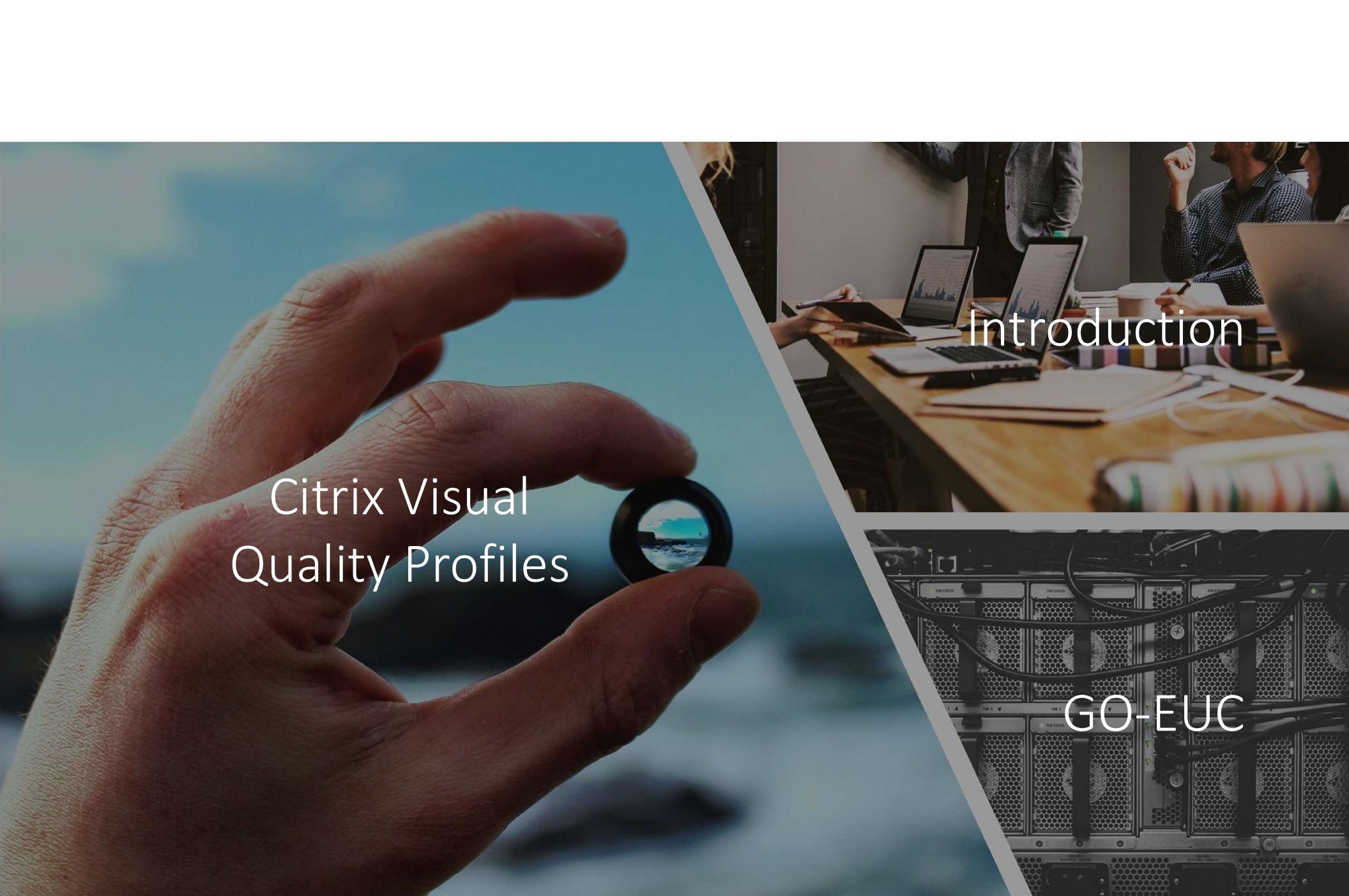


The true differences between Citrix Visual Quality Profiles

Ryan Ververs-Bijkerk





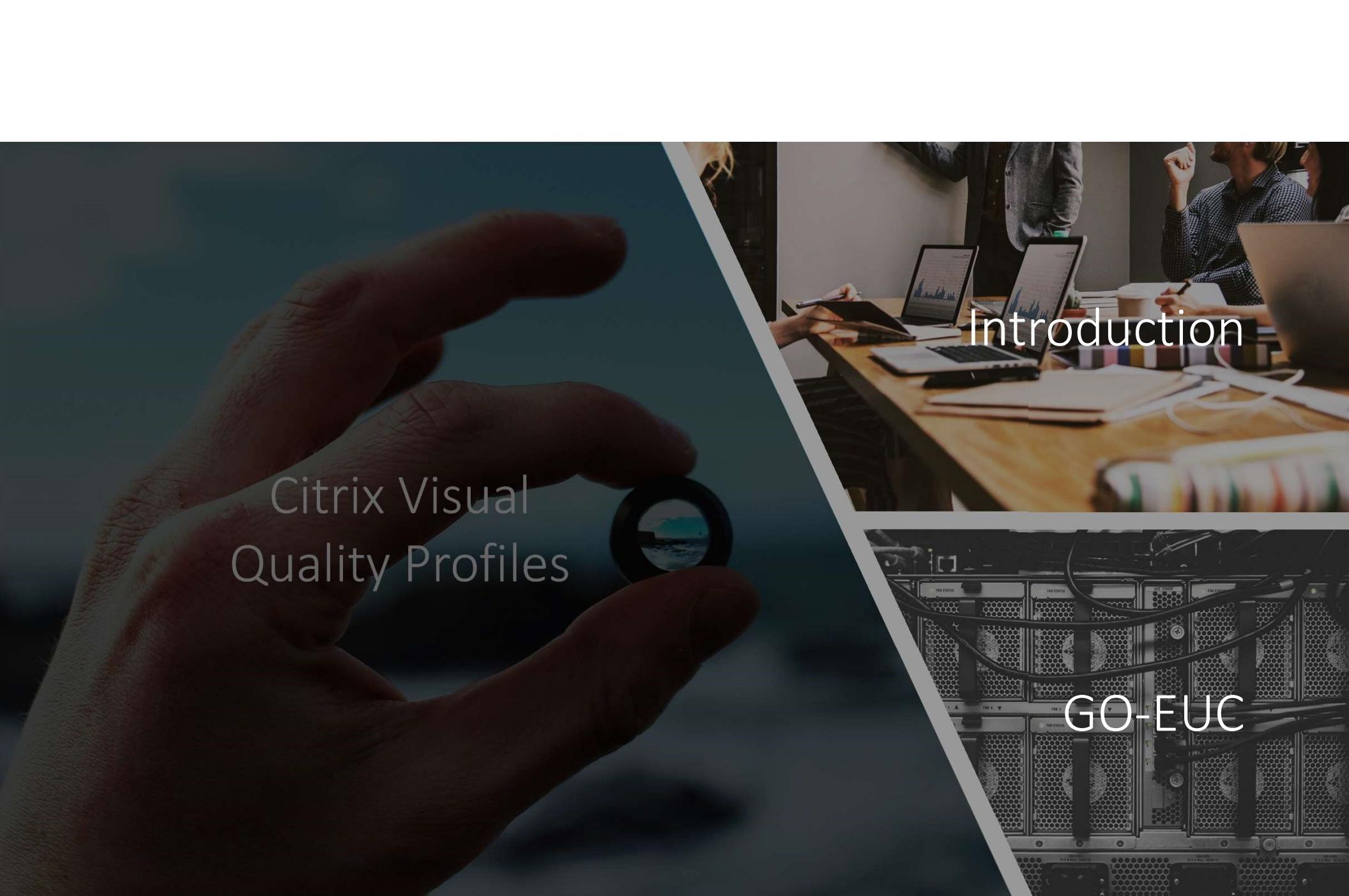
Citrix Visual
Quality Profiles



Introduction



GO-EUC



Citrix Visual Quality Profiles



Introduction



GO-EUC



Ryan Ververs-Bijkerk

Consultant @ ICT-Partners

cITRIX®
Technology
Advocates



@Logitblog



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www.logitblog.com



r.bijkerk@ict-partners.nl



A silhouette of a person standing with arms raised in a V-shape against a cloudy sky.

GO-EUC

The text "GO-EUC" is displayed in large, bold, black letters. The letter "O" is highlighted with a bright green outline and filled with a light green color. The letter "E" has a thick green horizontal stroke through its center.

