

MacBook Buying Guide

[MacBook Pro](#) [MacBook Air](#)

[2-Bay Synology NAS](#) [5-Bay Synology NAS](#) [USB-C Hub](#)

Welcome to the MacBook buying guide. It seems a lot of people aren't sure what the pros and cons of the different machines are or what they need, so I put together a little guide that boils things down into something simple to understand. Hopefully, it will help people figure out the right machine for the right person.

Choosing the Right MacBook Model: A Comprehensive Guide

Specification	M1 MacBook Air (2020)	M1 MacBook Pro 13-inch (2020)	M2 MacBook Air (2022)	M2 MacBook Pro 13-inch (2022)	M2 MacBook Pro 14/16-inch (2023)	M3 MacBook Air (2024)	M3 MacBook Pro 14/16-inch (2024)
Screen Size	13.3-inch Retina (2560 x 1600)	13.3-inch Retina (2560 x 1600)	13.6-inch Liquid Retina (2560 x 1664)	13.3-inch Retina (2560 x 1600)	14.2-inch or 16.2-inch Liquid Retina XDR	13.6-inch or 15.3-inch Liquid Retina	14.2-inch or 16.2-inch Liquid Retina XDR
Processor	M1 (8-core CPU, 7/8-core GPU)	M1 (8-core CPU, 8-core GPU)	M2 (8-core CPU, 8/10-core GPU)	M2 (8-core CPU, 10-core GPU)	M2 Pro/Max (up to 12-core CPU, 38-core GPU)	M3 (8-core CPU, 8/10-core GPU)	M3 Pro/Max (up to 12-core CPU, 40-core GPU)
RAM	8GB (up to 16GB)	8GB (up to 16GB)	8GB (up to 24GB)	8GB (up to 24GB)	16GB (up to 96GB with M2 Max)	8GB (up to 24GB)	16GB (up to 96GB with M3 Max)
Storage	256GB (up to 2TB)	256GB (up to 2TB)	256GB (up to 2TB)	256GB (up to 2TB)	512GB (up to 8TB)	256GB (up to 2TB)	512GB (up to 8TB)
Battery Life	Up to 18 hours (49.9Wh)	Up to 20 hours (58.2Wh)	Up to 18 hours (52.6Wh)	Up to 20 hours (58.2Wh)	Up to 17 hours (14-inch), 22 hours (16-inch)	Up to 18 hours (52.6Wh for 13-inch), 66.5Wh for 15-inch)	Up to 17 hours (14-inch), 22 hours (16-inch)
Ports	2 Thunderbolt/USB 4	2 Thunderbolt/USB 4	2 Thunderbolt/USB 4	2 Thunderbolt/USB 4	3 Thunderbolt 4, HDMI, SDXC, MagSafe 3	2 Thunderbolt/USB 4	3 Thunderbolt 4, HDMI, SDXC, MagSafe 3
Wireless Connectivity	Wi-Fi 6, Bluetooth 5.0	Wi-Fi 6, Bluetooth 5.0	Wi-Fi 6, Bluetooth 5.3	Wi-Fi 6, Bluetooth 5.3	Wi-Fi 6E, Bluetooth 5.3	Wi-Fi 6E, Bluetooth 5.3	Wi-Fi 6E, Bluetooth 5.3
Weight	2.8 pounds	3.0 pounds	2.7 pounds	3.0 pounds	3.5 pounds (14-inch), 4.7 pounds (16-inch)	2.7 pounds (13-inch), 3.3 pounds (15-inch)	3.5 pounds (14-inch), 4.7 pounds (16-inch)
Other Features	Magic Keyboard, Touch ID, Fanless	Magic Keyboard, Touch Bar, Touch ID, Active Cooling	Magic Keyboard, Touch ID, Fanless	Magic Keyboard, Touch Bar, Touch ID, Active Cooling	Magic Keyboard, Touch ID, ProMotion 120Hz, Active Cooling	Magic Keyboard, Touch ID, Supports Two External Displays	Magic Keyboard, Touch ID, ProMotion 120Hz, Active Cooling

M Chip Breakdown & Differences

The M1, M2, and M3 chips represent successive generations of Apple Silicon, each offering performance and efficiency improvements over its predecessor.

Key Differences:

- **M1:** The first Apple Silicon chip, delivering significant performance gains over previous Intel processors.
- **M2:** Offers improved performance and efficiency over the M1, with enhanced graphics capabilities.
- **M3:** The latest generation, featuring even better performance, improved power efficiency, and hardware-accelerated ray tracing for graphics.

