

Site: https://saucedemo.com

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ZAP Version: 2.16.0

ZAP by **Checkmarx** 

## **Summary of Alerts**

Risk Level	Number of Alerts
High	0
Medium	3
Low	2
Informational	4
False Positives:	0

### **Summary of Sequences**

For each step: result (Pass/Fail) - risk (of highest alert(s) for the step, if any).

#### Alerts

Name	Risk Level	Number of Instances
Content Security Policy (CSP) Header Not Set	Medium	1
Cross-Domain Misconfiguration	Medium	1
Missing Anti-clickjacking Header	Medium	1
Strict-Transport-Security Header Not Set	Low	3
X-Content-Type-Options Header Missing	Low	1
Modern Web Application	Informational	1
Re-examine Cache-control Directives	Informational	1
Retrieved from Cache	Informational	3
User Agent Fuzzer	Informational	24

## **Alert Detail**

Description

Content Security Policy (CSP) is an added layer of security that helps to detect and mitigate certain types of attacks, including Cross Site Scripting (XSS) and data injection attacks. These attacks are used for everything from data theft to site defacement or distribution of malware. CSP provides a set of standard HTTP headers that allow website owners to declare approved sources of content that browsers should be allowed to load on that page — covered types are JavaScript, CSS, HTML frames, fonts, images and embeddable objects such as Java applets, ActiveX, audio and video files.

URL

https://saucedemo.com

Method

**GET** 

Parameter

Attack

Evidence

Other Info

Instances

1

Solution

Ensure that your web server, application server, load balancer, etc. is configured to set the

Content-Security-Policy header.

https://developer.mozilla.org/en-US/docs/Web/Security/CSP/Introducing\_Content\_Security\_Policy

https://cheatsheetseries.owasp.org/cheatsheets/Content\_Security\_Policy\_Cheat\_Sheet.html

https://www.w3.org/TR/CSP/

https://w3c.github.io/webappsec-csp/

https://web.dev/articles/csp

https://caniuse.com/#feat=contentsecuritypolicy

https://content-security-policy.com/

CWE Id

693

WASC Id

Reference

15

Plugin Id

<u>10038</u>

w	di	100	a

#### **Cross-Domain Misconfiguration**

Description

Web browser data loading may be possible, due to a Cross Origin Resource Sharing (CORS) misconfiguration on the web server.

URL

https://saucedemo.com

Method

**GET** 

Parameter

Attack

Evidence

e Access-Control-Allow-Origin: \*

		The CORS misconfiguration on the web server permits cross-domain read requests from
	Other Info	arbitrary third party domains, using unauthenticated APIs on this domain. Web browser implementations do not permit arbitrary third parties to read the response from authenticated APIs, however. This reduces the risk somewhat. This misconfiguration could be used by an attacker to access data that is available in an unauthenticated manner, but which uses some other form of security, such as IP address white-listing.
Instances		1
		Ensure that sensitive data is not available in an unauthenticated manner (using IP address white-listing, for instance).
Solution		Configure the "Access-Control-Allow-Origin" HTTP header to a more restrictive set of domains, or remove all CORS headers entirely, to allow the web browser to enforce the Same Origin Policy (SOP) in a more restrictive manner.
Reference		https://vulncat.fortify.com/en/detail?id=desc.config.dotnet.html5_overly_permissive_cors_policy
CWE Id		<u>264</u>
WASC Id		14
Plugin Id		10098
Medium		Missing Anti-clickjacking Header
Description		The response does not protect against 'ClickJacking' attacks. It should include either Content-Security-Policy with 'frame-ancestors' directive or X-Frame-Options.
URL		https://saucedemo.com
URL	Method	https://saucedemo.com  GET
URL		
URL		GET
URL	Parameter	GET
URL	Parameter Attack	GET
URL	Parameter Attack Evidence Other	GET
	Parameter Attack Evidence Other	GET x-frame-options
	Parameter Attack Evidence Other	GET  x-frame-options  1  Modern Web browsers support the Content-Security-Policy and X-Frame-Options HTTP
Instances	Parameter Attack Evidence Other	GET  x-frame-options  1  Modern Web browsers support the Content-Security-Policy and X-Frame-Options HTTP headers. Ensure one of them is set on all web pages returned by your site/app.  If you expect the page to be framed only by pages on your server (e.g. it's part of a FRAMESET) then you'll want to use SAMEORIGIN, otherwise if you never expect the page to be framed, you should use DENY. Alternatively consider implementing Content Security Policy's

