain

What-if analysis and comparison of system designs and migration scenarios



## Quantify pain relief success

Before-after analysis of system optimizations and software updates



## Measure chronic pain

DaaS and VDI service level agreement management



## Deliver less pain by design

EUC software quality assurance and quality control

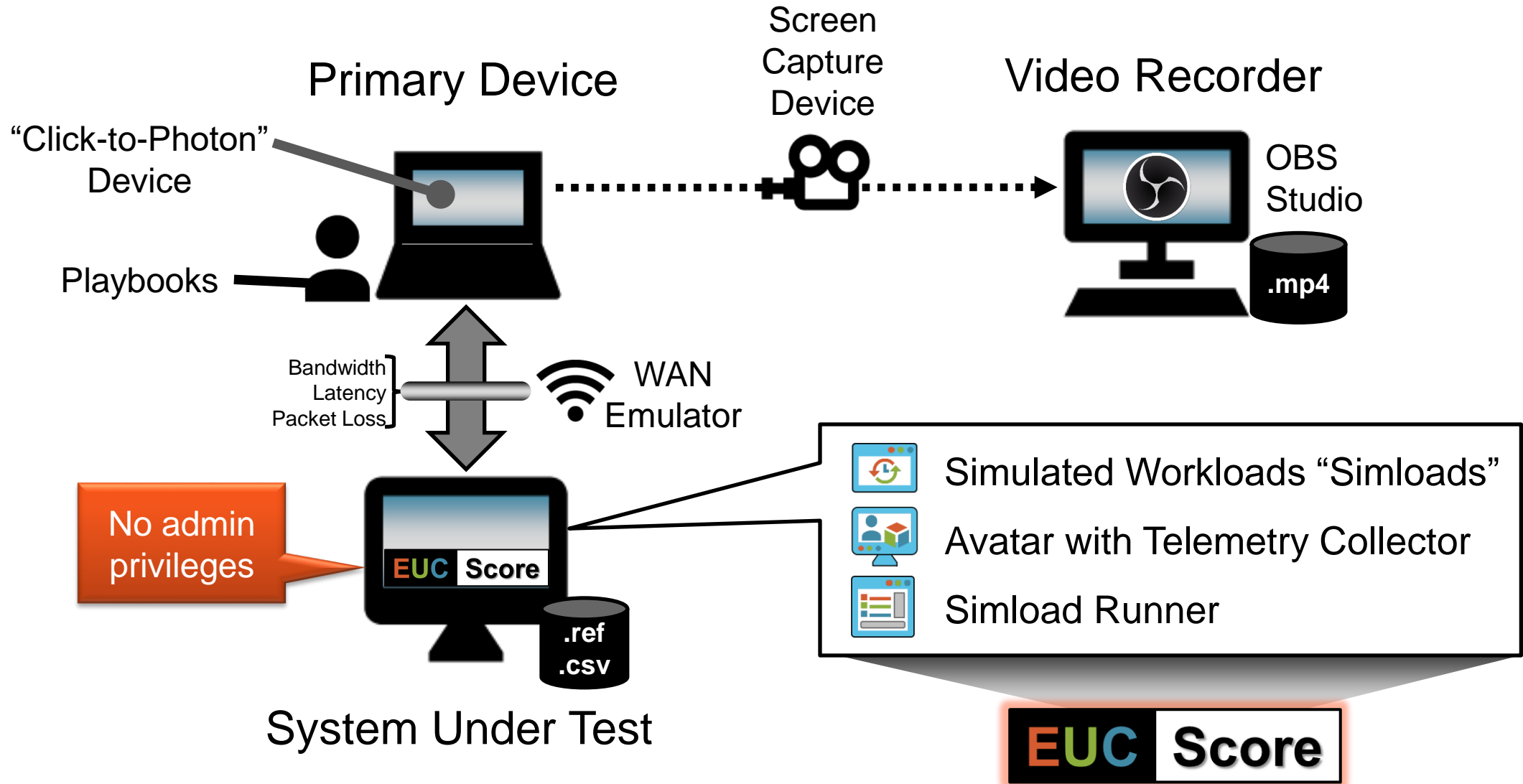
# EUC Score Testing Methodology

## EUC Score project phases




1. **Design & Build**: Pose testable question, state hypothesis, design experiment, and setup test environment (target system with test toolset, network, client device and test user accounts)
2. **Perform & Test**: Connect to target system from client device, select test workloads, prepare data collection, perform controlled and reproducible experiments, and collect/record test datasets
3. **Visualize, Analyze & Publish**: Review test results, visualize datasets, analyze test results, draw conclusions, and publish findings (and sometimes start all over again)

