Dell Precision Workstations Outpace the Competition in Innovation

By Andrew Glinka | September 10th, 2022

Dell Precision workstations are the No.1 workstation brand in the world[1], offering our highest performing, most reliable, and fully customizable client systems for professional applications. While Precisions have long delivered innovative technologies that power some of the most data- and graphic-intensive applications, they now offer even more capabilities that competing systems cannot match. These workstations come with innovative thinner and lighter designs featuring InfinityEdge, UHD+, HDR, touch display options, and advanced thermal technologies that allow you to keep your system running at high speeds for longer periods of time. Read on to find out how Dell's commitment to intelligence, portability, reliability, security, and sustainability outpaces the competition.

Intelligence

Are you ready to transform your workspace with Dell Precision intelligent business PCs?[2] Dell Precisions are equipped with Dell Optimizer for Precision, which improves application performance, battery life, bandwidth, audio quality, privacy, and network connectivity in the background while you are working.[3] Dell Optimizer is the only AI-based performance software in the industry that automatically tunes your workstation using machine learning—further delivering optimal performance. Some of the top Dell Optimizer features for Precisions that differentiate us from the competition include:

- ***ExpressConnect:*** Only Dell offers an AI-based optimized network connection feature, which allows users to prioritize bandwidth for conferencing applications during calls, automatic network switching to authenticated networks that deliver better-quality WiFi, and the world's first simultaneous multi-network connection[4] to two wired or wireless networks at the same time, resulting in faster downloads and fewer interruptions.[5]* Neither HP, Apple, nor Lenovo's competing workstations offer the ability to optimize network connection.
- ***ExpressResponse*** is a technology that uses AI/ML to boost application performance and helps optimize your workflow so that programs and applications launch and transition faster. HP, Apple and Lenovo do not have this technology. The latest release also offers Precision users 240w power performance even when unplugged from the adapter.
- ***ExpressCharge*** is an AI-based battery feature that analyzes power consumption habits and improves battery performance, extending run time[6]. Apple MacBook Pros are not AI-based, do not auto-adjust battery use, and only offer fast charging with an upgraded high-voltage charger. HP does not offer battery use adjustments and their fast-charging feature available on select mobile devices is not AI-based. Lenovo's Rapid Charging Technology is also not AI-based.
- ***ExpressSign-In*** is a feature that offers secure locking and faster sign-in by automatically detecting your presence, waking up your system, and locking your PC when you walk away. Competing HP and Lenovo workstations do not offer

this feature and Apple's proximity-based sign-in and screen lock features require a paired iPhone or Apple watch to work properly.

- **_Modular Installation:_** Only Dell offers modular installation and central management of Dell Optimizer[7] which allows for deployment of updates and optimization of multiple systems simultaneously and remotely with minimal interruptions. Dell Optimizer for Precision also offers an analytics feature that generates system performance reports to help users assess CPU, storage, graphic, and memory needs.

Portability and flexibility

The newest Precision mobile workstations are smaller, thinner, and lighter than ever, offering more flexibility and a choice of three panel sizes. Precisions 5570 and 5770 are our thinnest and smallest 15- and 17-inch mobile workstations built around an immersive InfinityEdge display in a compact footprint for highly mobile creators, engineers, and specialty professionals. Precision 5470 is the industry's most powerful, smallest, and thinnest 14-inch mobile workstation[8], which delivers performance levels previously only offered in larger workstations. Precision 7000 Series is available in a 16-inch and 17-inch chassis –choices not offered by our competitors –and only Dell offers a 17-inch full-power workstation. Lenovo's competing workstations are larger and heavier, MacBook Pros are thicker and heavier and the HP systems that compete with the new Precision 5000 Series mobile workstations only come in one 16-inch form factor versus the three Precision size options.

Advanced thermal design

Do you perform high-intensity workloads which include VR/AR, AI/ML, using creative software, and data sciences applications that tend to generate heat? While some PC companies sacrifice performance to prioritize "cool and quiet" modes as their default settings, Dell's engineering approach is different. We prioritize performance above all, and our engineers have made breakthroughs in the thermal design of new Precisions, using dual opposite outlet fans, vapor chambers, software-based thermal management solutions and other design strategies that allow Precisions to be quieter, significantly cooler, and reduce heat-related crashing, benefitting users that rely on high-end applications. Competing Apple MacBook Pros, Lenovo and HP workstations do not have dual opposite outlet fans. While only some Lenovo workstations have dual fans, they lack the opposite air dispersion feature. Dell proprietary Opposite Outlet (DOO) fans are 30% larger, deliver more than twice the airflow of a traditional fan, and opposite outlets send pressurized air in two directions, flooding the center of the chassis while also pushing air out through the sides versus the single outlet of a traditional fan. Because DOO fans blow air through the system, through the chassis, and over the CPU and other hotspots, using DOO in mobile workstations can reduce surface temperature by as much as 6 degrees Celsius, which makes for a more comfortable user experience and bolsters hardware reliability.

