

Set It and Forget It: Automating the Apple Experience (with Jamf)

Description of Presentation: Join us for an inside look at how Information Technology Services at Christopher Newport University streamlined Mac deployment and management through Jamf automation. What once required hours of manual configuration has evolved into a fully automated, white-glove process from unboxing to deployment.

This presentation will explore how Jamf Pro automates software installations, configurations, compliance checks, and even uninstalls, allowing our team to focus on innovation rather than repetitive setup tasks. Attendees will gain insight into the design of our automated workflows, the tools and scripts that power them, and how we ensure consistency and security across all faculty and staff devices.

We'll share lessons learned along the way, including best practices for scaling automation, maintaining reliability, and balancing control with flexibility. Whether you manage a small fleet or an entire campus environment, this session will demonstrate how automation can simplify endpoint management, improve the user experience, and empower your IT team to work smarter, not harder.



Introduction

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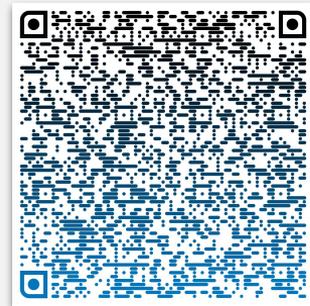
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I have worked in Higher Education Information Technology for 14 years, with most of that time focused on supporting campus endpoints and core infrastructure. I have spent nearly seven years in my current role, leading migrations from Windows 7 to Windows 11, macOS standardization, and the transition from limited client based management to modern MDM and Intune. With the support of my team, I implemented Jamf early in the COVID period, entirely remotely and with a team of four. During this time, we invested significant effort in automation, configuration, and process development to build a resilient, largely autonomous environment prepared to adapt to new challenges.

Current Endpoint Environment, Scale and Context

To provide perspective on scale and relativity, our current environment includes:

- Apple macOS devices: approximately 400 to 500
- Apple mobile devices: approximately 200 to 300
- Windows devices: approximately 2,200
- Endpoint team staffing: one senior engineer and four technicians
- Our Jamf instance is hosted **Jamf Cloud Pro** (Version 11.23*)



How We Got Here: macOS Management at CNU



What we needed:

- Faculty and staff expect devices to be ready on day one or as quick as possible.
- Manual setup does not scale and introduces inconsistency
- IT time is better spent on strategy than repetitive tasks
- Security and compliance must be built in, not bolted on
- We needed a predictable, repeatable deployment process
- At the time MDM was a new concept for Ivanti (2019) and we hadn't really bitten into it yet, thus we didn't have control outside of our ESET AV
- Consistency.

The problem we are trying to solve.

What we ALSO wanted:



Zero-touch deployment
from unboxing to login



Automation that works
quietly in the
background



A system that supports
growth without added
overhead



A consistent experience
across all faculty and
staff Macs

More on this later!



Our approach.

Guiding Principles



- **Automation first, manual only when necessary.** We needed to move away from the manual builds that everyone had their 'own' way of doing.



- **Consistency over customization.** Scripting, groups, how do we achieve this?



- **Defaults should be secure and compliant.** Defaults should be default, no choices, it's the same every time.



- **Self-service wherever possible.** We want to put bumpers up, but we didn't want to stop people from help themselves.



- **Build once, reuse everywhere** and hopefully for a long time.

The Research Journey



- Spun up a research project and looked at services and ways to control our fleet.



- At the time we just wanted to focus on Apple devices, and the best way to automate, control, and secure.



- After a few months of research and demos there was really only one choice at the time. Apple had a few tools available...but we saw the writing on the wall for some of those services.

How did we implement JAMF and how long did it take?

Late 2019 we procured and tested, middle of 2020 we implemented and went on our communication blitz.



Extensive testing, development vs. production. Balancing risk with efficiency.



Post-enrollment focus: Scripting, smart groups, and automation.



Communication blitz and user opt-in for MDM enrollment.



Devices enrolling, enabling background updates and security.



Automatic enrollment (DEP) with vendor coordination for zero-touch.

What did we do wrong?

A lot, but that's OK, we learned a lot too.



Maintaining a separate development instance ultimately created more complexity than value, especially with configuration migration and Firmware Password issues.



Early certificates, including for MDM, were tied to a single user account, introducing unnecessary risk and dependency.



Explored zero touch but faced limitations with SSO and FileVault, leading to a return to a more consistent white glove deployment model.



Underestimated the effort for custom packages and the number of users with local administrator access, adding complexity and security risks.

First, we had to prepare the environment.

Quick TLDR of the setup of the environment, from a high up view.



And then, the real work began...

