Reimagining Patch Management

Chad Swarthout
CEO

Ryan Ball
Director of Engineering

Alectrona

About Alectrona

> *“We could have expanded our internal IT team, but the cost and time to develop the level of expertise required made it a no-brainer to hire Alectrona.”*

Dave Stoicescu
Deputy CISO, Expel

Consultants Network

jamf | SERVICES Partner

Our Services

Alectrona Patch

The best Patch Management tool around.

Alectrona Migrator

Migrate users from one Mac to another.

Infrastructure for Enterprise

Supercharge your IT team with Alectrona.

Professional Services

Realize your Mac management end-state.

Reimagining Patch Management

What are the **challenges** of patch management?

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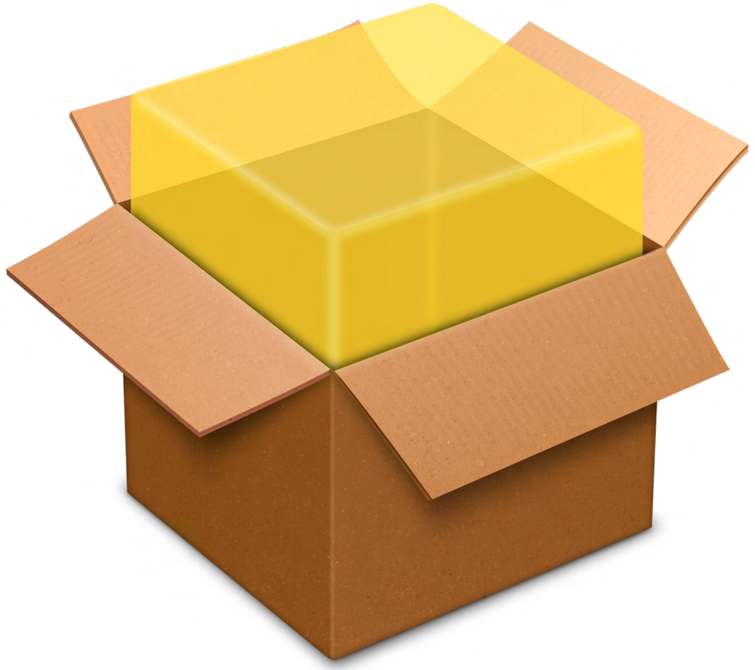
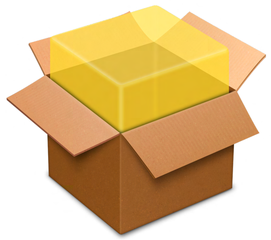


Creating software packages

What are the **challenges** of patch management?



Creating software packages

Software deployment

Source: https://basicappleguy.com/basicappleblog/hello-wallpaper

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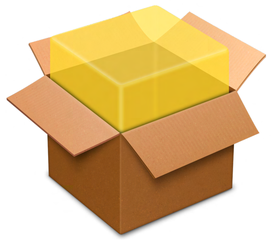
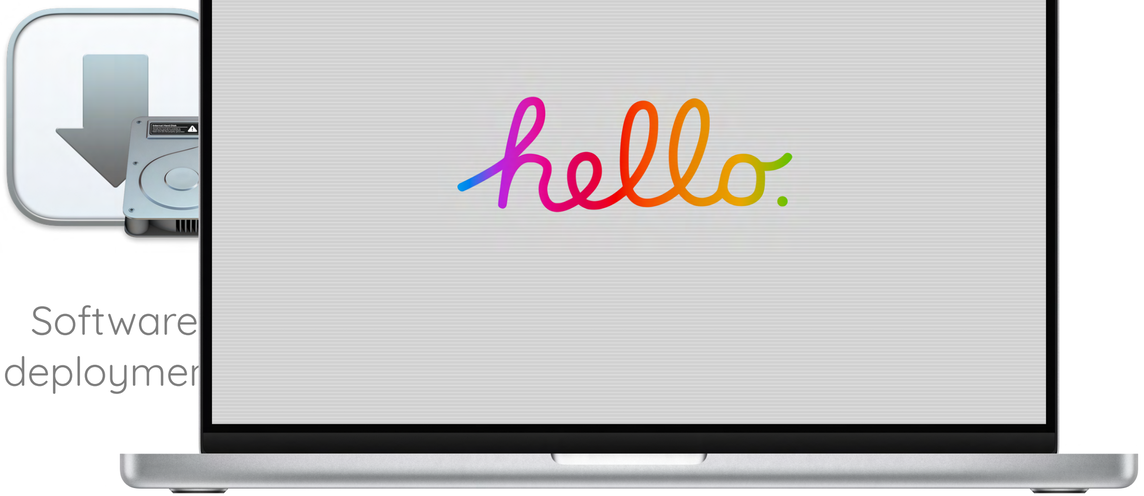


Creating software packages



Software deploymer

Maintaining a good user experience

Source: https://basicappleguy.com/basicappleblog/hello-wallpaper

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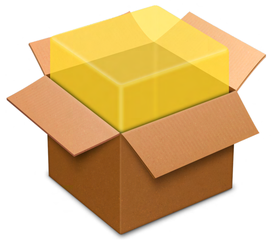


Creating software packages

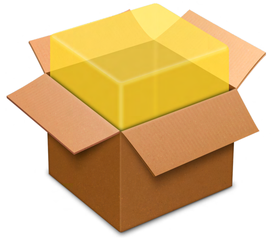
Software deployment

Maintaining a good user experience

Enforcing updates

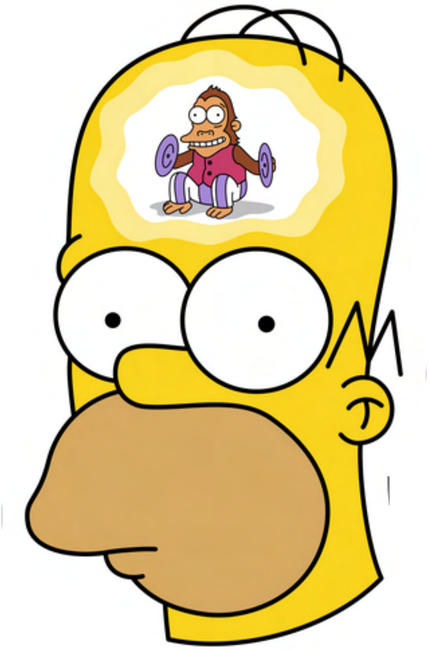
Source: LEGO, https://www.lego.com/en-us/product/police-car-60312

What are the **challenges** of patch management?



Creating software packages

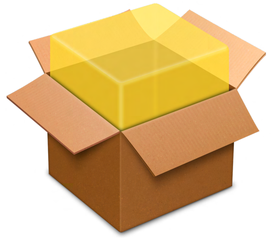
Software deployment



Figuring out what to update

Enforcing updates

What are the **challenges** of patch management?



Creating software packages

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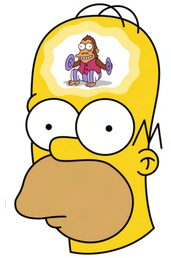
Enforcing updates



Figuring out what to update

...just to name a few 😬

Open Source Options

> *Talk is cheap. Show me the code. - Linus Torvalds*

AutoPKG / Munki

A tool to automate software packaging and a server to manage the software package deployment.

Installomator

A script-based Patch Management and software installation tool.

DIY

Rolling your own scripted Patch Management solution or manually creating software packages and deploying them with your MDM. 😬

What was missing for us?

- Relying on the kindness of others to maintain
- In-house maintenance requires scripting abilities
- Risk of bad recipes or malicious contributions
- Required infrastructure for servers or hosting packages
- The end-user experience
- Time = 💰
- Neglecting manual processes leaves countless systems unpatched

Source: Phil Jones, https://www.flickr.com/photos/phildesignart/5249892922/in/album-72157625368548711/

MDM Provided Solutions

Addigy

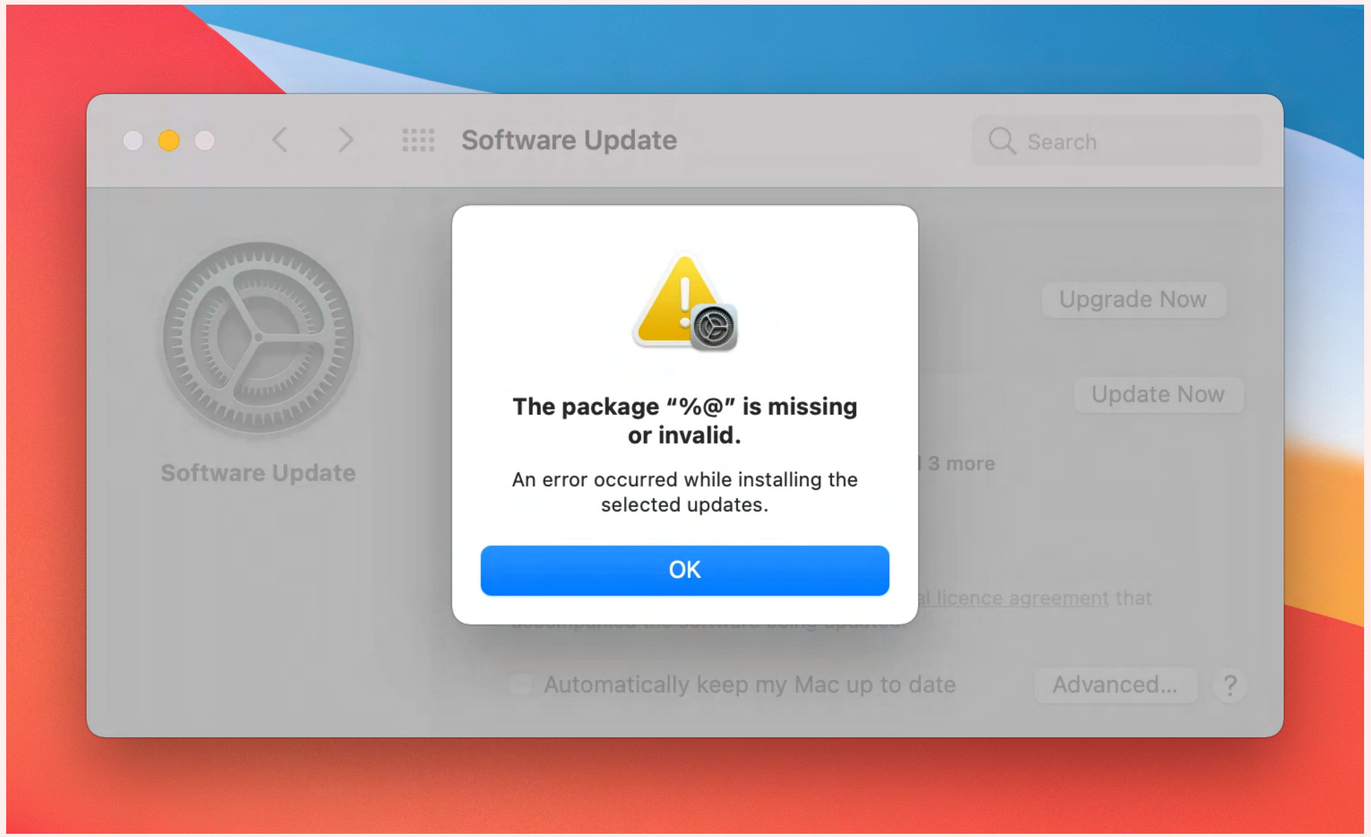
jamf | PRO

mosyle

kandji

What was missing for us?

- Speed of availability for new patches
- End-user experience
- Reliability of installation methods
- Size of app catalog
- Lack of automation



We were frustrated

We were **done** making packages and dealing with the lacking end-user experience when updating software using the methods available with an MDM at the time.

We wanted a tool that:

- Could both install or update the latest version of a software title - **obtained directly from the vendor**.
- Performed comprehensive security validations.
- Ensured a consistent and user-friendly experience.
- Was completely automated.
- Was **easy** to deploy and maintain.

Alectrona Patch Was Born

We built Alectrona Patch to fill our need for a flexible, easy to manage solution that can both install and update third-party macOS apps.

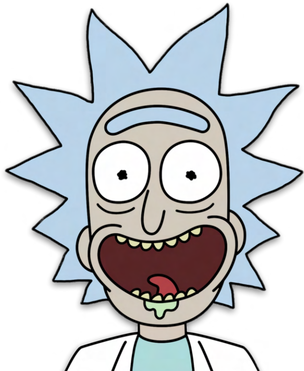
We used Alectrona Patch internally for our MSP customers before releasing the product publicly in 2021.

