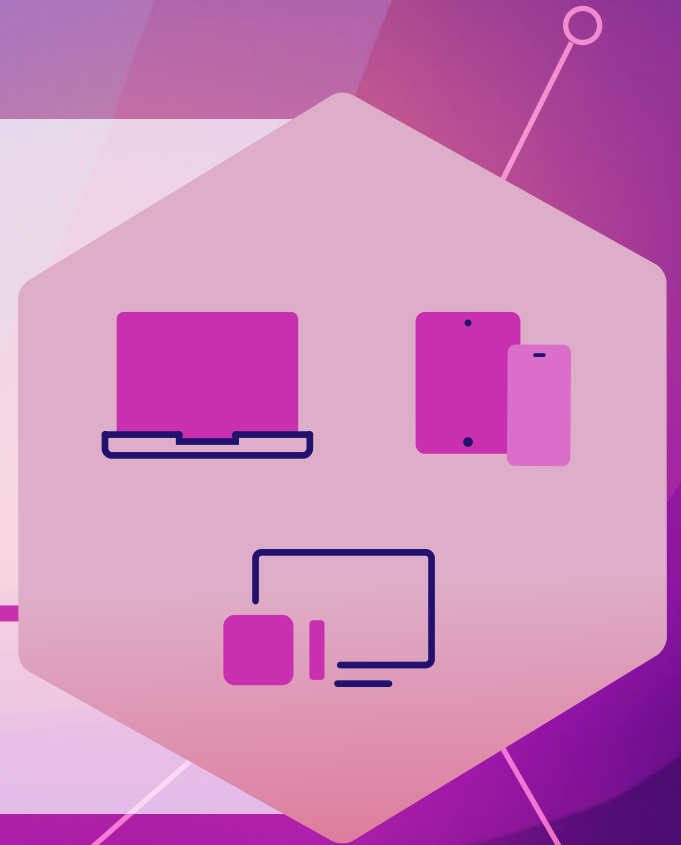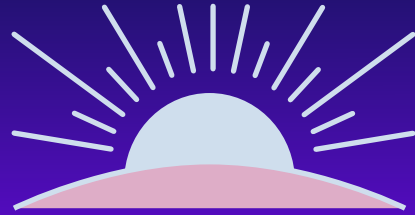Apple OS

Upgrades Guide For Beginners

Everything you need to prepare for macOS Monterey, iPadOS 15, iOS 15 and tvOS 15

Apple OS upgrades are coming. Are you ready?

Exciting new versions of macOS (for Mac), iPadOS (for iPad), iOS (for iPhone) and tvOS (for Apple TV) are heading to a device near you. Your job is simple. Get the latest, most secure version of the OS with new features into the hands of users, all without disrupting workflows or slowing productivity.

As most IT organizations know, this can often be easier said than done, especially when factoring in the speed at which Apple users like to upgrade. Now for the good news. At Jamf, we've been doing this for more than 18 years, and are here to provide step-by-step guidance for successful Apple upgrades — regardless if it is your first OS season, or you are a seasoned professional.

Why an Apple upgrade is different

Contrary to other ecosystems, major new versions of Apple's operating systems, macOS, iOS, tvOS, and iPadOS, are released annually. A combination of the simple upgrade path and $0 cost help drive industry-leading adoption rates for consumers.

This trend is further accelerated by Apple's vertical integration of hardware and software: any new Mac, iPad, iPhone, Apple TV or Apple Watch will always ship with the latest OS version and can't be downgraded.

When devices are running old software, consistency, security and user experience are all compromised. And this is especially true when organizations attempt to support a variety of devices and OS platforms with a single management solution. Without the complications and cost of licensing, Apple's user-initiated upgrades are easy for end users to carry out autonomously. This is one of the reasons Apple's operating systems have the highest adoption rate of any ecosystem.

End users are so excited to access the new features; yet, you're responsible for maintaining security controls and an accurate systems inventory at all times.

