Apple Event

Company Participants

- Craig Federighi, Senior Vice President, Software Engineering
- John Ternus, Senior Vice President, Hardware Engineering
- Johny Srouji, Senior Vice President-Hardware Technologies
- Jules Urbach, Chief Executive Officer, Octane
- Kate Bergeron, Vice President, Product Design
- Meagan Keane, Product Marketing Manager, Adobe Premiere Pro
- Nick Rapp, Director, Desktop Platforms, Unity Technologies
- Philip Losch, Chief Technology Architect, Cinema 4D, Redshift
- Rohit Gupta, Director, DaVinci Resolve
- Shruti Haldea, Mac Product Line Manager
- Sushmita Chowdhury, Data Engineer and Cloud Certified Professional
- Tim Cook, Chief Executive Officer
- Trevor McLeod, Senior Engineering Program Manager, Mac Systems
- Unidentified Speaker
- Zane Ward, Development Manager

Presentation

Tim Cook {BIO 14014370 <GO>}

Good morning. Welcome back to Apple Call for our Second Event in just over a month. At Apple, we are focused on creating innovative products and experiences. Products that offer our users new ways to express their creativity and to enjoy the creativity of others.

So today, we're focusing on two important areas, Music and the Mac. Let's start with music. Music plays such an important part in our lives. It has the power to inspire, lift us up and bring us together. Apple has forever changed the way people listen to and discover music, and we continue to make it better. Our deep integration of hardware, software and services, lets you enjoy a seamless music experience with amazing sound quality on all of your devices.

AirPods are one of the most popular music products we've ever created. Combined with the revolutionary iPhone, they bring an industry-leading wireless music experience wherever you go. Our powerful Mac and iPad multi-speaker sound systems bring incredible audio to any space. HomePod mini is the best way to enjoy your music throughout your home.

Apple Watch is a fantastic way to enjoy music right from your wrist, providing the soundtrack you need to stay active and fit. And of course, there's Apple Music, which has over 90 million songs and 30,000 curated playlists in its global catalog. This fall, we're taking the Apple Music experience even further. And here's Zane to tell you more.

Zane Ward

Today, Apple Music and Siri deliver an effortless music experience. It lets you hear pretty much anything you want by using just your voice. Already, you can ask for your favorite songs, albums, or artists, but there are also times when you want to find just the right music for the moment. And we want to make Siri more helpful with that. So, our music experts have created new playlists for hundreds of moods and activities.

Now, if you ask Siri to put on a playlist for your dinner party, you'll hear the perfect selection from Leon Bridges. When you want to relax before bed, there's a playlist for winding down, featuring one of my favorite artists Nils Frahm. And when you need that extra push to take you further on your next hike, you'll need The Weeknd's Take My Breath. These new playlists are available to every subscriber, and make using Apple Music together with Siri even easier and better.

Naturally, we want to bring this experience to more people than ever before. So today, we're excited to also introduce a brand-new subscription plan for Apple Music, the Voice Plan. With this new plan, use only your voice and the power of Siri to access every song, every playlist and every station in Apple Music across all your Apple devices for just $4.99 a month.

This plan will be available starting in 17 countries and regions later this fall. Now, everyone has three great ways to get Apple Music. There's the individual plan, the family plan and now, the Voice Plan, where you can use the power of Siri to access the full Apple Music catalog.

This is Apple Music. Back to Tim.

Tim Cook {BIO 14014370 <GO>}

We're excited that even more people will be able to enjoy Apple Music, simply with their voice. With access to virtually any song you want to hear, as well as expertly-crafted playlists that are perfect for any occasion, Apple Music truly has something for everyone and one of the best ways to experience it is with HomePod mini. To tell you more, here's Dave.

Unidentified Speaker

HomePod mini is a powerful smart speaker that delivers amazing sound, the intelligence of Siri and it's the foundation for your smart home. All while ensuring your privacy and security are protected. We've packed incredible innovation into a

compact elegant design. And today, we're excited to introduce more ways, HomePod mini can complement your home.