M1 Series (2020)

- **M1:** The M1 was Apple's first chip for Macs, transitioning from Intel processors. It features an 8-core CPU (4 performance cores and 4 efficiency cores) and up to an 8-core GPU. The M1 offers significant performance gains, especially in power efficiency, allowing for extended battery life while delivering solid performance for most tasks, including light professional work.
- **M1 Pro:** The M1 Pro takes the M1's architecture and expands it with more cores and memory support. It features up to a 10-core CPU (8 performance cores, 2 efficiency cores) and up to a 16-core GPU. The M1 Pro also supports more RAM (up to 32GB) and has increased bandwidth, making it more suitable for professionals who need more power, such as video editors or software developers.
- **M1 Max:** The M1 Max builds upon the M1 Pro with even more power. It features the same 10-core CPU as the M1 Pro but boosts the GPU to 24 or 32 cores. The M1 Max also supports up to 64GB of RAM and offers even higher memory bandwidth, making it ideal for highly demanding tasks like 3D rendering, high-resolution video editing, and other GPU-intensive workloads.
- **M1 Ultra:** The M1 Ultra is essentially two M1 Max chips fused together, resulting in a 20-core CPU and up to a 64-core GPU. It supports up to 128GB of RAM and offers incredibly high memory bandwidth. The M1 Ultra is designed for the most demanding professional workflows, such as multi-stream 8K video editing, complex simulations, and large-scale 3D rendering.

M2 Series (2022)

- **M2:** The M2 is the successor to the M1, offering about 18% more CPU performance and up to 35% better GPU performance than the M1. It features an 8-core CPU (4 performance cores, 4 efficiency cores) and up to a 10-core GPU. The M2 is designed to handle everyday tasks more efficiently while also offering better performance for creative and professional applications. It also supports up to 24GB of RAM and features improved media engines for faster video processing.
- **M2 Pro:** The M2 Pro expands on the M2 architecture with up to a 12-core CPU (8 performance cores, 4 efficiency cores) and up to a 19-core GPU. It supports up to 32GB of unified memory and offers greater performance for demanding tasks, such as software development, video production, and other professional workflows.
- **M2 Max:** The M2 Max further enhances the M2 Pro's capabilities, featuring the same 12-core CPU but with a 30-core or 38-core GPU. It also supports up to 96GB of RAM, providing substantial power for professionals who need to handle the most graphically demanding tasks, including high-end video editing, 3D graphics, and machine learning.

M3 Series (2024)

- **M3:** The M3 is the latest generation in Apple's silicon lineup, offering significant advancements in performance and power efficiency due to its 3nm process technology. It features an 8-core CPU (with improved efficiency and performance cores) and up to a 10-core GPU. The M3 also introduces hardware-accelerated ray tracing, making it more powerful for graphics-intensive tasks, including gaming and professional 3D work.
- **M3 Pro:** The M3 Pro builds on the M3 architecture with more cores and enhanced GPU performance. It is expected to feature up to a 12-core CPU and a 19-core GPU, similar to the M2 Pro, but with better efficiency and performance due to the 3nm process. This chip will continue to cater to professionals needing substantial processing power.
- **M3 Max:** The M3 Max is designed for the most demanding professional applications, with a 12-core CPU and up to a 40-core GPU. It supports up to 96GB of unified memory, making it an excellent choice for users who need top-tier performance in graphics, video editing, and complex simulations.
- **M3 Ultra** (Expected although we might see M4 instead): Although details are still emerging, the M3 Ultra is anticipated to be the most powerful chip in the M3 lineup, likely combining two M3 Max chips to provide unprecedented levels of performance, particularly for the most intensive professional and creative tasks.

Summary of Key Differences

- **Performance and Efficiency:** Each generation improves in both performance and efficiency, with the M3 series benefiting from the latest 3nm manufacturing process, allowing for more transistors and greater power efficiency.
- **Graphics Capabilities:** The Pro, Max, and Ultra variants significantly enhance GPU performance, making them ideal for tasks that require high-end graphics processing.
- **Memory Support:** The Pro and Max variants support more RAM, making them better suited for professional use cases where large amounts of memory are needed.

Which Processor Is Right For Me?

Basic and Everyday Use

- M1 or M2: If your work involves general tasks like web browsing, document editing, light photo editing, and streaming media, the M1 or M2 chip is more than sufficient. The M1 offers excellent performance for most users and is often available at a lower price point, making it a great choice for budget-conscious buyers. The M2 provides a bit more power and efficiency, which is beneficial if you want a slightly longer-lasting and faster machine.

