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# The Impact of Reverse Ajax a.k.a. Comet

Impact of the Reverse AJAX (Comet), TCP Connection and HTML5 to the architecture of the Web

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# Speaker

- Michael Carter
- Comet Architect, Kaazing
- Lead Developer, The Orbited Project

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# Comet

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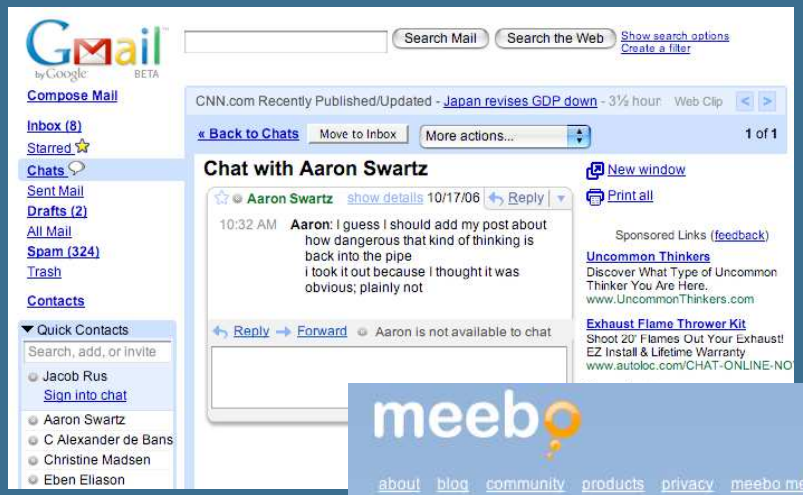
# What is Comet?




Gmail Chat

Renkoo

Meebo

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# Transports

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# iFrame

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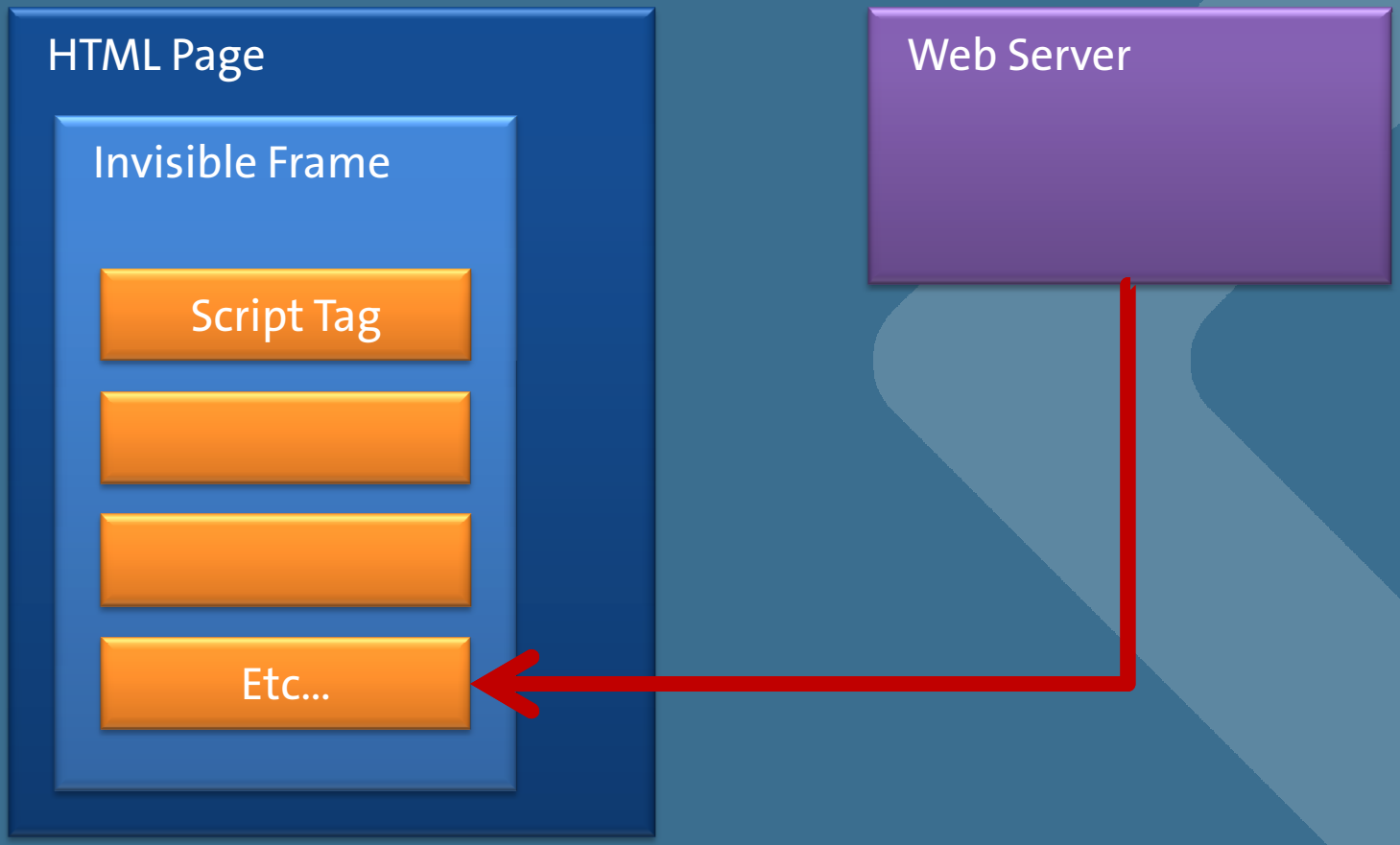
# iFrame Streaming

