

How the !%\$@ do you manage oddball software?

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Sound Engineer



What my mates think I do



What my manager thinks I do



What my mum thinks I do



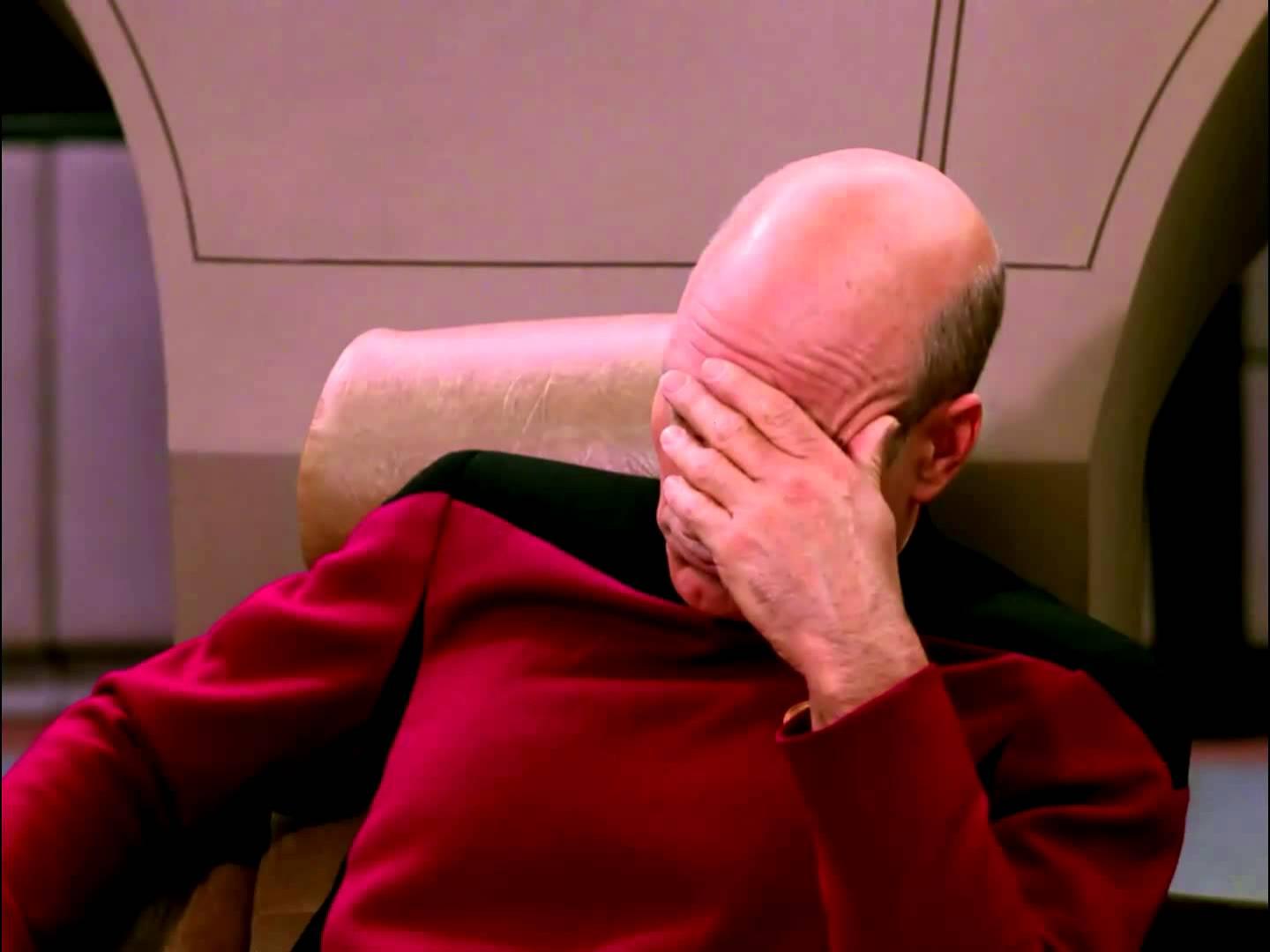
What society thinks I do



What I think I do



What I actually do





The University of East London

3
Campuses

- Docklands
- Stratford
- University Square
Stratford – YOU ARE HERE!

