

JNUC 2022

SAN DIEGO

ITS-LOG!

The one-click tool for
collecting diagnostics
and user feedback!





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ITS-LOG!

Presentation Overview

- I The Problem
- II The Solution
- III Demo Time!
- IV Final Remarks



1

The Problem



A Game of Telephone

- ★ User has a system crash, escalates urgently
- ★ Admins usually the last to know
- ★ Symptoms might not be understood or missed
- ★ End user not always available for follow-up
- ★ Try to collect logs anyway (cross fingers)
- ★ **Critical** story details may already be lost



SYSDIAGNOSE

'sɪs,dəɪəg'nəʊs

“System Diagnose”

a condensed snapshot in time



What's in a sysdiagnose?

- ★ Creates realtime performance snapshots
- ★ Copies MacOS unified log archive
- ★ Generates logs from other services
- ★ ~5 minutes to compile



What's in a sysdiagnose?

- > **Accessibility**
acdiagnose-503.txt
airport_info.txt
apfs_stats.txt
appleddstats.txt
apsd-status.txt
- > **ASPSnapshots**
bc_stats.txt
bless_info.txt
BluetoothTraceFile.pkg
bootstamps.txt
butil.txt
- > **brctl**
ckksctl_status.txt
codecctl.txt
com.apple.windowserver.displays.plist
- > **crashes_and_spins**
csrutil-status.txt
DiskMountConditioner.json
disks.txt
diskutil_apfs_listUsers.txt
diskutil_apfs.txt
diskutil_cs.txt
diskutil_info.txt
diskutil_list.txt
diskutil_listClients.txt
diskutil_listSnapshot.txt
display_diagnose.txt
efi-dump-logs.txt
error_log.txt
- > **errors**
filecoordination.txt
fileproviderctl_check.log
fileproviderctl_dump.log
fileproviderctl.log
find-system-migration-history.txt
footprint.txt
gpt.txt
hdiutil-pmap.txt
hidutil.plist

- hpmDiagnose.txt
ioggdiagnose.txt
- > **ioreg**
kextstat.txt
kmutil-diagnose.txt
launchctl-dumpstate.txt
launchctl-list-0.txt
launchctl-list-503.txt
launchctl-print-gui-503.txt
launchctl-print-system.txt
launchctl-print-user-503.txt
launchctl-procinfo-7195-Self Service.txt
- > **libtrace**
- < **logs**
 - > asl
 - > **BatteryBDC**
 - > **BatteryHealth**
 - > **BatteryUIList**
 - > **CalendarPreferences**
 - com.apple.SocialLayer.plist
 - > DCP
 - > **DiagnosticMessages**
 - > **EndpointSecurity**
 - > FDR
 - > fsck
 - install.log
 - InstallHistory.plist
 - > **IntlDataCache**
 - ionodecache.json
 - > **iSCPreboot**
 - > launchd
 - > **loginwindow**
 - > **MemoryExceptions**
 - > **MobileActivation**
 - > **MobileInstallation**
 - > **MobileSoftwareUpdate**
 - > olddsc
 - > **parsecd**
 - > **powerlogs**
 - > psm

- SFRRestoreVersion.plist
- > **SiriAnalytics**
- > **Splat**
- > **suggest_tool**
- system.log
- system.log.0.gz
- > **SystemExp**
- < **systemstats**
 - < db
 - ...many files
- > **SystemVersion**
- > **UserManagement**
- lsappinfo.txt
- lsregister-0.csstoredump
- lsregister-503.csstoredump
- > **mddiagnose.mdsdiagnostic**
- > **microstackshots**
- mount.txt
- nclist.txt
- > **network-info**
- nfsstat.txt
- night-shift.log
- nvram.txt
- odutil.txt
- oslog_archive_error.log
- otctl_status.txt
- pcsstatus.txt
- > **Personalization**
- pluginkit-503.txt
- pmset_everything.txt
- powermetrics.txt
- > **Preferences**
- ps_thread.txt
- ps.txt
- README.txt
- remotectl_dumpstate.txt
- resolv.conf
- > **RunningBoard**
- sample-389-highcpu.txt
- sample-662-highcpu.txt

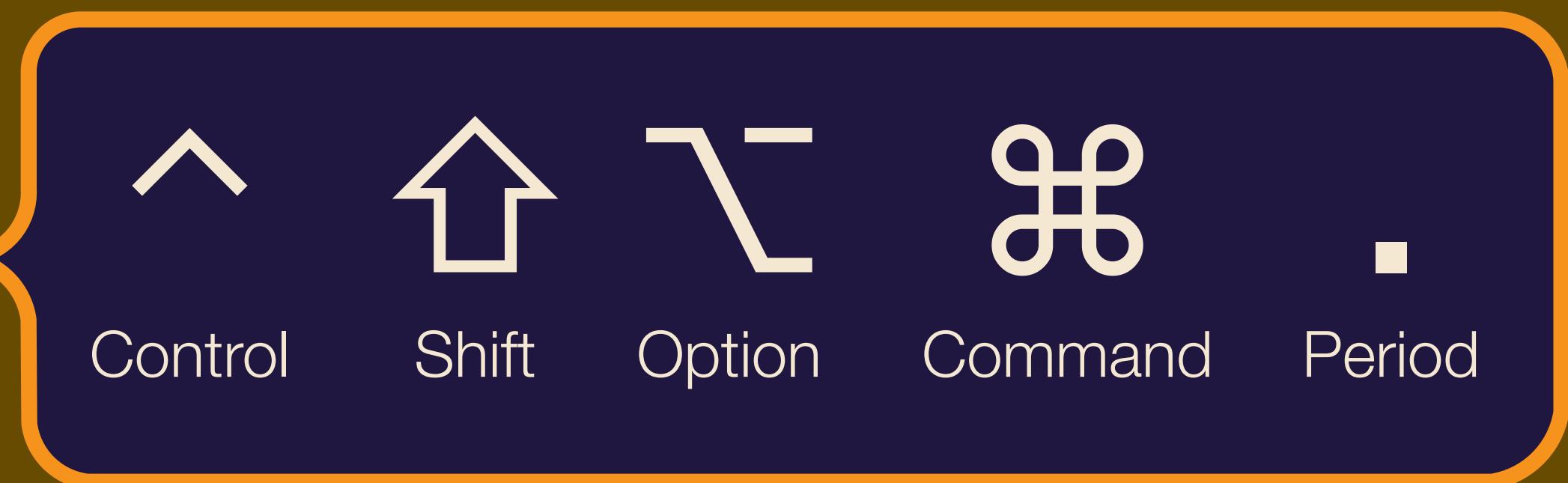
- sample-1443-highcpu.txt
- sample-7195.txt
- securebootvariables.txt
- security-sysdiagnose.txt
- sfltool.LSSharedFileList.FavoriteItems.txt
- sfltool.LSSharedFileList.FavoriteVolumes.txt
- sfltool.LSSharedFileList.iCloudItems.txt
- smcDiagnose.txt
- spindump.txt
- stackshot.kcdata
- > **summaries**
- sw_vers.txt
- swutil_show.txt
- sysctl.txt
- sysdiagnose.log
- system_logs.logarchive
- > **SystemConfiguration**
- systemextensionsctl_diagnose.txt
- > **SystemProfiler**
- tailspin-info.txt
- tailspin-trace.tailspin
- talagent-503.txt
- taskinfo.txt
- taskSummary.csv
- tbtDiagnose.txt
- thermal.txt
- > **TimezoneDB**
- top.txt
- transparency.log
- uptime.txt
- var_run_resolv.conf
- vm_stat.txt
- < **WiFi**
 - > **CoreCapture**
 - > WiFi
- WindowServer.external.winfo.plist
- xartutil.txt
- zprint.txt



"Apple needs some information..."

Apple asks for logs in different ways:

- ★ Keyboard Shortcut →
- ★ `/usr/bin/sysdiagnose`
- ★ via Feedback Assistant
- ★ via Enterprise Data Collector (EDC) app
- ★ Average file size = **400 MB**



Only half of the story...

- ★ How do you transmit a very large file reliably?
- ★ How do you capture the user's story in the moment?



2

The Solution



ITS-LOG!



Use only as directed. Each sold separately. Batteries not included. Not responsible for back injuries.



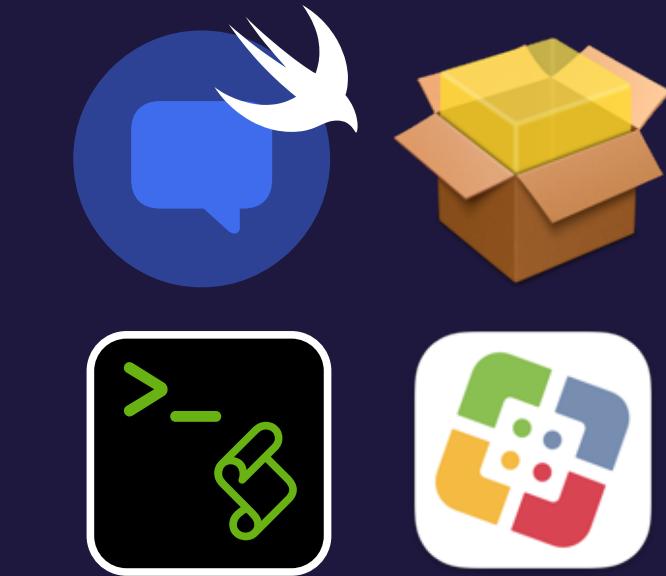
ITS-LOG!

