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Readers help support Windows Report. We may get a commission if you buy through our links. Read our disclosure page to find out how can you help Windows Report sustain the editorial team. Read more A message from our partner To fix various driver issues on your PC, you will need a dedicated tool to find the freshest and the original drivers. You can use PC HelpSoft Driver Updater to do it in 3 easy steps: Download PC HelpSoft Driver Updater and install it on your PC Start the scanning process to search for outdated or missing drivers that cause problems Right-click on Update Now to allow the update process. Download now PC HelpSoft has been downloaded by 0 readers this month If your Lenovo touch screen is not working, you probably own a ThinkPad, or Yoga model ranging from 530 to 720. The problem is caused by driver issues, problems with peripherals, or hardware issues. Before you start any of these fixes, ensure you disconnect any peripherals; they may trigger issues with the touch screen. Also, restart the device and ensure you have the latest Windows updates installed. Right-click the Start button and select Device Manager. Go to Human Interface Devices section and expand it. Find the HID-compliant touch screen, right click on it and choose Disable. Now, right click HID-compliant touch screen again and choose Enable. This solution worked for many users and it's pretty easy to perform it to get this out of the way. Go to Start, type command, right-click on Command Prompt, and select Run as administrator. Type the script below and hit Enter.sfc /scannow Wait for the scanning process to complete, and then restart your computer. On reboot, all corrupted files will be replaced. A few users reported that Intel drivers caused this issue, and downloading the 3147_Chipset_Driver_MHWYW_WN32_604.10135.1001.55518_A00.EXE driver from Intel's website fixed the problem. Others reported that using an older Intel Processor I/O Controller Driver worked for them. In some instances, updating the Wacom driver on Yoga 710 can also help. If you are looking for an easier and faster solution, you can employ specialized driver updater software in these circumstances. Due to its complete error-freeness and user-friendliness, we suggest PC HelpSoft Driver Updater as an automated tool. Press the Windows key + R and enter regedit. Once it opens, navigate to: HKEY_CURRENT_USER\Software\Microsoft\Wisp\Touch In the right pane, double-click the TouchGate value. If it's not available, right-click the right pane, and choose New. Then select DWORD (32-bit) Value. Name it TouchGate and open it. Set its Value data to 1 and save changes. If the issue is still present, you may be having an issue with the touchscreen panel, so it might be best to contact Lenovo. Before you go, don't miss our guide on what to do if the Lenovo Flex 5 touchscreen is not working or if the Windows 11 touch screen not working. Many also reported that the touchscreen is not working in Windows 11 Tablet Mode, but we have a guide that addresses this issue. If you have more questions, please ask them in the comments below. At the pinnacle of portable performance, the new seventh generation of the Yoga Slim premium clamshell laptop line offers power, flexibility, and collaborative features as well as the smart adaptive performance of Lenovo's X Power paired with the brilliant visuals of Lenovo's PureSight DisplayDesigned for the modern home, the new Yoga AIO 7 has an easily adjustable screen hinge and endless device-to-device collaborative options for a hybrid lifestyleWith more users on the go, new Lenovo Smart Lock Services adds an extra layer of protection helping users to locate, lock, delete data, and recover their stolen PCMay 5, 2022 – Lenovo has unveiled today the next generation of premium, ultra-slim Windows 11 Yoga laptops featuring:The flagship 14-inch Yoga Slim 9i (known as Lenovo Slim 9i in the U.S.), a carbon neutral certified laptop1 that offers smarter productivity and incredible portable entertainmentThe Yoga Slim 7i Pro X and Yoga Slim 7 Pro X (known as Lenovo Slim 7i Pro X and Lenovo Slim 7 Pro X in the U.S.), fueled by Lenovo X Power that enables creation anywhere, anytimeThe Yoga Slim 7i Carbon (known as Lenovo Slim 7i Carbon in the U.S.) that fuses powerful mobility with durable style.The new Yoga