Security and reliability

Did you know that Dell has the industry's most secure commercial PCs?[9] Across Precision workstations, we employ both software-based above the operating system (OS) protections and hardware-based below the OS capabilities to defend against current and future threats. None of our competitors can match our below the OS security features as only Dell offers off-host BIOS verification, capture and storage of the image if the BIOS is corrupt, Indicators of Attack to help IT identify potential future threats[10,11] and SafeID with ControlVault to store and process credentials and related secrets on a single chip[12,13] while HP and Lenovo store credentials in one chip and related secrets in Intel ME. We are also the only company among our competitors offering Secure Component Verification, a feature that provides a certificate securely stored on the device in a partitioned and secure area of Windows which documents the critical information about the components in the device as it was built*.[14,15]

Reliable Memory Technology (RMT) Pro

RMT Pro is an exclusive to Dell, patented technology that improves workstation reliability by automatically detecting and isolating memory-related errors, increasing user productivity by reducing system downtime due to memory-related defects, extending memory life by keeping it usable for longer, and alerting the user when memory needs to be replaced. *[16] There are no HP, Lenovo, or Apple counterparts to Dell's RMT Pro Reliability feature.

Serviceability and upgradability

Precisions are more serviceable and upgradable than the competing MacBook Pros. For example, customers can upgrade or replace the Precision 5470's storage as needed, while Apple's MacBook Pros have most major components soldered to the board, making it impossible to upgrade or replace components post-purchase.

ProSupport Plus

Dell's complete service and support offering ProSupport and ProSupport Plus for PCs is up to 6x faster time to resolution than the competition[17]*, so you can have both quality products and the ultimate services to go along with them. Furthermore, Dell ProSupport Plus & ProSupport Flex are the first and only standalone support services offered by a major PC brand via a subscription model.[18]* Precisions also offer broader operating system support and better warranties than competing Apple MacBook Pros.[19]

Sustainability

In alignment with our commitment to sustainable design, the new Precision mobile workstations feature even more sustainable components such as renewable materials in the lid and feet and ocean-bound plastic, as well as the packaging that is made from 100% recycled or renewable materials[20]. Our Precisions are the first workstations made

with reclaimed carbon fiber and renewable bioplastic[21] and Precision 3000 Series are the first entry mobile workstations containing bioplastics from trees.

New Precision Portfolio Lineup

So, it's clear that Dell Precision workstations are a cut above the competition. Check out our new Precision mobile workstations, which will enable you to conquer the most demanding applications with ease while offering greater collaboration, privacy, connectivity, portability, and advanced thermal design.

	3470	3570	3571	5470	5570	5770	7670	7770
	Entry-level 14"	Low Price / light 15"	Best Price / performance 15"	Power-packed 14" thin and light	Beautiful thin and light 15"	Thin and light 17"	Most powerful and scalable 16"	Most powerful and scalable 17"
Descriptions	Small, thin and powerful with entry-level scalability.	Light weight, value workstation with entry-level scalability and performance.	Light weight, value workstation with entry to moderate scalability and performance.	World's smallest, thinnest, & most powerful 14" mobile workstation.	Class leading size and weight for 15" workstation, with moderate scalability and performance.	Thin and light 17" workstation with moderate to high-end scalability and performance.	Our most scalable and highest performing mobile workstations, available in two sizes.	
Recommended use cases	Great for Office power users, hybrid offices and students. Light 2D/ entry 3D CAD.\n\nUse cases: business and remote office applications (Zoom, TEAMS), financial analysts, 2D CAD personnel.	Great for light 2D/ entry 3D CAD heavy Excel.\n\nUse cases: architects, financial analysts, students CAD personnel and engineers.	Great for medium 2D/ light 3D CAD, CAM, heavy Excel, compilers.\n\nUse cases: architects, engineers, software developers and CAD personnel.	Great for graphic design, animation, video and photo editing , CAD and CAM.\n\nUse cases: architects, engineers, video editors, animators, photographers, graphic designers.	Great for graphic design, animation, video and photo editing, CAD and CAM.\n\nUse cases: architects, engineers, video editors, animators, photographers, graphic designers.	Great for graphic design, animation, video and photo editing, CAD and CAM VR and AI workloads.\n\nUse cases: architects, engineers, video editors, animators, photographers, graphic designers, VR and AI users.	Great for VR/AR and AI applications, CAE and other complex apps.\n\nUse cases: engineers, creators, geophysicist, gaming developers and scientists, graphic designers and users of heavy compute applications.	Great for VR/AR and AI applications, CAE and other complex apps.\n\nUse cases: engineers, creators, geophysicist, gaming developers and scientists, animators, graphic designers and users of heavy compute applications.

