# Von Internetseiten Webseiten zu verteilten Cloud-Anwendungen: Entwicklungen in der Web-Sicherheit.

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## "Die HTML-Seiten werden häufig durch aktive Inhalte wie Flash und JavaScript erweitert."





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## transformative, interoperable Applikationsplattform für verteilte Anwendungen



## Netzwerkeffekte im Browser postMessage CORS & XHR2 WebRTC websockets Web Intents

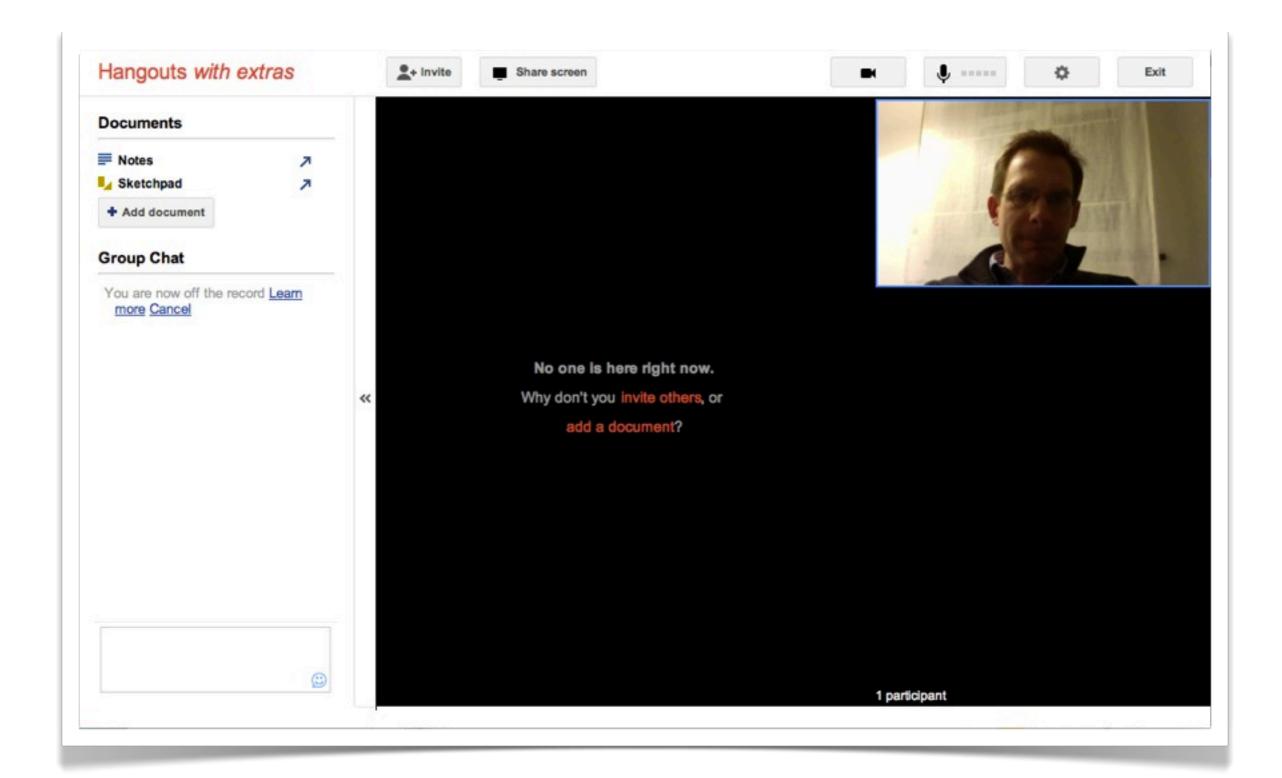


## Web Intents Dynamische Konstruktion von Mashups



### Sensoren Mikrofon Kamera Beschleunigung Touch









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#### Transformationen



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# Schutzziel Daten und Anwendungen in der Cloud

