macOS 15:
What You Need To Know

@roberthammen @hammen

Who am I?

For the last 20+ years, as a consultant, contractor, and employee, I have been supporting Macs and iOS/iPadOS devices in environments ranging from small and medium businesses, to K-12, to Fortune 500 companies, to the US government. For the last 4 1/2 years, I've managed the macOS and iOS environments at a reusable rocket, spacecraft and satellite company headquartered in suburban Los Angeles, California.

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macOS 15 Sequoia

- 21st release of modern macOS (10.0 = March 2001)

- Announced at WWDC on June 10th

- Shipping in Fall (late September? October?)

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macOS 15 Sequoia

macOS Sequoia is compatible with these devices.

Learn more about Mac >

iMac
2019 and later
Learn more >

iMac Pro
2017 and later
Learn more >

Mac Studio
2022
Learn more >

MacBook Air
2020 and later
Learn more >

Mac mini
2018 and later
Learn more >

MacBook Pro
2018 and later
Learn more >

Mac Pro
2019 and later
Learn more >

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Consumer Features

- Passwords app

- iPhone Mirroring app

- iOS notifications on Mac

- Window Tiles/Snap (Magnet)

- https://www.apple.com/macos/macos-sequoia-preview/

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Managed Apple Accounts

- Formerly known as Managed Apple ID's

- Federate Apple Business/School Manager with Identity Providers

  - Microsoft Entra ID (Commercial only)

  - Google Workspace

  - Third-party providers via OpenID Connect/

    Shared Signals Framework

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Managed Apple Accounts

- Domain Capture - do not need to federate

- Account Transfer - users can convert accounts from

personal to managed

For example, Zaphod uses the personal Apple Account zaphod@heartofgold.com
Heart of Gold requires that all Apple Accounts using @heartofgold.com be Managed Apple Accounts.
Zaphod can now do one of the following:
  o   Transfer his account to Heart of Gold, making it a Managed Apple Account with associated data
      remaining with the account.
  o   Choose a new primary email address, such as zaphod@galacticpresident.com to continue using
      associated data with the personal Apple Account.

If Zaphod doesn't take any action, after 30 days the account remains a personal Apple Account and is
automatically changed to zaphod@heartofgold.appleaccount.com

At this point, zaphod@heartofgold.com is freed up to be used as a Managed Apple Account.

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Apple Business Manager

- Activation Lock

  - Device (enrolled into an MDM/Lost Mode)

  - User (signs into iCloud on device)

  - MDM-managed devices can prevent user activation lock

  - But what about non-managed devices?

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Apple Business Manager

- Open an AppleCare Activation Unlock ticket

- Excel document, screen shots of device from AxM

- Include proof of purchase if devices are not in Apple

  Business/School Manager

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Apple Business Manager

iPhone 12

Overview

MDM Server	Device Model	Serial Number
No MDM Server	iPhone 12	DX3JM5X00DXT

Details

Source	Order Number	Part Number	Storage
Apple	AAA0341867	MGH93LL/A	64GB

Activation Lock
⊘ **On** (User)

Activity

Date Added
July 25, 2023

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Apple Business Manager

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New to Management

- Apple Watch

- Apple Vision Pro
  - Account-Driven user enrollment (1.0)
  - Account-Driven device enrollment (1.0)
  - Automated Device Enrollment (2.0)
  - Manage more like an iOS/iPadOS device - additional restrictions

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Safari 18 Extensions Management

- Control which extensions are allowed

- Control which extensions are enabled/disabled

- Control extension use for specific domains/sites

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Software Update Management

- macOS 14 improved reliability of software updates

- Enforcement still needs work

- For macOS 15, moving Software Update configuration to Declarative Device Management (DDM)

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MDM vs DDM

- Mobile Device Management - designed in 2000's

  - Servers were powerful, devices were not

  - Server has authority, client is dumb

  - client must often check in to server for instructions

  - Configurations pushed to device, evaluated at that time only

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MDM vs DDM

- Declarative Device Management - designed in 2020's

  - Clients are more intelligent

  - Configurations can be evaluated at any time, particularly if device config changes (i.e. OS update)

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Software Update Management

- Control over update installation

- Control over update deferral (up to 90 days)

- Beta Update Enrollment
  - today is a very manual process

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Rotate Wi-Fi Address

- iOS/iPadOS 14+ randomize MAC addresses (prevent tracking)

