

Viewing Sandbox Violation Reports

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The best way to view sandbox violation reports has changed over the years, so I thought I'd post some up-to-date info. I tested the following with Xcode 13.3 on macOS 12.2.

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—

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```
let myEmail = "eskimo" + "1" + "@" + "apple.com"
```

Viewing Sandbox Violation Reports

After enabling the App Sandbox, you may find that your app fails in some non-obvious way. That is, something within your app doesn't work, but your app doesn't display a permissions error and so you have no idea where to start. If you find yourself in that situation, look for a sandbox violation report:

- Run the Console app.
- For each line below, copy the line and paste it in to the search box at the top right.

```
type:error
subsystem:com.apple.sandbox.reporting
category:violation
```

- This searches for sandbox violation reports.
- Note** The exact query terms have changed over time. The above is accurate from macOS 12.2.
- Click the Save button in the bar below the search box and enter a name for your saved search. I typically use “Sandbox” for this. In future, click on this saved search to skip the previous step.
 - Click “Start streaming”.
 - Run your app and reproduce the problem.
 - Look for a sandbox violation report in the log. If you see one, follow the steps below to investigate.

Inside a Sandbox Violation report

A sandbox violation report log entry looks like this:

```
type: error
time: 11:58:26.009175+0000
process: sandboxd
subsystem: com.apple.sandbox.reporting
category: violation
message: Sandbox: AppSandboxViolat(5807) deny(1) file-read-data /Users/quinn/.ssh/id_rsa
```

The message includes a complete sandbox violation report. That's too big to include here, so I've added it as a text attachment.

sandbox-violation-report.txt

Look at the Violation field first:

```
Violation: deny(1) file-read-data /Users/quinn/.ssh/id_rsa
```

This means that the App Sandbox blocked an attempt to read the data of the file at the path `/Users/quinn/.ssh/id_rsa`.

Next look at the thread backtraces. It's normally pretty easy to identify the thread responsible for the violation: It's the one blocked in a system call that could reasonably trigger this violation. For example:

```
Thread 0 (id: 291952):
0  libsystem_kernel.dylib ... __open + 10
1  Foundation ... _NSReadBytesFromFileWithExtendedAttributes + 167
2  Foundation ... -[NSData(NSData) initWithContentsOfFile:options:maxLength:error:] + 119
3  libswiftFoundation.dylib ... NSData.__allocating_init(contentsOf:options:) + 77
4  libswiftFoundation.dylib ... Data.init(contentsOf:options:) + 76
5  AppSandboxViolator ... ViewController.violateAction(_) + 1507 (ViewController.swift:25)
6  AppSandboxViolator ... @objc ViewController.violateAction(_) + 65 (<compiler-generated>:0)
7  AppKit ... -[NSApplication(NSResponder) sendAction:to:from:] + 288
...
```

Here you see that AppKit has called the `ViewController.violateAction(_:)` method (frame 6) which has tried to created a `Data` value from the contents of a file (frame 5) which has eventually called `open` (frame 0), which is what triggered the violation.

Using this information, investigate and fix your sandbox incompatibility.

No Sandbox Violation Report

It's possible that you might not see a sandbox violation report even though the problem is caused by the App Sandbox. For example, imagine you have code like this:

```
let url: URL = ... some file URL ...
let data: Data
if access(url.path, R_OK) == 0 {
    data = try Data(contentsOf: url)
} else {
    data = Data()
}
```

The `access` system call never triggers a sandbox violation report. If the App Sandbox blocks access to `url`, this code will not fail, not generate a sandbox violation report, and set `data` to empty.

IMPORTANT Preflighting file system calls is [racy](#) and, in the worse case, can result in [TOCTTOU vulnerabilities](#). Avoid writing code like this.

Debugging problems like this can be tricky.

App Sandbox

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Posted 6 months ago by eskimo

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