
AWS
re:Invent
NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

ADM305

Privacy-enhanced collaboration with AWS Clean Rooms

Brian Pugh
Chief Information Officer
Comscore

Ankur Agarwal
Principal Product Manager
AWS

Shaila Mathias
Sr. Business Development Manager
AWS

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Agenda

1. AWS Clean Rooms introduction
   Shaila Mathias, Sr. Business Development Manager, AWS

2. AWS Clean Rooms demo
   Ankur Agarwal, Principal Product Manager, AWS

3. Customer speaker
   Brian Pugh, Chief Information Officer, Comscore

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Audience poll



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AWS customers want to collaborate with a vast range of partners but face challenges



Fragmentation and data silos



Proliferation of data



Data protection imperatives

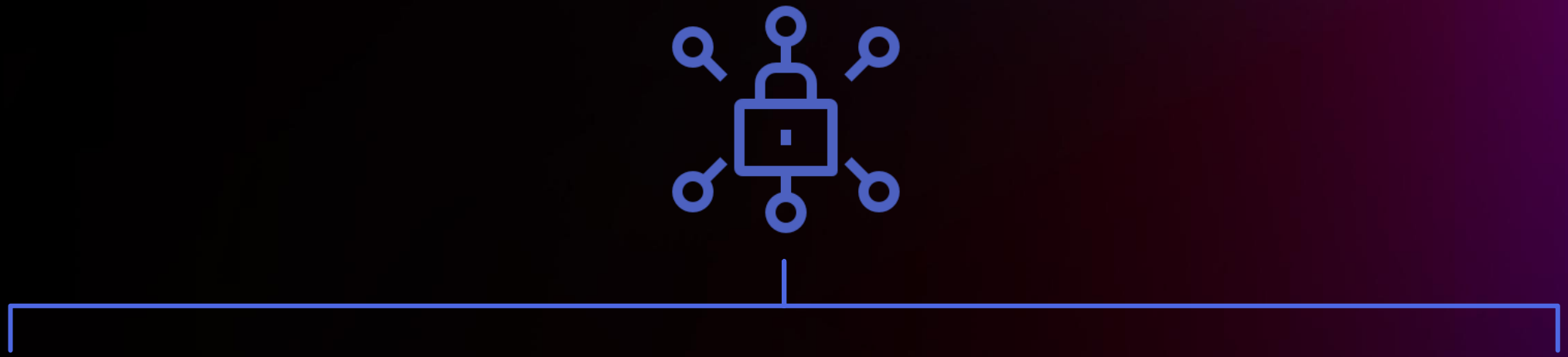
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We want to better understand our advertising efficacy and customer behavior by running analytics on data we own combined with data from partners without moving or sharing the raw data.

AWS Brand Marketer

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Introducing AWS Clean Rooms

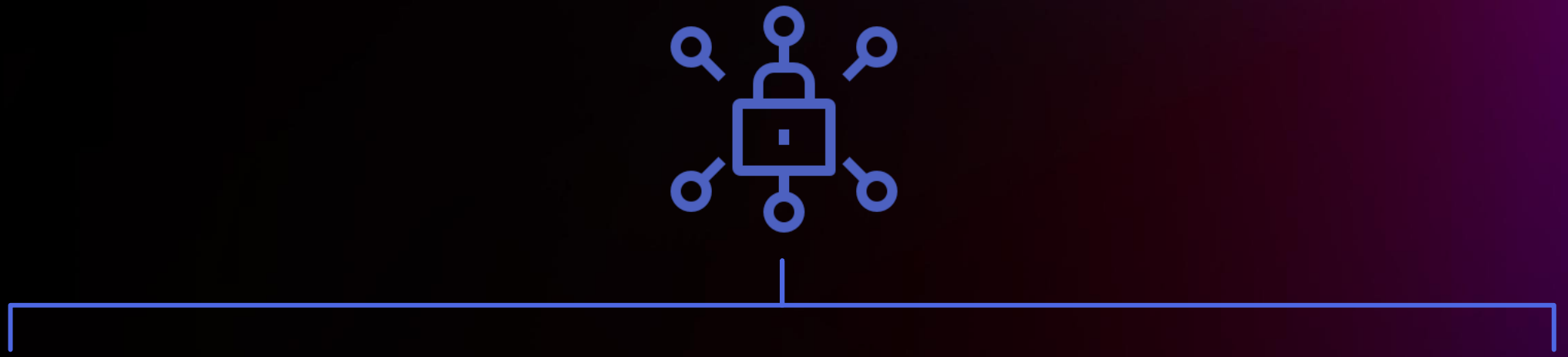


A new service that helps companies easily and securely match, analyze, and collaborate on their combined datasets – without sharing or revealing underlying data

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Introducing AWS Clean Rooms



Multi-party collaborations

Minimal data movement

Query controls & enforcement

Cryptographic computing

Programmatic access

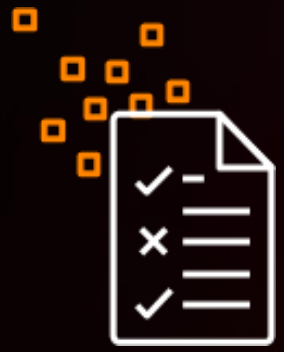
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Example: An AWS Brand Marketer's goals with AWS Clean Rooms

AN AIRLINE SEEKS TO UNDERSTAND MEDIA EFFECTIVENESS PER TACTIC



Analyze sales



Insights per media tactic



Personalized customer messaging

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AWS has 15 years experience working with advertising & marketing customers



