

TWISTING MUNKI

(for configuration management)

@GRAHAMGILBERT

pebble.it



**MUNKI ISN'T A
CONFIGURATION
MANAGEMENT TOOL**

But it can pretend to be one

**"I DON'T USE
MUNKI!"**

GRAHAM'S FIRST LAW OF MAC MANAGEMENT

**CONFIGURATION NEEDS
TO BE CONTINUALLY
MANAGED**



Here be dragons.



CURRENT STATE



DESIRED STATE



CORRECTION

**HOW MUNKI DECIDES
WHAT NEEDS TO
BE INSTALLED**

INSTALL CHECK SCRIPT
INSTALLS ARRAY
RECEIPTS

INSTALL CHECK SCRIPT
INSTALLS ARRAY
RECEIPTS

```
$ makepkginfo -f /Library/Management/Scripts/wallpaper
```

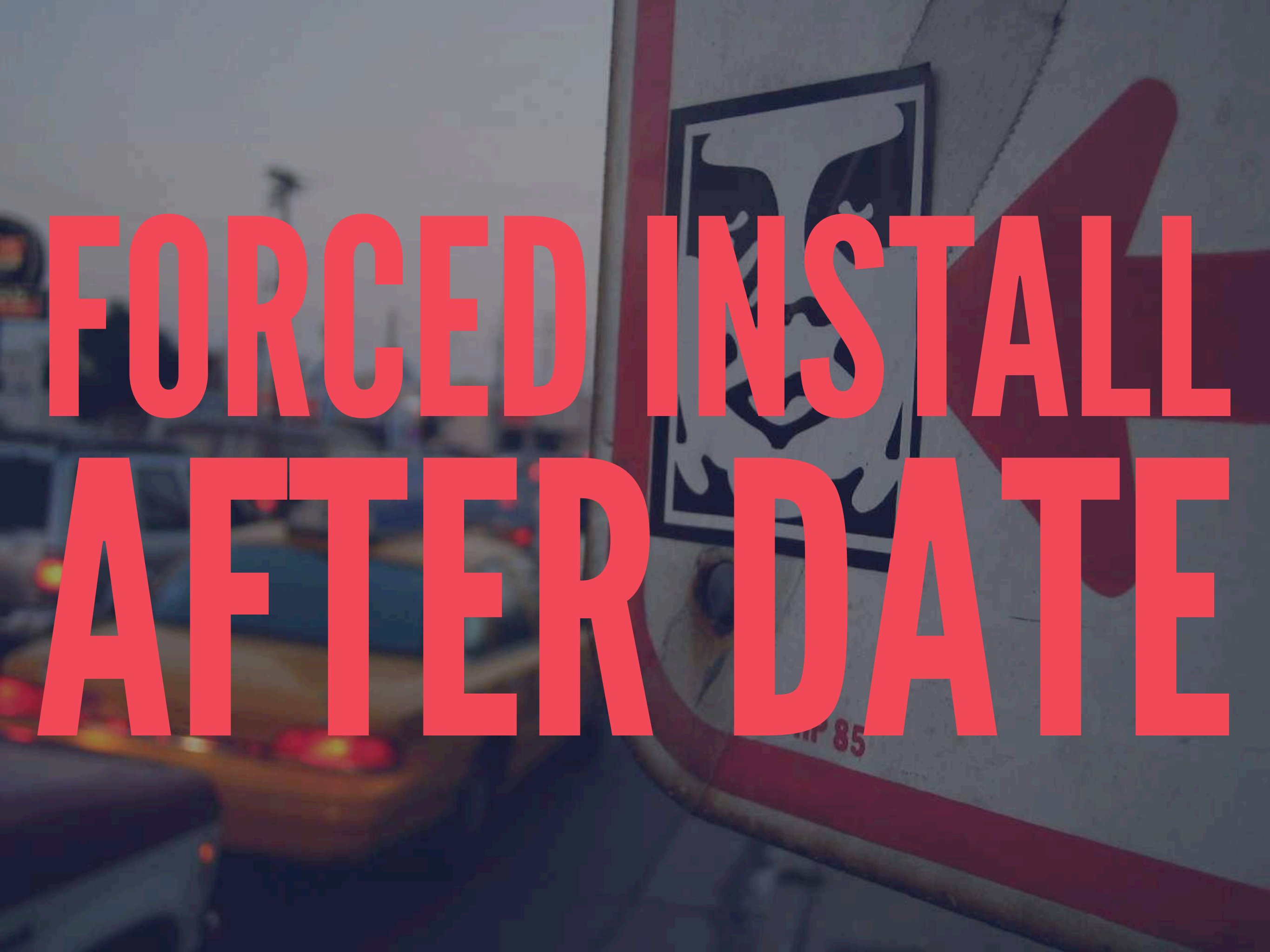


```
<key>installs</key>
<array>
  <dict>
    <key>md5checksum</key>
    <string>85757f9a341df4de3f1ca01b6a1d52eb</string>
    <key>path</key>
    <string>/Library/Management/Scripts/wallpaper</string>
    <key>type</key>
    <string>file</string>
  </dict>
</array>
```

