



RTB Project

*OpenRTB Native Ads API Specification
External Draft Version 1*

December 2014

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 Networks & Exchanges Committee:

The IAB Networks & Exchanges Committee is comprised of senior leaders of ad networks and ad exchanges member companies. The committee is dedicated to furthering the interests of digital ecosystem in today's complex ad marketplace. Committee objectives are to foster the highest standards of professionalism and accountability in relationships with publishers, advertisers, intermediaries, and the agency community, to develop programs that enable revenue growth, and to create best practices that protect consumers and the industry.

The OpenRTB Project is a working group within the IAB Advertising Technology Council.

This document can be found at www.iab.net

IAB Contact Information:

Brendan Riordan-Butterworth
Director of Technical Standards, IAB
brendan@iab.net

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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 (banner, video, mobile, etc.).

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
Required parameters <u>must</u> be included.	<u>id</u>	required	<u>string</u>	-	Unique ID of the bid request, provided by the exchange.
	<u>version</u>	required	<u>string</u>	-	Open RTB version
	<u>imp</u>	required	<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.
Recommended parameters <u>should</u> be included unless there is a compelling reason to omit them.	<u>site</u>	recommended for websites	<u>object</u>	-	See Site Object
	<u>app</u>	recommended for native apps	<u>object</u>	-	See App Object
	<u>device</u>	recommended	<u>object</u>	-	See Device Object
	<u>user</u>	recommended	<u>object</u>	-	See User Object
Optional 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 2.3) 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 2.3 to allow for the delivery of native advertising formats, as their specifics differ from publisher to publisher. In May 2013, a separate IAB subcommittee has been formed to define the request and response structures of native ad units.

Establishing a true open standard for this new format will be instrumental to native ads adoption by app publishers and demand side platforms. With a common framework on the buy-side, the industry as a whole will benefit from increased demand for native ad formats.

1.2 Credits / Project History

Neal Richter & Avinash Shahdarpuri, Rubicon Project

Jim Butler, Nexage

Adam Morgenlender & Gabor Cselle, Twitter

Narayanan Balakrishnan & Anand Narayanan, InMobi

Giuseppe Di Mauro, PubMatic

Ilya Kaplun, Visible Measures

Jennifer Lum, Adelphic

Wesley Biggs, Byyd

Benoit Grouchko & Elisabeth Rotrou, Criteo

David Hernandez, AOL

Rajaraman Periasamy, RocketFuel

Jin Yu, OpenX

Anton Roslov, Phorm

Andraž Tori, Zemanta

Osvaldo Doederlein, Google

1.3 Resources

Resource	Location
OpenRTB Website	http://openrtb.info
OpenRTB Native Ads Project Page	http://github.com/openrtb/OpenRTB/NativeAds.html
Developer / Product Manager Mailing List	http://groups.google.com/group/openrtb-native

1.4 Version History

Version 0.99.10.24 PUBLIC DRAFT October 24, 2014

Version 0.99.10.27 PUBLIC DRAFT October 27, 2014

Version 1.0.0.0 EXTERNAL DRAFT November 19, 2014

Version 1.0.0.1 EXTERNAL DRAFT Decemeber 14, 2014

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.

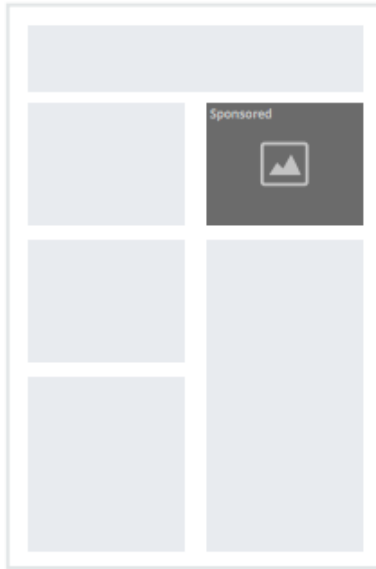
2.1 IAB Core Six

The [IAB Native Advertising Playbook](#) lists six types of native ad units:

