Real-time *collaborative editor* for *AsciiDoc*

When WebSocket met Asciidoctor

Maxime GREAU

#Asciidoctor #WebSocket #JavaEE7

@mgreau

About Me

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IT Architect Ministry for the Economy and Finance

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Author Apache Maven (French Book)

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When WebSocket met Asciidoctor

```
                                                o8o    o8o  oooooooooo.
                                                `"'    `"'  `888'    `Y8b
      .o.                                                     888      888  .ooooo.    .ooooo.
     .888.                                      oooo   oooo   888      888 d88' `88b  d88' `"Y8
    .8"888.       .oooo.o  .ooooo.   oooo  oooo   888      888 888   888 888
   .8' `888.     d88(  "8 d88' `"Y8  `888   `888   888      888 888   888 888    .o8
  .88ooo8888.    `"Y88b.  888         888    888   888      888 `Y8bod8P' `Y8bod8P'
 .8'     `888.   o.  )88b 888   .o8   888    888   888     d88'
o88o     o8888o 8""888P'  `Y8bod8P'  o888o  o888o o888bood8P'
```

HTML

QUICK POLL

Who sent an email today?

QUICK POLL

Who wrote technical documentation in the past two days ?

“Writing documentation has to be as easy as writing email !”

Your solution is AsciiDoc

AsciiDoc is…

lightweight **markup**

publishing **toolchain**

AsciiDoc : Lightweight markup

```
= Document Title2
Doc Writer <doc@asciidoc.org>
v1.0, 2013-01-01: Initial version

http://asciidoc.org[AsciiDoc] is a lightweight markup language.

This is the optional preamble (an untitled section body), useful for
writing simple sectionless documents consisting only of a preamble.

NOTE: The abstract, preface, appendix, bibliography, glossary and
index section titles are significant (_specialsections_).

== First section

Document sections start at *level 1* and can nest four levels deep.

* Item 1
* Item 2
```

> *Use AsciiDoc for document markup. It's actually readable by humans, easier to parse and more flexible than XML.*
>
> — Linus Torvald

What's Asciidoctor ?

Asciidoctor

A modern, open source implementation of AsciiDoc in Ruby

Output formats (i.e., backends)

Output formats (i.e., backends)

HTML 5

Output formats (i.e., backends)

HTML 5

DocBook 4.5 & 5.0

Output formats (i.e., backends)

HTML 5

DocBook 4.5 & 5.0

PDF fop, dblatex

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eBook ePub 2, mobi

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man pages

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DocBook 4.5 & 5.0
PDF fop, dblatex
eBook ePub 2, mobi
slides deck.js, dzslides, reveal.js
man pages
custom

How do I use Asciidoctor ?

How do I use Asciidoctor ?

Ruby asciidoctor asciidoctor-pdf

How do I use Asciidoctor ?

Ruby asciidoctor asciidoctor-pdf

Java asciidoctorJ, asciidoctor-maven-plugin

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How do I use Asciidoctor ?

