PARAKEET Browser Service REST API

Interface Details for Publishers' SSP and Prebid Servers

The PARAKEET Browser Service accepts ad requests from the Edge browser, then anonymizes and proxies the requests to SSPs. This document covers the format of the anonymized ad request that is sent to SSPs and is intended for SSPs that want to leverage and test PARAKEET APIs.

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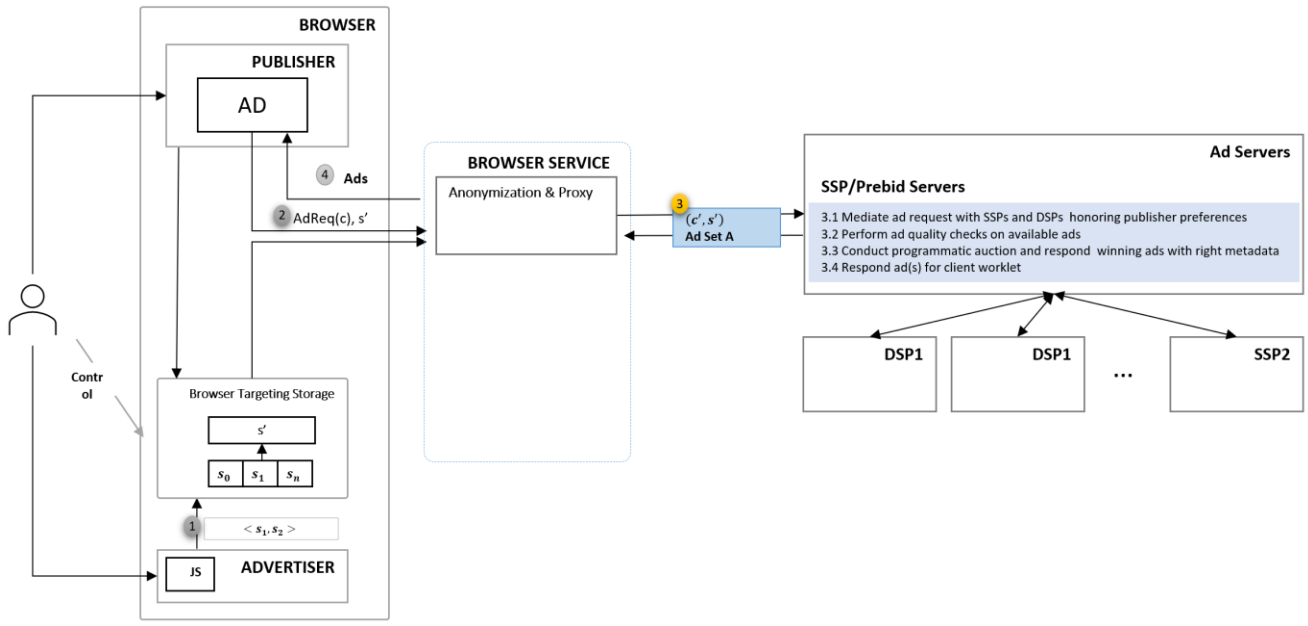
Publisher Page changes to support PARAKEET

For the publisher to enable ads based on user features in local storage and request through service:

1. Include the PARAKEET polyfill either directly on a page or with other scripts/ad-tech (SSP)
2. Execute new JavaScript API to request an ad with any contextual information or interests available. See: Create an AdRequest and serve an ad
    i. On success, create an iFrame, set the src to the provided URL and insert into the document to display the ad.
    ii. On failure, be sure to use **sendBeacon** or other mechanisms to log and track failures.

As an alternative, programmatic SSP/prebid servers can enable PARAKEET ad requests on behalf of publishers. The SSP or prebid server needs to create and support a service at the domain specified in **`proxiedAnonymizingOrigin.`** This document enumerates the PARAKEET request and response formats needed to create the API contract (step 3 in the diagram below).



PARAKEET Ad Request Format

PARAKEET will proxy the request to the origin specified in the `proxiedAnonymizingOrigin` field of the configuration object passed to `createAdRequest`.

POST	`https://{proxiedAnonymizingOrigin}/.well-known/ad-bundles`

Headers

X-Forwarded-For	Anonymized client IP address
User-Agent	Anonymized client User Agent

Body

A JSON object with the following schema:

adProperties	array	An array of AdProperty objects describing the ad placements.
orientation	string	Orientation of the placement. e.g. landscape.
size	string	Size of the placement. e.g. medium, large, ...
slot	string	The name of the ad slot. e.g. div-xyz-abc.
lang	string	Language. e.g. en-us.
bidfloor	number	Minimum bid for this impression.
adtype	string	Requested ad type. e.g. image/native/video.
publisherCode	string	The number identifier that represents a specific publisher's identity registered with the ad network.
publisherAdUnit	string	The string identifier that represents an ad unit/vertical that the publisher has registered with the ad network.
targeting	object	Anonymized contextual targeting information for the ad.
interests	array	A list of interests specific to a given ad request. These may include contextual signals made available at the time of the request, based on page content or publisher 1P data.
geolocation	object	Geolocation information the requesting site may be aware of.
lat	number	Latitude from -90.0 to +90.0, where negative is south.
lon	number	Longitude from -180.0 to +180.0, where negative is west.
userInterests	object	A map from reader names to encrypted JWEs, each containing the differentially privatized user interest information accessible to the reader.

