Explaining Apple’s Fight With the F.B.I.

By MIKE ISAAC FEB. 17, 2016

Tuesday evening, a federal court ordered Apple to help the F.B.I. unlock an iPhone

used by one of the attackers who killed 14 people in San Bernardino, Calif., in

December.

Wednesday morning, Apple said in a strongly worded letter that it would

challenge the court’s request. While technology companies recently have resisted

government demands, Apple’s letter is one of the industry’s most forceful

pushbacks against a court ruling.

In the hours after Apple’s letter was published, technologists and legal experts

have been dissecting what, exactly, the Cupertino, Calif., company can’t — or won’t

— do to help the government.

What is the government asking for?

The Federal Bureau of Investigation wants to examine the iPhone used by

Syed Farook to determine whether he and his wife, Tashfeen Malik, had planned

the shooting directly with the Islamic State. The iPhone, a 5c version of the

smartphone that was released in 2013, is locked by a passcode, which the F.B.I.

wants Apple to circumvent.Apple would have to build a new version of its iOS

smartphone software that allows the F.B.I. to bypass certain restrictions. Apple

claims this software can give someone “the potential to unlock any iPhone in

someone’s physical possession.”

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So what does the court order require Apple to do?

The court is ordering the company to “bypass or disable” a feature that

automatically wipes an iPhone clean of all its data after 10 incorrect password

attempts have been entered. This is a standard feature on iPhones.

Technically, that would not require Apple to decrypt the passcode that blocks

access by outsiders to the iPhone. It would allow the government to try an

unlimited number of passwords without fear of the phone erasing all of its stored

information.

In electronic security parlance, that is what is called a “brute force” attack, and

all it takes is time and patience to submit a large number of passcodes. Brute force

attacks are usually carried out with the assistance of a powerful computer, which

can automatically input millions of different password combinations until it

guesses the correct one.

Can Apple comply with the order if it wants to?

Apple’s opposition is mostly ideological.

“The same engineers who built strong encryption into the iPhone to protect

our users would, ironically, be ordered to weaken those protections and make our

users less safe,” Timothy D. Cook, Apple’s chief executive, wrote in the letter.

Apple argues that the software the F.B.I. wants it to create does not exist. But

technologists say the company can do it.

Why can’t the F.B.I. build this software?

The iPhone is designed to run only iOS software created by Apple. For the

phone to recognize that the software was made by Apple, the company must sign

each piece with an encrypted key to verify it. Even if the F.B.I. tried to build a new

version of iOS, it would not have Apple’s crucial signature.

The agency argues that this is a one-time request and wants Apple to create

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software only to get into Mr. Farook’s phone, not unlimited access to iPhones

everywhere.

Are there other ways for the F.B.I. to get this information?

There is a lot of data available that does not require Apple’s assistance in

unlocking the phone. The F.B.I. could ask Verizon, the cellular carrier by which Mr.

Farook’s phone was serviced, to give the agency more information on the phone.

The government could also request information from the application

developers who created the apps for Mr. Farook’s iPhone.

But those are avenues the F.B.I. has probably already pursued, explaining why

it wants Apple to unlock the device. Some data is not accessible without Apple’s

intervention.

Are there other legal implications for the tech industry?

What Apple is most worried about is the precedent that compliance can set for

future requests from the government. There are few earlier rulings courts can use

for guidance, and Apple does not want to pave the road for similar requests to itself

and other tech companies.

Other countries, like China, could also make similar demands.

“The key question here is how far can the government go in forcing a third

party to aid in surveillance?” said Christopher Soghoian, principal technologist for

the American Civil Liberties Union.

Apple will most likely file an appeal with the court in the coming days.