Ruby asciidoctor asciidoctor-pdf

Java asciidoctorJ, asciidoctor-maven-plugin

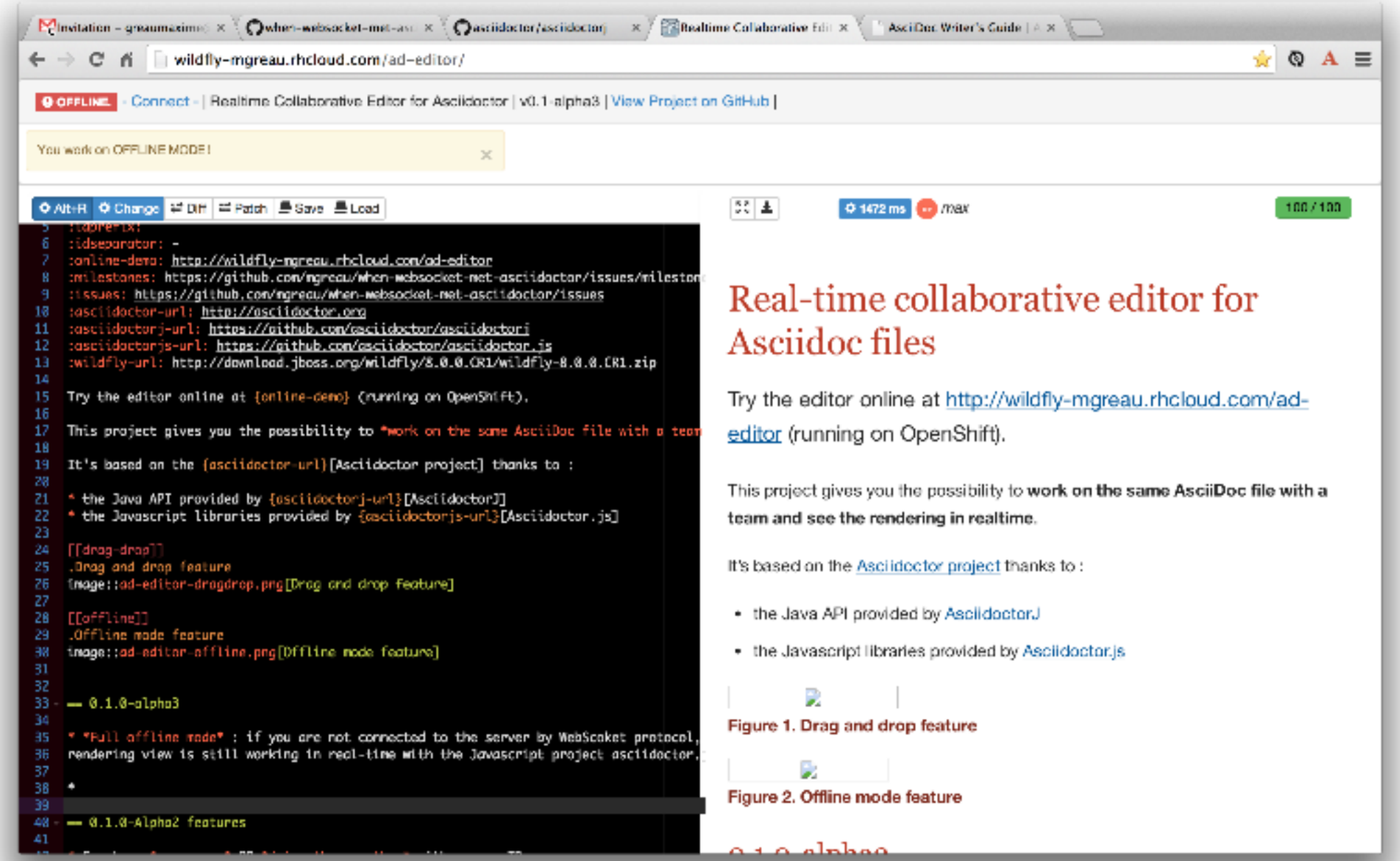
Groovy asciidoctor-gradle-plugin

Javascript asciidoctor.js, Chrome/Firefox extension

Who is using Asciidoctor ?

Frameworks Spring, Infinispan
JSR CDI Specifications
Publishers O'Reilly
Repositories Github, Bintray
and more…

