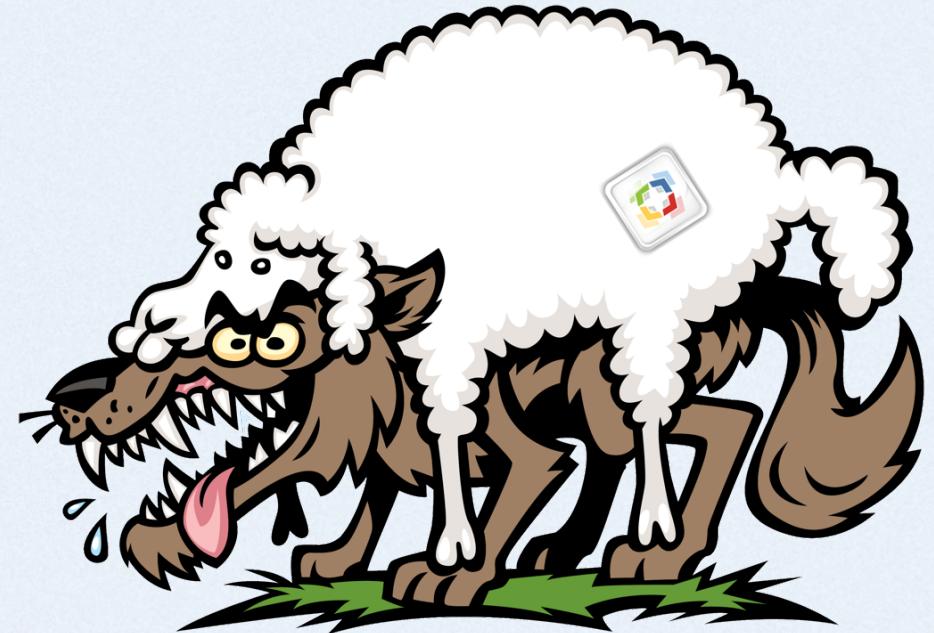




# Extension Attributes in Sheep's Clothing



# **Extension Attributes in Sheep's Clothing**

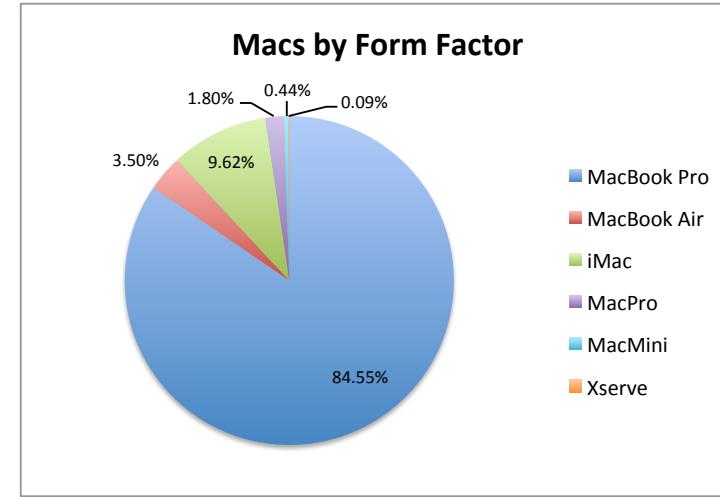
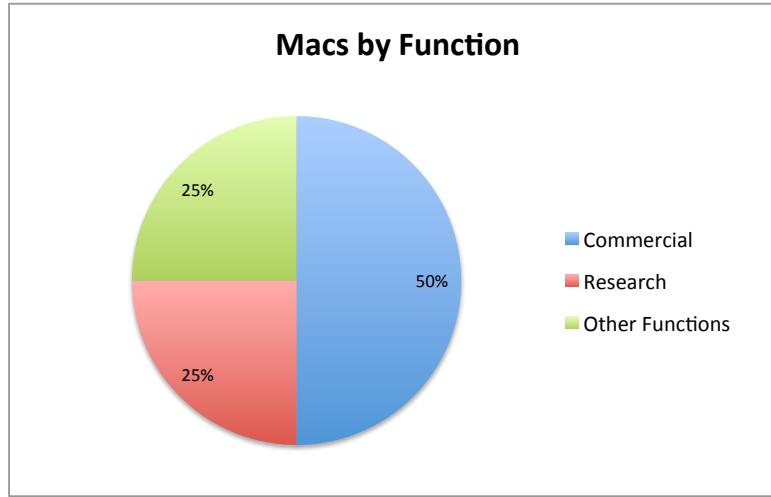
**Arek Sokol**