GRAHAM'S SECOND LAW OF MAC MANAGEMENT

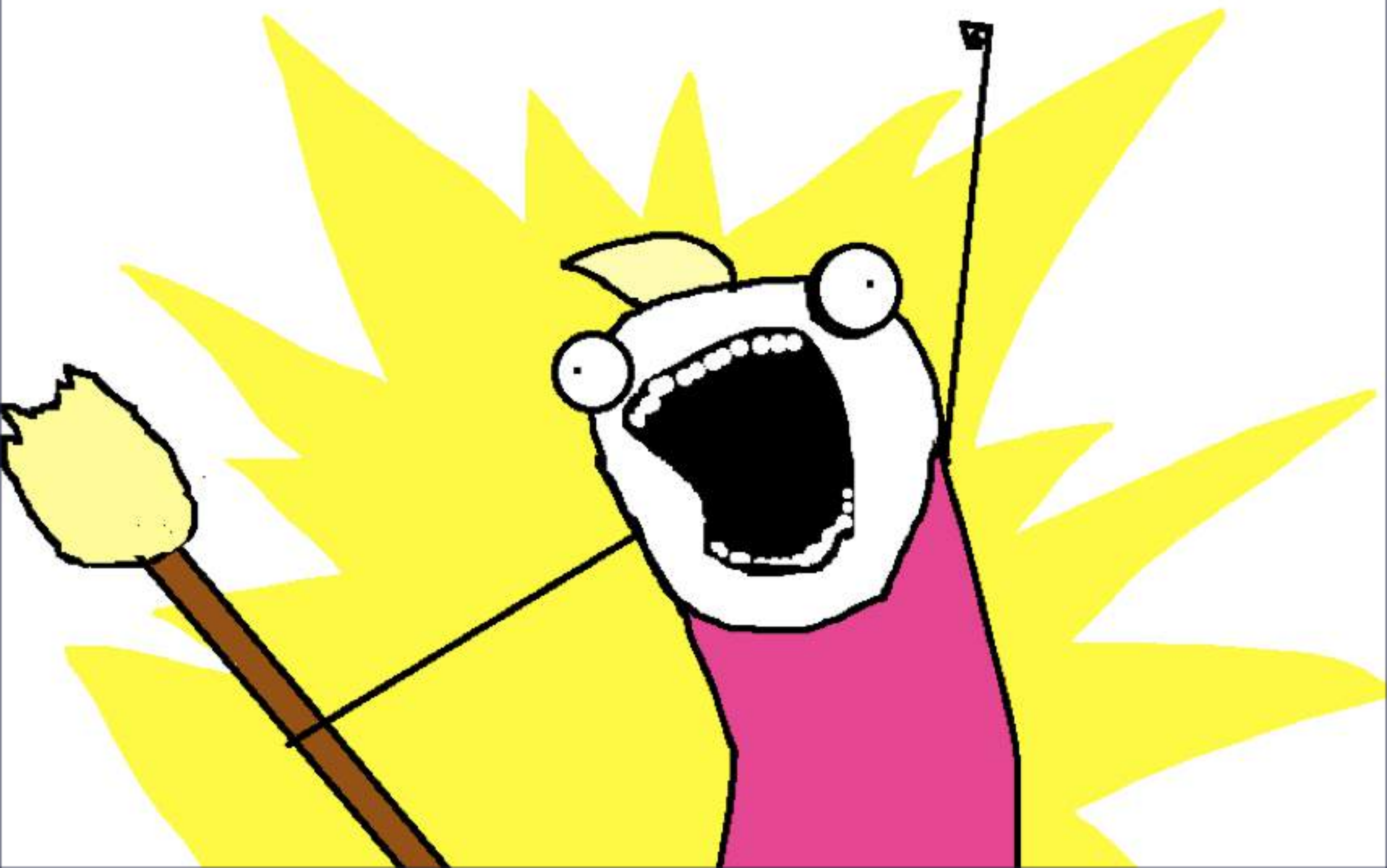
USERS ***** LOVE TO
CLICK 'LATER'

**UNATTENDED
INSTALL**



**FORCED INSTALL
AFTER DATE**

I'M UPDATING!



INSTALL CHECK SCRIPT

INSTALLS ARRAY

RECEIPTS

Blah blah blah

TIME SERVER

```
#!/bin/bash
```

```
/usr/sbin/systemsetup -setnetworktimeserver ntp.company.com
```

```
/usr/sbin/systemsetup -setusingnetworktime on
```

```
USE_PKGBUILD=1
```

```
include /usr/local/share/luggage/luggage.make
```

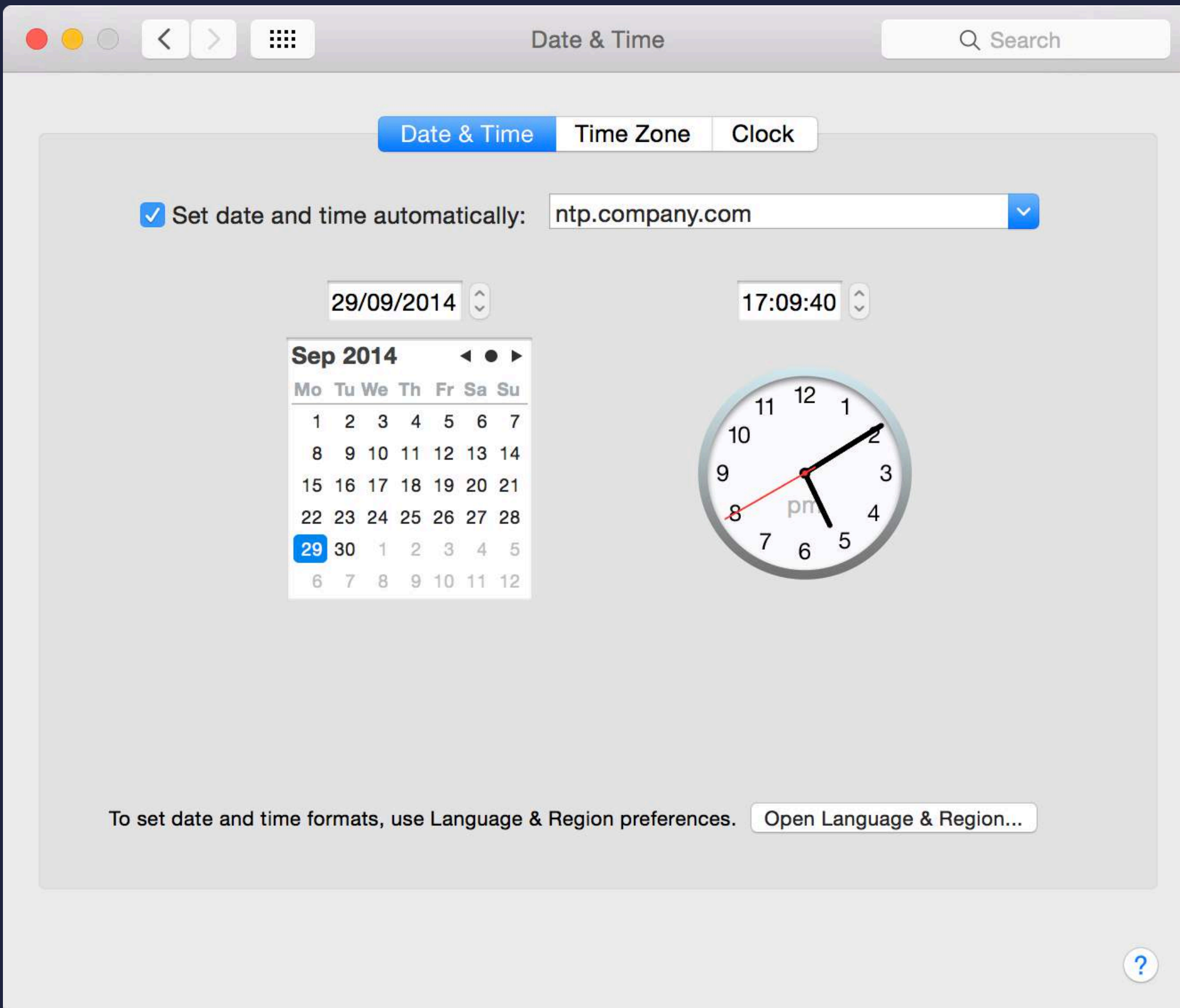
```
TITLE=set_time_server
```

```
PACKAGE_NAME=${TITLE}
```

```
REVERSE_DOMAIN=com.pebbleit
```

```
PAYLOAD=\
```

```
    pack-script-postinstall
```



```
$ pkgutil --pkg-info com.pebbleit.set-time-server
```