Alectrona Patch is

Built 💪🏾 Different

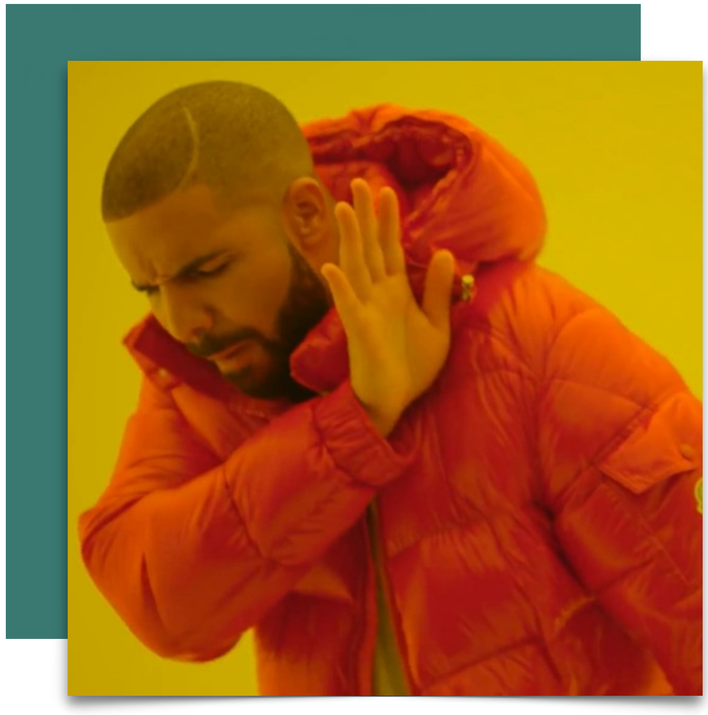
Source: Wikimedia, https://commons.wikimedia.org/wiki/File:Swift_logo.svg

Swift

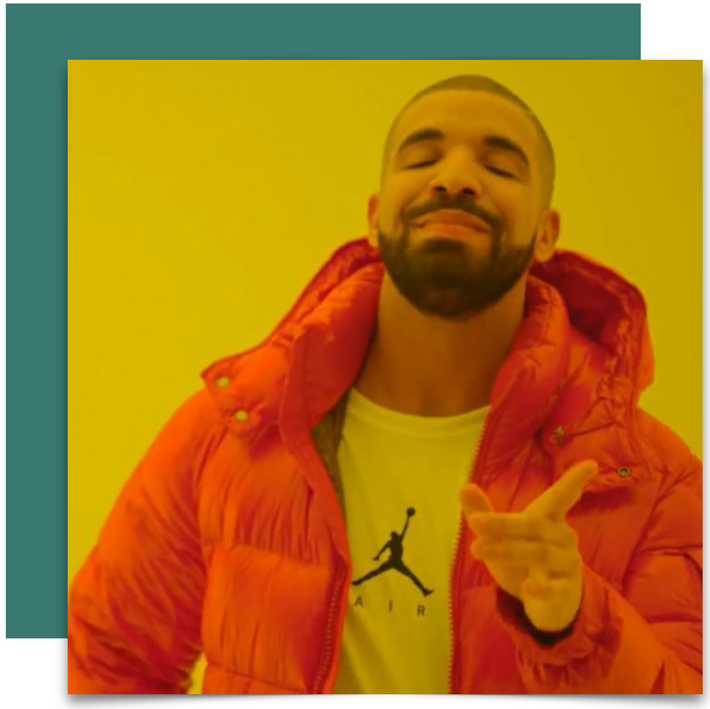


Source: Wikimedia, https://commons.wikimedia.org/wiki/File:Swift_logo.svg

We chose **not** to host packages



We catalog software **metadata**



description

version

code signature

vendor homepage

URL

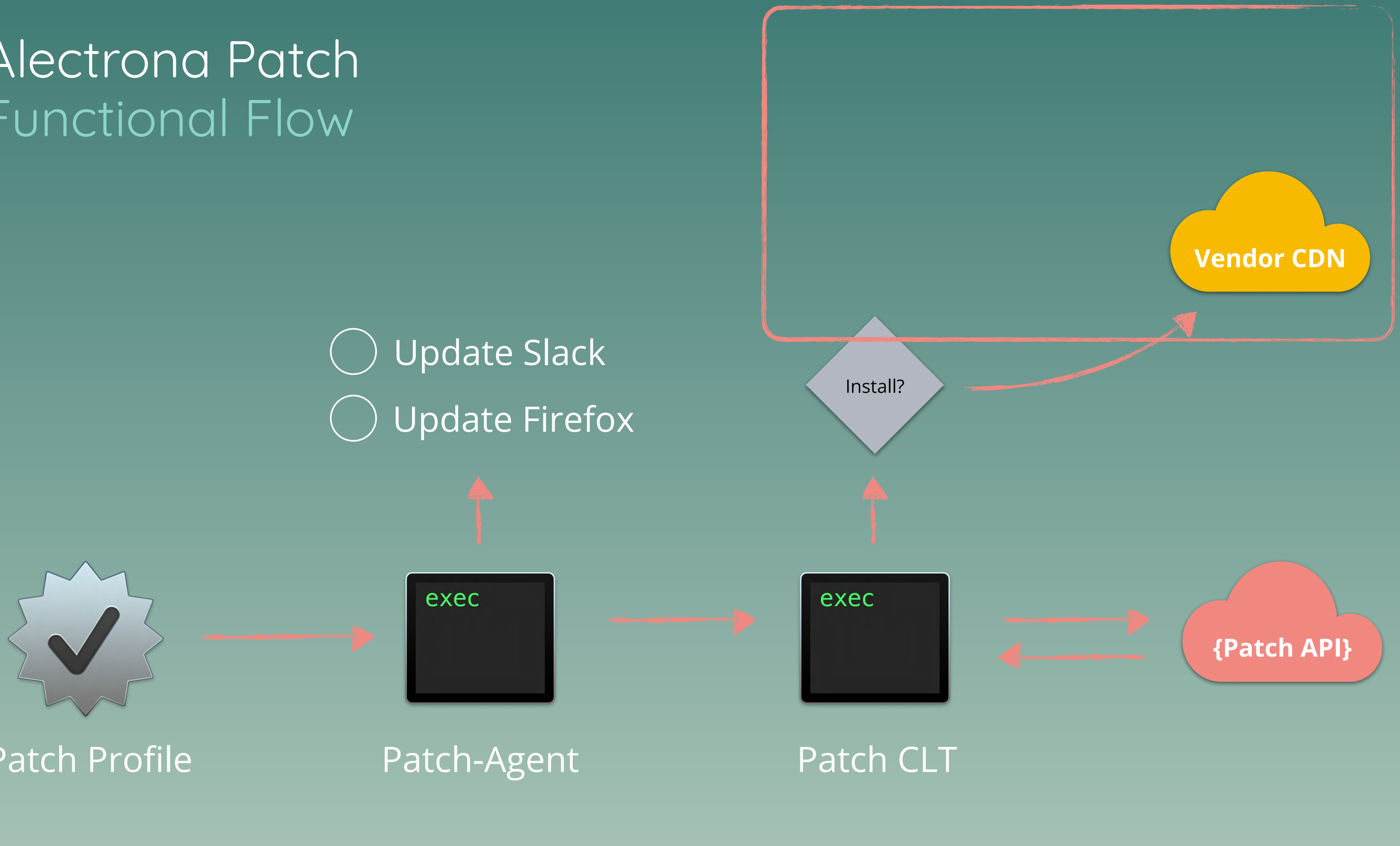
filename

checksum

install directory

icon

Alectrona Patch
Functional Flow



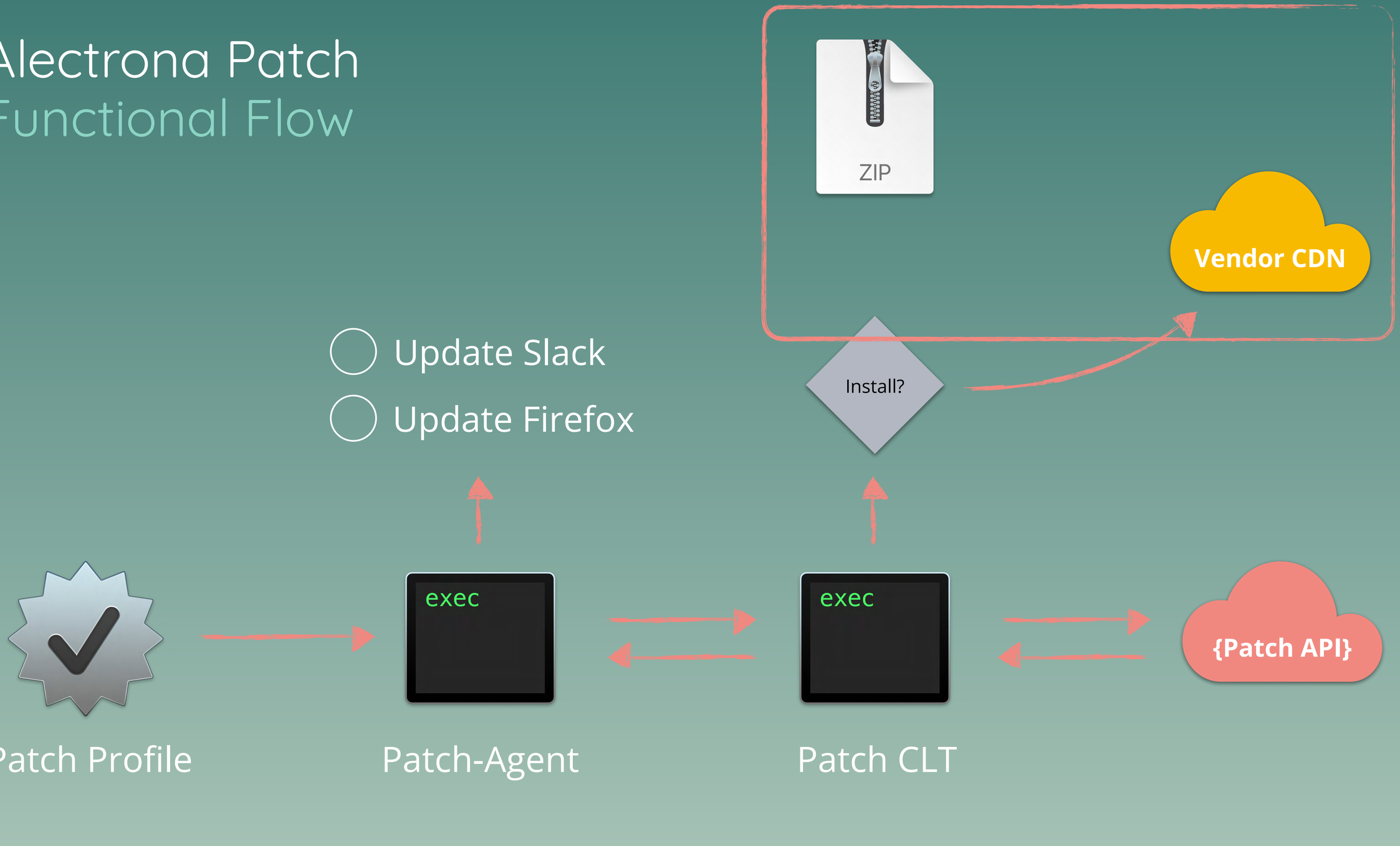
ATS
Vendor CDN

developer.apple.com
Developer
News
Discover
Design
Develop
Distribute
Support
Account
Documentation
Article
Preventing Insecure Network Connections
Enforce secure network links in your app by relying on App Transport Security.
Overview
On Apple platforms, a networking security feature called App Transport Security (ATS) improves privacy and data integrity for all apps and app extensions. It does this by requiring that network connections made by your app are secured by the Transport Layer Security (TLS) protocol using reliable certificates and ciphers. ATS blocks

ATS

Vendor CDN

Alectrona Patch
Functional Flow



Alectrona Patch
Functional Flow

Vendor CDN

Update Slack

Update Firefox

Install?