**Genentech / Roche  
Global Mac Engineer**

@macbrained

[github.com/macbrained/Public](https://github.com/macbrained/Public)

# About Genentech / Roche

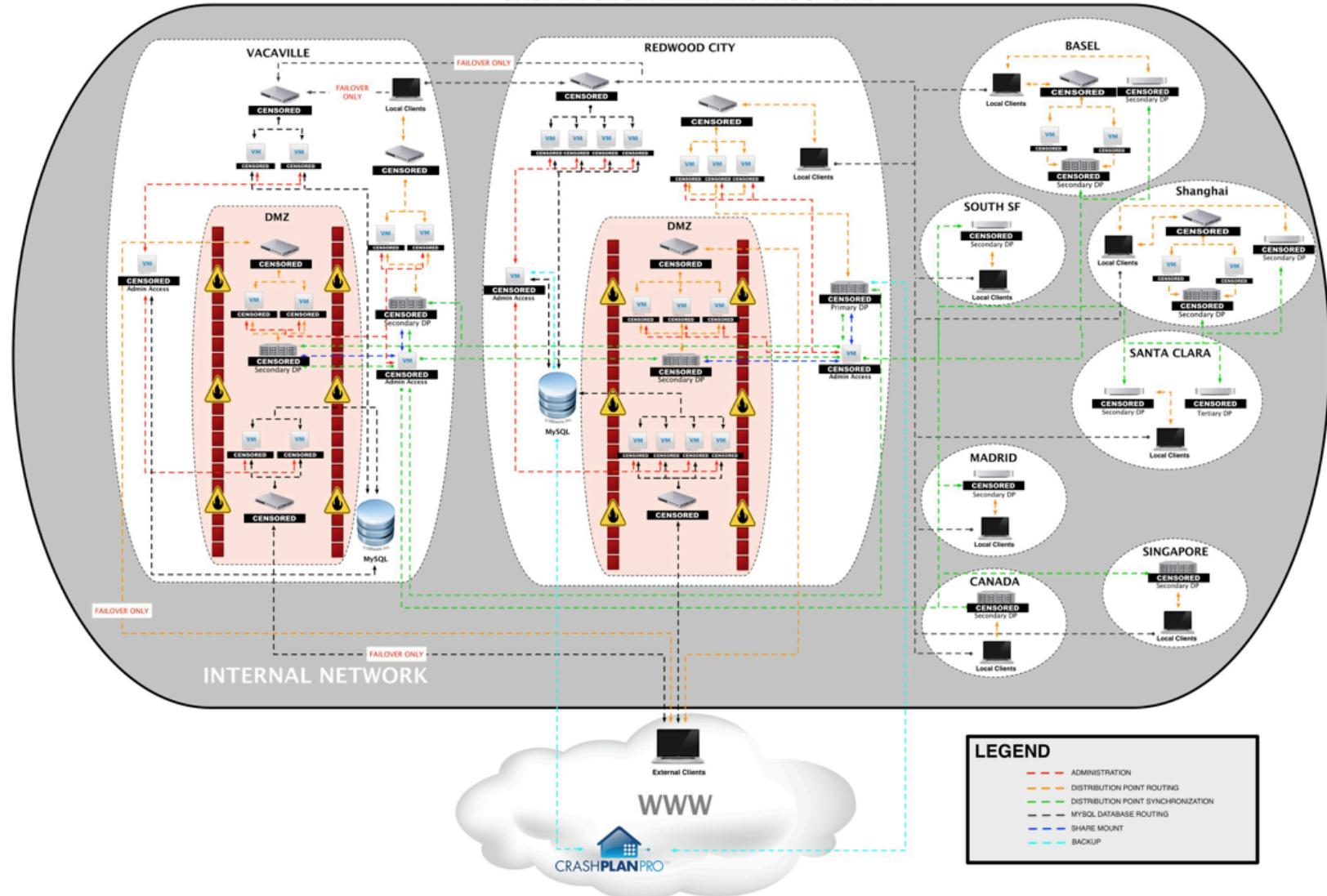


- › **80,000 Employees**
- › **10,000 Mac Clients managed by Casper (so far...)**
- › Power without numbers (just 2.5 of us)
- › And there's the infrastructure...