The community research platform

Love to research and use new technologies

Started in September 2018

For and by the community

Fully independent and unbiased

Performance analysis and best practices

Focus on End-User Computing

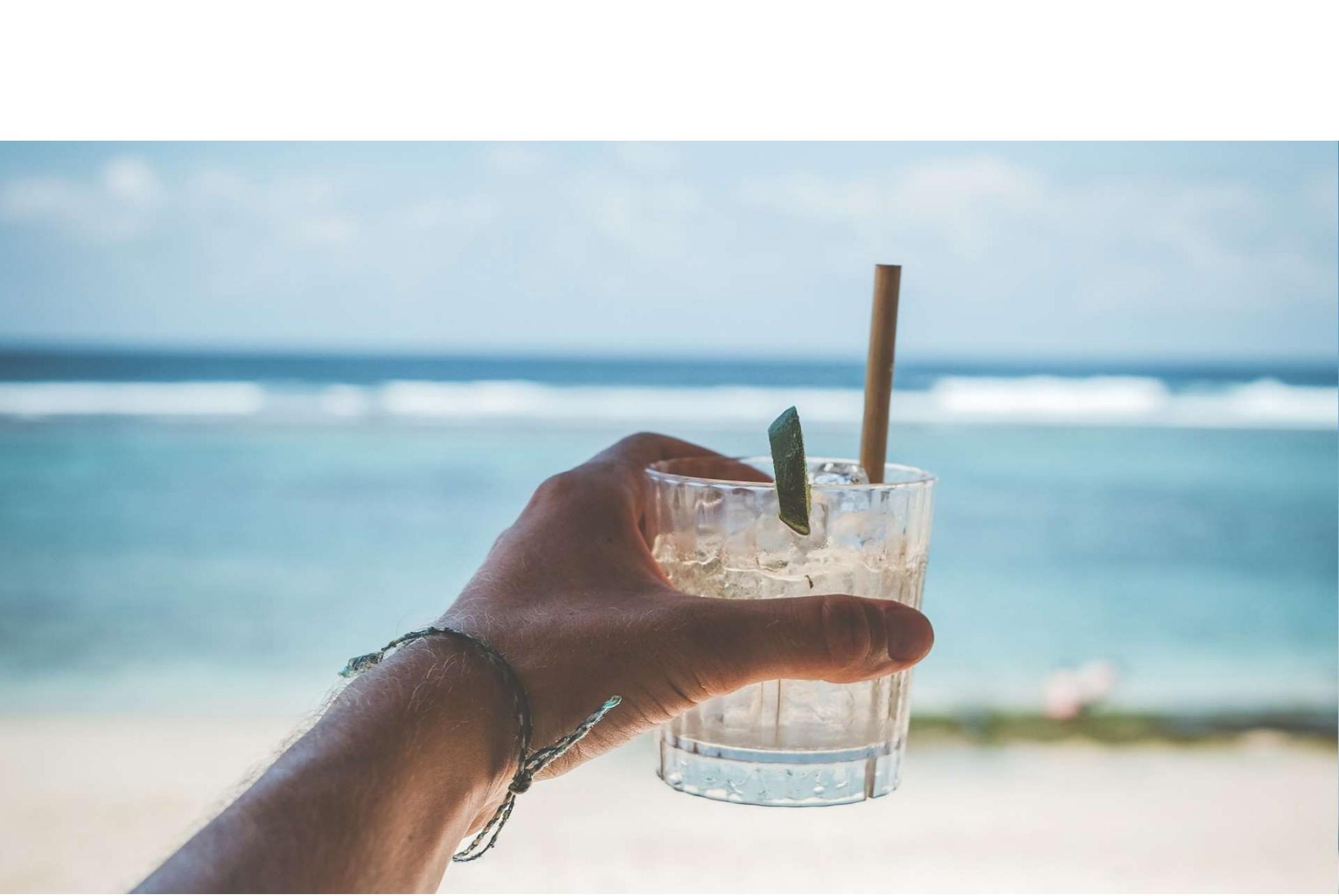
Over 1200 tests results

GO-EUC

Powered by

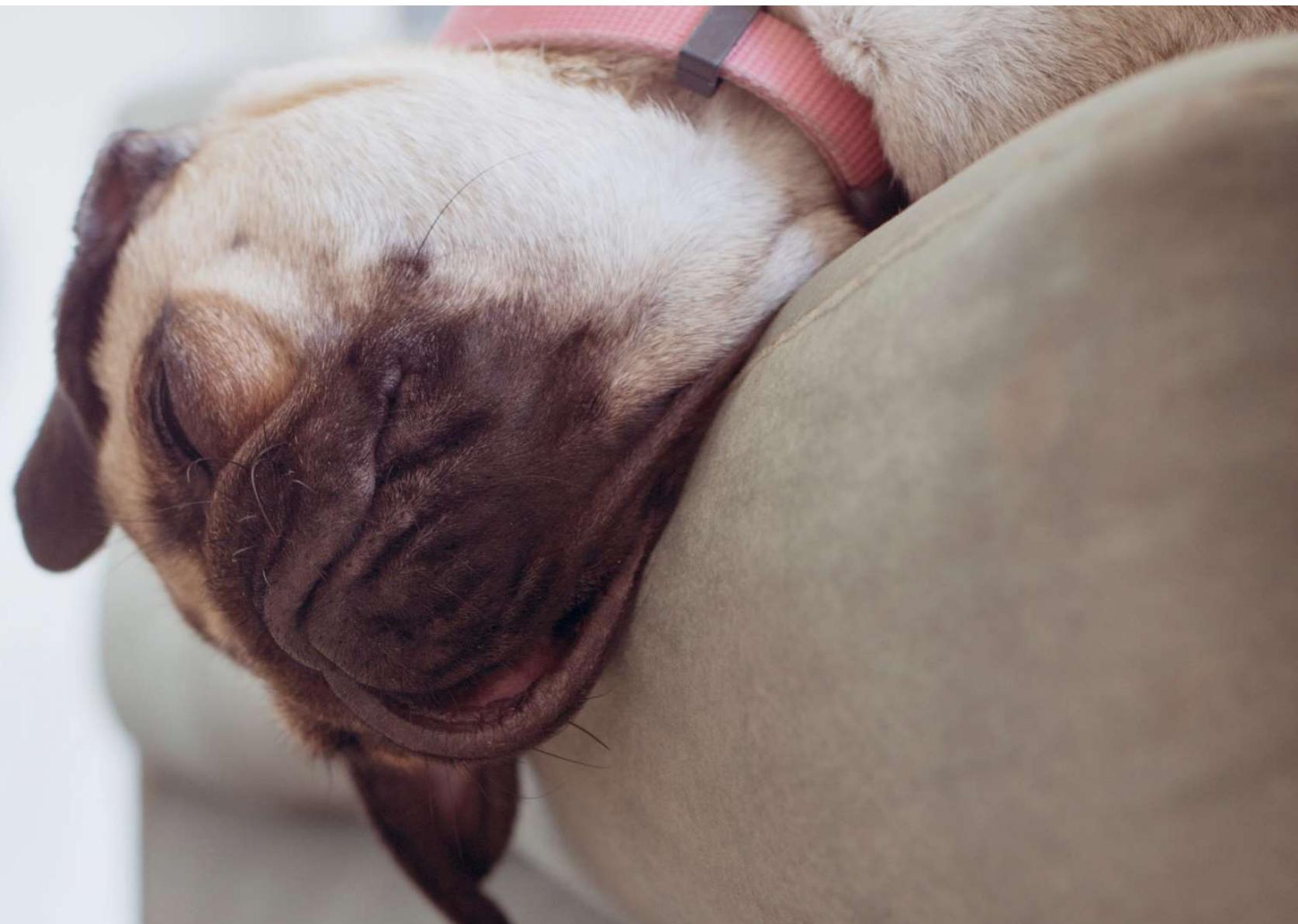














Current Members

Robert Maijen



Ryan Ververs-Bijkerk



Eltjo van Gulik



Omar Bouhaj



Sven Huisman





Research is creating
new knowledge

Neil Armstrong

GO-EUC - The research platform | https://www.go-euc.com

GO-EUC

The research platform for the EUC space

Home About Members

Moore's law of Windows 10 1903

Ryan Ververs-Bijkerk and Omar Bouhaj | 5 June 2019

Category: Research

Every 6 months Microsoft releases a new version of Windows 10. Last month Microsoft has released version 1903 with plenty of new features and improvements. But based on previous researches we have seen a Moore's law of Windows 10. This research will focus on the performance and user experience impact...

[read more >](#)

The true difference between Citrix Visual Quality profiles

Ryan Ververs-Bijkerk | 15 May 2019

Category: Citrix

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General	Microsoft
Microsoft Office	RDSH
Remoting Protocol Research	
VDI	VMware
Windows 10	

ARCHIVES

June 2019	May 2019
April 2019	March 2019
February 2019	January 2019
December 2018	November 2018



Infrastructure host

CPU:

Intel Xeon E5-1660v3
8c/16t - 3GHz /3.5GHz

Memory:

128GB DDR4 ECC 2133 MHz

Storage:

HardRaid FastPath 3x960GB SSD

Testing host

CPU:

Intel 2x Xeon E5-2687Wv4
24c/48t - 3GHz /3.5GHz

Memory:

384GB DDR4 ECC 2133 MHz

Storage:

HardRaid FastPath 3x960GB SSD



GO-EUC

Infrastructure host

CITRIX®

Brokering

Login VSI
Launchers

General components
(AD, MDT, SQL, RDWG)

Hypervisor

vmware™

OVH



Testing host

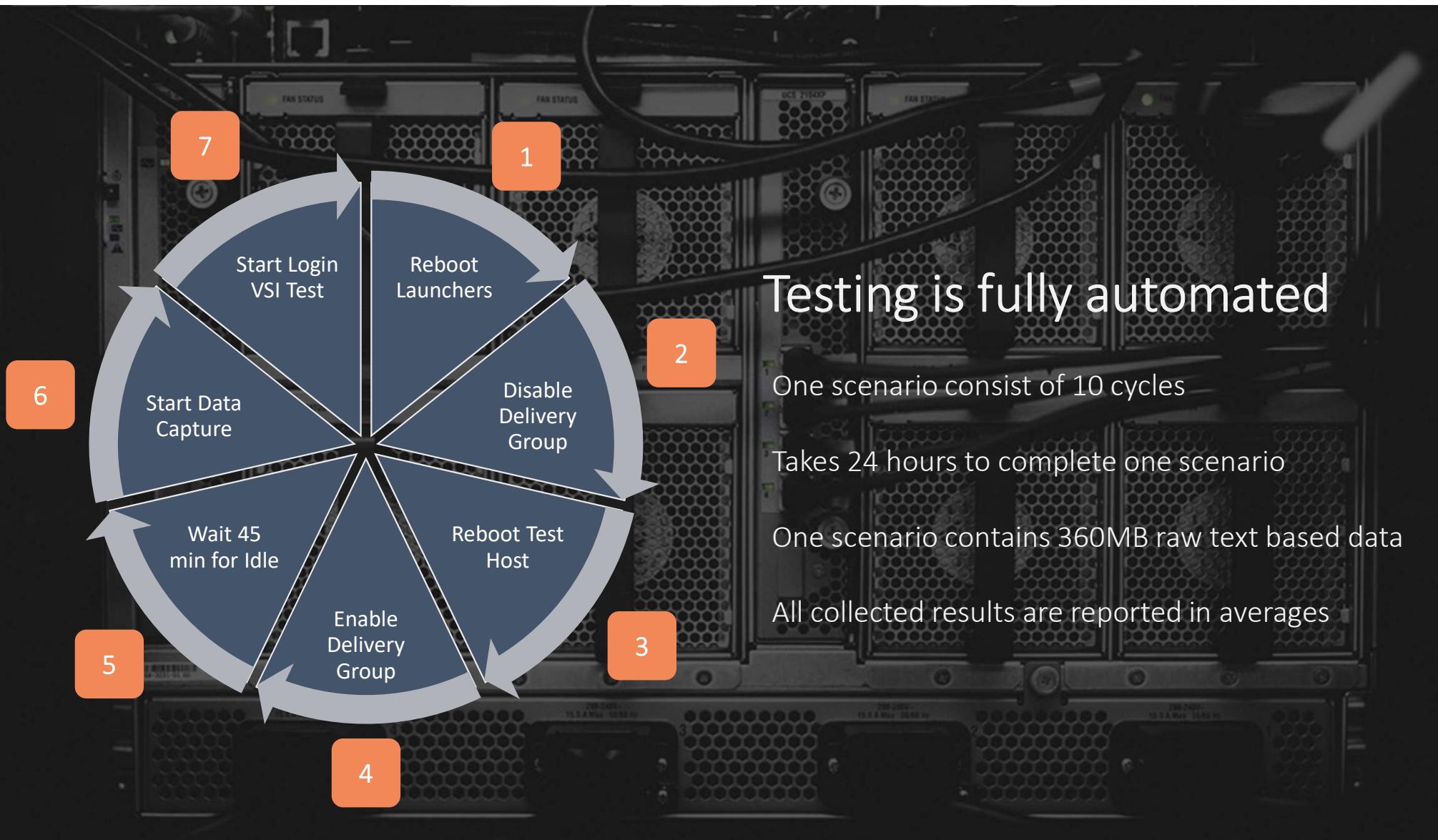
VM

Hypervisor

vmware™



LOGINVSI



Multiple data sources

Login VSI data

Hypervisor data - ESXtop

Launcher data - Perfmon

Protocol data – Remote Display Analyzer

The screenshot shows the 'Remote Display Analyzer' application window running on a server. The window displays various performance metrics and settings for a remote session.

Licensed To: [User Icon] Running for: Session ID: 10

Virtual Channel Display mode: HDX

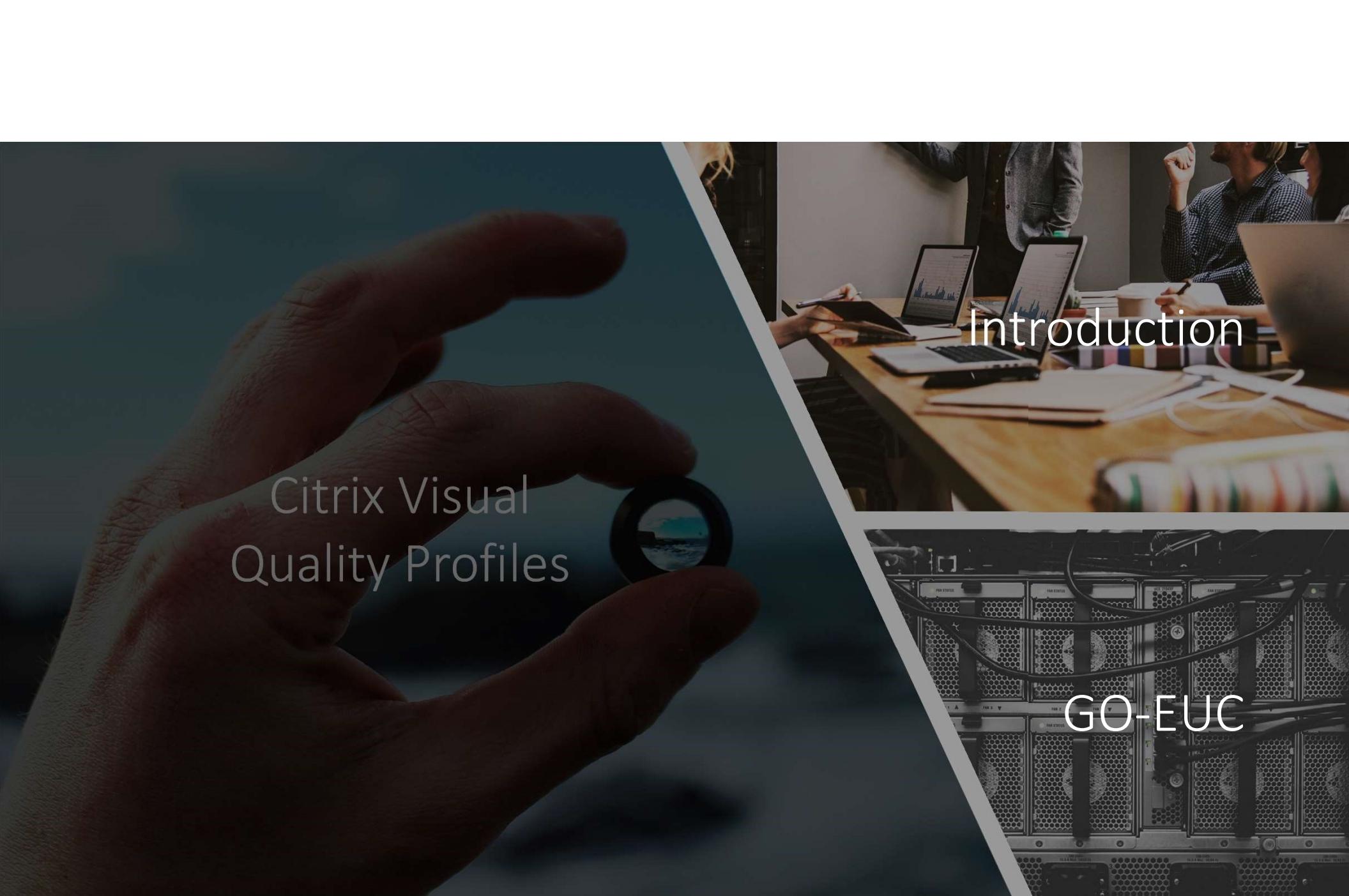
Windows 10 Enterprise 1803
Virtual Desktop Agent version: 1811.1
Detected Display mode: Thinwire
Video Codec usage: For the entire screen
Available bandwidth detected: 14,0 Mbps
Active transport protocol: UDP