Professional Use and Heavier Workloads

- M1 Pro, M2 Pro, or M3 Pro: If you work with more demanding applications like video editing, music production, software development, or run multiple heavy applications simultaneously, the Pro variants are worth considering. They provide more CPU and GPU power and higher memory capacity, which can significantly speed up these tasks.

High-End Professional and Creative Work

- M1 Max, M2 Max, or M3 Max: These chips are designed for users who need top-tier performance for tasks like 3D rendering, high-resolution video editing, large-scale simulations, and other graphics-intensive work. The Max variants offer the necessary power and efficiency if you regularly handle large files, work with multiple 4K or 8K video streams, or engage in complex graphical tasks.

Extreme Workloads

- M1 Ultra or M3 Ultra (if/when available): For the most demanding professional tasks—like multi-stream 8K video editing, complex machine learning models, or large-scale scientific simulations—these chips are the top choice. They combine the power of two Max chips into one, delivering unparalleled performance and efficiency.

When to Consider Older Machines

- Cost Savings: Older machines with M1 chips can be a fantastic value, especially if you don't need the latest performance. The M1 chip still delivers excellent efficiency and power for every day and even moderately demanding professional tasks.
- Compatibility and Specific Needs: Some professionals prefer older models due to software compatibility or specific workflows already optimized for those machines. Additionally, if you're upgrading from an Intel-based Mac, even an M1 model will significantly improve speed and battery life.

Choosing the Right Chip

- Ask Yourself: Do I need the latest and greatest, or will an older model meet my needs? If your work is demanding but not cutting-edge, an M1 Pro or Max may offer the best balance of power and cost. However, if future-proofing and having the most up-to-date technology is important to you, opting for an M2 or M3 model could be worth the investment.

In summary, match the chip to your workload:

- **M1/M2: Everyday tasks and light professional use.**
- **Pro Variants: Demanding tasks requiring more power and multitasking.**
- **Max/Ultra Variants: High-end creative and professional workloads needing maximum performance.**

RAM (Memory) Considerations

Basic Usage (8GB RAM)

- Who it's for: Users who primarily browse the web, stream videos, manage emails, and work on documents.
- Why it's sufficient: 8GB of RAM is enough for everyday tasks and some light multitasking. It's ideal if you don't frequently use resource-intensive applications. With macOS's efficient memory management, even basic tasks run smoothly on 8GB.

Moderate Usage (16GB RAM)

- Who it's for: Professionals or students who run multiple applications simultaneously, do some photo or video editing, or work with large spreadsheets and databases.
- Why it's better: 16GB provides more headroom for multitasking and running heavier applications like Adobe Creative Suite or video editing software. It's also a good future-proofing option for users who expect their needs to grow.

Heavy Usage (32GB RAM)

- Who it's for: Users involved in professional video editing, 3D modeling, software development, or any task requiring heavy multitasking with large datasets.
- Why it's necessary: With 32GB of RAM, you can comfortably handle complex projects without worrying about your system slowing down. It's ideal for professionals who need to work efficiently with demanding software.

Extreme Usage (64GB or 96GB RAM)

- Who it's for: High-end professionals dealing with multi-stream 8K video editing, advanced 3D rendering, or large-scale scientific simulations.
- Why it's critical: 64GB or 96GB of RAM is reserved for the most demanding workloads. This level of memory is necessary when working with extremely large files or running multiple intensive applications simultaneously.

Storage Considerations

Basic Storage (256GB SSD)

- Who it's for: Users who primarily store documents, a moderate amount of photos, and stream content rather than downloading it.
- Why it's sufficient: 256GB is adequate if you don't store a lot of large files locally. Cloud storage services can complement this storage size for users who manage their data online.

Moderate Storage (512GB SSD)

- Who it's for: Users who store a moderate amount of photos, videos, and applications, or those who prefer to keep a local copy of their work.
- Why it's better: 512GB provides more breathing room for apps, games, and media files. It's a good choice for users who do light video editing or store their music and movie libraries locally.

Heavy Storage (1TB SSD)

- Who it's for: Professionals who work with large files such as video editors, photographers, and developers who need to store many projects locally.
- Why it's necessary: 1TB allows you to store large projects, backups, and libraries without constantly managing storage space. It's ideal for users who need their data readily accessible without relying on external drives.

