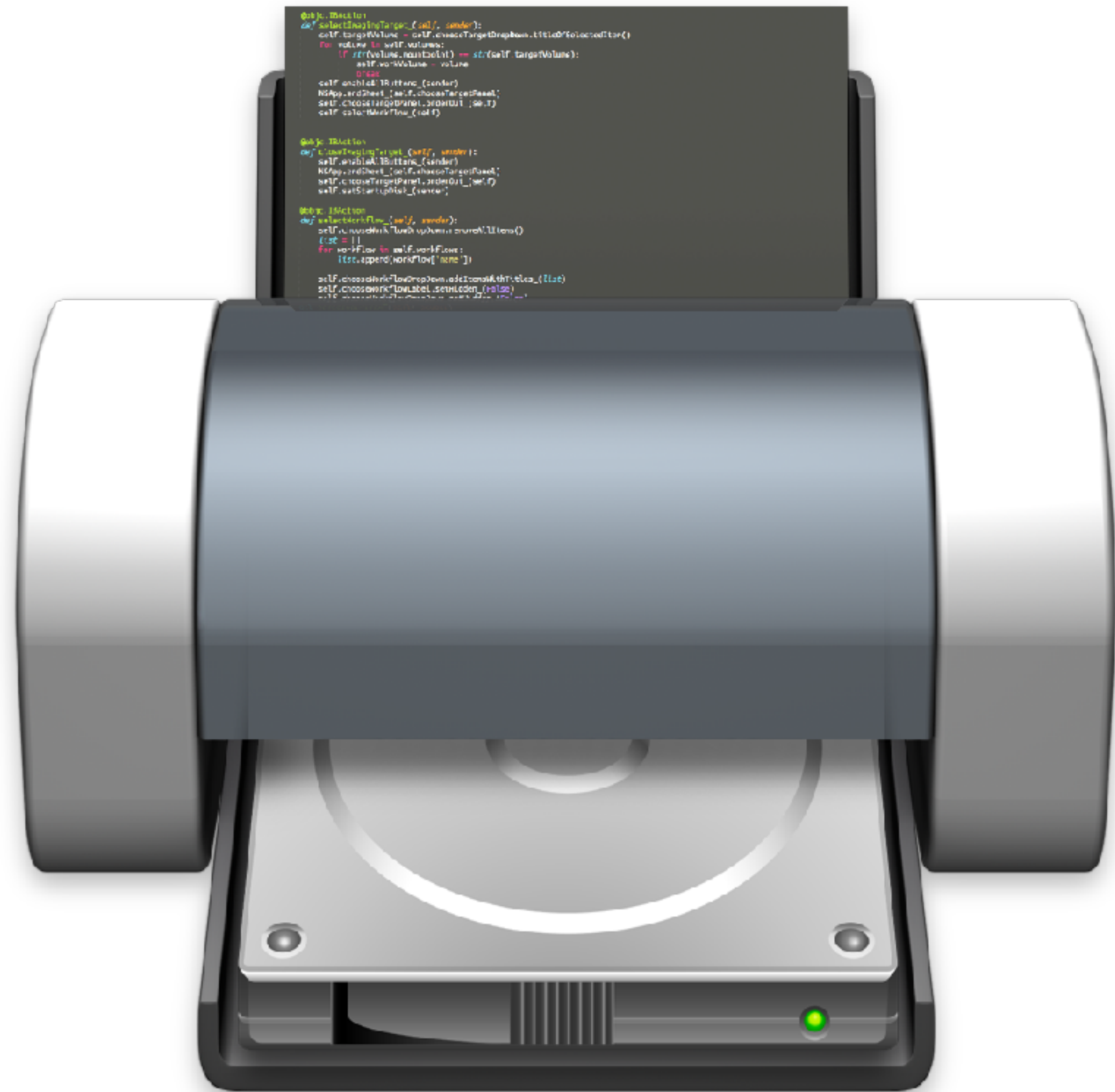


GRAHAM GILBERT / MACDEVOPS:YVR 2017 / 20170607

**Something something
commercial, something
something opensource**

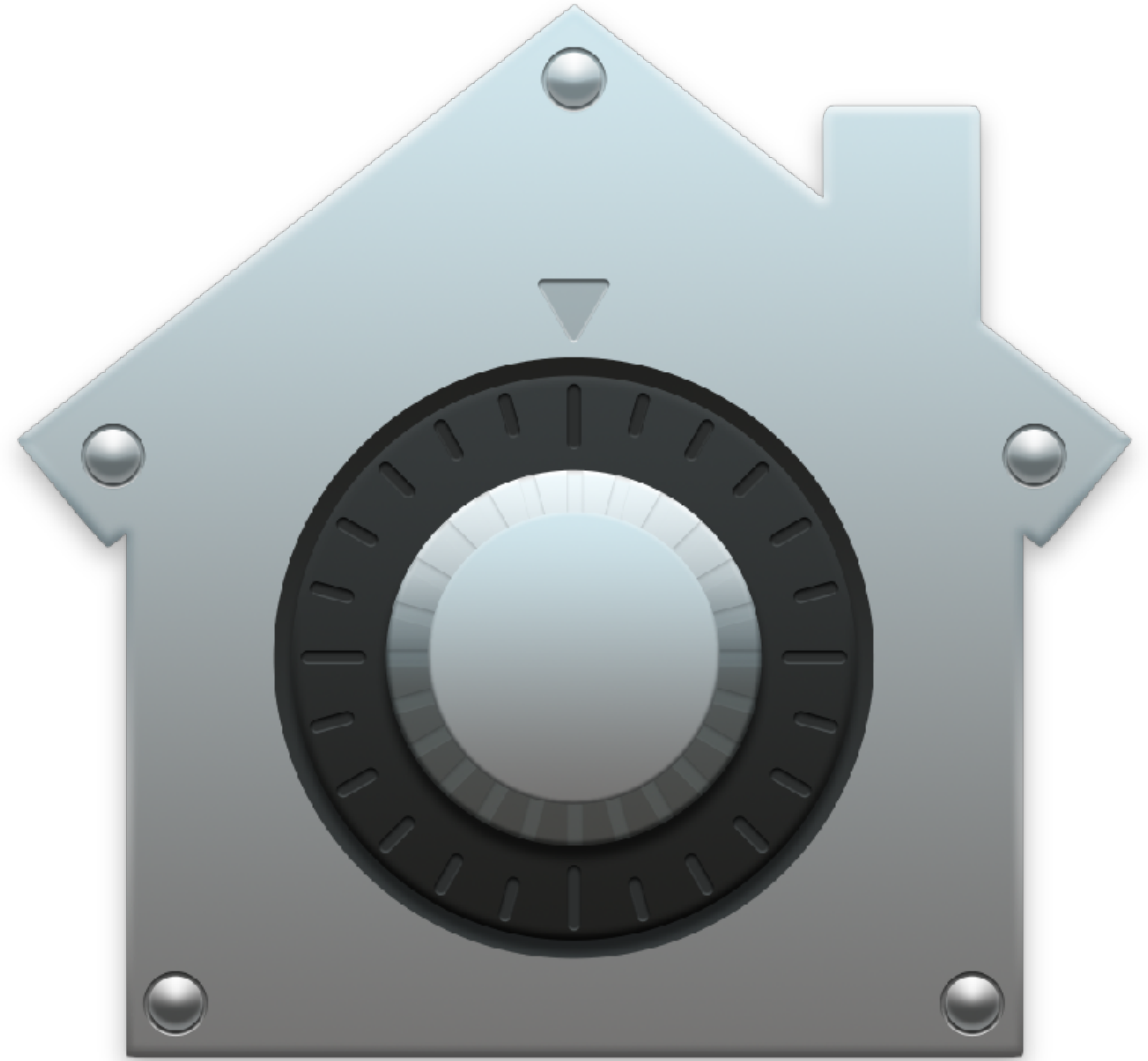




```
@objc IBAction
on: volumeTarget (self, sender):
    self.targetVolume = self.volumeTargetDropdown.selectedItem()
    for volume in self.volumes:
        if (volume.name == self.targetVolume):
            self.volume = volume
            break
    self.audioPlayer.play (sender)
    self.audioPlayer.volume = self.volume
    self.audioPlayer.pause (sender)
    self.audioPlayer.resume (sender)
    self.audioPlayer.currentTime = 0
    self.audioPlayer.play (sender)

@objc IBAction
on: volumeTarget (self, sender):
    self.audioPlayer.pause (sender)
    self.audioPlayer.resume (sender)
    self.audioPlayer.currentTime = 0
    self.audioPlayer.play (sender)

@objc IBAction
on: volumeTarget (self, sender):
    self.audioPlayer.pause (sender)
    self.audioPlayer.resume (sender)
    self.audioPlayer.currentTime = 0
    self.audioPlayer.play (sender)
```





