



HP Power Solutions

High Performance Workstations

Anton Russkikh

BPS Country Category Manager

August 2022



LIMITS

WHAT ARE THE CUSTOMER PAIN POINTS



TIME IS MONEY

Everyone gets the same 24 hours in a day— the number of simulations, trial and error adjustments, and analysis companies achieve depends on their technology.



DIFFERENTIATION

Companies rely on top experts to drive the research, development, and innovation for the next big thing. This means having the latest and greatest tools performing powerful, never before done exploration.



COMPLEXITY

Detail is increasing— whether it's the number of hairs on an animated character's head, or the variables in a thermal design simulation.



UNCERTAINTY

With complexity comes risk. As companies scale globally and achieve scale never before seen, they are relying on predictive analytics and big data to help them uncover problems before they occur and drive risk out of operations.

SIMULATION



Multi-threading divides and conquers.

CAD applications are coded to excel with single-threaded, high frequency processing power, while graphics-intensive work needs a machine powerfully engineered to divide and conquer for multi-threaded applications like CATIA and PTC Creo. Before this generation, you could be fast, or you could be able. But what if a new breed of power came along that could do... both?

VISUAL EFFECTS



The right expansion and power.

Visual effects artists use powerful graphics applications to create stunning sensory effects for audiences around the world— and that can take power budget, and single or dual processor configurations



VIDEO EDITING & RENDERING



8K isn't just twice as large to transfer as 4K.

In fact, as image resolution increase from 2K to 4K to 8K, each increment in pixel rate actually squares. While 4K equals 8 megapixels, 8K equals a whopping 32 megapixels. What's important to video editors? The expansion of the HP Z8 G4 is almighty, with bays that can accommodate additional GPUs for post-production processing, and PCIe storage for lightning-fast read/write in cutting edge resolutions



OEM BUSINESS



Reliability is king in the world of integrated solution

From powering scientific equipment to healthcare imaging, workstation computing has an incredible value proposition as part of larger solutions in oil & gas, manufacturing, healthcare, and more industries. With stable & consistent offerings, longer lifecycles, and the high reliability standards, HP Workstations are at the heart of mission critical machinery every day.



A grayscale photograph of an industrial refinery or chemical plant. The scene is filled with tall distillation columns, complex piping, and structural steel frameworks. A crane is visible on the right side. The overall atmosphere is industrial and technical.

GEOSPATIAL



Tackle large datasets with ease.

Z Performance Desktops are built to handle the demanding work flows and large datasets common in the segment of oil and gas and other geospatial industries. With highly configurable options, and the latest NVIDIA graphics cards, the Z Performance Desktops can tackle modeling and visualizing complex data structures to provide answers fast and drive data informed business decisions.



TECHNOLOGY TRENDS & DRIVERS FOR PERFORMANCE REQUIREMENTS

Virtual Reality

Content is king, and virtual reality is the technology to drive experiences that persuade, inform, entertain, and facilitate collaboration in the future. This demands development workstation-class horsepower.

3D Printing

With layered complexity in three dimensional space comes higher memory requirements to calculate model manipulations in real time. Computational design performs thousands of calculations in real time to represent users' designs and models.



Machine Learning

Artificial intelligence is built on learning over time. The more recorded history, the better the machine is at finding patterns, causes, and effects, which means these algorithms need a LOT of data.

3D Scanning

To capture every detail with today's advanced 3D scanning technology generates a complexity and nuance that means one thing: data. All that data needs not only workstation power, but also workstation reliability.

THE WORKFLOW OF THE FUTURE

MACHINE LEARNING

DEVELOPMENT



HP Workstations
power training
phase

*Desktop Workstation
Opportunity*



A cloud or data
center is used to
aggregate data

DEVELOPMENT

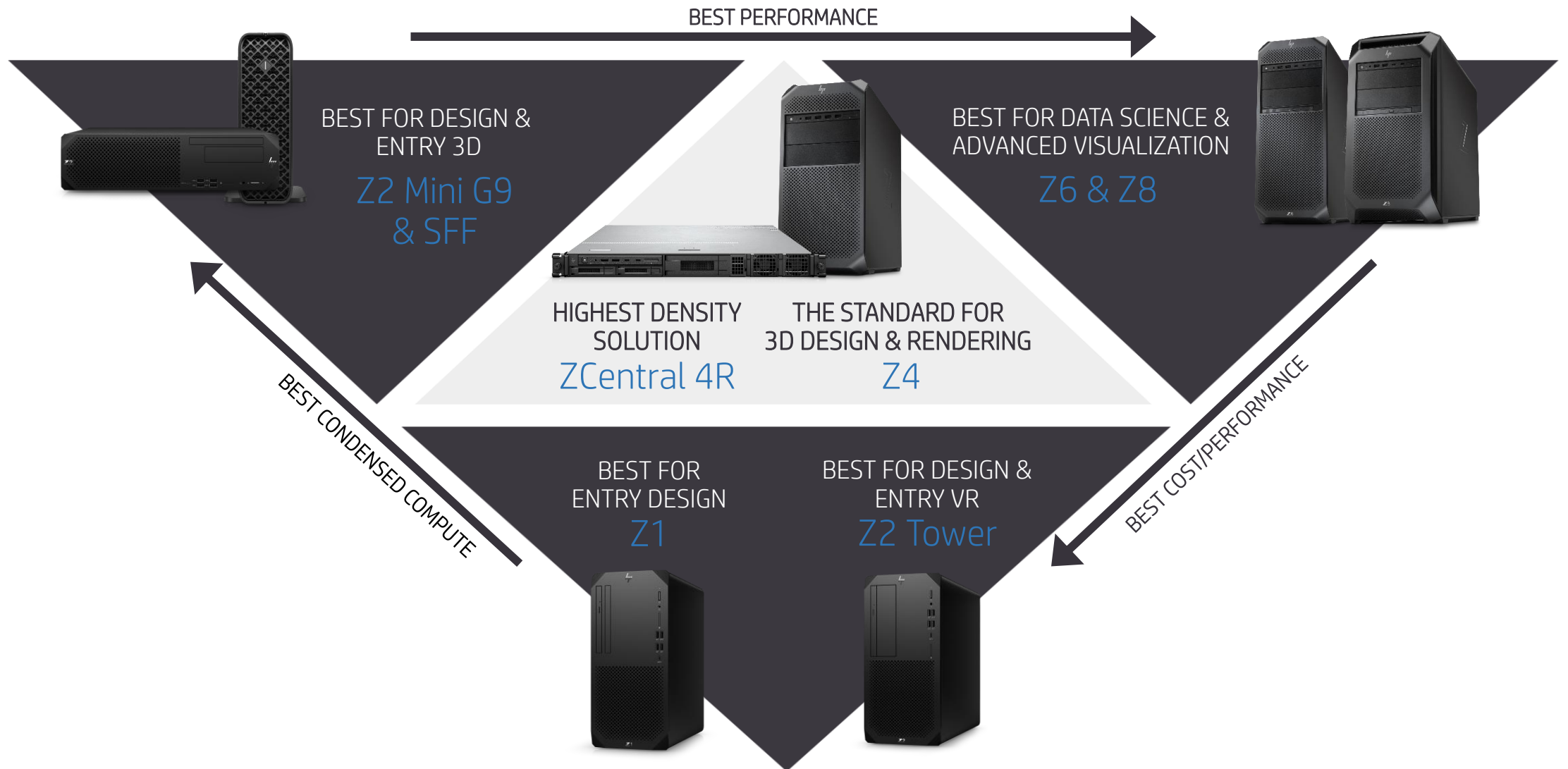


Use cases like industrial inspection, video surveillance, and self-driving cars emerge—some using integrated workstations such as video surveillance.