HomePod mini in yellow, orange and blue is bold, fun that's a pop of color in personality to any space. We infuse color into every element from the beautiful mesh fabric to the tinted touch surface, the details like the volume icons are moving cable. Brighten up your home with the perfect HomePod mini color in each day.

Now, playing new music everywhere.

Get Siri's help with all kinds of things, like creating a reminder to get what you need for your latest hobby.

Hey, Siri. Set a reminder to buy wood glue.

Okay, Jordan added to reminders.

And rally everyone has got a table with intercom without raising your voice. Hey, Siri. Tell everyone, lunch is ready.

Lunch is ready

We can't wait for you to enjoy these incredible experiences and beautiful colors in your home. These new colors join white and space gray, and be available for just $99. Starting in November. Now, back to Tim.

Tim Cook {BIO 14014370 <GO>}

HomePod mini will look great in even more places around your home, and it's a fantastic way to enjoy Apple Music. When it comes to listening to music on the go, AirPods deliver a magical wireless experience. And they'd become the most popular headphones in the world. We've got some exciting news about AirPods. And here's Sushmita to tell you more.

Sushmita Chowdhury

Our users love listening to music with AirPods and with spatial audio featuring Dolby Atmos in Apple Music. AirPods have never sounded better. By moving music beyond the simple left and right of traditional stereo sound and into three-dimensional immersive listening, spatial audio embeds you deeper into the mix than ever before.

Spatial audio brings music to life with sounds that surround you to create something truly multi-dimensional. It's a whole new way to experience your favorite music. Every day, top artists like James Blake and Doja Cat are releasing more songs in Dolby Atmos. Spatial audio goes beyond music when watching TV shows and movies, it

enables an immersive theater-like experience placing you right in the middle of the action.

You can enjoy a spatial audio with dynamic head tracking on AirPods Pro and AirPods Max across all of your devices from iPhone to iPad to Apple TV and Mac. We want to bring the full spatial audio experience to even more of our customers.

So today, we are excited to announce the third generation of our most popular AirPods. Let's take a look.

(Audio Video Presentation)

These are the new AirPods with spatial audio, featuring an all-new design inside, and out with a four sensor for more control of your music and phone calls. To deliver the best sound quality, we designed a brand-new low distortion driver, created just for the new AirPods to provide powerful bass and crisp clean high frequencies. Whether you're relaxing to Yo-Yo Ma or singing along to Lizzo. And to keep your music going during your toughest workouts or a jog in the rain. The next generation AirPods are sweat and water resistant. Since everyone's ear shape is unique. What you here, can be different from what you're intended to hear. We wanted to find a way to make sure everyone has the best audio experience possible and we achieve this in two ways. First, with our new contour design that delivers sound directly to your ears. Second, with adaptive EQ, a breakthrough feature in sound that we first made available with the AirPods Pro.

Adaptive EQ provides the best audio experience customized for you in real time by adjusting frequencies in the sound to match what you are hearing to how it's supposed to be heard. So, you can listen to Olivia Rodrigo's latest album just the way she intended. The magical experience of AirPods makes it effortless to enjoy your music throughout the day. It begins the moment you open the case with the one touch setup that automatically pairs to all of your Apple devices, making AirPods always ready when you are.

And to extend your experience, we increase the battery life for up to six hours of listening time; or if you're in a hurry, five minutes of charge time gets you around an hour of use. And of course, the convenience of the charging case, giving you an additional four full charges for up to 30 hours of total listening time.

To make charging your AirPods even more convenient, we added MagSafe and wireless charging to the case. These are the new AirPods, featuring spatial audio with dynamic head tracking, and all-new design. Our custom design driver with Adaptive EQ and the magical experience that our customers love. We took the best-selling headphones in the world and made them even better. All of this for $179. We will start taking orders today and they will be available next week. The next generation AirPods joined the world's most popular family of headphones. This is our new AirPods line-up starting at just $129. Now, back to Tim.

