

*OpenRTB Dynamic Native Ads API  
Specification Version 1.2*  
Final Version July 2017

## Introduction

The Native Ads sub-committee of the IAB OpenRTB Project assembled in May 2014 to develop a new supplementary API specification for companies interested in an open protocol for the automated trading of Native Ads enabled media across a broader range of platforms, devices, and advertising solutions. This document is the culmination of those efforts.

## ABOUT THE IAB'S TECHNOLOGY LAB

The IAB Technology Laboratory is a nonprofit research and development consortium charged with producing and helping companies implement global industry technical standards and solutions. The goal of the Tech Lab is to reduce friction associated with the digital advertising and marketing supply chain while contributing to the safe growth of an industry.

The IAB Tech Lab spearheads the development of technical standards, creates and maintains a code library to assist in rapid, cost-effective implementation of IAB standards, and establishes a test platform for companies to evaluate the compatibility of their technology solutions with IAB standards, which for 18 years have been the foundation for interoperability and profitable growth in the digital advertising supply chain.

**Further details about the IAB Technology Lab can be found at: <https://iabtechlab.com/>. The OpenRTB Work Group is a working group within the IAB Technology Lab.**

This document can be found at <https://iabtechlab.com/specifications-guidelines/openrtb-dynamic-native-ads-api-1-2/>

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## Change Log

Version	Date	Section Link	Change
1.0	Jan 2015		Original Version
1.1	Oct 2015		Various clerical fixes and clarifications, standardized creative element lengths/sizes/aspect ratios in the asset sub-objects, added new context and placement

			types to bid request, noted that direct-object representation is supported along with string-encoded. See 1.1 spec for further change log details.
1.2	Mar 2017	<a href="#">Request</a>	As previewed in 1.1, deprecating the AdUnit and LayoutID fields - they were replaced in 1.1 with Placement and Context.
1.2	Mar 2017	<a href="#">Event Trackers Request, Response</a>	Add new support for declared types of event tracking in the bid request and an array of responses for tracking in the response. Marking previous <a href="#">imptrackers and jstracker</a> as to be deprecated.
1.2	Mar 2017	<a href="#">Request, Response</a>	Added support for supply source to indicate whether they support displaying a link to a custom privacy notice, and for transmitting said URL in the response.
1.2	Mar 2017	<a href="#">Request, Response, Title, Data, Image</a>	Added support for third-party ad serving / dynamic creative by establishing a way to respond with a URL to retrieve the assets rather than including all the assets inline.
1.2	Mar 2017	<a href="#">Examples</a>	Updated examples to reflect all above changes
1.2	July 2017	<a href="#">Request, Response</a>	Added support for Dynamic Content Specification as an alternate method for third-party ad serving, in beta.

## Before You Get Started

This specification contains a detailed explanation of a sub-protocol of the OpenRTB real-time bidding interface. Not all objects are required, and each object may contain a number of optional parameters. To assist a first time reader of the specification, we have indicated which fields are essential to support a minimum viable real time bidding interface for various scenarios.

A minimal viable interface should include the **required** and **recommended** parameters, but the scope for these parameters may be limited to specific scenarios. In these cases, the scope will be qualified with the applicable scenarios (e.g., **required for native impressions** and **recommended for native impressions**). Conversely, if the scope is not qualified, it applies to all scenarios.

Optional parameters may be included to ensure maximum value is derived by the parties.

	Field	Scope	Type	Default	Description
<b>Required</b> parameters <u>must</u> be included.	<u>id</u>	<b>required</b>	<u>string</u>	-	Unique ID of the bid request, provided by the exchange.
	<u>version</u>	<b>required</b>	<u>string</u>	-	Open RTB version
	<u>imp</u>	<b>required</b>	<u>array of objects</u>	-	Array of impression objects. Multiple impression auctions may be specified in a single bid request. At least one impression is required for a valid bid request.
<b>Recommended</b> parameters <u>should</u> be included unless there is a compelling reason to omit them.	<u>site</u>	<b>recommended for websites</b>	<u>object</u>	-	See Site Object
	<u>app</u>	<b>recommended for native apps</b>	<u>object</u>	-	See App Object
	<u>device</u>	<b>recommended</b>	<u>object</u>	-	See Device Object
	<u>user</u>	<b>recommended</b>	<u>object</u>	-	See User Object
<b>Optional</b> parameters <u>may</u> be included at your discretion.	<u>at</u>	<u>optional</u>	<u>string</u>	2	Auction Type. If "1", then first price auction. If "2", then second price auction. Additional auction types can be defined as per the exchange's business rules.
	<u>tmax</u>	<u>optional</u>	<u>integer</u>	-	Maximum amount of time in milliseconds to submit a

**IMPORTANT:** Since **recommended** parameters are not required, they may not be available from all supply sources. It is suggested that all parties to OpenRTB transaction complete the integration checklist (please refer to OpenRTB) to identify which parameters the supply side supports in the bid request, and which parameters the demand side requires for ad decisioning.

# 1 Introduction

## 1.1 Mission / Overview

The mission of the OpenRTB Native project is to spur standardization and greater growth in the Real-Time Bidding (RTB) marketplace for Native Ads by providing open industry standards for communication between buyers of advertising and sellers of publisher inventory.

This specification is a sub-protocol of OpenRTB to allow for the delivery of native advertising formats, as their specifics differ from publisher to publisher. In May 2013, a separate IAB subcommittee was formed to define the request and response structures of native ad units; version 1.0 was published in early 2015.

Version 1.1 is designed to fix errors, make clarifications, and promote further adoption through refined standardization of assets and classification fields.

Version 1.2 adds support for third-party/dynamic creatives, more robust event-tracking support, privacy opt-out information sharing, and makes other minor enhancements as noted in the change log.