Asciidoctor via asciidoctor.js

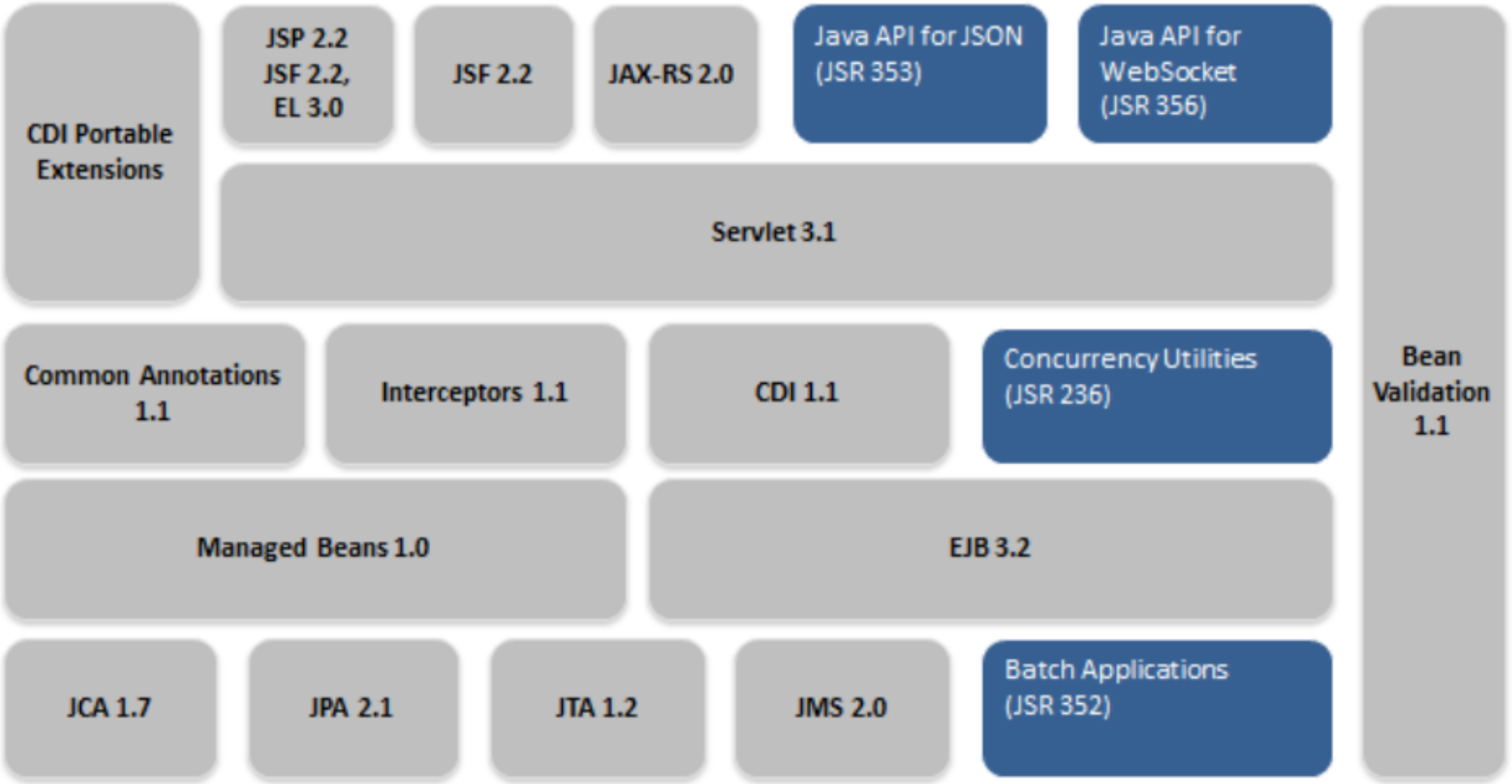


Asciidoctor resources

Website http://asciidoctor.org (blog, user manual, writing guide…)
Github http://github.com/asciidoctor
Forum http://discuss.asciidoctor.org
Twitter @asciidoctor @mojavelinux @alexsotob @lightguardjp

