

Exhibit 5

How to distinguish between different types of reCAPTCHA: v2, v3, enterprise

RECAPTCHA

Introduction to reCAPTCHA

The digital age has brought about a wealth of conveniences and possibilities, forging global connections and paving the way for new opportunities, all while accompanying a surge in cyber risks like online spam and data exploitation. In this constantly changing digital realm, reCAPTCHA has risen as a crucial guardian of online security, bolstering websites against these threats while ensuring a seamless user experience.

Originally introduced as CAPTCHA (Completely Automated Public Turing test to distinguish Computers and Humans), this system was crafted to verify user humanity, distinguishing them from bots. These tests frequently required tasks that were simple for humans yet perplexing for automated bots, such as deciphering distorted text or selecting specific images from a grid. Google's reCAPTCHA, an evolved iteration of this idea, takes a more advanced approach, delivering heightened security while preserving user convenience intact.

Fundamentally, reCAPTCHA serves a twofold purpose: protecting websites from spam and misuse by differentiating between human users and bots, while also optimizing user experiences by simplifying this procedure. This dual nature has been the driving force behind reCAPTCHA's development over the years, with each iteration enhancing security and user-friendliness compared to its forerunner.

The initial reCAPTCHA was revolutionary in terms of online security, employing distorted text that required users to decipher and enter. Although effective during its era, it posed difficulties, particularly for individuals with visual impairments or those encountering challenges in deciphering distorted text.

To address these obstacles, reCAPTCHA v2 introduced the "I'm not a robot" checkbox. This iteration aimed for greater user-friendliness while upholding strong security protocols. It leveraged advanced risk analysis methods, enabling the majority of humans to pass the test with just a single click, while bots encountered more challenging image-based tasks.

As the landscape of cyber threats continued to evolve, reCAPTCHA also underwent transformations. The introduction of reCAPTCHA v3 represented a notable departure, as it evaluated a user's interactions with a website and assigned a score to gauge the probability of them being a bot. This methodology provides a more seamless user experience, working inconspicuously without requiring active participation from the user.

The most recent version, reCAPTCHA v3 Enterprise, provides cutting-edge security capabilities, delivering in-depth analysis of website traffic and facilitating nuanced responses to potentially suspicious behavior. It preserves the seamless and user-friendly attributes of reCAPTCHA v3, seamlessly operating in the background without causing any disruption to the user's experience.

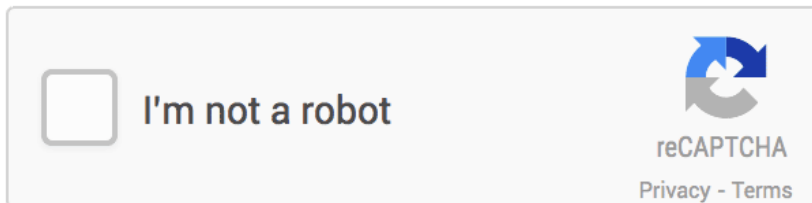
^

In conclusion, reCAPTCHA serves as the primary barrier against online spam and misuse, delivering crucial security for websites. Its evolution underscores the intricate equilibrium between strong security measures and user-friendly design. Grasping the role and importance of reCAPTCHA empowers website owners to make informed choices in safeguarding their websites and users from cyber threats. As we progress further into the digital era, tools like reCAPTCHA will continue to play a fundamental role in preserving the integrity and security of the online realm.

How to identifying reCAPTCHA Types?

Acquiring the ability to distinguish between various reCAPTCHA types is crucial, not just for web developers and cybersecurity experts, but also for regular internet users. Every version of reCAPTCHA possesses its own unique traits, user engagement methods, and code samples. In this section, we will walk you through the process of identifying these distinct attributes to effectively determine the reCAPTCHA type employed on a website.

reCAPTCHA V2 (Standard)



The distinctive identifier for reCAPTCHA V2 is a checkbox with the text “I’m not a robot.” When a user clicks on this checkbox, it evaluates their behavior to determine whether they are a genuine user or a bot. If it suspects any suspicious activity, reCAPTCHA V2 will present an additional challenge, typically involving selecting images as per its requirements.

