Surface Laptop Studio 2 for Business Product FAQ

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Versatility to create, power to perform

Reimagine the ways you get it done with the most powerful Surface ever. Surface Laptop Studio 2 combines enterprise-grade performance for complex workloads with revolutionary design that allows for seamless transitions from a touchscreen laptop to a perfectly angled display for collaboration, to a portable canvas for ideation and notetaking. All with Microsoft security enabled out of the box to keep your business protected. With Windows 11, it's the ultimate powerhouse laptop.

Designed for performance

The most powerful Surface yet delivers over 2× more computing power and up to 2× the graphics performance.[1] Tackle complex data, create stunning 3D visualizations, and multitask between complex workloads with the latest 13th Gen Intel® Core™ processors built on the Intel Evo™ platform, innovative enterprise-grade NVIDIA® graphics[1], and up to 64 GB of system RAM.[2] Stay productive all day with long hours of battery life.[3]

- **The most powerful Surface.** Get the incredible power and performance to focus on getting the job done with more powerful 13th Gen Intel Core processors built on the Intel Evo platform delivering over 2× the power.
- **Design, engineer, or render your next product with the NVIDIA RTX™ 2000 Ada Generation or create and edit content faster with NVIDIA GeForce RTX™ 4050 and 4060 laptop GPUs**[1]. NVIDIA Studio-validated laptops, preinstalled with Studio Drivers and exclusive tools, accelerate all your professional and creative workflows.
- **Supercharge your creative process with exclusive RTX and AI-accelerated NVIDIA Studio tools for creators.**
- **Multitask without breaking a sweat** with up to 64 GB of system RAM and ultra-fast SSDs with up to 2 TB of storage.[2]
- **Stay productive, no matter where your day takes you** with all-day battery life.[3]
- **Speed through the most intensive, business-critical desktop software** like Adobe® Premiere® Pro, Photoshop®, Lightroom®, Autodesk®, AutoCAD®, Dassault SOLIDWORKS™, and more.[4]
- **Keep your cool under pressure.** The new thermal design ensures Surface Laptop Studio 2 is running

1. Available as an option on certain SKUs of Surface Laptop Studio 2.

2. System software and updates use significant storage space. Available storage is subject to change based on system software and updates and apps usage. 1 GB = 1 billion bytes. 1 TB = 1,000 GB. See Surface Storage for more details.

3. Battery life varies significantly based on device configuration, usage, network and feature configuration, signal strength, settings, and other factors. See aka.ms/SurfaceBatteryPerformance for details.

4. Sold separately.

efficiently, delivering the performance you depend on.

Versatility for any challenge

Surface Laptop Studio 2 is designed for versatility so you can tackle any challenge, whether compiling data on a professional-grade laptop, multitasking across two 4K displays while docked, making crystal clear video calls on a perfectly angled display, or sketching your ideas and designs on a creative canvas with Surface Slim Pen 2[4].

- **Carry just one device that does it all:**
  - **Push the boundaries of productivity in laptop mode:** The 3:2 aspect ratio display that gives you 18% more vertical screen real estate than a typical laptop[7] that's ideal for documents and spreadsheets, viewing CAD files, editing video, and building 3D models. Stay productive anywhere with the comfortable, accurate keyboard and precision haptic touchpad.
  - **Make calls and collaborate in stage mode:** pull the display forward and place it at the perfect angle for immersive Microsoft Teams calls or presentations, thanks to the flexible dynamic woven hinge.
  - **Ideate in studio mode:** Brainstorm, take notes, or sketch ideas with Surface Slim Pen 2 on a portable digital canvas with up to 120hz refresh rate for smooth and responsive writing.
- **Precision haptics, accessible by design.** Easily navigate with the new, large Precision Haptic touchpad, providing responsive feedback with clicking or using gestures. Use however is most natural for you, with customizable click force, finger detection, and right click area size.
- **The best docking experience you've ever imagined.** When you connect up to two 4K displays, Surface Laptop Studio 2 becomes a touch-and-digital pen enabled third display with an extra dimension of interaction at the perfect angle. Transfer files at blazing speeds and dock with just one cable with USB-C® with Thunderbolt™ 4 and Surface Connect ports.
- **Sketch out your ideas whenever they strike.** Magnetically attach, store, and charge Surface Slim Pen 2[4] under the front of the keyboard. Slim Pen 2's tactile signals makes writing feel more like pen on paper.[5]

Empower creativity and collaboration

Surface Laptop Studio 2 is designed to bring your work to life. Elevate your productivity with Microsoft 365[6] on the vibrant 14.4"[7] PixelSense™ Flow touchscreen display with up to 120hz refresh rate. Stay centered and look more engaged on video calls, with the new Studio Camera with a wide field of view and AI-powered Automatic Framing and Eye Contact correction. Surface Laptop Studio 2 is ready for your accessories with ample ports for docking and peripherals.

- **Surface Laptop Studio 2 with Microsoft 365 elevates collaboration and gets things done**. With 18% more screen real estate on the 3:2 aspect ratio display[8], you can see more when you collaborate in real time in Microsoft 365, now better optimized for touch and pen.
- **Get into the details with uniform, true-to-life color on the vibrant 14.4" PixelSense™ Flow touchscreen,** with 650 nits of brightness and 2400 × 1600 resolution. Experience smoother scrolling and faster framerates

5. Tactile signals with Surface Slim Pen 2 can be experienced on some applications running Windows 11.

6. Sold separately. Software license required for some features.

7. Surface Laptop Studio 2 display has rounded corners within a standard rectangle. When measured as a standard rectangular shape the screen is 14.36" diagonally (actual viewable area is less).

8. Comparison of viewable content on Surface devices with 3:2 aspect ratio v. laptops with 16:10 or 16:9.

with a refresh rate up to 120Hz, now with HDR for more accurate color, contrast and brightness when viewing or creating HDR content[9].

- **Be more engaged on Microsoft Teams calls with the AI-enhanced field of view full HD Studio Camera** Face-to-face video calls feel more natural with Eye Contact correction and Automatic Framing keeping you in the center of the frame.
- **Hear and be heard during meetings** with Omnisonic® speakers and far-field Studio Mics with Voice Clarity[10] that remove background noise and capture your voice crisply and clearly.
- **Windows 11 is now better optimized for the touchscreen** and automatically adjusts the interface as you transition between modes. Tap, drag, swipe, and pinch like you do on your smartphone.
- **Surface Laptop Studio 2 is ready for all your accessories**, with 2 USB-C ports with Thunderbolt™ 4, a USB-A port, microSDXC card reader, 3.5mm audio jack, and Surface Connect for docking and charging.

Deploy, manage, and stay secure from anywhere

Surface Laptop Studio 2 is a Secured-core PC, with enhanced protection for data and identity. Surface customers save time and money with streamlined deployment, modern device management, and built-in, cloud-powered security[11]. Minimize downtime with a more serviceable design[12] and reduce environmental impact with more recyclable materials.

- **Surface Laptop Studio 2 is a Secured-core PC.** Secured-core PCs are one of the most secure Windows 11 devices. They elevate the benefits of Windows 11 security, providing additional hardware and software protection for those that handle the most sensitive data in your organization.
- **Peace of mind for IT, with chip to cloud security.** Every layer is maintained by Microsoft, from the hardened firmware that is adopted from a Microsoft open-source UEFI to the operating system, through to cloud management.
- **Work smarter with AI in Windows 11 and Microsoft 365**[6] with tools like AI-powered search built into the Windows task bar and Narrator to navigate and launch actions with your voice. Elevate any content you create with smart suggestions in Microsoft 365 and with tools like Microsoft Editor, Designer and Speaker Coach.
- **More control with cloud-first device deployment and management.** Deploy and manage down to the firmware layer through the cloud with Microsoft Endpoint Manager and DFCI[11]. Every Surface ships with Windows Autopilot, reducing IT complexity by deploying straight to your employees[11].
- **Get more out of your device with more components that are replaceable**[12]**.** Major components in Surface Laptop Studio 2, including the display, keyboard assembly, battery, storage, motherboard are replaceable through a network of approved service providers.

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9. HDR requires HDR content and enabling HDR in device settings.

10. Voice Clarity requires Windows 11 and is available in apps which use integrated device microphones and certain Windows audio processing modes.

11. Some cloud-enabled features and functionality require paid subscription and/or qualifying license.

12. Customer Replaceable Units (CRUs) are components available for purchase through your Surface Commercial Authorized Device Reseller. Components can be replaced on-site by a skilled technician following Microsoft's Service Guide. Opening and/or repairing your device can present electric shock, fire and personal injury risks and other hazards. Use caution if undertaking do-it-yourself repairs. Device damage caused during repair will not be covered under Microsoft's Hardware Warranty or protection plans. Availability of replaceable components and service options may vary by market and/or at initial product launch.

