Meta Platforms, Inc. - Proprietary

Private Computation Solutions Partner Playbook

Table of Contents

Introduction

Requirements

Step 1: Conversions API Gateway Setup (1 Hour)

Step 2: PCS AWS Infrastructure Setup (30 Minutes)
- Data Ingestion FYI

Step 3: Generating 60 days Access Token (10 Minutes)

Step 4: Private Lift
- Step 4.0: Check config before running computation
- Step 4.1: Run Private Lift Computation (15 mins)
- Step 4.2: View Private Lift Results

Appendix
- A1: Semi-auto data ingestion/preparation
- A2: How to set “canary” tier
- A3: Configure an AWS IAM user with minimal permissions for future computation after initial infra deployment
- A4: Data Migration

Introduction

This is the step-by-step guidebook for advertisers to set up, install and use privacy-enhanced Meta ads measurement products (such as Private Lift). We recommend that engineers go through this resource as it requires certain knowledge or familiarity with network setup, cloud service, etc.

Private Lift overview

Private Lift is a measurement solution that uses encrypted data and is powered by secure multi-party computation (MPC) with select partners. Data is encrypted so that each participating partner's data is kept private from the other, and, upon completion of the MPC, each participating partner is only able to view the aggregated output statistics of the computation. Previously, this type of reporting required at least one party to learn which specific people converted after seeing an ad, considering Meta has the information about who saw an ad and the advertiser has information on who converted. MPC and encryption make it possible for both parties to only learn insights about how the ads worked, without the need for either party to see the other's data sets.

How to use the playbook

Follow the step-by-step instructions to setup, install and use the product. Please contact your Meta representative for any questions/issues encountered.

Requirements

You'll need the below work to be done by someone with permissions and familiarity with the following components:

1. Domain name service (for setting DNS A record for Conversions API Gateway subdomain)
2. Basic knowledge and permissions to access AWS services like IAM, S3 - Creating and Reading , VPC - creation, Peering, Route Tables (all these creations will happen through scripts).
3. Making API calls (for using Private Lift Graph API)
4. Debugging and log reading
5. (**if not using UI**: familiarity with running shell commands)
6. (Only for clients who need/want to prepare your own conversion data): SQL and hashing
7. Please make sure you have reviewed the following AWS Prerequisites and Permission requirements.
    a. Private Computation: Business pre-check questions
    b. Private Computation: AWS pre-check questions
    c. Private Computation: Guide to answering AWS pre-check questions

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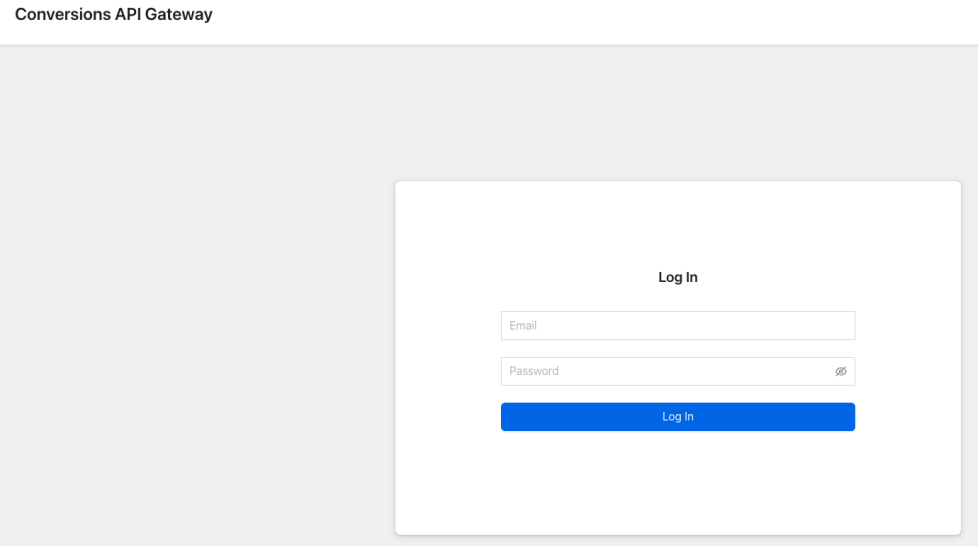
Step 1: Conversions API Gateway Setup (1 Hour)

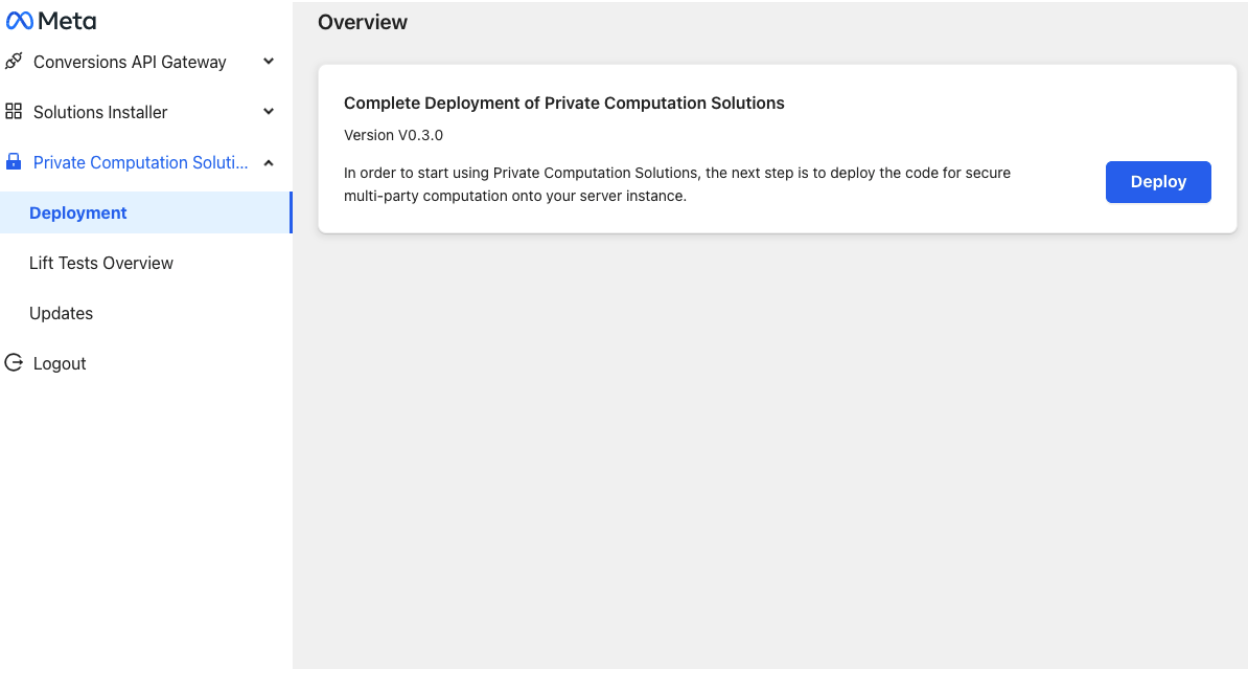
To run the commands to install the Private Lift infrastructure (specified in step 2 below), install Conversions API Gateway, by referring to the following guide:
https://developers.facebook.com/docs/marketing-api/conversions-api/guides/gateway/setup

