

removing  
the “*suck*” out of

# WEBSOCKETS

&

start building those real-time

# ENTERPRISE

*ready connections*

fancy  
pancy

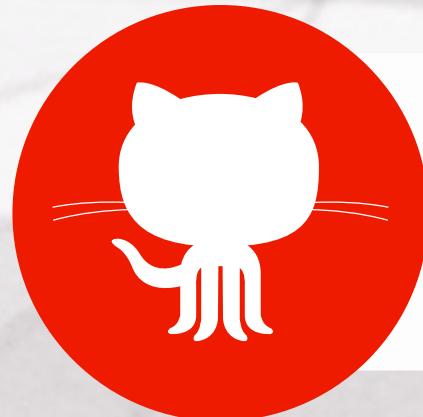




# nodejitsu



3rdEden



3rd-Eden

# Let's talk about WebSockets



# draft-hixie-thewebsoketprotocol - XX

version	released	details
0	Jan 2009	Initial version
53	Oct 2009	Sub protocol
76	May 2010	

# draft-ietf-hybi-thewebsocketprotocol - XX

version	released	details
1	Aug 2010	Binary support
4	Jan 2011	Security issues
14	Sep 2011	Versioning
RFC 6455	Dec 2011	Final

**Ok, I get it there  
are many protocols**



# Supports a WebSocket protocol

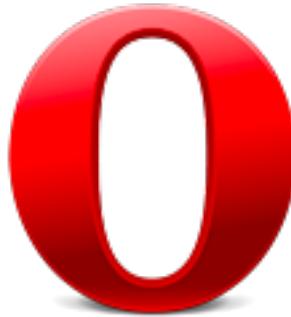
4+



4+



11+



4.2+



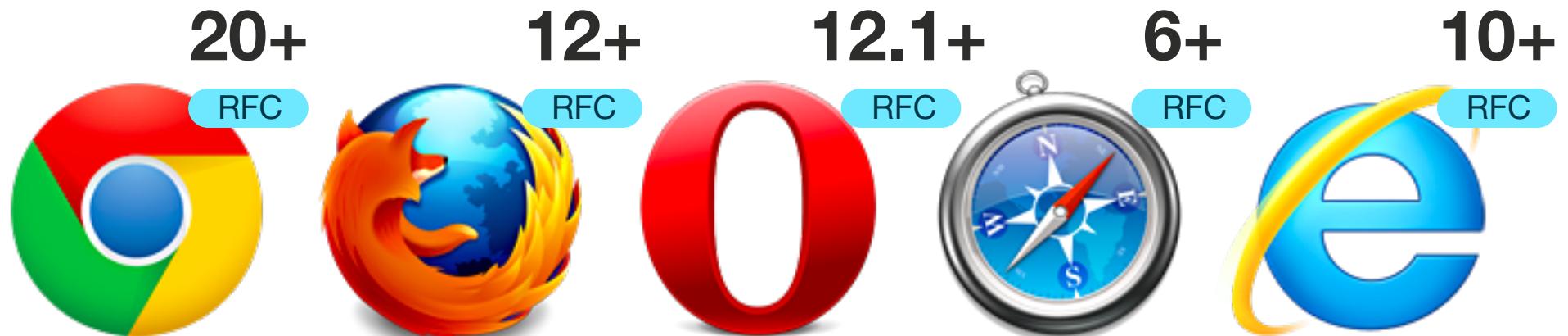
10+



Chrome for android 18+  
Firefox for android 15+  
Opera Mobile 12+

LULZ, no android browser

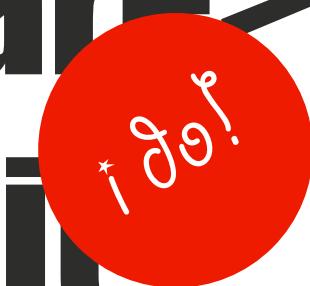
# Supports latest RFC 6455 protocol



RFC Chrome for android 18+  
RFC Firefox for android 15+  
RFC Opera Mobile 12+

TROLOLOL no android browser

**But, I don't </care>  
about old shit**





**“known” issues**



Usage or detecting a HTTP proxy  
(AutoProxyDiscovery) crashes < Safari  
5.1.4 and Mobile Webkit

This includes tabs and full browser crashes, not “feature” detectable



```
if (
  // target safari browsers
  $.browser.safari

  // not chrome
  && !$.browser.chrome

  // and correct webkit version
  && parseFloat($.browser.version) < 534.54
) {
  // don't use websockets
}
```



