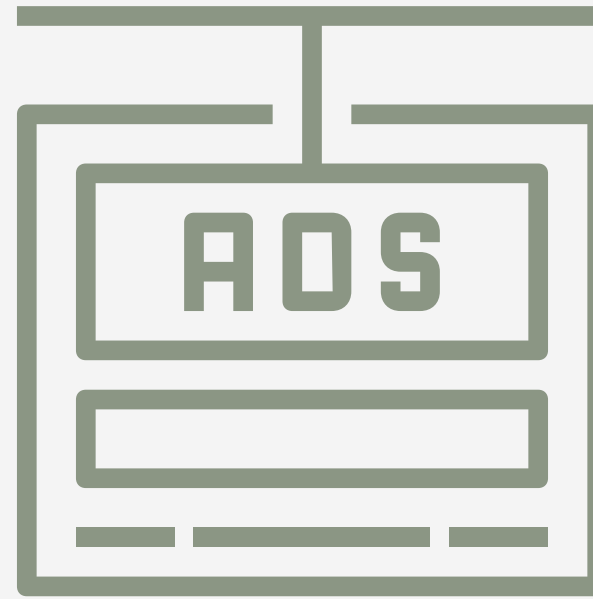


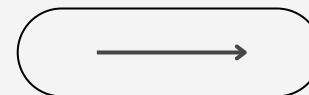
COURSE
advanced software
development (ASD810S)

DATE
23 april 2024



AD SERVER

How our Ad Network was created



CONTEXT
group project
presentation

PRESENTED BY
franco, mia, jay, vilho &
metumo

TABLE OF CONTENTS

01

INTRODUCTION

Overview of project objectives and role of Revive Adserver, introducing the presentation's purpose.

02

OVERVIEW OF REVIVE ADSERVER

Introduction to Revive Adserver, highlighting features and usage in digital advertising.

03

KEY CONCEPTS

Discussion of core concepts used in Revive Adserver.

04

IMPLEMENTATION DETAILS

Step-by-step explanation of Revive Adserver setup and configuration.

05

MARKETING CAMPAIGNS

Overview of campaigns set up in Revive Adserver and assessment criteria.

06

EVALUATING BIDDERS

Explanation of bidder evaluation process and revenue optimization strategies.

07

PUBLISHING ADS

Demonstration of ad publishing using Revive Adserver and targeting options.

08

TRACKING INVENTORY & REPORTS

Explanation of inventory tracking and showcase of sample reports.

09

CHALLENGES

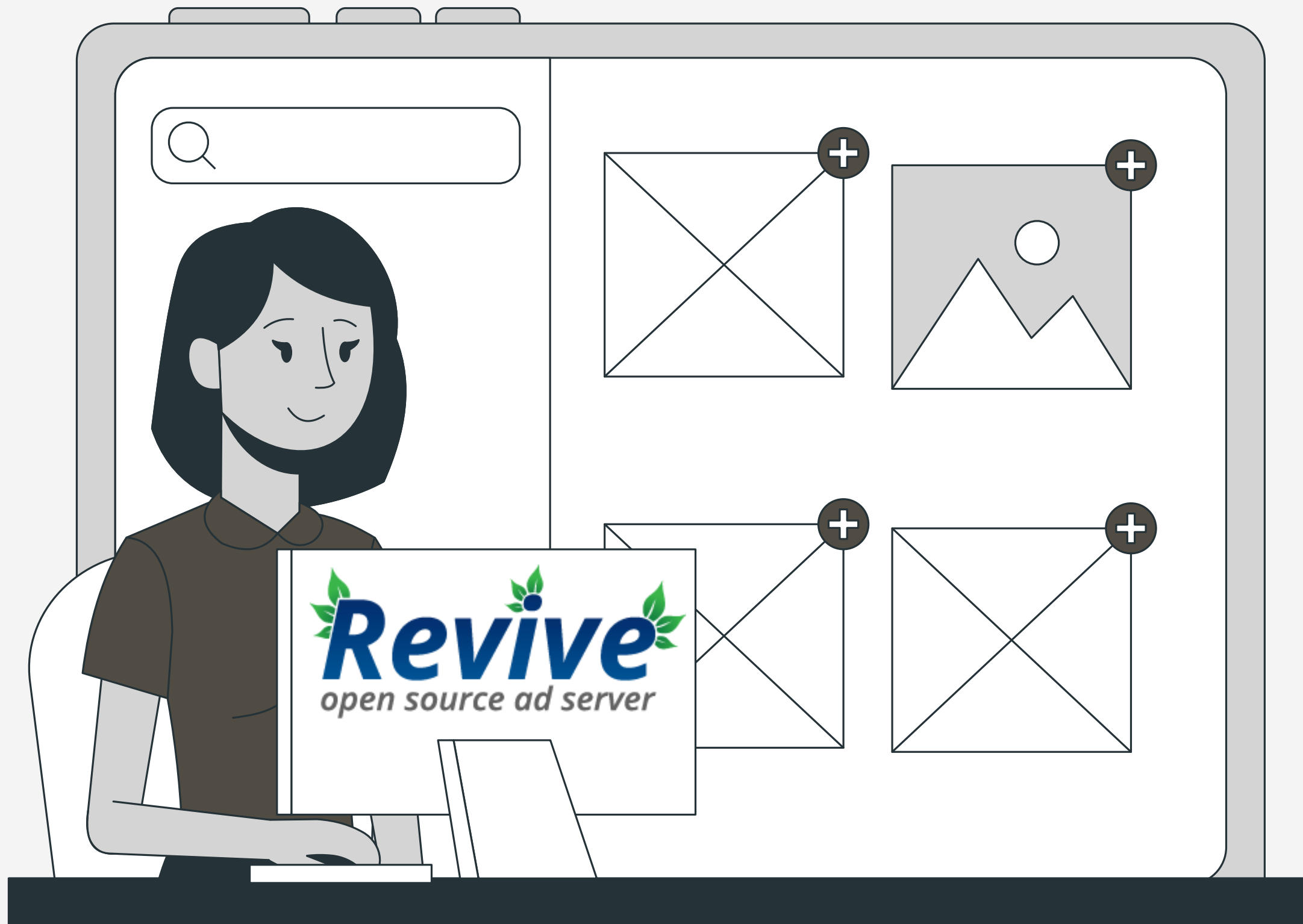
Presentation of all challenges and issues faced throughout the development, with lessons learned and future improvements.

