

# 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



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**Username:**

**Serial Number:**

**Fully Updated:**

No

## macOS Update


A friendly reminder from your local IT team

**A security update is required on your machine.**

A fully up-to-date device is required to ensure that IT can your accurately protect your computer.

If you do not update your computer, you may lose access to some items necessary for your day-to-day tasks.

To begin the update, simply click on the button below and follow the provided steps.




**Ready to start the update?**  
Click on the button below.

Update Machine

Close

# The new and improved Nudge



**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](#)

# 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](#)

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A friendly reminder from your local IT team

**Your device will restart during this update**

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[Update Device](#)

**Important Notes**

A fully up-to-date device is required to ensure that IT can accurately protect your device.

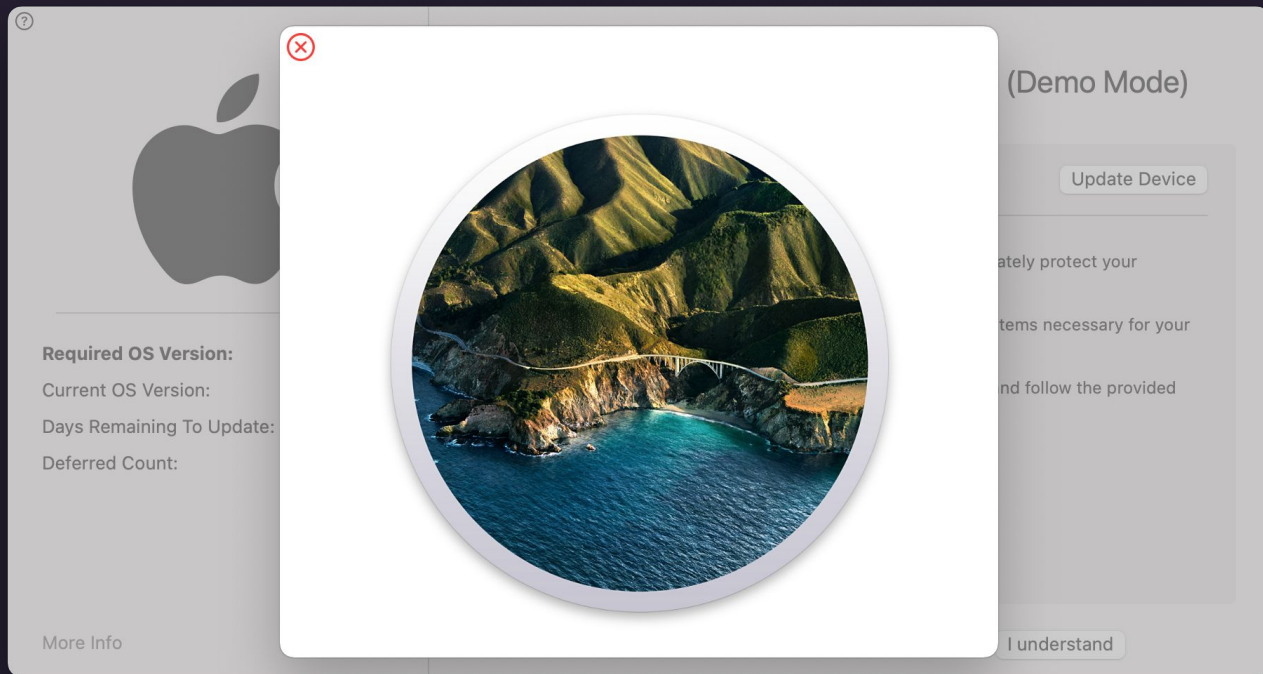
If you do not update your device, you may lose access to some items necessary for your day-to-day tasks.

To begin the update, simply click on the Update Device button and follow the provided steps.