Detected settings:
Visual Quality: AlwaysLossless
Max Frames p/s: 30
Video Encoder type: H264 (Yuv444)
Hardware Encode: Enabled
Text Optimization: Disabled

Total Statistics:
Total bandwidth usage: 14,0 Mb
Total frames send to client: 332
Average bandwidth usage: 1,0 Mb
Average available bandwidth: 19,0 Mb

Real-Time Statistics:
CPU time used by encoder: 3%
Memory used by encoder: 157 MB
Thinwire Frames per second: 6
Thinwire Bandwidth Output: 5,0 Mbps
ICA Network Latency: 17 ms
ICA Round Trip Time (RTT): 0 ms
GPU Utilization: [Progress Bar]

Control Buttons:
Exit | Less | GPU | 0:33



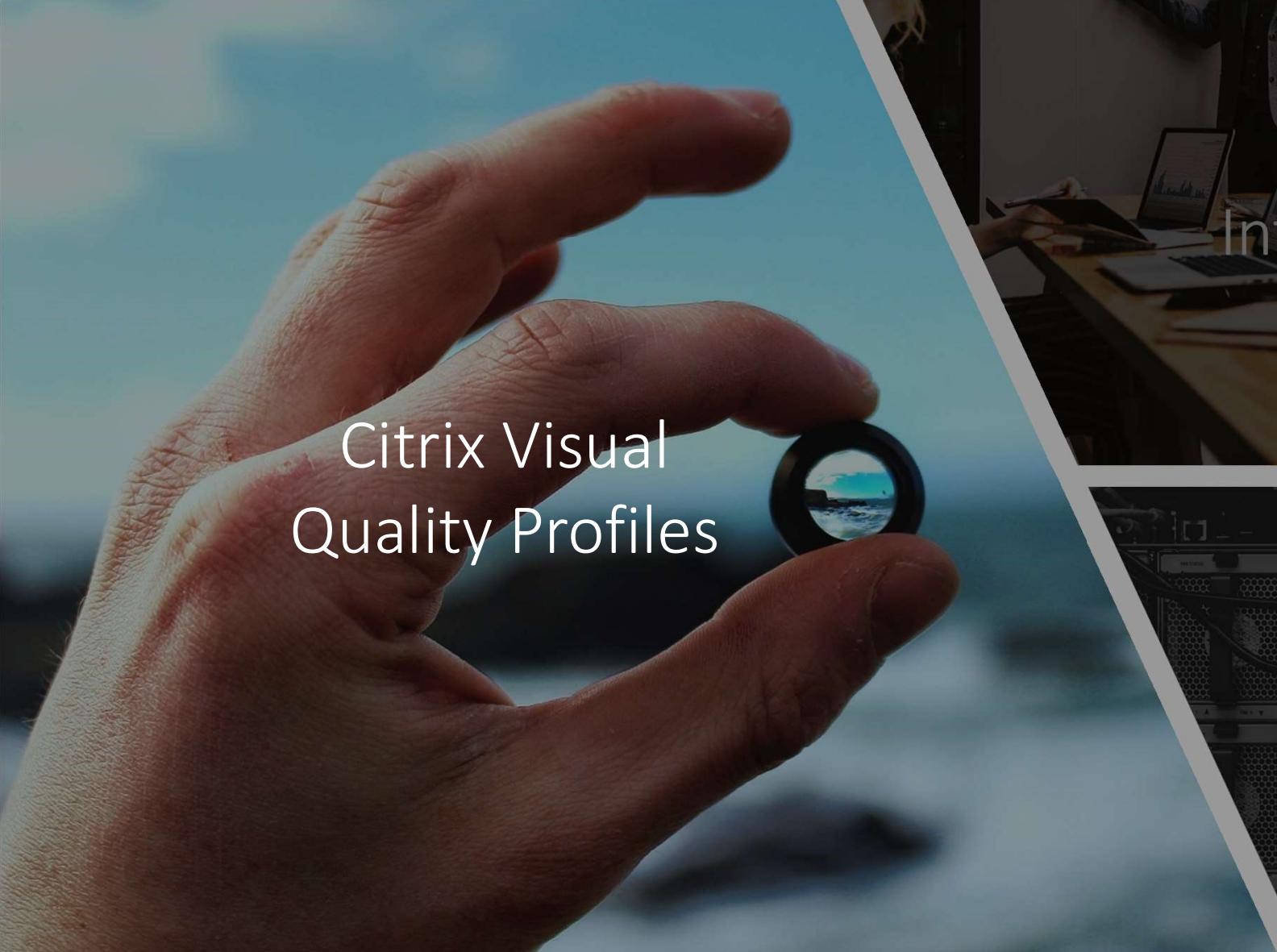
Citrix Visual Quality Profiles



Introduction



GO-EUC

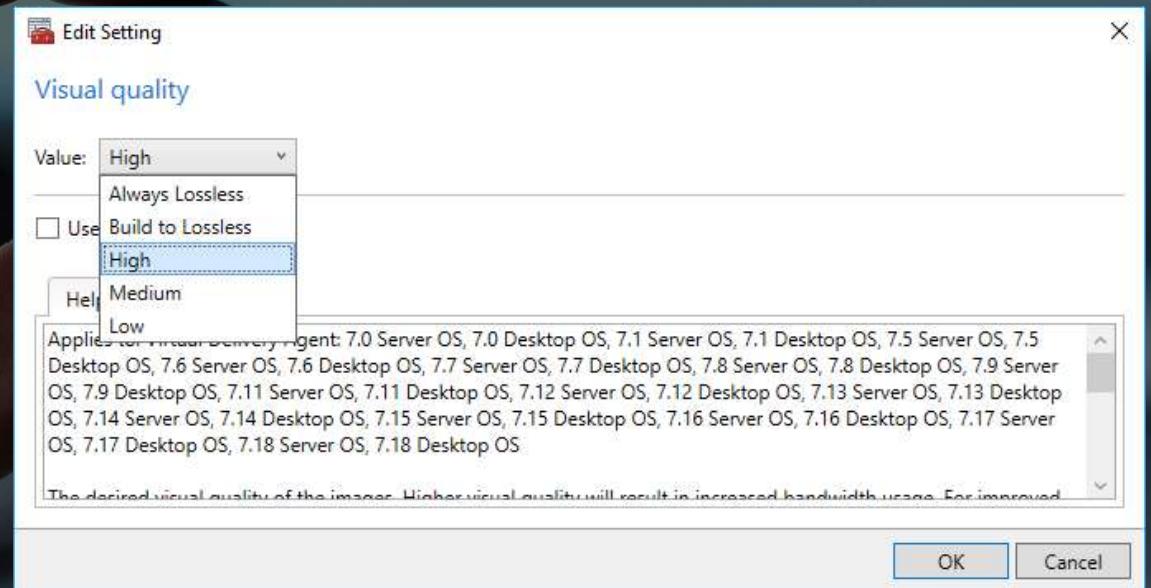


Citrix Visual Quality Profiles



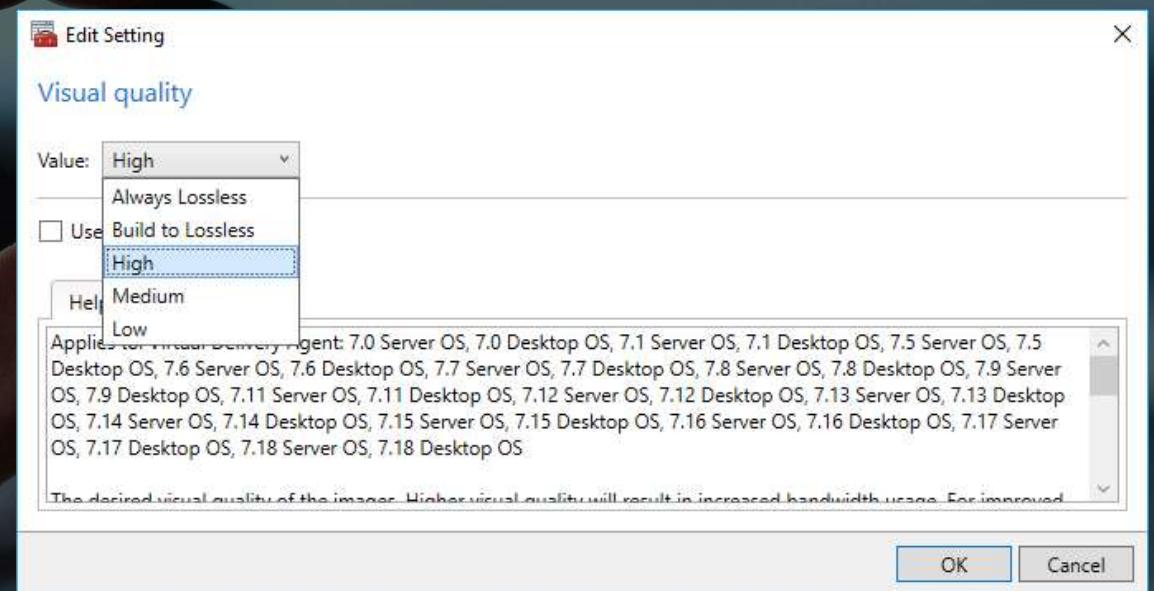
What is Visual Quality setting?

This setting specifies the desired visual quality for images displayed on the user device. By default, this setting is Medium.



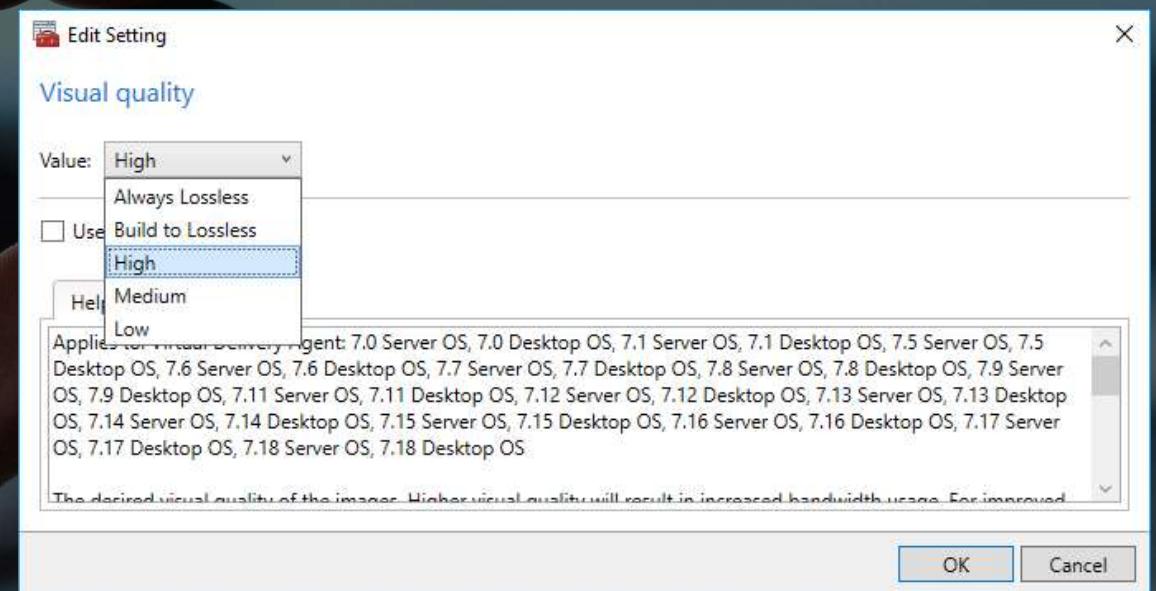
What is Visual Quality setting?

