



Android™ App Performance & Trend Report H1 2016

By AVG® Technologies



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Executive Summary

The AVG Technologies Android App Performance and Trend Report H1 2016 reveals the top performance-draining apps for Android devices, based on battery, storage and data use, and the key recent trends in Android app use.

We generated this report from a sample of randomized and anonymized data collected from more than **three million global Android users** from January through April, 2016.

AVG found that during this period, the three apps that most impacted Android phone resources were SnapChat, YouTube and Google Maps. Our report further identified that among apps running automatically

at start-up, Facebook Messenger and Instagram are the top performance drainers. In apps initiated by users, we also followed Spotify and LINE, which offers free calls and messages.

Methodology



Executive Summary Key Findings



Snapchat caches encrypted data from chats in your phone's storage, even when you have already viewed those photos and videos, contradicting the notion that chats 'self-destruct.'



AppLock turned up, during the time we collected data, among the Top 10 apps that drain devices, but appears to have fixed this issue with a more recent update. Top marks for making privacy useful and efficient.



YouTube is a big storage hog, planting a few hundred MB of cached data on your device. Keep this in mind if you are a regular viewer.



First-timers in this report include Google Maps, BlackBerry Messenger, Facebook Messenger, Instagram, ChatOn and, perhaps surprisingly, the Weather Channel.



The average user has installed 33 apps on their Android device.



User's favorite devices tend to be older models; Samsung dominates with the Samsung Galaxy S5, S4 and S4 mini, and SIII and Note II among the most popular. Sony's Xperia Z3, Z3 Compact and Z2 were next popular.



Nintendo's first mobile gaming app, Miitomo, had around 127,000 installs at time of launch in March 2016 but this had dropped to 17,000 by May.



50 most used Android apps include many Google apps (unsurprisingly), plus the usual chat and messaging apps such as WhatsApp, Viber and Skype. More unexpected entries included eBay and TripAdvisor.



Pokémon GO: This H1 report doesn't include the phenomenon that is Pokemon GO as it just hit the app stores in July 2016. However, AVG has analyzed the app for battery drain and provided [tips](#) for ways to manage it.

A Insights and Analysis

1 Snapchat Has a Compulsive Hoarding Disorder



Snapchat is certainly one of the hottest apps around, priding itself on its Mission Impossible-esque 'self-destruct' mechanism for photos and video clips. Ironically, the report shows that the app not only keeps cached data on your device, but is also a top drainer of storage.

Snapchat keeps encrypted versions of some of the photos and videos you take (or receive, even if you've already viewed them and assume they're gone forever. In our internal tests, one ten second video we received **raised Snapchat's internal cache from 48 to 59 MB**, as seen in our AVG Cleaner for Android cache view. (figure 2)

Once we watched this video and replayed it one last time (to make sure it was 'gone' from the conversation), Snapchat's cache was still only partially deleted, hovering around 60 MB.

This increased with every photo and video we took. Digging deeper, we discovered that the '*com.snapchat.android*' package on our Android phone contained subfolders '*cache\received_image_snaps*' and '*com.android.renderscript.cache*', which store files hidden from the end user using a '.nomedia' file.



TIP *Our advice: Use a cache cleaner like our own AVG Cleaner for Android to get rid of these leftovers automatically, or go to your Snapchat Profile, hit the settings icon and tap on **Clear Browser Data** and **Clear Conversations** to get rid of it.*

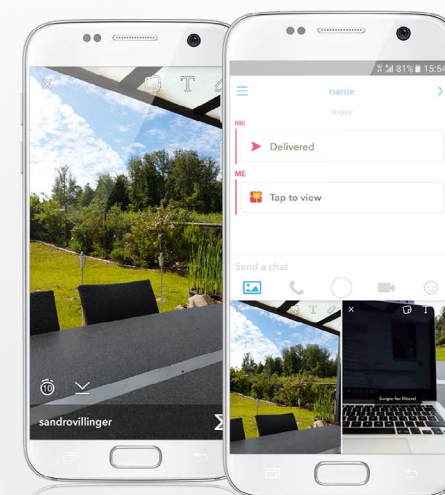


figure 1



figure 2

A Insights and Analysis

2 AppLock: Privacy vs. Battery



This was a newcomer on our list of top battery-draining apps, showing performance draining behavior across the timeframe of our report.

The popular AppLock uses your fingerprint or a password to lock your messages, contacts, Facebook, settings or any app from prying eyes.

Many users complained in online forums about AppLock's constant CPU usage and battery drain, both when the phone is in use and on standby.

To confirm this, we did our own tests once we were done collecting data, using AppLock over the course of 4 days to lock us out of 90% of our phone's features and apps. The good news is that in our test scenarios, AppLock consumed **less than 0.5% of battery power**, suggesting more recent updates have likely fixed the power-hogging issues.