# About Genentech / Roche



CASPER GLOBAL INFRASTRUCTURE



# Extension Attributes in Sheep's Clothing

- › What is an Extension Attribute?
- › Some Real World Examples (practical, awesome, and awesomely-practical)
- › Other Examples?
- › Q & A



# What is an Extension Attribute?

# What is an Extension Attribute?



- › Attribute that is collected at inventory (recon)
- › Populated by a script, a pop-up, or text input and added to the computer record in the JSS
- › Can be used for scoping and reporting
  - You can scope policies and reports against it
  - You can generate reports with its value
- › And... can be used beyond its “intended” purpose

# What is an Extension Attribute?



## » Where can you find Extension Attributes?

A screenshot of the JAMF Software interface. The top navigation bar includes "Inventory", "Management", "Logs", "Settings", and a search bar. A user icon and "Logout arek" are also present. Below the navigation is a green header bar with the title "Inventory Collection Preferences". Underneath is a toolbar with icons for Software, Package Receipts, Software Updates, Accounts, Printers, Services, Extension Attributes (which is highlighted), Mobile Devices, and Location. The main content area is titled "Extension Attributes" and contains the following text: "Extension Attributes allow you to define custom fields that store information for a computer. These fields can be populated manually, from a popup menu or with a script." Below this is a table listing extension attributes with their display names, types, and edit/remove options. The table has columns for Display Name, Type, Edit..., and Remove...

Display Name	Type		
AD - Centrify	Populated by Script	Edit...	Remove...
AD - CentrifyClient	Populated by Script	Edit...	Remove...
AD - CentrifyClient Version	Populated by Script	Edit...	Remove...
AD - CentrifyDC Status	Populated by Script	Edit...	Remove...
AD - Error Check	Populated by Script	Edit...	Remove...
AD - Joined As	Populated by Script	Edit...	Remove...
AD - Shared Mac	Populated by Script	Edit...	Remove...
CI - Battery Health Status	Populated by Script	Edit...	Remove...
CI - com.apple.security	Populated by Script	Edit...	Remove...
CI - Firstboot Ran	Populated by Script	Edit...	Remove...
CI - getPrimaryMAC	Populated by Script	Edit...	Remove...
CI - Image Version	Populated by Script	Edit...	Remove...
CI - ITOBA Mac	Populated by Script	Edit...	Remove...
CI - JSSID	Populated by Script	Edit...	Remove...
CI - LastUser	Populated by Script	Edit...	Remove...

Settings > Inventory Options > Inventory Collection Preferences > Extension Attributes

# What is an Extension Attribute?



## » How do you create an Extension Attribute?

The screenshot shows the 'Edit Extension Attribute' dialog box within the 'Inventory Collection Preferences' interface. The top navigation bar includes icons for Software, Package Receipts, Software Updates, Accounts, Printers, Services, Extension Attributes (which is selected), Mobile Devices, and Location.

**Edit Extension Attribute**

**Display Name:** AD - Joined As

**Description:** (empty text area)

**Data Type:** String

**Input Type:** Populated by Script

**Mac OS X Script Contents:**

```
#!/bin/sh
adJoinStatus=`/usr/bin/adinfo | grep "Joined as:" | awk '{print $3}'`"
domainCheck=`/usr/bin/adinfo | grep "Joined as:" | awk '{print $3}' | grep -o
gne.windows.gene.com`"

if [ $domainCheck == "gne.windows.gene.com" ]; then
    echo "<result>$adJoinStatus</result>"
else
    echo "<result>Not joined</result>"
fi
```

**Windows Script Type:** VBScript

**Windows Script Contents:** (empty text area)

Buttons at the bottom: Cancel, OK



JAMF NATION  
user conference 2012

# Real-World Example #1

“Breadcrumbs”