NOTE: Benchmarking experiments or simulations may not reflect the real world, but they help us to understand certain aspects of the real world

# Build an EUC Score Test Lab

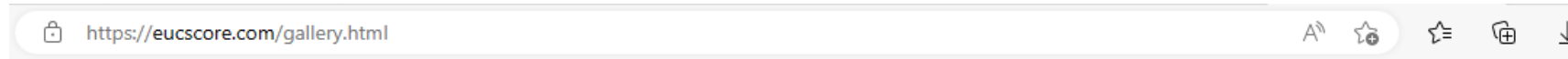


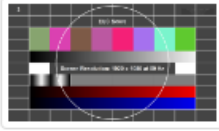



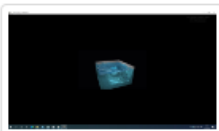
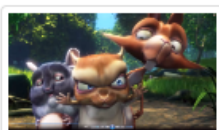

# Simulated Workloads – “Simloads”

	Type	Description
	<b>Type 1 Primary</b>	Test run with an application that highlights a specific graphic or multimedia format (GDI, DirectX, OpenGL or video) – may require a pre-installed application.
	<b>Type 2 Persona</b>	Sequence of chained or overlaid user activities, orchestrated in such a way they generate the characteristic behavior and consistent load pattern of a predefined interactive user type.
	<b>Type 3 Score</b>	Measures predefined system metrics used to produce a number (= score) that represents the performance. Typically, each Score Simload is associated with a specific theme.

**NOTE:** Each Simload stores system and user activities in a .ref file and may collect telemetry data into a .csv file if configured accordingly

