Integrating as a DSP

Getting Started

Integration and testing will only begin after all legal documents are signed by both parties. Get in touch with our technical team here: ads-integration-support@kaiostech.com

Introduction

KaiOS is a web-based mobile operating system that enables a new category of smart feature phones. **KaiAds** support standard web ad types such as images, video, text, and richmedia ads.

Location

Our servers are located in Singapore.

Latency

At this stage we are allowing up to 500ms for a bid response. Please reach out to our technical team if your DSP is incapable of responding in time for impression opportunities. We will make reasonable adjustments accordingly.

Technical

KaiAds SSP supports OpenRTB 2.5 and it's our preferred method for integration. If your DSP isn't OpenRTB compliant, reach out to our technical team and we can come up with a custom solution. Please find example OpenRTB bid requests and bid responses below.

Bid request example (Interstitial banner)


```
{
   "id":"FrZVy9z7MQj64z86sYRJCWxdm",
   "imp":[
      {
         "id":"1",
```

```
         "banner":{
            "format":[
               {
                  "w":250,
                  "h":150
               },
               {
                  "w":200,
                  "h":150
               }
            ]
         },
         "bidfloor":0.78,
         "secure":1
      }
   ],
   "app":{
      "id":"7ac2e350-0820-ba4e-83b7-e016ee31dc74",
      "bundle":"app://7ac2e350-0820-ba4e-83b7-e016ee31dc74/manifest.webapp",
      "publisher":{
         "id":"ff3b1882-8e73-477d-e86f-cc17a5d860fc"
      }
   },
   "device":{
      "ua":"Mozilla/5.0 (Mobile; CAT B35; rv:48.0) Gecko/48.0 Firefox/48.0
KAIOS/2.5",
      "geo":{
         "country":"IND",
         "city":"Kolkata"
      },
      "dnt":0,
      "ip":"47.11.0.1",
      "devicetype":4,
      "os":"KaiOS",
      "osv":"2.5",
      "js":1,
      "connectiontype":3,
      "ifa":"374ff4a5ef242041f033304ec9cef0b55e368da8"
   },
   "tmax":700,
   "cur":[
      "USD"
   ],
   "ext":{
      "partnerid":131,
      "clickurlopt":0
   }
}
```

OpenRTB Bid request attributes

Attributes with KaiOS specific comments:

Attribute	Comments	Required?
id	A randomly generated unique identifier from our SDK for each bid request.	Yes
imp.id	A unique identifier for this impression within the context of the bid request.	Yes
app.id	A developer specified app identifier for the app making the request. *This field is optional and is provided by the developer, not by KaiAds SSP	Yes
app.bundle	The KaiOS equivalent for bundleID is a manifestURL. *As of now, you can only view and evaluate the application associated with a manifest URL on a real KaiOS device.	Yes
imp.banner.format	Array of format objects representing the banner sizes permitted.	Banners only
imp.inst	Flag for interstitial ads. If set to 1, expect the creative in your bid response to be displayed in fullscreen mode on our SDK.	Banners only
imp.bidfloor	Minimum bid for this impression expressed in CPM (USD). KaiAds SSP will always provide a non zero value in this field. *KaiAds SSP selects the winning bid via first price auction. Refer to the Auction section for more details.	Banners only
imp.bidfloorcur	Currency of the bid floor value. All bid requests from KaiAds SSP will be in USD.	Banners only
imp.video.w	Width of the video player in device independent pixels, expect this value to be the screen width of our devices.	Video only
imp.video.h	Height of the video player in device independent pixels, expect this value to be the screen height of our devices.	Video only
imp.video.startdelay	Indicates the start delay in seconds for pre-roll, mid-roll, or post-roll ad placements.	Video only
imp.video.minduration	Minimum video ad duration in seconds.	Video only