## 1.2 Credits / Project History

This document has been developed by the IAB Technology Lab's OpenRTB Native Subgroup. The OpenRTB Working Group mission and participation list can be reviewed at:

<http://www.iab.com/guidelines/real-time-bidding-rtb-project/>

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## 1.3 Resources

Resource	Location
OpenRTB Website	<a href="https://iabtechlab.com/openrtb/">https://iabtechlab.com/openrtb/</a>
OpenRTB Native Ads Project Page	<a href="http://github.com/openrtb/OpenRTB/NativeAds.html">http://github.com/openrtb/OpenRTB/NativeAds.html</a>
Developer / Product Manager Mailing List	<a href="http://groups.google.com/group/openrtb-native">http://groups.google.com/group/openrtb-native</a>
Making Sense of Programmatic Native (“OpenRTB for native for dummies”)	<a href="http://www.sharethrough.com/guides/programmatic-native/">http://www.sharethrough.com/guides/programmatic-native/</a>
IAB Deep-Dive on In-Feed Ads	<a href="http://www.iab.net/media/file/IAB_Deep_Dive_on_InFeed_Ad_Units.pdf">http://www.iab.net/media/file/IAB_Deep_Dive_on_InFeed_Ad_Units.pdf</a>
IAB Native Advertising Playbook	<a href="http://www.iab.net/media/file/IAB-Native-Advertising-Playbook2.pdf">http://www.iab.net/media/file/IAB-Native-Advertising-Playbook2.pdf</a>
Guide to Native 1.1	<a href="http://nativeadvertising.com/openrtb-2-4-and-native-1-1-the-new-iab-standards-that-are-allowing-native-ads-to-scale/">http://nativeadvertising.com/openrtb-2-4-and-native-1-1-the-new-iab-standards-that-are-allowing-native-ads-to-scale/</a>

## 1.4 Version History

Version 0.99.10.24 PUBLIC COMMENT DRAFT October 24, 2014

Version 0.99.10.27 PUBLIC COMMENT DRAFT October 27, 2014

Version 1.0.0.0 EXTERNAL DRAFT November 19, 2014

Version 1.0.0.1 EXTERNAL DRAFT December 14, 2014

Version 1.0.0.2 FINAL DRAFT January 23, 2015

Version 1.1 FINAL DRAFT March 22, 2015

Version 1.2 PUBLIC COMMENT DRAFT April, 2017

Version 1.2 FINAL DRAFT July 2017

## 2 Native Ads Basics

Native advertising is an online advertising method in which the advertiser attempts to gain attention by providing content in the context of the user's experience. Native ad formats match both the form and function of the user experience in which it is placed. This is in contrast to traditional banner or interstitials ads, which are displayed in a separate space of predefined and universal size, without regard to their surroundings.

## 2.1 In-Feed Ad Units

To help define and clarify the types and categories of native advertising, the IAB published a [Deep Dive on In-Feed Ad Units](#) in July 2015. Version 1.1 and forward of the Native spec use these concepts to define the definitions of ad types, detailed below as Context and PlacementType, which are replacing the previous LayoutID and AdUnitID, which were defined in Native 1.0 and based on the original Native Advertising Playbook.

	1	2	3
	Content Feeds	Social Feeds	Product Feeds
<b>Where found</b>	Publisher content sites and news aggregators such as CNN, Forbes, Yahoo	Social networking and messaging apps such as Facebook, Instagram, Tango	Retail sites and app listings such as Amazon, Etsy, eBay
<b>Most common ad types/content objects</b>	Story ad, video ad	Story ad, video ad, app install ad, product ad	Product ad, app install ad
<b>Most common types of links</b>	Articles, videos, stories, images, music	Social content, articles, videos, stories, images and music	Products and apps
<b>Representative feed view</b>			

## 2.2 Data Format

As this specification outlines an optional sub-protocol of the main OpenRTB protocol payload, the format must follow that of its parent. Please refer to the main OpenRTB specification for details of various formats that may be used

## 2.3 Versioning

The Native Object in the Bid Request (OpenRTB contains a “ver” field defining the version of the OpenRTB native extension.

## 2.4 Customization and Extensions

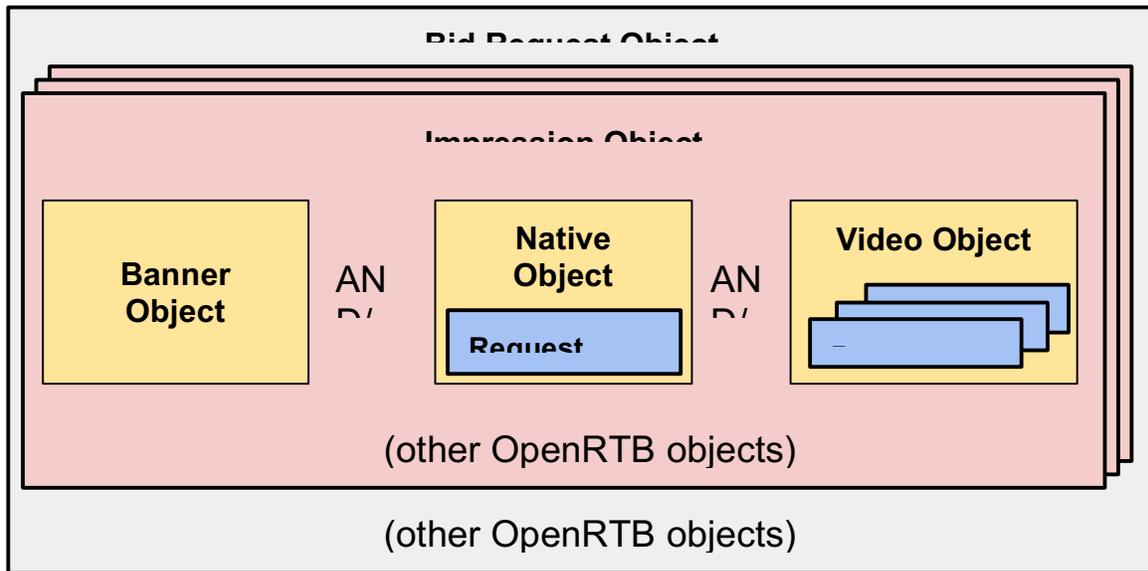
The OpenRTB Native Ads spec allows for exchange specific customization and extensions of the specification. Any object may contain extensions. In order to keep extension fields consistent across platforms, they should consistently be named “ext”.

### 3 Bid Request Details

RTB transactions are initiated when an exchange or other supply source sends a bid request to a bidder. The bid request consists of a bid request object, at least one impression object, and may optionally include additional objects providing impression context.

#### 3.1 Native Object Hierarchy

Following is the object hierarchy for a bid request. The new Native Object is another optional element of the impression object, and can be specified as an alternative to or in conjunction with a banner object or video object.