# EUC Score Simload Gallery: <https://eucscore.com/gallery.html>

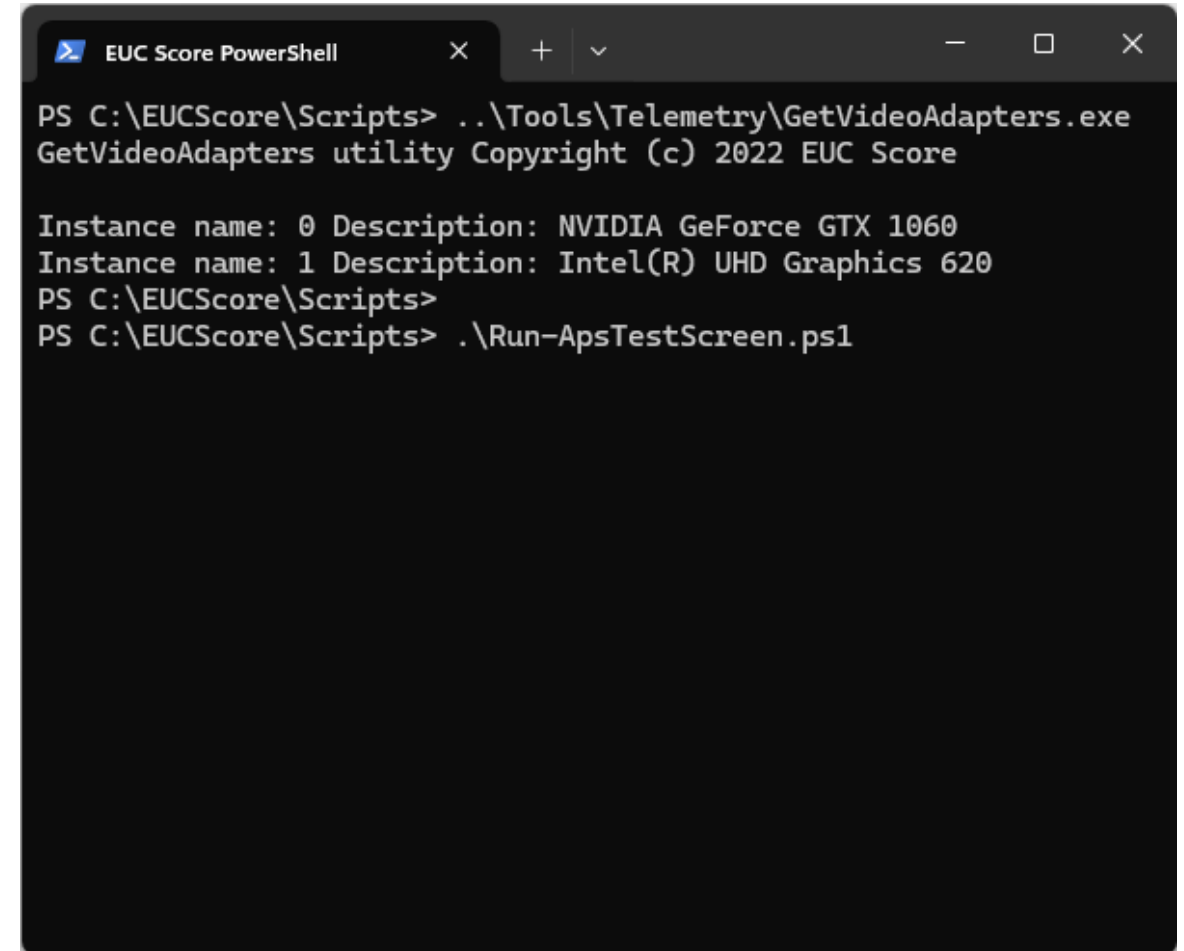
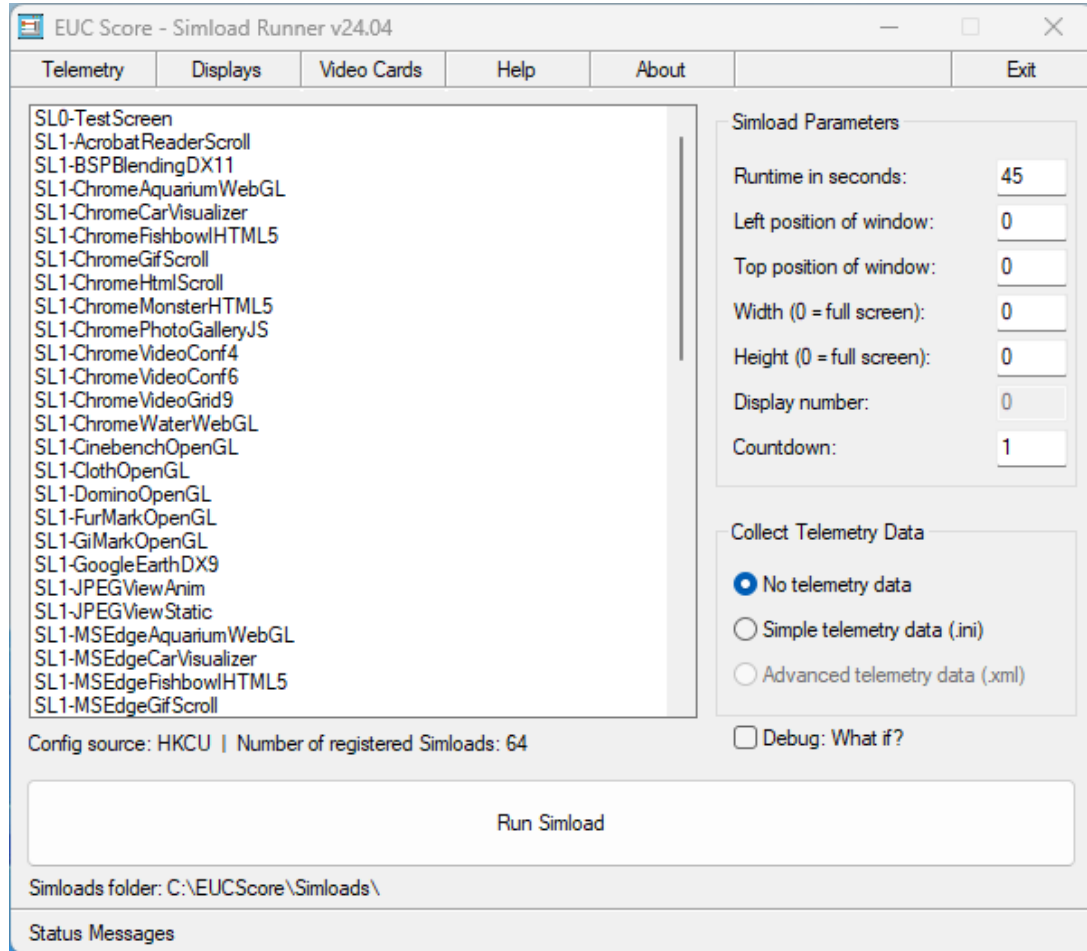