Brands

Retail M&E Insurance



Agencies

Data unit Tech unit

Media buyer Hold co



Advertising technology

DSP SSP

CDP Ad servers

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Customer

amazon



Media publishers

Social network MSO

Web publisher Network

Programmer CTV/ATV



Data & measurement

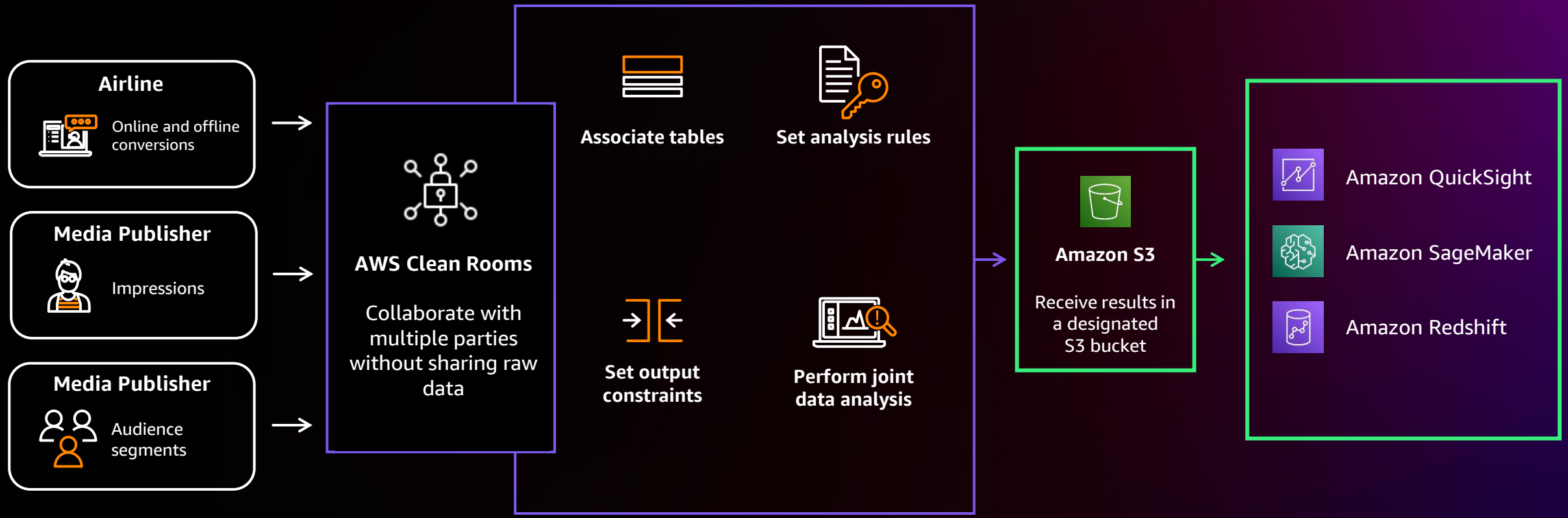
Demographics Transactional

Location Viewership

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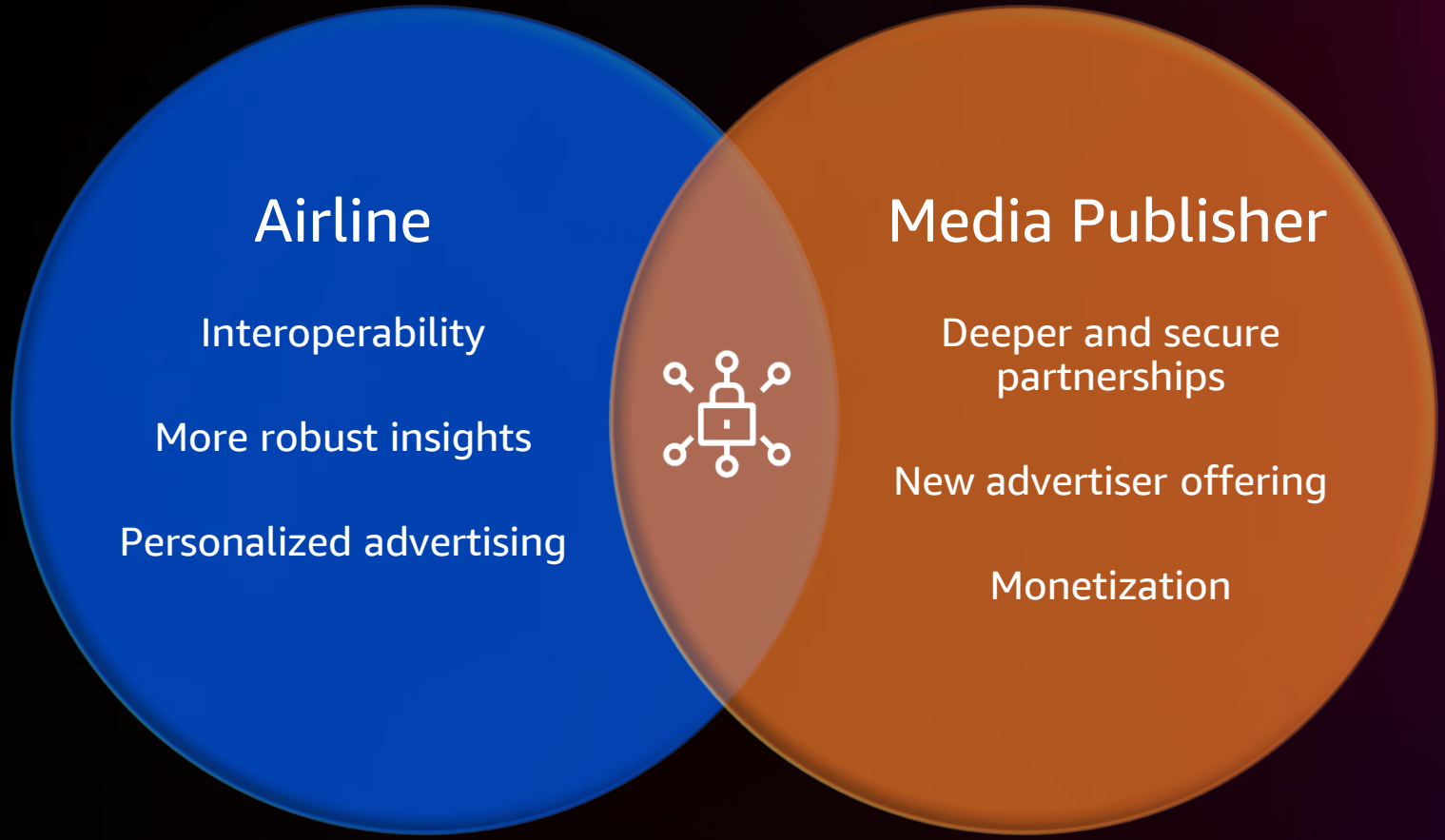
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How AWS Clean Rooms works