Step 2: PCS AWS Infrastructure Setup (30 Minutes)

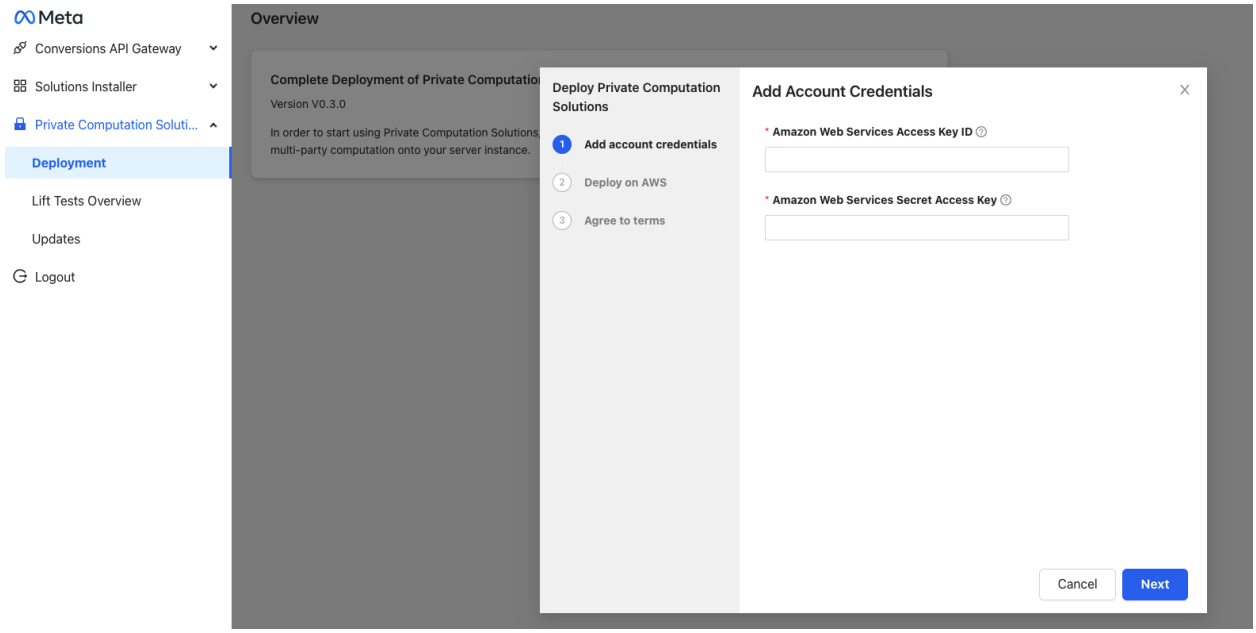
- Navigate to https://<capig.instance.url>/hub/ui. You should see the following window:



- Enter the credentials and login.
- Navigate to the Deployment Menu and click Deploy.

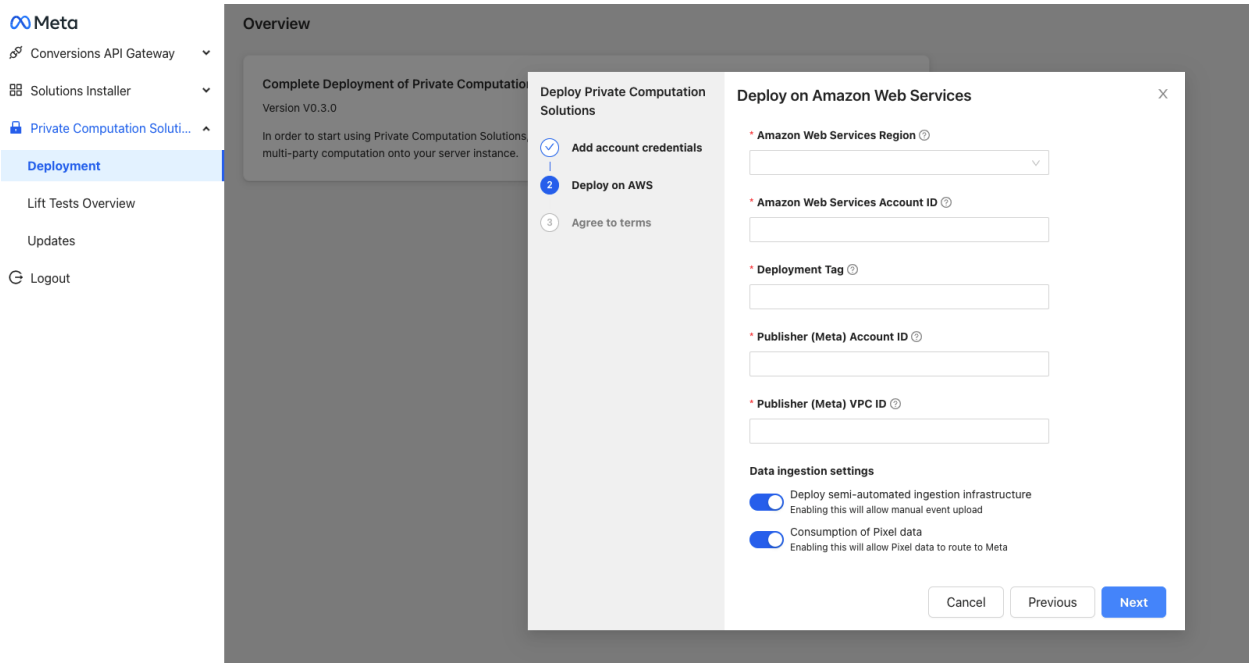


- Enter AWS Access Key ID and Secret Access Key and click on Next. These credentials should have admin access to create new components - S3 Buckets, Kinesis, VPC, Subnets, ECS Clusters.