Look in the Page Source, there must be an iframe with an src attribute containing the string `recaptcha/api2/bframe`

```

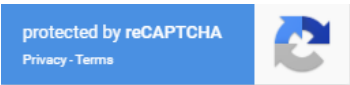
<!DOCTYPE html>
<html lang="en">
<head>
</head>
<body>
<!-- Google Tag Manager (noscript) -->
<noscript>
<!-- End Google Tag Manager (noscript) -->
</noscript>
<div id="root">
<div class="RRlgOqXXFV2k25MalpHM">
</div>
<div class="app-level-notifications">
</div>
</script>
<script id="__LOADABLE_REQUIRED_CHUNKS__" type="application/json">[1075,8798,6189,6030,6088]</script>
<script id="__LOADABLE_REQUIRED_CHUNKS__ext" type="application/json"></script>
<script async data-chunk="main" src="/dist/web/runtime-main.80f3309...js"></script>
<script async data-chunk="main" src="/dist/web/main.f083c2c...js"></script>
<script async data-chunk="pages-CaptchaDemo" src="/dist/web/pages-CaptchaDemo.96096e1...js"></script>
<script async data-chunk="pages-CaptchaDemo-pages-RecaptchaV3" src="/dist/web/8798.5421b97...js"></script>
<script async data-chunk="pages-CaptchaDemo-pages-RecaptchaV3" src="/dist/web/pages-CaptchaDemo-pages-RecaptchaV3.5d47c8d...js"></script>
<script async data-chunk="HtmlToComponents" src="/dist/web/6030_a6ffc50...js"></script>
<script async data-chunk="HtmlToComponents" src="/dist/web/HtmlToComponents.42a3fbd...js"></script>
<script type="text/javascript" id=" " ></script>
</noscript>
<script type="text/javascript" id=" " ></script>
<script type="text/javascript" id=" " ></script>
<script type="text/javascript" id=" " ></script>
<div style="visibility: hidden; position: absolute; width: 100%; top: -10000px; left: 0px; right: 0px; transition: visibility 0s linear 0.3s, opacity 0.3s linear 0s; opacity: 0;">
<div style="width: 100%; height: 100%; position: fixed; top: 0px; left: 0px; right: 0px; z-index: 2000000000; background-color: rgb(255, 255, 255); opacity: 0.5;"></div>
<div style="margin: 0px auto; top: 0px; left: 0px; right: 0px; position: absolute; border: 1px solid rgb(204, 204, 204); z-index: 2000000000; background-color: rgb(255, 255, 255); overflow: hidden;">
<iframe title="recaptcha challenge expires in two minutes" src="https://www.google.com/recaptcha/api2/bframe?ar=1&k=6Ld05_IbAAAAAAeVBL9TCL1S19NUTt5wswEb3Q7C5&co=aHR0cHM6Ly8yY2FwdGNvYSS5jb206NDQz&hl=en&v=0hCdE87LyjzAkF05F-v7Hj1&size=invisible" name="cncfsw6lmsk" frameborder="0" scrolling="no" sandbox="allow-forms allow-popups allow-same-origin allow-scripts allow-top-navigation allow-models allow-popups-to-escape-sandbox" style="width: 100%; height: 100%;"></iframe>
</div>
</div>
<div style="background-color: rgb(255, 255, 255); border: 1px solid rgb(204, 204, 204); box-shadow: rgba(0, 0, 0, 0.2) 2px 2px 3px; position: absolute; transition: visibility 0s linear 0.3s, opacity 0.3s linear 0s; opacity: 0; visibility: hidden; z-index: 2000000000; left: 0px; top: -10000px;"></div>
</body>
</html>

```

reCAPTCHA V2 (Invisible)

The reCAPTCHA V2 Invisible version comes with a slight variation compared to the standard reCAPTCHA V2. The reCAPTCHA V2 Invisible will exhibit the following characteristics:

- The “Protected by reCAPTCHA” icon (typically found in the bottom right corner of the website).



- Using element inspector, you will see an iframe element with a src attribute in the form of

```

src="https://www.google.com/recaptcha/api2/anchor?ar=1&k=6Ld05_IbAAAAAAeVBL9TCL1S19NUTt5wswEb3Q7C5&co=aHR0cHM6Ly8yY2FwdGNvYSS5jb206NDQz&hl=en&v=0hCdE87LyjzAkF05F-v7Hj1&size=invisible..."

