Links and References:
https://tinyurl.com/MacADUK-EB

Escrow Buddy

A Tool for Escrowing Missing FileVault Recovery Keys

Elliot Jordan

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https://tinyurl.com/MacADUK-EB

Elliot Jordan

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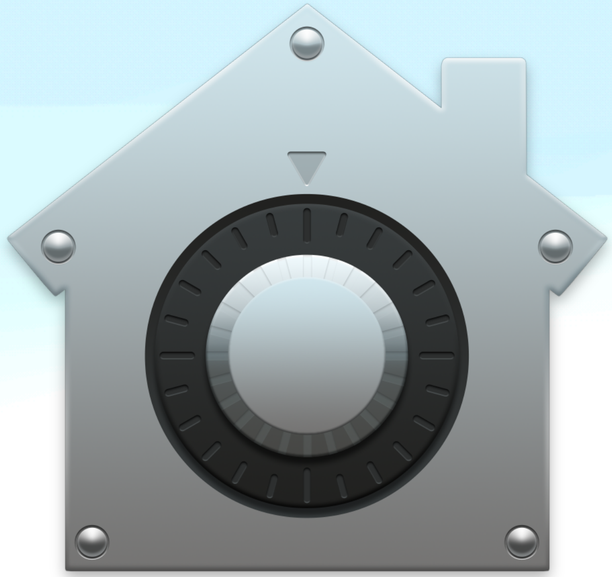
FileVault Basics



FileVault Basics

- Full disk encryption
- Protects organization data if a Mac lost/stolen
- Authorized users’ passwords can unlock
- Personal recovery key (PRK) can unlock
- PRK can be escrowed to MDM or other storage

Escrow Buddy Log (via SSH)

```
Filtering the log data using "subsystem == "com.netflix.Escrow-Buddy""
```

Escrow Buddy Logs

(via SSH to target Mac)

MDM FileVault Info (via Jamf API)

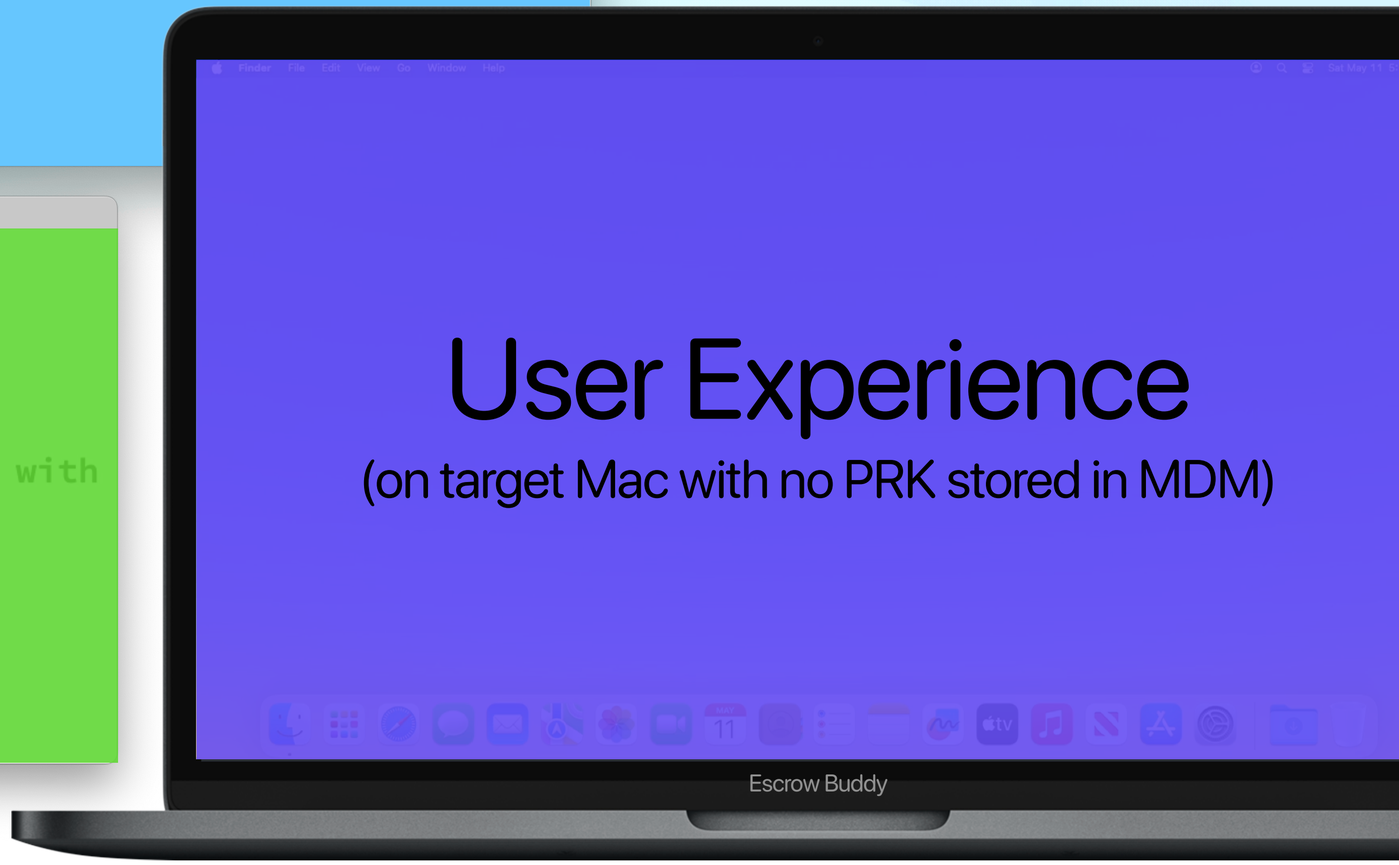
```
2024-05-11 17:13:01
{
  "httpStatus" : 404,
  "errors" : [ {
    "code" : "INVALID_ID",
    "description" : "FileVault information for computer with
given id does not exist",
    "id" : "25026",
    "field" : null
  } ]
}
```

