Improve Your Printer Deployments

Improve Your Printer Deployments

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https://github.com/MScottBlake/Presentations

Agenda

- Explain relevant commands
- Manual Installs
- Robust Script
- Scaling Deployments
- What's next?

Should we use a Configuration Profile?

Should we use a Configuration Profile?

- Can't programmatically install driver
- Printer remains after profile is removed
- Named mcx_0, mcx_1, etc.
- Script options anyway
- Tedious at scale

Matthew Turland

@elazar

Follow

Q: What's the most common language used in programming? A: Profanity.

Matthew Turland
@elazar

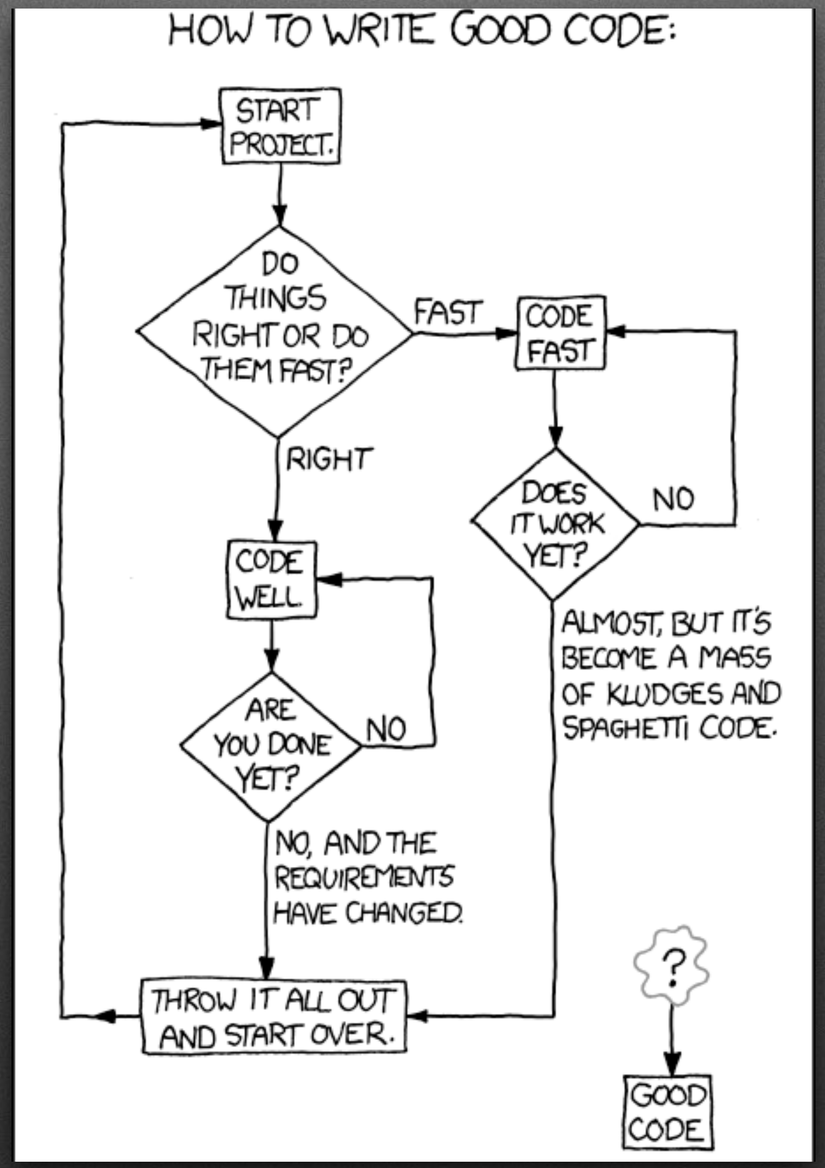
Follow

Q: What's the most common language used in programming? A: Profanity.

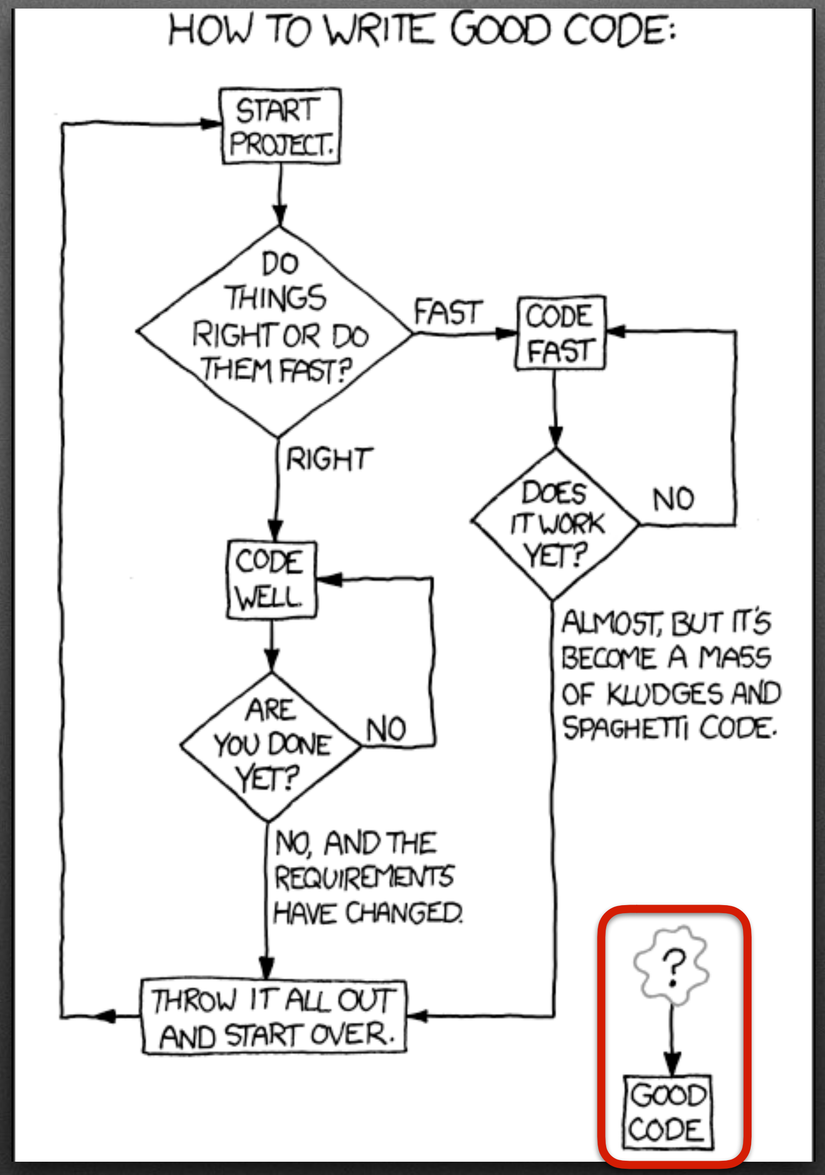
Greg Neagle
@gregneagle

Follow

If you are not comfortable at the command line, your career as an OS X systems administrator will be nasty, brutish, and short.



https://xkcd.com/844/



https://xkcd.com/844/

Swift

Swift

- NSPrinter
- NSPrintInfo
- NSPrintOperation
- NSPrintPanel

Basics

Basics

/System/Library/Frameworks/ApplicationServices.framework/Versions/A/Frameworks/PrintCore.framework/Versions/A/Resources/Generic.ppd