- **Maintain control of your sensitive information** with a removable hard drive for data retention[13].
- **Make the most of your investment in Microsoft 365,** with the essential foundation of Windows 11 Pro, the protection of Microsoft Enterprise Mobility + Security, and the suite of Microsoft 365 productivity apps[6] you rely on every day.
- **Surface plays a key role in Microsoft's commitment to be carbon negative, water positive, and zero waste by 2030.** That's why we aim to create devices that reduce carbon impact across their lifecycles, reduce waste, and are built with integrity. Surface Laptop Studio 2 is now built with more recyclable materials, with the environment in mind.[14]
- **Your face is your password.** Log in securely in seconds with Instant On and Windows Hello facial recognition.

13. Drive (SSD) Retention is only available on Microsoft Surface devices in which the SSD is marketed as removable per the Technical Specifications. Drive (SSD) Retention is included in Microsoft Complete for Business Plus and is available as an Optional Add-on when purchasing Microsoft Extended Hardware Service and Microsoft Complete for Business. Except for Surface Pro X and Surface Pro 7+, devices returned to Microsoft with a missing SSD are subject to an SSD replacement fee unless the user is enrolled in the Drive (SSD) Retention offer.

14. See more details - Sustainable Products & Solutions | Microsoft CSR . Product EcoProfile will be available after launch here - Download Eco Profiles from Official Microsoft Download Center.

Technical specifications

Table 1. Surface Laptop Studio 2 for Business commercial tech specs

Feature	Description
Processor	– 13th Gen Intel® Core™ i7-13800H Processor – Built on the Intel Evo™ platform – Intel Gen3 Movidius 3700VC VPU AI Accelerator
Graphics	– Intel Iris® Xe Graphics – NVIDIA® GeForce RTX™ 4050 Laptop GPU with 6 GB GDDR6 VRAM – NVIDIA GeForce RTX 4060 Laptop GPU with 8 GB GDDR6 VRAM – NVIDIA RTX 2000 Ada Generation Laptop GPU with 8 GB GDDR6 VRAM
Memory	– 16 GB, 32 GB or 64 GB at 5200MHz LPDDR5x RAM
Storage[15]	– Gen 4 removable solid-state drive (SSD)[12] options: 512 GB, 1TB, 2 TB

Display	– HDR Touchscreen: 14.4"[7] PixelSense™ Flow Display
	– Resolution: 2400 × 1600 (200 PPI)
	– Refresh rate: up to 120Hz
	– Aspect ratio: 3:2
	– Contrast ratio 1500:1
	– Color profile: sRGB and Vivid
	– Individually color-calibrated display
	– VESA DisplayHDR 400 certified[16]
	– Dolby Vision IQ®[17] support
	– Touch: 10-point multi-touch
	– Corning® Gorilla® Glass 5 display
	– Brightness:
	  – SDR: 500 nits maximum (typical)
	  – HDR: 650 nits peak luminance

Dimensions	– 12.72" × 9.06" × 0.86" (323 mm × 230 mm × 22 mm)
Weight	– Intel Iris Xe graphics models : 4.18 lbs. (1892.41 grams) – NVIDIA graphics models: 4.37 lbs. (2.0 kg)
Battery life	– Intel Iris Xe graphics model: up to 19 hours[18] of typical device usage

15. System software and updates use significant storage space. Available storage is subject to change based on system software and updates and apps usage. 1 GB = 1 billion bytes. 1 TB = 1,000 GB. See Surface Storage for more details.

16. HDR requires HDR content and enabling HDR in device settings.

17. Requires Dolby Vision® encoded content and video.

18. Up to 19.0 hours of battery life based on typical Surface device usage on Surface Laptop Studio 2 with Intel® Core™ i7-13700H Processor, 512GB, 16 GB RAM - Testing conducted by Microsoft in July-August 2023 using preproduction Windows 11 software and preproduction Surface Laptop Studio 2 Intel® Core™ i7-

Feature	Description
	– NVIDIA graphics models (except 2 TB SSD): up to 18 hours[19] of typical device usage – 2 TB SSD NVIDIA graphics models: up to 16 hours[20] of typical device usage
Security	– Hardware TPM 2.0 chip for enterprise security and BitLocker support – Enterprise-grade protection with Windows Hello face sign-in – Windows enhanced hardware security

Camera	– Full HD front-facing Surface Studio Camera
	  – 1080p Full HD camera with wide field of view
	  – Windows Studio Effects with Auto Framing, Eye Contact, and Background Blur
	– Windows Hello 2.0 Face Authentication camera

Audio	– Dual far-field Studio Mics with Voice Clarity – Quad Omnisonic® speakers with Dolby® Atmos®[21]
Connections	– 2 × USB-C with USB4®/ Thunderbolt™ 4 (with DisplayPort and Power Delivery) – USB-A 3.1 – MicroSDXC card reader – 3.5 mm headphone jack – Surface Connect port
Wireless	– Wi-Fi 6E: 802.11ax compatible – Bluetooth® Wireless 5.3 technology
Pen & accessories compatibility	– Designed for Surface Slim Pen 2 and supports tactile signals – Integrated Surface Slim Pen 25 storage for charging under the keyboard – Supports Microsoft Pen Protocol (MPP)

13700H Processor, 512GB, 16GB RAM devices. Testing consisted of full battery discharge with a mixture of active use and modern standby. The active use portion consists of (1) a web browsing test accessing eight popular websites over multiple open tabs, (2) a productivity test utilizing Microsoft Word, PowerPoint, Excel, OneNote, and Outlook, and (3) a portion of time with the device in use with idle applications. All settings were default except screen brightness was set to 150 nits with Auto-Brightness, Adaptive Color, and Smart Charging disabled. Wi-Fi was connected to a network. Tested with Windows 11 Version 10.0.22621 (22H2). Battery life varies significantly with settings, usage, and other factors.

19. Up to 18.0 hours of battery life based on typical Surface device usage on Surface Laptop Studio 2 with Intel® Core™ i7-13700H Processor, NVIDIA® GeForce™ RTX 4050 Laptop GPU, 512GB, 16GB RAM Testing conducted by Microsoft in July-August 2023 using preproduction Windows 11 software and preproduction Surface Laptop Studio 2 Intel® Core™ i7-13700H Processor, NVIDIA® GeForce™ RTX 4050 Laptop GPU, 512GB, 16GB RAM devices. Testing consisted of full battery discharge with a mixture of active use and modern standby. The active use portion consists of (1) a web browsing test accessing eight popular websites over multiple open tabs, (2) a productivity test utilizing Microsoft Word, PowerPoint, Excel, OneNote, and Outlook, and (3) a portion of time with the device in use with idle applications. All settings were default except screen brightness was set to 150nits with Auto-Brightness, Adaptive Color, and Smart Charging disabled. Wi-Fi was connected to a network. Tested with Windows 11 Version 10.0.22621 (22H2). Battery life varies significantly with settings, usage, and other factors.

20. Surface Laptop Studio 2 with Intel® Core™ i7-13700H Processor, NVIDIA® GeForce™ RTX 4060 Laptop GPU, 2TB, 64GB RAM Testing conducted by Microsoft in July-August 2023 using preproduction Windows 11 software and preproduction Surface Laptop Studio 2 Intel® Core™ i7-13800H Processor, NVIDIA® GeForce™ RTX 4060 Laptop GPU, 2TB, 64GB RAM devices. Testing consisted of full battery discharge with a mixture of active use and modern standby. The active use portion consists of (1) a web browsing test accessing eight popular websites over multiple open tabs, (2) a productivity test utilizing Microsoft Word, PowerPoint, Excel, OneNote, and Outlook, and (3) a portion of time with the device in use with idle applications. All settings were default except screen brightness was set to 150nits with Auto-Brightness, Adaptive Color, and Smart Charging disabled. Wi-Fi was connected to a network. Tested with Windows 11 Version 10.0.22621 (22H2). Battery life varies significantly with settings, usage, and other factors.

21. Requires Dolby® Atmos® encoded content/audio.

Feature	Description
Software	– Windows 11 Pro 21H2[22] or Windows 10 Pro 22H2 – Preloaded Microsoft 365 Apps[6] – Microsoft 365 Business Standard, Microsoft 365 Business Premium, or Microsoft 365 Apps 30-day trial[23]
Accessibility	– Surface Precision Haptic touchpad with adjustable click sensitivity, right click area, and adaptive touch mode – Compatible with Surface Adaptive Kit – Compatible with Microsoft Adaptive Accessories – Includes Windows Accessibility Features – Learn More Accessibility Features | Microsoft Accessibility – Discover more Microsoft Accessible Devices & Products - Accessible Devices & Products for PC & Gaming | Assistive Tech Accessories - Microsoft Store
Serviceability	Replacement components[12] include: – SSD – AB cover module (display) – C cover (including keyboard, touchpad, and pen charger) – D-Plate + battery – Motherboard – Cosmetic plate – Charging Port (Surface Connect connector) – MicroSD card reader – USB-C and USB-A port connectors – Audio jack
Exterior	– Casing: Anodized Aluminum – Color: Platinum
Hinge	– Dynamic Woven Hinge made of woven fabric
Sensors	– Ambient light sensor – Accelerometer – Gyroscope – Magnetometer
What's in the box	– Surface Laptop Studio 2 – Intel Core i7 iGPU: 102W Surface Power Supply – Intel Core i7 dGPU: 127W Surface Power Supply – Quick Start Guide – Safety and warranty documents

22. The following Surface Laptop Studio functionalities are only available with Windows 11: Wake on touch and Surface Slim Pen 2 haptic support, which are available in some apps. Experience might be limited without Windows 11 installed.