A bit of history

The old guard



Lots of yucky Unix scripts



Macintosh HD



Restart required

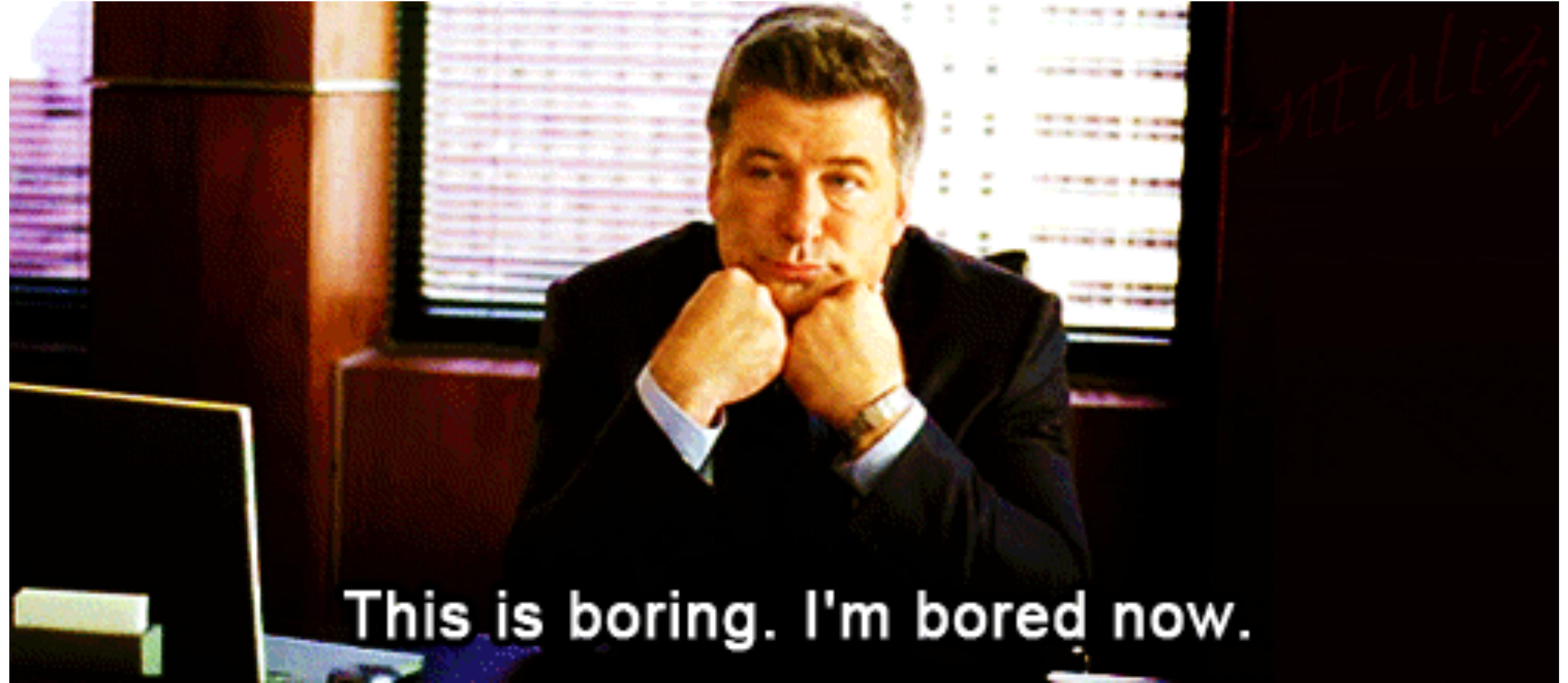
In order to install critical updates, your Mac will restart in 10 minutes. Please save all work now.