One click log & survey in Self Service!

- ★ Gets critical input from user
- ★ Collects sysdiagnose in background
- ★ Uploads to cloud storage when done
- ★ Sends email with link & survey responses
- ★ Designed for crashes and repeatable bugs
- ★ Set appropriate expectations for use



Components & Build Order:



1. Email account
2. SNS, confirm subscription
3. Set up S3 Bucket
4. Create 2 λ functions
5. Set IAM policy
6. Set IAM user & get keys
7. Configure Jamf items:
itslog script, swiftDialog, extras



Signal flow from client



Signal flow in AWS





Email

- ★ Any email address will do
- ★ SNS requires one-time confirmation
- ★ Allow sender: **@sns.amazonaws.com**





SNS

- ★ Standard delivery (best effort)
- ★ No encryption needed

Amazon SNS > Topics > sysdiag-alerts

sysdiag-alerts

[Edit](#) [Delete](#) [Publish message](#)

Details	
Name	sysdiag-alerts
ARN	arn:aws:sns:us-east-1:607456343589:sysdiag-alerts
Type	Standard
Display name	-
Topic owner	607456343589

[Subscriptions](#) [Access policy](#) [Delivery retry policy \(HTTP/S\)](#) [Delivery status logging](#) [Encryption](#) [Tags](#)

Subscriptions (1)

[Edit](#) [Delete](#) [Request confirmation](#) [Confirm subscription](#) [Create subscription](#)

ID	Endpoint	Status	Protocol
7987a328-924c-4eda-aef0-3548224a6b40	@gmail.com	Confirmed	EMAIL





SNS

- ★ Standard delivery (best effort)
- ★ No encryption needed
- ★ Access policy:
 - ★ Publish: topic owner
 - ★ Subscribe: topic owner

Amazon SNS

Access policy - optional

This policy defines who can access your topic. By default, only the topic owner can publish or subscribe to the topic. [Info](#)

Choose method

Basic
Use simple criteria to define a basic access policy

Advanced
Use a JSON object to define an advanced access policy.

Define who can publish messages to the topic

Only the topic owner
Only the owner of the topic can publish to the topic

Everyone
Anybody can publish

Only the specified AWS accounts
Only the specified AWS account IDs can publish to the topic

Define who can subscribe to this topic

Only the topic owner
Only the owner of the topic can subscribe to the topic

Everyone
Any AWS account can subscribe to the topic

Only the specified AWS accounts
Only the specified AWS account IDs can subscribe to the topic

Only requesters with certain endpoints

JSON preview

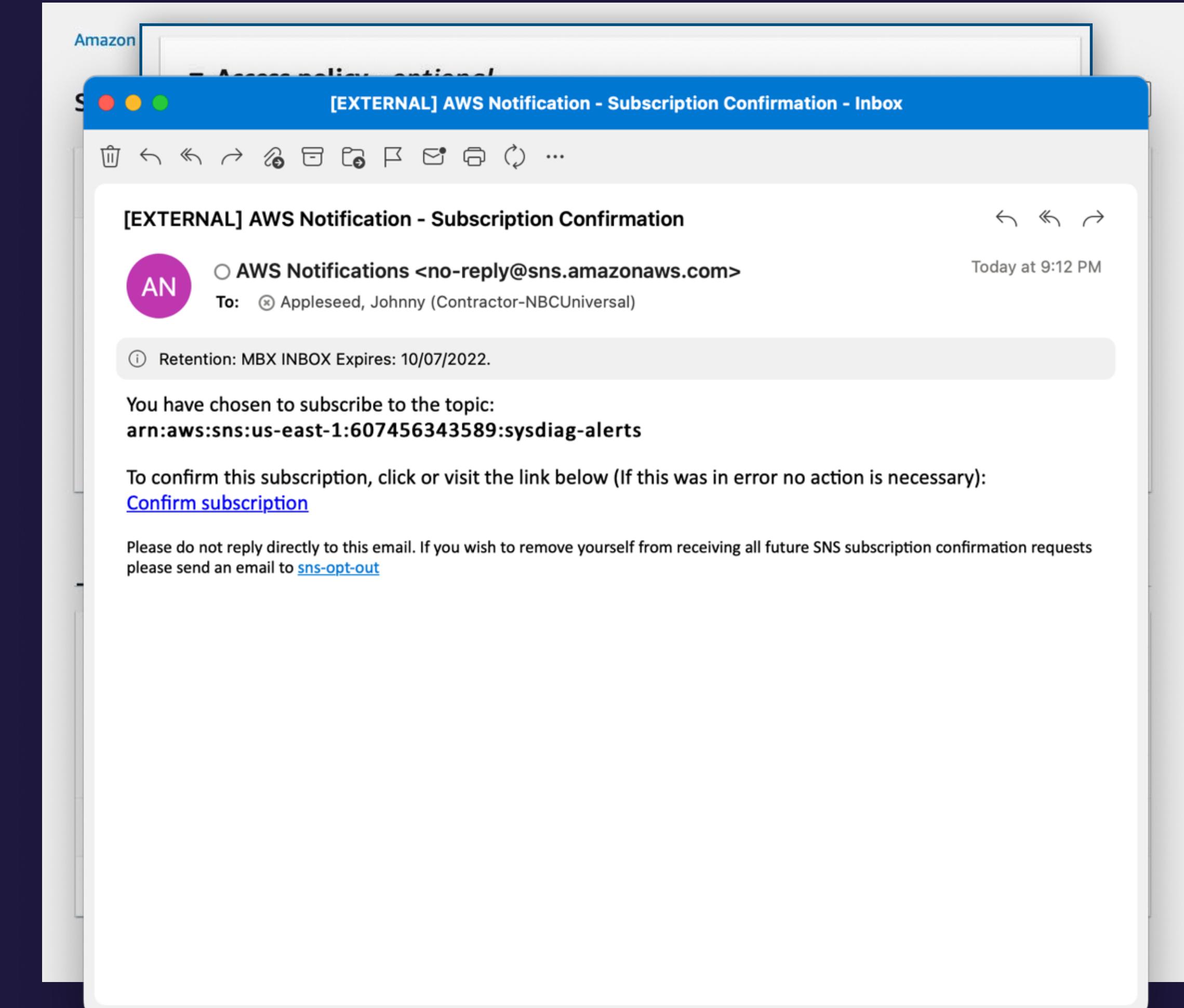
```
{
  "Version": "2008-10-17",
  "Id": "__default_policy_ID",
  "Statement": [
    {
      "Sid": "__default_statement_ID",
      "Effect": "Allow",
      "Principal": {
        "AWS": "*"
      },
      "Action": [
        "SNS:Publish",
        "SNS:RemovePermission",
        "SNS:SetTopicAttributes",
        "SNS:DeleteTopic"
      ]
    }
  ]
}
```