This guide provides you with a thorough understanding of the new operating systems, and ways to carefully prepare for and implement an upgrade. You'll learn how to minimize disruptions and eliminate unplanned downtime, gaining the knowledge to deliver organizational value and walk users through their macOS Monterey, iPadOS 15, iOS 15 and tvOS 15 upgrades.
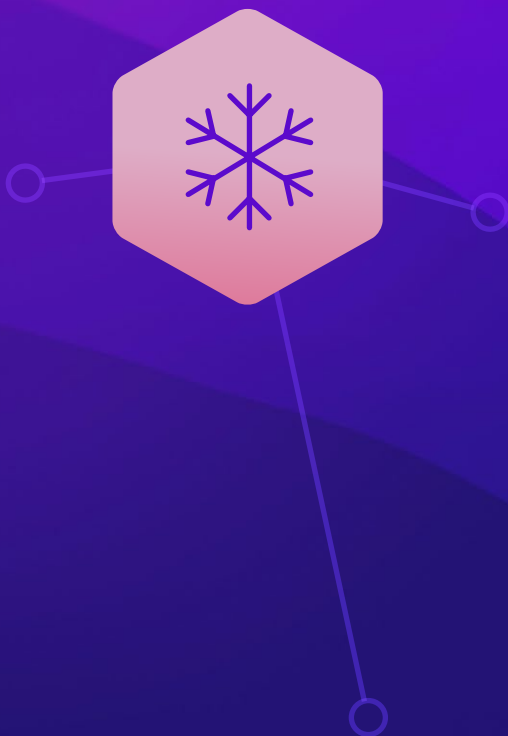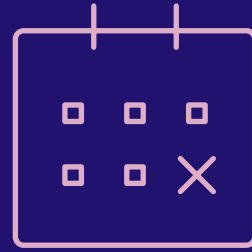
The business value of same-day readiness

There are four key reasons organizations should embrace upgrades and empower end users to update their device(s) when your environment, organization and team is ready:

1 Reduce security vulnerabilities

New operating system versions usually include improved security and privacy functionality. It's in your best interest to empower and encourage users to upgrade to the latest operating systems. This will help ensure your organization doesn't fall prey to data breaches and system vulnerabilities, all because devices are out of date.

2 Keep end users happy

New features and improvements mean end users eagerly anticipate new operating system versions. With more users adopting the full Apple ecosystem, they want all their devices upgraded and compatible for the features that allow multiple device types to work together.

3 Keep users productive

The latest operating systems introduce new features that support greater efficiency and productivity. When users are unable to upgrade, they cannot take advantage of helpful functionality.

4 Access new IT management features

Gain access to a wealth of new management features. Not only will you have access to new capabilities for Apple ecosystem management, but you can also customize and configure new end-user features based on the unique needs of your environment.

Join the beta party

1
STEP

The best defense is a good offense. Arm yourself with previews of upcoming releases through AppleSeed for IT to get an early look at how new OS versions and features will impact your organization.

Apple updates its operating systems annually, which means participating in the beta program provides months of testing ahead of an operating system release. Apple offers AppleSeed for IT which provides free beta programs for macOS, iPadOS, iOS and tvOS. To join, sign up with your Managed Apple ID you use Apple Business Manager or Apple School Manager.

Why Beta?

1 The beta cycle for these operating systems typically occurs in multiple phases. Participating early and submitting feedback to Apple increases the likelihood that the features and issues that impact you most will be addressed before the update is generally released. And, when submitting feedback to Apple, you can use the Feedback Assistant app to have visibility to the issue's status and OS version where a potential resolution occurs.

2 Participating in the beta not only gives you early access to test new features and compatibility, but it also offers a deeper understanding of how the end-user experience will be impacted. Knowing which new settings have been added, any features that have moved, or changes to labels can inform necessary updates to your training materials, onboarding kits, etc. This helps your organization best prepare for changes to the end-user experience, so you can execute a more user-centric support model and communication plan accordingly.

