Nudge

Nudge

Now in Swift/SwiftUI!

What is Nudge?

- Tool to encourage users to update their macOS devices
- All of the UI text can be customized to your specific company requirements
- Originally meant to be a unified UI for updates due to Apple changing user experience through the years.

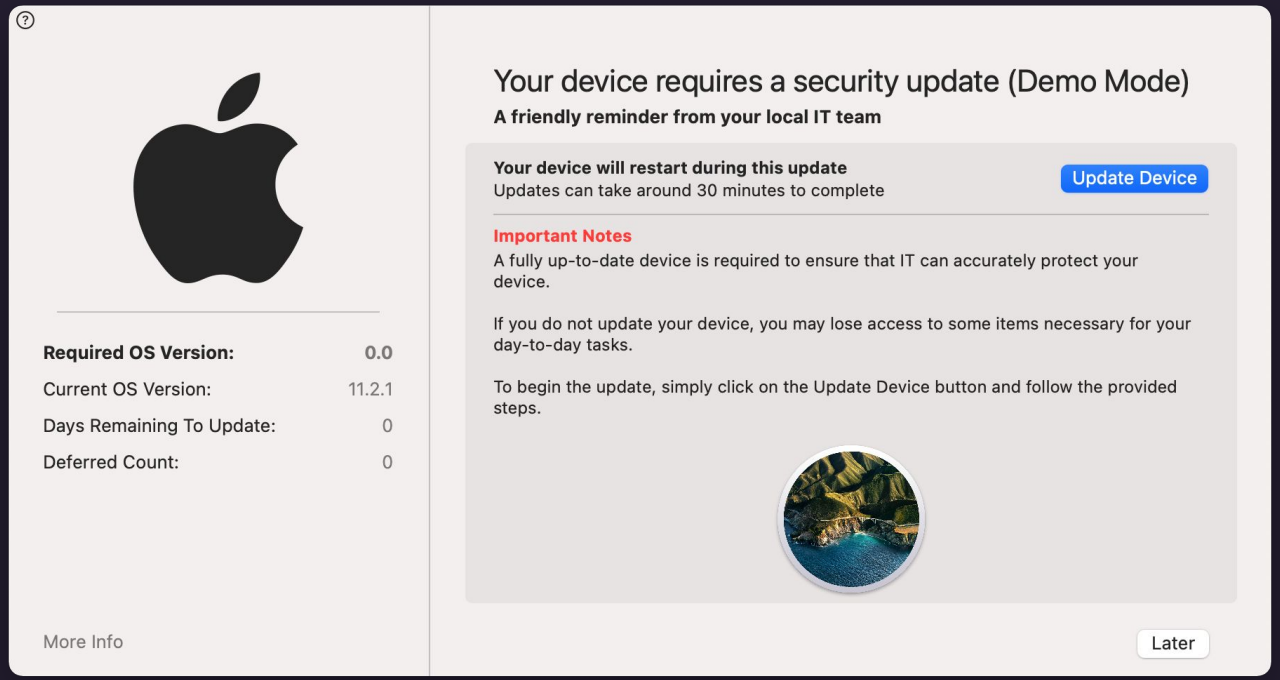
- V1 written in Python 2.7 and PyObjC
- V2 written Python 3.9 and PyObjC 6 for macOS Catalina
- Now completely redone in Swift/SwiftUI 5.2 for macOS Big Sur +

Why Nudge?

- “softwareupdate” is unreliable and not tested (well) by Apple
- MDM commands are Apple’s future vision but also unreliable and prone to bugs with each new macOS release (including minor updates!)
- Apple’s notifications around updates can easily be missed and are not customizable for complex company needs
- Tested in real-world Enterprise scale (Uber and Facebook)

