



VIDEO SUITE

EXECUTIVE SUMMARY

VAST 3.0, VPAID 2.0 AND VMAP 1.0

The IAB Video Suite was developed by the IAB Digital Video Committee

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BlackArrow	LiveRail, Inc.	TRUSTe
Brightcove	MediaMind	TubeMogul
Brightroll	Microsoft	Turner Broadcasting System
Cable Television Laboratories, Inc.	Mixpo	Unicast
CBS Interactive	NBC Universal Digital Media	Vindico
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ABOUT THE IAB'S DIGITAL VIDEO COMMITTEE

The Digital Video Committee of the IAB is comprised of over 180 member companies actively engaged in the creation and execution of digital video advertising. One of the goals of the committee is to implement a comprehensive set of guidelines, measurement, and creative options for interactive video advertising. The Committee works to educate marketers and agencies on the strength of digital video as a marketing vehicle. A full list of Committee member companies can be found at:

www.iab.net/digital_video_committee

This document is on the IAB website at: <http://www.iab.net/videosuite>

Table of Contents

Executive Summary	4
Video Marketplace Rationale FAQ	5
What is the “IAB Video Suite”?	5
Why is the IAB Video Suite important to the video advertising marketplace?	5
Are the VAST and VPAID specs in the IAB Video Suite different from what’s already used by the market today?	5
Why create three different specifications instead of just combining them into one?	6
What are some of the key updates in VAST and VPAID?	6
How will the IAB Video Suite impact the video advertising market?.....	7
How does the IAB Video Suite empower advertisers to innovate?	7
How does the IAB Video Suite affect the end-user experience?	7
Is there any reason that consumers should care about the IAB Video Suite?.....	8
What are the economic impacts of the IAB Video Suite?.....	8
VAST 3.0 Overview	8
Intended Audience	9
How VAST Works	9
VPAID 2.0 Overview	10
Intended Audience	10
The VPAID Advantage	11
VMAP 1.0 Overview	12
Intended Audience	12
How VMAP Works.....	13

Executive Summary

To promote the continued growth of in-stream digital video advertising, the Digital Video Committee of the Interactive Advertising Bureau (IAB) has published the 'IAB Video Suite'; a set of technical specifications and protocols for in-stream video ad formats that allow compliant ads to seamlessly play across multiple compliant publisher sites.

The IAB Video Suite's three specifications are devised to work together, as part of a thorough in-stream video advertising offering:

Video Ad-Serving Template (VAST) – a universal protocol for serving in-stream video ads, permitting ad servers to use a single ad response format across multiple compliant publishers/video players

Video Player-Ad Interface Definition (VPAID) – a common communication protocol between ad units and video players that enables rich ad experiences and detailed event reporting back to advertisers

Video Multiple Ad Playlist (VMAP) – a protocol that allows content owners to describe where ad breaks should be placed in their content when they do not control the video player or the content distribution outlet

Historically, technical complexities related to the fragmentation of the online video marketplace have artificially limited the reach of digital video advertising campaigns. Interoperability of video ads with disparate proprietary video players, across many publisher sites, served as a key technical barrier to market scale. The IAB Video Suite provides a common technical solution for interoperability, allowing for increased reach and market scale in digital video advertising.

The VAST and VPAID specifications, first released in 2008 and 2009, facilitated interoperability and considerable growth for digital video ad spend, but certain technical limitations remained. In 2011 the IAB's Digital Video Committee commissioned a full review and update to these protocols. Working in an open forum with digital video domain experts from over 45 member companies, the Technical Standards Working Group spent over a year crafting the Suite, which includes critical updates to its key specifications – VAST and VPAID – and the establishment of a new protocol, VMAP. The full Suite was released in April 2012.

The IAB Video Suite provides important updates to VAST (now VAST 3.0) and VPAID (now VPAID 2.0) that improve clarity around format and expected interpretations of each specification. New features and capabilities have been added to address past technical limitations, to increase interoperability across players/devices/platforms, and to introduce support for new ad formats like 'Skippable Ads' and multi-ad groups called 'Ad Pods'. Additionally, the Video Multiple Ad Playlist (VMAP) protocol was introduced, which allows content owners to pre-define ad breaks in their content.

The various tools available through the IAB Video Suite empower creative shops to produce in-stream interactive ads that are more engaging and relevant for consumers. Advertisers should expect increased interoperability across video publisher sites and devices, with uniformity of returned interaction data from disparate players. And compliant publishers and content owners should find it easier to monetize their video content. However, the benefits offered by the IAB Video Suite cannot fully materialize without wide industry adoption.