9
Schools

The University of East London

- Architecture, Computing & Engineering
- Arts & Digital Industries – Me!
- Combined Honours
- The School of Business & Law
- Cass School of Education & Communities
- Graduate School
- Health, Sport & Biosciences
- Social Sciences
- Psychology

The University of East London

The School of Arts and Digital Industries

- Over 3,000 students
- 124 currently studying Music:
 - BSc(hons) Music Technology – 88 students
 - BA(hons) Music Performance & Production – 36 students

UEL's 375 Macs

Previously managed by ADI

- A Mac network per campus
- OS X Infrastructure (OD, AFP homes, Profile Manager...)
- DeployStudio and Munki later used at USS
- A little bit messy...



Now managed by IT Services

- Integrated into Active Directory – one network.
- Casper (Windows infrastructure)
- Better!



...ADI as a Stakeholder...

- Manage specialist/bespoke needs:
 - Photography
 - Video
 - Multimedia
 - Music

The 90 Macs at USS

2 Mac Labs
(50 Macs)

4 Edit Suites
(4 Macs)

2 Recording
Studios (3
Macs)

Loanable
MacBooks (2
Macs)

Theatre
Studio (1 Mac)

Staff Desks
(30 Macs)

A lecturer once told me...

“Students [and anyone else] should be able to walk into the studio, switch everything on and just get on with making music...”

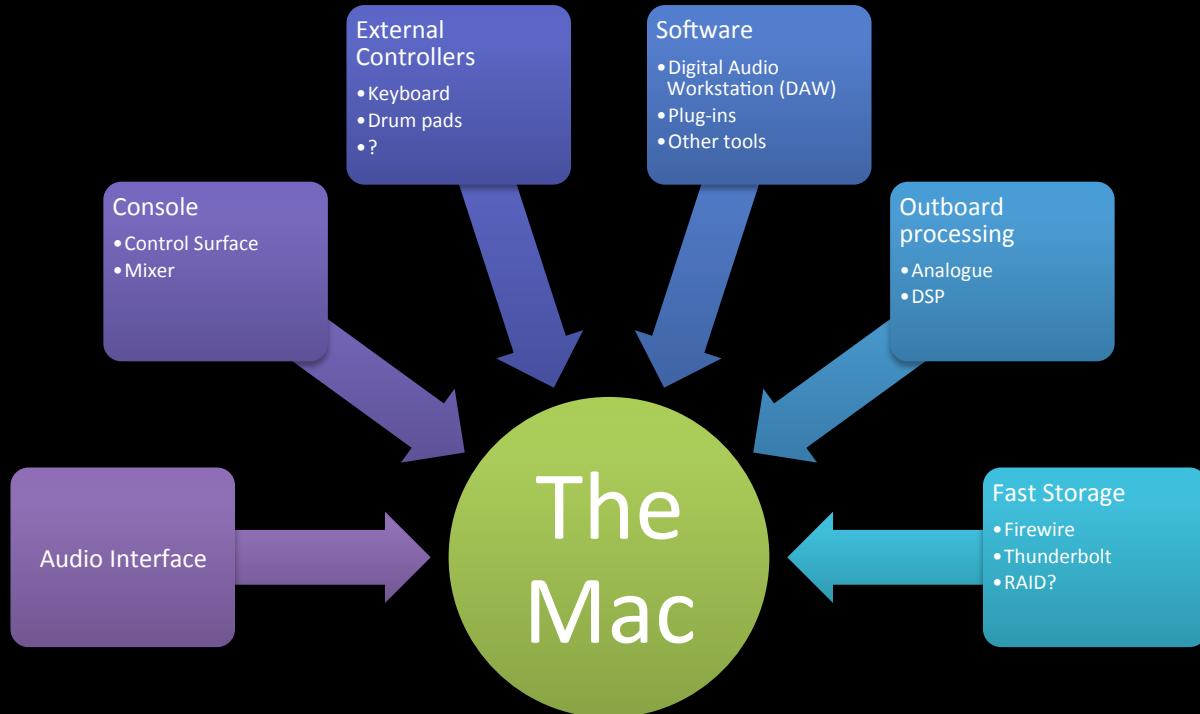
Dr J. Thomas, ca. 2006

ONE DOES NOT SIMPLY

MAKE MUSIC ON A MAC



A studio is more than just a Mac!



The problem with (music) software...

Packages

- Lucky to get one!
- InstallerVISE (yes, some still are)!
- Badly behaved scripts!
- Other weirdness that makes deployment HARD...

The problem with (music) software..

Licensing

- Cloud based strangeness
- Node-locked serialisation
- Per-user account (not machine) licensing
- Physical protection (hardware dongles)

The problem with (music) software...

Once you've actually installed it...

- Proprietary preferences (no plists... bye bye Profiles/MCX...)
- It wants to download and install MORE!
- Network home areas – BAD!
- Often external hardware to configure...