line also offers refreshes of the 14-inch and 16-inch Yoga Slim 7 Pro (known as Lenovo Slim 7 in the U.S.), the Yoga Slim 7i Pro (known as the Lenovo Slim 7i in the U.S.), and the Yoga 7. To meet the needs of the new hybrid home office, Lenovo has also announced today the new Yoga AIO 7, a new 4K 27-inch desktop PC that features an ergonomic hinge for endless adaptability, collaboration across multiple devices, and modern engineering for the contemporary home."Hybrid life is the new norm that's inspired the development of this new generation of Lenovo Yoga devices. Our goal is to empower more people to 'just be you' – to consume, create, and collaborate on their own terms," said Ouyang Jun, Lenovo's vice president and general manager of the Consumer Business Segment, Intelligent Devices Group. "We've designed and engineered the new Yoga PCs with smarter features and an even more premium user experience to help people pursue their ambitions, relax, and get things done in their own way."The Lenovo Yoga: Premium, Powerful, and PortableMade to merge unbelievable portability and versatility with more power, Lenovo's Yoga 2-in-1 convertible laptops were pioneers in opening possibilities for users to flip and fold from work to play. The Yoga sub-brand has since expanded to encompass even more premium consumer devices that now span multiple form factors, including ultra-slim clamshell laptops, desktop computers, Chromebooks, and tablets. In today's new hybrid environment, the new generation of Yoga devices are designed to help people thrive against new challenges and opportunities in the way they connect, consume, create, and collaborate from the home, school, office, and beyond – giving users the tools to do more and the freedom to be themselves.Lenovo's new Yoga Slim line exemplifies the pinnacle of this performance and portability – defined by its refined craftsmanship, premium experiences, and bold innovation. These ultra-slim laptops integrate a comfort edge design with humanizing soft contours for easier and more comfortable mobility and handling. They're also crafted for premium experiences, powered by Lenovo's X Power,2 a new defined set of features committed to better upgraded performance. To add, they're enhanced by Lenovo's show-stopping PureSight displays that set a new standard of premium features for a sharper, faster, more realistic, Eyesafe-certified visual experience.The Yoga Slim line stands for premium, portable performance – empowering users to adapt to hybrid living through smarter performance, sensing, security, and recognition capabilities – all made possible by the Lenovo A.I. Engine+. This A.I. engine's smart performance can anticipate the user's power or battery needs based on what they're doing, while Lenovo Intelligent Sense and Integrated Security – also part of Lenovo A.I. Engine+ – help keep work and play on the Yoga seamless and safer.Consumers can also attach Lenovo's latest advanced support offering Premium Care Plus for an elevated service experience. This includes personalized hardware and software support from a global network of elite technicians along with accidental damage protection, sealed battery warranty, smart PC performance solutions, and data migration assistance – adding a level of protection and care to keep users productive even when the unexpected occurs. For those who would like to help the environment, Lenovo's CO2 Offset Service is a simple way of offsetting carbon emissions, allowing consumers to support one of the United Nations Framework Convention on Climate Change's (UNFCCC) projects.Yoga Slim 9i: Smart. Sustainable. Powerful.As a carbon-neutral-certified laptop,1 the Yoga Slim 9i (14", 7), known as Lenovo Slim 9i (14", 7) in the U.S., is ideal for the eco-conscious without compromising on mobile luxury, premium entertainment features, and A.I.