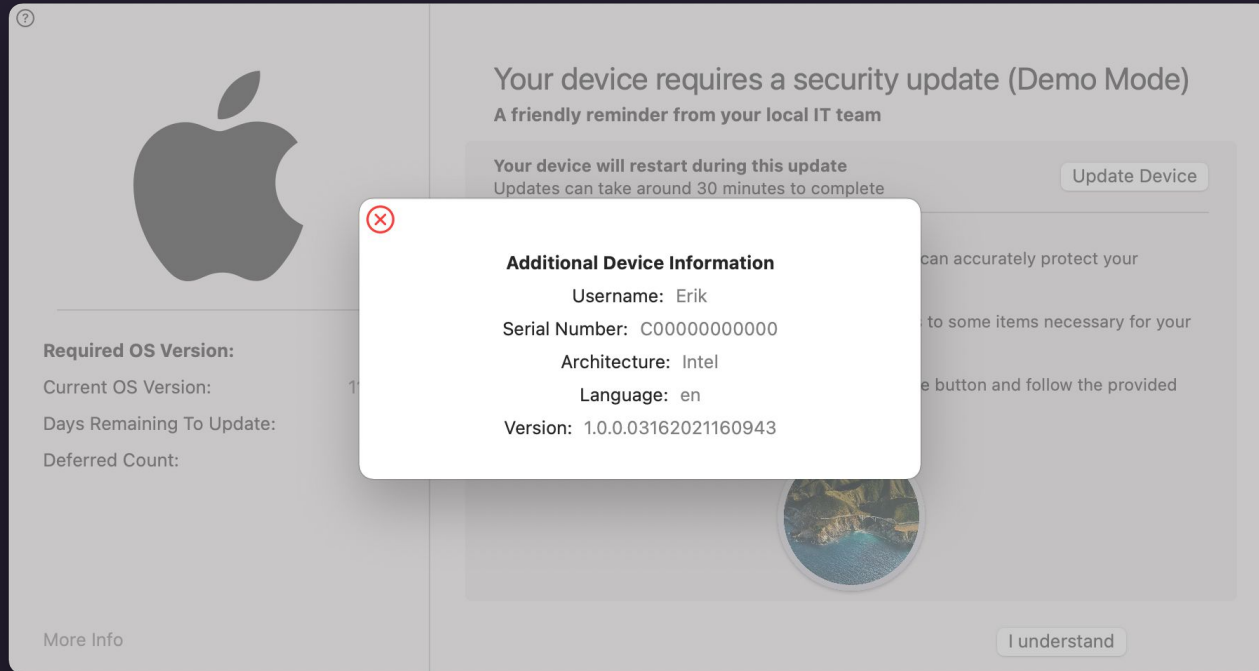


[Later](#)


# Zoom into company screenshot



# Advanced device information



# Localization (Currently French/German/Spanish)



**Versión Requerida Del Sistema Operativo:** 0.0

Versión Actual Del Sistema Operativo: 11.2.1

Días Restantes Para Actualizar: 0

Recuento diferido: 0

Más Información

Tu dispositivo requiere una actualización de seguridad (Modo de demostración)

**Un recordatorio amistoso de su equipo de IT local**

**Su dispositivo se reiniciará durante esta actualización**  
Las actualizaciones pueden tardar unos 30 minutos en completarse


**Actualizar dispositivo**

**Notas importantes**

Se requiere un dispositivo completamente actualizado para garantizar que IT pueda proteger su dispositivo con precisión.

Si no actualiza su dispositivo, es posible que pierda el acceso a algunos elementos necesarios para sus tareas diarias.

Para comenzar la actualización, simplemente haga clic en el botón Actualizar dispositivo y siga los pasos proporcionados.



Más Tarde

# 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)

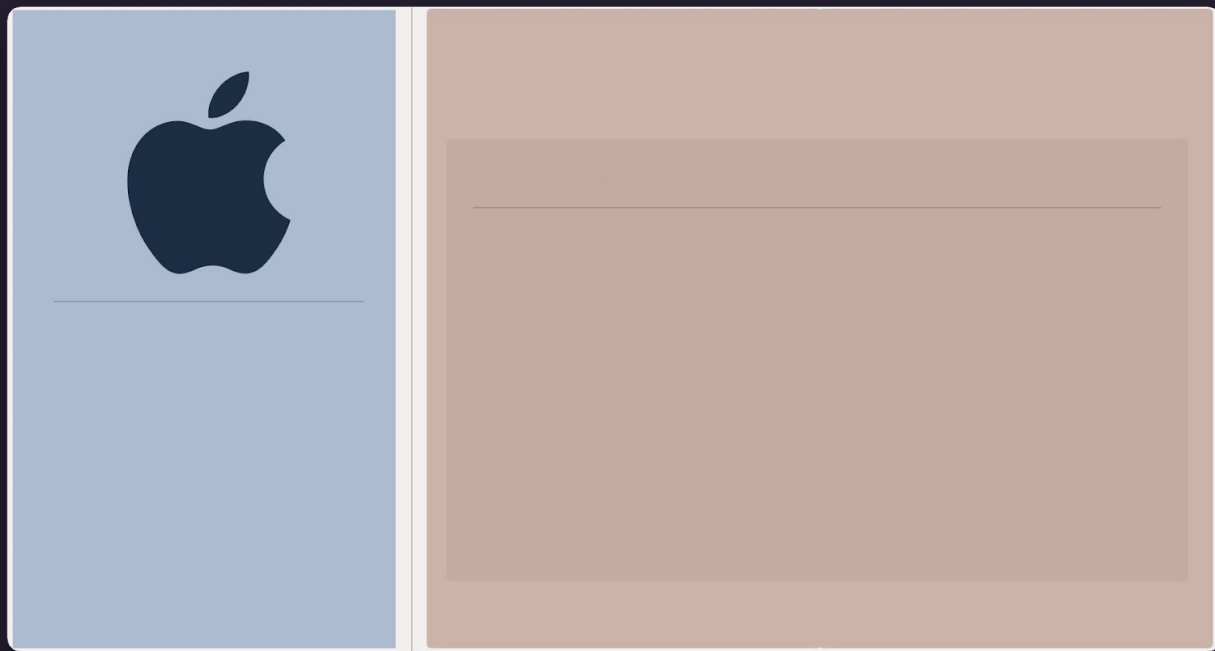
## Any drawbacks?