*OEM Workstation
Opportunity*



Z DESKTOP PORTFOLIO



PERFORMANCE

RELIABILITY

INNOVATIONS



WHAT DID WE DO ABOUT IT?

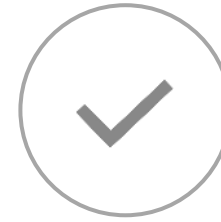
THE APPROACH

HP PERFORMANCE ADVISOR

A COMPLETE SYSTEM VIEW AT YOUR FINGERTIPS



Tuned for each application



Solve performance constraints



Achieve maximum performance



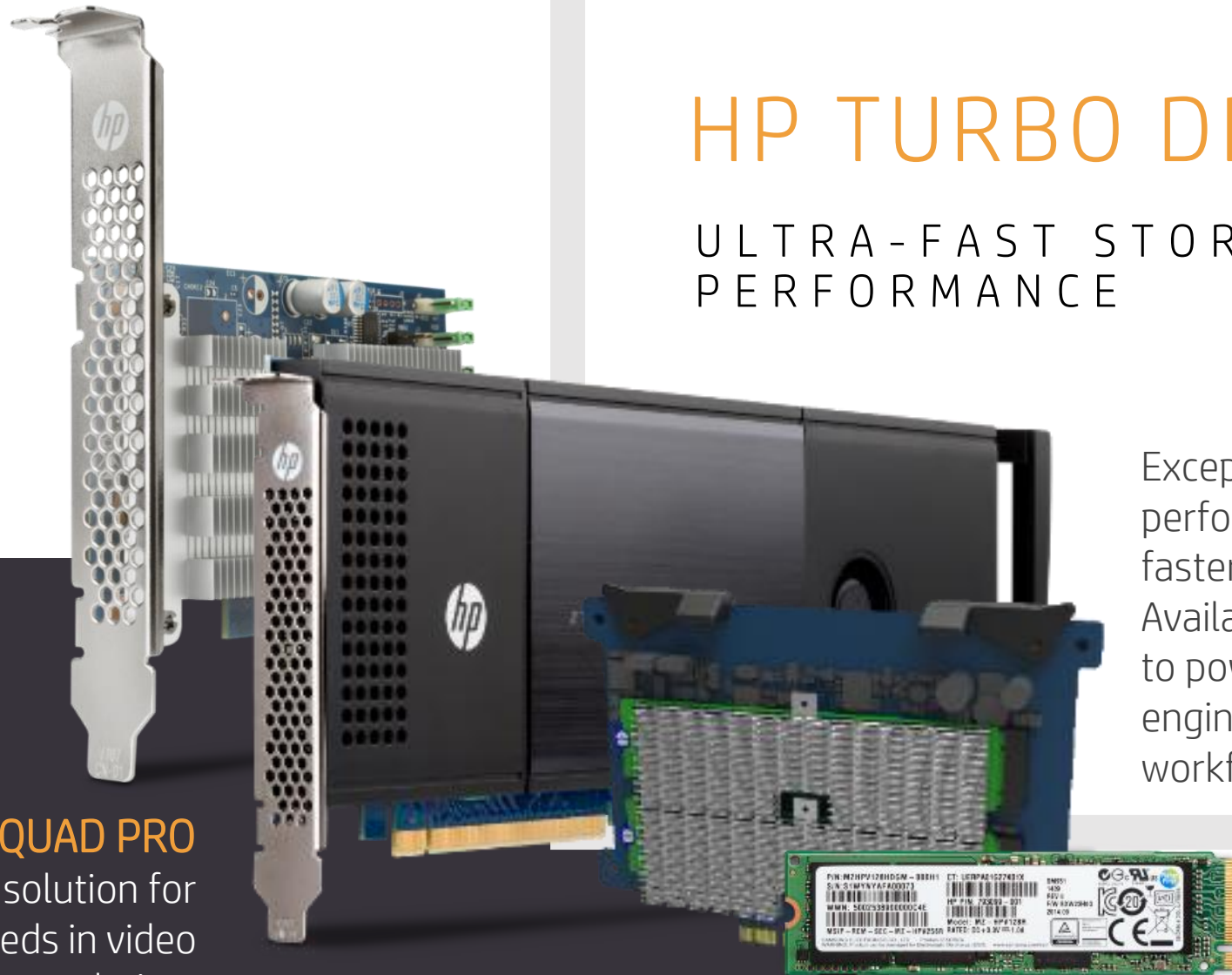
HP TURBO DRIVE

ULTRA-FAST STORAGE
PERFORMANCE

Exceptional price for performance that's up to 4x faster than SATA SSD. Available in 1 TB5 capacities to power advanced video, engineering, and complexity workflows.

HP Z TURBO DRIVE QUAD PRO

A great quad PCIe solution for high performance needs in video editing, rendering, & more



AN EXTRAORDINARY
AMOUNT OF
ENGINEERING.



THE HP Z8 G4 WORKSTATION

HP Z8 G4 WORKSTATION: FEATURES AND BENEFITS (PART 1)

Windows 10 Pro, Windows 11 Pro¹
and Linux[®] OS Support

Provides a choice to meet user need for legacy OS deployments, future-looking OS requirements and Linux[®] requirements

Dual Intel[®] Xeon[®] Scalable processors²

Latest generation of processor technology providing performance benefits through greater core counts and higher speed memory

High performance memory subsystem

High frequency memory with greater parallelism and expandability. Results in greater performance for data-intensive operations

24 memory slots enabled for up to 3 TB of high-speed memory

Highest memory capacity supported by the architecture. Improves overall solution performance and time-to market with their product

7 high-performance PCIe slots

Very flexible and high-performance IO implementation providing the customer with expandability, flexibility and performance for configuration enhancements

Choice of 1125 W, 1450 W, and 1700 W 90% efficient power supplies

1700 W supply enables the largest system configurations. Ideal for users requiring the highest levels of processing, memory, graphics, storage and IO configurability

** 1.5 TB available at launch*



HP Z8 G4 WORKSTATION: FEATURES AND BENEFITS (PART 2)

Personality Slots (2x PCIe x8)

Additional high-performance expandability initially providing support for up to 4 PCIe storage devices; expandability is enhanced by not consuming the 7 PCIe slots

Dual 10GbE add-in card

Two high-speed 10 Gb network ports WITHOUT consuming I/O slots at a significantly lower cost than standard add-in cards; HP-proprietary solution

Tool-less chassis

Quick/easy access for system updates without requiring tools; quick access allows upgrades while incurring minimal system downtime enhances overall user productivity

Iconic industrial design with aluminum handles

Provides a modern and advanced look; built-in handles allows for quick and easy system relocations

Low acoustics

Noise reduces productivity; the low acoustics of the HP Z8 allows the full range of HP Z8 configurations to be provided while avoiding noise distractions to the user

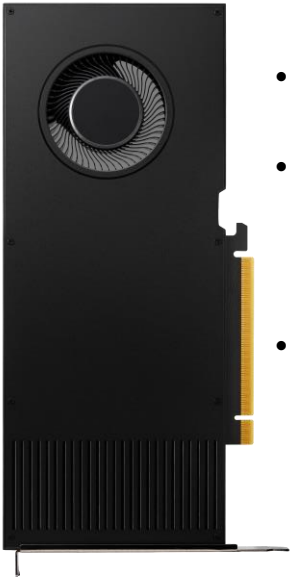
* 1.5 TB available at launch



NEW! NVIDIA RTX LINEUP

PERFORMANCE AMPLIFIED

NVIDIA RTX™ A4000*



- 16 GB of memory
- 48 2nd generation RT Cores to acceleration photorealistic ray-tracing
- Purpose-built 3rd generation 192 Tensor Cores accelerate AI Workflows