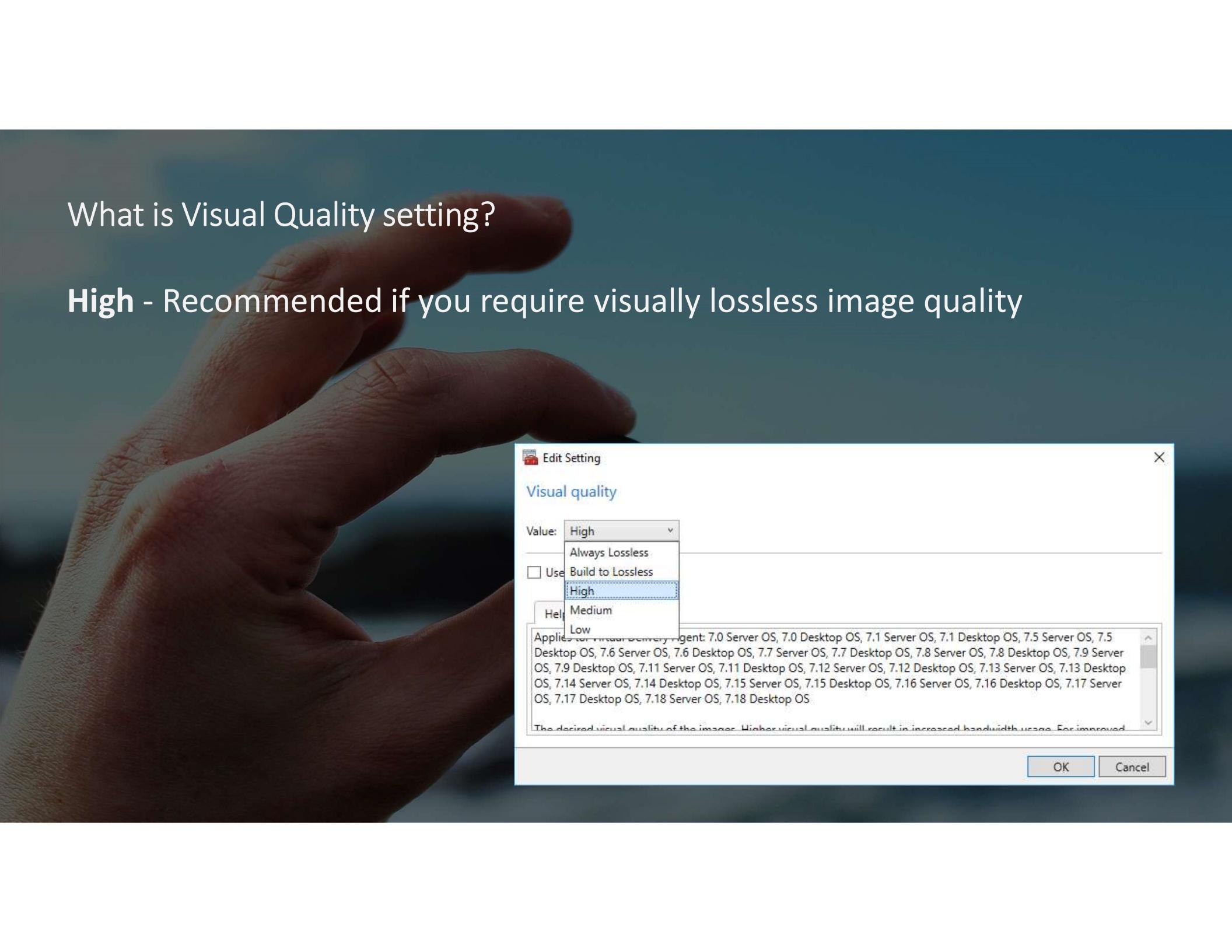
Low - Recommended for bandwidth-constrained networks where visual quality can be sacrificed for interactivity



What is Visual Quality setting?

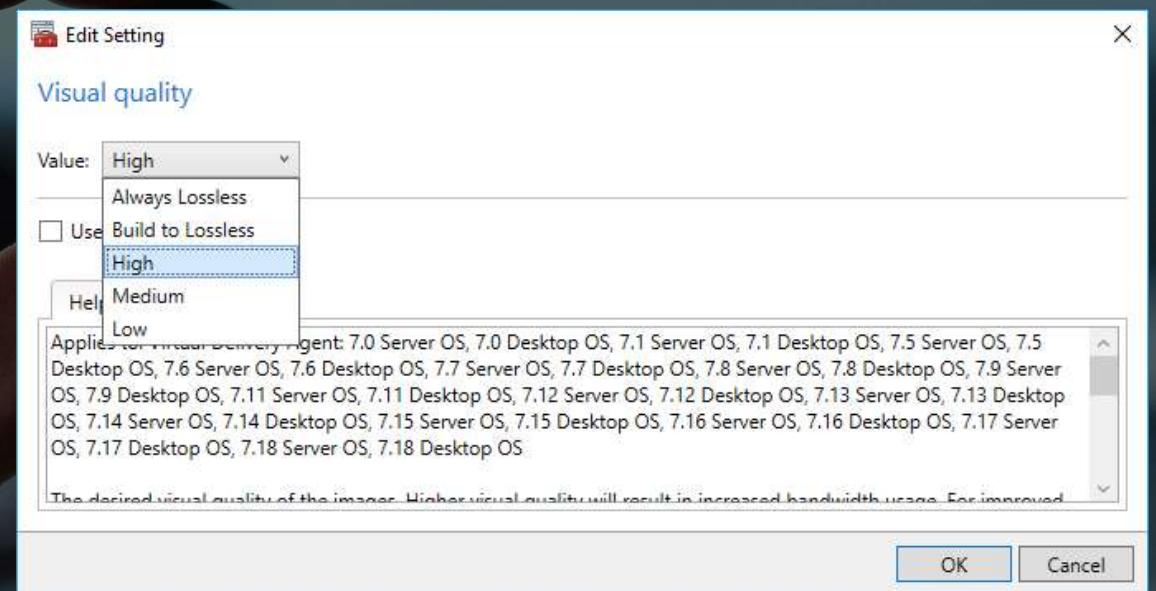
Medium - Offers the best performance and bandwidth efficiency in most use cases





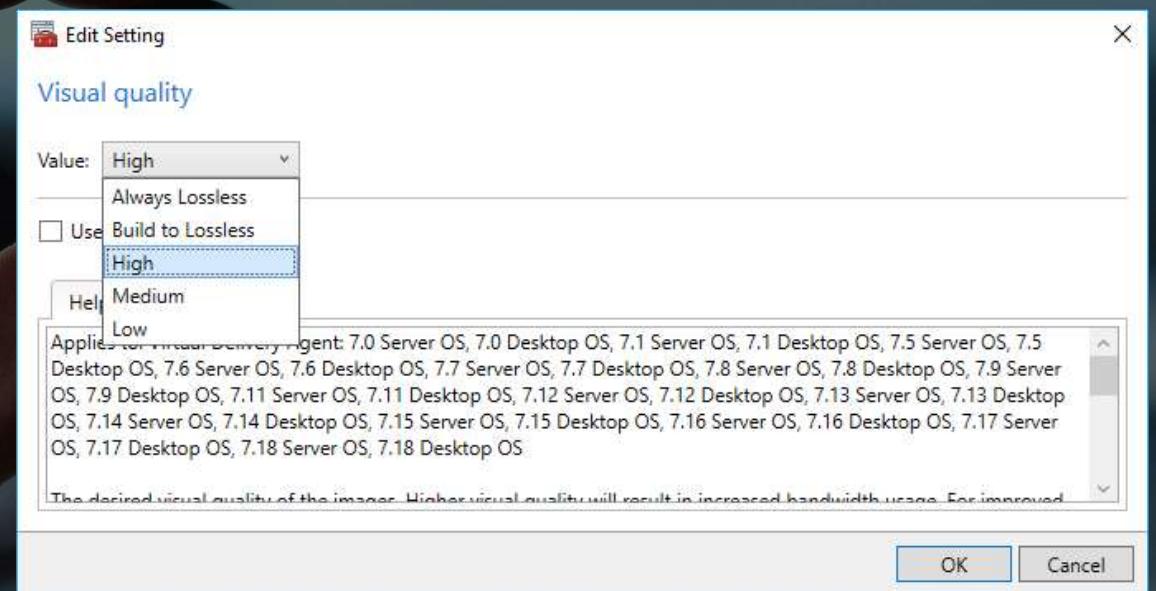
What is Visual Quality setting?

High - Recommended if you require visually lossless image quality



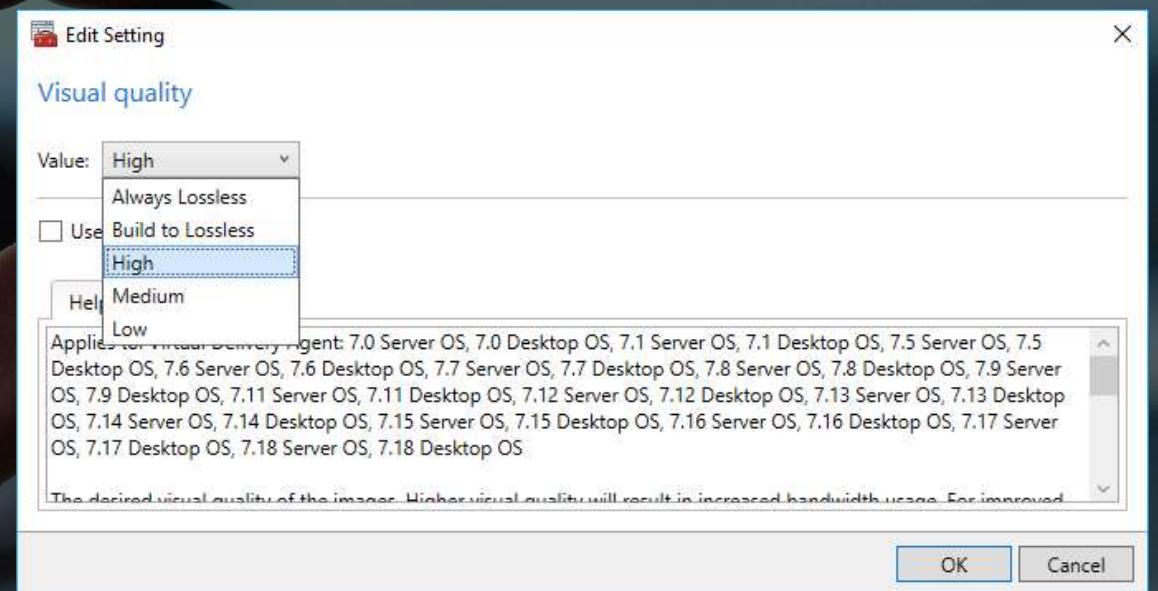
What is Visual Quality setting?

Build to lossless - Sends lossy images to the user device during periods of high network activity and lossless images after network activity reduces; this setting improves performance over bandwidth-constrained network connections



What is Visual Quality setting?

Always lossless - In cases where preserving image data is vital (for example, when displaying X-ray images where no loss of quality is acceptable), select Always lossless to ensure lossy data is never sent to the user device.