### 4 Native Ad Request Markup Details

#### 4.1 Native Markup Request Object

The Native Object defines the native advertising opportunity available for bid via this bid request. It will be included as a JSON-encoded string in the bid request’s imp.native field or as a direct JSON object, depending on the choice of the exchange. *While OpenRTB 2.x officially supports only JSON-encoded strings, many exchanges have implemented a formal object. Check with your integration docs.*

The **Default** column dictates how optional parameters should be interpreted if explicit values are not provided.

Field	Scope	Type	Default	Description
ver	optional	string	1.2	Version of the Native Markup version in use.

context	<b>recommended</b>	integer	-	The context in which the ad appears. See <a href="#">Table of Context IDs</a> below for a list of supported context types.
contextsubtype	optional	integer	-	A more detailed context in which the ad appears. See <a href="#">Table of Context SubType IDs</a> below for a list of supported context subtypes.
plcmnttype	<b>recommended</b>	integer	-	The design/format/layout of the ad unit being offered. See <a href="#">Table of Placement Type IDs</a> below for a list of supported placement types.
plcmntcnt	optional	integer	1	The number of identical placements in this Layout. Refer <a href="#">Section 8.1 Multiplacement Bid Requests</a> for further detail.
seq	optional	integer	0	0 for the first ad, 1 for the second <b>ad</b> , and so on. Note this would generally NOT be used in combination with plcmntcnt - either you are auctioning multiple identical placements (in which case plcmntcnt>1, seq=0) or you are holding separate auctions for distinct items in the feed (in which case plcmntcnt=1, seq=>=1)
assets	<b>required</b>	array of objects	-	An array of <a href="#">Asset Objects</a> . Any bid response must comply with the array of elements expressed in the bid request.
aurlsupport	optional	int	0	Whether the supply source / impression supports returning an assetsurl instead of an asset object. 0 or the absence of the field indicates no such support.
durlsupport	optional	int	0	Whether the supply source / impression supports returning a dco url instead of an asset object. 0 or the absence of the field indicates no such support. Beta

Field	Scope	Type	Default	Description
eventtrackers	optional	array of objects	-	feature. Specifies what type of event tracking is supported - see <a href="#">Event Trackers Request Object</a>
privacy	recommended	integer	0	Set to 1 when the native ad supports buyer-specific privacy notice. Set to 0 (or field absent) when the native ad doesn't support custom privacy links or if support is unknown.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

**Note:** Prior to VERSION 1.1, the specification could be interpreted as requiring the native request to have a root node with a single field "native" that would contain the object above as its value. The Native Markup Request Object specified above is now the root object.

## 4.2 Asset Request Object

The main container object for each asset requested or supported by Exchange on behalf of the rendering client. Any object that is required is to be flagged as such. Only one of the {title,img,video,data} objects should be present in each object. All others should be null/absent. The id is to be unique within the AssetObject array so that the response can be aligned.

To be more explicit, it is the ID of each asset object that maps the response to the request. So if a request for a title object is sent with id 1, then the response containing the title should have an id of 1.

Since version 1.1 of the spec, there are recommended sizes/lengths/etc with some of the asset types. The goal for asset requirements standardization is to facilitate adoption of native by DSPs by limiting the diverse types/sizes/requirements of assets they must have available to purchase a native ad impression. While great diversity may exist in publishers, advertisers/DSPs can not be expected to provide infinite headline lengths, thumbnail aspect ratios, etc. While we have not gone as far as creating a single standard, we've honed in on a few options that cover the most common cases. SSPs can deviate from these standards, but should understand they may limit applicable DSP demand by doing so. DSPs should feel confident that if they support these standards they'll be able to access most native inventory.

Field	Scope	Type	Default	Description
id	<b>required</b>	int	-	Unique asset ID, assigned by exchange. Typically a counter for

				the array.
required	optional	int	0	Set to 1 if asset is required (exchange will not accept a bid without it)
title	<b>recommended</b> 1	object	-	Title object for title assets. See TitleObject definition.
img	<b>recommended</b> 1	object	-	Image object for image assets. See ImageObject definition.
video	optional <sup>1</sup>	object	-	Video object for video assets. See the Video request object definition. Note that in-stream (ie preroll, etc) video ads are not part of Native. Native ads may contain a video as the ad creative itself.
data	<b>recommended</b> 1	object	-	Data object for brand name, description, ratings, prices etc. See DataObject definition.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

<sup>1</sup>: each asset object may contain only one of title, img, data or video.

### 4.3 Title Request Object

The Title object is to be used for title element of the Native ad.

Field	Scope	Type	Default	Description
len	<b>required</b>	integer	-	Maximum length of the text in the title element. <b>Recommended to be 25, 90, or 140.</b>
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

## 4.4 Image Request Object

The Image object to be used for all image elements of the Native ad such as Icons, Main Image, etc. **Recommended sizes and aspect ratios are included in the [Image Asset Types](#) section.**

Field	Scope	Type	Default	Description
type	optional	integer	-	Type ID of the image element supported by the publisher. The publisher can display this information in an appropriate format. See Table <a href="#">Image Asset Types</a> .
w	optional	integer	-	Width of the image in pixels.
wmin	<b>recommended</b>	integer	-	The minimum requested width of the image in pixels. This option should be used for any rescaling of images by the client. Either w or wmin should be transmitted. If only w is included, it should be considered an exact requirement.
h	optional	integer	-	Height of the image in pixels.
hmin	<b>recommended</b>	integer	-	The minimum requested height of the image in pixels. This option should be used for any rescaling of images by the client. Either h or hmin should be transmitted. If only h is included, it should be considered an exact requirement.
mimes	optional	array of strings	All types allowed	Whitelist of content MIME types supported. Popular MIME types include, but are not limited to "image/jpg" "image/gif".  Each implementing Exchange should have their own list of supported types in the integration docs. See <a href="#">Wikipedia's MIME page</a> for more information and links to all IETF RFCs.  If blank, assume all types are

				allowed.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

#### 4.5 Video Request Object

The video object to be used for all video elements supported in the Native Ad. This corresponds to the Video object of OpenRTB. Exchange implementers can impose their own specific restrictions. Here are the required attributes of the Video Object. For optional attributes please refer to OpenRTB.