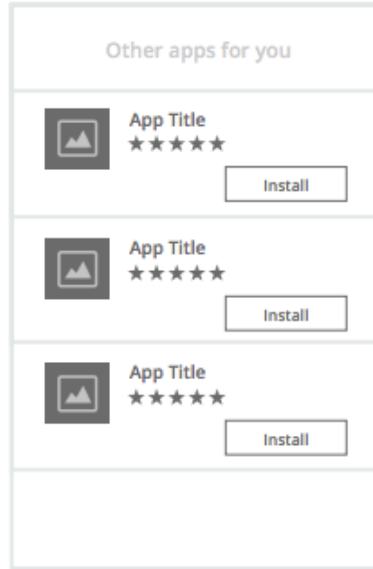
- In Feed Units
- Paid Search Units
- Recommendation Widgets
- Promoted Listings
- IAB Standard with Native Elements
- Custom / “Can’t be contained”

Some examples for native ad formats are shown below.

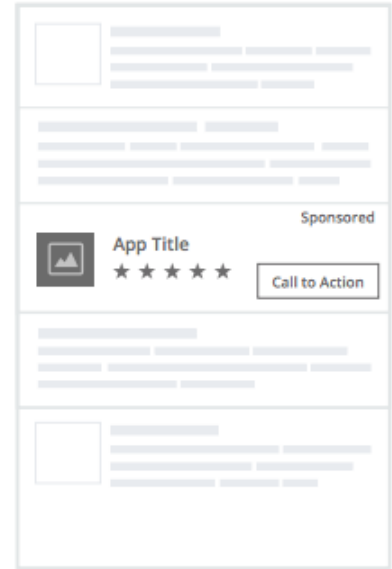
☐ Content Wall



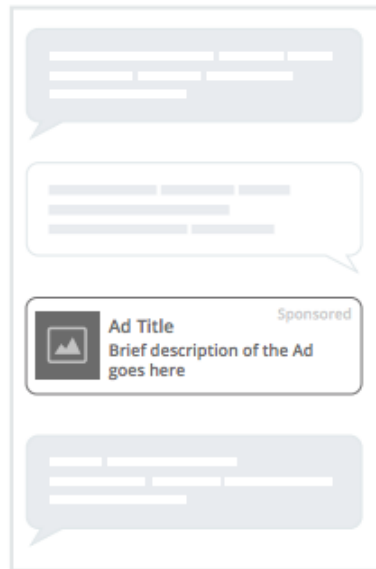
☐ App Wall



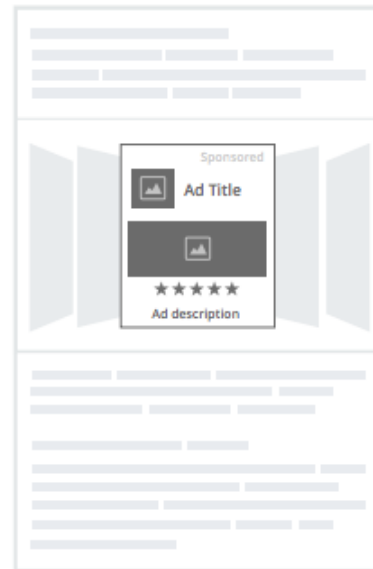
☐ News Feed



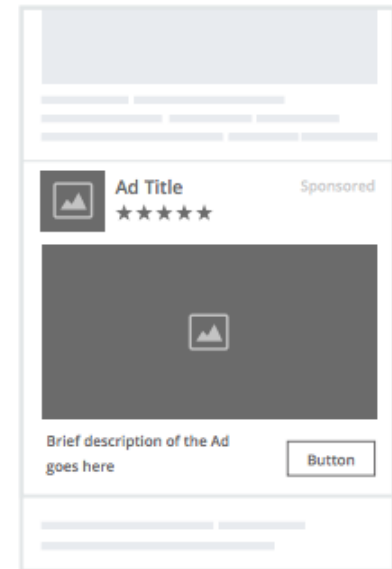
☐ Chat List



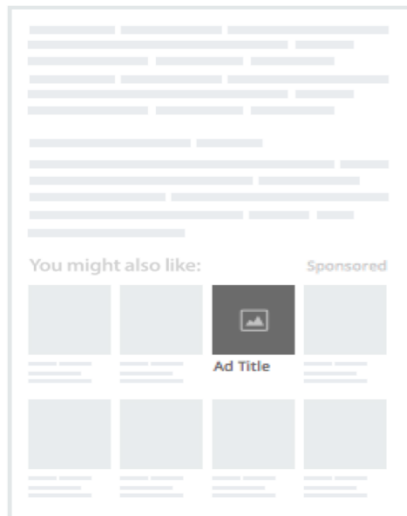
☐ Carousel



☐ Content Stream



○ Grid Adjoining The Content