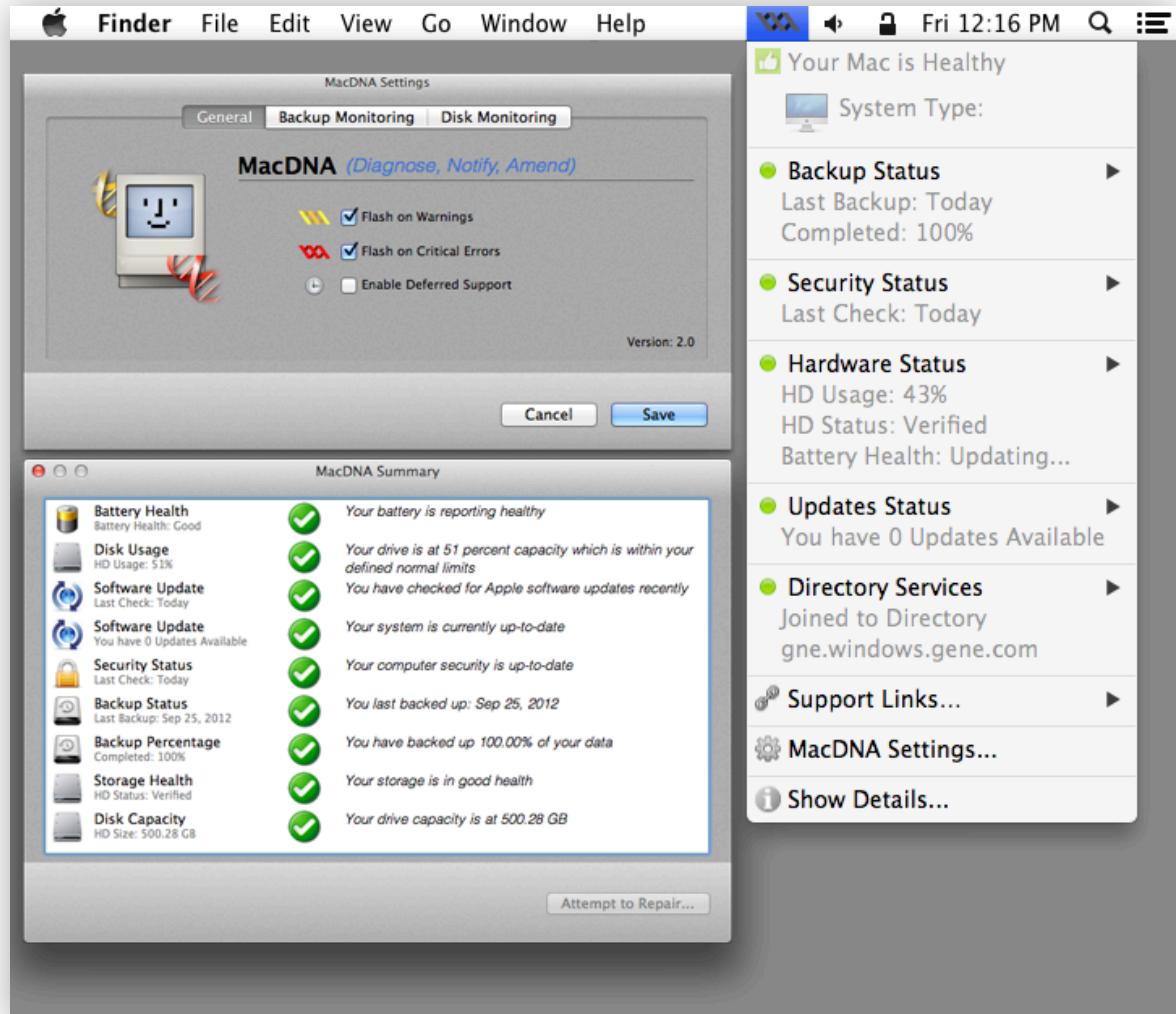
# Example: “Breadcrumbs”



Find a way to populate critical data like...

- Last Casper policy check-in
- Last Crashplan backup date and backup percentage

...to our custom Mac health check menu-let application.