imp.video.maxduration	Maximum video ad duration in seconds.	Video only
imp.video.skip	Indicates if the player will allow the video to be skipped, where 0 = no, 1 = yes.	Video only
imp.video.mimes	MIME types supported.	Video only
device.ua	User agent string. KaiOS devices will have the substring "KAIOS/<version_number>" located at the end of the user agent. Examples: Doro DFC-0190: *Mozilla/5.0 (Mobile; DORO7060; rv:48.0) Gecko/48.0 Firefox/48.0 KAIOS/2.5* JioPhone F61F: *Mozilla/5.0 (Mobile; LYF/F61F/LYF-F61F-000-02-08-010319; Android; rv:48.0) Gecko/48.0 Firefox/48.0 KAIOS/2.5*	Yes
device.js	Support for JavaScript, where 0 = no, 1 = yes.	Yes
user.id	A unique identifier generated by our SDK which will be saved to local storage.	Yes
app.publisher.id	The publisher id of the application making the bid request.	Yes
at	KaiAds SSP is currently using first price auction.	Yes
ext. clickurlopt	Specifies whether a click URL attribute is required in the bid response, where 0 = required and 1 = optional. *If the ext.clickurlopt attribute is not specified, then the click URL is required in the bid response.	n/a

Bid response example (Interstitial Banner)


```
{
  "id":"1",
  "seatbid":[
    {
      "bid":[
        {
          "id":"12345",
```

```
          "impid":"2",
          "price":3,
          "iurl":"http://example.com/imageurl",
          "nurl":"http://example.com/winnoticeurl",
          "burl":"http://example.com/billingnoticeurl",
          "lurl":"http://example.com/lossnoticeurl",
          "adid":"17221",
          "adm":"<body><a href=\"https://creative-clickthrough-link\"><img
src=\"https://url-to-your-creative\"></a></body>",
          "w":"240",
          "h":"320",
          "ext":{
            "sspclicktracker":"http://example.com/clickthroughurl"
          }
        }
      ]
    }
  ]
}
```

OpenRTB Bid response attributes

In addition to the fields required by the OpenRTB standard, our SSP also requires the following fields to be provided:

Attribute	Comments	Required?
bid.price	Bid price expressed as CPM (USD).	Yes
bid.iurl	URL to an image that is representative of the content of the campaign. *If this field is populated, we'll display the creative provided here instead of the ad markup provided in the adm field.	Depends
bid.nurl	Win notice URL invoked if the bid is selected for display.	Yes No
bid.burl	Billing notice URL invoked if the bid is selected for display.	No
bid.lurl	Loss notice URL called if the bid is not selected for display.	No
bid.adid	ID of a preloaded ad if the bid wins.	Yes
bid.adm	Custom HTML Ad markup should be provided in this field or inline VAST document. (See below for more details) *We will only display the ad markup provided in this field if bid.iurl is not provided.	Depends

bid.w	Width of the creative. Current KaiOS devices support QVGA resolutions in portrait (240 x 320 pixels) or landscape (320 x 240 pixels).	Yes
bid.h	Height of the creative. Current KaiOS devices support QVGA resolutions in portrait (240 x 320 pixels) or landscape (320 x 240 pixels).	Yes
ext.SSPclicktracker	Extension field that will be used to supply the Clickthrough URL to our SDK.	Yes

Macro substitutions in response attributes

Kai SSP supports the following macro substitutions for **adm**, **nurl**, **burl** and **lurl** attributes:

- ${AUCTION_PRICE}
- ${AUCTION_SEAT_ID}
- ${AUCTION_LOSS}

Feel free to contact our technical team if other macro substitutions are required.

Auction

Our SSP runs a first price auction based on the **bid.price** field provided in the bid response from our demand partners. Once the SSP selects a winning bid, it'll invoke both the billing notice URL and the win notice URL.

Our SSP will always provide a non zero bid floor value in our requests. If the bid price in your bid response does not exceed the requested bid floor, our SSP will not select your creatives for bidding. Please note that our bid floor price is not static and may vary based on certain factors (i.e. location) of the incoming bid request.