SNS

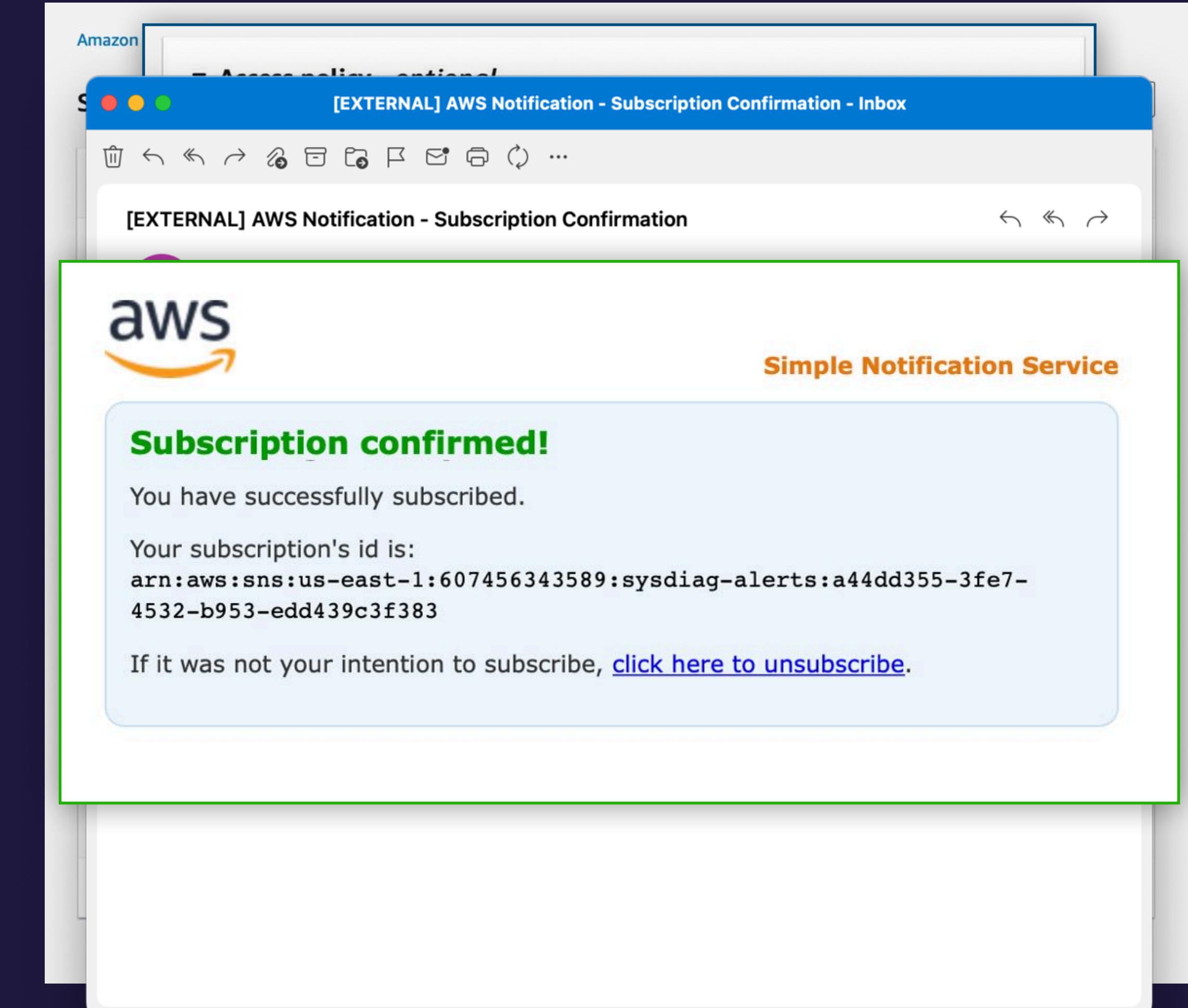
- ★ Standard delivery (best effort)
- ★ No encryption needed
- ★ Access policy:
 - ★ Publish: topic owner
 - ★ Subscribe: topic owner
- ★ Must **confirm** email subscription





SNS

- ★ Standard delivery (best effort)
- ★ No encryption needed
- ★ Access policy:
 - ★ Publish: topic owner
 - ★ Subscribe: topic owner
- ★ Must **confirm** email subscription





S3: Bucket

- ★ Give it a name
- ★ Choose a region
- ★ Note the region & ARN

itslog-blammo-001 [Info](#)

Objects Properties Permissions Metrics Management

Bucket overview

AWS Region	Amazon Resource Name (ARN)
US East (N. Virginia) us-east-1	arn:aws:s3:::itslog-blammo-001





S3: Bucket

- ★ Give it a name
- ★ Choose a region
- ★ Note the region & ARN
- ★ Ownership:
 - ★ ACLs enabled, owner preferred

Object Ownership Info

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

ACLs disabled (recommended)
All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

ACLs enabled
Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

Object Ownership

Bucket owner preferred
If new objects written to this bucket specify the bucket-owner-full-control canned ACL, they are owned by the bucket owner. Otherwise, they are owned by the object writer.

Object writer
The object writer remains the object owner.

Info If you want to enforce object ownership for new objects only, your bucket policy must specify that the bucket-owner-full-control canned ACL is required for object uploads. [Learn more](#)





S3: Bucket

- ★ Give it a name
- ★ Choose a region
- ★ Note the region & ARN
- ★ Ownership:
 - ★ ACLs enabled, owner preferred
- ★ Create folders:
 - ★ **itslog/**
 - ★ **itslog/logs/**
 - ★ **itslog/surveys/**

The screenshot shows the AWS S3 console interface. On the left, a sidebar titled "Object Ownership" has "Bucket" selected. The main area is titled "Objects (2)" and contains the following information:

Objects are the fundamental entities stored in Amazon S3. You can use them to access your objects, you'll need to explicitly grant them permissions.

Actions: **Copy S3 URI**, **Copy URL**, **Upload**

Search: **Find objects by prefix**

	Name	Type	Last modified
<input type="checkbox"/>	logs/	Folder	-
<input type="checkbox"/>	surveys/	Folder	-





S3: Lifecycle

- ★ **2** Lifecycle Rules: Logs, Surveys
- ★ **Filter to prefix:**
 - ★ **itslog/logs/**
 - ★ **itslog/surveys/**

itslog-delete-logs-7days

Lifecycle rule configuration

Lifecycle rule name	Prefix
itslog-delete-logs-7days	itslog/logs/
Status	Object tags
<input checked="" type="checkbox"/> Enabled	-
Scope	
Filtered	





S3: Lifecycle

- ★ **2** Lifecycle Rules: Logs, Surveys
- ★ **Filter** to prefix:
 - ★ **itslog/logs/**
 - ★ **itslog/surveys/**
- ★ Expire current, delete non-current
- ★ Expire after **x** days
- ★ Delete **1** day afterward

itslog-delete-logs-7days

Lifecycle rule actions
Choose the actions you want this rule to perform.

Move current versions of objects based on tags
 Move noncurrent versions of objects based on tags
 Expire current versions of objects
 Permanently delete noncurrent versions of objects
 Delete expired object delete marker

These actions are not supported when using object versioning.





Lambda

- ★ Microservices (“Serverless”)
- ★ S3 events sent as raw JSON
- ★ λ 1 transform S3 object metadata
- ★ λ 2 reads contents of S3 object
- ★ Both available @ GitHub repo

The screenshot shows the AWS Lambda code editor interface. The top navigation bar includes tabs for Code, Test, Monitor, Configuration, Aliases, and Versions. Below the tabs, there's a toolbar with File, Edit, Find, View, Go, Tools, Window, and a dropdown menu. The main area is titled "Code source" with an "Info" tab selected. A "Upload from" button is at the top right. The code editor displays a file named "JS index.js". The code itself is a JavaScript function that reads options from an S3 event, extracts bucket name, event name, and event time, calculates file size in MB, and constructs an S3 URL. It then creates a message string with details about the upload and initializes an AWS.SNS client.

```
// Read options from the event.  
console.log("Reading options from event:\n", util.inspect(event));  
  
var s3Event = event.Records[0];  
  
var srcBucket = s3Event.s3.bucket.name;  
var srcEvent = s3Event.eventName;  
var time = s3Event.eventTime;  
  
// var timeUTC = Date.UTC(time);  
// var objYear = Date.prototype.getFullYear(time);  
// var objMonth = Date.prototype.getMonth(time);  
// var objDay = Date.prototype.getDate(time);  
// var objHour = Date.prototype.getHours(time);  
var object = s3Event.s3.object.key;  
var size = Math.round((s3Event.s3.object.size)/1048576);  
  
var s3Url = "https://" + srcBucket + ".s3.amazonaws.com/"  
+ https://sysdiagnose-nbcu-00001.s3.amazonaws.com/sysdiagnc  
  
var msg = "A new file has been uploaded to S3. \r\n\r\n" +  
"Bucket: " + srcBucket + "\r\n" +  
"Event: " + srcEvent + "\r\n" +  
"Object: " + object + "\r\n" +  
"Size: " + size + " MB\r\n" +  
"Time: " + time + "\r\n" +  
"URL:";  
  
var sns = new AWS.SNS();
```





λ Function #1: Object Metadata

★ “Author From Scratch”

Lambda > Functions > Create function

Create function Info

Choose one of the following options to create your function.

Author from scratch Start with a simple Hello World example.

Use a blueprint Build a Lambda application from sample code and configuration presets for common use cases.





λ Function #1: Object Metadata

- ★ “Author From Scratch”
- ★ Name, NodeJS 16.x, x86_64

Basic information

Function name
Enter a name that describes the purpose of your function

Use only letters, numbers, hyphens, or underscores

Runtime Info
Choose the language to use to write your function

Architecture Info
Choose the instruction set architecture you want
 x86_64
 arm64





λ Function #1: Object Metadata

- ★ “Author From Scratch”
- ★ Name, NodeJS 16.x, x86_64
- ★ Create role from templates:

▼ Change default execution role

Execution role

Choose a role that defines the permissions of your function. To create a custom role, go to the [IAM console](#).

- Create a new role with basic Lambda permissions
- Use an existing role
- Create a new role from AWS policy templates

i Role creation might take a few minutes.
Please do not delete the role or edit the trust
or permissions policies in this role.