JAMF NATION  
user conference 2012

# Example: “Breadcrumbs”



# Example: “Breadcrumbs”



```
#!/bin/sh

CP_ServerAddress="crashplan.company.com"
CP_ServerPort="4285"
CP_AdminUsername="administrator"
CP_AdminPassword="god"

if [ "$CP_ServerAddress" == "" ] || [ "$CP_ServerPort" == "" ] || [ "$CP_AdminUsername" == "" ] || [ "$CP_AdminPassword" == "" ];then
    echo "<result>Please ensure all variables are set in the extension attribute script.</result>"
else
    if [ -f /Library/Application\ Support/CrashPlan/.identity ];then
        GUID=`/bin/cat /Library/Application\ Support/CrashPlan/.identity | grep guid | sed s/guid\=///g`
        totalSize=`/usr/bin/curl -s -u "$CP_AdminUsername":"$CP_AdminPassword" -k https://"$CP_ServerAddress":$CP_ServerPort/rest/computerUsage?sourceGuid="$GUID" 2>&1 | grep -w selectedBytes | awk '{print $2}' | sed s/,//g`
        todo=`/usr/bin/curl -s -u "$CP_AdminUsername":"$CP_AdminPassword" -k https://"$CP_ServerAddress":$CP_ServerPort/rest/computerUsage?sourceGuid="$GUID" | grep -w todoBytes | awk '{print $2}' | sed s/,//g`
        done=`expr "$totalSize" - "$todo"`
        result=$( echo "scale=4; ($done / $totalSize) * 100" | bc | sed 's/^.*/./1/' )
        echo "<result>$result</result>"
        echo "$result" > /var/gne/macDNA/.crashplanpercentage
    else
        echo "<result>Not installed</result>"
    fi
fi
```



JAMF NATION  
user conference 2012

# Real-World Example #2

“Snoop and Tell”

# Example: “Snoop and Tell”



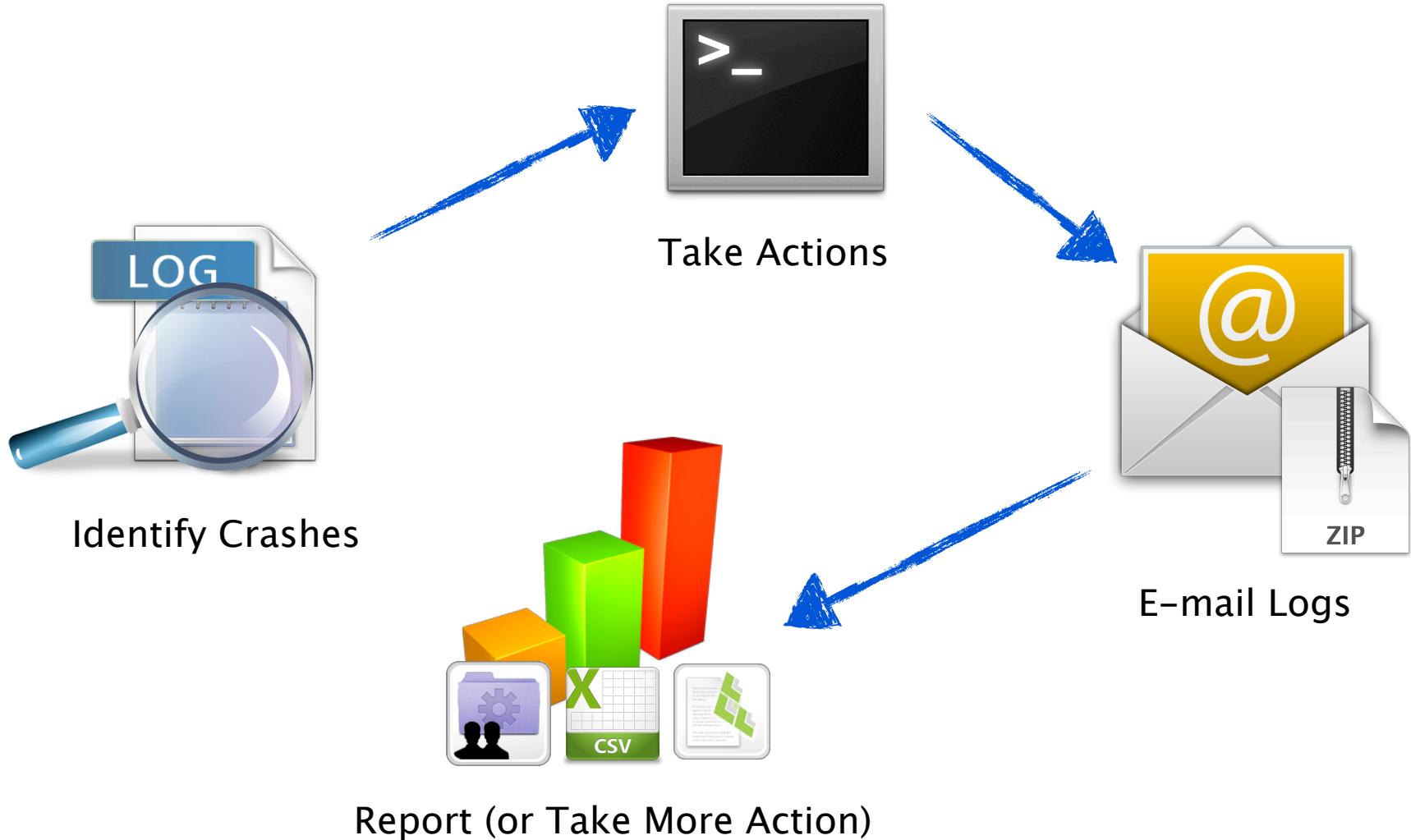
Find a way to...