## Writing to a closed WebSocket connection can crash the browser & tabs

Caused by a race condition on Mobile devices



```
var ws = new WebSocket("wss://localhost:8080/");

ws.onmessage = function(event) {
  // wrap sends in a setTimeout out to allow the readyState
  // to be correctly set to closed
  setTimeout(function () {
    ws.send("g'day realtimeconf");
  });
};
```



```
var ws = new WebSocket("wss://localhost:8080/");

ws.onmessage = function(event) {
    // wrap sends in a setTimeout out to allow the readyState
    // to be correctly set to closed, make this only happen
    // on mobile devices
    if (mobile) return setTimeout(function () {
        ws.send("g'day realtimeconf");
    });
}

ws.send("g'day realtimeconf");
};
```



3G doesn't always work with WebSocket  
or causes a crash

Not detectable



```
var ua = navigator.userAgent.toLowerCase();  
  
// detect all possible mobile phones to filter out  
// websuckets  
if (  
    ~ua.indexOf('mobile')  
    || ~ua.indexOf('android')  
    || .. and more ..  
) {  
    // don't use websuckets  
}
```



Pressing ESC in Firefox will drop the established connection. Even after the page has fully loaded.

Capture the event early and try to cancel it, still happening in latest firefox but they are “working” on it



```
$( 'body' ).keydown(function (e) {  
  // make sure that you capture the `esc` key and prevent  
  // it's default action from happening  
  if (e.which === 27) e.preventDefault();  
});
```



Sending “invalid” UTF-8 can drop the connection, for example emoji’s

**escape & encodeURI your data, yes both**



```
var ws = new WebSocket("wss://localhost:8080/");

ws.onopen = function(event) {
  // encode and then unescape all messages that contain
  // utf8, and also user input
  ws.send(unescape(encodeURIComponent(poop)));
};
```





Firefox doesn't connect to ws:// from a secure https page.

they called it a security “feature”, but I call it annoying



## Safari doesn't allow you to connect using self signed certificates

if you do this in production you are a nut head, but it can be annoying for development

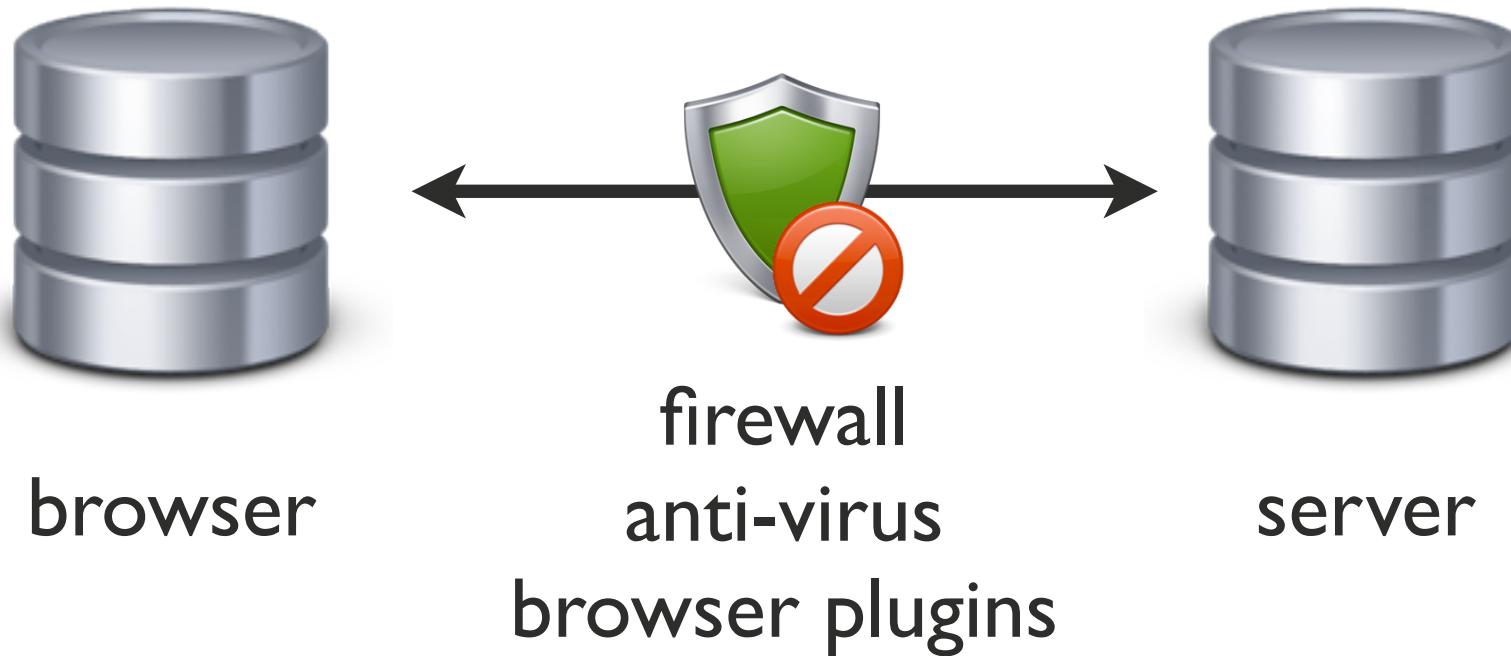
**It can't be worse  
than that right.**





**connection  
blockage**

doing painful research



## port testing



**~3% of all requests on port 4000  
were blocked**

out of the unique 100k connections tested



**enterprise proxies usually block  
everything except port  
80,443,843**

and virus scanners usually target port 80 for scanning & blocking

# virus scanner & proxy testing



Forum Start > English Forums - Battlelog Discussions > Problems with chat, invites and events? Read this!