PATCH MANAGEMENT

Version control?



This is boring. I'm bored now.





Munki



Managed Software Center



- Software
- Categories
- My Items
- Updates



All items

Quick Links



1Password
Utilities - AgileBits Inc.
Installed
REMOVE



Adele
Printers - Airbnb
INSTALL



Adobe Acrobat Reader DC
Uncategorized
INSTALL



Adobe Creative Cloud Client
Productivity - Adobe
INSTALL



Adobe Flash Player
Internet - Adobe
INSTALL



Alfred 2
Utilities - Running with Crayons Ltd
INSTALL



Android Studio
Developer Tools - Google
INSTALL



Atom
Developer Tools - GitHub
Installed
REMOVE



Banksy
Printers - Airbnb
INSTALL



Bollywood
Printers - Airbnb
INSTALL



Bonnie
Printers - Airbnb
INSTALL



Bowie
Printers - Airbnb
INSTALL



Box Sync



Bria CCS



BurleMarx

- One Airbnb
- Contact AirSupport
- LDAP Password Reset
- VPN Troubleshooting
- Brand Center
- Goods Store
- Letterhead
- Presentations
- Business Cards
- A/V FAQ
- Rickshaw Bags

All Categories

Does this even still work?

It's code! Yay!

VOLLHA

**Your scientists were so
preoccupied with whether
they could, they didn't stop
to think if they should.**

Tadaaaaaahh!

FileVault

Accuracy? Nope.



4GIFS.com



This machine must be encrypted. It will reboot shortly after clicking continue.

Continue

Munki is great and all...

**But it's not a real config
management tool**

Puppet

Simple DSL

Batteries included

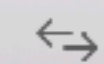
Extensible

apple_package

```
apple_package {'munkitools':  
  source      => 'puppet:///modules/bigfiles/munki/munkitools-2.8.2.2855.pkg',  
  version     => '2.8.2.2855',  
  receipt     => 'com.googlecode.munki.core',  
  installs    => [ '/Applications/Managed Software Center.app/Contents/MacOS/Managed Software Center',  
                  '/usr/local/munki/managedsoftwareupdate' ],  
  checksum    => [ 'f01ff7cc2b0ed727980f43990424a9124a487285',  
                  '768c21b2b89dfd6af8524e5ba4cb67b8c32e5d98' ],  
  force_install => false  
}
```

Hiera

A > > > > > > > > > Code examples > ManagedInstalls 1.mobileconfig



B > > > > > > > > > Code examples > ManagedInstalls 2.mobileconfig

A ...gedInstalls 1.mobileconfig
...cDevOps/2017/Code examplesB ...edInstalls 2.mobileconfig
...cDevOps/2017/Code examples

```

11     <dict>
12     <key>Forced</key>
13     <array>
14     <dict>
15     <key>mcx_preference_settings</key>
16     <dict>
17     <key>AppleSoftwareUpdatesOnly</key>
18     <false/>
19     <string></string>
20     <key>DaysBetweenNotifications</key>
21     <integer>1</integer>
22     <key>InstallAppleSoftwareUpdates</key>
23     <true/>
24     <key>UnattendedAppleUpdates</key>
25     <true/>
26     <key>LoggingLevel</key>
27     <integer>1</integer>
28     <key>LogToSyslog</key>
29     <true/>
30     <key>MSULogEnabled</key>
31     <false/>
32     <key>SoftwareRepoURL</key>
33     <string>https://munki.yourcompany.com</string>