WASC Id		15
Plugin Id		10020
Low		Strict-Transport-Security Header Not Set
Description		HTTP Strict Transport Security (HSTS) is a web security policy mechanism whereby a web server declares that complying user agents (such as a web browser) are to interact with it using only secure HTTPS connections (i.e. HTTP layered over TLS/SSL). HSTS is an IETF standards track protocol and is specified in RFC 6797.
URL		https://saucedemo.com
	Method	GET
	Parameter	
	Attack	
	Evidence	
	Other Info	
URL		https://saucedemo.com/robots.txt
	Method	GET
	Parameter	
	Attack	
	Evidence	
	Other Info	
URL		https://saucedemo.com/sitemap.xml
	Method	GET
	Parameter	
	Attack	
	Evidence	
	Other Info	
Instances		3
Solution		Ensure that your web server, application server, load balancer, etc. is configured to enforce Strict-Transport-Security.

https://cheatsheetseries.owasp.org/cheatsheets/HTTP\_Strict\_Transport\_Security\_Cheat\_Sheet.html https://owasp.org/www-community/Security\_Headers Reference https://en.wikipedia.org/wiki/HTTP\_Strict\_Transport\_Security https://caniuse.com/stricttransportsecurity https://datatracker.ietf.org/doc/html/rfc6797 CWE Id 319 WASC Id 15 Plugin Id 10035 Low X-Content-Type-Options Header Missing The Anti-MIME-Sniffing header X-Content-Type-Options was not set to 'nosniff'. This allows older versions of Internet Explorer and Chrome to perform MIME-sniffing on the response body, Description potentially causing the response body to be interpreted and displayed as a content type other than the declared content type. Current (early 2014) and legacy versions of Firefox will use the declared content type (if one is set), rather than performing MIME-sniffing. **URL** https://saucedemo.com Method **GET** Parameter x-content-type-options Attack Evidence This issue still applies to error type pages (401, 403, 500, etc.) as those pages are often still Other affected by injection issues, in which case there is still concern for browsers sniffing pages away Info from their actual content type. At "High" threshold this scan rule will not alert on client or server error responses. 1 Instances Ensure that the application/web server sets the Content-Type header appropriately, and that it sets the X-Content-Type-Options header to 'nosniff' for all web pages. Solution If possible, ensure that the end user uses a standards-compliant and modern web browser that does not perform MIME-sniffing at all, or that can be directed by the web application/web server to not perform MIME-sniffing. https://learn.microsoft.com/en-us/previous-versions/windows/internet-explorer/ie-developer/compatibility/g Reference https://owasp.org/www-community/Security\_Headers CWE Id 693 WASC Id 15 Plugin Id 10021

**Informational** 

**Modern Web Application** 

Description		The application appears to be a modern web application. If you need to explore it automatically then the Ajax Spider may well be more effective than the standard one.
URL		https://saucedemo.com
	Method	GET
	Parameter	
	Attack	
	Evidence	<pre><script type="text/javascript">!function(n){if("/"===n.search[1]){var a=n.search.slice(1).split("&").map((function(n){return n.replace(/~and~/g,"&")})).join("?");window.history.replaceState(null,null,n.pathname.slice(0,-1)+a+n.hasl</pre></td></tr><tr><td></td><td>Other Info</td><td>No links have been found while there are scripts, which is an indication that this is a modern web application.</td></tr><tr><td>Instances</td><td></td><td>1</td></tr><tr><td>Solution</td><td></td><td>This is an informational alert and so no changes are required.</td></tr><tr><td>Reference</td><td></td><td></td></tr><tr><td>CWE Id</td><td></td><td></td></tr><tr><td>WASC Id</td><td></td><td></td></tr><tr><td>Plugin Id</td><td></td><td>10109</td></tr><tr><td>Informatio</td><td>nal</td><td>Re-examine Cache-control Directives</td></tr><tr><td>Description</td><td></td><td>The cache-control header has not been set properly or is missing, allowing the browser and proxies to cache content. For static assets like css, js, or image files this might be intended, however, the resources should be reviewed to ensure that no sensitive content will be cached.</td></tr><tr><td>URL</td><td></td><td>https://saucedemo.com</td></tr><tr><td></td><td>Method</td><td>GET</td></tr><tr><td></td><td>Parameter</td><td>cache-control</td></tr></tbody></table></script></pre>

For secure content, ensure the cache-control HTTP header is set with "no-cache, no-store,

must-revalidate". If an asset should be cached consider setting the directives "public, max-age,

Attack

Other Info

Instances

Solution

Evidence

max-age=600

immutable".