A lecturer once told me...

“Students [and anyone else] should be able to walk into the studio, switch everything on and just get on with making music...”



My ‘detective’s kit...

fseventer

- <http://www.fernlightning.com/doku.php?id=software:fseventer:start>

Suspicious Package

- <http://www.mothersruin.com/software/SuspiciousPackage/>

Pacifist

- <https://www.charlesssoft.com/>

Charles Proxy

- <http://www.charlesproxy.com/>

JAMF Composer

- <http://www.jamfsoftware.com/products/composer/>

MF_Printer_Installer.pkg

Developer ID Installer Package



DEVELOPER ID

Signed by "Developer ID Installer: Canon Inc."



Runs 174 install scripts



What the..?!

21.7 MB for package — 58.3 MB installed on disk

Last modified 17 Sep 2014 05:42:44

My toolbox

Whitebox Packages

- <http://s.sudre.free.fr/Software/Packages/about.html>

JAMF Composer

Autopkg

- <http://autopkg.github.io/autopkg/>

Pkgkeeper

- <http://errorfreeit.com.au/blog/2014/10/18/pkgkeeper-script>

TextWrangler

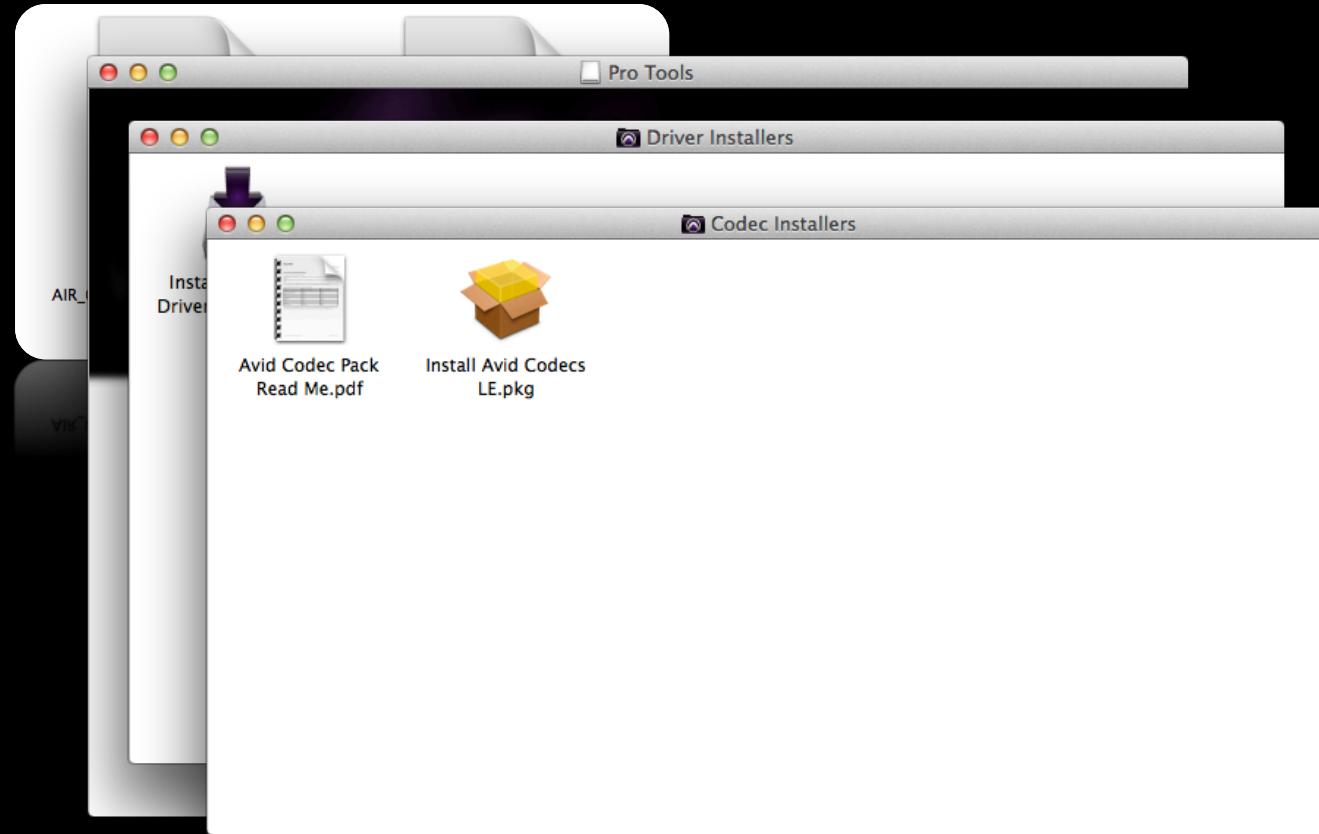
- <http://www.barebones.com/products/textwrangler/>