Basics

/System/Library/Frameworks/
ApplicationServices.framework/Versions/A/Frameworks/
PrintCore.framework/Versions/A/Resources/Generic.ppd

Basics

lpadmin

Basics

lpadmin -p PrinterName

PrinterName cannot contain SPACE, TAB, "/", or "#"

Basics

lpadmin -p PrinterName

PrinterName cannot contain SPACE, TAB, "/", or "#"

Basics

lpadmin -p PrinterName -D "Printer Name"

Basics

lpadmin -p PrinterName -D "Printer Name"

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404"

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404"

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404" -v "ipp://10.10.10.10"

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404" -v "ipp://10.10.10.10"

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404" -v "ipp://10.10.10.10" -P "/Library/Printers/PPDs/Contents/Resources/SomeDriver.ppd.gz"

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404" -v "ipp://10.10.10.10" -P "/Library/Printers/PPDs/Contents/Resources/SomeDriver.ppd.gz"

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404" -v "ipp://10.10.10.10" -P "/Library/Printers/PPDs/Contents/Resources/SomeDriver.ppd.gz" -o printer-is-shared=false -o printer-error-policy=abort-job

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404" -v "ipp://10.10.10.10" -P "/Library/Printers/PPDs/Contents/Resources/SomeDriver.ppd.gz" -o printer-is-shared=false -o printer-error-policy=abort-job

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404" -v "ipp://10.10.10.10" -P "/Library/Printers/PPDs/Contents/Resources/SomeDriver.ppd.gz" -o printer-is-shared=false -o printer-error-policy=abort-job -E

Basics

lpadmin -p PrinterName -D "Printer Name" -L "Rm 404" -v "ipp://10.10.10.10" -P "/Library/Printers/PPDs/Contents/Resources/SomeDriver.ppd.gz" -o printer-is-shared=false -o printer-error-policy=abort-job -E

Basics

lpadmin -d PrinterName

Basics

lpadmin -x PrinterName

Basics

man lpadmin

Basics

lpoptions

Basics

lpoptions -p PrinterName -l

```
PaperSources/Paper Source Unit: None PC110 *PC210 PC410
Finisher/Finisher: None *FS534 FS534SD FS533 JS506
KMPunchUnit/Punch Unit: *None PK520-2 PK520-23 PK520-EU4 PK520-SWE4 PK519-2 PK519-23 PK519-EU4 PK519-SWE4
PrinterHDD/Hard Disk: False *True
SecurePrintOnly/Secure Print Only: *False True
PublicUserAccess/Allow Public User: False *True
PageSize/Paper Size: A3JIS A4JIS A5JIS A6JIS B4JIS B5JIS B6JIS 220mmx330mm 12x18 11x17 8.5x14 8.5x13
8.5x13.5 *8.5x11 8.25x13 8.125x13.25 8x13 7.25x10.5 5.5x8.5 8K 16K EnvelopeB5 EnvelopeDL EnvelopeMonarch
EnvelopeCom10 EnvelopeC4 EnvelopeC5 EnvelopeC6 EnvelopeYou3 EnvelopeYou4 EnvelopeChou3 EnvelopeChou4
EnvelopeKaku1 EnvelopeKaku2 EnvelopeKaku3 JapanesePostCard 4x6_PostCard A3Wide A4Wide A5Wide B4Wide B5Wide
11x17Wide 8.5x11Wide 5.5x8.5Wide SRA3 A4Index 8.5x11Tab Custom.WIDTHxHEIGHT
Collate/Collate: False *True
KMCollate/Collate: False *True
Offset/Offset: *False True
OutputMethod/Output Method: *Off Secure Store StorePrint ProofMode AuthPrint
KMAuthentication/User Authentication: *False True
UserType/User: Public *Private
CertServerType/User Authentication Settings: *None Number DeviceNumber
CertServerNum/Server Setting: *Device Server1 Server2 Server3 Server4 Server5 Server6 Server7 Server8
Server9 Server10 Server11 Server12 Server13 Server14 Server15 Server16 Server17 Server18 Server19 Server20
KMSection/Account Track: *False True
NameServerEnable/Enhanced Server: *None NameServer DeviceName
NameCertServerType/Authentication Settings: *None NameServer Device DeviceSection
NameServerPublic/Public User: *False True
PopupSecureMode/Relay Server: *ID IDPW
KMDuplex/Print Type: Single *Double Booklet
Binding/Binding Position: *LeftBinding RightBinding TopBinding
Combination/Poster Mode: *None 2x2 3x3 4x4
```

```
ColorModel/Select Color: *CMYK Gray
GlossyMode/Glossy Mode: *False True
TonerSave/Toner Save: *False True
Point4Character/Edge Enhancement: *False True
OriginalImageType/Color Settings: *Document Photo DTP Web CAD
AutoTrapping/Auto Trapping: *False True
BlackOverPrint/Black Over Print: *Off Text TextGraphic
TextColorMatching/Color Matching (Text): *Auto Vivid Photo Colorimetric
TextPureBlack/Pure Black (Text): *Auto False True
TextScreen/Screen (Text): *Auto Gradation Resolution HighResolution
TextSourceProfile/RGB Color(Text): None *sRGB AppleRGB AdobeRGB ColorMatch BlueAdjust __Custom_Profile__
TextDestinationProfile/Destination Profile(Text): *Auto __Custom_Profile__
PhotoColorMatching/Color Matching (Photo): *Auto Vivid Photo Colorimetric
PhotoPureBlack/Pure Black (Photo): *Auto False True
PhotoScreen/Screen (Photo): *Auto Gradation Resolution HighResolution
PhotoSmoothing/Smoothing (Photo): *Auto None Dark Medium Light
PhotoSourceProfile/RGB Color(Photo): None *sRGB AppleRGB AdobeRGB ColorMatch BlueAdjust __Custom_Profile__
PhotoDestinationProfile/Destination Profile(Photo): *Auto __Custom_Profile__
GraphicColorMatching/Color Matching (Graphic): *Auto Vivid Photo Colorimetric
GraphicPureBlack/Pure Black (Graphic): *Auto False True
GraphicScreen/Screen (Graphic): *Auto Gradation Resolution HighResolution
GraphicSmoothing/Smoothing (Graphic): *Auto None Dark Medium Light
GraphicSourceProfile/RGB Color(Graphic): None *sRGB AppleRGB AdobeRGB ColorMatch BlueAdjust __Custom_Profile__
GraphicDestinationProfile/Destination Profile(Graphic): *Auto __Custom_Profile__
SimulationProfile/Simulation Profile: *Auto JC2001 SWOP Euroscale Commercial TOYO DIC None __Custom_Profile__
SimMatchPaperColor/Match Paper Color: *False True
SimGrayTreatment/CMYK Gray Treatment: *Composite BlackGray BlackOnly
```

Basics

```
lpoptions -p PrinterName -l > before.txt
```

Basics

cupsctl WebInterface=yes
http://localhost:631/printers/

localhost

CUPS.org Home Administration Classes Help Jobs Printers

Printers

Search in Printers: Search Clear

Showing 2 of 2 printers.