exec

exec

{Patch API}

Patch Profile

Patch-Agent

Patch CLT

Alectrona Patch
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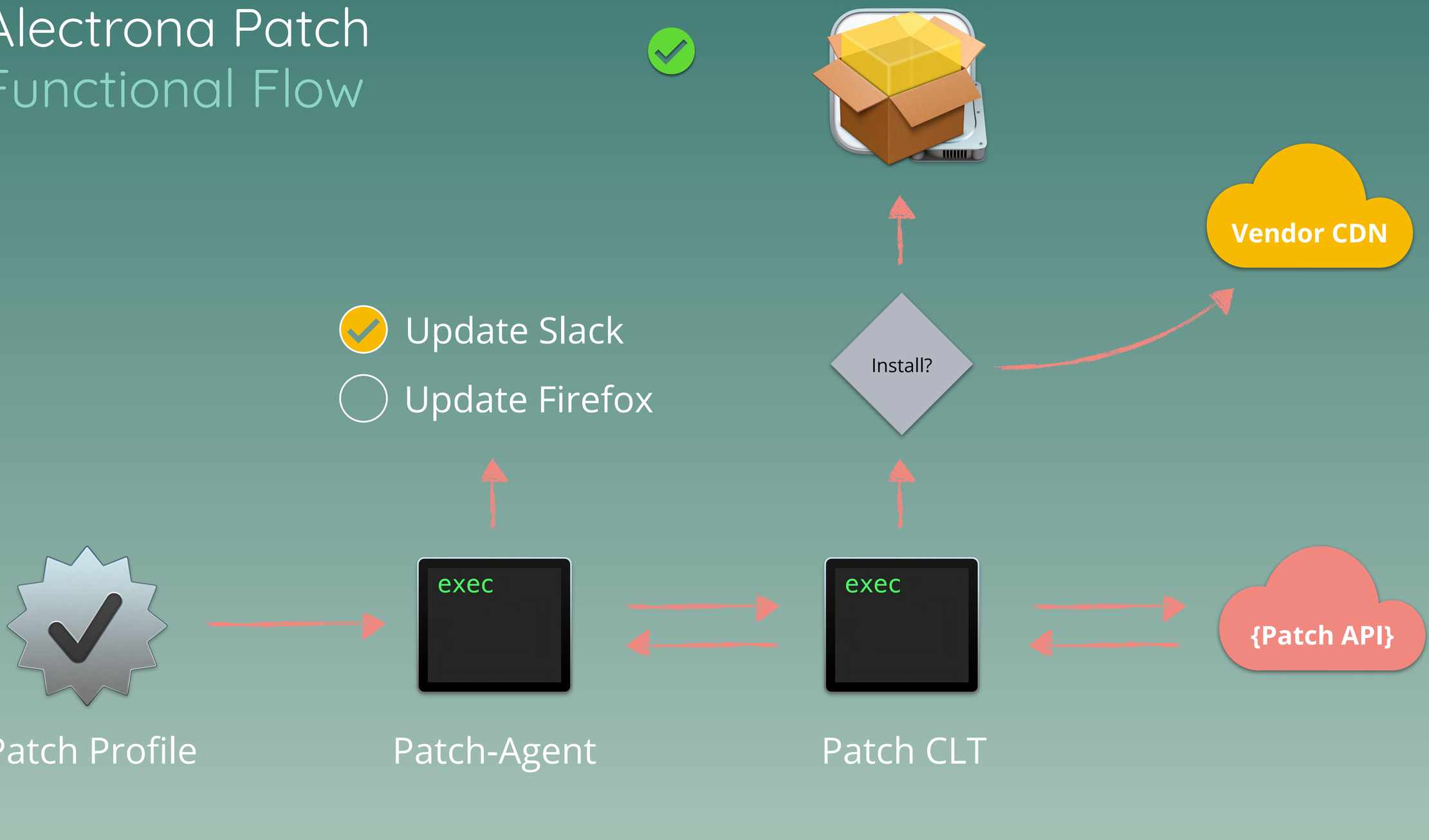
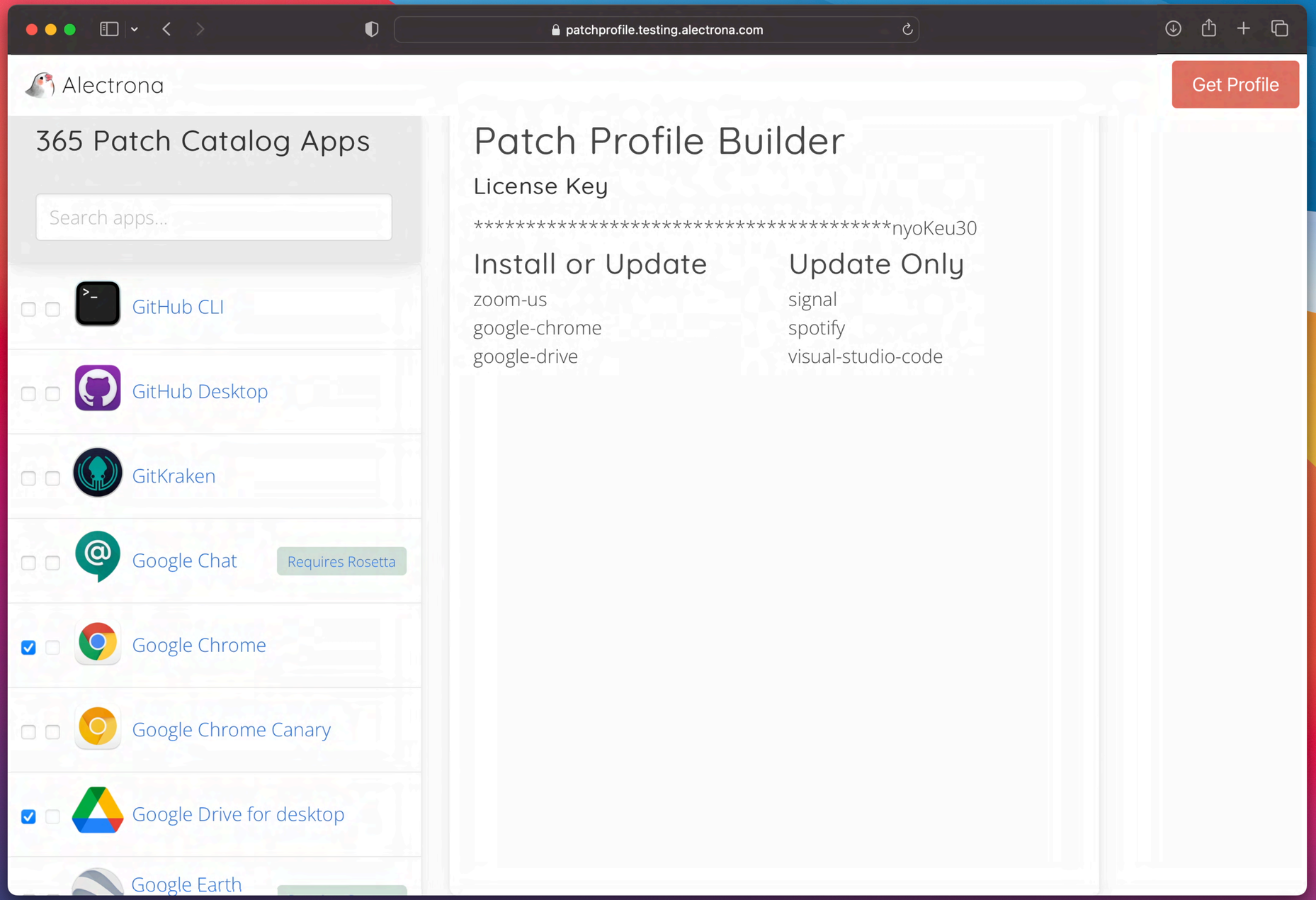
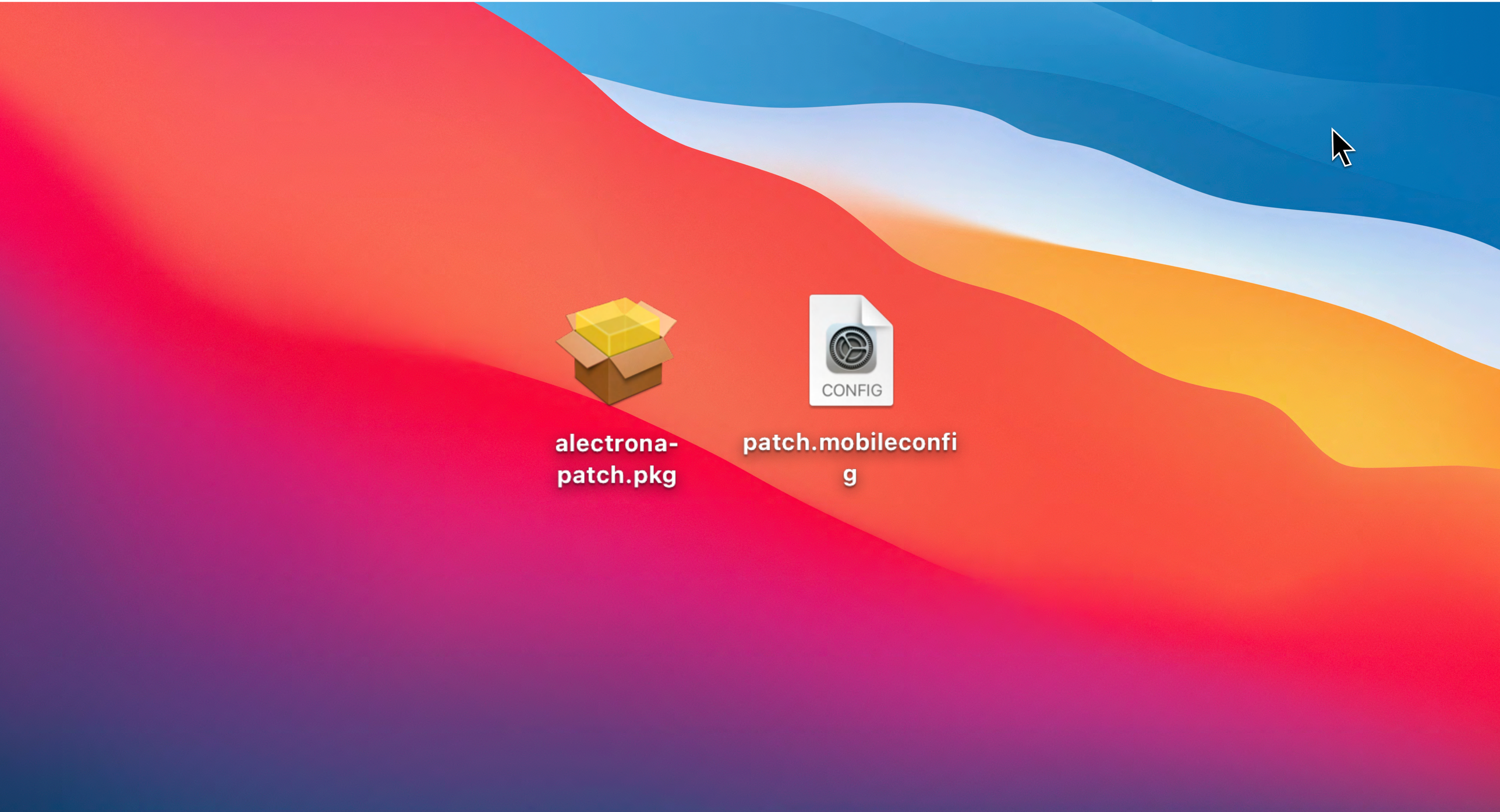
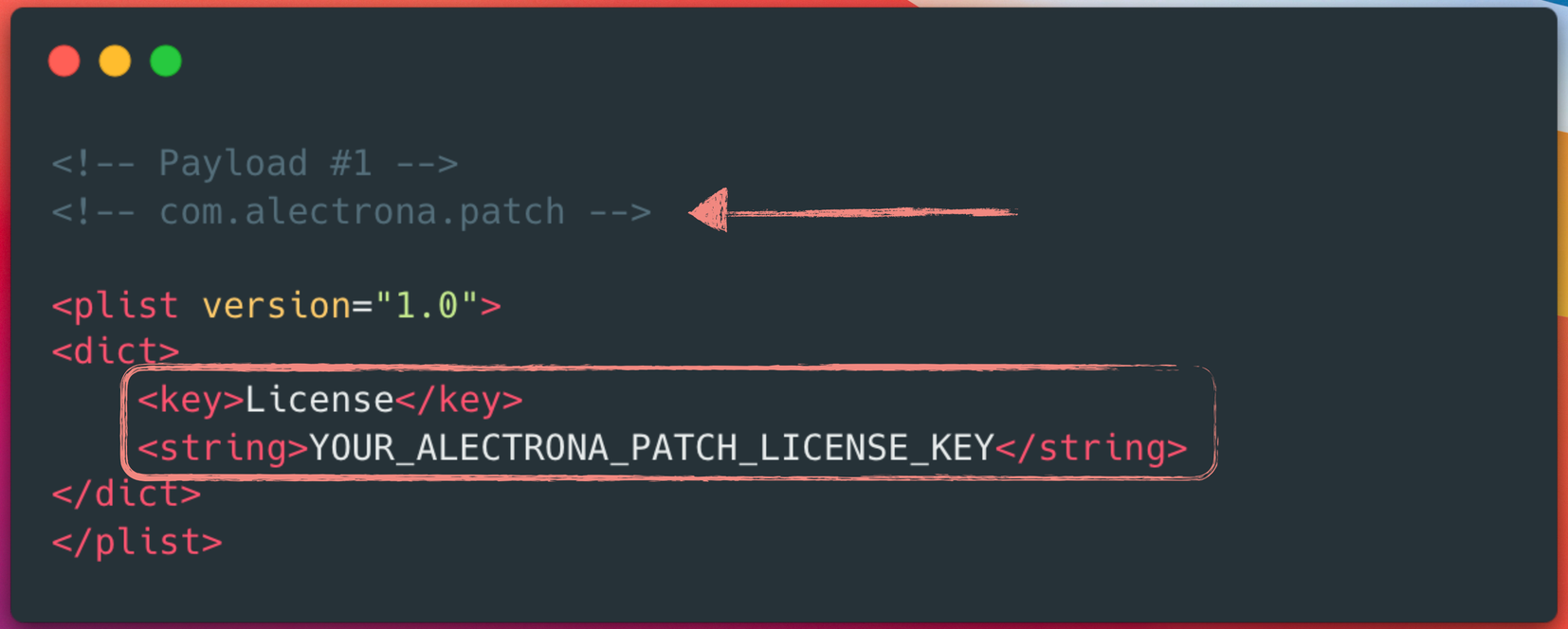