Java EE 7
WebSocket

Java EE 7 - Overview



half-duplex
verbose
hack for server push

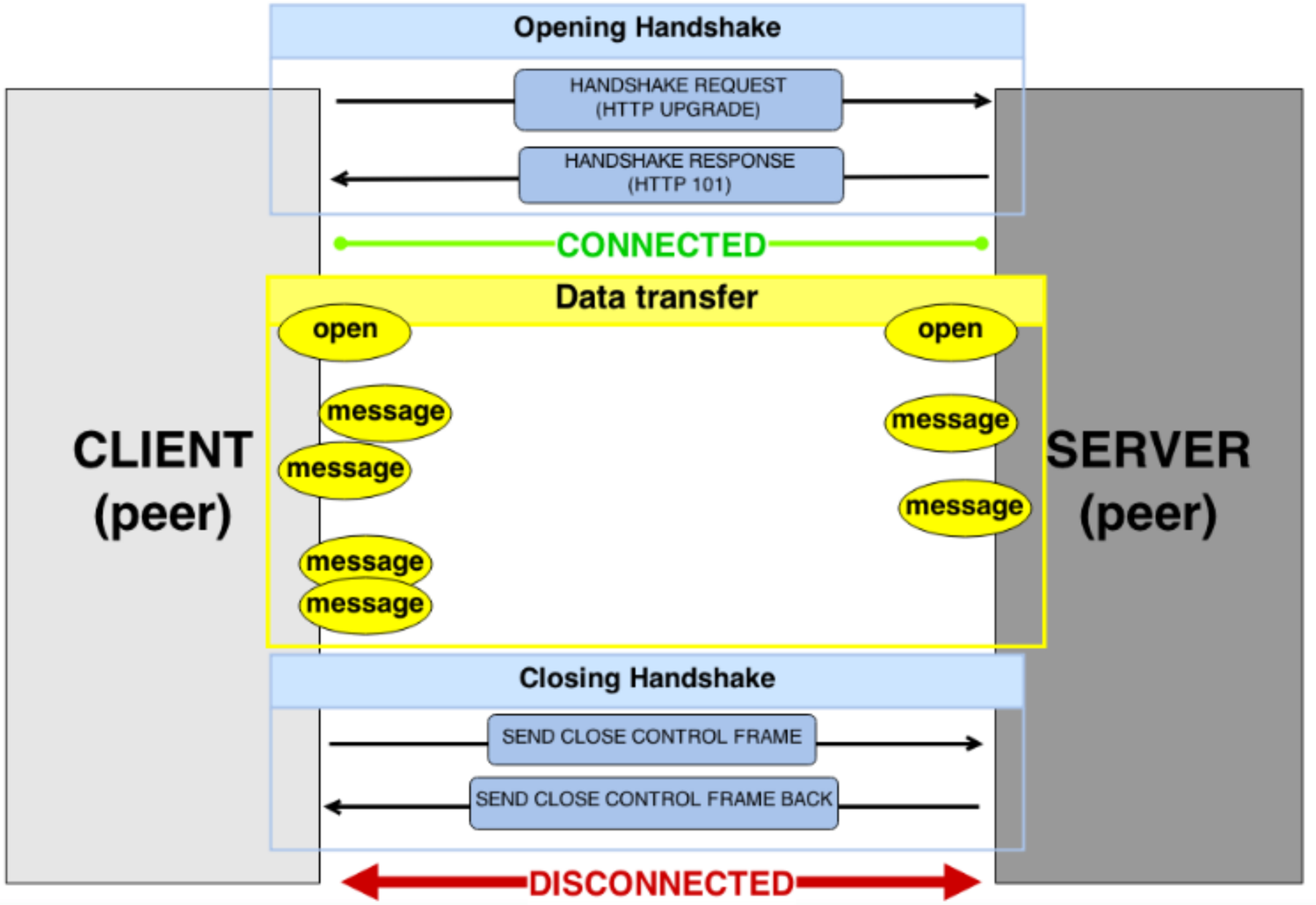
> *WebSocket is a full-duplex bi-directional protocol, over a Single TCP Connection.*
>
> — Arun Gupta (RedHat)

WebSocket Protocol IETF - RFC6455

Javascript API W3C

Java API for WebSocket JSR 356

WebSocket Protocol lifecycle



Request

```
GET /ad-editor/adoc/1234 HTTP/1.1      (1)
Host: wildfly-mgreau.rhcloud.com:8000  (2)
Upgrade: websocket  (3)
Connection: Upgrade (4)
Origin: http://wildfly-mgreau.rhcloud.com
Sec-WebSocket-Key:0EK7XmpTZL341oOh7x1cDw==
Sec-WebSocket-Version:13
```

Response

```
HTTP/1.1 101 Switching Protocols
Connection:Upgrade
Sec-WebSocket-Accept:SuQ5/hh0kStSr6oIzDG6gRfTx2I=
Upgrade:websocket
```

Javascript WebSocket API example

```
var wsUri = "ws://echo.websocket.org/";
function testWebSocket() {
        websocket = new WebSocket(wsUri);
        websocket.onopen = function(evt) { onOpen(evt) };
        websocket.onclose = function(evt) { onClose(evt) };
        websocket.onmessage = function(evt) { onMessage(evt) };
        websocket.onerror = function(evt) { onError(evt) }; }
}
function onOpen(evt) {
        writeToScreen("CONNECTED");
        doSend("WebSocket rocks");
}
function onClose(evt) {
        writeToScreen("DISCONNECTED");
}
function onMessage(evt) {
        writeToScreen('<span >RESPONSE: ' + evt.data+'</span>');
        websocket.close();
}
```