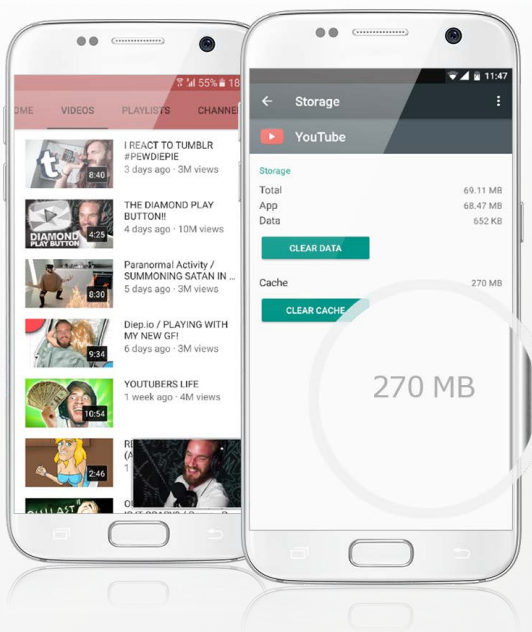


A Insights and Analysis

3 YouTube: Entertaining but Draining



Every time you enjoy your daily dose of PewDiePie, Smosh, HolaSoyGerman or any other YouTube channel using the official Android YouTube App, it caches files to your Android device. Not a lot, and the amount varies from device to device, but in our tests, when playing dozens of YouTube clips, we saw it go as high as **270 MB**, which is why YouTube is among the top storage-eaters and performance-drainers.



4 The Usual Suspects: Care needed!

When we launched our first AVG Technologies Android App Performance & Trend Report in 2014, the apps draining mobile data, battery power and storage capacity were, as you might expect, the ones you launch and use regularly – including **Snapshot, Spotify, Facebook and WhatsApp**.

In this H1 2016 report, we again uncovered the apps that eat up your devices' performance even when you're not using them. Turns out we're seeing a somewhat new line-up, including **Google Maps, Facebook Messenger, Instagram, BlackBerry Messenger, ChatOn**, and – to our surprise – the **Weather Channel**, which appeared in our U.S. data. All of these constantly drain your resources while running in the background.

A Insights and Analysis

5 The Average Android User has 33 Apps Installed

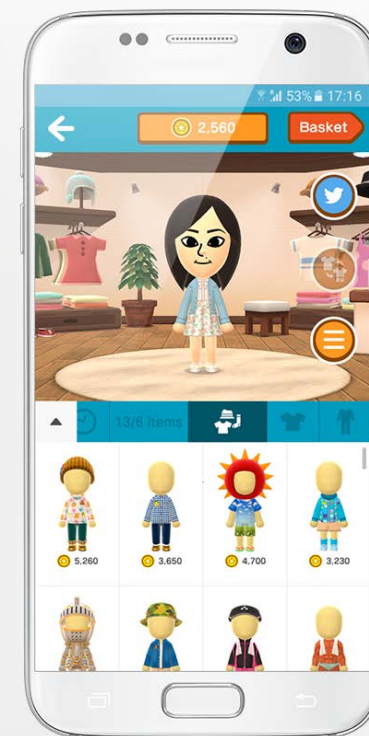
Our analysis also revealed the average number of apps users install. Those who use popular media apps such as Spotify, VLC Player or Shazam tend to have an average of **33 installed apps**. Users of lesser known media apps, like Deezer or FMRadio, and fitness apps such as MyTracks, tended to have an average of more than 40 apps installed, though why this might be the case isn't obvious.



6 Nintendo's Miitomo: Game on, Game off?



A leader in the gaming industry, Nintendo finally released its first real mobile app - Miitomo - in March 2016. Miitomo allows you to create a Nintendo Mii character and use it to communicate with your peers, play games and send photos or stamps. It's a fun app, but its popularity seems to have waned as we tracked how the massive spike in installs right after the launch of around 127,000 dwindled to a mere 17,000 installs in May.



A Insights and Analysis

7 Top Mobile Devices in H1 2016

In last year's final App Report (Q3 2015), Samsung dominated the list of most-used smartphones across the analyzed user base. This year, however, we've seen Sony sustain users with 3 of its older smartphones - the Xperia Z3, the Z3 Compact and the Z2 - entering the Top 10 instead of just one (2015). While Samsung still dominates the market, the most widely used phones - despite all the current marketing that might lead you to think otherwise - appear to be 2014's Samsung Galaxy S5, 2013's Galaxy S4 and S4 Mini and 2012's Galaxy SIII and Note II.

8 BBC Ups the Auntie on your Battery

In our U.K. data, we saw not one, but two BBC apps consuming the most battery power in comparison to other apps. BBC iPlayer isn't a surprise, as it streams videos and has appeared in our previous app reports as a result, but the BBC News app's heavy information stream also puts more pressure on devices than you might think.

Most Used Devices H1 2016

- 1 **Samsung GT-N7100**
Galaxy Note II 32GB
Google Android 4.1.1
- 2 **Samsung GT-i9195F3**
Galaxy S4 Mini LTE
Google Android 4.2.2 (Japanese)
- 3 **Samsung GT i9300I**
Galaxy S3 Neo+ Duos/S3 Neo
Google Android 4.3
- 4 **Samsung GT i9301I**
Galaxy S3 Neo/Galaxy S3 VE
Google Android 4.4.2
- 5 **Samsung GT-i9500**
Galaxy S4 La Fleur Edition
Google Android 4.3





