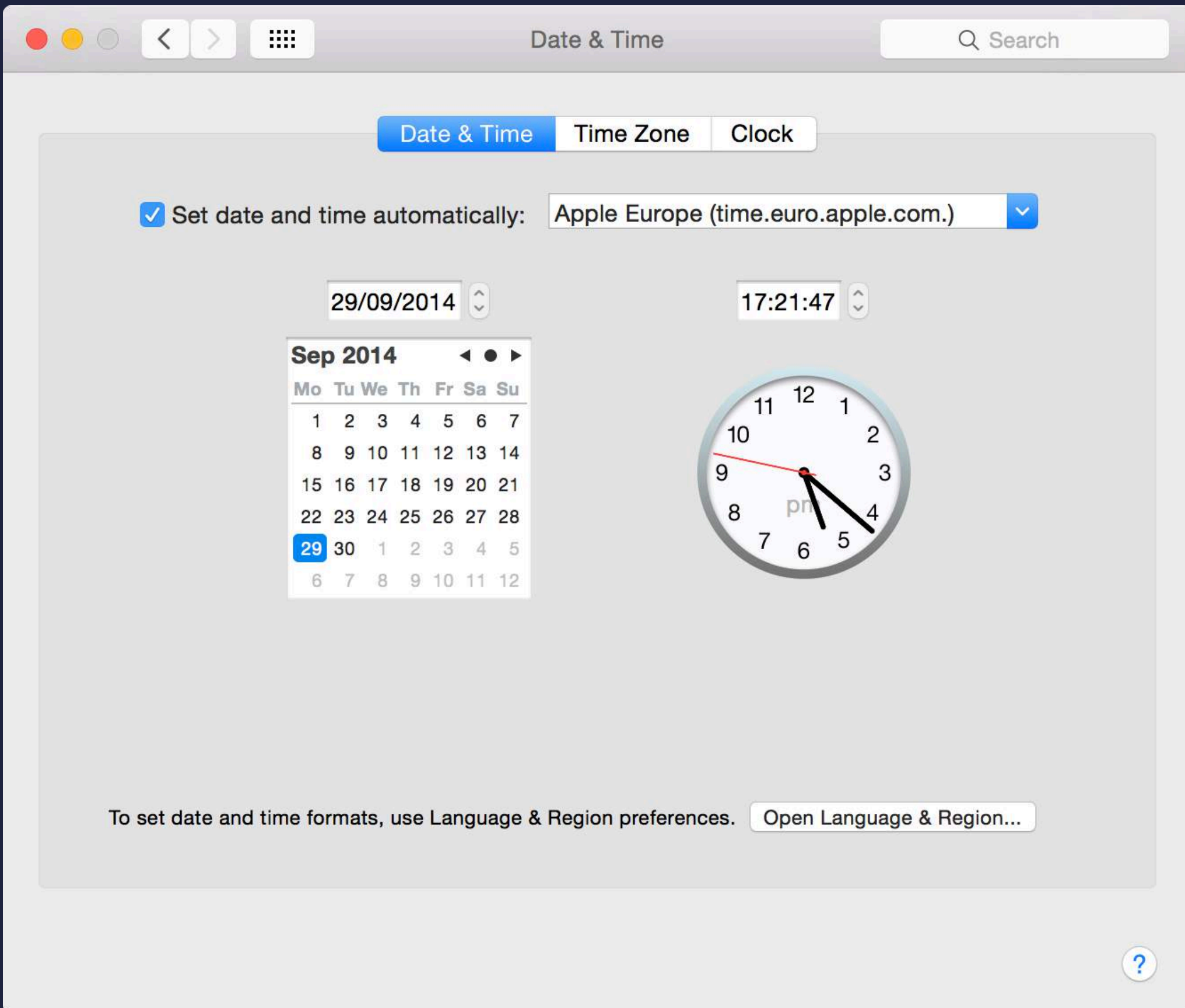
```
package-id: com.pebbleit.set-time-server
```

```
version: 1.0.0
```

```
volume: /
```

```
location: /
```

```
install-time: 1411314264
```





2. grahamgilbert@Artoo: ~ (zsh)

Last login: Mon Sep 29 16:18:24 on ttys000

[grahamgilbert@Artoo] []

↳ sudo managedsoftwareupdate

[~]

Password:

Managed Software Update Tool

Copyright 2010-2014 The Munki Project

<http://code.google.com/p/munki>

Starting...

Checking for available updates...

Retrieving list of software for this machine...

Retrieving list of software for this machine...

Finishing...

Performing postflight tasks...

postflight stdout: Sal report submitted for Artoo

.

Done.

[grahamgilbert@Artoo] []

↳

[~]

**INSTALL
CHECK
SCRIPTS**

exit 1

EVERYTHING'S PEACHY

exit 0

I NEED TO BE

```
#!/bin/bash
```

```
TIMESERVER=`/usr/sbin/systemsetup -getnetworktimeserver`  
USINGNETWORK=`/usr/sbin/systemsetup -getusingnetworktime`
```

```
if [ "$TIMESERVER" == "Network Time Server: ntp.company.com" ]; then  
    if [ "$USINGNETWORK" == "Network Time: On" ]; then  
        exit 1  
    else  
        exit 0  
    fi  
else  
    exit 0  
fi
```

security

security(1)

BSD General Commands Manual

security(1)

NAME

security -- Command line interface to keychains and Security framework

SYNOPSIS

security [-hilqv] [-p prompt] [command] [command_options] [command_args]

DESCRIPTION

A simple command line interface which lets you administer keychains, manipulate keys and certificates, and do just about anything the Security framework is capable of from the command line.

By default **security** will execute the command supplied and report if anything went wrong.

If the **-i** or **-p** options are provided, **security** will enter interactive mode and allow the user to enter multiple commands on stdin. When EOF is read from stdin **security** will exit.

Here is a complete list of the options available:

-h If no arguments are specified, show a list of all commands. If

:|

Last login: Mon Sep 29 17:31:35 on ttys002

[grahamgilbert@Artoo] []

↳ security authorizationdb read system.preferences.energysaver

[~]

```
<?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>allow-root</key>
```

```
  <true/>
```

```
  <key>authenticate-user</key>
```

```
  <true/>
```

```
  <key>class</key>
```

```
  <string>user</string>
```

```
  <key>comment</key>
```

```
  <string>Checked by the Admin framework when making changes to the Energy Saver preference pane.</string>
```

```
  <key>created</key>
```

```
  <real>427674229.99584597</real>
```

```
  <key>group</key>
```

```
  <string>admin</string>
```

```
  <key>modified</key>
```

```
  <real>427674229.99584597</real>
```

```
  <key>session-owner</key>
```

```
  <false/>
```

```
  <key>shared</key>
```

```
  <true/>
```

```
  <key>timeout</key>
```

```
  <integer>2147483647</integer>
```

```
  <key>tries</key>
```

```
  <integer>10000</integer>
```

```
  <key>version</key>
```

```
  <integer>0</integer>
```

```
</dict>
```

```
</plist>
```

```
YES (0)
```