Java API for WebSocket - JSR356

Server and Client Endpoint

- **Annotated** `@ServerEndpoint`
  `@ClientEndpoint`
- **Programmatic** `Endpoint`

Send and consume messages

- **all types** `text, binary or control msg`
- **as Java Objects** `Encoders Decoders`
- **send synchronously / asynchronously**

Java API - JSR356 - @ServerEndpoint

EchoServer.java

```
import javax.websocket.OnMessage;
import javax.websocket.ServerEndpoint;

@ServerEndpoint("/echo")
public class EchoServer {

        @OnMessage
        public String handleMessage(String message){
                return "Thanks for the message: " + message;
        }
}
```

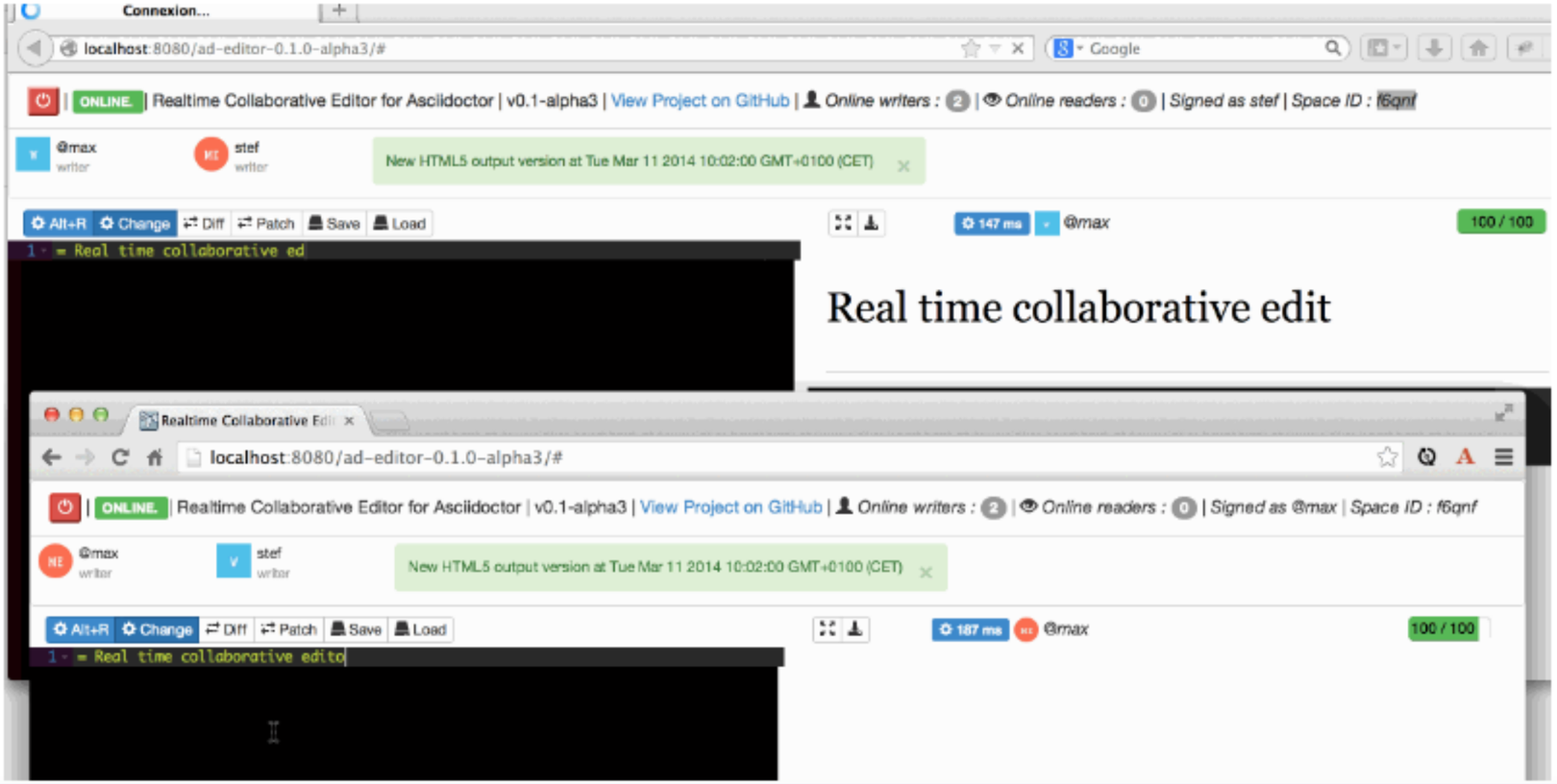
Java API - JSR356 - Annotations

@ServerEndpoint	POJO → Server Endpoint
@ClientEndpoint	POJO → Client Endpoint
@OnOpen	Intercepts open events
@OnMessage	Intercepts message events
@OnClose	Intercepts close events
@OnError	Intercepts error events

