

Shared Storage Overview

*A new unpartitioned local storage with strong privacy
preserving access controls for a variety of uses*

The Privacy Sandbox Initiative



Remove 3P cookies and other cross-site user tracking methods:



Remove Third Party Cookies



Combat Covert Tracking



Develop **privacy-preserving technologies** to support key use cases:



Relevant Ads & Content



Measurement & Attribution

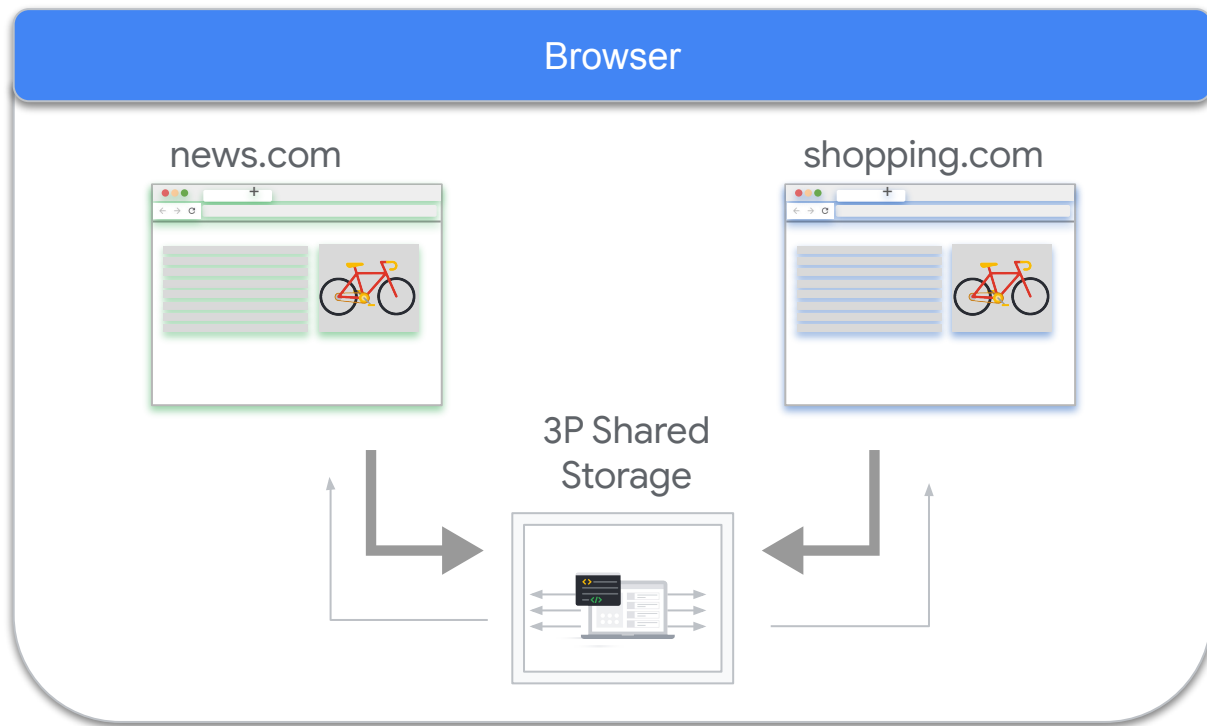


Fraud Detection



Tailored User Experiences
& more...

The Shared Storage API allows unlimited cross-site write access with privacy preserving read access