## Problems with chat, invites and events? Read this!

◀ 1 2 ... 15 ▶

Tottenizer

BATTLELOG B2K



Enlisted: 2011-10-22

2011-10-25 12:08 , edited 2011-10-28 12:13 by Tottenizer

Since beta we have made extensive testing with a lot of anti-virus programs to get around them blocking events and messages from being received by the browser.

We have done all these anti-virus program tests with standard installation with default settings. If you have an anti-virus program in "aggressive", "paranoia", "super safe", or the alike, then this could have an impact.

We are now doing new sets of tests based on the feedback we are getting from you all to be able to find out what is causing Battlelog from working with each anti-virus respectively. Therefore it is crucial that we get proper feedback on any problems with realtime events.

### First up:

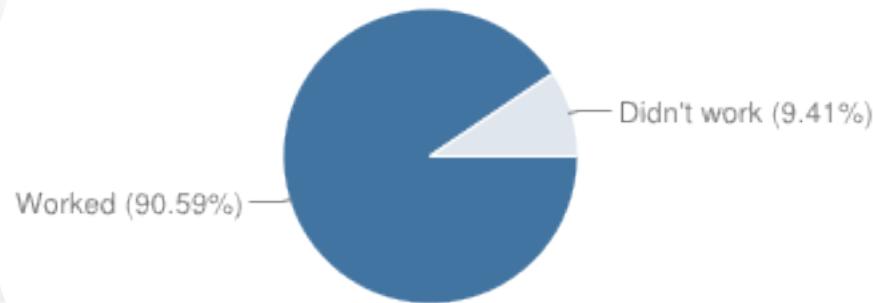
Visit <http://www.adobe.com/software/flash/about/> [adobe.com] and make sure you have version 11 or an update available.

### Update your anti-virus to the latest version

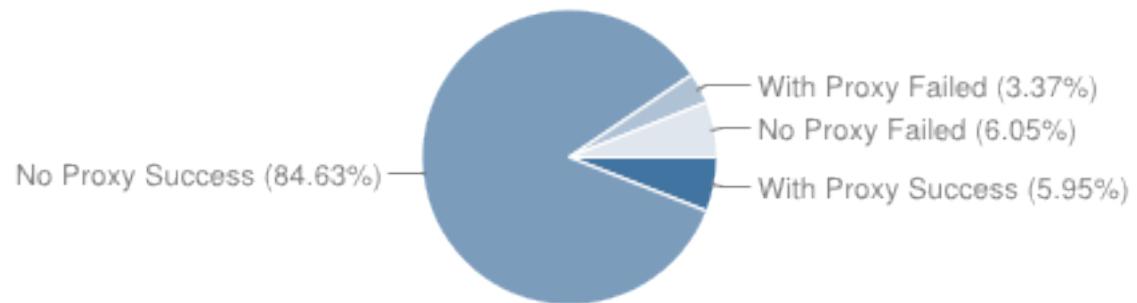
AVG, Bitdefender, Avast, and most other anti-virus programs offer free upgrades to the latest version. Doing this will ensure that your computer is protected and can communicate with Battlelog.