-powered performance. Encased in 3D glass, the comfort-edge design of the thin and light 14.9mm (0.59 in) chassis features rounded, smooth contours for a more comfortable handling and holding experience.A union of mobility and performance, the Yoga Slim 9i also redefines the meaning of portable entertainment and content creation. It has a 14-inch 16:10 up-to-4K OLED PureSight touchscreen display, complemented with Sound by Bowers & Wilkins. Lenovo's PureSight visual experience on the optional 4K OLED screen provides ultra-sharp detail and clarity and rich, photorealistic colors — from deep blacks to vibrant lights. With Vesa Certified Display HDR True Black 500, its depth of 10 bits can display over a billion colors in a single pixel and a full color gamut of 100 percent DCI-P3. The Yoga Slim 9i's four Bowers & Wilkins speakers bring audio to life.The Yoga Slim 9i lets users tap into a mode of portable performance that adapts to them, powered by Intel Evo featuring 12th Gen Intel Core processors. Powering next-level smarter experiences, the Lenovo A.I. Core 2.0 delivers improved A.I.-enabled performance and smarter security, which includes hardware-level encryption engineered to help protect the device from root and ransomware attacks. And depending on the task at hand and the amount of system load, the A.I. engine can also dynamically adjust fan speed and hardware performance to optimize and accelerate performance.Yoga Slim 7i Pro X and Yoga Slim 7 Pro X: The Power to Create, No Matter Where Providing the sheer power to create from anywhere, the Yoga Slim 7i Pro X (14", 7) known as Lenovo Slim 7i Pro X (14", 7) in the U.S., and the Yoga Slim 7 Pro X (14", 7) known as Lenovo Slim 7 Pro X (14", 7) in the U.S., deliver the raw performance for users to realize their ambitions. They feature up to next-gen processors, up to 32GB of LPDDR5 RAM, up to NVIDIA GeForce RTX 3050 Laptop GPU with NVIDIA Studio validation, and Lenovo's X Power that takes thermal design power to the next level. Lenovo's X Power offers specific tuning for different usage scenarios to push the laptop beyond the benchmarks of maximum CPU and GPU performance. At less than 1.6kg (3.5 lbs), these thin and light machines are built to go virtually anywhere, while packing the pure performance needed for digital content creation.Watch the latest show on the 14.5-inch 3K 120Hz refresh Lenovo PureSight display with optional touch, featuring an accurate color palette and richer hues. It has a hardware calibrated 100 percent sRGB gamut coverage with 100 percent sRGB gamut volume, as well as TÜV Hardware Blue Light certification3 to help reduce eye strain. And with the Lenovo A.I. Engine+ on the new Yoga Slim 7i Pro and 7 Pro, users can create as fast as their imaginations run.Yoga Slim 7i Carbon: The Art of MobilityFor those who embrace hybrid living and the freedom to get things done from their living room to the office, the Yoga Slim 7i Carbon (13", 7), known as Lenovo Slim 7i Carbon (13", 7) in the U.S., offers amazing mobile performance, matching its extraordinary lightness of under 1kg (2.2 lbs) and a chassis as thin as 14.8mm (0.58 in) at its thinnest point, with the rugged resilience of aerospace-grade magnesium alloy reinforced with multi-layer carbon fiber. Its comfort-edge design is built for ease of carrying. Three contemporary two-tone color options5 and edge-to-edge keyboard with larger trackpad further make the Yoga Slim 7i Carbon a personalized accessory that can be taken anywhere.Perform at its peak potential with Intel Evo, now featuring 12th Gen Intel Core Processors, enhanced by self-adjusting fan speeds and performance to match the user's power and battery needs. Create and binge content virtually anytime and anywhere with a Lenovo PureSight 13.3-inch 2.5k optional touchscreen featuring ultra-smooth 90Hz refresh rates and a taller 16:10 aspect ratio. Its Lenovo PureSight display offers an expanded color palette and more accurate, hardware calibrated, hues of 100 percent sRGB color space and 100 percent color volume with 8-bit color, as well as TÜV Hardware Low Blue Light certification3 made for less eye strain.Yoga Slim 7 Pro and Yoga Slim 7i Pro: Essential PerformanceLenovo is also announcing a refresh of its Yoga Slim 7 Pro (14", 7) and Yoga Slim 7i Pro (14", 7), known as Lenovo Slim 7 (14", 7) and Lenovo Slim 7i (14", 7) in the U.S. These devices are built for essential performance, with a sleek Storm Grey or Cloud Grey5 premium aluminum design. Create on the go, featuring an option of the latest gen Intel Core or AMD Ryzen 6000 Series processors. With up to an NVIDIA GeForce RTX 2050 Laptop GPU, take in the spectacular color, brightness and contrast of its optional OLED Lenovo PureSight display, enhanced by optional Dolby Vision and a 100 percent sRGB color space.Available in Storm Grey5, the larger Yoga Slim 7 Pro (16", 7) and Yoga