Explore ProVR with the Power of Lenovo Workstations

Mike Leach | Joerg Walther | 12th October 2017
Our Unique Heritage

- 1981 IBM PC
- 1984 LEGEND
- 2005 IBM SYSTEM x
- 2009 MOTOROLA
- 2009 LENOVO MOBILE
- 2011 MEDION
- 2011 NEC
- 2012 STONEWARE
“…Industry’s Fastest Growing Workstation Brand …”
“…1 in 4 Mobile Workstations sold is a ThinkPad P Series …”
Mom: Don’t sit too close to the TV. It’s bad for your eyes

Remember?
20 years later

Reality....
An artificial computer-generated world that can be experienced and interacted with.

Where the user, uses special equipment to immerse themselves and completely block out the real world.
WHAT IS AR?

A technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view.
WHAT IS MR?

“AR and VR is the same...just a different display opacity”

Reggie Watts, VRLA Keynote August 6th 2016
Is 2017 the year of VR?
VR Failures

https://youtu.be/ES_07yKIIcQ?t=125
A Quick Look Back

VR History......
Hardware Technologies

1950’s
1960’s
1980’s
1990’s
2010+
Head Mounted Displays
‘HMD’

Professional Grade
- Low FOV
- High Pixel Density
- Detail over Immersion

Entertainment
- High FOV
- Low Pixel Density
- Immersion over Detail *
Don’t Forget VR Caves

Fully Immersive 3, 4 or 5 Sided.....
and 3D Projectors
$2.3 Billion

Source: Autodesk 2017
Low Cost VR Experiences

- VR-ready Smartphone, cost less than €100 now bundled with Software

- Growing consumer support and expanding uses

Source: https://vr.google.com/daydream/
Low Cost VR for the Desktop

- VR-Ready Devices
- Growing Consumer Support and Expanding Uses
Tracking HTC Vive with Lighthouse Tracking

- OpenVR
- Precision
- Low Latency
- Extendable
- 4m x 4m Space
What Are Lenovo Doing?
LENOVO THINKSTATION P Series

A powerful range of desktop workstations NVIDIA certified for ProVR use. Entry level through to ultra-high-end and built to not only meet but exceed the rigorous performance requirements of Virtual Reality workflows.

- NVIDIA Quadro Pascal GPU(s)
- Powerful Intel Xeon CPUs
- Desktop/Rackmountable Chassis
- ISV Certified
LENOVO THINKPAD P71

World’s most powerful & technologically advanced 17” notebook. NVIDIA Quadro ProVR certified and perfect for demanding mobile VR requirements.

- World’s First ProVR Certified Laptop
- 17” 4K Colour Accurate Display
- Mil-Spec Tested for Ultimate Durability
- ISV Certified
NEW - Lenovo VR Headset


- World’s First Holographics HMD
- 1440x1440 OLED Screen
- Supports Inside/Outside
- Six Degrees of Freedom Tracking
- Supports 3\textsuperscript{rd} Party Controllers
VR Experiences

360 Degree Panoramic

Immersive VR
ULTRA-LOW LATENCY

Motion to Photon: $\leq 20$ ms
VR Works – Quadro VR SLI

Frame 1 (Left eye)

Frame 1 (Right eye)

Merged Frame

Scales Performance Across 2x GPUs
**PROFESSIONAL AR / VR**

**Creation**
- Virtual Reality Content Creation

**Performance**

**Consumption**
- **Product Design**
- **AEC / BIM**
- **Training**
- **Collaboration**

**Professional VR Content**
- Collaborative, Multi-user

**Education / Museums**
- 360 Video

**VR Film & Game**

- **Prosumer Video**
- **360 Video**
- **Edu / Museum**
- **Kiosk**

- **VR Gaming**
- **Consumer**
- **VR at Home**

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LENOVO PRO AR / VR STRATEGY

2017

VR Ready Hardware Partners

NVIDIA VR READY

VIVE

Lenovo VR

Solution & Technology Integration Partners

VIRTALIS

EPIC GAMES

WORLDVIZ

ISV Partners

THE FOUNDRY

AUTODESK

DASSAULT SYSTEMES

SIEMENS

UNREAL ENGINE

unity
ProVR Use Cases
Customer Success Stories
ThinkStation P920

- Powerful Multi-CPU Workstation
- Up to 2TB of DDR4-2666 Memory
- Storage Capacity >40TB
- Support for 4x High-End GPUs
- (3) NVIDIA Quadro P6000 & GP100
- NVIDIA Quadro SLI & Quadro Sync Certified

Perfect for High Quality & GPU Intensive VR Workflows – HMDs, Caves & More....
Collaborative VR

ThinkPad P71

- 17.3 “ Mobile ProVR Workstation
- +6hrs VR use
- NVIDIA Quadro Pro VR Ready
- NVIDIA Quadro P4000 & P5000 GPU

Perfect for ‘On the Go’, Mobile or Customer Facing & Collaborative VR
Questions?
thanks.
Different is better