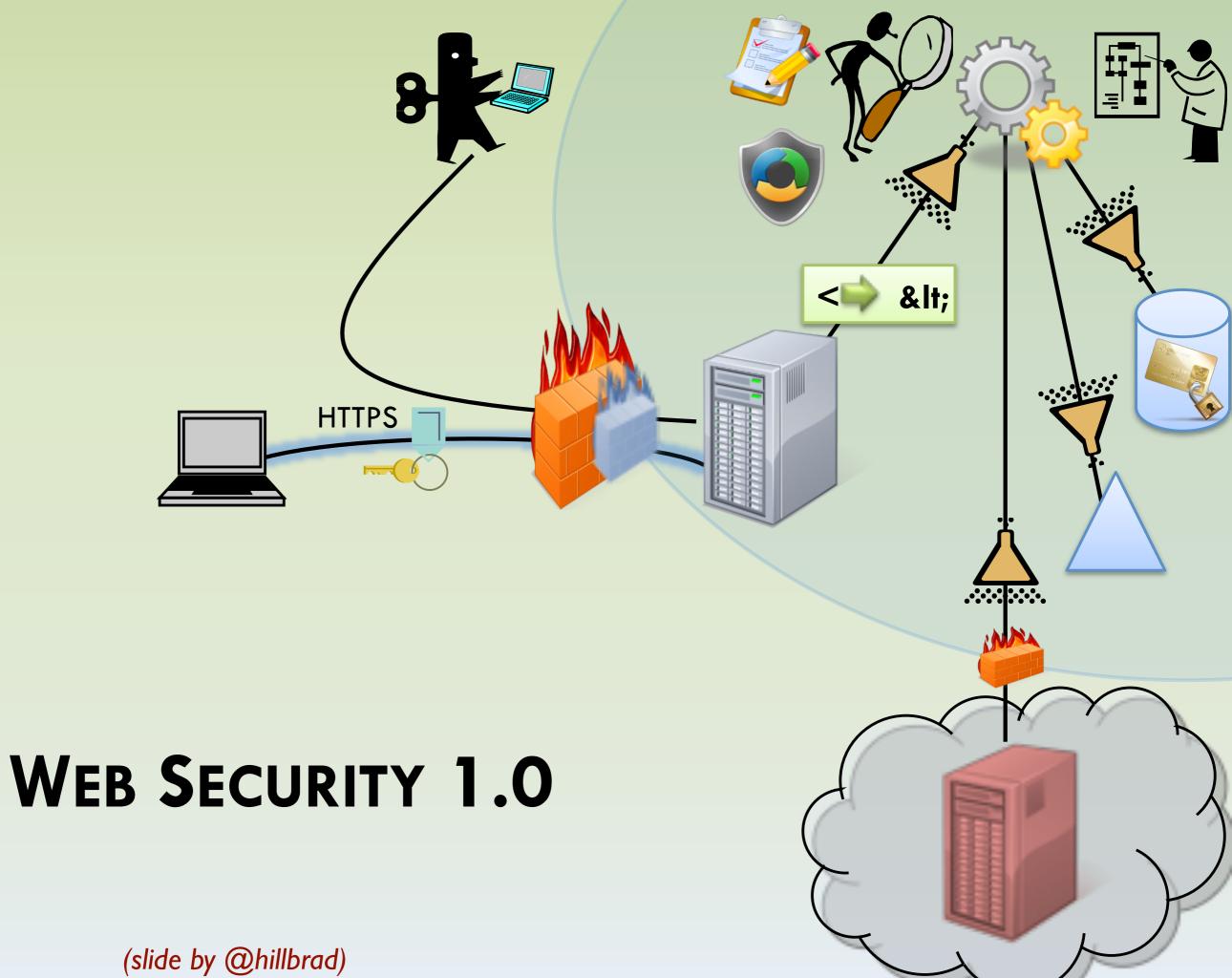


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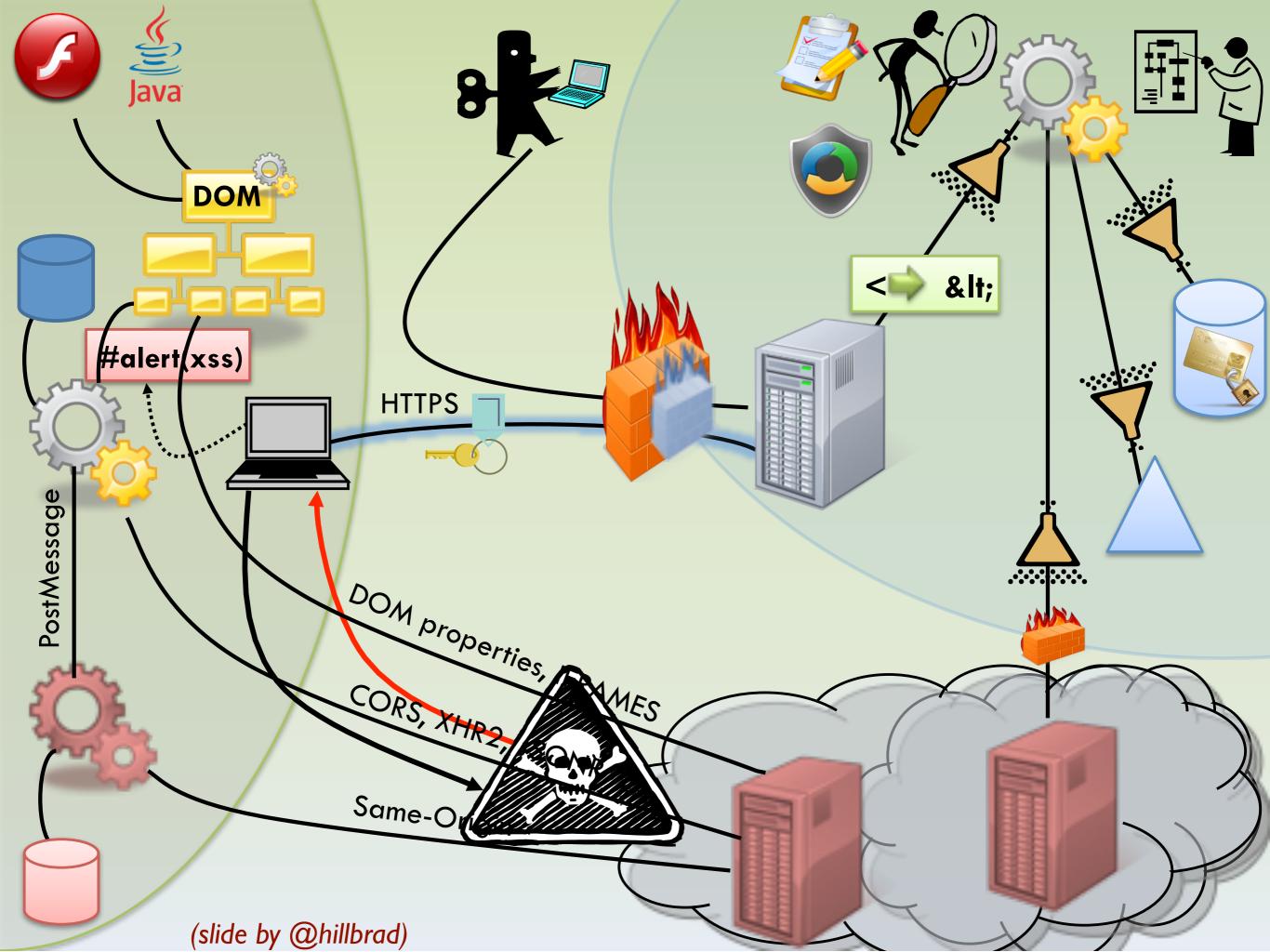
## Server-Sicherheit Malware-Schutz Netzwerksicherheit OVVASP Top 10





# client/server verteilte Anwendungen





## Server-Sicherheit Malware-Schutz Netzwerksicherheit OWASP Top 10 Webapp-Sicherheit



## Verteidigung im Client Datenströme im Browser Serverlose Apps



## Codeinjektion wird im Client ausgeführt



#### Some stats about DOM Xss

We downloaded top Alexa 1 million sites and analyzed the first 100 in order to verify the presence of *exploitable* DOM Based Cross Site Scripting vulnerabilities.