23. Activation required. If your device is managed by your organization's IT department, contact your IT administrator for activation. After 30 days, you will be charged the applicable monthly or annual subscription fee. Credit card required. Cancel any time to stop future charges. See https://aka.ms/m365businesstrialinfo.

Feature	Description
Keyboard layout	– Activation: Moving (mechanical) keys – Layout: QWERTY, full row of function keys (F1-F12) – Windows key and dedicated buttons for media controls, screen brightness and mute – Backlight – Precision Haptic touchpad
Warranty[24]	– 1-year limited hardware warranty
Battery capacities[25] *[Microsoft Stores only]*	– Battery Capacity Nominal (WH): 58.0 – Battery Capacity Min (WH): 56

24. Microsoft's Limited Warranty is in addition to your consumer law rights.
25. Might vary depending on manufacturing processes.

Questions

Overview

What is Surface Laptop Studio 2?

Surface Laptop Studio 2 is the next generation of Surface Laptop Studio, designed to bring together the versatility to create with the power to perform. Turbocharged with the latest Intel CPUs and NVIDIA GPUs, Surface Laptop Studio 2 is built for pro-creators and power-professionals with the most demanding workloads. It's now more productive than ever with additional ports, more RAM, an NPU, and a camera with Windows Studio Effects.

- **The most powerful Surface. Ever.** 2× the power and graphics performance with the latest CPUs and GPUs from Intel and NVIDIA. Three different GPUs allow customers to choose what is suitable for their performance needs.
- **Built for versatile creativity.** The dynamic woven hinge provides the perfect angle for creativity with the always-charged, always-ready Surface Slim Pen 2.
- **More vibrant screen.** 14.4"[7] PixelSense Flow touchscreen display with Dolby Vision IQ™, now more vibrant with HDR.
- **Choices for connectivity.** More ports than ever with 2× Thunderbolt 4 USB-C®, USB-A, Surface Connect, and microSD reader.
- **Surface Studio Camera with wide field of view.** The new wide field of view camera and AI-powered automatic framing and eye contact correction bring Windows Studio Effects to x86 for the first time. Introducing the AI feature to an Intel platform provides customers with auto framing, eye gaze correction and advanced background blur on a device built for creativity, productivity, and gaming.

What's new for Surface Laptop Studio 2?

- Surface Laptop Studio 2 is a first for many things in Surface: it has the most inclusive touchpad on any laptop[26], Full HD front-facing Surface Studio Camera with wide field of view, bringing Windows Studio Effects to Intel based laptop, and an 85W laptop chassis.
- The latest 13th Gen Intel processors are twice as powerful.
- NVIDIA RTX 2000 Ada Generation GPU, with more VRAM and up to twice the graphics performance.
- Faster LPDDR5x RAM with up to 64 GB configurations.
- USB-A port.
- MicroSDXC card reader.
- Surface Studio Camera with wide field of view. Wide field of view improves video conferencing flexibility when coupled with Windows Studio Effects AI Auto Framing to capture the user no matter how they are positioned.
- HDR[9] display with increased peak brightness.

[26] Based on a comparison of touchpad accessibility features in published tech specs as of August 2023. Requires Windows 11.

Table 2. What's changed in Surface Laptop Studio 2

Component	Surface Book3 13"	Surface Laptop Studio	Surface Laptop Studio 2
SoC	– Intel Core 10th Gen i5-1035G7 – Intel Corei7-1065G7	– Intel Core11th Gen H35 i5-11300H – Intel Core11th Gen H35 i7-11370H	– Intel Core13th Gen H processor H45 i7-13700H – Intel Core13th Gen H processor H45 i7-13800H
VPU	– N/A	– N/A	– Intel Gen3 Movidius 3700VC VPU
Memory	– 8 GB/16 GB/32 GB LPDDR4x	– 16 GB/32 GB LPDDR4x	– LPDDR5X 16 GB, 32 GB & 64 GB
SSD	– 256 GB/512 GB/1TB/ 2 TB	– Gen 4 SSDs in 256 GB/ 512 GB/1TB/ 2 TB	– Gen 4 SSDs in 512 GB, 1 TB, 2 TB capacities
dGPU options	– Nvidia GeForce GTX 1660Ti	– NVIDIA GeForce RTX 3050 Ti Laptop GPU – NVIDIA RTX A2000 Laptop GPU	– NVIDIA GeForce RTX 4050 Laptop GPU – NVIDIA GeForce RTX 4060 Laptop GPU – NVIDIA RTX 2000 Ada Generation Laptop GPU
Graphics memory	– 4 GB GDDR6	– 4 GB GDDR6	– 6 GB GDDR6 paired with RTX 4050 – 8 GB GDDR6 paired with RTX 4060 & RTX 2000
PCIe	– Gen3x4	– Gen3x4	– 2×4 Gen4 + 1×8 Gen5
Dimensions	– 312 mm × 232 mm × 13-23 mm	– 322.6 mm × 228.6 mm × 17.8 mm	– 323 mm × 230 mm × 22 mm
Battery life	– 15.5 hours [27]	– 18.5 hours[28]	– Intel Iris Xe graphics model: up to 19 hours[19] of typical device usage

27. Surface Book 3 13.5" on base: Up to 15.5 hours of battery life based on typical Surface device usage. Testing conducted by Microsoft in April 2020 using preproduction software and preproduction configurations of Surface Book 3 13.5" Intel® Core™ i5, 256 GB, 8 GB RAM. Testing consisted of full battery discharge with a mixture of active use and modern standby. The active use portion consists of (1) a web browsing test accessing 8 popular websites over multiple open tabs, (2) a productivity test utilising Microsoft Word, PowerPoint, Excel and Outlook, and (3) a portion of time with the device in use with idle applications. All settings were default except screen brightness was set to 150 nits with Auto-Brightness disabled. Wi-Fi was connected to a network. Battery life varies significantly with settings, usage and other factors.

28. Surface Laptop Studio i7 processor: Battery life varies significantly based on usage, network and feature configuration, signal strength, settings and other factors. See aka.ms/SurfaceBatteryPerformance for details. Surface Laptop Studio 14.4" 11th Gen Intel® Core™ i7 1TB SSD, 32GB RAM NVIDIA® GeForce RTX™ 3050 Ti laptop GPU, up to 18 hours of battery life based on typical Surface device usage. Battery life based on typical Surface device usage. Testing conducted by

Component	Surface Book3 13”	Surface Laptop Studio	Surface Laptop Studio 2
			– NVIDIA graphics models (except 2 TB SSD): up to 18 hours[20] of typical device usage – 2 TB SSD NVIDIA graphics models: up to 16 hours[21] of typical device usage
Weight	– 3.38 lbs. (iGPU) – 3.62 lbs. (dGPU)	– 3.83 lbs. (iGPU) – 4.00 lbs. (dGPU)	– 4.17 lbs. (iGPU) – 4.41 lbs. (dGPU)
Display	– 13.5” LCD, 267ppi, 3000×2000, – 1700:1 contrast ratio, 100% sR GB – 450 nit max brightness	– 14.4” LCD, 200ppi, 2400×1600 – 1500:1 contrast ratio, DCI-90 – 2-500 nit brightness range	– 14.4” LCD, 200ppi, 2400×1600 – 1500:1 contrast ratio, DCI-90, – 2-500 nit brightness range
Touch	– 10-point multi-touch G5	– 10-point multi-touch G6	– 10-point multi-touch G6
Keyboard	– “Chiclet” style, 1.5mm travel, 19mm pitch, backlit, 0.2mm dish – Detach Key – Display brightness up/down keys – Keyboard backlight brightness toggle key	– "Chiclet-style," 1.3mm travel, Backlit Keyboard, 0.2mm dish – Function row power & volume – Display brightness up/down keys – Keyboard backlight brightness toggle key – Accessibility Improvements	– "Chiclet-style," 1.3mm travel, Backlit Keyboard, 0.2mm dish – Function row power & volume – Display brightness up/down keys – Keyboard backlight brightness toggle key – Accessibility Improvements
Touchpad	– 105 mm × 70 mm – Mechanical click	– Precision haptic touchpad – 119.38 mm × 81.28 mm	– Precision haptic touchpad – 119.38 mm × 81.28 mm – Accessibility improvements
Xbox controller	– Integrated Xbox Controller Radio	– Connect over Bluetooth	– Connect over Bluetooth
Hinge	– Dynamic Fulcrum v2	– Dynamic Woven Hinge	– Dynamic Woven Hinge