Slim 7i Pro (16", 7), known as Lenovo Slim 7 (16", 7) and Lenovo Slim 7i (16", 7) in the U.S., are built for superior graphical display speeds, featuring a 2.5K IPS monitor at up to 165Hz for ultra-smooth gameplay and video editing. It has up to an NVIDIA GeForce RTX 3050 Ti Laptop GPU with NVIDIA Studio validation on the Yoga Slim 7 Pro (16", 7) and Intel Arc A370M graphics on Yoga Slim 7i Pro (16", 7). All Yoga Slim 7 Pro and Yoga Slim 7i Pro laptops come with smart features such as Smart Performance that can dynamically adjust power and battery life, so that users can tap into powerful performance from home or on the go.Yoga 7: Pure Passion for EntertainmentCrafted for entertainment and creativity, the new Lenovo Yoga 7 (14", 7) is a versatile 2-in-1 multi-mode convertible laptop that also features a comfort-edge design for an easier hold and carry experience. With powerful AMD Ryzen 6000 Series processors, this entertainment powerhouse packs an up-to-2.8K OLED touchscreen 16:10 display, featuring Dolby Vision for true-to-life color, richer detail, and hardware-based low blue light, as well as Dolby Atmos enveloping spatial audio over four speakers.The Yoga 7 is defined by its versatility. Go for longer periods without scrambling for a power outlet with its long-lasting battery6 and Rapid Charge Express7 technology. Create, sketch, and take notes with the optional Active Pen.5 Its four usage modes also empower users to interact with their Yoga 7 in a number of different ways. Streamline productivity and learning with smarter features such as noise cancellation during videocalls and low blue light filters to keep video quality clear and free from distraction and eye strain.Yoga AIO 7: Powerful and CollaborativeInspired by the many ways in which people are now creating, working, and entertaining at home, the new Yoga AIO 7 (27", 7) is incredibly adaptive. With a 27-inch 4K IPS narrow-bezel display and 95 percent DCI-P3, the Yoga AIO 7 effortlessly rotates 90 degrees, lifts up, and tilts for more viewing angles – just with the gentle push of a hand or finger via its flexible hinge design. This new Yoga all-in-one desktop computer is made to be at the center of a modern home. And it has the power to match – with AMD Ryzen 6000 Series Processor and optional AMD Radeon RX 6600M graphics featuring the ground-breaking AMD RDNA 2 architecture. It also doubles as a robust home entertainment system, with dual JBL 5W speakers that minimizes distortion through a unique Lenovo passive radiator design, while taking up a smaller base footprint than its previous generation to give back more desk space.One of the Yoga AIO 7's best features is enabling sharing and collaboration. Users can now wirelessly cast their smartphone's screen8 to the desktop monitor to watch videos, scroll through photos, or browse social media on a massive 27-inch display – rotated horizontally or vertically. And while working or binging videos on a laptop,9 one can also augment the audio and screen size by plugging it into the Yoga AIO 7's full-function Type-C port – letting the user assume control of both devices with a keyboard and mouse, all the while keeping the device charged.Lenovo Smart Lock Services: Shielding the PC from the UnknownTo further support hybrid lifestyles, Lenovo is introducing its latest software application product, Lenovo Smart Lock Services. Powered by Absolute® and available via Lenovo Vantage and Lenovo.com, this cloud-based security software offers users peace of mind in the event their PC is stolen, giving them more remote control of the personal information stored on their device.Packed with robust security features, when deployed, Lenovo Smart Lock Services enables users to track and locate the last known location of their Lenovo device either through a web browser or mobile app. They can also remotely lock the device to restrict unauthorized access or, through its data wipe feature, delete sensitive files to help prevent identity and data theft. To help users recover a stolen PC, Lenovo Smart Lock Services includes access to Absolute's dedicated Investigations team that works closely with local law enforcement to try to track it down.U.S. Pricing and Availability12The Yoga Slim 9i (14", 7), known as Lenovo Slim 9i (14", 7) in the U.S., starts at $1,799 and is expected to be available starting June 2022.12The Yoga