[grahamgilbert@Artoo] []

```
#!/usr/bin/env python
```

```
import subprocess  
import sys  
import plistlib
```

```
# Group System Preferences should be opened to  
group = 'everyone'
```

```
command = ['/usr/bin/security', 'authorizationdb', 'read', 'system.preferences']
```

```
task = subprocess.Popen(command, stdout=subprocess.PIPE, stderr=subprocess.PIPE)  
(out, err) = task.communicate()
```

```
formatted = plistlib.readPlistFromString(out)
```

```
# if group matches, exit 1 as we don't need to install
```

```
if formatted['group'] == group:  
    sys.exit(1)
```

```
else:  
    # if it doesn't we're exiting with 0 as we need to perform the install  
    sys.exit(0)
```



```
/usr/bin/profiles -I -F /path/to/my.mobileconfig
```

MAKE-PROFILE-PKG

```
#!/bin/bash
```

```
if ( /usr/bin/profiles -P | /usr/bin/grep -q 'com.pebbleit.myprofile' ); then  
    # Profile is present  
    exit 1  
else  
    # Profile isn't there, need to install  
    exit 0  
fi
```



BUT WAIT!



60% of the time,
it works every time.

INSTALL CHECK SCRIPT
INSTALLS ARRAY
RECEIPTS

INSTALL CHECK SCRIPT

INSTALLS ARRAY

RECEIPTS


```
#!/bin/bash
```

```
# The version of the package  
PKG_VERSION="1.0.0"
```

```
# The identifier of the package  
PKG_ID="com.pebbleit.myprofile"
```

```
# The identifier of the profile  
PROFILE_ID="com.pebbleit.myprofile"
```

```
# The version installed from pkgutil  
VERSION_INSTALLED=`/usr/sbin/pkgutil --pkg-info ${PKG_ID} | grep version | sed 's/^[^:]*: //'`
```

```
if ( /usr/bin/profiles -P | /usr/bin/grep -q $PROFILE_ID ); then  
    # Profile is present, check the version  
    if [ "$VERSION_INSTALLED" = "$PKG_VERSION" ]; then  
        # Correct version, all good  
        exit 1  
    else  
        exit 0  
    fi  
else  
    # Profile isn't there, need to install  
    exit 0  
fi
```

**WHO LOVES
PRINTERS?**

space:		MSU End:	2014-09-29
Console user:	grahamgilbert		20:51
		Puppet Run:	2014-09-29
			20:36

Errors 9

```
Running postinstall_script for laserjet_p4014 failed.
-----
(standard_in) 1: illegal character: &
(standard_in) 1: parse error
printer laserjet_p4014: failed. enabled in MZ step 20:49:35 2014
/tmp/munki-SPyeoQ/postinstall_script: line 3: [ == binary operator expected
lpadmin: Unable to copy PD file "/Library/Contents/Resources/HP LaserJet P4010_P4510 Series.gz" - No such file or directory
File Doesn't Exist, Will Create: /private/etc/cups/deployment/receipts/laserjet_p4014.plist
-----
```

Warnings 1

```
Postinstall script for laserjet_p4014 returned 1
```

RELATIONSHIPS

```
<key>catalogs</key>
<array>
  <string>production</string>
</array>
<key>category</key>
<string>Printers</string>
<key>description</key>
<string>Sets up the HP LaserJet P4014</string>
<key>display_name</key>
<string>HP LaserJet P4014</string>
<key>name</key>
<string>laserject_p4014</string>
<key>requires</key>
<array>
  <string>HewlettPackardPrinterDrivers</string>
</array>
```