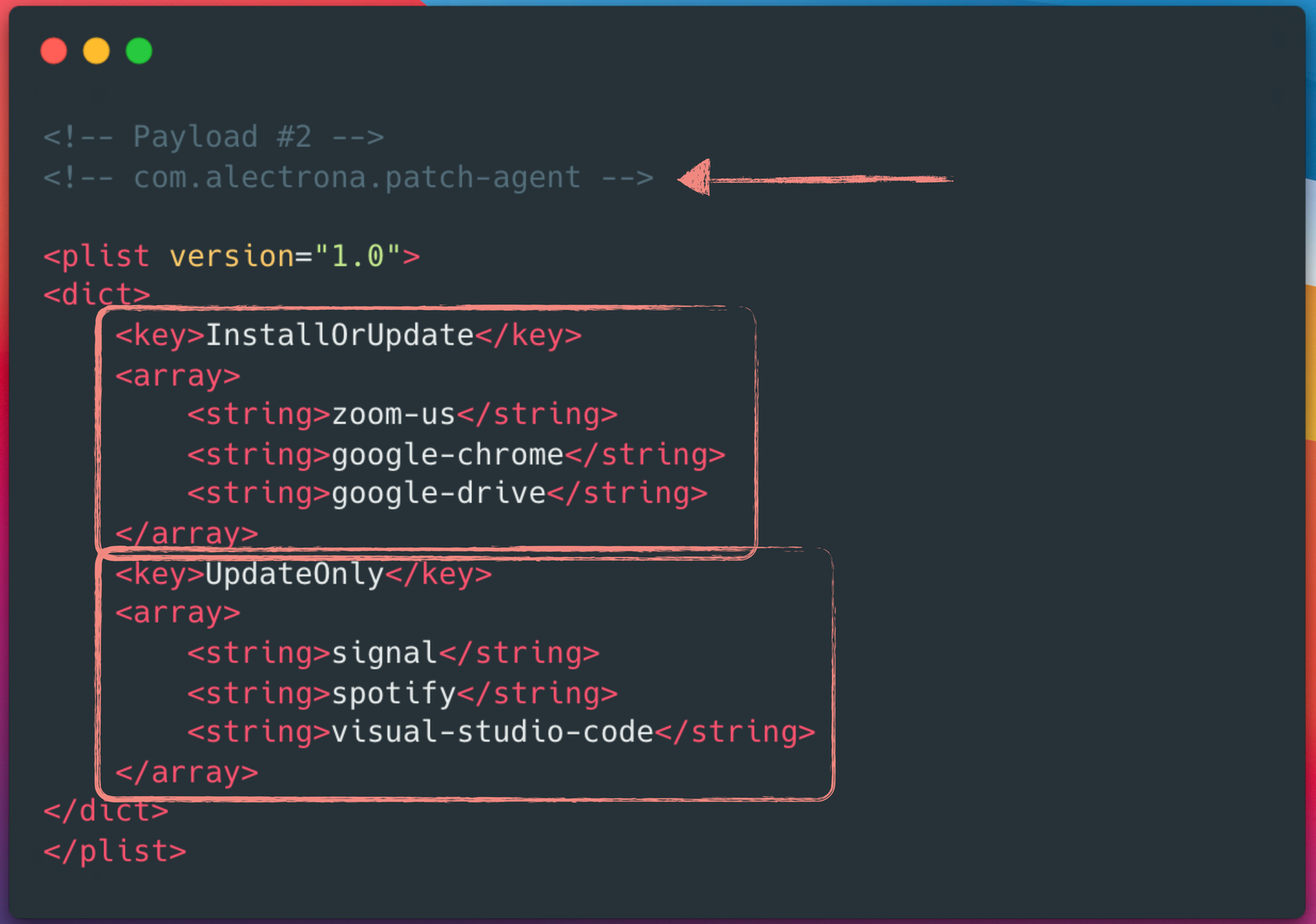
Deploying Alectrona Patch

alectrona-
patch.pkg

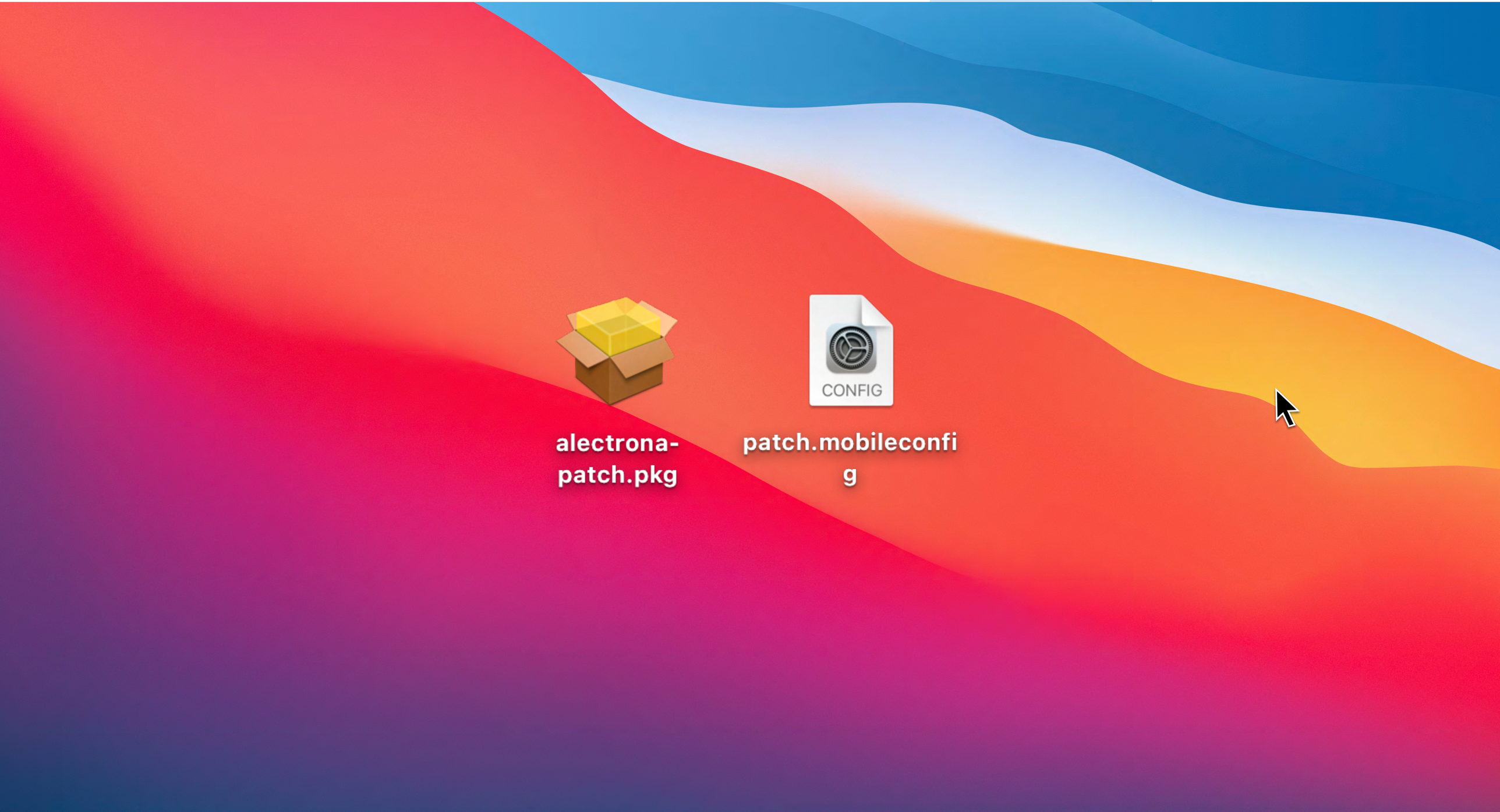

patchprofile.testing.alectrona.com
Alectrona
Get Profile
365 Patch Catalog Apps
Search apps...
GitHub CLI
GitHub Desktop
GitKraken
Google Chat
Requires Rosetta
Google Chrome
Google Chrome Canary
Google Drive for desktop
Google Earth
Patch Profile Builder
License Key
**********nyoKeu30
Install or Update
zoom-us
google-chrome
google-drive
Update Only
signal
spotify
visual-studio-code

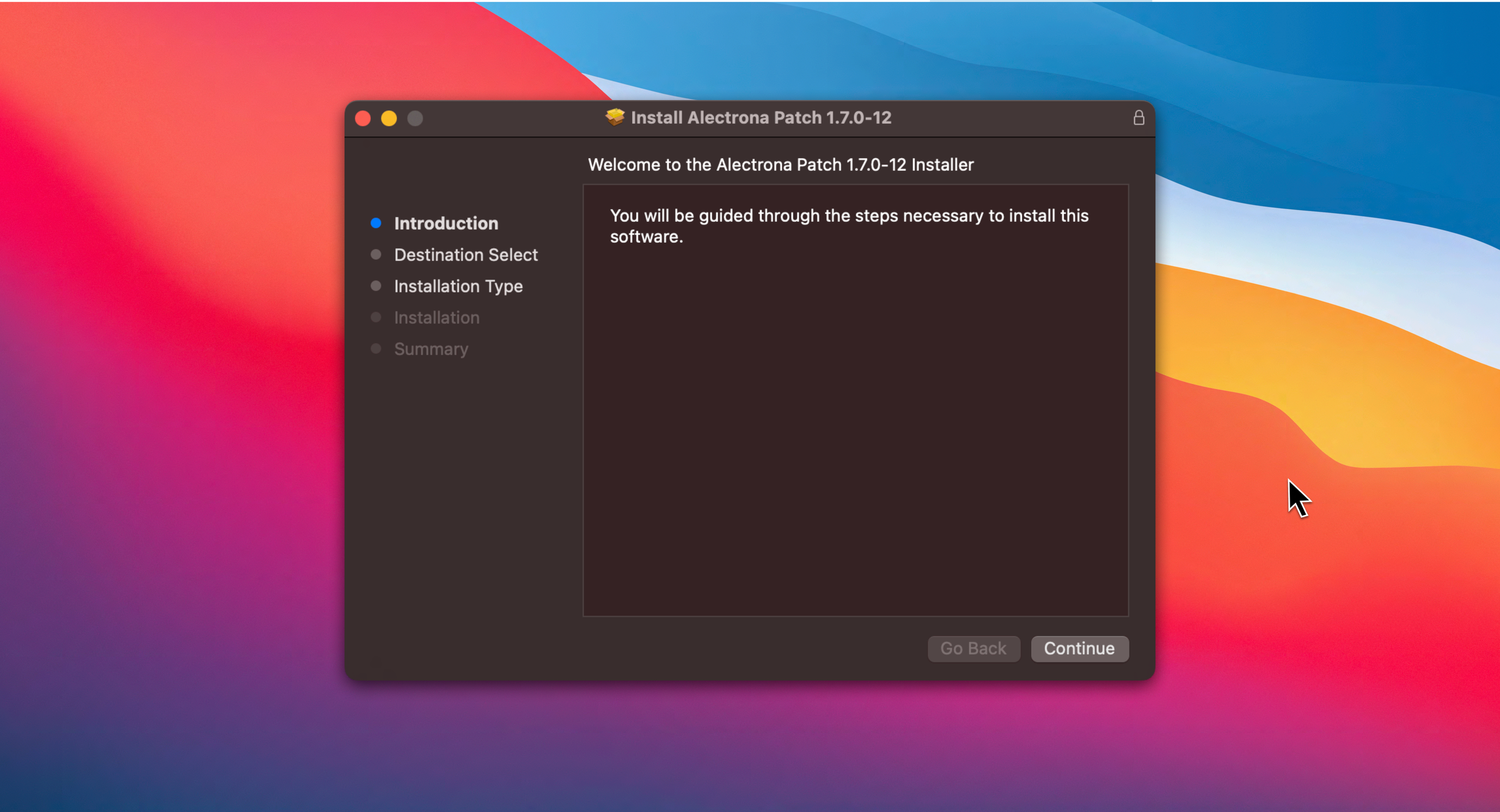

CONFIG
alectrona-patch.pkg
patch.mobileconfig

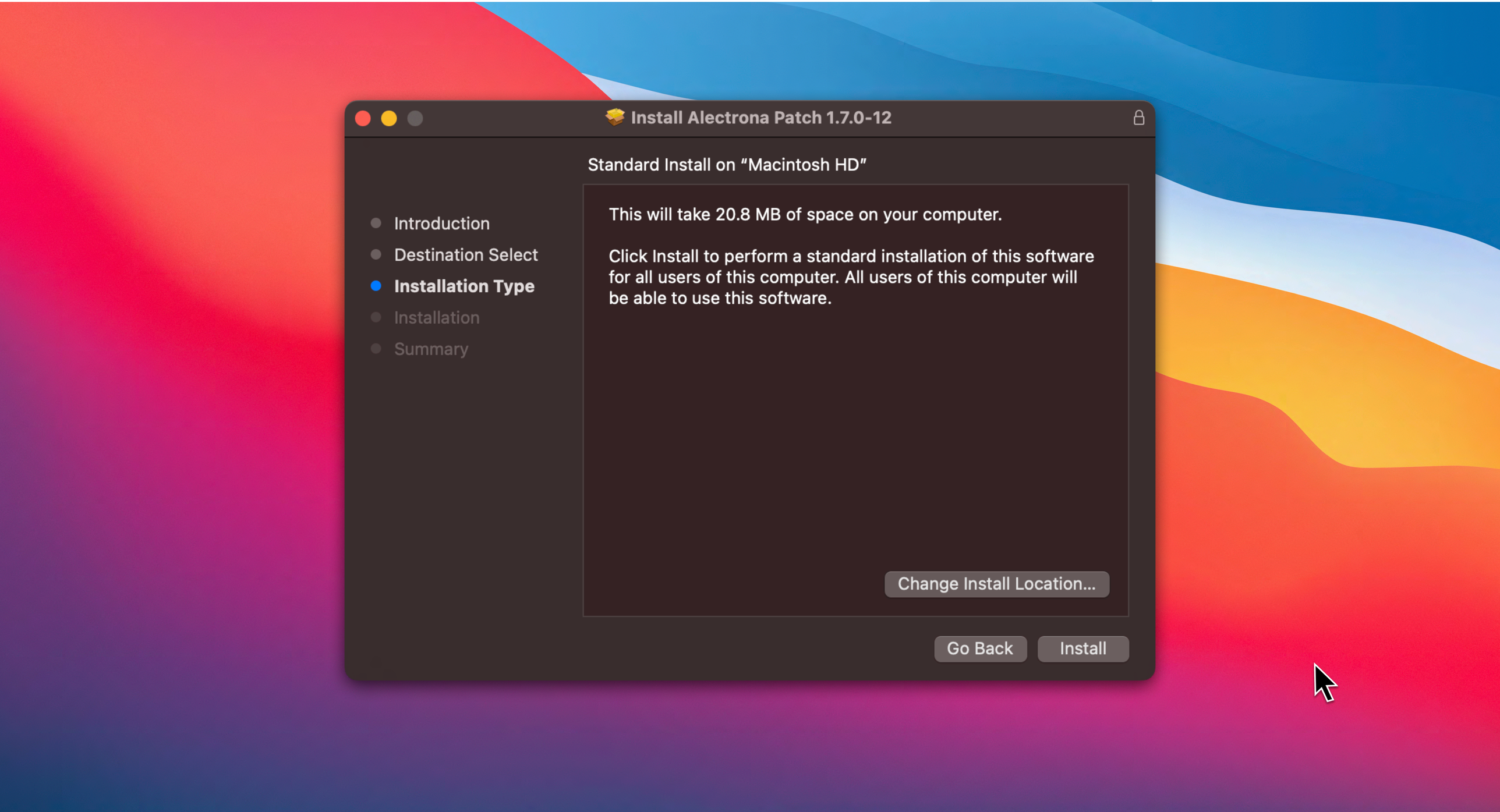

<!-- Payload #1 -->
<!-- com.alectrona.patch -->
<plist version="1.0">
<dict>
<key>License</key>
<string>YOUR_ALECTRONA_PATCH_LICENSE_KEY</string>
</dict>
</plist>