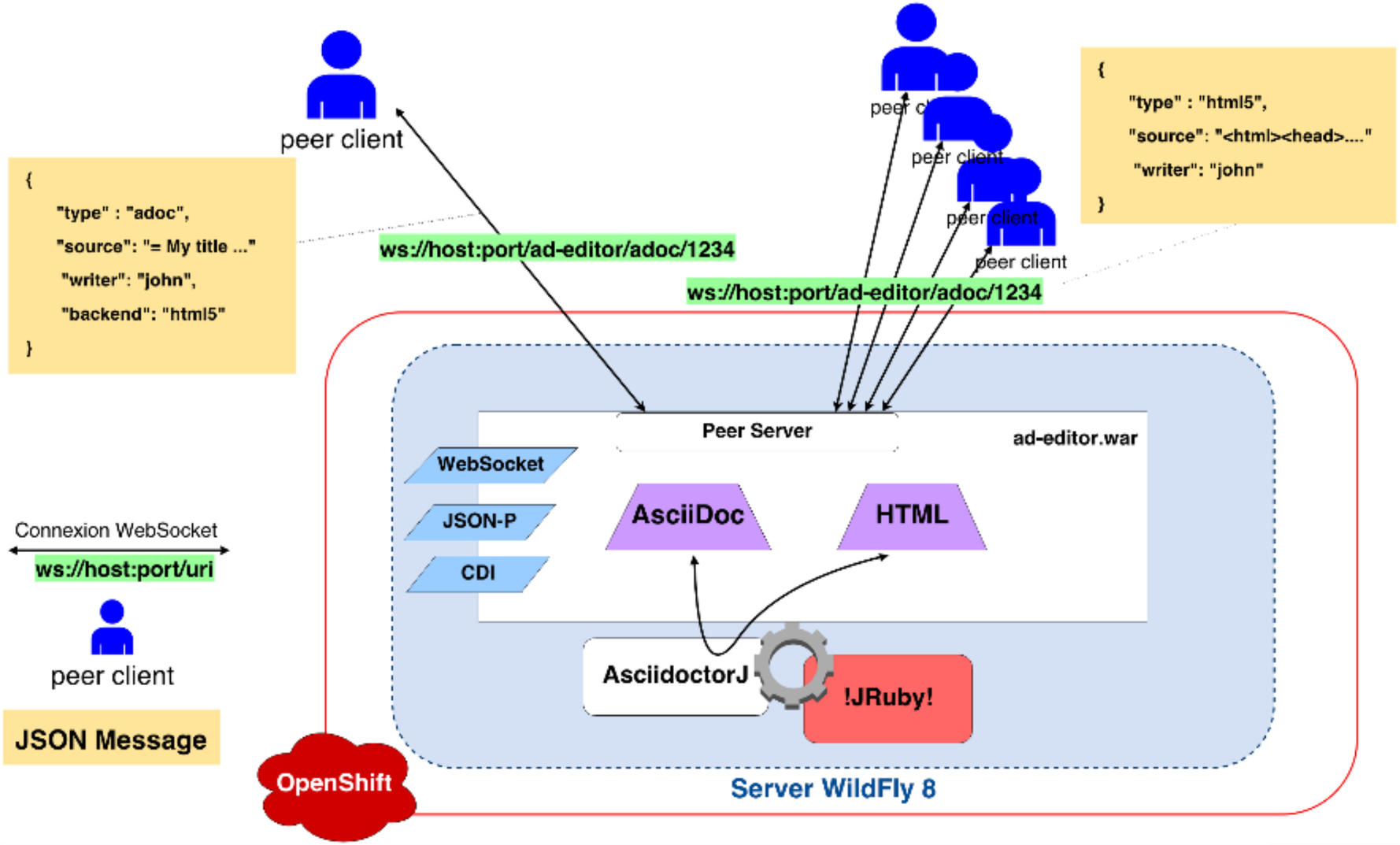
ad-editor Demo & Code

Asciidoctor via asciidoctorJ and WebSocket

http://tinyurl.com/adeditor #adeditor



How does ad-editor work ?



ad-editor : API Javascript send Message → Java API

services.js

```
app.factory('WebSocketService', function($window) {
    ...
    // Send an adoc source to see the generated output back
    service.sendAdocSource = function(idAdoc, source, writer, backend) {
        var wsUrl;
        ...
        var websocket = new WebSocket(wsUrl);

        var jsonObj = {"type" : backend, "source" : source, "writer": writer};
        websocket.send(JSON.stringify(jsonObj));
    };
    ...
});
```

ad-editor : Java API @ServerEndpoint

```
@ServerEndpoint(value = "/adoc/{adoc-id}",                    (1)
    decoders = { MessageDecoder.class },                      (2)
    encoders = { AsciidocMessageEncoder.class ... })          (3)
public class WWSMADEndpoint {

    static Set<Session> peers = Collections                   (4)
                                    .synchronizedSet(new HashSet<Session>());
    @Inject @Backend("html5")
    Event<AsciidocMessageEvent> html5Event;                   (5)

    @OnMessage
    public void message(AsciidocMessage msg, Session session,                  (6)
                                    @PathParam("adoc-id") String adocId) {
        AsciidocMessageEvent event =
                        new AsciidocMessageEvent(session, adocId, msg);
        ...
        html5Event.fire(event);                (7)
    }
}
```

AsciidocMessageConsumer.java

```
public class AsciidocMessageConsumer {

    @Inject
    AsciidoctorProcessor processor; (1)

    public void html5RenderedEvent(@Observes @Backend("html5")          (2)
                                          AsciidocMessageEvent event){