Banner Ads

We currently support full-screen (interstitial) and traditional banners. We will provide the ad container's max-width and max-height in the request. Current KaiOS devices support QVGA resolutions in portrait (240 x 320 pixels) or landscape (320 x 240 pixels).

In the absence of an image creative provided in bid.iurl, our SSP will serve your creative via the HTML Ad Markup you provide us with in the **bid.adm** field of the bid response. The markup will be embedded in an iframe so any html, css or javascript you send will be displayed provided that it's valid.

Example Ad Markup:

```
<style>
* {
    margin: 0;
    padding: 0;
    border: 0
}
body {
    background: #000
}

img {
    position: absolute;
    margin: auto;
    top: 0;
    right: 0;
    bottom: 0;
    left: 0
}
</style>
<body>
  <a href="https://creative-clickthrough-link" target="_blank">
        <img src="https://url-to-your-creative">
  </a>
</body>
```

If you serve a creative beyond the size specified in the bid request, the ad may be cropped when we try to display it on our devices.

Note: Due to the limited screen resolution of our devices, we are also open to resizing creatives that may be larger than the imp.banner.w and imp.banner.h attributes specified in the bid request. Please let us know if this is required, alternatively you can also resize the creative on your end within the markup you provide us with. Please note that in this case, we rely on our partners to fully review their ad markup requirements before serving it through our SSP.

Kai SSP Banner Ad metrics

KaiAds SSP records the following events when banner ads are displayed using our SDK:

Event	Source	Comments
load	Ads-SDK	Load events are recorded when the developer preloads the ad on our SDK.
display	Ads-SDK	A display event is recorded when the SDK attempts to display the creative on screen.

		*Note that this does not account for display errors and may result in discrepancies between impressions recorded by our SSP and your DSP.
click	Ads-SDK	A click event is recorded when the user clicks on the ad (cursor mode) or presses the key mapped to the ad's clickthrough action (non cursor mode). *Navigation for KaiOS apps are split into two categories, cursor and non cursor apps.
close	Ads-SDK	Recorded when the user dismisses the ad container.

Note: For more details regarding our SDK, please visit: https://www.kaiads.com/publishers/sdk.html

Banner Ad errors codes

We log the following bid response status codes on our SSP server.

- HTTP 200 – Response failed
- HTTP 204 – No Bid

If discrepancies arise and you would like to start an investigation, you may request for error code occurrences via email.

Video Ads

KaiAds SSP supports skippable linear ads via the VAST 3.0 standard. The video player we use will support both cursor and non-cursor navigation.

Due to the specifications of our devices, we have several limitations:

1. Only interstitial requests are supported, our SSP will not return video ads for banner slots. As such all video bid responses should target a screen dimension of 240 x 320.
2. We do not support companion ads or non-linear ads, only linear ad support is available.
3. To preserve the data consumption of our end users, video ad requests are only made for KaiOS devices connected to wifi. **Users in the United States are the sole exception to this rule (Subject to change in the future).*
4. Just like banner ads, we require an explicit clickthrough URL to be supplied, either through an extension field if OpenRTB is used, or a Linear.VideoClicks.Clickthrough element via VAST.
5. Video controls do not support the following: expanding and collapsing the player, volume controls and rewind functionalities.
6. We only serve the first creative in the first ad of the VAST document.

