

AdFalcon Server API Integration Developer's Guide

AdFalcon Mobile Ad Network

Product of

Noqoush Mobile Media Group



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1 Overview

This document aims at providing developers with instructions and guidance on how to access and integrate with AdFalcon Server APIs from within the server side of their Mobile Device Application or Mobile Website.

Through sending Post or Get HTTP Requests with predefined parameters to the AdFalcon network, our system will be able to detect your application, the device its running on and its location as well as other useful information that would help AdFalcon to serve a targeted ad for the Mobile App users and audience.



2 Ad Request

Request Structure

The AdFalcon Server API supports both get and post HTTP Requests.

When sending a request, the standard <u>Internet media type</u> is "application/x-www-form-urlencoded". This is a format for encoding <u>key-value pairs</u> with possibly duplicate keys. Each key-value pair is separated by an '&' character, and each key is separated from its value by an '=' character.

Keys and values are both escaped by replacing spaces with the '+' character and then using <u>URL encoding</u> on all other non-<u>alphanumeric</u> characters.

For example,

the key-value pairs

Name: Jonathan Doe Age: 23 Formula: a + b == 13%!

are encoded as

Name=Jonathan+Doe&Age=23&Formula=a+%2B+b+%3D%3D+13%25%21

AdFalcon Service URL

The URL of AdFalcon Server API is:

http://api.adfalcon.com/AdRequest/GetAd

Required Parameters

There are a collection of parameters that are mandatory in all ad requests. If you do not fill the required parameters in a correct way, AdFalcon network will not be able to respond back with an appropriate ad.

Common Parameters

- Site ID (R_SID)
 This parameter is the unique ID for your application or web site in AdFalcon system.
- Ad Format (R_F)
 AdFalcon supports three types of ad formats which are

Format	Description
JSON	JSON formatted response
BASIC_HTML	Simple HTML without



	JavaScript
XHTML	XHTML 1.1 with JavaScript format.

IP (R IP)

This parameter is the IP Address of the mobile devices to which the Ad will be delivered. the IP Address helps AdFalcon to identify the country and carrier of the device.

You can get the IP Address of the device making the request from the HTTP header **REMOTE_ADDR**.

If you have an intermediate server (proxy) between the device and your server you can get the device IP address from HTTP header **X_FORWARDED_FOR**.

User agent (D_UA)

The User agent of the device making the request. This helps AdFalcon to identify the device's specifications and capabilities.

You can get the user-agent of the device making the request from HTTP header **USER-AGENT**.

Version (R_V)

The version of the AdFalcon Server API on which the integration has been implemented. The current version is: **api-all-1.0.0**

Mobile Application Parameters

Unique Device ID (D_UDID)

This parameter is used to uniquely identify the app/site's user via the unique id of the device. You can get itfrom the unique device id property.

Blackbery Vender ID (D_BBVID)

If the requesting device is a blackbery, you will need to pass the vendor ID to help AdFalcon detect the country and operator of the device.

Mobile Web Parameters

User ID (R_UUID)

This parameter is used to get the unique ID for the device user. you can get this value in two ways:

- 1. If you have your own unique ID for each user you can always pass this ID.
- 2. If you do not have a unique ID for each user then you can do the following:
 - A Send the first ad request without R_UUID and D_UDID parameters.
 - B When AdFalcon receive the request without a unique ID, the system will generate a new unique user id and send it back as follows:
 - Set the HTTP header "X-ADFALCON-UUID"
 - Set a persistent cookie
 - Set UUID field in JSON responses.

C – Get the generated user unique id from X-ADFALCON-UUID HTTP header or from the UUID JSON field.



D – Thereafter, pass the user unique id in the R_UUID in all ad requests that are submitted on behalf of the same user.

HTTP Headers of end-user browser (R_HH_HEADERNAME)

HTTP headers sent by the user's device. In order to pass header values use the following format: R_HH_HEADERNAME = header value. Header name should be in capital letters only.

Example

 $R_HH_REMOTE\text{-}ADDR\text{=}94.249.59.107 \& R_HH_USER\text{-}AGENT\text{=}keep\text{-}alive\text{...etc}$

Optional Parameters

The optional parameters are extra information related to the user and device which helps AdFalcon's ads selector engine to get the most relevant ads for the user.