3 Lastly, in addition to new OS settings and features, application, infrastructure and management compatibility testing is critical for continuity with current software offerings in your environment. We recommend you run Apple's betas to test their deployed apps for issues. Apple has various test plans available for organizations to validate how beta OS versions interact in numerous customer environments.

Join the beta party

Beta tips

Use dedicated hardware for pre-release testing of Mac, iPad, iPhone and Apple TV devices. As always, avoid using personal or production hardware for beta testing.

Not only is it critical to test your organization's business tools with Apple's betas, but you should test your device management solution as well. Whichever solution your organization uses to manage and secure your Mac, iPad, iPhone or Apple TV devices should provide active beta programs year-round and demonstrate the ability to test compatibility with Apple's beta software on all of your devices.

Check out Apple's Lifecycle Management guide or the AppleSeed for IT Guide for more details.

STEP
1

Conduct strategic testing

STEP 2

For best results and to ensure the upgrade won't impact any unforeseen aspects of your end users' workflows, be sure to test your entire tech stack including:

1 Infrastructure

Includes anything outside your application stack, such as VPN or printer drivers (which should always be tested with new operating systems). Testing infrastructure is less of a concern for organizations moving toward cloud hosting and services.

2 Applications

Includes both web and non-web based applications. If you don't have time to test all apps, prioritize based on an application vendor's statements related to compatibility.

macOS Monterey includes changes to legacy kernel extensions. Consult your vendor(s) to see if they support Apple's modern System Extensions framework.

3 Management

Includes device deployment and management solutions (MDM, EMM, UEM, etc.). Check that your device management solution offers the ability to test new restrictions, management capabilities and features.

Incorporate a user-centric test process.

Prioritization is essential, especially in resource-strapped organizations. Take inventory of all applications used across your organization and rank them by critical-business nature (financial software, CRM software, ERP software, etc.). Start with high-level business apps, move to mid-level apps, browsers and low-level apps.

Many organizations choose to prioritize based on automated inventory information from their device management provider, as well as frequency of use (most commonly used to least commonly used).

Consider recruiting end-user liaisons from each department you support (Finance, Marketing, Sales, Technology, HR, etc.) to discuss their daily business processes. Ask them to walk you through their workflows and which tools they use most. Then, document each item in a spreadsheet format for testing.

Due to the architecture of iPadOS, iOS and tvOS apps, light testing might be more appropriate for these platforms. Consider leveraging automated testing tools which automate point-and-click tasks to execute a task and test it. For more information on testing frameworks, check out ITIL certification.

For additional OS testing support, Apple has "test plans" that suggest areas of each OS and features to test and validate. This can be found within the AppleSeed portal.

STEP 2

When documenting use cases, lay out the key business units, critical level, applications, user tasks and whether you validated compatibility. Example:

Business Unit	Critical	Apps	User Task	Operating System	Validate
Marketing	Mid-Level	Word	*"I want to create a Word document on a machine that was just upgraded, choose the Copperplate font, then print on a printer."*	macOS Monterey	Yes

Understand the new operating systems

STEP 3

In addition to the testing guidance above, macOS Monterey, iPadOS 15, iOS 15 and tvOS 15 have differing sets of new features and unique impact on your environment.

Below you will find important information for what you need to know when upgrading to each operating system. For a comprehensive list, please review Apple's online resources, including articles on their support site.

Upgrading to macOS Monterey

There are several ways to accomplish upgrades on a Mac. The most common upgrade path for macOS is an in-place upgrade. An in-place upgrade involves installing the operating system while keeping user data intact.

Three common methods are:

1 Supervised Macs or those enrolled via Apple Business Manager or Apple School Manager can be upgraded by sending an MDM command to download and install updates. When this command is ran as a Mass Action, IT admins can choose to include updates to major OS versions like macOS Monterey. For computers with Apple silicon, no user interaction is required to authorize the update when bootstrap token is escrowed with Jamf Pro.

2 Download the "Install macOS Monterey.app" directly from Apple for deployment from your preferred distribution points. Once deployed to devices, a policy can be triggered to either run automatically, or users can starts the install themselves from Jamf Self Service. These methods can reduce the time to install for end users, as the update is already downloaded.