Smart Computer Groups

NAME

1Password Installed

Adapter Installed

Adobe Acrobat Pro Installed

Adobe Acrobat Pro Not Installed

Adobe After Effects 2025 Installed

Adobe Audition 2025 Installed

Adobe Bridge 2025 Installed

Adobe Character Animator 2025 Installed

Adobe Creative Cloud Installed

Configuration Profiles

> 1 - 68 of 68

NAME ⌵ LOGS

> Administrative

> Browser

> Classroom Lab

> CNU

> Global Standards

> JAMF

> Network

> PPPC

> Research Standards

> Security

> zzz_DELETE

Policies

> 1 - 305 of 305

NAME ⌵ FREQUENCY

> Administrative

> Applications

> Browser

> CIS Level 1

> Classroom

> Classroom Lab

> CNU

> JAMF

Just a small look at the groups created, configurations needed, and policies we have.

Computers : Smart Computer Groups

← macOS 12.0+ (Monterey)

Computer Group [Criteria](#) Reports

Show in Jamf Pro Dashboard

AND/OR	CRITERIA	OPERATOR	VALUE
	Operating System Version	greater than or equal	12.0.0
and	Operating System Version	less than	13.0

Computers : Smart Computer Groups

← Classroom Lab

Computer Group [Criteria](#) Reports

Show in Jamf Pro Dashboard

AND/OR	CRITERIA	OPERATOR	VALUE
	Computer Group	member of	McMurrin 110 Classroom Lab
or	Computer Group	member of	McMurrin 110 Classroom Lab (Static)
or	Computer Group	member of	Library Media Center
or	Computer Group	member of	Ferg A213
or	Computer Group	member of	Ferg Music Studio

We use smart groups a lot, this is how we automate, along with Departments and Tags.

Using Groups to Drive Automation



Resources and scripts!



Example 1: State-Based Automation (Install vs Uninstall)

- Smart group: Google Chrome Not Installed
- Install policy scoped via Self Service
- Once installed, device exits the group automatically and joins Google Chrome Installed group
- Uninstall policy scoped to Google Chrome Installed group

Example 2: Event-Based Automation (Enrollment)

- Policies triggered at enrollment
- Install required software automatically
- Exclude devices where software is already present

Example 3: Health-Based Automation (Ongoing Remediation)

- Smart group: "Old Antivirus Software Installed"
- Uninstall software, inventory update
- Install newly implemented software
- Smart group: "New Antivirus Software Installed"
- Apply configuration profiles to smart group (or all devices if applicable)
- Extension attribute created and implemented to track health of antivirus
- Smart group: "Health is not good"
- Set parameters and run script on smart group to fix health status, update inventory. **Ongoing with check in.**
- Smart group: "Health is good"
- Devices moves to correct group, no longer is targeted with remediation script.
- If device is tampered with, will move back to group, remediation script can be run.

Modern App Management with Jamf Mac Apps



Application Name	Version	Progress	Size	Category	Source
Microsoft Word	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Excel	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft PowerPoint	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Teams	1.5.0	100%	1.2 GB	Productivity	Microsoft Store
Microsoft Edge	85.0.480.0	100%	1.5 GB	Productivity	Microsoft Store
Microsoft OneDrive	17.0.0	100%	1.2 GB	Productivity	Microsoft Store
Microsoft Outlook	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Access	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Publisher	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Project	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Visio	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Finance	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Sales	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Marketing	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Customer Service	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Field Service	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Project Operations	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Supply Chain Management	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Commerce	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Retail	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Customer Engagement	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Finance and Operations	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Sales and Marketing	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Customer Service and Field Service	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Project Operations and Supply Chain Management	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Commerce and Retail	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Customer Engagement and Finance and Operations	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Finance and Operations and Sales and Marketing	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Customer Service and Field Service and Project Operations and Supply Chain Management	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Commerce and Retail and Customer Engagement and Finance and Operations	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Finance and Operations and Sales and Marketing and Customer Service and Field Service	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Project Operations and Supply Chain Management and Commerce and Retail and Customer Engagement and Finance and Operations	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Commerce and Retail and Customer Engagement and Finance and Operations and Sales and Marketing and Customer Service and Field Service	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Finance and Operations and Sales and Marketing and Customer Service and Field Service and Project Operations and Supply Chain Management	16.0.1	100%	3.7 GB	Productivity	Microsoft Store
Microsoft Dynamics 365 Commerce and Retail and Customer Engagement and Finance and Operations and Sales and Marketing and Customer Service and Field Service and Project Operations and Supply Chain Management	16.0.1	100%	3.7 GB	Productivity	Microsoft Store



Streamlining software deployment, updates, and compliance through a centralized, automated catalog.