1

		https://cheatsheetseries.owasp.org/cheatsheets/Session_Management_Cheat_Sheet.html#web-cont	ent-
Reference		https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/Cache-Control	
CWE Id		https://grayduck.mn/2021/09/13/cache-control-recommendations/	
WASC Id		<u>525</u> 13	
Plugin Id		1001 <u>5</u>	
Information	nal	Retrieved from Cache	
Description		The content was retrieved from a shared cache. If the response data is sensitive, personal or user-specific, this may result in sensitive information being leaked. In some cases, this may even result in a user gaining complete control of the session of another user, depending on the configuration of the caching components in use in their environment. This is primarily an issue where caching servers such as "proxy" caches are configured on the local network. This configuration is typically found in corporate or educational environments, for instance.	
URL		https://saucedemo.com	
	Method	GET	
	Parameter		
	Attack		
	Evidence	HIT	
	Other Info		
URL		https://saucedemo.com/robots.txt	
	Method	GET	
	Parameter		
	Attack		
	Evidence	Age: 0	
	Other Info	The presence of the 'Age' header indicates that a HTTP/1.1 compliant caching server is in use.	
URL		https://saucedemo.com/sitemap.xml	
	Method	GET	
	Parameter		
	Attack		
	Evidence	Age: 0	

	Other	
	Info	The presence of the 'Age' header indicates that a HTTP/1.1 compliant caching server is in use.
Instances		3
		Validate that the response does not contain sensitive, personal or user-specific information. If it does, consider the use of the following HTTP response headers, to limit, or prevent the content being stored and retrieved from the cache by another user:
		Cache-Control: no-cache, no-store, must-revalidate, private
Solution		Pragma: no-cache
		Expires: 0
		This configuration directs both HTTP 1.0 and HTTP 1.1 compliant caching servers to not store the response, and to not retrieve the response (without validation) from the cache, in response to a similar request.
Reference		https://tools.ietf.org/html/rfc7234 https://tools.ietf.org/html/rfc7231 https://www.rfc-editor.org/rfc/rfc9110.html
CWE Id		
WASC Id		
Plugin Id		<u>10050</u>
Information	nal	User Agent Fuzzer

Informatio	nal	User Agent Fuzzer
Description		Check for differences in response based on fuzzed User Agent (eg. mobile sites, access as a Search Engine Crawler). Compares the response statuscode and the hashcode of the response body with the original response.
URL		https://saucedemo.com/robots.txt
	Method	GET
	Parameter	Header User-Agent
	Attack	Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)
	Evidence	
	Other Info	
URL		https://saucedemo.com/robots.txt
	Method	GET
	Parameter	Header User-Agent

Attack Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.0) Evidence Other Info URL https://saucedemo.com/robots.txt Method GET Parameter Header User-Agent Attack Mozilla/4.0 (compatible; MSIE 8.0; Windows NT 6.1) Evidence Other Info URL https://saucedemo.com/robots.txt Method GET Parameter Header User-Agent Attack Mozilla/5.0 (Windows NT 10.0; Trident/7.0; rv:11.0) like Gecko Evidence Other Info https://saucedemo.com/robots.txt

**URL** 

Method GET

Parameter Header User-Agent

Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Attack

Chrome/75.0.3739.0 Safari/537.36 Edg/75.0.109.0

Evidence

Other Info

**URL** https://saucedemo.com/robots.txt

> Method **GET**

Parameter Header User-Agent

Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Attack

Chrome/91.0.4472.124 Safari/537.36

Evidence

Other Info URL https://saucedemo.com/robots.txt Method GET Parameter Header User-Agent Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:93.0) Gecko/20100101 Firefox/91.0 Attack Evidence Other Info URL https://saucedemo.com/robots.txt Method **GET** Parameter Header User-Agent Attack Mozilla/5.0 (compatible; Googlebot/2.1; +http://www.google.com/bot.html) Evidence Other Info URL https://saucedemo.com/robots.txt Method **GET** Parameter Header User-Agent Attack Mozilla/5.0 (compatible; Yahoo! Slurp; http://help.yahoo.com/help/us/ysearch/slurp) Evidence Other Info URL https://saucedemo.com/robots.txt Method **GET** Parameter Header User-Agent Mozilla/5.0 (iPhone; CPU iPhone OS 8\_0\_2 like Mac OS X) AppleWebKit/600.1.4 (KHTML, like Attack Gecko) Version/8.0 Mobile/12A366 Safari/600.1.4

Info

Evidence

Other

URL <a href="https://saucedemo.com/robots.txt">https://saucedemo.com/robots.txt</a>

Method GET

Parameter Header User-Agent

Attack Mozilla/5.0 (iPhone; U; CPU iPhone OS 3\_0 like Mac OS X; en-us) AppleWebKit/528.18

(KHTML, like Gecko) Version/4.0 Mobile/7A341 Safari/528.16

Evidence

Other Info

URL <a href="https://saucedemo.com/robots.txt">https://saucedemo.com/robots.txt</a>

Method GET

Parameter Header User-Agent

Attack msnbot/1.1 (+http://search.msn.com/msnbot.htm)

Evidence

Other Info

URL <a href="https://saucedemo.com/sitemap.xml">https://saucedemo.com/sitemap.xml</a>