NVIDIA RTX™ A5000**



- 24 GB of memory
- 64 2nd generation RT Cores to accelerate photorealistic ray-traced rendering
- Purpose-built 3rd generation 256 Tensor Cores accelerate AI Workflows

NVIDIA RTX™ A6000



- 48 GB of memory, double the memory size of the previous-gen 6000 series
- Up to 1.4x faster performance in graphics heavy workflows^{1 3}
- Up to 53% faster renders using 2nd generation RT cores^{2 3}

NVIDIA GRAPHICS FOR DESKTOPS

	ENTRY	MID-RANGE	HIGH END	ULTRA HIGH-END	SPECIALITY SOLUTIONS		
Graphics Card	NVIDIA® Quadro® P1000 NVIDIA® Quadro® P620 NVIDIA® Quadro® P400	NVIDIA® Quadro® P2200	NVIDIA® Quadro RTX™ 4000	NVIDIA® Quadro RTX™ 5000 NVIDIA® Quadro® P5000	NVIDIA® Quadro RTX™ 6000 NVIDIA® Quadro® P6000	NVIDIA RTX™ A6000 NVIDIA® Quadro RTX™ 8000	NVIDIA® Quadro® GV100
Target Segments	Architecture, Engineering & Construction (AEC)						
	Product Design & Manufacturing (PD)						
	Healthcare						
	Media & Entertainment (ME)						
	Oil & Gas						
VR-Ready	X	X	✓	✓	✓		
Benefits for Upgrading	<ul style="list-style-type: none"> 2 GB memory ISV Certs Higher performance vs IGP, gfx GPU, consumer cards NVIDIA Mosaic 	<ul style="list-style-type: none"> Up to 5 GB memory Up to 400%¹ faster NVIDIA Mosaic 	<p>QUADRO RTX</p> <ul style="list-style-type: none"> 8GB GDDR6 memory 36 NVIDIA RT Cores 288 Tensor Cores <p>QUADRO PASCAL</p> <ul style="list-style-type: none"> 8GB memory Up to 140%¹ faster NVIDIA Mosaic with Sync II 	<p>QUADRO RTX</p> <ul style="list-style-type: none"> 16 GB GDDR6 Memory +12 NVIDIA RT Cores +96 Tensor Cores Up to 57%¹ faster NVLink multi-GPU support <p>QUADRO PASCAL</p> <ul style="list-style-type: none"> 16GB memory Up to 33%¹ faster Error Correcting Code (ECC) Memory 	<p>QUADRO RTX</p> <ul style="list-style-type: none"> 24 GDDR6 Memory +24 NVIDIA RT Cores +192 Tensor Cores Up to 46% faster NVLink multi-GPU support <p>QUADRO PASCAL</p> <ul style="list-style-type: none"> 24GB memory Up to 41%¹ faster 	<ul style="list-style-type: none"> 48 GB GDDR6 Memory NVLink multi-GPU support <p>QUADRO PASCAL</p> <ul style="list-style-type: none"> Up to 32GB of HBM2 ultra-high-performance memory Dedicated Tensor Cores for highest Deep Learning performance NVLink multi-GPU support 	

VIRTUALLY AMAZING VR READY



THE HIGH
PERFORMANCE
WORKSTATION THAT
GROWS WITH YOU.



THE HP Z6 G4 WORKSTATION

HP Z6 G4 WORKSTATION: FEATURES AND BENEFITS

Brand new industrial design

Latest-generation Intel® Xeon® processors¹

Latest generation NVIDIA and AMD pro graphics

Dual HP Z Turbo Drive M.2 slots standard

HP Sure Start Gen3²

Dual 1 GbE LAN ports standard

Dual USB 3.1 Type C™ port front I/O option

Dual 10GbE copper port rear I/O option

Self-encrypting drive options

Inspire users to design their best work for a company who values them

Maximum multi-thread performance of professional applications

Maximum 3D workflow application performance pro display support

Peak application storage read/write performance without losing a PCIe slot

Security and confidence knowing BIOS in use has not been compromised

Create two network connections without adding cost or losing a PCIe slot

Transfer data to external devices faster with less workflow disruption

Create two super-fast network connections to huge data files in the cloud

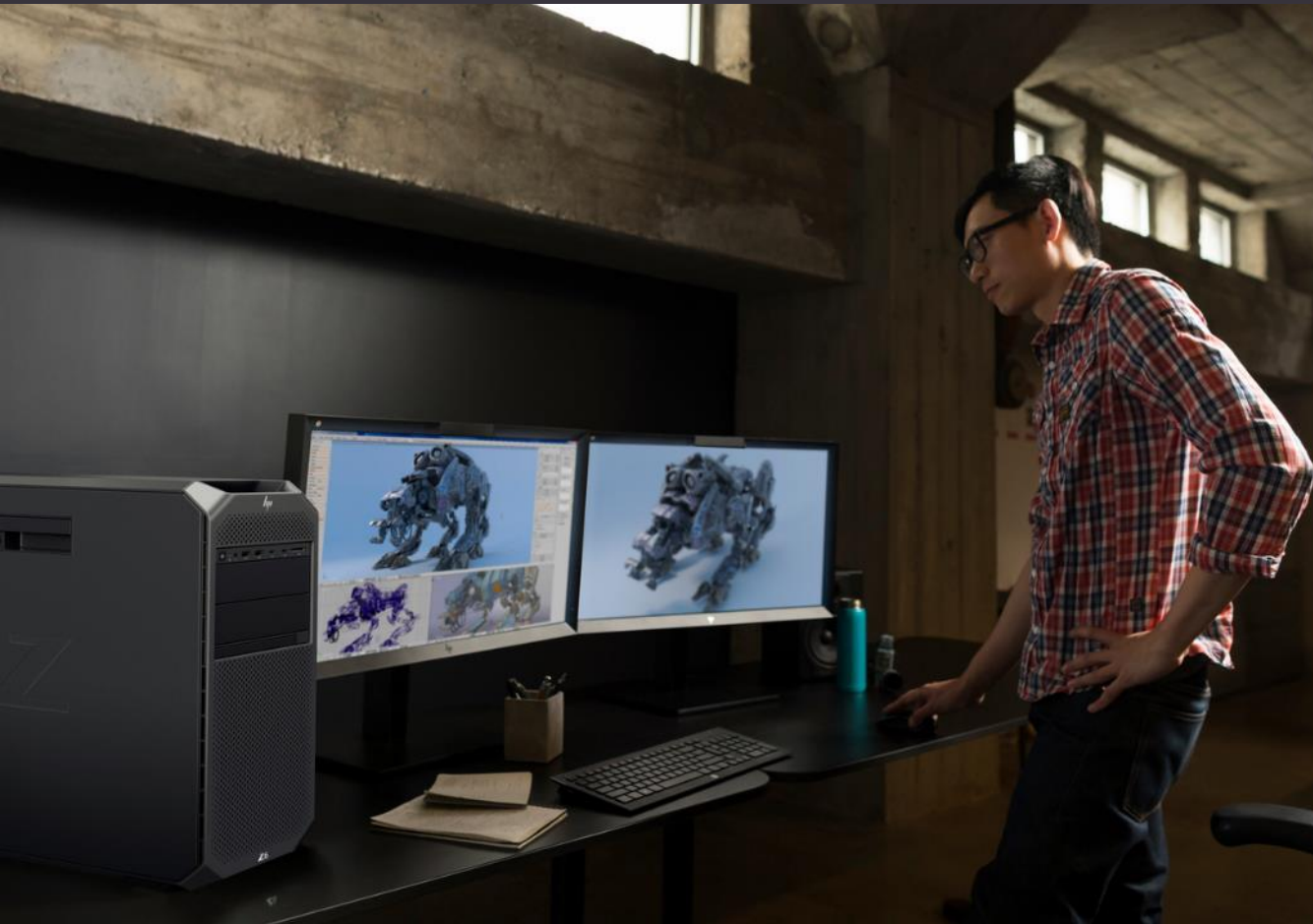
Security and confidence knowing valuable IP won't be compromised