3 Alternatively, you can simply encourage your users to download and run the "Install macOS Monterey.app" from the Mac App Store, or allow them to download from System Preferences to install.

Understand the new operating systems

You must also be connected to the internet when you upgrade macOS. This is due to firmware updates Apple installs on the Mac, further strengthening the security of your devices. Only the macOS installer can download and install these firmware updates, which validates Apple as the source of the critical firmware. **In fact, installing macOS Monterey on a Mac connected by Target Disk Mode is no longer a supported installation method.**

If you need to erase data for rapid return to service, there is an option to install macOS and erase the hard drive at the same time. --eraseinstall option is a command to install macOS and erase the hard drive at the same time. Simply download the macOS Monterey installer and upload via your MDM solution. Deploy macOS Monterey via policies:

1) Stage the installer on client Mac

2) Run startosinstall with the --eraseinstall flag. Start install automatically or place in Jamf Self Service.

Once devices are running Monterey, the "Wipe Device" MDM command will be able to do an Erase All Contents and Settings workflow for any T2 Macs or computers with Apple sillicon.

Additional considerations with Apple silicon are:

- User credentials are required to use startosinstall and macOS installer apps

- Select "Include major updates, if available" option with a Jamf Pro Mass Action MDM command

- No user interaction is required when a Bootstrap Token is escrowed to Jamf Pro. macOS will request the token to authorize software updates

Customer Quote

"Being able to deploy a Mac operating system upgrade without having to visit each machine is huge. Jamf Self Service allows us to put the power into our end users' hands, allowing them to kick off a system upgrade on their time."

Steve Wood
Endpoint Services Manager,
Omnicom Group

STEP 3

Understand the new operating systems

STEP 3

User Privacy

Apple continues its unparalleled tradition as a privacy-first company. The new macOS privacy features include Private Relay, a new iCloud+ service that protects user privacy by hiding the IP address and location from visited websites.

Erase All Content and Settings

Erase All Content and Settings is now available for macOS Monterey and works as it does on iOS/iPadOS, with the option to erase all user data and user-installed apps while maintaining the currently installed operating system version.

macOS Managed Software Updates

Managed software updates allows MDM admins to delay software updates on supervised devices and is now available for M1 Macs. By delaying the availability of software updates, you can test critical apps and infrastructure before rolling it out to your team. This allows a major release (like Monterey) to be deferred up to 90 days, with important security updates and minor versions of macOS still available for users to install.

macOS Recovery Lock

macOS Recovery Lock is a way to secure the most sensitive parts of the Mac by preventing users from accessing the recovery mode of the device without a password.

Apple Configurator on iOS

With Apple Configurator for iOS – a new iOS app – admins can easily add existing Macs to automated device enrollment. It's simple: connect the Mac to an iOS device and the app will help bring the Mac under management.

Screen Sharing

Screen sharing is now available in FaceTime with SharePlay. SharePlay extends the ability for users to receive remote assistance, bringing support to a new level.

Apps & Books

Apple's new API delivers a more performant and scalable apps and books experience for organizations. In addition, Xcode for developers provides a way to continue to expand the Mac App Store and support for Mac apps.

Upgrading to iPadOS 15 and iOS 15

When it comes to upgrading iPhone or iPad devices there are two options — upgrade by user or IT. If you are having your users complete their upgrades, they will simply go to Settings on their device(s) and start the installation — no IT interaction required. If your devices are managed by Apple Business Manager or Apple School Manager, IT has the ability to send an MDM command to download and install iPadOS 15 and/or iOS 15 — no user interaction required.

Here are a few aspects to look forward to as you prepare for upgrading to iOS/iPadOS 15:

iOS Restrictions

The new Paste restriction block end users from being able to Copy and Paste specific items, like sensitive information, to unmanaged and unsecured locations and apps. This means organizations can keep their data contained within the security of their managed applications. For the Siri restriction, a device will not contact the Siri servers to perform translation tasks, but rather perform them on the device, adding further security to translations.