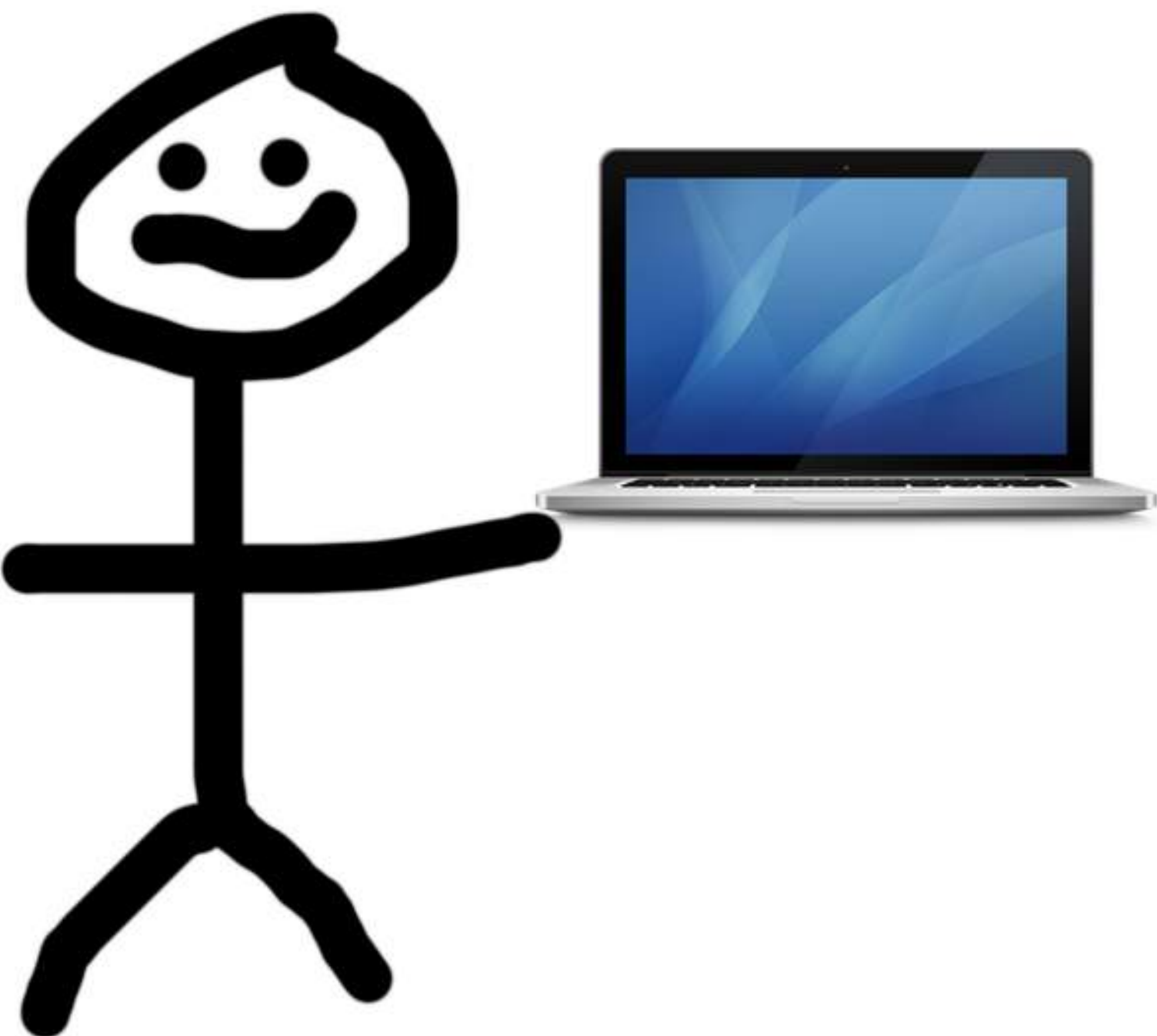
```
<key>requires</key>
```

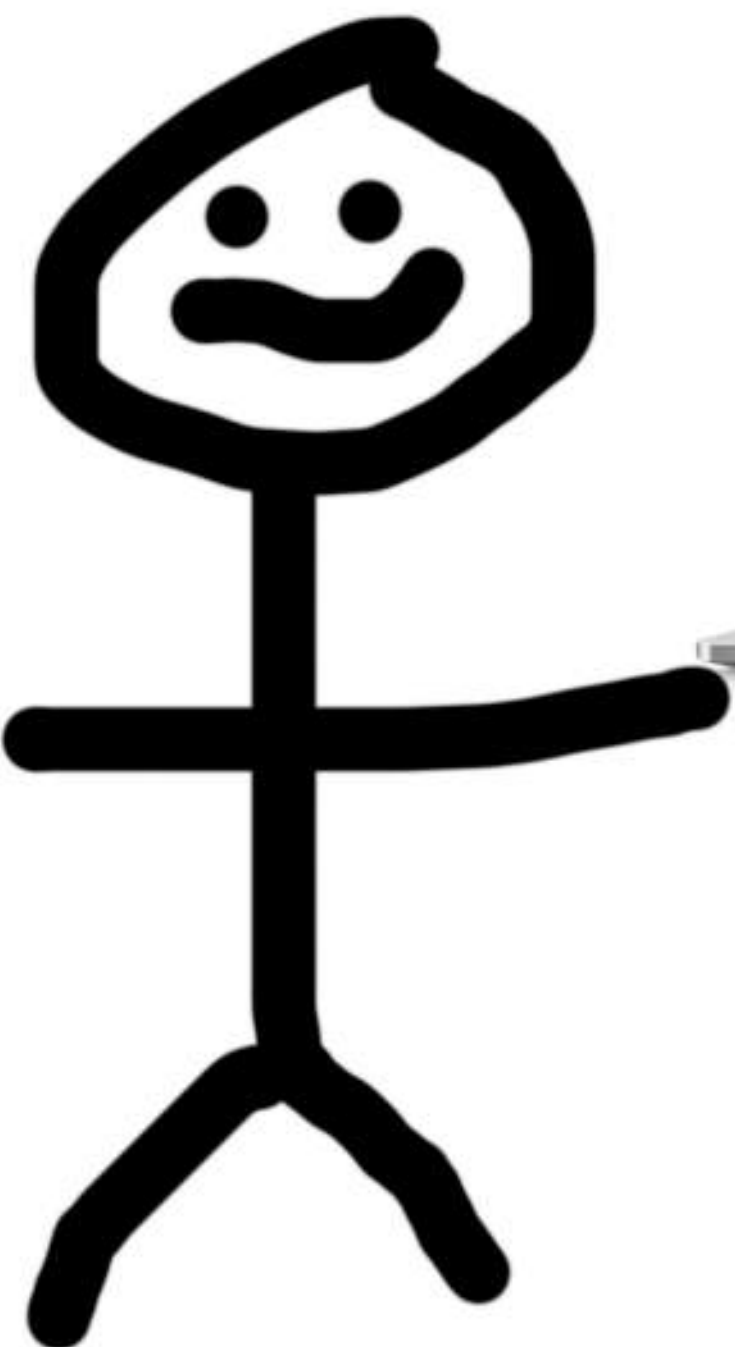
```
<array>
```

```
    <string>HewlettPackardPrinterDrivers</string>
```

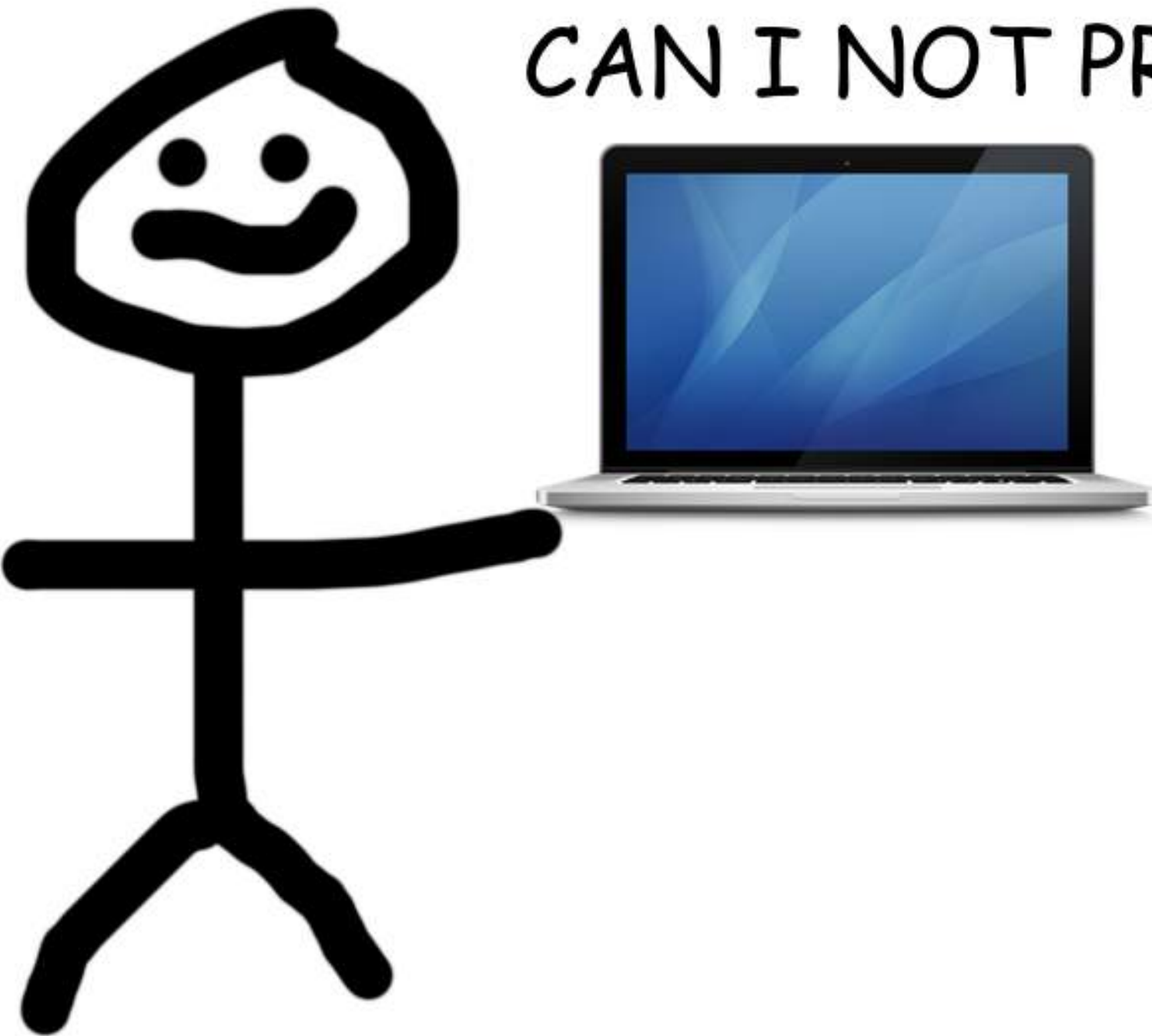
```
</array>
```

CONDITIONAL ITEMS





I NEED TO PRINT MY VERY
IMPORTANT DOCUMENT. WHY
CAN I NOT PRINT! MAKE IT
PRINT.