Field	Scope	Type	Default	Description
mimes	<b>required</b>	array of string	-	Content MIME types supported. Popular MIME types include, but are not limited to “video/x-ms-wmv” for Windows Media, and “video/x-flv” for Flash Video, or “video/mp4”. Note that native frequently does not support flash.
minduration	<b>required</b>	integer	-	Minimum video ad duration in seconds.
maxduration	<b>required</b>	integer	-	Maximum video ad duration in seconds.
protocols	<b>required</b>	array of integers	-	An array of video protocols the publisher can accept in the bid response. See OpenRTB Table ‘Video Bid Response Protocols’ for a list of possible values.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

## 4.6 Data Request Object

The Data Object is to be used for all non-core elements of the native unit such as Brand Name, Ratings, Review Count, Stars, Download count, descriptions etc. It is also generic for future native elements not contemplated at the time of the writing of this document. In some cases, additional recommendations are also included in the [Data Asset Types](#) table.

Field	Scope	Type	Default	Description
type	<b>required</b>	integer	-	Type ID of the element supported by the publisher. The publisher can display this information in an appropriate format. See <a href="#">Data Asset Types</a> table for commonly used examples.
len	optional	integer	-	Maximum length of the text in the element's response.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

## 4.7 Event Trackers Request Object

The event trackers object specifies the types of events the bidder can request to be tracked in the bid response, and which types of tracking are available for each event type, and is included as an array in the request.

Field	Scope	Type	Default	Description
event	<b>required</b>	integer	-	Type of event available for tracking. See <a href="#">Event Types</a> table.
methods	<b>required</b>	array of integers	-	Array of the types of tracking available for the given event. See <a href="#">Event Tracking Methods</a> table.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this

specification

## 5 Native Ad Response Markup Details

The structure and contents of the Bid Response are the same as in the OpenRTB standard. The difference is in how the ad creative is returned. The native creative shall be returned as a JSON-encoded string in the adm field of the Bid Object. Note some implementers have chosen to use a direct object in a new field rather than JSON encoded string.

### 5.1 Native Markup Response Object

The native object is the top level JSON object which identifies a native response. The native object has following attributes:

Field	Scope	Type	Default	Description
ver	<b>recommended</b>	string	"1.2"	Version of the Native Markup version in use.
assets	<b>recommended</b>	array of objects	-	List of native ad's assets. Required if no assetsurl. Recommended as fallback even if assetsurl is provided.
assetsurl <sup>1</sup>	optional	string	-	URL of an alternate source for the assets object. The expected response is a JSON object mirroring the assets object in the bid response, subject to certain requirements as specified in the individual objects. Where present, overrides the asset object in the response.
dcourl	optional	string	-	URL where a dynamic creative specification may be found for populating this ad, per the <a href="#">Dynamic Content Ads Specification</a> . Note this is a beta option as the interpretation of the Dynamic Content Ads

<sup>1</sup> The provided "assetsurl" or "dcourl" should be expected to provide a valid response when called in any context, including importantly the brand name and example thumbnails and headlines (to use for reporting, blacklisting, etc), but it is understood the final actual call should come from the client device from which the ad will be rendered to give the buyer the benefit of the cookies and header data available in that context.

				Specification and how to assign those elements into a native ad is outside the scope of this spec and must be agreed offline between the parties or as may be specified in a future revision of the Dynamic Content Ads spec. Where present, overrides the asset object in the response.
link	<b>required</b>	object	-	Destination Link. This is default link object for the ad. Individual assets can also have a link object which applies if the asset is activated(clicked). If the asset doesn't have a link object, the parent link object applies. See LinkObject Definition
imptrackers	optional	array of strings	-	Array of impression tracking URLs, expected to return a 1x1 image or 204 response - typically only passed when using 3rd party trackers. To be deprecated - replaced with eventtrackers.
jstracker	optional	string	-	Optional JavaScript impression tracker. This is a valid HTML, Javascript is already wrapped in <script> tags. It should be executed at impression time where it can be supported. To be deprecated - replaced with eventtrackers.
eventtrackers	optional	Array of objects	-	Array of <a href="#">tracking objects</a> to run with the ad, in response to the declared supported methods in the <a href="#">request</a> . Replaces <a href="#">imptrackers</a> and <a href="#">jstracker</a> , to be deprecated.
privacy	optional	string	-	If support was indicated in the request, URL of a page informing the user about the buyer's targeting activity.
ext	optional	object	-	This object is a placeholder that may contain custom JSON

agreed to by the parties to support flexibility beyond the standard defined in this specification

**Note:** Prior to VERSION 1.1, the native response’s root node was an object with a single field “native” that would contain the object above as its value. The Native Object specified above is now the root object.

**Note re: asseturl format responses:** In the case of asseturl or dcourl (beta) bidding, since the ultimate buyer/creative engine cannot alter the assets response based on the details inside the assets request (as it does not receive said request), it is critical that all required assets are provided, and such communications will need to be handled offline for recommended/optional elements.

In the normal embedded response, certain attributes of the response are assumed based on matching the ID of the asset object in the response to the ID of the asset object in the request. Since the asset response will not be reading the asset request directly in this implementation, that information is added as option in the below object definitions and marked for that use case.

It is also recommended that where the standard specifies multiple options for an element, that **all options be provided**. IE all 4 supported thumbnail aspect ratios and all 3 supported title lengths.

The ID component of the asset responses can be omitted.

Note that this change to provide the metadata description of the asset in the response, rather than using the asset ID to implicitly specify that, may be reflected into the inline version of responses in a future version to align the two methods of replying. Making that change now would break backwards compatibility of the inline response mechanism.

## 5.2 Asset Response Object

Corresponds to the Asset Object in the request. The main container object for each asset requested or supported by Exchange on behalf of the rendering client. Any object that is required is to be flagged as such. Only one of the {title,img,video,data} objects should be present in each object. All others should be null/absent. The id is to be unique within the AssetObject array so that the response can be aligned.