Video Marketplace Rationale FAQ

The following questions have been raised during the development of these specifications:

What is the “IAB Video Suite”?

The IAB Video Suite is a set of technical specifications and protocols that support video advertising marketplace interoperability. These specifications (VAST 3.0, VPAID 2.0, and VMAP 1.0) standardize the serving of in-stream ads to digital video players, across disparate publishers, devices and platforms.

VAST is an acronym for “Video Ad Serving Template”. It outlines the XML format for an ad response to a video player and enables compliant video ads to be served in any VAST-compliant video player.

VPAID is an acronym for “Video Player-Ad Interface Definition”. This specification defines a common protocol for communication that enables live interactions between the ad and the video player. VPAID compliments VAST, as VAST alone provides no mechanism for supporting interactive features like embedded buttons, games, etc. However, VAST is the best way to deliver an interactive VPAID ad unit.

VMAP is an acronym for “Video Multiple Ad Playlist” and defines the XML structure for ad breaks in video content, unlike VAST or VPAID, which provide specifications about how the ads play in a video player, once called. VMAP allows content owners who don’t control the video player or the content distribution network to pre-define the ad breaks in their content when their content plays in a third-party video player.

Why is the IAB Video Suite important to the video advertising marketplace?

Without VAST and VPAID, marketplace interoperability between ads and disparate publishers, video players and devices cannot be achieved. Without VAST and VPAID, achieving market scale is impossible. More specifically:

Before the industry adopted VAST and VPAID, advertisers were forced to create separate custom-built versions of their ad creatives for every target publisher, in order for those creatives to play properly on each publisher’s proprietary video player—an expensive and time consuming process. With the adoption of VAST and VPAID, advertisers have been able to outsource ad serving to vendors who can independently serve and track a single version of a compliant ad creative across multiple sources; similar to how traditional display advertising works.

Before the adoption of VAST and VPAID, in order to accept in-stream ads from ad networks, custom video player integrations were necessary. Now, with VAST and VPAID compliant video players widely available, ad networks can quickly add new publisher inventory to their network, by simply distributing VAST-formatted ad tags and VPAID-formatted interactive ad units.

Before VAST and VPAID, publishers would avoid vendor ad serving tags because separate integrations for each advertiser and/or network who served the ads were required. Without the ability to accept vendor ad serving tags, a lot of video ad inventory would go unsold. Today, publishers who support VAST and VPAID integrations can easily accept ads from any ad-serving vendor, making it easier to monetize their content.

A new problem was introduced to the market with the distribution and playing of video content owned by third parties. Many content owners retain the contractual right to control the ad “playlist” within their content, but without control of the video player, defining the ad playlist has been next to impossible. With the release of VMAP, control of the ad playlist is now available to the content owner.

Are the VAST and VPAID specs in the IAB Video Suite different from what’s already used by the market today?

No. With the release of the IAB Video Suite, VAST and VPAID have been updated to provide more clarity and enable new innovations in video advertising, but one of the goals for these updates was to be as backward compatible as possible with previous versions.

Why create three different specifications instead of just combining them into one?

VAST, VPAID and VMAP each offer different, yet related technology solutions for varying aspects of serving and managing digital video ads. The three unique specifications offer the industry flexibility required to support different business models and technologies. This flexibility facilitates widespread adoption and increased advertising liquidity across the market.

What are some of the key updates in VAST and VPAID?

First, these updates add clarity around format and expected interpretations of each specification. The documentation has also been improved for better readability. Other improvements include:

Five Ad Formats: In VAST 3.0, five unique ad formats have been defined, allowing publishers to be VAST compliant with the ad formats that best fit their particular business models. For example, if a publisher only accepts linear ads, that publisher/player would not be expected to support for other ad formats, such as nonlinear ads.

Skippable Ads: Both VAST and VPAID include new functionality for the addition of skip controls, as well as new metrics for tracking skipped ads.

Ad Pods: VAST supports the ability to serve multiple ads in a single VAST ad response. A set of sequenced ads in a VAST response plays back-to-back ads as a “pod”, similar to how consumers experience commercial ad breaks in broadcast television. With the addition of VMAP, ad breaks can be specifically designed to accept these Ad Pods and any combination of single ads, random sets of ads, and structured Ad Pods.