Original Nudge

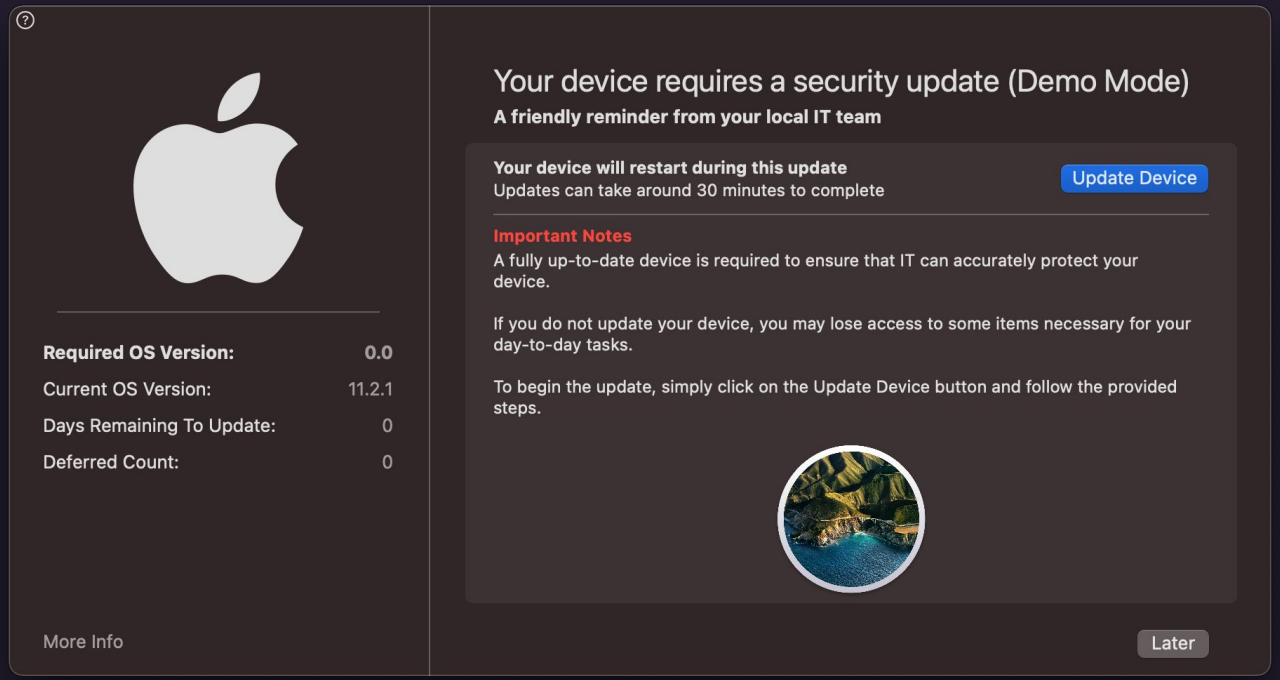
The new and improved Nudge



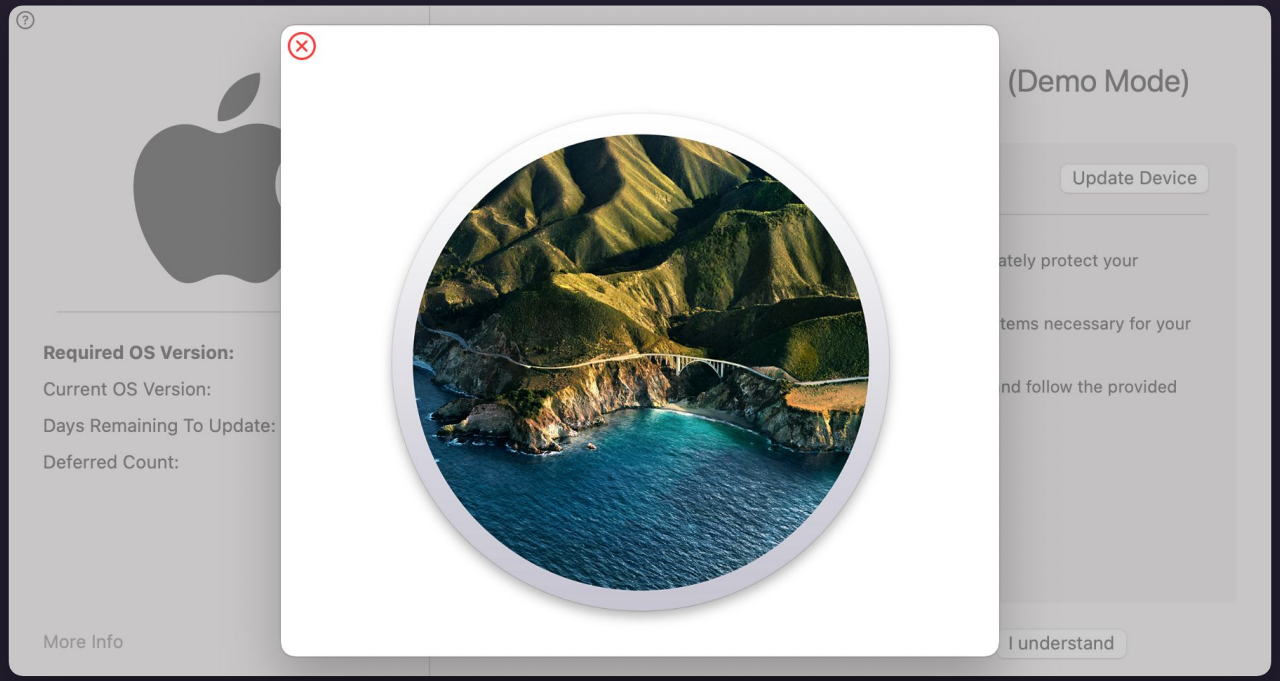
New features

Thank you SwiftUI

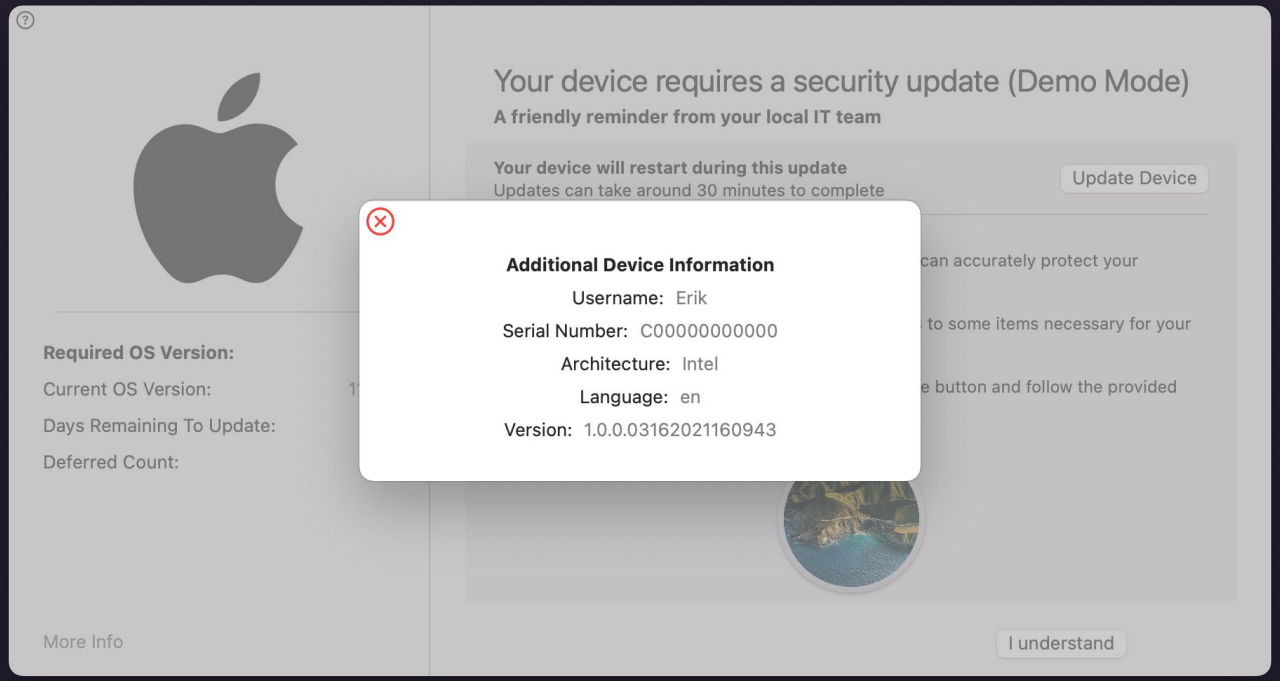
Dark Mode


Required OS Version: 0.0
Current OS Version: 11.2.1
Days Remaining To Update: 0
Deferred Count: 0
More Info
Your device requires a security update (Demo Mode)
A friendly reminder from your local IT team
Your device will restart during this update
Updates can take around 30 minutes to complete
Update Device
Important Notes
A fully up-to-date device is required to ensure that IT can accurately protect your device.
If you do not update your device, you may lose access to some items necessary for your day-to-day tasks.
To begin the update, simply click on the Update Device button and follow the provided steps.
Later