Using DOMinator we found that *56 out of 100* (56% of sites) were vulnerable to reliable DOMXss attacks.

Some analysis example can be found here and here.

We'll release a white paper about this research, in the meantime you can try to reach our results using DOMinator.



# Kooperative Durchsetzung von Sicherheitspolicies



## CSP

Content Security Policy



# zum Beispiel inline <script> eval &c data:...



#### Content Security Policy

#### Unofficial Draft 15 November 2011

#### Editors:

Brandon Sterne, Mozilla Corporation Adam Barth, Google, Inc.

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#### Abstract

This document defines a policy language used to declare a set of content restrictions for a web resource, and a mechanism for transmitting the policy from a server to a client where the policy is enforced.

#### Status of This Document

This document is merely a public working draft of a potential specification. It has no official standing of any kind and does not represent the support or consensus of any standards organisation.

#### **Table of Contents**

- 1. Introduction
- 2. Conformance Criteria
  - 2.1 Terminology
- 3. Syntax
  - 3.1 Policy Delivery
    - 3.1.1 x-content-Security-Policy Response Header
    - 3.1.2 <meta http-equiv="X-Content-Security-Policy"> HTML Element



## Grenzen zwischen Applikationen







### <script src="...">



### JSONP



## Strukturierte Kommunikation zwischen Applikationen





#### Cross-Origin Resource Sharing

#### W3C Working Draft 27 July 2010

This Version:

http://www.w3.org/TR/2010/WD-cors-20100727/

**Latest Version:** 

http://www.w3.org/TR/cors/

Latest Editor Draft:

http://dev.w3.org/2006/waf/access-control/

**Previous Versions:** 

http://www.w3.org/TR/2009/WD-cors-20090317/

http://www.w3.org/TR/2008/WD-access-control-20080912/

http://www.w3.org/TR/2008/WD-access-control-20080214/

http://www.w3.org/TR/2007/WD-access-control-20071126/

http://www.w3.org/TR/2007/WD-access-control-20071001/

http://www.w3.org/TR/2007/WD-access-control-20070618/

http://www.w3.org/TR/2007/WD-access-control-20070215/

http://www.w3.org/TR/2006/WD-access-control-20060517/

http://www.w3.org/TR/2005/NOTE-access-control-20050613/

Editor:

Anne van Kesteren (Opera Software ASA) <annevk@opera.com>

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## <iframe>



#### WARNING: Facebook Clickjacking Attack Spreading Through "Likes"



May 31, 2010 by Christina Warren





Send 16885 likes. Sign Up to see what your friends like.

A new clickjacking worm is spreading through Facebook via the "Like" feature. The attack, which is said to have hit hundreds of thousands of users, uses a combination of social engineering and clickjacking to make it appear as if a user has "liked" a link.

The messages that are being used in the link text include, "LOL This girl gets OWNED after a POLICE OFFICER reads her STATUS MESSAGE," "This man takes a picture of himself EVERYDAY for 8 YEARS!!," "The Prom Dress That Got This Girl Suspended From School" and "This Girl Has An Interesting Way Of Eating A Banana, Check It Out!"





