Inside the black box: a glimpse of Google's internal data free-for-all.

The GDPR "purpose limitation principle" requires that personal data is "collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes".[1] This is at odds with the data free-for-all shown here.

Sources:

All quotations in the table are directly from Google's own documents for business clients, technology partners, developers, lawmakers, and users. Almost 100 documents are cited.

Note:

This table is not a complete list of Google purposes, or of the details of each purpose. Some may duplicate others. Many more are so ill-defined by Google that they conflate multiple purposes.

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Accounting	*"purposes such as accounting…"*[2]	*"…such as…"*[3] is vague language that may conflate or omit many distinct processing purposes.			*"For example, when you purchase apps from the Play Store or products from the Google Store."*[4]	Unknown
Accounting (related to dispute resolution)	*"purposes such as … dispute resolution …"*[5]	*"…such as…"*[6] is vague language that may conflate or omit many distinct processing purposes.			*"For example, when you purchase apps from the Play Store or products from the Google Store."*[7]	Unknown
Accounting (related to tax compliance)	*"purposes such as… compliance with tax …"*[8]	*"…such as…"*[9] is vague language that may conflate or omit many distinct processing purposes.			*"For example, when you purchase apps from the Play Store or products from the Google Store."*[10]	Unknown
Accounting (related to escheatment)	*"purposes such as … escheatment …"*[11]	*"…such as…"*[12] is vague language that may conflate or omit many distinct processing purposes.			*"For example, when you purchase apps from the Play Store or products from the Google Store."*[13]	Unknown
Accounting (related to anti-money laundering)	*"purposes such as … anti-money laundering …"*[14]	*"…such as…"*[15] is vague language that may conflate or omit many distinct processing purposes.			*"For example, when you purchase apps from the Play Store or products from the Google Store."*[16]	Unknown
Accounting (unknown)	*"purposes such … other financial regulations."*[17]	*"…such as…"*[18] is vague language that may conflate or omit many distinct processing purposes.			*"For example, when you purchase apps from the Play Store or products from the Google Store."*[19]	Unknown
Advertising (related to targeting)	*"To serve ads in services where cookie technology may not be available (for example, in mobile applications)"*[20]	This vague language may conflate or omit many distinct processing purposes.	*"Advertising identifiers for mobile apps … We may use technologies that perform similar functions to cookies"*[21]			Unknown
Advertising (related to targeting)	*"to coordinate ads across your mobile apps and mobile browser"*[22]		*"Advertising identifiers for mobile apps … Sometimes Google links the identifier used for advertising on mobile applications to an advertising cookie on the same device"*[23]			Unknown
Advertising (related to targeting)		*"Google Ad Manager collects data to provide the relevant services, including: … To apply publisher configurations and rules, such as protections, blocks and minimum prices; …"*[24]			*"Depending on the publisher's settings, the user's preferences and the device in question, the collected data may include:* *The request itself, such as the browser's request for an ad to be served on a non-Google website and the ad slot to be filled; System and device information, such as the device, browser version, operating system version, default language and screen size; IP address; Location; The date and time of the request; In the case of web browsers, the full URL of the page being visited together with the referrer URL; In the case of mobile devices, mobile network information; In the case of mobile applications, an identifier for the application and a resettable mobile advertising identifier (such as IDFA for iOS or AdID for Android); In the case of web browsers, any cookie IDs that Google has previously set on the user's device; and Event data such as impression, click, or conversion data.* *Google Ad Manager may also collect such data through tags on the publisher's property or the Google Mobile Ads software development kit (SDK) on the user's app.* *It can also collect publisher-provided IDs. In addition, Google Ad Manager allows publishers to integrate audience data, such as audience lists and lists of cookie IDs with inferred interests, from their own data management platform."*[25]	Unknown
Advertising (related to targeting)		*"Best times of day to target a campaign"*[26]				Unknown

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Advertising (related to targeting)	*"to link your activity across devices if you've previously signed in to your Google Account on another device. We do this to coordinate the ads you see across devices ..."*[27]				*"We also use cookies named 'AID,' 'DSID,' and 'TAID'"*[28]	**Unknown**
Advertising (related to targeting)		*"Google Ad Manager collects data to provide the relevant services, including: ... To forecast available traffic (e.g., the number of potential ad impressions available to an ad campaign targeted to a specific country or device type); ..."*[29]			*"Depending on the publisher's settings, the user's preferences and the device in question, the collected data may include: The request itself, such as the browser's request for an ad to be served on a non-Google website and the ad slot to be filled; System and device information, such as the device, browser version, operating system version, default language and screen size; IP address; Location; The date and time of the request; In the case of web browsers, the full URL of the page being visited together with the referrer URL; In the case of mobile devices, mobile network information; In the case of mobile applications, an identifier for the application and a resettable mobile advertising identifier (such as IDFA for iOS or AdID for Android); In the case of web browsers, any cookie IDs that Google has previously set on the user's device; and Event data such as impression, click, or conversion data. Google Ad Manager may also collect such data through tags on the publisher's property or the Google Mobile Ads software development kit (SDK) on the user's app. It can also collect publisher-provided IDs. In addition, Google Ad Manager allows publishers to integrate audience data, such as audience lists and lists of cookie IDs with inferred interests, from their own data management platform."*[30]	**Unknown**
Advertising (related to targeting)		*"Google Ad Manager collects data to provide the relevant services, including: ... To enable frequency capping (i.e., to ensure that users are not served the same ad multiple times); ...."*[31]			*"Depending on the publisher's settings, the user's preferences and the device in question, the collected data may include: The request itself, such as the browser's request for an ad to be served on a non-Google website and the ad slot to be filled; System and device information, such as the device, browser version, operating system version, default language and screen size; IP address; Location; The date and time of the request; In the case of web browsers, the full URL of the page being visited together with the referrer URL; In the case of mobile devices, mobile network information; In the case of mobile applications, an identifier for the application and a resettable mobile advertising identifier (such as IDFA for iOS or AdID for Android); In the case of web browsers, any cookie IDs that Google has previously set on the user's device; and Event data such as impression, click, or conversion data. Google Ad Manager may also collect such data through tags on the publisher's property or the Google Mobile Ads software development kit (SDK) on the user's app. It can also collect publisher-provided IDs. In addition, Google Ad Manager allows publishers to integrate audience data, such as audience lists and lists of cookie IDs with inferred interests, from their own data management platform."*[32]	**Unknown**
Advertising (related to targeting)		*"Google Ad Manager collects data to provide the relevant services, including: ... To maximize publisher yield through optimizations ..."*[33]			*"Depending on the publisher's settings, the user's preferences and the device in question, the collected data may include: The request itself, such as the browser's request for an ad to be served on a non-Google website and the ad slot to be filled; System and device information, such as the device, browser version, operating system*	**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
					version, default language and screen size; IP address; Location; The date and time of the request; In the case of web browsers, the full URL of the page being visited together with the referrer URL; In the case of mobile devices, mobile network information; In the case of mobile applications, an identifier for the application and a resettable mobile advertising identifier (such as IDFA for iOS or AdID for Android); In the case of web browsers, any cookie IDs that Google has previously set on the user's device; and Event data such as impression, click, or conversion data. Google Ad Manager may also collect such data through tags on the publisher's property or the Google Mobile Ads software development kit (SDK) on the user's app. It can also collect publisher-provided IDs. In addition, Google Ad Manager allows publishers to integrate audience data, such as audience lists and lists of cookie IDs with inferred interests, from their own data management platform."	
Advertising (related to targeting)		"*Google Ad Manager collects data to provide the relevant services, including: ... To maximize publisher yield through ... real time bidding; ...*"[34]			"*Depending on the publisher's settings, the user's preferences and the device in question, the collected data may include: The request itself, such as the browser's request for an ad to be served on a non-Google website and the ad slot to be filled; System and device information, such as the device, browser version, operating system version, default language and screen size; IP address; Location; The date and time of the request; In the case of web browsers, the full URL of the page being visited together with the referrer URL; In the case of mobile devices, mobile network information; In the case of mobile applications, an identifier for the application and a resettable mobile advertising identifier (such as IDFA for iOS or AdID for Android); In the case of web browsers, any cookie IDs that Google has previously set on the user's device; and Event data such as impression, click, or conversion data. Google Ad Manager may also collect such data through tags on the publisher's property or the Google Mobile Ads software development kit (SDK) on the user's app. It can also collect publisher-provided IDs. In addition, Google Ad Manager allows publishers to integrate audience data, such as audience lists and lists of cookie IDs with inferred interests, from their own data management platform.*"[35]	Unknown
Advertising (related to targeting)		"*Google Ad Manager collects data to provide the relevant services, including: ... To enable sequential creative rotation (i.e., to show a set of ads to users in a specific sequence); ...*"[36]			"*Depending on the publisher's settings, the user's preferences and the device in question, the collected data may include: The request itself, such as the browser's request for an ad to be served on a non-Google website and the ad slot to be filled; System and device information, such as the device, browser version, operating system version, default language and screen size; IP address; Location; The date and time of the request; In the case of web browsers, the full URL of the page being visited together with the referrer URL; In the case of mobile devices, mobile network information; In the case of mobile applications, an identifier for the application and a resettable mobile advertising identifier (such as IDFA for iOS or AdID for Android); In the case of web browsers, any cookie IDs that Google has previously set on the user's device; and Event data such as impression, click, or conversion data.*	Unknown

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
					Google Ad Manager may also collect such data through tags on the publisher's property or the Google Mobile Ads software development kit (SDK) on the user's app. *It can also collect publisher-provided IDs. In addition, Google Ad Manager allows publishers to integrate audience data, such as audience lists and lists of cookie IDs with inferred interests, from their own data management platform."[37]*	
Advertising (related to targeting)		"*Real-time bidding*"[38] covers a multitude of purposes, and since the information sharing involved is boundless, the range of purposes that may result from it is boundless too.	"*id…, google_user_id…, hosted_match_data…, user_agent…., geo_criteria_id…, postal_vode…, encrypted_hyper_local_set, hyperlocal_set…, user_vertical…, user_list…, url…, detected_vertical…, latitude, longitude, … hyperlocal, center_point, … userlist id, userlist age_seconds, … vertical object id, vertical object weight, … device os_version, device carrier_id, device screen_width, device screen_height, device screen_pixel_ratio_millis, device_platform, device_brand, device_model, device hardware_version, OsVersion major minor micro, …encrypted_advertising_id, encrypted_hashed_idfa, advertising_id, hashed_idfa, … installedSdk id, Version major minor micro, … consented_providers*" [39]	Google's sharing on personal data appears to be boundless. Data are broadcast to 833 "*ad technology providers*"[40] and may also be broadcast to 2,033 "*certified*"[41] Google partners. There is no control over how the data are then processed by these companies, aside from Google' request to be notified if its contractual provisions are breached.[42]		**Unknown**
Advertising (related to measurement)	"*Google uses the information shared by sites and apps to … , measure the effectiveness of advertising*"[43]	This vague language may conflate or omit many distinct processing purposes.	"*For example, when you visit a website that uses advertising services like AdSense, including analytics tools like Google Analytics, or embeds video content from YouTube, your web browser automatically sends certain information to Google. This includes the URL of the page you're visiting and your IP address. We may also set cookies on your browser or read cookies that are already there. Apps that use Google advertising services also share information with Google, such as the name of the app and a unique identifier for advertising.*"[44]			**Unknown**
Advertising (unknown)	"*Providing advertising, which keeps many of our services free (and when ads are personalized, we ask for your consent)*"[45]	This language is exceptionally broad and vague, and may conflate or omit many distinct processing purposes.				**Google claims legitimate interest applies to an undefined, and perhaps limitless domain of activity it describes as "*advertising*".[46]**
Advertising (related to measurement)	"*so we can provide aggregated reports to advertisers,*"[47]		"*we collect information about views and interactions with ads. … We may also measure other interactions, such as how you move your mouse over an ad or if you interact with the page on which the ad appears.*"[48]			**Unknown**
Advertising (unknown purposes related to advertising and measurement)	"*…for advertising and ad measurement purposes…*"[49]	This vague language may conflate or omit many distinct processing purposes.	"*Specific partners, listed below, can collect or receive non-personally identifiable information about your browser or device when you use Google sites and apps. These partners collect this information for advertising and ad measurement purposes, using their own cookies or similar technologies. For example, we allow YouTube creators and advertisers to work with measurement companies to learn about the audience of their YouTube videos or ads, using cookies or similar technologies.* *You can learn more about how these specific partners collect and use your information: Nielsen,comScore, Integral Ad Science, DoubleVerify, Oracle Data Cloud, Kantar, RN SSI Group*"[50] "*For example, advertisers may upload data from their loyalty-card programs so that they can better understand the performance of their ad campaigns.*"[51]		"*For example, we allow YouTube creators and advertisers to work with measurement companies to learn about the audience of their YouTube videos or ads, using cookies or similar technologies. … Another example is merchants on our shopping pages who use cookies to understand how many different people see their product listings.*" [52]	**Unknown**
Advertising (related to measurement)	"*helps us improve the reports we give to our advertisers on the effectiveness of their campaigns.*"[53]		"*Advertising identifiers for mobile apps … Sometimes Google links the identifier used for advertising on mobile applications to an advertising cookie on the same device*"[54]			**Unknown**