The most important optional parameters are:

Test Mode (R TM)

A boolean intended to inform AdFalcon network about application or web is under the development or maintenance mode. Ex. R_TM: true

Note: Ensure Test Mode Parameter is set to false before releasing your application to the public.

Ad Unit size (R_AS)

This parameter identifies the ad unit size to be delivered by AdFalcon. Below are the supported sizes.

Ad size	value
320x48	1
300x50	2
216x36	3
168x28	4
120x20	5
480x60	6
728x90	7
300x250	8
120x600	9

Note: If this Ad Unit Size parameter is not specified, AdFalcon server will choose the best ad size that is suitable for the device's screen resolution.

Language (U_LN)

The language of the requested ad in ISO 639-1 language codes format (Two Letters code); for arabic language, pass <u>ar</u> code for language parameter U_Ln=ar.

Age or birthdate (U_AGE or U_BD)
 You can add one of these two parameters to determine the age of the user.



In the case you pass a birthdate you must send it in the dd.MM.yyyy format

Gender (U G)

This parameter represents the Gender of the user

Gender	Value
Male	m
Female	f

Keywords (U_KW)

This parameter is used to list a collection of keywords in comma separated format. These keywords can be useful since AdFalcon's ads selector engine will search for ads containing these keywords.

Country Code (U_CC)
 County code of the end user in ISO 3166-1 alpha-2 format code (two-letter code)

Area Code (U_AC)
 A parameter containing the user's area code

Postal Code (U PC)

A parameter containing the user's postal/ZIP code

Geolocation (D_LA, D_LO)

A parameter containing the geolocation information of the device. The location information is divided into two double values; latitude (D_LA) and longitude (D_LO).

Example

D_LA=35.54454548&D_LO=58.981

For more information on the parameters please refer to Appendix A.

Sample HTTP Get Ad Request

http://api.adfalcon.com/AdRequest/GetAd?

R_SID=54645456421537421324153421354&

R_IP=192.168.2.1&

R_F=XHTML_with_js&

R_V=api-all-1.0.0&

R_AS=1&

R_TM=TRUE&

R_UUID=&

U_KW=sport%2C+mobile&

U_LN=ar&

R_HH_HOST=94.249.59.107&

R_HH_CONNECTION=keep-alive&

R_HH_CACHE-CONTROL=max-age%3D0&

R HH USER-AGENT=

Mozilla%2F5.0+%28Macintosh%3B+Intel+Mac+OS+X+10_6_7%29+AppleWebKit%2F535.1+%28KHTML%2C+like+Gecko%29+Chrome%2F13.0.782.220+Safari%2F535.1&

R_HH_ACCEPT=

text%2Fhtml%2Capplication%2Fxhtml%2Bxml%2Capplication%2Fxml%3Bq%3D0.9%2C*%2F*%3Bq%3D0.8&



R_HH_ACCEPT-ENCODING=gzip%2Cdeflate%2Csdch&

R_HH_ACCEPT-LANGUAGE=en-US%2Cen%3Bq%3D0.8&

R_HH_ACCEPT-CHARSET=

 $ISO-8859-1\%2Cutf-8\%3Bq\%3D0.7\%2C^*\%3Bq\%3D0.3\&$

R_HH_COOKIE=

 $\label{lem:sessionid} JSESSIONID\%3D8e87c767d2078016a5ad14055f0e\%3B+_utma\%3D132162694.2044970470.1\\ 309352199.1309352199.1309352199.1\%3B+_utmz\%3D132162694.1309352199.1.1.utmcsr\%3D\%28direct\%29\%7Cutmccn\%3D\%28direct\%29\%7Cutmcmd\%3D\%28none\%29$



3 Ad Response

ADFaclon's Ad Response format depends on the value passed for the Request Parameter (R_F) describe above. The following formats are currently supported:

- JSON
- XHTML
- Basic HTML

JSON

JSON contains a collection of parameters that contain all the needed information to process an ad on the mobile app or website.

JSON Ad Response is divided into four sections:

- 1 Result code is a code that gets the status of request.
- 2 Settings: represents App/Site setting's set by the Developer/Publisher on AdFalcon portal, which you can modify from the AdFalcon web site.
- 3 Click to Action: contains informations to trigger Ad clickaction.
- 4 Slides: contains a list of slides. Each slide has:
 - A display duration
 - B elements: divided into three types
 - o Background
 - o Text
 - o Image

Comments:

- There is no difference between banner and text when drawing an ad. You will only need to draw a slide as per the instructions in the response.
- After you finish drawing an ad you must load and display the beacon image.