Tim Cook {BIO 14014370 <GO>}

We can't wait for you to try the next generation of AirPods. And with this great line-up, there is something for everyone. Now, let's talk about the Mac. The Mac has always been an easy-to-use yet incredibly capable tool that empowers users to create in new and innovative ways. The tight integration of hardware and software provides a user experience that is simply unrivaled and with Apple silicon, that experience is better than ever.

We're a year into a two-year transition, which started with M1. Our first chip designed specifically for the Mac. M1 is a breakthrough. It is transformed our most popular and affordable systems, redefining what they can do with incredible performance and extraordinary battery life. The response has been off the charts. M1 has propelled back growth over the past year, outpacing the industry, where the Mac having its best year ever. And today, I'm thrilled that we're bringing Apple silicon to even more systems to tell you all about it. Here's John.

Unidentified Speaker

Our Pro users rely on the Mac and the one they choose most is the MacBook Pro. They choose it to develop amazing apps that enrich people's lives to create music that moves us, and to make movies and shows that entertain and educate us. The MacBook Pro appeals to people, who want the most powerful Mac notebook, so they can change the world. Well, today is the day that they've been waiting for. Because today, we're completely reimagining MacBook Pro. And it starts with the first pro chip designed for the Mac. This is M1 Pro, the next chip in the M1 family. And it's a game changer.

Now, let's hand it over to Johny for a deep dive into this remarkable new chip.

Johny Srouji {BIO 19052877 <GO>}

The transition for Apple silicon is all about bringing its incredible performance, custom technologies, and relentless focus on power efficiency to the Mac. And M1 has done exactly that. Not only has it transformed our most popular systems, it has shocked the PC World. M1 has been amazing for so many of our customers. However, there are some Pro users, who need even more and we wanted to build something great just for them. That is what M1 Pro is all about. It's our next breakthrough chip for the Mac.

Now building a Pro laptop has made using a power-hungry CPU and discrete GPU. But the two-chip architecture requires much more power and cooling. It also means the CPU and GPU have separate pools of memory. So, they have to copy data back and forth over a slower interface. No one has ever applied a system on a chip designed to ecosystem until today and we did this by scaling of M1's ground-breaking architecture to create a far more powerful chip with M1 Pro. We started by rearchitecting the chip fabric to inhibit this obviously to scale, while doubling the width of the memory interface and using faster DR.

This lets M1 Pro deliver up to 200 gigabytes per second of memory bandwidth, nearly three times M1. And its custom package supports up to 32 gigabytes of unified memory. The M1 product is built using the industry-leading 5-nanometer process technology and features a massive 33.7 billion transistors. That's more than twice M1.

All those transistors deliver even more performance, starting with a 10-core CPU, with eight high-performance cores and two high-efficiency cores, delivering up to 70% faster CPU performance than M1. For graphics M1 Pro features 16 GPU cores, eight more than M1. This additional cores along with increased memory bandwidth, give M1 Pro up to two times faster graphics performance than M1. M1 Pro has our industry-leading media engine that accelerates video processing while using very little power. And now, it pushes even further with 4S. It's one of the highest-quality codex and professional video production. Adding 4S acceleration in M1 Pro to play multiple streams of 4K and 8K 4S video, while using just a fraction of the power. It's another key advantage of building our own silicon.

And finally, M1 Pro includes other advanced technologies for a complete Pro system like a powerful engine to drive multiple displays and additional thunderbolt controllers to deliver even more IO bandwidth and so much more. So that's M1 Pro. Building on the M1 architecture, M1 Pro takes the amazing performance of Apple silicon to a whole new level. M1 Pro is unlike anything else in Pro computer. Yet, we wanted to push the performance of Apple silicon even further.