## x-frame-options ist keine Lösung



# W3C Web Application Security Working Group



## Kommunikation zwischen Webapps



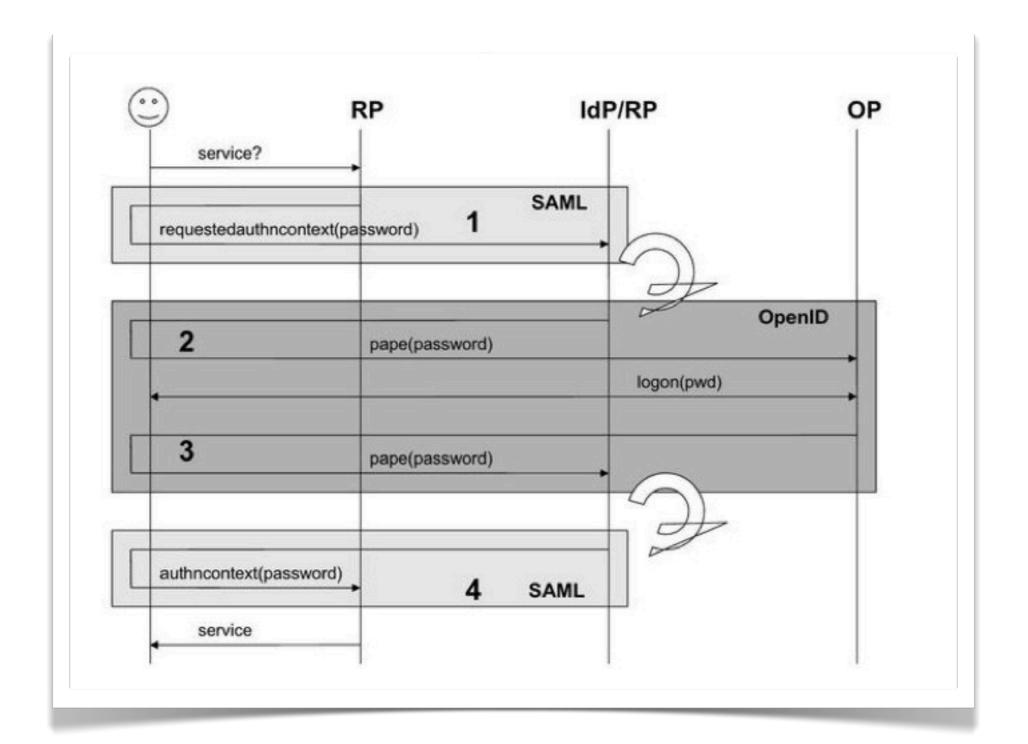
### CORS postMessage Web Intents WebRTC



# Protokolle zwischen Webapplikationen, z.B.

Identitätsmanagement









#### W3C Workshop on Identity in the Browser 24/25th May 2011, Mountain View (USA)

About W3C Report Call for Participation Papers Agenda Nearby Events Venue

#### **Call For Participation**

#### **Background**

Now available: Final Report

As the Web becomes increasingly a focal point for economic and social activity, there is an urgent need for trustworthy, widely-applicable digital identity management. This includes the need for authentication and authorization to work across multiple web-sites, enterprises, devices, and browsers in a uniform and easy-to-use manner. For critical enterprise activity, effective government engagement, and sensitive social information accessed over the Web, a higher level of identity assurance, privacy protection, and security is required beyond simple username/password combinations. To address many of these issues, digital identity should become a core part of Web architecture, enabled by a combination of server and client-side solutions. Achieving this vision, however, requires addressing numerous technical, operational, policy, and legal issues. This



