BOINGO MEDIA

Wi-Fi Portal Ad Code Integration Instructions

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WELCOME TO THE Boingo Media Family

This document is for:

- A business person who has some technical understanding of web technologies.
- A technical person with an understanding of web and Wi-Fi network engineering.

ABOUT BOINGO MEDIA

Who We Are

Boingo's Wi-Fi advertising network delivers a unique way for brands and advertisers to engage with consumers on the go, as well as help drive revenue to help offset your Wi-Fi network's operating expenses. Our networks – and ads we serve on them – are optimized for all smart device types, browsers and operating systems.

About This Document

This document describes the Boingo Media platform, how it works, and how to integrate the Boingo Media ad code with your venues' captive portals and networks. If you are charged with integrating the Boingo Media platform code into your company's network, ideally you should have experience with online advertising, but should also have experience working with captive portal environments, authorization, and authentication, and understand concepts of HTTP protocols. Knowledge of JavaScript and HTML – and debugging – are necessary if technical issues arise.

Integrating Boingo Media into your venues is a straightforward process and our team is here to help you every step of the way.

CONTACT INFORMATION

Our Boingo Media experts are here to support you and your business.
If you need help or have questions, please contact:

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Step 1

PRE-INTEGRATION and TECHNICAL EXCHANGE

For a more detailed look at Step 1, check out Pre-Integration and Technical Exchange in the following section "A Deeper Dive."

Kick Off Call

Boingo will schedule an orientation call with you and your team. This call is technical and lasts about 30 minutes. At least one member from your team who is capable of configuring the Login Page must be present on the call. On this call we will:

- Review the details of your login page
- Discuss the Boingo Media installation process
- Evaluate all venues that will be integrated
- Answer any questions you have

You will need:

- Login page
- The ability to manage the login page HTML code
- The ability to whitelist by domain with wildcards.

Send Boingo Your Login Page Code

1. Login pages come in all flavors and commonly have unique behaviors. Don't worry, we've seen it all! Send us a copy of your front-end login page code. This should include the HTML and JavaScript.
2. Send Boingo a network device available to us for full end-to-end testing (optional, but highly recommended).

Fill Out the Venue Import Spreadsheet

We'll need to know all about your venues. You should have received the Venue Import Excel Spreadsheet. Please fill it out as soon as possible. The info that you provide – such as address, postal code, and venue ID number – will allow us to target ads to specific venues, as well as track and report on them. A completed spreadsheet is required prior to launch.

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How to Integrate Boingo Media Into Your Venue

Step 2 INTEGRATION

The Boingo Media Ad Flow

1. Login Page
2. Splash Screen
3. Video
4. Call to Action

For a more detailed look at Step 2, check out Integration in the following section "A Deeper Dive."

Install HTML and test:

A. **HTML:** Boingo will return the HTML that you provided in Step 1, updated with our Boingo Media code, which makes the Boingo Media platform work. You'll need to add it to your login page and test it.

B. **Testing:** When you're ready to start testing, use a staging environment where you can test across multiple venue IDs. If that's not possible, Boingo will provide you a special Test Venue ID used only to test venues. Follow these functional testing steps:

- **a.** Connect to the SSID
- **b.** Open your browser if the captive network assistant (CNA)* is disabled
- **c.** Login Page should appear
- **d.** Select the login button. This is where Boingo takes over and redirects users to the Boingo Media platform.
- **e.** You will be redirected to an ad. [See flow diagram below.]
- **f.** The final step of the ad is a "call to action." This screen provides users with one or two buttons, both of which connect the user to the internet.
  - i. "Wi-Fi connect & learn more" button: Clicking this button triggers Boingo's post-authentication redirect and points the user to the advertiser's website. The user will be online.
  - ii. "No Thanks, just take me online" button: Clicking this button points the user to your venue's typical post-authentication (welcome) page. The user will be online.

Post functional testing:

A. Once completed, report your testing results to Boingo and we will validate the reporting to ensure installation was implemented correctly.

B. Capture relevant screen shots or video of the testing experience and send to Boingo. This is especially useful if you experience problems with your tests.