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# iFrame Streaming

```
function iframe_streaming(url, event_callback) {
  var ifr = document.createElement('iframe');
  ifr.setAttribute('src', url);
  document.body.appendChild(ifr);
  ifr.e = event_callback;
}
```

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# Unacceptable: Usability

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# XHR Long-Polling

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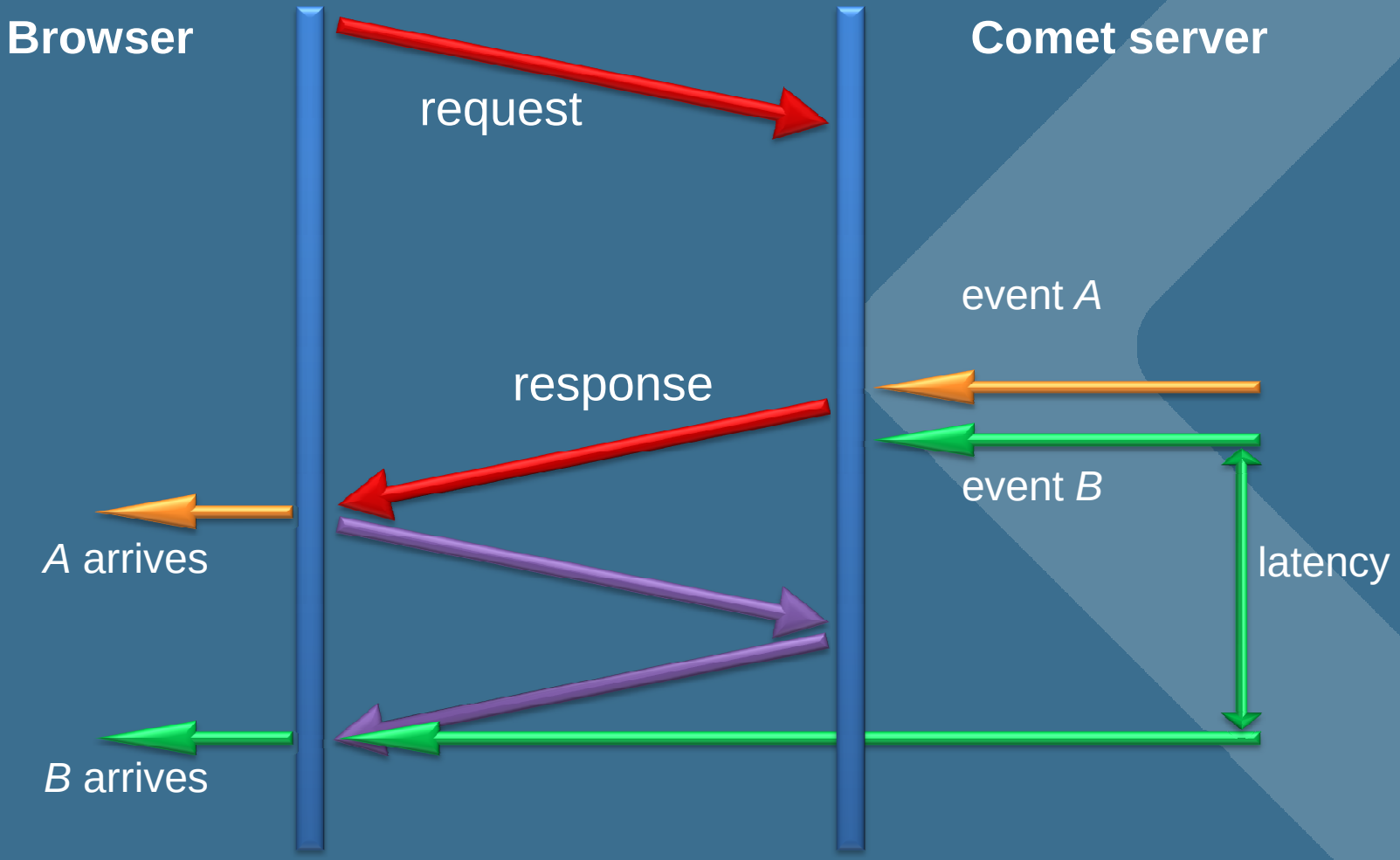
# XHR Long-Polling