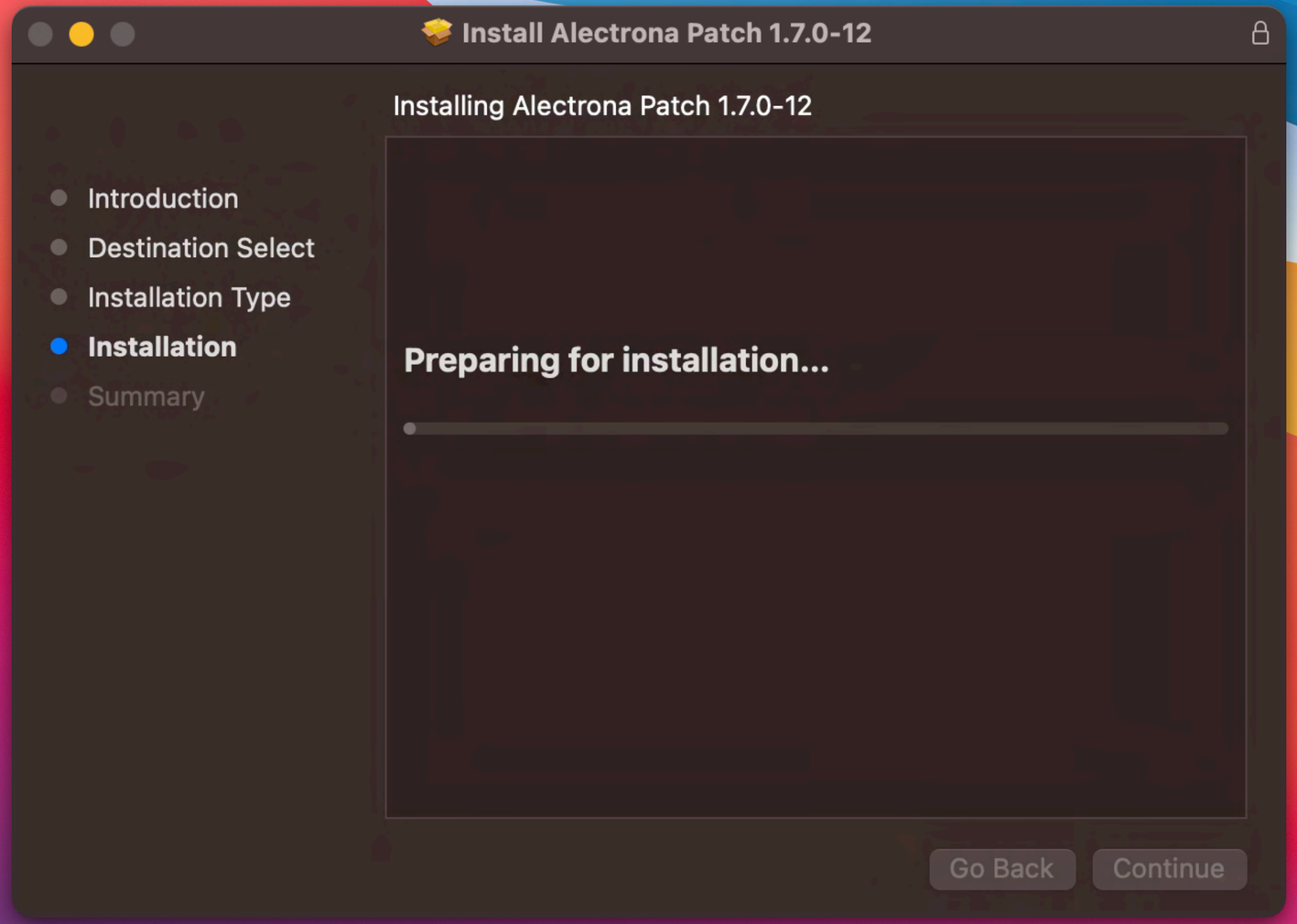


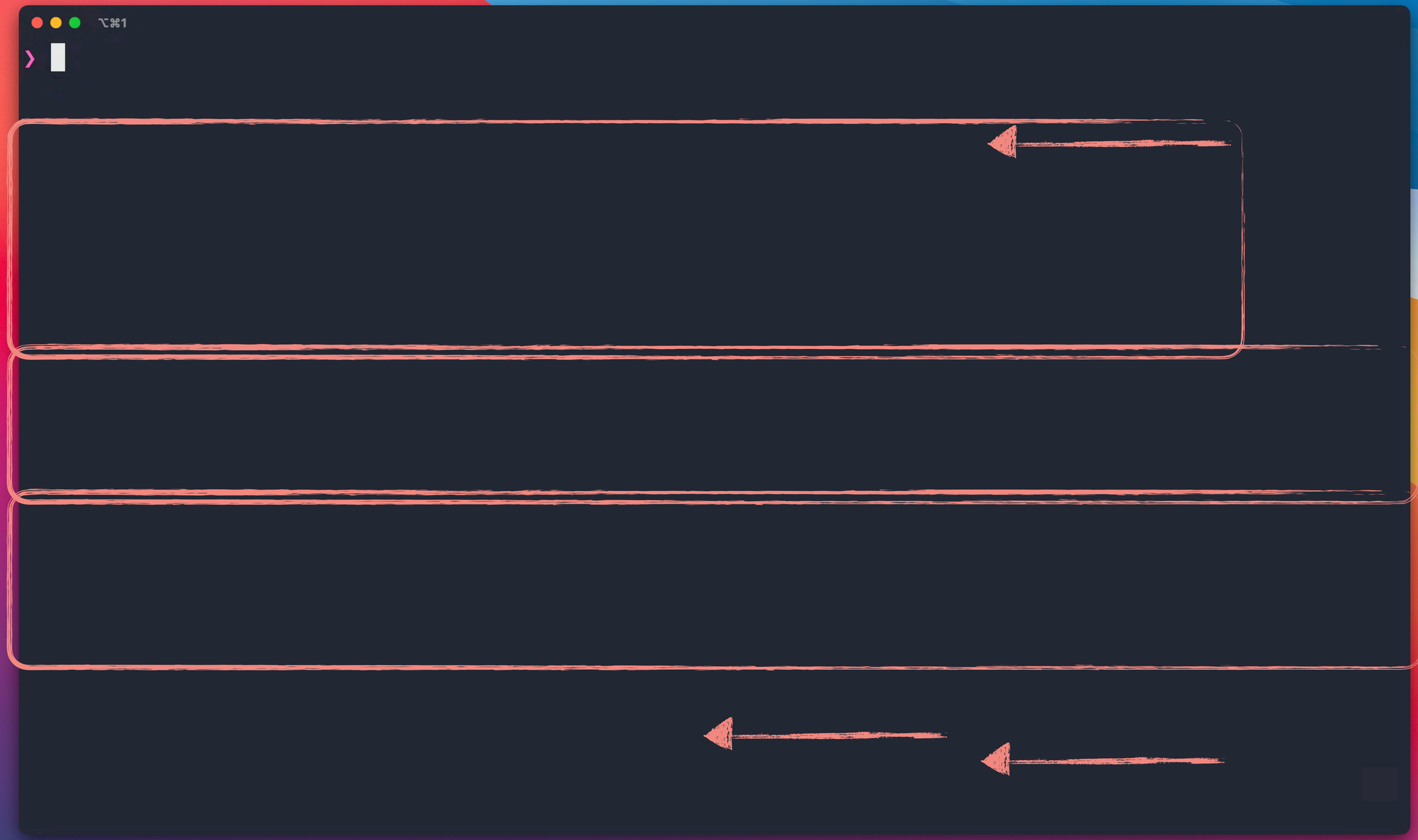
```
<!-- Payload #2 -->
<!-- com.alectrona.patch-agent -->

<plist version="1.0">
<dict>
    <key>InstallOrUpdate</key>
    <array>
        <string>zoom-us</string>
        <string>google-chrome</string>
        <string>google-drive</string>
    </array>
    <key>UpdateOnly</key>
    <array>
        <string>signal</string>
        <string>spotify</string>
        <string>visual-studio-code</string>
    </array>
</dict>
</plist>
```

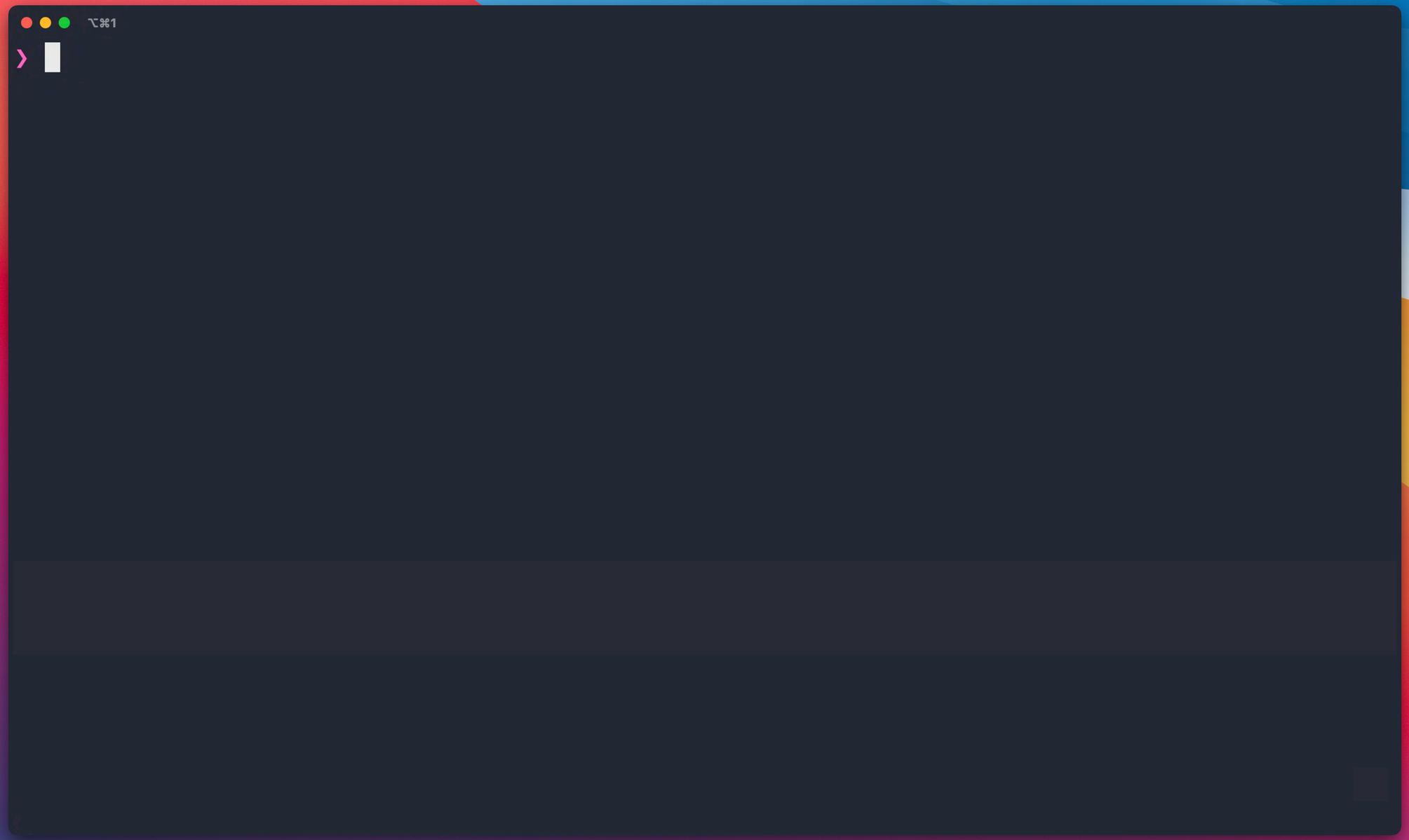

alectrona-patch.pkg
CONFIG
patch.mobileconfig

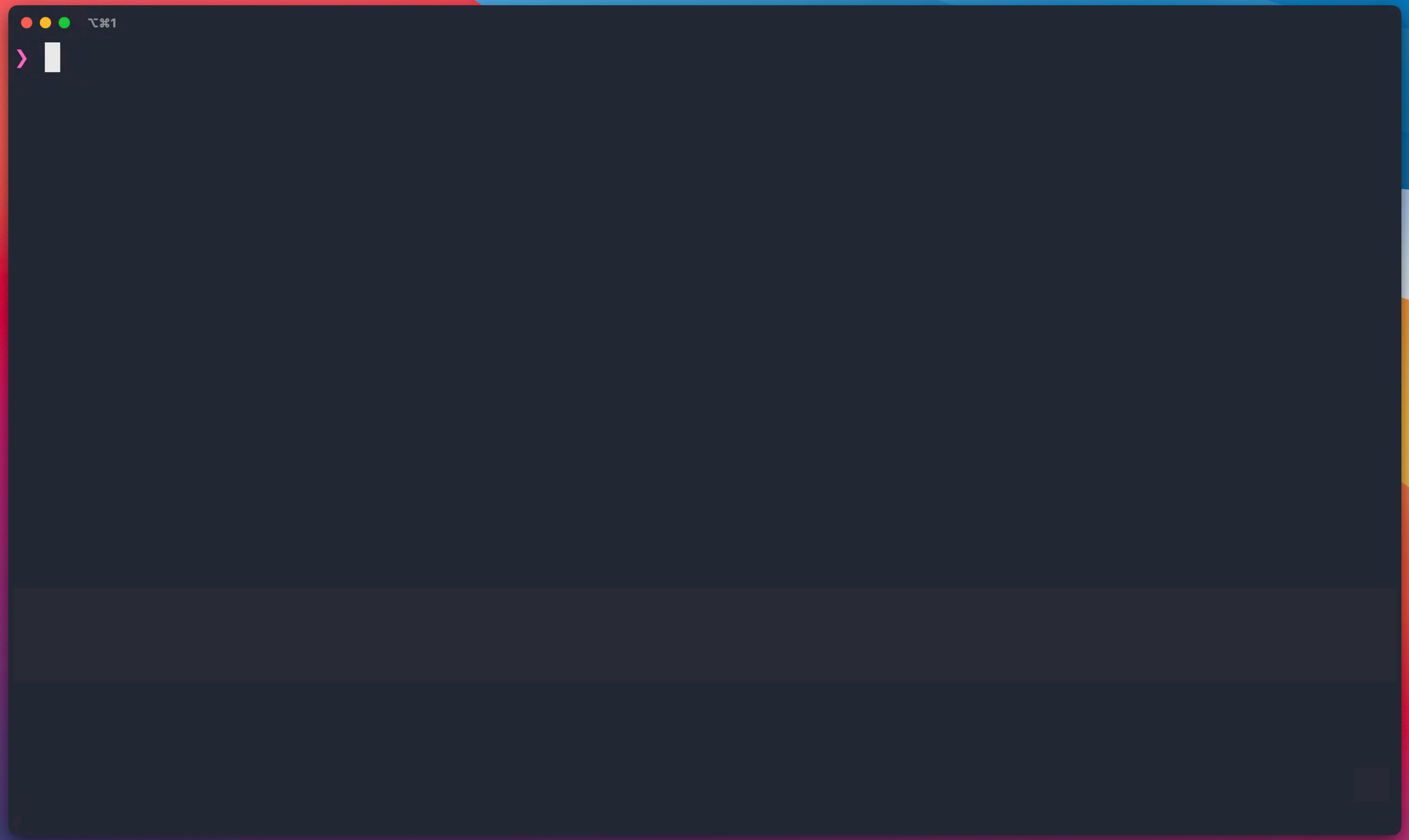

Install Alectrona Patch 1.7.0-12
Welcome to the Alectrona Patch 1.7.0-12 Installer
Introduction
Destination Select
Installation Type
Installation
Summary
You will be guided through the steps necessary to install this software.
Go Back
Continue


Install Alectrona Patch 1.7.0-12
Standard Install on “Macintosh HD”
Introduction
Destination Select
Installation Type
Installation
Summary
This will take 20.8 MB of space on your computer.
Click Install to perform a standard installation of this software for all users of this computer. All users of this computer will be able to use this software.
Change Install Location...
Go Back
Install


Install Alectrona Patch 1.7.0-12
Installing Alectrona Patch 1.7.0-12
Introduction
Destination Select
Installation Type
Installation
Summary
Preparing for installation...
Go Back
Continue