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Advertising (related to measurement)	*"Advertising. … to make advertising more engaging to users and more valuable to publishers and advertisers. Some common applications of cookies are … to improve reporting on campaign performance…"*[55]	*"…Some common applications are…"*[56] suggests the existence of other purposes that are not specified. This vague language may conflate or omit many distinct processing purposes.				**Unknown**
Advertising (related to measurement)	*"purposes such as measuring interactions with the ads on that domain …"*[57]	*"…such as…"*[58] is vague language that may conflate or omit many distinct processing purposes.			*"Sometimes advertising cookies may be set on the domain of the site you're visiting. In the case of advertising we serve across the web, cookies (e.g., cookies named '__gads' or '__gac') may be set on the domain of the site you're visiting. Unlike cookies that are set on Google's own domains, these cookies can't be read by Google when you're on a site other than the one on which they were set."*[59]	**Unknown**
Advertising (related to measurement)	*"'session state cookies' … to anonymously measure the effectiveness of PPC (pay per click) and affiliate advertising."*[60]				*"For example, we use a cookie called 'recently_watched_video_id_list' so that YouTube can record the videos most recently watched by a particular browser."*[61]	**Unknown**
Advertising (related to measurement)	*"… to measure interactions with the ads we show."*[62]				*"…data collected on Google properties by Google Analytics may also be used, together with some of the advertising cookies described above"*[63]	**Google claims legitimate interest applies to** *"Customizing our services to provide you with a better user experience"* **which is then linked to a pop up example** *"For example, we analyze how people interact with advertising to improve the performance of our ads"*.[64] **It is impossible to know what this purpose entails.**
Advertising (related to measurement)		*"Google Ad Manager collects data to provide the relevant services, including: … To measure ad performance (e.g., how many ads were served and how many clicks those ads received) and provide reporting"*[65]			*"Depending on the publisher's settings, the user's preferences and the device in question, the collected data may include:* The request itself, such as the browser's request for an ad to be served on a non-Google website and the ad slot to be filled; System and device information, such as the device, browser version, operating system version, default language and screen size; IP address; Location; The date and time of the request; In the case of web browsers, the full URL of the page being visited together with the referrer URL; In the case of mobile devices, mobile network information; In the case of mobile applications, an identifier for the application and a resettable mobile advertising identifier (such as IDFA for iOS or AdID for Android); In the case of web browsers, any cookie IDs that Google has previously set on the user's device; and Event data such as impression, click, or conversion data. Google Ad Manager may also collect such data through tags on the publisher's property or the Google Mobile Ads software development kit (SDK) on the user's app. It can also collect publisher-provided IDs. In addition, Google Ad Manager allows publishers to integrate audience data, such as audience lists and lists of cookie IDs with inferred interests, from their own data management platform.*[66]	**Unknown**
Advertising (related to measurement)	*"…to help advertisers measure how often an online ad campaign helps drive traffic to physical stores or properties"*[67]	This vague language may conflate or omit many distinct processing purposes.			*"Store visit conversions"* are explained to advertisers in Google's help documentation for business customers.[68]	**Unknown**
Advertising (related to measurement)	*"Advertising. … to make advertising more engaging to users and more valuable to"*	*"…Some common applications are…"*[70] suggests the existence of other purposes that are not			*"Sometimes advertising cookies may be set on the domain of the site you're visiting. In the case of advertising we serve across the web, cookies (e.g.,*	**Unknown**

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	publishers and advertisers. ...Some common applications of cookies are ..."[69]	specified. This vague language may conflate or omit many distinct processing purposes..			*cookies named '__gads' or '__gac') may be set on the domain of the site you're visiting. Unlike cookies that are set on Google's own domains, these cookies can't be read by Google when you're on a site other than the one on which they were set.*"[71]	
Advertising (related to measurement)	*"purposes such as ... preventing the same ads from being shown to you too many times."*[72]	*"...such as..."*[73] is vague language that may conflate or omit many distinct processing purposes.			*"Sometimes advertising cookies may be set on the domain of the site you're visiting. In the case of advertising we serve across the web, cookies (e.g., cookies named '__gads' or '__gac') may be set on the domain of the site you're visiting. Unlike cookies that are set on Google's own domains, these cookies can't be read by Google when you're on a site other than the one on which they were set.*"[74]	Unknown
Advertising (related to measurement)	*"to help advertisers determine how many times people who click on their ads end up taking an action on their site (e.g., making a purchase). These cookies allow Google and the advertiser to determine that you clicked the ad and later visited the advertiser's site."*[75]				*"Google also uses conversion cookies (e.g., cookies named '__gcl') ... Some of our other cookies may be used to measure conversion events as well. For example, Google Marketing Platform and Google Analytics cookies may also be used for this purpose."*[76]	Unknown
Advertising (related to measurement)	*"to link your activity across devices if you've previously signed in to your Google Account on another device. We do this to ... measure conversion events."*[77]				*"We also use cookies named 'AID,' 'DSID,' and 'TAID'"*[78]	Unknown
Advertising (related to targeting)	*"Google uses the information shared by sites and apps to ... personalize ... ads you see on Google ... sites and apps."*[79]		*"For example, when you visit a website that uses advertising services like AdSense, including analytics tools like Google Analytics, or embeds video content from YouTube, your web browser automatically sends certain information to Google. This includes the URL of the page you're visiting and your IP address. We may also set cookies on your browser or read cookies that are already there. Apps that use Google advertising services also share information with Google, such as the name of the app and a unique identifier for advertising."*[80]			Unknown
Advertising (related to targeting)	*"We use your gender to make Google services more personal. ... help us to: ... provide more relevant, tailored content you might be interested in, like ads".*[81]	*"...like..."*[82] is vague language that may conflate or omit many distinct processing purposes.	*"your gender"*[83]			Unknown
Advertising (related to targeting)	*"Google uses the information shared by sites and apps to ... personalize ... ads you see on ... our partners' sites and apps."*[84]		*"For example, when you visit a website that uses advertising services like AdSense, including analytics tools like Google Analytics, or embeds video content from YouTube, your web browser automatically sends certain information to Google. This includes the URL of the page you're visiting and your IP address. We may also set cookies on your browser or read cookies that are already there. Apps that use Google advertising services also share information with Google, such as the name of the app and a unique identifier for advertising."*[85]			Unknown
Advertising (related to targeting)	*"Some ways Google uses your birthday. ... Determine your age group for personalized recommendations and ads..."*[86]	*"...some ways..."* and *"...ads..."* is vague language that may conflate or omit many distinct processing purposes.[87]				Unknown
Advertising (related to targeting)	*"helps Google give you more personalised experiences across Google services, such as ... useful ads, both on and off Google."*[88]	*"...such as..."*[89] is vague language that may conflate or omit many distinct processing purposes.	*"Additional Web & App Activity saves your activity from sites, apps and devices that use Google services, including: activity from sites and apps that partner with Google to show ads Chrome history (if Chrome Sync is turned on) app activity, including data that apps share with Google Android usage & diagnostics, such as battery level, how often you use your device and apps, and system errors ... This data may be saved and used in any Google service where you are signed in..."*[90]	*"...both on and off Google"* is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[91]		Unknown **See "Web & App Activity" dialogues at sign up, in appendix. This dialogue appears to seek consent for potentially boundless data processing.**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Advertising (related to targeting)	*"This data helps Google give you more personalised experiences across Google services, such as … useful ads, both on and off Google."*[92]	*"…such as…"*[93] is vague language that may conflate or omit many distinct processing purposes.	*"Location History saves where you go with your devices. To save this data, Google regularly obtains location data from your devices. This data is saved even when you aren't using a specific Google service, such as Google Maps or Search. … This data may be saved and used in any Google service where you are signed in to give you more personalised experiences."*[94]	*"…both on and off Google"* is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[95]		**Unknown** **See "Location History" dialogues at sign up in appendix. This dialogue appears to seek a conflated consent for various purposes related to location data.**
Advertising (related to targeting)	*"Gmail ads are based on your activity"*[96]	This vague language may conflate or omit many distinct processing purposes.	*"The ads that you see in Gmail are based on data associated with your Google account. For example, your activity in other Google services such as YouTube or Search could affect the types of ads that you see in Gmail."*[97]			**Unknown**
Advertising (related to targeting)	*"Google Play ads help you discover apps that you might like"*[98]		*"When you browse on an Android device, ads may appear based on your search terms, apps that you've installed or used, or an app's similarity to the app that you're using."*[99]		*"When you browse on an Android device, ads may appear based on your search terms, apps that you've installed or used, or an app's similarity to the app that you're using."*[100]	**Unknown**
Advertising (related to targeting)	*"Search ads use your activity to be more personally relevant"*[101]		*"Most of the time, these ads are prompted by the search that you just did and your location. For example, if you search for 'bikes', you might see ads for bicycles on sale near you. In other cases, we use additional data like your past searches or sites that you have visited to help deliver more useful ads."*[102]		*"Since you have already searched for 'bikes', if you now search for 'holidays' you might see Search ads for places to go cycling while on holiday."*[103]	**Unknown**
Advertising (related to targeting)	*"Shopping Ads help you find what you're looking for"*[104]		*"These ads are based on the product that you just searched for, your location and online retailers that you've browsed in the past."*[105]		*"For example, if you search for 'leather sofa', you may see ads with pictures, prices and shop locations for leather sofas on sale at furniture shops near you."*[106]	**Unknown**
Advertising (related to targeting)	*"YouTube ads use your search and watch activity to be more relevant"*[107]		*"Ads may be based on data such as the videos that you've watched, things or places that you've searched for or apps that you use."*[108]		*"For example, if you search for 'home decor' or watch do-it-yourself videos, you might see an ad for a home improvement series."*[109]	**Unknown**
Advertising (related to targeting)	*"This info helps Google show ads that may be useful to you."*[110]	This vague language may conflate or omit many distinct processing purposes.	*"your activity on: Google services (such as Search or YouTube)* *Websites and apps that partner with Google to show ads"*[111]		*"Personalization applies to [REDACTED-EMAIL-ADDRESS] across your devices. For example, if you visit a travel website on your home computer in the morning, you might see ads about train tickets on your phone later that day."*[112]	**Google appears to claim consent, but its notification does not appear to meet the requirements for consent, or for explicit consent:** *"When you turn on ad personalization, you give Google permission to show you ads based on your activity on…."*[113]
Advertising (related to targeting)	*"Advertising… Google uses cookies like NID and SID to help customize ads on Google properties, like Google Search."*[114]		*"…we use such cookies to remember your most recent searches, your previous interactions with an advertiser's ads or search results, and your visits to an advertiser's website. This helps us to show you customized ads on Google."*[115]			**Unknown**
Advertising (related to targeting)	*"We also use one or more cookies for advertising we serve across the web … on non-Google sites. … Google properties, like YouTube, may also use these cookies to show you more relevant ads."*[116]				*"One of the main advertising cookies on non-Google sites is named 'IDE' and is stored in browsers under the domain doubleclick.net. Another is stored in google.com and is called ANID. We use other cookies with names such as DSID, FLC, AID, TAID, and exchange_uid."*[117]	**Unknown**
Advertising (related to targeting)	*"to help show more relevant ads on Google properties (like Google Search) and across the web…"*[118]	This vague language may conflate or omit many distinct processing purposes.			*"data collected on Google properties by Google Analytics may also be used, together with some of the advertising cookies described above"*[119]	**Unknown**
Advertising (related to targeting)	*"helps us show you … more relevant ads…"*[120]	This vague language may conflate or omit many distinct processing purposes.	*"…your searches and activity from a number of other Google services are saved to your Google Account. The activity saved to Web & App Activity may also include location information… The location used and stored with your Web & App Activity can come from signals like the device's IP address, your past activity, or from your device, if you've chosen to turn on your device's location settings."*[121]			**Unknown**