10

CONCLUSION

Summary of presentation content and reinforcement of key takeaways.

INTRODUCTION



Purpose of the Presentation:

- This presentation aims to showcase our work with Revive Adserver, demonstrating how it aligns with our assignment's specific objectives and criteria.

Overview of Revive Adserver:

- An open-source ad-serving platform used by publishers, advertisers, and ad networks worldwide.

Objectives:

- Explore specific aspects like tracking inventory, setting up campaigns, evaluating bidders, and publishing ads.
- Enhance understanding of ad-serving technologies and digital advertising strategies.

OVERVIEW OF REVIVE ADSERVER

Revive Adserver is powerful, open-source ad server software designed to empower publishers with the tools they need to manage and serve ads effectively on their websites. Key features include;

- Support for Various Ad Formats
- Free and Open Source
- Advanced Reporting

Why we choose to use Revive Adserver

- Customisation and Flexibility: Revive Adserver's open-source nature allows for extensive customisation, enabling publishers to tailor the ad server to their specific needs and preferences.
- Review of our Statistics: With Revive Adserver, you are able to review your requests, impressions, clicks and conversions.
- Scalability: Its architecture supports high traffic volumes and can be easily expanded to accommodate growth, making it suitable for both small and large-scale digital advertising operations.



KEY CONCEPTS



An **advertiser** is a person or company that wants to display advertising on your (or another) website via your Revive Adserver installation. Each advertiser Will have one or more campaigns.

A **campaign** is a set of related advertisements that an advertiser wants to display. Campaigns allow shared details, such as the dates to start and stop showing the ads and the frequency with which the ads are displayed, to be managed consistently across the related ads (called banners in Revive Adserver). Each campaign that an advertiser has will have one or more banners.

A **banner** is the content and associated properties that make up an online advertisement. It is what visitors to a website see displayed to them as the "ad" and can click on or interact with in some way. A banner's creative can be a static image, some HTML code, a Flash banner, text, or a video ad.

A **website** in Revive Adserver is simply a placeholder to collect together all of the zones for a website on which you will display banners. Accordingly, websites will have one or more zones. A website in Revive Adserver can also be thought of as representing the **publisher**.

A **zone** is a defined area on a website where banners will be displayed.

A **zone invocation code** (or zone invocation tag - the terms are used interchangeably) is a small piece of code that can be inserted into a website to display the relevant banner(s) that are linked to the tag's zone.

A small piece of code that can be inserted into a website to "**track**" so called actions, acquisitions or conversions.

Revive Adserver has the ability to track and report on the following banner delivery **statistics**, such as Requests, Impressions, Clicks and Concersions.

IMPLEMENTATION DETAILS

Preparing the Environment

1. Before diving into the installation of Revive Adserver, we first had to ensure our development environment was set up correctly. This involved installing WAMPServer, a popular local development environment for Windows, which provides an Apache web server, MySQL database, and PHP.
2. We downloaded WAMPServer from its official website and followed the installation instructions. This step was crucial as it allowed us to run a local web server on our machine, simulating a live server environment for development purposes.

Installation Process

- With WAMPServer installed, we verified that our system met the basic requirements for Revive Adserver. This included checking the PHP version and ensuring compatibility with the database system.

Installation Steps:

1. Downloaded Revive Adserver
2. After downloading, we extracted the Revive Adserver files into the www directory of our WAMPServer installation. This is where all web content is stored and served by WAMPServer.
3. Run the Installation Script: Accessing the install.php script through our web browser initiated the installation wizard.
4. We carefully followed the on-screen instructions, entered our database details, and configured our initial settings. This step was pivotal in setting up our ad server to meet our specific needs.
5. Upon completion of the installation wizard, we were directed to the Revive Adserver dashboard. This marked the successful installation of Revive Adserver on our local development environment.

MARKETING CAMPAIGNS

In our journey with Revive Adserver, we took on a strategic approach to managing our marketing campaigns. We recognised the value of grouping related banners under campaigns, which streamlined our ad management and allowed us to share common properties among these banners. This included crucial elements such as campaign start and end dates, priority calculation to meet delivery requirements, and certain delivery restrictions.

We created two advertisers with two campaigns tailored to their specific needs and objectives. This structure was instrumental in organising our ad inventory, ensuring each campaign was uniquely aligned with its advertiser's goals. Whether driven by different marketing strategies, target audiences, or campaign objectives, each campaign within Revive Adserver was meticulously configured to optimise ad delivery and performance.

This approach enhanced our ad-serving efficiency and provided us with a clear overview of our advertising efforts, making tracking and analysing campaign performance easier. Below are our 2 Advertisers.



MARKETING CAMPAIGNS (1ST CAMPAIGN)

CV2'S Campaign Preview

Basic information

Name *

CV2

Campaign type

☐ Remnant

☐ Contract

☒ Override

Override campaigns are a special campaign type specifically to override (i.e. take priority over) Remnant and Contract campaigns. Override campaigns are generally used with specific targeting and/or capping rules to ensure that the campaign banners are always displayed in certain locations, to certain users, and perhaps a certain number of times, as part of a specific promotion. (This campaign type was previously known as 'Contract (Exclusive)').

Date

Start date

☐ Start immediately

☒ Set specific date

15 April 2024

Campaign will commence at the start of this day

End date

☒ Don't expire

☐ Set specific date

why is it disabled?