* 1.5 TB available at launch



Z6 G4

INTEL® XEON® W-3000 SERIES (SINGLE SOCKET PROCESSORS)



- Enables a cost effective combination of high core count and high frequency, for workflows that don't need or benefit from extreme core count processing of dual processor systems.
- More expandable, with similar or better performance than the HP Z4 G4 with similar configurations.¹
- Ideal for combined workflows such as simulation driven design, or design with CPU based rendering and visualization, in product design and animation.

1. Based on internal HP testing comparing similar configurations of the HP Z6 G4 to HP Z4 G4.



HP'S BEST-SELLING PERFORMANCE WORKSTATION



THE HP Z4 G4 WORKSTATION

HP Z4 G4

NOW WITH INTEL'S HIGHEST PERFORMANCE
SINGLE-SOCKET PROCESSORS AVAILABLE

SPEED. VISUALIZATION. 24x7 DESIGN.



Up to 18 cores for multi-threaded applications



HP Z4 G4 WORKSTATION

TYPICAL CUSTOMER PROFILES

Intel® Xeon® W configurations

- Civil Engineering
- Finance
- Geospatial
- Healthcare
- Automotive
- Aerospace and Defense

- AUTODESK® INVENTOR®
- BENTLEY MICROSTATION
- AUTODESK® REVIT®
- AUTODESK® 3D STUDIO MAX®

Intel® Core® X configurations

- Education
- Rendering
- VR development
- Game development
- Animation
- Software development

- UNREAL ENGINE
- KEYSHOT®
- V-RAY
- PIXAR RENDERMAN®



HP Z4 G4 NVIDIA® GRAPHICS COMPARISON

NVIDIA® GEFORCE®

Less predictable lifecycle

Many professional applications not supported with NVIDIA® GeForce® driver

Gaming-visualization intent only

Designed for gaming use-cases

Less robust cards for shake, shock, vibration, and acoustics

NVIDIA® QUADRO®

Stable lifecycle and availability

NVIDIA® Quadro® driver supports all major professional applications

Advanced visualization features such as NVIDIA® Mosaic™ & NVIDIA® Quadro® Sync II

Designed for heavy professional 24x7 use

Reliable & durable card designs for dynamics as well as acoustics



HP Z4 G4 WORKSTATION: FEATURES AND BENEFITS

Brand new industrial design

Latest generation
Intel® Xeon® W / Core™ X processors¹

Latest generation NVIDIA® and AMD pro
graphics

Dual HP Z Turbo Drive M.2 slots

HP Sure Start Gen³

Dual Extreme 3D Graphics option

Dual USB 3.1 Type C™ port front I/O option

10% smaller chassis generation to generation

Inspire users to design their best work for a company who values them

Incredible performance for multi-thread and frequency-bound applications

Maximum 3D workflow application performance pro display support

Peak application storage read/write performance without losing a PCIe slot

Security and confidence knowing BIOS in use has not been compromised

Enables GPU intensive workflows e.g. VR content creation and GPU compute

Transfer data to external devices faster with less workflow disruption

More space in furniture enclosures or your ever-shrinking office layout

** Available on Intel Xeon W configurations only*

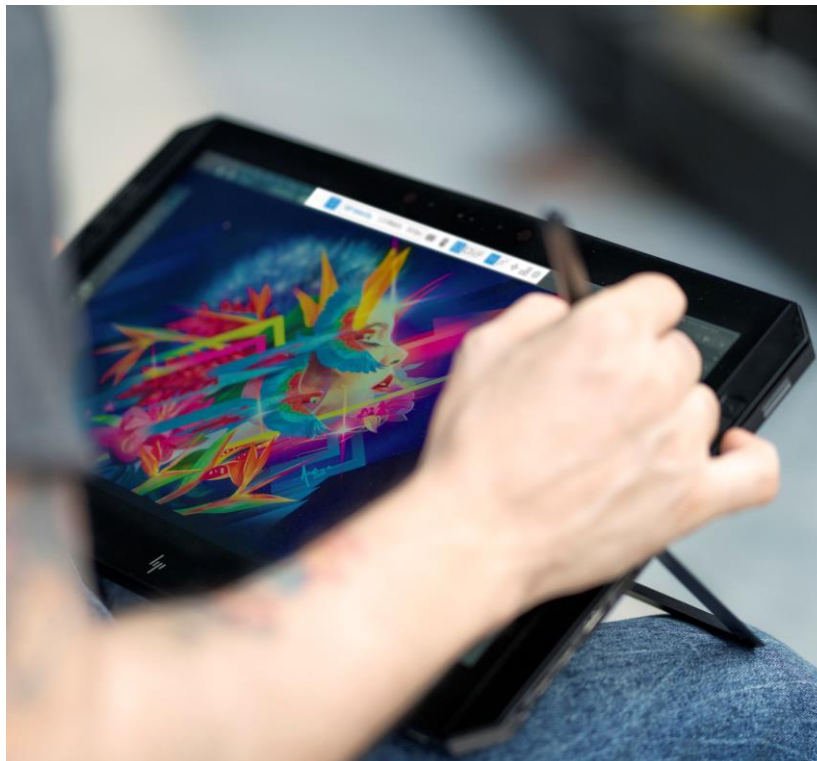


THE ZCENTRAL SOLUTION

The world's first single-sourced remote workstation solution¹¹.
Designed to empower your global workforce.



Rack Mounted Z by HP Workstations



ZCentral Remote Boost



ZCentral Connect

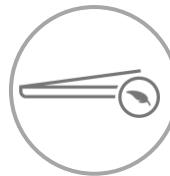




WORKSTATION ACCESS
FROM ANYWHERE⁵

ZCentral Remote Boost Software

(Formerly known as RGS)