FileVault Info in MDM

(via Jamf API)

User Experience

(on target Mac with no PRK stored in MDM)



Escrow Buddy Log (via SSH)

```
Filtering the log data using "subsystem == "com.netflix.Escrow-Buddy""
```

MDM FileVault Info (via Jamf API)


```
2024-05-11 17:13:50
{
  "computerId" : "25026",
  "name" : "Elliot's Virtual Machine",
  "personalRecoveryKey" : "8DL9-RNRT-VCWN-ZQ4H-B5E4-VNN8",
  "bootPartitionEncryptionDetails" : null,
  "individualRecoveryKeyValidityStatus" : "VALID",
  "institutionalRecoveryKeyPresent" : false,
  "diskEncryptionConfigurationName" : ""
}
```


Why are my FileVault recovery keys missing?

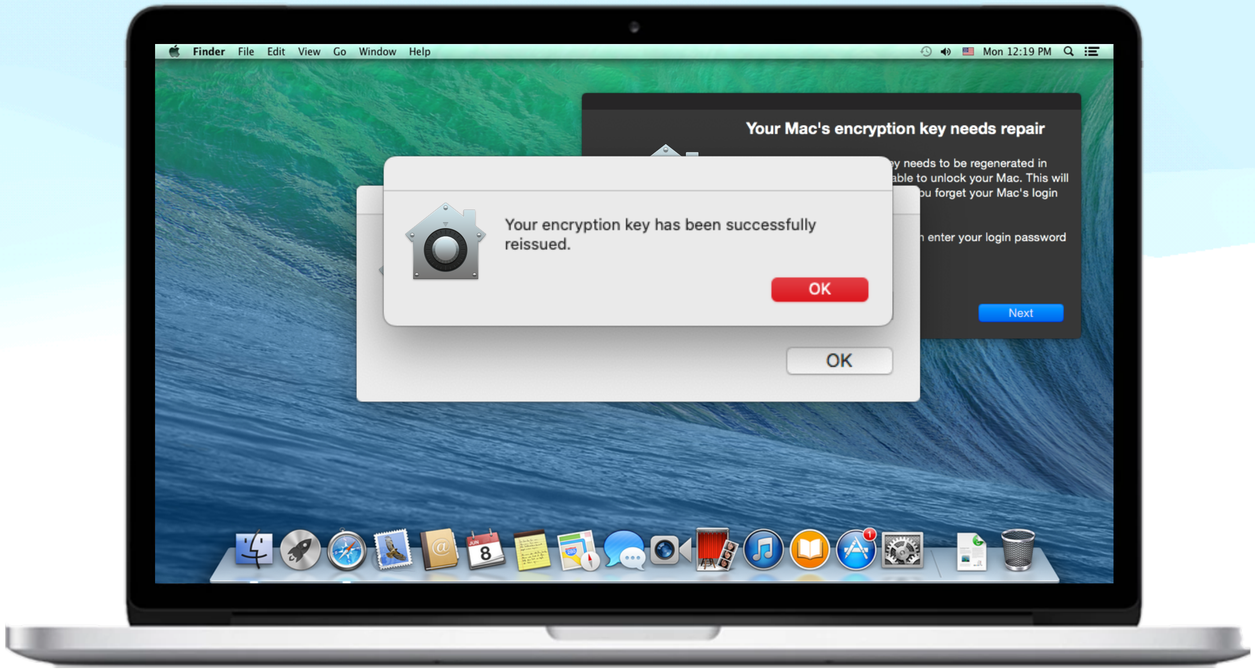
- Migration from another MDM
- Encrypted before enrollment
- Escrow profile misconfigured
- Data loss or corruption

How can I solve missing FileVault recovery keys?