Slim 7i Pro X (14", 7), known as Lenovo Slim 7i Pro X (14", 7) in the U.S., with Intel Core processor starts at $1,699 and is expected to be available starting June 2022. The Yoga Slim 7 Pro X (14", 7), known as Lenovo Slim 7 Pro X (14", 7) in the U.S., with AMD Ryzen 6000 Series processor starts at $1,499 and is expected to be available starting June 2022.12The Yoga Slim 7i Carbon (13", 7), known as Lenovo Slim 7i Carbon (13", 7) in the U.S., starts at $1,299 and is expected to be available starting June 2022.12The Yoga Slim 7 Pro (14", 7), known as Lenovo Slim 7 (14", 7) in the U.S., with AMD Ryzen 6000 Series processor is not available in the U.S. and is expected to be available in other select geographical markets. The larger Yoga Slim 7 Pro (16", 7), known as Lenovo Slim 7 (16", 7) in the U.S., with AMD Ryzen 6000 Series processor starts at $1,499 and is expected to be available starting June 2022.12The Yoga Slim 7i Pro (14", 7), known as Lenovo Slim 7i (14", 7) in the U.S., with Intel Core processor starts at $1,199 and is expected to be available starting May 2022. The larger Yoga Slim 7i Pro (16", 7), known as Lenovo Slim 7i (16", 7) in the U.S., with Intel Core processor starts at $1,599 and is expected to be available starting June 2022.12The Yoga AIO 7 (27", 7) is not available in the U.S. and is expected to be available in other select geographical markets.12The Yoga 7 (14", 7) is not available in the U.S. and is expected to be available in other select geographical markets.12Lenovo Smart Lock Services is expected to be available in North America starting June 2022 with a planned expansion to other global markets through September 202212For product images, visit Lenovo StoryHub newsroom and www.lenovo.com/yoga. Watch videos here:Lenovo Yoga 'Just Be You' Campaign VideoLenovo Yoga Slim Portfolio VideoLenovo's young creator audience is not defined by any one thing. Join @Happykelli, @anaocto, @Dannero, @tootymcnooty, @kurtschneider, @marblemaniki and @bri_thelady who are teaming up to create something surprising, using the new 7th Gen Lenovo Yoga Slim laptops in the MIX MASTERS. Check out the launch of the #LenovoJustBeYou challenge on TikTok that invites audiences to share their multifaceted creativity. PC form factor with integral display Not to be confused with 2-in-1 laptop. Dell Inspiron One 23 Touch, an all-in-one PC from 2012 An all-in-one computer (also called an AIO or all-in-one PC) is a type of personal computer that integrates the computer components, such as the CPU, monitor, and speakers, into a single unit. It occupies a smaller footprint than a desktop computer with a tower form factor, and also uses fewer cables.[1][2][3] Some advantages of the all-in-one computer compared to other form factors include being easier to set up, a reduced physical footprint, ease of transportation, and the option to interface with the computer via touchscreen (a now-common fixture on all-in-ones).[4][5] Some disadvantages include generally being more expensive than desktop computers, a lack of customizability—most of the internal hardware such as the RAM and the SSD, especially in post-late-2010s machines, is soldered onto the system board—a lack of upgrade paths for the CPU, RAM, and technology of the display, and the difficulty of repair.[6][7][8] The slim design also allows for minimal airflow, which can make them prone to overheating.[9] Having more powerful processors and graphic cards causes overheating which leads to inefficiencies.[10] Commodore PET (2001 Series), an all-in-one computer from 1977 This form factor was popular during the early 1980s for personal computers intended for professional use such as the Commodore PET,[11] the Osborne 1,[12] the TRS-80 Model II,[13] and the Datapoint 2200.[11] Many manufacturers of home computers like Commodore and Atari included the computer's motherboard into the same enclosure as the keyboard; these systems were most often connected to a television set for display.[14] Apple has manufactured several popular examples of all-in-one computers, such as the compact Macintoshes of the mid-1980s and early 1990s, the Macintosh LC 500 series in the mid-1990s, the eMac from 2002 to 2006, and the iMac series since 1998 to the present. Since the early 2000s, some all-in-one desktops, such as the iMac G4, have used laptop components in order to reduce the size of the system case.