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AWS Clean Rooms drives business value for all members in the collaboration



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Comscore

Brian Pugh

Chief Information Officer

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Agenda

1. Comscore company overview and product offerings
2. Industry changes requiring clean rooms
3. Deep dive into Comscore’s clean room use case
4. New offerings enabled by clean rooms

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Comscore is a trusted currency



Planning



Transacting



Evaluating media

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Comscore solutions provide actionable digital insights for audience analysis and campaign planning

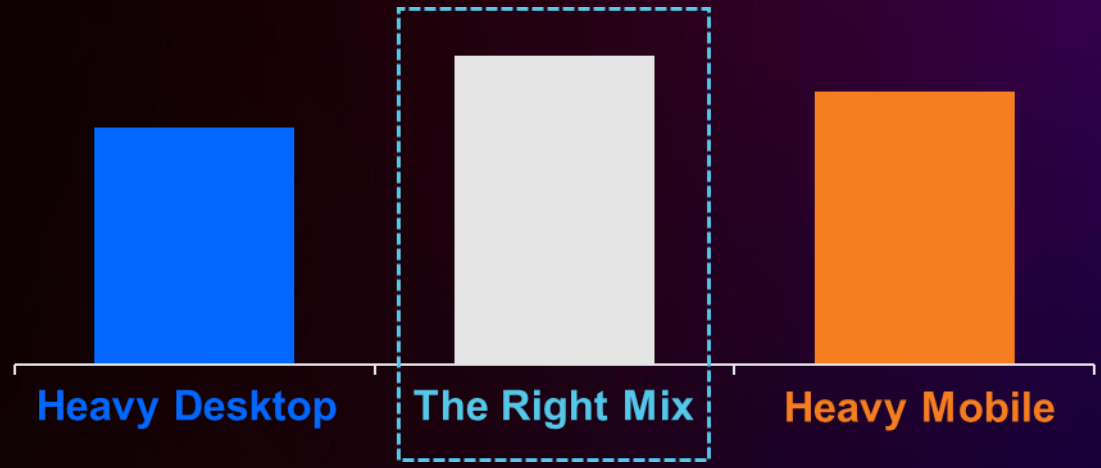
Audience analysis

Reveals total audience behavior for all content types across all digital devices.



Campaign planning

Enables consumer segmentation, media plan optimization and spend allocation across digital platforms.



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Unmatched scale provides granular insights into digital behaviors



192M
DESKTOP SCREENS



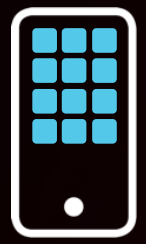
243M
MOBILE PHONES & TABLETS



138M
CTV DEVICES MEASURED



642K
DIGITAL PANELISTS GLOBALLY



56K
MOBILE APPS GLOBALLY

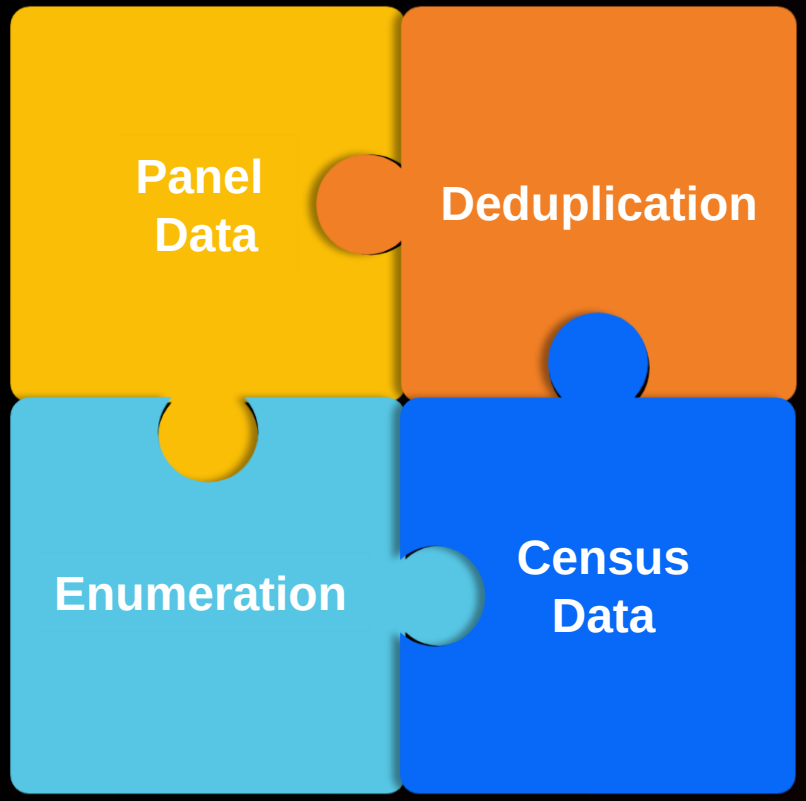


2.5M+
WEBSITES GLOBALLY

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All numbers are U.S. only, except where noted. All stats as of August 2022.