OBA Self-Regulation: Both VAST and VPAID now enable basic support for managing industry icon programs such as the Digital Advertising Alliance’s ‘AdChoices’ program for Online Behavioral Advertising (OBA) self-regulation.

Improved Error Reporting: VAST now defines a common list of error codes used to report errors, as well as specifications for when to send error notifications. An error tag protocol is also included at the topmost level to handle a “no ad” response. Improved error reporting enables systems to troubleshoot technical issues and become more sophisticated over time.

How will the IAB Video Suite impact the video advertising market?

The IAB Video Suite enables new innovation that impacts business models and end user experiences, but more importantly increases ad spend. Skippable ads, Ad Pods, support for in-ad privacy notices, and optional ad formats all contribute to a changing landscape for business models. By being flexible and providing more options, we can expect to see increased adoption of the specifications and protocols offered in the IAB Video Suite.

With the introduction of Skippable ads, some publishers may enable new business models based on ads viewed through completion.

Ad Pods enable ad servers to provide multiple ads with one ad tag, while allowing control of the sequence in which the ads are played. Sequencing possibilities are only limited by the availability of ads. Support for Ad Pods has the potential to increase the presence of syndicated video content online.

With adoption of the IAB Video Suite, we can expect to see increased support for important industry icon programs. For example, the Digital Advertising Alliance's 'AdChoices' program for the self-regulation of online behavioral advertising (OBA) provides consumers with notice and control.

In addition to these impacts, compliant ads will now have the ability to play seamlessly across different platforms including iOS and Android mobile devices and certain connected televisions that adopt the Suite.

How does the IAB Video Suite empower advertisers to innovate?

With increased market adoption of the IAB Video Suite, advertisers will find it easier than ever to provide video ads that are engaging and relevant to the audience.

Skippable ads empower advertisers to collect more data about their audiences' preference for certain kinds of ads and ad experiences—specifically who their audience is and what kind of ad experience they prefer.

With increased adoption across platforms and devices, compliant ads will be served seamlessly across an ever increasing array of devices and screens, further encouraging advertisers to reach consumers where they watch.

How does the IAB Video Suite affect the end-user experience?

As adoption of the IAB Video Suite increases, and advertisers innovate on new formats and features, consumers can expect to experience increased interactivity in video ads, including ads with social features, in-ad apps, games, and more.

Consumers can also expect to see pods of ads played during ad breaks in long-form content, providing a traditional TV-like experience. Consumers will also see more ads in more places—like linear video ads between plays of a mobile game.

Is there any reason that consumers should care about the IAB Video Suite?

When consumers choose to use ad-supported content or apps, they desire the advertising delivered to be relevant and engaging. The continued evolution and adoption of the IAB Video Suite encourages advertisers to make ads engaging and use whatever media channels necessary to get them in front of the right viewers. Highly engaging video ads, targeted to the interests of the audience, will appear on more devices, apps, and content than ever.

As the IAB Video Suite helps publishers more effectively monetize their video content, content producers will be incentivized to create and publish more entertaining content for online audiences.

What are the economic impacts of the IAB Video Suite?

Industry adoption of the IAB Video Suite facilitates liquidity and efficiency in digital video advertising, which ultimately drives growth in overall ad spend for digital video.

VAST 3.0 Overview

The IAB's Video Ad Serving Template (VAST) specification is a universal XML schema for serving ads to digital video players, and describes expected video player behavior when executing VAST-formatted ad responses. VAST 3.0 adds critical functionality that opens up the in-stream digital video advertising marketplace, reducing expensive technical barriers and encouraging advertisers to increase video ad spend.

As online video content publishing has become more common, video publishers have sought to monetize their content with in-stream video advertising. Before VAST, there was not a common in-stream advertising protocol for video players, which made scalable distribution of ads impossible for ad servers. In order to serve ads to multiple publishers using disparate proprietary video players, ad-serving organizations had to develop slightly different ad responses for every publisher/video player targeted. This approach was expensive and didn't easily scale.

VAST provides a common protocol that enables ad servers to use a single ad response format across multiple publishers/video players. In 2008, the IAB introduced the first version of VAST to the video advertising marketplace, which has since been widely adopted throughout the industry. In 2009 features were added that enabled additional functionality and more clarity. Today, as the in-stream digital video advertising market becomes more sophisticated, additional features and functionality are required to improve support for in-stream ad display and reporting.