- 6 **Samsung GT-i9505**
Galaxy S4 Black Edition 32GB
Google Android 4.2.2
- 7 **Samsung SM-G5308**
Galaxy Grand Prime TD LTE
Google Android 4.4.4
- 8 **Samsung SM-G900MD**
Galaxy S5 Duos 4G LTE-A
Google Android 4.4.4
- 9 **Sony Xperia Z3 Compact**
LTE-A D5803 M55w
Google Android 4.4.2
- 10 **Sony Xperia Z2 LTE A**
D6503 (Sony Sirius Gina)
Google Android 4.4.4



B Key Findings - H1 2016

Top 50 Most Commonly Used Android Apps

1 Google Play Store		11 Facebook Messenger		21 Viber		31 Google Books		41 OfficeSuite 8 + PDF Editor	
2 Google Plus		12 Google Mail		22 Skype Free IM & Video		32 Google Videos		42 TripAdvisor	
3 Quick Search Box		13 WhatsApp		23 LINE : Free Calls & Messages		33 Samsung Knox		43 Amazon Kindle	
4 YouTube		14 Google Play Newsstand		24 Dropbox		34 Google Photos		44 Google News & Weather	
5 Facebook		15 S Suggest		25 Flipboard		35 Google Cloud		45 eBay	
6 Google Chrome		16 AllShareCast Dongle		26 Twitter		36 Google Account Services		46 WeChat	
7 Google Maps		17 ChatON		27 Samsung Groupcast		37 Yahoo! Mail		47 MX Player	
8 Google Hangouts		18 Samsung Accounts		28 AllShare Cast		38 YouTube Studio		48 JRDCom Weather	
9 Samsung Push Service		19 Instagram		29 Clean Master		39 Google Talkback		49 Lenovo Anyshare	
10 Google Play Music		20 Google Drive		30 Google Text to Speech		40 IMO Videotalk		50 Pinterest	

Google wins on Google Android

Being baked into most Android devices, the dominance of Google's own apps and services isn't surprising. Google Play, Google+, the Search box or even YouTube are among the most commonly used apps. What did surprise us, however, given Google's dominance, is that Gmail experienced quite a drop in overall popularity among our sampled user base, going down from Rank 4 (used by 77% of the users sampled) to 14 (roughly 50%).

B Key Findings - H1 2016

Top 50 Most Commonly Used Android Apps cont...

Samsung holds firm with Android fans

Likely tied to the dominance of Samsung in the Most Used Devices category, Samsung apps are still widely used. For example, the Samsung GroupShare (AllShareCast) app, which comes pre-installed with certain Samsung phones and lets you share files or your screen, did show up as a resource-drainer.

TripAdvisor

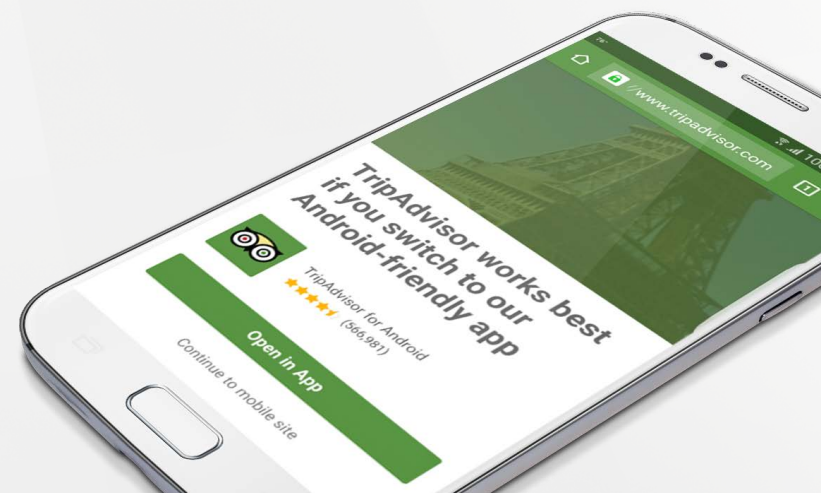
Another fresh face, this app's inclusion might not be such a surprise given how the mobile website constantly pushes users to download and convert to the app.

OfficeSuite + PDF Editor

A newcomer in the popularity contest, its inclusion could indicate that mobile phone productivity is on the rise.

Snapchat

Not in the Top 50, but coming in at number 76, is Snapchat. Generally regarded as a widely used app and also appearing quite high in our list of most resource-hungry apps, it's strangely not one of the 50 most popular apps with our user base.



B Key Findings - H1 2016

World's Greediest Mobile Apps

In this section, we reveal which apps had the most overall impact on mobile devices.