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# XHR Long-Polling

```
function long_polling(url, event_callback) {
  xhr = createXMLHttpRequest();
  xhr.onreadystatechange = function() {
    try {
      if (xhr.status  == 200) {
        if (xhr.readyState == 4) {
          data = eval(xhr.responseText);
          if (data != undefined)
            event_callback(data);
          long_polling(event_callback);
        }
      }
    }
    catch(e) {}
  }
  xhr.open("GET", url);
  xhr.send(null);
}
```

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# 20 × bandwidth

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# Unacceptable:
# Latency Bandwidth

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photo by Michael (mx5tx)

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# HTMLFile Object

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# ActiveX!

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photo by Mykl Roventine

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# Works Great.
# No Side-Effects

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# Explorer Only

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# XHR Streaming

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# Ready State 3

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# Manually Parse Own Format

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# Server-Sent Events

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# Standard: HTML5

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# Deprecated Version Implemented by Opera

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# Transport Conclusions

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# It's Hacks All the Way Down

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# Aim Carefully

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# Bullseye?

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photo by Jiaren Lau

# Scalability

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# Vertical Scaling

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# Comet + Threads
# ≠ Scalable

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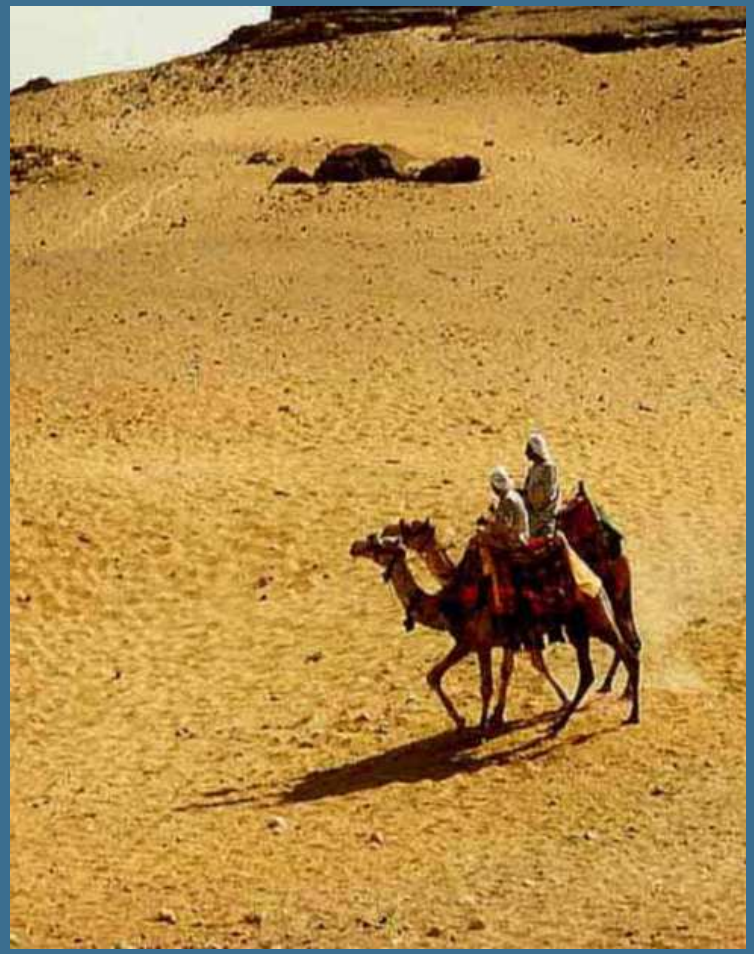