Thumbnail	Simload Type	Description
	System	<b>SL0-TestScreen</b> Open a test pattern screen and save system information.
	Primary Base	<b>SL1-NotepadEdit</b> Open Microsoft Notepad and start writing a novel with random type speed.
	Primary Base	<b>SL1-WordpadScroll</b> Open local DOCX file with PNG images in Wordpad and randomly move pages up and down every second.
	Primary JPEGView	<b>SL1-JPEGViewStatic</b> Open JPEG image in JPEG View. <b>NOTE:</b> This is the most basic Simload as it includes neither animations nor user interactions.
	Primary JPEGView	<b>SL1-JPEGViewAnim</b> Open animated GIF image in JPEG View.
	Primary WMPlayer	<b>SL1-WMPlayer480pWMV</b> Open local 480p WMV video in Windows Media Player, switch from windowed to fullscreen mode.
	Persona Base	<b>SL2-Base</b> <b>Foreground:</b> SL3-AppDialog <b>Background:</b> SL1-JPEGViewAnim

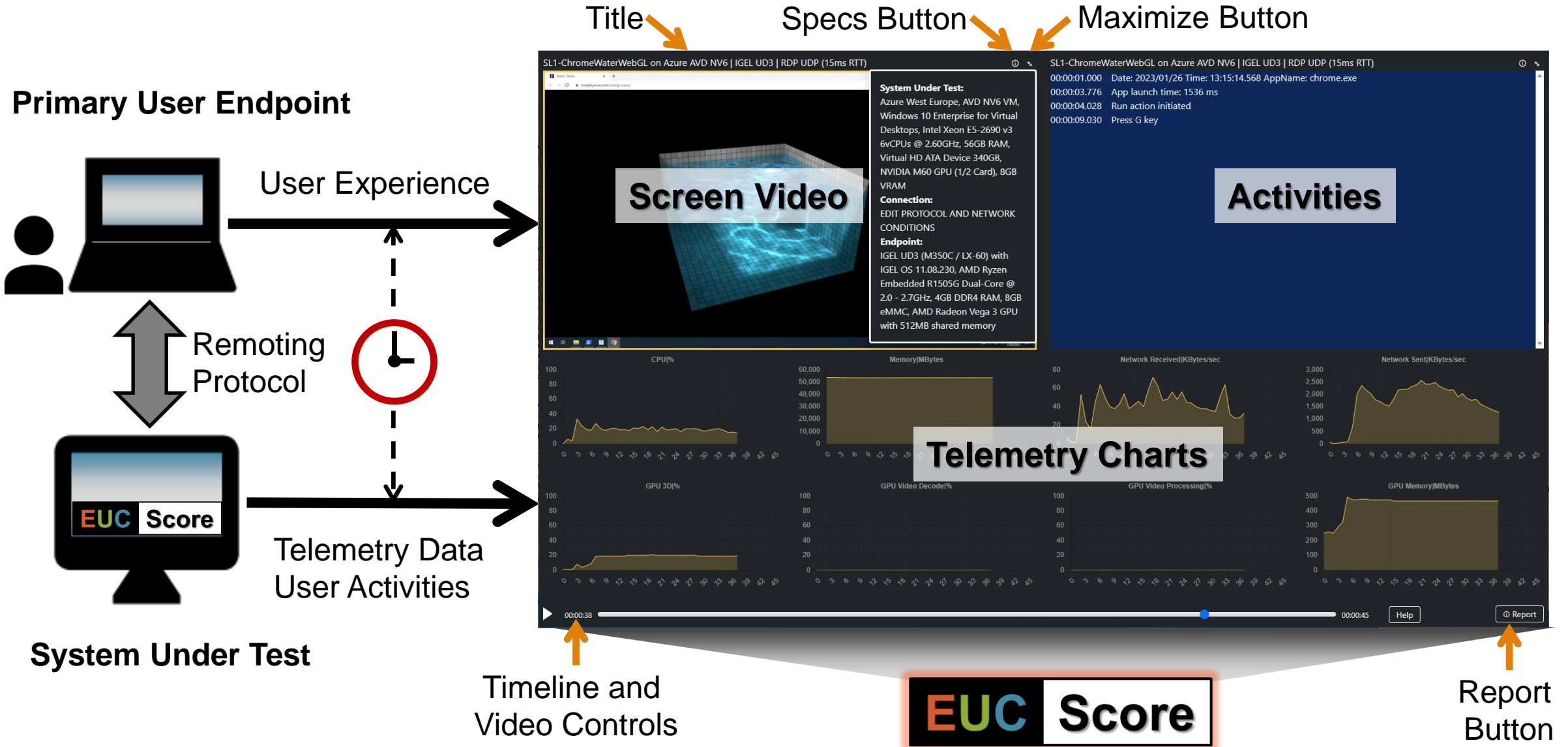
**+ custom  
or manual  
Simloads  
with real user  
playbooks**