Test scenario

Configuration:

Windows 10 build 1809
2vCPUs with 4GB Memory
Microsoft Office 2016
Citrix VDA 1811
Citrix Optimizer Template 1809

TCP is used by default

Scenarios:

-  Medium
-  Low
-  High
-  High with EDT (UDP)
-  Build to lossless
-  Always lossless

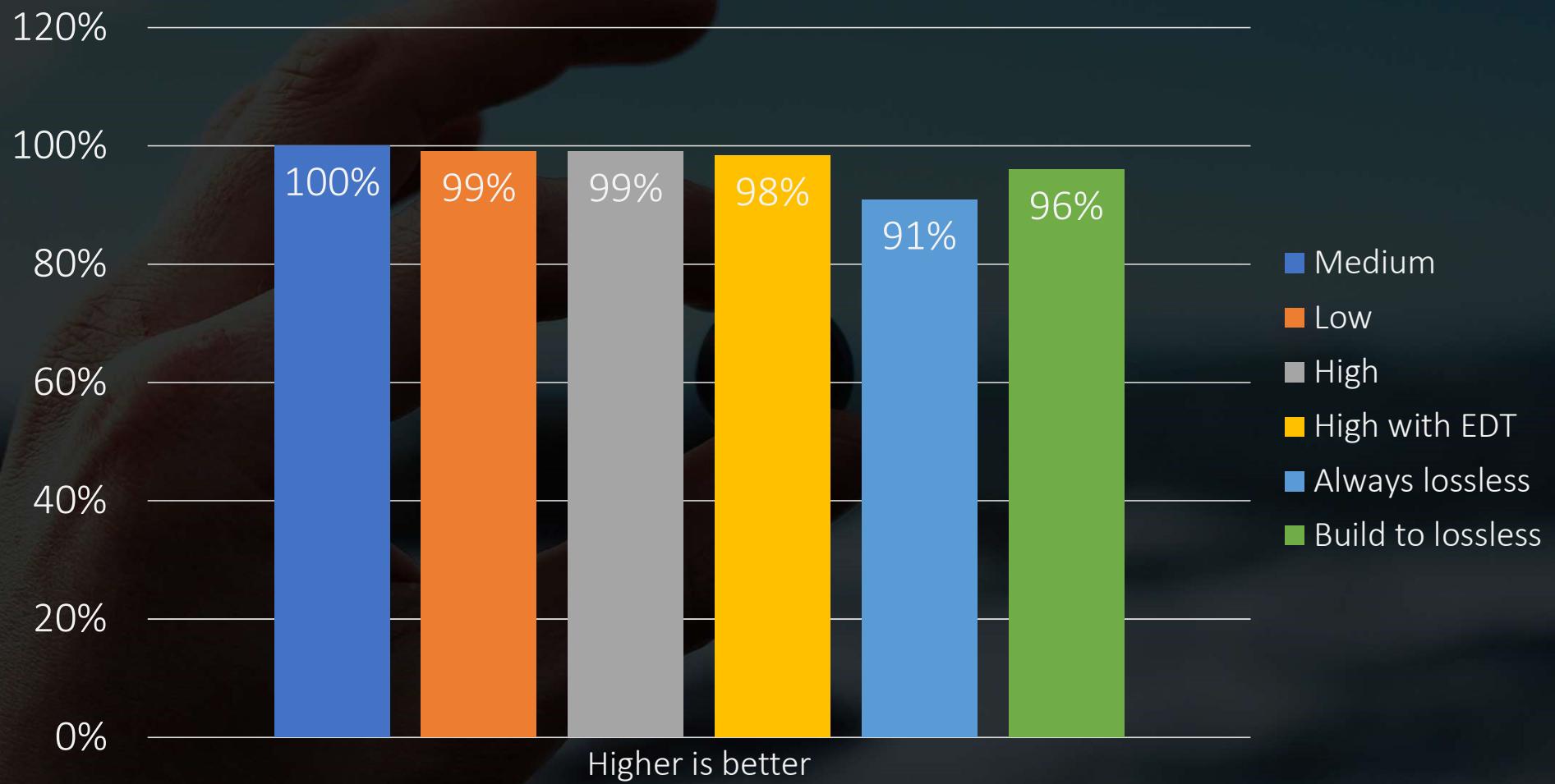
Test scenario

Modification on the Login VSI progress
during for this research.

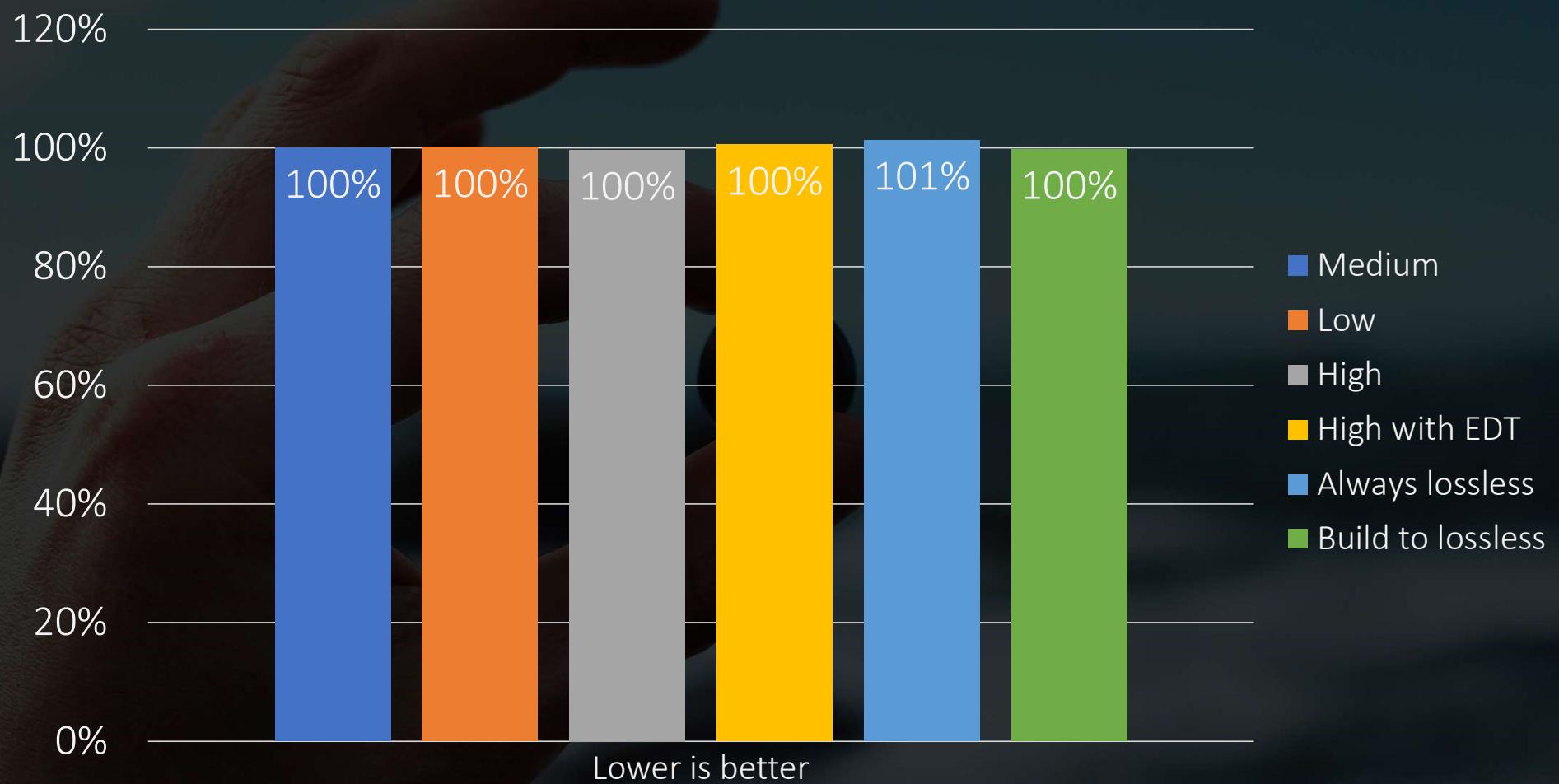
Please note: this is not a best practice!