```

Take note of the "size=invisible" attribute; this is a crucial identifying feature indicating that it is reCAPTCHA V2 Invisible.

```

<div class="g-recaptcha" data-sitekey="6Ld05_IbAAAAAAeVBL9TCL1S19NUTt5wswEb3Q7C5" data-callback="verifyDemoRecaptcha" data-size="invisible">
  <div class="grecaptcha-badge" data-style="bottomright" style="width: 256px; height: 60px; display: block; transition: right 0.3s ease 0s; position: fixed; bottom: 14px; right: -186px; box-shadow: gray 0px 0px 5px; border-radius: 2px; overflow: hidden;">
    <div class="grecaptcha-logo">
      <iframe title="reCAPTCHA" src="https://www.google.com/recaptcha/api2/anchor?ar=1&k=6Ld05_IbAAAAAAeVBL9TCL1S19NUTt5wswEb3Q7C5&co=aHR0cHM6Ly8yY2FwdGNvYSS5jb206NDQz&hl=en&v=0hCdE87LyjzAkF05F-v7Hj1&size=invisible" name="cncfsw6lmsk" frameborder="0" scrolling="no" sandbox="allow-forms allow-popups allow-same-origin allow-scripts allow-top-navigation allow-models allow-popups-to-escape-sandbox" == $0
    </iframe>
  </div>
</div>

```

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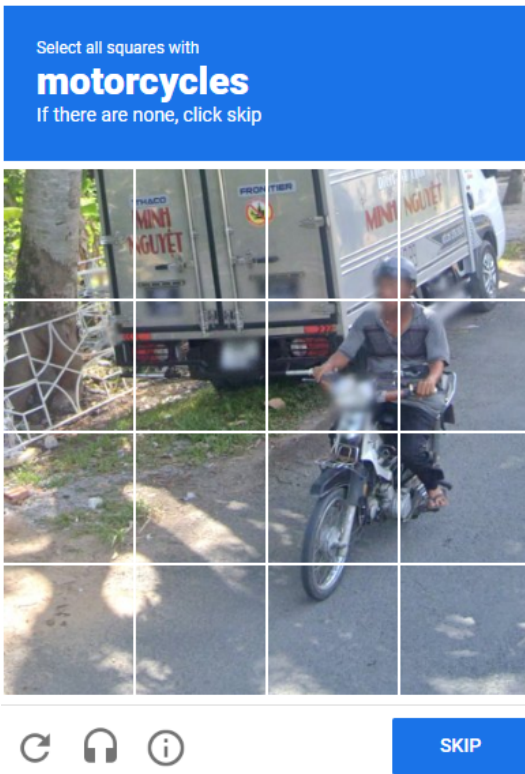


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    <script async data-chunk="main" src="/dist/web/runtime-main.80f3309...js"></script>
    <script async data-chunk="main" src="/dist/web/main.fb83c2c...js"></script>
    <script async data-chunk="pages-CaptchaDemo" src="/dist/web/pages-CaptchaDemo.96096e1...js"></script>
    <script async data-chunk="pages-CaptchaDemo-pages-RecaptchaV3" src="/dist/web/8798.5421b97...js"></script>
    <script async data-chunk="pages-CaptchaDemo-pages-RecaptchaV3" src="/dist/web/pages-CaptchaDemo-pages-RecaptchaV3.5d47c8d...js"></script>
    <script async data-chunk="HtmlToComponents" src="/dist/web/6030_a6ffc5b...js"></script>
    <script async data-chunk="HtmlToComponents.42a3fbd...js"></script>
    <script type="text/javascript" id="..."></script>
    <noscript></noscript>
    <script type="text/javascript" id="..."></script>
    <script type="text/javascript" id="..."></script>
    <script type="text/javascript" id="..."></script>
    <div style="visibility: hidden; position: absolute; width: 100%; top: -10000px; left: 0px; right: 0px; transition: visibility 0s linear 0.3s, opacity 0.3s linear 0s; opacity: 0;">
    <div style="width: 100%; height: 100%; position: fixed; top: 0px; left: 0px; z-index: 2000000000; background-color: rgb(255, 255, 255); opacity: 0.5;"></div>
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    <iframe title="recaptcha challenge expires in two minutes" src="https://www.google.com/recaptcha/api2/bframe?l=en&v=0&CdeE7LyjsAKF05FF-v7Hj1k=&6LD05_IpAAAAAAeVBL9TCL19HUT5=swEb3Q7C5" name="cncfsw68lnsk" frameborder="0" scrolling="no" sandbox="allow-forms allow-popups allow-same-origin allow-scripts allow-top-navigation allow-models allow-popups-to-escape-sandbox" style="width: 100%; height: 100%;"></iframe>
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</html>

```

Typically, for reCAPTCHA V2 Invisible, when there are suspicious activities, it will present a challenge in the form of a popup and require users to select a few images as per its requirements:



reCAPTCHA V3



Tags

- FUNCAPTCHA
- OUTLOOK CAPTCHA
- RECAPTCHA
- RECAPTCHA V3
- TWITTER FUNCAPTCHA