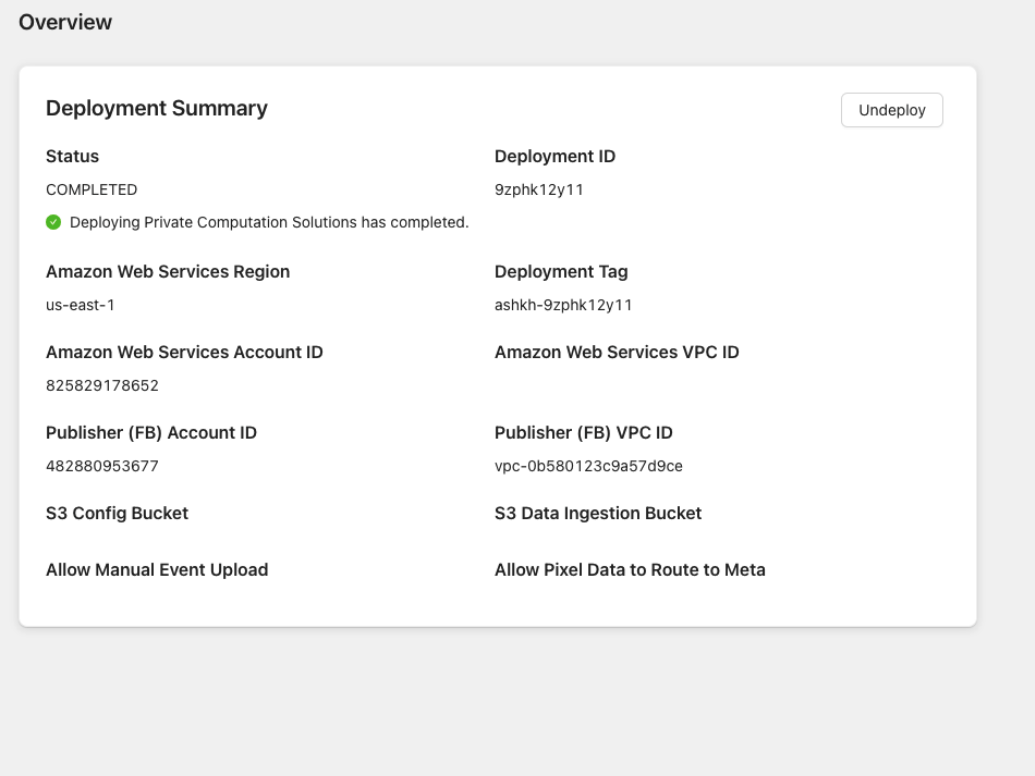


- Please fill in the required fields and click on Next:
  - **Amazon Web Services Region:** This is the AWS region where the resources would be deployed. It should be the same as the region used for Conversions API Gateway deployment.
  - **Amazon Web Services Account ID:** the AWS region you would like to deploy the AWS infrastructure to. We should have alignment on this beforehand so that Advertiser and Meta infra is set up in the same region.
  - **Deployment Tag:** this is a string that will be appended to the name or tag of AWS resources to be created. It will be easier for you to identify which AWS resources are created
  - **Publisher (Meta) Account ID:** Meta AWS Account number that is provided beforehand.
  - **Publisher (Meta) VPC ID:** Meta VPC ID that is provided beforehand.

- Data Ingestion Settings:
  - Toggle the first button on if you would like to use the semi-automated data ingestion option. This option would enable you to upload conversions data manually and ingest them into your Athena table for computation. (**We recommend keeping this on**).
  - Toggle the second button on if you wish to send pixel events back to Meta as Conversions API events. If you already have Conversions API integration in place, or if you do not wish to forward your web pixel events as Conversions API events, you can toggle this button to off.



- About 10 minutes later, you should be able to see the following screen confirming the successful deployment.



- To enable the data ingestion to S3 using CAPIG, please complete below steps:
  - Open CAPI API Gateway Shell: `https://<capig.instance.url>/hub/shell`
  - Run the following update commands after updating the placeholders (AWS access key and AWS secret key):

        - config write Kinesis /PUBLISH_TO_KINESIS true
        - config write CloudResources /AWS_ACCESS_KEY "<Your aws_access_key_id>"
        - config write CloudResources /AWS_SECRET_KEY "<Your aws_secret_access_key>"
    - **Note**: The AWS access key and secret key needs either: admin-level access to all AWS services, or a minimal set of necessary permissions (see A3 for more details)
- After your setup is complete, please check with your Meta representative if the VPC peering has been accepted. If yes, please follow the instructions to run PCE Validator to ensure the setup is correct.

Please Note: Before moving forward, confirm with your Meta POC if they have accepted the VPC Peering, made changes to routing tables and provided access to ECR repositories.