The below table lists all the parameters for the JSON response.

Parameter	Туре	Description			
-code	String	Gives the status of request. In case of success this parameters is omitted.			
		The possible values for this parameter are:			
		Value Description			
		1 No Ad Available			
		2 Invalid Parameters			
		3 Missing Required Parameters-1 Server internal error			
-message	String	Gives more details about the error parameter.			



+settings	object	This object is returned when a request has R_STG parameter set to TRUE. This object contains the App/Site settings to override settings set in the code.			
-DTM	int		ble Test Mode. This parameter is used to enable/disable mode for the App/Site.		
		The possi	ible values for this parameter are:		
		Value	Description		
		-1	value does not exist		
		0	Enable test mode		
		1	disable test mode		
-EA	int	autorefre	utorefresh. This parameter is used to enable/disable the esh for App/Site. ible values for this parameter are:		
		Value	Description		
		-1	value does not exist		
		0	Disable autorefresh		
		1	Enable autorefresh		
-RD	int		The Refresh Duration in seconds. This parameter used to set the refresh duration for App/Site.		
uuid	String	AdFalcon	Unique User ID; if generated by AdFalcon system.		
-adType	String	Type of re	equested Ad.		
+adAction	object		nts Ad click action "click to action" (URL, SMS etc.), action info url.		
-type	String	Indicates	the action performed upon the user clicks the Ad.		
		The follow	wing actions are supported:		
		Value	Action		
		URL	click to open web site		
		Video	click to play video stream		
		Audio	click to play audio stream		
		SMS	click to send sms		
		Call	click to make call		
		Canvas	click to expand to a canvas		
			Note: <u>canvas</u> is a type of action that is similar to a dialog that is divided into two sections:		
			1 – Title bar: is a bar that contains the title of the canvas, foreground and background.		
			2. Dody is a wall view that wandows the mation well		

2 – Body: is a web view that renders the action_url.



			App click to launch apple store or android market base on the mobile device.
-actio	on_url	String	The url of the target action; being a landing page, audio. When the user click on the Ad, the device should redirect the user to this URL. Note: Requesting this URL will log a click on the Ad.
-actio	onInfo_url	String	When this URL is requested, it provided extra information about the Ad Action "Click to Action". Mainly this is used for cases where extra information is required, such as Phone number to call or send SMS to. The format of the JSON is: { "url":"http://"
			or "number":"0096278"
			} Note: Requesting this URL will log a click on the Ad.
+canvas Object		Object	Canvas is an object that is returned when an action type is canvas. It included all the information needed to draw the canvas.
			canvas is divided into two sections:
			1 – Title bar: is a bar that contains the title of the canvas, foreground and background. As illustrated below.
			2 – Body: is a web view that renders the image/page specified in the action_url field.
-s	SZ	array	Size of canvas that contains an array and contains one of two possible values: [width, height]
-s -t		array	possible values:
-t		,	possible values: [width, height]
-t	x	String	possible values: [width, height] Text of the canvas's title bar.
-t	x oc	String	possible values: [width, height] Text of the canvas's title bar. Background of canvas's title bar. The possible values for this parameter are:
-t -b	x oc	String	possible values: [width, height] Text of the canvas's title bar. Background of canvas's title bar. The possible values for this parameter are: red, green, blue, alpha]
-t -b	cx oc	String array	possible values: [width, height] Text of the canvas's title bar. Background of canvas's title bar. The possible values for this parameter are: red, green, blue, alpha] Foreground of the canvas's title. The possible values for this parameter are: [red, green, blue, alpha]
-t -b	cx oc	String	possible values: [width, height] Text of the canvas's title bar. Background of canvas's title bar. The possible values for this parameter are: red, green, blue, alpha] Foreground of the canvas's title. The possible values for this parameter are:
-t -b	cx oc	String array	possible values: [width, height] Text of the canvas's title bar. Background of canvas's title bar. The possible values for this parameter are: red, green, blue, alpha] Foreground of the canvas's title. The possible values for this parameter are: [red, green, blue, alpha] This parameter represents a url for an image of size 1x1 pixel., This is used to indicate the Ad unit has been displayed on the device.
-t -b	cx oc	String array	possible values: [width, height] Text of the canvas's title bar. Background of canvas's title bar. The possible values for this parameter are: red, green, blue, alpha] Foreground of the canvas's title. The possible values for this parameter are: [red, green, blue, alpha] This parameter represents a url for an image of size 1x1 pixel., This is used to indicate the Ad unit has been displayed on the device. This must be requested an impression will be logged for this Ad and