- Toggle FileVault off/on
- Manually use **`fdesetup`**
- Automate **`fdesetup`**

The old way (stop doing this!)

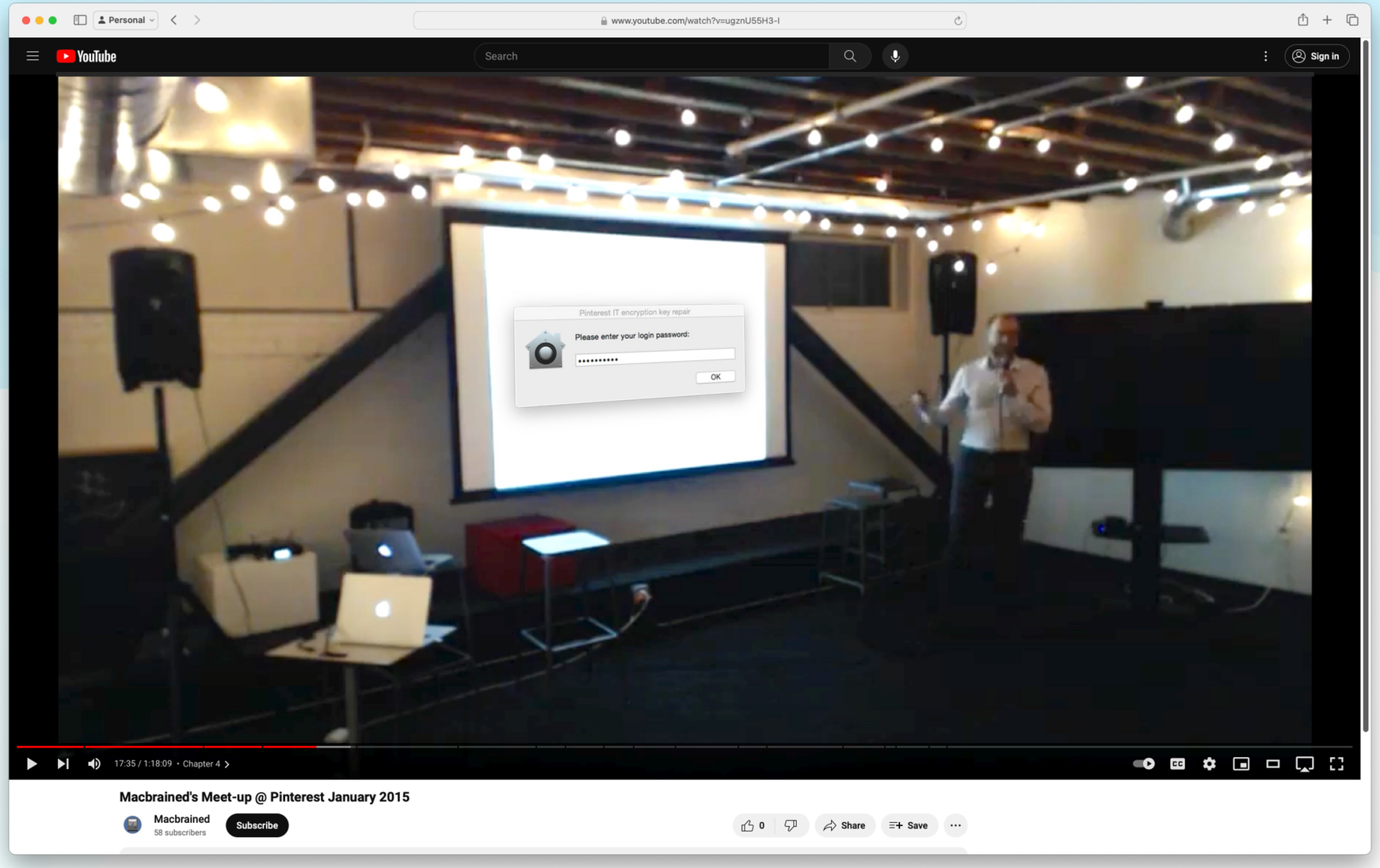
1. Make user aware
2. Prompt for password
3. Trigger fdesetup
4. Communicate result