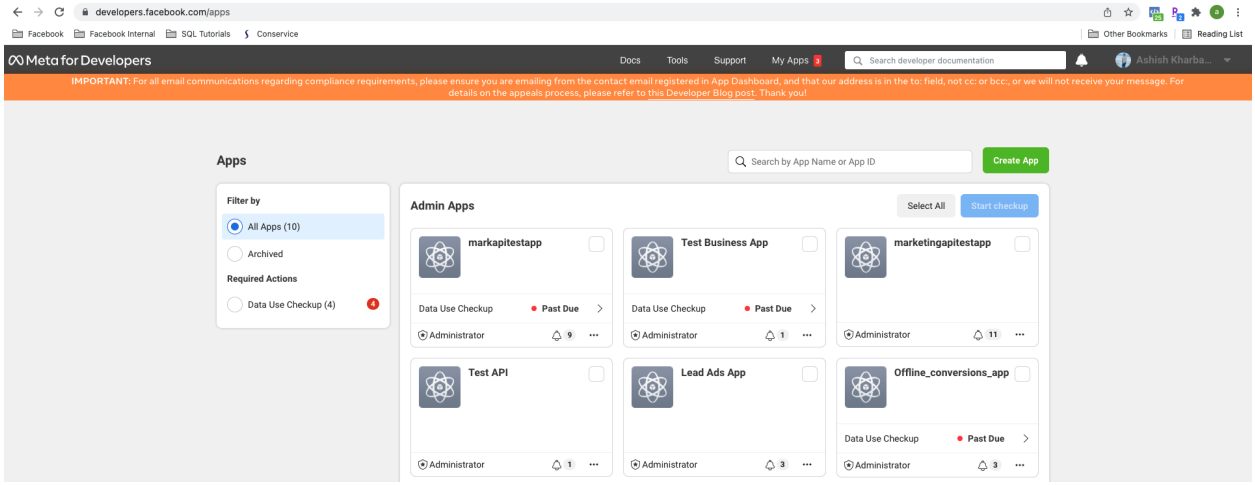
Data Ingestion FYI

1. After Step 2, you need to wait for the completion of data ingestion (**no further action needed from you!**). The whole process is automated.
    a. Depending on your needs and study setup, different wait time could apply. Your Meta representative will guide you on the exact wait time.

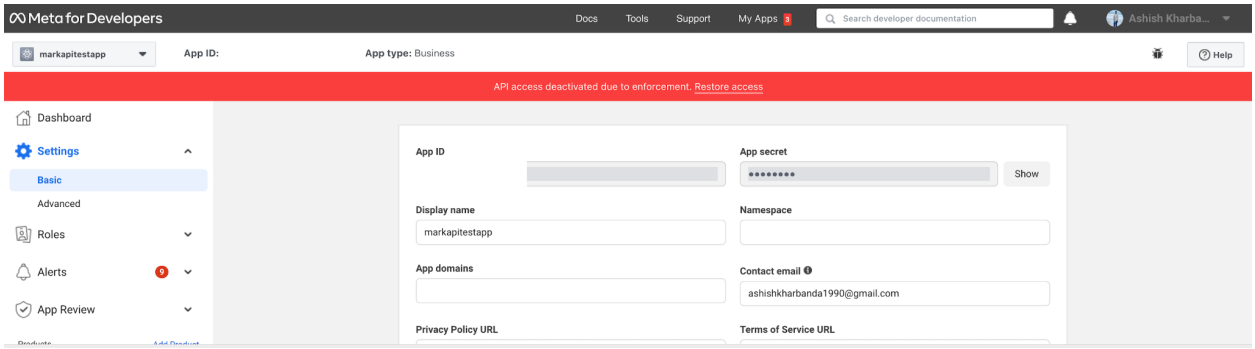
Alternatively, you could prepare your own conversion data if you deployed semi-auto from Step 2. Then it should take less than 30 mins to ingest multi-month conversion data. please redirect to Appendix Semi-auto data ingestion/preparation for more details.

Step 3: Generating 60 days Access Token (10 Minutes)

- Go to developers.facebook.com/apps and select the app that you want to use.

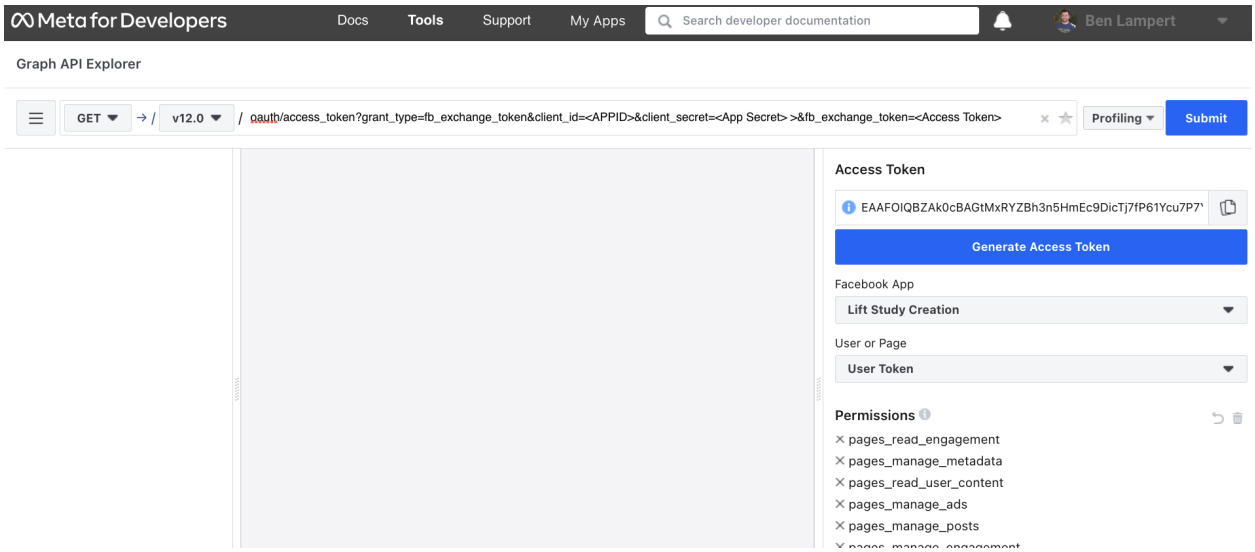


- Navigate to Settings → Basic. Click on “Show” near app secret and copy both App ID and App Secret.