VAST 3.0 provides more features, increased functionality and better reporting, while maintaining backward compatibility with VAST 2.0 to ensure a smooth transition for the industry. VAST 3.0 provides additional detail for the ad response format and the expected behavior of video players.

With VAST 3.0, video players now have the ability to declare which ad formats they support. Five formats are provided as options: Linear Ads, Nonlinear Ads, Skippable Linear Ads, Linear Ads with Companions, and Ad Pods (a sequenced group of ads). Skippable Linear Ads and Ad Pods are new formats offered with this release. Some video players choose to only support certain VAST ad formats in accordance with their publishing business model. With VAST 3.0, the guesswork of which VAST ad format a player supports is eliminated.

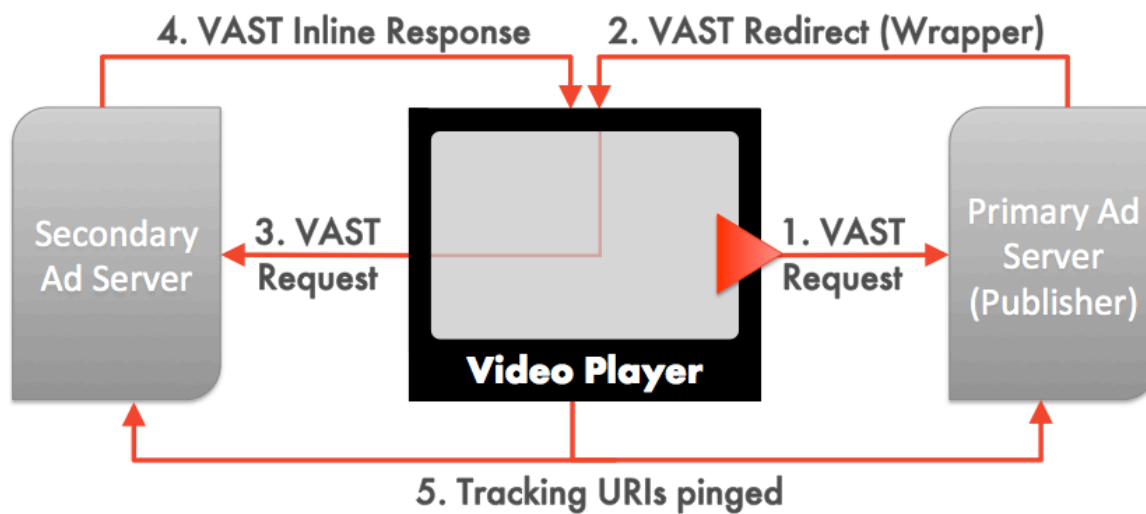
Video content publishers should upgrade their video players to support VAST 3.0 ad responses according to the ad formats they support. These video players should also adhere to the expected behaviors defined in this document. Additionally, ad-serving organizations should ensure that their VAST 3.0 ad responses are well formatted and adhere to the specifications outlined in this document.

Intended Audience

Anyone involved in the in-stream (also referred to as “in-player”) video ad supply chain can benefit from being familiar with these guidelines, but implementation details are targeted toward video player developers and video ad-serving organizations. Specifically, video software engineers and video product managers should use this document as a guide when implementing technology designed to support a VAST ad response.

How VAST Works

The diagram below provides a simplified overview of how a video ad is served using VAST.



1. **VAST Request:** The video player sends a request to the primary ad server, usually the content owner/publisher.
2. **VAST Redirect:** During campaign set up, the advertising party (possibly an agency or network) provides a VAST “Wrapper” that is like a redirect to a video ad server.
3. **VAST Request:** The video player then requests the video ad from the secondary ad server.
4. **VAST Inline Response:** The secondary ad server sends the video ad formatted in a VAST response.
5. **Tracking URIs Pinged:** Upon triggering specified events for the ad, each of the ad servers is notified using the tracking URIs provided in the VAST response.

VPAID 2.0 Overview

The IAB's Video Player Ad-Serving Interface Definition (VPAID) establishes a common interface between video players and ad units, enabling a rich interactive in-stream ad experience.

In-stream video advertisers have two important execution goals for the delivery of their video ad campaigns: a) provide viewers a rich ad experience, and b) capture ad playback and user-interaction details that report on the viewed ad experience. To achieve these goals in a world without common video player functionality, advertisers would have to develop multiple specialized versions of their ad creative for every unique video player—an expensive proposition that doesn't scale well.