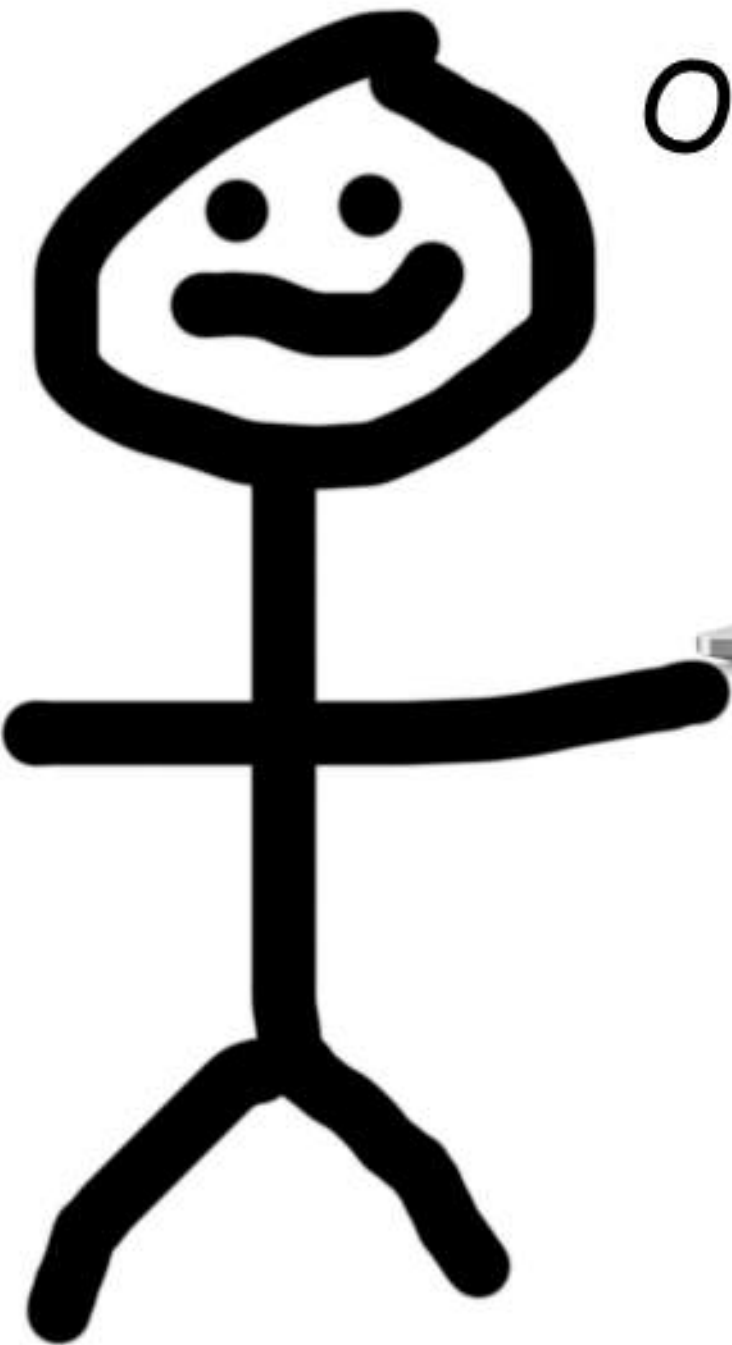




```
<key>conditional_items</key>
<array>
  <dict>
    <key>condition</key>
    <string>external_ip == "123.456.789.123"</string>
    <key>managed_installs</key>
    <array>
      <string>InstallLondonPrinter</string>
    </array>
  </dict>
</array>
```

I NEED TO PRINT MY VERY
IMPORTANT DOCUMENT.

OH LOOK, THERE'S THE PRINTER.



SELF SERVICE

**OPTIONAL
INSTALLS**



SELF SERV VEMANIFEST

```
<?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>managed_installs</key>
  <array>
    <string>OracleJava8</string>
    <string>Silverlight</string>
  </array>
  <key>managed_uninstalls</key>
  <array>
  </array>
</dict>
</plist>
```

```
#!/usr/bin/python
```

```
import plistlib
```

```
my_item = 'RepairPermissions'
```

```
SelfServeManifestPath = "/Library/Managed Installs/manifests/SelfServeManifest"
```

```
SelfServeManifest = plistlib.readPlist(SelfServeManifestPath)
```

```
for item in SelfServeManifest.get('managed_installs', []):
```

```
    if item == my_item:
```

```
        SelfServeManifest['managed_installs'].remove(item)
```

```
SelfServeManifest = plistlib.writePlist(SelfServeManifest, SelfServeManifestPath)
```

INSTALLINFO

I THOUGHT WE WERE REPAIRING PERMISSIONS?

```
#!/usr/bin/python
```

```
import subprocess
```

```
# Run the repair permissions
```

```
cmd = ['/usr/sbin/diskutil', 'repairPermissions', '/']
```

```
task = subprocess.Popen(cmd).communicate()[0]
```

PREFLIGHT

POSTFLIGHT

WHERE AM I?

PACKAGEURL

NO INTERRUPTIONS



**Hello, IT, have you tried
turning it off and on again?**


```
#!/bin/bash
```

```
days=`uptime | awk '{ print $4 }' | sed 's/,//g'`
```

```
num=`uptime | awk '{ print $3 }'`
```

```
if [ $days = "days" ]; then
```

```
    if [ $num -gt "7" ]; then
```

```
        exit 0
```

```
    else
```

```
        exit 1
```

```
    fi
```

```
else
```

```
    exit 1
```

```
fi
```



Software



Categories



My Items



Updates

Search

1 pending update **Restart Required**

UPDATE



System Reboot Required.