Extreme Storage (2TB to 8TB SSD)

- Who it's for: Users with massive storage needs, such as film editors, game developers, or anyone dealing with huge datasets.
- Why it's critical: Having 2TB or more ensures you can store multiple large projects and datasets locally. It's crucial for professionals who need immediate access to their work without the lag of external storage solutions.

Choosing the Right Configuration

- For Everyday Use: 8GB RAM and 256GB SSD might suffice if your usage is light, but opting for 16GB RAM and 512GB SSD offers better flexibility and future-proofing.
- For Professional Use: Start with 16GB RAM and 512GB or 1TB SSD if you're handling more intensive tasks. For more demanding work, consider 32GB RAM with 1TB or more of storage.
- For High-End Workloads: 32GB or more of RAM and 1TB to 8TB of storage will provide the power and space needed for the most demanding professional environments.

External Storage Options

External SSD/HDD

- **Who it's for:** Users who need additional storage without upgrading the internal SSD.
- **Why it's beneficial:** External drives are significantly cheaper per GB compared to internal SSDs. They offer flexibility, as you can easily expand your storage capacity by adding more drives as needed. USB-C and Thunderbolt 3/4 drives provide fast data transfer speeds, making them suitable even for video editing and other demanding tasks.

Network-Attached Storage (NAS)

[Click here for my favorite NAS device.](#) It is expandable, works with backup services, and offers the best bang for the buck.

- **Who it's for:** Ideal for users who need a centralized storage solution accessible from multiple devices, both locally and remotely.
- **Why it's beneficial:** NAS devices allow you to store large amounts of data in one place and access it wirelessly from anywhere in your home or even remotely while traveling. They are particularly useful for collaborative work environments, backup solutions, and media streaming. NAS devices can be paired with services like Backblaze, CloudBerry, or CrashPlan for automated backups, ensuring your data is secure and easily recoverable.

[MacBook Pro](#) vs. [MacBook Air](#)

[MacBook Pro:](#)

- Higher performance, especially for demanding tasks like video editing or 3D rendering.
- Better cooling system for sustained performance.
- More ports and connectivity options.
- Available in 14-inch and 16-inch sizes.

[MacBook Air:](#)

- Thinner and lighter design, making it highly portable.
- Fanless design, resulting in quieter operation.
- Lower price point, making it more budget-friendly.
- Suitable for everyday tasks and light professional work.

Battery Life

Battery life varies between models, but generally:

- [MacBook Air](#) models tend to offer slightly longer battery life due to their power-efficient design.
- [MacBook Pro](#) models still provide excellent battery life, especially considering their higher performance capabilities.

Display Differences

- [MacBook Pro](#) models feature mini-LED displays with higher brightness and contrast ratios.
- [MacBook Air](#) models use standard LED displays, which are high-quality but not as advanced as the Pro models.
- The 14-inch and 16-inch MacBook Pro models offer ProMotion technology for smoother scrolling and adaptive refresh rates.

External Display Support

- **M1 and M2 [MacBook Air](#)** models support one external display.
- [MacBook Pro](#) models with M1 Pro, M2 Pro, M3 Pro, and Max chips support multiple external displays, making them ideal for users who require multi-monitor setups.

Ports

- [MacBook Air](#) models typically have fewer ports (2 Thunderbolt/USB 4 ports).
- [MacBook Pro](#) models offer more ports, including HDMI and an SD card reader on 14-inch and 16-inch models, which are useful for photographers and videographers.

Upgrading Considerations

Upgrading from an older MacBook model to a newer one can be worthwhile if:

- Your current device is struggling with your workload.
- You need features only available in newer models (e.g., improved display, more ports).
- You want to take advantage of the performance gains offered by newer Apple Silicon chips.

Accessories

Consider the following accessories for your MacBook:

- USB-C hub or docking station for expanded connectivity.
- External display for increased productivity.
- Protective case or sleeve for added protection.
- External storage for backups or additional space.
- Wireless mouse and keyboard for a more comfortable setup.

All in all, I hope this information was helpful to you, and helped bridge the gap between what might be the best fit when choosing a new, used, or refurbished machine.

I've spent more time than I care to share trying to figure out when to replace my 2012 [MacBook Pro](#) because of the 2016-2019 keyboard issues, Apple's switch over to Apple silicone, etc.

If you're on a shoestring budget I would look at eBay for a decent looking older machine, or Apple refurbished since it comes with the same warranty as a new machine (and you really can't tell the difference).

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