Microsoft in August 2021 using preproduction software and preproduction devices. Testing consisted of full battery discharge with a mixture of active use and modern standby. The active use portion consists of (1) a web browsing test accessing 8 popular websites over multiple open tabs, (2) a productivity test utilizing Microsoft Word, PowerPoint, Excel and Outlook, and (3) a portion of time with the device in use with idle applications. All settings were default except screen brightness was set to 150nits with Auto-Brightness disabled. Wi-Fi was connected to a network. Battery life varies significantly with settings, usage and other factors

Component	Surface Book3 13”	Surface Laptop Studio	Surface Laptop Studio 2
Wireless	– 802.11 a/b/g/n/ac/ax 160MHz – 2×2 MIMO – Bluetooth 5.0	– Wi-Fi 6 (802.11ax), – 2×2 MIMO, – Bluetooth 5.1	– Wi-Fi 6E (802.11) – 2×2 MIMO, – Bluetooth 5.3
Ports	– Base: 2×USB3.0, – full-size SD, – USB-C, – Surface Connect – Top: 3.5mm audio jack	– 2× USB-C (USB4/Thunderbolt4), – 3.5mm audio jack, – Surface Connect,	– 2× USB-C (USB4/Thunderbolt 4) – 1× USB-A (Gen 3.1) – 1× microSDXC1× 3.5mm audio jack – 1× Surface Connect
Sensors	– Acc, Mag, Gyro, ALS, Hall Effect	– Auto brightness via ACS, Acc, Mag, Gyro, Hall Effect	– Auto brightness via ACS – Acc, Mag, Gyro, Hall Effect
Audio	– 2 mics, stereo front-facing speakers	– Quad Omnisonic Speakers – 2 Studio Mics with Clear Voice technology, – Stereo speakers with separate high & low frequency drivers	– Quad Omnisonic Speakers – 2 Studio Mics with Voice Clarity – Stereo speakers with separate high & low-frequency drivers
Cameras	– 5Mp FHD FFC 80-degree field of view – 8Mp RFC with Auto-focus – Windows Hello 1.0 HW – Face Detection	– 2.1Mp FHD FFC 80-degree field of view – Windows Hello 2.0 HW – Improved Face Detection	– 3Mp FHD FFC 100-degree wide field of view – Windows Hello 2.0 HW – Improved Face Detection
Inbox PSU	– 65W (iGPU) – 102W (dGPU)	– 65W (iGPU) – 102W (dGPU)	– 102W (iGPU) – 127W (dGPU)
Compatible pen	– Surface Pen/Slim Pen (not charging)	– Surface Slim Pen, – Surface Slim Pen 2 integrated charging	– Surface Slim Pen – Surface Slim Pen 2 integrated charging
Wi-Fi/Bluetooth	– Intel Wi-Fi 6 AX201	– Intel Wi-Fi 6 AX201	– Intel Wi-Fi 6E AX210

What are some other differences vs earlier gen?

- **Improved thermals.** We redesigned Surface Laptop Studio 2 thermals by doubling the heat pipe capacity, improving airflow by 20% with 30% bigger fans.
- **Improved Wi-Fi in congested environments**. Surface Laptop Studio 2 comes with Wi-Fi 6E, an extended implementation of Wi-Fi 6 that adds a 6GHz radio band to the existing 2.4GHz and 5GHz bands available in Wi-Fi 6. The additional 6GHz band helps reduce congestion in areas with dense Wi-Fi networks, improving network performance and reliability. Wi-Fi 6E is built on the same standard as Wi-Fi 6 (802.11ax) and offers the same top speed — about 9.6 gigabits per second (Gbps).
- **Faster SSDs.** Gen 4 NVMe SSDs are built on the PCIe 4.0 standard and have double the bandwidth of Gen 3 NVMe SSDs, allowing faster data transfer.
- **Faster PCIe.** Surface Laptop Studio 2 comes with PCIe Gen 4, capable of speeds up to 64 GB/s. It also includes PCIe Gen 5, the fifth and latest generation of the PCI Express specification and is capable of speeds up to 128 GB/s.
- **Secure USB-C management**. Keep your organization's data more secure with Surface Laptop Studio 2 and the Surface Thunderbolt™ 4 Dock, ensuring only trusted devices can dock and have access to USB data transfer. To learn more, see Surface devices documentation - Surface | Microsoft Learn.

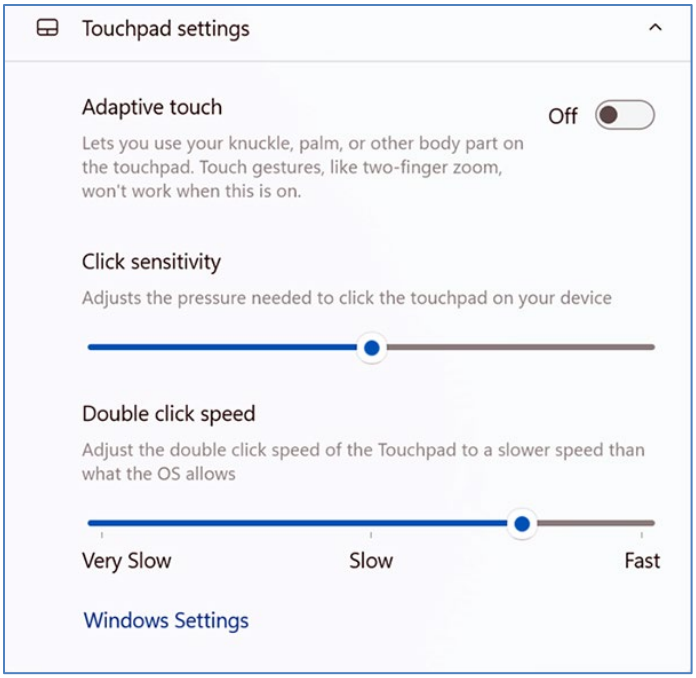
How does Surface Laptop Studio 2 benefit from 64 GB of RAM?

- **High-end tasks and professional software.** For professionals working with 3D rendering, video editing (especially 4K and 8K footage), large-scale simulations, virtual machines, and specific scientific computations, having 64 GB of RAM can significantly improve performance. Software like Autodesk's Maya, Adobe's After Effects, or virtualization platforms can benefit immensely from this amount of memory.
- **Multitasking.** More RAM can improve multitasking performance for users who run numerous applications simultaneously or keep many tabs open in a web browser while also running other software. However, most general users or even power users might not fully utilize 64 GB RAM solely for multitasking.
- **Futureproofing.** As software becomes more advanced and resource-intensive, having more RAM ensures that the laptop remains relevant and can handle newer software or updates for a longer period.

How have you improved the touchpad?

- Surface Laptop Studio has the most inclusive touchpad on any laptop[26].
- The new Microsoft touchpad controller is a generational leap, and the most customizable touchpad Surface has ever been created with a new Windows UI for Haptic Intensity.
- Smart Gesturing with enhanced gesture detection to prevent accidental clicking.
- Adaptive Touch Mode enables use of the touchpad with knuckles, palms, or limbs, making it the most inclusive touchpad on any laptop.[29]

29. Based on a comparison of touchpad accessibility features in published tech specs as of August 2023.



Who do you see buying this device in the consumer space?

- **Creative power users.** The Surface consumer audience is the creative power user. Older millennials or Gen X seek an innovative, stylish device to accommodate their hobbies and entertainment. Highly educated- 75% of Laptop Studio's buyers had at least a college degree. They might be freelance illustrators, artists, photo, and video editing hobbyists, or those wanting a top-of-the-line laptop. Consumers want to create, be productive, and be entertained on a device that's flexible enough to keep up with them. They want to be able to sketch and draw when inspiration strikes but also have enough power to play the latest games from Xbox Game Pass.

Who do you see buying this device in the commercial space?

- **Power professionals** are people who might consider mobile workstations today. With significantly increased CPU, GPU, and RAM, Surface Laptop Studio 2 offers flexibility, beautiful design, and build quality to this category for the first time. These customers are running specialized industry applications - They need 64 GB of RAM and advanced NVIDIA commercial graphics to render their projects and designs quickly, wherever they are. Surface Laptop Studio 2 is a Secured-core PC with the ease of deployment and management that our Surface commercial customers expect.
- **Higher Education/STEM.** Students love being able to instantly transition between laptop mode and Studio Mode. Surface Laptop Studio 2 has the power to run the apps they need no matter what they are studying, with battery life that can get them through their day. When they get home, they can unwind with Surface Laptop Studio 2's gaming capabilities.
- **Faculty** benefits from being able to ink in Studio mode for demonstrations during lectures while still having great typing performance in Laptop mode for research. 64 GB of RAM, improved GPUs and higher wattage processors expand the market for Surface Laptop Studio 2 in commercial. The flexibility of going into studio mode and designing with Surface Sim Pen or collaborating and presenting in stage mode is something they have never been able to do on a device with these specs before.