1:1 Dedicated
Connection
with Thin &
Light



Application
Independent



License
Included in Z
Workstations



Integrated
Collaboration
Tools



Exceptional
Frame Rate



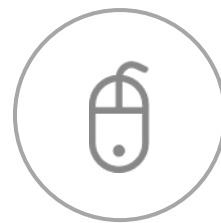
Superb
Image
Quality



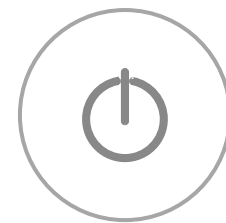


CENTRALIZED WORKSTATION
MANAGEMENT MADE EASY

ZCentral Connect Software



One-Click
Access



Centralized
Power On/Off



Manage Connections
Remotely





WORLD'S MOST POWERFUL MINI WORKSTATION¹

Z2 MINI G9
WITH INTEL K-SERIES PROCESSORS

NVIDIA A2000 12GB GPU

280W Power Supply for expandability

Unique thermal solution for high performance





THE RIGHT CHOICE

FOR SMALL & MEDIUM BUSINESS



High performance with K-series Intel CPUs and standard low-profile graphics



World's most secure and manageable workstations³



Built to last with 360k hours of testing



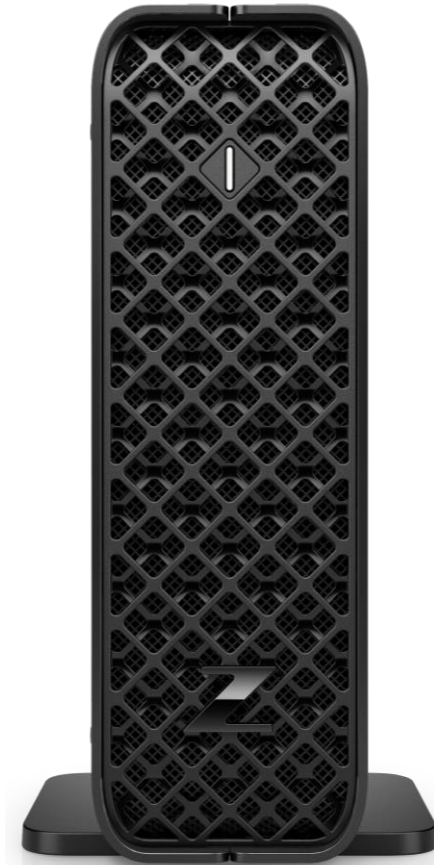
Hybrid support for the evolving workforce with ZCentral³¹ and Teradici solutions.



WHAT'S EXCITING ABOUT THE NEW Z2 MINI G9?



Z2 MINI G5	KEY EXPERIENCES WHAT'S NEW	Z2 MINI G9
Intel® 10 th gen CPUs	Latest Intel technology to create with confidence	Intel 12th gen CPUs
Up to 10 core CPUs	The power to create	Up to 16 core (8+8) CPUs*
PCIe Gen3 graphics	Desktop-class graphics performance	PCIe Gen4 graphics
PCIe Gen3 storage	Cruise through large files	PCIe Gen4 storage
DDR4 3200MHz ECC/nECC memory	Faster memory for complex workflows	DDR5 4800MHz ECC/nECC memory



VISIONARY
DISPLAYS FOR
VISIONARY
CREATORS



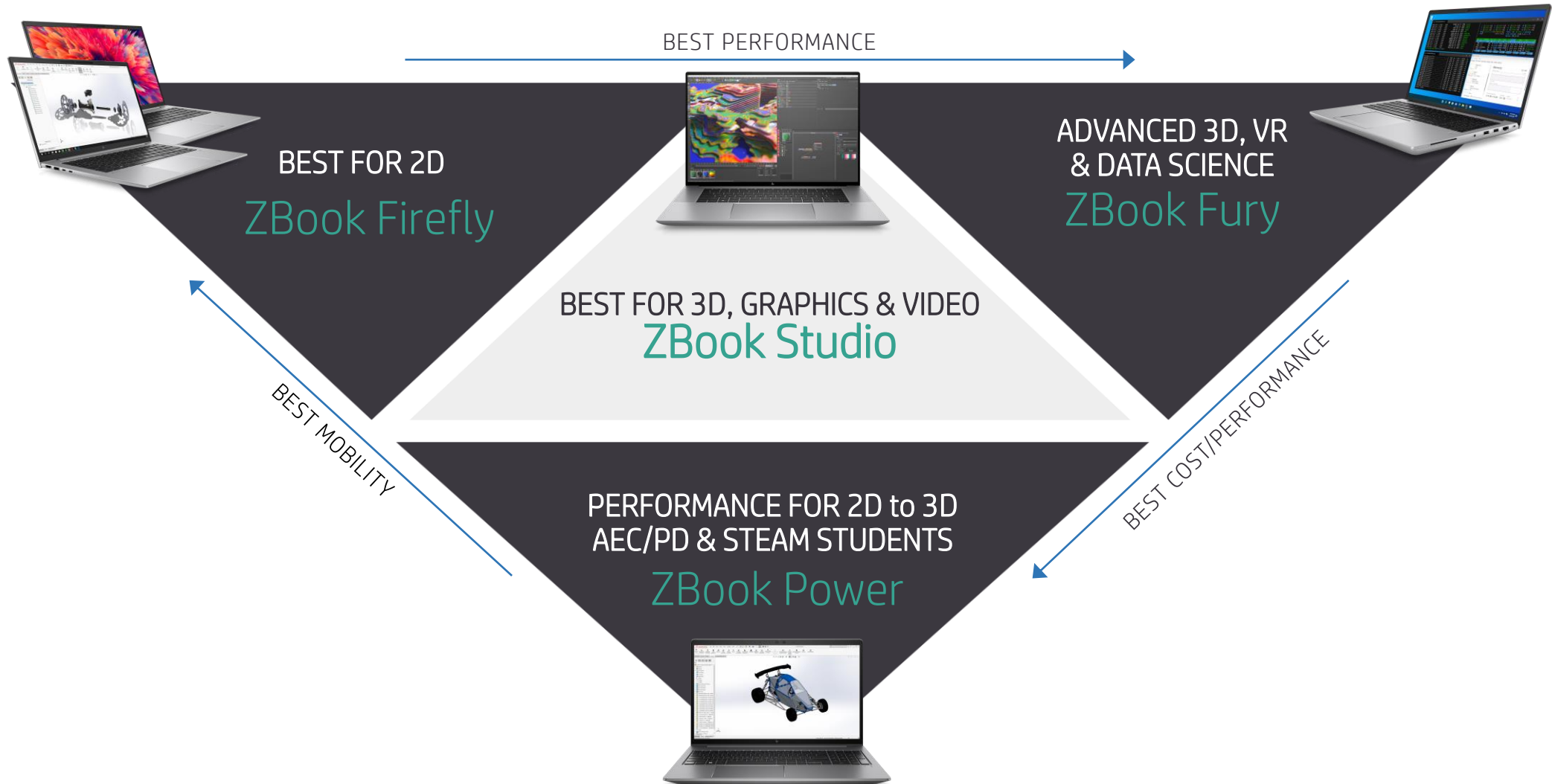
HP DREAMCOLOR
Z31x STUDIO

HP DREAMCOLOR
Z27x STUDIO

HP DREAMCOLOR
Z24x

HP DREAMCOLOR DISPLAY PORTFOLIO

ZBOOK PORTFOLIO



WE PROUDLY DESIGN A SANITIZABLE PC PORTFOLIO

HP Easy Clean¹ disables the touchscreen, keyboard, & clickpad at the touch of a button to clean without powering off.



TESTED TO ENDURE 1000 WIPE CYCLES²

All ZBook PCs are designed to be wiped down using many commonly available household disinfecting and cleaning wipes² using the HP cleaning guidelines.