```

```

34     <key>SuppressUserNotification</key>
35     <false/>
36     <key>UseClientCertificate</key>
37     <false/>
38     <key>ShowRemovalDetail</key>
39     <false/>
40     <key>PerformAuthRestarts</key>
41     <false/>
42     <key>RecoveryKeyFile</key>
43     <string></string>
44     <key>UseNotificationCenterDays</key>

```

```

11     <dict>
12     <key>Forced</key>
13     <array>
14     <dict>
15     <key>mcx_preference_settings</key>
16     <dict>
17     <key>AppleSoftwareUpdatesOnly</key>
18     <false/>
19     <string></string>
20     <key>DaysBetweenNotifications</key>
21     <integer>1</integer>
22     <key>InstallAppleSoftwareUpdates</key>
23     <true/>
24     <key>UnattendedAppleUpdates</key>
25     <true/>
26     <key>LoggingLevel</key>
27     <integer>1</integer>
28     <key>LogToSyslog</key>
29     <true/>
30     <key>MSULogEnabled</key>
31     <false/>
32     <key>SoftwareRepoURL</key>
33     <string>https://munki.yourcompany.com</string>

```

```

34     <key>ClientIdentifier</key>
35     <string>special_snowflake</string>
36     <key>SuppressUserNotification</key>
37     <false/>
38     <key>UseClientCertificate</key>
39     <false/>
40     <key>ShowRemovalDetail</key>
41     <false/>
42     <key>PerformAuthRestarts</key>
43     <false/>
44     <key>RecoveryKeyFile</key>
45     <string></string>
46     <key>UseNotificationCenterDays</key>

```

```
ce_settings</key>
areUpdatesOnly</key>
g>
nNotifications</key>
eger>
leSoftwareUpdates</key>
AppleUpdates</key>
el</key>
eger>
g</key>
led</key>
poURL</key>
/munki.yourcompany.com</string>
erNotification</key>
ertificate</key>
lDetail</key>
hRestarts</key>
yFile</key>
```

```
11 <dict>
12 <key>Forced</key>
13 <array>
14 <dict>
15 <key>mcx_preference_settings</key>
16 <dict>
17 <key>AppleSoftwareUpdatesOnly</key>
18 <false/>
19 <string></string>
20 <key>DaysBetweenNotifications</key>
21 <integer>1</integer>
22 <key>InstallAppleSoftwareUpdates</key>
23 <true/>
24 <key>UnattendedAppleUpdates</key>
25 <true/>
26 <key>LoggingLevel</key>
27 <integer>1</integer>
28 <key>LogToSyslog</key>
29 <true/>
30 <key>MSULogEnabled</key>
31 <false/>
32 <key>SoftwareRepoURL</key>
33 <string>https://munki.yourcompany.com</string>
34 <key>ClientIdentifier</key>
35 <string>special_snowflake</string>
36 <key>SuppressUserNotification</key>
37 <false/>
38 <key>UseClientCertificate</key>
39 <false/>
40 <key>ShowRemovalDetail</key>
41 <false/>
42 <key>PerformAuthRestarts</key>
43 <false/>
44 <key>RecoveryKeyFile</key>
```