So today, we're launching not one, but two new chips with the Mac. I am thrilled to introduce M1 Max. This incredible chip builds on M1 Pro and takes its amazing capabilities to new heights. M1 Max starts with a much higher bandwidth on chip fabric and doubles the memory interface once again. This delivers up to 400 gigabytes per second of memory bandwidth. That's twice M1 Pro and six times M1. This wider memory interface lets the M1 custom package support up to 64 gigabytes of unified memory, and -- has a staggering 57 billion transistors, that's 1.7 times M1 Pro and 3.5 times M1. It's the largest chip we've ever built by far.

M1 Max has the same powerful 10-core CPU complex of M1 Pro and doubles the GPU to a massive 32 cores. Giving M1 Max up to four times faster GPU performance than M1. And it has an even more capable media engine with up to two times faster video encoding and two cores accelerators. M1 Max delivers all of this with industry-leading performance per watt. For Apple silicon, power efficiency defines system performance. That's why M1 is a breakthrough. When you look at its multi-core CPU performance versus power curve, it continues to crash the latest 4-core PC laptop chip. M1 is phenomenal. And when you add an M1 Pro and M1 Max, they deliver dramatically more performance.

To put that in perspective, here is the latest 8-core PC laptop chip. M1 Pro and M1 Max have higher performance at every power level. At their peak, they deliver 1.7 times the performance of the PC chip in the same power envelope. And at the peak performance of the PC chip, they deliver the same performance at 70% less power. That's a big deal.

Now, here's the GPU performance versus power curve of M1. And here is the integrated graphics in that 8-core PC laptop chip. M1 easily outperforms it while using significantly less power. So, when we add an M1 Pro, it's a whole different class. At its peak, it's more than seven times faster. Now, many PC laptops added discrete GPU for better graphics performance. So, here is a PC laptop with a powerful discrete GPU. M1 Pro delivers more performance while using 70% less power, but that's not all. There are compact pro laptops that have higher performing, yet very power-hungry discrete GPUs that delivers strong performance, but they consume a ton of power. And on a notebook, when you consume that much power, it means more heat, noisy fans and less battery life. So, let's look at M1 Max. It delivers comparable performance while using 40% less power.

Now, let's compare M1 Max to the chip running in the fastest PC laptop we could find. It's a high-end system that is much bigger and heavier than a compact pro laptop. It delivers even faster graphics performance, but it also consumes a massive amount of power. Here, M1 Max delivers similar performance while using a 100 watts less power. This is unheard of and this remarkable efficiency means M1 Max performance is outstanding, plugged in or using the battery. If you look at the compact pro laptop on battery, its graphics performance drops significantly. M1 Max is up to 2.5 times faster. And if you look at the high-end laptop, when it's on battery, the drop-off in graphics performance is even more extreme. M1 Max is over three times faster. This is one of the huge advantages that Apple silicon brings to our Pro users. So, that's M1 Max. Scanning up the M1 architecture even further, it's by far the most capable chip we have ever built. Simply put its the world's most powerful chip for a Pro Notebook.

Next, here is Craig to tell you how macOS takes full advantage of M1 Pro and M1 Max.

Craig Federighi {BIO 6190419 <GO>}

These new chips are phenomenal. By designing macOS for our own silicon, we're able to take the experience of using a Mac to a whole new level. Everything is incredibly fast and responsive. Apps launch instantly. And my personal favorite, instant wake from sleep.

For these new pro chips, we've made improvements across the system to provide the best performance on the most demanding apps. For example, using pro app workload data to help optimize how macOS assigns multi-threaded tasks to the CPU cores. Advanced power management features intelligently allocate tasks between the performance and efficiency cores, giving you both incredible performance and incredible battery life. So, you can compile more code or edit more video on a single charge and macOS is designed to take advantage of the unified memory architecture in these new chips.

So, Pro apps can manipulate huge images or video streams, and move them between the CPU and GPU with zero copies for breath-taking performance. Technologies like Metal let apps automatically scale with our new chips for even

better performance. Thanks to Core ML optimizations, machine learning models perform on average over three times faster compared with the fastest Core i9 MacBook Pro, with some M1 models performing over 20 times faster. And when it comes to security, M1, M1 Pro and M1 Max are a major leap forward with industry-leading protections like hardware-verified secure boot, runtime anti-exploitation technologies and fast in-line encryption for all of your files.