Queue Name	Description	Location	Make and Model	Status
Canon_MX522	Canon MX522		Canon MX520 series-AirPrint	Idle
W1P-PRINTSVR000_OWP-5127	OWP-5127 on W1P-PRINTSVR000	One Waterfront Place - Rm 5127	KONICA MINOLTA C224e PS	Idle

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localhost

CUPS.org Home Administration Classes Help Jobs Printers

W1P-PRINTSVR000_OWP-5127

W1P-PRINTSVR000_OWP-5127 (Idle, Accepting Jobs, Not Shared)

Maintenance Administration

Description: OWP-5127 on W1P-PRINTSVR000
Location: One Waterfront Place - Rm 5127
Driver: KONICA MINOLTA C224e PS (color)
Connection: smb://w1p-printsvr000.wvu-ad.wvu.edu/OWP-5127
Defaults: job-sheets=none, none media=oe_8.5x11in_8.5x11in sides=one-sided

Jobs

Search in W1P-PRINTSVR000_OWP-5127: Search Clear

Show Completed Jobs Show All Jobs

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localhost

CUPS.org Home Administration Classes Help Jobs Printers

W1P-PRINTSVR000_OWP-5127

W1P-PRINTSVR000_OWP-5127 (Idle, Accepting Jobs, Not Shared)

Maintenance

- ✓ Administration
- Modify Printer
- Delete Printer
- Set Default Options
- Set As Server Default
- Set Allowed Users

Description: OWP- NTSVR000
Location: One Rm 5127
Driver: KONI e PS (color)
Connection: smb wvu-ad.wvu.edu/OWP-5127
Defaults: job-sheets=none, none media=oe_8.5x11in_8.5x11in sides=one-sided

Jobs

Search in W1P-PRINTSVR000_OWP-5127: Search Clear

Show Completed Jobs Show All Jobs

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localhost

CUPS.org Home Administration Classes Help Jobs Printers

Print in Header: Off On

Print in Footer: Off On

Start Number: Number only

Pages: All Pages

Text Color: Black

Resolution: 600dpi 1200dpi (High Quality)

Select Color: Auto Color

Select Color: Full Color

Glossy Mode: Off On

Toner Save: Off On

Edge Enhancement: Off On

Color Settings: Document

Auto Trapping: Off On

Black Over Print: Off

Color Matching (Text): Auto

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Basics

```
lpoptions -p PrinterName -l > after.txt
```

Basics

```
lpoptions -p PrinterName -l > before.txt
[Make Changes]
lpoptions -p PrinterName -l > after.txt
diff before.txt after.txt
```

```
107,108c107,108
< SelectColor/Select Color: *Color ColorFixed Grayscale
< ColorModel/Select Color: *CMYK Gray
---
> SelectColor/Select Color: Color ColorFixed *Grayscale
> ColorModel/Select Color: CMYK *Gray
132c132
< SimulationProfile/Simulation Profile: *Auto JC2001 SWOP Euroscale Commercial TOYO DIC None __Custom_Profile__
---
> SimulationProfile/Simulation Profile: Auto JC2001 SWOP Euroscale Commercial TOYO DIC *None __Custom_Profile__
```

```
107,108c107,108
< SelectColor/Select Color: *Color ColorFixed Grayscale
< ColorModel/Select Color: *CMYK Gray
---
> SelectColor/Select Color: Color ColorFixed *Grayscale
> ColorModel/Select Color: CMYK *Gray
132c132
< SimulationProfile/Simulation Profile: *Auto JC2001 SWOP Euroscale Commercial TOYO DIC None __Custom_Profile__
---
> SimulationProfile/Simulation Profile: Auto JC2001 SWOP Euroscale Commercial TOYO DIC *None __Custom_Profile__
```

```
107,108c107,108
< SelectColor/Select Color: *Color ColorFixed Grayscale
< ColorModel/Select Color: *CMYK Gray
---
> SelectColor/Select Color: Color ColorFixed *Grayscale
> ColorModel/Select Color: CMYK *Gray
132c132
< SimulationProfile/Simulation Profile: *Auto JC2001 SWOP Euroscale Commercial TOYO DIC None __Custom_Profile__
---
> SimulationProfile/Simulation Profile: Auto JC2001 SWOP Euroscale Commercial TOYO DIC *None __Custom_Profile__
```

```bash
#!/bin/bash

/usr/sbin/lpadmin -p W1P-PRINTSVR000_OWP-5127 \
  -o SelectColor=Grayscale \
  -o ColorModel=Gray \
  -o SimulationProfile=None

```

Basics

cupsctl WebInterface=no

Basics

lpstat

Basics

lpstat -p PrinterName

Basics

lpstat -p

Basics

lpstat -d

Basics

lpstat -t

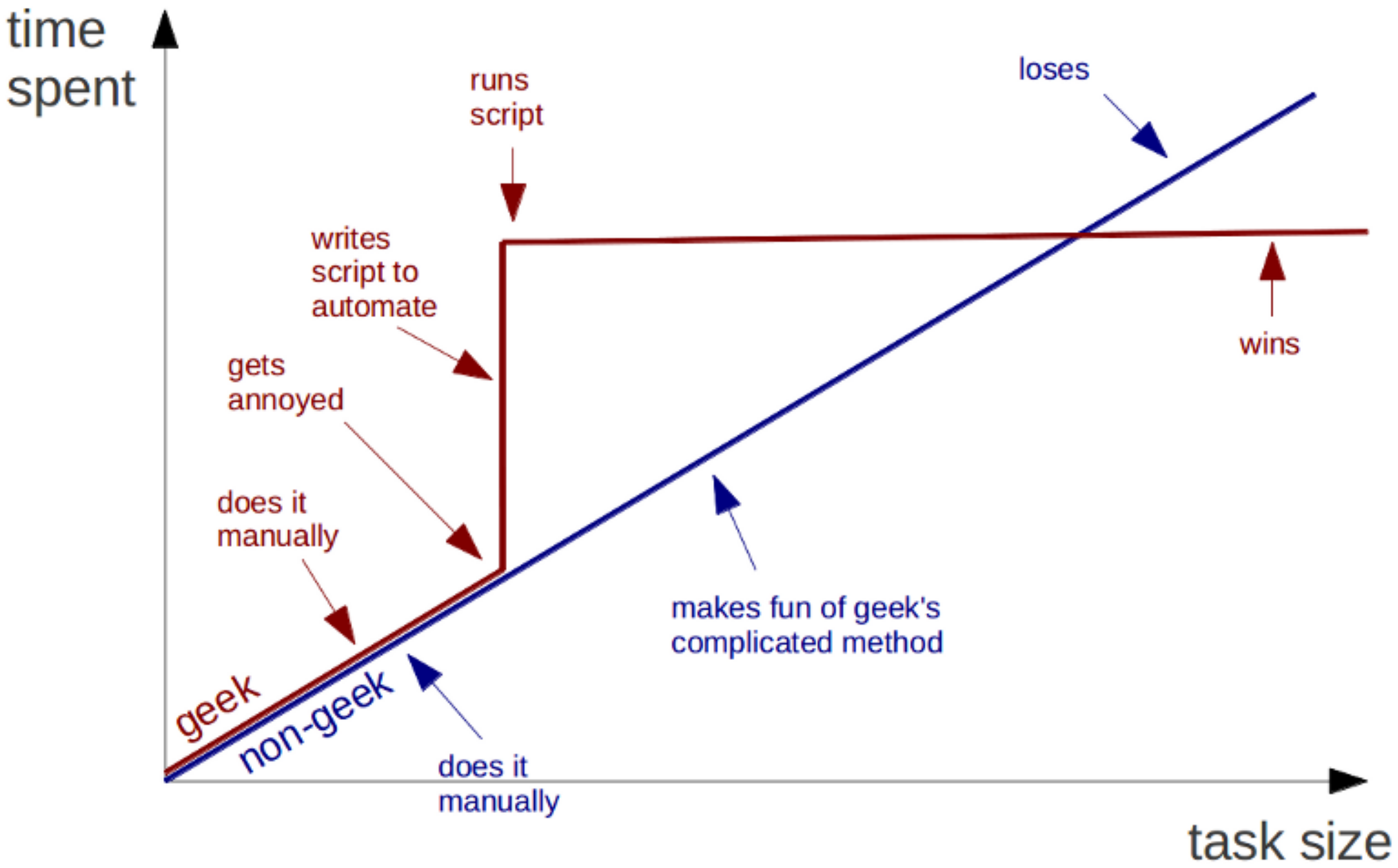
Basics

man lpstat

Example #1

Hardcoded Single Printer.sh

Geeks and repetitive tasks



```
#!/bin/bash

/usr/sbin/lpadmin -p Sales_Printer -L "1st Floor, West Side" \
  -P /System/Library/Frameworks/ApplicationServices.framewo...
  -v "ipp://192.168.5.5" -o printer-error-policy=abort-job \
  -o printer-is-shared=false -E