[15] By the mid 2000s, many all-in-one designs have used flat-panel displays (chiefly LCDs), and later models have incorporated touchscreen displays, allowing them to be used similarly to a mobile tablet.[1] Like most laptops, some all-in-one desktop computers are characterized by an inability to customize or upgrade internal components, as the systems' cases do not provide convenient access to upgradable components, and faults in certain aspects of the hardware may require the entire computer to be replaced, regardless of the health of its remaining components.[16] There have been exceptions to this; the monitor portion of HP's Z1 workstation can be angled flat, and opened like a vehicle hood for access to internal hardware.[17] 2-in-1 PC Internet appliance Laptop Portable computer Keyboard computer Desktop form factor ^ a b Domingo, Joel Santo (September 13, 2012). 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HP Spectre x360 convertible laptop Microsoft Surface Pro 3, a kickstand hinge laptop with detachable keyboard A 2-in-1 laptop, also known as 2-in-1 PC, 2-in-1 tablet,[1] laplet,[2][3] tabtop, laptop tablet, or simply 2-in-1, is a portable computer that has features of both tablets and laptops. 2-in-1 PCs consist of portable computer components within light and thin chassis, and exemplify technological convergence. They are convenient for media consumption and non-intensive tasks in tablet mode yet useful for content production in laptop mode.[2] Before the emergence of 2-in-1s and their denomination as such, technology journalists used the words convertible and hybrid to denominate pre-2-in-1 portable computers: Convertible typically denominated those that featured a mechanism to conceal the physical keyboard by sliding or rotating it behind the chassis, and hybrid those that featured a hot-pluggable, complementary, physical keyboard. Both pre-2-in-1 convertibles and hybrids were crossover devices that combined features of both tablets and laptops. The later 2-in-1 PCs comprise a category that is a sibling to both the pre-2-in-1 convertibles and hybrids. Models of 2-in-1 PC are each similarly categorized as either a 2-in-1 convertible or 2-in-1 detachable, respectively, and despite borrowing the terminology of the pre-2-in-1 PCs, the two species of 2-in-1 PCs are distinct from the two species of pre-2-in-1 PCs because 2-in-1 PCs have additional features of traditional laptops.[citation needed] Sony VAIO Duo, a 2-in-1 convertible with a sliding keyboard 2-in-1 convertibles are tablets with in which the keyboard can be rotated, folded, or slid behind the display. On most devices, the hinge is at the junction of the display and the keyboard. In the Dell XPS Duo, uniquely, the display sits in a spinning frame.[4] HP Compaq as netvertible example Rotational-convertible format is where in addition to the conventional hinging action, the central single hinge mechanism is also able to rotate about a central axis perpendicular to the keyboard surface, such that the laptop can be turned into a thick tablet. Most netvertibles have the option to support active (electromagnetic) stylus and/or touch screen (resistive or capacitive), some being ruggedized such as Panasonic Toughbook CF series. Other examples include Toshiba Portege M7xx, Fujitsu LifeBook T series and HP EliteBook Revolve series. 2-in-1 detachable are devices with detachable keyboards. In most cases, the keyboard part provides few, if any, additional features (most often a touchpad, as in the HP Spectre x2).[5] However, the keyboards of some detachable provide additional features similar to those of a docking station such as additional I/O-ports and supplementary batteries.[6] For instance, the Surface Book can leverage the discrete GPU in the keyboard upon the keyboard's connection.[7] When connected to the keyboard, the display of the detachable can either be free-standing on the hinge[8] or require external support, often in the form of a kickstand.[9][10] Novel ways of providing external support include the bending frame and locking mechanism of the HP Spectre x2.[citation needed] Though the keyboard is usually bundled with the purchase of a 2-in-1 detachable,[11][12][13][14] it is occasionally deemed an optional accessory by manufacturers in order to minimize the starting price of a device.