SKUs and availability

What are the SKUs for Surface Laptop Studio 2?

Table 3. Surface Laptop Studio 2 SKUs

Processor	Memory	Storage	GPU	Market
i7	16	512 GB	Intel Iris Xe Graphics	Commercial & Consumer
i7	16	512 GB	NVIDIA GeForce RTX 4050 Laptop GPU	Commercial & Consumer
i7	32	1 TB	NVIDIA GeForce RTX 4050 Laptop GPU	Commercial & Consumer
17	32	1 TB	NVIDIA RTX 2000 Ada Generation Laptop GPU	Commercial & Consumer
i7	64	1 TB	NVIDIA GeForce RTX 4060 Laptop GPU	Commercial & Consumer
i7	64	2 TB	NVIDIA GeForce RTX 4060 Laptop GPU	Commercial & Consumer
i7	64	2 TB	NVIDIA RTX 2000 Ada Generation Laptop GPU	Commercial only

When is Surface Laptop Studio 2 available for purchase?

- Surface Laptop Studio 2 is available for purchase on October 3, 2023.

Which markets are Laptop Studio 2 available in?

- Laptop Studio 2 will be available globally across Surface markets on October 3, as follows
- AOC: US, Canada
- APOC: Australia, NZ, HK, Taiwan
- EOC: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Rep., Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Lux., Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, UK.
- Availability will follow in other markets.

Is there a 5G model for Surface Laptop Studio 2?

- No. See Surface Pro 9 with 5G.

Is there an I-5 processor option?

- No. Commercial SKUs have a 13th Gen Intel Core i7-13800H Processor, and consumer SKUs have a 13th Gen

Intel Core i7-13700H Processor.

Why are you no longer offering Intel i5 option?

- The Surface team carefully selects processors based on the customer experience that we aim to deliver. Surface Laptop Studio 2 is built for pro-creators and power professionals with the most demanding workloads, and the 13th Gen Intel Core i7 processor delivers over 2x the performance than Surface Laptop Studio to ensure that these customers have the performance they need for the apps they depend on.

What's the difference between the commercial and consumer processors?

- The processors are equivalent except the i7-13800H has a slightly higher Turbo Boost frequency of 5.20 GHz compared to 5.0 GHz on the i7-13700H.

Why are you offering three different GPUs for Surface Laptop Studio 2 and how are they different?

- Our customers tell us they want a choice in GPU, so they can select the right one to optimize performance for the apps they need. We're excited to be able to offer three cutting-edge GPUs from NVIDIA. The NVIDIA GeForce RTX 4050 and GeForce RTX 4060 are great for content creation and gaming. The NVIDIA RTX 2000 Ada Generation is optimized for designing, rendering and engineering projects in professional applications.

Why is Surface Laptop Studio 2 heavier and thicker than Surface Laptop Studio V1?

- Clear feedback from our target audience (Creatives and Professionals, Developers) is telling us they prioritize performance, versatility, and a robust port selection above everything else – and we've optimized for that. Customers looking for a smaller and lighter form factor can also consider Surface Laptop 5 and Surface Pro 9.

How is the Pro 9 5G NPU different and/or similar to Surface Laptop Studio 2 VPU?

- Surface Laptop Studio 2 is the first Surface with an AI accelerator on the Intel platform. This powers Windows Studio Effects on the new Surface Studio Camera, which were only previously available on Surface Pro 9 5G. These effects are automatic framing, eye contact correction and background blur.

How is Background Blur in Windows Studio Effects different from the background blur feature available on other devices and apps?

- The AI Accelerator/VPU assumes the compute load to run Windows Studio Effects, including background blur, conserving CPU and GPU capacity to run other operations.

Are there multiple sizes for Surface Laptop Studio 2?

- Surface Laptop Studio 2 is available in one size only: 14.4"[7]

Performance

What are some top performance highlights?

- Get the incredible power and performance to focus on getting the job done with more powerful 13th Gen Intel Core processors built on the Intel® Evo delivering 2× the power[30] of Surface Laptop Studio.
- Render and sketch stunning 3D visualizations with ease. Surface Laptop Studio 2 with NVIDIA RTX 2000 Ada Generation delivers up to 60% better performance score on PTC Creo workload than Surface Laptop Studio with RTX A2000.
- Model and design your product effortlessly. Surface Laptop Studio 2 with NVIDIA RTX 2000 Ada Generation delivers up to 60% better performance score on Dassault Systems CATIA workload than Surface Laptop Studio with RTX A2000.
- Create, animate, and shape your complex projects without breaking a sweat. Surface Laptop Studio 2 with NVIDIA RTX 2000 Ada Generation delivers up to twice the performance on Autodesk Maya workload than Surface Laptop Studio with RTX A2000.
- Get product engineering design done easier. Surface Laptop Studio 2 with NVIDIA RTX delivers up to 80% better performance score on Dassault Systems SOLIDWORKS workload than Surface Laptop Studio with NVIDIA RTX A2000.
- The PixelSense Flow touch display with a 120Hz refresh rate achieves the lowest-ever ink latency, reducing eyestrain and enhancing overall comfort.

Features

What type of processor is included?

- Intel H series processors, designed for high-performance laptops. H series processors are ideal for demanding tasks such as video editing, graphic design, and 3D rendering. They have a higher power consumption compared to other Intel processors but are offset by their high performance capabilities.

What is the VPU? Is it the same thing as an NPU?

- VPU stands for Vision Processing Unit and is designed to support AI workloads to enable Windows Studio effects system wide. It performs similar functionality to the NPU found in Surface Pro 9 with 5G. Show your best in meetings and on stream with background blur, eye contact correction and automatic framing.
- Surface Laptop Studio 2 comes with the Intel Gen3 Movidius 3700VC VPU, part of the Intel Movidius VPU product line built on the Keem Bay architecture.[31]
- The 3700VC VPU has a base frequency of 700 MHz and is built on a 12 nm lithography process. It is designed for use in industrial environments with extended temperature conditions

What type of card reader is included?

- A MicroSD UHS-II card reader. The main difference between UHS-I and UHS-II is the speed at which they can transfer data. UHS-I cards have a maximum transfer speed of 104 MB/s, while UHS-II cards can transfer data at speeds of up to 312 MB/s. UHS-II cards have an additional row of pins that allow for faster data

30. On select models.
31. Gen 3 Intel Movidius 3700VC VPU Product Specifications

transfer rates.

Professional graphics

Which GPU is best for my needs?

- Our customers tell us they want a choice in GPU, so they can select the right one to optimize performance for the apps they need. We're excited to be able to offer three cutting-edge GPUs from NVIDIA. The NVIDIA GeForce RTX 4050 and GeForce RTX 4060 are great for content creation and gaming. The NVIDIA RTX 2000 Ada Generation is optimized for designing, rendering and engineering projects in professional applications.

What are the ISV-certified apps?

- The RTX 2000 Ada Generation GPU provides the capability to run ISV-tested or certified apps for the most demanding professional GPU workload; Surface ensures compatibility and experience with the most popular application in the commercial market.
- To learn more, see Surface Laptop Studio 2 ISV-tested/certified apps.

What are some example workloads for a dGPU?

The NVIDIA dGPUs (GeForce RTX 4050, GeForce RTX 4060, and RTX 2000 Ada Generation) enable the following functionality:

- **AI for games with DLSS3** with the 3rd generation of GPU AI Algorithm, enjoy super-resolution in your game for the best visual experience.
- **AI for creators with DirectML** creator apps such as Adobe Sensei AI can now leverage GPU AI capabilities to enhance your workflow.
- **AI for A/V with Broadcast** adds a special A/V AI effect to any broadcasting app, such as OBS, thanks to the GPU AI A/V capabilities.
- **AV1 video decoding and encoding support** increases performance for watching videos and generating new content.

What are some other top benefits of the NVIDIA GPUs?

- **Surface GPU/CPU power balancing**. Take advantage of Surface performance algorithms that optimize workloads by dynamically adjusting power consumption across the CPU and GPU.
- **Directx12 Ultimate**. Enjoy optimal compatibility for Windows-based games.

What are some top workflows for GPUs in Surface Laptop Studio 2?