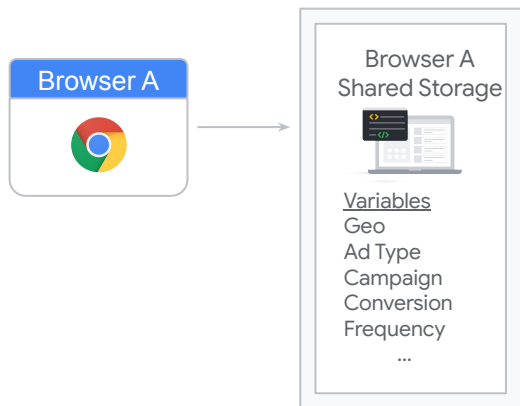


Aggregated Measurement

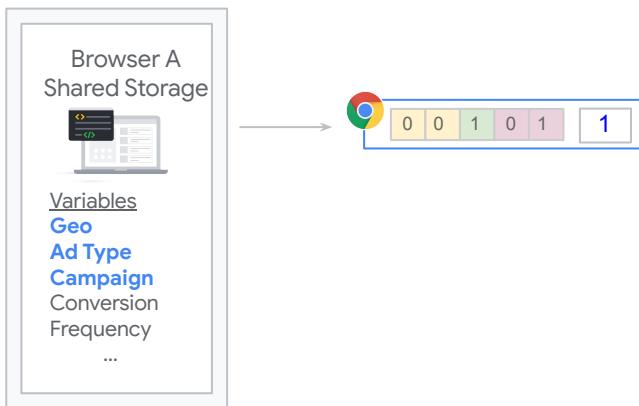
High Level Flow

Companies can use relevant Shared Storage data to aggregate data and return noisy summary reports

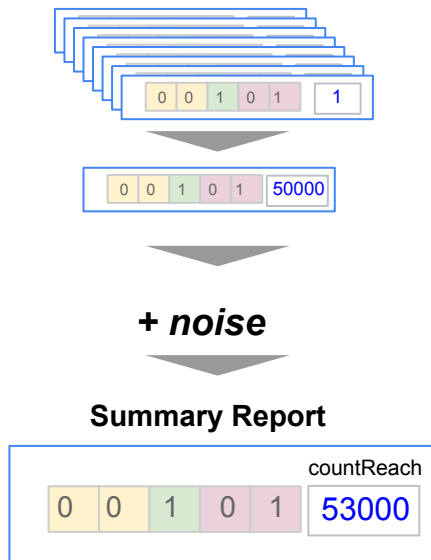
- 1 Ad techs can write a variety of variables into Shared Storage when called on site



- 2 For each measurement use case, ad techs can call the relevant cross-site Shared Storage data to send encrypted reports via the Private Aggregation API

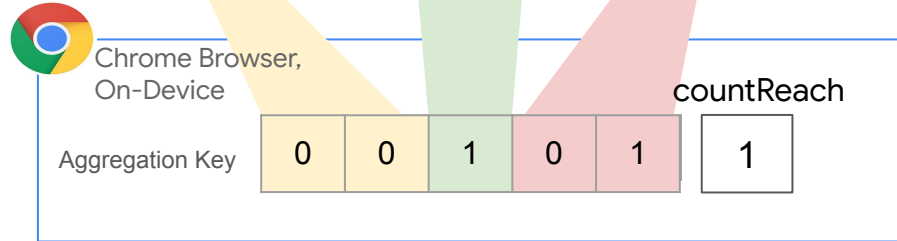


- 3 Reports are then aggregated with noise added to produce summary reports via the Aggregation Service

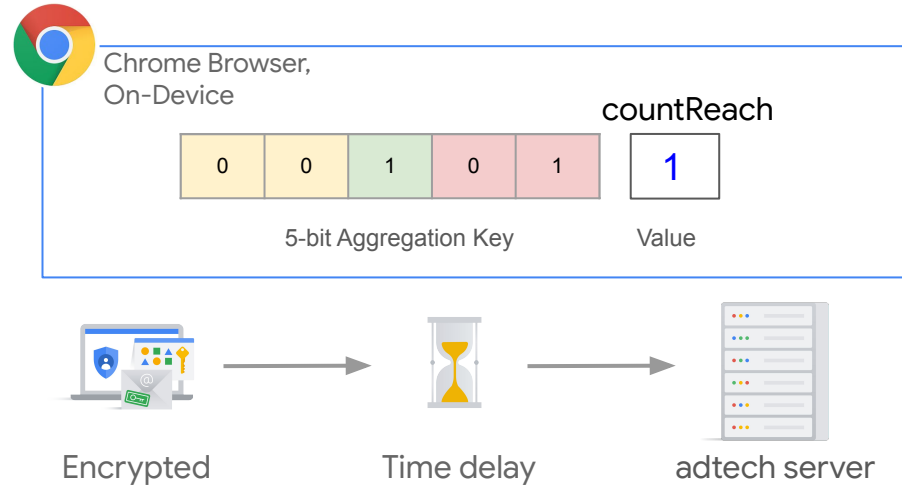


Adtech sets aggregation key in the browser based on Shared Storage data

Key	Geo	Key	Campaign Name	Key	Ad Type
11	US	0	GenZ	00	Banner
01	UK	1	Labor Day	11	Video
10	JP			10	Static
00	BR			01	Mobile



