CAPTCHA HOWTO

Build 2.2.0.44

2020-06-30

This is the official HOWTO on enabling CAPTCHAs on SAMLite

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Introduction

A CAPTCHA is a *Completely Automated Public Turing test to tell Computers and Humans Apart.*

SAMLite v5 Build 2.2.0.44 supports Google reCAPTCHA v2 and hCaptcha to make automated login attempts more difficult.

For example when the CAPTCHA feature is enabled, in order for users to log in to SAMLite, a challenge may be shown and the user has to solve it in addition to providing the correct username and password.
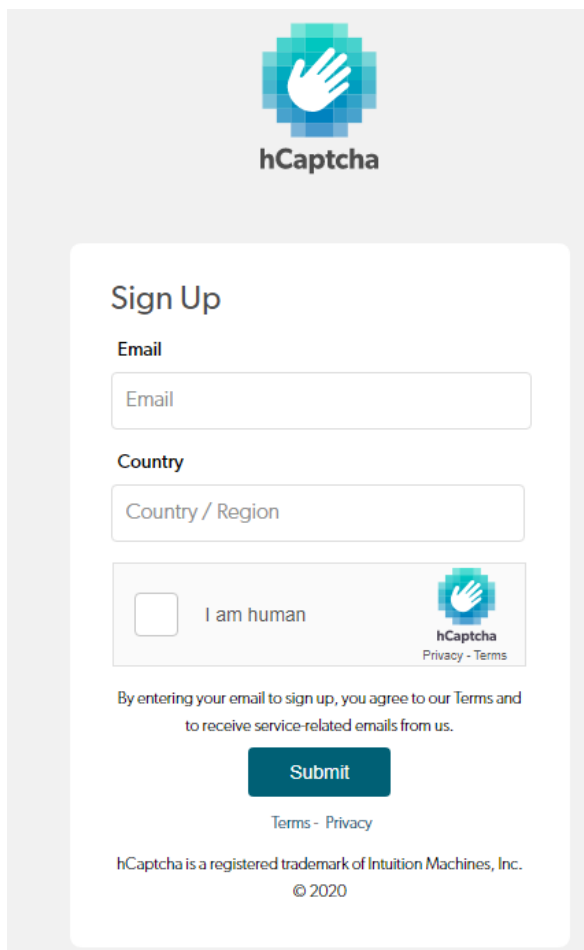
CAPTCHA Sign Up

Sign up for hCaptcha

Go to: https://www.hcaptcha.com/

Click on Sign Up Now.

For companies

Add hCaptcha to your service (free)

Add hCaptcha for Publishers to my website or app

Select the Add hCaptcha to your service (free).

Enter your email etc, solve the CAPTCHA and submit.

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Welcome! Let's get started.

To use hCaptcha you will need a **Sitekey** and your **Account Secret**.

1 Sitekey

Sitekeys are used to uniquely identify your site(s). We've already generated your first one:
489a315f-79e1-433d-9d8c-74e02f5297d4

You can specify captcha related settings per sitekey, such as challenge difficulty and preferred content based on site topics.

2 Secret

A secret is used to verify your hCaptcha account:
0x1B98Df54b706fF6f8ab22391C19769eDFbad35D8

This secret is used by your server to verify the hCaptcha passcode returned when a user successfully completes a captcha. One secret is used for all sitekeys.

Copy the Sitekey and Secret. You will use these in the CAPTCHA Configuration.

Check your email for the email verification from hCaptcha and verify your email address.

Sign up for Google reCAPTCHA

Go to: https://www.google.com/recaptcha/

Click on AdminConsole.

Login to a suitable Google account or create one.

Click on the + to add a site.