        OutputMessage html;
        ...
        html.setContent(
            processor.renderAsDocument(event.msg.getAdocSource())); (3)

        // send the new HTML version to all connected peers
        WWSMADEndpoint.sendMessage(html, event.id);  (4)
    }
}
```

ad-editor : API Java send → API Javascript Consume

```
@ServerEndpoint(value = "/adoc/{adoc-id}",                    (1)
    decoders = { MessageDecoder.class }...                      (2)
public class WWSMADEndpoint {
    ...
    public static void sendMessage(Message msg, String adocId) {
        for (Session session : peers) {
            ...
            session.getAsyncRemote().sendObject(msg);    (3)
        }
    }
}
```

```
app.controller("adEditorCtrl", function($scope, WebSocketService) {
    WebSocketService.subscribe(function(id, message) {
        var obj = JSON.parse(message);
        $scope.space[id].html5 = obj.data;
    });
});
```

What about a Killer feature ?

Asciidoctor AST Transformation

Asciidoctor AST Transformation

Asciidoctor → AST feature…

Asciidoctor AST Transformation

Asciidoctor → AST feature…

easy to render one part of the document…

Asciidoctor AST Transformation

Asciidoctor → AST feature…
easy to render one part of the document…
and we can render HTML5 slides…

Asciidoctor AST Transformation

Asciidoctor → AST feature…
easy to render one part of the document…
and we can render HTML5 slides…
and we have the WebSocket protocol…

http://tinyurl.com/webinar85

SpaceID : 85

Start your engine

What's next for ad-editor ?

Github workflow
PDF renderer
OAuth
Chat (audio, text)
… Pull requests are welcome :)

Thanks to…

@alexsotob

@tgrall

@arungupta

@mojavelinux

when-websocket-met-asciidoctor on Github

Maxime Gréau - @mgreau