VMWare Fusion

- <http://www.vmware.com/uk/products/fusion>

Unpicking Pro Tools 11







Install Pro Tools 11.3.1.pkg

Open with Installer

Install Scripts

Install Pro Tools 11.3.1.pkg

Open with Installer

Main Package

install_utils.pl

preflight.pl

Pro Tools App

preinstall

background.jpg

install_utils.pl

prepare_bundles.pl

safe_install_utils.pl

set_plugin_perms.pl

untaint.pl

Back

Main Package

install_utils.pl

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Pro Tools Application.pkg

preinstall

background.jpg

install_utils.pl

prepare_bundles.pl

safe_install_utils.pl

set_plugin_perms.pl

untaint.pl

Back

Install Scripts

Pro Tools Application.pkg/preinstall

PERL SCRIPT

Script is run by installer, as the **root** user, *before* moving files into place.

```
$0      path to script "preinstall"  
$ARGV[0]  path to package  
$ARGV[1]  "/" on selected install disk  
$ARGV[2]  path for selected install disk  
$ARGV[3]  "/" on startup disk
```

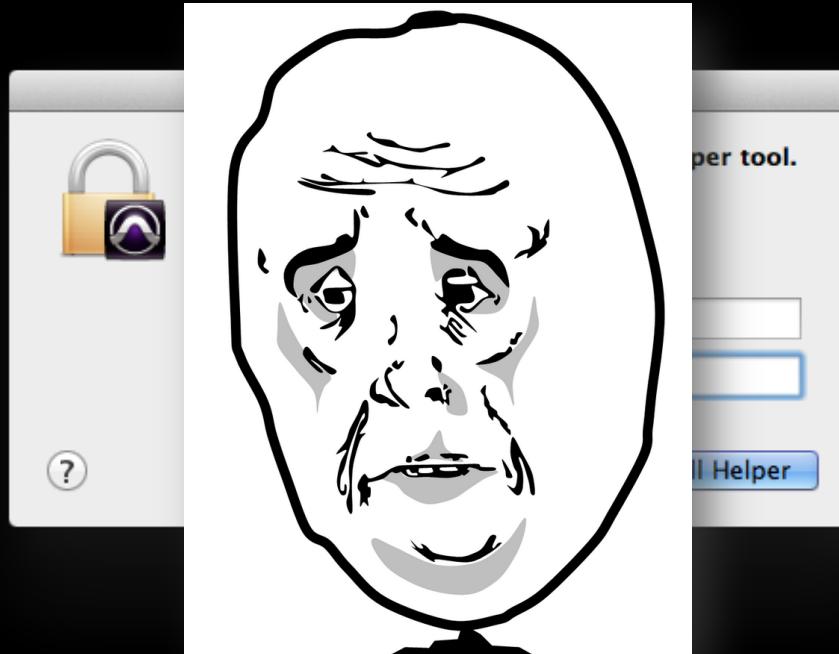
```
#!/usr/bin/perl  
#  
# Copyright 2014 by Avid Technology, Inc.  
#  
  
$PACKAGE_PATH = shift;  
$INSTALLATION_DESTINATION = shift;  
$TARGET_VOLUME = shift;  
  
if ( -e "$PACKAGE_PATH/Contents/Resources/install_utils.pl" ) {  
    require "$PACKAGE_PATH/Contents/Resources/install_utils.pl";  
} elsif ( -e "./install_utils.pl" ) {  
    require "./install_utils.pl";  
} else {  
    print "ERROR: Could not find library install_utils.pl";  
}  
  
#####
# Remove the previous Pro Tools application before installing the  
# new one to avoid incorrect internal components in the app.  
#####  
if ( -e "/Applications/Pro Tools.app" ) {  
    print "Previous installation of Pro Tools found. Remove before reinstalling.\n";  
    execute_command("rm -rf '/Applications/Pro Tools.app'");  
}  
####
```

At least I know what that does...