Adtech calls the Private Aggregation API from Shared Storage to send encrypted data to adtech server



Adtech gathers all encrypted reports from browsers that have been reached

Adtech receives summary report

Adtech company stores and batches encrypted reports on their server.

Batch is sent to TEE to decrypt and aggregate. Receive back unencrypted aggregated value.

Adtech Server



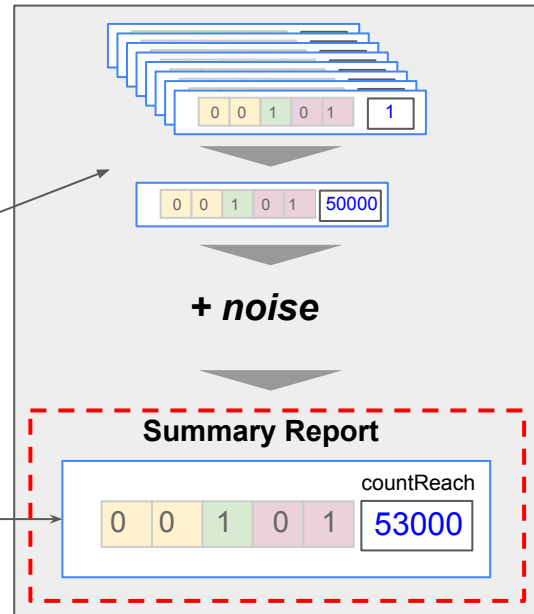
Encrypted
"Aggregatable" Reports

encrypted

True Count = 50,000

With Noise = 53,000

Aggregation Service TEE



Use Cases

Proprietary + Confidential



Campaign Reach and Frequency

Store cross-site ad view and frequency variables to measure reach and frequency



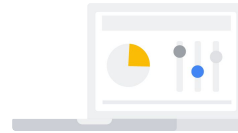
Demographic Reporting

Store cross-site ad view and demographic information to measure reach by demo



Custom Attribution Analysis

Store cross-site ad view and conversion variables to perform aggregated attribution analysis



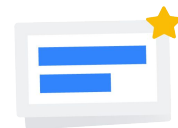
Aggregated Custom Analytics

Store variables such as interest groups, contextual signals, conversion information to perform custom business related audience and conversion analytics



Brand Sentiment

Store test/control groups and polling information to measure brand lift



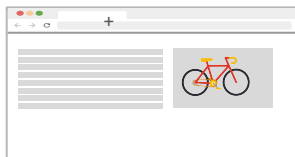
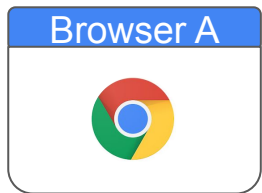
Conversion Lift

Store test/control groups and conversion information to measure incrementality

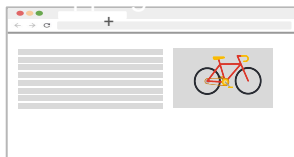
Aggregated Measurement: Reach Use Case

What is my unique reach by creative?