Next, let's talk about apps. With Apple silicon users get way more of them and they perform better than ever. Every app made by Apple is optimized for and runs natively on Apple silicon. We also have Rosetta 2, so Intel based apps even pro apps with plugins simply run without missing a beat and even running under Rosetta applications invoking macOS technologies like Metal get a big speed boost from our optimizations for Apple silicon. And you can run iPhone and iPad apps on Mac, opening a huge new universe of possibilities to unlock the full power and performance of these chips. Apps can be recompiled to run natively as universal. All of our pro apps are universal. And today, we're launching some exciting updates with new features and even faster performance on M1 Pro and M1 Max.

With Logic Pro, for the first time musicians will be able to create massive spatial audio mixes on a notebook. In Final Cut Pro, video analysis for the new object tracking feature is up to 5x faster. And then compressor, ProRes video transcode is a remarkable 10x faster, of course, this isn't just about Apple. Developers are moving fast and there are now over 10,000 universal apps and plug-ins available, including Lightroom Classic, Cinema 4D, Capture One, Sketch, and many more. We gave some developers an early look and they were blown away by what they could do with M1 Pro and M1 Max. Let's hear from a few of them.

Rohit Gupta {BIO 19109695 <GO>}

Hey, I'm Rohit.

Nick Rapp {BIO 20642161 <GO>}

Hi, I'm Nick.

Meagan Keane

My name is Meagan Keane.

Jules Urbach

Jules Urbach.

Philip Losch {BIO 20825087 <GO>}

My name is Philip Losch.

Jules Urbach

Apple silicon has 3.5x the transistor count, 4x the unified memory, and 6x the memory bandwidth of the M1.

Philip Losch {BIO 20825087 <GO>}

It's like a racing car.

Rohit Gupta {BIO 19109695 <GO>}

4x the performance individual results, 5x faster GPU performance, 8x faster ProRes to ProRes rendering performance. In a typical short, for example, a basketball shot, you'll do try make color correction, secondary color correction, magic masks, power windows with tracking. And you can apply all this in real time. This was not possible before.

Philip Losch {BIO 20825087 <GO>}

Imagine taking this performance anywhere. These new projects allow you to create and shape the world in a playful way. Cinema 4D is nearly 3x faster. Redshift is over 4x faster. This completely unlocks new possibilities.

Nick Rapp {BIO 20642161 <GO>}

The first thing that comes to my mind, when I think of a scale test, is just spinning cubes, thousands and thousands and thousands of them. When you're making a game, you're constantly iterated, you iterate again and again and again and again. The increased performance of these new pro chips mean you can make more complex scenes, bigger games, better games, all in your laptop.

Meagan Keane

Launching Premiere Pro feels super snappy. Auto-captions what used to be fast is now like magic, like, it's super, super, super fast. We're seeing improvements every step of the way, like scene edit detection and that's up to 5x faster now. Your creativity can be limitless. You can be underwater, you can transition into outer space into the redwoods. Creators can just get back to being creative.

Jules Urbach

There's never been a GPU with 64 gigs ever in a notebook. And it changes our entire workflow, for example that 100 gigabytes starship enterprise loading it all into memories, slicing through it, seeing every detail of that, it just hasn't been possible in any other piece of hardware.

Craig Federighi {BIO 6190419 <GO>}

If I had to summarize what M1 Pro and M1 Max means to me, I'd say they are life changing.

When we put all of this together, great apps, macOS, and these new chips were able to deliver breakthrough performance, unbelievable battery life, and phenomenal pro capabilities. It's just awesome to see our vision for Apple silicon truly come to life.

Now, back to John.

John Ternus {BIO 22135753 <GO>}

M1 Pro and M1 Max represent a huge leap forward in silicon for pro systems. And our teams have been hard at work designing a brand new MacBook Pro that can take full advantage of that incredible performance and capability and the result is something truly special.

