Standard Header Container Integration with an Ad Server

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Introduction

In 2016, the Header Tag Task Force assembled within the IAB Tech Lab to determine appropriate scope for standards development in header bidding. Considering the recent growth of header bidding yield management strategies, the IAB Tech Lab Board of Directors determined a need for baseline open protocol for integrating header tag technology with an adserver.

This document standardizes how header tags and containers interact with ad servers. This will allow for header bidding to scale with industry consensus on process within the ad server. Expected audience for this standard includes technical leads and product owners at sell side and at intermediary partner companies. Non-standard setups, yield management strategies, and current market adoption rates are outside the scope of this document.

As header bidding innovation continues, there may be additional technology or implementation standardization opportunities.

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 has been the foundation for interoperability and profitable growth in the digital advertising supply chain.

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Tech Lab's Header Tag Working Group Roster

ABC TV Network	Disney Interactive	Rubicon Project
Adform	Eyeview	Shazam
Adrizer	Facebook	Smart AdServer
ADVR	Google	Sonobi
Adyoulike	GumGum	SpotX
Amazon	Hanley Wood	Taboola
American Media, Inc.	Happy Punk Panda	Technorati Media
AOL	Hearst Magazines Digital	TripleLift
AppNexus	Media	Twitter
AT&T AdWorks	Improve Digital	Viant
C1 Exchange	International B.V.	VideoAmp
Cedato Technologies Ltd	Index Exchange	Videology
Cinematique, Inc.	Leaf Group	Vix
ConvertMedia	Media.net	Warner Bros. Digital Media
Criteo	PubMatic	Sales
Dailymotion	Quantcast	WebMD

Table of Contents

A.   Line-item setup

Header based technologies use a system of key value targeting to call dormant ad server lines in order to provide a way to route creative through generic line items. When using a wrapper based technology, there are multiple options in how this can be employed.   This can work to push all buyers through a single set of lines or have each buy route through their own set of lines. When setting up line items for header tag, consider the following;

a. Line item limits
  i. There are global restrictions in popular ad servers on the total number of line items and each solution should be cognizant of that restriction in order to drive the right solution. Please check with the ad server on line item limits.
b. Types of publishers
  i. Each publisher has a different set of considerations that need to be made based on their direct sell through rate and number of actively sold upfront campaigns. Based on the line item restrictions referenced above, and the number of active direct campaigns vs indirect campaign, each publisher needs to determine how best to ensure a scalable ad server framework.
c. Buy-type set up
  i. Direct Guaranteed
    1. Guarantees should work to target line items with a like for like priority level against non-sponsorship direct reserved guarantees. As an example in DFP this is usually priority 8. However in certain instances publishers use a non-normative priority setup for direct deals (non-sponsorship) and that priority is what should govern the reservation.   In the instance where as the publisher is using sponsorship 4-5 for direct sold deals there needs to be an agreement on SoV and impressions commitments as the ad server is limited in how that is set-up and established.
  ii. Indirect Non-Guaranteed
    1. Indirect RTB based demand should be governed by the traditional price competition position within the ad server. This will be governed by the specific ad server but in essence should allow for bids that are higher than other bids to run if in which it is not in disturbance or disruption of a direct sold guarantee.
  iii. Direct Non-Guaranteed
    1. Direct non-guaranteed (i.e. Private Marketplace deals) demand should be based on negotiated price and priority position agreed upon by buyer and seller. This can be trafficked into a standard

> price competition position or can be trafficked into a higher priority position with impression goals.

d. Setup of demand sources

   i. Single bidder setup within the ad server framework must conform to the restrictions set forth in above in A: Line Item Limits and should follow a normative price point increment setup that minimizes discrepancies and maximizes a bidder's ability to spend. This setup is foundational when adding additional bidders (described below). Scalability of the setup should be a consideration in the setup of the first bidder.

   ii. Multiple bidder setup is more complicated than a single bidder and setup may be based on an analysis of the following:
   1. The number of available lines (set forth above in A: Line Item Limits),
   2. The number of bidders desired,
   3. The ability to setup multiple orders (one per bidder), or a single aggregate order (one order for all bidders).
   A decision would be made on whether to choose bespoke order per bidder vs aggregate order for all bidders. The analysis before setup of multiple bidders is important, as the complexity of wrappers may continue to evolve.