Without Hiera

```
class without_hiera {
  $identifier = $facts['some_identifier']

  if $identifier == 'one_group' {
    $munki::client_identifier = 'something'
  } elsif $identifier == 'another_group' {
    $munki::client_identifier = 'something_else'
  } ...
  else {
    $munki::client_identifier = ''
  }
}
```

```
1 # Class: munki
2 #
3 # Installs and configures munki
4 # you must specify your own munki repo URL; please don't use http://munki and instead use a https URL.
5
6 class munki (
7     String $munkitools_version           = '2.8.0.2810',
8     Boolean $apple_software_updates_only = false,
9     String $client_cert_path             = "${facts['ssldir']}/certs/${facts['certname']}.pem",
10    String $client_identifier             = '',
11    String $client_key_path               = "${facts['ssldir']}/private_keys/${facts['certname']}.pem",
12    Integer $days_between_notifications  = 1,
13    Boolean $install_apple_software_updates = true,
14    Boolean $unattended_apple_updates     = false,
15    Integer $logging_level                = 1,
16    Boolean $log_to_syslog                 = false,
17    Boolean $msu_log_enabled               = false,
18    String $software_repo_ca_cert         = "${facts['ssldir']}/certs/ca.pem",
19    String $software_repo_url             = '',
20    Any $software_update_server_url       = undef,
21    Boolean $suppress_user_notification    = false,
22    Boolean $use_client_cert               = false,
23    Boolean $show_removal_detail           = false,
24    Integer $days_before_broken           = 60,
25    Array $additional_http_headers        = [],
26    String $payload_organization          = '',
27    String $package_source                 = "puppet:///modules/bigfiles/munki/munkitools-${munkitools_version}.pkg",
28    Boolean $auto_run_after_install        = true,
29    Boolean $perform_auth_restarts         = false,
30    String $recovery_key_file              = '',
```

\$ sudo puppet facts

```
"ssh_client_version_full": "7.4p1,",
"ssh_client_version_major": "7.4",
"ssh_client_version_release": "7.4",
"ssh_server_version_full": "7.4p1,",
"ssh_server_version_major": "7.4",
"ssh_server_version_release": "7.4",
"ssldir": "/etc/puppetlabs/puppet/ssl",
"staging_http_get": "curl",
"system_profiler": {
  "boot_mode": "Normal",
  "boot_rom_version": "MBP132.0226.B22",
  "boot_volume": "Macintosh HD",
  "computer_name": "thunderpants",
  "cores": "2",
  "hardware_uuid": "4414E6BA-F9FD-51F4-912B-983EB569D32C",
  "kernel_version": "Darwin 16.7.0",
  "l2_cache_per_core": "256 KB",
  "l3_cache": "4 MB",
  "memory": "16 GB",
  "model_identifier": "MacBookPro13,2",
  "model_name": "MacBook Pro",
  "processor_name": "Intel Core i7",
  "processor_speed": "3.3 GHz",
  "processors": "1",
  "secure_virtual_memory": "Enabled",
  "serial_number": "ABC123",
  "smc_version": "2.37f20",
  "system_version": "macOS 10.12.6 (16G8c)",
  "uptime": "51 minutes",
  "username": "System Administrator (root)"
},
"system_uptime": {
  "days": 0,
  "hours": 0,
  "seconds": 3047,
  "uptime": "0:50 hours"
```

```
1 ----  
2 :backends:  
3   - yaml  
4 :hierarchy:  
5   - "nodes/{::trusted.certname}"  
6   - "serial_number/{::system_profiler.serial_number}"  
7   - "keyframe/{::keyframe}"  
8   - "itx_machine/{::itx_machine}"  
9   - "hrc_machine/{::hrc_machine}"  
10  - "osfamily/{::osfamily}/build_type/{::build_type}"  
11  - "osfamily/{::osfamily}"  
12  - "virtual/{::osfamily}/{::virtual}"  
13  - "virtual/{::virtual}"  
14  - common  
15
```

**serial_number/
ABC123.yaml**

```
---  
munki::client_identifier: 'special_snowflake'
```

osfamily/ Darwin.yaml

```
---
```

```
classes:
```

- malwarebytes
- munki
- ntp
- osquery
- planb
- sal_client

```
munki::log_to_syslog: true
```

```
munki::use_client_cert: false
```

```
munki::software_repo_url: 'https://  
munki.company.com'
```

```
munki::unattended_apple_updates: true
```

```
munki::munkitools_version: '2.8.2.2855'
```

```
munki::client_identifier: 'site_default'
```