# Run Simloads and Collect Test Data



# Visual Data Analytics – Sync Player



Left Media Tile  
“Screen Recording”  
[.mp4]

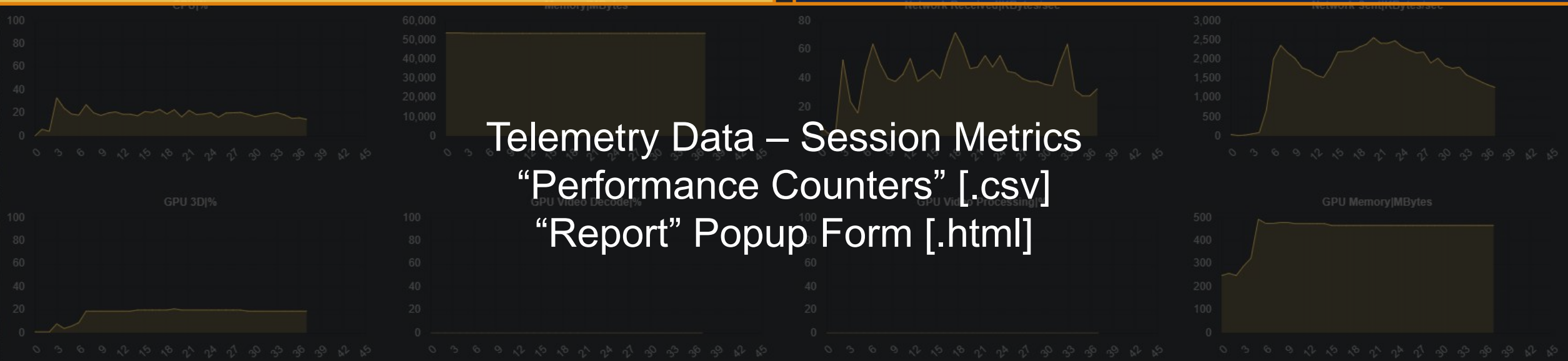
Description

System & User Activities  
[.ref]

```

00:00:01.000 Date: 2023/01/26 Time: 13:13:14.568 AppName: chrome.exe
00:00:03.776 App launch time: 1536 ms
00:00:04.028 Run action initiated
00:00:09.030 Press G key

```



Left Media Tile  
“Pacemaker” Video  
[.mp4]

Right Media Tile  
Comparison Video  
[.mp4]

Color-Coded Telemetry Data – 2 x Session Metrics  
“Performance Counters” Overlay [.csv]  
“Report” Popup Form [.html]

**Left Media Tile  
“Pacemaker” Video  
[.mp4]**

**Right Media Tile  
Comparison Video  
[.mp4]**

**Left System & User Activities  
[.ref]**

**Right System & User Activities  
[.ref]**

```

00:00:00.000 Date: 2023/11/20
00:00:00.000 Simload: SLX-ActivityRecorder
00:00:00.000 Number of Monitors: 2
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: 1.606 sec
00:00:01.237 Delay between Simload start time and core telemetry start time: 0.417 sec
00:00:01.240 Initialize settings
00:00:01.248 Run action initiated
00:00:07.380 LEFT MOUSE button pressed - Open Start menu
00:00:09.520 LEFT MOUSE button pressed - Explorer icon clicked
00:00:11.580 LEFT MOUSE button pressed - This PC item clicked
00:00:13.440 LEFT MOUSE button pressed - C drive item clicked
00:00:16.220 LEFT MOUSE button pressed - Windows folder selected
00:00:19.000 LEFT MOUSE button pressed - Scroll
00:00:19.320 LEFT MOUSE button pressed - Scroll
00:00:20.160 LEFT MOUSE button pressed - Scroll
00:00:21.560 LEFT MOUSE button pressed - System32 folder selected
00:00:22.300 START Enumerating files & folders list view...
00:00:23.040 DONE That took less than 1 sec!