- Coming to macOS, with a twist
  - For pre-WPA2 auth or open networks - rotate every two weeks
  - WPA2 or later auth - rotate if computer erased, or network forgotten/re-enrolled
  - can control on a per-network basis via MDM
  - no global "off" switch

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Managed Device Attestation

- Leverage Secure Enclave (like TPM) to store keys for device certs

- Validate device is owned and managed by organization

- Requirements changing to only Apple Silicon (macOS) and A11+ chips (iOS/iPadOS/tvOS)

- Still no external app access
  - i.e. AnyConnect, GlobalProtect cannot use device certs

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Artificial Intelligence

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New AI Features

- Apple Intelligence

  - Writing Tools (summarization)

  - Image Playground

  - Smart Script

  - Math Notes

  - Siri

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AI Features

- Three types of AI features

  - On-Device

  - Private Cloud Compute

    - https://security.apple.com/blog/private-cloud-compute/

  - External Providers

    - OpenAI being the first

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AI Pushback

• Many organizations and institutions have expressed concern about the AI features in the new Apple OSes

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Restrictions Are Coming

Device management for Math Notes, Smart Script, Image Playground, and Writing Tools

Apple will be providing device management (MDM) and Assessment Mode (AAC) controls for Math Notes, Smart Script, Image Playground, and Writing Tools. Organizations can also learn more about how Apple Intelligence features like Writing Tools and Image Playground leverage Private Cloud Compute. For more information, see Private Cloud Compute: A new frontier for AI privacy in the cloud on the Apple Security Research website.

Restriction for limiting access to external integrations

In iOS 18, iPadOS 18, and macOS 15, a new restriction will allow organizations to prevent the use of the ChatGPT integration in Siri and Writing Tools.

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Feedback

Robert Hammen
June 21, 2024 at 12:01 PM

ASSIGNEE

Apple Intelligence Restrictions

FB14000116 – Assigned to Robert Hammen

Recent Similar Reports: None
Resolution: Open

Basic information

Please provide a descriptive title for your feedback:
Apple Intelligence Restrictions

Which area are you seeing an issue with?
Something else not on this list

What type of feedback are you reporting?
Suggestion

Description

Please describe the issue and what steps we can take to reproduce it:
Knowing that Apple is planning on implementing restrictions for Apple Intelligence in macOS/iOS/iPadOS, but not knowing the details, I feel compelled to provide feedback.

Basically, Apple Intelligence comes down to:
1. On-Device features
2. Apple Intelligence Cloud Features
3. Open AI features

For macOS/iOS/iPadOS, we require granular controls which allow us to enable or disable each of these independently of the others.
Due to ITAR we are unlikely to be able to leverage cloud services, so Apple Intelligence and OpenAI are non-starters.
On-device MAY be allowed, but may not be.

Also, to satisfy heavily-regulated industries, down the road, Apple should consider EITHER hosting Apple Intelligence services in FedRAMP environments, or actually selling/supporting/recommending an on-premise Apple Intelligence servers that institutionally-owned and managed devices could be directed to.

AppleCare Customer

Does your organization have an AppleCare OS Support plan?
Not answered

Robert Hammen
June 21, 2024 at 12:11 PM

ASSIGNEE

This is a Deployment Blocker for us (see https://twitter.com/elonmusk for more details)

Impact: iOS/iPadOS 14,000
macOS: 1200

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Additional Changes

- Hardware key or passkey support during enrollment

- New skip keys for enrollment

  - Welcome (similar to iOS)

  - Intelligence

- jq (JSON processor) now installed by default

- Ruby, Perl, still deprecated, still present

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Additional Changes

- Non-Flat packages no longer supported

  - Will need to re-generate your Adobe installation packages

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Background Task Management

- macOS supports LaunchDaemons (system) and LaunchAgents (user)

- These files stored in known locations in /Library

- Users and malware can abuse

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Background Task Management

- macOS 15 supports secure, tamper-proof storage of executables, scripts, etc. when installed via MDM

- But, Endpoint Security Extensions can currently be disabled in System Settings

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Feedback

Robert Hammen
June 21, 2024 at 11:46 AM

`ASSIGNEE`

Deployment Blocker - Must Be Able to Prevent Users from Disabling System/Network Extensions

FB13999949 – Assigned to Robert Hammen

Recent Similar Reports: None
Resolution: Open

Basic Information

Please provide a descriptive title for your feedback:
Deployment Blocker - Must Be Able to Prevent Users from Disabling System/Network Extensions

Which area are you seeing an issue with?
Network Extensions

What type of issue are you reporting?
Incorrect/Unexpected Behavior

Description

Please describe the issue and what steps we can take to reproduce it:
In macOS 15.0 beta 1, users have the ability to turn off/disable System and Network extensions.
Much like the issue with "Login Items" on macOS 13, this should NEVER have been introduced without the ability for organizations to prevent users from being able to disable these things on institutionally owned and managed/supervised devices.