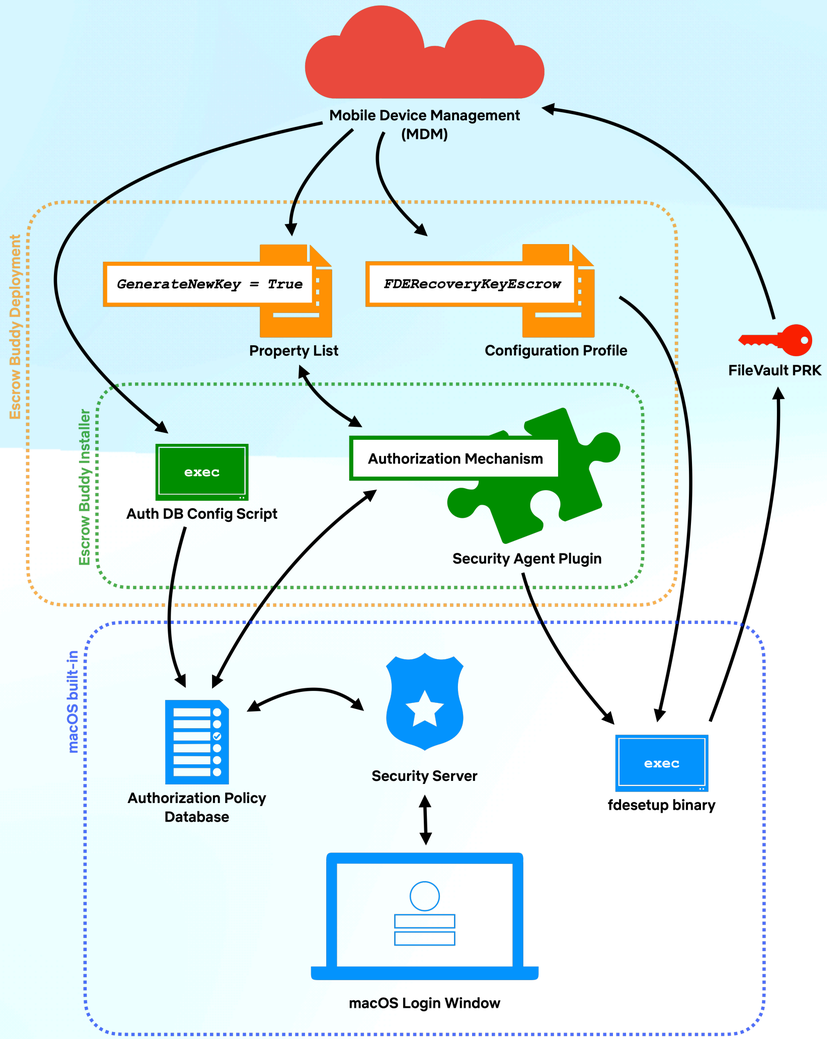
https://github.com/homebysix/jss-filevault-reissue

The new way is better...

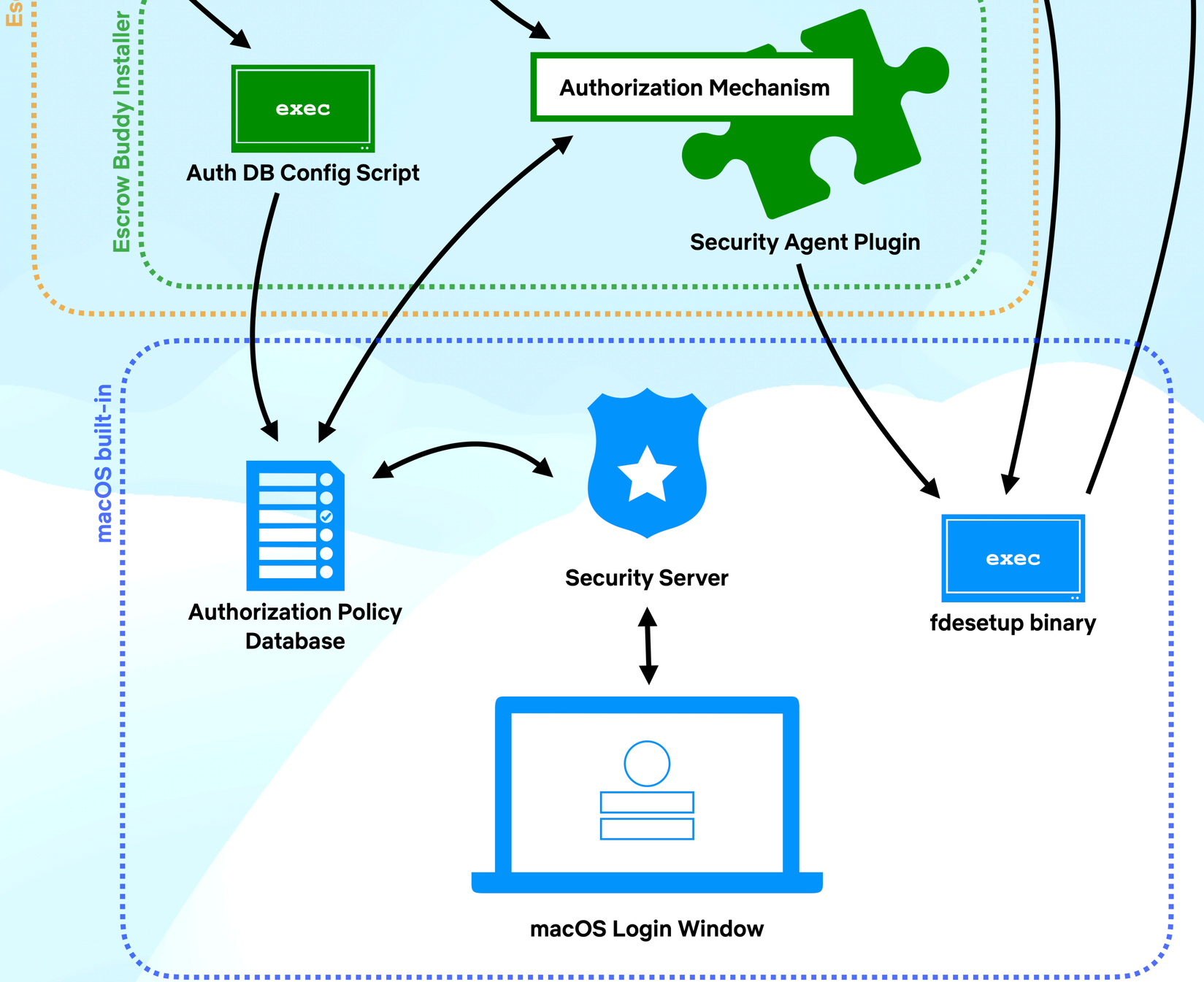
(take it from the guy who popularized the old way)