(Audio-Video Presentation)

This is the all-new completely redesigned MacBook Pro and it comes in two sizes, a 16-inch model and for the first time a compact yet immensely powerful 14-inch model, which shares the same remarkable features and capabilities. The new MacBook Pro is a combination of groundbreaking performance with amazing battery life, extraordinary display quality, and advanced connectivity. This is a Pro Notebook that simply has no equal. It was designed with an intense focus on performance and utility. The all new aluminum enclosure optimizes internal space for more performance of features, and it is precisely machine around an advanced thermal system. It can move 50% more air even at lower fans speeds. This thermal design enables MacBook Pro to deliver phenomenal sustained performance, while operating quietly. And because of the efficiency of Apple silicon, the fans never even have to turn on for most of the tasks you do every day. And it's all in a design that is just 16.8 millimeters thin and 4.7 pounds on the 16-inch model, and just 15.5 millimeters thin and 3.5 pounds on the 14-inch model. Now, this all new design is just the beginning of the MacBook Pro story. To tell you more, here's Shruti.

Shruti Haldea

The new MacBook Pro has been re-imagined in every way. Let's start with the keyboard. Users value the full height function row on the standalone magic keyboard, and we've brought it to the MacBook Pro. The physical keys replace the touch bar, bringing back the familiar tactile feel of mechanical keys that pro users love. The keyboard is set in a double anodized black well that elegantly highlights the backlit cliffs on the keys, and it's complemented by our expansive industry-leading Force Touch trackpad that's perfect for pro applications.

Now, let's talk about connectivity. Having a wide range of ports can make life a lot easier for pros. So, I'm excited to share that we're adding ports to the new Macbook Pro. On one side, there's an HDMI port for conveniently connecting to displays and TVs, a Thunderbolt 4-port which connects to high-speed peripherals and an SD card

slot enabling fast access to media. On the other side, the headphone jack now has advanced support for high-impedance headphones. And there are two more Thunderbolt 4 ports for a total of three in the system. And yes, MagSafe is coming back to the MacBook Pro. MagSafe 3 has a new design that supports more power into the system. And you can still charge via the Thunderbolt ports.

Display support is better than ever as well. With M1 Pro you can connect up to 2 Pro Display XDRs. And with M1 Max, you can connect up to 3 Pro display XDRs and a 4K TV, all at the same time. That's over 75 million pixels of screen real estate and you still have ports available to connect a high-fidelity headphones and camera media, all without a single adapter. This is the most advanced connectivity ever on a Mac notebook. The new MacBook Pro also has a breathtaking display. To tell you more, here's Kate.

Kate Bergeron {BIO 20311790 <GO>}

On the new MacBook Pro, we're taking the stunning retina display to an entirely new level. We started by bringing the sides of the enclosure closer to the active area of the display resulting in a 24% thinner border. We also expanded the display up and around the camera making the top border 60% thinner, giving you even more screen real estate. And macOS takes full advantage of this extra space by raising the menu bar up and out of the way, automatically wrapping it around the camera to give you more room for your content. And it looks great in dark mode, which our pro users love. All together, it's a fantastic user experience.

With this new design, the displays are now larger. The 16 inch model has a 16.2 inch display in nearly the same size enclosure. And along with a higher pixel density, it has 1.8 million more pixels than before for a total of 7.7 million. That's the most ever in a Mac Notebook. The 14 inch model has an expansive 14.2 inch active area, and a total of 5.9 million pixels. That's even more pixels than the previous generation 16 inch MacBook Pro.

Next, we're super excited to bring ProMotion technology to the Mac, with refresh rates up to a 120 hertz. ProMotion automatically adapts to the motion of your content. So when your content is static, the refresh rate dynamically steps down to preserve battery life. And it steps up to make tasks like scrolling through web pages super fluid and video editors can still choose a standard refresh rate when they need to lock one in. The display now supports 1 billion colors for ultra smooth gradients. And for the first time, it's a liquid Retina XDR display.