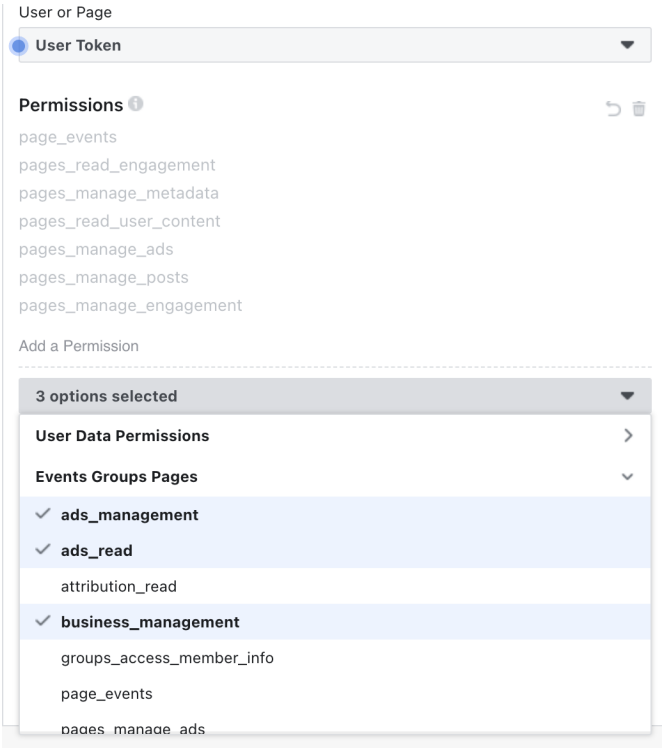


- Go to https://developers.facebook.com/tools/explorer.
- In the GET request enter:
  `oauth/access_token?grant_type=fb_exchange_token&client_id=<AppId>&client_secret=<App Secret>&fb_exchange_token=<Access Token>`

  Replace <AppId> and <AppSecret> with the values copied in the previous step. Also replace the <Access Token> with the Access Token on the screen in the right corner (see below).



- Click on the User or Page dropdown and select User Token.
- Click on Add a Permission → Events Groups Pages → Select **ads_management**, **ads_read** and **business_management, private_computation_access**.



- Click on Submit Button and copy the access_token received in the response.
    - Please carefully store this token.

Step 4: Private Lift

Step 4.0: Check config before running computation

1. Open CAPI API Gateway Shell: `https://<capig.instance.url>/hub/shell`
2. Run the following commands
    a. config read Kinesis
        - Expected values:

```
{
  "PUBLISH_TO_KINESIS" : true,
  "BATCH_PUBLISH_PERIOD" : 1000,
  "BATCHING_ENABLED" : true,
  "FIREHOSE_DELIVERY_STREAM_NAME" :
"cb-data-ingestion-stream-<TAG>",
  "AWS_REGION" : "<AWS REGION>"
}
```

    For AWS_REGION, it should be lower case and format like “us-west-2”
    b. config read Athena
        - Expected values:

```
{
```

```
  "AWS_REGION" : "<AWS REGION>",
  "CATALOG_NAME" : "AwsDataCatalog",
  "DATABASE_NAME" : "mpc-events-db-<TAG>",
  "TABLE_NAME" : "fb_pc_data_<TAG WITH UNDERSCORE>",
  "QUERY_RESULTS_S3_BUCKET_PATH" :
"s3://fb-pc-data-<TAG>/query-results/",
  "ID_FIELDS" : "user_data.device_id,user_data.email"
}
```

- For AWS_REGION, it should be lower case and format like “us-west-2”
- For ID_FIELDS
    - If your data only has email PII data. Please update the ID_FIELDS to email only with following command
        - config write Athena /ID_FIELDS "user_data.email"
    - If your data only has device_id PII data. Please update the ID_FIELDS to device_id only with following command
        - config write Athena /ID_FIELDS "user_data.device_id"

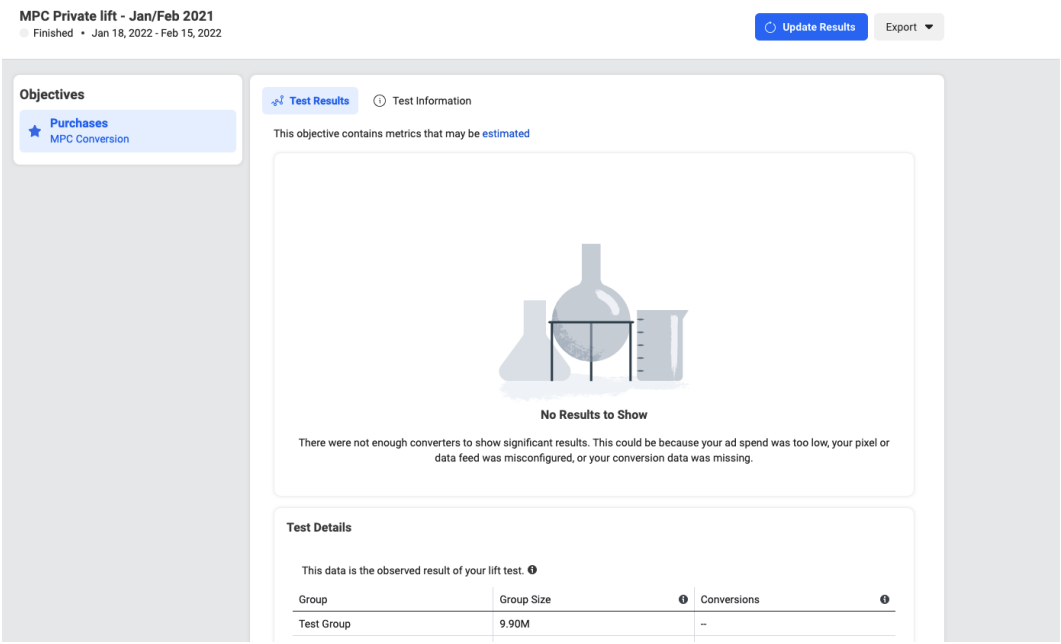
c. config read CloudResources

- Expected value:

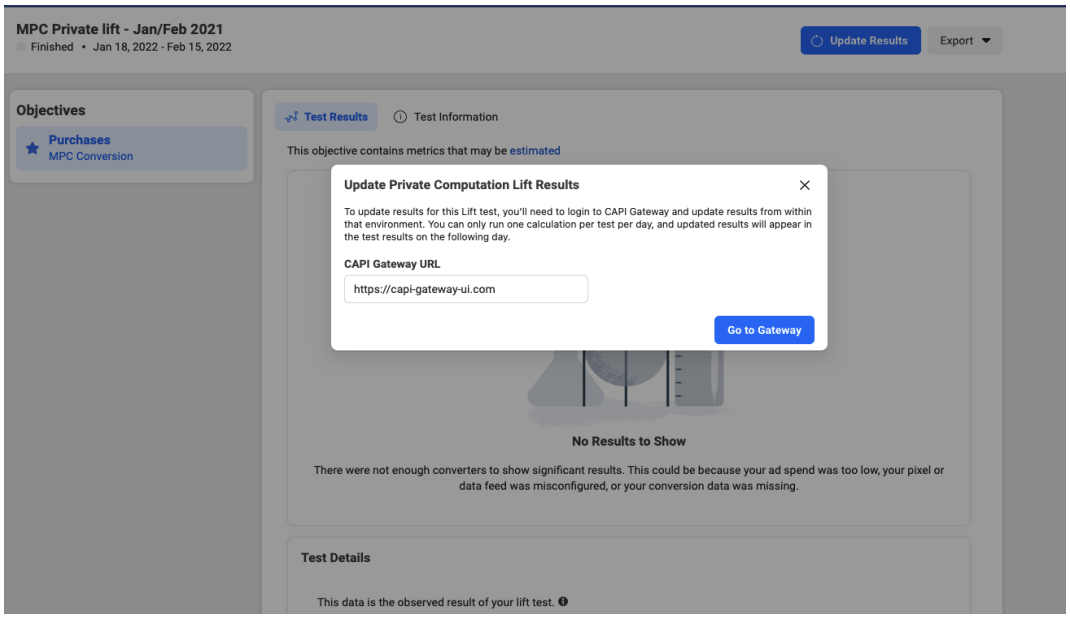
```
{  "AWS_ACCESS_KEY" : "<YOUR AWS ACCESS KEY>",
  "AWS_SECRET_KEY" : "<YOUR AWS SECRET KEY>",
  "AWS_SESSION_TOKEN" : "",
  "CONFIG_FILE_S3" : "s3://fb-pc-config-<TAG>/config.yml",
  "IMAGE_TAG" : "latest"
}
```

Step 4.1: Run Private Lift Computation (15 mins)

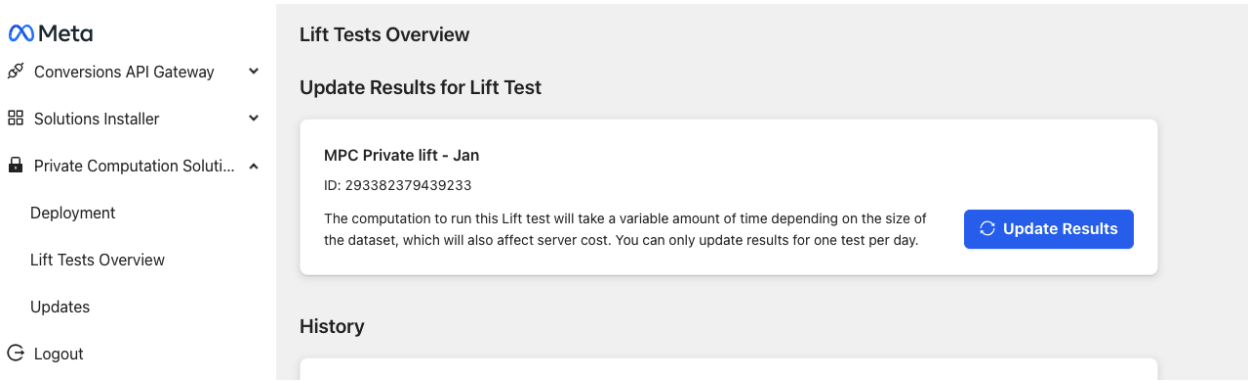
- Go to Lift Report UI (sample URL: https://business.facebook.com/ads/lift/report/?ad_study_id=<your ad_study_id>) and select a MPC Conversion objective
    - replace <your ad_study_id> with your own study id



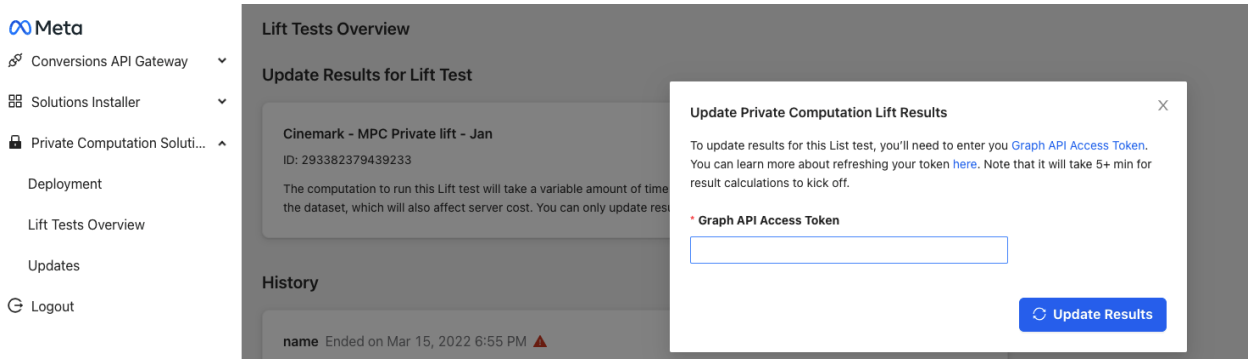
- Click on “Update Results”. A new window will pop-up, enter your Conversions API Gateway instance url here and click on “Go to Gateway”.



- You are now re-directed back to CAPI Gateway. To start the computation, click on “Update Results”.
  - Format: https://<capig.instance.url>/hub/pcs/calculation/<your ad_study_id>/<your ad_study_name>
- Enter the following URL and click on “Go to Gateway”.