```

```
1 #!/bin/bash
2
3 /usr/sbin/lpadmin -p Sales_Printer -L "1st Floor, West Side" \
4  -P /System/Library/Frameworks/ApplicationServices.framewo...
5   -v "ipp://192.168.5.5" -o printer-error-policy=abort-job \
6   -o printer-is-shared=false -E
7
```

```
1 #!/bin/bash
2
3 /usr/sbin/lpadmin -p Sales_Printer -L "1st Floor, West Side" \
4   -P /System/Library/Frameworks/ApplicationServices.framewo...
5   -v "ipp://192.168.5.5" -o printer-error-policy=abort-job \
6   -o printer-is-shared=false -E
7
```

```
#!/bin/bash

/usr/sbin/lpadmin -p Sales_Printer -L "1st Floor, West Side" \
  -P /System/Library/Frameworks/ApplicationServices.framewo...
  -v "ipp://192.168.5.5" -o printer-error-policy=abort-job \
  -o printer-is-shared=false -E

```

Example #1a

Hardcoded Single Printer.app

```
do shell script "/bin/bash -s <<EOF
/usr/sbin/lpadmin -p Sales_Printer -L '1st Floor, West Side' \\
  -P /System/Library/Frameworks/ApplicationServices.framewor...
  -v 'ipp://192.168.5.5' -o printer-error-policy=abort-job \\
  -o printer-is-shared=false -E
EOF" with administrator privileges
```

QuickTime Player
File
Edit
View
Window
Help
Sat 4:53 PM
JUN
30

Example #2

Hardcoded Multiple Printers.sh

```bash
#!/bin/bash

/usr/sbin/lpadmin -p Sales_Printer -L "1st Floor, West Side" \
  -P /System/Library/Frameworks/ApplicationServices.framework/Versions/A/Framewor...
  -v "ipp://192.168.5.5" -o printer-error-policy=abort-job \
  -o printer-is-shared=false -E

/usr/sbin/lpadmin -p Marketing_Printer -L "1st Floor, East Side" \
  -P /System/Library/Frameworks/ApplicationServices.framework/Versions/A/Framewor...
  -v "ipp://172.16.10.10" -o printer-error-policy=abort-job \
  -o printer-is-shared=false -E

/usr/sbin/lpadmin -p Management_Printer -L "2nd Floor" \
  -P /System/Library/Frameworks/ApplicationServices.framework/Versions/A/Framewor...
  -v "smb://printserver1.domain.com/MGTPrt1" \
  -o printer-error-policy=abort-job -o printer-is-shared=false \
  -o auth-info-required=negotiate -E

```

INSTALL.SH

```
#!/bin/bash

pip install "$1" &
easy_install "$1" &
brew install "$1" &
npm install "$1" &
yum install "$1" & dnf install "$1" &
docker run "$1" &
pkg install "$1" &
apt-get install "$1" &
sudo apt-get install "$1" &
steamcmd +app_update "$1" validate &
git clone https://github.com/"$1"/"$1" &
cd "$1";./configure;make;make install &
curl "$1" | bash &
```