Pricing

Pricing model *

CPA

Rate / Price

5.0000

Conversions

50

☐ Unlimited

Conversions Remaining: 50

Clicks

50

☐ Unlimited

Clicks Remaining: 48

Impressions

100

☐ Unlimited

Impressions Remaining: -193

Priority in relation to other campaigns

Set the campaign weight

2

Delivery capping per visitor

Limit campaign views to:

150

in total

Limit campaign views to:

3

per session

Reset view counters after:

-

hours

-

minutes

-

seconds

Cookies

☒ Show capped ads if cookies are disabled

V Industries		
Advertiser’s Market Focus	Education	
Campaign Name?	CV1	CV2
Campaign Agenda/Focus?	Explore Your Passion – Diverse Educational Courses Await You	Excellence Defined – Pursue A Master Degree in Teaching
Main Marketing Objectives for the Campaigns?	To increase awareness and enrollment in educational courses across different disciplines	To attract top-tier candidates and enroll highly motivated individuals in a rigorous educational program focused on a specialized field.
Campaign’s Target Audience?	Individuals aged 18-35 interested in furthering their education and exploring new career opportunities.	Exceptional students and professionals with a strong academic background and a passion for excellence in their chosen field.
Target websites?	Websites with ANYTHING to do with Education and Teaching	
Banner Sizes (in pixels)?	All Ad Banners (1. 509x911 2. 509x269 3. 509x1203 4. 509x772 5. 509x840)	
What will your performance metrics be used?	CPM The campaign benefits from CPM (Cost Per Mille) advertising as it maximises brand awareness by paying for impressions, reaches a broad audience interested in educational courses, and provides budget control through predetermined costs per thousand impressions.	CPA The campaign is well-suited for CPA (Cost Per Action) because it allows advertisers to focus on acquiring conversions, such as applications or enrollments, efficiently reaching this specific audience.

MARKETING CAMPAIGNS (2ND CAMPAIGN)

CF1'S Campaign Preview

Basic information

Name *

CF1

Campaign type

☒ Remnant

The default campaign type. Remnant campaigns have lots of different delivery options, and you should ideally always have at least one Remnant campaign linked to every zone, to ensure that there is always something to show. Use Remnant campaigns to display house banners, ad-network banners, or even direct advertising that has been sold, but where there is not a time-critical performance requirement for the campaign to adhere to.

☐ Contract

☐ Override

Date

Start date

☐ Start immediately

☒ Set specific date

15 April 2024

Campaign will commence at the start of this day

End date

☒ Don't expire

☐ Set specific date

Pricing

Pricing model *

CPM

Rate / Price

50.0000

Impressions

-

☒ Unlimited

Priority in relation to other campaigns

Set the campaign weight

1

Delivery capping per visitor

Limit campaign views to:

0

in total

Limit campaign views to:

0

per session

Reset view counters after:

-

hours

-

minutes

-

seconds

Cookies

☒ Show capped ads if cookies are disabled

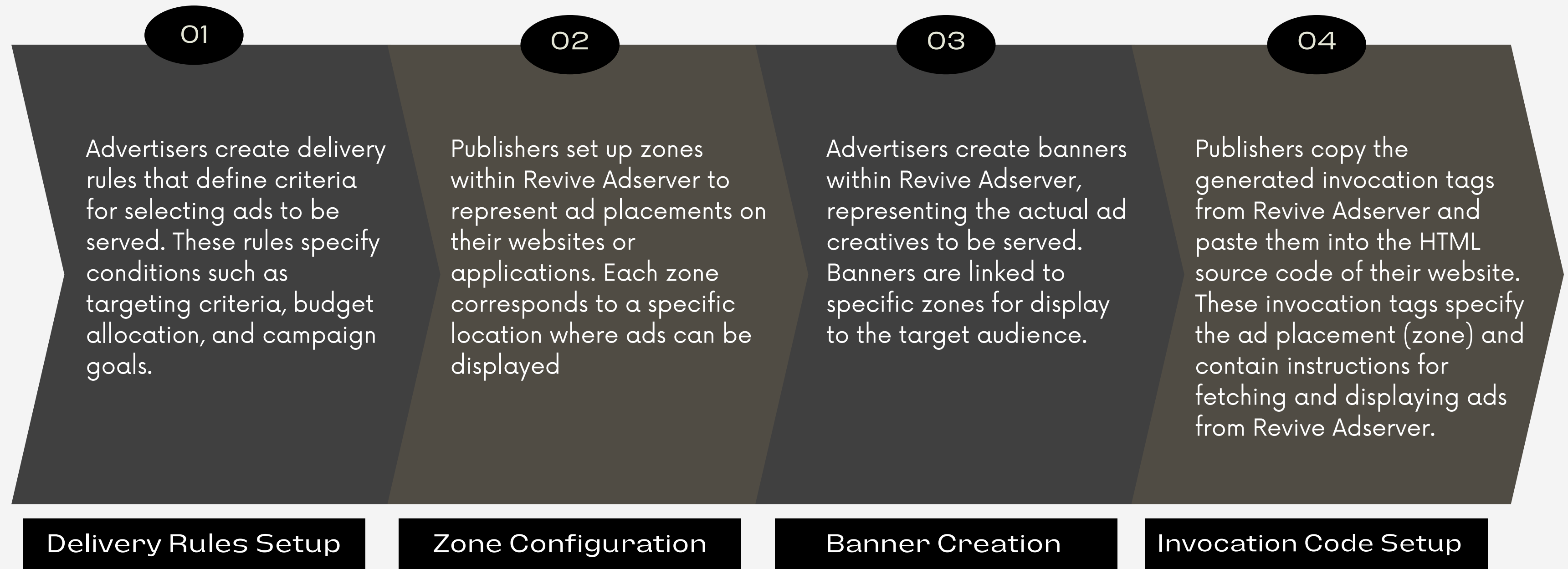
F INC		
Advertiser’s Market Focus	Fashion	
Campaign Name?	CF1	CF2
Campaign Agenda/Focus?	Spring Collection Launch	LimitedTime Offer - Flash Sale
Main Marketing Objectives for the Campaigns?	Increase brand awareness and drive traffic to the online store for the spring collection launch.	Drive immediate sales by promoting a limited-time flash sale on selected items.
Campaign’s Target Audience?	Everyone!	40 < individuals
Target websites?	Websites with ANYTHING to do with Fashion	
Banner Sizes (in pixels)?	All Ad Banners (1. 352x352 2. 754x306)	
What will your performance metrics be?	CPM CPM is ideal for brand awareness campaigns because it focuses on impressions rather than clicks or conversions. Since the main objective of the Spring Collection Launch is to increase brand visibility and exposure, CPM allows you to reach a broad audience and maximize impressions.	CPC The primary objective of the Flash Sale campaign is to drive immediate clicks and conversions from interested customers. Cost Per Click (CPC) pricing model charges advertisers only when users click on the ads, making it an effective choice for direct response campaigns.