   iii. Based on the decision to create custom orders per bidder or an aggregate order for all bidders, orders should be setup with a maximum number of line items that respect the restrictions set forth above in A: Line Item Limits and should follow a normative price point increment setup that minimizes discrepancies and maximizes all bidders ability to spend.

   iv. A discrepancy test should be conducted upon installation of the bidders setup comparing the key values being passed. Compare reporting from the two systems; the ad server system and the bidders. The initial setup discrepancy test can test for the following:
   1. Revenue comparison
   2. Impression comparison
   3. Key value bid comparison

   v. Discrepancy tests should be conducted upon installation of any new bidders comparing key values being passed, and impressions being accrued across the two systems: the ad server and the bidders reporting.

   vi. Discrepancy tests should be conducted frequently to ensure no discrepancy in keys vs impression counts has been created over time since the initial discrepancy test.

e. Price points
i. Setup to max with a maximum number of line items that respect the line item limits and should follow a normative price point increment setup that minimizes discrepancies and maximizes all bidders ability to spend.

B.   Data to be passed between container and ad server

This section details header bidder setup and the consideration of an ad server's capabilities. Some ad servers may directly support header bidders, other ad servers may require the use of key value pairs.

a. Setup with an ad server that supports header bidders
i. Some ad servers support header bidder bid injection.
ii. Work with the ad server on the appropriate protocol to inject the bids
b. Setup with an ad server that requires use of Key Value Pairs
i. A header bidding container simplifies the process of passing the demand source partner's bids to the ad server. Use an agreed-upon naming schema for passing key-value information to the ad server in order to represent the demand source's bids (some string normalization may be needed to convert object in string in consistent fashion). A container, in some cases, also supports arbitrary obfuscated key value pairs.

ii. Table: Key Value Pair Parameters for Header Bidding setup

Parameter	Required?	Description
Bidder	Required	ID and/or Name of the header bidder partner or wrapper with the highest bid
Winning Ad ID	Required	Unique ID of the winning ad
Winning Bid Amount	Required	Winning bid in CPM
Placement Size	Required	The size of the ad placement

iii. In the case where the ad server is doing server-side call out, server-side containers may have the ability to reduce the number of line items and reduce the need to provide the outside technology partners with API credentials.

iv. Considerations for Key value Naming conventions
1. Naming convention could include an ID, ad size, and/or price point
a. Consider line item setup when determining naming conventions
b. Work with technology partners to set up agreed names

      c.   Additionally, naming conventions may include the name of bidder, if key values are unified.

   c. Server-side and client-side: data passed should match

      i.   Server-side information passed should match information passed through client-side set-up. In server-to-server setup, most of the same principles apply. When ad server and server-to-server header bidding are provided by the same technology partner, then it is recommended to discuss and follow guidance of that partner.

C.   Reporting and Discrepancy

   a. Impression counting and auction mechanics should be consistent with [OpenRTB standards](#).

   b. Primary sources of reporting are the publisher's ad server and the individual Header Bidders. Reporting functionality in the Header Bider Container may provide supporting information and aid in debugging integrations.

   c. Header Bidder container reporting includes;

      i.   Count of ad requests per header bidding partner

      ii.   Count of ad responses

      iii.   Count of impressions

         1. Who won within each bidder

         2. Who won the mediation within the container (before the adserver decision)

         3. Who won within the adserver logic (which bidder delivered the ad)

      iv.   Count of ad server header bidder selection events per header bidding partner

      v.   For each of the above metrics, support for each header bidding partner should include the dimensions of hierarchy, size identifier, domain and custom publisher identifiers.

      vi.   Certain ad formats require additional reporting and impression discrepancy considerations such as; video, in-app, and others. This is due to caching and other technical integration differences.

   d. Discrepancy rules

      i.   Remittance should be a consideration, especially in regards to discrepancies. There are potential gaps within header bidding implementations between ad server and header bidding partners.

      ii.   Discrepancy thresholds related to accrued impression volume should be agreed upon between partners in the bid transaction.

Conclusion

This Standard Header Container Integration with an Ad Server presents considerations for header container set up. Depending on a publisher's current header bidding integration status, this standard may have differing impact. The value in providing this baseline is to support industry adoption of header bidding technologies, even as header bidding technologies grow.

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