Multi-source measurement



Panel Data

Recruited individuals that provide complete views of all activity and demographics for any entity visited

Deduplication

Overlap operations that create empirical or modeled unduplicated audiences within and across platforms

Enumeration

Reportable universe populations determined via surveys and 3rd party estimates

Census Data

Publisher provided event level analytics traffic that measures holistic activity for a single entity

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Unified Digital Measurement (UDM) today

DESKTOP PANEL (2+ Audience) **MOBILE PANEL (18+ Audience)**

CENSUS NETWORK (Web & App Tags)



PANEL PROVIDES

- DEMOGRAPHICS
- DURATION
- UNIQUE VISITORS
- PAGE VIEWS
- APP STARTS

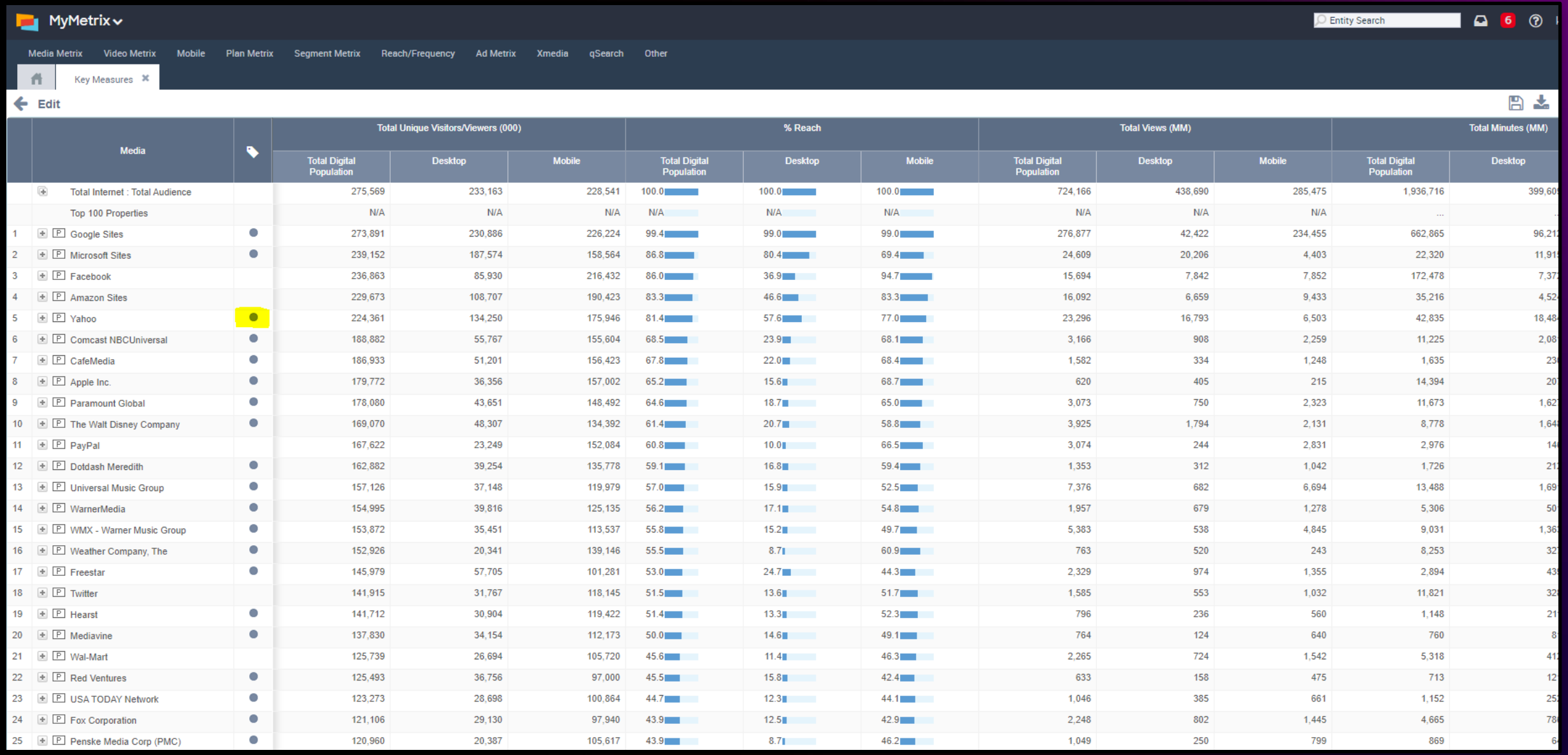
UNIFIED DIGITAL MEASUREMENT (UDM)