EVALUATING BIDDERS



In Revive Adserver, evaluating bidders involves several key steps, from advertisers configuring their campaigns to configuring delivery rules, defining zones, and linking banners to ensure practical ad placements. Here's a general overview of the process flow:

PROCESS FLOW



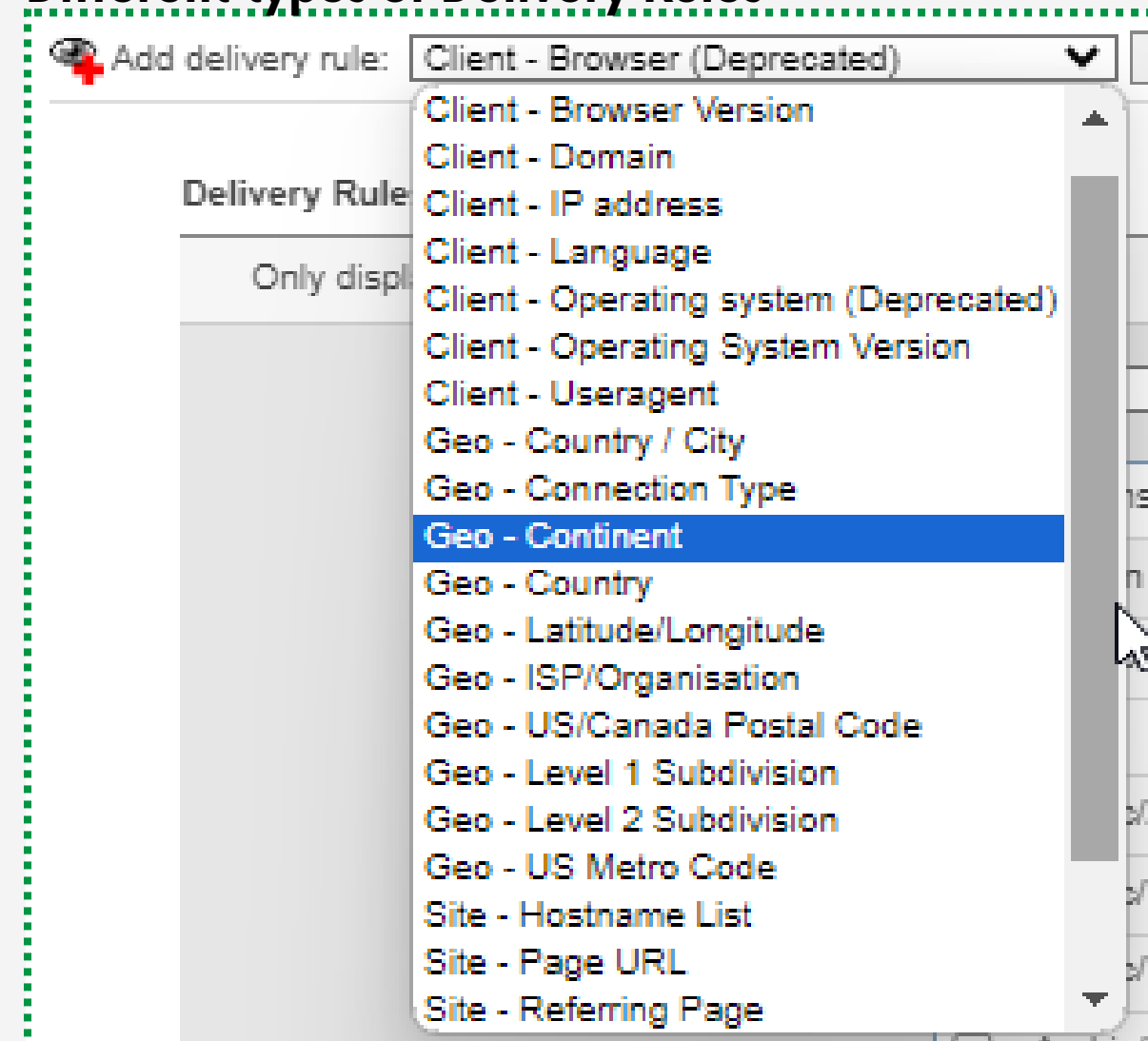
EVALUATING BIDDERS

SETTING UP DELIVERY RULES

In Revive Adserver, you can specify rules that determine if a banner can be displayed or not. This allowed us to:

- Have a set of delivery rules applied quickly, efficiently and accurately to banners to help ensure that multiple banners with the exact delivery rule requirements all have the same delivery rules applied;
- Have a simple way to update the delivery rules that are being used by multiple banners without having to edit each and every banner's delivery rules