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Advertising (related to targeting)	"*to make ads more useful to you on websites and apps...*"[122]	This vague language may conflate or omit many distinct processing purposes.	"*By including non-Google activity, Google will: …* *Use Google Account activity to make ads more useful to you on websites and apps...*"[123]			**Unknown**
Advertising (related to targeting)	"*to make ads more useful to you on websites and apps...*"[124]	This vague language may conflate or omit many distinct processing purposes.	"*By including non-Google activity, Google will:* *Include your browsing data from non-Google websites and apps that partner with Google, including those that show ads from Google, in your Google Account* *Store that data with other data in your Google Account based on your activity controls preferences …* *, and improve Google services* *This setting applies across all of your signed-in devices and across all Google services.*"[125]			**Unknown**
Advertising (related to targeting)	"*Ads can be served based on your general location*"[126]	This vague language may conflate or omit many distinct processing purposes.	"*This can include location derived from the device's IP address. Depending on your ads personalization settings, you may also see ads based on your activity in your Google Account. This includes activity stored in your Web & App Activity, which can be used for more useful ads. Another example is if you have enabled Location History and regularly frequent ski resorts, you might later see an ad for ski equipment when watching a video on YouTube.*"[127]			**Unknown**
Advertising (related to targeting)	"*personalized ads based on your interests*"[128]	This vague language may conflate or omit many distinct processing purposes.	"*Reasons you might see an ad* *Your info:* *Info in your Google Account, like your age range and gender* *Your general location* *Your activity:* *Your current search query* *Previous search activity* *Your activity while you were signed in to Google* *Your previous interactions with ads* *Types of websites you visit* *Types of mobile app activity on your device* *Your activity on another device* *Other info:* *The time of day* *Info you gave to an advertiser, like if you signed up for a newsletter with your email address* *Google can personalize ads so they're more useful to you.* *Personalized ads aren't shown or hidden from you based on sensitive categories, like race, religion, sexual orientation, or health.*"[129] "*Unique identifiers can be used for … providing personalized advertising.*"[130]		"*For example, if you search for "mountain bikes," you may see an ad for sports equipment when you're browsing a site that shows ads served by Google. You can control what information we use to show you ads by visiting your ad settings.*"[131] "*You may also see personalized ads based on information from the advertiser. If you shopped on an advertiser's website, for example, they can use that visit information to show you ads.*"[132] "*For example, we may think that you're a football fan because you watched highlights from a recent match on YouTube, or looked up 'football fields near me' on Google Search. And if you've spent time on a partner advertiser's site, we may suggest ads based on that visit.*"[133] "*Depending on your Ad Settings and if you're signed in, this data informs the ads that you see across your devices and across sites that partner with us to show ads. So if you visit a travel website on your computer at work, you might see other ads served by Google about airfares to Paris on your phone later that night.*"[134]	**Unknown**
Advertising (related to targeting)	"*Partner websites and apps use your online activity to create ads that are more useful to you*"[135]	This vague language may conflate or omit many distinct processing purposes.	"*When we show ads on these partners' sites and apps, they are based on what you're reading or watching, audience 'types' based on personal information that our users have shared with us, and data that we collect about your online activities*"[136]		"*…for instance, '35- to 44-year-old females who are interested in travel'. … For example, you might see an ad for those hiking shoes that you added to your online shopping basket but decided not to buy. .*"[137]	**Unknown**
Advertising (related to targeting)	"*to… make the ads you see more relevant to you.*"[138]	This vague language may conflate or omit many distinct processing purposes.	"*If you add your phone number to your account*"[139]		"*If "Ads Personalization" is turned on, your phone number might be used to make the ads you see more relevant to you. For example, if you use your phone number for a loyalty program, you might see related ads while using Google Search.*"[140]	**Unknown**
Advertising (related to targeting)	"*This data helps Google give you more personalised experiences across Google services, such as … useful ads, both on and off Google.*"[141]	"*…such as…*"[142] is vague language that may conflate or omit many distinct processing purposes.	"*YouTube search history saves your YouTube searches. … This data may be saved and used in any Google service where you are signed in to give you more personalised experiences.*"[143]	"*…both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[144]		**Google appears to claim a sort of conflated consent, but its notification does not appear to meet the requirements for consent, or for explicit consent.**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
						See "YouTube History" text at sign up, in appendix.
Advertising (related to targeting)	*"This data helps Google give you more personalised experiences across Google services, such as ... useful ads, both on and off Google."*[145]	*"...such as..."*[146] is vague language that may conflate or omit many distinct processing purposes.	*"YouTube watch history saves the YouTube videos you watch and listen to. ... This data may be saved and used in any Google service where you are signed in to give you more personalised experiences."*[147]	*"...both on and off Google"* is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[148]		**Google appears to claim a sort of conflated consent, but its notification does not appear to meet the requirements for consent, or for explicit consent. See "YouTube History" text at sign up, in appendix.**
Analytics	*"to determine a user's inclusion in an experiment and the expiry of experiments a user has been included in."*[149]					**Unknown**
Analytics	*"Google Analytics is Google's analytics tool that helps website and app owners to understand how their visitors engage with their properties"*				*"It may use a set of cookies to collect information and report site usage statistics without personally identifying individual visitors to Google. The main cookie used by Google Analytics is the '_ga' cookie."*[150]	**Unknown**
Analytics	*"to provide the Google Analytics measurement service to customers"*[151]		*"Identifiers such as cookies and app instance IDs are used to measure user interactions with a customer's sites and/or apps, while IP addresses are used to provide and protect the security of the service, and to give the customer a sense of where in the world their users come from."* [152] *"First-party Cookies* *Google Analytics collects first-party cookies, data related to the device/browser, IP address and on-site/app activities to measure and report statistics about user interactions on the websites and/or apps that use Google Analytics. Customers may customize cookies and the data collected with features like cookie settings, User-ID, Data Import, and Measurement Protocol. ...* *Google Analytics customers who have for instance, enabled the analytics.js or gtag.js collection method can control whether or not they use cookies to store a pseudonymous or random client identifier. If the customer decides to set a cookie, the information stored in the local first-party cookie is reduced to a random identifier (e.g., 12345.67890).* *For customers who use the Google Analytics for Apps SDK, we collect an App Instance Identifier, which is a number that is randomly generated when the user installs an app for the first time.* *Advertising identifiers* *Where customers use Google Analytics Advertising Features, Google advertising cookies are collected and used to enable features like Remarketing on the Google Display Network. These features are subject to the users' Ads Settings, the Policy requirements for Google Analytics Advertising Features and Google's EU User Consent policy, which requires customers to obtain consent for cookies where legally required—including consent for personalized ads. For more information about how Google uses advertising cookies, visit the Google Advertising Privacy FAQ. It is possible to implement Google Analytics without affecting normal data collection where Advertising features are disabled until consent is obtained.* *IP Address* *Google Analytics uses IP addresses to derive the geolocation of a visitor, and to protect the service and provide security to our customers. Customers may apply IP masking so that Google Analytics uses only a portion of an IP address*		*"We use a variety of tools to do this, including Google Analytics. When you visit sites that use Google Analytics, Google and a Google Analytics customer may link information about your activity from that site with activity from other sites that use our ad services."*[154] *"Google Analytics relies on first-party cookies, which means the cookies are set by the Google Analytics customer. Using our systems, data generated through Google Analytics can be linked by the Google Analytics customer and by Google to third-party cookies that are related to visits to other websites. For example, an advertiser may want to use its Google Analytics data to create more relevant ads, or to further analyze its traffic."*[155]	**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
			collected, rather than the entire address. In addition, customers can override IPs at will using our IP Override feature.[153]			
Android	*"helps us provide features like automatic product updates ..."*[156]	*"...provide features like..."*[157] is vague language that may conflate or omit many distinct processing purposes.	*"information about the apps, browsers, and devices you use to access Google services. ... The information we collect includes unique identifiers, browser type and settings, device type and settings, operating system, mobile network information including carrier name and phone number, and application version number. We also collect information about the interaction of your apps, browsers, and devices with our services, including IP address, crash reports, system activity, and the date, time, and referrer URL of your request. We collect this information when a Google service on your device contacts our servers — for example, when you install an app from the Play Store or when a service checks for automatic updates. If you're using an Android device with Google apps, your device periodically contacts Google servers to provide information about your device and connection to our services. This information includes things like your device type, carrier name, crash reports, and which apps you've installed."*[158]		*"For example, we can use information from your devices to help you decide which device you'd like to use to install an app or view a movie you buy from Google Play."*[159]	**Unknown**
Android	*"helps us provide features like ... dimming your screen if your battery runs low"*[160]	*"...provide features like..."*[161] is vague language that may conflate or omit many distinct processing purposes.	*"information about the apps, browsers, and devices you use to access Google services. ... The information we collect includes unique identifiers, browser type and settings, device type and settings, operating system, mobile network information including carrier name and phone number, and application version number. We also collect information about the interaction of your apps, browsers, and devices with our services, including IP address, crash reports, system activity, and the date, time, and referrer URL of your request. We collect this information when a Google service on your device contacts our servers — for example, when you install an app from the Play Store or when a service checks for automatic updates. If you're using an Android device with Google apps, your device periodically contacts Google servers to provide information about your device and connection to our services. This information includes things like your device type, carrier name, crash reports, and which apps you've installed."*[162]		*"For example, we can use information from your devices to help you decide which device you'd like to use to install an app or view a movie you buy from Google Play."*[163]	**Unknown**
Anti-fraud & security		*"Temporary log data is used only for security and stability purposes. This data is used to identify and mitigate security threats and/or to fix, maintain, or improve Google DNS services."*[164]	*"Google Public DNS, is opt-in for Chrome users. Google retains two types of data from Google Public DNS queries, temporary logs and permanent logs: Temporary logs contain some personal information and are deleted after 48 hours."*[165]			**Unknown**
Anti-fraud & security	*"Google uses the information shared by sites and apps to ... protect against fraud and abuse"*[166]	This vague language may conflate or omit many distinct processing purposes.	*"For example, when you visit a website that uses advertising services like AdSense, including analytics tools like Google Analytics, or embeds video content from YouTube, your web browser automatically sends certain information to Google. This includes the URL of the page you're visiting and your IP address. We may also set cookies on your browser or read cookies that are already there. Apps that use Google advertising services also share information with Google, such as the name of the app and a unique identifier for advertising".*[167]			Appears to be "legitimate interest", listed as *"Detecting, preventing, or otherwise addressing fraud, abuse, security, or technical issues with our services".*[168]
Anti-fraud & security	*"to help protect your account."*[169]	This vague language may conflate or omit many distinct processing purposes.	*"information about the apps, browsers, and devices you use to access Google services. ... The information we collect includes unique identifiers, browser type and settings, device type and settings, operating system, mobile network information including carrier name and phone number, and application version number. We also collect information about the interaction of your apps, browsers, and devices with our services, including IP address, crash reports, system*			**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
			activity, and the date, time, and referrer URL of your request. *We collect this information when a Google service on your device contacts our servers — for example, when you install an app from the Play Store or when a service checks for automatic updates. If you're using an Android device with Google apps, your device periodically contacts Google servers to provide information about your device and connection to our services. This information includes things like your device type, carrier name, crash reports, and which apps you've installed.*[170]			
Anti-fraud & security	*"Detect, prevent, or otherwise address fraud, security, or technical issues."*[171]	This vague language may conflate or omit many distinct processing purposes.				**Unknown**
Anti-fraud & security	*"to protect against automated abuse. … such as … stealing money from advertisers by fraudulently clicking on ads …"*[172]	*"…such as…"*[173] is vague language that may conflate or omit many distinct processing purposes.	*"Collecting and analyzing IP addresses and cookie"*[174] *"Ad fraud information is "retained for extended time periods"*[175] *"Unique identifiers can be used for … security and fraud detection"*[176]		*"This abuse takes many forms, such as sending spam to Gmail users, stealing money from advertisers by fraudulently clicking on ads, or censoring content by launching a Distributed Denial of Service (DDoS) attack."*[177]	**Unknown**
Anti-fraud & security	*"to protect against automated abuse. … such as … censoring content by launching a Distributed Denial of Service (DDoS) attack."*[178]	*"…such as…"*[179] is vague language that may conflate or omit many distinct processing purposes.	*"Collecting and analyzing IP addresses and cookie"*[180] *"Ad fraud information is "retained for extended time periods"*[181] *"Unique identifiers can be used for … security and fraud detection"*[182]		*"This abuse takes many forms, such as sending spam to Gmail users, stealing money from advertisers by fraudulently clicking on ads, or censoring content by launching a Distributed Denial of Service (DDoS) attack."*[183]	**Unknown**
Anti-fraud & security	*"help you find out if and when someone accessed your email without your knowledge."*[184]		*"information about recent activity in Gmail, such as the IP addresses that accessed your mail, the associated location, and the date and time of access."*[185] *"Unique identifiers can be used for … security and fraud detection"*[186]		*"The "last account activity" feature in Gmail"*[187]	**Unknown**
Anti-fraud & security	*"Security. … We use security cookies to … protect user data from unauthorized parties. … such as attempts to steal the content of forms that you complete on web pages."*[188]				*"For example, we use cookies called 'SID' and 'HSID' which contain digitally signed and encrypted records of a user's Google account ID and most recent sign-in time. The combination of these two cookies allows us to block many types of attack, such as attempts to steal the content of forms that you complete on web pages."*[189]	**Unknown**
Anti-fraud & security	*"Protect Google, our users, and the public. … This includes detecting, preventing, and responding to fraud, abuse, security risks, and technical issues that could harm Google…"*[190]		*"We may also collect information about you from … security partners who provide us with information to protect against abuse."*[191]	*"Other partners help Google with securing our services; information about security threats can help us notify you if we think your account has been compromised (at which point we can help you take steps to protect your account)."*[192]		Appears to be legitimate interest, described as *"Protecting against harm to the rights, property or safety of Google, our users, or the public as required or permitted by law, including disclosing information to government authorities"*.[193]
Anti-fraud & security	*"Protect against harm to the rights, property or safety of Google, our users, or the public as required or permitted by law."*[194]	This vague language may conflate or omit many distinct processing purposes.				**Unknown**
Anti-fraud & security	*"Protect Google, our users, and the public. … This includes detecting, preventing, and responding to fraud, abuse, security risks, and technical issues that could harm … the public."*[195]		*"We may also collect information about you from … security partners who provide us with information to protect against abuse."*[196]	*"Other partners help Google with securing our services; information about security threats can help us notify you if we think your account has been compromised (at which point we can help you take*		**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
				steps to protect your account)."[197]		Unknown
Anti-fraud & security	*"Protect against harm to the rights, property or safety of Google, our users, or the public as required or permitted by law."*[198]					Unknown
Anti-fraud & security	*"Protect Google, our users, and the public. … This includes detecting, preventing, and responding to fraud, abuse, security risks, and technical issues that could harm … our users…"*[199]		*"We may also collect information about you from … security partners who provide us with information to protect against abuse."*[200]	*"Other partners help Google with securing our services; information about security threats can help us notify you if we think your account has been compromised (at which point we can help you take steps to protect your account)."*[201]		Unknown
Anti-fraud & security	*"Protect against harm to the rights, property or safety of Google, our users, or the public as required or permitted by law."*[202]					Unknown
Anti-fraud & security	*"to protect against automated abuse. … such as sending spam to Gmail users …"*[203]	*"…such as…"*[204] is vague language that may conflate or omit many distinct processing purposes.	*"Collecting and analyzing IP addresses and cookie"*[205] Ad fraud information is *"retained for extended time periods"*[206] *"Unique identifiers can be used for … security and fraud detection"*[207]		*"This abuse takes many forms, such as sending spam to Gmail users, stealing money from advertisers by fraudulently clicking on ads, or censoring content by launching a Distributed Denial of Service (DDoS) attack."*[208]	Unknown
Anti-fraud & security	*"to help us detect abuse such as … malware…"*[209]	*"…such as…"*[210] is vague language that may conflate or omit many distinct processing purposes.	*"we analyze your content"*[211] *"Unique identifiers can be used for … security and fraud detection"*[212]		*"When we detect spam, malware, illegal content, and other forms of abuse on our systems in violation of our policies, we may disable your account or take other appropriate action. In certain circumstances, we may also report the violation to appropriate authorities."*[213]	Unknown
Anti-fraud & security	*"to help us detect abuse such as spam…"*[214]	*"…such as…"*[215] is vague language that may conflate or omit many distinct processing purposes.	*"we analyze your content"*[216] *"Unique identifiers can be used for … security and fraud detection"*[217]		*"When we detect spam, malware, illegal content, and other forms of abuse on our systems in violation of our policies, we may disable your account or take other appropriate action. In certain circumstances, we may also report the violation to appropriate authorities."*[218]	Unknown
Anti-fraud & security	*"Enforce applicable Terms of Service, including investigation of potential violations."*[219]					Unknown
Anti-fraud & security	*"When Safe Browsing is enabled in Chrome, Chrome contacts Google's servers periodically to download the most recent Safe Browsing list of unsafe sites including sites associated with phishing, social engineering, malware, unwanted software, malicious ads, intrusive ads, and abusive websites or Chrome extensions."*[220]		*"If you navigate to a URL that appears on the list, Chrome sends a partial URL fingerprint (the first 32 bits of a SHA-256 hash of the URL) to Google for verification that the URL is indeed dangerous. Chrome also sends a partial URL fingerprint when a site requests a potentially dangerous permission, so that Google can protect you if the site is malicious. Google cannot determine the actual URL from this information. … In addition to the URL check described above, Chrome also conducts client-side checks. If a website looks suspicious, Chrome sends a subset of likely phishing and social engineering terms found on the page to Google, in order to determine whether the website should be considered malicious. Chrome can also help protect you from phishing if you type one of your previously saved passwords into an uncommon site. In this case Chrome sends the URL and referrers of the page to Google to see if the page might be trying to steal your password. … For … unverified potentially dangerous file downloads, Chrome sends Google the information needed to help determine whether the download is harmful, including some or all of the following: information about the full URL of the site or file download, all related referrers and redirects, code signing certificates, file hashes, and file header information. … Google logs the transferred data in its raw form and retains this data for up to 30 days. Google collects standard log information for Safe*			Unknown