Register a new site

Label ⓘ

SAMLite Login

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reCAPTCHA type ⓘ

◯ reCAPTCHA v3   Verify requests with a score

◉ reCAPTCHA v2   Verify requests with a challenge

  ◉ "I'm not a robot" Checkbox   Validate requests with the "I'm not a robot" checkbox

  ◯ Invisible reCAPTCHA badge   Validate requests in the background

  ◯ reCAPTCHA Android   Validate requests in your android app

Domains ⓘ

+ Add a domain, e.g. example.com

Fill in the details. Select v2 and I'm not a robot Checkbox.

If your SAMLite site has a DNS domain you can add the domain to the Domains list, otherwise add the IP address.

Owners

(You)

+👤 Enter email addresses

☑ **Accept the reCAPTCHA Terms of Service**

By accessing or using the reCAPTCHA APIs, you agree to the Google APIs Terms of Use, Google Terms of Use, and to the Additional Terms below. Please read and understand all applicable terms and policies before accessing the APIs.

reCAPTCHA Terms of Service ⌄

☑ **Send alerts to owners** ⓘ

CANCEL   **SUBMIT**

Add email address of additional managers/owners for this. If the Terms of Service are OK accept, and submit.

You should see the following:

'SAMLite Login' has been registered.

Use this site key in the HTML code your site serves to users.   ⬈ See client side integration

🔑 COPY SITE KEY   6Lc696oZAAAAAEgY9So2fTevyZdiwlrvWLW7xbVA

Use this secret key for communication between your site and reCAPTCHA.   ⬈ See server side integration

🔑 COPY SECRET KEY   6Lc696oZAAAAAIHtAgLki32kZAq3M-KUn0WwcV0f

Copy the Site and Secret key for use in the Configuration section.

CAPTCHA Configuration

Edit the SAMLite WebDash web.config file. Example:

Run: notepad "%ProgramFiles(x86)%\SAMLite\v5\WebDash\web.config"

Configuration for hCaptcha

Go to the appSettings section of the web.config file

```xml
<appSettings>
    <add key="GeoLocationEnabled" value="True"/>
    <add key="Version" value="5.0"/>
    <add key="Build" value="2.2.0.44"/>
    <add key="CaptchaFeatureEnabled" value="False" />
    <add key="CatpchaIPWhiteList" value="127.,::1"/><!-- comma delimited list of patterns to match st
    <add key="CaptchaJSSource" value="https://hcaptcha.com/1/api.js" /><!-- blank to default to Goog
    <add key="CaptchaVerifyURL" value="https://hcaptcha.com/siteverify" /><!-- blank to default to Goog
    <add key="CaptchaDivClass" value="h-captcha" /> <!-- blank to default to Google reCAPTCHA-->
    <add key="CaptchaResponseName" value="h-captcha-response" /> <!-- blank to default to Google reCAP
    <add key="CaptchaSiteKey" value="XXXXXXXXXXXXXXXXXXXX" /> <!-- required to enable Captcha feature
    <add key="CaptchaSiteSecret" value="XXXXXXXXXXXXXXXXXXXX" /><!-- required to enable Captcha feature
```

Change the CaptchaFeatureEnabled value from False to True

Replace the "XXXX…XXX" value for CaptchaSiteKey and CaptchaSiteSecret with the Sitekey and Secret values copied previously.

Configuration for Google reCAPTCHA

Go to the appSettings section of the web.config file

```xml
<appSettings>
    <add key="GeoLocationEnabled" value="True"/>
    <add key="Version" value="5.0"/>
    <add key="Build" value="2.2.0.44"/>
    <add key="CaptchaFeatureEnabled" value="False" />
    <add key="CatpchaIPWhiteList" value="127.,::1"/> <!-- comma delimited list of patterns to match sta
    <add key="CaptchaJSSource" value="" /><!-- blank to default to Google reCAPTCHA-->
    <add key="CaptchaVerifyURL" value="" /><!-- blank to default to Google reCAPTCHA-->
    <add key="CaptchaDivClass" value="" /> <!-- blank to default to Google reCAPTCHA-->
    <add key="CaptchaResponseName" value="" /> <!-- blank to default to Google reCAPTCHA-->
    <add key="CaptchaSiteKey" value="XXXXXXXXXXXXXXXXXXXX" /> <!-- required to enable Captcha feature -
    <add key="CaptchaSiteSecret" value="XXXXXXXXXXXXXXXXXXXX" /><!-- required to enable Captcha feature
```

Change the CaptchaFeatureEnabled value from False to True

Replace the "XXXX…XXX" value for CaptchaSiteKey and CaptchaSiteSecret with the Site Key and Secret Key values copied previously.