SANITIZABLE PC

Withstands 1,000 cycles of disinfection with household wipes²



51% OF ITDMS³

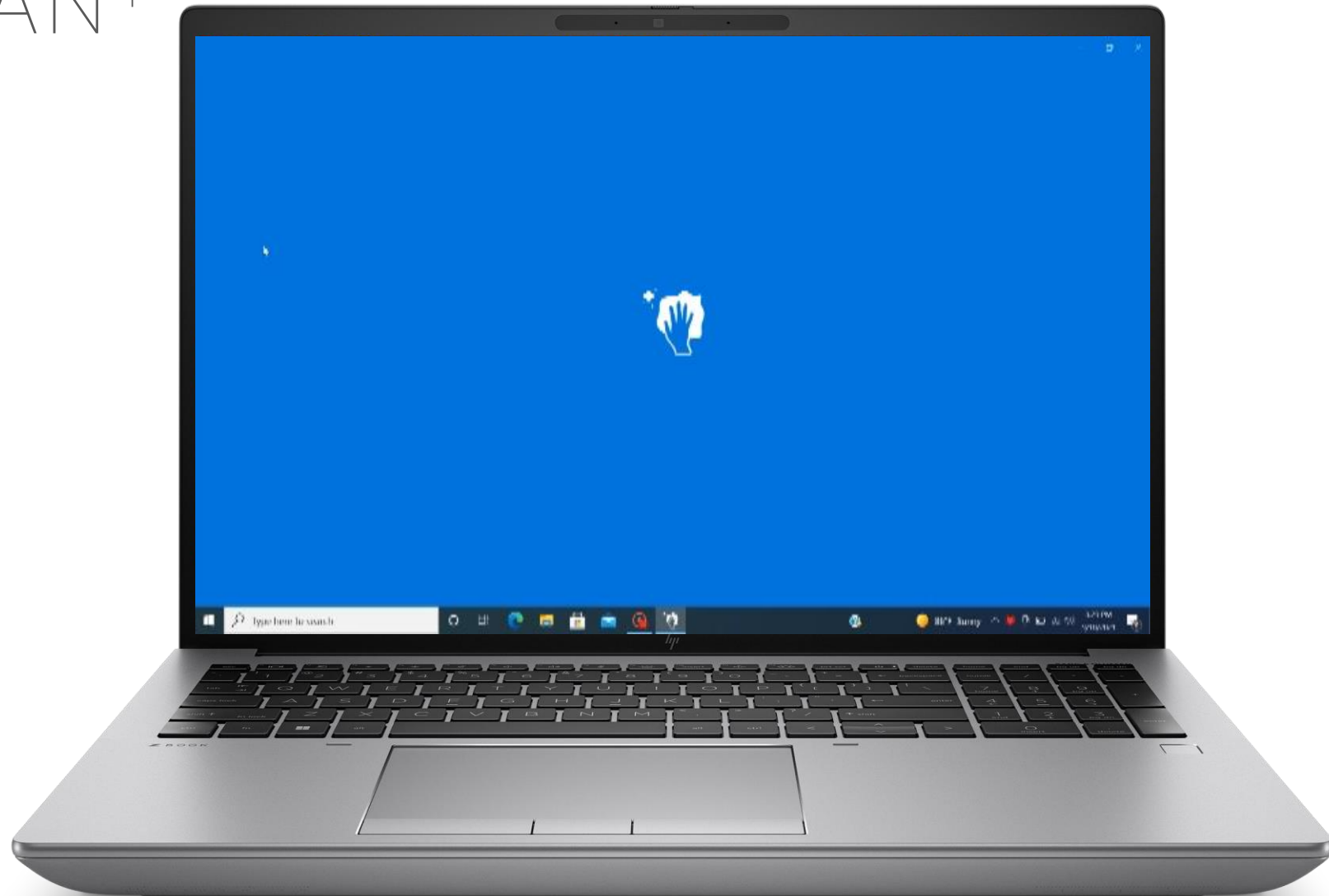
Prioritize computers that you can sanitize/wipe down



HP EASY CLEAN¹

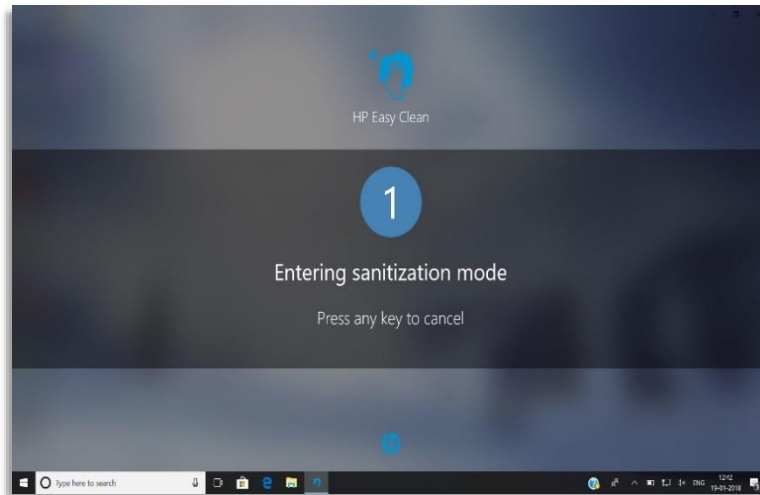
EXCLUSIVE FROM HP.

Provides the ability to disinfect the entire device without having to put it to sleep or power it off. HP Easy Clean¹ freezes all the functions of your PC allowing you to physically sanitize and clean your PC components like the keyboard, display, camera, & touchpad.

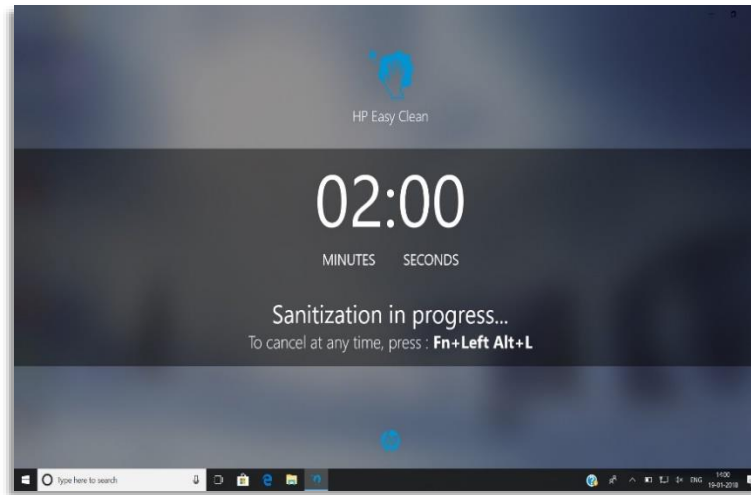


HP EASY CLEAN 2.0¹

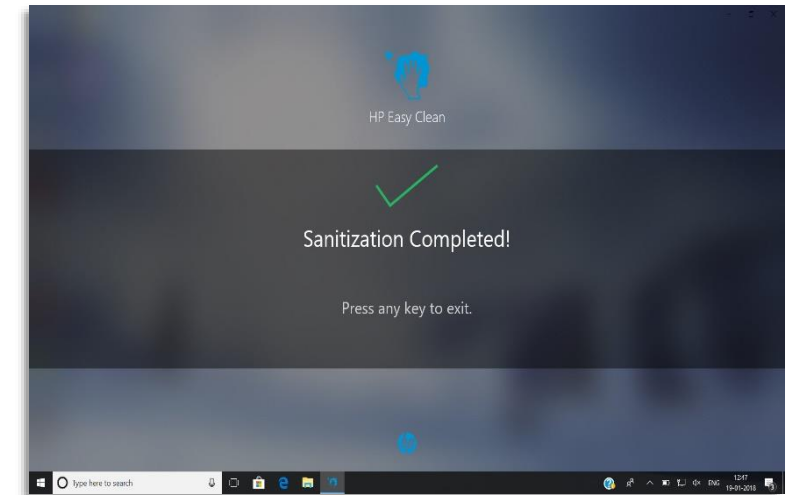
COMPLETELY DISABLES KEYBOARD, TOUCHSCREEN, CLICK PAD,
CLICK KEYS &
POWER BUTTON



PRE-SANITIZATION
Pre-sanitization countdown timer to
help the user exit if application is
invoked in error