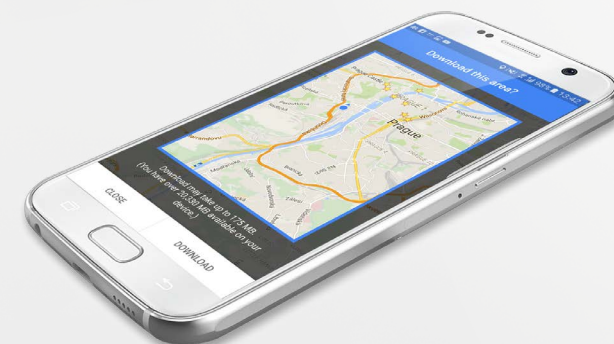
TOP 10 PERFORMANCE-DRAINING APPS THAT RUN AT START-UP



CATEGORY:  Social  Communication  Tools  Weather

Analysis

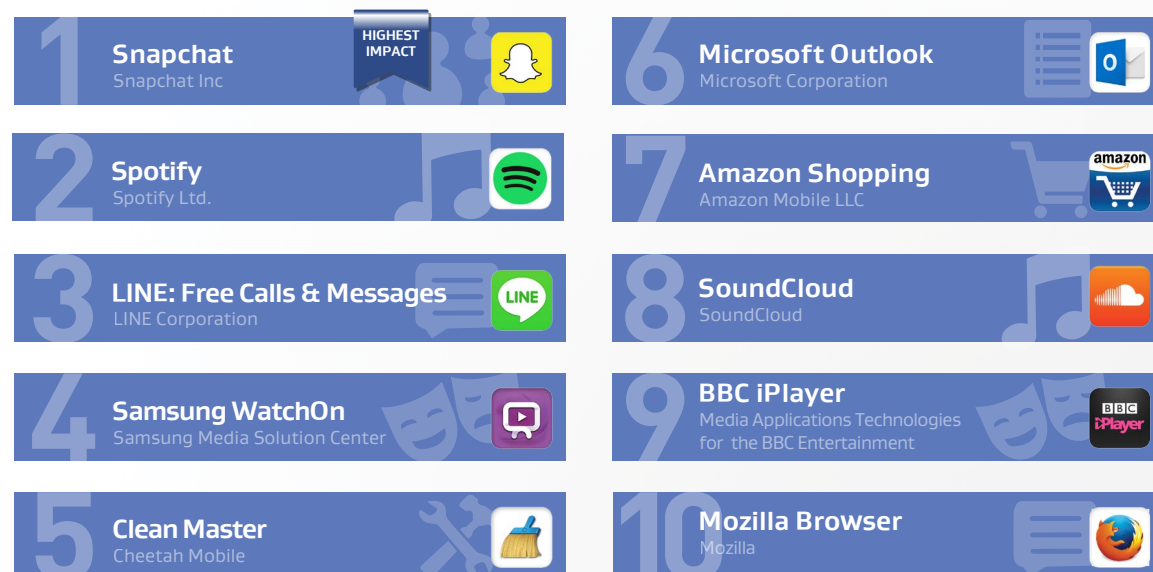
As before, the number one app that drains your battery and starts up automatically in the background is Facebook. But interestingly, Google Maps came out of nowhere to take second place. We can only speculate why. Is it because people use it more and more to go from place to place? Or did the resource utilization increase with a recent update? In any case, our advice is to use the app's '**Offline Area**' feature, which lets you download complete maps to your phone without taxing battery life or mobile data.



B Key Findings - H1 2016

World's Greediest Mobile Apps Cont...

TOP 10 PERFORMANCE-DRAINING APPS RUN BY USERS



CATEGORY:  Social  Music & Audio  Communication  Tools  Entertainment  Shopping  Productivity

Analysis

No shockers here. If you actively run multi-media apps like **Spotify**, **Outlook** or **SoundCloud**, you are likely to find your battery drains faster than if you were just texting or reading the news.

However, we were pleasantly surprised to see that our previously ever-present top 10 resource drainer Netflix seems to have improved usage enough to get itself off the list for performance drain. One of the most popular apps in the United States, Netflix is shown in our tests to be still heavy on battery usage (see below), but its mobile data usage and local cache usage have apparently decreased after recent updates.



B Key Findings - H1 2016

Top Ten Battery Drainers

In this category are apps which run automatically when you turn on your smartphone or tablet and keep running in the background all the time as part of their core functionality. This could, for example, include antivirus apps, messaging apps and social apps.

TOP 10 BATTERY-DRAINERS THAT RUN AT START-UP



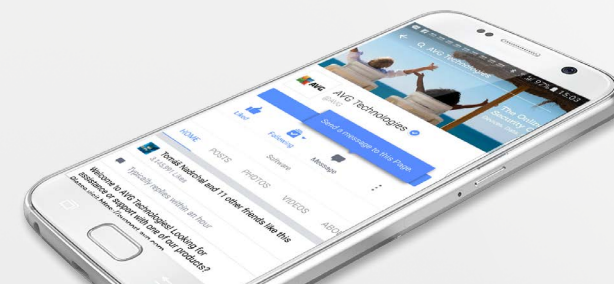
CATEGORY:  Social  Communication  Productivity  Tools

Analysis

Using these background apps will increase the drain on your smartphone's battery.