Mac Apps

Jamf App Catalog [App Store](#)

Q Search filterable columns... 71 entries

<input type="checkbox"/>	NAME ↑	DEPLOYMENT STATUS	VERSION DEPLOYED	TARGET GROUP	UPDATE METHOD	INITIAL DISTRIBUTION METHOD	CATEGORY
<input type="checkbox"/>	1Password 8	<div style="width: 20px; height: 10px; background-color: red; position: relative;">120</div>	8.12.0	All Managed Clients	Automatic	Self Service	Security
<input type="checkbox"/>	1Password 8 Update	<div style="width: 80px; height: 10px; background-color: green; position: relative;">83</div>	8.12.0	1Password Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe Acrobat Reader DC C...	<div style="width: 30px; height: 10px; background-color: green; position: relative;">313030</div>	25.001.21111	All Managed Clients	Automatic	Self Service	Productivity
<input type="checkbox"/>	Adobe Acrobat Reader DC U...	<div style="width: 8px; height: 10px; background-color: green; position: relative;">8108</div>	25.001.21111	Adobe Reader DC Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe After Effects 2025	<div style="width: 20px; height: 10px; background-color: green; position: relative;">2152</div>	25.6.4	Adobe After Effects 2025 Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe Audition 2025	<div style="width: 13px; height: 10px; background-color: green; position: relative;">132</div>	25.6.4	Adobe Audition 2025 Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe Bridge 2025	<div style="width: 11px; height: 10px; background-color: green; position: relative;">1143</div>	15.1.3	Adobe Bridge 2025 Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe Character Animator 2...	<div style="width: 17px; height: 10px; background-color: green; position: relative;">17</div>	25.6.0	Adobe Character Animator 2025 In...	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe Creative Cloud	<div style="width: 5px; height: 10px; background-color: red; position: relative;">5</div>	6.8.1.861	All Managed Clients	Automatic	Self Service	Productivity
<input type="checkbox"/>	Adobe Creative Cloud Update	<div style="width: 88px; height: 10px; background-color: green; position: relative;">88432</div>	6.8.1.861	Adobe Creative Cloud Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe InCopy 2025	<div style="width: 8px; height: 10px; background-color: green; position: relative;">8</div>	20.5.1.66	Adobe InCopy 2025 Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe InDesign 2025	<div style="width: 18px; height: 10px; background-color: green; position: relative;">1841</div>	20.5.1.66	Adobe InDesign 2025 Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe Lightroom Classic	<div style="width: 29px; height: 10px; background-color: green; position: relative;">29143</div>	15.1.1	Adobe Lightroom Classic	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe Media Encoder 2025	<div style="width: 30px; height: 10px; background-color: green; position: relative;">3182</div>	25.6.4	Adobe Media Encoder 2025 Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe Photoshop 2025 Upda...	<div style="width: 24px; height: 10px; background-color: green; position: relative;">2484</div>	26.11.2	Adobe Photoshop 2025 Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Adobe Premiere Pro 2025	<div style="width: 34px; height: 10px; background-color: green; position: relative;">3471</div>	25.6.4	Adobe Premiere Pro 2025 Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Arc	<div style="width: 1px; height: 10px; background-color: red; position: relative;">145</div>	1.130.1	All Managed Clients	Automatic	Self Service	Browser
<input type="checkbox"/>	Arc Update	⌚ Not installed	1.130.1	Arc Installed	Automatic	Install automatically	Automatic
<input type="checkbox"/>	Box Drive	<div style="width: 14px; height: 10px; background-color: red; position: relative;">14</div>	2.48.243	All Managed Clients	Automatic	Self Service	Productivity
<input type="checkbox"/>	Box Drive Update	<div style="width: 1px; height: 10px; background-color: green; position: relative;">1</div>	2.48.243	Box Installed	Automatic	Install automatically	Automatic

High-Level Implementation Flow

1. Target devices that already have the app installed
 - a. Use smart groups like Box Installed or Adobe Installed
2. Deploy the app via Jamf Mac Apps
 - a. Jamf handles install and detection
 - b. No custom PKG required
3. Leave existing install policies temporarily
 - a. Double scoping is OK during transition
 - b. Self Service and policies can coexist safely
4. Remove legacy install policies after adoption
 - a. Once Jamf App is in place and verified

Key takeaway: This reduces maintenance without changing our automation logic.

Jamf Catalog Applications



Application Installers Documentation



What changed for us?

What we do now:



Device deployments are predictable and repeatable



Automation runs at enrollment, install, update, and remediation



Groups define state, policies enforce state



Less hands-on work across the entire device lifecycle



IT time shifted from setup to strategy

What we stopped doing:



Manually building devices



Re-running installs that should be automatic



Maintaining fragile one-off scripts



Repackaging software unnecessarily



Chasing configuration drift



Key takeaways:

High Level implementation:

- Define the desired state
- Describe that state with groups
- Use policies to move devices between states
- Automate at enrollment and continuously thereafter
- Simplify as platforms mature

Automation, End to End

- Enrollment: zero-touch provisioning (or white glove) or user-initiated if onboarding to Jamf
- Baseline: required software and configurations
- Ongoing: updates and compliance
- Remediation: health-based correction
- Evolution: reducing custom work over time

I want to take a brief moment to note that these same ideologies and tactics apply across any MDM. Whether it is Intune, Jamf, or SimpleMDM, success is largely driven by clearly defining and enforcing the desired state.



Resources and Questions