```

```

00:00:00.000 Number of Monitors: 2
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: 1.606 sec
00:00:01.237 Delay between Simload start time and core telemetry start time: 0.416 sec
00:00:01.240 Initialize settings
00:00:01.252 Run action initiated
00:00:07.000 LEFT MOUSE button pressed - Open Start menu
00:00:09.220 LEFT MOUSE button pressed - Explorer icon clicked
00:00:11.520 LEFT MOUSE button pressed - This PC item clicked
00:00:14.160 LEFT MOUSE button pressed - C drive item clicked
00:00:17.420 LEFT MOUSE button pressed - Windows folder selected
00:00:22.180 LEFT MOUSE button pressed - Scroll
00:00:23.000 LEFT MOUSE button pressed - Scroll
00:00:23.520 LEFT MOUSE button pressed - Scroll
00:00:25.380 LEFT MOUSE button pressed - System32 folder selected
00:00:26.200 START Enumerating files & folders list view...
00:00:30.000 Still Working on it...
00:00:35.000 Still Working on it...
00:00:40.000 Still Working on it...

```



00:00:42 00:01:33

00:00:40.000 Still Working on it... 00:01:33 [Help](#) [Report](#)

# EUC Score Editions

## Community Edition

- EUC Score Toolbox subscription: €0 (yes, it's completely free)
- Requires license and registration
- The test results must be made freely available to the public
- No Simload SDK
- EUC Score consulting services are offered at a discounted rate (and we share the results)

## Business Edition

- EUC Score Toolbox subscription: €5,000/year or €1,500/quarter
- Requires license and registration
- The customer owns the test results exclusively
- Simload SDK included
- Full daily consulting rate, with or without extra equipment (frame grabbers or WAN emulators)

Individual Commercial Edition (for Consultants): €495/year or €149/quarter

<b>EUC Score Components</b>	<b>Freeware Edition Free Download</b>	<b>Community Edition Requires Free License</b>	<b>Professional Individual Edition Requires License</b>	<b>Enterprise Edition Requires License</b>
<b>Base Simloads (single app)</b>	✓	✓	✓	✓
<b>Simple Personas (multiple apps)</b>	✓	✓	✓	✓
<b>Score Simloads</b>	✓	✓	✓	✓
<b>Simload Runner</b>	✓	✓	✓	✓
<b>Core Telemetry</b>	✓	✓	✓	✓
<b>Command-Line Automation</b>	✓	✓	✓	✓
<b>Shared Results</b>	(✓)	✓		
<b>For Community Usage</b>	(✓)	✓		
<b>Advanced Simloads (single app)</b>		✓	✓	✓
<b>Advanced Personas (multiple apps)</b>		✓	✓	✓
<b>Avatar (tray app)</b>		✓	✓	✓
<b>Telemetry Collector (user mode)</b>		✓	✓	✓
<b>Telemetry Collector GUI</b>		✓	✓	✓
<b>PowerShell Object &amp; Automation</b>		✓	✓	✓
<b>Sync Player</b>		✓	✓	✓
<b>Protected Results</b>			✓	✓
<b>For Individual Commercial Usage</b>			✓	✓
<b>Simload SDK</b>				✓
<b>Online Training (2h/quarter)</b>				✓
<b>For Enterprise Commercial Usage</b>				✓
<b>Support</b>	Community	Community	Email	Email
<b>Subscription Fee</b>	Free	Free	€495/year €149/quarter	€5,000/year €1,500/quarter

# EUC Score Project Phases

- Preparation Phase
  - Define test goal, identify target user group (persona) and select EUC Score Simloads
  - Identify all individual test scenarios and define test conditions accordingly
- Design and Build Phase
  - Install/update and configure the remoting client software + screen recording
  - Deploy/provide system under test and install the EUC Score Toolset
- Perform and Test Phase
  - Run selected Simloads under the conditions defined by the test scenarios and collect data
- Visualize, Analyze & Publish Phase
  - Build Sync Player clips and review test results
  - Side by side comparison of test results with reference data



# Call to Action

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

**info@eucscore.com**



<https://eucscore.com>

<https://eucscore.com/results>

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



# EUC Score Links

- Home page: <https://eucscore.com/>
- Test Results (Sync Player): <https://eucscore.com/results>
- Test Methodology: <https://eucscore.com/methodology.html>
- Toolset documentation: <https://eucscore.com/docs/index.html>
- Simload Gallery: <https://eucscore.com/gallery.html>
- Terminology (Glossary): <https://eucscore.com/terminology.html>
- Lab Equipment: <https://eucscore.com/equipment.html>

**Thank You**

**Benny Tritsch | [info@eucscore.com](mailto:info@eucscore.com)**

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