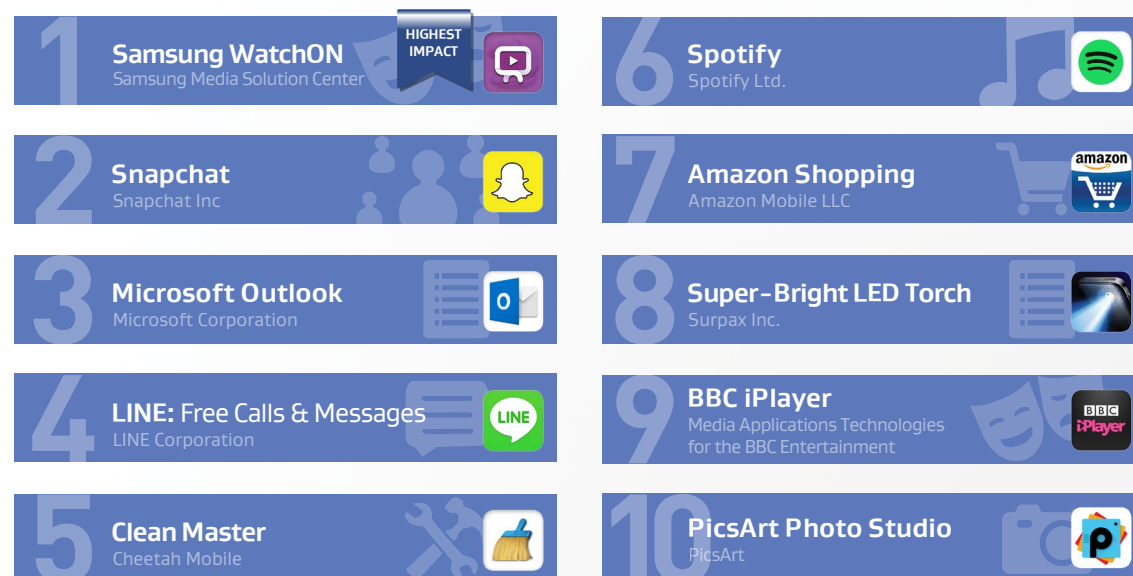
Our advice: One way to improve battery life is to uninstall or disable apps you may not need on a constant basis (such as Samsung AllShare, now known as "Samsung Link"). If you don't use **Facebook** regularly, try accessing it via mobile browser instead. This way you only use battery and storage when you check the app, and it won't constantly be running in the background.



B Key Findings - H1 2016

Top Ten Battery Drainers Cont...

TOP 10 BATTERY-DRAINERS RUN BY USERS



CATEGORY:  Social  Entertainment  Shopping  Communication  Productivity  Tools  Music & Audio  Photography

Analysis

WatchOn, Samsung's remote control app that's since been replaced by a newer version under the Peel banner, came preinstalled with many Samsung phones, so you may not even know you have it. Yet it may be constantly running in the background, draining your power.



TIP *Our advice:* Find the app on your phone and disable **Show Remote Control** on the **Notification Panel** (the option are called **Quick Remote Widget** and **Quick Notification Widget**).



B Key Findings - H1 2016

Top Ten Storage Hogs

TOP 10 STORAGE-EATERS THAT RUN AT START-UP



CATEGORY:  Social  Communication  Tools  Books & Reference  Media & Video

Analysis

Chatterboxes beware: **Skype, Tango, Facebook Messenger** (and all other email providers) keep a cache on your phone that might include photos, videos, documents and other attachments you've sent or received.



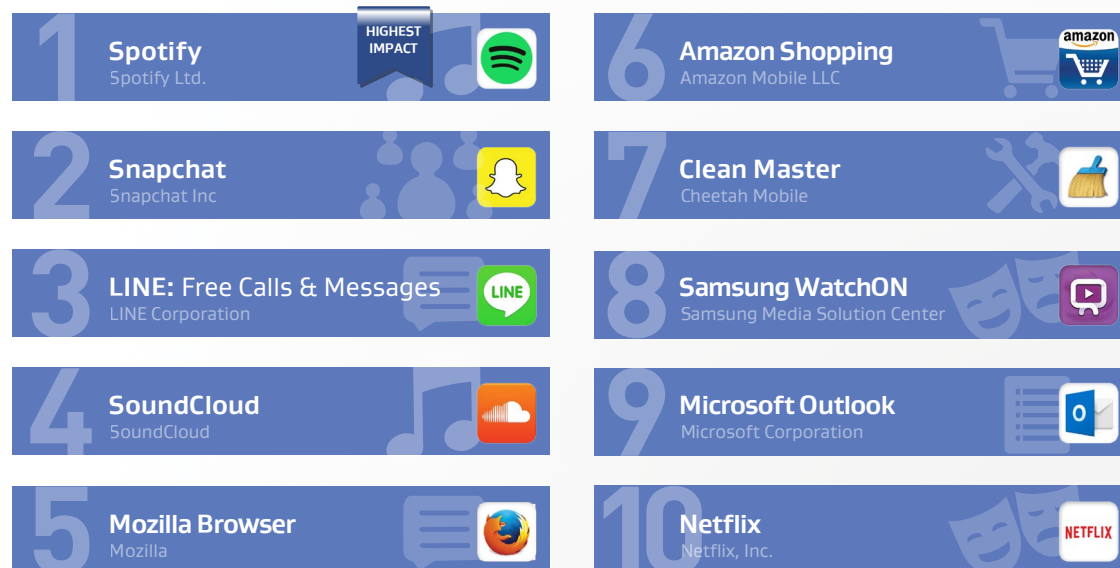
TIP *Our advice: Clean the cache with an appropriate tool or delete your chat logs every few weeks to keep your phone from bloating.*



B Key Findings - H1 2016

Top Ten Storage Hogs Cont...

TOP 10 STORAGE-EATERS RUN BY USERS



CATEGORY: 🎵 Music & Audio 🛒 Shopping 💬 Communication 🛠️ Tools 👥 Social 📅 Productivity

Analysis

Spotify is the number-one storage hog, as it needs a huge cache to stream music and, in the Premium version, can also store songs offline.