CENSUS PROVIDES

- 100% ACCURACY ON TAGGED PAGES/ APPS
- DURATION
- UNIQUE VISITORS
- PAGE VIEWS
- APP STARTS

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	Media	Total Unique Visitors/Viewers (000)			% Reach			Total Views (MM)			Total Minutes (MM)	
		Total Digital Population	Desktop	Mobile	Total Digital Population	Desktop	Mobile	Total Digital Population	Desktop	Mobile	Total Digital Population	Desktop
	Total Internet : Total Audience	275,569	233,163	228,541	100.0	100.0	100.0	724,166	438,690	285,475	1,936,716	399,60
	Top 100 Properties	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	...	..
1	Google Sites	273,891	230,886	226,224	99.4	99.0	99.0	276,877	42,422	234,455	662,865	96,21
2	Microsoft Sites	239,152	187,574	158,564	86.8	80.4	69.4	24,609	20,206	4,403	22,320	11,91
3	Facebook	236,863	85,930	216,432	86.0	36.9	94.7	15,694	7,842	7,852	172,478	7,37
4	Amazon Sites	229,673	108,707	190,423	83.3	46.6	83.3	16,092	6,659	9,433	35,216	4,52
5	Yahoo	224,361	134,250	175,946	81.4	57.6	77.0	23,296	16,793	6,503	42,835	18,48
6	Comcast NBCUniversal	188,882	55,767	155,604	68.5	23.9	68.1	3,166	908	2,259	11,225	2,08
7	CafeMedia	186,933	51,201	156,423	67.8	22.0	68.4	1,582	334	1,248	1,635	23
8	Apple Inc.	179,772	36,356	157,002	65.2	15.6	68.7	620	405	215	14,394	20
9	Paramount Global	178,080	43,651	148,492	64.6	18.7	65.0	3,073	750	2,323	11,673	1,62
10	The Walt Disney Company	169,070	48,307	134,392	61.4	20.7	58.8	3,925	1,794	2,131	8,778	1,64
11	PayPal	167,622	23,249	152,084	60.8	10.0	66.5	3,074	244	2,831	2,976	14
12	Dotdash Meredith	162,882	39,254	135,778	59.1	16.8	59.4	1,353	312	1,042	1,726	21
13	Universal Music Group	157,126	37,148	119,979	57.0	15.9	52.5	7,376	682	6,694	13,488	1,69
14	WarnerMedia	154,995	39,816	125,135	56.2	17.1	54.8	1,957	679	1,278	5,306	50
15	WMX - Warner Music Group	153,872	35,451	113,537	55.8	15.2	49.7	5,383	538	4,845	9,031	1,36
16	Weather Company, The	152,926	20,341	139,146	55.5	8.7	60.9	763	520	243	8,253	32
17	Freestar	145,979	57,705	101,281	53.0	24.7	44.3	2,329	974	1,355	2,894	43
18	Twitter	141,915	31,767	118,145	51.5	13.6	51.7	1,585	553	1,032	11,821	32
19	Hearst	141,712	30,904	119,422	51.4	13.3	52.3	796	236	560	1,148	21
20	Mediavine	137,830	34,154	112,173	50.0	14.6	49.1	764	124	640	760	8
21	Wal-Mart	125,739	26,694	105,720	45.6	11.4	46.3	2,265	724	1,542	5,318	41
22	Red Ventures	125,493	36,756	97,000	45.5	15.8	42.4	633	158	475	713	12
23	USA TODAY Network	123,273	28,698	100,864	44.7	12.3	44.1	1,046	385	661	1,152	25
24	Fox Corporation	121,106	29,130	97,940	43.9	12.5	42.9	2,248	802	1,445	4,665	78
25	Penske Media Corp (PMC)	120,960	20,387	105,617	43.9	8.7	46.2	1,049	250	799	869	6

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Priority use case with a clean room: Media planning

For agencies/advertisers

- ✓ Reach target audiences
- ✓ Evaluate sites and apps side-by-side
- ✓ Expand campaign reach

For publishers/content owners

- ✓ Benchmarking
- ✓ Quantify reach and scale
- ✓ Tailor content offerings

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Changing landscape

Measurement needs to be accurate, complete, repeatable, trend-able and **privacy-forward**

Fragmentation of identifiers and proliferation of content and data requires **collaboration**

Reduce friction across technology stacks minimizing costs and delays.

Interoperability in environments like AWS where Comscore and clients already operate

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Source: Deloitte, The CMO Survey: Marketers Rise to Meet Challenges, 2021, eMarketer 2022

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Interoperability in environments like AWS where Comscore and clients already operate