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
			Browsing requests, including an IP address and one or more cookies. After at most 30 days, Safe Browsing deletes the raw logs, storing only calculated data in an anonymized form that does not include your IP addresses or cookies. Additionally, Safe Browsing requests won't be associated with your Google Account. They are, however, tied to the other Safe Browsing requests made from the same device."[221]			
Anti-fraud & security	*"You can also opt in to reporting additional data relevant to security to help improve Safe Browsing and security on the Internet."[222]*		*"If you opt in, Chrome will send an incident report to Google every time you receive a warning, visit a suspicious page, and on a very small fraction of sites where Chrome thinks there could be threats, to help Safe Browsing learn about the new threats you may be encountering. The reports ... can include URLs, headers, and snippets of content from the page ... If Chrome discovers unwanted or malicious software on your machine, the reports may also include details about malicious files and registry entries. ... Chrome also sends a request to Safe Browsing each time you start to enter a password on a page that isn't in Chrome's local list. In addition, the request Chrome sends to Safe Browsing to determine the reputation of the website on which you reuse your password includes the list of websites for which you saved this password in Chrome's password manager (but not the password itself). ... Google logs the transferred data in its raw form and retains this data for up to 30 days. Google collects standard log information for Safe Browsing requests, including an IP address and one or more cookies. After at most 30 days, Safe Browsing deletes the raw logs, storing only calculated data in an anonymized form that does not include your IP addresses or cookies. Additionally, Safe Browsing requests won't be associated with your Google Account. They are, however, tied to the other Safe Browsing requests made from the same device."[223]*			Unknown
Anti-fraud & security	*"to improve the quality of download protection"[224]*		*"Chrome may ask you to opt in to reporting to Google Safe Browsing some data relevant to security ... Once you've opted in, some downloaded files that are suspicious will be sent to Google for investigation each time they are encountered."[225]*			Unknown
Anti-fraud & security	*"...improving Google's ability to detect unwanted software..."[226]*		*"System information includes metadata about programs installed or running on your system that could be associated with harmful software, such as: services and processes, scheduled tasks, system registry values commonly used by malicious software, command-line arguments of Chrome shortcuts, Windows proxy settings, and software modules loaded into Chrome or the network stack. ... stored for up to 14 days, after which only aggregated statistics are retained."[227]*			Unknown
Chrome	*"to determine the aggregate popularity and usage of applications and extensions"[228]*	This vague language may conflate or omit many distinct processing purposes.	*"...information (such as the application ID, when the application was last used, and how long it's been installed)."[229]*			Unknown
Chrome	*"to keep you up to date with the latest and most secure versions"[230]*		*" information necessary for the update process, such as the version of Chrome, its release channel, basic hardware information, and update errors that have been encountered. The update requests also send Google information that helps us understand how many people are using Google Chrome and the Chrome Apps Launcher —specifically, whether the software was used in the last day, the number of days since the last time it was used, the total number of days it has been installed, and the number of active profiles. Google Update also periodically sends a non-unique four-letter tag that contains information about how you obtained Google Chrome. This tag is not personally identifiable, does not encode any information about when you obtained Google Chrome, and is the same as everyone who obtained*			Unknown

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
			Google Chrome the same way. Because Chrome OS updates the entire OS stack, Google Update on Chrome OS also sends the current Chrome OS version and hardware model information to Google … This information is not personally identifiable, and is common to all users of Chrome OS on the same revision of device. … If you install web apps on an Android device, a Google server is responsible for creating a native Android package that can be verified for authenticity by Chrome. When Chrome is updated or notices that the web app's manifest has changed, Chrome asks the server for a new version of the Android package in a cookieless request. If the information needed to create the native Android package cannot be acquired by the server (e.g., because the information is behind a corporate firewall), Chrome sends it to Google and an Android package is created that is unique to you. It contains a unique and random identifier that is not tied to your identity.[231]			
Chrome	*"Google Chrome can show tips to help guide you to the page you were trying to reach in cases where the web address cannot be found, a connection cannot be made, the server returns a very short (under 512 byte) error message, or you've navigated to a parked domain."*[232]		*"Google Chrome will first check the address against a locally-stored list of suspected parked domains. If there is a match, Chrome sends a partial fingerprint (a hash prefix) of the URL to Google for verification that the domain is indeed parked. … In the case of other navigation errors, the URL of the web page you're trying to reach is stripped of all GET parameters, and then sent to Google in order to retrieve navigation tips. This information is logged and anonymized in the same manner as Google web searches. The logs are used to ensure and improve the quality of the feature. … when a domain name cannot be found, Chrome will investigate the underlying cause by attempting to resolve "google.com" using both Google Public DNS and the default DNS service configured for your system. … In the event that Chrome detects SSL connection timeouts, certificate errors, or other network issues that might be caused by a captive portal (a hotel's WiFi network, for instance), Chrome will make a cookieless request to https://www.gstatic.com/generate_204 and check the response code. If that request is redirected, Chrome will open the redirect target in a new tab on the assumption that it's a login page. Requests to the captive portal detection page are not logged."*[233]			**Unknown**
Chrome	*"…to measure installations or reactivations of Chrome through a campaign…"*[234]		*"Chrome will send a token or an identifier unique to your device to Google at the first launch of Chrome, as well as the first search using Google. On desktop versions of Chrome, a token unique to your device is generated. The same token will be sent if Chrome is later reinstalled at first launch and at first use of the Omnibox after reinstallation or reactivation. Rather than storing the token on the computer, it is generated when necessary by using built-in system information that is scrambled in an irreversible manner. On iOS, Chrome uses the IDFA for counting installations acquired by a campaign, and it can be reset in iOS settings."*[235]			**Unknown**
Chrome	*"…in order to help improve Chrome's feature set and stability."*[236]		*"…information such as system information, preferences, user interface feature usage, responsiveness, performance, and memory usage. Crash reports contain system information gathered at the time of the crash, and may contain web page URLs or personal information depending on what was happening at the time of the crash. … Chrome stores a randomly generated unique token on your device, which is sent to Google along with your usage statistics and crash reports."*[237]			**Unknown**
Chrome	*"Desktop versions of Chrome can provide smarter spell-checking…"*[238]		*"…Chrome sends the entire contents of text fields as you type in them to Google, along with the browser's default language."*[239]			**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
						("*This feature is disabled by default; to turn it on, click "Ask Google for suggestions" in the context menu that appears when you right-click on a misspelled word.*"[240])
Communicate with data subject	"*Communicate with you. … send you a notification if we detect suspicious activity, like an attempt to sign in to your Google Account from an unusual location. Or we may let you know about upcoming changes or improvements to our services.*"[241]		"*We use information we collect, like your email address, to interact with you directly.*"[242]			Unknown
Communicate with data subject	"*Communicate with you. … we may let you know about upcoming changes or improvements to our services.*"[243]		"*We use information we collect, like your email address, to interact with you directly.*"[244]			This appears to be "legitimate interest". Google says it uses legitimate interest as its legal basis for "*Marketing to inform users about our services*".[245]
Contacts	"*Provide our services. … helping you share content by suggesting recipients from your contacts.*"[246]					Unknown
Crisis response	"*Google's Crisis Response products are designed to inform you about emergencies and other extreme events. Your reports are used to help others affected by these crises.*"[247]					Unknown
Customer support	"*Communicate with you. … if you contact Google, we'll keep a record of your request in order to help solve any issues you might be facing.*"[248]		"*We use information we collect, like your email address, to interact with you directly.*"[249]			Unknown
Customer support	"*Provide our services. … to provide support in connection with the product or service you purchase.*"[250]		"*When you purchase services or physical goods from us, you may provide us information like your shipping address or delivery instructions.*"[251]			Unknown
Detect illegal content	"*to help us detect abuse such as … illegal content*"[252]	"*…such as…*"[253] is vague language that may conflate or omit many distinct processing purposes.	"*we analyze your content*"[254] "*Unique identifiers can be used for … security and fraud detection*"[255]		"*When we detect spam, malware, illegal content, and other forms of abuse on our systems in violation of our policies, we may disable your account or take other appropriate action. In certain circumstances, we may also report the violation to appropriate authorities.*"[256]	Unknown
Email product	"*helps people identify an email coming from you*"[257]				"*If other users already have your email address or other information that identifies you, we may show them your publicly visible Google Account information, such as your name and photo.*"[258]	Unknown
Email product	"*Provide our services. … A flight confirmation email you receive may be used to create a "check-in" button that appears in your Gmail.*"[259]	This vague language may conflate or omit many distinct processing purposes.				Unknown
Email product	"*syncing services such as your email inbox*"[260]	"*…such as…*"[261] is vague language that may conflate or omit many distinct processing purposes.	"*Unique identifiers*"[262]			Unknown
Email product	"*To ensure continuity of service for you and other users.*"[263]				"*For example, when you share information with other users (such as when you have sent an email to someone else), deleting it from your Google Account will not eliminate copies maintained by the recipients.*"[264]	Unknown
Essential network communication	"*Provide our services. … use the IP address assigned to your device to send you the data you requested, such as loading a YouTube video.*"[265]					Unknown

