

Exhibit 224

From: [REDACTED]
To: [REDACTED]
Sent: Tue, 14 Aug 2018 12:45:17 +0200
Subject: Re: [Industryinfo] AP Exclusive: Google tracks your movements, like it or not
Cc: [REDACTED]
[REDACTED]

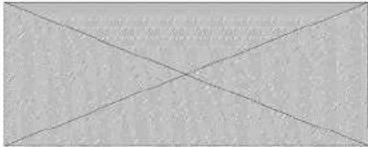
Although I know how it works and what the difference between "Location" and "Location History" is, I did not know Web and App activity had anything to do with location. Also seems like we are not very good at explaining this to users.

Here is the screenshot from "My activity" setting:
[REDACTED]

And When You click on Learn More:
[REDACTED]

cheers
[REDACTED]

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On Tue, Aug 14, 2018 at 11:28 AM [REDACTED] wrote:

Definitely confusing from a user point of view if we need googlers explain it to us :)

[REDACTED]
[REDACTED]

Google Cloud Platform UX
London, UK



On Tue, Aug 14, 2018 at 11:17 AM [REDACTED] wrote:

There are three location-related settings on Android:
Location History: this controls whether your location is recorded in your timeline in Google Maps.

Location toggle on the device: simplifying a little, this controls whether GPS is enabled and can be found in the notification pulldown. If this is off, the phone will not attempt to determine its precise location. Most people never turn this off, since it will prevent Maps from telling you where you are.

Web and App Activity: a catch-all for recording search and Assistant query history. If you turn this off, you can't use Assistant.

The complaint in this article is that if you have Web and App Activity enabled and the location toggle enabled, then your search history entries contain your approximate location at the time you made the query. It's also not possible to remove them by clearing your location history, which is counter-intuitive - you have to clear your search history instead.

On Tue, Aug 14, 2018, 09:03 [REDACTED] wrote:

It is a bit complicated, and we might need better messaging.
There is a general location tracking for figuring out your home, work locations, and routines (you go to a cafe at the same time every week, then you might get a notification for that etc). This seems to run in the background all time.

But there is also a location information passed on with individual requests, like when you search for "Walmart", or ask for weather forecast. each app, search, news, home, etc seem to have a separate setting.

There is a valid use case. I might want to keep getting local results, while disabling always on location tracking. Or disable location in weather but keep it in news, etc.

On Monday, August 13, 2018 at 6:52:57 PM UTC-7, [REDACTED] wrote:

I agree with the article. Location off should mean location off; not except for this case or that case.

The current UI feels like it is designed to make things possible, yet difficult enough that people won't figure it out. New exceptions, defaulted to on, silently appearing in settings menus you may never see is <redacted>.

The general concept of what I'd like to see on the location settings :

Location: On/Off (Off disables everything; On enables the ones selected items)

Enable GPS location (on/off)

Enable Bluetooth location (on/off)

Enable Bluetooth to report, even when Bluetooth is off (on/off)

Enable Web/App Activity (on/off)

Enable ... (on/off)

We already have this menu/style for non-Google apps.

This way the user can see and set, in ONE place all of the items related to location. If users find it useful for all of the bluetooth settings to be together, then have the "enable bluetooth to report location when bluetooth is off" in both menus.

Btw. Thank you whomever added the option for bluetooth to not respond to queries when bluetooth is off. (It used to respond, thereby giving location information away, even when location and bluetooth were off.)

On Mon, Aug 13, 2018 at 7:06 AM, [REDACTED] wrote:

IIRC we've had reports like this in the past on this list but I don't remember major outlets like AP reporting this.

<https://apnews.com/828aefab64d4411bac257a07c1af0ecb>

SAN FRANCISCO (AP) — Google wants to know where you go so badly that it records your movements even when you explicitly tell it not to.

An Associated Press investigation found that many Google services on Android devices and iPhones store your location data even if you've used privacy settings that say they will prevent it from doing so.

Computer-science researchers at Princeton confirmed these findings at the AP's request.

For the most part, Google is upfront about asking permission to use your location information. An app like Google Maps will remind you to allow access to location if you use it for

navigating. If you agree to let it record your location over time, Google Maps will display that history for you in a “timeline” that maps out your daily movements.

Storing your minute-by-minute travels carries privacy risks and has been used by police to determine the location of suspects — such as a warrant that police in Raleigh, North Carolina, served on Google last year to find devices near a murder scene. So the company will let you “pause” a setting called Location History.

Google says that will prevent the company from remembering where you’ve been. Google’s support page on the subject states: “You can turn off Location History at any time. With Location History off, the places you go are no longer stored.”

That isn’t true. Even with Location History paused, some Google apps automatically store time-stamped location data without asking.

For example, Google stores a snapshot of where you are when you merely open its Maps app. Automatic daily weather updates on Android phones pinpoint roughly where you are. And some searches that have nothing to do with location, like “chocolate chip cookies,” or “kids science kits,” pinpoint your precise latitude and longitude — accurate to the square foot — and save it to your Google account.