⌥⌘1


⌥⌘1
❯


⌥⌘1
❯

⌥⌘1
❯ sudo patch install github-cli jq terraform

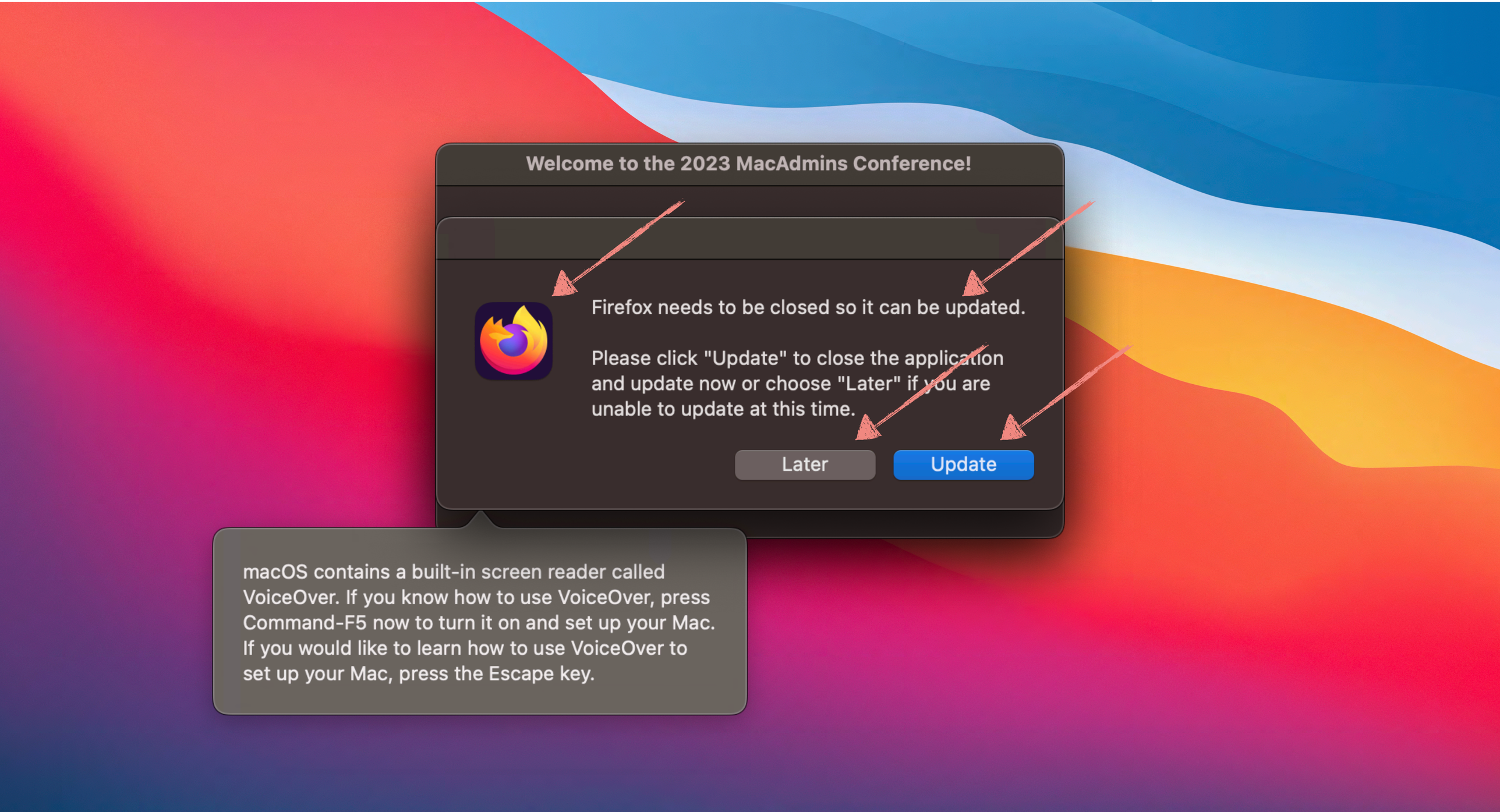
Owning the User Experience

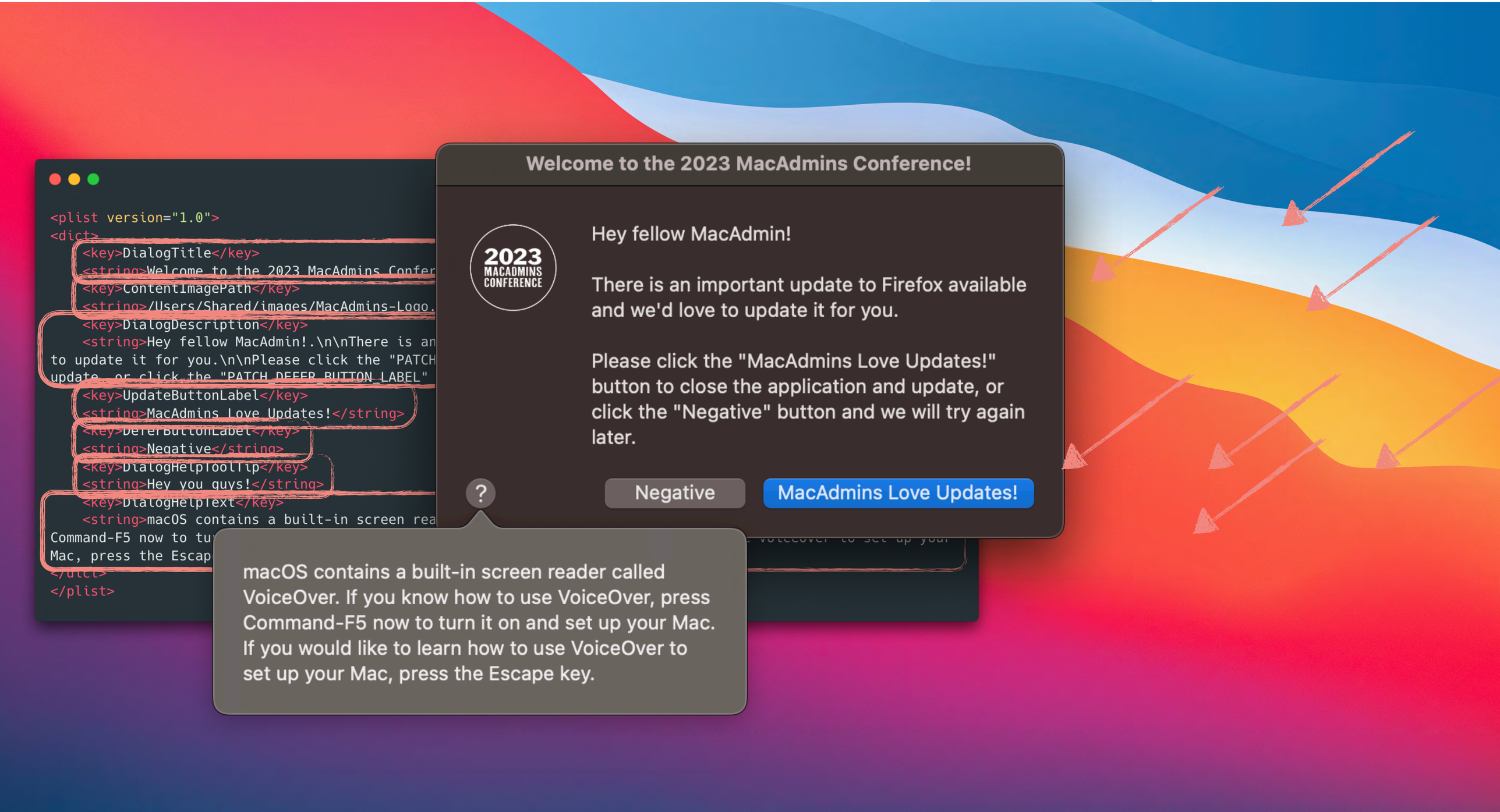
With Alectrona Patch

Owning the User Experience

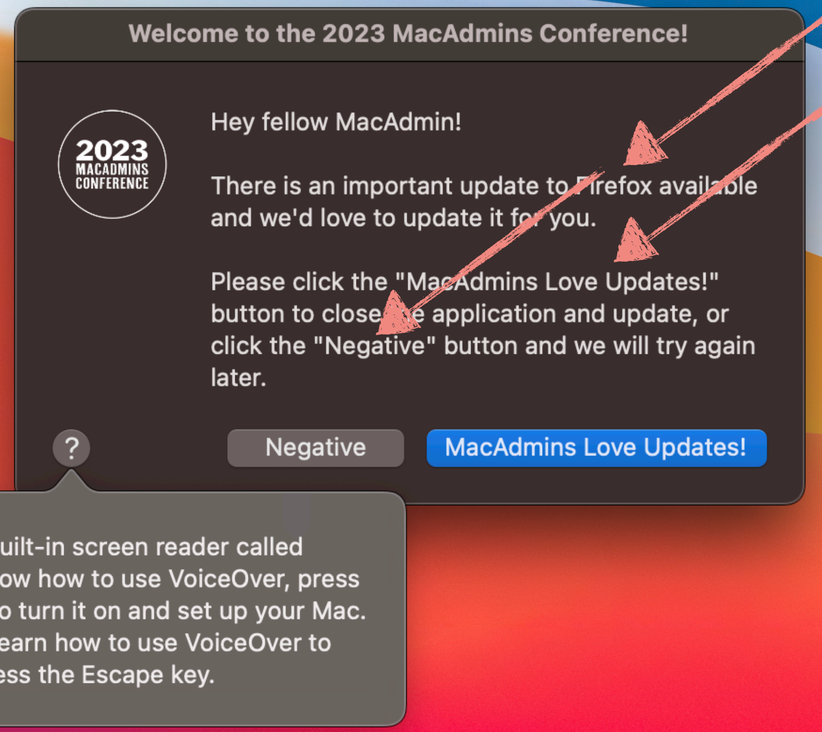
With Alectrona Patch

- Users are notified with when an open app has an available update
- The update dialog can be customized for your organization
- Include your own logo rather than the default app icon
- Custom descriptions, button labels, dialog timeouts and more
- The update dialog is customized with a profile


Welcome to the 2023 MacAdmins Conference!
Firefox needs to be closed so it can be updated.
Please click "Update" to close the application and update now or choose "Later" if you are unable to update at this time.
Later
Update
macOS contains a built-in screen reader called VoiceOver. If you know how to use VoiceOver, press Command-F5 now to turn it on and set up your Mac. If you would like to learn how to use VoiceOver to set up your Mac, press the Escape key.


<plist version="1.0">
<dict>
<key>DialogTitle</key>
<key>Content1ImagePath</key>
<key>DialogDescription</key>
<string>Hey fellow MacAdmin!.\n\nThere is an
to update it for you.\n\nPlease click the "PATCH
<key>UpdateButtonLabel</key>
<string>MacAdmins Love Updates!</string>
<string>Negative</string>
<key>DialogHelpTooltip</key>
<string>Hey you guys!</string>
<key>DialogHelpText</key>
<string>macOS contains a built-in screen rea
Command-F5 now to tu
Mac, press the Escap
</dict>
</plist>
Welcome to the 2023 MacAdmins Conference!
2023 MACADMINS CONFERENCE
Hey fellow MacAdmin!
There is an important update to Firefox available and we'd love to update it for you.
Please click the "MacAdmins Love Updates!" button to close the application and update, or click the "Negative" button and we will try again later.
?
Negative
MacAdmins Love Updates!
macOS contains a built-in screen reader called VoiceOver. If you know how to use VoiceOver, press Command-F5 now to turn it on and set up your Mac. If you would like to learn how to use VoiceOver to set up your Mac, press the Escape key.

```swift
// MARK: The variables that can be included in a profile for custom branding
// the Alectrona Patch Update Dialog

// Swift pseudocode

enum PatchUpdateDialogVariables: String {
    case PATCH_FRIENDLY_NAME = "Friendly name of the app"
    case PATCH_TARGET_VERSION = "Target version of the app"
    case PATCH_INSTALLED_VERSION = "Installed version of the app"
    case PATCH_UPDATE_BUTTON_LABEL = "The Update Button label"
    case PATCH_DEFER_BUTTON_LABEL = "The Defer Button label"
    case PATCH_DEFERRAL_COUNT = "Current number of deferrals for the app"
    case PATCH_DEFERRAL_LIMIT = "Deferral limit for the app"
    case PATCH_DEFERRALS_UNTIL_LIMIT = "Number of deferrals until the limit is reached"
    case PATCH_FINAL_DIALOG_TIMEOUT = "Timeout of the final update dialog in seconds"
    case \n = "New line"
    case \t = "Tab"
}
```