		contains its display duration and elements (image, text and background).				
-dd	int	each slide has a specific time in screen. ameter are:				
		Value Des				
		that rem disp This	no duration is de ain displayed and layed. is normal used if	n or equal to zero then this means termined and so the slide will following slides will not be the Ad consists of one slide only or ast slide in the Ad.		
		than zero the slide will be ition of the value in seconds, and displayed.				
+elements	l ements Array of elements	An Array of elements where each element represents an image, text or background. You must draw the elements as per the order and specifications supplied. The possible values for this Array depending on the type of ad are:				
		Туре	Parameters	Description		
		Image	t:i p: [x-axis ,y-axis, width, height] url:http://	Indicates an Image Element. Possible images are logo, action icon and banner. To draw the image perform the following: 1 – download an image from a url. 2 – draw the image at the given position.		
		Text	t:t p: [x-axis,y-axis, width, height] tx:Ad text fn:font name fz:font size fs:font style al:align	Indicates a Text Element. Possible text elements are Text ad, AdFalcon logo and alternative text for the banner. To draw the text perform the following: 1 – create a font that has a font name, size and style (plain, bold and italic) using the parameters fn, fz and fs. 2 – draw the text at given position and align it.		
		Background	t:bg p: [x-axis .v-axis.	Indicated a Background Element. To draw the text perform the following:		



			width, height] bc:[red,green, blue,alpha] c:[red,green, blue,alpha]	 Fill the rectangle using the values in the c parameter which represents color. Draw rectangle at given position. Gradient Fill the gradient of the rectangle using values of the bc parameter and the using the values of the c parameter. Draw rectangle at the specified position. 	
-t	char(1,2)	Type of	element.		
		The per	sible values for this para	imotor aro:	
		The poss	sible values for this para	imeter are.	
		Value	Description		
		bg	background element		
		i	image element		
		t	text element		
-р	array		of element [x-axis ,y-ax	-	
-fn	String		t name such as Arial, Ta	homaetc.	
-fs	char	Style of t	Style of text.		
		The poss	sible values for this para	imeter are:	
		Value	Description		
		n	Normal or plain		
		i	Italic		
		b	bold		
-fz	int	Text fon	t size		
-al	char(3)	Text alig	nment.		
		The nose	sible values for this para	imeter are:	
		The poss	note values for this pare	interest die.	
		Value	Description		
		ltr	left to right		
		rtl	right to left		
		ctr	center		
-tx	String(40)	Text	a.		
-url	String	Image u		la mala a a la mina a mala e e e e e e	
-bc	Array	pc is arra	ay of numbers that hold	s rgba color in order as the	



following format [red, green, blue, alpha].

note: red, green and blue are integer have the range (0 – 255)

alpha is double has the range (0.0 – 1.0).

this parameter used to represent top gradient color

-c Array c is array of numbers that holds rgba color in order as the following format [red, green, blue, alpha].

note: red, green and blue are integer have the range (0 – 255)

alpha is double has the range (0.0 – 1.0).

this parameter used to represent bottom gradient color or normal color

Sample JSON Ad Response

```
"adType":"banner",
       "adAction":{
                       "type": "URL",
                       "action_url": "http://api.AdFalcon.com/C/x/xxxxx/xxxx/x",
                       "actionInfo_url": "http://api.AdFalcon.com/CI/x/xxx/xx/x",
               },
       "beacon_url": "http://api.AdFalcon.com/B/x/xxxxx/xxxx/x",
       "slides":[{
               "dd":0,
               "elements" : [{
                       "t" : "bg",
                       "p": [0, 0, 320, 48],
                       "bc": [95,86,246,1],
                       "c": [194,215,96,1]
               },{
                       "t": "t",
                       "p": [53, 5, 219, 30],
                       "fn": "Arial"
                       "fc": [68,112,85,1],
                       "fs": "b",
                       "fz" : 12,
                       "al" : "ctr",
                       "tx": "alternative text"
               },{
                       "t": "i",
                       "p": [0, 0, 320, 48],
                       "url": "http://image.adfalcom.com/234/2313/123232234"
               }]}
       ]
}
```

XHTML and BASIC_HTML

The XHTML and BASIC_HTML Response is very useful because you will be able to display the XHTML Ad Response in a web view where it renders XHTML directly without needing to parse the response.