- 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?

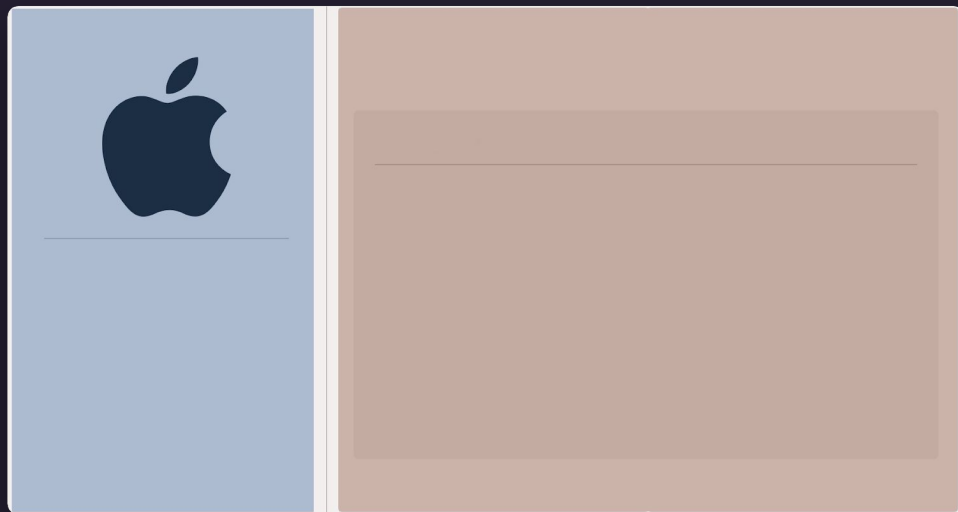
```

HStack {
  // Life side of Nudge
  StandardModeLeftSide()

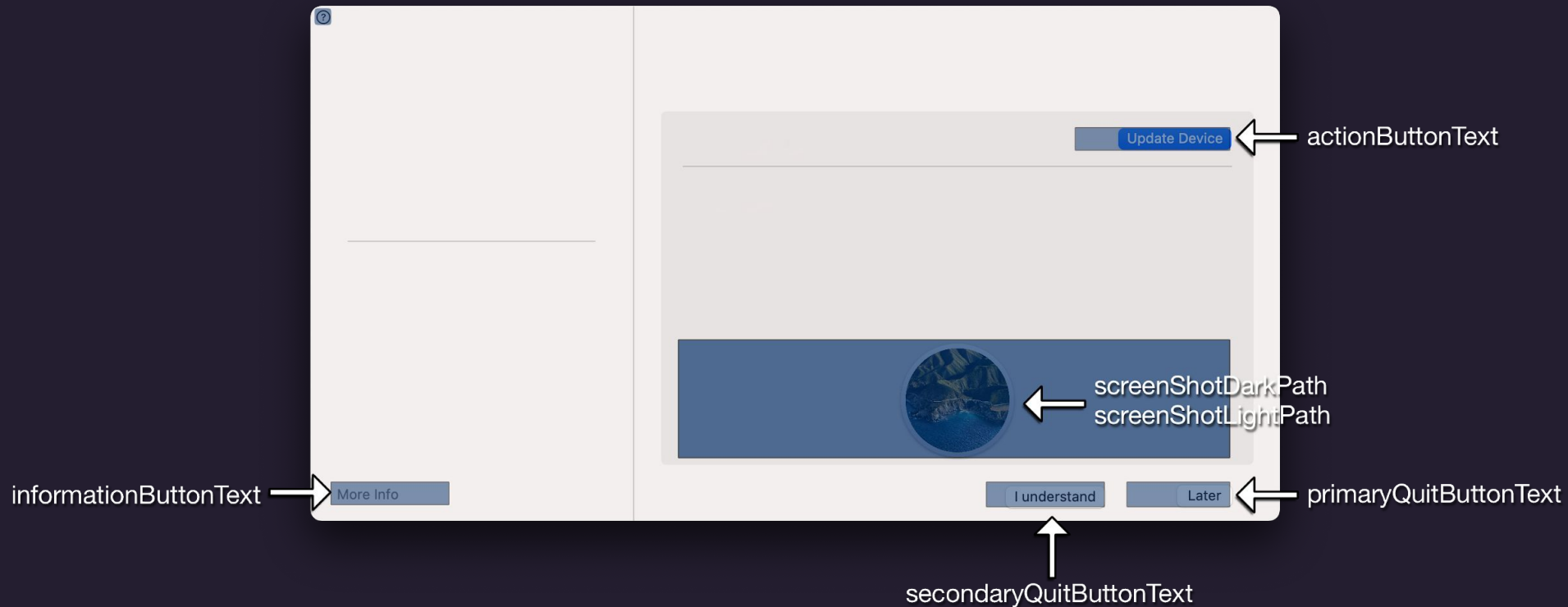
  // Vertical Line
  VStack {
    Rectangle()
      .fill(Color.gray.opacity(0.5))
      .frame(width: 1)
  }
  .frame(height: 525)