- › Scour the system.log for ongoing application crashes
- › Enable debug tools
- › Generate an archive of related logs, system settings...
- › Email the archive directly to the vendor for analysis

The screenshot shows the OS X System Log window. The left sidebar lists log files: system.log, ~/Library/Logs, /Library/Logs, and /var/log. The /Library/Logs section is expanded, showing logs for Adobe, AppleFileService, CrashPlan, DiagnosticReports, EventMonitor, Genetech, LKD, MySQL, config.log, stackshot-syms.log, stackshot.log, VMware, and VMware Fusion Services. The right pane displays log entries from system.log. A large black pen graphic is overlaid on the left side of the window, pointing towards the log files.

```
system.log
Sep 28 12:47:45 arek-macbookpro101 mdworker[56939]: Unable to talk to lsboxd
Sep 28 12:47:45 arek-macbookpro101 mdworker[56938]: Unable to talk to lsboxd
Sep 28 12:47:45 arek-macbookpro101 sandbox[56942] ([56939]): mdworker(56939) deny ma
Sep 28 12:47:45 arek-macbookpro101 sandbox[56942] ([56938]): mdworker(56938) deny ma
Sep 28 12:47:45 arek-macbookpro101 kernel[0]: Sandbox: sandboxd(56942) deny mach-look
Sep 28 12:48:22 arek-macbookpro101 netbiosd[67]: name servers down?
Sep 28 12:48:49 arek-macbookpro101 mdworker[56950]: Attempt to add read-only file at
Containers/com.evernote.Evernote/Data/Library/Application%20Support/Evernote/accounts
write. Adding it read-only instead. This will be a hard error in the future; you must
NSReadOnlyPersistentStoreOption.
Sep 28 12:49:31 --- last message repeated 3 times ---
Sep 28 12:49:45 arek-macbookpro101 mdworker[56954]: Unable to talk to lsboxd
Sep 28 12:49:45 arek-macbookpro101 mdworker[56953]: Unable to talk to lsboxd
Sep 28 12:49:45 arek-macbookpro101 sandbox[56957] ([56954]): mdworker(56954) deny ma
Sep 28 12:49:45 arek-macbookpro101 sandbox[56957] ([56953]): mdworker(56953) deny ma
Sep 28 12:49:45 arek-macbookpro101 kernel[0]: Sandbox: sandboxd(56957) deny mach-look
Sep 28 12:51:04 arek-macbookpro101 Safari[3971]: CGContextClipToRect: invalid context
Sep 28 12:52:21 arek-macbookpro101 kernel[0]: CODE SIGNING: cs_invalid_page(0x1000):
CS_VALID
Sep 28 12:52:24 arek-macbookpro101 KernelEventAgent[73]: tid 00000000 received event(
Sep 28 12:52:24 arek-macbookpro101 kernel[0]: HFS: Vol: Install Google Drive Very Low
Sep 28 12:52:24 arek-macbookpro101 SAVDiskMountNotify[555]: disk with identifier disk
Sep 28 12:52:25 arek-macbookpro101 kernel[0]: CODE SIGNING: cs_invalid_page(0x1000):
Sep 28 12:52:45 arek-macbookpro101 mdworker32[57018]: bootstrap_look_up2 failed with
Sep 28 12:52:45 arek-macbookpro101 sandbox[57019] ([57018]): mdworker32(57018) deny
com.apple.PowerManagement.control (import fstype:hfs fsflag:480D000 flags:240000005E
plugin:/Library/Spotlight/Microsoft Office.mdimporter - find suspect file using: sudo
Sep 28 12:52:45 arek-macbookpro101 kernel[0]: Sandbox: sandboxd(57019) deny mach-look
Sep 28 12:53:43 arek-macbookpro101 lsboxd[582]: @AE relay 61657674:6f646f63
Sep 28 12:53:46 arek-macbookpro101 mdworker[57027]: Unable to talk to lsboxd
Sep 28 12:53:46 arek-macbookpro101 mdworker[57029]: Unable to talk to lsboxd
Sep 28 12:53:46 arek-macbookpro101 sandbox[57031] ([57027]): mdworker(57027) deny ma
Sep 28 12:53:46 arek-macbookpro101 sandbox[57031] ([57029]): mdworker(57029) deny ma
Sep 28 12:53:46 arek-macbookpro101 kernel[0]: Sandbox: sandboxd(57031) deny mach-look
Sep 28 12:54:44 arek-macbookpro101 netbiosd[67]: name servers down?
Sep 28 12:55:47 arek-macbookpro101 coreservicesd[27]: SendFlattenedData, got error #2
from ::mach_msg(), sending notification kLSNotifyApplicationDeath to notificationID=3
Size: 31.6 MB (Showing last 16.8 MB)
```