Our advice: If you don't have the absolute highest end headphones or speakers connected to your Android device, there's little point in using higher quality settings, so make sure it's all set to **'Normal'** to keep your storage usage down.

Also make sure to clean up your browsers (see **Mozilla** in spot 5) or the **Amazon shopping** app (which is essentially a mobile shopping browser) before they chew through your device's space.



B Key Findings - H1 2016

Top Ten Data Traffic Hogs

TOP 10 DATA TRAFFIC HOGS THAT RUN AT START-UP



CATEGORY:  Social  Tools  Weather  Communication  Productivity

Analysis

Mobile data is precious, especially when there's no Wi-Fi to be found, making it all the more important to keep a close eye on traffic hogs, whether you run them (below) or whether they kick in automatically at start-up and run continuously in the background.

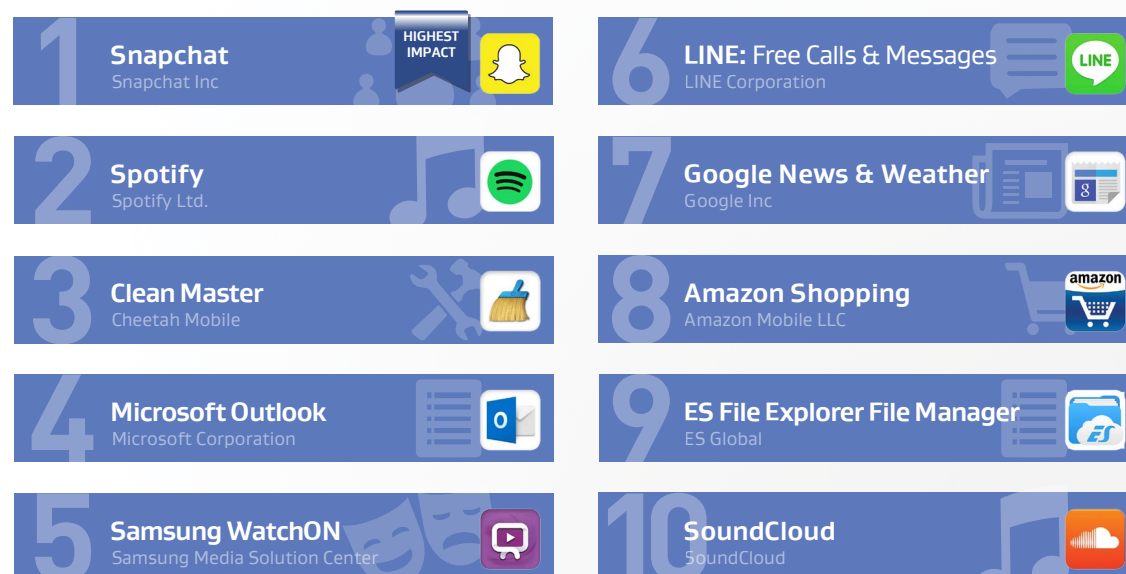
You can silence **Facebook**, which is at the top of our list, by using the web version or some of our tips and tricks (see the [AVG Android Performance Guide](#)). Other apps should simply never consume that much space under any circumstances, for example, the **Weather Channel**, so you might want to consider switching to an alternative if your mobile data runs out quickly when using it.



B Key Findings - H1 2016

Top Ten Data Traffic Hogs Cont...

TOP 10 DATA TRAFFIC HOGS RUN BY USERS

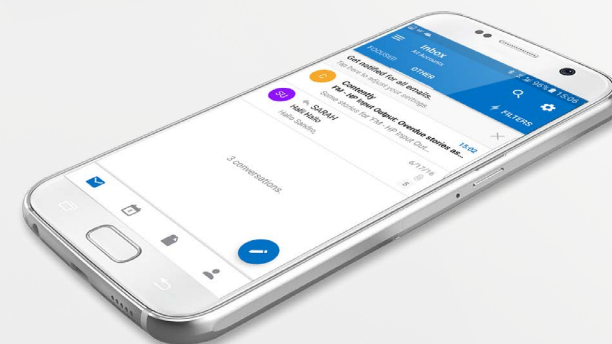


CATEGORY:  Social  Music & Audio  Newspaper & Magazines  Tools  Entertainment  Productivity  Shopping  Communication

Analysis

Newcomer **ES File Explorer** might surprise you at first. Why would a local file explorer be responsible for traffic consumption? Simple: it can be used as a download manager too, so many downloaded apps (outside the Google Play Store), videos, documents or other files go through ES FE, which explains its spot in the Top 10. However, apps like **Google News** or **Samsung WatchON** should not consume that much mobile traffic overall and should be avoided if there's no secure Wi-Fi in range.

In other news, **Netflix**, having previously held the number one spot, made it off the list of top traffic hogs, likely due to the improved compression techniques mentioned above. Nice work, Netflix.