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Essential session cookies	"*Process cookies help make the website work and deliver services that the website visitor expects, like navigating around web pages or accessing secure areas of the website. Without these cookies, the website cannot function properly.*"[266]				"*For example, we use a cookie called 'lbcs' which makes it possible for Google Docs to open many Docs in one browser. Blocking this cookie would prevent Google Docs from operating correctly.*"[267]	**Unknown**
Essential session cookies	"*'session state cookies' to help us improve our services, in order to improve our users' browsing experience.*"[268]				"*Websites often collect information about how users interact with a website. This may include the pages users visit most often and whether users get error messages from certain pages.*"[269]	**Unknown**
Gboard product	"*Your Gboard learned words help ... to predict searches that you might be interested in.*"[270]		"*When Sync learned words is turned on for a device, your learned words are saved to your Google Account to use across devices.*"[271]			**Unknown**
Gboard product	"*Your Gboard learned words help you with spelling ...*"[272]		"*When Sync learned words is turned on for a device, your learned words are saved to your Google Account to use across devices.*"[273]			**Unknown**
Government compliance	"*Meet any applicable law, regulation, legal process, or enforceable governmental request.*"[274]					**Unknown**
Location	"*showing you when a restaurant is typically busy*"[275]		"*GPS, IP address, Sensor data from your device, Information about things near your device*"[276] "*your device sends information to Google about its location, sensors (like accelerometer), and nearby cell towers and Wi-Fi access points (like MAC address and signal strength).*"[277] Also see further related detail at https://policies.google.com/technologies/location-data#how-find			**Unknown**
Location	"*To help improve Location History*"[278]	This vague language may conflate or omit many distinct processing purposes.	"*For example, sent information could include: Quality and length of your connections to mobile networks, GPS, Wi-Fi networks, or Bluetooth. State of your location settings. Restarts and crash reports. Apps used to turn Location History on or off. Battery levels*"[279]			**Unknown**
Location	"*This data helps Google give you more personalised experiences across Google services, such as ... tips about your commute ... both on and off Google.*"[280]	"*...such as...*"[281] is vague language that may conflate or omit many distinct processing purposes.	"*Location History saves where you go with your devices. To save this data, Google regularly obtains location data from your devices. This data is saved even when you aren't using a specific Google service, such as Google Maps or Search. ... This data may be saved and used in any Google service where you are signed in to give you more personalised experiences.*"[282]	"*...both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners. [283]		**See "Location History" dialogues at sign up in appendix. This dialogue appears to seek a conflated consent for various purposes related to location data.**
Location	"*How Google Maps gets you places faster*"[284]		"*When you use the Google Maps app, your phone sends anonymous bits of data about your location back to Google*"[285]		"*For instance, Maps can detect when a lot of vehicles are moving slowly along the same street and let you know there is heavy traffic.*"[286]	Unknown If these data are actually not personal data, then a legal basis is not required.
Location	"*making sure your search results include things near you*"[287]	This vague language may conflate or omit many distinct processing purposes.	"*GPS, IP address, Sensor data from your device, Information about things near your device*"[288] "*your device sends information to Google about its location, sensors (like accelerometer), and nearby cell towers and Wi-Fi access points (like MAC address and signal strength).*"[289] Also see further related detail at https://policies.google.com/technologies/location-data#how-find			**Unknown**
Location	"*helps us offer features like driving directions for your weekend getaway...*"[290]	"*...offer features like...*"[291] is vague language that may conflate or omit many distinct processing purposes.	"*GPS, IP address, Sensor data from your device, Information about things near your device*"[292] "*your device sends information to Google about its location, sensors (like accelerometer), and nearby cell towers and Wi-Fi access points (like MAC address and signal strength).*"[293]			**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
			Also see further related detail at https://policies.google.com/technologies/location-data#how-find			
Location	"*to provide improved … commute routes, and more.*"[294]	"*…and more*"[295] may cover many purposes.	"*Location History creates a private map of where you go with your signed-in phones*"[296]		"*This gives you improved map searches and commute routes, as well as helping you to rediscover the places you've been and the routes you've travelled*"[297]	Unknown
Location	"*provides more personalized experiences across Google … real-time information about the best time to leave for home or work in order to beat the traffic…*"[298]		"*If you opt in to Location History and your device is reporting location, the precise location of your signed-in devices will be collected and stored, even when you're not actively using a Google product or service.*"[299]			Unknown
Location	"*to provide improved map searches…*"[300]		"*Location History creates a private map of where you go with your signed-in phones*"[301]		"*This gives you improved map searches and commute routes, as well as helping you to rediscover the places you've been and the routes you've travelled*"[302]	Unknown
Location	"*helps us offer features like … showtimes for movies playing near you.*"[303]	"*…offer features like…*"[304] is vague language that may conflate or omit many distinct processing purposes.	"*GPS, IP address, Sensor data from your device, Information about things near your device*"[305] "*your device sends information to Google about its location, sensors (like accelerometer), and nearby cell towers and Wi-Fi access points (like MAC address and signal strength).*"[306] Also see further related detail at https://policies.google.com/technologies/location-data#how-find			Unknown
Location	"*This data helps Google give you more personalised experiences across Google services, such as a map of where you've been… both on and off Google.*"[307]	"*…such as…*"[308] is vague language that may conflate or omit many distinct processing purposes.	"*Location History saves where you go with your devices. To save this data, Google regularly obtains location data from your devices. This data is saved even when you aren't using a specific Google service, such as Google Maps or Search. … This data may be saved and used in any Google service where you are signed in to give you more personalised experiences.*"[309]	"*…both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[310]		See "Location History" dialogues at sign up in appendix. This dialogue appears to seek a conflated consent for various purposes related to location data.
Location	"*provides more personalized experiences across Google … albums in Google Photos automatically created from places you've visited.*"[311]		"*If you opt in to Location History and your device is reporting location, the precise location of your signed-in devices will be collected and stored, even when you're not actively using a Google product or service.*"[312]			See "Location History" dialogues at sign up in appendix. This dialogue appears to seek a conflated consent for various purposes related to location data.
Location	"*Albums in Google Photos automatically created from places you've visited*"[313]		"*your Location History*"[314]			See "Location History" dialogues at sign up in appendix. This dialogue appears to seek a conflated consent for various purposes related to location data.
Location	"*This helps create your Timeline where Location History data is stored*"[315]		"*If you opt in to Location History and your device is reporting location, the precise location of your signed-in devices will be collected and stored, even when you're not actively using a Google product or service.*"[316]			See "Location History" dialogues at sign up in appendix. This dialogue appears to seek a conflated consent for various purposes related to location data.
Location	"*Real-time information about the best time to leave for home or work in order to beat the traffic*"[317]		"*your Location History*"[318]			See "Location History" dialogues at sign up in appendix. This dialogue appears to seek a conflated consent for various purposes related to location data.
Maintain and improve services	"*Google uses the information shared by sites and apps to … maintain and improve … our services…*"[319]	This vague language may conflate or omit many distinct processing purposes.	"*For example, when you visit a website that uses advertising services like AdSense, including analytics tools like Google Analytics, or embeds video content from YouTube, your web*"			Google claims legitimate interest covers "*Providing, maintaining, and*

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
			browser automatically sends certain information to Google. This includes the URL of the page you're visiting and your IP address. We may also set cookies on your browser or read cookies that are already there. Apps that use Google advertising services also share information with Google, such as the name of the app and a unique identifier for advertising."[320]			*improving our services to meet the needs of our users*".[321] **This purpose appears to be boundless.**
Maintain and improve services	"*Maintain & improve our services. … to make improvements to our services.*"[322]	This vague language may conflate or omit many distinct processing purposes.			"*…for example, understanding which search terms are most frequently misspelled helps us improve spell-check features used across our services*".[323] "*For example, we use cookies to analyze how people interact with our services. And that analysis can help us build better products. For example, it may help us discover that it's taking people too long to complete a certain task or that they have trouble finishing steps at all. We can then redesign that feature and improve the product for everyone.*"[324]	Google claims legitimate interest covers "*Understanding how people use our services to ensure and improve the performance of our services*"[325] This purpose unclear, and made all the more so because the words "*ensure and improve*" are linked to a pop up message that says "*For example, we analyze how people interact with advertising to improve the performance of our ads.*"
Maintain services: troubleshoot	"*Maintain & improve our services. … to ensure our services are working as intended, such as tracking outages or troubleshooting issues that you report to us.*"[326]				"*For example, we continuously monitor our systems to look for problems. And if we find something wrong with a specific feature, reviewing activity information collected before the problem started allows us to fix things more quickly.*"[327]	Unknown
Personalisation & recommendations	"*to improve Chrome's understanding of the languages you speak and when Chrome should offer to translate text for you.*"[328]		"*If you've chosen to sync your Chrome history, statistics about the languages of pages you visit and about your interactions with the translation feature will be sent to Google…*"[329]			Unknown
Personalisation & recommendations	"*…automatic descriptions for users who are visually impaired…*"[330]		"*by sending the contents of images on pages you visit to Google's servers.*"[331]			Unknown ("*This feature is only enabled when Chrome detects that the user has a screen reader running and if the user explicitly enables it in the page context menu.*"[332])
Personalisation & recommendations	"*Google also uses your synchronized browsing data to provide personalized Google products and services to you.*"[333]	This vague language may conflate or omit many distinct processing purposes.				Unknown ("*If "Include history from Chrome and other apps in your Web & App Activity" is checked on the Web & App Activity controls page…*"[334])
Personalisation & recommendations	"*How Chrome Auto-fill completes forms for you*"[335]		"*When you use Chrome, we can save things like your name, address, phone number, email address and payment information so that we can auto-complete these forms for you.*"[336]			Unknown
Personalisation & recommendations	"*If you've chosen to sync your Chrome history, and if Google is your default search engine, the URL of the page you're viewing is sent to Google in order to provide better, contextually relevant suggestions.*"[337]	This vague language may conflate or omit many distinct processing purposes.	"*URLs are sent only for HTTP pages and HTTPS pages, not other schemes such as file: and ftp:*"[338]			Unknown (Occurs "*If you've chosen to sync your Chrome history, and if Google is your default search engine*"[339])