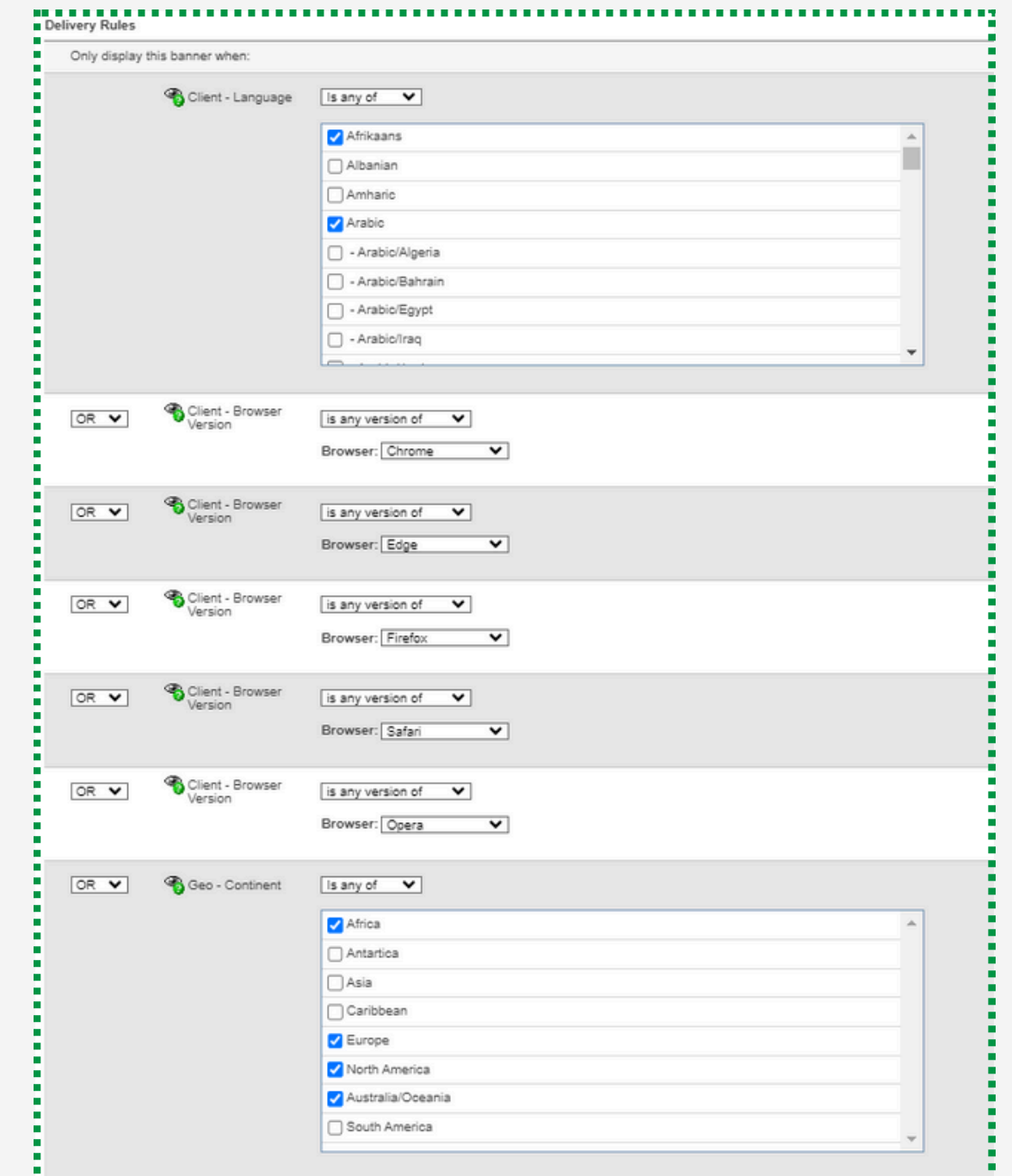
Different types of Delivery Rules



The screenshot shows the 'Add delivery rule' dropdown menu in Revive Adserver. The menu is open, displaying a list of delivery rule categories. The 'Geo - Continent' option is highlighted in blue. The categories listed are:

- Client - Browser (Deprecated)
- Client - Browser Version
- Client - Domain
- Client - IP address
- Client - Language
- Client - Operating system (Deprecated)
- Client - Operating System Version
- Client - Useragent
- Geo - Country / City
- Geo - Connection Type
- Geo - Continent**
- Geo - Country
- Geo - Latitude/Longitude
- Geo - ISP/Organisation
- Geo - US/Canada Postal Code
- Geo - Level 1 Subdivision
- Geo - Level 2 Subdivision
- Geo - US Metro Code
- Site - Hostname List
- Site - Page URL
- Site - Referring Page

One of my Set of Delivery Rules



The screenshot shows the 'Delivery Rules' configuration page in Revive Adserver. The page is titled 'Only display this banner when:' and contains a list of rules. The rules are:

- Client - Language: Is any of (checked: Afrikaans, Arabic)
- Client - Browser Version: Is any version of (checked: Chrome)
- Client - Browser Version: Is any version of (checked: Edge)
- Client - Browser Version: Is any version of (checked: Firefox)
- Client - Browser Version: Is any version of (checked: Safari)
- Client - Browser Version: Is any version of (checked: Opera)
- Geo - Continent: Is any of (checked: Africa, Europe, North America, Australia/Oceania)

EVALUATING BIDDERS

ZONE AND BANNER CONFIGURATION

Banners are displayed on websites in zones. A zone represents a defined website area where a banner should be displayed.

In order to display a given banner to a website visitor, the desired banner that should be shown needs to be associated (i.e. linked) to the relevant zone(s) for the website. This way, Revive Adserver knows which banners to display when the relevant zone invocation tag is invoked on a website. We linked banners to zones at a campaign level

Example of one of our Zones

Basic information

Name *

EduCourseZone5

Description

Zone type

☒ Banner, Button or Rectangle

☐ Interstitial or Floating DHTML

☐ Text ad

☐ Email/Newsletter zone

☐ Inline Video ad

☐ Overlay Video ad

Size

☐ Custom

☒ Width: 509 Height: 840

Comments

CV1 and CV2 (with their respective banners) linked to Zone EduCourseZone5

Please choose what to link to this zone

Link banners by parent campaign

Select the campaign you would like to link to this zone:

-- Select Advertiser --

Campaigns linked to the zone:

Name	Type	ID
CV1	Remnant	1
edubanner1		5
CV2	Override	4
eduban5		20

Hide inactive campaigns

EVALUATING BIDDERS

ZONE AND BANNER CONFIGURATION

Once a zone has been created, you can retrieve a little piece of code that needs to be placed inside your website. In other ad serving systems, these pieces of code are sometimes referred to as 'tags'. The Revive Adserver software uses the term 'invocation code'.