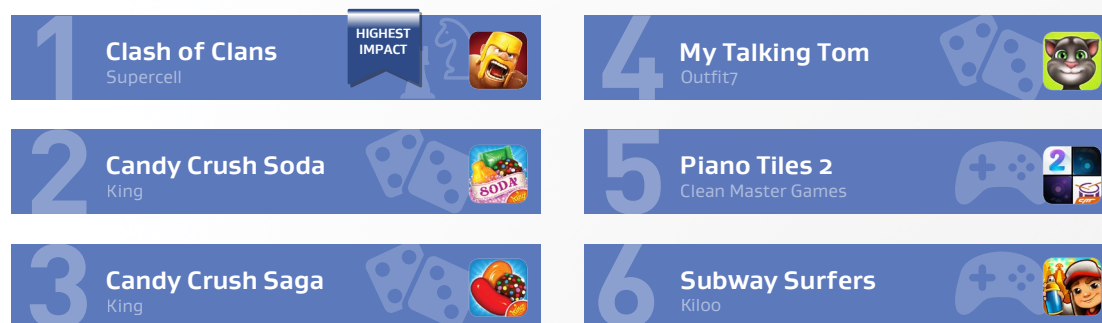


B Key Findings - H1 2016

Mobile Gaming - What Gamers Should Know

Many of the games you love the most can heavily impact your device performance, so if you are watching your battery or storage levels, you might want to choose when to use these apps.

TOP PERFORMANCE-DRAINING APPS - GAMES



CATEGORY:  Strategy  Casual  Arcade

* Not enough games met the threshold of 1 million downloads and thus did not meet our methodology criteria

Analysis

Not much has changed in the list of top resource-hungry games since the last report. **Clash of Clans** holds the spot for the highest overall performance usage and is an app you should avoid if battery life or storage is an issue for you.

Newcomer **My Talking Tom** has replaced its sibling app, **My Talking Angela**. But it doesn't matter what game you play, as all of the apps above hog your device storage more than most other apps. Why? Because they constantly access the GPU (Graphics Processing Unit) of your smartphone, which tends to drain the most resources across the board.

In future, we will be watching the newly launched location-based game Nintendo GO with interest to see if it appears in our H2 lists.



C Addressing the Issues

7 Ways to Boost Battery Life, Free Up Storage and Reduce Mobile Data Traffic

Here are 7 easy steps to help you boost battery life, stop storage eaters and save mobile traffic.



Limit notifications to save battery life, performance and mobile data

Phone notifications are one of the most useful mobile inventions, giving users information they need to know about new appointments or messages at a glance. But not all of them are useful, and they can consume resources.



Limit apps battery & performance drain

Reduce background features, refresh intervals, location usage or in-app notifications.



Free up space

Apps collect clutter over time. Use [AVG Cleaner for Android](#) to get rid of temporary files.



Reduce data traffic

Turn off background data transfers or any offline reading features within your app if you don't want it to consume mobile traffic.



Turn off Wi-Fi, Bluetooth and GPS

To save more battery life, turn off all the hardware features you don't need at any given moment.



Turn down brightness

If you're not in bright sunlight, we recommend turning the brightness levels down to 50-70%. Why? On many of today's big phones and tablets, the display is responsible for up to 80% of the entire power consumption.



Get rid of performance-sapping apps

Our [AVG Cleaner for Android](#) analyzes the top battery, storage, and traffic-hogging apps on your device. If you don't need one of these apps, you can easily uninstall it and look for more resource-friendly alternatives.

We've put together a comprehensive guide for all consumers and businesses looking to address the issues outlined in this report.

Click [here](#) to download the full PDF guide.



C Contact Information

For further information, please visit:

Our blogs, press information and resources on how to get the most out of your connected devices at AVG Now: <http://now.avg.com>

Our website for details about our performance products: <http://www.avg.com/performance>

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D Appendix

App Resource Consumption Analysis

In this section, you can find the app resource consumption analysis for the United States and the United Kingdom. We used the same methods to calculate the rankings as before, but this time only took into account performance data of users from these specific countries.



D Appendix

USA

TOP 10 PERFORMANCE DRAINING APPS – EXCLUDING GAMES



CATEGORY:  Social  Communication  Entertainment  Tools  Entertainment  Books & Reference