Example VAST document:

```
 <VAST version="3.0" xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <Ad id="20001">
        <InLine>
            <AdSystem version="4.0">iabtechlab</AdSystem>
            <AdTitle>iabtechlab video ad</AdTitle>
            <Pricing model="cpm" currency="USD">
                <![CDATA[ 25.00 ]]>
            </Pricing>
            <Error>http://example.com/error</Error>
            <Impression id="Impression-
ID">http://example.com/track/impression</Impression>
            <Creatives>
                <Creative id="5480" sequence="1">
                    <Linear>
                        <Duration>00:00:16</Duration>
                        <TrackingEvents>
                            <Tracking
event="start">http://example.com/tracking/start</Tracking>
                            <Tracking
event="firstQuartile">http://example.com/tracking/firstQuartile</Tracking>
                            <Tracking
event="midpoint">http://example.com/tracking/midpoint</Tracking>
                            <Tracking
event="thirdQuartile">http://example.com/tracking/thirdQuartile</Tracking>
                            <Tracking
event="complete">http://example.com/tracking/complete</Tracking>
                            <Tracking event="progress"
offset="00:00:10">http://example.com/tracking/progress-10</Tracking>
                        </TrackingEvents>
                         <VideoClicks>
                            <ClickTracking id="blog">
                                <![CDATA[https://iabtechlab.com]]>
                            </ClickTracking>
                            <CustomClick>http://iabtechlab.com</CustomClick>
                        </VideoClicks>
                        <MediaFiles>
                            <MediaFile id="5241" delivery="progressive"
type="video/mp4" bitrate="500" width="400" height="300" minBitrate="360"
maxBitrate="1080" scalable="1" maintainAspectRatio="1" codec="0">
                                <![CDATA[https://iab-
publicfiles.s3.amazonaws.com/vast/VAST-4.0-Short-Intro.mp4]]>
                            </MediaFile>
                        </MediaFiles>
                    </Linear>
                </Creative>
            </Creatives>
        </InLine>
    </Ad>
</VAST>
```

VAST Inline elements

Assuming your VAST document isn't a wrapper element, we expect the following elements to be provided in the inline tag:

Element	Comments	Required?
Inline.Adsystem	Name and version of your ad system.	Yes
Inline.AdTitle	Common name of your ad.	Yes
Inline.Error	Error URL for tracking VAST errors.	Optional
Inline.Impression	Impression URL invoked by the video player when the first frame of the creative is displayed.	Yes
Inline.Pricing	A value that represents a price that can be used by real-time bidding (RTB) systems. *Kai SSP will conduct a first price auction using this value. Unless expressed elsewhere (i.e. OpenRTB), this is **not** an optional field in our partner's bid response.	*Yes

VAST linear elements

We currently do not support non-linear elements or companion ads, for linear elements we require the following attributes to be provided:

Element (Attributes)	Comments	Required?
Linear (skipoffset)	Only supported ad format for VAST. *skipoffset* is also supported. Our SDK will comply with the value provided and provide a skippable countdown button.	Yes (*skipoffset* is optional)
Linear.Duration	The ad duration of a Linear creative	Yes
Linear.MediaFiles	Container for media files elements	Yes
Linear.VideoClicks.Clickthrough	Clickthrough URL for the creative. *Our Ads-SDK will bind a click URL value to the corresponding navigation controls. Unless expressed elsewhere (i.e. OpenRTB extension), this is **not** an optional field in our partner's bid response.	*Yes

Linear.TrackingEvents	See below for more information on tracking elements.	Yes

VAST tracking events

Tracking event support list supported by the player we've integrated with:

Event	Comments	Supported?
start	This event is used to indicate that an individual creative within the ad was loaded and playback began.	Yes
firstQuartile	The creative played for at least 25% of the total duration.	Yes
midpoint	The creative played for at least 50% of the total duration.	Yes
thirdQuartile	The creative played for at least 75% of the total duration.	Yes
complete	The creative was played to the end at normal speed.	Yes
mute	The user activated the mute control and muted the creative. *This event is not supported by our Ads-SDK	No
unmute	The user activated the mute control and unmuted the creative. *This event is not supported by our Ads-SDK	No
pause	The user clicked the pause control and stopped the creative.	Yes
rewind	The user activated the rewind control to access a previous point in the creative timeline. *This event is not supported by our Ads-SDK.	No
resume	The user activated the resume control after the creative had been stopped or paused.	Yes
fullscreen	The user activated a control to extend the video player to the edges of the viewer's screen. *By default, all video ads shown on our devices will be fullscreen.	No
exitFullscreen	The user activated the control to reduce video player size to original dimensions. *By default, all video ads shown on our devices will be fullscreen.	No
expand	The user activated a control to expand the creative.	No