Impact: 1200+ macOS computers

System/Network Extensions MUST have MDM controls that
1. Disable the UX toggle for institutionally-installed-and-managed extensions
2. Label these extensions as "Controlled by a profile" (Similar to the established Service Management controls)

AppleCare Customer

Does your organization have an AppleCare OS Support plan?
Yes

What is your AppleCare OS Support agreement number?

If you filed an AppleCare case about this issue, enter the case number:

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Late-Breaking News

- macOS 15 beta 3 includes an attempt to address

- Needs further testing/there may be issues if you're already using the RemovableSystemExtensions key in a profile

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Background Task Management

- Legacy Background Tasks, if present, can be turned off in System Settings

  - cron

  - at

  - periodic

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External Storage Access

- Current Media Controls deprecated for years

  - Mentions CD-ROM, DVD-ROM, etc.

  - Many orgs have used these to disable external media by default

  - Users must obtain an exemption, requires reboot

  - Can't mount read-only, or control file share access

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External Storage Access

- New Disk Management Controls in macOS 15

  - Can block external media entirely

  - Or, allow read-only

  - Can also block SMB shares

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Local Network Access

- Apps and LaunchAgents will prompt user to approve

- User can review in System Settings->Privacy->Local Network (similar to iOS/iPadOS)

- Admins currently have no management controls over this

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Feedback

Robert Hammen
June 21, 2024 at 11:51 AM

Deployment Blocker - MDM Management of Network Access prompts on macOS 15

FB14000009 – Assigned to Robert Hammen

Recent Similar Reports: None
Resolution: Open

Basic Information

Please provide a descriptive title for your feedback:
Deployment Blocker - MDM Management of Network Access prompts on macOS 15

Which area are you seeing an issue with?
Something else not on this list

What type of issue are you reporting?
Incorrect/Unexpected Behavior

Description

Please describe the issue and what steps we can take to reproduce it:
One of the new features of macOS 15 are dialogs to allow "incoming network" and "would like to find devices on your local network". For many IT and business apps, these functions are expected parts of normal function. The first reboot after upgrading to macOS 15 beta is painful because of multiple prompts that most users do not understand.

Organizations MUST have the ability to pre-approve and suppress these dialogs, otherwise it's an exceptionally poor user experience/dialog fatigue (has no one at Apple seen the old "Get a Mac" commercial about Windows Vista?)

The controls and UX should be similar to those of the existing Service Management controls.

IMPACT: 1200+ macOS Computers

AppleCare Customer

Does your organization have an AppleCare OS Support plan?
Yes

What is your AppleCare OS Support agreement number?

If you filed an AppleCare case about this issue, enter the case number:

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Kerberos SSO

- Orgs can use this to synchronize local account passwords with
  Active Directory

- Also ensures user has a valid Kerberos ticket

- New preferences in macOS 15

  - Start in Smartcard Mode

  - allow Smartcard, allow Password

  - Certificate auto-select filtering

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Platform SSO

- Feature for integrating with an identity provider (i.e. Entra ID)

- Introduced in macOS 13, but lacked functionality

- macOS 14 added the ability to create local accounts

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Platform SSO

- macOS 15 login policies requiring IdP auth across FileVault, Lock Screen, Login Window

- also configure Touch ID and Apple Watch unlock

- also configure offline and authentication grace periods

- FileVault still initially problematic
  - cannot go completely passwordless

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Virtualization Framework

- Did you know macOS has this functionality built-in?

- Besides macOS, Windows ARM, some Linux distros

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Resources

- VirtualBuddy - https://github.com/insidegui/VirtualBuddy

- UTM - https://mac.getutm.app

- IPSW's from the https://beta.apple.com/it portal

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Virtualization Framework

- Limitations

  - Cannot sign into iCloud - can in macOS 15

  - Cannot Erase all Content and Settings - can in macOS 15

  - Cannot test enrollment workflows

  - License agreement says 2 virtual Macs on one physical Mac

    (not enforced)

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Directory Services

- Active Directory Binding - still works

- Directory Services plug-ins are no longer supported

  - Novell Netware used in some edu environments - dead

  - Migrate to Platform SSO (future)