Example Request

```
{
    "publisherCode": "1234",
    "publisherAdUnit": "1234",
    "adProperties": [{
        "orientation": "landscape",
        "size": "medium",
        "slot": "div-xyz-abc",
        "lang": "en-us",
        "bidfloor": 1.0,
        "adType": "image/native"
    }],
    "targeting": {
        "interests": [
            "IAB123", "IAB321", …
        ]
    },
    "userInterests": {
        "http://www.microsoftads.com": <JWE Object>,
        "http://www.facebookads.com": <JWE Object>,
        …
    }
}
```

OpenRTB Compatible Ad Request Format

PARAKEET will be able to support OpenRTB 2.X requests. Fields containing contextual targeting information will be reduced in granularity until the K-Anonymity threshold is met. If the K-Anonymity threshold is met for the full OpenRTB request, then user interest information in the same format specified above will be added to `user.ext.interests`.
The response schema is the same, regardless of which ad request format is used.

Body

A JSON object with the following schema (non-exhaustive):

device	object	A set of properties describing the ad placement.
ua	string	Browser user agent string
language	string	Browser language using ISO-639-1-alpha-2
ip	string	The client IP address
devicetype	string	General type of device
geo	object	Browser location
lat	number	Latitude from -90.0 to +90.0, where negative is south.
lon	number	Longitude from -180.0 to +180.0, where negative is west.
user	object	Information about the user. Identifiers will not pass the K-Anonymity check, so this field will only contain parakeet interest groups.
ext	object	Extension object
interests	object	A map from reader names to encrypted JWEs, each containing the differentially privatized user interest information accessible to the reader.
imp	array	Array of impression objects listing available ad placements
id	string	A unique ID indicating the placement. A GUID will prevent the request from passing the K-Anonymity check, so if included this id should start at 1 and increment.
tagid	string	Identifier for a specific ad placement
bidfloor	number	Minimum bid for this impression
site	object	Contextual information about the publisher's website
content	object	Details about the content of the site
publisher	object	Details about the site publisher

Example Request

```
{
  "device": {
    "devicetype": 0,
    "ip": "13.29.51.127",
    "ua": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) ...",
    "geo": {"lat": 47.63, "lon": -122.14 }
  },
  "imp": [
    {
      "id": "1",
      "tagid": "div-xyz-abc",
      "bidfloor": 1.0,
      "native": "{\"placementtype\":\"medium\", ...}",
    }
  ],
  "site": {
    "content": {
      "cat": [
        "IAB24", "IAB25", …
      ]
    },
    "publisher": {
      "id": "1"
    }
  },
  "user": {
    "ext": {
      "interests": {
        "www.microsoftads.com": <JWE Object>,
        "www.googleadservices.com": <JWE Object>,
        …
      }
    }
  }
}
```

Response

A JSON object with the following schema:

winningAds	array	An array of Ad objects containing the creative URL, metadata, and reporting target URLs.
creativeBundleUrl	string	The URL for the creative bundle.
adMetadata	object	General ad metadata containing, e.g. winning bid information. **Ultimately passed to the seller's worklet to be used for reporting.**
adReportingBeacons	object	Mapping from beacon event names to reporting URLs.

Example Response

```
{
    "winningAds": [
        {
            "creativeBundleUrl": "https://adtech.example/adBundle/1234",
            "adMetadata": {
                "bid": 0.42,
                "adtype": "image/native",
                "impid": "",
                "campaignid": "",
                "creativeid": "",
                "exclusion": "interest1, freqCap, locExcluded",
                "lang": "en-ww",
                "bidInferenceOrigin": "hxxps://dsp.example - FUTURE MPC USE",
                "bidModelFormat": "hxxps://dsp.example/bidmodel-structure.out- FUTURE
MPC USE",
                "contextualSignalProcessor": "hxxps://dsp.example/feature-
processing.js-FUTURE MPC USE"
            },
            "adReportingBeacons": {
                "click": {
                    "url": "https://dsp.example/click?buyer_event_id=123"
                },
                "view": {…
                },
            }
        }
    ]
}
```