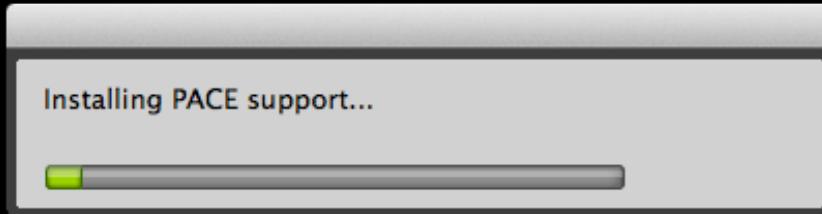
Let's see what lands on the file system...



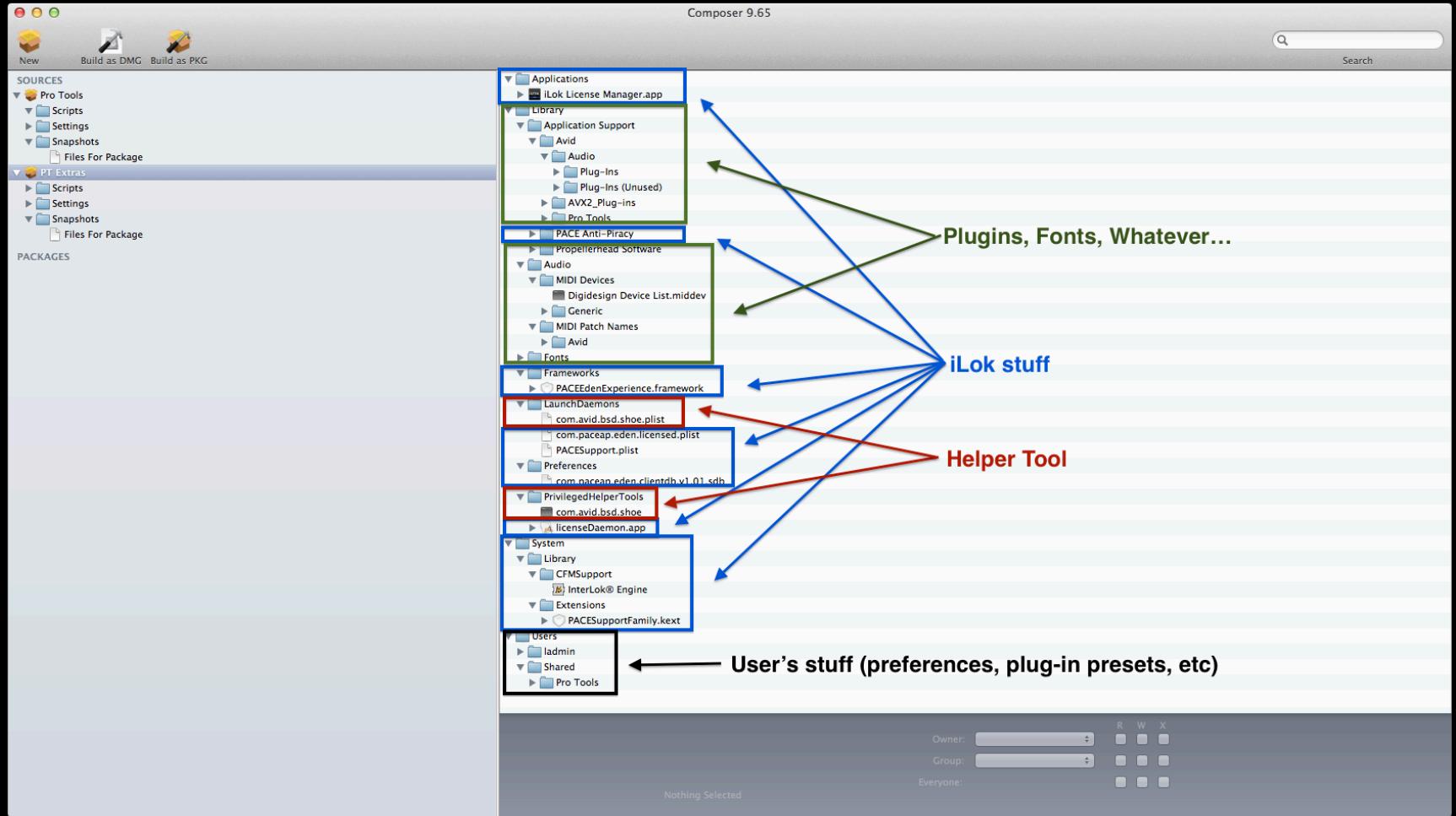
The PKG deploys properly! Let's run the app...