Role name

Enter a name for your new role.

itslog-lambda-s3-readonly





λ Function #1: Object Metadata

- ★ “Author From Scratch”
- ★ Name, NodeJS 16.x, x86_64
- ★ Create role from templates:
 - ★ S3 object read-only
 - ★ SNS publish policy

The screenshot shows the 'Change default execution role' section of the AWS Lambda console. It includes a note about role creation taking a few minutes and links to IAM documentation. A search bar is used to find the 'SNS' policy template. The 'Amazon SNS publish policy' checkbox is selected. Below the search bar, two policy arns are listed: 'Amazon S3 object read-only permissions' (S3) and 'Amazon SNS publish policy' (SNS). The role name 'itslog-lambda-s3-readonly' is visible at the bottom.





λ Function #1: Object Metadata

★ Add Trigger...

itslog-get-logs

▼ Function overview [Info](#)

itslog-get-logs

Layers (0)

+ Add trigger





λ Function #1: Object Metadata

- ★ Service: S3
- ★ Select bucket
- ★ Event: all object create events
- ★ Prefix: itslog/logs/

Trigger configuration

S3 aws storage

Bucket
Please select the S3 bucket that serves as the event source. The bucket must exist in the same region as the Lambda function.

Event type
Select the events that you want to have trigger the Lambda function. You can select multiple events per bucket. Within each bucket, individual events cannot have multiple configurations with the same key.
 All object create events

Prefix - optional
Enter a single optional prefix to limit the notifications to objects with keys that begin with this prefix.





λ Function #1: Object Metadata

- ★ Service: S3
- ★ Select bucket
- ★ Event: all object create events
- ★ Prefix: itslog/logs/
- ★ Recursion warning...

Trigger configuration

Recursive invocation

If your function writes objects to an S3 bucket, ensure that you are aware that writing to the same S3 bucket from within the Lambda function increases the risk of creating a recursive invocation, which can lead to unexpected behavior.

I acknowledge that using the same S3 bucket for both reading and writing is not recommended and that this configuration can cause recursive invocations, leading to increased Lambda usage, and increased costs.

Lambda will add the necessary permissions for AWS S3 to invoke your Lambda function. Learn more about the Lambda permissions model.

Prefix - optional

Enter a single optional prefix to limit the notifications to objects with keys starting with this prefix.

itslog/logs/





λ Function #1: Object Metadata

- ★ Replace “hello world” sample

The screenshot shows the AWS Lambda code editor interface. The title bar says "Code source" and "Info". The menu bar includes File, Edit, Find, View, Go, Tools, Window, Test, Deploy, and Changes not deployed. The toolbar has an "Upload from" button. The left sidebar shows a file tree with "s3-reas" and "index.js". The main area displays the following JavaScript code:

```
1 var util = require('util');
2 var AWS = require('aws-sdk');
3 AWS.config.region = 'us-east-1';
4 var snsTopicARN = "arn:aws:sns:us-east-1:607456343589:sysdiag-alerts";
5
6 exports.handler = function(event, context, callback) {
7
8     // Read options from the event.
9     console.log("Reading options from event:\n", util.inspect(event, {depth: null}));
10
11    var s3Event = event.Records[0];
12
13    var srcBucket = s3Event.s3.bucket.name;
14    var srcEvent = s3Event.eventName;
15    var time = s3Event.eventTime;
16
17    var object = s3Event.s3.object.key;
18    var size = Math.round((s3Event.s3.object.size)/1048576);
19
20    // Regular speed bucket
21    var s3Url = "https://" + srcBucket + ".s3.amazonaws.com/" + object;
22
23    // S3 accelerate bucket
24    // var s3Url = "https://" + srcBucket + ".s3-accelerate.amazonaws.com/"
```

At the bottom right, it says "14:38 JavaScript Spaces: 4".





λ Function #1: Object Metadata

- ★ Replace “hello world” sample
- ★ Copy arn: from SNS topic
- ★ Set AWS.config.region

The screenshot shows a code editor interface with a yellow border. On the left, there's a sidebar with three small icons. The main area has two tabs: "index.js" and "Execution results". The "index.js" tab contains the following code:

```
1 var util = require('util');
2 var AWS = require('aws-sdk');
3 AWS.config.region = 'us-east-1';
4 var snsTopicARN = "arn:aws:sns:us-east-1:607456343589:sy
5
6 exports.handler = function(event, context, callback) {
7
8     var s3Event = event.Records[0];
9     var srcBucket = s3Event.s3.bucket.name;
10    var srcEvent = s3Event.eventName;
11    var time = s3Event.eventTime;
12
13    var object = s3Event.s3.object.key;
14    var size = Math.round((s3Event.s3.object.size)/1048576);
15
16    // Regular speed bucket
17    var s3Url = "https://" + srcBucket + ".s3.amazonaws.com/" + object
18
19    // S3 accelerate bucket
20    // var s3Url = "https://" + srcBucket + ".s3-accelerate.amazonaws.com/"
```

In the bottom right corner of the code editor, there is some small text: "14:38 JavaScript Spaces: 4".





λ Function #1: Object Metadata

- ★ Replace “hello world” sample
- ★ Copy arn: from SNS topic
- ★ Set AWS.config.region
- ★ Customize email body
- ★ **SNS sent directly via API**
(no “destination” required)

```
JS index.js x Execution results x +  
23 // S3 accelerate bucket  
24 // var s3Url = "https://" + srcBucket + ".s3-accelerate.amazonaws.com/itslog/  
25 // Example URL: https://its-blammo-001.s3.amazonaws.com/itslog/  
26  
27 var msg = "ITS-LOG: a sysdiagnose file was just uploaded. :sys  
28 Bucket: " + srcBucket + "\r\n" +  
29 "Event: " + srcEvent + "\r\n" +  
30 "Object: " + object + "\r\n" +  
31 "Size: " + size + " MB\r\n" +  
32 "Time: " + time + "\r\n" +  
33 "URL: " + s3Url + "\r\n" ;  
34  
35 var sns = new AWS.SNS();  
36  
37 sns.publish({  
38   Subject: "ITS-LOG: Sysdiagnose Uploaded",  
39   Message: msg,  
40   TopicArn: snsTopicARN  
41 },  
42   function(err, data) {  
43     if (err) {  
44       console.log("Error publishing message: " + err);  
45     } else {  
46       console.log("Message published to SNS topic: " + data.TopicArn);  
47     }  
48   }  
49 );  
50  
51 // S3 trigger function  
52 // var s3Trigger = new AWS.S3Trigger(function(event) {  
53 //   console.log("S3 event received: " + JSON.stringify(event));  
54 //   const bucket = event.Records[0].s3.bucket.name;  
55 //   const key = event.Records[0].s3.object.key;  
56 //   const size = event.Records[0].s3.object.size;  
57 //   const eventTime = event.Records[0].eventTime;  
58 //   const snsTopicARN = "arn:aws:sns:us-east-1:123456789012:itslog";  
59 //  
60 //   const s3Url = "https://" + bucket + ".s3-accelerate.amazonaws.com/" + key;  
61 //  
62 //   const msg = "ITS-LOG: a sysdiagnose file was just uploaded. :sys  
63 //   Bucket: " + bucket + "\r\n" +  
64 //   "Event: " + eventTime + "\r\n" +  
65 //   "Object: " + key + "\r\n" +  
66 //   "Size: " + size + " MB\r\n" +  
67 //   "Time: " + eventTime + "\r\n" +  
68 //   "URL: " + s3Url + "\r\n" ;  
69 //  
70 //   sns.publish({  
71 //     Subject: "ITS-LOG: Sysdiagnose Uploaded",  
72 //     Message: msg,  
73 //     TopicArn: snsTopicARN  
74 //   },  
75 //   function(err, data) {  
76 //     if (err) {  
77 //       console.log("Error publishing message: " + err);  
78 //     } else {  
79 //       console.log("Message published to SNS topic: " + data.TopicArn);  
80 //     }  
81 //   }  
82 // );  
83 // });  
84 //});  
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88 //});  
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```



λ Function #1: Object Metadata

- ★ NOTE: function is not live until...
- ★ You click Deploy!