Method GET

Parameter Header User-Agent

Attack Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1)

Evidence

Other Info

URL https://saucedemo.com/sitemap.xml

Method GET

Parameter Header User-Agent

Attack Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.0)

Evidence

Other Info

URL <a href="https://saucedemo.com/sitemap.xml">https://saucedemo.com/sitemap.xml</a>

Method GET

Parameter Header User-Agent

Attack Mozilla/4.0 (compatible; MSIE 8.0; Windows NT 6.1)

Evidence

Other Info

URL https://saucedemo.com/sitemap.xml

Method GET

Parameter Header User-Agent

Attack Mozilla/5.0 (Windows NT 10.0; Trident/7.0; rv:11.0) like Gecko

Evidence

Other Info

URL <a href="https://saucedemo.com/sitemap.xml">https://saucedemo.com/sitemap.xml</a>

Method GET

Parameter Header User-Agent

Attack Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)

Chrome/75.0.3739.0 Safari/537.36 Edg/75.0.109.0

Evidence

Other Info

URL https://saucedemo.com/sitemap.xml

Method GET

Parameter Header User-Agent

Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)

Chrome/91.0.4472.124 Safari/537.36

Evidence

Other Info

URL <a href="https://saucedemo.com/sitemap.xml">https://saucedemo.com/sitemap.xml</a>

Method GET

Parameter Header User-Agent

Attack Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:93.0) Gecko/20100101 Firefox/91.0

Evidence

	Other Info	
URL		https://saucedemo.com/sitemap.xml
	Method	GET
	Parameter	Header User-Agent
	Attack	Mozilla/5.0 (compatible; Googlebot/2.1; +http://www.google.com/bot.html)
	Evidence	
	Other Info	
URL		https://saucedemo.com/sitemap.xml
	Method	GET
	Parameter	Header User-Agent
	Attack	Mozilla/5.0 (compatible; Yahoo! Slurp; http://help.yahoo.com/help/us/ysearch/slurp)
	Evidence	
	Other Info	
URL		https://saucedemo.com/sitemap.xml
URL	Method	https://saucedemo.com/sitemap.xml  GET
URL		
URL		GET
URL	Parameter	GET  Header User-Agent  Mozilla/5.0 (iPhone; CPU iPhone OS 8_0_2 like Mac OS X) AppleWebKit/600.1.4 (KHTML, like
URL	Parameter Attack	GET  Header User-Agent  Mozilla/5.0 (iPhone; CPU iPhone OS 8_0_2 like Mac OS X) AppleWebKit/600.1.4 (KHTML, like
URL	Parameter Attack Evidence Other	GET  Header User-Agent  Mozilla/5.0 (iPhone; CPU iPhone OS 8_0_2 like Mac OS X) AppleWebKit/600.1.4 (KHTML, like
	Parameter Attack Evidence Other	GET  Header User-Agent  Mozilla/5.0 (iPhone; CPU iPhone OS 8_0_2 like Mac OS X) AppleWebKit/600.1.4 (KHTML, like Gecko) Version/8.0 Mobile/12A366 Safari/600.1.4
	Parameter Attack Evidence Other Info Method	GET  Header User-Agent  Mozilla/5.0 (iPhone; CPU iPhone OS 8_0_2 like Mac OS X) AppleWebKit/600.1.4 (KHTML, like Gecko) Version/8.0 Mobile/12A366 Safari/600.1.4  https://saucedemo.com/sitemap.xml
	Parameter Attack Evidence Other Info Method	GET  Header User-Agent  Mozilla/5.0 (iPhone; CPU iPhone OS 8_0_2 like Mac OS X) AppleWebKit/600.1.4 (KHTML, like Gecko) Version/8.0 Mobile/12A366 Safari/600.1.4  https://saucedemo.com/sitemap.xml  GET
	Parameter Attack Evidence Other Info Method Parameter	GET  Header User-Agent  Mozilla/5.0 (iPhone; CPU iPhone OS 8_0_2 like Mac OS X) AppleWebKit/600.1.4 (KHTML, like Gecko) Version/8.0 Mobile/12A366 Safari/600.1.4  https://saucedemo.com/sitemap.xml  GET  Header User-Agent  Mozilla/5.0 (iPhone; U; CPU iPhone OS 3_0 like Mac OS X; en-us) AppleWebKit/528.18

URL <a href="https://saucedemo.com/sitemap.xml">https://saucedemo.com/sitemap.xml</a>

Method GET

Parameter Header User-Agent

Attack msnbot/1.1 (+http://search.msn.com/msnbot.htm)

Evidence

Other Info

Instances 24

Solution

Reference <a href="https://owasp.org/wstg">https://owasp.org/wstg</a>

CWE Id

WASC Id

Plugin Id <u>10104</u>

# **Sequence Details**

With the associated active scan results.