# Example: “Snoop and Tell”



# Example: “Snoop and Tell”



```
#!/bin/sh
# Extension Attribute - Application Crash Count

declare -x awk='/usr/bin/awk'
declare -x who='/usr/bin/who'
declare -x LoggedInUser="`($who | $awk '/console/{print $1}')`"
declare -x ArchivePath="/path/to/archive"
declare -x EmailScript="/path/to/sendEmail.sh"
declare -x EmailSubject="CRASH REPORT ($LoggedInUser)"
declare -x ProblemApp="loginwindow*"
declare -i count=`cat /var/log/system.log | grep "crash report for $ProblemApp" | wc -l
$1 | awk '{print $1}'` 

if [[ $count -gt 0 ]]; then
    mkdir -p $ArchivePath
    cp /var/log/system.log $ArchivePath 2>/dev/null
    cp /var/log/secure.log $ArchivePath 2>/dev/null
    cp /Library/Logs/CrashReporter/* $ArchivePath 2>/dev/null
    cp /Library/Logs/DiagnosticReports/$ProblemApp $LogPath 2>/dev/null
    zip -r /tmp/Archive.zip $LogPath 2>/dev/null
    $EmailScript "$EmailSubject" "$LoggedInUser" "/tmp/Archive.zip" #2>/dev/null
    echo "<result>$count</result>"
else
    echo "<result>N/A</result>"
fi
```



JAMF NATION  
user conference 2012

# Real-World Example #3

“Server Up Details”