```
Code source Info
File Edit Find View Go Tools Window Test JS index.js Execution results
Go to Anything (⌘ F) s3-reas JS index.js
1 var util = require('util');
2 var AWS = require('aws-sdk');
3 AWS.config.region = 'us-east-1';
4 var snsTopicARN = "arn:aws:sns:us-east-1:607456343589:sysdiag-alerts";
5
6 exports.handler = function(event, context, callback) {
7
8     // Read options from the event.
9     console.log("Reading options from event:\n", util.inspect(event, {depth: null}));
10
11    var s3Event = event.Records[0];
12
13    var srcBucket = s3Event.s3.bucket.name;
14    var srcEvent = s3Event.eventName;
15    var time = s3Event.eventTime;
16
17    var object = s3Event.s3.object.key;
18    var size = Math.round((s3Event.s3.object.size)/1048576);
19
20    // Regular speed bucket
21    var s3Url = "https://" + srcBucket + ".s3.amazonaws.com/" + object;
22
23    // S3 accelerate bucket
24    // var s3Url = "https://" + srcBucket + ".s3-accelerate.amazonaws.com/"
```





λ Function #2: Read Surveys

- ★ All steps similar to λ 1...
- ★ Execution role:
 - ★ **Use existing role**
 - ★ Search for role created during λ 1

Permissions [Info](#)

By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs and invoke AWS Lambda functions triggered by AWS Lambda triggers.

▼ Change default execution role

Execution role
Choose a role that defines the permissions of your function. To create a custom role, go to the IAM console.

Create a new role with basic Lambda permissions

Use an existing role

itslog-reads3

service-role/**itslog-readS3**-publishSNS





IAM Policy

- ★ Use the **Visual Editor**
- ★ Create a **write-only** policy
- ★ Service: S3

Visual editor JSON

Expand all | Collapse all

▼ Select a service

▶ Service Choose a service

Actions Choose a service before defining actions

Resources Choose actions before applying resources

Request conditions Choose actions before specifying conditions





IAM Policy

- ★ Actions:
 - ★ s3:PutObject
 - ★ s3:PutObjectAcl