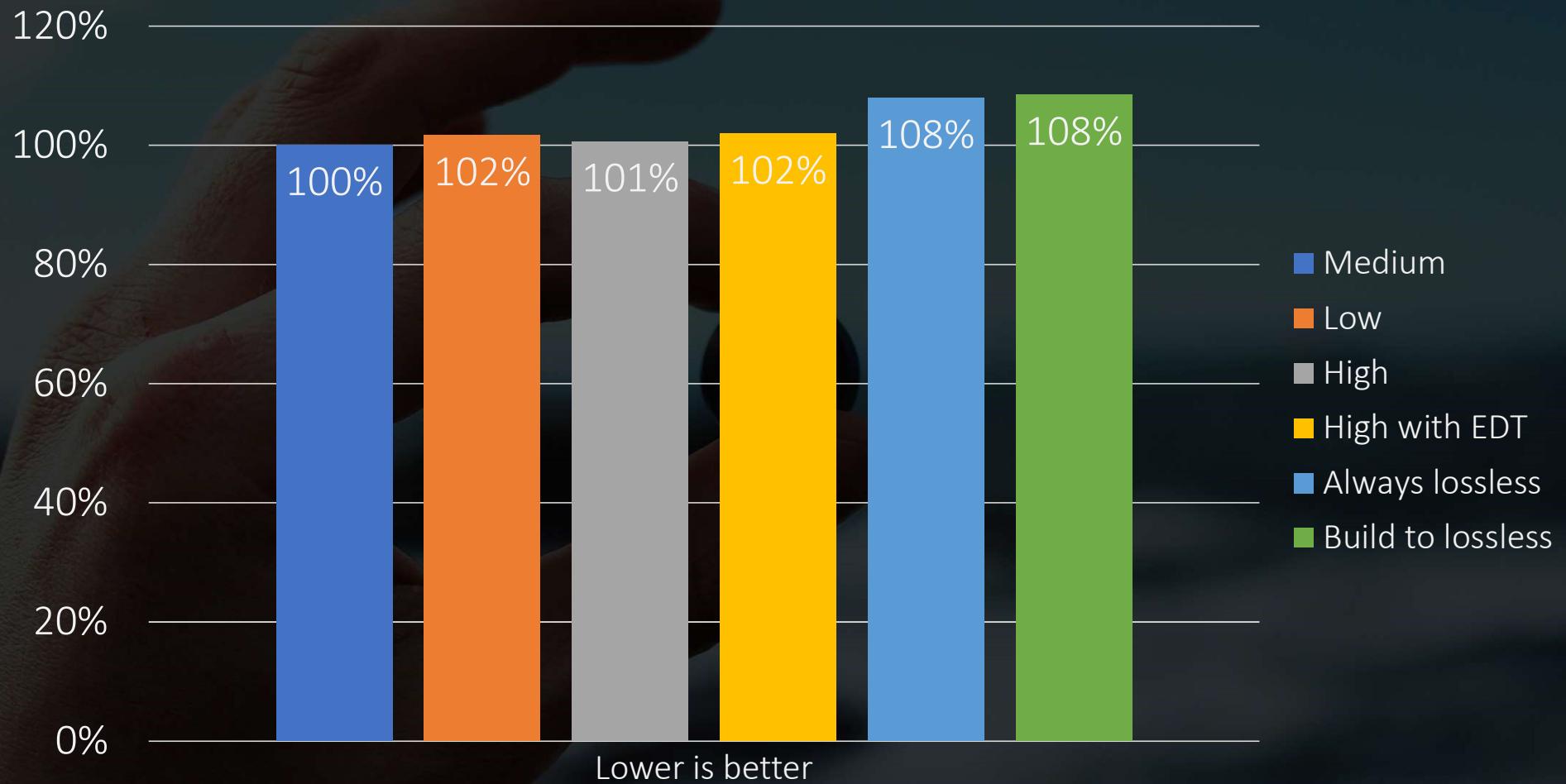
Login VSI VSImax



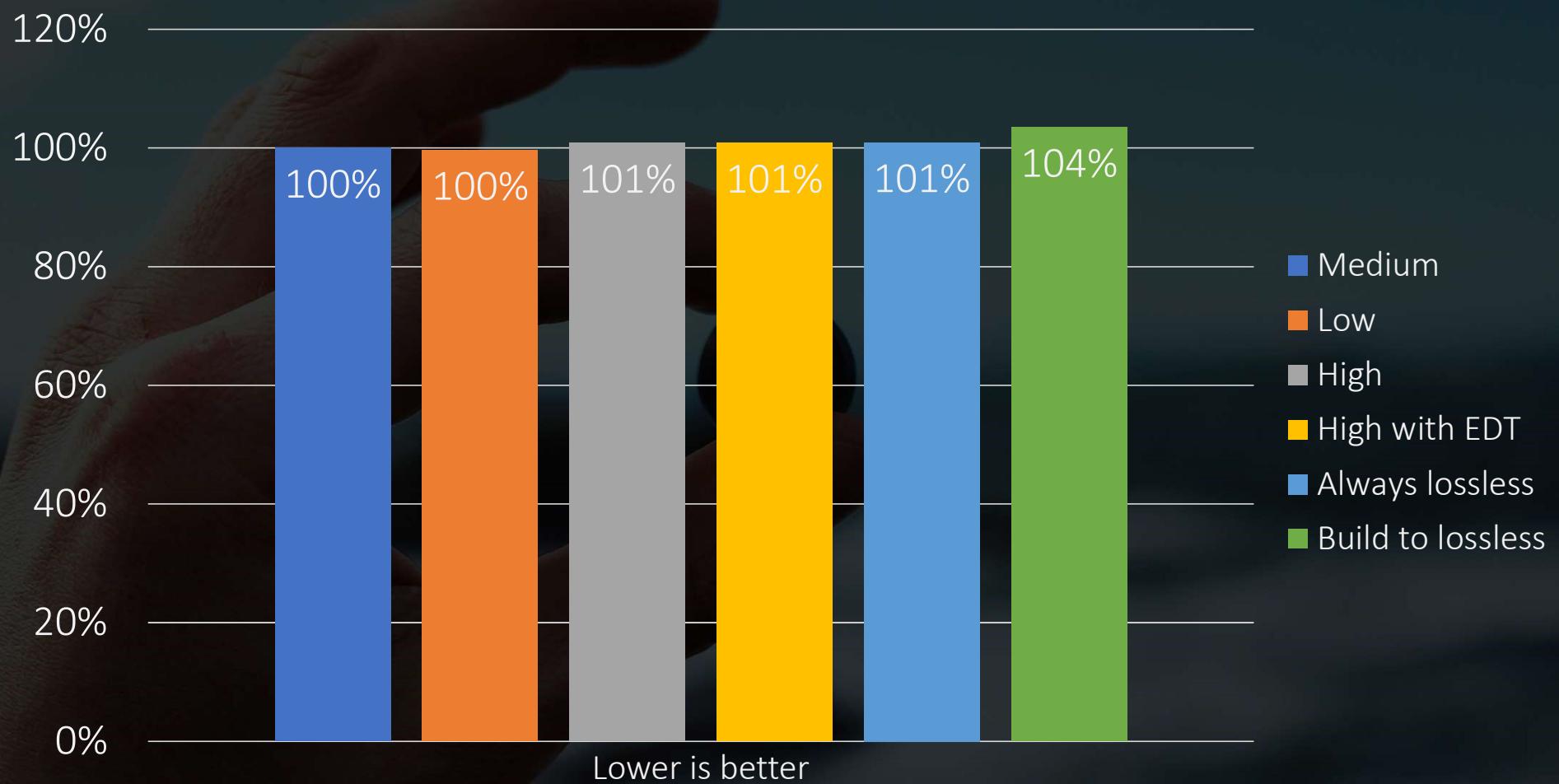
Login VSI Baseline



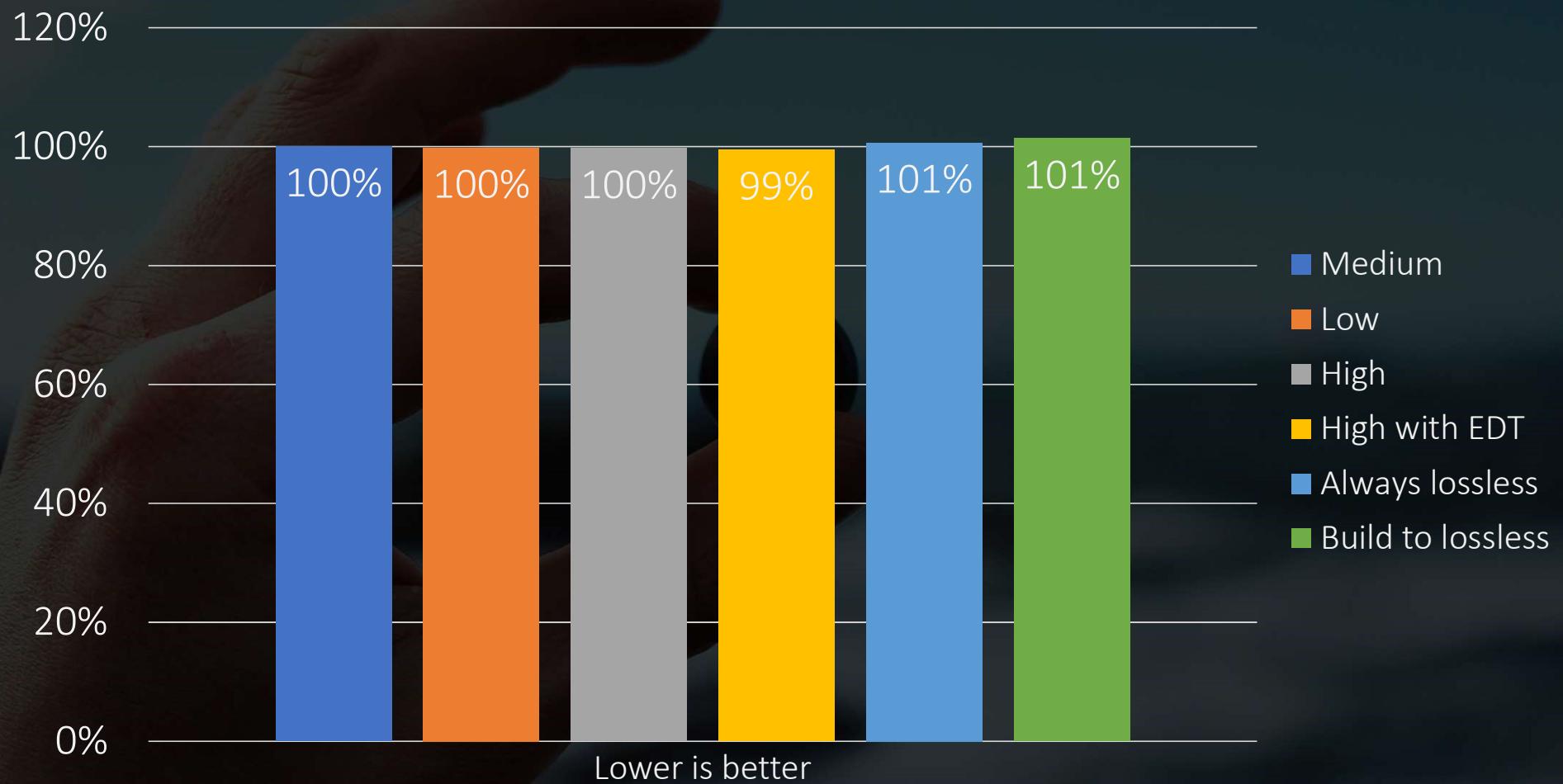
Host CPU Utilization



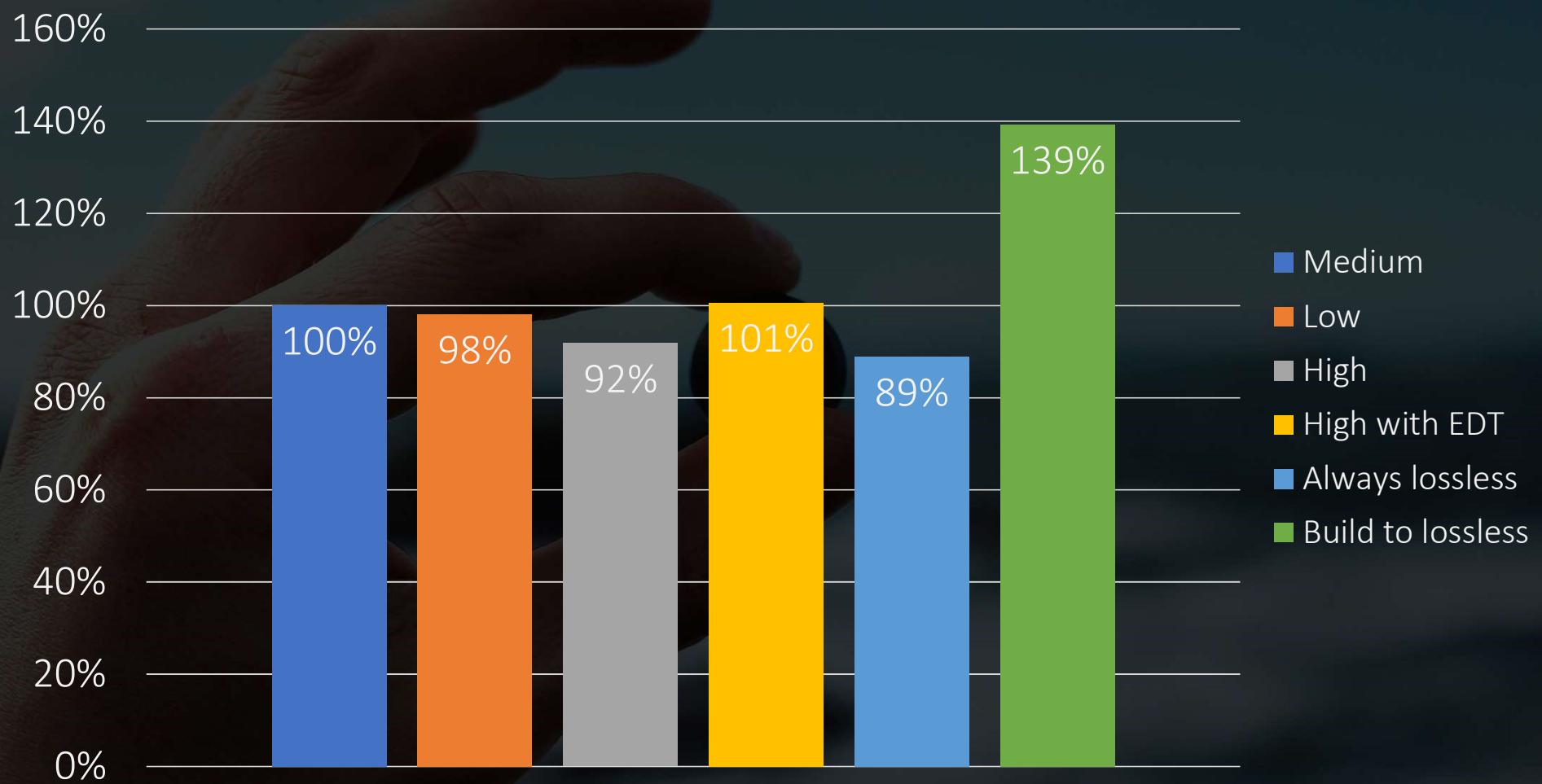
