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Testing a Notarised Product

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To ship a product outside of the Mac App Store, you must notarise it. The notary service issues a notarised ticket, and the ultimate consumer of that ticket is Gatekeeper. However, Gatekeeper does not just check the ticket; it also applies a variety of other checks, and it's possible for those checks to fail even if your notarised ticket is just fine. To avoid such problems showing up in the field, test your product's compatibility with Gatekeeper before shipping it.

To do this:

1. Set up a fresh machine, one that's never seen your product before. If your product supports macOS 10.15.x, x < 4, the best OS version to test with is 10.15.3 (1).
2. Download your product in a way that quarantines it (for example, using Safari).
3. Disconnect the machine from the network.
4. Install and use your product as your users would.

If the product is signed, notarised, and stapled correctly, everything should work. If not, you'll need to investigate why Gatekeeper is unhappy (2), fix that, and then retest.

Run this test on a fresh machine each time. This is necessary because Gatekeeper caches information about your product and it's not easy to reset that cache. Your best option is to do this testing on a virtual machine (VM). You can take a snapshot of the VM before the first test, and then restore to that snapshot when you want to retest.

Also, by using a VM you can disable networking in step 3 without disrupting other work on your machine.

The reason why you should disable networking in step 3 is to test that you've correctly stapled the notarised ticket on to your product. If, for some reason, you're unable to do that stapling, it's fine to skip step 3. However, be aware that this may cause problems for a user if they try to deploy your product to a Mac that does not have access to the wider Internet.

(1) macOS 10.15.4 fixes a bug that made Gatekeeper unnecessarily strict (r. 57278824).

(2) Unfortunately it's not always easy to work out what Gatekeeper is unhappy about. I've posted some hints on this thread.

The process described above is by far the best way to test your Gatekeeper compatibility because it accurately tests how your users run your product. However, you can also run a quick, albeit less accurate test, using various command-line tools. The exact process depends on the type of product you're trying to check:

- App — Run `spctl` as shown in the first example below.
- Disk image — Run `spctl` as shown in the second example below.
- Installer package — Run `spctl` as shown in the third example below.
- Other code — Run `codesign` as shown in the fourth example below.

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```
1  % # App
2  % spctl -a -t exec -vvv WaffleVarnish.app
3  %
4  % # Disk image
5  %
6  % spctl -a -t open -vvv --context context:primary-signature WaffleVarnish.dmg
7  %
8  % # Installer package
9  %
10 % spctl -a -t install -vvv WaffleVarnish.pkg
11 %
12 % # Other code
13 %
14 % codesign -vvvv -R="notarized" --check-notarization WaffleVarnish.bundle
```

Note The last command requires macOS 10.15 or later.

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Quinn "The Eskimo!" @ Developer Technical Support @ Apple
`let myEmail = "eskimo" + "1" + "@" + "apple.com"`

Change history:

- 25 Mar 2020 — First version.
- 17 Apr 2020 — Added the section discussing `spctl`.
- 26 Feb 2021 — Fixed the formatting.

Gatekeeper   Developer ID   Asked 11 months ago by eskimo 🍎 📤

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