The result

```
---  
classes:  
- malwarebytes  
- munki  
- ntp  
- osquery  
- planb  
- sal_client  
  
munki::log_to_syslog: true  
munki::use_client_cert: false  
munki::software_repo_url: 'https://  
munki.company.com'  
munki::unattended_apple_updates: true  
munki::munkitools_version: '2.8.2.2855'  
munki::client_identifier: 'special_snowflake'
```



keyframe/ 10.yaml

```
---  
munki::munkitools_version: '3.0.0.3327'
```

But what about imaging?



What's going on?

Search...

Advanced Search

Application Inventory

Business Units

Airbnb Macs

4854

+ New Business Unit

Activity



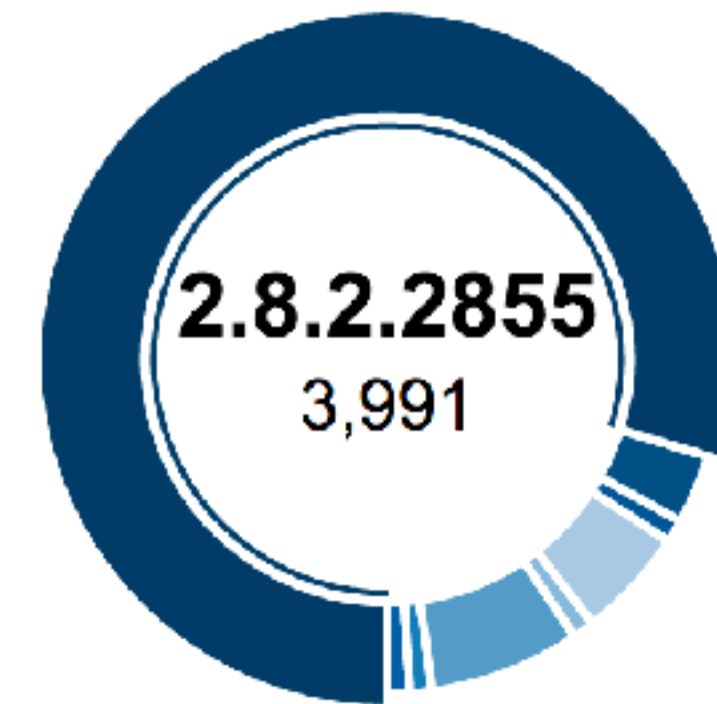
Status

Clients with errors	44
Clients with warnings	203
Clients with activity	3139
7 day active	3468
30 day active	3697
90 day active	4173
All machines	4854

Operating Systems

10.12.3	1
10.12.2	3101
10.12.1	325
10.12	180
10.11.6	374
10.11.5	218
10.11.4	93
10.11.3	29
10.11.2	1
10.11.1	2
10.10.6	292
10.10.4	8
10.10.3	4
10.9.5	25
10.9.4	1

Munki Version



Uptime



Memory



Disk Space



Search...

Back

Saved Searches

New Search

Search

2013 Machines

Search Item	Machine
Search Field	machine_model_friendly
Operator	Contains
Search Term	2013

AND / OR	AND
Search Item	Machine
Search Field	last_checkin
Operator	>=
Search Term	2017-01-01



group

New Group

Run Search

This is all great, but...

Freeware vs. Paid



**The high cost
of a cheap solution**

People

The buck stops with you

Open source can be difficult

What about security?

“I miss \$oldtool”

What we lost

MDM

MDM

- DEP
- Remote Wipe
- VPP

What we won

Desired State

Auditable

Tailor made solution

What's next?

Questions?

Questions?
(Not statements pls)

Say hi!

- **Twitter:** @grahamgilbert
- **Github:** @grahamgilbert
- **Web:** grahamgilbert.com