*What is a CNA? See "A Deeper Dive Step 1"

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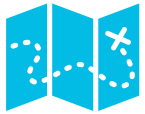
Step 3

POST-INTEGRATION and PRODUCTION ROLLOUT

For a more detailed look at Step 3, check out Post-Integration – Production Rollout in the following section "A Deeper Dive."



A. Follow the Venue Import Configuration Guide in the following section for your production properties. Ensure that the Venue IDs generated in the ad code match the respective venue that is associated with the Login Page.

B. After notifying your Boingo support rep, launch and follow the testing procedure outlined in the previous page's "Step 2: Integration Testing" again in the production environment.

STEP 1 PRE-INTEGRATION AND TECHNICAL EXCHANGE

Network Controller Information

- **Network Controller Type**
  Knowing the type of network controller (e.g. Aruba, Mikrotik, etc.) can sometimes give us critical information when troubleshooting issues during – and even after – integration.

- **Loaner network controller**
  We recommend that we keep a configured controller or access point here at Boingo to test any issues should they ever arise. Please reach out to Yanko or George for shipping information.

- **Client MAC Address**
  While Boingo can identify a unique device through a temporary, randomly-generated ID, we prefer to use the client MAC address passed through the network controller. This helps with troubleshooting and validation.

Whitelisting

Applying Whitelist Rules

1. Whitelist rules determine which sites and pages users are able to access before authentication. Since the sponsored login page is hosted externally, you will need to add the following domain names to your whitelist (also known as a Walled Garden Policy or pre-auth access control list (ACL)):
   - *boingomedia.com
   - *.boingomedia.com
   - *boingo.com
2. Whitelist the above addresses on all available ports, or at a minimum, the following ports:
   - 80
   - 443
3. Verify Whitelist
   a. Test that the whitelist is working before continuing. If configured properly, you should be able to reach these URLs pre-auth:
      - http://nimbus.boingomedia.com/static/test.html
      - https://nimbus.boingomedia.com/static/test.html
      - http://www.boingo.com.proxy.boingomedia.com
      - https://www-netflix-comproxy.boingomedia.com
   b. The above links should return successfully.

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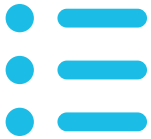
STEP 1 PRE-INTEGRATION AND TECHNICAL EXCHANGE

Captive Network Assistant (CNA) - AKA "Web Sheet"



1. The CNA is a function that is controlled at the OS-level and is exposed from the network controller via whitelisting. This function works and looks like a web browser. It is triggered when a device detects that it is behind a closed network that requires authentication via browser. However, the CNA is not a fully-featured browser. It has a limited subset of capabilities compared to a browser. **If you use CNA, please let us know so we can flag campaigns to support it.**

2. **Caution:** Android devices are not compatible with the Boingo Media Platform when CNA is enabled. We recommend that you disable CNA on Android devices, by whitelisting the following URLs:

    - connectivitycheck.android.com/generate_204
    - connectivitycheck.gstatic.com/generate_204
    - clients3.google.com/generate_204

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STEP 2 INTEGRATION

How it works now

Existing login page flow – Your login page flow probably looks something like this:

1. Associate SSID: the user connects to your router.
2. Login Page: the first page the user sees when logging onto your network.
3. Authentication: user authenticates to the network.
4. Post-Auth Page: the page shown to the user after a successful authentication.

