Intro to BOSH using Javascript

(Bidirectional-streams Over Synchronous HTTP)

Adam Fortuna

Initial setup:
Open up ejabberd webpage.
Open strophe documentation webpage.
Open PSI webpage.

Open up apache config, and echobot.

What is BOSH again?

When you think BOSH, you should think XMPP. BOSH, fully spelled out as Bidirectional-streams Over Synchronous HTTP, is a standard that enables you to use an XMPP server over HTTP. If you've ever heard about XMPP, it's probably been in the context of some server side language that was using it — Ruby, Python, Erlang, etc. That's because they can open up a connection to the XMPP server using the Jabber protocol. In some situations, such as within a web browser, this isn't possible. That's where BOSH comes in. Instead of connecting directly from javascript to an XMPP server, the XMPP server can expose an HTTP endpoint, like http://example.org:5218/http-bind. XMPP messages can be sent to this URL as if it were the XMPP server. That enables a client to authenticate against the server, get a roster list and everything else XMPP allows.

In this talk we'll be going over some of the basics of XMPP, how to get a BOSH server setup, just how close to realtime it actually is and the ideas behind using it rather than polling. If you're thinking about using XMPP, or have a need for near-realtime communication it should be interesting.

What can you do with XMPP?

Applications: Instant messaging, groupchat, gaming (combine one-to-one, multi-party messaging), systems control (possible to deploy lightweight systems for control of and interaction with remote systems - give redgreen peepcode example). Geolocation xmpp messages with lat/lng. Data syndication (twitter could push data to an xmpp stream that others could subscribe to). VoIP (gtalk). Single sign on (using jabber ids).

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Arbitrary Messages

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How about BOSH?

Same thing!

If you can do it with XMPP,
you can do it with BOSH

BOSH is just exposing that XMPP connection with HTTP. There are some limitations on message size unfortunately though (from what I understand), so binary data isn't the best idea over BOSH.

How's it work?

Show BOSH example.
1) Initial setup. Open up ejabberd page. Open up apache config. Start ejabberd server. (admin@yuugi.local/testing).
Explain how ejabberd users are the center of everything.
2) Open up PSI and connect as a sample user to show xmpp server is running. Show the resource I was logged in with.
3) Open up echobot and connect.

What's gained with BOSH?

Transport over HTTP instead of jabber protocol.

Allows applications to scale up using XMPP. Jabber servers can handle TONS of concurrent users. Apache ~5k, Nginx ~9k. Imagine 9k people polling a web app every 3 seconds -- not a pretty picture.

Can be used in situations where jabber isn't available (like hotels, etc).

Doesn't lose data! Messages will be stored on the server and sent when when the client is there. Ever talk on AIM and have someone disconnect and not know what the last message received was? Doesn't happen with XMPP, so doesn't happen with BOSH. Great for unreliable connections. Can go offline and come back online (like if you were moving between networks) and bosh will hide it.

If apache/nginx is setup to be gzipped, all xmpp stanza's will be gzipped as well.

A few things to consider...

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BOSH("<xmpp response />")

XMPP Payload

Can be anything! You could make a microblogging service like twitter and using atom as the messages sent back and forth.

Strophe Example...

Show strophe documentation page.

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```
$iq({type: 'get'})
    .c('query', {xmlns: Strophe.NS.ROSTER})
    .toString()
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    .toString()
```

```
<iq type='get'>
<query xmlns='jabber:iq:roster'/>
</iq>
```

Show strophe documentation page.

Authentication

Explain authentication in example.
Explain connection.attach(BOSH_JID, BOSH_SID, BOSH_RID, onConnect);

So who's using BOSH?

Chesspark: Chess game where messages are sent back and forth containing chess moves.
Speeqe: Chat servers
Yammer: Twitter for business
seesmic: twitter for video
Izea...?
Lots more using XMPP. Bosh standard is extremely new, and the libraries are just getting up to speed with it.

Next Step with XMPP?

BOSH just might be the next big space for XMPP to move into.

References

- http://xmpp.org/
- http://metajack.im
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- http://code.stanziq.com/strophe/
- http://www.ejabberd.im/
- http://www.amazon.com/XMPP-Definitive-Guide-Peter-Saint-Andre/dp/059652126X/ref=pd_bbs_sr_2?ie=UTF8&s=books&qid=1231469854&sr=8-2