https://xkcd.com/1654/

Example #3

Send to Print Server.sh

```bash
#!/bin/bash

##########################################################################
#
# VARIABLES
#

# Enter the protocol here. It should be smb, lpd, ipp, etc.
printserver_protocol="smb"

# Enter the shorthand name of the print server.
printserver_name="PRINTSVR_NAME"

# Enter the fully qualified domain name for the print server.
printserver_fqdn="printsvr_name.domain.com"

# Check to see if a value was passed in parameter 4. If so, assign to "printer_shortname".
[ "$4" != "" ] && printer_shortname=$4

# Check to see if a value was passed in parameter 5. If so, assign to "printer_location".
[ "$5" != "" ] && printer_location=$5

# Check to see if a value was passed in parameter 6. If so, assign to "driver_policy_trigger".
[ "$6" != "" ] && driver_policy_trigger=$6
```

```bash
#!/bin/bash

##################################################################
#
# VARIABLES
#

# Enter the protocol here. It should be smb, lpd, ipp, etc.
printserver_protocol="smb"

# Enter the shorthand name of the print server.
printserver_name="PRINTSVR_NAME"

# Enter the fully qualified domain name for the print server.
printserver_fqdn="printsvr_name.domain.com"

# Check to see if a value was passed in parameter 4. If so, assign to "printer_shortname".
[ "$4" != "" ] && printer_shortname=$4

# Check to see if a value was passed in parameter 5. If so, assign to "printer_location".
[ "$5" != "" ] && printer_location=$5

# Check to see if a value was passed in parameter 6. If so, assign to "driver_policy_trigger".
[ "$6" != "" ] && driver_policy_trigger=$6
```

```
15 printserver_fqdn="printsvr_name.domain.com"
16
17 # Check to see if a value was passed in parameter 4. If so, assign to "printer_shortname".
18 [ "$4" != "" ] && printer_shortname=$4
19
20 # Check to see if a value was passed in parameter 5. If so, assign to "printer_location".
21 [ "$5" != "" ] && printer_location=$5
22
23 # Check to see if a value was passed in parameter 6. If so, assign to "driver_policy_trigger".
24 [ "$6" != "" ] && driver_policy_trigger=$6
25
26 # Check to see if a value was passed in parameter 7. If so, assign to "driver_ppd".
27 [ "$7" != "" ] && driver_ppd=$7
28
29 # Check to see if a value was passed in parameter 8. If so, assign to "option_1".
30 [ "$8" != "" ] && option_1=$8
31
32 # Check to see if a value was passed in parameter 9. If so, assign to "option_2".
33 [ "$9" != "" ] && option_2=$9
34
35 # Check to see if a value was passed in parameter 10. If so, assign to "option_3".
36 [ "${10}" != "" ] && option_3=${10}
37
38 # Check to see if a value was passed in parameter 11. If so, assign to "option_4".
39 [ "${11}" != "" ] && option_4=${11}
40
41 ##################################################################################
```

```
34
35 # Check to see if a value was passed in parameter 10. If so, assign to "option_3".
36 [ "${10}" != "" ] && option_3=${10}
37
38 # Check to see if a value was passed in parameter 11. If so, assign to "option_4".
39 [ "${11}" != "" ] && option_4=${11}
40
41 ##################################################################
42 #
43 # ADDITIONAL VARIABLES - Do Not Edit
44 #
45
46 printername="${printserver_name}_${printer_shortname}"
47 gui_display_name="${printer_shortname} on ${printserver_name}"
48 address="${printserver_protocol}://${printserver_fqdn}/${printer_shortname}"
49
50 ##################################################################
51 #
52 # Code
53 #
54
55 function DriverInstall() {
56   # Trigger Jamf policy to (re)install drivers
57   if [ ! -z "${driver_policy_trigger}" ]; then
58     /usr/local/bin/jamf policy -event "${driver_policy_trigger}"
59   fi
60
```

```
47 gui_display_name="${printer_shortname} on ${printserver_name}"
48 address="${printserver_protocol}://${printserver_fqdn}/${printer_shortname}"
49
50 ##########################################################################
51 #
52 # Code
53 #
54
55 function DriverInstall() {
56   # Trigger Jamf policy to (re)install drivers
57   if [ ! -z "${driver_policy_trigger}" ]; then
58     /usr/local/bin/jamf policy -event "${driver_policy_trigger}"
59   fi
60
61   # If driver PPD does not exist, fail and exit
62   if [ ! -e "${driver_ppd}" ]; then
63     /bin/echo "Driver not found at ${driver_ppd}."
64     exit 1
65   fi
66 }
67
68 function PrinterDelete() {
69   # If printer already exists, remove it first
70   if /usr/bin/lpstat -p "${printername}" > /dev/null 2>1; then
71     /bin/echo "Existing printer found. Removing..."
72     /usr/sbin/lpadmin -x "${printername}"
73   fi
74 }
```

```
58      /usr/local/bin/jamf policy -event "${driver_policy_trigger}"
59    fi
60
61    # If driver PPD does not exist, fail and exit
62    if [ ! -e "${driver_ppd}" ]; then
63      /bin/echo "Driver not found at ${driver_ppd}."
64      exit 1
65    fi
66  }
67
68  function PrinterDelete() {
69    # If printer already exists, remove it first
70    if /usr/bin/lpstat -p "${printername}" > /dev/null 2>1; then
71      /bin/echo "Existing printer found. Removing..."
72      /usr/sbin/lpadmin -x "${printername}"
73    fi
74  }
75
76  function PrinterInstall() {
77    # Now we can install the printer.
78    /usr/sbin/lpadmin \
79      -p "${printername}" \
80      -L "${printer_location}" \
81      -D "${gui_display_name}" \
82      -v "${address}" \
83      -P "${driver_ppd}" \
84      -o "${option_1}" \
```

```
74 }
75
76 function PrinterInstall() {
77   # Now we can install the printer.
78   /usr/sbin/lpadmin \
79     -p "${printername}" \
80     -L "${printer_location}" \
81     -D "${gui_display_name}" \
82     -v "${address}" \
83     -P "${driver_ppd}" \
84     -o "${option_1}" \
85     -o "${option_2}" \
86     -o "${option_3}" \
87     -o "${option_4}" \
88     -o printer-error-policy=abort-job \
89     -o auth-info-required=negotiate \
90     -o printer-is-shared=false \
91     -E
92
93   result=$?
94   if [ "${result}" -eq 0 ]; then
95     /bin/echo "${printername} installed successfully."
96   else
97     exit "${result}"
98   fi
99 }
100
```

```
74 }
75
76 function PrinterInstall() {
77   # Now we can install the printer.
78   /usr/sbin/lpadmin \
79     -p "${printername}" \
80     -L "${printer_location}" \
81     -D "${gui_display_name}" \
82     -v "${address}" \
83     -P "${driver_ppd}" \
84     -o "${option_1}" \
85     -o "${option_2}" \
86     -o "${option_3}" \
87     -o "${option_4}" \
88     -o printer-error-policy=abort-job \
89     -o auth-info-required=negotiate \
90     -o printer-is-shared=false \
91     -E
92
93   result=$?
94   if [ "${result}" -eq 0 ]; then
95     /bin/echo "${printername} installed successfully."
96   else
97     exit "${result}"
98   fi
99 }
100
```

```
74 }
75
76 function PrinterInstall() {
77   # Now we can install the printer.
78   /usr/sbin/lpadmin \
79     -p "${printername}" \
80     -L "${printer_location}" \
81     -D "${gui_display_name}" \
82     -v "${address}" \
83     -P "${driver_ppd}" \
84     -o "${option_1}" \
85     -o "${option_2}" \
86     -o "${option_3}" \
87     -o "${option_4}" \
88     -o printer-error-policy=abort-job \
89     -o auth-info-required=negotiate \
90     -o printer-is-shared=false \
91     -E
92
93   result=$?
94   if [ "${result}" -eq 0 ]; then
95     /bin/echo "${printername} installed successfully."
96   else
97     exit "${result}"
98   fi
99 }
100
```

```
84      -o "${option_1}" \
85      -o "${option_2}" \
86      -o "${option_3}" \
87      -o "${option_4}" \
88      -o printer-error-policy=abort-job \
89      -o auth-info-required=negotiate \
90      -o printer-is-shared=false \
91      -E
92
93    result=$?
94    if [ "${result}" -eq 0 ]; then
95      /bin/echo "${printername} installed successfully."
96    else
97      exit "${result}"
98    fi
99  }
100
101 function main() {
102   DriverInstall
103   PrinterDelete
104   PrinterInstall
105 }
106
107 main
108
```

```
84      -o "${option_1}" \
85      -o "${option_2}" \
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100
101 function main() {
102   DriverInstall
103   PrinterDelete
104   PrinterInstall
105 }
106
107 main
108
```
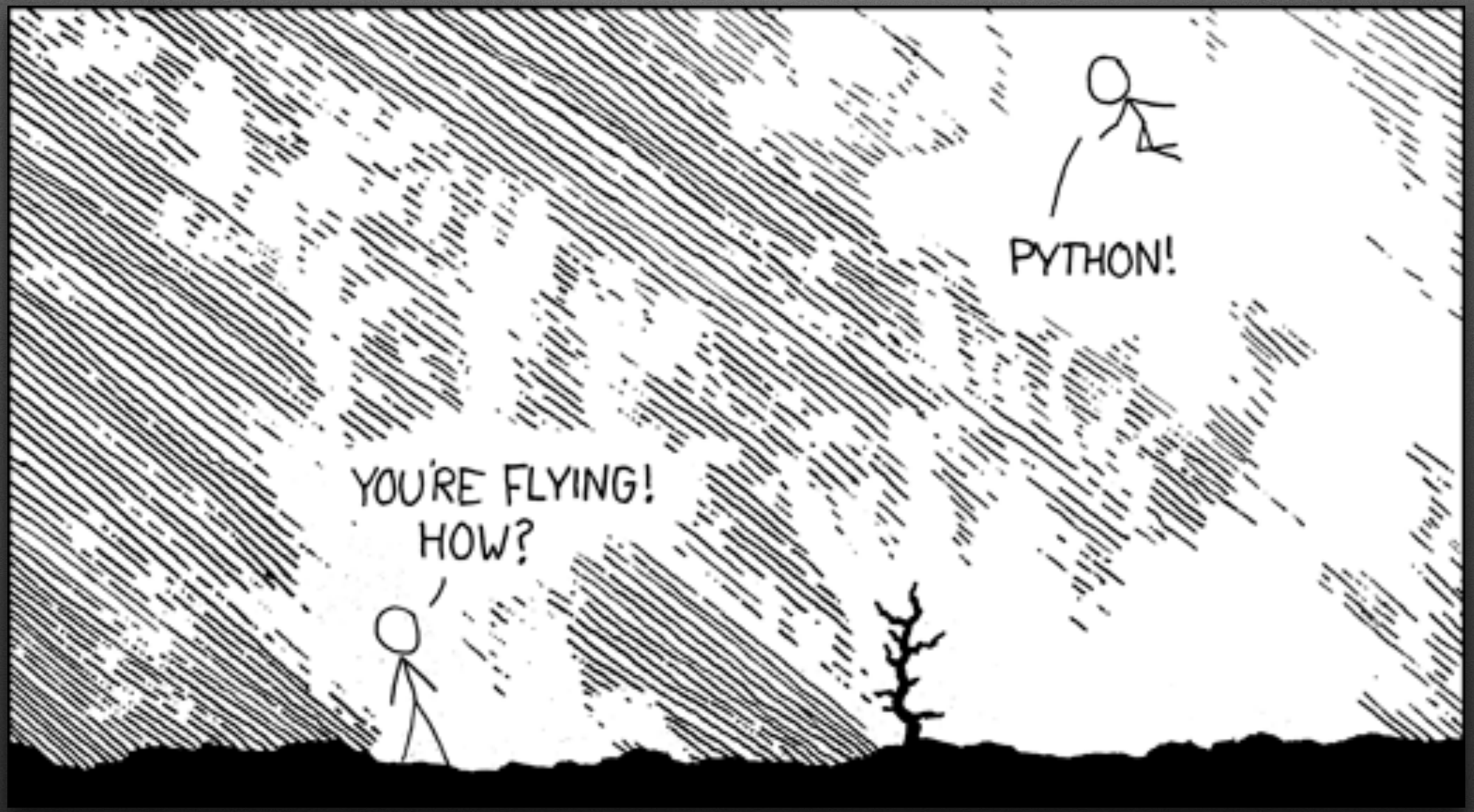
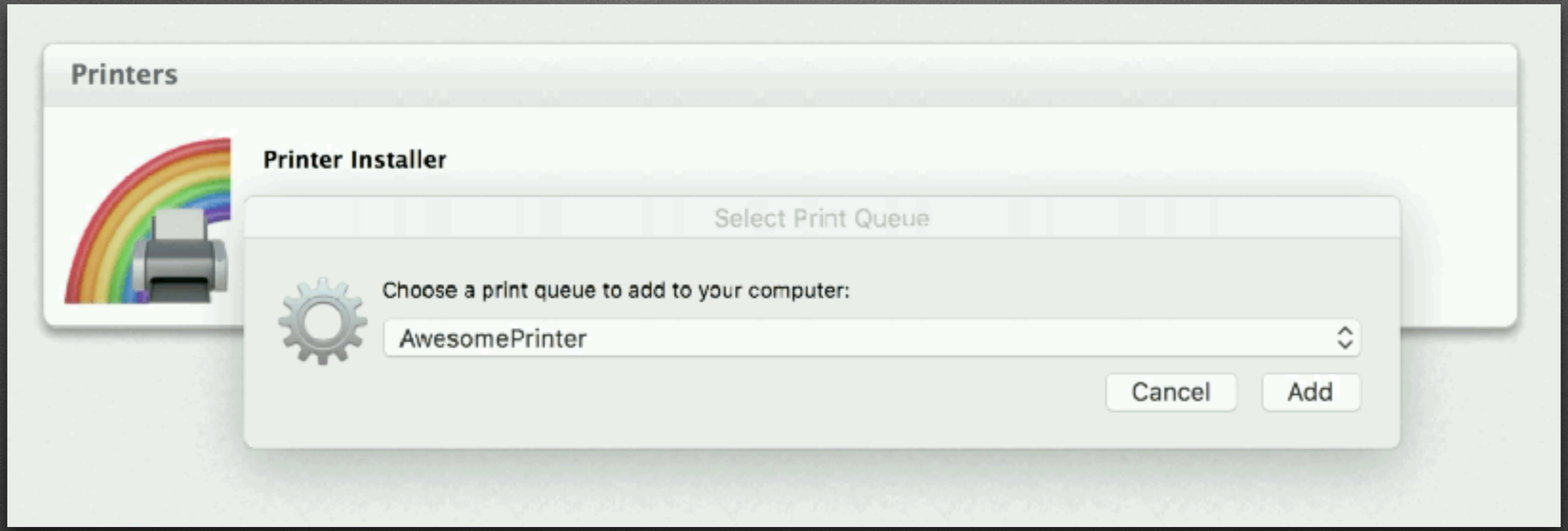