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Personalisation & recommendations	"*display suggestions for websites that you might want to visit. … Chrome may suggest content that is popular in your country or region. … Chrome tries to make personalized suggestions that are useful to you.*"[340]	This vague language may conflate or omit many distinct processing purposes.	"*Chrome uses your IP address to identify your country or region. … Chrome uses the sites you have visited from your local browsing history. … If you are signed into Chrome, suggestions are also based on data stored in your Google account activity.*"[341]			**Unknown**
Personalisation & recommendations	"*Chrome measures the quality of suggestions by sending Google information about the sets of suggestions that were displayed, and those that were selected.*"[342]	This vague language may conflate or omit many distinct processing purposes.	"*information about the sets of suggestions that were displayed, and those that were selected.*"[343]			**Unknown**
Personalisation & recommendations	"*For Chrome on Android, in certain countries, Chrome may download the content of the New Tab page suggestions from Google, for use while offline.*"[344]		"*Chrome sends to Google a cookieless request with the URL for each suggestion, along with Chrome's user agent string, in order to render the content.*"[345]			**Unknown**
Personalisation & recommendations	"*Customizing our services to provide you with a better user experience*"[346]	This vague language may conflate or omit many distinct processing purposes.			"*For example, we may display a Google Doodle on the Search homepage to celebrate an event specific to your country.*"[347]	**Unknown**
Personalisation & recommendations	"*Google uses the information shared by sites and apps to … personalize content … you see on Google …*"[348]	This vague language may conflate or omit many distinct processing purposes.	"*For example, when you visit a website that uses advertising services like AdSense, including analytics tools like Google Analytics, or embeds video content from YouTube, your web browser automatically sends certain information to Google. This includes the URL of the page you're visiting and your IP address. We may also set cookies on your browser or read cookies that are already there. Apps that use Google advertising services also share information with Google, such as the name of the app and a unique identifier for advertising.*"[349]			**Unknown**
Personalisation & recommendations	"*Google uses the information shared by sites and apps to … personalize content … you see on … our partners' sites and apps.*"[350]	This vague language may conflate or omit many distinct processing purposes.	"*For example, when you visit a website that uses advertising services like AdSense, including analytics tools like Google Analytics, or embeds video content from YouTube, your web browser automatically sends certain information to Google. This includes the URL of the page you're visiting and your IP address. We may also set cookies on your browser or read cookies that are already there. Apps that use Google advertising services also share information with Google, such as the name of the app and a unique identifier for advertising.*"[351]			**Unknown**
Personalisation & recommendations	"*Provide personalised services, including content and ads. … to customize our services for you, including providing … personalized content…*"[352]	This vague language may conflate or omit many distinct processing purposes.				**Unknown**
Personalisation & recommendations	"*helps Google give you more personalised experiences across Google services, such as … content recommendations … both on and off Google.*"[353]	"*…such as…*"[354] is vague language that may conflate or omit many distinct processing purposes.	"*Additional Web & App Activity saves your activity from sites, apps and devices that use Google services, including: activity from sites and apps that partner with Google to show ads Chrome history (if Chrome Sync is turned on) app activity, including data that apps share with Google Android usage & diagnostics, such as battery level, how often you use your device and apps, and system errors … This data may be saved and used in any Google service where you are signed in…*"[355]	"*…both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[356]		**See "Web & App Activity" dialogues at sign up, in appendix. This dialogue appears to seek consent for potentially boundless data processing.**
Personalisation & recommendations	"*This data helps Google give to you more personalised experiences across Google services, like … suggesting creators that you might like … both on and off Google.*"[357]	"*…like…*"[358] is vague language that may conflate or omit many distinct processing purposes.	"*YouTube History saves the YouTube videos that you watch and listen to and the things that you search for on YouTube. … This data may be saved and used in any Google service where you are signed in to give you more personalised experiences.*"[359]	"*…both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[360]		**Google appears to claim a sort of conflated consent, but its notification does not appear to meet the requirements for consent, or for explicit consent. See "YouTube History" text at sign up, in appendix.**
Personalisation & recommendations	"*This data helps Google give you more personalised experiences across Google services, such as recommendations for*"[361]	"*…such as…*"[362] is vague language that may conflate or omit many distinct processing purposes.	"*YouTube search history saves your YouTube searches. … This data may be saved and used in any Google service*"	"*…both on and off Google*" is vague language that may indicate extensive or minor		**Google appears to claim a sort of conflated consent, but its notification does**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
	content or creators that you'll like … both on and off Google."[361]		*where you are signed in to give you more personalised experiences."*[363]	data sharing with an unknowable number Google's business partners.[364]		**not appear to meet the requirements for consent, or for explicit consent. See "YouTube History" text at sign up, in appendix.**
Personalisation & recommendations	*"This data helps Google give you more personalised experiences across Google services, such as … seeing recommendations for content that you'll like … both on and off Google."*[365]	*"…such as…"*[366] is vague language that may conflate or omit many distinct processing purposes.	*"YouTube watch history saves the YouTube videos you watch and listen to. … This data may be saved and used in any Google service where you are signed in to give you more personalised experiences."*[367]	*"…both on and off Google"* is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[368]		**Google appears to claim a sort of conflated consent, but its notification does not appear to meet the requirements for consent, or for explicit consent. See "YouTube History" text at sign up, in appendix.**
Personalisation & recommendations	*"..helps Google give you more personalised experiences across Google services. For example, discovering new apps, films and music that you'll enjoy."*[369]	This vague language may conflate or omit many distinct processing purposes.	*"Your Google Play library activity, such as purchases, subscriptions and downloads,.."*[370]			**Unknown**
Advertising (related to targeting)	*"Some ways Google uses your birthday. … Determine your age group for personalized recommendations…"*[371]	*"…some ways…"* and *"…personalized recommendations…"* is vague language that may conflate or omit many distinct processing purposes.[372]				**Unknown**
Personalisation & recommendations	*"After you link a subscription to your account, Google can personalize experiences like:* *Finding articles without signing in to an account or hitting a paywall.* *Getting articles from print subscriptions in your search results."*[373]	This vague language may conflate or omit many distinct processing purposes.	*"Manage linked subscriptions* *Subscriptions can include content like:* *Google Play subscriptions* *YouTube subscriptions* *News subscriptions you've linked with your Google Account"*[374]			**Unknown**
Personalisation & recommendations	*"to do things like recommend a YouTube video you might like"*[375]	*"…do things like…"*[376] is vague language that may conflate or omit many distinct processing purposes.	*"The activity information we collect may include:* *Terms you search for* *Videos you watch* *Views and interactions with content and ads* *Voice and audio information when you use audio features* *Purchase activity* *People with whom you communicate or share content* *Activity on third-party sites and apps that use our services* *Chrome browsing history you've synced with your Google Account* *If you use our services to make and receive calls or send and receive messages, we may collect telephony log information like your phone number, calling-party number, receiving-party number, forwarding numbers, time and date of calls and messages, duration of calls, routing information, and types of calls."*[377]			**Unknown**
Personalisation & recommendations	*"Your 'Not interested' feedback is used to remove videos from your YouTube recommendations."*[378]		*"The following recommended content can be removed from the Home page on your computer:* *Videos* *Channels* *Sections* *Playlists* *You can also remove recommended videos from the Watch Next page on your computer"*[379]			**Unknown**
Personalisation & recommendations	*"…help Google deliver the best possible News experience and signal other Google services about your preferences. "*[380]	This vague language may conflate or omit many distinct processing purposes.	*"Your preferences about News …."*[381]			**Unknown**
Personalisation & recommendations	*"Provide personalised services, including content and ads. … to customize our services for you, including providing recommendations…"*[382]	This vague language may conflate or omit many distinct processing purposes.				**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Personalisation & recommendations	"*helps Google give you more personalised experiences across Google services. For example, discovering new products that you'll enjoy.*"[383] "*to Make recommendations on items to buy. Enable quick reorders of products you've purchased before. Send reminders based on your preferences and past orders*"[384]	In this context, "*...for example...*"[385] is vague language that may conflate or omit many distinct processing purposes.	"*Your Google Shopping order activity, such as items that you purchase through Buy With Google*"[386] "*To help you get better results on Google Shopping, your order history and past Google activity are used*"[387]			**Unknown** **(This appears to be activated automatically as part of "Web & App Activity").**
Personalisation & recommendations	"*Your Word Coach answers are used to personalise your game experience and show words that are more relevant to you.*"[388]					**Unknown**
Personalisation & recommendations	"*to ... give you customized experiences in Search, Maps, and other Google product*"[389]	This vague language may conflate or omit many distinct processing purposes.	"*Web & App Activity saves your searches and other activity on Google services*"[390]			**Unknown**
Personalisation & recommendations	"*Your "Not Interested" feedback may be used to tune your recommendations.*"[391]					**Unknown**
Personalisation & recommendations	"*helps Google give you more personalised experiences across Google services, such as helpful app ... recommendations ... both on and off Google.*"[392]	"*...such as...*"[393] is vague language that may conflate or omit many distinct processing purposes.	"*Additional Web & App Activity saves your activity from sites, apps and devices that use Google services, including: activity from sites and apps that partner with Google to show ads Chrome history (if Chrome Sync is turned on) app activity, including data that apps share with Google Android usage & diagnostics, such as battery level, how often you use your device and apps, and system errors ... This data may be saved and used in any Google service where you are signed in...*"[394]	"*...both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[395]		**Unknown**
Personalisation & recommendations	"*This data helps Google give you more personalised experiences across Google services, such as ... recommendations based on places that you've visited ... both on and off Google.*"[396]	"*...such as...*"[397] is vague language that may conflate or omit many distinct processing purposes.	"*Location History saves where you go with your devices. To save this data, Google regularly obtains location data from your devices. This data is saved even when you aren't using a specific Google service, such as Google Maps or Search. ... This data may be saved and used in any Google service where you are signed in to give you more personalised experiences.*"[398]	"*...both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[399]		**Unknown**
Personalisation & recommendations	"*This data helps Google give to you more personalised experiences across Google services, like giving you better recommendations ... both on and off Google.*"[400]	"*...like...*"[401] is vague language that may conflate or omit many distinct processing purposes.	"*YouTube History saves the YouTube videos that you watch and listen to and the things that you search for on YouTube. ... This data may be saved and used in any Google service where you are signed in to give you more personalised experiences.*"[402]	"*...both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[403]		**Google appears to claim a sort of conflated consent, but its notification does not appear to meet the requirements for consent, or for explicit consent. See "YouTube History" text at sign up, in appendix.**
Personalisation & recommendations	"*help ... improve recommendations in YouTube and other Google services.*"[404]	This vague language may conflate or omit many distinct processing purposes.	"*Your YouTube search history*"[405] "*YouTube recommends videos that you may like based on what you have watched before and what other people with similar viewing histories have watched before.*"[406]			**Unknown**
Personalisation & recommendations	"*YouTube History stores: Your YouTube search history to make your future searches faster ...*"[407]	This vague language may conflate or omit many distinct processing purposes.				**Unknown**
Personalisation & recommendations	"*YouTube History stores: Your YouTube search history to ... improve your recommendations.*"[408]	This vague language may conflate or omit many distinct processing purposes.				**Unknown**
Personalisation & recommendations	"*Your YouTube watch history to make it easier for you to find your recently watched videos on YouTube...*"[409]					**Unknown**
Personalisation & recommendations	"*Your YouTube watch history to ... avoid getting recommendations for already watched videos...*"[410]					**Unknown**
Personalisation & recommendations	"*Your YouTube watch history to ... improve your recommendations.*"[411]	This vague language may conflate or omit many distinct processing purposes.				**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Personalisation & recommendations	"*provides more personalized experiences across Google—restaurants suggested in Google Maps based on dining spots you've visited...*"[412]	This vague language may conflate or omit many distinct processing purposes.	"*If you opt in to Location History and your device is reporting location, the precise location of your signed-in devices will be collected and stored, even when you're not actively using a Google product or service.*"[413]			Unknown
Personalisation & recommendations	"*Recommendations based on places you've visited*"[414]	This vague language may conflate or omit many distinct processing purposes.	"*your Location History*"[415]			Unknown
Personalisation & recommendations	"*remembering your preferences*"[416]		"*Unique identifiers*"[417]			Unknown
Personalisation & recommendations	"*Preferences. … These cookies allow our websites to remember information that changes the way the site behaves or looks, such as your preferred language or the region you are in. For instance, by remembering your region, a website may be able to provide you with local weather reports or traffic news. These cookies can also assist you in changing text size, font, and other parts of web pages that you can personalize.*"[418]				"*Most Google users will have a preferences cookie called 'NID' in their browsers. A browser sends this cookie with requests to Google's sites. The NID cookie contains a unique ID Google uses to remember your preferences and other information, such as your preferred language (e.g. English), how many search results you wish to have shown per page (e.g. 10 or 20), and whether or not you wish to have Google's SafeSearch filter turned on.*"[419]	Unknown
Personalisation & recommendations	"*This data helps Google give to you more personalised experiences across Google services, like … remembering where you left off when you resume a video … both on and off Google.*"[420]	"*…like…*"[421] is vague language that may conflate or omit many distinct processing purposes.	"*YouTube History saves the YouTube videos that you watch and listen to and the things that you search for on YouTube. … This data may be saved and used in any Google service where you are signed in to give you more personalised experiences.*"[422]	"*…both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[423]		Google appears to claim a sort of conflated consent, but its notification does not appear to meet the requirements for consent, or for explicit consent. See "YouTube History" text at sign up, in appendix.
Personalisation & recommendations	"*help make your recently watched videos easier to find …*"[424]		"*Your YouTube watch history*"[425]		"*to make it easier for you to find your recently watched videos on YouTube, avoid getting recommendations for already watched videos, and improve your recommendations.*"[426]	Unknown
Phone directory	"*to...help people find and connect with you...*"[427]		"*If you add your phone number to your account*"[428]			Unknown
Photos	"*Provide our services. … Photos and videos you upload to Google Photos are used to help you create albums, animations, and other creations that you can share.*"[429]					Unknown
Podcast listings	"*Your Google app podcast subscriptions make it easy to find your favourite podcasts in the Google app and Google Assistant.*"[430]					Unknown
Search	"*Google Chrome uses a combined web address and search bar (we call it the "omnibox") at the top of the browser window. As you use the omnibox, your default search engine can suggest addresses and search queries that may be of interest to you. These suggestions make navigation and searching faster and easier, and are turned on by default...*"[431]		"*In order to provide these suggestions, Chrome sends the text you've typed into the omnibox, along with a general categorization (e.g., "URL", "search query", or "unknown"), to your default search engine. Chrome will also send a signal to your default search engine when you focus in the omnibox, telling it to get ready to provide suggestions. That signal includes the URL of the currently displayed search engine results page. Your IP address and certain cookies are also sent to your default search engine with all requests, in order to return the results that are most relevant to you. If Chrome determines that your typing may contain sensitive information, such as authentication credentials, local file names, or URL data that is normally encrypted, it will not send the typed text. If Google is your default search engine, when you select one of the omnibox suggestions, Chrome sends your original search query, the suggestion you selected, and the position of the suggestion back to Google. This information helps improve the quality of the suggestion feature, and it's logged and anonymized in the same manner as Google web*			Unknown