# Example: “Server Up Details”



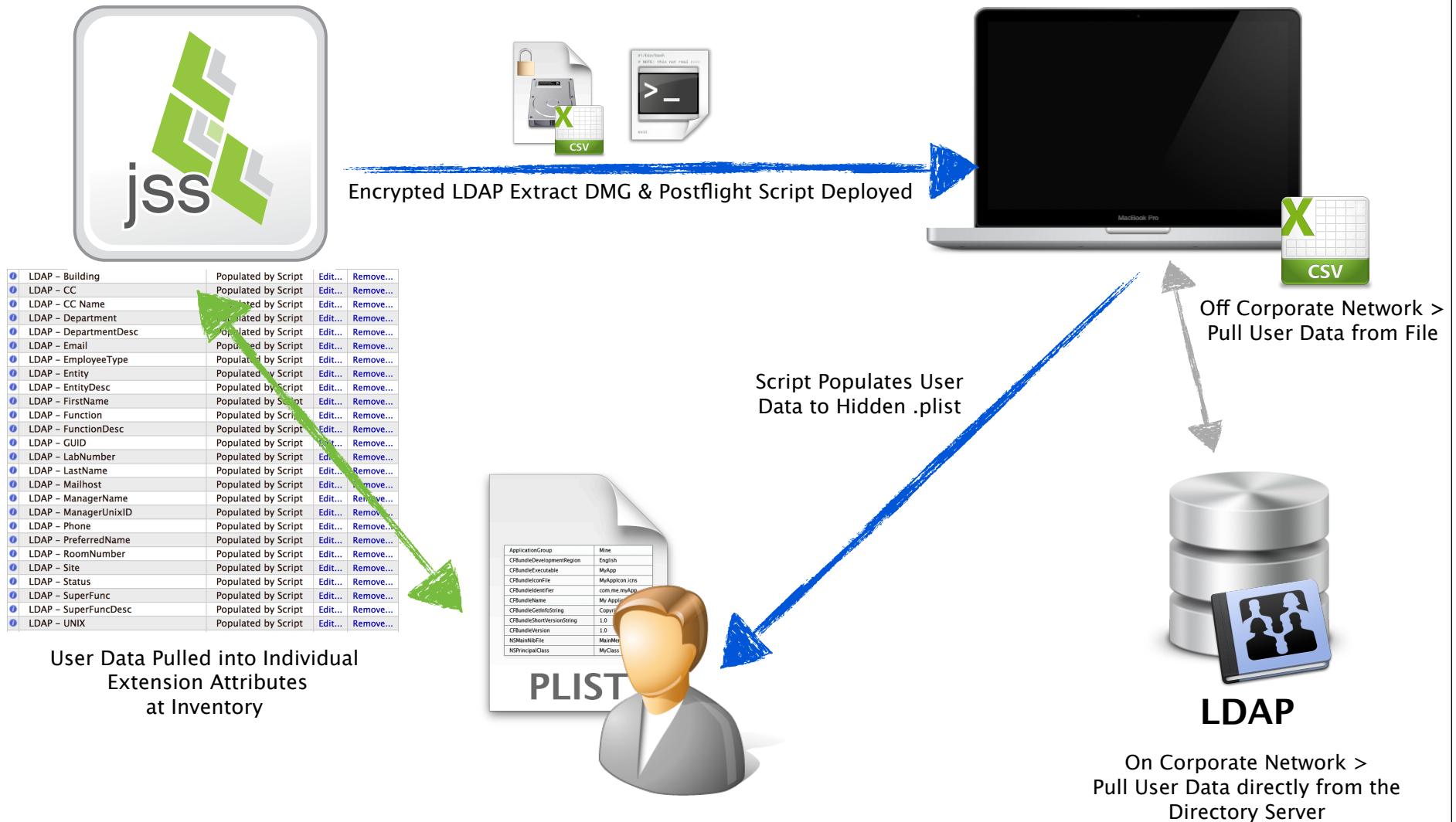
Find a way to...

- › Pull user-specific data from a secondary data store while client is on or off the corporate network
- › Populate these values into the JSS computer object for scoping policies and/or reporting

Arek Sokol	
Photo	Personal Information
	Preferred Name Arek Sokol Legal Last Name Sokol Legal First Name Arkadiusz Title Engineer II Cost Center Name Systems Operations
	Phone n/a Mobile n/a Pager n/a Fax n/a
General Information	
Email sokol.arek@gene.com	
Unix Login arek	
Cost Center 808	
Building 83	
Site S5F	
Room 8305164-2	
Lab Number n/a	
Mail Stop 255b	
Type Regular	
GUID 503580	
Manager Maria Segrove	
Manager	
Maria Segrove, Associate Director, PI Infrastructure Engineering	
Pars	
San Wiedenek Principal Systems Engineer	
Amit Dassani	
Jeffrey Gaur Systems Engineer	
Agnieszka	
Tobias & Justyna Engineer	
Liliana	
Rafaela Administrator	
Sergio & Paola Engineer	



# Example: “Server Up Details”



# Example: “Server Up Details”



```
#!/bin/sh
# Extension Attribute - LDAP Cost Center Name

Key="cost_center_desc"

if [ -f "$UserLDAPInfo" ]; then
    LDAPValue=`defaults read /var/gne/user "$Key" 2>/dev/null`
    if [ "$LDAPValue" != "" ]; then
        echo "<result>$LDAPValue</result>"
    else
        echo "<result>NoValue</result>"
    fi
else
    echo "<result>NoPlist</result>"
fi
```



JAMF NATION  
user conference 2012

# Other Examples?

# Q & A



JAMF NATION  
user conference

Thank you!