View the full guide here.

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[1] *Source: IDC Quarterly Workstation Tracker, Q1 2022
Based on internal analysis, January 2021. 21% bioplastics in the LCD cover lid.
[2] Based on Dell internal analysis of competitive PC performance software and applications. September 2021 AD#CLM-003280
[3] Based on Dell internal analysis of competitive PC performance software and applications. September 2021. Intelligent Privacy is available on select Dell systems and devices.
[4] Best network selection based on signal strength, channel congestion, router type and others. Network suggestions based on user credentials.
[5] *Disclaimer: Simultaneous multi-network connection (or Connection based teaming) is a new connectivity feature under ExpressConnect. It simultaneously sends and receives data and video traffic using two or more wired or wireless connections. Based on Dell internal analysis, September 2021.
[6] *Disclaimer: this feature is not offered on Precision Fixed Workstations Series 3000, 5000, and 7000.
[7] Based on competitive analysis of HP, Lenovo, and Apple's offerings. SMEs analyzed Optimizer vs competitors' features for HP, Lenovo and Apple and their analysis determined that none of the competitors offer this feature for any of their devices.
[8] Based on comparison of 45W CPU in the 5470 vs. competitor 14" workstations, March 2022.

[9] Based on Dell internal analysis, January 2020. Claim cannot be used in the following countries: Chile, China, Colombia, Costa Rica, Guatemala, Hong Kong, Korea, Malaysia, Russia, South Africa, Taiwan, Ukraine, Venezuela and Vietnam.

[10] Based on internal competitive analysis (Dell security team)

[11] A Partnership of Trust: Dell Supply Chain Security (Customer-facing whitepaper)

[12] Based on internal competitive analysis (HP & Lenovo Endpoint Security Battlecards)

[13] A Partnership of Trust: Dell Supply Chain Security (Customer-facing whitepaper)

[14] *Disclaimer: Available for U.S. Federal customers only.

[15] Based on internal competitive analysis (HP & Lenovo Endpoint Security Battlecards). For more information, read the A Partnership of Trust: Dell Supply Chain Security (Customer-facing whitepaper)

[16] RMT Pro is only available with ECC memory and currently only available on the 7000 Series Precision Mobile Workstations.

[17] *Based on a Principled Technologies report, "Diagnose and resolve a hard drive issue in less time with Dell ProSupport Plus" May 2020. Testing commissioned by Dell, conducted in the United States. Actual results may vary. Full report: http://facts.pt/ddv0ne9

[18] Based on internal analysis, May 2022, comparing Dell, HP, Lenovo, Apple and Acer commercial PC support options. ProSupport Plus & ProSupport Flex available on select commercial devices. Feature availability and functionality varies by model. Do Not Use in Argentina, Brazil, Costa Rica, Chile, China, El Salvador, Guatemala, Honduras, Hong Kong, Indonesia, Korea, Malaysia, Morocco, Nicaragua, Philippines, Russia, South Africa, Taiwan, Thailand, Turkey, Ukraine, Venezuela or Vietnam.

[19] Dell Precisions operating system support includes Windows 1- Pro for workstations, Red Hat Enterprise Linux 8.0, Ubuntu Linux 18.04, NeoKylin 6.0 SP5 (China only), Certified Suse Linux SLES 12 SP5 while Apple only offers macOS support. Dell offers a 3-year Limited Hardware Warranty and 3-year Next Business Day On-Site Service after Remote Diagnosis, while Apple offers only a 1-year warranty and an optional AppleCare+ for purchase for warranty extensions.

[20] Percentage of recycled or renewable materials vary by devices.

[21] Based on internal analysis, January 2021. 21% bioplastics in the LCD cover lid.