Field	Scope	Type	Default	Description
-------	-------	------	---------	-------------

id	<b>optional</b>	int	-	Optional if asseturl/dcourl is being used; required if embedded asset is being used.
required	optional	int	0	Set to 1 if asset is required. (bidder requires it to be displayed).
title	optional <sup>1</sup>	object	-	Title object for title assets. See TitleObject definition.
img	optional <sup>1</sup>	object	-	Image object for image assets. See ImageObject definition.
video	optional <sup>1</sup>	object	-	Video object for video assets. See Video response object definition. Note that in-stream video ads are not part of Native. Native ads may contain a video as the ad creative itself.
data	optional <sup>1</sup>	object	-	Data object for ratings, prices etc.
link	optional	object	-	Link object for call to actions. The link object applies if the asset item is activated (clicked). If there is no link object on the asset, the parent link object on the bid response applies.
ext <sup>2</sup>	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

<sup>1</sup>: asset object may contain only one of title, img, data or video.

<sup>2</sup>: Bidders are encouraged not to use asset.ext for exchanging text assets. Use data.ext with custom type instead.

### 5.3 Title Response Object

Corresponds to the Title Object in the request, with the value filled in.

If using `assetsurl` or `dcourl` response rather than embedded asset response, it is recommended that three title objects be provided, the length of each of which is less than or equal to the three recommended maximum title lengths (25,90,140).

Field	Scope	Type	Default	Description
text	<b>required</b>	String	-	The text associated with the text element.
len	optional	integer	-	The length of the title being provided. Required if using <code>assetsurl/dcourl</code> representation, optional if using embedded asset representation.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

## 5.4 Image Response Object

Corresponds to the Image Object in the request. The Image object to be used for all image elements of the Native ad such as Icons, Main Image, etc.

It is recommended that if `assetsurl/dcourl` is being used rather than embedded assets, that an image of each recommended aspect ratio (per the Image Types table) be provided for image type 3.

Field	Scope	Type	Default	Description
type	optional	integer	-	Required for <code>assetsurl</code> or <code>dcourl</code> responses, not required for embedded asset responses. The type of image element being submitted from the <a href="#">Image Asset Types</a> table.
url	<b>required</b>	string	-	URL of the image asset.
w	<b>recommended</b>	integer	-	Width of the image in pixels. Recommended for embedded asset responses. Required for <code>assetsurl/dcourl</code> responses if multiple assets of same type submitted.
h	<b>recommended</b>	integer	-	Height of the image in pixels. Recommended for embedded

				asset responses. Required for assetsurl/dcourl responses if multiple assets of same type submitted.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

## 5.5 Data Response Object

Corresponds to the Data Object in the request, with the value filled in. The Data Object is to be used for all miscellaneous elements of the native unit such as Brand Name, Ratings, Review Count, Stars, Downloads, Price count etc. It is also generic for future native elements not contemplated at the time of the writing of this document.

Field	Scope	Type	Default	Description
type	optional	integer	-	Required for assetsurl/dcourl responses, not required for embedded asset responses. The type of data element being submitted from the <a href="#">Data Asset Types</a> table.
len	optional	integer	-	Required for assetsurl/dcourl responses, not required for embedded asset responses. The length of the data element being submitted. Where applicable, must comply with the recommended maximum lengths in the <a href="#">Data Asset Types</a> table.
value	<b>required</b>	string	-	The formatted string of data to be displayed. Can contain a formatted value such as "5 stars" or "\$10" or "3.4 stars out of 5".
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

## 5.6 Video Response Object

Corresponds to the Video Object in the request, yet containing a value of a conforming VAST tag as a value.

Field	Scope	Type	Default	Description
vasttag	<b>required</b>	string	-	vast xml.

## 5.7 Link Response Object

Used for 'call to action' assets, or other links from the Native ad. This Object should be associated to its peer object in the parent Asset Object or as the master link in the top level Native Ad response object. When that peer object is activated (clicked) the action should take the user to the location of the link.

Field	Scope	Type	Default	Description
url	<b>required</b>	string	-	Landing URL of the clickable link.
clicktrackers	optional	array of strings	-	List of third-party tracker URLs to be fired on click of the URL.
fallback	optional	string (URL)	-	Fallback URL for deeplink. To be used if the URL given in url is not supported by the device.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

## 5.8 Event Tracker Response Object

The event trackers response is an array of objects and specifies the types of events the bidder wishes to track and the URLs/information to track them. Bidder must only respond with methods indicated as available in the request. Note that most javascript trackers expect to be loaded at impression time, so it's not generally recommended for the buyer to respond with javascript trackers on other events, but the appropriateness of this is up to each buyer.

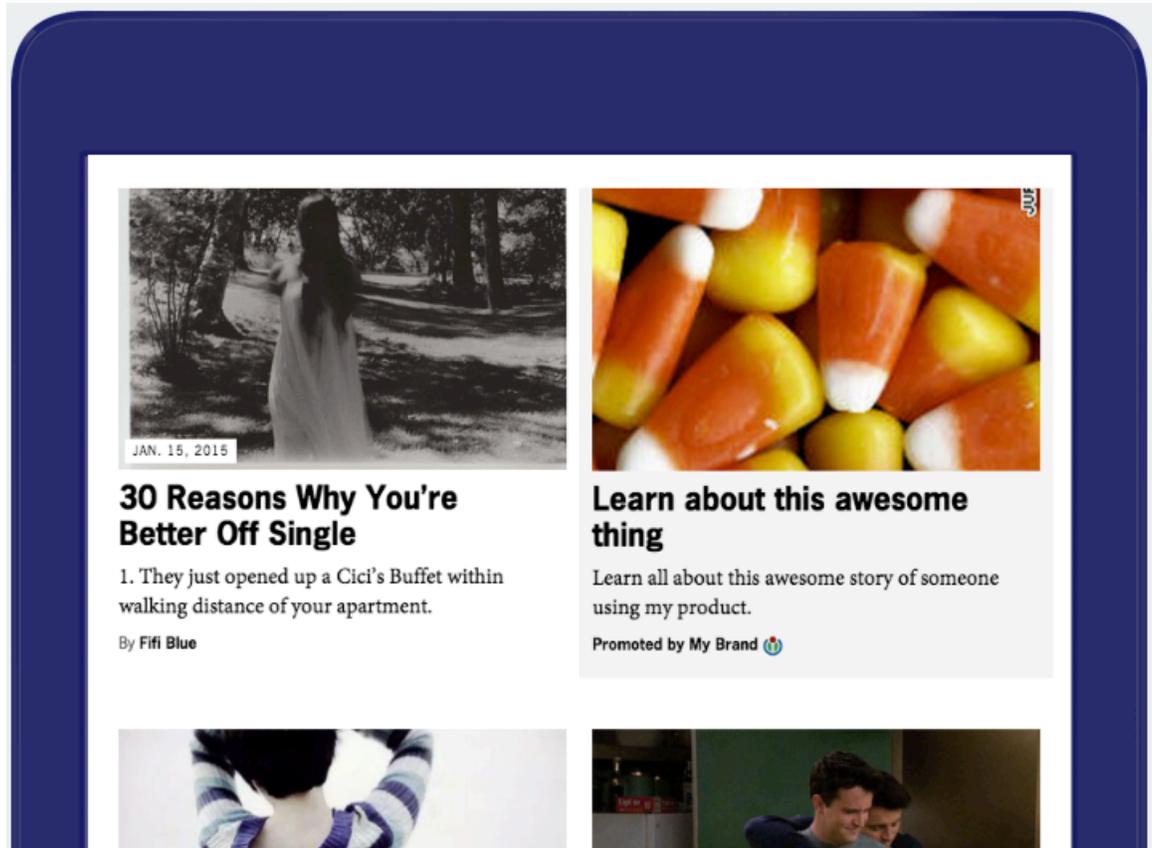
Field	Scope	Type	Default	Description
event	<b>required</b>	integer	-	Type of event to track. See <a href="#">Event Types</a> table.
method	<b>required</b>	integer	-	Type of tracking requested. See <a href="#">Event Tracking Methods</a> table.
url	optional	text	-	The URL of the image or js. Required for image or js, optional for custom.
customdata	optional	object containing key:value pairs	-	To be agreed individually with the exchange, an array of key:value objects for custom tracking, for example the account number of the DSP with a tracking company. IE {"accountnumber": "123"}.
ext	optional	object	-	This object is a placeholder that may contain custom JSON agreed to by the parties to support flexibility beyond the standard defined in this specification