  // 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

iconDarkPath  
iconLightPath



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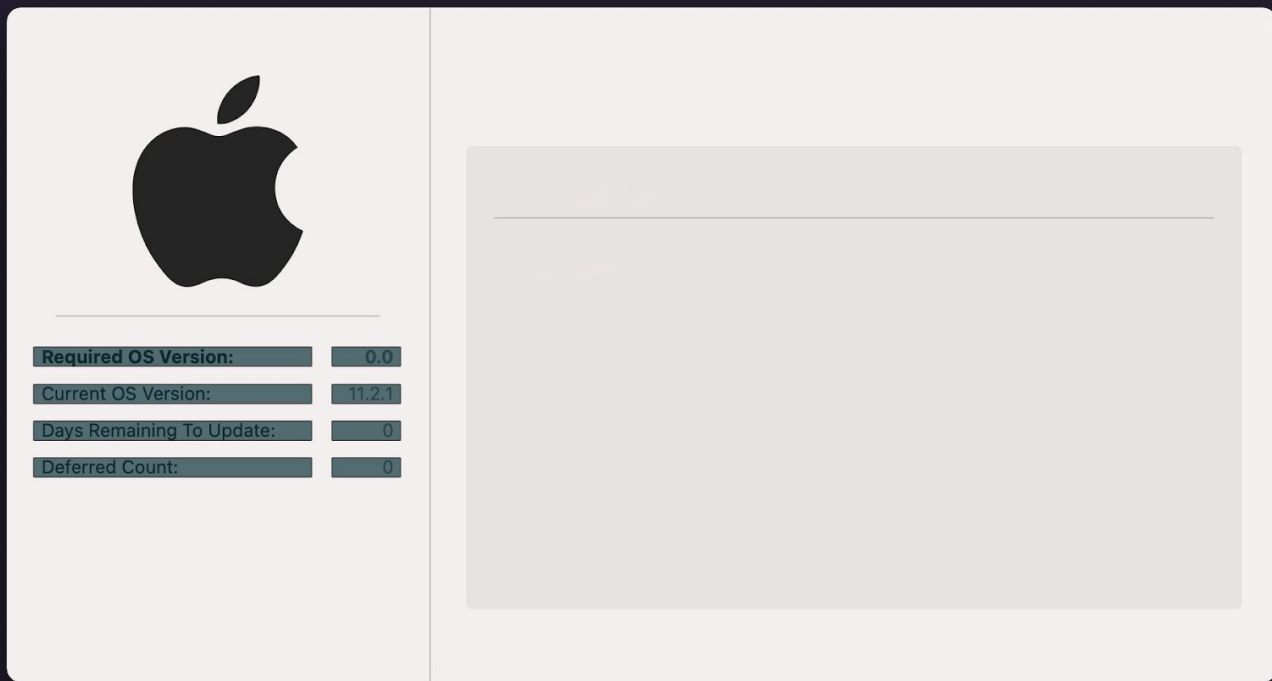
To begin the update, simply click on the Update Device button and follow the provided steps.

mainHeader  
subHeader

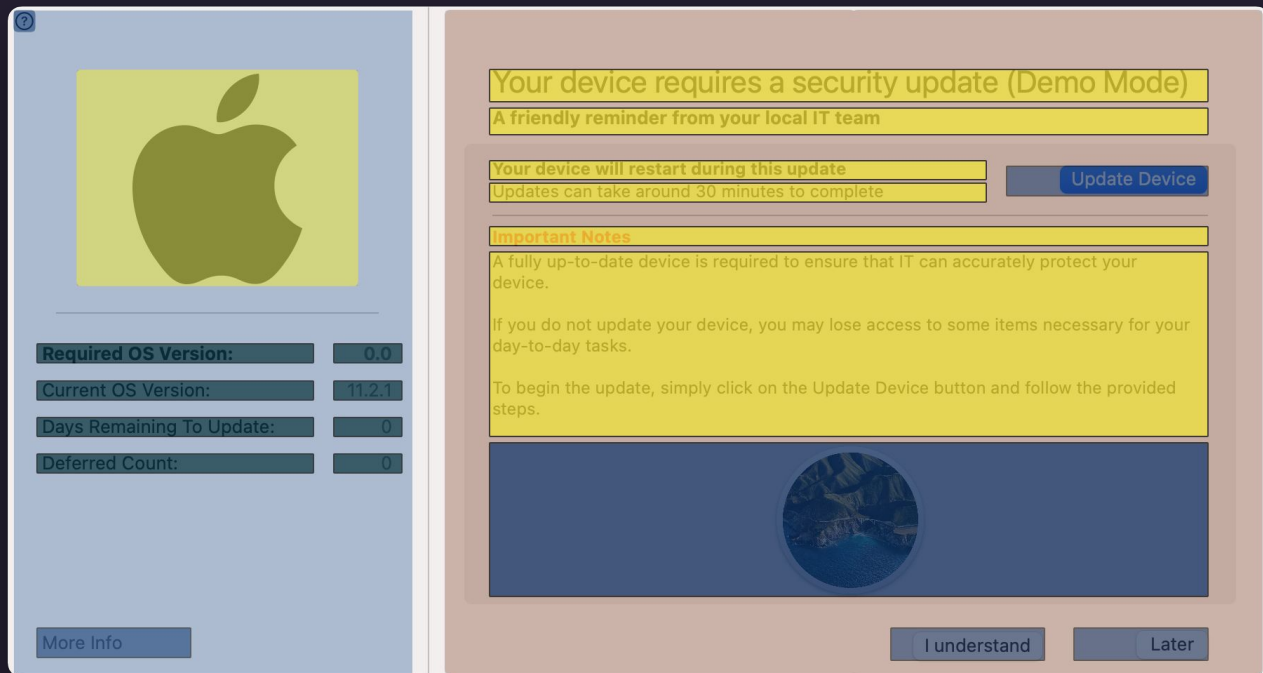