- NVIDIA breaks out the following industry sectors as top workflows.[32]

32. See RTX in Professional Laptops | NVIDIA

Table 4. Comparing NVIDIA GPUs on Surface Laptop Studio 2

Feature	NVIDIA GeForce RTX 4050 Laptop GPU	NVIDIA GeForce RTX 4060 Laptop GPU	NVIDIA RTX 2000 Ada Generation Laptop GPU
Architecture	Ada Lovelace	Ada Lovelace	Ada Lovelace
GPU memory	6 GB GDDR6	8 GB GDDR6	8 GB GDDR6
GPU boost clock	2130	2010	2115
NVIDIA CUDA processing cores	2560 (v8.9)	3072 (v8.9)	3072 (v8.9)
NVIDIA RT cores	3rd Gen/20	3rd Gen/24	3rd Gen/24
Tensor cores	4th Gen/80	4th Gen/96	4th Gen/96
Memory rate (GBps)	16 GBps	16 GBps	16 GBps
Memory bandwidth (GB/s)	192 GB/s	256 GB/s	256 GB/s
Memory interface (bit)	96	128	128
Maximum graphics power	80W	80W	80W
DLSS	DLSS3 Super Resolution Frame Generation	DLSS3 Super Resolution Frame Generation	DLSS3 Super Resolution Frame Generation
NVIDIA GPU Boost	Yes	Yes	Yes
Resizable BAR	Yes	Yes	Yes
NVIDIA Optimus	Yes	Yes	Yes
Nvidia Encoder	8th Gen	8th Gen	8th Gen
Nvidia Decoder	5th Gen	5th Gen	5th Gen

Feature	NVIDIA GeForce RTX 4050 Laptop GPU	NVIDIA GeForce RTX 4060 Laptop GPU	NVIDIA RTX 2000 Ada Generation Laptop GPU
Tensor performance (TFLOPS Peak)[33]	174.4	197.6	208.0
Single precision FP performance (TFLOPS)[34]	10.9	12.3	13.0
PCIe generation	4	4	4 & 5
Vulkan RT API, OpenGL 4.6	Yes	Yes	Yes
OpenCL	Yes	Yes	Yes
DirectX	DX12 Ultimate	DX12 Ultimate	DX12 Ultimate

Table 5. GPU workflows

Industry sector	Example workflows
Manufacturing and Product Design	– Design, engineer, simulate, and render your next product at home, in the office, from the factory, or wherever you need to work. – Leverage the power of real-time ray tracing, AI, and advanced graphics in a thin and light form factor to create advanced design visualizations on the go. – Simulate structural, fluid, and electromagnetic product performance to get an accurate understanding of design functionality quickly—anytime, anywhere.
Media & Entertainment	– Model, animate, simulate, and render photorealistic characters, environments, and visual effects in the studio, on location, or from anywhere. – Edit up to 8K quality footage with AI-enhanced features. – Bring RTX acceleration to the creative applications you use every day to create, animate, and design more visually stunning content than ever before.

33. Based on GPU boost clock at 60W graphics power.
34. Effective TFLOPS using the sparsity feature. NVIDIA Ada Lovelace architecture using FP8 matrix multiply with FP16 or FP32 accumulate.

Industry sector	Example workflows
Architecture, Engineering, Construction, & Operations	– Design, review, modify, and accurately visualize complex 3D building models anywhere, from your office to your customer locations. – Immerse yourself in large-scale building designs with virtual reality. – Create compelling photorealistic renderings with lifelike reflections, shadows, and lighting with ray-tracing acceleration.
AI & Data Science	– Accomplish compute-intensive data science tasks from anywhere. Explore large datasets and features, and train and validate models directly on your laptop. – Examine large datasets with high levels of interactivity without cutting down the size of the data or reducing fidelity. – Save environment setup time with NVIDIA-certified data science mobile workstations, ideal for the most widely used AI frameworks and SDKs, like TensorFlow and PyTorch.

What Wi-Fi NIC is included in Surface Laptop Studio 2?

- Intel Wi-Fi 6E AX210 (Gig+) provides Wi-Fi 6E, the latest version of the Wi-Fi standard (802.11ax). The Wi-Fi NIC enables faster speeds, lower latency, and higher capacity than previous versions. It supports the 6 GHz frequency band, less congested than the 2.4 GHz and 5 GHz bands used by older Wi-Fi standards. This results in faster and more reliable wireless connections.

Table 6. Comparing wireless functionality on Surface Laptop Studio 2

Component	Surface Book 3	Surface Laptop	Surface Laptop Studio 2
Wi-Fi	Intel Harrison Peak 22560 (AX201) Separate Xbox wireless Wi-Fi connection on 15" models	Intel Wi-Fi 6 AX201	Intel Wi-Fi 6E AX210 (Gig+)
Wi-Fi gen	Wi-Fi 6	Wi-Fi 6	Wi-Fi 6E
Standard	802.11ax	802.11a, b, d, g, h, i, k, n, r, u, v, w, ac, ax;	802.11a, b, d, g, h, i, k, n, r, u, v, w, ac, ax;
Antenna config	2×2	2×2	2×2
MU-MIMO	Yes	Yes	Yes

160 MHz support	Yes	Yes	Yes
Fast roaming	Full	Full	Full
	802.11k	802.11k	802.11k
	802.11r	802.11r	802.11r
	802.11v	802.11v	802.11v
WPA3 support	Yes	Yes	Yes
802.11mc support	Yes	Yes	Yes
Bluetooth version	5	5.2	5.3

Compete

How does Surface Laptop Studio 2 fare against competitors?

- Up to 35% more graphics performance than MacBook Pro M2 Pro.[35]
- Surface Laptop Studio 2 is more versatile than any MacBook with flexible design and touch and pen support.
- Connect and collaborate better on video calls with 46% wider field of view than MacBook Pro.[36]
- Touch and pen enable more natural creativity than on MacBook.
- Surface Laptop Studio 2 delivers a better gaming experience than MacBook Pro with M2 Pro.

How does Surface stack up against Apple's M2 products?

- Surface delivers amazing performance across a range of form factors and price points. Surface is pushing the industry forward with versatile and powerful features in beautiful and elegant forms that set our products apart. Versatility, typing, touch, ink, cameras, speakers, mics – all these capabilities contribute to the usefulness and performance of a product. We continue to work closely with our silicon partners to innovate. Still, we believe it's the sum of the parts that yield the type of performance that matters most to our customers, and our products reflect that.
- The new Surface Laptop Studio 2 with Intel 13th Gen (H class) processors plus cutting-edge NVIDIA graphics that deliver up to 2.5× more graphics performance than MacBook Pro with M2 Pro[37]. It also will deliver better experiences with its unique and versatile form factor that transforms from Laptop to Stage to Canvas. Best for inking, our most inclusive touchpad, and top-notch features such as Dolby Atmos Audio and Studio Camera with Windows Studio Effects.

35. Tested by Microsoft in August 2023 using 3DMark Wild Life benchmark comparing Surface Laptop Studio 2 with NVIDIA® GeForce RTX 4050 an 4060 to MacBook Pro with M2 Pro 12core/19 Core configuration 14".

36. MacBook Pro 14" 69 degrees field of view vs. Surface Laptop Studio 2: 100 degrees field of view.

37. Tested by Microsoft in September 2023 using CineBench 2024 GPU benchmark comparing Surface Laptop Studio 2 with GeForce RTX 4050 and 4060 to MacBook Pro14" with M2 Pro 19 12 core / 19 core configuration.

Enterprise management and security

Surface Laptop Studio 2 is built with the versatility to go from home to the road to the most secure managed enterprise environments.

How does being a Secured core PC make Surface Laptop Studio 2 more secure?

- Secured-core PCs are a new class of devices that Microsoft has introduced to provide extra protection for people handling sensitive information. They are designed to protect against sophisticated attacks and provide increased assurance when handling mission-critical data in some of the most data-sensitive industries, such as healthcare workers that handle medical records and other personally identifiable information (PII), commercial roles that handle high business impact and highly sensitive data, such as a financial controller with earnings data.
- Secured-core PCs provide extra protection at the firmware level with hardware security features that shield user credentials and other critical data. They are built to be the most secure Windows devices and offer extra security for sensitive data like intellectual property, classified intelligence, and financial information.
- To learn more, see Windows 11 Secured-Core PCs | Microsoft.

How does a Surface dock enhance the manageability of Surface Laptop Studio 2 devices?

- With Surface Thunderbolt 4 Dock, you can take advantage of the following features:
  - Surface Enterprise Management Mode for Dock
  - Media Access Control (MAC) address emulation
  - Wake on LAN from Modern Standby and S4/S5 sleep modes
  - Secure USB-C management.
  - To learn more, see What's new in Surface Thunderbolt 4 Dock - Surface | Microsoft Learn.

What is USB-C disablement?

- USB-C disablement refers to the IT admin ability to manage and lock down USB-C access when Surface Laptop Studio 2 is connected to Surface Thunderbolt 4 Dock. To learn more, see Surface Thunderbolt 4 Dock and Surface devices documentation - Surface | Microsoft Learn.

Can I remove the SSD to protect sensitive data?

- Yes. You can maintain control of your sensitive information with a removable hard drive for data retention.[13]

To update Surface Laptop Studio 2, can customers download drivers directly from NVIDIA?

- Surface Laptop Studio 2 continues to align with the current device servicing infrastructure across all Surface devices to ensure the testing required to meet quality assurance standards. Accordingly, once NVIDIA releases, drivers undergo extensive Microsoft testing and must meet all Surface quality criteria before distribution via Windows Update.
- Users can install drivers directly from NVIDIA if they don't want to wait for them to come via Windows Update.

What's the advantage of Microsoft's UEFI compared with 3rd party UEFI?