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 2.3) contains a “ver” field defining the version of the OpenRTB native extension.

2.4 Customization and Extensions

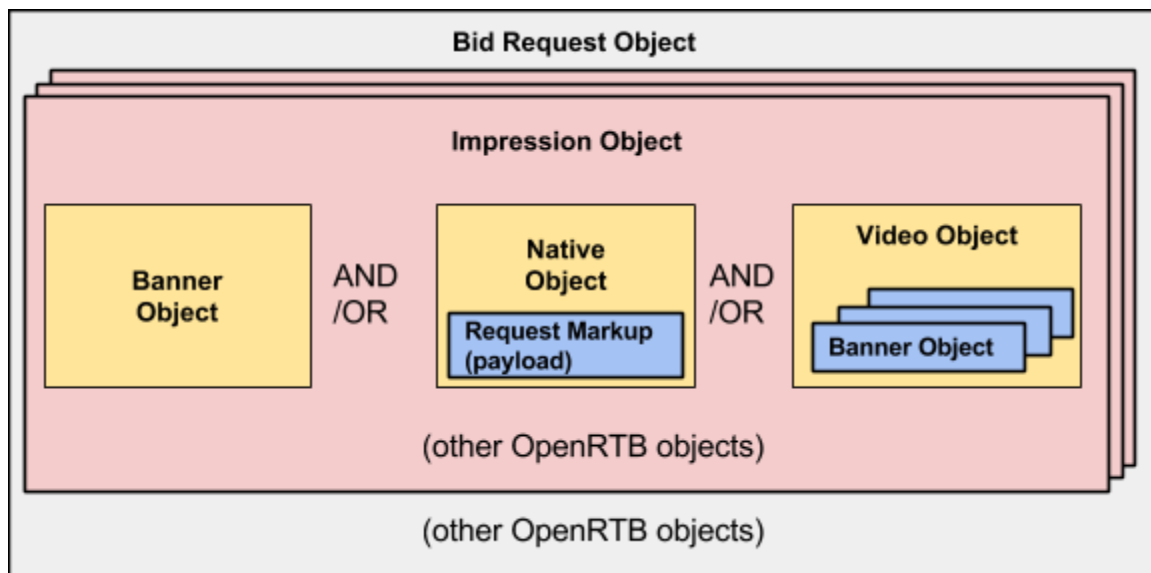
The OpenRTB Native Ads spec allows for exchange specific customization and extensions of the specification. Any object may contain extensions. In order to keep extension fields consistent across platforms, they should consistently be named ‘ext’.

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 must be included directly in the impression object if the impression offered for auction is a native ad format.