The privacy issue affects some two billion users of devices that run Google’s Android operating software and hundreds of millions of worldwide iPhone users who rely on Google for maps or search.

Storing location data in violation of a user’s preferences is wrong, said Jonathan Mayer, a Princeton computer scientist and former chief technologist for the Federal Communications Commission’s enforcement bureau. A researcher from Mayer’s lab confirmed the AP’s findings on multiple Android devices; the AP conducted its own tests on several iPhones that found the same behavior.

“If you’re going to allow users to turn off something called ‘Location History,’ then all the places where you maintain location history should be turned off,” Mayer said. “That seems like a pretty straightforward position to have.”

Google says it is being perfectly clear.

“There are a number of different ways that Google may use location to improve people’s experience, including: Location History, Web and App Activity, and through device-level Location Services,” a Google spokesperson said in a statement to the AP. “We provide clear descriptions of these tools, and robust controls so people can turn them on or off, and delete their histories at any time.”

To stop Google from saving these location markers, the company says, users can turn off another setting, one that does not specifically reference location information. Called “Web and App Activity” and enabled by default, that setting stores a variety of information from Google apps and websites to your Google account.

When paused, it will prevent activity on any device from being saved to your account. But leaving “Web & App Activity” on and turning “Location History” off only prevents Google from adding your movements to the “timeline,” its visualization of your daily travels. It does not stop Google’s collection of other location markers.

You can delete these location markers by hand, but it’s a painstaking process since you have to select them individually, unless you want to delete all of your stored activity.

You can see the stored location markers on a page in your Google account at myactivity.google.com, although they’re typically scattered under several different headers, many of which are unrelated to location.

To demonstrate how powerful these other markers can be, the AP created a visual map of the movements of Princeton postdoctoral researcher Gunes Acar, who carried an Android phone with Location history off, and shared a record of his Google account.

The map includes Acar’s train commute on two trips to New York and visits to The High Line park, Chelsea Market, Hell’s Kitchen, Central Park and Harlem. To protect his privacy, The AP didn’t plot the most telling and frequent marker — his home address.

Huge tech companies are under increasing scrutiny over their data practices, following a series of privacy scandals at Facebook and new data-privacy rules recently adopted by the European Union. Last year, the business news site Quartz found that Google was tracking Android users by collecting the addresses of nearby cellphone towers even if all location services were off. Google changed the practice and insisted it never recorded the data anyway.

Critics say Google’s insistence on tracking its users’ locations stems from its drive to boost advertising revenue.

“They build advertising information out of data,” said Peter Lenz, the senior geospatial analyst at Dstillery, a rival advertising technology company. “More data for them presumably means more profit.”

The AP learned of the issue from K. Shankari, a graduate researcher at UC Berkeley who studies the commuting patterns of volunteers in order to help urban planners. She noticed that her Android phone prompted her to rate a shopping trip to Kohl’s, even though she had turned Location History off.

“So how did Google Maps know where I was?” she asked in a blog post .

The AP wasn’t able to recreate Shankari’s experience exactly. But its attempts to do so revealed Google’s tracking. The findings disturbed her.

“I am not opposed to background location tracking in principle,” she said. “It just really bothers me that it is not explicitly stated.”

Google offers a more accurate description of how Location History actually works in a place you'd only see if you turn it off — a popup that appears when you “pause” Location History on your Google account webpage . There the company notes that “some location data may be saved as part of your activity on other Google services, like Search and Maps.”

Google offers additional information in a popup that appears if you re-activate the “Web & App Activity” setting — an uncommon action for many users, since this setting is on by default. That popup states that, when active, the setting “saves the things you do on Google sites, apps, and services ... and associated information, like location.”

Warnings when you're about to turn Location History off via Android and iPhone device settings are more difficult to interpret. On Android, the popup explains that “places you go with your devices will stop being added to your Location History map.” On the iPhone, it simply reads, “None of your Google apps will be able to store location data in Location History.”

The iPhone text is technically true if potentially misleading. With Location History off, Google Maps and other apps store your whereabouts in a section of your account called “My Activity,” not “Location History.”

Since 2014, Google has let advertisers track the effectiveness of online ads at driving foot traffic , a feature that Google has said relies on user location histories.

The company is pushing further into such location-aware tracking to drive ad revenue, which rose 20 percent last year to \$95.4 billion. At a Google Marketing Live summit in July, Google executives unveiled a new tool called “local campaigns” that dynamically uses ads to boost in-person store visits. It says it can measure how well a campaign drove foot traffic with data pulled from Google users' location histories.

Google also says location records stored in My Activity are used to target ads. Ad buyers can target ads to specific locations — say, a mile radius around a particular landmark — and typically have to pay more to reach this narrower audience.

While disabling “Web & App Activity” will stop Google from storing location markers, it also prevents Google from storing information generated by searches and other activity. That can limit the effectiveness of the Google Assistant, the company's digital concierge.

Sean O'Brien, a Yale Privacy Lab researcher with whom the AP shared its findings, said it is “disingenuous” for Google to continuously record these locations even when users disable Location History. “To me, it's something people should know,” he said.

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