The Video Ad-Serving Template (VAST), another IAB specification, provides a common ad response format for video players that enables video ads to be served across all compliant video players. However, VAST alone does not provide support for rich interactivity. VAST alone only supports relatively simple in-stream video ad formats that are not executable. These simple ad formats do not provide an interactive user experience, and do not allow the advertiser to collect rich interaction details.

Layering VPAID onto VAST offers an enhanced solution. VPAID establishes a common communication protocol between video players and ad units that allows a single "executable ad" (one that requires software logic to be executed as part of ad playback) to be displayed in-stream with the publisher's video content, in any compliant video player. Furthermore, it enables the executable ad unit to expect and rely upon a common set of functionality from the video player. VPAID enables the video player to expect and rely upon a common set of functionality from the executable ad unit. The significance is that advertisers using VPAID ads can provide rich ad experiences for viewers and collect ad playback and interaction details that are just as rich as the ad experience.

With the adoption of VPAID, advertisers have more control over the display experience in their video campaigns. Also, as VPAID compliant video players enable a more diverse and interactive set of video advertising, VPAID compliant publishers should expect to sell more in-stream video inventory.

With VPAID, the IAB aims to address the following market inefficiencies for publishers, advertisers, and vendors by:

- Increasing common video ad supply technology so that video publishers can readily accept video ad serving from agency ad servers and networks;
- Providing common technology specifications for advertisers to develop against, thereby decreasing the cost of creative production and thus increasing business ROI;
- Improving video ad supply liquidity, thus decreasing the cost of integration with each publisher.

To improve the interactive ad experience in video players, publishers should build their video players to the VPAID specifications outlined in this document. These specifications were defined with creativity and innovation in mind and should not limit video player design.

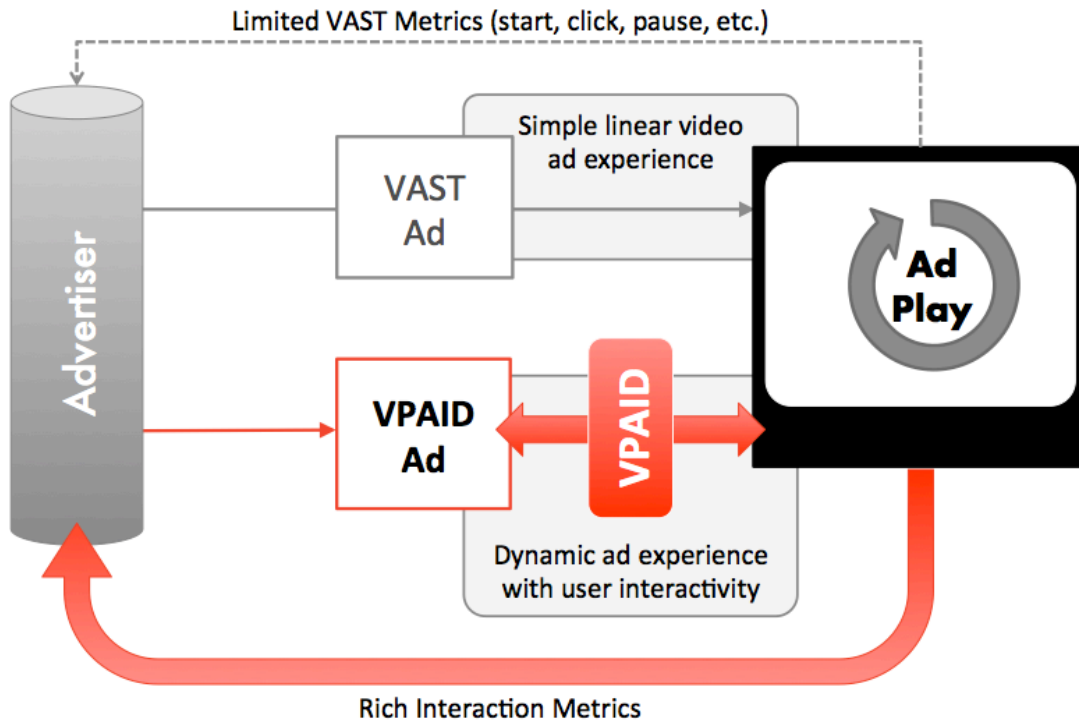
Intended Audience

Anyone involved in the in-stream (also referred to as "in-player") video advertising supply chain can benefit from being familiar with this specification, however implementation details are targeted toward the developers of executable in-stream video ads, and video player software developers. Specifically,

video software engineers and video product managers should use this document as a guide when implementing technology designed to support VPAID.