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

Field	Scope	Type	Default	Description
ver	required	integer	1	Version of the Native Markup version in use.

layout	recommended	integer	-	The Layout ID of the native ad unit. See the Table of Layout IDs below.
adunit	recommended	integer	-	The Ad unit ID of the native ad unit. This corresponds to one if IAB Core-6 native ad units. See the Table of Ad Unit IDs below.
plcmcnt	optional	integer	1	The number of identical placements in this Layout. Refer Section 8.1 Multiplacement Bid Requests .
seq	optional	integer	0	xx (see the layout types). 0 for the first ad, 1 for the second ad, and so on. This is not the sequence number of the content in the stream.
assets	required	array of objects	-	An array of AssetObjects. Any bid must comply with the array of elements expressed by the Exchange.
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

4.2 AssetObject

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	required	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	optional ¹	object	-	Title object for title assets. See TitleObject definition.
img	optional ¹	object	-	Image object for image assets. See ImageObject definition.
video	optional ¹	object	-	Video object for video assets. See the Video request 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 ¹	object	-	Data object for 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

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

4.3 Title Object

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

Field	Scope	Type	Default	Description
len	required	integer	-	Maximum length of the text in the title element.
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 Object

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

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 Image Asset Types for commonly used examples..
w	optional	integer	-	Width of the image in pixels.
wmin	recommended	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	recommended	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	<p>Whitelist of content MIME types supported. Popular MIME types include, but are not limited to “image/jpg” “image/gif”.</p> <p>Each implementing Exchange should have their own list of supported types in the integration docs. See Wikipedia's MIME page for more information and links to all IETF RFCs.</p> <p>If blank, assume all types are allowed.</p>
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 Object

The video object to be used for all video elements supported in the Native Ad. This corresponds to the Video object of OpenRTB 2.3. Exchange implementors can impose their own specific restrictions. Here are the required attributes of the Video Object. For optional attributes please refer to OpenRTB 2.3.

Field	Scope	Type	Default	Description
mimes	required	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.
minduration	required	integer	-	Minimum video ad duration in seconds.
maxduration	required	integer	-	Maximum video ad duration in seconds.
protocols	required	array of integers	-	An array of video protocols the publisher can accept in the bid response. See OpenRTB 2.3 Table 6.7 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 Object

The Data Object is to be used for all non-core elements of the native unit such as Ratings, Review Count, Stars, Download count, descriptions etc. It is also generic for future of Native elements not contemplated at the time of the writing of this document.

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

type	required	integer	-	Type ID of the element supported by the publisher. The publisher can display this information in an appropriate format. See Table Data Asset Types 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

5 Native Ad Bid Response Markup

The structure and contents of the Bid Response is the same as in the OpenRTB standard. The difference is how ad creative is returned. The native creative is returned as a JSON-encoded string in the adm field of the Bid Object, or in response to calling the URL given in the nurl field of the Bid Object.

5.1 Native Ad Creative JSON

The JSON returned in adm or in response to nurl is a JSON string with the following attributes:

Field	Scope	Type	Default	Description
native	required	object	-	Top level Native object

5.2 Native Object

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

Field	Scope	Type	Default	Description
ver	optional	integer	1	Version of the Native Markup version in use.
assets	required	array of objects	-	List of native ad's assets.

link	required	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.
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.
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

5.3 Asset 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	required	int	-	Unique asset ID, assigned by exchange, must match one of the asset IDs in request
required	optional	int	0	Set to 1 if asset is required. (bidder requires it to be displayed).
title	optional ¹	object	-	Title object for title assets. See TitleObject definition.

img	optional ¹	object	-	Image object for image assets. See ImageObject definition.
video	optional ¹	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 ¹	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 ²	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

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

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

5.4 Title Object

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

Field	Scope	Type	Default	Description
text	required	String	-	The text associated with the text element.
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 Image 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.

Field	Scope	Type	Default	Description
url	required	string	-	URL of the image asset.
w	recommended	integer	-	Width of the image in pixels.
h	recommended	integer	-	Height of the image in pixels.
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 Data 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 Ratings, Review Count, Stars, Downloads, Price count etc. It is also generic for future of Native elements not contemplated at the time of the writing of this document.