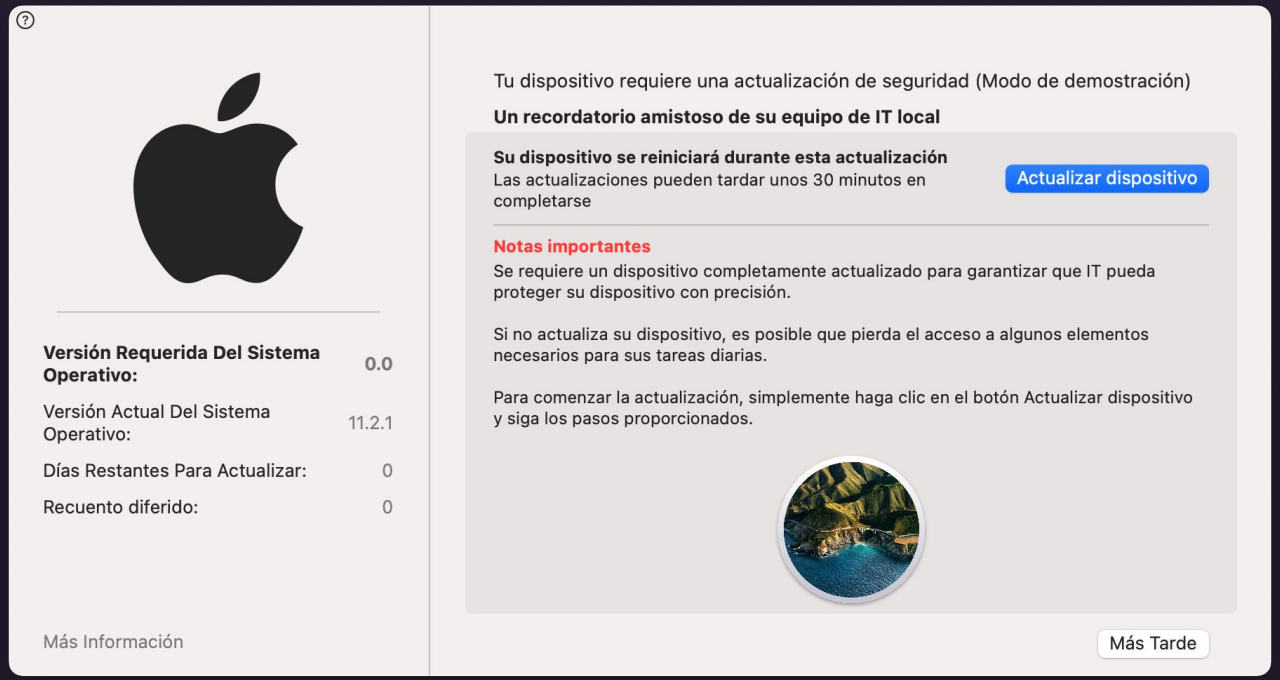
Zoom into company screenshot



Advanced device information



Localization (Currently French/German/Spanish)



Simple Mode

Your device requires a security update (Demo Mode)
Days remaining to update: 0
Deferred Count: 0
Update Device
More Info
Later

Other new features

- MDM profile support
  - Jamf JSON Schema
- Proper Big Sur support
- Apple Silicon support
- All logs now in Unified Logging (can view them in real-time with Console.app or log cli tool)