When someone visits your website, their web browser will receive the HTML code of the webpage. The HTML code also contains the aforementioned zone invocation code. The browser executes this code and as a result, one of the banners that's linked to the zone gets displayed.

Example of one of our Invocation Code

 Bannercode

```
<!-- Revive Adserver Asynchronous JS Tag - Generated with Revive Adserver v5.5.1 -->  
<ins data-revive-zoneid="12" data-revive-id="53126d71827fcba70ff68055b9a73ca1"></ins>  
<script async src="//localhost/revive/www/delivery/asyncjs.php"></script>
```

Invocation Code in one of our HTML website code

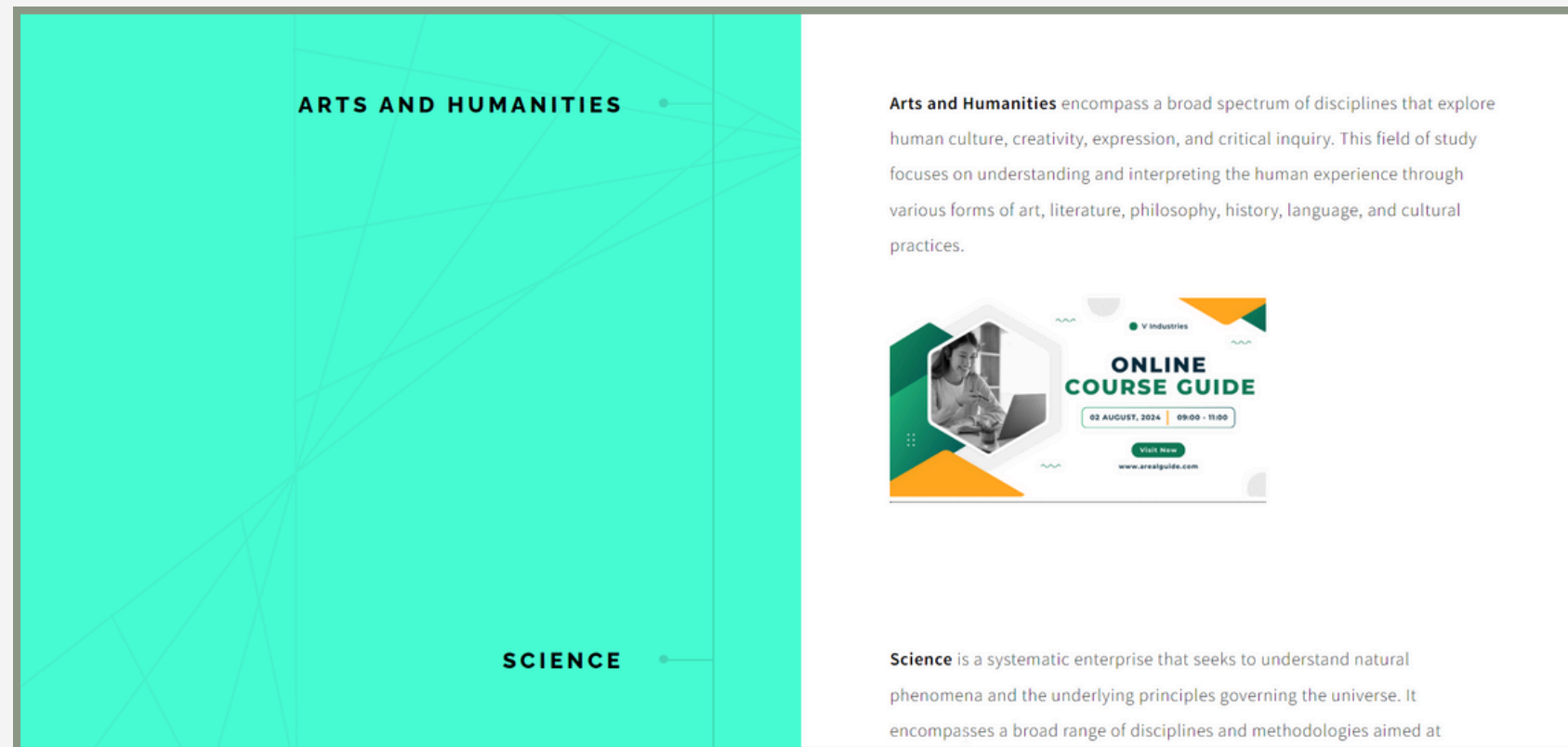
```
<div class="content">  
  <div class="ads">  
    <!-- Revive Adserver Asynchronous JS Tag - Generated with Revive Adserver v5.5.1 -->  
    <ins data-revive-zoneid="12" data-revive-id="53126d71827fcba70ff68055b9a73ca1"></ins>  
    <script async src="//localhost/revive/www/delivery/asyncjs.php"></script>  
  </div>  
</div>
```