Private Relay

Private Relay is a new internet privacy service offered as part of an iCloud+ subscription that allows users to connect to and browse the web more privately and securely by hiding the IP address and location of the user and prevents anyone, including Apple, from being able to associate an individual with the services they are accessing from a networking perspective.

Apple Configurator on iOS

The ease of enrolling devices now comes on iOS. Before, you had to walk around with a Mac device and a cable to use Apple Configurator, but not anymore.

Now:

1. Log in with your managed Apple ID

2. Use your camera

3. Register the image which pops up in the Setup Assistant

These features offer admins new workflow options, enrollment capabilities, and the ability to serve unsupervised devices, but what are the best ways and steps to getting these features to your users in a timely fashion?

Understand the new operating systems

STEP
3

Understand the new operating systems

STEP 3

Upgrading to tvOS 15

Apple TV devices enable wireless sharing without the need for adapters, all while delivering a modern conference room experience. Apple TV is also great for digital signage, wayfinding and specific industries, such as hospitality.

Building off the management functionality introduced with tvOS 14, tvOS 15 gives organizations even more control over the Apple TV experience.

Here are some areas to consider as you prepare for upgrades to tvOS 15:

MDM command upgrades

tvOS devices can be now upgraded by MDM command like iOS, including specifying which available tvOS version you want to update them to.

Automatic upgrades

tvOS will automatically and silently update itself to the latest OS release at its earliest convenience without interrupting users. This is unless updates are deferred by a configuration profile or the Apple TV is running in Single App Mode.

A deep understanding of the new operating systems, careful planning and insight into the potential impact for end users ahead of an upgrade can minimize disruption, help desk calls and unhappy end users. Next, consider the following stakeholders and conversations ahead of your upgrade.

Partner with InfoSec

If your organization has an information security (InfoSec) team, this is a great opportunity to partner with them. Keeping your organization secure and productive is not often a one-team task, so reach out proactively to make sure you consider their needs before OS upgrades.

Some consumer features released by Apple may not be approved for use by your InfoSec team. This is why the MDM specs are updated to disable these features. Get together with your InfoSec team now to discuss which features are appropriate for your organization.

Establish a test plan, and communicate these new features to your InfoSec team. If your organization is going to adopt new settings or restrictions available in a new OS version, consider using Smart Groups to intelligently target those configurations to eligible devices.

Steps to preparing end users when it's time to upgrade

1 Not every end user is aware of the time it takes to upgrade a Mac. Inform users of the average upgrade time, and provide tips on the best time of day to upgrade.

2 Recommend that your end users back up their device(s) before they update. This applies to localized and iCloud backups.

If you use a centralized backup tool for macOS, consider sending a policy to run a backup before you do an upgrade.

3 Implement a policy to require end users to update within 30 days, or let them know you will update for them. PCIDSS compliance requires 30 days.

When it comes to upgrades, err on the side of over communication. Use email, your company's intranet, or if your device management solution allows, your Jamf Self Service app catalog, to give users plenty of warning and recommendations prior to OS upgrades. They'll thank you for it (or if all goes well, they'll say nothing.)

Upgrades communications plan

STEP 4

Go forth and conquer

Apple's latest operating systems, macOS Monterey, iPadOS 15, iOS 15 and tvOS 15 bring innovative capabilities to all organizations.

A streamlined approach to Apple upgrades ensures security measures are met, accurate system inventory is maintained and downtime is eliminated. A purpose-built Apple ecosystem management solution equips you with the tools you need to take advantage of the latest Apple OSs without negatively impacting end users or putting abundant strain on IT personnel.

Jamf is committed to helping organizations succeed with Apple. We've offered same-day support for all Apple releases for more than a decade, ensuring organizations can take advantage of new Apple technology as it becomes available.

Let Us Prove It

Or contact your preferred authorized reseller of Apple devices to take Jamf for a test drive.