```
{  
  "Version": "2012-10-17",  
  "Statement": [  
    {  
      "Effect": "Allow",  
      "Action": [  
        "s3:PutObject",  
        "s3:PutObjectAcl"  
      ],  
      "Resource": [  
        "arn:aws:s3:::itslog-blammo-001/itslog/*"  
      ]  
    }  
  ]  
}
```





IAM Policy

- ★ Resource: arn:...s3/prefix

Add ARN(s)

Amazon Resource Names (ARNs) uniquely identify AWS resources. Resources are unique to each service. [Learn more](#)

Specify ARN for object [List ARNs manually](#)

arn:aws:s3:::itslog-blammo-001/itslog/*

Bucket name * Any

Object name * Any

[Cancel](#) [Add](#)





IAM Policy

- ★ Resource: arn:...s3/prefix
- ★ Enter a policy description
- ★ No conditions, no tags

Review policy

Name*
Use alphanumeric and '+=,.@-_' characters. Maximum 128 characters.

Description
Maximum 1000 characters. Use alphanumeric and '+=,.@-_' characters.

Summary

Service ▾	Access level
Allow (1 of 331 services) Show remaining 330	
S3	Limited: Write, Permissions management





IAM User

★ Access Type: Access Key



Access key - Programmatic access

Enables an **access key ID** and **secret access key** for the other development tools.



Password - AWS Management Console access

Enables a **password** that allows users to sign-in to the A





IAM User

- ★ Access Type: **Access Key**
- ★ Perms: attach existing policy
- ★ No boundary
- ★ No tags

▼ Set permissions

Attach existing policies directly

Create policy

Filter policies ▾

Policy name ▾

➔ itslog-s3-writeonly





IAM User

- ★ Secret key is only shown **once!**

 **Success!**

You successfully created the users shown below. You can view and download user security credentials...

This is the last time these credentials will be available to download. However, you can create new credentials at any time.





IAM User

- ★ Secret key is only shown once!

Success!

Access key ID	Secret access key
AKIAY23ZYGYSSEMUKQSI	***** Show





IAM User

- ★ Secret key is only shown once!

✓ Success!

Access key ID	Secret access key
AKIAY23ZYGYSSEMUKQSI 	Ig0s0CYoRqzC2OfNtuQtyoK a5wpzNx3S+gnj2b6N 





IAM User

- ★ Secret key is only shown **once!**
- ★ (Generate new ones any time)

Success!

Access key ID	Secret access key
AKIAY23ZYGYSSEMUKQSI	***** Show





IAM User

- ★ Secret key is only shown **once!**
- ★ (Generate new ones any time)
- ★ Save the credentials in a .CSV

Success!	
Access key ID	Secret access key
AKIAY23ZYGYSSEMUKQSI	***** Show



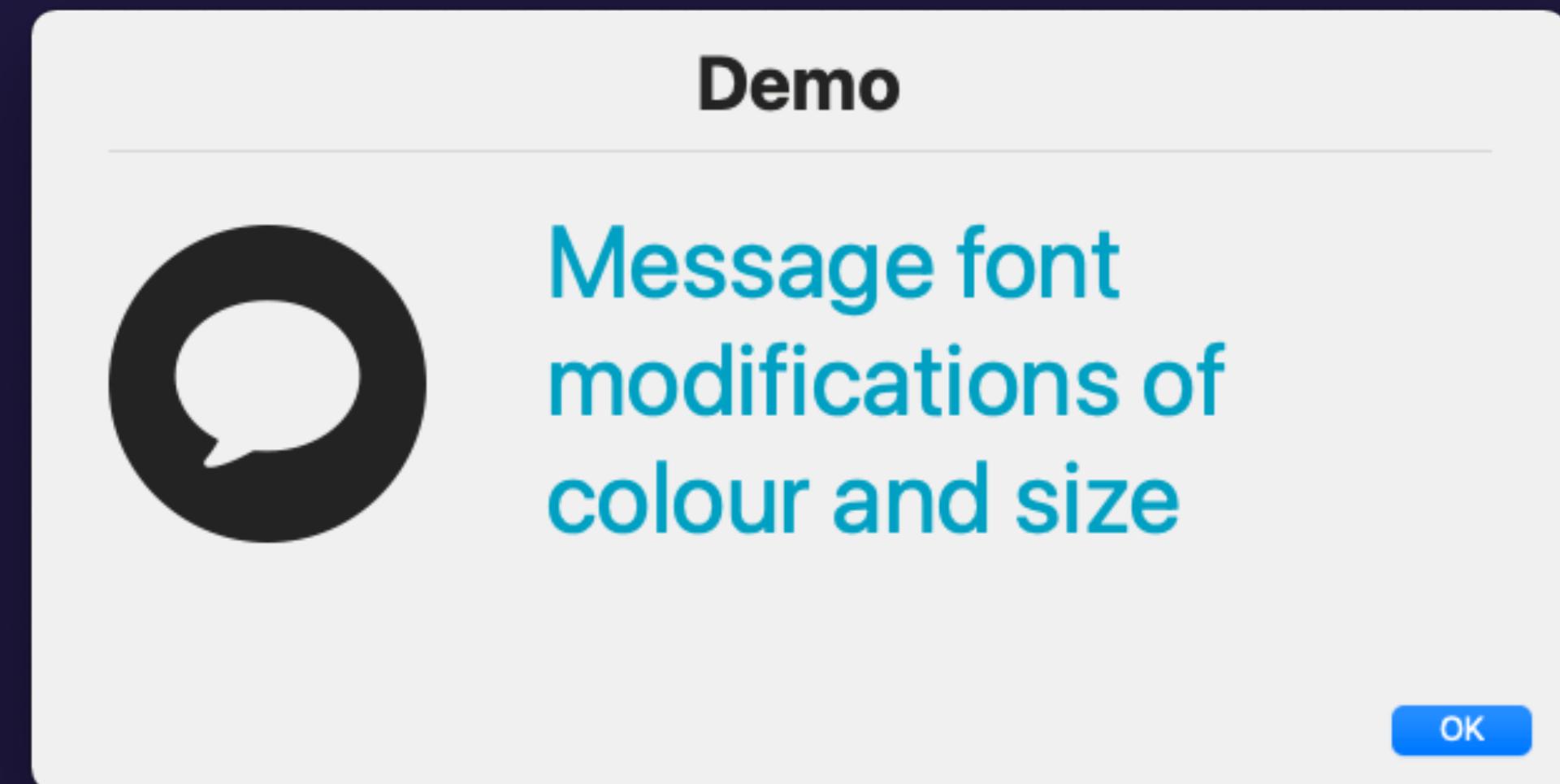
Download .csv





swiftDialog

- ★ github.com/bartreardon/swiftdialog
- ★ A new way to interact with your users
- ★ Excellent wiki, community projects
- ★ Update contents while running
- ★ Capture form outputs in shell script
- ★ Can replace cocoaDialog, Pashua, jamfHelper, many others...
- ★ **100% Swift (macOS 11+)**





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Multicolour SF Symbols



SF=person.3.sequence.fill,
palette=red,green,blue

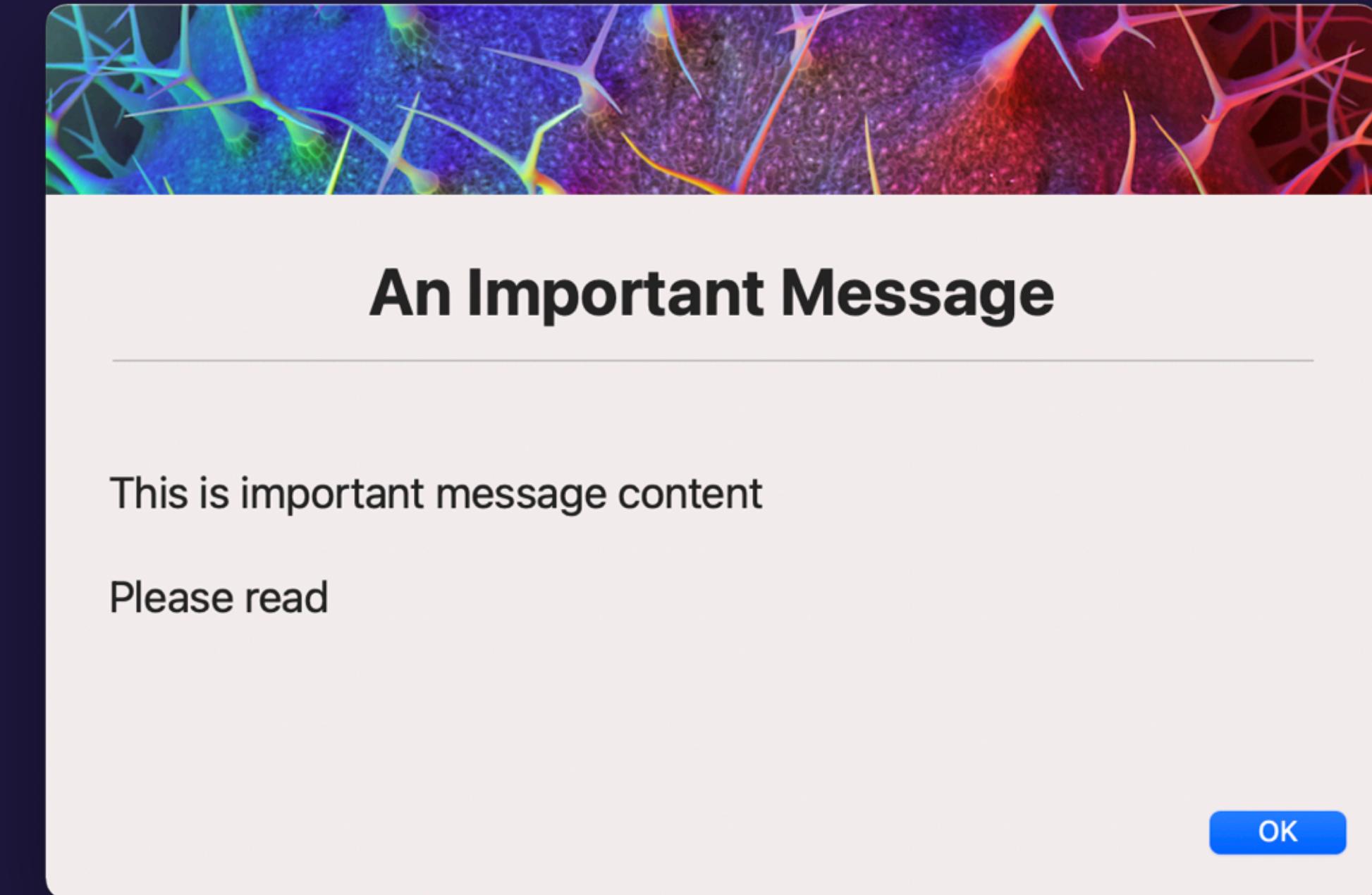
OK





swiftDialog

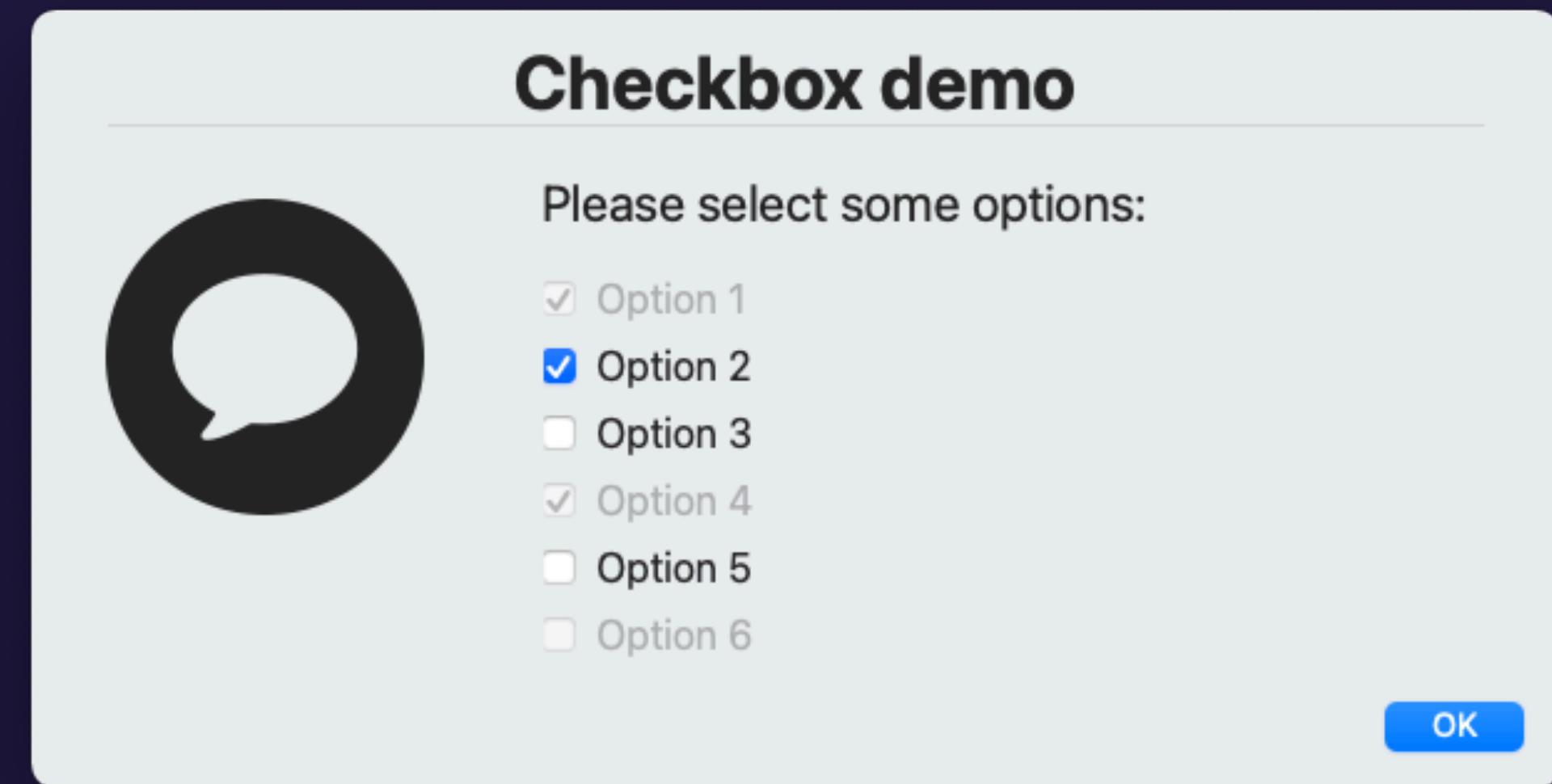
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swiftDialog

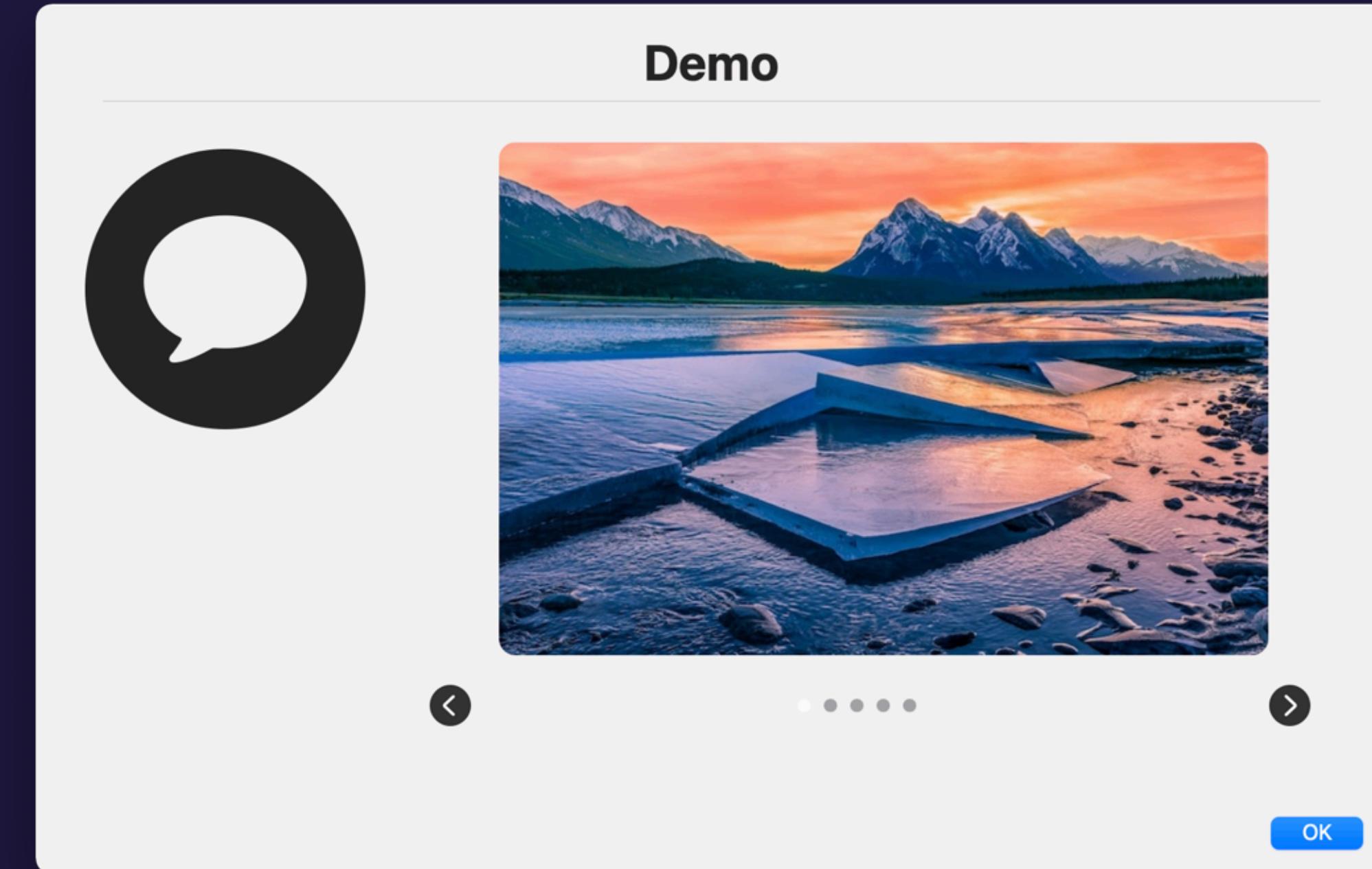
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swiftDialog

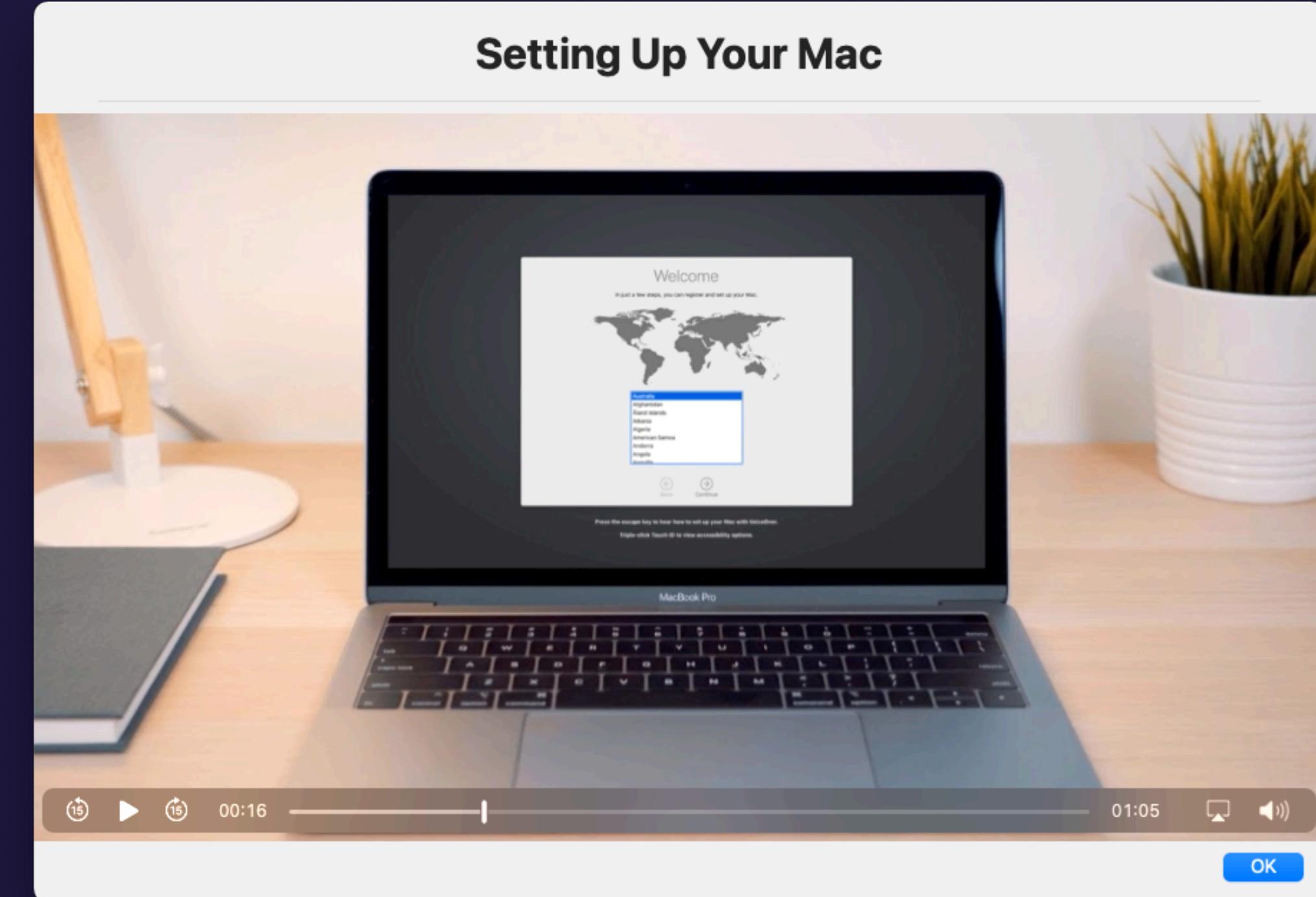
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swiftDialog

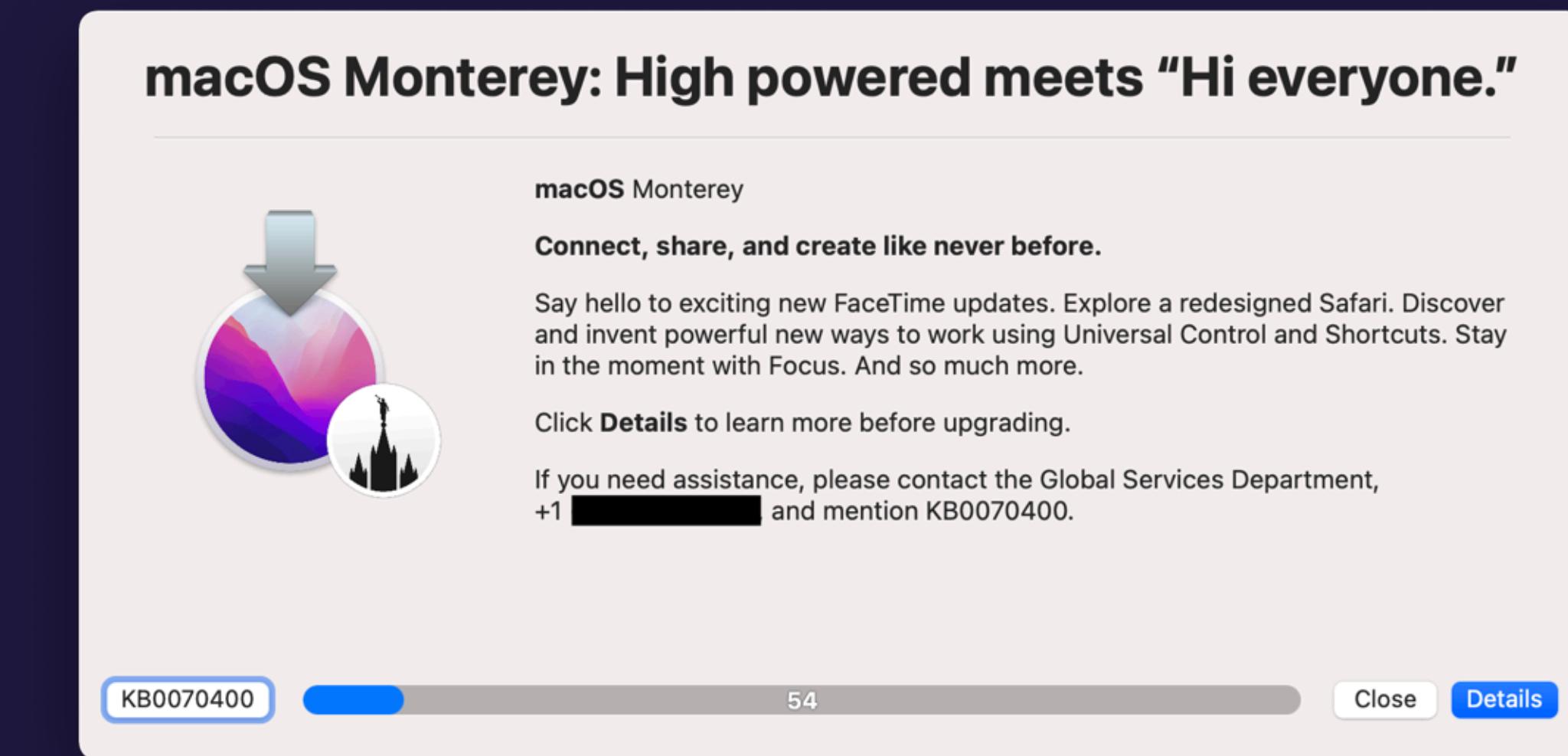
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- ★ **100% Swift (macOS 11+)**

ITS-LOG: Crash Survey



Oh no!

We're sorry that your Mac is having a problem. Please tell us a little more about the most recent crash or issue that occurred.

If you're done, click [OK] ; processing will continue in the background.

NOTE: This tool collects diagnostic data from your Mac that will be transmitted to your IT department, who may require forwarding to Apple for additional analysis.

Describe in detail: *

My Mac crashed this afternoon when rendering a video in Avid. It only happens on projects with H.265 video.

What is your UID? * 206111222 * Required Fields

Type of issue? System crash or unexpected reboot

How frequently? After a few hours

Last occurrence? Less than 1 hour ago

Uploading logs: 37 % - 00:44 remaining

OK



ITSLOG – PART 2 – THE SOLUTION

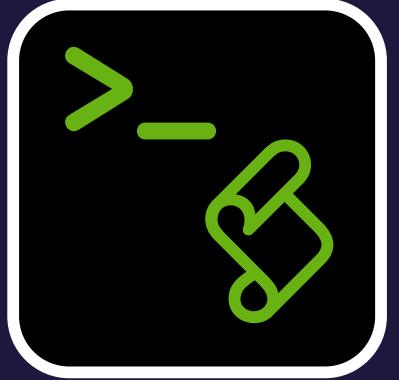


Script

★ Available @ GitHub repo