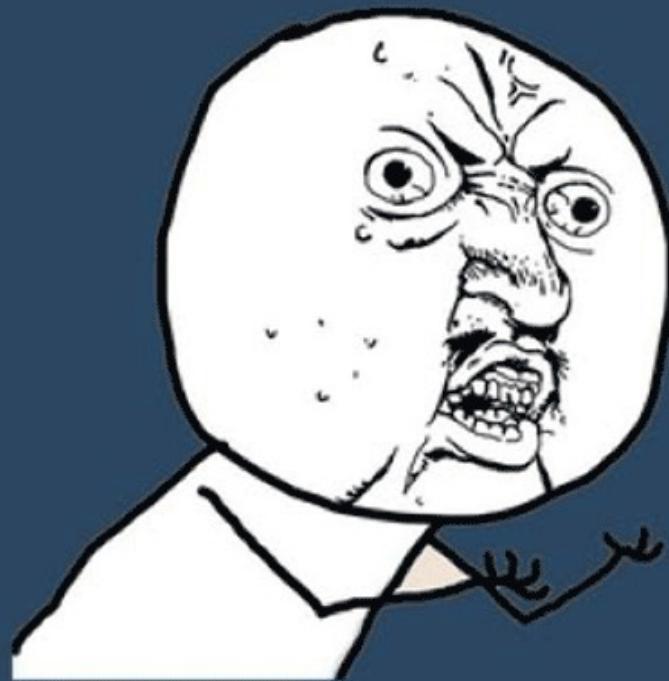
So what MORE does it do?



iLok Drivers – iLok provide a separate PKG for those...



AVID



Y U NO GET UR PKG TO DO IT?!

Repackaging – preinstall script

```
#!/bin/sh

If [ -d "$3/Applications/Pro Tools.app" ]; then
    /bin/echo "Pro Tools has been previously
installed, removing before installation..."
    /bin/rm -rf "$3/Applications/Pro Tools.app"
else
    /bin/echo "Pro Tools has not been previously
installed, proceeding with installation..."
fi
```

Repackaging – postinstall script

```
#!/bin/sh

# Thank you to Ricky Chilcott Ryan Manly from the munki-dev mailing list for the original inspiration behind this

# Variables

PHT_SHOE="$3/Library/PrivilegedHelperTools/com.avid.bsd.shoe"
PLIST="$3/Library/LaunchDaemons/com.avid.bsd.plist"

# Copy the com.avid.bsd.shoe Helper Tool

/bin/cp -f "$3/Applications/Pro Tools.app/Contents/Library/LaunchServices/com.avid.bsd.shoe" $PHT_SHOE
/usr/sbin/chown root:wheel $PHT_SHOE
/bin/chmod 544 $PHT_SHOE

# Create the Launch Daemon Plist for com.avid.bsd.shoe

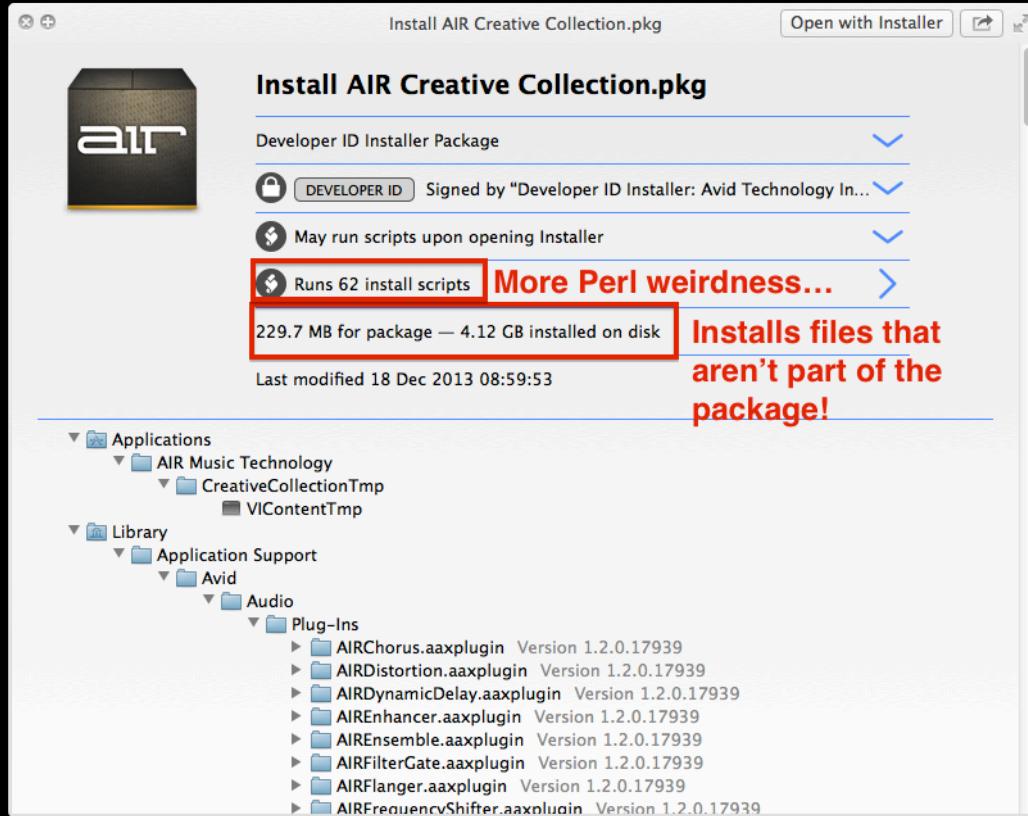
/bin/rm "$PLIST" # In case Pro Tools has been updated from a previous version

/usr/bin/defaults write $PLIST Label -string com.avid.bsd.shoe
/usr/bin/defaults write $PLIST MachServices -dict com.avid.bsd.shoe -bool true
/usr/bin/defaults write $PLIST ProgramArguments -array /Library/PrivilegedHelperTools/com.avid.bsd.shoe
/bin/chmod 644 $PLIST
/bin/launchctl load $PLIST
```