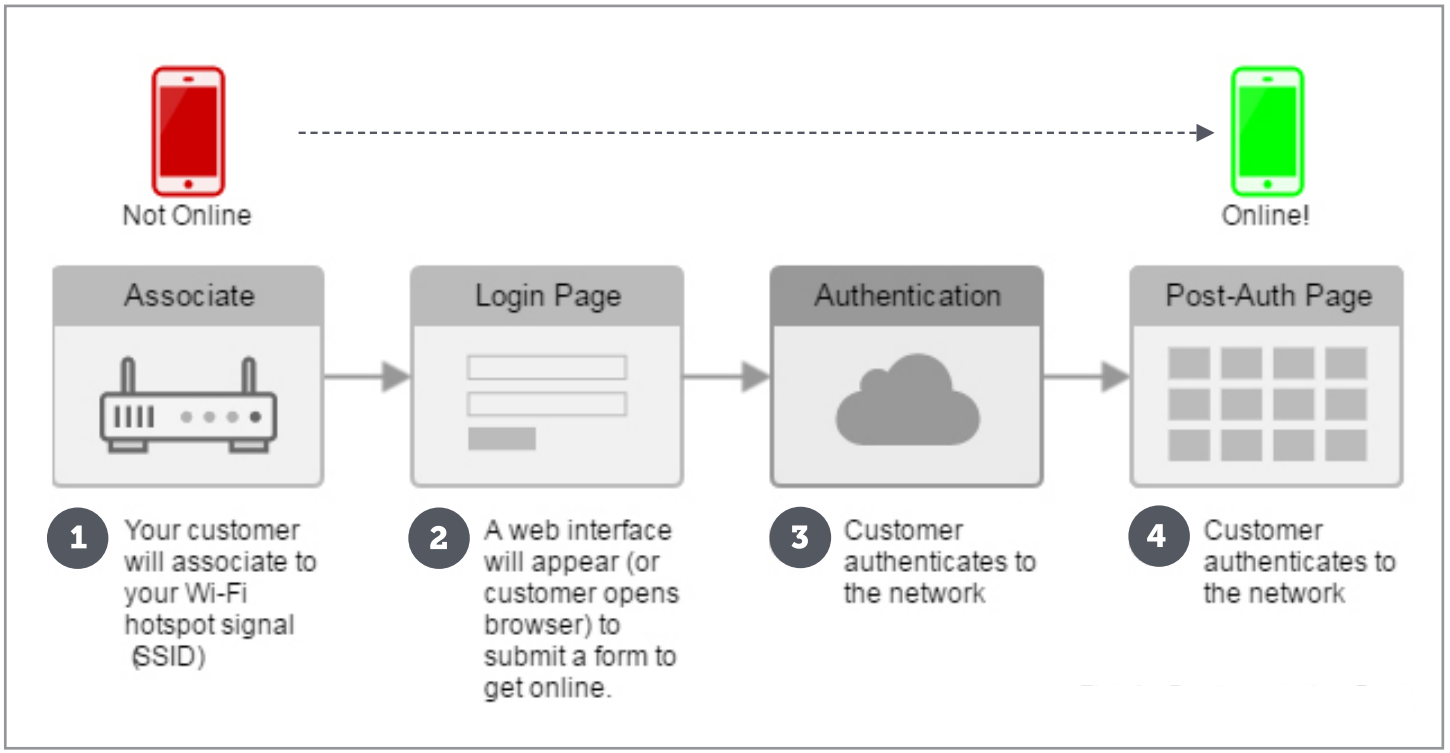

Fig. 1 - Pre-Integration Flow

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STEP 2 INTEGRATION

Ad Code Integration

- Ad codes are JavaScript functions that you can copy and paste into each of your existing login pages. The ad codes are responsible for redirecting clients to sponsorship advertisement and authenticating them after they have completed the advertisement flow. Boingo will work with your team to write ad codes specific to your login pages.
- Boingo's Flow – below is what your system's flow will look like after the Boingo Media integration:

1. **Associate SSID:** the user connects to your router.
2. **Login Page:** the first page the user sees when logging onto your network. This is what the Boingo-Supplied Ad Code binds to.
3. **Sponsorship:** a series of pages to display the advertisement. The screenshots located on page four of this document show an example of this.
4. **Login Page:** an invisible redirect page for triggering authentication.
5. **Auth:** authenticate the device to use the internet.
6. **Post-auth Action:** after authentication, your system makes a call to the Boingo Media platform to determine where the user used to be redirected to.
7. **Advertiser's Post-auth Page:** the webpage shown to a user who chooses to see more information about the advertisement.
8. **Default Post-auth Page:** this is your current post auth page.

This is technically the most complicated section where the partners have the most problems.