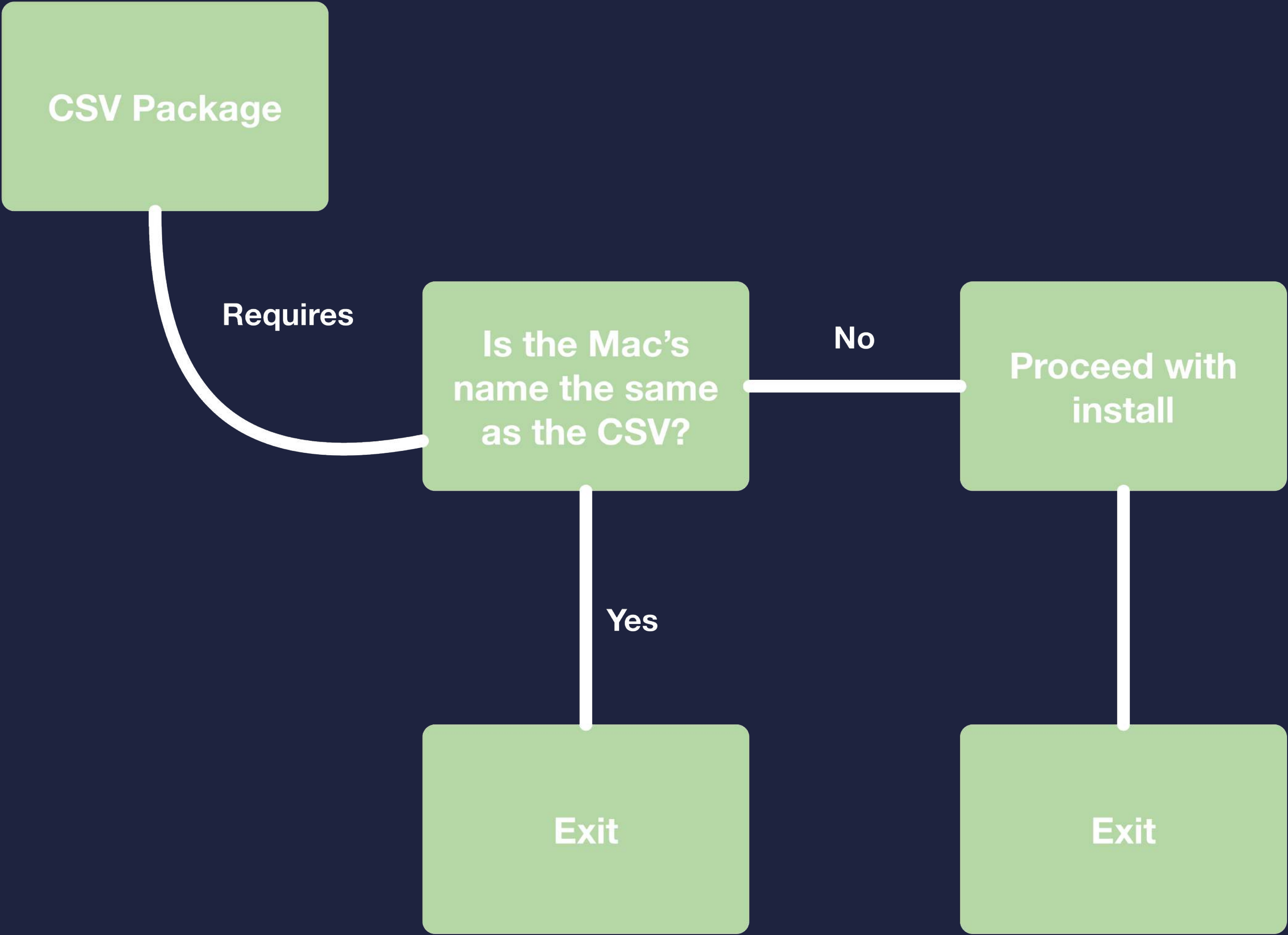
Version 1.0

Restart Required

This will be enforced after 14 days.

```
<key>forced_install_after_date</key>  
<date>2011-08-03T13:00:00Z</date>
```


EVERYONE NEEDS A NAME



CSV Package

Requires

Is the Mac's
name the same
as the CSV?

No

Proceed with
install

Yes

Exit

Exit

```
#!/usr/bin/python
```

```
import blah
```

```
if blah != blahblah:  
    print "Time for tea, chaps"
```

WHAT'S MISSING?

REPORTING

Clients



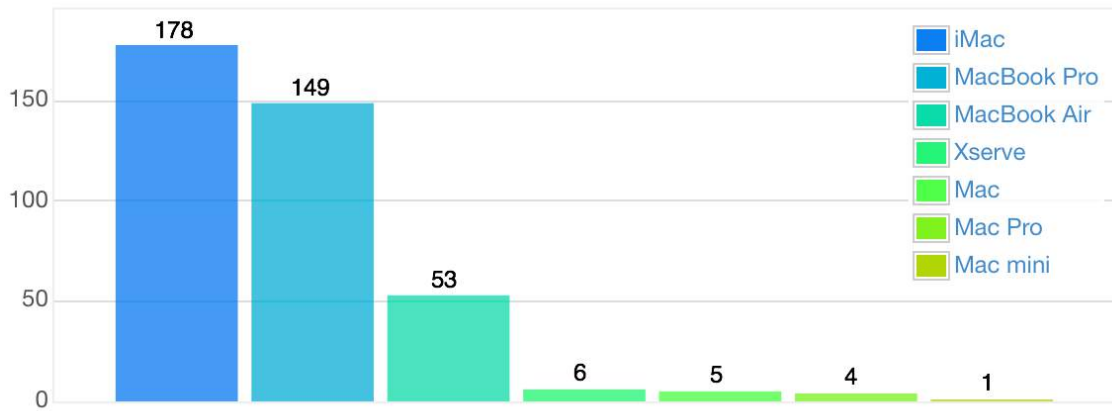
Disk status



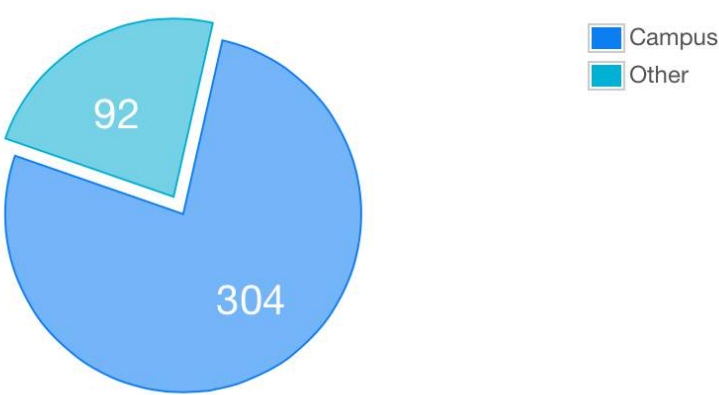
Munki



Hardware breakdown



Network locations



New clients

5

Rik's MacBook Pro	a day ago
Jeroen's MacBook Pro	2 days ago
Lorenz Kolbes MacBook Pro	2 days ago
Rob's MacBook Air	6 days ago
mb-016358	6 days ago

Warranty status

Expires in 30 days (Supported)