photos by babasteve & jurvetson

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# Horizontal Scaling

photo by ulybug

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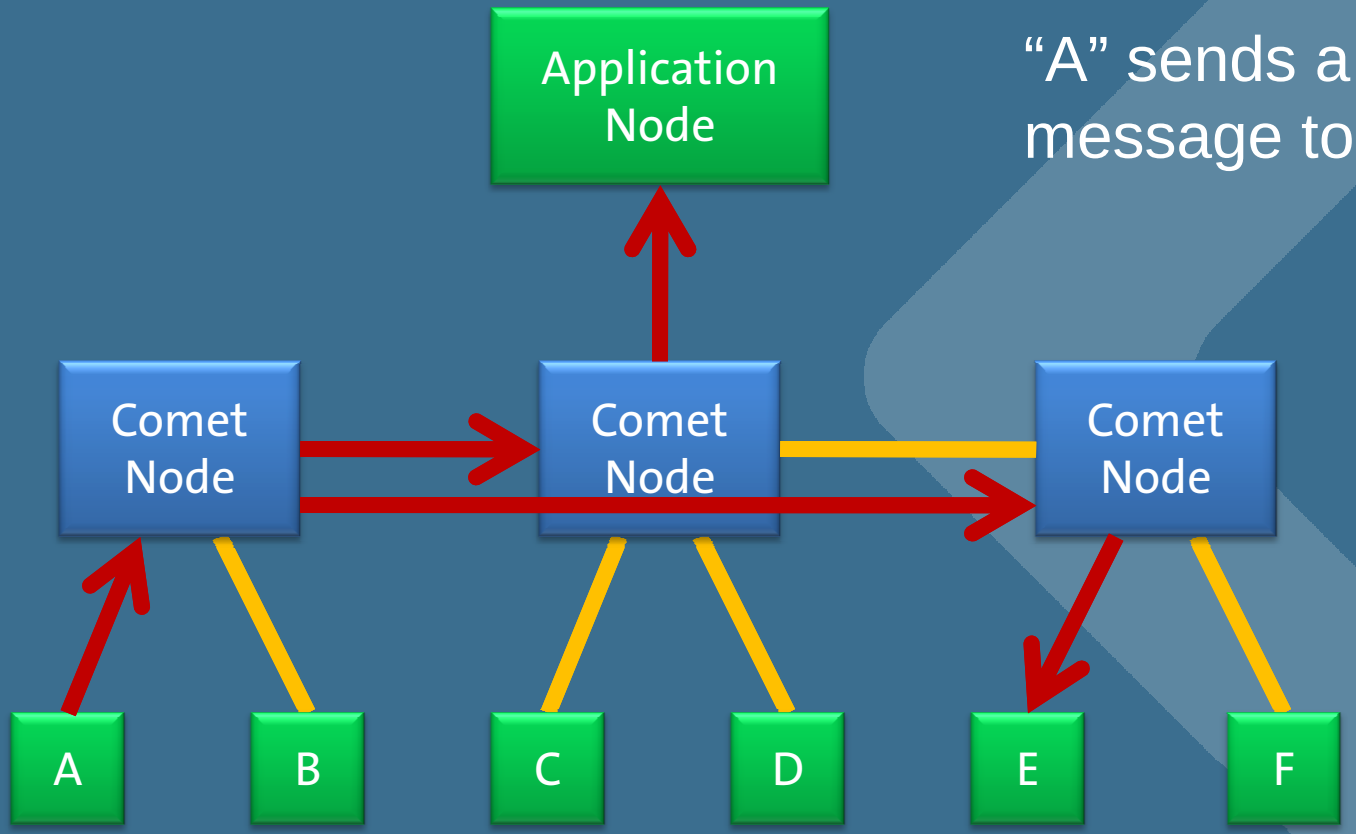
# Horizontal Scaling