The AIR Creative Collection



The Air Creative Collection



The AIR Creative Collection

The 'Yo Dawg' method

- <https://derflounder.wordpress.com/2013/12/06/repackaging-the-labview-2013-pro-installer/>
- Worked for me in Munki
- I learnt loads!
- Doesn't work in Casper unless user logged in

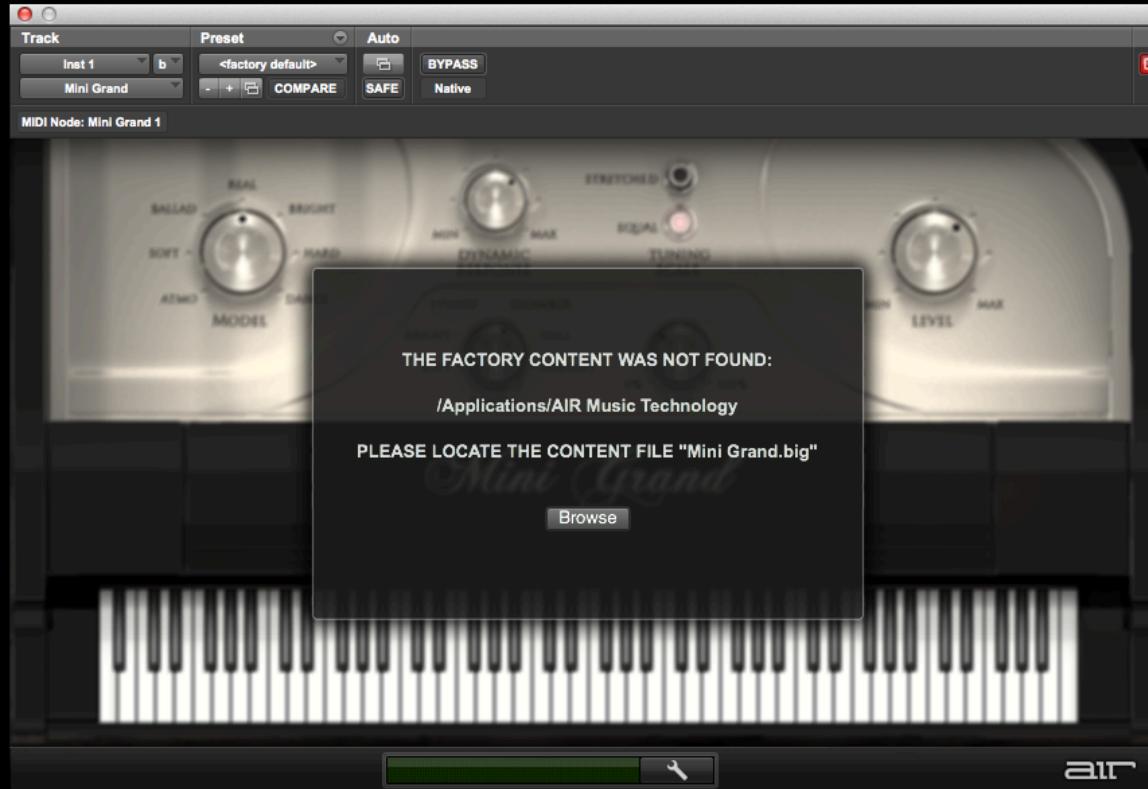
Snapshot

- Easy and quick
- May leave out vendor's intended actions
- Stops me learning about packaging and scripting

Import the DMG straight into Munki 2

- I've been told this works (haven't tried though)
- I miss Munki... ☹

Try loading one of those AIR plug-ins...