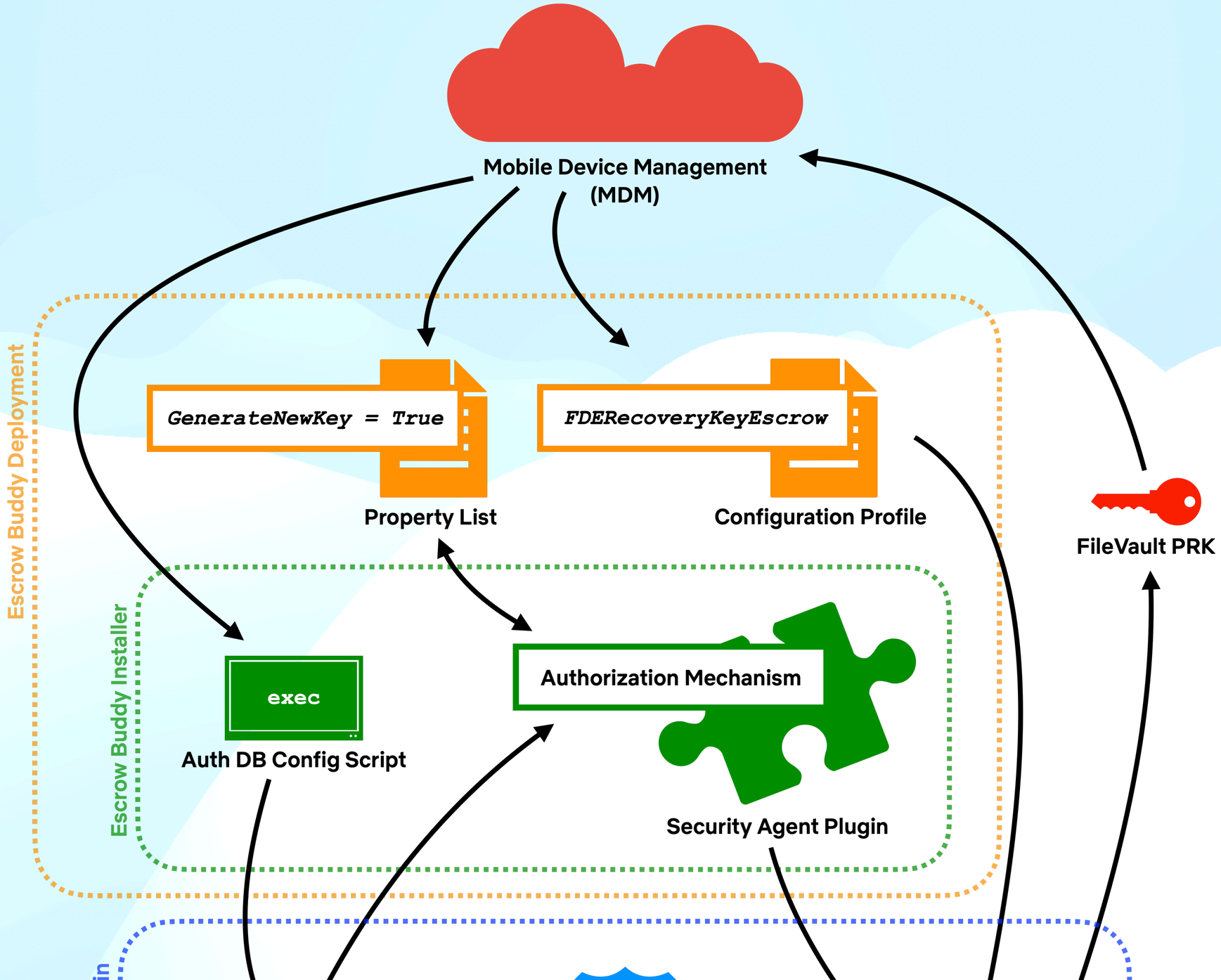


The new way: authorization plugin



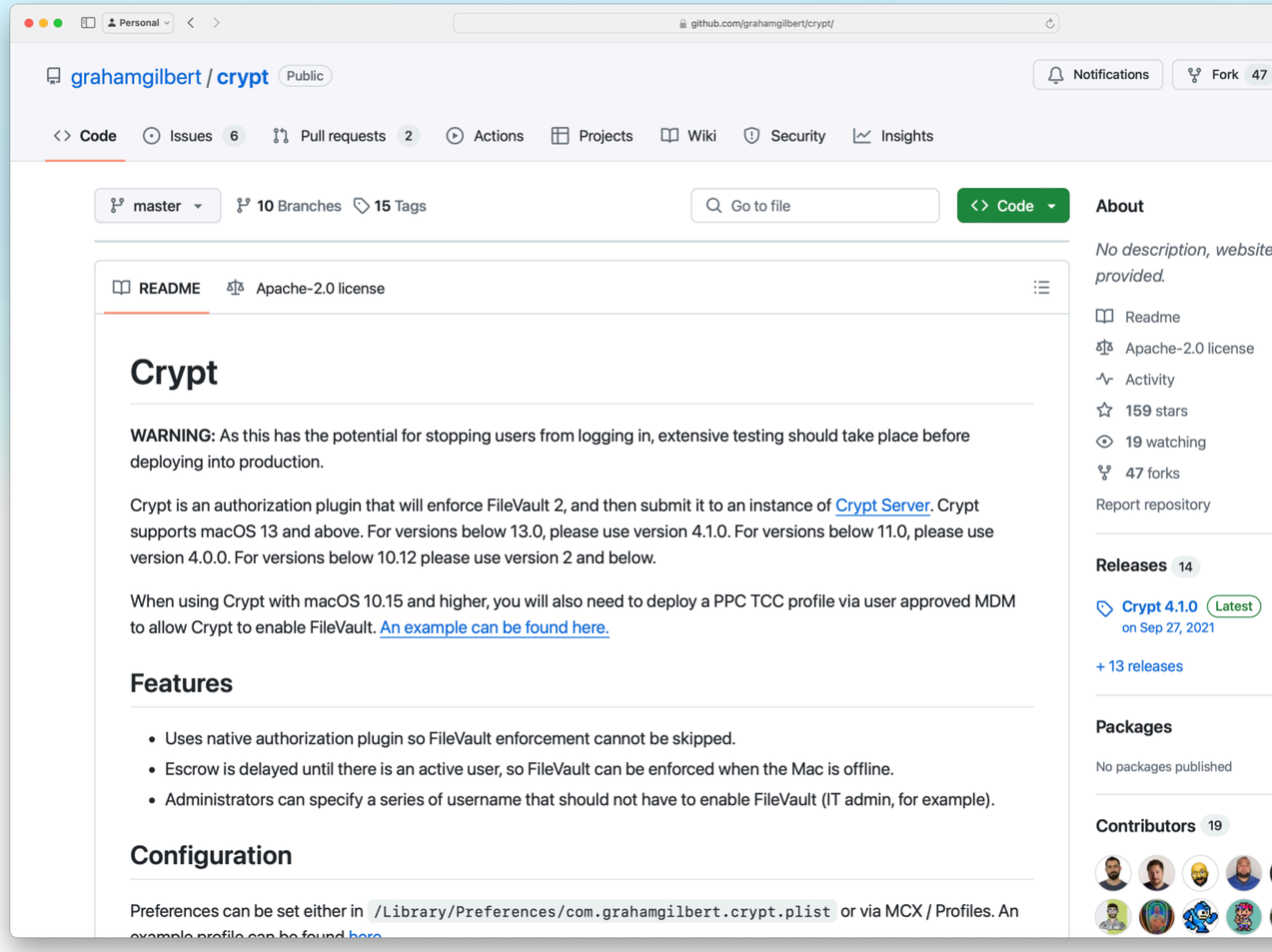
- Leverages macOS login
- Secure credential access
- No unfamiliar prompts!


Escrow Buddy Installer
exec
Auth DB Config Script
Authorization Mechanism
Security Agent Plugin
macOS built-in
Authorization Policy Database
Security Server
exec
fdesetup binary
macOS Login Window


Mobile Device Management
(MDM)
Escrow Buddy Deployment
GenerateNewKey = True
FDERecoveryKeyEscrow
Property List
Configuration Profile
FileVault PRK
Escrow Buddy Installer
exec
Auth DB Config Script
Authorization Mechanism
Security Agent Plugin

Crypt did it first!