```
154
155
156 #
157 ##### STAGE 2: SYSDIAGNOSE COLLECTION
158 #
159
160 generateSysdiagnose() {
161
162     /usr/bin/sysdiagnose -b -n -u -Q -P -G -f /var/tmp -A "$sysDiagArchive" | cat &
163
164     swd_echo "progresstext: Gathering logs (about 3-5 minutes) ..."
165
166     sleep 1
167
168     while [[ -n $(pgrep "sysdiagnose_helper") ]]
169     do
170         # Keep checking until the sysdiagnose utility has finished. "Sysdiagnose is still
171         # running..."
172
173         # If user finishes the survey before curl or sysdiagnose are completed...
174         # Launch the mini window to keep them informed.
175
176         if [[ -z $(ps -ax $swd_survey_PID | tail +2) && $mini_window_launched == false ]]
177         then
178             launch_mini_window
179             swd_echo "progresstext: Gathering logs (about 3-5 minutes) ..."
180         fi
181
182         sleep 1
183
184     done
185
186     /usr/bin/tar -czf "$sysDiagTarball" "$sysDiagArchive/" &
187     tarPID=$!
188
189     echo "PID of tar is $tarPID"
190
191     swd_echo "progresstext: Compressing logs and preparing to upload."
192
193     sleep 1
194
195     while [[ -n $(ps -ax $tarPID | tail +2) ]]
196     do
197         # echo "tar is still balling..."
198
199         # If user finishes the survey before curl or sysdiagnose are completed...
200         # Launch the mini window to keep them informed.
201
202         if [[ -z $(ps -ax $swd_survey_PID | tail +2) && $mini_window_launched == false ]]
203         then
204             launch_mini_window
205             swd_echo "progresstext: Compressing logs and preparing to upload."
206         fi
207
208         sleep 1
```

IBCUniversal



Script

- ★ Available @ GitHub repo
- ★ Uses AWS v4 Security
- ★ Object ACLs: “public-read”
- ★ Customize dialogs in here

itslog-master-script.sh — Edited