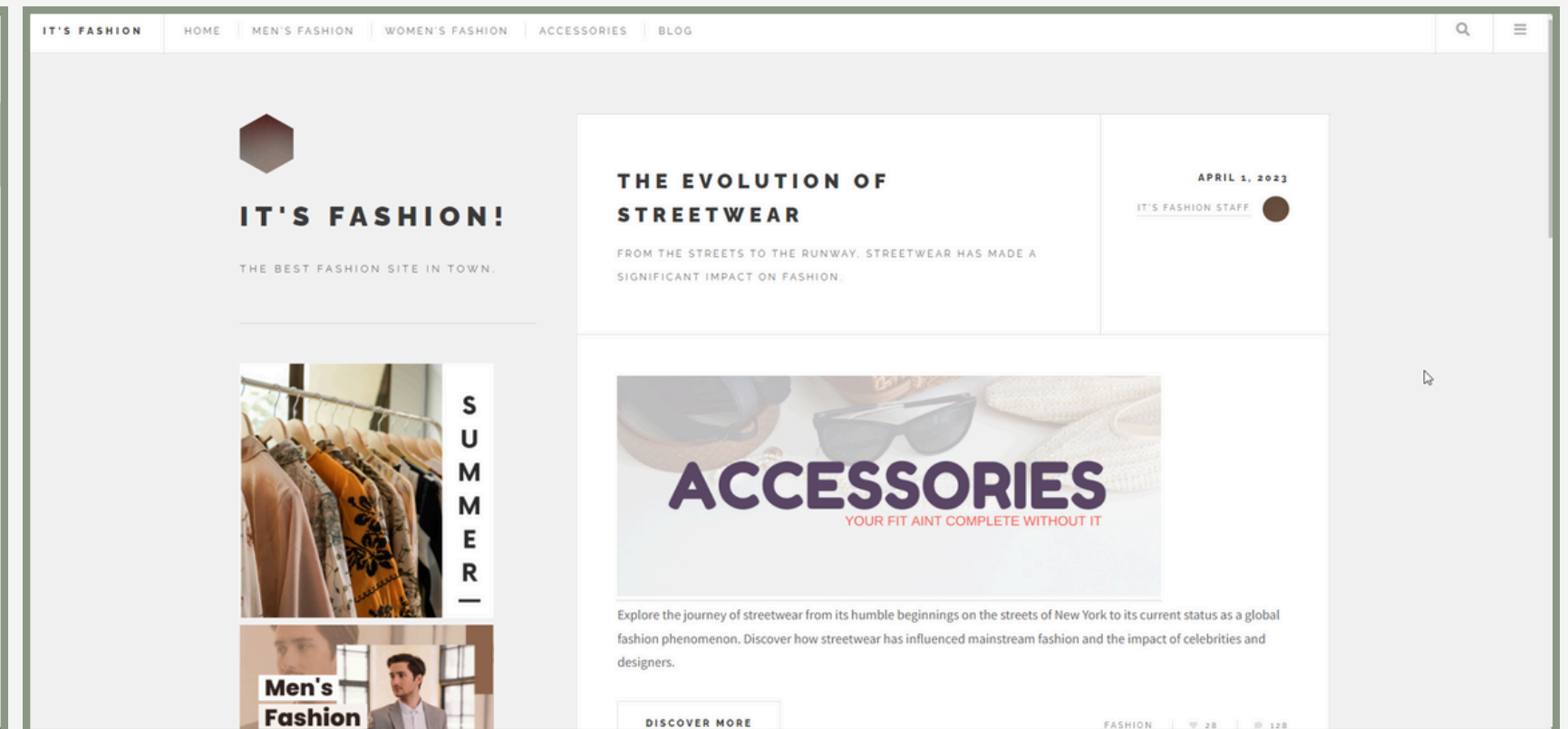
PUBLISHING ADS

As we concluded our setup and configuration of Revive Adserver, we turned our attention to the final step: publishing ads. To give you a tangible sense of our ad serving efforts, here are previews of two of our websites where the ads are now live.

SITE 1 EDUCOURSE



SITE 2: IT'S FASHION



TRACKING INVENTORY & REPORTS

After a few days of the ads being up and running, tracking inventory and generating reports were essential to determine whether it was functioning. We leveraged Revive Adserver's powerful inventory management tools to monitor our ad inventory closely.

Revive Adserver offers **three** primary ways to view statistics:

- 1. **Advertisers & Campaigns:** This view allows us to analyse ad performance at the level of individual advertisers and their campaigns. It provides detailed insights into each campaign's performance, including impressions, clicks, and conversions.

Advertisers & Campaigns

Name ^	Impr.	Clicks	CTR	Rev.	ECPM
Total	932	30	3.22%	207.71	222.88
▼ F Inc	427	10	2.34%	206.65	483.98
▼ CF1	133	8	6.02%	6.65	50.00
fin2	19	2	10.53%	0.95	50.00
fin1	18	3	16.67%	0.90	50.00
fin3	20	-	-	1.00	50.00
fin4	19	1	5.26%	0.95	50.00
fin5	26	-	-	1.30	50.00
fin6	19	2	10.53%	0.95	50.00
fin7	12	-	-	0.80	50.00
▶ CF2	294	2	0.68%	200.00	680.27
▼ V Industries	505	20	3.96%	1.06	2.10
▼ CV1	212	18	8.49%	1.06	5.00
Child School	15	-	-	0.08	5.00
edubanner1	30	1	3.33%	0.15	5.00
edubanner2	32	3	9.38%	0.16	5.00
edubanner3	28	2	7.14%	0.14	5.00
edubanner4	30	1	3.33%	0.15	5.00
edubanner5	16	1	6.25%	0.08	5.00
educoursebanner1	16	4	25.00%	0.08	5.00
edumain banban	22	4	18.18%	0.11	5.00
Literature Summit	13	1	7.69%	0.07	5.00
School Sale	10	1	10.00%	0.05	5.00
▶ CV2	293	2	0.68%	-	-



TRACKING INVENTORY & REPORTS

2. **Global Statistics:** This overview broadly looks at our ad performance across all advertisers and campaigns. It helps us understand the overall health of our ad inventory and identify trends or anomalies that might require further investigation.
3. **Websites and Zones:** This perspective focuses on the ad inventory, allowing us to see how ads are served across different websites and zones. It's beneficial for optimising ad placement and ensuring our ad inventory is used efficiently.

Global Statistics

Day of week ^	Impr.	Clicks	CTR	Rev.	ECPM
Monday	1	-	-	0.01	5.00
Tuesday	88	6	6.98%	0.43	5.00
Wednesday	11	-	-	0.06	5.00
Thursday	627	4	0.64%	200.83	320.30
Friday	29	7	24.14%	0.78	26.72
Saturday	178	13	7.30%	5.62	31.54
Sunday	-	-	-	-	-
View by: Day of week ▾					
	Impr.	Clicks	CTR	Rev.	ECPM
Total	932	30	3.22%	207.71	222.86