Clean rooms

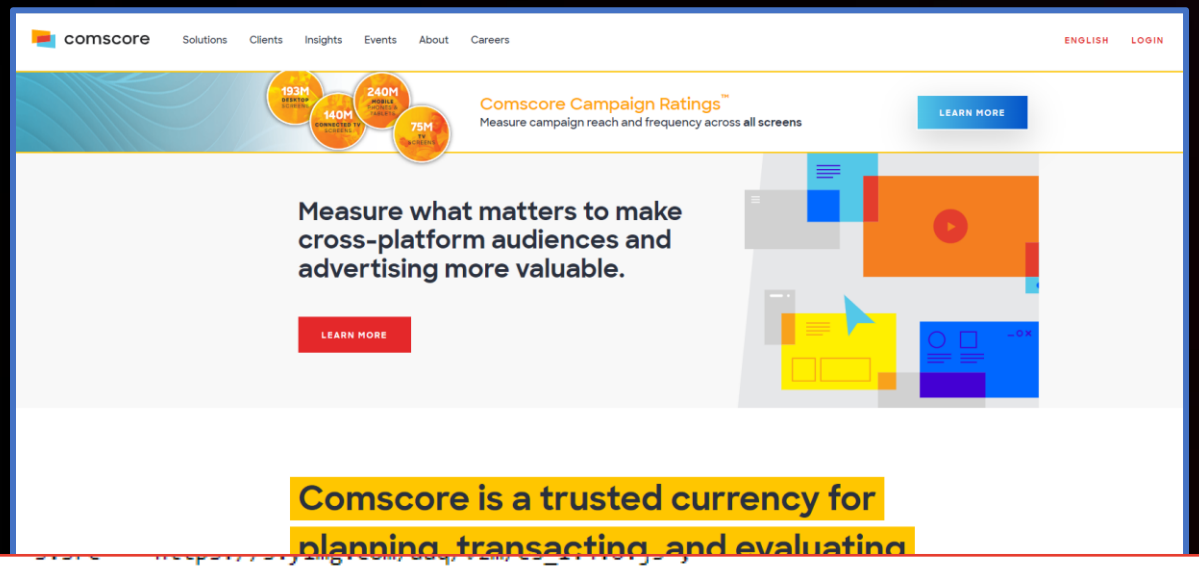


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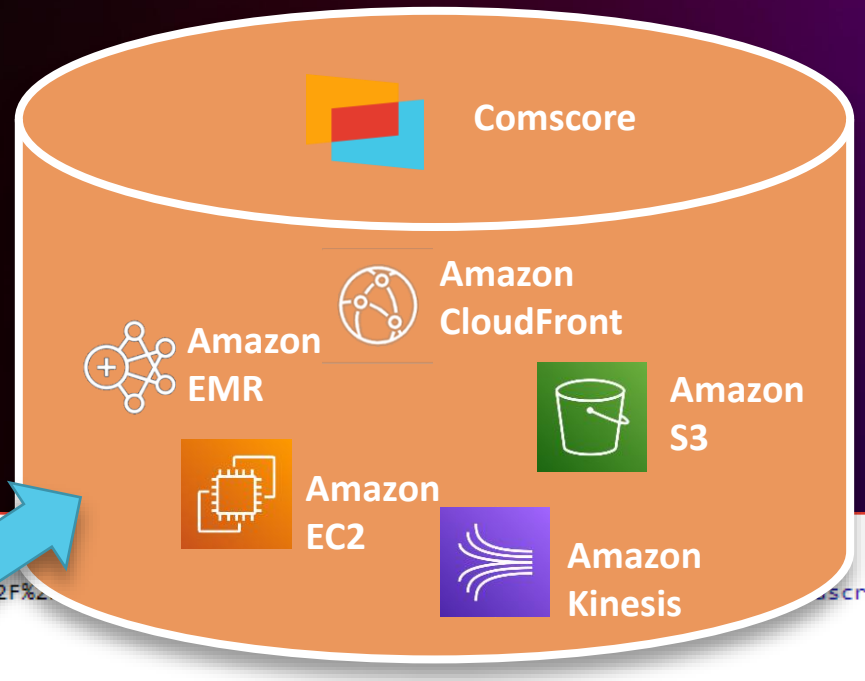
Source: Deloitte, The CMO Survey: Marketers Rise to Meet Challenges, 2021, eMarketer 2022

How Comscore data sharing works today

PUBLISHERS SHARE CENSUS LEVEL DATA WITH COMSCORE VIA TAGS/SDKS



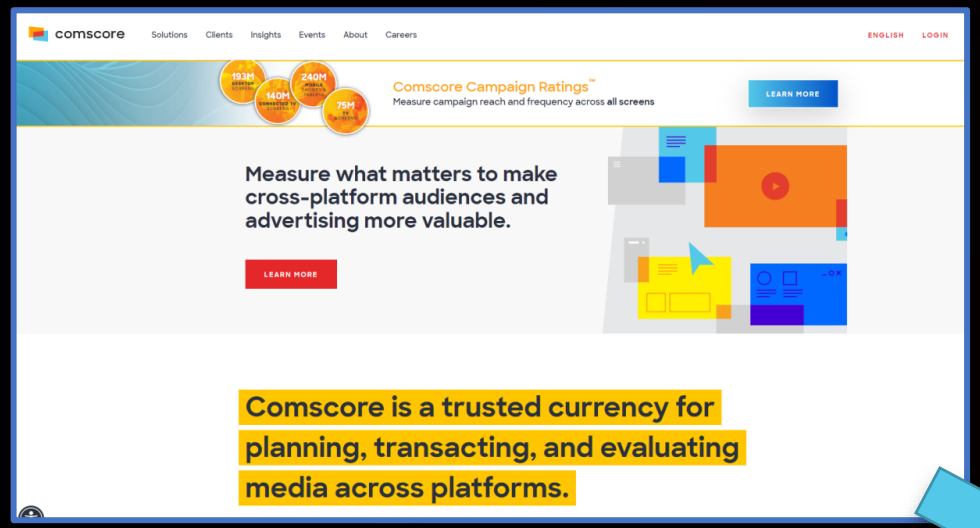

```
        el.parentNode.insertBefore(s, el);
    }(window));
</script><noscript><img src=https://sb.scorecardresearch.com/p?c1=2&c2=7241469&c5=2023538075&c7=h
    (function(w) {
        var beaconer = function(type, source, beaconKeys) {
            if (!w.wafer && !w.wafer.utils) {
                return;
            }
```



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How Comscore data sharing works today