So users can create, edit and review HDR content with exceptional precision. It was inspired by the capability of the pro display XDR, and it features the mini LED technology, used in iPad Pro which we've built into the impossibly thin display enclosure of the new MacBook Pro. We did this by integrating the custom design, mini-LED backlight, optical films and diffusers and a cutting edge LCD panel into the display housing and the display is uncompromising in its performance.

The state-of-the-art backlit features thousands of many LEDs arranged in individually controlled local dimming zones. This enables up to an astonishing 1,000 nits of sustained, full-screen brightness. 1,600 nits of peak brightness and a staggering 1 million to 1 contrast ratio. This is extreme dynamic range, bringing HDR content to life with unbelievable detail and shadows, brilliant specular highlights even more vibrant colors and deeper blacks than ever before. This new display is going to be amazing, whether you're adding final touches to an image or just kicking back and watching a show in HDR. This is hands-down the world's best notebook display.

To tell you about our new camera and audio system, here's Trevor.

Trevor McLeod

Our users are relying on the Mac more than ever to stay connected. So we've doubled the resolution of the camera to 1080P and used the lens with a wider aperture that lets in more light. Together with a larger image sensor that has more efficient pixels, the camera delivers 2x better low-light performance. The camera system also uses the ISP and neural engine for computational video, which enhances video quality. So you get sharper images and more natural-looking skin tones. With all these advancements, this is by far the best camera system ever in a Mac Notebook.

Now, let's talk about the audio experience. First, we made our industry-leading studio quality mics even better with an up to 60% lower noise floor, which means you get crystal clear recordings that capture the subtlest sounds. Next, the new 16-inch pro has an even better six speaker sound system that features two tweeters and four force cancelling woofers. The tweeters are nearly 2x larger, purifying the sound on mids and highs for a clear sound stage.

The woofer diaphragms are also larger and have an increased range of motion. So they can now displace twice as much air. This allows them to deliver 80% more bass. It also means, they go half an octave deeper, revealing a range of notes you previously couldn't hear. And we've brought this sensational six speaker sound system to the 14-inch pro as well. The new sound system also supports spatial audio, which creates a sophisticated, three-dimensional sound stage. So when you're listening to music or watching a movie with Dolby Atmos, you get a theater like experience with studio-quality mics that have an even higher signal-to-noise ratio and a spectacular six speaker sound system with spatial audio, there's never been an audio system this good in a notebook. We can't wait for you to hear it. Back to you Shruti.

Shruti Haldea

Let's talk performance. The new MacBook Pro pushes the limits of what a notebook can do. The 16 inch model with M1 Pro and M1 Max has up to 2x faster CPU performance than the previous generation with the Core I9. This is a tremendous performance boost for compute heavy tasks, like, compiling a project in Xcode. And when it comes to graphics, M1 Pro is up to 2.5x faster than the prior 16 inch model with the fastest GPU and M1 Max is up to 4x faster. This boost is dramatic for graphics

intensive tasks, like, rendering scenes in Cinema 4D. And when it comes to machine-learning, you'll get up to 5x faster performance. So things like selecting the subjects within images in photoshop are faster than ever.

Now, let's look at the 14 inch model, which is also configurable with M1 Max, our most powerful chip. Compared to the 13 inch model with a Core i7, the 14 inch Pro has up to 3.7x faster CPU performance. For graphics, M1 Pro delivers up to 9x faster performance and M1 Max is up to an astonishing 13x faster and ML tasks are up to 11x faster. So whether you're stitching a massive panorama in Lightroom Classic or rendering a complex scene with Redshift, the 14 inch MacBook Pro absolutely crushes it and it goes even further. The unified memory architecture enables workflows that were previously unimaginable on a notebook, even the latest Pro PC laptops top out at 16 gigs of video memory. MacBook Pro has up to 64 gigabytes of unified memory, so apps have dramatically more memory for the most demanding graphics tasks. No other notebook even comes close.