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
			searches. Logs of these suggestion requests are retained for two weeks, after which 2% of the log data is randomly selected, anonymized, and retained in order to improve the suggestion feature."[432]			
Search	"*If Google is your default search engine, when you select one of the omnibox suggestions, Chrome sends your original search query, the suggestion you selected, and the position of the suggestion back to Google. This information helps improve the quality of the suggestion feature*"[433]		"*it's logged and anonymized in the same manner as Google web searches. Logs of these suggestion requests are retained for two weeks, after which 2% of the log data is randomly selected, anonymized, and retained in order to improve the suggestion feature.*"[434]			**Unknown** **Occurs by default (assuming that Google is the default search engine that the data subject has selected in Chrome**
Search	"*If Google is set as your default search engine, Chrome will try to determine the most appropriate locale for Google search queries conducted from the omnibox in order to give you relevant search results based on your location.*"[435]		"*In order to do this, Chrome will send a request to google.com each time you start the browser. If you already have any cookies from the google.com domain, this request will also include these cookies, and is logged as any normal HTTPS request to google.com would be.*"[436]		"*For example, if you were in Germany, your omnibox searches may go through google.de instead of google.com.*"	**Unknown** **Occurs by default (assuming that Google is the default search engine that the data subject has selected in Chrome)**
Search	"*to identify recommended search terms (for example, tapping on "whale" on a site about the blue whale would lead to showing "blue whale").*"[437]		"*If you've enabled "Tap to Search" on Chrome Mobile you can search for terms by tapping them. ... the word, the surrounding text, and the home country of your device's SIM card are sent to Google ... The tapped word is logged in accordance with standard Google logging policies, and the surrounding text and home country are logged only when the page is already in Google's search index.*"[438]			**Unknown** "*Tap to Search is enabled in a limited mode by default: potentially privacy-sensitive data, such as the URL and surrounding text, is not sent for HTTPS pages. Tap to Search can be fully enabled and disabled in the card or in the Chrome privacy settings.*"[439]
Search	"*to improve your query suggestions*"[440]	This vague language may conflate or omit many distinct processing purposes.	"*If you've enabled "Tap to Search" on Chrome Mobile you can search for terms by tapping them. ... the word, the surrounding text, and the home country of your device's SIM card are sent to Google ... The tapped word is logged in accordance with standard Google logging policies, and the surrounding text and home country are logged only when the page is already in Google's search index. If you have turned on "Make searches and browsing better", the URL of the page is also sent and logged, and is used to improve your query suggestions.*"[441]			**Unknown** "*Tap to Search is enabled in a limited mode by default: potentially privacy-sensitive data, such as the URL and surrounding text, is not sent for HTTPS pages. Tap to Search can be fully enabled and disabled in the card or in the Chrome privacy settings.*"[442]
Search	"*to make searches faster...*"[443]	This vague language may conflate or omit many distinct processing purposes.	"*Web & App Activity saves your searches and other activity on Google services*"[444]			**Unknown**
Search		"*Google currently measures the quantity of traffic it refers to other websites by logging user activity like queries and clicks, and then using tools that analyze those logs to produce aggregate metrics that, in our experience, correlate with user satisfaction with Google Search results.*"[445]				**Unknown**
Search	"*Provide our services. ... processing the terms you search for in order to return results*"[446]		"*We use automated systems that analyze your content to provide you with things like customized search results...*"[447]			**Unknown**
Search	"*helps us show you ... more tailored suggestions–like when you see your search automatically suggested based on past searches.*"[448]	This vague language may conflate or omit many distinct processing purposes.	"*...your searches and activity from a number of other Google services are saved to your Google Account. The activity saved to Web & App Activity may also include location information... The location used and stored with your Web & App Activity can come from signals like the device's IP address, your past activity, or from your device, if you've chosen to turn on your device's location settings.*"[449]			**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Search	*"helps us show you more useful search results…"*[450]	This vague language may conflate or omit many distinct processing purposes.	*"…your searches and activity from a number of other Google services are saved to your Google Account. The activity saved to Web & App Activity may also include location information… The location used and stored with your Web & App Activity can come from signals like the device's IP address, your past activity, or from your device, if you've chosen to turn on your device's location settings."*[451]		*"As an example, if you type in "weather" in Search and get weather results based on where you are, this activity, including the location used to provide this result, is saved to your Web & App Activity."*[452]	**Unknown**
Search	*"Search results from other Google products"*[453]	This vague language may conflate or omit many distinct processing purposes.			*"You can search for information from other Google products you use, like Gmail or Google Calendar. Try searching for upcoming flights, restaurant reservations, or appointments."*[454]	**Unknown**
Search	*"How Google Search helps you find your own information"*[455]		*"Google Search can fetch useful information from Gmail, Google Photos, Calendar and more. … As long as you are signed in, we will pull this information from other Google services"*[456]		*"Just search for things like 'my dentist appointment', 'show me my photos at the beach' or 'where is my hotel reservation'."*[457]	**Unknown**
Search	*"Provide personalised services, including content and ads. … to customize our services for you, including providing … customized search results."*[458]	This vague language may conflate or omit many distinct processing purposes.	*"…your previous searches and activity from other Google services."*[459]		*"For example, when you're signed in to your Google Account and have the Web & App Activity control enabled, you can get more relevant search results that are based on your previous searches and activity from other Google services."*[460]	**Unknown**
Search	*"This data helps Google give you more personalised experiences across Google services, such as … faster searches … both on and off Google."*[461]	*"…such as…"*[462] is vague language that may conflate or omit many distinct processing purposes.	*"YouTube search history saves your YouTube searches. … This data may be saved and used in any Google service where you are signed in to give you more personalised experiences."*[463]	*"…both on and off Google"* is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[464]		**Google appears to claim a sort of conflated consent, but its notification does not appear to meet the requirements for consent, or for explicit consent. See "YouTube History" text at sign up, in appendix.**
Search	*"This data helps Google give you more personalised experiences across Google services, such as making your recently watched videos easier to find … both on and off Google."*[465]	*"…such as…"*[466] is vague language that may conflate or omit many distinct processing purposes.	*"YouTube watch history saves the YouTube videos you watch and listen to. … This data may be saved and used in any Google service where you are signed in to give you more personalised experiences."*[467]	*"…both on and off Google"* is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[468]		**Google appears to claim a sort of conflated consent, but its notification does not appear to meet the requirements for consent, or for explicit consent. See "YouTube History" text at sign up, in appendix.**
Search	*"help make future searches faster …"*[469]	This vague language may conflate or omit many distinct processing purposes.	*"Your YouTube search history"*[470] *"YouTube recommends videos that you may like based on what you have watched before and what other people with similar viewing histories have watched before."*[471]			**Unknown**
Search	*"How Google auto-completes your searches"*[472]		*"Our spelling correction model uses data from people who have made the same mistake before to correct it for you. … Your search history can also help Google auto-complete your searches."*[473]		*"That is how we know that when you type 'Barsalona', you most likely mean 'Barcelona'. …if you have searched for 'Barcelona flights' before, we might suggest this in the search box before you even finish typing it."*[474]	**Unknown**
Shopping	*"Your tracked prices are used by Google Shopping to send you price drop notifications."*[475]					**Unknown**
Stadia	*"…help Google improve Stadia and provide you with more personalised experiences across Google services."*[476]	This vague language may conflate or omit many distinct processing purposes.	*"Your Stadia Store activities, such as purchases, subscriptions, code redemptions and other content that you claim…"*[477]			**Unknown**
Transactions	*"Provide our services. … processing, fulfilling, and delivering your order".*[478]		*"When you purchase services or physical goods from us, you may provide us information like your shipping address or delivery instructions."*[479]			**Unknown**
Transactions	*"if you add a credit card or other payment method to your Google Account, you can use it to buy things across our services, like apps in the Play Store."*[480]		*"a credit card or other payment method [,] … your Google Account …. We may also ask for other information, like a business tax ID, to help process your payment."*[481]		*"We also use algorithms to recognize patterns in data"*[482]	**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Translation	*"Google Translate helps people communicate across languages by detecting common language patterns in phrases you ask it to translate."*[483]		*"phrases you ask it to translate."*[484]			**Unknown**
Translation	*"Chrome's built-in translation feature"*[485]		*"…the contents of a web page are only sent to Google if you decide to have it translated."*[486]			**Unknown**
Unspecified		Unknown.	*"Google Chrome uses a combined web address and search bar (we call it the "omnibox") at the top of the browser window. … On Android, your location will also be sent to Google via an X-Geo HTTP request header if Google is your default search engine, the Chrome app has the permission to use your geolocation, and you haven't blocked geolocation for www.google.com (or country-specific origins such as www.google.de). Additionally, if your device has network location enabled (High Accuracy or Battery Saving Device Location mode in Android settings), the X-Geo header may also include visible network IDs (WiFi and Cell), used to geocode the request server-side."*[487]			**Unknown** **Occurs by default (assuming certain device settings)**[488]
Unspecified	*"Google uses the information shared by sites and apps to deliver our services…"*[489]	This vague language may conflate or omit many distinct processing purposes.	*"For example, when you visit a website that uses advertising services like AdSense, including analytics tools like Google Analytics, or embeds video content from YouTube, your web browser automatically sends certain information to Google. This includes the URL of the page you're visiting and your IP address. We may also set cookies on your browser or read cookies that are already there. Apps that use Google advertising services also share information with Google, such as the name of the app and a unique identifier for advertising."*[490]			**Unknown**
Unspecified	*"Improve your experience across Google"*[491]	This vague language may conflate or omit many distinct processing purposes.	*"If you add your phone number to your account"*[492]		*"If "Across Google" is listed on your "Phone" page, this number can be used across Google services."* [493]	**Unknown**
Unspecified	*"to power future recommendations on Google"*[494]	This vague language may conflate or omit many distinct processing purposes.	*"If you opt in to Location History and your device is reporting location, the precise location of your signed-in devices will be collected and stored, even when you're not actively using a Google product or service."*[495]			**Unknown**
Unspecified	*"Measure performance. … to understand how our services are used."*[496]	This vague language may conflate or omit many distinct processing purposes.				**Unknown**
Unspecified		Unknown.	*"We may also collect information about you from trusted partners, including marketing partners who provide us with information about potential customers of our business services"*[497]			**Unknown**
Unspecified		Unknown.	*"When you use Google services to do things like write a message in Gmail or comment on a YouTube video, we store the information you create.* *When you search for a restaurant on Google Maps or watch a video on YouTube, for example, we process information about that activity - including information like the video you watched, device IDs, IP addresses, cookie data, and location.* *We treat all of this as "personal information" when it's associated with your Google Account.* *We also process the kinds of information described above when you use apps or sites that use Google services like ads, Analytics, and the YouTube video player."*[498]			**Unknown**
Unspecified	*"How your Google Assistant can help you get things done"*[499]	This vague language may conflate or omit many distinct processing purposes.	*"data from other Google services"*[500]		*"For example, if you ask, 'What coffee shops are nearby?' or 'Do I need an umbrella tomorrow?', your Assistant uses information from Maps and Search as well as your location, interests and preferences to give you the most relevant answer."*[501]	**Unknown**
Unspecified	*"Your saved routines enable Google Assistant to do multiple things for you with just a single command."*[502]					**Unknown**

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Unspecified	"*To help others find cool stuff online,*"[503]	This vague language may conflate or omit many distinct processing purposes.	"*your activity (such as reviews, +1s, follows, shares, etc.) may be used along with your name and photo in commercial or other promotional contexts.*"[504]			**Unknown** (A tick box says "*Based upon my activity, Google may show my profile name, profile photo, and activity in shared endorsements in ads.*"[505])
Verify the data subject's age	"*to verify that you meet age requirements*"[506]		"*In some cases, we may also need to verify your identity and may ask you for information to do this.*"[507] '*We ask for authorization using a valid credit card or for a copy of a government issued ID in order to validate your date of birth. We only use this information to confirm your date of birth and to restore your account. If you choose the option to provide a copy of your government ID, we will destroy the copy of your government ID after we validate your date of birth.* *If you choose the option of a credit card authorization, we will confirm that the credit card is valid. We will retain this data as necessary to meet regulatory requirements for a credit card transaction, after which it will be deleted.*"[508]		"*if, for example, you enter an incorrect birthday indicating you're not old enough to have a Google Account.*"[509]	**Unknown**
Voice & Face input	"*...context for the Google Assistant.*"[510]		"*If you've enabled "Tap to Search" on Chrome Mobile you can search for terms by tapping them. … Saying "Ok Google" after long-pressing on a word provides the word and its surrounding text as context for the Google Assistant.*" [511]			**Unknown** "*Tap to Search is enabled in a limited mode by default: potentially privacy-sensitive data, such as the URL and surrounding text, is not sent for HTTPS pages. Tap to Search can be fully enabled and disabled in the card or in the Chrome privacy settings.*"[512]
Voice & Face input	"*Voice and Face Match allow your Assistant to tell you apart from others. This is done by creating unique models of your voice or face, which are stored only on devices that you enable.*"[513]		"*These models are initially created using data that you provided when you turned on Voice or Face Match.*"[514]			**Unknown**
Voice & Face input	"*to create unique models of your voice and face stored on your enabled devices.*"[515]		"*your Voice and Face Match enrolment data*"[516]			**Unknown**
Voice & Face input	"*This data helps Google give you more personalised experiences across Google services, like improved speech recognition when you say "Hey Google" to speak to your Assistant, both on and off Google.*"[517]	"*…like…*"[518] is vague language that may conflate or omit many distinct processing purposes.	"*Voice and audio recordings save a recording of your voice and other audio inputs in your Web & app activity on Google services and from sites, apps and devices that use or connect to Google speech services. The recording only happens when you use audio activation commands, like touch the microphone icon or say commands like "Hey Google," and includes a few seconds before to catch your request at the right time…. This data may be saved and used in any Google service where you are signed in to give you more personalised experiences.*"[519]	"*…both on and off Google*" is vague language that may indicate extensive or minor data sharing with an unknowable number Google's business partners.[520]		This is incorporated in Web & App Activity.[521] See "Web & App Activity" dialogues at sign up, in appendix. This dialogue appears to seek consent for potentially boundless data processing.
Google Account	"*desktop versions of Chrome, signing into or out of any Google web service, like google.com, signs you into or out of Chrome*"[522]	This vague language may conflate or omit many distinct processing purposes.	"*On both desktop and mobile, signing into Chrome keeps you signed into Google web services until you sign out of Chrome. On mobile, signing into Chrome will keep you signed in with all Google Accounts that have been added to the device. On desktop, it will keep you signed in with all Google Accounts that you added from a Google web service, unless you have set "Keep local data only until you quit your browser" in your cookie settings. …*"[523]			**Unknown**
Google Account	"*Google uses your personal synchronized data to provide you a consistent browsing*	This vague language may conflate or omit many distinct processing purposes.	"*When you're signed-in and have enabled sync with your Google Account, your personal browsing data information is saved in your Google Account so you may access it when you*			**Unknown**