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Changes to System Settings

- UI tweaks/improvements on macOS/iOS/iPadOS

- Opening System Settings now defaults to General
  (no longer Appearance)

- Profiles moves from Privacy & Security to General, is renamed
  Device Management (matches iOS/iPadOS)

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Additional Changes

- Can no longer disable Gatekeeper using spctl

- Performance improvements when accessing SMB shares with large numbers of items in a directory

- Cannot manipulate com.apple.alf.plist firewall preference file
  - must use socketfilterfw command

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Additional Changes

- new xprotect command-line tool

- Additional System Integrity Protection restrictions on ~/Library/Group Containers

- Additional privacy prompts when attempting to alter home directory via:
  - dscl
  - dsimport

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Additional Changes

- CUPS printer drivers/PPD's deprecated since macOS 10.15

  - Still work

- Additional privacy prompts for apps using older

  screen capture API's

  - Microsoft Teams 2 still problematic

  - Belief is that it will be addressed before 15.0

Type
Evaluated

Status
Warning ⚠️

Observation
Some or all conferencing applications on this Mac do not use the ScreenCaptureKit API:

Not using ScreenCaptureKit API:
/Applications/Microsoft Teams.app

Using ScreenCaptureKit API:
/Applications/zoom.us.app
/Applications/Webex.app

Description
Identifies conferencing applications that aren't using the latest screen sharing APIs (ScreenCaptureKit). Applications using the deprecated APIs will not work in a future release of macOS.

Go to Settings -> Conferencing Applications to see which conferencing applications are tested by default and to add your own conferencing applications.

Note: This test requires the Xcode Command Line Tools to be installed.

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AppleSeed for IT

- https://beta.apple.com/it

- Sign in with your ABM/ASM Apple Account

- What's New WWDC 2024 PDF

- Managing Software Updates for IT PDF

- macOS Testing Template

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Private AppleSeed Channel

- #appleseed on MacAdmins Slack

- Instructions located there on how to prove you have access to ABM/ASM

- The "real" AppleSeed channel is private due to NDA

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Beta Cadence

- Release on average every two weeks until sometime in September, then Release Candidates begin

- Public Beta in early July

- Posted in #apple-dev-rss channel on MacAdmins Slack, usually on Mondays/Tuesdays

- Pay attention to private AppleSeed channel for emerging issues

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macOS 15 Beta Cadence

- First Developer/AppleSeed beta on June 10th

- Second beta June 24th

- Third beta July 10th

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Betas Keep Coming…

- You will most likely be waiting for your MDM vendor to release Day Zero support - may not support all new features

- Contact your MDM vendor about availability of a pre-release or test environment with macOS 15 support

- Cannot properly manage macOS/iOS/iPadOS without an MDM

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Testing

- The best time to begin testing is immediately after WWDC

- The second best time to begin testing is now

- Apple's developers have more focus earlier in cycle than later

- Far easier to change course sooner than later

- Periodically test beta versions throughout the year, not just leading up to major OS releases, otherwise…

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Get Ready for a Surprise!

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Get Ready for a Surprise!

How To Test

- VMs used to be the way, but challenges with testing ADE that leave them less useful

- Best to use physical hardware - Erase All Content and Settings is a godsend, as is Configurator DFU Restore on Apple Silicon
  - install Xcode Beta on macOS 14 for MobileDevice Framework

- Be sure to test on Intel if you must support

- New 13/15" MacBook Airs are great for testing

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Who should test?

- Immediately - IT/CPE, Infosec, helpdesk

- You need to solicit testers from your user community
  - Identifying good testing candidates easier said than done
  - Preferably across different job functions

- Make it easy for them to sign up, understand that their Mac may experience crashes/problems

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Testing at Your Org

- Users will need an Apple Account to sign into the beta

  - If federated - great!

  - Otherwise, manually create a **Staff** account in AxM

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Managed Apple Accounts
for Testing

Add New Account

First Name	Test
Middle Name (optional)	Middle Name
Last Name	User
Managed Apple ID ⓘ	testuser @
Roles / Locations	Staff ⌄ at 🔍 Location

- Make sure user signs into AppleSeed for IT site to accept any

  Terms & Conditions before trying to sign into Software Update

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What to test?

- Start with upgrading an enrolled Mac

- Subsequently test enrollment (scoping issues, installer packages needing updates)

- Test your application suites, internal tools, websites, Self Service or Company Portal app installs, etc.

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Test Your Apps

- Do they launch? Do they function correctly? Do they print?