Why Swift and SwiftUI?

- The future of the Apple app ecosystem
- Code is more precise than Interface Builder
- Can easily split the UI into separate files and dynamically call them
- (Potentially) easier to maintain in future OS releases
- Significantly smaller deployment package
  - Nudge-Python over 30MB with macadmins/python
  - Nudge-Swift 3.5MB (would be smaller without the icons)

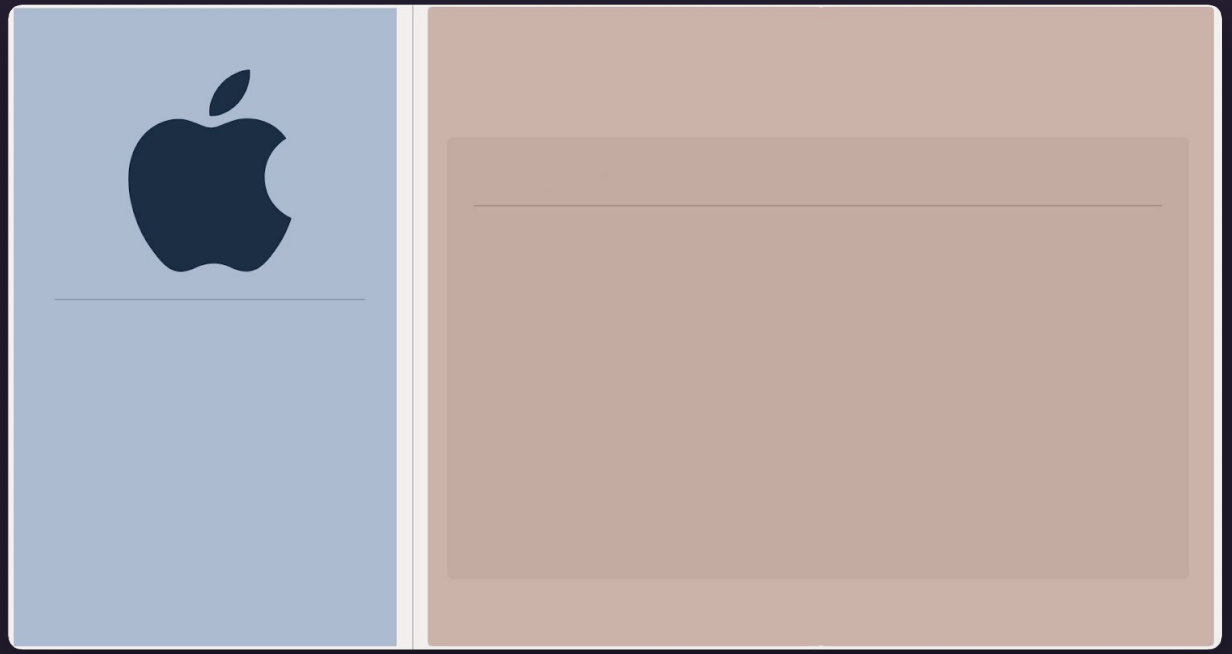
Any drawbacks?