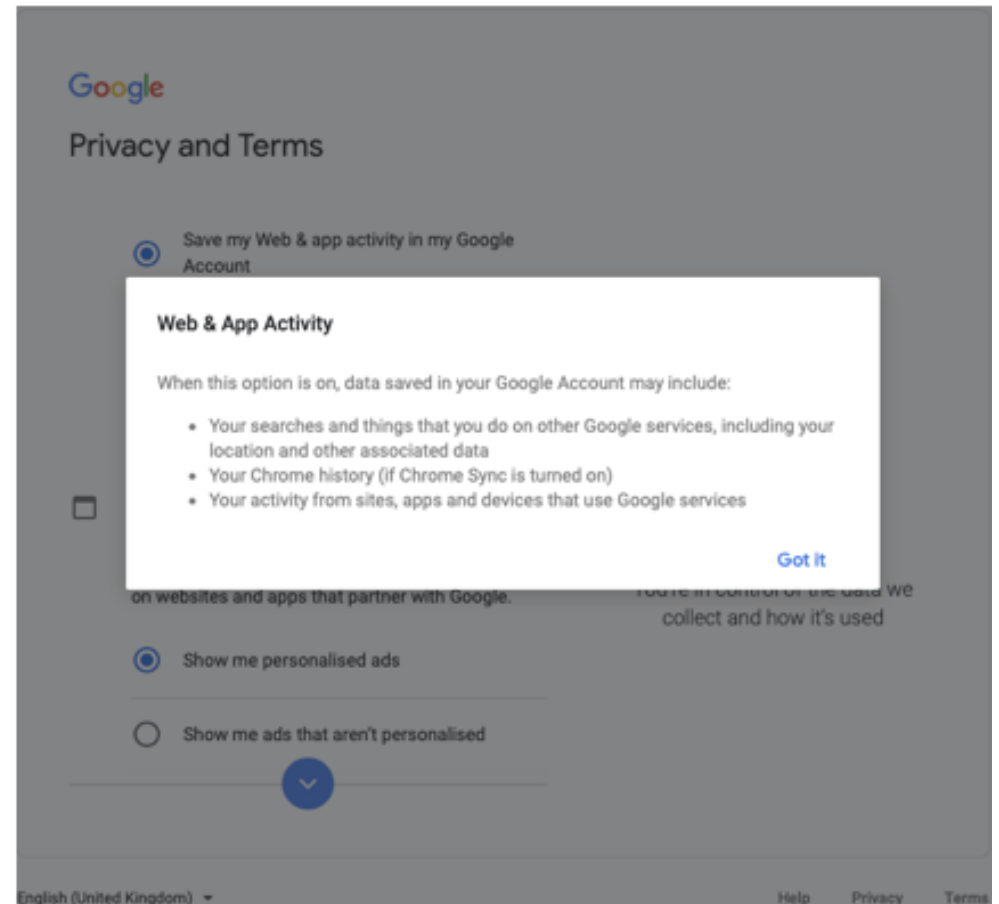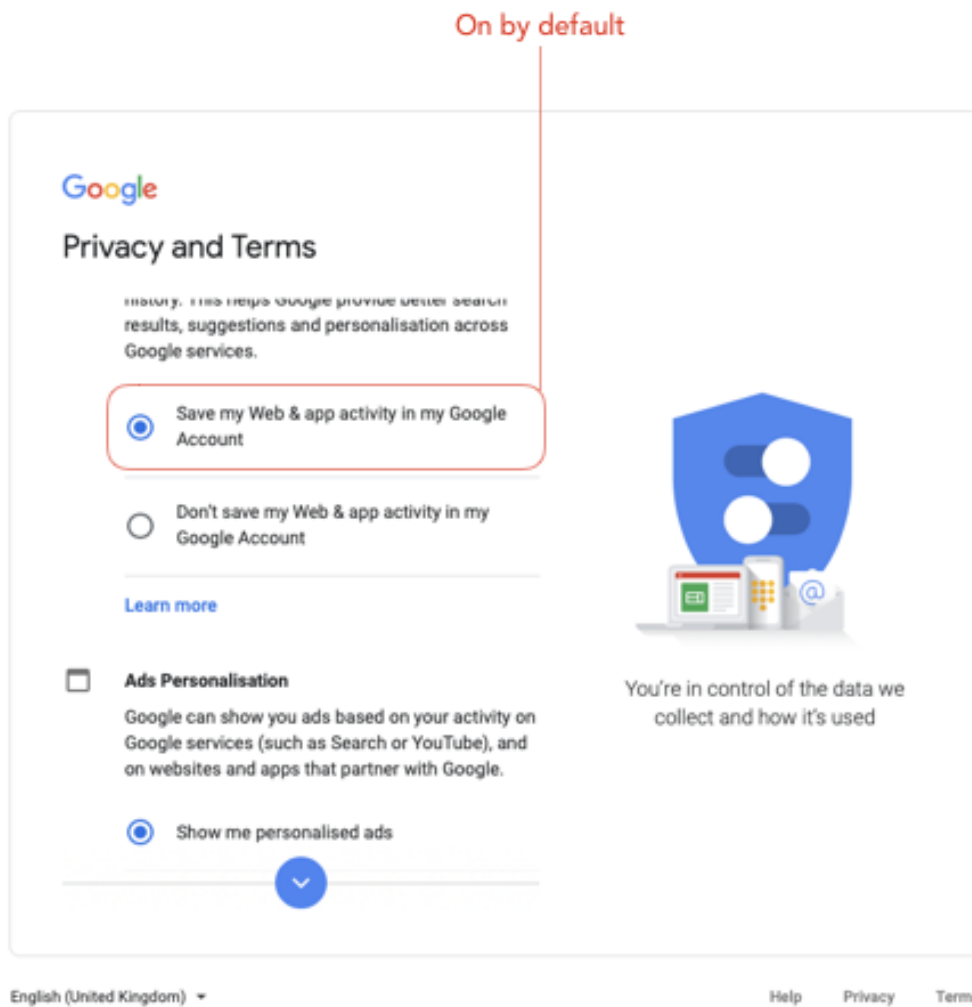| Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
	experience across your devices, and to customize features in Chrome." [524]		*sign in and sync to Chrome on other computers and devices. Synced data can include bookmarks, saved passwords, open tabs, browsing history, extensions, addresses, phone numbers, payment methods, and more. In advanced sync settings, you can choose which types of data to synchronize with this device. By default, all syncable data types are enabled."* [525]			*("If you would like to use Google's cloud to store and sync your Chrome data without allowing any personalized and aggregated use by Google as described in the previous paragraphs, you can choose to encrypt all of your synced data with a sync passphrase." [526])*
Google Account	*"Chrome may help you sign in with credentials you've saved in Android apps on websites that are associated with the respective apps. Likewise, credentials you've saved for websites can be used to help you sign into related Android app."* [527]		*"passwords and/or other types of login credentials"* [528]		*"If you're signed into Chrome and are syncing passwords and/or other types of login credentials without a sync passphrase, these credentials are stored in your Google Account."* [529]	Unknown
Google Account	*"Provide our services. … use unique identifiers stored in cookies on your device to help us authenticate you as the person who should have access to your Google Account."* [530]					Unknown
Google Account		*"If users choose to download apps from the Google Play Store, they must have a Google account, which is necessary for, among other things, … enabling parental controls."* [531]				Unknown
Google Account	*"…to help you access your account if you forget your password…"* [532]		*"If you add your phone number to your account"* [533]			Unknown
Google Account		*"If users choose to download apps from the Google Play Store, they must have a Google account, which is necessary for, among other things, facilitating users to purchase apps …"* [534]				Unknown
Google Account	*"Security. … We use security cookies to authenticate users …"* [535]				*"For example, we use cookies called 'SID' and 'HSID' which contain digitally signed and encrypted records of a user's Google account ID and most recent sign-in time. The combination of these two cookies allows us to block many types of attack, such as attempts to steal the content of forms that you complete on web pages."* [536]	Unknown
Google Account	*"Security. … We use security cookies to … prevent fraudulent use of login credentials …"* [537]				*"For example, we use cookies called 'SID' and 'HSID' which contain digitally signed and encrypted records of a user's Google account ID and most recent sign-in time. The combination of these two cookies allows us to block many types of attack, such as attempts to steal the content of forms that you complete on web pages."* [538]	Unknown
Google Account	*"We organize your purchases and reservations in your Google Account to help you get things done. For example: You can ask your Google Assistant about the shipping status of a purchase. You can ask your Google Assistant to show you your flight reservations, or use Search to ask questions like, "Is my flight on time?""* [539]	In this context, *"…for example…"* may cover multiple purposes. [540]	*"Food orders or Google shopping orders placed through Search or Assistant Reservations for restaurants, hotels, and health and fitness bookings created using Search, Maps, or Assistant"* [541]			Unknown
Research & Development	*"…to help us build products better suited for your demographics."* [542]	This vague language may conflate or omit many distinct processing purposes.	*"…if you're signed in to Chrome and have enabled Chrome sync, Chrome may combine your declared age and gender from your Google account with our statistics …"* [543]			Unknown
Research & Development	*"…to improve our products and services, for example, by identifying web pages which load slowly; this gives us insight into how to best improve overall Chrome performance."* [544]	In this context, *"…for example, by…"* [545] is vague language that may conflate or omit many distinct processing purposes.	*"If you have also turned on "Make searches and browsing better (Sends URLs of pages you visit to Google)" in the "Sync and Google services" section of Chrome's settings, Chrome usage statistics include information about the web pages you visit and your usage of them. The information will*			Unknown

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
			also include the URLs and statistics related to downloaded files. If you sync extensions, these statistics will also include information about the extensions that have been installed from Chrome Web Store. The URLs and statistics are sent along with a unique device identifier"[546]			
Research & Development	"*Google also uses aggregated and anonymized synchronized browsing data to improve other Google products and services. For example, we use this information to improve Google Search by helping to detect mobile friendly pages, pages which have stopped serving content, and downloads of malware.*"[547]	In this context, "*…for example…*" [548] is vague language that may conflate or omit many distinct processing purposes.	"*…aggregated and anonymized synchronized browsing data…*" [549]			Unknown
Research & Development	"*Google uses the information shared by sites and apps to … develop new services…*"[550]	This vague language may conflate or omit many distinct processing purposes.	"*For example, when you visit a website that uses advertising services like AdSense, including analytics tools like Google Analytics, or embeds video content from YouTube, your web browser automatically sends certain information to Google. This includes the URL of the page you're visiting and your IP address. We may also set cookies on your browser or read cookies that are already there. Apps that use Google advertising services also share information with Google, such as the name of the app and a unique identifier for advertising.*"[551]			Google appears to claim that this is covered by its legitimate interest, which it says applies to "*Developing new products and features that are useful for our users*".[552]
Research & Development	"*Develop new services*"[553]	This vague language may conflate or omit many distinct processing purposes.	"*We use the information we collect in existing services to help us develop new ones.*"[554]		"*For example, understanding how people organized their photos in Picasa, Google's first photos app, helped us design and launch Google Photos.*"[555]	Unknown
Research & Development	"*Measure performance. … we analyze data about your visits to our sites to do things like optimize product design*"[556]	"*…to do things like…*"[557] is vague language that may conflate or omit many distinct processing purposes.				Unknown
Research & Development	"*YouTube survey answers are used to improve the relevance of content and ads that you and others may see on YouTube and other Google products.*"[558]		"*YouTube surveys appear in the interface and ask about your YouTube experience or demographics/interests.*"[559]			Google appears to claim a sort of conflated consent, but its notification does not appear to meet the requirements for consent, or for explicit consent. See "YouTube History" text at sign up, in appendix.
Research & Development	"*to … improve Google services*"[560]	This vague language may conflate or omit many distinct processing purposes.	"*By including non-Google activity, Google will:* *Include your browsing data from non-Google websites and apps that partner with Google, including those that show ads from Google, in your Google Account* *Store that data with other data in your Google Account based on your activity controls preferences* *Use Google Account activity to make ads more useful to you on websites and apps, and improve Google services* *This setting applies across all of your signed-in devices and across all Google services.*" [561]			Unknown
Research & Development		"*a variety of purposes, including development of new products and services. We do not share permanent logs outside of Alphabet Inc. and its subsidiaries.*"[562]	"*Google Public DNS, is opt-in for Chrome users. Google retains two types of data from Google Public DNS queries: temporary logs and permanent logs: … Permanent log data, which does not contain any personal information.*"[563]	"*We do not share permanent logs outside of Alphabet Inc. and its subsidiaries*"[564]		Unknown
Research & Development	"*To help us improve Android, you can let your device send us information about how you use it and how it's working.*"[565]		"*Battery level, How often you use your apps, Quality and length of your network connections (like mobile, Wi-Fi, and Bluetooth)*"[566]	"*Some aggregated info can help partners, like Android developers, make their apps and products better, too.*"[567]	"*For example, Google can use usage and diagnostics info to improve: Battery life: Google can use info about what's using the most battery on your device to help make common features use less battery. Crashing or freezing on devices: Google can use info about when apps crash and freeze on your device to help make the Android operating system more reliable.*"[568]	Unknown
Research & Development	"*…help train Google's language models…*"[569]		"*information that's publicly available online or from other public sources*"[570]			Unknown

Category	Purported processing purpose	Other discoverable processing purposes	Data collected	Data shared externally	Explanation and examples	Purported legal basis
Research & Development	"*Google can use this data to improve its speech recognition so it can understand you better.*"[571]		"*If you turn this setting on and use voice commands (such as "Ok Google") or touch the microphone icon, Google will save a recording of your voice and other audio inputs.*"[572]		"*Google uses your voice and audio recordings to: Learn the sound of your voice. Learn how you say words and phrases. Recognize when you say activation commands, like "Hey Google"…*"[573]	**Unknown**
Research & Development	"*Improve speech recognition across Google products that use your voice.*"[574]				"*Improvements to speech models may also be sent to Google without uploading your voice and audio recordings. For example, when the Improve Gboard setting is on, Gboard can improve word suggestions for everyone without sending what you say to the server.*"[575]	This may use federated learning, and process personal data only on the device. If so, a legal basis may not be required.[576]
Research & Development	"*…help … build features like Google Translate*".[577]	"*…help…build features like…*"[578] is vague language that may conflate or omit many distinct processing purposes.	"*information that's publicly available online or from other public sources*"[579]			**Unknown**

Appendix: information given when a person signs up for a Google Account

"Web & App Activity" dialogues at sign up

Clicking "Learn more" reveals the dialogue shown on the right.

"Location History" dialogues at sign up

Clicking "Learn more" reveals the dialogue shown on the right.

Google

Privacy and Terms

■ **Location History**

Saves a private map of where you go with your signed-in devices (even when you're not actively using a Google product) to give you better map searches, commute routes and more.

○ Save my Location History in my Google Account

● Don't save my Location History in my Google Account

Learn more

☐ Send me occasional reminders about these settings

You're in control of the data we collect and how it's used

Help   Privacy   Terms

Google

Privacy and Terms

■

Location History

Location History helps you get useful information, such as commute predictions and improved search results, and more useful ads on and off Google. It does this by creating a private map of where you go with your signed-in devices.

To create this map, Google regularly obtains location data from devices for which you've turned on Location History. This data is collected even when you aren't using a specific Google product.

Got it

we

Learn more

collect and how it's used

☐ Send me occasional reminders about these settings

Help   Privacy   Terms

"YouTube History" text at sign up

Notes

[1] Article 6(1)b, the General Data Protection Regulation.

[2] URL: https://policies.google.com/technologies/retention#purpose-financial. Note: visit using a personal Google Account. Some settings or text may not be visible to Google Business Accounts.

[3] ibid.

[4] ibid.

[5] ibid.

[6] ibid.

[7] ibid.

[8] ibid.

[9] ibid.

[10] ibid.

[11] ibid.

[12] ibid.

[13] ibid.

[14] ibid.

[15] ibid.

[16] ibid.

[17] ibid.

[18] ibid.

[19] ibid.

[20] URL: https://policies.google.com/technologies/ads. Note: visit using a personal Google Account. Some settings or text may not be visible to Google Business Accounts.

[21] ibid.

[22] ibid.

[23] ibid.

[24] Google's submission responding to questions for the record from US Congress Judiciary Subcommittee on Antitrust, Commercial, and Administrative Law, hearing on "Online platforms and market power, part 2", 16 July 2019 (URL: https://docs.house.gov/meetings/JU/JU05/20190716/109793/HHRG-116-JU05-20190716-SD030.pdf), pp. 62-64.

[25] ibid.

[26]" ibid., p. 75.

[27] URL: https://policies.google.com/technologies/types. Note: visit using a personal Google Account. Some settings or text may not be visible to Google Business Accounts.

[28] ibid.

[29] Google's submission responding to questions for the record from US Congress Judiciary Subcommittee on Antitrust, Commercial, and Administrative Law, hearing on "Online platforms and market power, part 2", 16 July 2019 (URL: https://docs.house.gov/meetings/JU/JU05/20190716/109793/HHRG-116-JU05-20190716-SD030.pdf), pp. 62-64.

[30] ibid.

[31] ibid.

[32] ibid.

[33] ibid.

[34] ibid.

[35] ibid.

[36] ibid.

[37] ibid.

[38] URL: https://developers.google.com/authorized-buyers/rtb/start

[39] URL: https://developers.google.com/authorized-buyers/rtb/realtime-bidding-guide

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