Call Shared Storage to send encrypted report for first creative view



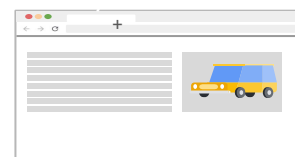
'BikeFrequency'=1



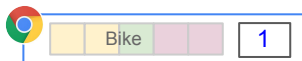
'BikeFrequency'=2



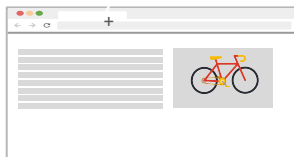
'CarFrequency'=1



'CarFrequency'=2



'CarFrequency'=1



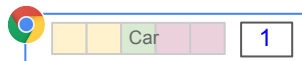
'BikeFrequency'=1



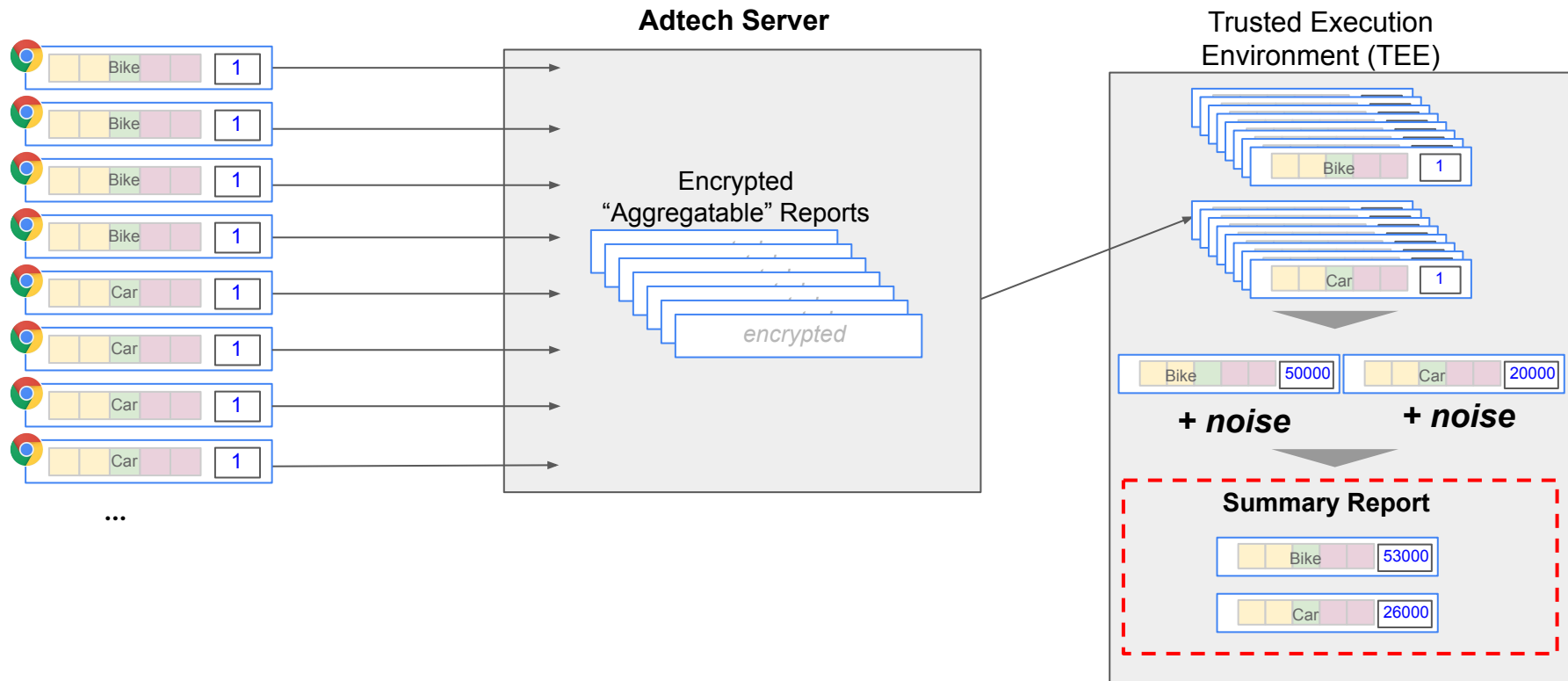
'CarFrequency'=2



'CarFrequency'=3



Batch and send encrypted reports to aggregation service and receive noised summary values



Feedback Questions

Proprietary + Confidential

1. Client side vs Server Side Uniqueness: The current workflow requires uniqueness to be handled on the client side. Is it possible to take advantage of this flow or are systems reliant on being able to dedupe across browsers?
2. Scope of Dynamic Flexibility: We have heard requests to be able to process reports more than once and split reports into more batches. Does the current batching model allow for your standard dimension/date range reporting requirements?
 - a. If we were to allow for reprocessing, what kind of flexibility would be most useful? For example with date ranges, is daily and weekly reporting enough?