- SwiftUI on Catalina had a lot of bugs
- SwiftUI 5.2 (what Nudge uses) only supports Big Sur +
- Most blog posts are centered around iOS
- New SwiftUI (5.3) features may only support Big Sur 11.3 and higher.

SwiftUI

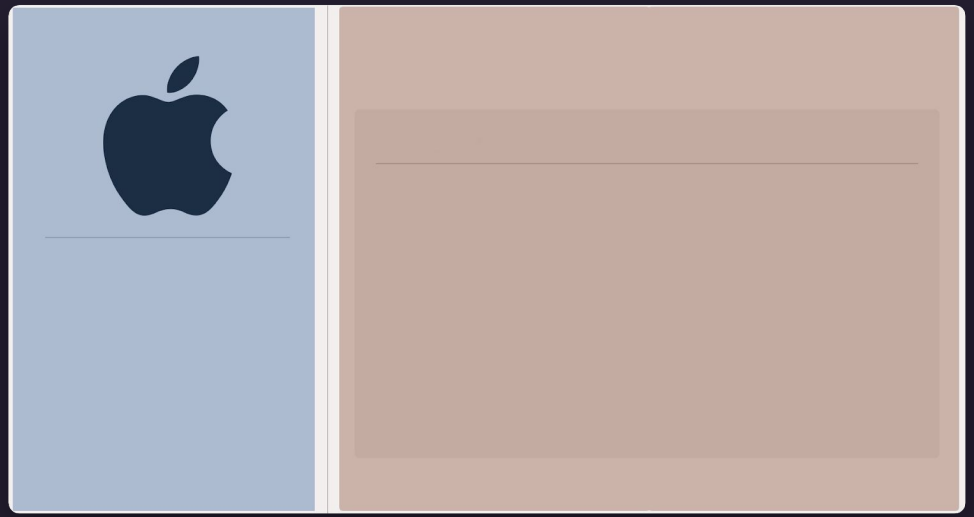
It’s Legos… in code form... for UI

The left and right side are separate SwiftUI files



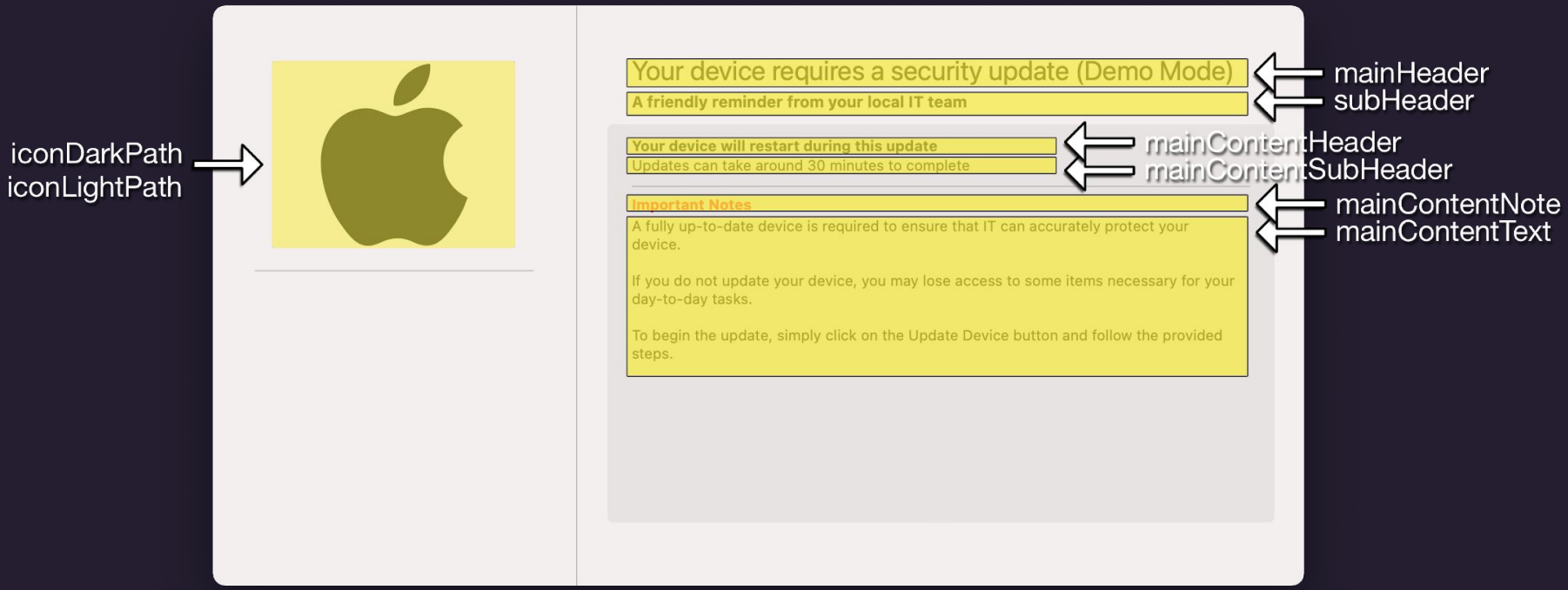
What does this look like in code?

```
HStack {
    // Life side of Nudge
    StandardModeLeftSide()

    // Vertical Line
    VStack {
        Rectangle()
        .fill(Color.gray.opacity(0.5))
        .frame(width: 1)
    }
    .frame(height: 525)

    // Right side of Nudge
    StandardModeRightSide()
}
.frame(width: 900, height: 450)
.onAppear(perform: nudgeStartLogic)
```