So this means that on MacBook Pro, 3D artists can now easily work with extreme geometry and textures and seems that the latest Pro PC laptops can't even run. And with the enhanced media engine on M1 Max, you can edit up to 30 streams of 4K ProRes video in Final Cut Pro or up to seven streams of 8K ProRes. That's more streams than on a 28 core MacPro with Afterburner. And video editors can now color grade in HDR on 8K ProRes 4x4 video on battery when they're miles away from the edit bay.

Finally, storage is getting even faster. The Superfast SSDs deliver up to a jaw-dropping 7.4 gigabytes per second of read speeds more than 2x faster than the prior gen SSDs. These are by far the most powerful Mac Notebooks ever. The magic of M1 Pro and M1 Max is that even though they're extremely powerful, they're also remarkably power-efficient. So pro users benefit from super fast performance, whether they're plugged in or not and they benefit from extraordinary battery life, so they'll get so much more done on a single charge.

Photographers, who go from capture to publish on the go will get up to 2x longer battery life Lightroom Classic when editing images. And developers working in Xcode will be able to compile 4x as much code. And battery life is unbelievable for everyday tasks, like watching your favorite movies.

The 14 inch model delivers up to 17 hours of video playback, which is seven additional hours, and the 16 inch model gets up to 21 hours of video playback, which is 10 additional hours and the longest battery life ever on a Mac notebook. And the new MacBook Pro now supports fast charge for the very first time on Mac, so it can charge up to 50% in just 30 minutes. And when it comes to the environment, the new Macbook Pro raises the bar yet again. The enclosure is made with 100% recycled aluminum, which brings us a step closer to our goal of using only recyclable and renewable materials. And it is free of numerous harmful substances, manufactured using even more renewable energy and meets Apple's high standards for energy efficiency. The new Macbook Pro is simply extraordinary. It has a combination of phenomenal performance, incredible battery life, and

groundbreaking features that set it apart from every other notebook. Now, before I hand it back to John, let's take another look at this beast of a machine.

(Audio-Video Presentation)

John Ternus {BIO 22135753 <GO>}

So that's the new MacBook Pro. We couldn't be more excited about what this groundbreaking system can do. It allows Pros to unleash their creativity in ways that were previously unimaginable and it is for anyone who simply wants the world's best notebook. When you compare the 14 inch model to the previous high-end 13 inch MacBook Pro, you get a giant leap in performance, up to seven more hours of battery life, a larger display with XDR, an advanced camera, high fatality audio and more ports, all for $1,999. And when you compare the new 16-inch Pro to the previous model, you also get a massive boost in performance and capabilities for $2,499. Both models are available in silver and space gray. You can order it today and it will be available next week.

Today, we've completely redefined high-performance Apple silicon with M1 Pro and M1 Max. They are by far the most powerful and capable chips we've ever created and there's never been anything like them. Together with M1, they form an incredible family of chips that leads the industry in performance and power efficiency. The new MacBook Pro joins the 13-inch Pro with M1 to create the strongest line-up of pro notebooks we've ever offered. And with this introduction, we've taken another huge step forward in the Max transition to Apple silicon. Now back to Tim.

Tim Cook {BIO 14014370 <GO>}

What a huge day for the Mac and our Pro users. These are the most powerful Mac Notebooks we've ever built. And the best example yet of the extraordinary performance and capabilities we can deliver when we combine our most advanced Apple silicon with the power of macOS.

Today, we focused on two areas, very dear to us, music and the mac and the creative spirit fueled by each of them. At Apple, creativity is so incredibly important to who we are and what we do, designing products that empower users as well as enable them to be inspired by the creativity of others. It helps drive our teams to continue pushing things forward to create products and experiences that enrich people's lives.

I'd like to take a moment to thank everyone here at Apple for their unbelievable effort this year and to everyone watching, thank you for joining us today. Please take care, stay safe and have a great day.