- Identify all of the apps your org uses, and who is responsible for each one

- Come up with test plans

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Filing Feedback

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Filing Feedback

- Feedback is how you tell Apple something isn't working, or important functionality is missing

- File feedback early and often

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Filing Feedback

- File feedback first, THEN AppleCare Enterprise Support

  - particularly if it's a Deployment Blocker

  - Feedback process prompts you with questions AppleCare will ask you (avoids email back-and-forth delays)

  - Automatically includes a sysdiagnose and system profile

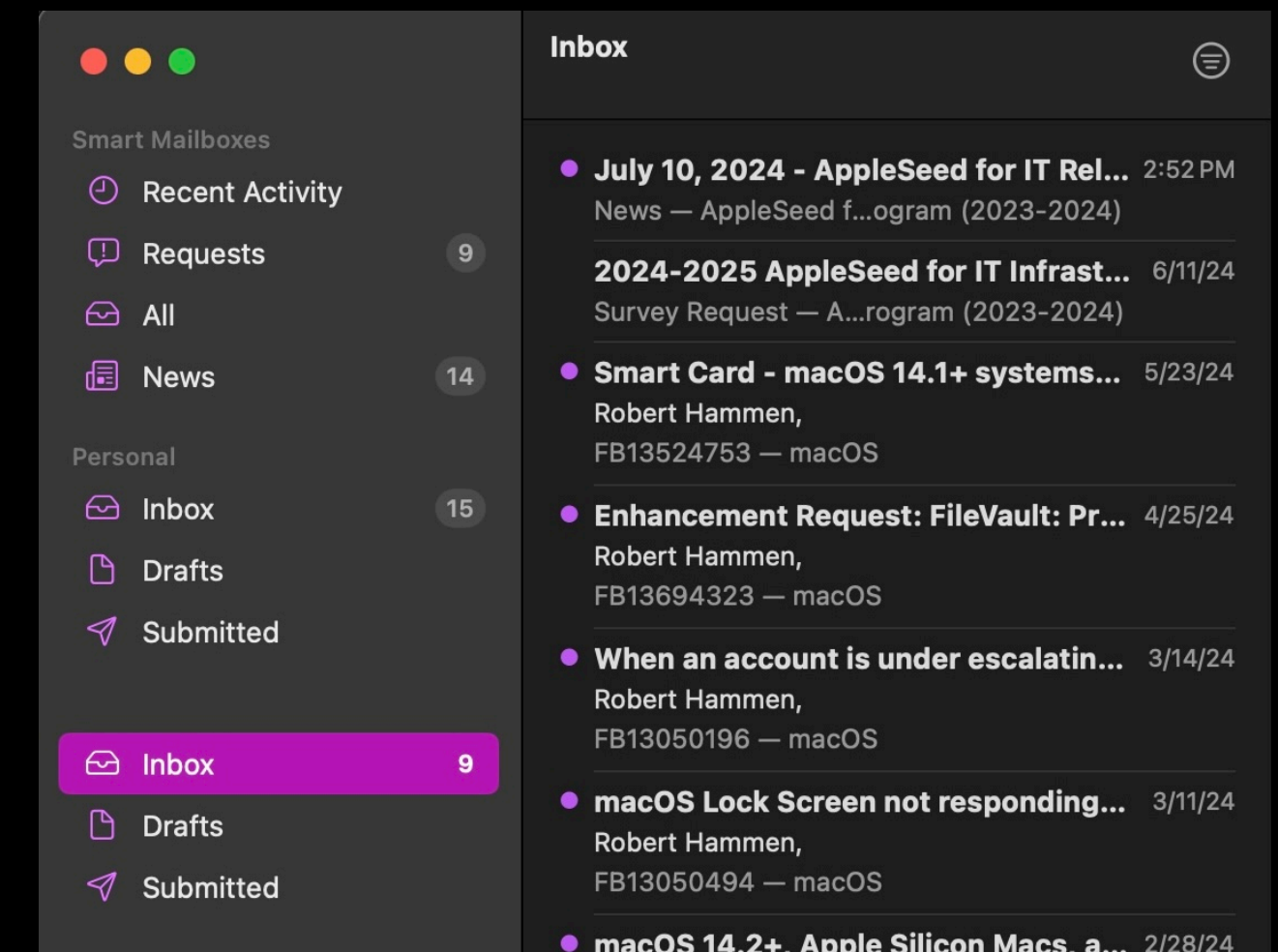- recoverydiagnose can be useful if having boot issues

Filing Feedback

- Feedback Assistant app - /System/Library/CoreServices/Applications

- https://feedbackassistant.apple.com

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Filing Feedback

- Be sure to use a Managed Apple Account!