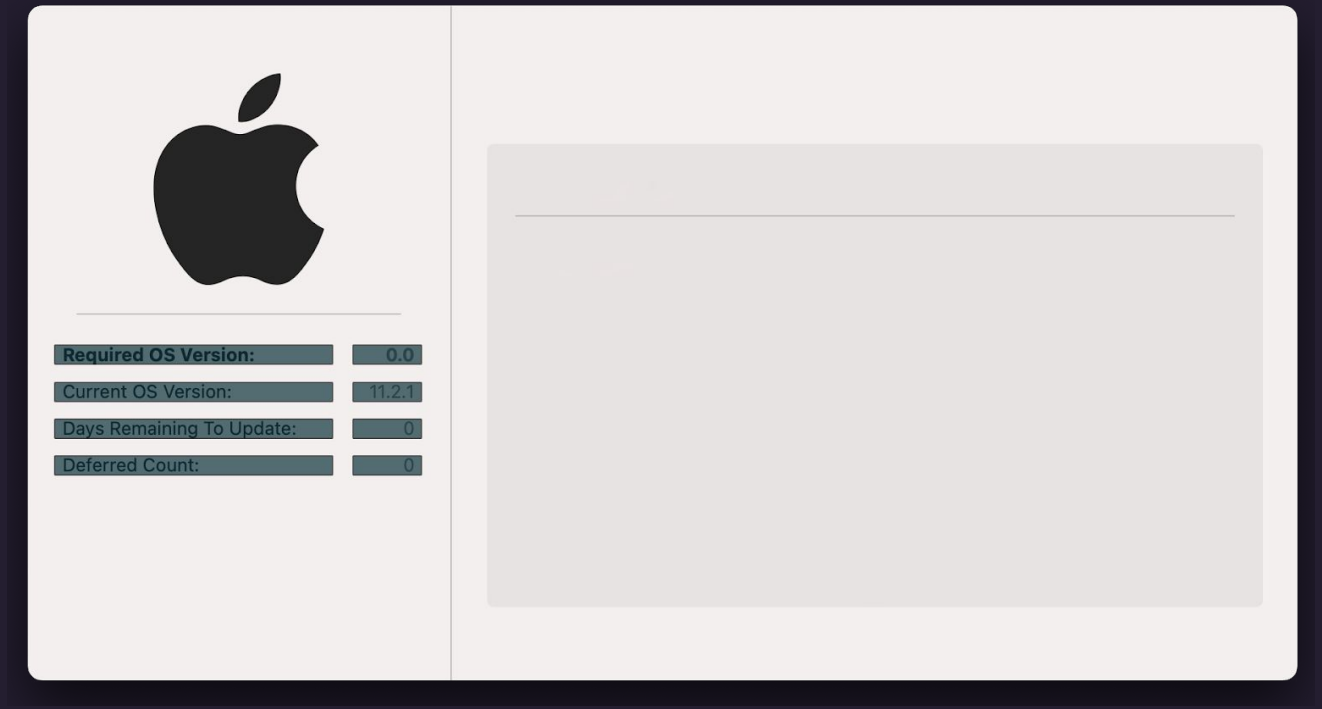


These are all the actionable buttons - the text is fully customizable

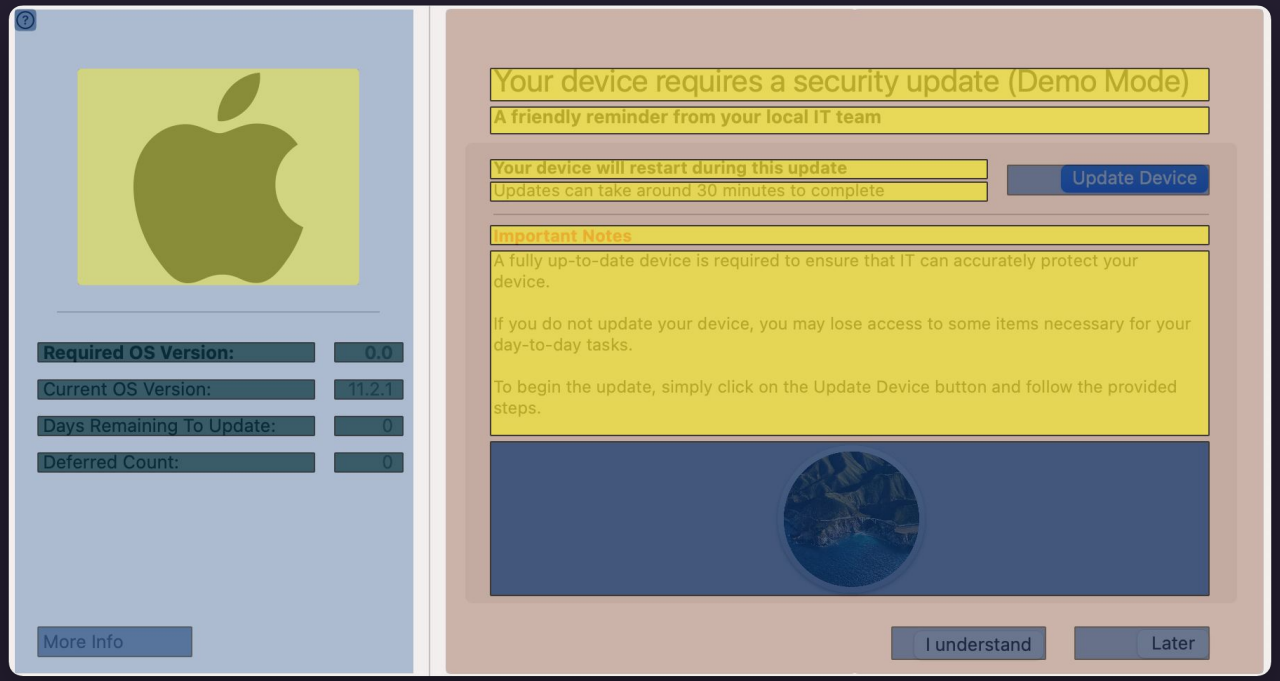
The logo and right side text items are also fully customizable