A close-up shot of Arnold Schwarzenegger's face. He has a shocked or screaming expression, with his mouth wide open showing his teeth. His eyes are wide and looking slightly to the side. He has short brown hair and is wearing a dark green jacket over a white collared shirt.

ARGH!

AIR Creative Collection postinstall

```
#!/bin/sh

/usr/bin/defaults write $3/Library/Preferences/com.airmusictech.Boom Content -string "/Applications/AIR Music Technology/Boom"
/usr/bin/defaults write $3/Library/Preferences/com.airmusictech.Mini\ Grand Content -string "/Applications/AIR Music Technology/Mini Grand"
/usr/bin/defaults write $3/Library/Preferences/com.airmusictech.Xpand\!2 Content -string "/Applications/AIR Music Technology/Xpand!2"

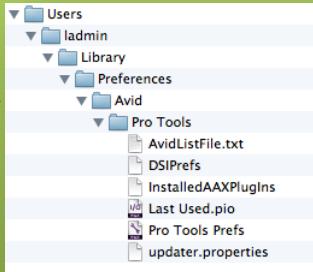
/bin/chmod 644 $3/Library/Preferences/com.airmusictech.Boom.plist
/bin/chmod 644 $3/Library/Preferences/com.airmusictech.Mini\ Grand.plist
/bin/chmod 644 $3/Library/Preferences/com.airmusictech.Xpand\!2.plist

exit 0
```

Managing proprietary preferences

Set up Pro Tools the way you'd like

Take a copy of its preference files



Deploy them to the User Template - /System/Library/User Template/English.lproj/

- This only affects NEW users
- Apple own it – they may screw it up at any time!

Casper admins – make a DMG package and FUT/FEU.

- FEU will apply this to existing users too

What about the iLok?

Manually authorised
with the iLok License
Manager app... x 56



Devised method of
securing to iMacs
and “cheese grater”
Mac Pros



When you have to touch a machine - Remote Log-in script

```
#!/bin/bash
#Replace "username" and "password" with credentials of the user you wish to
log in

osascript -e 'tell application "SecurityAgent" to activate'; \
osascript -e 'tell application "Bluetooth Setup Assistant" to quit'; \
osascript -e 'tell application "System Events" to keystroke "username"'; \
osascript -e 'tell application "System Events" to keystroke tab'; \
osascript -e 'tell application "System Events" to delay 0.5'; \
osascript -e 'tell application "System Events" to keystroke "password"'; \
osascript -e 'tell application "System Events" to delay 0.5'; \
osascript -e 'tell application "System Events" to keystroke return'
```

My bits and bobs

iLok Security In A Computer Lab

- <http://tinyurl.com/bn7lgvq>

Preparing Pro Tools For Automatic Installation In A Mac Enterprise Environment

- Part 1 - <http://tinyurl.com/ofq2hse>
- Part 2 - <http://tinyurl.com/pt94m5x>
- Part 3 - <http://tinyurl.com/n9d3aw4>
- Part 4 - <http://tinyurl.com/offmnxr>
- Update for 11.3 - <http://tinyurl.com/pjqo82m>

My GitHub Gist

- <https://gist.github.com/neilmartin83>

Extremely helpful resources

IRC: Freenode

- ##osx-server
- #jamfnation

Slack Macadmins team

- <https://macadmins.herokuapp.com/>

Awesome blogs:

- Rich Trouton - <https://derflounder.wordpress.com/>
- Graham Gilbert - <http://grahamgilbert.com/>
- Ben Toms - <https://macmule.com/>
- Greg Neagle - <https://managingosx.wordpress.com/>
- Charles Edge - <http://krypted.com/>
- Too many more to mention... sorry!

Github

- Hannes Juutilainen - <https://github.com/hjuutilainen>

Macenterprise mailing list

- <http://www.macenterprise.org/mailing-list>

When you're confronted with oddball software...

- Don't panic!
- Put on your Mac and Deerstalker
- Grab your magnifying glass
- Investigate
- Ask the community
- Reach out to vendors and MAKE them change!

(\vdash ° \Box °) \vdash \perp

Thank You!