Field	Scope	Type	Default	Description
label	optional	string	-	The optional formatted string name of the data type to be displayed.
value	required	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

5.7 Video 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	required	string	-	vast xml.

5.8 Link Object

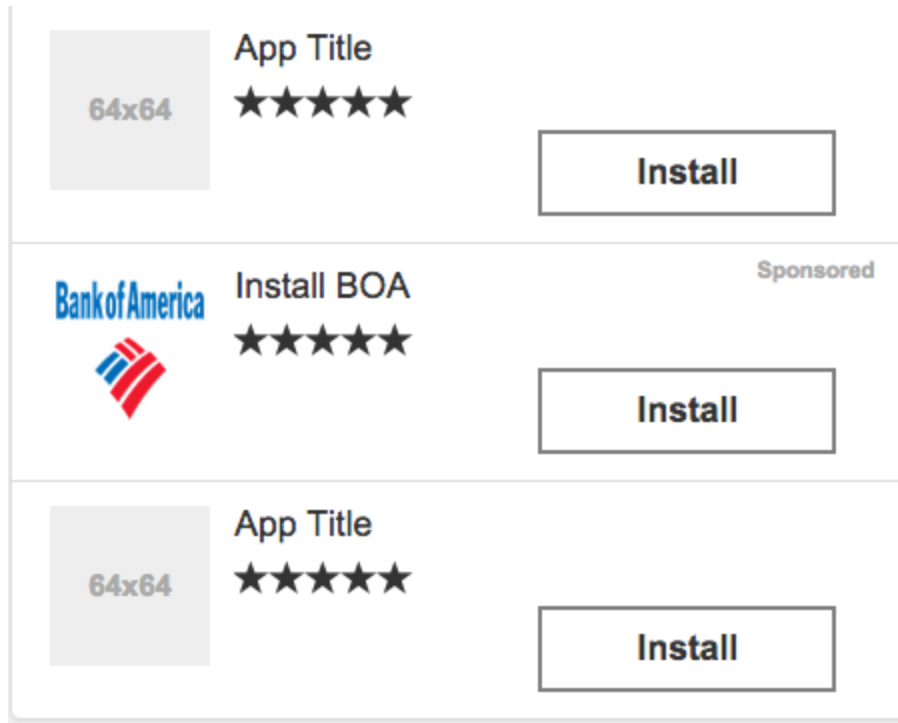
Used for 'call to action' assets, or other links from the Native ad. This Object should be associated to its peer object in the parent Asset Object. When that peer object is activated (clicked) the action should take the user to the location of the link.

Field	Scope	Type	Default	Description
url	required	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

6 Bid Request/Response Samples

6.1 App Wall Example

The ad might look like -



Bid Request

```
{
  "native": {
    "assets": [
      {
        "id": 1,
        "required": 1,
        "title": {
          "len": 30
        }
      },
      {
        "id": 2,
        "required": 0,
        "data": {
          "type": 3,
          "len": 5
        }
      },
      {
        "id": 3,
        "required": 1,
        "img": {
          "type": 1,
          "w": 64,

```

```

        "h": 64,
        "mimes": [
            "image/png"
        ]
    },
    {
        "id": 4,
        "required": 0,
        "data": {
            "type": 2,
            "len": 10
        }
    }
]
}
}