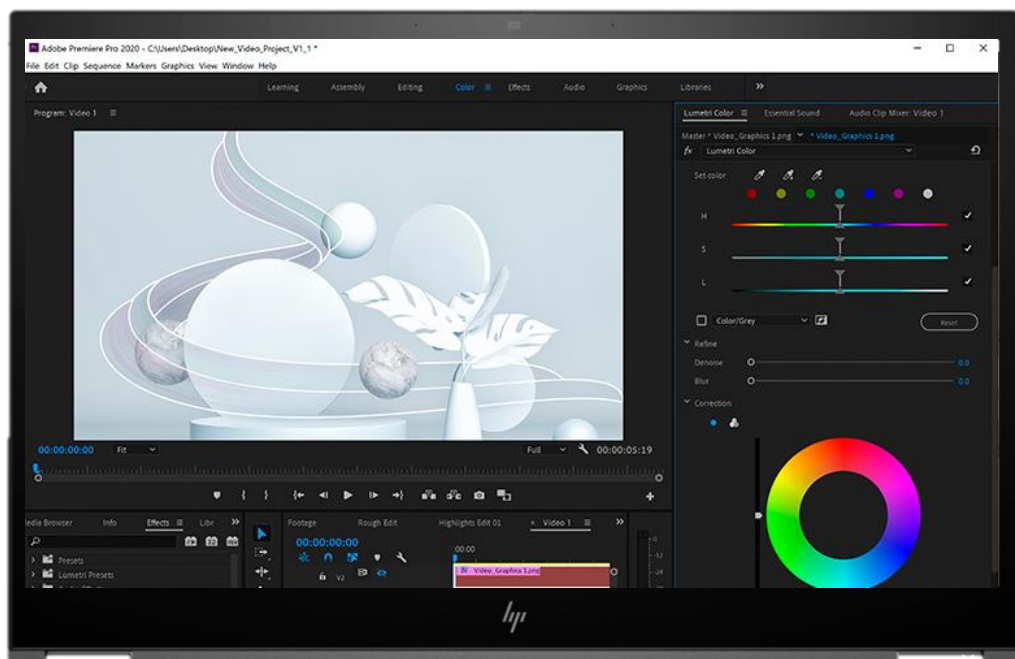
SANITIZATION
On-screen countdown timer
and short-cut info



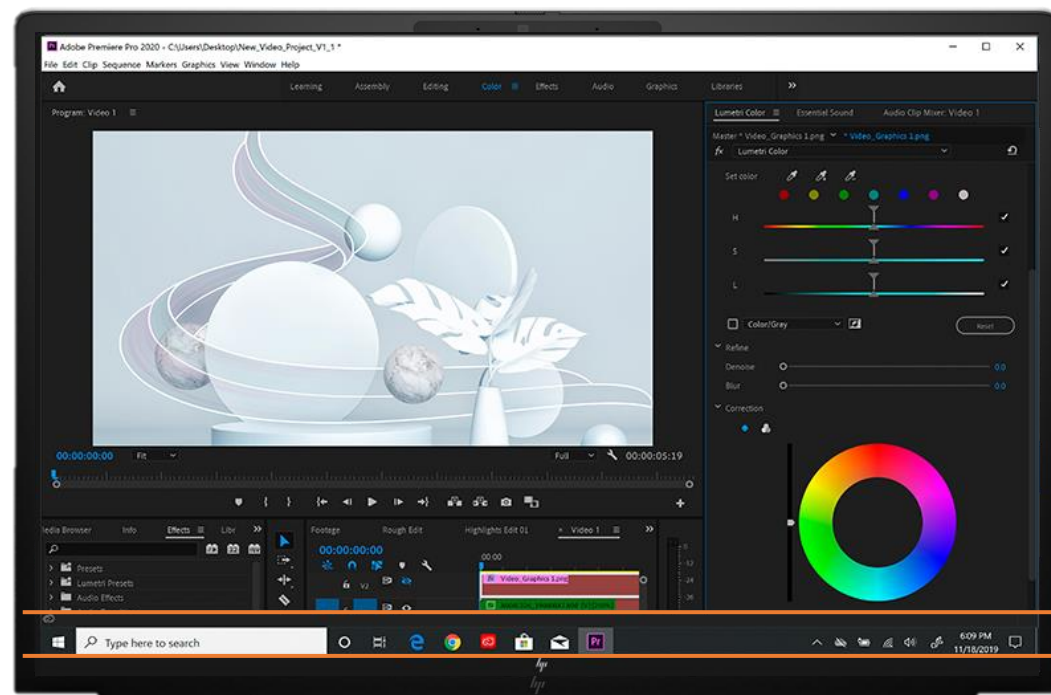
POST-SANITIZATION
On-screen info specifying
sanitization mode is complete