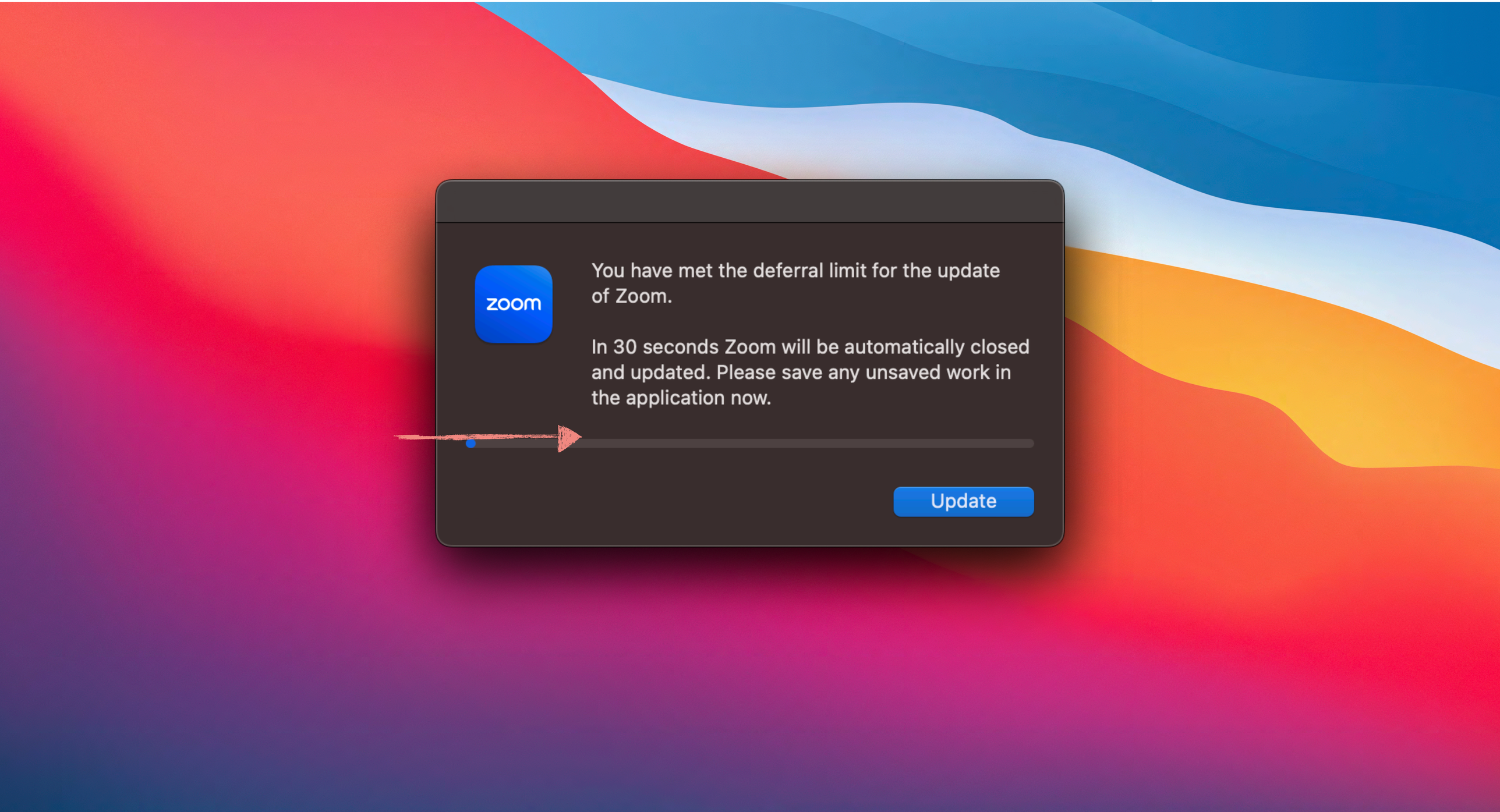
Enforcing Updates

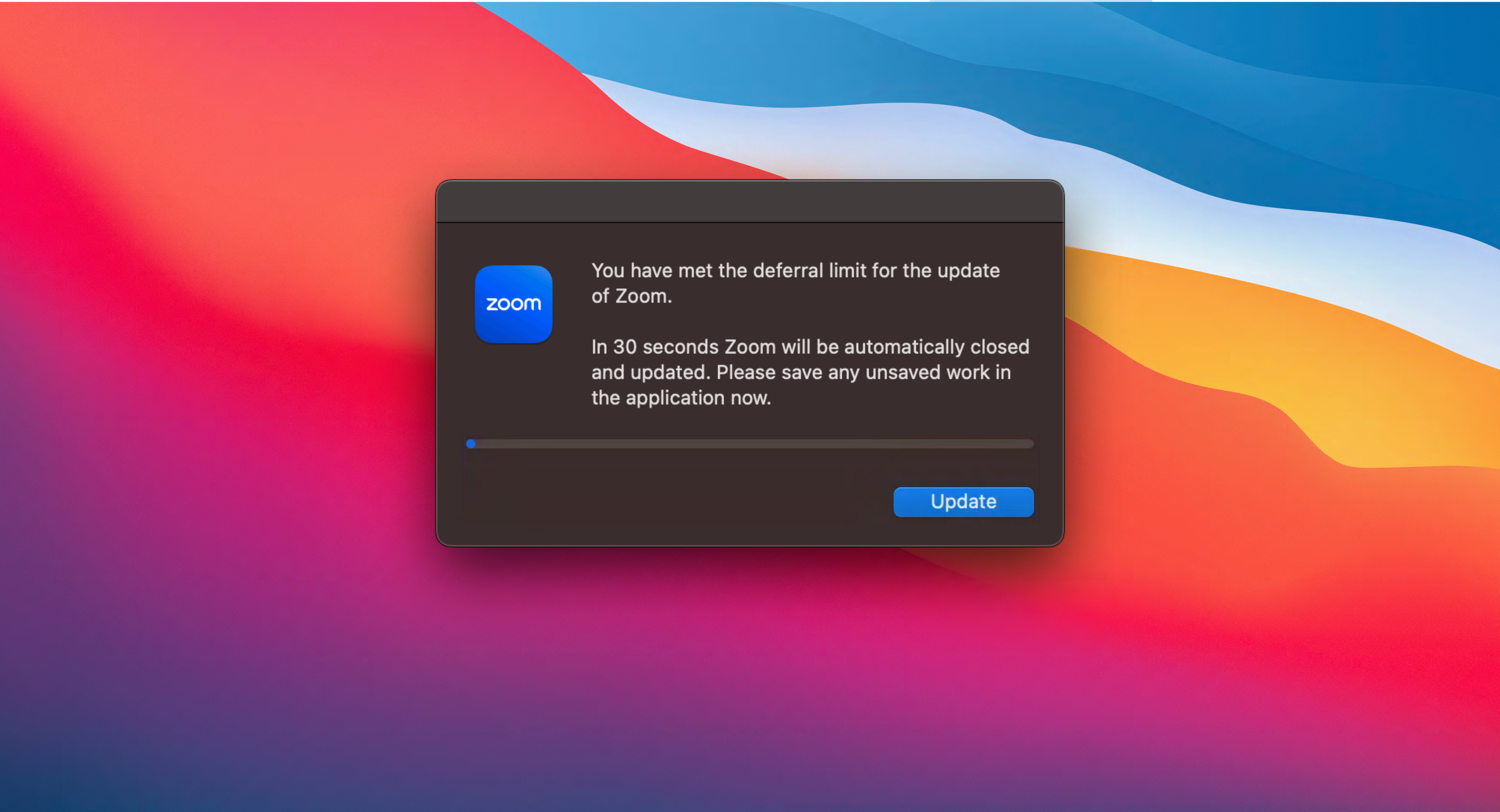
With Alectrona Patch

Enforcing Updates

With Alectrona Patch

- The Mac Admin can specify how many deferrals are available when updating
- A forced update occurs when a Deferral Limit is reached
- Deferral Limits can be set for all software titles or a subset of titles
- Deferral Limits are tracked on a per-user basis
- Configured with a profile


zoom
You have met the deferral limit for the update of Zoom.
In 30 seconds Zoom will be automatically closed and updated. Please save any unsaved work in the application now.
Update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In 30 seconds Zoom will be automatically closed and updated. Please save any unsaved work in the application now.
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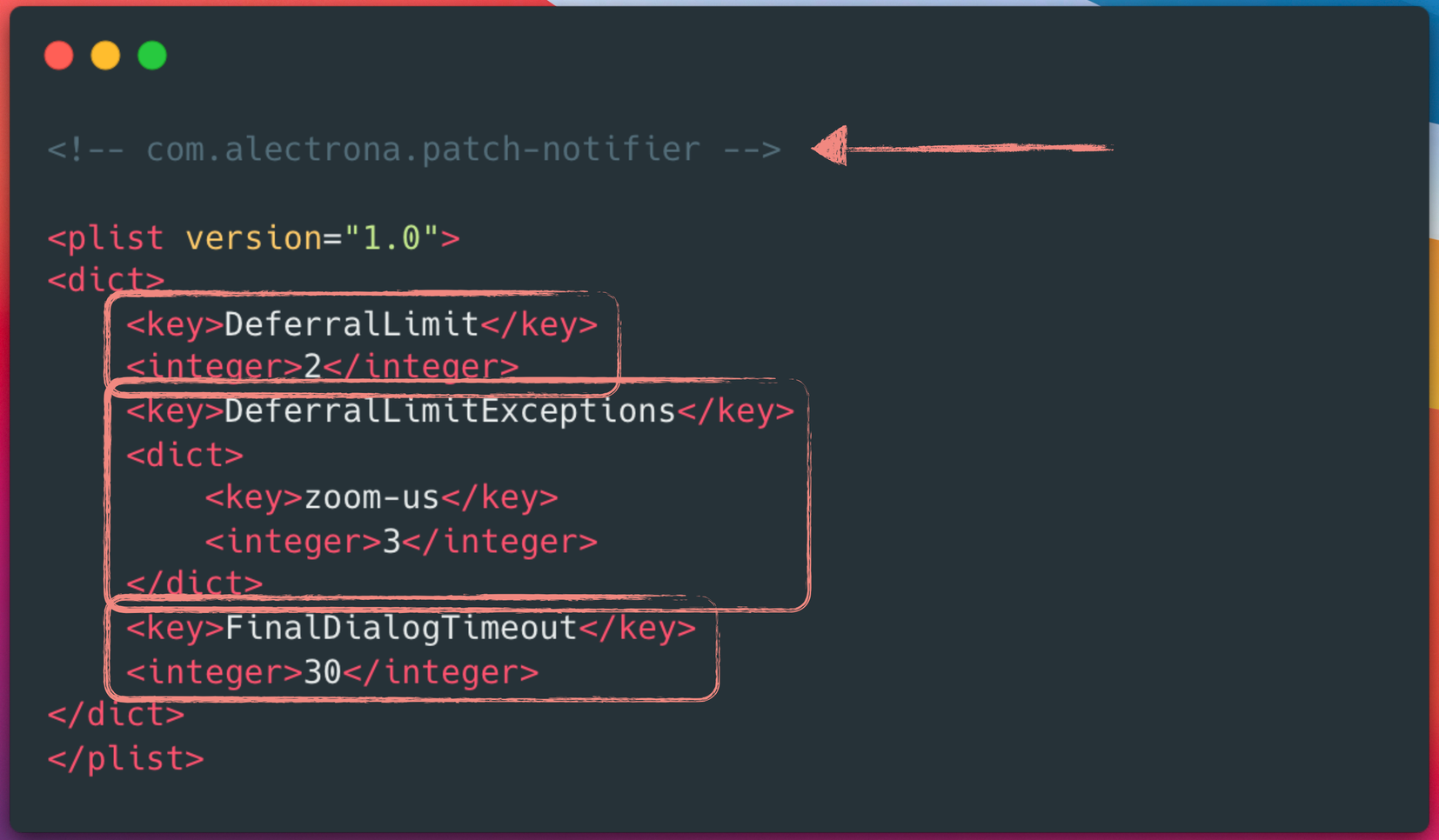


```
<!-- com.alectrona.patch-notifier -->

<plist version="1.0">
<dict>
    <key>DeferralLimit</key>
    <integer>2</integer>
    <key>DeferralLimitExceptions</key>
    <dict>
        <key>zoom-us</key>
        <integer>3</integer>
    </dict>
    <key>FinalDialogTimeout</key>
    <integer>30</integer>
</dict>
</plist>
```

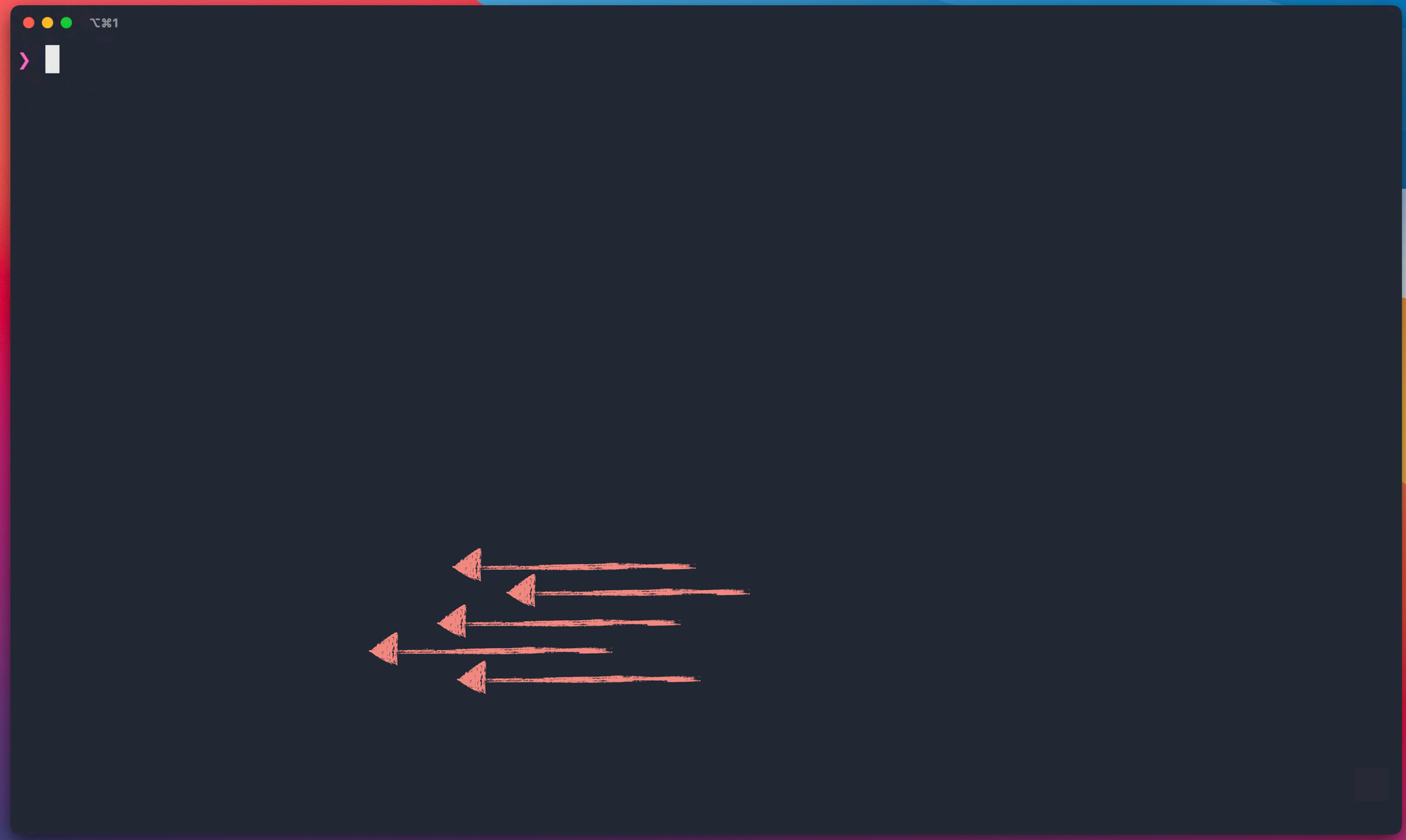
Reporting

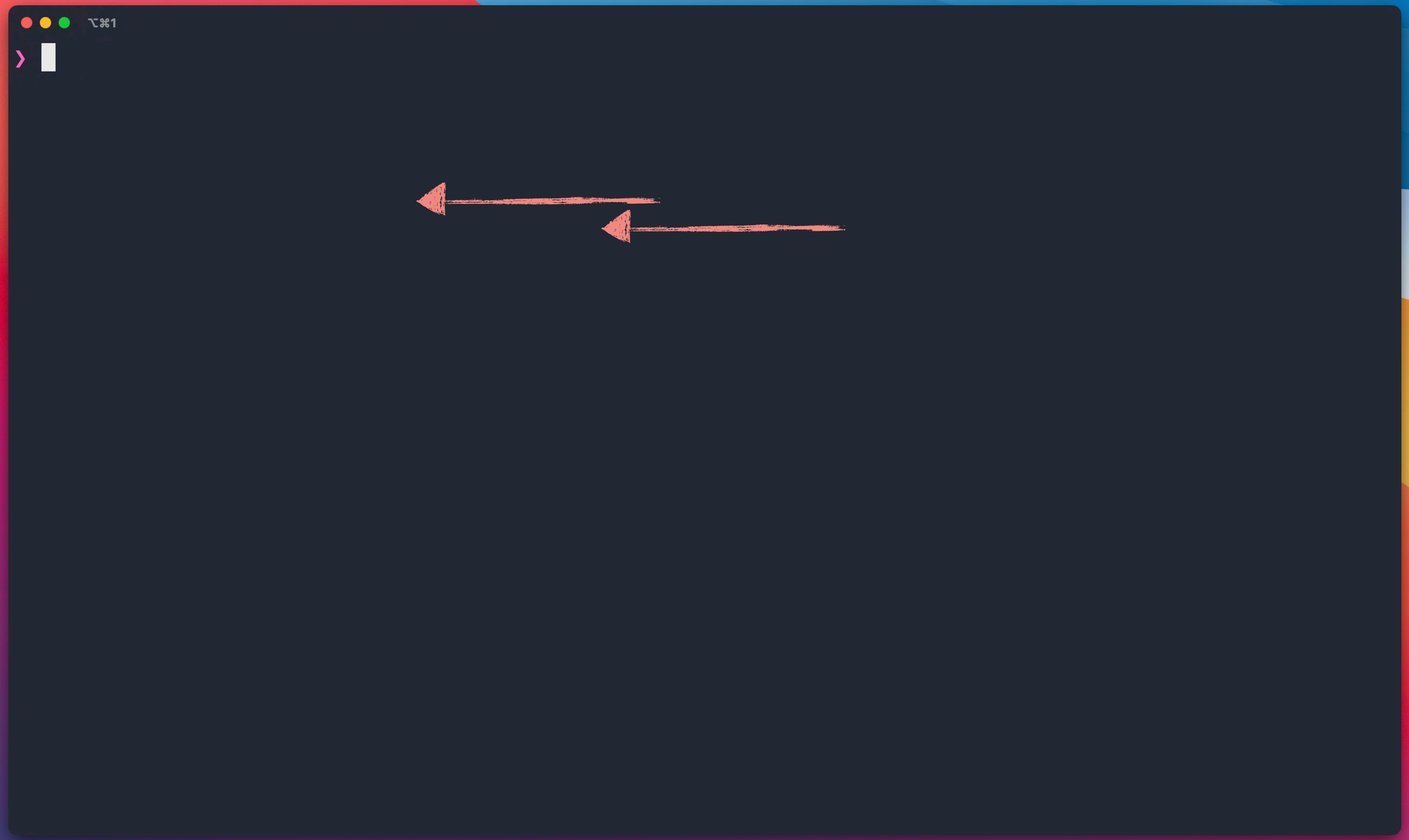
With Alectrona Patch

Reporting

With Alectrona Patch

- Generate a JSON report of installed apps on a Mac that are in the Patch Catalog
- Limit the report to include only updatable (out-of-date) apps
- Limit the report to include only apps managed by Alectrona Patch
- Data your SecOps team would love to get their hands on 🥰
- **Make better decisions** about the apps you configure Alectrona Patch to manage