# Success rate

*includes SSL & different ports*



# Proxy breakdown



# Port breakdown



**tl;dl**

*to long, didn't listen*

# **Recommendations**

*which you should really follow, srsly*

**Always use SSL**

# Upgrade from fallbacks

WebSocket



Plugins



Streaming



Polling



JSONP

WebSocket



Polling



JSONP

WebSocket



Plugins



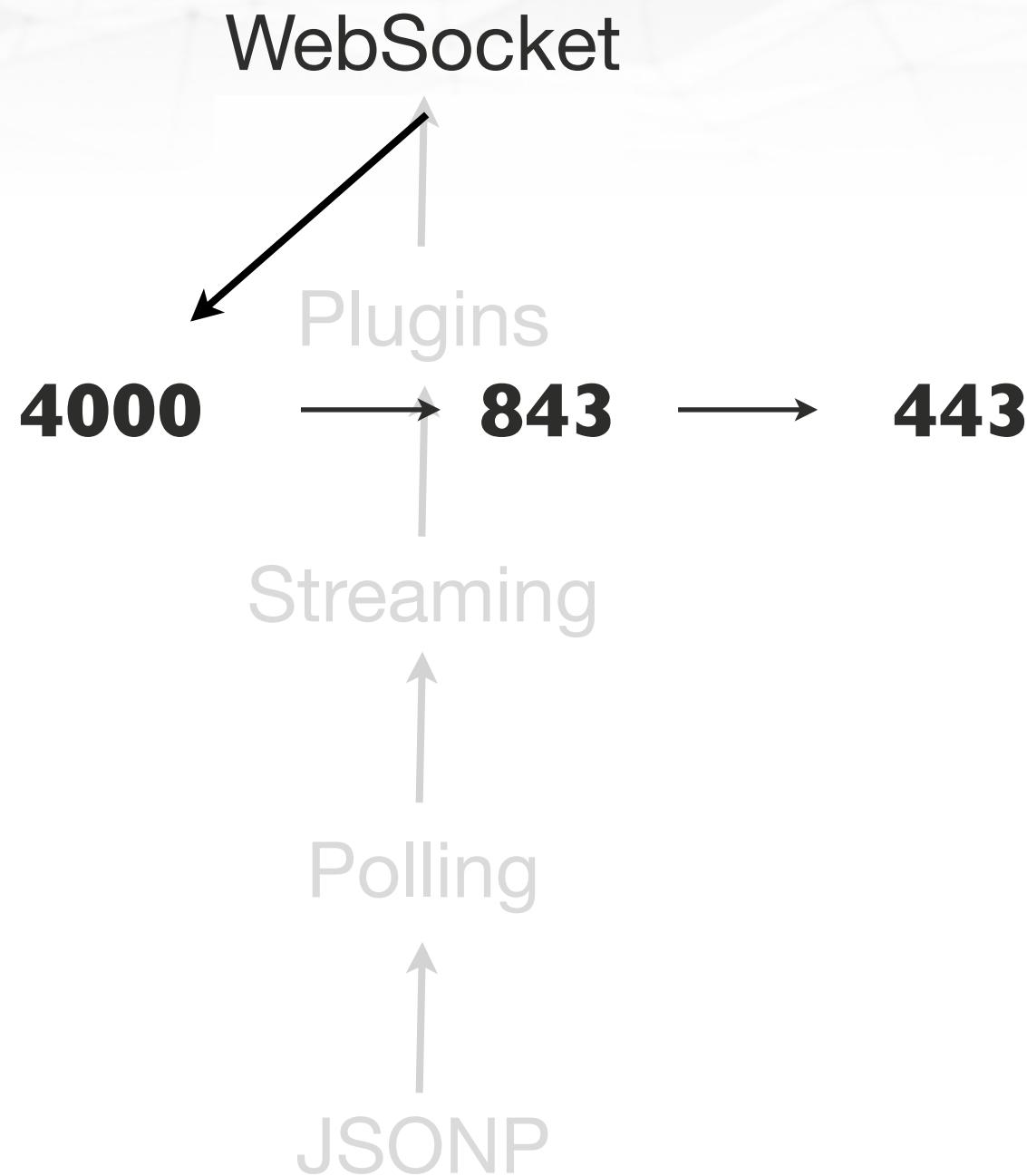
Streaming



Polling



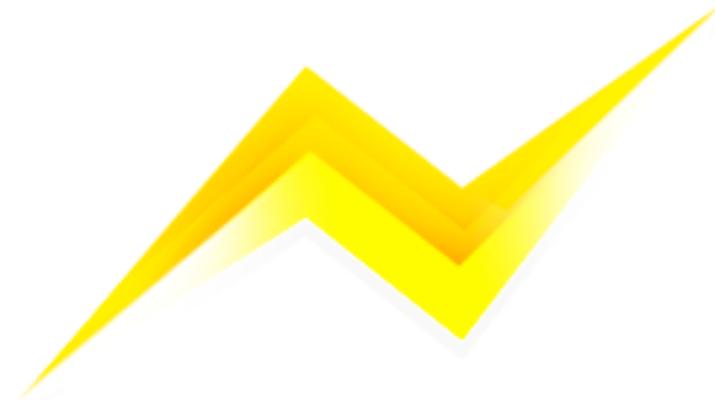
JSONP



# Don't use WebSockets on mobile

# **Educating the web**





*real-time*  
platform

<http://realtimeplatform.org/>

# Sharing is caring



# Sharing is caring

```
var indicator = document
  && "MozAppearance" in document.documentElement.style;

if (indicator) {
  setTimeout(function () {
    // creating and removing an iframe is enough to
    // kill a loading indicator
    var iframe = document.createElement('iframe');
    document.body.appendChild(iframe);
    document.body.removeChild(iframe);
  }, 100);
}
```





*keep your eyes on it*

<http://realtimeplatform.org/>



That's all Folks!



-by sanjukyu-

Tuesday, October 23, 12