- Different teams monitor different feedback channels, and yours will be ignored if not filed properly (i.e. under Developer)

- When creating Feedback, be sure it's filed under your organization/team, not personal

- **NEVER CHOOSE** "Something Not On This List"

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Filing Feedback

- What were you trying to accomplish?

- What did you expect would happen?

- What actually happened?

- Screen shots, videos, logs, sysdiagnose all helpful

- Deployment Blockers require escalation/AppleCare tickets

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Example Feedback

Robert Hammen
May 10, 2023 at 2:20 PM

ASSIGNEE

Make Finder Go->Connect to Server auto-translate Windows-format URLs

FB12181533 – Assigned to Robert Hammen

Recent Similar Reports: None
Resolution: Open

Basic information

Please provide a descriptive title for your feedback:
Make Finder Go->Connect to Server auto-translate Windows-format URLs

Which area are you seeing an issue with?
Finder

What type of feedback are you reporting?
Suggestion

Details

Are you able to collect a screenshot or screen recording that shows the issue? If so, please attach it to this report.
No

Description

Please describe the issue and what steps we can take to reproduce it:
One of the many pain points with supporting macOS in a predominantly Windows environment is the difference in server nomenclature between Windows and macOS.

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Sharing Your Feedback

- #apple-feedback channel on MacAdmins Slack (not for beta)

- The private AppleSeed channel (beta/NDA)

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Filing Feedback

- Re-test when new betas are released

  - Update your feedback with results

- If you filed feedback on an issue in macOS 14, please file
  feedback again if your issue is still occurring on macOS 15

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Documenting your Provisioning Process

- Do you have a runbook that documents what applications/ settings/profiles/configuration changes are performed as part of your provisioning process?

- If the answer is **No**, the time to create one is **now**

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Why Test Sequoia Now?

- Provide feedback to Apple and shape direction of OS

- Find bugs/issues, potentially exclusive to your environment

- Be ready to support as close to release as possible
  - Deferrals were a major pain point in macOS 13/early 14

- Prepares you for future hardware releases

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Why Support Right Away?

- Previous Security model: slow and methodical change management approach, with change control board, approvals, and backout plans

- Pace of updates due to Zero-Days being exploited in wild is increasing

- Today's agile security model, with regularly-scheduled releases as well as critical security updates

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Security!

- Apple provides patches for current OS and previous 2, i.e. N-2

- Read the Apple Security Updates KB:

  https://support.apple.com/en-us/HT201222

- Not all fixes are backported to older OSes

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Security!

- If you want to have the most secure Mac, you must be running the latest (N) macOS (with the latest app updates, of course)