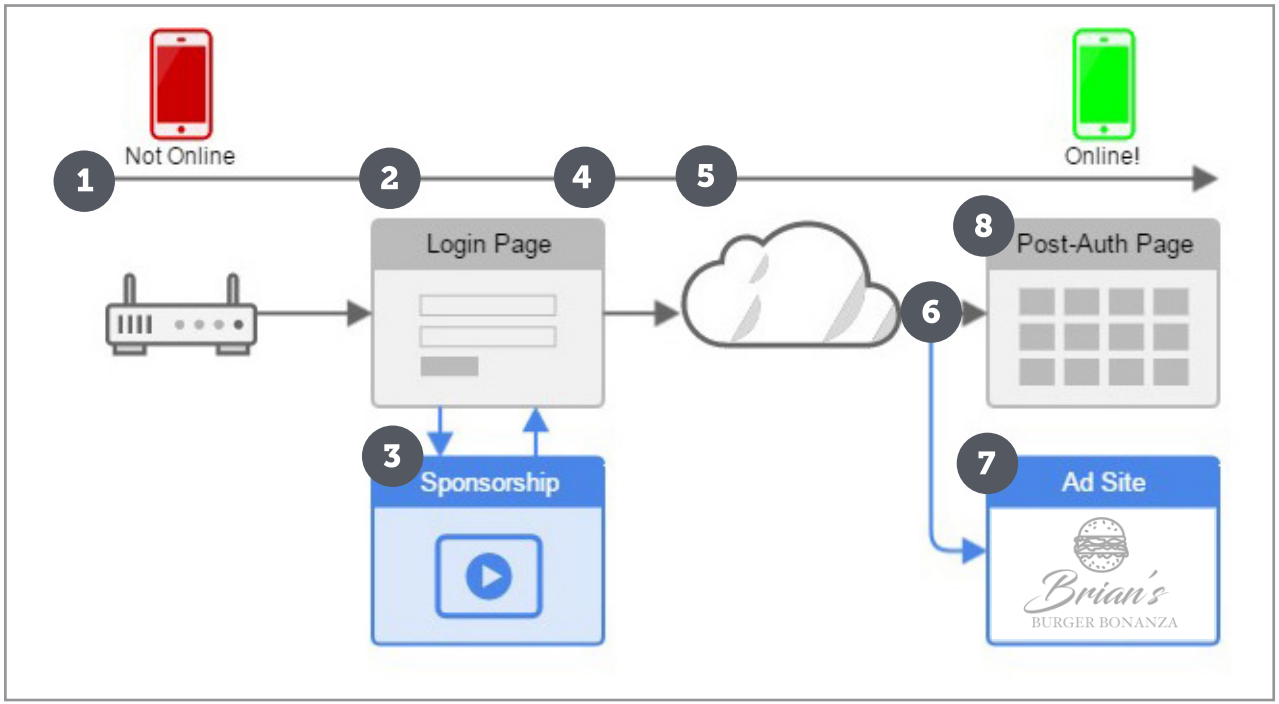

Fig. 1 - Post-Integration Flow

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STEP 2 INTEGRATION

Ad Code User Authentication

The ad code alters your login page but it preserves the existing login mechanisms already built into your login page. It then uses the existing login mechanisms to authenticate the user once they have reached the end of the advertisement. In most advertisements, clients will be given the option to visit the brand's website for additional advertising content at the end of the sponsorship flow (See Fig. 2, Step 7). In order to switch between sending users to your current post-auth page vs. that of the advertiser's post-auth page, we rely on a redirect in the post-auth action (See Fig. 2, Step 6).

Integration Locations

Boingo Media integration code is installed in two distinct locations.

1. **LOGIN PAGE**
   Code should be installed in the first location, the login page, prior to any user action in your venue login page. This allows us to redirect users to an advertisement (e.g. a 30-second video).

2. **POST-AUTH**
   The second location is in the controller for redirection to the advertiser's website after the user has seen the ad. This will require extra attention and understanding between Boingo and the venue partner. Generally a working session with Boingo is the best way to manage this step.

NOTE: This second location is a common pitfall for integrations. More information can be found on the next page.

Login Page Integration

A. Overview

i. Boingo will provide ad code for each functionally distinct login page. As noted before, ad code is installed into your current login page and serves two primary roles:
   a. It redirects to the sponsored advertisement
   b. It triggers the authentication action (i.e. form submission)

ii. To trigger the authentication action, the ad code mimics the action a user took to sign onto a particular Wi-Fi network.

This could involve checking a check box, filling in an access code, or clicking a button. There are an infinite number of ways Wi-Fi authentication forms can be represented. Because of this a portion of the ad code must be custom tailored for each individual login page.