Does it Scale?



https://xkcd.com/353/



Self Service Printer Installer

https://github.com/haircut/self-service-printer-installer

Requirements

- CocoaDialog (https://cocoadialog.com)
- Modify a JSON configuration file
- Create printer queue definitions in CSV form

```
{
  "default_driver": "/System/Library/Frameworks/ApplicationServices.framework/Versions/A/Frameworks/PrintCore.framework/Versions/A/Resources/Generic.ppd",
  "cocoaDialog": {
    "path": "/Applications/cocoaDialog.app/Contents/MacOS/cocoaDialog",
    "install_trigger": "InstallcocoaDialog"
  },
  "generator": {
      "input_python_template": "source/printer-installer.source.py",
      "output_json_file": "output/printer-queues.json",
      "output_script": "output/printer-installer.py"
  },
  "gui": {
    "window_title": "Printer Installer",
    "printer_icon": "/System/Library/CoreServices/AddPrinter.app/Contents/Resources/Printer.icns",
    "brand_icon": "/System/Library/CoreServices/Certificate Assistant.app/Contents/Resources/AppIcon.icns",
    "messages": {
      "success_queue_added": "The printer queue '%s' was successfully added. You should now be able to send jobs to this printer.",
      "error_undefined": "An error occured; please contact your support team for assistance.",
      "error_no_queues_available": "All available printer queues are already installed on your Mac. Please contact your support team if you need further assistance.",
      "error_driver_failure": "A driver is required for full control of this printer, but an error occurred when attempting to install the software. Please contact your support team for assistance.",
      "error_unable_map_queue": "There was a problem mapping the printer queue - please try again. If the problem persists, contact your support team for further assistance.",
      "error_preselected_queue": "The printer queue '%s' is already configured on your Mac."
    }
  }
}
```

DisplayName	URI	Driver	DriverTrigger	Location	Options
FirstPrinter	smb://print.server.tld/FirstPrinter			Brown Hall	APOptionalDuplexer=True printer-is-shared=false auth-info-required=negotiate
MFD	smb://print.server.tld/MFD	/Library/Printers/PPDs/Contents/Resources/RICOH Aficio MP C3002.gz	InstallRicohDrivers	Brown Hall	ColorModel=Gray Finisher=FinKINGB ImageableArea=Letter PageRegion=Letter PageSize=Letter PaperDimension=Letter printer-is-shared=false auth-info-required=negotiate
Another	smb://print.server.tld/Another			Blue Hall	APOptionalDuplexer=True printer-is-shared=false auth-info-required=negotiate

generator.py config.json printers.csv

printer-installer.py 1 2 username default filterField filterValue

printer-installer.py 1 2 msblake

printer-installer.py 1 2 msblake OWP-5127

```
printer-installer.py 1 2 msblake "" Location Waterfront
printer-installer.py 1 2 msblake "" URI PrintServerName
printer-installer.py 1 2 msblake "" CusomField foo
```

