

Version notice. Artifacts change between versions of iOS, iPadOS, macOS and watchOS. A term, process, subsystem or message that works on one build can change, move or disappear on another. This sheet reports what was measured on the builds named at the bottom of the last page. It is not a guarantee for any other build. Verify every term on your own reference device before you rely on it in a case.

How to search

Count at the bottom of the stack. The kernel endpoint writes once per event and is independent of the process. Then determine the meaning from the cluster around it, not from a single line.

A log line says that a process observed something. Several processes describe the same moment in different words. More lines is not more evidence.

Notepad++: search mode Normal, no regular expression needed. Count gives the number, Find All in Current Document gives the lines. Cut to the marker window first; a count over a whole file is meaningless.

Unlock and authentication

What you are looking for	Search term	Process / subsystem	Note
The unlock itself	is now UN-locked Sending notification for volume	kernel AppleSEPKeyStore apfs	the endpoint. 2 lines per unlock on iOS, 1 on macOS
Counting on iOS	Device unlocked	softwareupdateservicesd	1 line per unlock. iOS 12 through 26. Says nothing about the method
Biometric	inBioUnlock matchResult MATCH	kernel / ApplePearlSEPDriver kernel / AppleMesaSEPDriver biometrickitd	matchResult contains the user ID and enrollment UUID
Face ID hardware	isFaceDetected=1 getFaceDetectInfo PearlCamFrameReceived	kernel AppleH13CameraInterface	FD Distance 0 means no detection. The line alone is not a match
Touch ID hardware	kAppleBiometricFingerOnEvent kAppleBiometricFingerOffEvent	kernel AppleMesaSEPDriver	finger on sensor, finger off sensor
Passcode entered	SBUIPasscodeTextField Suppress Scanning State	SpringBoard UIKit:KeyboardSceneDelegate	the passcode field was on screen. Not measured on iOS 18 and older
Attempt rejected	matchResultHandler: MATCH -1 matchResult:timestamp: NO-MATCH has received no-match	biometrickitd	fires on a wrong passcode and on a failed Face ID. The cluster determines which. matchResultHandler: iOS 26.6.1; the other two: macOS 26.6.2
macOS, method	Unlock succeeded, with password	loginwindow LWScreenLockAuthentication	macOS only. Search for the message, not the function name _authSuccessUsingPassword
Keybag echo	Transition:	SpringBoard, chronod, duetexpertd WidgetRenderer_Default, remindd ControlCenter	3 to 5 processes per unlock, sometimes with different text

Do not use as evidence of passcode entry: success=YES also fires on a rejected passcode and on Face ID. Transition: locked -> unlocked counts processes and is absent on a biometric unlock. Search handle_async_keybag_unlock without the line number: 6570 on iOS 18.2.1, 6682 on iOS 26.

Touchscreen

What you are looking for	Search term	Process / subsystem	Note
Touch	contact 0 presence: touching contact 0 presence: within contact 0 presence: none	backboardd BackBoard:TouchEvents	<i>the state is stated literally. Better than eventMask</i>
Touch point	Touch entered	backboardd BackBoard:TouchEvents	<i>the rectangle in it is the screen size, not the position of the finger</i>
Touch event	Dispatching	backboardd Multitouch:Plugin MultitouchHID / HSTouchHIDService	<i>the continuation differs per device: event with 1 children or digitizer event with 2 children</i>
Tap to wake	received tapToWake send tapToWake tapToWakeDidRecognize	backboardd SpringBoard / Backlight	<i>never search on tapToWake alone: it also appears in ProximitySensor as a mode label</i>
Swipe from the edge	system gesture stealing the touches SBGrabberTongue	backboardd SpringBoard SystemGestureAppSwitcher	<i>a single line is an edge touch, a real swipe gives nine to twenty-three</i>
Keyboard in an app	touch down touch drag touch up appTouchDown	UIKit:KeyboardTouch KeyboardSignposts	<i>the process name names the app. The typed text is not in it</i>

The touch contains no position, no gesture type and no repetition. A double tap appears in the log as two touches; the contact index also stays the same. The distinction always comes from the process that responds to the touch.

Screen orientation

What you are looking for	Search term	Process / subsystem	Note
Rotation	Received orientation. (Portrait to LandscapeRight)	backboardd com.apple.locationd.Motion:Orientation	<i>on iOS 12: SpringBoard / CoreMotion. The old name gives zero hits on iOS 26</i>
Join key	Timestamp	backboardd biometrickitd	<i>monotonic counter. Same value means one event</i>
Device picked up	Gesture notification: 1(Detected) Start:FaceUp	SpringBoard audiomxd biometrickitd	<i>three processes write the same line. A count gives three times the number</i>
Sensor level	[TTW] Orientation changed	kernel (AOP)	<i>own microsecond counter, no process in between</i>

The end state is reliable, the start state is not. Processes report different start states for the same event, including Ambiguous.