The VPAID Advantage

The following diagram illustrates the difference between serving a standard VAST ad and using VAST to serve a VPAID-enabled ad.



The VAST ad unit is served as a package: everything needed to serve the ad is included in the VAST response. The video player can only report on certain essential events like start, click, pause, play, etc. User interactions can't change the ad playback in any way. The ad plays for a set duration with only basic interactions.

With a VPAID (typically served using VAST), the interactive experience engages users and offers a dynamic brand opportunity for the advertiser. Such interactions happen in real time and can be reported to the advertiser.

Because VPAID offers such a dynamic advertising experience and a growing acceptance in the industry, advertisers are increasing their use of VPAID-enabled ad units. Publishers offering video players that are VPAID-enabled can accept more of these ads—often for premium compensation.

VMAP Overview

The IAB Video Multiple Ad Playlist (VMAP) specification is an XML template that video content owners can use to describe the structure for ad inventory insertion when they don't control the video player or the content distribution outlet.

In order to effectively monetize video content with in-stream insertion advertising, video content owners must carefully manage the structure and use of ad inventory opportunities available within their content. When the content owner controls the content distribution outlet, the content owner can easily manage ad placement within the content they play. However, when the video content airs in a video player that they do not control (such as when the content is syndicated using a video aggregation service), managing ad placement becomes complicated.

Business arrangements between the video content owner and a distribution outlet may grant the owner the right to manage its video ad inventory, but without control of the video player or the distribution outlet, the video content owner is effectively prevented from exercising this right.

Content owners and distribution outlets have looked to the IAB Video Ad Serving Template (VAST) to help solve this problem. While VAST 3.0 provides some additional controls over the use of video ad inventory (such as support for ad pods), it lacks the ability to define ad breaks or the timing of those ad breaks within the video content entertainment timeline.

With VMAP, video content owners can exercise control over the ad inventory displayed in their content when they can't control the video player, to capitalize on advertising while maintaining the integrity of their program content. VMAP enables the content owner to define the ad breaks within their content, including the timing for each break, how many breaks are available, what type of ads and how many are allowed in each break.

What VMAP cannot do is define the ads themselves. VMAP was designed to accept VAST 3.0 ad responses to fill ad breaks, but can also accept ad responses in other formats. VMAP is complementary to VAST and only useful in cases where content owners have no control over the video players, but have rights to control the advertising experiences within their content.

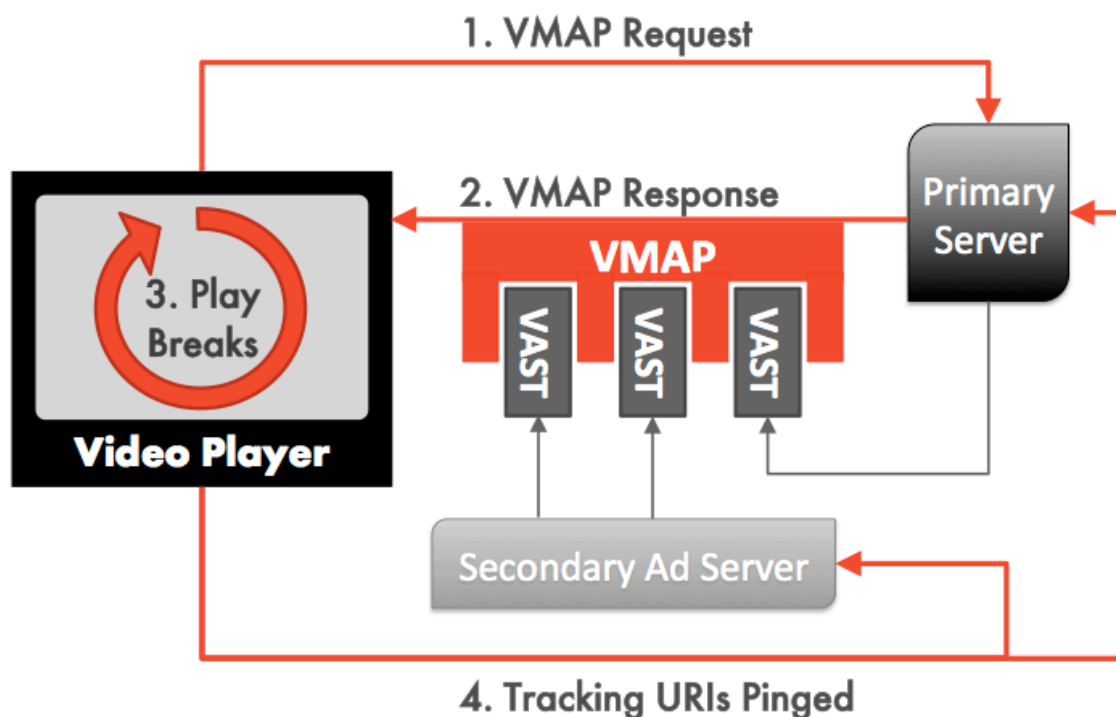
Video players that support VMAP provide a mechanism to honor business agreements that give advertising control to video content owners. VMAP specifications were defined with creativity and innovation in mind and should not limit video player design. As with all IAB guidelines and specifications, this document will be updated as video advertising progresses and new ad formats become more widely adopted.