## 6 Bid Request/Response Samples

**Note:** for purposes of readability, these examples are written as JSON objects directly and illegal strings are NOT encoded for readability, even though they may or may not be string-encoded in the actual message. Also note that only the native portion of the request/response is illustrated. For full examples, please see the OpenRTB 2.x parent document.

### 6.1 Social Context, Clickout Response

The ad might look like -



### Bid Request

```

"native":{
  "ver": "1.2",
  "context": 2,
  "contextsubtype": 20,
  "plcmtype": 11,
  "plcmcnt": 1,
  "aurlsupport": 0,
  "privacy": 1,
  "eventtrackers": [
    {
      "event": 1,
      "methods": [1,2]
    },
    {
      "event": 2,
      "methods": [1]
    }
  ]
}

```

```
],
"assets":[
  {
    "id":123,
    "required":1,
    "title":{"
      "len":140
    }
  },
  {
    "id":128,
    "required":0,
    "img":{"
      "wmin":836,
      "hmin":627,
      "type":3
    }
  },
  {
    "id":124,
    "required":1,
    "img":{"
      "wmin":50,
      "hmin":50,
      "type":1
    }
  },
  {
    "id":126,
    "required":1,
    "data":{"
      "type":1,
      "len":25
    }
  },
  {
    "id":127,
    "required":1,
    "data":{"
```

```

        "type":2,
        "len":140
      }
    }
  ]
}

```

### ***Bid Response***

```

  "native": {
    "link": {
      "url": "http: //i.am.a/URL"
    },
    "assets": [
      {
        "id": 123,
        "required": 1,
        "title": {
          "text": "Learn about this awesome thing"
        }
      },
      {
        "id": 124,
        "required": 1,
        "img": {
          "url":"http://www.myads.com/thumbnail1.png"
        }
      },
      {
        "id": 128,
        "required": 1,
        "img": {
          "url":"http://www.myads.com/largethumb1.png"
        }
      },
      {
        "id": 126,
        "required": 1,
        "data": {

```

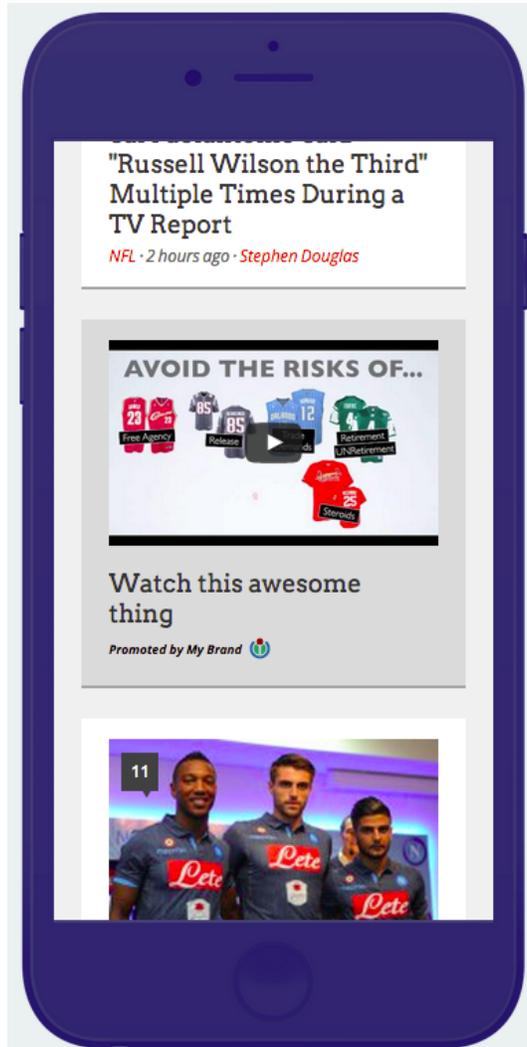
```

        "value": "My Brand"
      }
    },
    {
      "id": 127,
      "required": 1,
      "data": {
        "value": "Learn all about this awesome story of someone using
my product."
      }
    }
  ],
  "eventtrackers": [
    {
      "event": 1,
      "method": 2,
      "url": "http://www.mytracker.com/tracker.js"
    }
    {
      "event": 2,
      "method": 1,
      "url": "http://www.mytracker.com/tracker.php"
    }
  ],
  "privacy": "http://www.myprivacyurl.com"
}