Crypt is an authorization plugin that will enforce FileVault 2, and then submit it to an instance of Crypt Server.



Lesser-known feature: Standalone regeneration of FileVault keys upon login

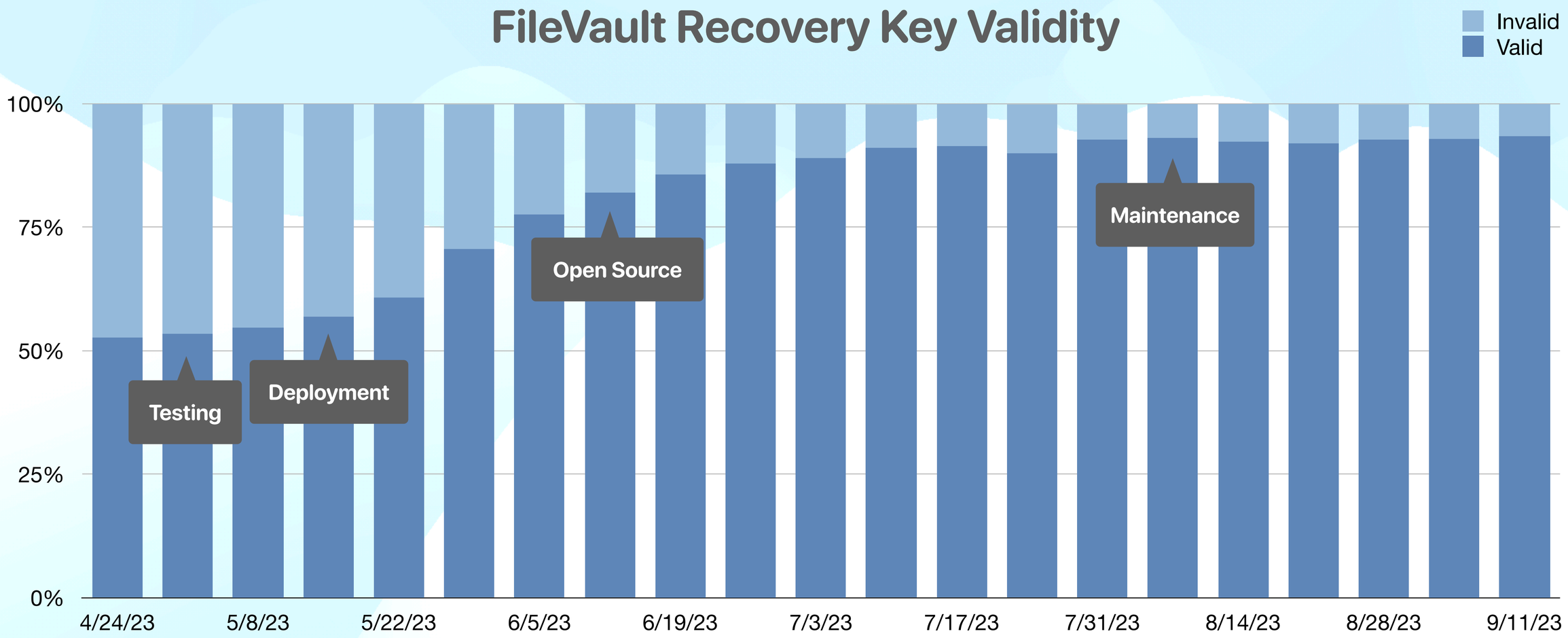
https://github.com/grahamgilbert/crypt/

Escrow Buddy makes it simple

- ✓ Checks for FDERecoveryEscrow payload
- ✓ Generates new FileVault keys upon login
- ✓ Nothing else

https://github.com/macadmins/escrow-buddy/

Our Success Story



Our Success Story

FileVault Recovery Key Validity

Deploying Escrow Buddy from your MDM

Works with any MDM that can deploy pkgs

Community-contributed setup instructions for

- Addigy
- Jamf
- Intune
- Kandji
- Mosyle
- WorkspaceONE

https://github.com/macadmins/escrow-buddy/wiki/Examples

Example: Basic deployment with Jamf

- Package: Escrow Buddy
- Smart Group: FileVault PRK Missing or Invalid
- Policy: Install and configure Escrow Buddy

Wiki https://github.com/macadmins/escrow-buddy/wiki/Jamf
HCS Guide https://tinyurl.com/2systu46