```

Shell Script
Language Run Stop Run Settings...
itslog-crash-survey.sh itslog-master-script.sh
154
155
156 #

43
44 # Create signature if not public upload.
45 key_and_sig_args=''
46 if [ "$aws_ak" != "" ] && [ "$aws_sk" != "" ]; then
47
48 # Need current and file upload expiration date. Handle GNU and BSD date command style to get tomorrow's date.
49 date=`date -u +%Y%m%dT%H%M%SZ`
50 expdate=`if ! date -v+1d +%Y-%m-%d 2>/dev/null; then date -d tomorrow +%Y-%m-%d; fi`
51 expdate_s=`printf $expdate | sed s/-//g` # without dashes, as we need both formats below
52 service='s3'
53
54 # Generate policy and sign with secret key following AWS Signature version 4, below
55 p=$(cat <<POLICY | openssl base64
56 { "expiration": "${expdate}T12:00:00.000Z",
57 "conditions": [
58 {"acl": "$acl" },
59 {"bucket": "$bucket" },
60 ["starts-with", "\$key", ""],
61 ["starts-with", "\$content-type", ""],
62 ["content-length-range", 1, `ls -l -H "$srcfile" | awk '{print $5}' | head -1`],
63 {"content-md5": "$md5" },
64 {"x-amz-date": "$date" },
65 {"x-amz-credential": "$aws_ak/$expdate_s/$region/$service/aws4_request" },
66 {"x-amz-algorithm": "AWS4-HMAC-SHA256" }
67 ]
68 }
69 POLICY
70 )
71
72 # AWS4-HMAC-SHA256 signature
73 s='printf "$expdate_s" | openssl sha256 -hmac "AWS4$aws_sk" -hex | sed 's/(stdin)= //'
74 s='printf "$region" | openssl sha256 -mac HMAC -macopt hexkey:"$s" -hex | sed 's/(stdin)= //'
75 s='printf "$service" | openssl sha256 -mac HMAC -macopt hexkey:"$s" -hex | sed 's/(stdin)= //'
76 s='printf "aws4_request" | openssl sha256 -mac HMAC -macopt hexkey:"$s" -hex | sed 's/(stdin)= //'
77 s='printf "$p" | openssl sha256 -mac HMAC -macopt hexkey:"$s" -hex | sed 's/(stdin)= //'
78
79 key_and_sig_args="-F X-Amz-Credential=$aws_ak/$expdate_s/$region/$service/aws4_request -F X-Amz-Algorithm=AWS4-
80 fi
81
82

203 launch_mini_window
204 swd_echo "progressText: Compressing logs and preparing to upload."
205 fi
206
207 sleep 1

```

Run Succeeded | Time 0:00:41 | Peak Memory 55.4M | launchSurveyWindow | Tabs: 4 | Line 138, Column 1





Jamf Policy

General

- ★ Self Service Enabled
- ★ Execution: Ongoing
- ★ Custom Trigger optional

The screenshot shows the Jamf Pro interface for configuring a policy. The top navigation bar includes Options, Scope, Self Service, and User Interaction. The main pane is titled 'General' under 'Display Name'. It shows the display name 'ITS-LOG! Collector (sysdiagnose)' and has the 'Enabled' checkbox checked. Under the 'Trigger' section, 'Custom' is selected, and the custom event 'itslog' is listed. The 'Execution Frequency' is set to 'Ongoing'. A partially visible 'Scope' tab indicates there is one script associated with the policy.

General	Display Name	Enabled	Trigger	Execution Frequency
ITS-LOG! Collector (sysdiagnose)	<input checked="" type="checkbox"/>	Enabled	Custom At a custom event itslog	Ongoing





Jamf Policy

Script

- ★ \$4 : Access Key
- ★ \$5 : Secret Key
- ★ \$6 : Bucket @ Region

Screenshot of the Jamf Pro Policy editor showing a configuration for an AWS Lambda function named "itslog-collector.sh". The policy includes parameters for AWS access key, secret key, and bucket name.

Setting	Value
Priority	After
Parameter Values	aws_access_key: AKIAMZABCDEFH1234567890 aws_secret_key: abcdefghPSK8nwJkTQNpLfVww933Fp0L3+1234 bucket@region: pretendco-s3bucket-itslog-collector-1@us-west-1



3

Demo Time!



4

Final Remarks



ITS-LOG is flexible!

- ★ Customize the user input form
- ★ Set custom filename schema
- ★ Collect different kinds of logs
- ★ Analyze the sysdiagnose for type of crash
- ★ Add extra / custom logs before archiving



Use Case: AppleCare for Enterprise

- ★ Access to Level 3 Support w/ SLAs
- ★ Limited # of “Technical Contacts”
- ★ **ITS-LOG clears the escalation bottleneck**
- ★ Timely collection of user stories & data =
Faster turnaround with Apple



Resources

swiftDialog: github.com/bartreardon/swiftDialog

its-log: github.com/bradtchapman/its-log

All AWS Resources will be posted in my GitHub repo.



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Thank you for watching!