- Enter the Graph API token generated in Step 3 and click on “Update Results”. Please note that computation will run for approx 5-6 hours before completion.



- Once the computation begins, logs will be printed to output.txt in your S3 bucket under the directory <data bucket>/query-results/fbpcs_instances_<studyId>_<postfix>. This will be a key resource to monitor and use for debugging purposes in case any issue occurs.

Step 4.2: View Private Lift Results

- After the computation is complete, click on “View Results” to navigate to Lift UI. It can take up to 2 days for the results to populate.

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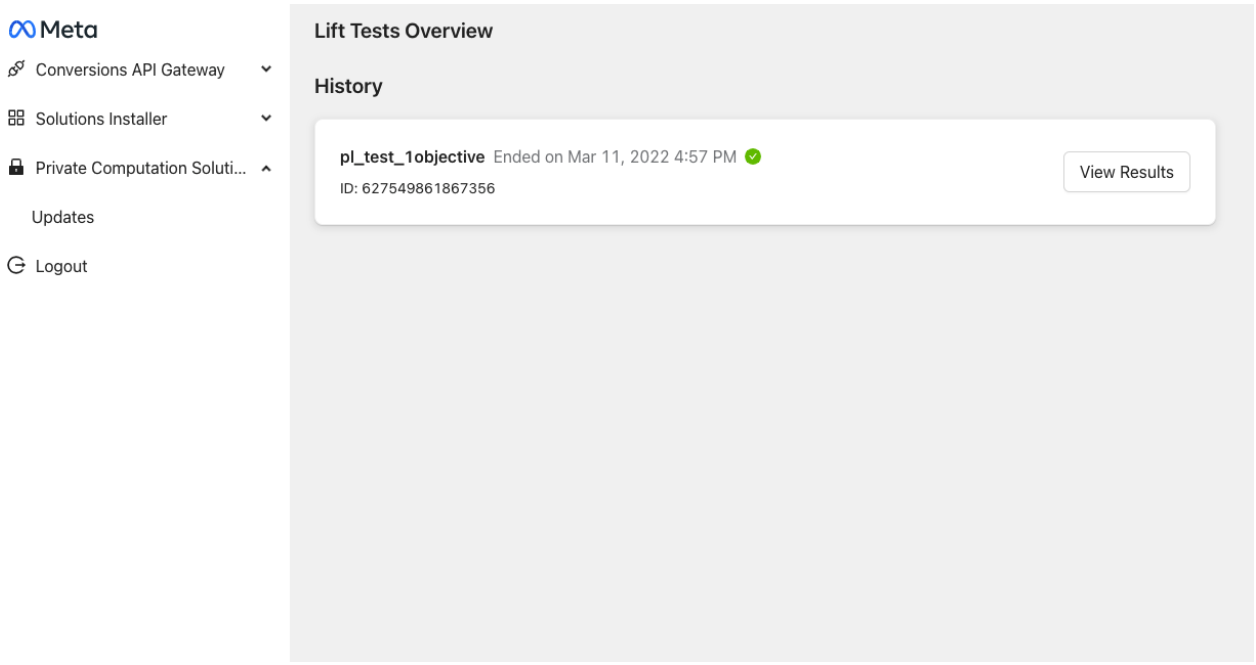


Appendix

A1: Semi-auto data ingestion/preparation

Github URL

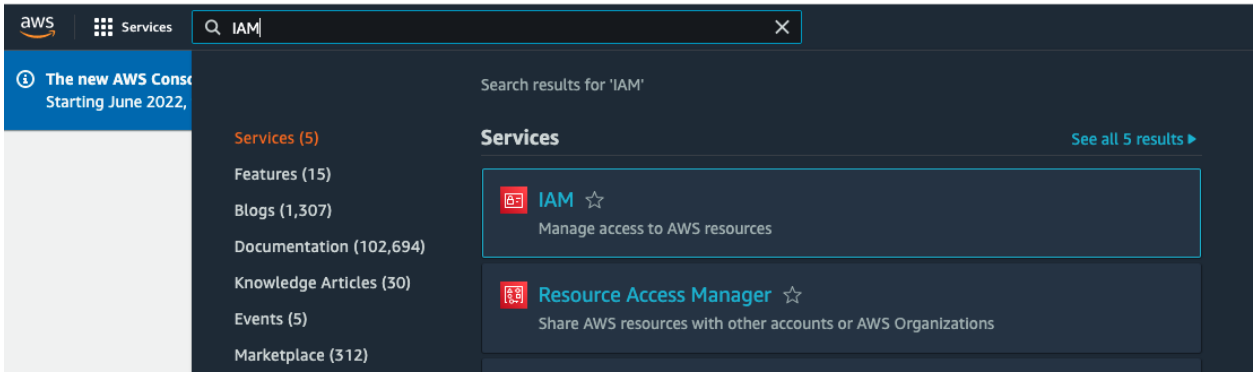
A2: How to set “canary” tier

Sometimes Meta would like you to run on the “canary” tier. Here is how you can set it up.