COMSCORE ALSO OFFERS SERVER-TO-SERVER DATA TRANSMISSION



Event level data collected by publisher

Publisher S3 bucket

Comscore

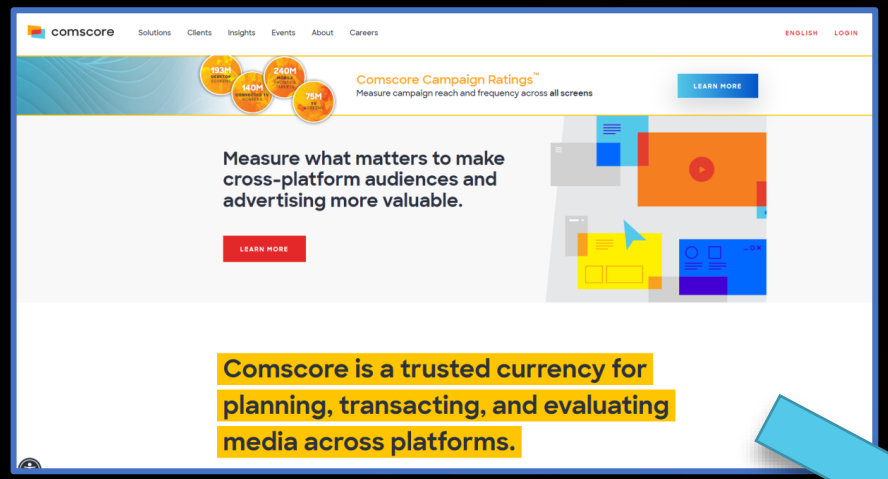
Amazon EMR

EC2

S3

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AWS Clean Rooms enables analysis without the publisher or Comscore moving or revealing the raw data to the other



Event level data collected by publisher

Publisher S3 bucket

AWS Clean Rooms

Comscore S3 bucket

No data movement from each data owner's S3

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The future of data collaboration in AWS Clean Rooms