```

Bid Response

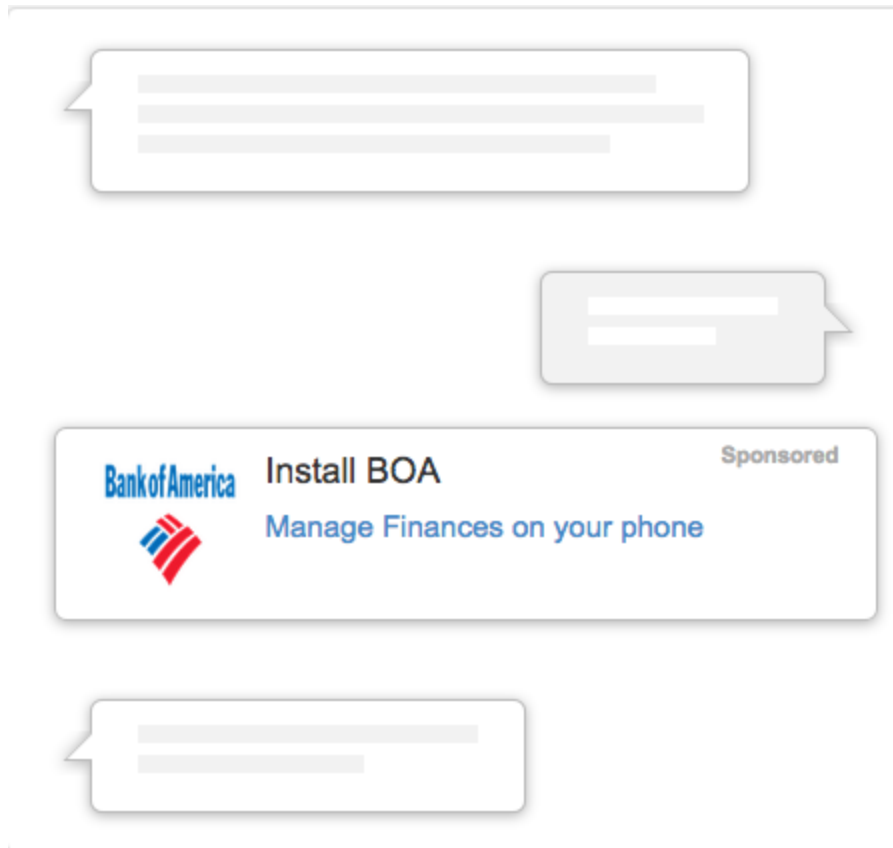
```

{
  "native": {
    "ver": 1,
    "link": {
      "url": "http: //i.am.a/URL",
      "fallback": "deeplink://deeplink/url/into/app",
      "clicktrackers": [
        "http: //a.com/a",
        "http: //b.com/b"
      ]
    },
    "imptrackers": [
      "http: //a.com/a",
      "http: //b.com/b"
    ],
    "assets": [
      {
        "id": 1,
        "title": {
          "text": "InstallBOA"
        },
        "link": {
          "url": "http: //i.am.a/URL"
        }
      },
      {

```

```
        "id": 2,
        "data": {
            "value": 5
        }
    },
    {
        "id": 3,
        "img": {
            "url": "http: //cdn.mobad.com/ad.png",
            "w": 64,
            "h": 64
        }
    },
    {
        "id": 4,
        "data": {
            "value": "Install"
        },
        "link": {
            "url": "http: //i.am.a/URL"
        }
    }
]
}
```

6.2 Chat List Example



Bid Request

```
{
  "native": {
    "layout": 4,
    "assets": [
      {
        "id": 1,
        "required": 1,
        "title": {
          "len": 30
        }
      },
      {
        "id": 2,
        "required": 0,
        "data": {
          "type": 2,
          "len": 100
        }
      }
    ]
  }
}
```

```

    }
  },
  {
    "id": 3,
    "required": 1,
    "img": {
      "type": 1,
      "w": 64,
      "h": 64,
      "mimes": [
        "image/png"
      ]
    }
  }
]
}
}

```

Bid Response

```

{
  "native": {
    "ver": 1,
    "link": {
      "url": "http: //i.am.a/URL",
      "fallback": "deeplink://deeplink/url/into/app",
      "clicktrackers": [
        "http: //a.com/a",
        "http: //b.com/b"
      ]
    },
    "imptrackers": [
      "http: //a.com/a",
      "http: //b.com/b"
    ],
    "assets": [
      {
        "id": 1,
        "title": {
          "text": "Install BOA"
        }
      },
      {
        "id": 2,
        "data": {
          "value": "Manage Finances on your phone"
        }
      }
    ]
  }
}