[15] In such cases the 2-in-1 detachable is often displayed with its complementary keyboard in advertisements and promotional materials. This is true for all devices of the Surface and Surface Pro lines.[16][17][18] Although not in typical laptop sizes, but due to both Smartphone/Phablet and Tablet hardware is getting more powerful, some third party accessories OEM had developed a keyboard accessories which allowed either though wireless connection or connection via the USB port to the handheld device that allowed it to work like a laptop. Operating system such as Android even show the mouse cursor when connected to a mouse, where as Ubuntu Touch take it even further by allowing the user to modified the UI to a typical desktop mode with window which allowed desktop level multitasking, albeit with smaller screen. ThinkPad Yoga with 360° rotating hinge 2-in-1s fall in the category of hybrid or convertible tablets but are distinct in that they run a full-featured desktop operating system and have I/O ports typically found on laptops, such as USB and DisplayPort.[19][20][21] The most prominent element is the keyboard that allows the 2-in-1 to provide the ergonomic typing experience of a laptop. While 2-in-1s fall in a category distinct from laptops, they loosely parallel the traits of the Ultrabook device category, having light and thin chassis, power-efficient CPUs, and long battery lives.[22] They are distinguished from traditional Ultrabooks by the inclusion of a touchscreen display and a concealable or detachable keyboard. The Compaq Concerto, one of the earliest 2-in-1 PCs The earliest device that can be considered a 2-in-1 detachable is the Compaq Concerto from 1993. It came with Windows 3.1 and Windows for Pen Computing, and had a cabled detachable keyboard, and battery powered stylus.[23] In June 1994, IBM introduced the ThinkPad 360P, which features a display that can be rotated backwards and closed down into a pen-operated tablet.[24] The IBM ThinkPad 360P, an early 2-in-1, is shown here in tablet mode. Mainstream attention for 2-in-1 PCs was not achieved until nearly two decades later, when many manufactures showed devices, at that time referred to as "hybrid" devices, at CES 2011.[25][26] While Packard Bell, Acer and HP all had Microsoft Windows based 2-in-1s by 2011,[27] Lenovo released the well reviewed[28] Windows 2-in-1: The X220 Tablet variant of the ThinkPad X220, successor of 2010's ThinkPad X201 Tablet. The 12-inch device included a digital stylus housed within the chassis, somewhat ruggedized construction, and a multi-touch screen with a twist and fold hinge.[29] Microsoft started its own line of 2-in-1s with the introduction of the Surface Pro series, the first of which was released in February 2013.[30] It had a 10.6-inch (27 cm) display, Intel Core i5 CPU, and included the Pro Pen stylus and a detachable keyboard that doubled as a protective screen cover. In 2015 Microsoft introduced the Surface Book series, which, similar to the Surface Pro series, features a detachable keyboard cover and Surface Pen stylus. Samsung entered the 2-in-1 PC market with the release of the Windows-based Samsung Galaxy TabPro S, which was released in March 2016.[31] It had a 12-inch display, Intel Core m3 CPU, a first-party keyboard attachment, and a TabPro Pen. Its successor, the Galaxy Book, was released in February 2017. Coming in a 10.6-inch model and a 12-inch model, the Galaxy Book has an improved detachable keyboard and include an S Pen.[32] Google entered the 2-in-1 market after it announced the Pixel Slate in October 2018.[33] It runs on ChromeOS and features a 12.3-inch display. It includes two USB-C ports, but it omits the headphone jack. The featured Pixel Keyboard and Pixelbook Pen are sold separately. Since 2012, a number of other prominent laptop manufacturers, such as Dell, Asus, and Sony have also begun releasing their own 2-in-1s.