Change the values for CaptchaJSSource, CaptchaVerifyURL, CaptchaDivClass and CaptchaResponseName to an empty string e.g. value="".
Or with updated values from Google (see advanced configuration).

IP Whitelisting

If there are IP ranges that should not get CAPTCHA challenges, you can add the patterns to match those IP ranges to the **CatpchaIPWhiteList** value. The patterns match the starting of the IP addresses.

For example if users logging in using IP addresses in 10.1.0.0 – 10.1.255.254 and 192.168.1.0/24 should not get CAPTCHA challenges change the CatpchaIPWhiteList value from "127.,::1" to "127.,::1,10.1.,192.168.1."

The default value of 127.1,::1 matches the IPv4 loopback network address (127.0.0.0/8) and the IPv6 loopback address ::1

Advanced Configuration

hCaptcha advanced configuration

View the installation instructions, you may see something similar to the following:

Include in an HTML form:

```html
<form method="POST">
 <div class="h-captcha" data-sitekey="489a315f-79e1-433d-9d8c-
74e02f5297d4"></div>
 <script src="https://hcaptcha.com/1/api.js" async defer></script>
</form>
```

Copy

Verify on your server:

```
token = request.POST[ "h-captcha-response"]
params = {
  "secret": "0x1B98Df54b706fF6f8ab22391C19769eDFbad35D8",
  "response": token
}
json = http.POST("https://hcaptcha.com/siteverify", params)
```

In the web.config file update the CaptchaJSSource value with the script src if it is different.

Update the values for CaptchaDivClass with the div class name if they differ.

Update the values for CaptchaResponseName with the request.POST parameter name if they differ.

Update the values for CaptchaVerifyURL with the http.POST url if it is different.

Google reCAPTCHA advanced configuration

'SAMLite Login' has been registered.

Use this site key in the HTML code your site serves to users. ⧉ See client side integration

🔑 COPY SITE KEY   `6Lc696oZAAAAAEgY9So2fTevyZdiwlrvWLW7xbVA`

Use this secret key for communication between your site and reCAPTCHA. ⧉ See server side integration

🔑 COPY SECRET KEY   `6Lc696oZAAAAAIHtAgLki32kZAq3M-KUn0WwcV0f`

Click on See client side integration.

```html
<html>
  <head>
    <title>reCAPTCHA demo: Simple page</title>
    <script src="https://www.google.com/recaptcha/api.js" async defer></script>
  </head>
  <body>
    <form action="?" method="POST">
      <div class="g-recaptcha" data-sitekey="your_site_key"></div>
      <br/>
      <input type="submit" value="Submit">
    </form>
  </body>
</html>
```

In the web.config file replace CaptchaJSSource with the script src if is not `https://www.google.com/recaptcha/api.js`

Replace CaptchaDivClass with the div class name if it is not `g-recaptcha`

Go back to the previous page and click on See server side integration

This page explains how to verify a user's response to a reCAPTCHA challenge from your application's backend.

For web users, you can get the user's response token in one of three ways:

- `g-recaptcha-response` POST parameter when the user submits the form on your site

Replace CaptchaResponseName with the request.POST item name if it is not `g-recaptcha-response`.

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Go to the API Request section.

API Request

URL: https://www.google.com/recaptcha/api/siteverify METHOD: POST

Replace CaptchaVerifyURL with the http.POST url if it is not
`https://www.google.com/recaptcha/api/siteverify`