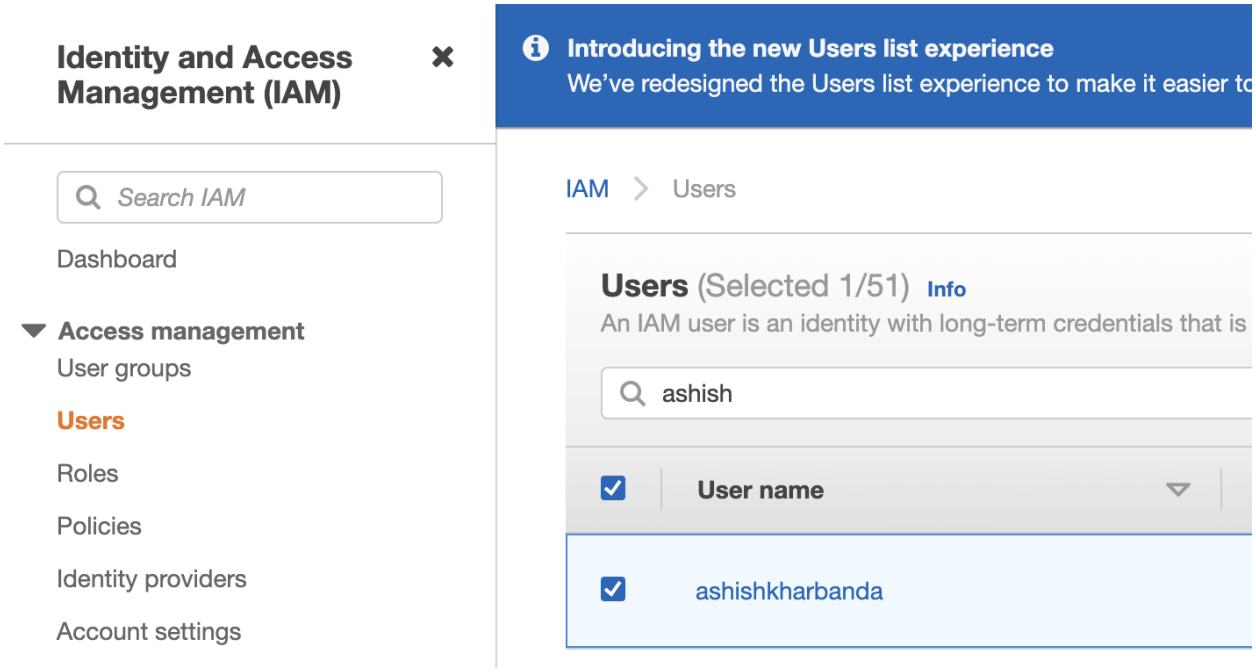
1. Open CAPI API Gateway Shell: `https://<capig.instance.url>/hub/shell`
2. Run the following update commands:
    a. `config write CloudResources /IMAGE_TAG canary`

A3: Configure an AWS IAM user with minimal permissions for future computation after initial infra deployment

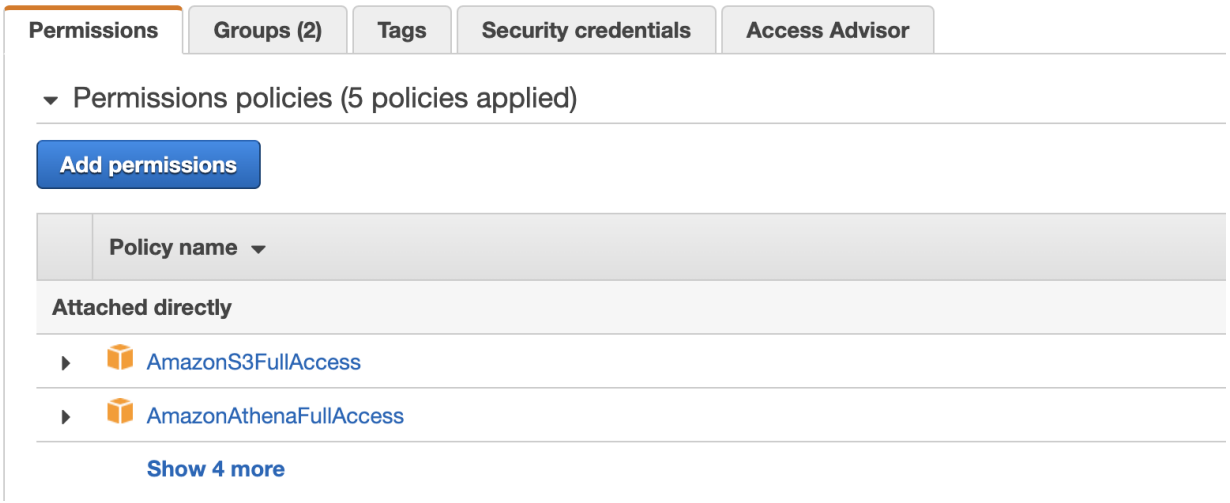
a. Open your AWS account and enter IAM component



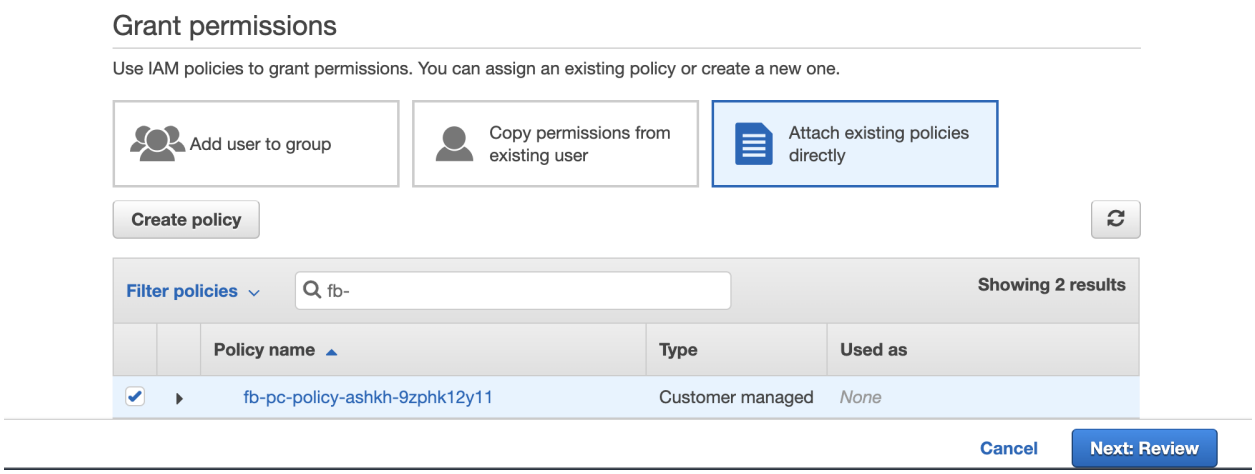
b. Select an AWS IAM user, either create an user or re-use an existing one.



c. Enter into user page and click “add permissions”



d. Attach the “fb-pc-policy-<tag>” policy to the user.



e. Add permission
f. Then you could generate the access_key and Secret_key for this user to fill in the next step in cloudbridge.

A4: Data Migration

Github URL