- Microsoft developers write the UEFI on Surface Laptop Studio 2, a security-driven decision that ensures

complete oversight and direct control over every line of code. In-house UEFI development eliminates the complexity and risk of relying on 3rd party vendors or subcontractors.

- Third-party UEFI that relies on outside vendors or subcontractors may be more exposed to security vulnerabilities.
- Microsoft's UEFI is automatically updated via Windows Update. Other third-party versions of UEFI are typically updated manually.

What UEFI settings can I manage using Intune and DFCI?

- See: Manage DFCI on Surface devices.
- Use Device Firmware Configuration Interface profiles on Windows devices in Microsoft Intune.

What is the complete list of UEFI settings that can be managed with SEMM?

- To manage Surface Laptop Studio 2 with Surface Enterprise Management Mode (SEMM), refer to Configure Advanced Settings with SEMM.

Does the consumer version of Surface Laptop Studio 2 use firmware TPM (fTPM)?

- Yes. The consumer SKUs use a firmware Trusted Platform Module (fTPM) 2.0 chip.

What exactly is a discrete TPM?

- A discrete TPM (dTPM) is a specialized microchip designed primarily for encryption-related tasks. Typically affixed to the motherboard, this chip interacts with the system via a hardware bus. On Surface models, the dTPM ensures software protection, while its keys and measurements validate software authenticity. Note: "discrete TPM" and "TPM" are interchangeable terms.

Why might I opt for a discrete TPM?

- The dTPM is FIPS 140-2 certified, aligning with the US government's computer security criteria. This certification is typically mandated by government clients in the US and Canada. Additionally, the dTPM adheres to the Common Criteria certification, recognized by clients outside North America.

Can the TPM receive updates alongside Windows and firmware?

- Certainly, just as with other firmware components, the dTPM can be refreshed either through Windows Update or using standalone .msi files, as preferred by commercial users.

Where can I learn more about TPM?

- Refer to the Microsoft Learn TPM documentation.

What is Microsoft Surface Management Portal?

- In light of our continued commitment to bringing commercial customers the best possible experience, we partnered with teams across Microsoft to streamline Surface management into a single view within Microsoft

Intune admin center.[38] Whether you lead a large organization with thousands of devices or manage IT for a small-medium business, you can now gain insight into the health of all your Surface devices and monitor device warranty and support requests — all in one location. To learn more, see Surface Management Portal - Surface | Microsoft Learn.

What does this release mean for commercial customers and IT admins? How should they think about this update and implement it across their workforces?

- This release provides commercial organization value in key areas like productivity powered by AI, security, and management.
  - In the productivity space powered by AI, we are introducing Copilot in Windows with Bing Chat Enterprise, AI-powered recommendations in Start Menu and File Explorer, and Windows 365 Boot and Windows 365 Switch.
  - In security, a few examples are Windows Hello for Business Passwordless enablement and improved commercial application control policies.
  - For management, we are introducing MAM for Windows and Config Refresh
- To find out more about the commercial value coming on this release, check out this IT Pro Blog
- Commercial organizations will have access to this release through how they typically deploy their Windows updates, i.e., Windows Update for Business, Windows Server Updates Services (WSUS), and Intune. We recognize that enterprise and education organizations need a stable environment and the ability to control select features introduced via servicing in their organizations. Features that may disrupt organizations will be off by default for all Windows update-managed devices until the device enables the policy. To learn more, please visit: Delivering continuous innovation in Windows 11 - Microsoft Support

What is the value of mobile application management (MAM) for Windows?

- Based on customer feedback, we know there are times when you want to empower employees to access company information through personal devices without compromising privacy or protection. Scenarios we hear that fit this is when someone needs to borrow a family member's computer to quickly make some edits to a Word doc or write out an email that would be time-consuming on their phone. For these scenarios and more, we built Application Management for Windows, which enables people to securely access organizational resources through Edge from an unmanaged device while allowing IT to control the conditions under which the resources can be accessed.

Can IT teams customize limits for mobile application management (MAM) for Windows for their organization?

- IT has access through policies to limit which resources can be accessed (Web-based email and corporate SharePoint site) through Edge and what actions can be taken (copy & paste, download, printing, and so on).

What are the minimum system requirements for mobile application management (MAM) for Windows?

- Windows 11 Home/Pro/Enterprise 22H2 and Microsoft Intune

38 Requires license or subscription (sold separately) to activate and use.

What is Windows 365 Boot?

- Windows 365 Boot allows you to log directly into your Windows 365 Cloud PC as the primary Windows experience on the device. It seamlessly takes you to your Windows 11 login experience, and once logged in, you will be directly connected to your Windows 365 Cloud PC with no additional steps. You can configure the Windows 365 Boot components to your Windows 11 endpoints with Microsoft Intune, provided you have eligible Windows 365 Cloud PC licenses. Windows 365 Boot is generally available beginning September 26.

What is Windows 365 Switch?

- Windows 365 Switch provides the ability to quickly move between a Windows 365 Cloud PC and the local desktop using the same familiar keyboard commands, as well as a mouse-click or a swipe gesture. It offers a seamless experience within Windows 11 through the Task View feature. Once Windows 365 is installed on the endpoint, all relevant elements will automatically appear in Task View. You can configure the Windows 365 Switch feature components to your Windows 11 endpoints, provided you have eligible Windows 365 Cloud PC licenses. Windows 365 Switch is generally available beginning September 26.

Windows Backup & Restore

What is the Windows Backup and Restore feature?

- We are introducing backup and restore capabilities that ease moving to a new Windows 11 PC and help app developers retain users across this new PC transition. These changes enable users to return to productivity on their new Windows 11 PC within minutes. Users can move most settings, apps, and files from one PC to another based on their credentials, so their settings are "just there" when logging into a new device.

What are the minimum system requirements for Windows Backup?

- Backup is available from any supported Windows 10 or higher device. Restore is available on Windows 11 22H2 or greater devices when connected to the network during OOBE. Backup and Restore are available globally except for mainland China.

Will Backup and Restore be available via Microsoft Entra ID for commercial customers?

- No, backup and restore will only be available for MSA accounts at this time.

How much free storage do I need to use Windows Backup?

- All users can get 5 GB of free storage from OneDrive to back up their apps, settings, and files.

What if I don't have the free storage needed for Windows Backup?

- If users need additional storage for their files, Microsoft 365 Basic, Personal, and Family options are available to provide additional storage capability, and they can take advantage of a free trial to get started.Serviceability

Could you clarify the term "serviceability"?

- Serviceability alludes to our pledge to provide commercial customers with options for servicing their devices.

- We are committed to designing our products to deliver what customers need and want in a premium device, and that includes multiple options for servicing. We actively collaborate with industry peers to curate repair alternatives that uphold repair standards, secure user data and privacy, and shield consumers from potential hazards.

How serviceable is Surface Laptop Studio 2?

- Surface Laptop Studio 2 is designed to be more serviceable with more replaceable parts and service options through our growing Authorized Service Provider network.[39]

What parts are serviceable?

- Keyboard/Trackpad sub-assembly
- Touch/Display sub-assembly
- Feet
- Cosmetic Plate
- rSSD
- C-Cover Keyboard Assembly
- AB cover display assembly
- D-Bucket + Battery Assembly
- Surflink Port
- USB-C
- Audio jack

Where can my company obtain replacement parts to service our Surface devices?

- See Customer self-serve repair for Surface devices - Surface | Microsoft Learn

Do replacement components come with a warranty?

- Yes, a 90-day warranty.

NOTE: Replacement components may be refurbished.

Where can I learn more about serviceability?

- See: Surface for Business service and repair & Surface service options

What SSD form factors are compatible with the new Surface Laptop Studio 2?

- We support Microsoft SSDs (not third-party SSDs), and the 2230 and 2280 physical form factors are supported. We do not provide a 2280 256 GB/512 GB first-party option.

39 Surface ASP network available in 160 locations across North America, Asia Pacific, and Europe.

Is Advanced Exchange available for Surface Laptop Studio 2?

- Yes. Advanced Exchange Service[40] is available in supported markets at no additional charge.

What else is good about Surface Laptop Studio 2 from a sustainability perspective?

- Surface Laptop Studio 2 has improved thermal capabilities, helping extend battery life.
- Surface Laptop Studio 2's base is manufactured using a "Stamping" technique[41] which produces less waste and emissions.
- Surface Laptop Studio 2's thermal module contains 25% post-consumer recycled plastic.

What are you doing to reduce the environmental impact of your devices?

- Sustainability has long been a core priority for Microsoft, and that commitment is embedded in all we do – including our devices. The most comprehensive source detailing our Devices team's sustainability initiatives is our Devices Sustainability Report.
- Our commitment to sustainability shapes every aspect of our operation – including our devices. The most comprehensive source detailing our Devices team's sustainability initiatives is is our Devices Sustainability Report.
- For more than ten years, we've steadily enhanced energy efficiency, curtailed packaging waste, reduced or eliminated harmful chemicals, and invested in the recyclability and repairability of our devices.