	*Our Ads-SDK do not support controls for this.	
collapse	The user activated a control to reduce the creative to its original dimensions. *Our Ads-SDK do not support controls for this.	No
acceptInvitationLinear	The user activated a control that launched an additional portion of the creative. *Our Ads-SDK do not support controls for this.	No
closeLinear	The user clicked the close button on the creative. *Our Ads-SDK favours the skip event instead this.	No
skip	The user activated a skip control to skip the creative, which is a different control than the one used to close the creative. *Only available is *skipoffset* attribute is provided.	Yes
progress	The creative played for a duration at normal speed that is equal to or greater than the value provided in an additional attribute for `offset`.	Yes

VAST + OpenRTB Integration

In addition to supporting raw VAST documents in the response body, we also support inline VAST documents returned in an OpenRTB bid response. We expect the VAST document to be provided in the ad markup attribute 'adm'.

Example RTB response:

```
{
  "id": "123",
  "seatbid": [
    {
      "bid": [
        {
          "id": "12345",
          "impid": "2",
          "price": 3,
          "nurl": "http://example.com/winnoticeurl",
          "adm": "<?xml version=\"3.0\" encoding=\"utf-8\"?></VAST>"
        }
      ]
    }
  ]
}
```

If the *price* attribute is available in the OpenRTB bid response, we will run the auction using the provided value. For non OpenRTB implementations (or if the price attribute is missing in the response), we will fallback to the *Inline.Pricing* element in the VAST document. Please refer to the section on bid response attributes for more details regarding the other fields.

Kai SSP Video Ad metrics

KaiAds SSP records the following events when video ads are displayed using our Ads-SDK:

Event	Source	Comments
init	Video player	Indicates that the video player has been initialized successfully.
load	Ads-SDK	Load events are recorded when the developer preloads the ad on our SDK.
load	Video player	Indicates that the player has successfully loaded the VAST document.
display	Ads-SDK	A display event is recorded when the SDK attempts to display the creative on screen.
impression	VAST	Used to track when the first frame of the ad is displayed.
play	Video player	Indicates that the player has started a playback.
start	VAST	Indicates that an individual creative within the ad was loaded and playback began.
first_quartile	VAST	Indicates that the creative has played for at least 25% of the total duration.
midpoint	VAST	Indicates that the creative has played for at least 50% of the total duration.
third_quartile	VAST	Indicates that the creative has played for at least 75% of the total duration.
complete	VAST	Indicates that the creative played to completion at normal speed.
end	Video player	Indicates that the video player has finished playing all content.
pause	Video player	Indicates that playback has been paused.
skip	Video player	Indicates that playback has been skipped.

click	Ads-SDK	A click event is recorded when the user presses the key mapped to the ad's clickthrough action (non-cursor mode).
close	Ads-SDK	Recorded when the user dismisses the ad container.

Video Ad error codes

We log the following error codes for video ads on our SSP server.

- HTTP 200 – Response failed
- HTTP 204 – No Bid
- VAST 100 – XML Parsing error
- VAST 303 – No Ads VAST response after one or more Wrappers.

If discrepancies arise and you would like to start an investigation, you may request for error code occurrences via email.

KaiOS Advertising ID (KAID)

KaiOS Advertising ID, KAID, is a stable ID uniquely identifying a KaiOS user to demand partners. It is analogous to Google Advertising ID. A given user will have the same KAID across demand partners. It is a UUID type 4, for example: c52dbd96-224c-48af-bcef-566e7651535c.

Testing with a real device

If you would like to evaluate applications on our Appstore or how your creatives look using our SDK on a real device, let us know and we'll make arrangements to ship you one.