Comscore Total Home Panels



Panel Type, Panelist ID, Scorecard Cookie, First Party ID

Publisher website event data



Content type, Client ID, Timestamp, First Party ID, First Party ID Type

Data remains in AWS S3



AWS Clean Rooms

Collaborate with multiple parties without sharing raw data



ID Match

Test which identifiers to match on & rates of match



Export Census Data

Output event data without identifiers for volumetric analysis



Compute Analytics

Derive true audience reach and demographic alignment



Amazon S3

Receive results in a designated S3 bucket



Amazon EMR



Amazon EC2

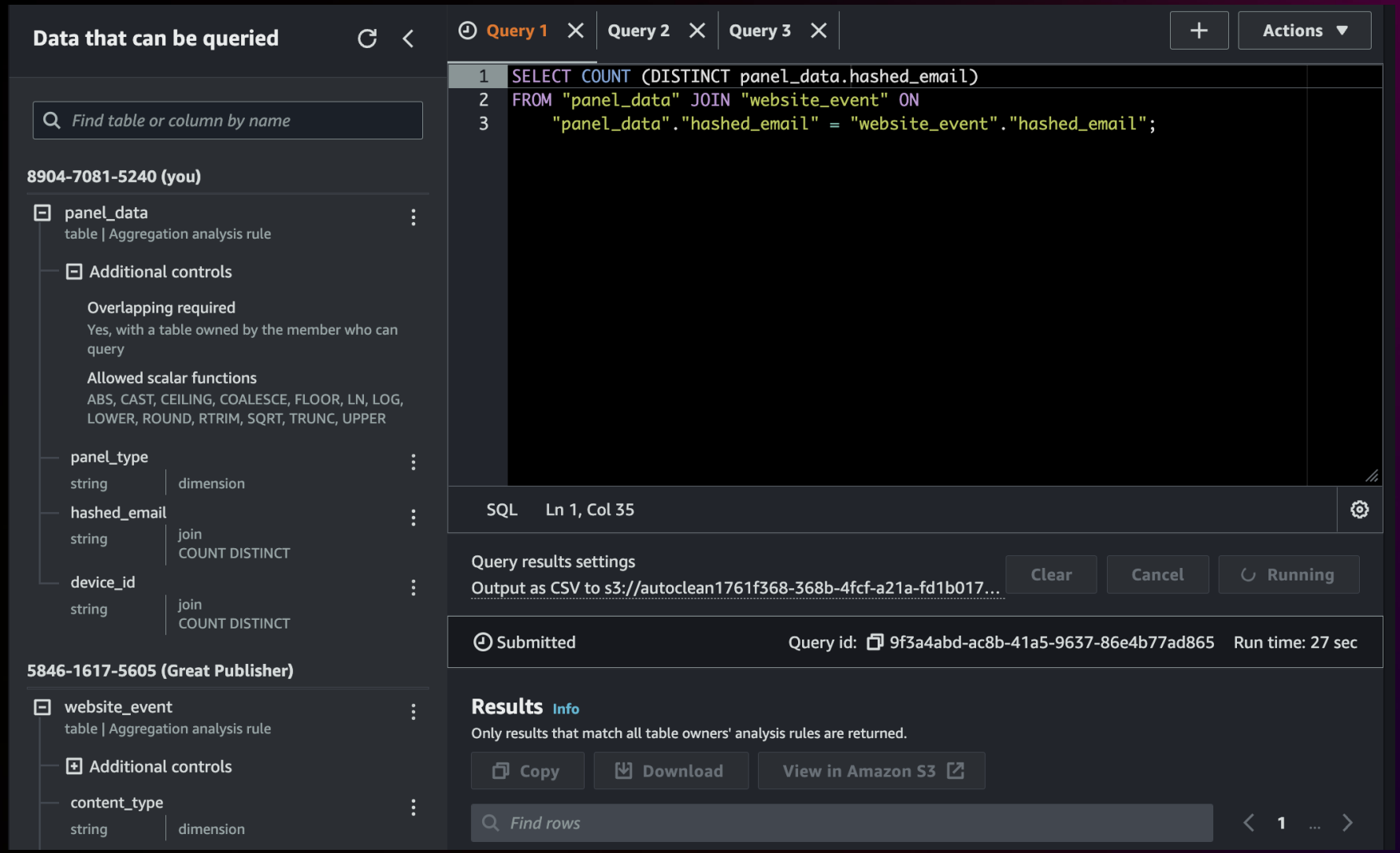


Amazon Redshift

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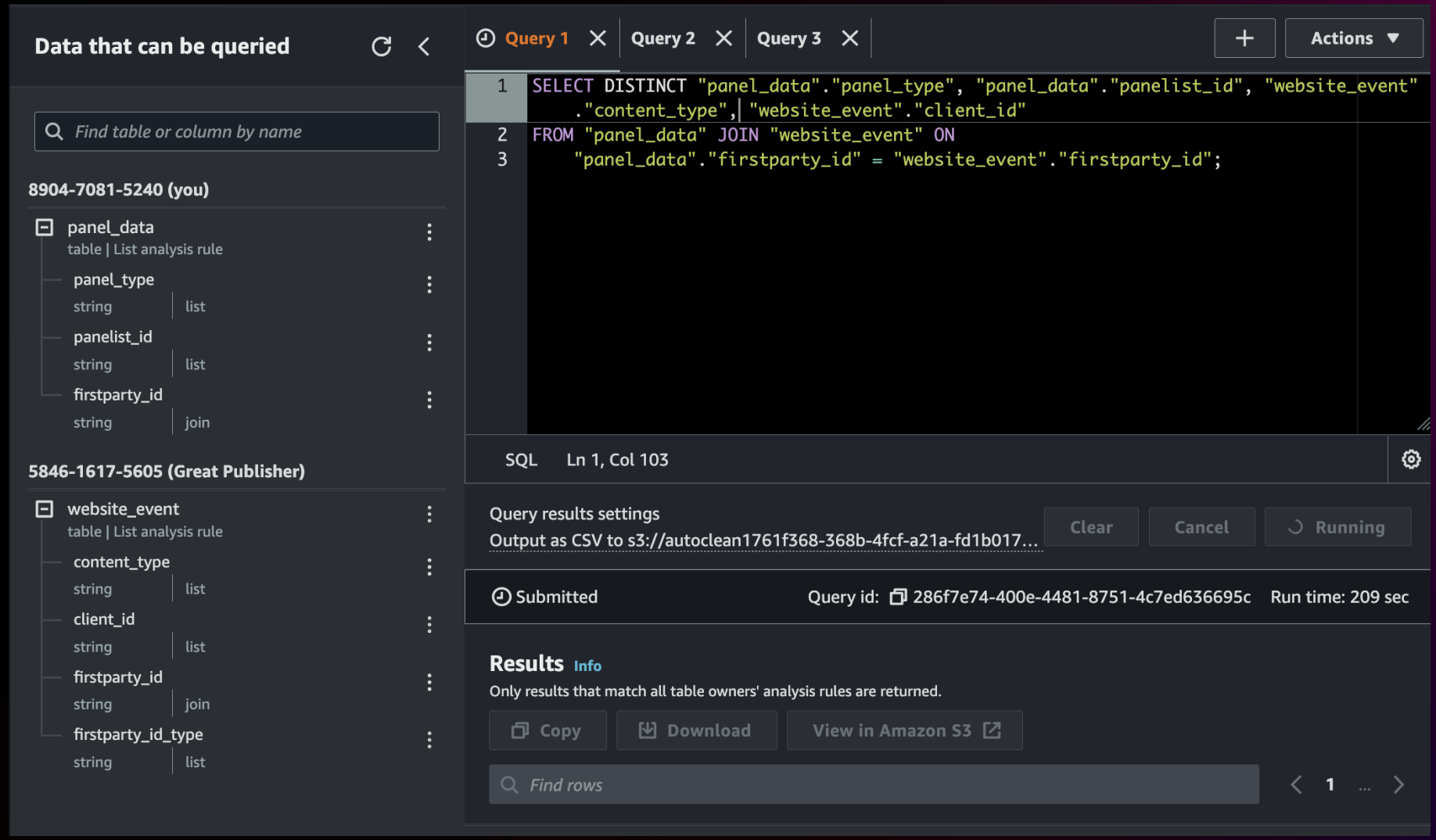
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AWS Clean Rooms Aggregation Analysis Rule to support Comscore's ID match & compute analytics



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AWS Clean Rooms List Analysis Rule to support Comscore's census data analysis



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Looking ahead

WHAT CLEAN ROOMS WILL ENABLE

- ✓ More frequent reporting
- ✓ Validation of demographic datasets
- ✓ Enablement of standardized measurement
- ✓ Integration of predictive audiences for activation



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Why Comscore is considering data clean rooms



Interoperability



Data security



Easy to work with

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Stay in touch!



Brian Pugh

CHIEF INFORMATION OFFICER

bpugh@comscore.com

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Recap

Shaila Mathias

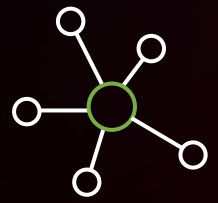
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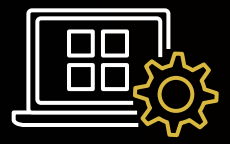
AWS Clean Rooms helps deliver results



Create your own clean room, add participants, and start collaborating in a few clicks



Collaborate with hundreds of thousands of companies without sharing or revealing underlying data



Protect underlying data with a broad set of privacy-enhancing controls for clean rooms



Use flexible, easy-to-configure analysis rules to tailor queries to your specific business needs

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Learn more about AWS Clean Rooms:

https://aws.amazon.com/clean-rooms/

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