OS choice for Surface Laptop Studio 2

Can Surface Laptop Studio 2 come with Windows 10 preinstalled?

- Yes, for commercial customers, Surface offers Windows 10 preinstalled for an extra $50. This "OS Choice" allows businesses to select their preferred Windows version and facilitates seamless, direct deployment to users.

Why is there a $50 surcharge for Windows 10?

- OS Choice is geared towards promoting modern tools like Autopilot. It allows devices to be factory-configured for Autopilot deployment. The fee covers the development of essential firmware and drivers, facilitating efficient deployment and full lifecycle support.

What's the advantage of OS Choice?

- It streamlines IT by providing devices already set up with the right firmware, drivers, and security measures for the chosen OS.
- It eliminates potential supply chain issues by removing the need to re-image to Windows 10 22H2.
- Deployment is faster through Windows Autopilot, ensuring rapid app and policy updates and reducing help desk interactions.

39. Advanced Exchange Service is available at no additional charge in supported markets only. Restrictions apply. See the Surface for Business warranty page for AES terms and conditions and a list of supported markets.
41. As compared to Computer Numerical Control (CNC) machining.

- Customers can deploy the newest Surface hardware while transitioning to Windows 11 on their own terms.

Who is this option intended for?

- Commercial customers using cloud-based deployment and management through Microsoft 365 or other contemporary deployment systems.

I'm not ready for Windows 11. What is the minimum OS version available on new devices?

- Windows 10 22H2.

End users

What are the different modes or postures for Surface Laptop Studio 2?

- **Laptop Mode.** Stay productive in Laptop Mode with the full keyboard and new Precision haptic touchpad that provides comfortable feedback as you navigate.
- **Stage Mode.** Stream and present in Stage Mode: Pull the display forward at the perfect angle for watching videos, gaming, or presenting, thanks to our first-ever flexible and ultra-durable Dynamic Woven Hinge.
- **Studio Mode.** Get creative in Studio Mode: Draw, write and sketch with Surface Laptop Studio 2 on a portable digital canvas.

What AI features make Surface Laptop Studio 2 an optimal device for remote and hybrid work?

- The new wide field of view camera and AI-powered automatic framing and eye contact correction bring Windows Studio Effects to x86 for the first time. Thanks to Intel's 13th gen processor with AI accelerator, customers engaged in remote or hybrid work benefit from auto framing, eye gaze correction and advanced background blur on a device built for creativity, productivity, and gaming.

How should I clean or disinfect Surface Laptop Studio 2?

- See the **Disinfecting your Surface** section in the following Support article: Clean and care for your Surface.

Is Surface Laptop Studio 2 available in new color variants?

- Surface Laptop Studio 2 is available in one color, Platinum.

Does Surface Laptop Studio 2 have a rear camera?

- No. Surface Laptop Studio 2 comes with one front 1080p camera.

What ports does Surface Laptop Studio 2 have?

- Surface Laptop Studio 2 has 2x USB-C Thunderbolt 4 ports, 1 USB-A port, a microSDXC card reader, Surface Connect, and a 3.5mm headphone jack. Connect with Surface Dock 2 or Surface Thunderbolt 4 Dock[42] for additional ports.

42 Sold separately.

Does Surface Laptop Studio 2 include Thunderbolt?

- Yes, Surface Laptop Studio 2 has 2×USB-C (USB4/Thunderbolt 4).

What can I connect with Thunderbolt?

- **Thunderbolt devices**. Connect devices bearing the Thunderbolt logo, including docks, displays, storage, and video capture devices. Thunderbolt 3 devices and cables are compatible with Thunderbolt 4 ports. Older Thunderbolt devices work, too, but require an adapter.
- **External monitors.** Connect multiple displays. One Thunderbolt 4 port can connect up to two 4K 60Hz DisplayPort or HDMI monitors through a compatible dock or an adapter. Thunderbolt-designated monitors can be connected directly.
- **Storage.** Connect a high-speed external Thunderbolt SSD to expand the storage capacity of your system and achieve speeds on par with internal drives.
- **USB peripherals**. Connect USB devices like mice, keyboards, controllers, and headsets for gaming.
- **Networking.** Connect to a high-speed 10 Gigabit Ethernet network via an adapter or use a Thunderbolt cable to connect two computers over a peer-to-peer network.
- **Charging.** Connect your phone and other compatible USB devices to charge them quickly. Or charge your device with a USB-C charger, as explained below.
- **eGPUs**. Unlock workstation power with dedicated graphics by connecting an external GPU via Thunderbolt.

Do I need specific cables to connect Thunderbolt devices?

- See Surface recommendations at Tested peripherals for new Surface devices - Surface | Microsoft Learn

Can I charge Surface Laptop Studio 2 via USB-C?

- Surface Laptop Studio 2 comes with Thunderbolt 4 USB-C ports with Surface Connect –which supports fast charging. Note that for the best performance, we recommend using a USB-C charger that provides at least 100W for the best charging experience. For more info about Surface power supplies, see Surface power supplies and charging requirements.

What is the supported resolution for external displays?

Table 7. Supported resolution for external displays

Interface	One External Display (Plus Internal LCD)	Two External Displays (Plus Internal LCD)
mDP on Surface Connect Dock for EOS	Up to 4096×2160 @60Hz	Up to 2× 4096×2160 @30Hz Up to 2× 2960×1440 @60Hz
USB-C on Surface Connect 2	Up to 5120×2880 @60Hz	Up to 2× 4096×2160 @60Hz
USB-C on Surface Laptop Studio 2	Up to 5120×2800 @120Hz	Up to 2× 4096×2160 @60Hz

What does it mean to be VESA DisplayHDR Certified?

- VESA DisplayHDR Certified is a certification program developed by the Video Electronics Standards Association (VESA) that defines the display industry's first fully open standard specifying HDR quality, including luminance, color gamut, bit depth, and rise time.[43]
- The certification program provides a multi-tiered performance rating and logo system for "DisplayHDR" and "DisplayHDR True Black," representing visible, meaningful performance levels relevant to specific applications and usage scenarios.
- The certification assures HDR content appears vivid and lifelike, with accurate color and contrast reproduction.

TIP: Surface Laptop Studio 2 is the first Surface Product to ship with an HDR display.

How is Windows Hello better on Surface Laptop Studio 2?

- The Windows ecosystem features an upgraded 940nm wavelength spectrum sensor and an improved algorithm capable of adapting to user experience changes over time, resulting in faster login times. With 940 nm, the Windows Hello camera extends login capabilities to varied lighting conditions, such as outdoor sunlight or light reflected from a window.

Does Surface Laptop Studio 2 meet Teams certification requirements for audio?

- Audio capture meets certification requirements set for Microsoft Teams Room accessories.[4]

Is Surface Laptop Studio 2 also a gaming PC?

- Surface Laptop Studio 2 provides the best gaming experience on any Surface with up to twice the graphics performance.[44]
- Surface Laptop Studio 2 enables faster game load times and more detailed game worlds with DirectStorage.[45]
- Surface Laptop Studio 2 lets you upscale any video in Edge or Chrome to 4K with NVIDIA RTX Video Super Resolution. [46]

What is the haptic pen experience?

- The Surface Slim Pen 2[28], with a new slimmer tip featuring haptic feedback, enables the most advanced inking experience on any Surface device. The pen utilizes a haptic motor capable of simultaneously producing vibrations with multiple frequencies. These vibration patterns, or "waveforms," are complex creations, carefully tuned to be played on Surface Slim Pen 2.
- The pen automatically charges when docked and is automatically paired on first use.
- The PixelSense Flow touch display with a 120Hz refresh rate achieves the lowest-ever ink latency, reducing eyestrain and enhancing overall comfort.

43. See Vesa Certified DisplayHDR.

44. On select models.

45. DirectStorage requires API adoption by games.

46. Available in models with NVIDIA® Laptop GPUs and requires activation in system settings. Resolution upscaling is limited to maximum resolution of display.

- A redesigned tilt system provides a 77° tilt for better shading and zero force inking.
- When you remove the Surface Slim Pen 2 from its storage location, the Pen menu in Windows 11 automatically shows you customizable shortcuts to your favorite pen-enabled apps.
- Press the top button on your pen once to quickly open Microsoft Whiteboard, and double press it to open the Snipping Tool to take a snapshot of your screen.

Since Surface Laptop Studio 2 has storage for a pen, is a Surface pen included in the box?

- No, the Surface Slim Pen 2 is sold separately.

Why is the Surface Slim Pen 2 sold separately?

- We recommend Surface Slim Pen 2 for the best digital pen experience on Surface Laptop Studio 2 – it wirelessly charges and stores on the device and has a haptic motor so customers can experience tactile signals.
- However, we do value choice. Customers who already own a Surface Pen or Surface Slim Pen can still pair it with Surface Laptop Studio 2 to take notes, sketch, and more.

Learn more

- Surface for Business
- Surface devices documentation