SEE MORE, DO MORE

MORE CONTENT | MORE MENUS | LESS SCROLLING



FURY 15 G8
16:9



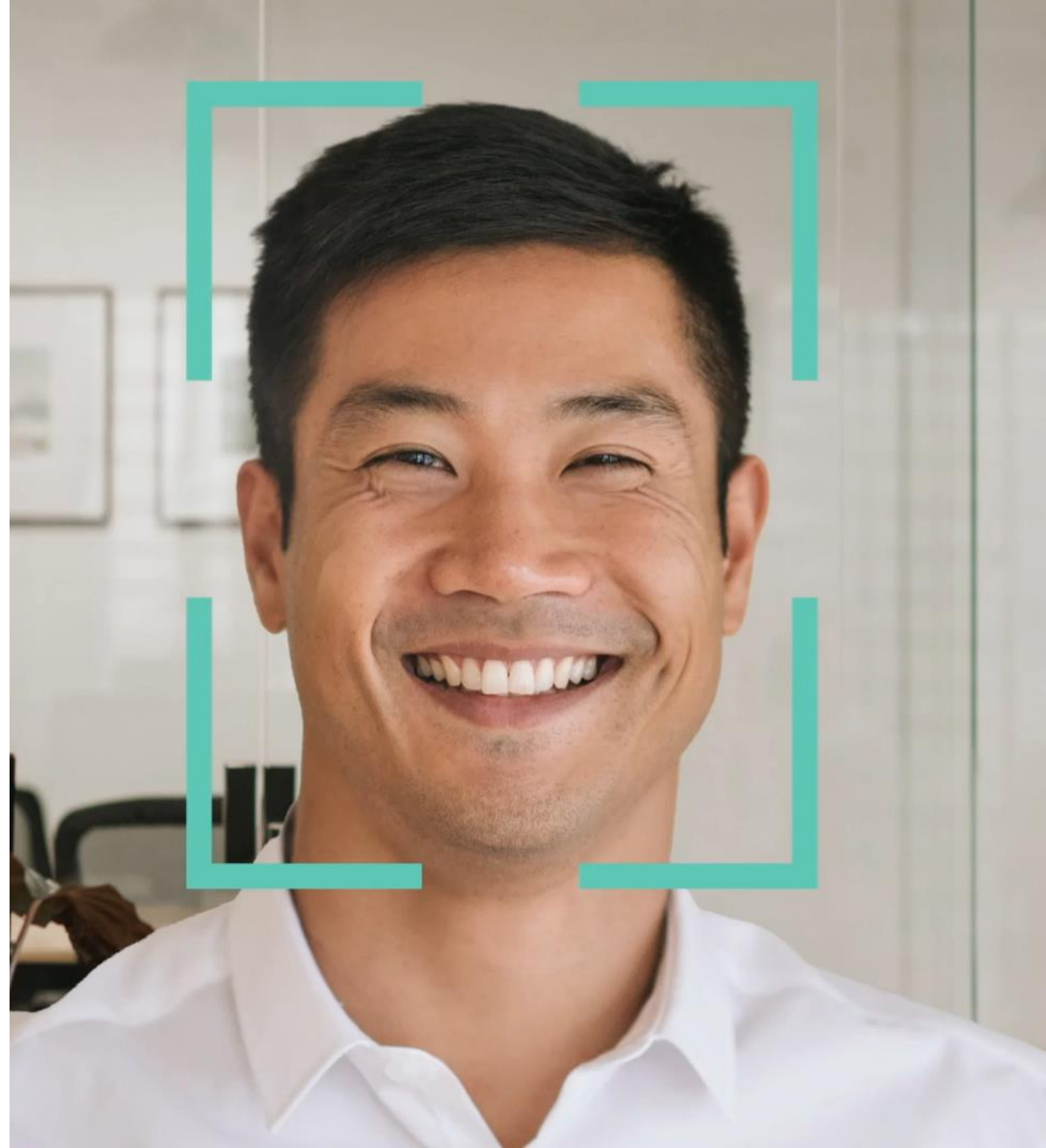
FURY 16 G9
16:10

11% more
screen space

FOCUS THE ATTENTION ON YOU

INTELLIGENT FACE TRACKING
WITH THE 5MP CAMERA + IR¹

We're taking you from HD to FHD with intelligent face tracking that follows your movement in front of the camera and actively keeps you front & center with Auto Frame.



LOOK YOUR BEST

WITH THE 5MP CAMERA + IR¹ AND AUTOMATIC SCENE RECOGNITION

Go from HD to 5MP + IR¹ with **automatic scene recognition**, backlight and lowlight improvements.

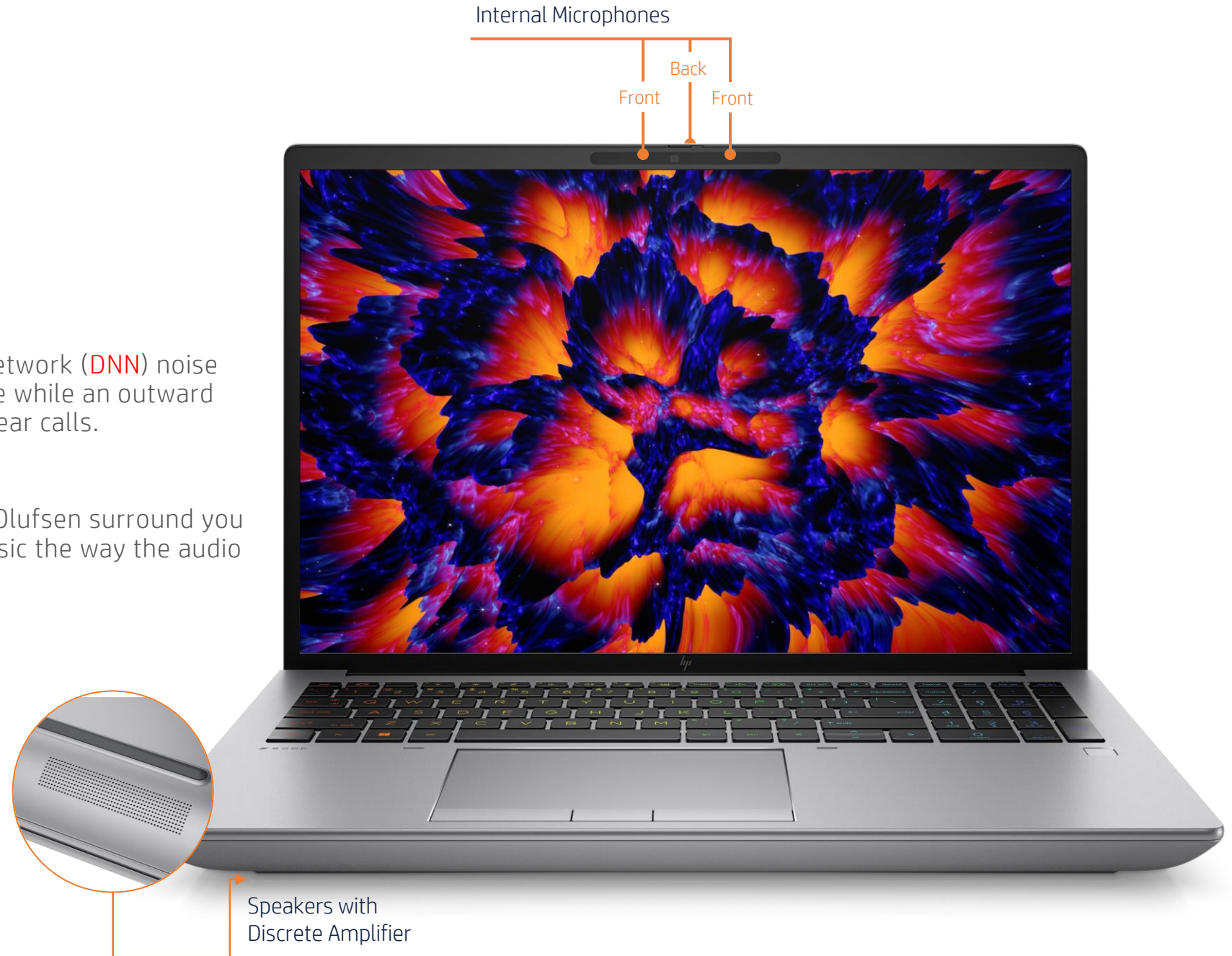


LOUD & CLEAR

COLLABORATE WITH CONFIDENCE

Advanced features like deep neural network (DNN) noise reduction¹ suppress background noise while an outward facing microphone makes for crisp, clear calls.

Custom tuned speakers by Bang and Olufsen surround you in a rich sound space, so you hear music the way the audio engineers intended.





RELIABILITY IS IN OUR DNA

HOW Z BY HP DELIVERS RELIABILITY?



120,000 HOURS OF TESTING



SUPPLIER QUALIFICATION RIGOR



3 AXIS TESTING



MIL-STD TESTING¹



MATERIALS QUALIFICATION

Reliability



ULTIMATE DURABILITY TO KEEP YOUR DAY ROLLING

Designed to pass 21 MIL-STD 810H
TESTS²

ZBook-specific system validation
protocol

Checking components through
functional & system integration testing

120k
HOURS

Included in the total
HP test process¹

MEET YOUR SUSTAINABILITY GOALS

WITH THE WORLD'S MOST SUSTAINABLE PC PORTFOLIO¹

5%

ocean-bound
plastics in
speaker box²

UP TO
30%

Post Consumer recycled
plastics⁴

UP TO
50%

Recycled metals³ in the
enclosure



REDUCE, REUSE, RECYCLE



DEVICE

30% recycled plastics

Speaker enclosure made from **50%** recycled material, including ocean-bound plastics¹

50% of the keycaps of the Backlit keyboard are made from recycled DVDs



PACKAGING

100% Sustainable Box/cushion²



RECYCLED METAL COVERS

50% Post Industrial Aluminum in C&D covers





THANK YOU