TOP 10 BATTERY DRAINERS THAT RUN AT START UP

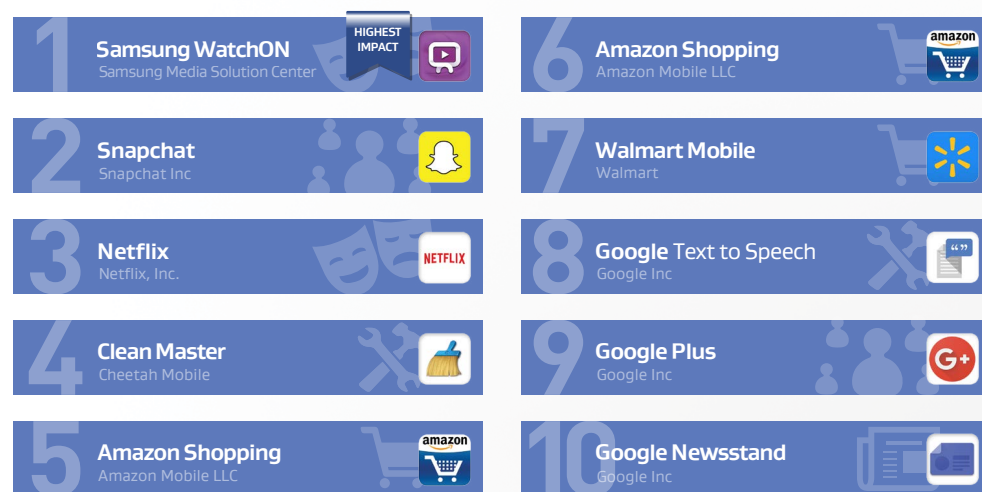


CATEGORY:  Communication  Productivity  Tools  Social

D Appendix

USA

TOP 10 BATTERY DRAINERS RUN BY USER



CATEGORY:  Newspaper & Magazines  Shopping  Social  Entertainment  Tools

TOP 10 STORAGE EATERS – EXCLUDING GAMES

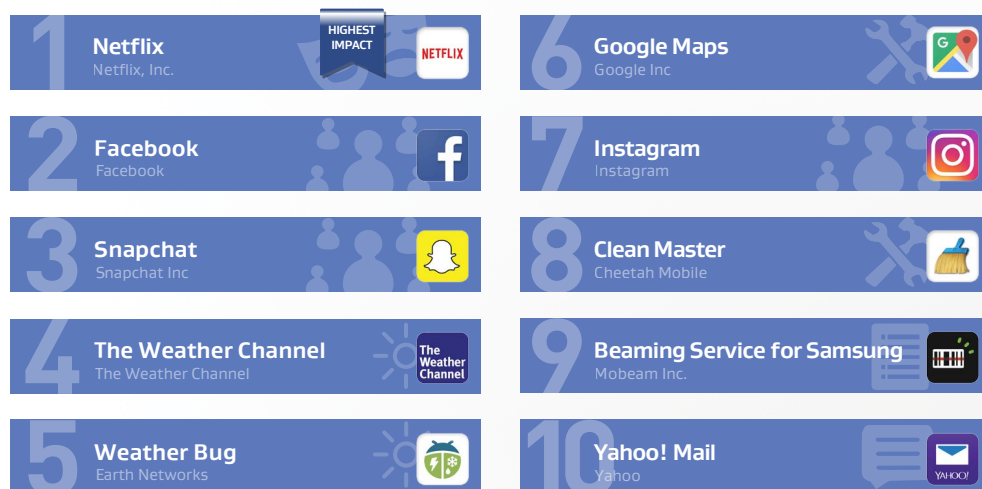


CATEGORY:  Communication  Social  Books & Reference  Tools

D Appendix

USA

TOP 10 DATA TRAFFIC HOGS - EXCLUDING GAMES



CATEGORY:  Productivity  Social  Entertainment  Weather  Tools  Communication

D Appendix

UNITED KINGDOM



TOP 10 PERFORMANCE DRAINING APPS - EXCLUDING GAMES



CATEGORY:  Social  Music & Audio  Communication  Tools  Shopping  Newspaper & Magazines

TOP 10 BATTERY DRAINERS THAT RUN AT START UP

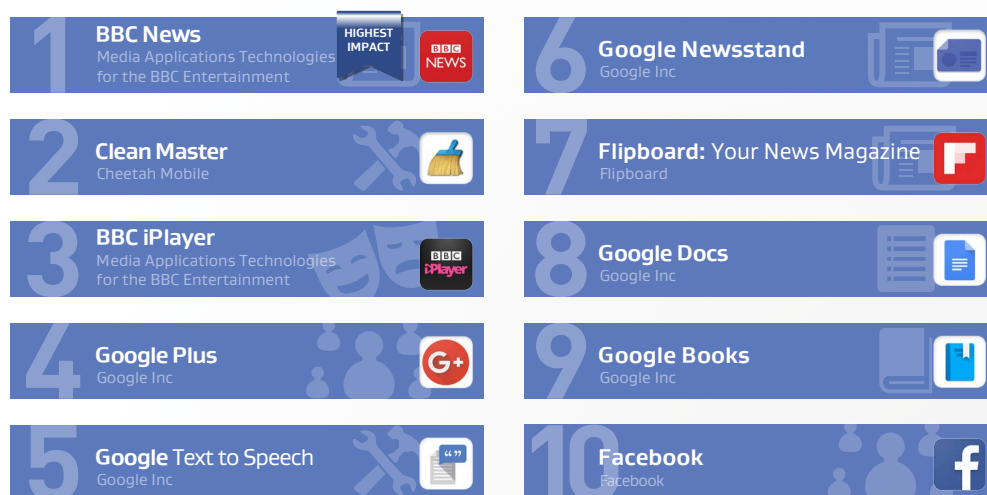


CATEGORY:  Social  Communication  Tools  Productivity  Music & Audio

D Appendix

UNITED KINGDOM


TOP 10 BATTERY DRAINERS RUN BY USER



CATEGORY:  Social  Tools  Entertainment  Newspaper & Magazines  Books & Reference  Productivity

TOP 10 STORAGE EATERS - EXCLUDING GAMES



CATEGORY:  Social  Media & Video  Communication  Books & Reference  Tools

D Appendix

UNITED KINGDOM

TOP 10 DATA TRAFFIC HOGS - EXCLUDING GAMES



CATEGORY:  Social  Newspaper & Magazines  Communication  Tools  Media & Video