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Mac Evaluation Utility

- https://support.apple.com/en-us/101555
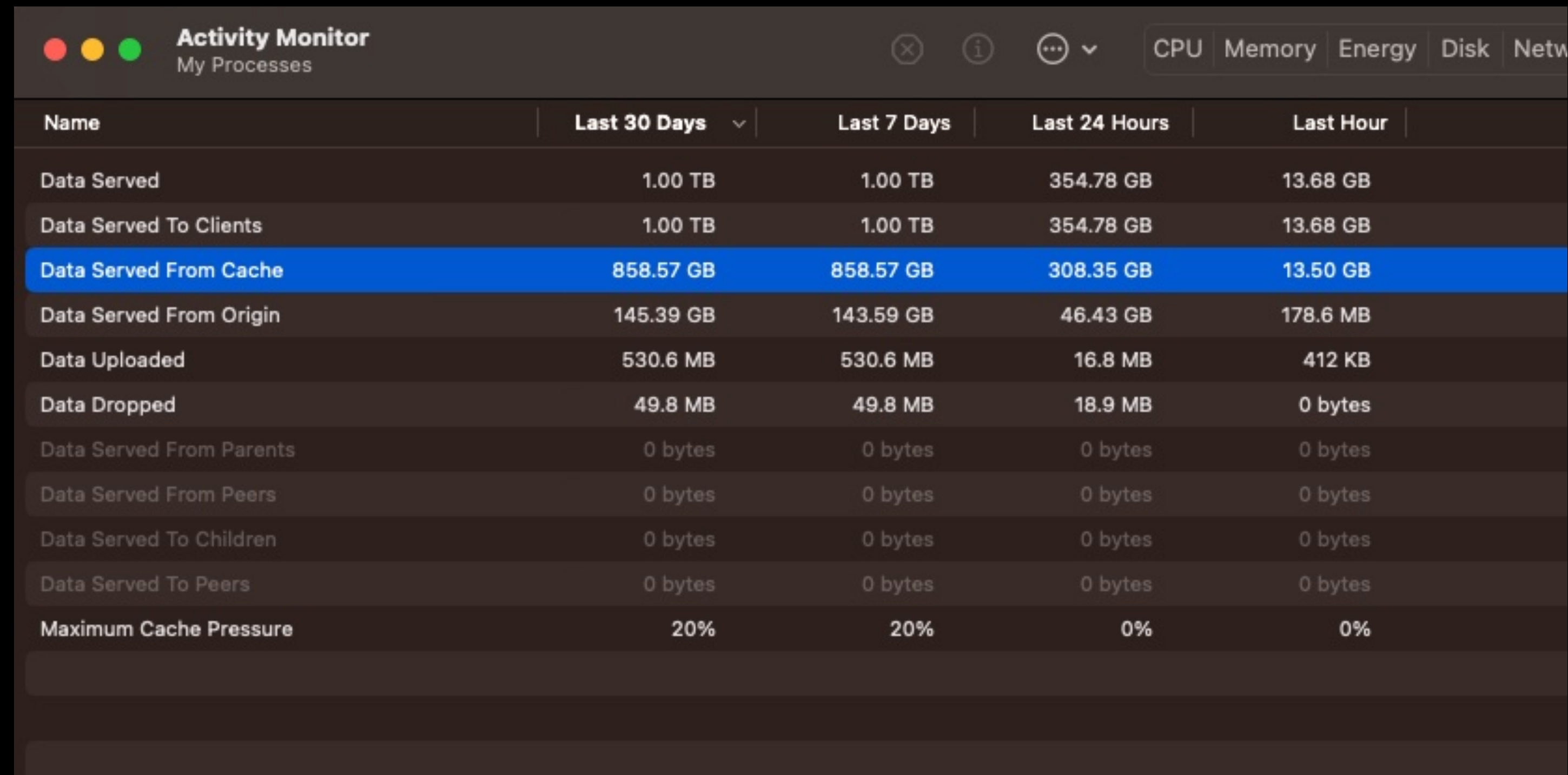
@roberthammen @hammen
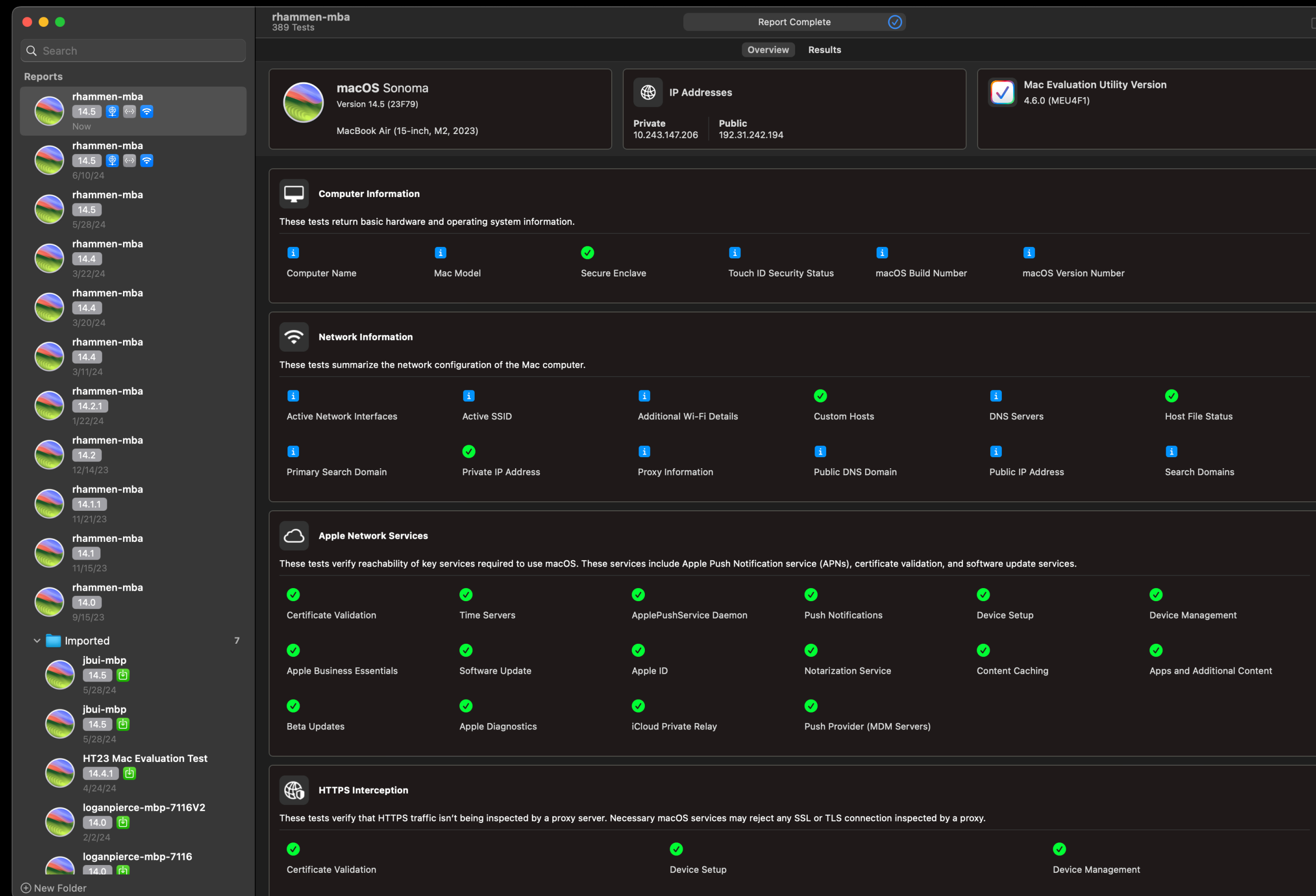
Evaluate Your Environment