Advanced workflow options

- Separate installation/configuration
- Recidivism detection
- Automatic key rotation
- Logout notification

https://github.com/macadmins/escrow-buddy/wiki/Jamf

Escrowing quickly after key generation

/Library/LaunchDaemons/com.elliotjordan.FileVaultPRKWatcher.plist

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
    <key>Comment</key>
    <string>Details: https://www.elliotjordan.com/posts/filevault-escrow-daemon/</string>
    <key>Label</key>
    <string>com.elliotjordan.FileVaultPRKWatcher</string>
    <key>ProgramArguments</key>
    <array>
        <string>/usr/local/bin/jamf</string>
        <string>recon</string>
    </array>
    <key>WatchPaths</key>
    <array>
        <string>/var/db/FileVaultPRK.dat</string>
    </array>
</dict>
</plist>
```

https://www.elliotjordan.com/posts/filevault-escrow-daemon/

Tips and troubleshooting

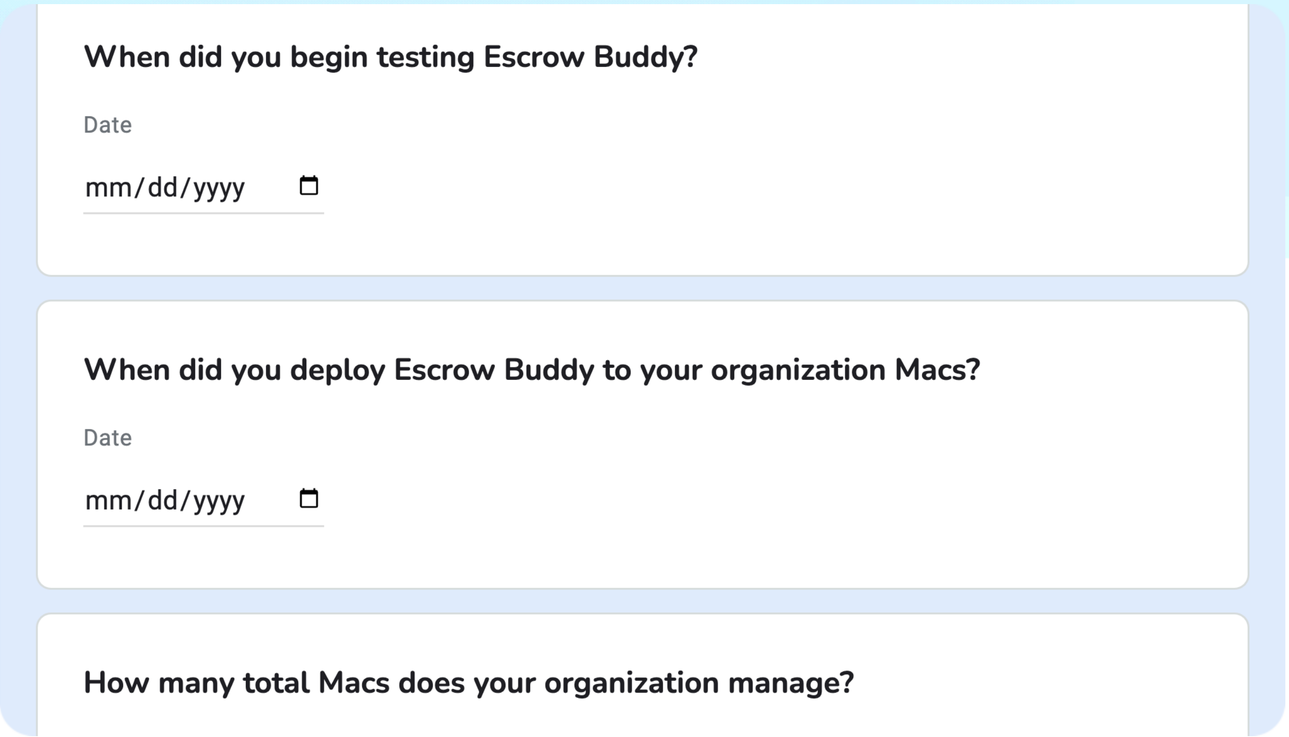
- Reading logs
- Testing with new macOS versions
- Tracking success over time
- Managing authorization database entries

https://github.com/macadmins/escrow-buddy/wiki/

Escrow Buddy Usage Survey

Consider submitting our anonymous survey after you deploy

Collected data will help us prioritize potential future work



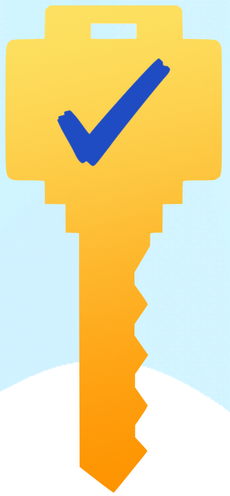
https://tinyurl.com/eb-usage

Mac Admins Open Source

- Solving problems broadly
- Signed/notarized releases
- Community stewardship

https://youtu.be/REyEYsgz5MI

Takeaways



- Check your FileVault key validity
- Consider using Escrow Buddy to remediate
- Stop prompting users for their passwords whenever possible

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Thank you!