```

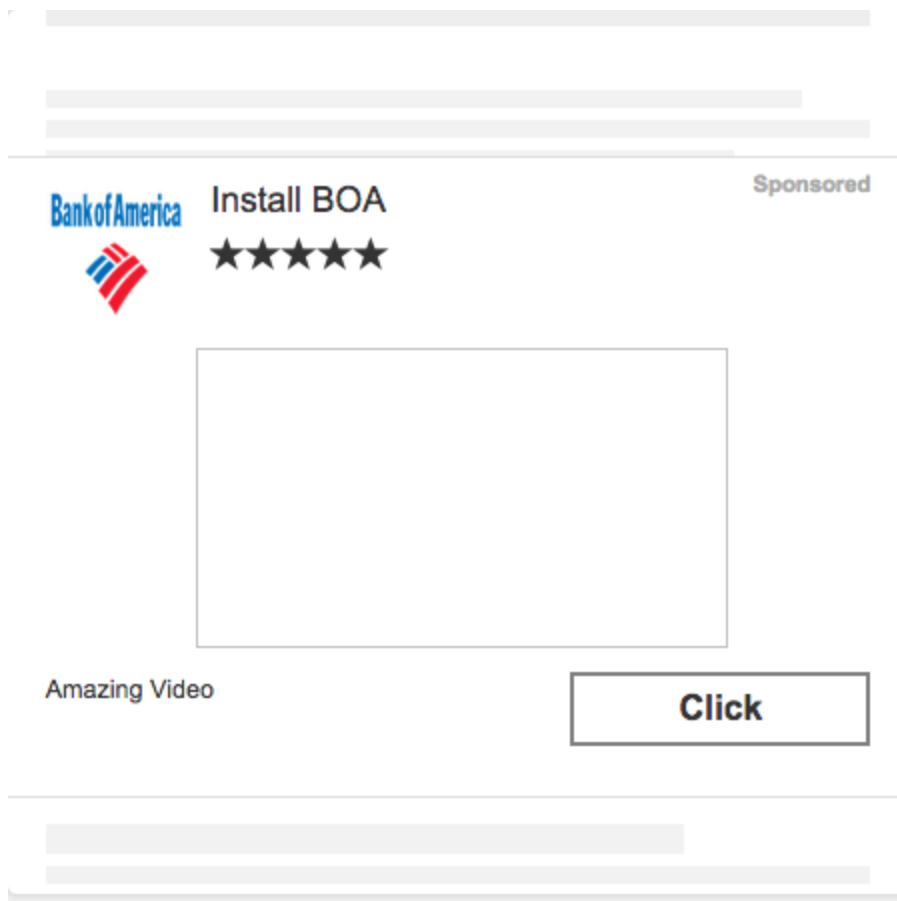


```

    }
  },
  {
    "id": 3,
    "img": {
      "url": "http://cdn.mobad.com/ad.png",
      "w": 64,
      "h": 64
    }
  }
]
}
}

```

6.3 Content Stream with Video Element Example



Bid Request

```

{

```

```

"native": {
  "layout": 6,
  "assets": [
    {
      "id": 1,
      "required": 1,
      "title": {
        "len": 30
      }
    },
    {
      "id": 2,
      "required": 0,
      "data": {
        "type": 3,
        "len": 10
      }
    },
    {
      "id": 3,
      "required": 1,
      "img": {
        "w": 64,
        "h": 64,
        "mimes": [
          "image/png"
        ]
      }
    },
    {
      "id": 4,
      "video": {
        "linearity": 1,
        "minduration": 15,
        "maxduration": 30,
        "protocols": [
          "VAST 2.0"
        ]
      }
    },
    {
      "id": 5,
      "required": 0,
      "data": {
        "type": 2,
        "len": 10
      }
    }
  ]
}