- Still binding to AD, and using mobile accounts?

  Plan for future changes

- Happy with your Security tools?

  - When did they support system/network extensions?

  - When did they support Apple Silicon?

  - One-year contracts

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Evaluate Your Environment

- Lot of Apple devices on your network? Not split-tunnel?

  Set up a caching server:

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Deferrals - Do You Need Them?

- "I've got 99 macOS problems,

  but a deferral profile ain't one, son"

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Deferrals - Do You Need Them?

- "I've got 99 macOS problems,

  but a deferral profile ain't one, son"

macOS Security Compliance Project

- https://github.com/usnistgov/macos_security

- Open-source tool that evaluates your current security configuration against NIST 800-53, DISA-STIG, and others

- Generates guidance, scripts, configuration profiles, etc. to configure additional security settings

- Developed by Mac Admins

macOS Security Compliance

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When will macOS 15 ship?

- Apple OS releases = Fall

- macOS Sonoma - September 26, 2023

- macOS Ventura - October 24, 2022

- macOS Monterey - October 25, 2021

- macOS Big Sur - November 12, 2020

- Normally: macOS gets major release, then several point updates

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Resources

- What's New for IT WWDC 2024 (v1.1)

- Managing Software Updates for IT

- What's New in Device Management:

  https://developer.apple.com/videos/play/wwdc2024/10143/

- Apple Device Management Github:

  https://github.com/apple/device-management

  https://github.com/apple/device-management/tree/

  seed_iOS-18.0_macOS-15.0

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Resources

- Apple Platform Deployment:

  https://support.apple.com/guide/deployment/welcome/web

- Apple Device Management:

  https://developer.apple.com/documentation/devicemanagement

- Apple Platform Security:

  https://support.apple.com/guide/security/welcome/web

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Blog Posts

- SimpleMDM Blog - WWDC 2024 Recap:
  https://simplemdm.com/blog/wwdc-2024/

- Kandji Blog - What Apple Admins Need To Know
  https://blog.kandji.io/wwdc-2024-what-apple-admins-need-to-
  know

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Blog Posts

- Jamf Blogs:

  https://www.jamf.com/blog/apple-wwdc24-keynote-recap/

  https://www.jamf.com/blog/wwdc-2024-highlights-it-security-key-takeaways/

  https://www.jamf.com/blog/wwdc-2024-takeaways-education/

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Thank You's

- To the folks who contribute to MacAdmins Slack, Jamf Nation, Reddit, Github, and/or their own personal blogs. You have saved many of us countless hours of work/research/testing.

- And to you, attending this session in person, or watching the presentation on YouTube.

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Give Back!

- Find some way to contribute back to the community: either posting on Slack, Jamf Nation, Reddit, blogging, whatever.

- Don't hesitate to share something you've learned!

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In Memoriam

- Charles Edge

  July 10, 1975 - April 20, 2024

- CharlesCon Tonight

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Questions?

?

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