⌥⌘1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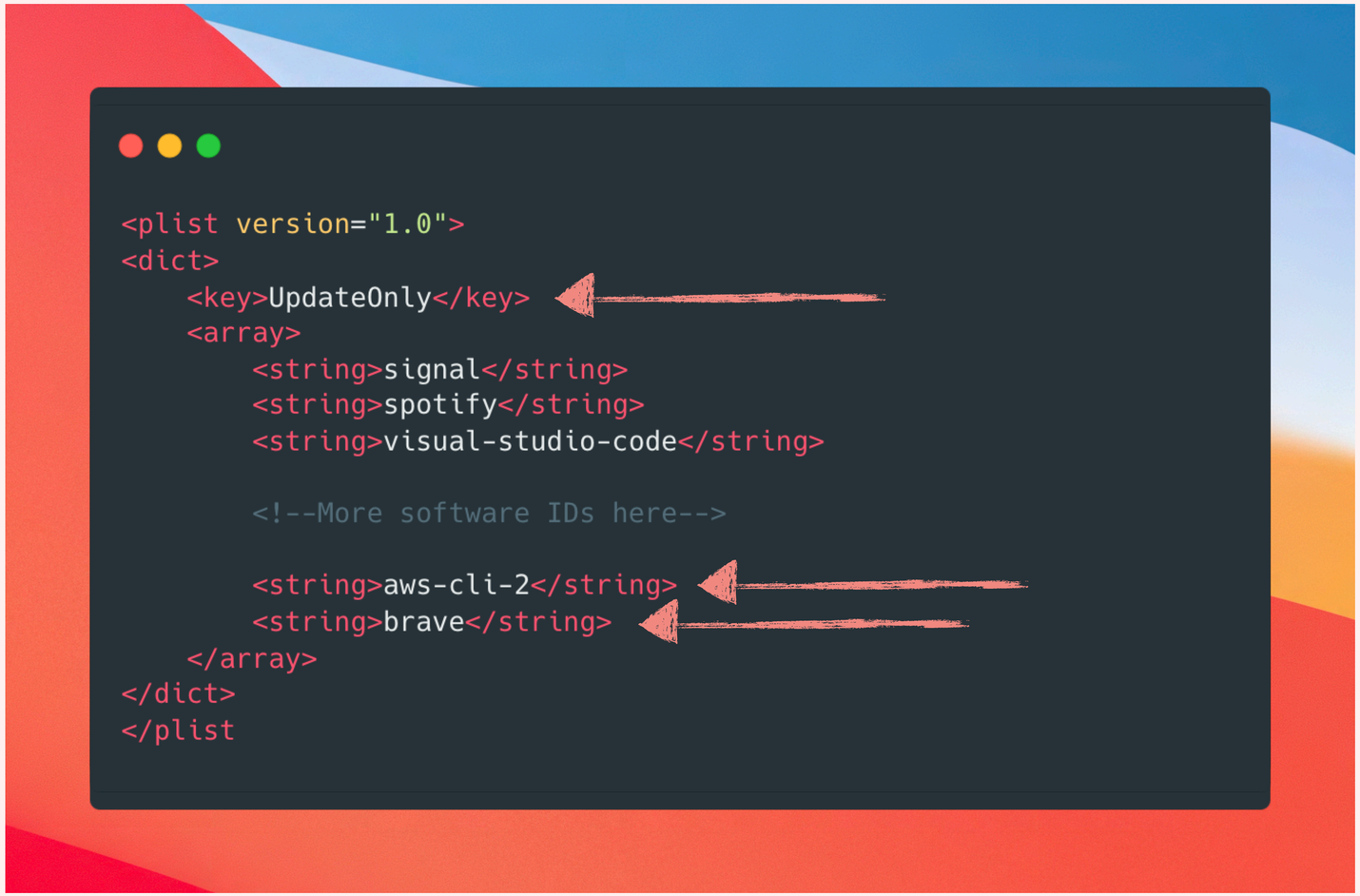


Jamf Pro Extension Attribute

Use the report subcommand in a Jamf Pro Extension Attribute.

Easily identify apps you should manage with Alectrona Patch.

Introducing a New Unreleased Feature

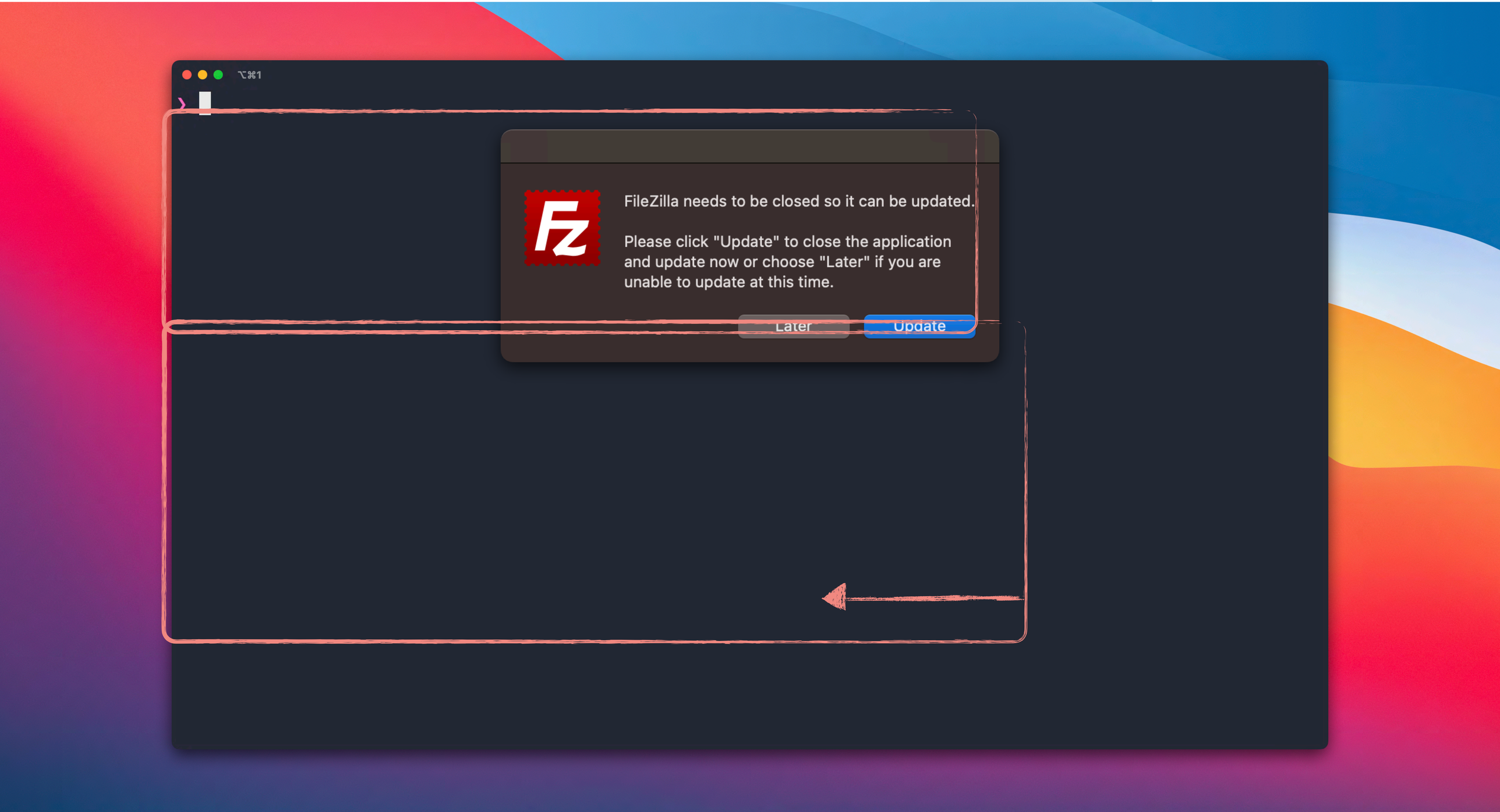
Update All

With Alectrona Patch

Update All

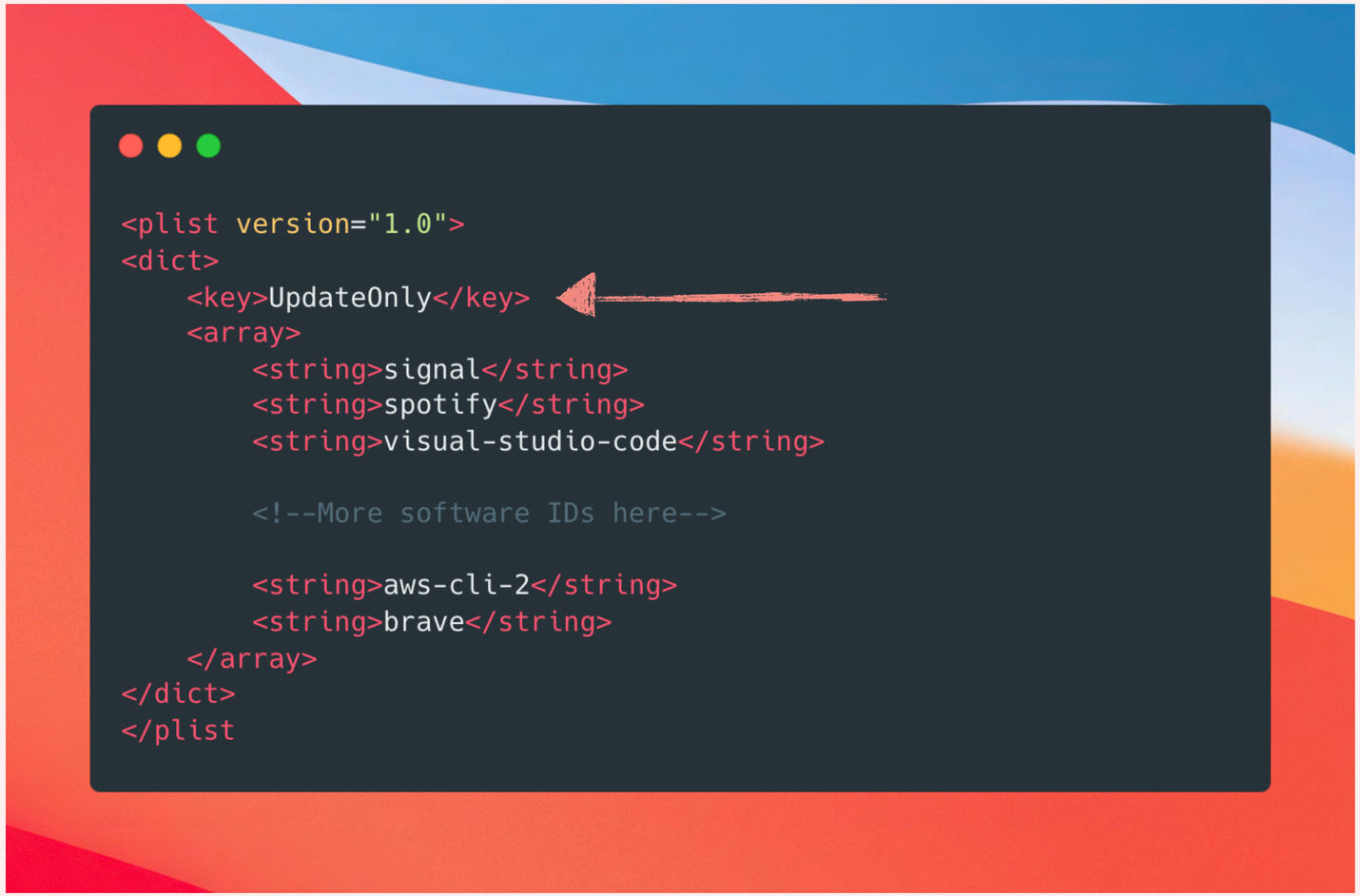
With Alectrona Patch

- A simple way to update all apps on a Mac that exist in the Patch Catalog
- Determines updatable (out-of-date) apps super fast
- Performs updates in a meaningful order
- Perfect for organizations with app sprawl
- Easy to configure and allows exclusions


⌥⌘1
FileZilla needs to be closed so it can be updated.
Please click "Update" to close the application and update now or choose "Later" if you are unable to update at this time.
Later
Update

Configuring the Update All Feature

Configuring Alectrona Patch with the Update All feature is easy.



Customer Feedback

> *“This is what patching on the Mac should be. It is easy, automated, and well thought out. If you are like me and have made your own patch engine, then you will really appreciate the attention to detail and user experience!”*

Simon Carlson
Senior Endpoint Engineer
SiriusXM

Thank You

We’d love to connect and discuss this topic more!

> *Visit alectrona.com/MacAdmins2023 for presentation slides and more info!*

Give us feedback on today’s talk:
https://bit.ly/psumac2023-142

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