No dynamic filtering

Self Service Printer Installer

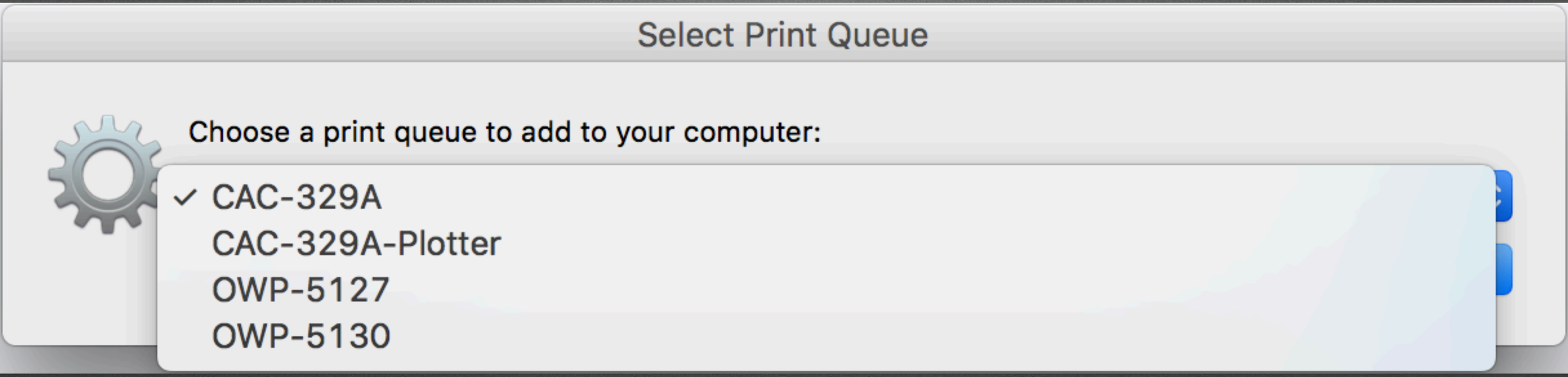
https://github.com/MScottBlake/self-service-printer-installer

Self Service Printer Installer

https://github.com/MScottBlake/self-service-printer-installer

```
{
  "default_driver": {
    <snip>
  },
  "ldap": {
     "group": {
         "name_format": "PrinterGroup-*"
     },
     "messages": {
         "error": "Unable to contact LDAP server. Please contact your support team for further assistance."
     },
     "search_base": "dc=ad,dc=domain,dc=com",
     "server": "ldap://ad.domain.com"
  }
}

```

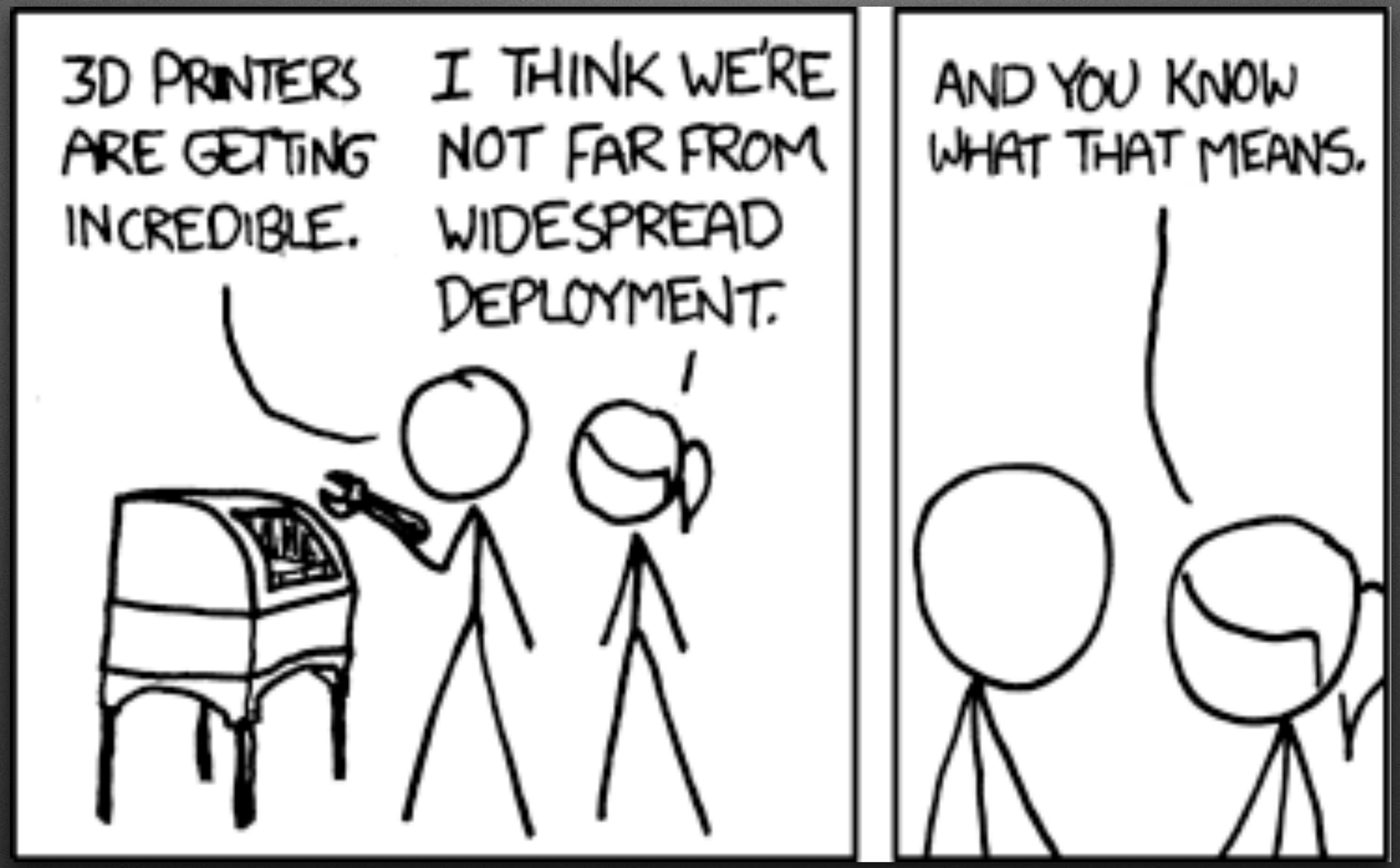
DisplayName	URI	Driver	DriverTrigger	Location	Options	ADFilterGroup
Printer1	ipp://10.10.10.10					PrinterGroup-Printer1
Printer2				Rm 404		
Printer3		/Libary/Printers/PPDs/Contents/Resources/SomeDriver.ppd.gz		Woodburn Hall - Rm 100		PrinterGroup-WoodburnHall
Printer4				Woodburn Hall - Rm 200		PrinterGroup-WoodburnHall


Select Print Queue
Choose a print queue to add to your computer:
CAC-329A
CAC-329A-Plotter
OWP-5127
OWP-5130