```

## 6.2 Content Context, Video Response

The ad might look like -



### Bid Request

```

"native":{
  "ver": "1.2",
  "context": 1,
  "contextsubtype": 10,
  "plcmtype": 11,
  "plcmcnt": 1,
  "aurlsupport": 0,
  "privacy": 1,
  "eventtrackers": [
    {
      "event": 1,
    }
  ]
}

```

```

        "methods": [1,2]
    },
    {
        "event":2,
        "methods": [1]
    }
],
"assets":[
    {
        "id": 4,
        "video": {
            "linearity": 1,
            "minduration": 15,
            "maxduration": 30,
            "protocols": [
                2,3
            ],
            "mimes": [
                "video/mp4"
            ]
        }
    },
    {
        "id":123,
        "required":1,
        "title":{
            "len":140
        }
    },
    {
        "id":128,
        "required":0,
        "img":{
            "wmin":836,
            "hmin":627,
            "type":3
        }
    },
    {
        "id":124,
        "required":1,
        "img":{

```

```

        "wmin":50,
        "hmin":50,
        "type":1
    }
},
{
    "id":126,
    "required":1,
    "data":{
        "type":1,
        "len":25
    }
},
{
    "id":127,
    "required":1,
    "data":{
        "type":2,
        "len":140
    }
}
],
"eventtrackers": [
    {
        "event":1,
        "method":2,
        "url":"http://www.mytracker.com/tracker.js"
    }
    {
        "event":2,
        "method":1,
        "url":"http://www.mytracker.com/tracker.php"
    }
],
"privacy": "http://www.myprivacyurl.com"
}

```

### ***Bid Response***

```
    "native": {
      "link": {
        "url": "http://i.am.a/URL"
      },
      "assets": [
        {
          "id": 4,
          "video": {
            "vasttag": "<VAST version='2.0'></VAST>"
          }
        },
        {
          "id": 123,
          "required": 1,
          "title": {
            "text": "Watch this awesome thing"
          }
        },
        {
          "id": 124,
          "required": 1,
          "img": {
            "url": "http://www.myads.com/thumbnail1.png"
          }
        },
        {
          "id": 128,
          "required": 1,
          "img": {
            "url": "http://www.myads.com/largethumb1.png"
          }
        },
        {
          "id": 126,
          "required": 1,
          "data": {
            "value": "My Brand"
          }
        },
        {
```

```

        "id": 127,
        "required": 1,
        "data": {
            "value": "Watch all about this awesome story of someone using
my product."
        }
    }
]
}

```

### 6.3 Third-Party Ad Serving Example

#### Bid Request

```

"native":{
  "ver": "1.2",
  "context": 2,
  "contextsubtype": 20,
  "plcmttype": 11,
  "plcmtcnt": 1,
  "aurlsupport": 1,
  "durlsupport": 1,
  "assets": [
    {
      "id": 123,
      "required": 1,
      "title": {
        "len": 140
      }
    },
    {
      "id": 128,
      "required": 0,
      "img": {
        "wmin": 836,
        "hmin": 627,
        "type": 3
      }
    },
    {

```

```

        "id":124,
        "required":1,
        "img":{
            "wmin":50,
            "hmin":50,
            "type":1
        }
    },
    {
        "id":126,
        "required":1,
        "data":{
            "type":1,
            "len":25
        }
    },
    {
        "id":127,
        "required":1,
        "data":{
            "type":2,
            "len":140
        }
    }
]
}

```

### ***Bid Response***

```

"native": {
  "assetsurl": "http://www.myadserver.com/getad123nativejson.php",
  "link": {
    "url": "http://i.am.a/URL"
  },
  "assets": [
    {
      "id": 123,
      "required": 1,
      "title": {

```

```

        "text": "Learn about this awesome thing"
      }
    },
    {
      "id": 124,
      "required": 1,
      "img": {
        "url": "http://www.myads.com/thumbnail1.png"
      }
    },
    {
      "id": 128,
      "required": 1,
      "img": {
        "url": "http://www.myads.com/largethumb1.png"
      }
    },
    {
      "id": 126,
      "required": 1,
      "data": {
        "value": "My Brand"
      }
    },
    {
      "id": 127,
      "required": 1,
      "data": {
        "value": "Learn all about this awesome story of someone using
my product."
      }
    }
  ]
}

```

#### ***What Should be Returned by the Assets URL***

Note: the assets object may still be included in the response as a fallback, but the supply source must call the assetsurl and use the provided response for the ad. The response

must be a json assets object like in the response itself, with the changes as indicated in the spec. An example follows of what that URL would return.

```
{
  "assets": [
    {
      "required": 1,
      "title": {
        "text": "Learn about this awesome thing",
        "len": 30
      }
    },
    {
      "link": {
        "url": "http://brand.com/landingpage/"
      }
    },
    {
2 {
      "img": {
        "type": 1,
        "url": "http://www.myads.com/icon.png",
        "h": 50,
        "w": 50
      }
    },
    {
      "img": {
        "type": 3,
        "url": "http://www.myads.com/largethumb11.png",
        "h": 200,
        "w": 200
      }
    },
    {
      "img": {
        "type": 3,
```

---

<sup>2</sup> In the context of third-party ad-serving, including a link object in the assets response would be a useful way to override the link object specified by the bidder in the parent native object. The exchange could also choose to wrap this link in the bid response link to allow bidder click tracking to work.

```

        "url": "http://www.myads.com/largethumb43.png",
        "h": 200,
        "w": 267
    }
},
{
    "img": {
        "type": 3,
        "url": "http://www.myads.com/largethumb1911.png",
        "h": 200,
        "w": 382
    }
},
{
    "required": 1,
    "data": {
        "type": 1,
        "len": 8,
        "value": "My Brand"
    }
},
{
    "required": 1,
    "data": {
        "type": 2,
        "len": 63,
        "value": "Learn all about this awesome story of someone using
my product."
    }
}
]
}

```

## 7 Reference Lists/Enumerations

### 7.1 Context Type IDs

The context in which the ad appears - what type of content is surrounding the ad on the page at a high level. This maps directly to the new [Deep Dive on In-Feed Ad Units](#). This

denotes the primary context, but does not imply other content may not exist on the page - for example it's expected that most content platforms have some social components, etc.