```

```
}
```

Bid Response

```
{
  "native": {
    "ver": 1,
    "link": {
      "url": "http: //i.am.a/URL",
      "fallback": "deeplink://deeplink/url/into/app",
      "clicktrackers": [
        "http: //a.com/a",
        "http: //b.com/b"
      ]
    },
    "assets": [
      {
        "id": 1,
        "title": {
          "text": "Install BOA"
        }
      },
      {
        "id": 2,
        "data": {
          "value": 5
        }
      },
      {
        "id": 3,
        "img": {
          "url": "http://cdn.mobad.com/ad.png",
          "w": 1200,
          "h": 627
        }
      },
      {
        "id": 4,
        "video": {
          "vasttag": "<VAST version='2.0'></VAST>"
        }
      },
      {
        "id": 5,
        "data": {
          "value": "Click"
        }
      }
    ]
  }
}
```

```

    },
    "link": {
      "url": "http://i.am.a/URL"
    }
  }
]
}
}

```

6.4 Google Text Ad

An Google text ad with title, description 1, description 2 and display url can be represented as -

Bid Request

```

{
  "native": {
    "assets": [
      {
        "id": 1,
        "title": {
          "len": 25
        }
      },
      {
        "id": 2,
        "data": {
          "type": 2,
          "len": 35
        }
      },
      {
        "id": 3,
        "data": {
          "type": 10,
          "len": 35
        }
      }
    ],
  },
}

```

```

        {
            "id": 4,
            "data": {
                "type": 11,
                "len": 35
            }
        }
    ]
}

```

Bid Response

```

{
    "native": {
        "ver": 1,
        "link": {
            "url": "http: //i.am.a/URL",
            "fallback": "deeplink://deeplink/url/into/app",
            "clicktrackers": [
                "http: //a.com/a",
                "http: //b.com/b"
            ]
        },
        "assets": [
            {
                "id": 1,
                "title": {
                    "text": "Plasma Television"
                }
            },
            {
                "id": 2,
                "data": {
                    "value": "Huge range of equipment on sale"
                }
            },
            {
                "id": 3,
                "data": {
                    "value": "Free delivery. Order now."
                }
            },
            {
                "id": 4,
                "data": {
                    "value": "mybestplasmastvstore.com"
                }
            }
        ]
    }
}

```

```

    }
  }
}

```

7 Reference Lists/Enumerations

7.1 Native Layout IDs

Below is a list of the core layouts described in the introduction above.

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

Layout ID	Description
1	Content Wall
2	App Wall
3	News Feed
4	Chat List
5	Carousel
6	Content Stream
7	Grid adjoining the content
500+	Reserved for Exchange specific layouts.

7.2 Native Ad Unit IDs

Below is a list of the core ad unit ids described by IAB here

<http://www.iab.net/media/file/IABNativeAdvertisingPlaybook120413.pdf>

In feed unit is essentially a layout, it has been removed from the list. The in feed units can be identified via the layout parameter on the request.

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

Ad Unit ID	Description
1	Paid Search Units
2	Recommendation Widgets
3	Promoted Listings
4	In-Ad (IAB Standard) with Native Element Units
5	Custom /"Can't Be Contained"
500+	Reserved for Exchange specific formats.

7.3 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
1	sponsored	Sponsored By message where response should contain the brand name of the sponsor.	text
2	desc	Descriptive text associated with the product or service being advertised.	text

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

7.4 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 introduce new ones unique to that system.

Type ID	Name	Description
1	Icon	Icon image
2	Logo	Logo image for the brand/app.
3	Main	Large image preview for the ad
500+	XXX	Reserved for Exchange specific usage numbered above 500

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>"
    }]
  }]
}
```