Websites amd Zones

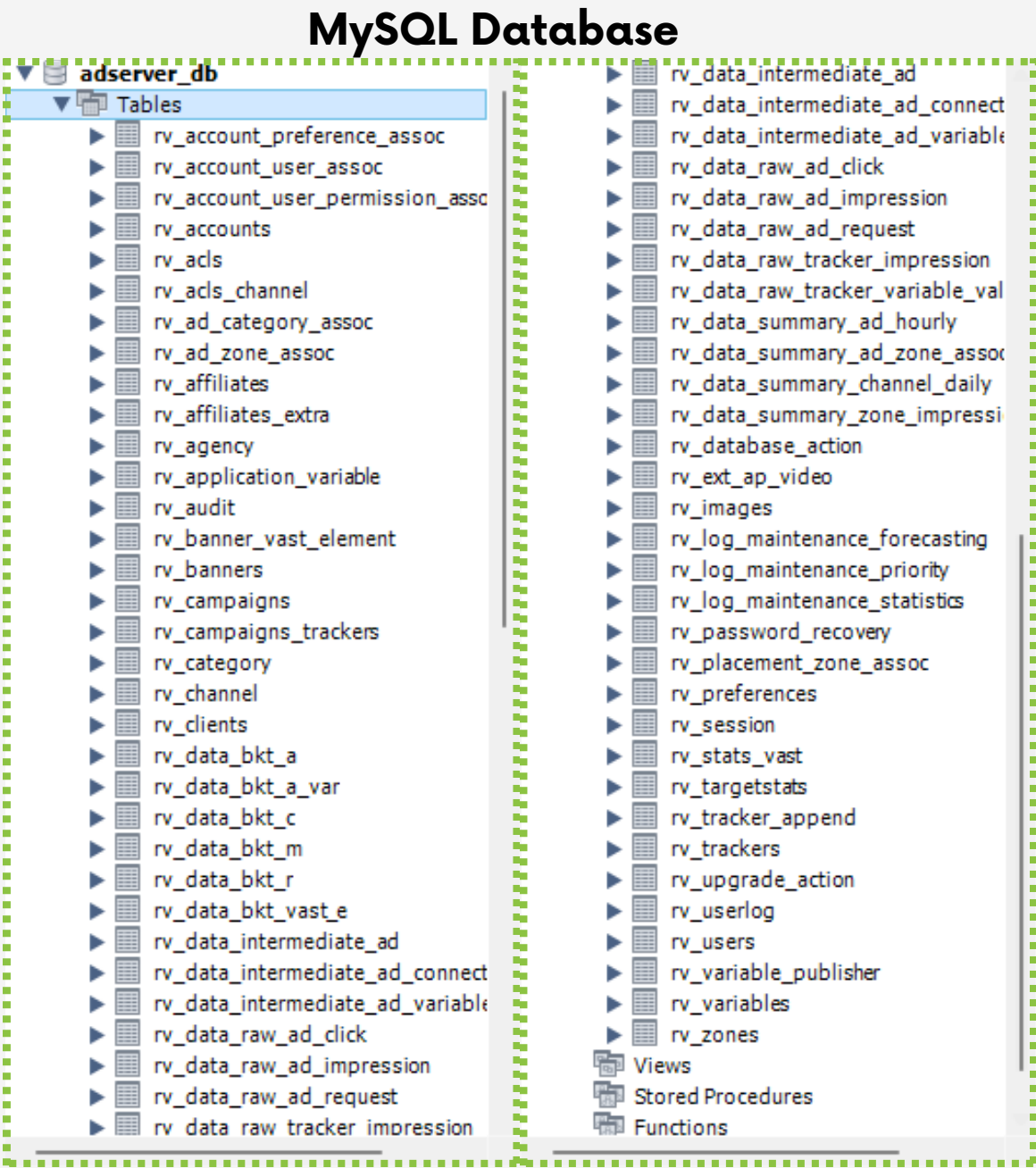
Name ^	Impr.	Clicks	CTR	Rev.	ECPM
Total	932	30	3.22%	207.71	222.86
▼ EduCourse	505	20	3.96%	1.06	2.10
EduCourseZ2	-	-	-	-	-
EduCourseZ3	-	-	-	-	-
EduCourseZ4	-	-	-	-	-
EduCourseZ5	-	-	-	-	-
EduCourseZone	239	11	4.60%	0.53	2.22
EduCourseZone1	7	1	14.29%	0.04	5.00
EduCourseZone2	70	3	4.29%	0.14	1.93
EduCourseZone3	63	2	3.17%	0.12	1.90
EduCourseZone4	63	1	1.59%	0.12	1.90
EduCourseZone5	63	2	3.17%	0.12	1.90
▼ It's Fashion	427	10	2.34%	206.65	483.96
It's Fashion Zone 1	208	4	1.92%	103.80	499.04
It's Fashion Zone 2	219	6	2.74%	102.85	469.63



TRACKING INVENTORY & REPORTS

In addition to these views, Revive Adserver offers an **advanced campaign delivery report**. This report provides a detailed breakdown of how campaigns are being delivered, including information on the priority of ads, delivery restrictions, and the effectiveness of our targeting rules. This level of detail is invaluable for optimising campaign performance and ensuring our ads reach the right audience.

All of our ad inventory data is stored in a **MySQL database**. This database allows us to view and analyse a wide range of data, from basic ad performance metrics to detailed demographic information about our audience. The ability to query this database directly enables us to conduct custom analyses and generate reports tailored to our needs.



Advanced Campaign Delivery Report

Campaign delivery									
Campaign Name	Type	Status	Priority	Start Date	End Date	Booked Impressions	Delivered Impressions		
CF1	Targeted	Running	Remnant	15-04-2024	-	-			133
CV1	Targeted	Running	Remnant	06-04-2024	-	-			212
CV2	Targeted	Stopped	Override	15-04-2024	-	100			293
CF2	Targeted	Stopped	Override	15-04-2024	-	200			294

Thank you!

CHALLENGES & IMPROVEMENTS

In conclusion, we've examined the hurdles faced, and the path forward for future improvements.



Challenges Faced

- We've encountered various challenges in navigating the complexities of ad serving, from configuring delivery rules to optimizing campaign performance.
- Teamwork

What Could We Have Done Better/Changed

- We acknowledge that there were areas where we could have improved or made different decisions. Perhaps we could have implemented better campaigns, better delivery sets, or experimented with alternative ad formats to achieve better results.