Physical buttons

What you are looking for	Search term	Process / subsystem	Note
The button press	com.apple.BackBoard:Button	backboardd	the hardware event. One line on press, one on release
Which button	VolumeIncrement VolumeDecrement Lock	backboardd	on the code: usage:0xE9 up, 0xEA down, 0x30 side button
How long held	finished: firstDown:	backboardd	the duration is in the line itself and does not need to be calculated
How many times	press count:	SpringBoard buttons:Lock	1 for a single press, 2 for a second shortly after. Side button only
Handling	RECEIVED rawVolumeIncreasePress Lock button single press recognized	SpringBoard buttons:Volume buttons:Lock	buttons:Interaction only repeats the state
Button combination	SOS button gesture: press type=	SpringBoard buttons:Combo	102 volume up, 103 down, 104 side button. Same codes on iOS 18.2.1 and 26

SBSOSClawGestureObserver appears on every button press and is not an indication of an emergency call. Setting SS disabled: YES, reason: SOSTriggered also appears when the power-off menu is opened. HIDEvent Power, HIDEvent Volume and homeButton give zero hits on iOS 18.2.1 and 26.

USB connection

What you are looking for	Search term	Process / subsystem	Note
The cable	AppleUSBCableDetect 1 AppleUSBCableDetect 0 USB Power (VBUS) Present	kernel IOAccessoryManager IOAccessoryUSBConnectShim	1 is connected, 0 is disconnected
Computer or power source	AppleUSBCableType USBHost connectType: 2	kernel UserEventAgent	connectType 1 is a power source, 2 a computer. With power, USBHost is absent
The session	usb_host_connected_block_invoke bump_connection_count	lockdownd	the session, not the cable. Does not always appear while the kernel does see a host
Confirmation	handleChargingStateUpdate State:Charging State:Disconnected	powerd powerd:batterychargingstate	status changes, not connections. Different count

Four processes give four different counts for the same cable. Choose the level that fits your question and note at which level you counted. accessoryd repeats the notifications from IOAccessoryManager in thousands of lines and adds nothing.

App launch

What you are looking for	Search term	Process / subsystem	Note
Which app	Allowing tap for icon view	SpringBoard SpringBoardHome SpringBoard:Icon	contains the bundle ID in readable form. Appears twice per launch: press down and release
The launch itself	Launching application	SpringBoard SpringBoard:Icon	names the bundle ID and the position on the screen. Count on this
Where the icon was	SBIconLocationDock SBIconLocationRoot	SpringBoard	on the iPad also SBIconLocationAppLibraryCategoryPod
Masked	Icon tapped Icon touch began	SpringBoard SpringBoard:Icon	the app appears as <private>. Usable for the moment, not for the app
Preparation	Prewarming	SpringBoard SpringBoard:Common	a prewarmed app is not yet a launched app
macOS	LAUNCH: AppSandbox request successful	CoreServicesUIAgent launchd secinitd	three processes, three moments in the same launch

Apple Watch

What you are looking for	Search term	Process / subsystem	Note
Crown	Description: Crown down	Carousel CarouselPlugins	acquisition via co-sysdiagnose
Side button	Description: Button held Description: Button long-held	Carousel CarouselPlugins	short and long presses are separate lines

Pitfalls that recur in every block

The number in brackets after the process name is the Process ID. It is reassigned at every restart. Search on the process name, not on the number.

Subsystem names shift between OS versions. A search term that works on iOS 18 can give zero hits on iOS 26, and the other way around.

Line numbers in kernel lines, such as handle_async_keybag_unlock:6682, belong to the source code of that version. Leave them out of your search term.

Count within the marker window. Hits in the margin belong to the block before or after.

Note which search terms you checked and did not find. Absence is only a finding if the check is recorded.

Disclaimer

The search terms and notes in this sheet come from the author’s own reference devices. No case data was used. Apple changes what it logs between versions of iOS, iPadOS, macOS and watchOS, including in minor updates and betas. A term can change, move to another process or subsystem, or stop being written at all. A message that is absent on one version can appear on the next.

This sheet is a starting point for your own reference research. It does not replace validation on the build you are examining, and it does not say what a line means in a specific case. Record the device, the build and the acquisition method for every search you run. The author accepts no liability for conclusions drawn from this sheet. It is a personal research publication and does not represent the position of any employer or working group.

Contribute an artifact

Is an artifact missing, or does a term no longer work on a newer version? Send it to tim@thesisfriday.com. Include the device model, the OS version and build, the exact action you performed with the time and the clock you read it from, the raw log lines, and how you acquired the log. Do not send case data. Contributions are checked against a reference action before they are added. Accepted contributions are credited by name unless you ask otherwise.

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