Context Type ID	Description
1	Content-centric context such as newsfeed, article, image gallery, video gallery, or similar.
2	Social-centric context such as social network feed, email, chat, or similar.
3	Product context such as product listings, details, recommendations, reviews, or similar.
500+	To be defined by the exchange.

## 7.2 Context Sub Type IDs

Next-level context in which the ad appears. Again this reflects the primary context, and does not imply no presence of other elements. For example, an article is likely to contain images but is still first and foremost an article. SubType should only be combined with the primary context type as indicated (ie for a context type of 1, only context subtypes that start with 1 are valid).

Context SubType ID	Description
10	General or mixed content.
11	Primarily article content (which of course could include images, etc as part of the article)
12	Primarily video content
13	Primarily audio content
14	Primarily image content
15	User-generated content - forums, comments, etc
20	General social content such as a general social network
21	Primarily email content
22	Primarily chat/IM content

30	Content focused on selling products, whether digital or physical
31	Application store/marketplace
32	Product reviews site primarily (which may sell product secondarily)
500+	To be defined by the exchange

### 7.3 Placement Type IDs

The FORMAT of the ad you are purchasing, separate from the surrounding context

Placement Type ID	Description
1	In the feed of content - for example as an item inside the organic feed/grid/listing/carousel.
2	In the atomic unit of the content - IE in the article page or single image page
3	Outside the core content - for example in the ads section on the right rail, as a banner-style placement near the content, etc.
4	Recommendation widget, most commonly presented below the article content.
500+	To be defined by the exchange

### 7.4 Data Asset Types

Below is a list of common asset element types of native advertising at the time of writing this spec. This list is non-exhaustive and intended to be extended by the buyers and sellers as the format evolves.

An implementing exchange may not support all asset variants or introduce new ones unique to that system.

Type ID	Name	Description	Format	Recommendations
1	sponsored	Sponsored By message where response should contain the brand name of the sponsor.	text	Required. Max 25 or longer.

2	desc	Descriptive text associated with the product or service being advertised. Longer length of text in response may be truncated or ellipsed by the exchange.	text	Recommended. Max 140 or longer.
3	rating	Rating of the product being offered to the user. For example an app's rating in an app store from 0-5.	number formatted as string	Optional. 0-5 integer formatted as string.
4	likes	Number of social ratings or "likes" of the product being offered to the user.	number formatted as string	
5	downloads	Number downloads/installs of this product	number formatted as string	
6	price	Price for product / app / in-app purchase. Value should include currency symbol in localised format.	number formatted as string	
7	saleprice	Sale price that can be used together with price to indicate a discounted price compared to a regular price. Value should include currency symbol in localised format.	number formatted as string	
8	phone	Phone number	formatted string	
9	address	Address	text	
10	desc2	Additional descriptive text associated with the product or service being advertised	text	
11	displayurl	Display URL for the text ad. To be used when sponsoring entity doesn't own the content. IE sponsored by BRAND on SITE (where SITE is transmitted in this field).	text	

12	ctatext	CTA description - descriptive text describing a 'call to action' button for the destination URL.	text	Optional. Max 15 or longer.
500+	XXX	Reserved for Exchange specific usage numbered above 500	Unknown	

## 7.5 Image Asset Types

Below is a list of common image asset element types of native advertising at the time of writing this spec. This list is non-exhaustive and intended to be extended by the buyers and sellers as the format evolves.

An implementing exchange may not support all asset variants or may introduce new ones unique to that system.

In order to facilitate adoption, recommendations are made for both minimum sizes and aspect ratios. We speak here of 'minimum maximum height' or 'max height of at least', which means the SSP should support a max height of at least this value. They are free to support larger, but the DSP knows that if they have an image of this size it will be accepted. Note that SSPs will be responsible for sizing image to exact size if min-max-height framework is used; exact size may not be available at bid request time. Width is calculated from the 3 supported aspect ratios. Note we merged the prior overlapping type 1 and type 2 as just type 1 - to be used for app icon, brand logo, or similar.

Type ID	Name	Description	Recommendations
1	Icon	Icon image	Optional. max height: at least 50 aspect ratio: 1:1
3	Main	Large image preview for the ad	At least one of 2 size variants required: Small Variant: max height: at least 200 max width: at least 200, 267, or 382 aspect ratio: 1:1, 4:3, or 1.91:1

			<p>Large Variant:</p> <p>max height: at least 627</p> <p>max width: at least 627, 836, or 1198</p> <p>aspect ratio: 1:1, 4:3, or 1.91:1</p>
500+	XXX	Reserved for Exchange specific usage numbered above 500	No recommendations

## 7.6 Event Types Table

Type ID	Name	Description
1	impression	Impression
2	viewable-mrc50	Visible impression using MRC definition at 50% in view for 1 second
3	viewable-mrc100	100% in view for 1 second (ie GroupM standard)
4	viewable-video50	Visible impression for video using MRC definition at 50% in view for 2 seconds
500+	exchange-specific	

## 7.7 Event Tracking Methods Table

Type ID	Name	Description
1	img	Image-pixel tracking - URL provided will be inserted as a 1x1 pixel at the time of the event.

2	js	Javascript-based tracking - URL provided will be inserted as a js tag at the time of the event.
500+	exchange-specific	Could include custom measurement companies such as moat, doubleverify, IAS, etc - in this case additional elements will often be passed

## 8 Implementation Notes

### 8.1 Multi Placement Bid Requests

If the bid request has a placement count (“plcmcnt”) greater than 1, then the implication is that the bidder is submitting bids to a Generalized Second Price auction where multiple identical placements are being offered in the same content feed or stream.

Example If a bid request is for 5 ad placements within a feed based layout. The bidder can return 1-5 bids. The exchange runs a generalized second price auction across these bids. The bidder can potentially win between 0-5 placements in the auction.

An example bid response would look like

```
{
  "id": "1234567890",
  "seatbid": [{
    "bid": [{
      "id": "1",
      "impid": "1",
      "price": 10,
      "nurl": "http://adserver.com/WinNoticeUrlThatReturnsNative1",
      "adm": "<native response>"
    },
    "bid": [{
      "id": "2",
      "impid": "1",
      "price": 20,
      "nurl": "http://adserver.com/WinNoticeUrlThatReturnsNative2"
      "adm": "<native response>"
    }
  ]
}]
}
```