Host Reads/sec



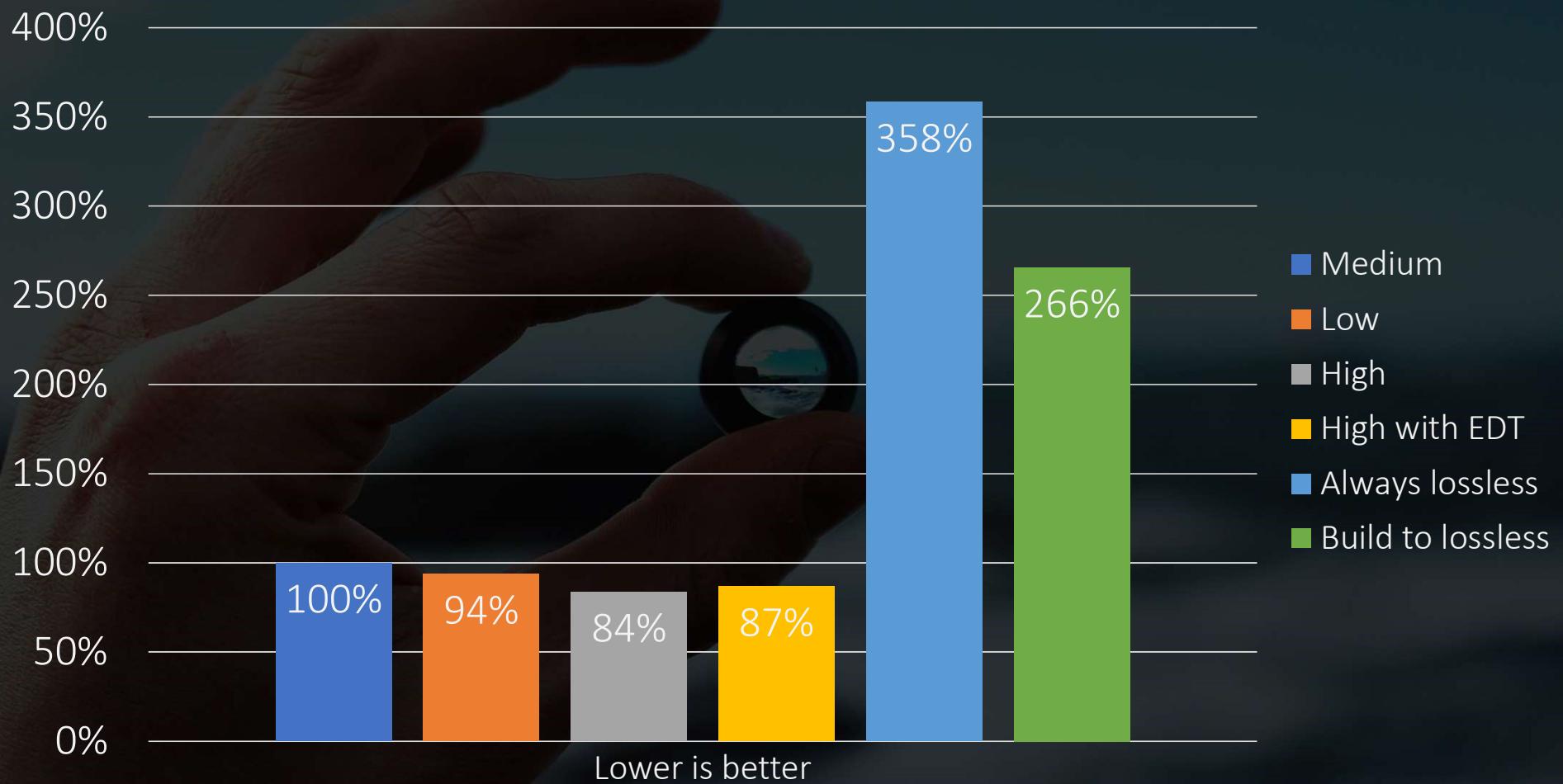
Host Writes/sec



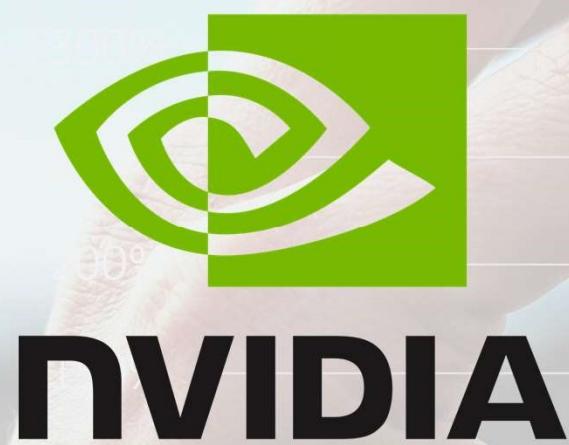
Frames per Second (FPS)



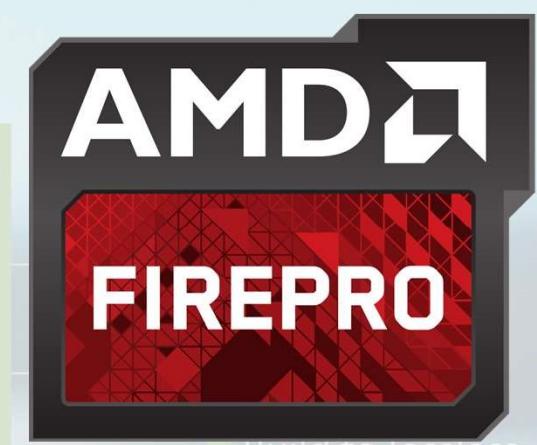
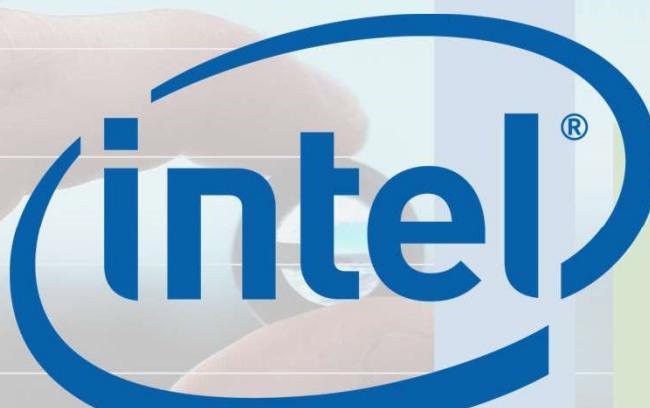
CPU for Encoding