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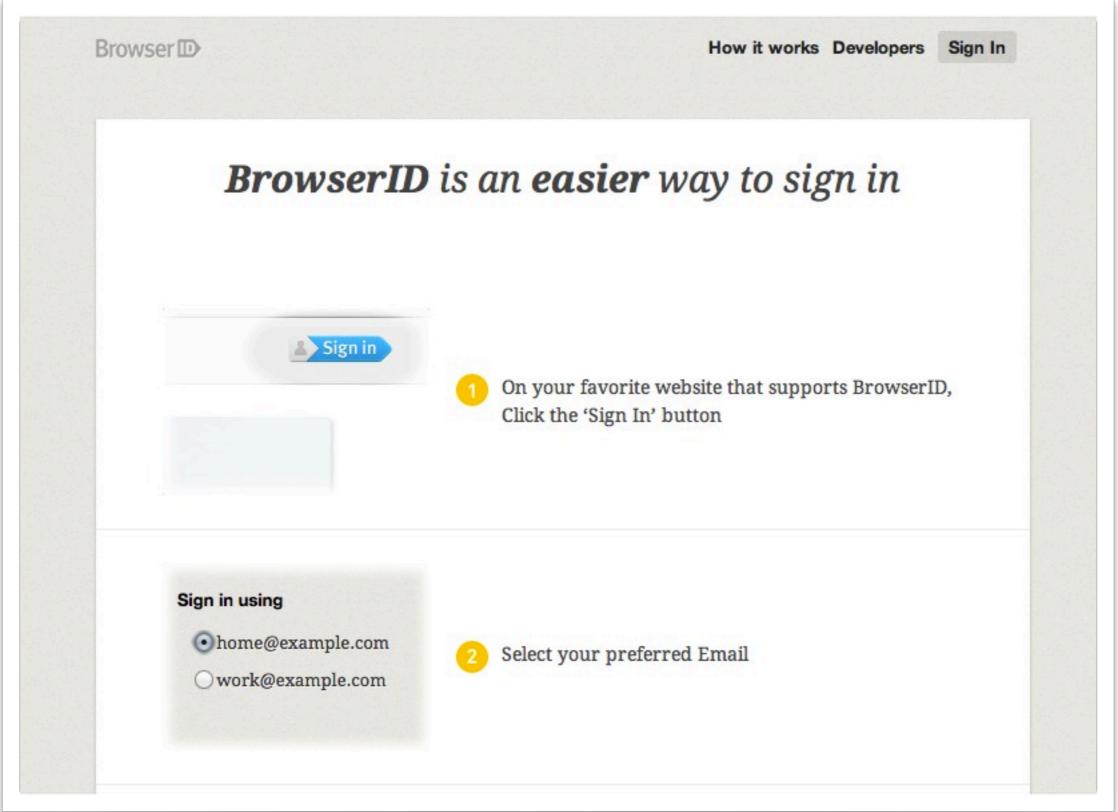


The Security Division of EMC











#### 2. Identify the User

Instead of displaying a form on your site which takes a username and password, use the BrowserID JavaScript API when the user clicks your sign-in button:

```
navigator.id.getVerifiedEmail(function(assertion) {
    if (assertion) {
        // This code will be invoked once the user has successfully
        // selected an email address they control to sign in with.
    } else {
        // something went wrong! the user isn't logged in.
    }
});
```

Upon a successful sign-in, you'll be called back with an assertion, a string containing a signed claim that proves the user is who they say they are.



# Komplexere Sicherheitsprotokolle zwischen Webapps?



```
01.
    [Supplemental]
02. interface Crypto {
      readonly attribute CryptoPk pk;
03.
      readonly attribute CryptoSign sign;
04.
05.
    };
06.
07. [Constructor(in DOMString algorithm)]
08. interface CryptoHash {
      void append(in ArrayBuffer data);
09.
      ArrayBuffer finish();
10.
11.
    };
12.
13. [Constructor(in DOMString algorithm, in ArrayBuffer key)]
14. interface CryptoHmac {
      void append(in ArrayBuffer data);
15.
16.
      ArrayBuffer finish();
17. };
18.
19. [Callback=FunctionOnly, NoInterfaceObject] interface

☐ GenerateKeypairCallback {
      void onsuccess(ArrayBuffer keyID, ArrayBuffer pubKey);
20.
21.
   };
22.
     [Callback=FunctionOnly, NoInterfaceObject] interface
23.
     GetPublicKeyCallback {
      void onsuccess(ArrayBuffer pubKey);
24.
25.
    };
26.
    [Callback=FunctionOnly, NoInterfaceObject] interface PKEncryptCallback {
27.
      void onsuccess(ArrayBuffer message);
28.
29. };
30.
```



### coming soon Kryptographische APIs für JavaScript Identity-APIs im Browser



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