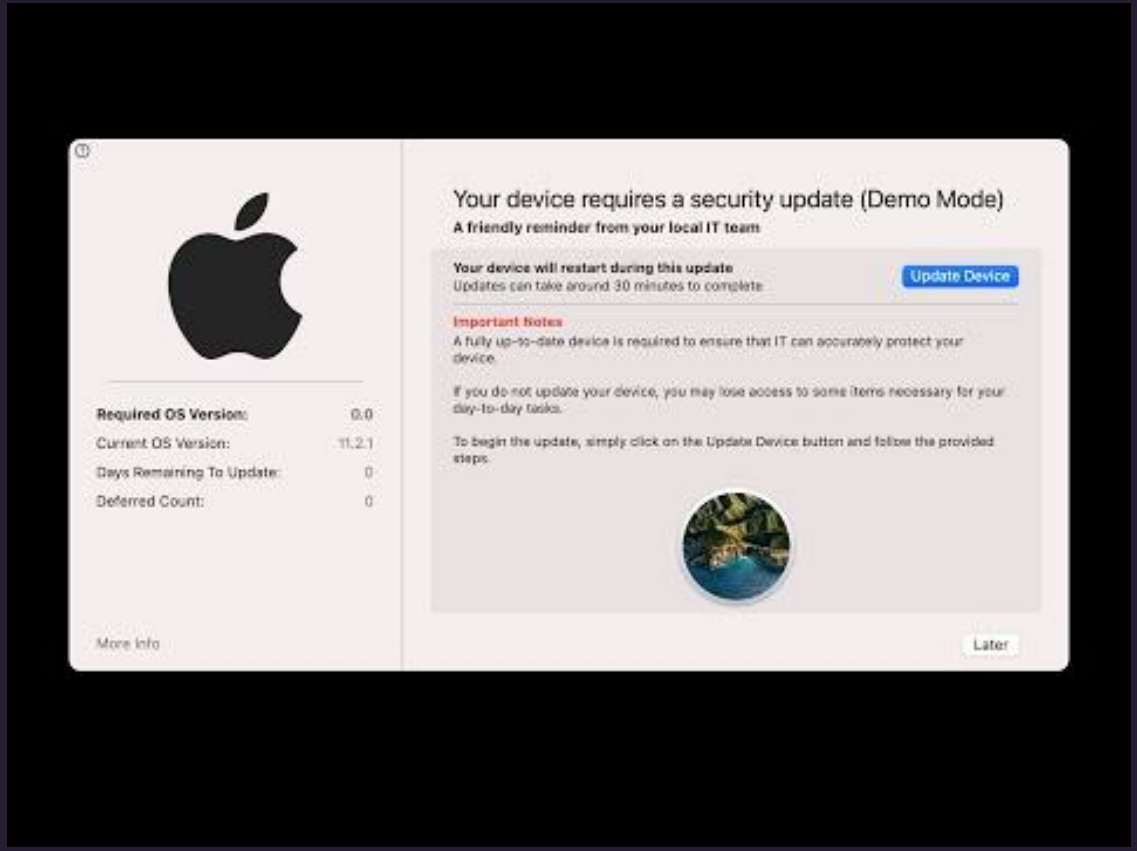


These text items are localized and defined within the Nudge codebase



Putting all the pieces together





https://www.youtube.com/watch?v=hhetHevnoWI

This is cool but...

...how do I get started with Nudge?

- https://github.com/macadmins/nudge/blob/main/README.md
- https://github.com/macadmins/nudge/wiki/Getting-Started
- https://github.com/macadmins/nudge/releases
- https://github.com/autopkg/erikng-recipes/tree/main/Nudge
- https://gist.github.com/erikng/0b3ef25f7cd1df27d529bc02debd594b
- Automated builds via GitHub Actions
- Signed (not currently notarized) packages
- Autopkg recipes (.download and .munki)

Live Demo

Never deploy what you’re about to see in production

```
/Applications/Utilities/Nudge.app/Contents/MacOS/Nudge -json-url \
"https://gist.githubusercontent.com/erikng/0b3ef25f7cd1df27d529bc02debd594b/raw/5cdfd90a444d5c70f6c9a928707a55b7f2e9fba4/nudge.json"

sudo log stream --predicate 'subsystem == "com.github.macadmins.Nudge"' --style ndjson --color none | egrep --line-buffered '^{' | jq '. | .eventMessage'
```

```
{
  "osVersionRequirements": [
    {
      "aboutUpdateURL": "https://github.com/macadmins/nudge",
      "requiredInstallationDate": "2021-04-10T00:00:00Z",
      "requiredMinimumOSVersion": "11.3",
      "targetedOSVersions": ["11.0", "11.0.1", "11.1", "11.2", "11.2.1", "11.2.2", "11.2.3"]
    }
  ],
  "userInterface": {
      "iconDarkPath": "/Library/Application Support/Nudge/logoDark.png",
      "iconLightPath": "/Library/Application Support/Nudge/logoLight.png",
      "screenShotDarkPath": "/Library/Application Support/Nudge/screenShotDark.png",
      "screenShotLightPath": "/Library/Application Support/Nudge/screenShotLight.png"
  },
  "userExperience": {
      "allowedDeferrals": 2,
      "allowedDeferralsUntilForcedSecondaryQuitButton": 1,
      "approachingRefreshCycle": 5,
      "elapsedRefreshCycle": 5,
      "imminentRefeshCycle": 5,
      "initialRefreshCycle": 5,
      "nudgeRefreshCycle": 5
  }
}
```

Help Needed (#nudge on macadmins slack)

- Does the README/Getting Started make sense?
- Localization for more languages
- More documentation on integrating with jamf Pro, SimpleMDM, MicroMDM, WorkSpace One, Munki, etc.
- Reporting Bugs / Feature enhancements

Questions?

Thanks!

We’re hiring (DM me on slack @erik for more info)