Intended Audience

VMAP is defined for a specialized use case and is intended for anyone that is part of a business agreement where one party is afforded the control of ad breaks within video program content they either own or distribute. Specifically, this document is designed for the engineers who design the video players in which VMAP is accepted as well as for those who develop the systems that serve VMAP responses. While VMAP is defined for this special use case, other uses may be found and any party to other use cases will benefit from being familiar with VMAP specifications.

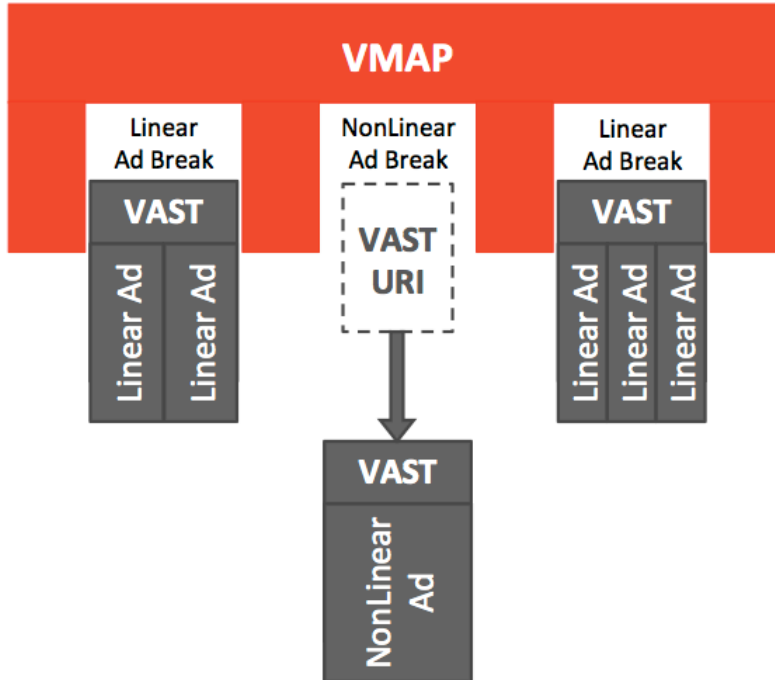
How VMAP Works

The following diagram illustrates how VMAP defines ad breaks in the process for video ad serving.



1. **VMAP Request:** Video player requests a VMAP response from the primary server.
2. **VMAP Response:** The primary server returns a VMAP response that contains a playlist of ad breaks. Each ad break references a VAST ad response that provides the video player with ads to fill specific ad breaks. VAST ads may be supplied directly in the VMAP response by the primary server or by other video ad servers.
3. **Play Breaks:** The video player executes (displays) VAST ads at the time specified in VMAP and in accordance with VAST guidelines.
4. **Tracking URIs Pinged:** At the appropriate times, the video player requests the tracking resources identified by URIs in VMAP. These tracking URIs represent VMAP-level events such as the start and end of ad break.

VMAP defines ad breaks by specifying how many ads, ad types, and other details. The following diagram illustrates the conceptual structure of a VMAP response.



In this example, VMAP specifies a linear ad break followed by a nonlinear ad break and then another linear ad break. The linear ads are served using an InLine VAST response, but the nonlinear ad is specified with a redirect (URI) that references a NonLinear VAST response from another server.