CPU for Encoding



NVIDIA



Build to lossless

100%

100%

50%

0%

94%

84%

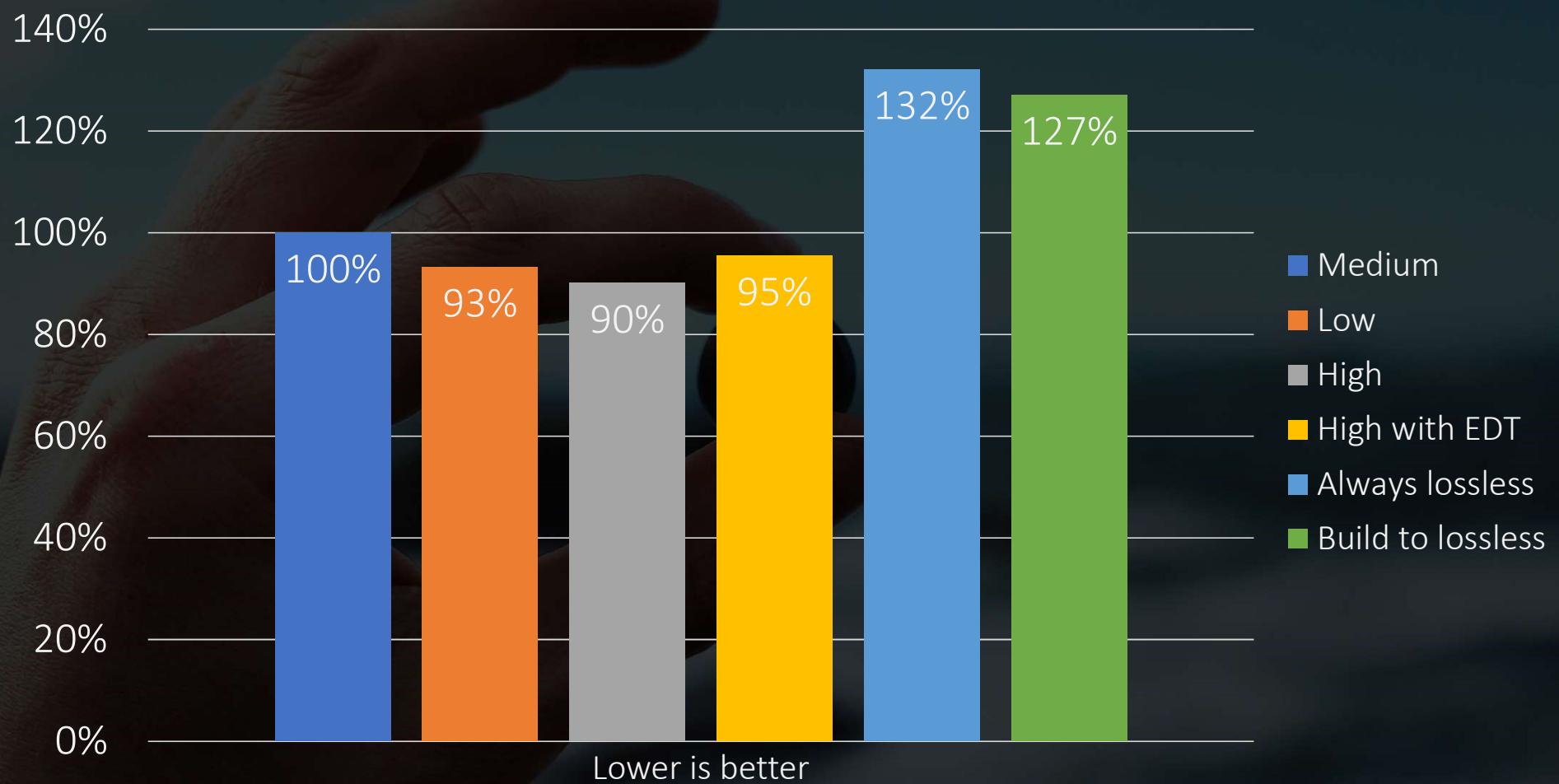
87%

Lower is better

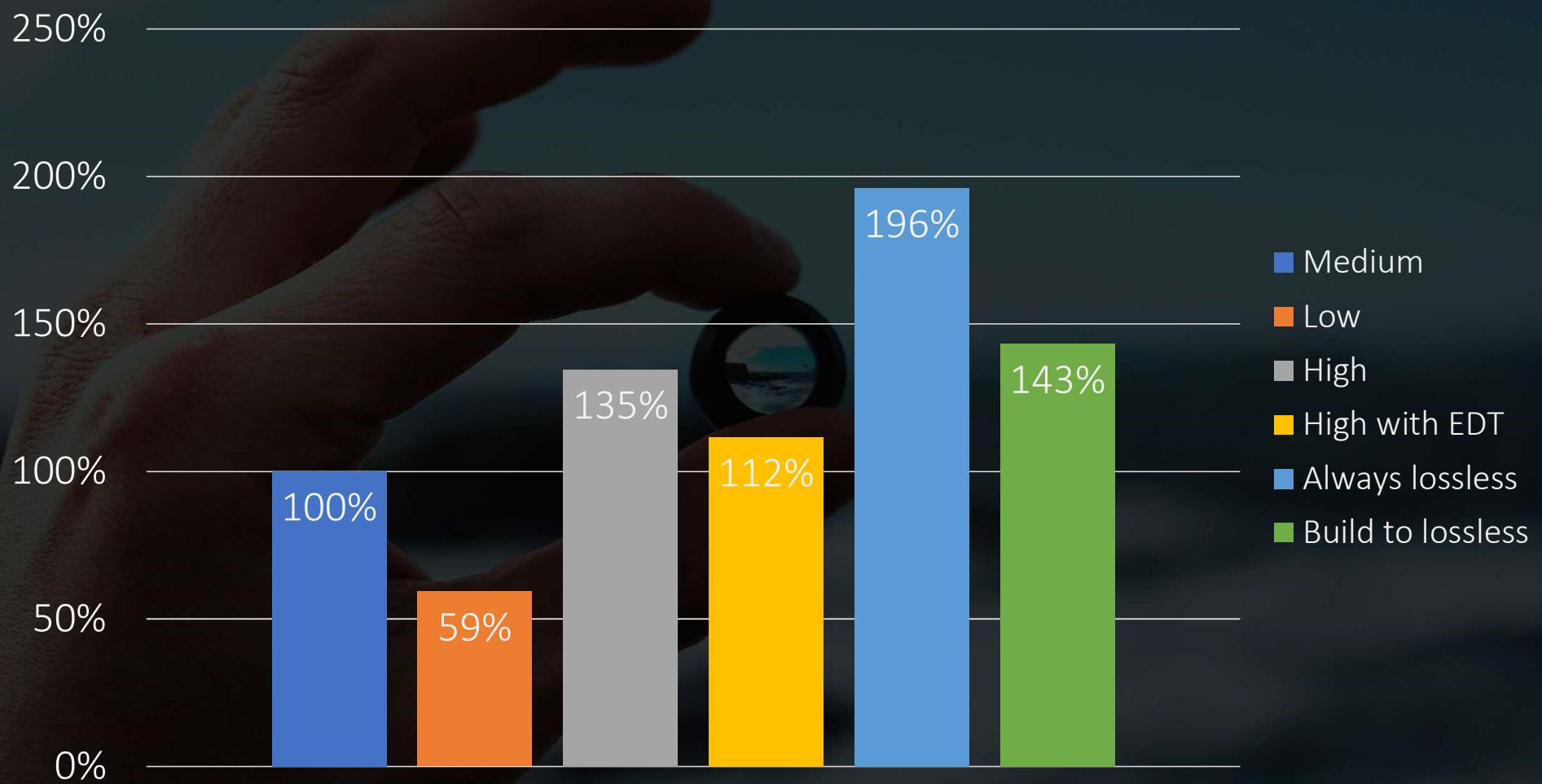
358%

66%

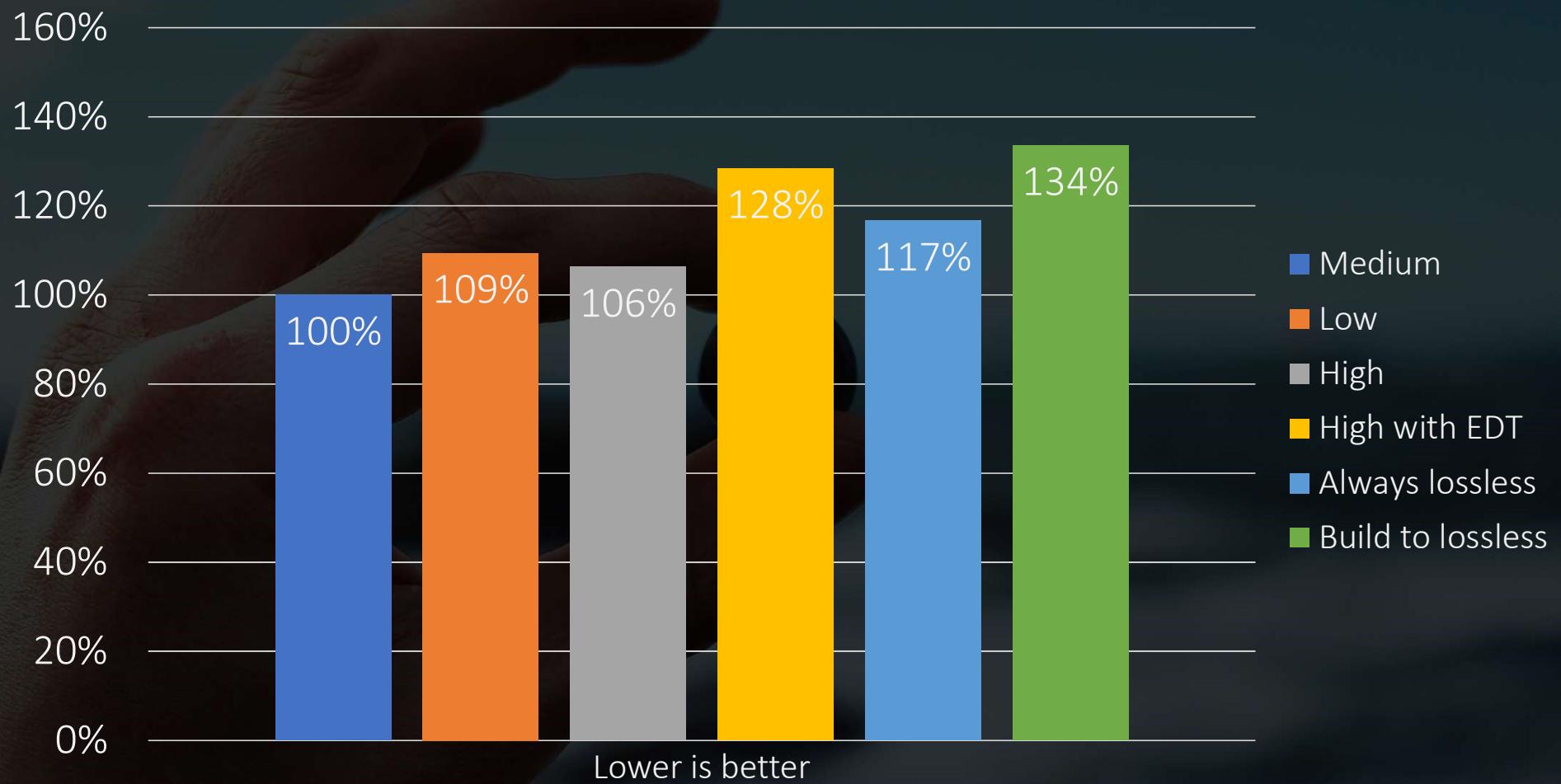
Round Trip Times (RTT)



Bandwidth



Endpoint CPU Util





Visual Quality Summary

Visual quality have different use-cases and ensure to pick the appropriate profile

Small difference in the overall user density on the servers

The visual quality does influence the resources within the VDI like bandwidth, CPU and RTT

Don't forget the endpoint resources as these are effected by the visual quality

Feel free to contribute



Join the community by participating in our
Slack Channel

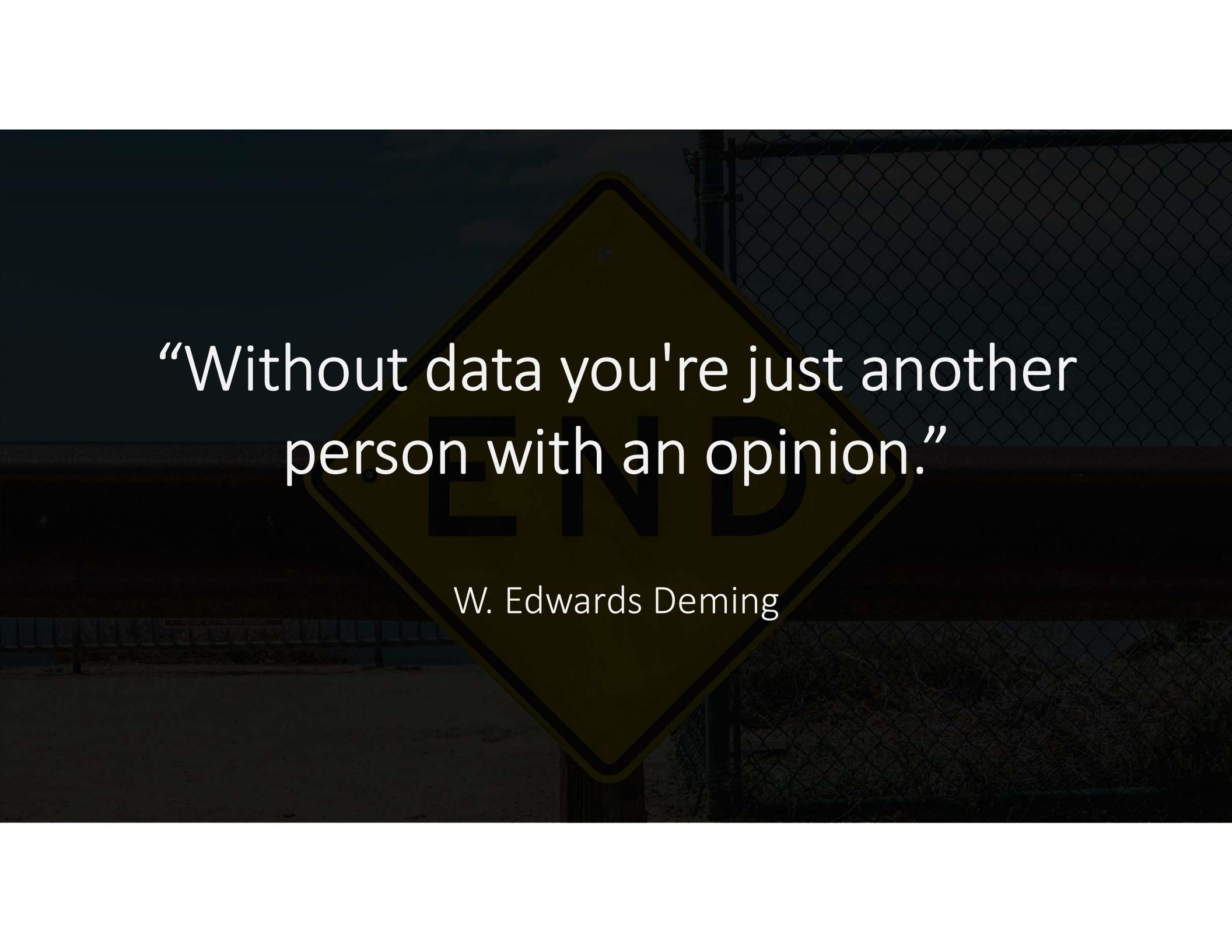


Share your ideas for interesting researches



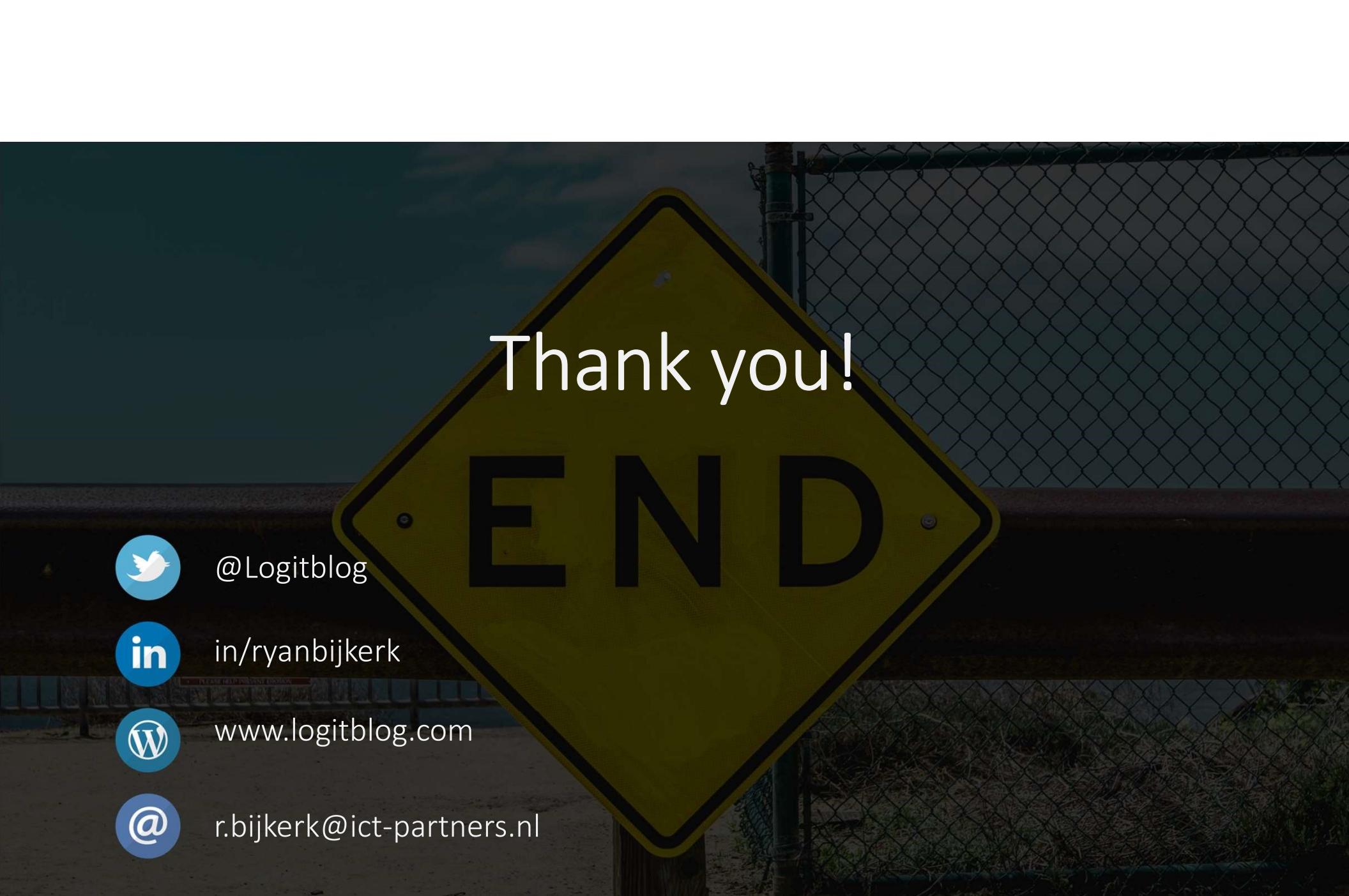
Get involved by joining and writing yourself!





“Without data you're just another person with an opinion.”

W. Edwards Deming



Thank you!



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