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STEP 2 INTEGRATION

iii. Venue IDs

a. Every property in your network has a corresponding record in our database. We identify your properties through a venue ID. Ideally, since our venue IDs are based on information that should be available to you, the window.__VENUE_ID__ setting should be set dynamically via your templating language (i.e. PHP). Otherwise, you will need to modify it on a property-by-property basis.

The following code shows the window.__VENUE_ID__ being set to a value: window.__VENUE_ID__ = 'comfortinn_123';

B. Post-auth integration and controller update

i. The final step of a Boingo Media ad flow consists of two "call-to-action" buttons that will authenticate the user onto the network:

1. One button leads to the advertisers site
2. The other button lands the user on your standard post-authentication post-auth page.

ii. Change post-auth destination page in your controller

- Before example: http://www.myhotspot.com/welcome.php
- After example:
- http://edge.boingomedia.com/wifi_dest.html?dest_url=http%3A%2F%2Fwww.myhotspot.com%2Fwelcome.php
  Note: Your URL as "dest_url" value should be URLencoded

IMPORTANT: The post-auth integration is the most challenging for our partners. Please keep in close contact with us as you carry out this section's instructions. Most times a screenshare with access to your network controller is necessary to complete the integration.

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STEP 3 POST-INTEGRATION ACCEPTANCE AND QUALITY ASSURANCE

User acceptance testing

Validation of the user flow after Boingo's integration is an important step to ensure quality of the change and to help us fix any issues quickly.

Reporting validation

Our team can validate reporting by looking for patterns that point to success. We can also spot problems if any occur.

How can we improve?

We're always looking for ways to improve our integrations with our customers. Your feedback regarding your experience with us and our integration process will help make this process better for everyone.

Please let us know how we can improve!

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FINAL: VENUE IMPORT CONFIGURATION GUIDE

Venue Import Spreadsheet - we need to add data about your venues to Boingo's system. You will need to document each venue in the Venue Import Spreadsheet before we can return the correct Venue IDs to you.

1. Download the Venue Import Spreadsheet.
2. Fill in the details for your venues and return to Boingo Media contact.

See below table for the type of information we are looking for.

Column Name	Description
Property ID	Your system-specific identifier for the venue. (e.g. "14838")
Brand	The brand name of the venue. (e.g. "Holiday Inn")
Support Number	The phone number you want Wi-Fi guests to call for support requests.
Address Line 1	e.g. "1234 Sunshine St."
Address Line 2	e.g. "Ste. 4403"
City	e.g. "San Francisco"
State/Region	For US, the two-letter state abbreviation. e.g. "CA"
Country	Use two-letter country code, e.g. "US" for the United States. For countries in Latin America, use "LATAM"
Postal Code	e.g. "95129"
Room Count	Optional. For relevant properties like hotels, the number of rooms at the location.
Venue Type	e.g. "Hotel," "Airport," "Café," "Restaurant," "Transit," "Recreational," "Other"

Glossary

Ad Code

Catch-all term for JavaScript and HTML that Boingo embeds into your captive portal.

Captive Network Assistant (CNA)

The CNA is an app that is controlled at the OS-level and is exposed from the network controller via whitelisting. This app works and looks like a web browser. It is triggered when a device detects that it is behind a closed network that requires authentication via browser. However, the CNA is not a fully-featured browser. It has a limited subset of capabilities compared to a browser. If you use CNA, please let us know so we can flag campaigns to support it.

Landing Page/Login Page

The first page the user sees after typing in a non-whitelisted resource in their browser. Also referred to as the Splash Page, Walled-Garden page or Captive Network Page.

Whitelist

List of allowed sites accessible through your firewall or captive network controller.

Frequently Asked Questions

Q. What do users see if they have JavaScript disabled?

Users will continue to see your original login page.

Q. What happens if the sponsored captive portal goes down or otherwise becomes unreachable?

After a brief "loading..." message, users will see your original login page. This enables users to connect to the Wi-Fi network even under catastrophic failure of our web servers.

Q. How do you handle access code, username and password protected properties?

The required user credentials are collected at the externally sponsored captive portal but are passed back to your login page in the form of URL query string parameters. The ad code will then populate the required login form fields prior to submission.