[2] While the iPad Pro has optional Smart Keyboard[34] and Apple Pencil accessories, Apple has yet to release a true 2-in-1 PC in a detachable form-factor and with a similar desktop OS, citing the quote below. In April 2012 Apple's CEO Tim Cook, answering to the question of the researcher Anthony Sacconaghi about a possible hybrid of iPad and MacBook, compared a 2-in-1 to a combination of "a toaster and a refrigerator" that "doesn't please anyone": I think, Tony, anything can be forced to converge. But the problem is that products are about trade-offs, and you begin to make trade-offs to the point where what you have left at the end of the day doesn't please anyone. You can converge a toaster and a refrigerator, but those things are probably not going to be pleasing to the user ... you wouldn't want to put these things together because you wind up compromising in both and not pleasing either user. Some people will prefer to own both, and that's great, too. But I think to make the compromises of convergence, so — we're not going to that party. Others might. Others might from a defensive point of view, particularly. But we're going to play in both.[35]—Tim Cook, Apple's CEO 2-in-1s are natively supported by the Microsoft Windows, and Google ChromeOS operating systems. Various other Linux distributions also support some touch features of 2-in-1s, though they are generally unsupported by hardware vendors.[36][37] Tablet All-in-one computer ^ "2 in 1 Detachable Laptop Tablet Hybrid PCs | HP Official Site". www8.hp.com. Archived from the original on March 4, 2015. Retrieved April 17, 2016. ^ a b c Chang, Alexandra (October 17, 2012). "Here Come the Hybrid 'Laplets.' Should You Care?". Wired. Retrieved September 5, 2014. ^ "Microsoft Surface Pro 3 Teardown". IFixit.com. June 23, 2014. Retrieved January 5, 2015. ^ Ardjuna Seghers (April 3, 2013). "Dell XPS Duo 12 review". Trusted Reviews. Retrieved September 7, 2016. ^ Dana Wollman (October 7, 2015). "The HP Spectre x2 is like the Surface Pro, but cheaper and lower-specced". Engadget. Retrieved September 7, 2016. ^ Stephanie Mlot (March 11, 2014). 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HP Spectre x360 convertible laptop Microsoft Surface Pro 3, a kickstand hinge laptop with detachable keyboard A 2-in-1 laptop, also known as 2-in-1 PC, 2-in-1 tablet,[1] laplet,[2][3] tabtop, laptop tablet, or simply 2-in-1, is a portable computer that has features of both tablets and laptops. 2-in-1 PCs consist of portable computer components within light and thin chassis, and exemplify technological convergence. They are convenient for media consumption and non-intensive tasks in tablet mode yet useful for content production in laptop mode.[2] Before the emergence of 2-in-1s and their denomination as such, technology journalists used the words convertible and hybrid to denominate pre-2-in-1 portable computers: Convertible typically denominated those that featured a mechanism to conceal the physical keyboard by sliding or rotating it behind the chassis, and hybrid those that featured a hot-pluggable, complementary, physical keyboard. Both pre-2-in-1 convertibles and hybrids were crossover devices that combined features of both tablets and laptops. The later 2-in-1 PCs comprise a category that is a sibling to both the pre-2-in-1 convertibles and hybrids. Models of 2-in-1 PC are each similarly categorized as either a 2-in-1 convertible or 2-in-1 detachable, respectively, and despite borrowing the terminology of the pre-2-in-1 PCs, the two species of 2-in-1 PCs are distinct from the two species of pre-2-in-1 PCs because 2-in-1 PCs have additional features of traditional laptops.[citation needed] Sony VAIO Duo, a 2-in-1 convertible with a sliding keyboard 2-in-1 convertibles are tablets with in which the keyboard can be rotated, folded, or slid behind the display. On most devices, the hinge is at the junction of the display and the keyboard. In the Dell XPS Duo, uniquely, the display sits in a spinning frame.[4] HP Compaq as netvertible example Rotational-convertible format is where in addition to the conventional hinging action, the central single hinge mechanism is also able to rotate about a central axis perpendicular to the keyboard surface, such that the laptop can be turned into a thick tablet. Most netvertibles have the option to support active (electromagnetic) stylus and/or touch screen (resistive or capacitive), some being ruggedized such as Panasonic Toughbook CF series. Other examples include Toshiba Portege M7xx, Fujitsu LifeBook T series and HP EliteBook Revolve series. 2-in-1 detachable are devices with detachable keyboards. In most cases, the keyboard part provides few, if any, additional features (most often a touchpad, as in the HP Spectre x2).[5] However, the keyboards of some detachable provide additional features similar to those of