The following HTTP Headers are returned as part of the XHTML and BASIC_HTML responses:

HTTP Header Name	Value		
X-ADFALCON-ERROR-CODE	Error Code		
	Value Description		
	1 No Ad Available		
	2 Invalid Parameters		
	3 Missing RequiredParameters		
	-1 Server internal error		
X-ADFALCON-ERROR-MESSAGE	Message of the error if any.		
X-ADFALCON-UUID	Unique Id of the user.		

Sample Ad Responses

BASIC_HTML

XHTML



4 Appendix A: AdFalcon Parameters Reference

Parameter	Name	Туре	Is Required ?	Example	Description
R_SID	Site ID	String	YES	R_SID=xxxxx	<u>Publisher ID</u>
R_F	Format	String	YES	R_F=JSON	Ad Response Format
R_IP	IP Address	String	YES	R_IP=94.249.59. 100	Mobile Device IP
R_AS	Ad Unit Size	int	YES	R_AS=1	Ad Unit Sizes
R_V	Version	String	YES	R_V= api-all- 1.0.0	AdFalcon API Version
D_UA	User agent	String	YES	D_UA= Mozilla/5.0 (iPhone; U; CPU like Mac OS X; en) AppleWebKit/42 0+ (KHTML, like Gecko) Version/3.0	<u>User-Agent</u>
D_UDID	Unique device ID	String	YES (Application Request)	D_UDID=564654 6	Unique Device ID
D_BBVID	Blackberry vender ID	String	YES (Blackber ry)	D_BBVID=100	Blackberry Vender ID
R_UUID	User ID	String	YES (WEB Request)	R_UUID=645351 321	<u>User ID</u>
R_HH_HEADE RNAME	HTTP Headers	String	YES (WEB)	R_HH_ACCEPT= text/plain&	Source HTTP Header
U_LN	Language	Char(2)	NO	en	This is ISO 639-1 codes language code
U_PC	Postal Code	int	NO	962	User postal code
U_AC	Area Code	int	NO	11121	User area Code
U_AGE	AGE	int	NO	27	User age
U_KW	Keywords	String	NO	sport, football, technologies	Search on ad which related to this keywords
U_G	Gender	char(1)	NO	1	m male f female
U_CC	country code	char(2)	NO	JO	This is <u>ISO 3166-1</u> alpha-2 country



					code.
U_BD	Birthdate	String	NO	21.11.1984	dd.MM.yyyy
D_LA & D_LO	geo location latitude and longitude	double, double	NO	D_LA=35.154& D_LO=35.484	user geolocation
D_DO	Device orientation	char(1)	NO	D_DO=p	Landscape : I Portrait : p
D_SW	Device screen width	float	NO	D_SW=320	
D_SH	Device screen height	float	NO	D_SH=480	
D_SS	Sound status	char(1)	NO	D_SS=s	Silent: s Normal: n
D_DM	Device manufactur er	String	NO	D_DM=Apple	
D_DMdl	Device model	String	NO	D_DMdl=iPhone	
D_OS	OS name	String	NO	D_OS=android	
D_OSV	OS version	String	NO	D_OSV=iOS4.3	
R_AdType	Ad type	char(1)	NO	D_AdType=b	Banner: b Text: t
R_TM	Test Mode	Boolean	NO	R_TM=false	true false
D_RAM_FSZ	Ram free size	double	NO	D_RAM_FSZ=832 545444	
D_RAM_SZ	Ram size	double	NO	R_RAM_SZ=2423 2312354	
D_RAM_USZ	Ram user size	double	NO	R_RAM_SZ=2323 23232454	
D_CPU_FQ	cpu frequency	double	NO	D_CPU_FQ=1000 000	
D_CON_TYPE	network type	String	NO	D_CON_TYPE=WI FI	WIFI, CARRIER
R_STG	application site settings	Boolean	NO	R_STG=true	if the value of this parameter is true, AdFalcon network will return a JSON that has the site settings. These settings are: 1 – Disable test mode 2 – Enable auto refresh



					3 – Refresh duration
R_STYLE	Text ad style	Boolean	NO	R_STYLE=false	If the value of this parameter is false you will only receive a plain text ad that does not have any decoration like bg color, font or size