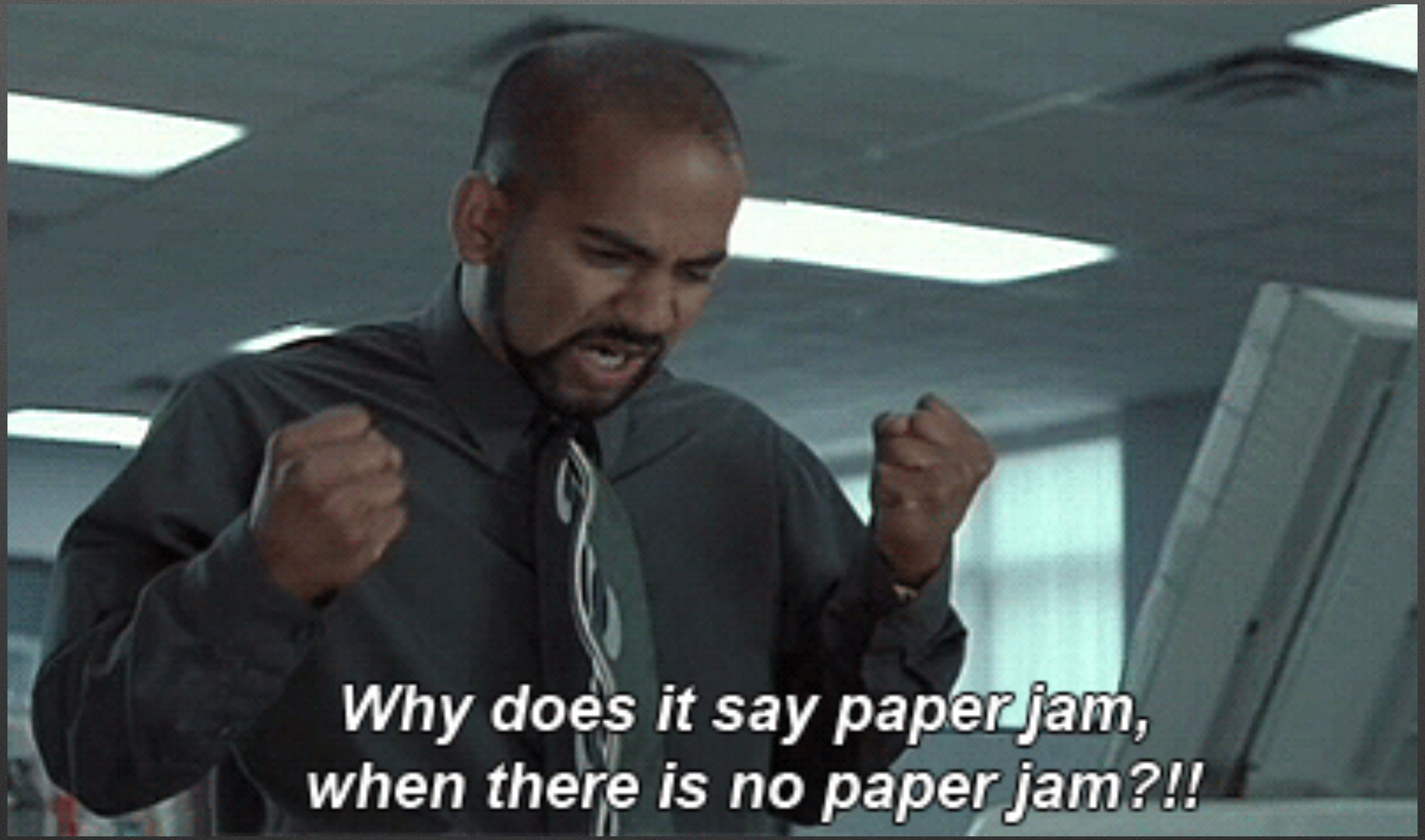
PrinterGenerator

https://github.com/nmcspadden/PrinterGenerator

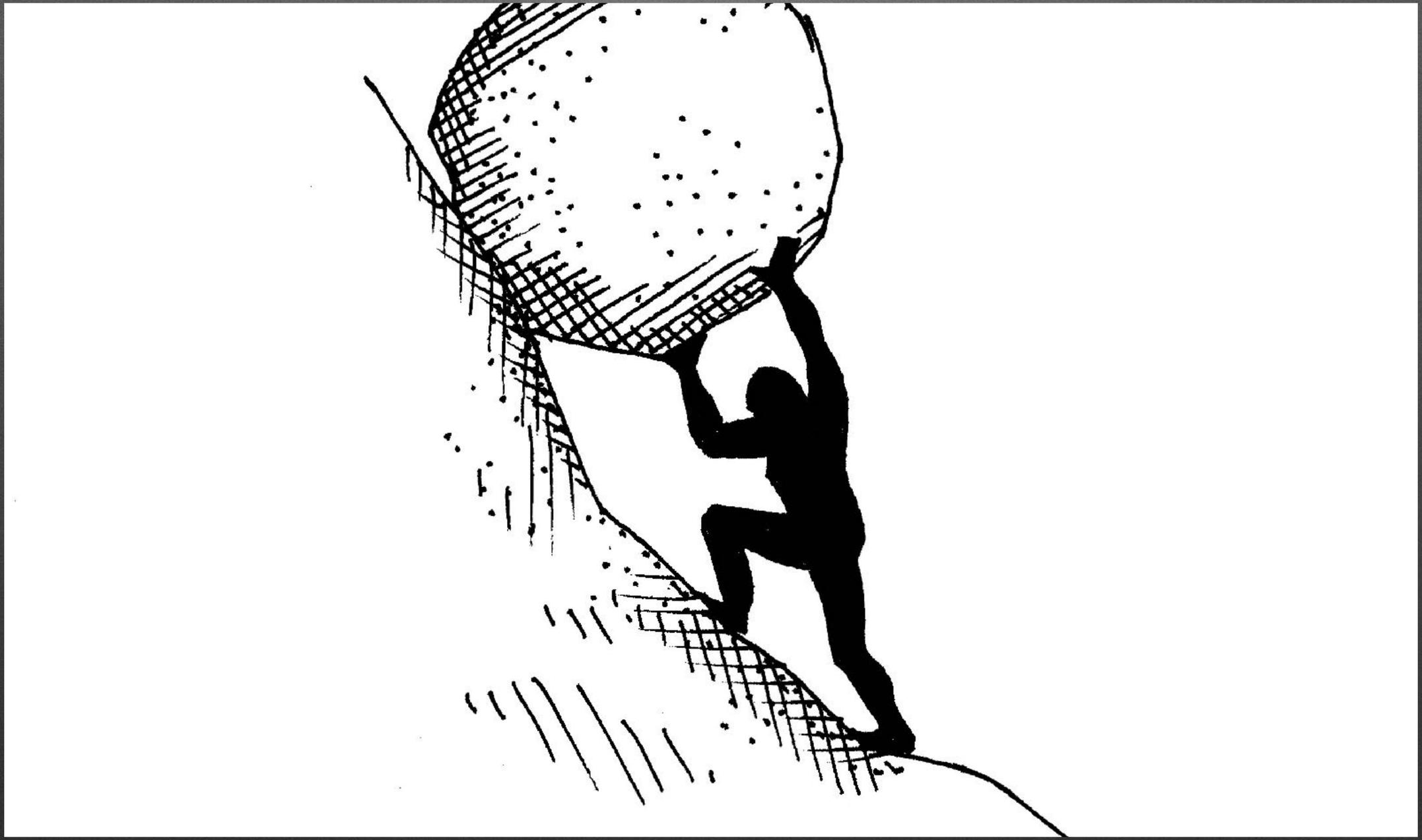
What's next?



https://xkcd.com/924/


Why does it say paper jam,
when there is no paper jam?!!

HP Easy Start
Connect
Give your printer a name that will be easy to recognize, make sure your Mac's current Wi-Fi network is selected, and then click Join.
Join
HP printer
HP's Wi-Fi Network
Rename Printer (Optional)
HP printer
Apply
you click Join, your Mac
porarily disconnected from
s network. More...
Back
Continue



Questions?

https://github.com/MScottBlake/Presentations

https://bit.ly/psumac2018-274

https://bit.ly/psumac2018-274