mainContentHeader  
mainContentSubHeader

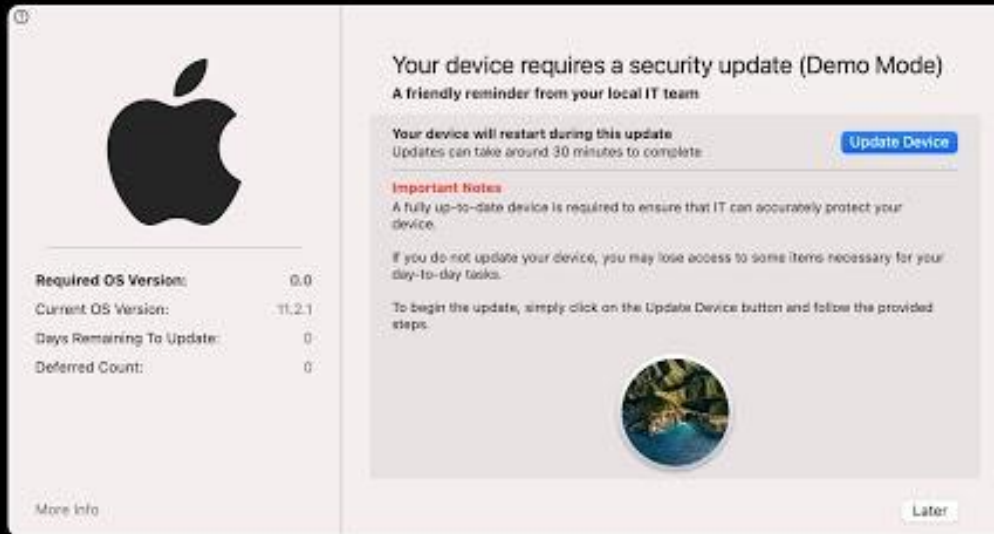
mainContentNote  
mainContentText

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.github.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,
    "imminentRefreshCycle": 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)