2

Business Units

Acme Corp

89

Big Kahuna Burger

127

Kwik-E-Mart

78

Moe's Tavern

14

OCP

69

pebble.it

31

SkyNet

10

+ New Business Unit

Activity



204

Last hour



268

Today



16

Month



9

3 months

Status

Clients with errors

19

Clients with warnings

104

Clients with activity

148

All machines

435

Operating System breakdown

10.10

9

10.7.5

12

10.8.5

23

10.9.2

2

10.9.3

4

10.9.4

60

10.9.5

325

Munki Version



Uptime

249
< 1 Day212
< 7 Days11
7 Days +

Memory

349
8GB +80
4GB +6
< 4GB

Disk Space

398
< 80%11
80% +5
90% +

MSU Repository

Pending 3rd Party Updates

Pending Apple Updates

GU

MunkiAdmin - Packages

View

Open

Save

Reload

Make

REPOSITORY

All Packages

Last 30 Days

INSTALLER TYPES

Copy from Disk Image

Installer Package

No Package

Apple Update Metadata

Adobe Installer

CATEGORIES

Uncategorized

Administration

Administration

Apple

Audio

Configuration

Design & CAD

Developer

Drivers

Internet Plugins

Media Player

Printers

Productivity

Social

System

Utilities

Q Any

Name	Display Name	Version	Modified
1Password	1Password	4.4.1	8/25/14
031-0628	OS X Update	1.0	8/25/14
031-0630	OS X Combo Update	1.0	8/25/14
031-3498	OS X Update	10.9.2	8/25/14
031-3499	OS X Update Combined	10.9.2	8/25/14
AdobeAIR	Adobe® Integrated Runtime	13.0.0.111	8/25/14
AdobeAIR	Adobe® Integrated Runtime	14.0.0.110	8/25/14
AdobeAIR	Adobe® Integrated Runtime	14.0.0.178	9/10/14
AdobeAIR	Adobe® Integrated Runtime	15.0.0.249	9/10/14
AdobeFlashPlayer	Adobe Flash Player	13.0.0.214	8/25/14
AdobeFlashPlayer	Adobe Flash Player	14.0.0.125	8/25/14
AdobeFlashPlayer	Adobe Flash Player	14.0.0.145	9/10/14
AdobeFlashPlayer	Adobe Flash Player	14.0.0.176	8/13/14
AdobeFlashPlayer	Adobe Flash Player	15.0.0.152	9/10/14
AdobeReader	Adobe Reader	11.0.07	8/25/14
Alfred2	Alfred 2	2.3	8/25/14
Alfred2	Alfred 2	2.4	9/10/14
AppCleaner	AppCleaner Uninstaller Utility	2.2.3	8/25/14
AppleRemoteDesktop	Apple Remote Desktop	3.0	7/28/14
Atom	Atom	0.113.0	9/10/14
Atom	Atom	0.114.0	9/10/14
Atom	Atom	0.115.0	9/10/14
Atom	Atom	0.117.0	9/10/14
Atom	Atom	0.118.0	9/10/14
Atom	Atom	0.119.0	9/10/14
Atom	Atom	0.120.0	9/10/14
Atom	Atom	0.121.0	9/10/14
Atom	Atom	0.121.0	9/10/14
Atom	Atom	0.122.0	9/10/14
Atom	Atom	0.123.0	9/10/14

Summary

Pkginfo keys19

Architectures0

Blocking apps2

Catalogs2

Choices XML0

Installs1

Items to copy1

Receipts0

Requires0

Update for0

Pkginfo

Location1Password-4.4.1.plist

Created6/5/14, 6:48 AM

Modified8/25/14, 9:19 PM

Last opened9/4/14, 1:42 AM

Installer

Location1Password-4.4.1.dmg

Created1/1/70, 1:00 AM

Modified6/5/14, 6:48 AM

Last opened9/4/14, 9:43 AM

?

Properties...

[< Back](#)[Manage Installs](#)[+ Computer](#)[pebble.it](#)[pebble.it Support](#)

8

pebble.it

Enrollment Key

```
4jw0h3pq8srek6tfx4uin2iwd1hlv4nvqc8lhz4qh2lcimc581avk49oc3kcz60222rj8uq98mk3ppidwbuliuxnb  
yhj3lzvyf6zanoemd5bce4e6a1bfl8jor1lyjra
```

Default Group

[Edit](#)

pebble.it Support

Managed Installs

Condition_supported_major_os_upgrades	Root
sal_scripts	Root
ADPassMon	pebble.it

Optional Installs

OracleJava8	Root
AutoDMG	pebble.it

Conditional Items

Item	Type	Condition	Source
Hiera	Managed Install	ANY ipv4_address BEGINSWITH '10.30.0'	Root

SUPPORT



Search for topics



+Graham



NEW TOPIC



Mark all as read

Filters ▾

munki-dev Shared publicly

30 of many topics ★ 

This is a group for discussing the use of and development of Munki, an OS X software management tool.

Before posting, please check out the documentation here: <https://github.com/munki/munki/wiki> and especially the FAQ here: <https://github.com/munki/munki/wiki>

Remember also to search this group for discussions on topics similar to yours. There's a lot of knowledge here.

All are welcome: a new participant's first posting is held for moderation; this prevents unwanted spam.

To join the list, send an email to munki-dev+subscribe@googlegroups.com



Uninstall Adobe CC package existing of several applications fails

By Peter Bos - 25 posts - 721 views



App removal description.

By Greg Batye - 4 posts - 27 views



running munki1 and munki2 with webadmin?

By Ryan Snyder - 2 posts - 30 views



Viewing managed installs in Munki2

By briakes - 2 posts - 32 views



Get current user in Install Check Script

By Matter - 20 posts - 97 views



Adobe Acrobat X Pro update

By Jason Hatman - 9 posts - 20 views

pebble.it

All things to all men

<plung>

Business Units

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89

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Disk Space

398
< 80%11
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90% +

MSU Repository

Pending 3rd Party Updates

Pending Apple Updates

[< Back](#)[🔧 Manage Installs](#)[+ Computer](#)[📱 pebble.it](#) [pebble.it Support](#)

8

pebble.it

Enrollment Key

```
4jw0h3pq8srek6tfx4uin2iwd1hlv4nvqc8lhz4qh2lcimc581avk49oc3kcz60222rj8uq98mk3ppidwbuliuxnb  
yhj3lzvyf6zanoemd5bce4e6a1bfl8jor1lyjra
```

Default Group

[Edit](#)

pebble.it Support

Managed Installs

Condition_supported_major_os_upgrades	Root
sal_scripts	Root
ADPassMon	pebble.it

Optional Installs

OracleJava8	Root
AutoDMG	pebble.it

Conditional Items

Item	Type	Condition	Source
Hiera	Managed Install	ANY ipv4_address BEGINSWITH '10.30.0'	Root

YAY, STICKERS!

pebble.it



@GRAHAMGILBERT

GRAHAMGILBERT.COM

SALSOFTWARE.COM