"A" sends a message to "E"

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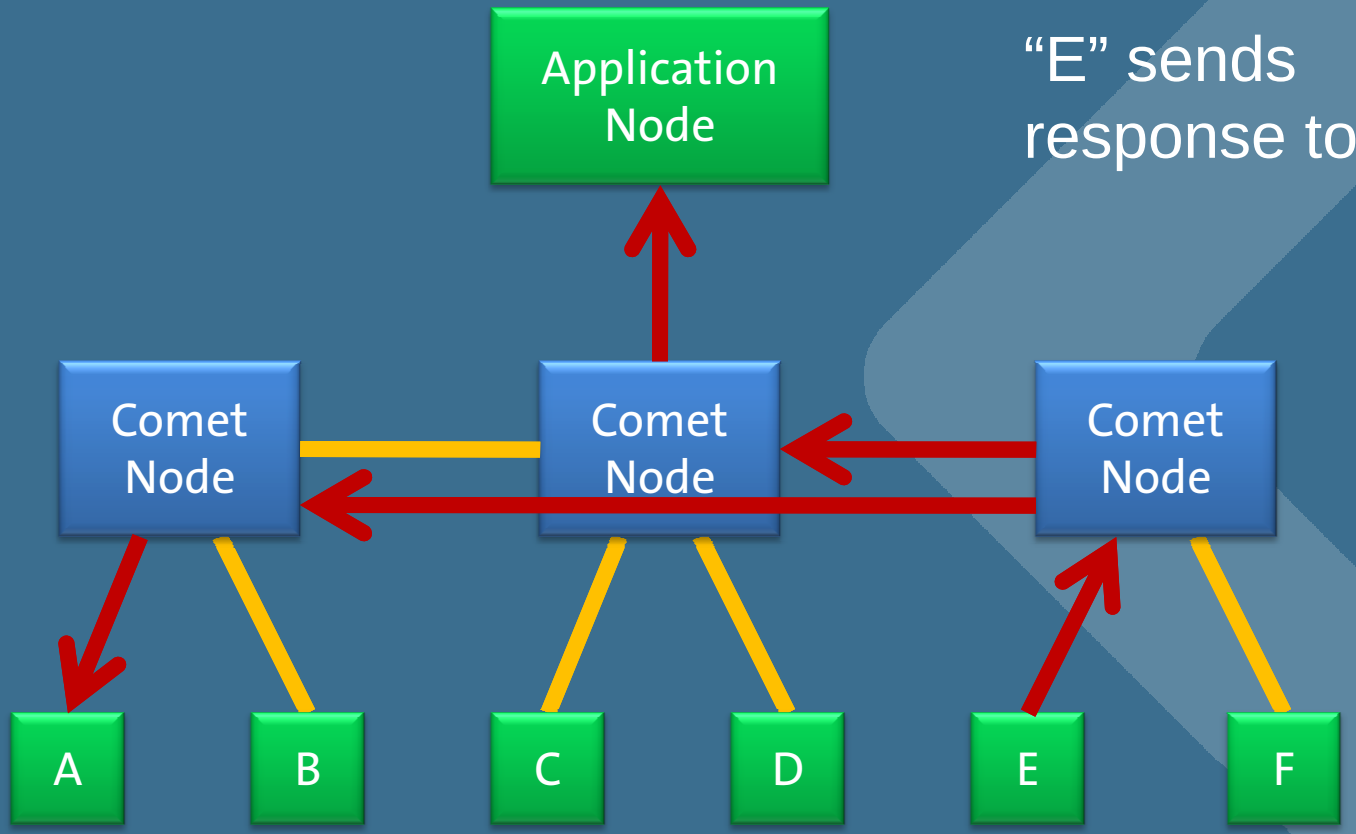
# Horizontal Scaling




"E" sends response to "A"

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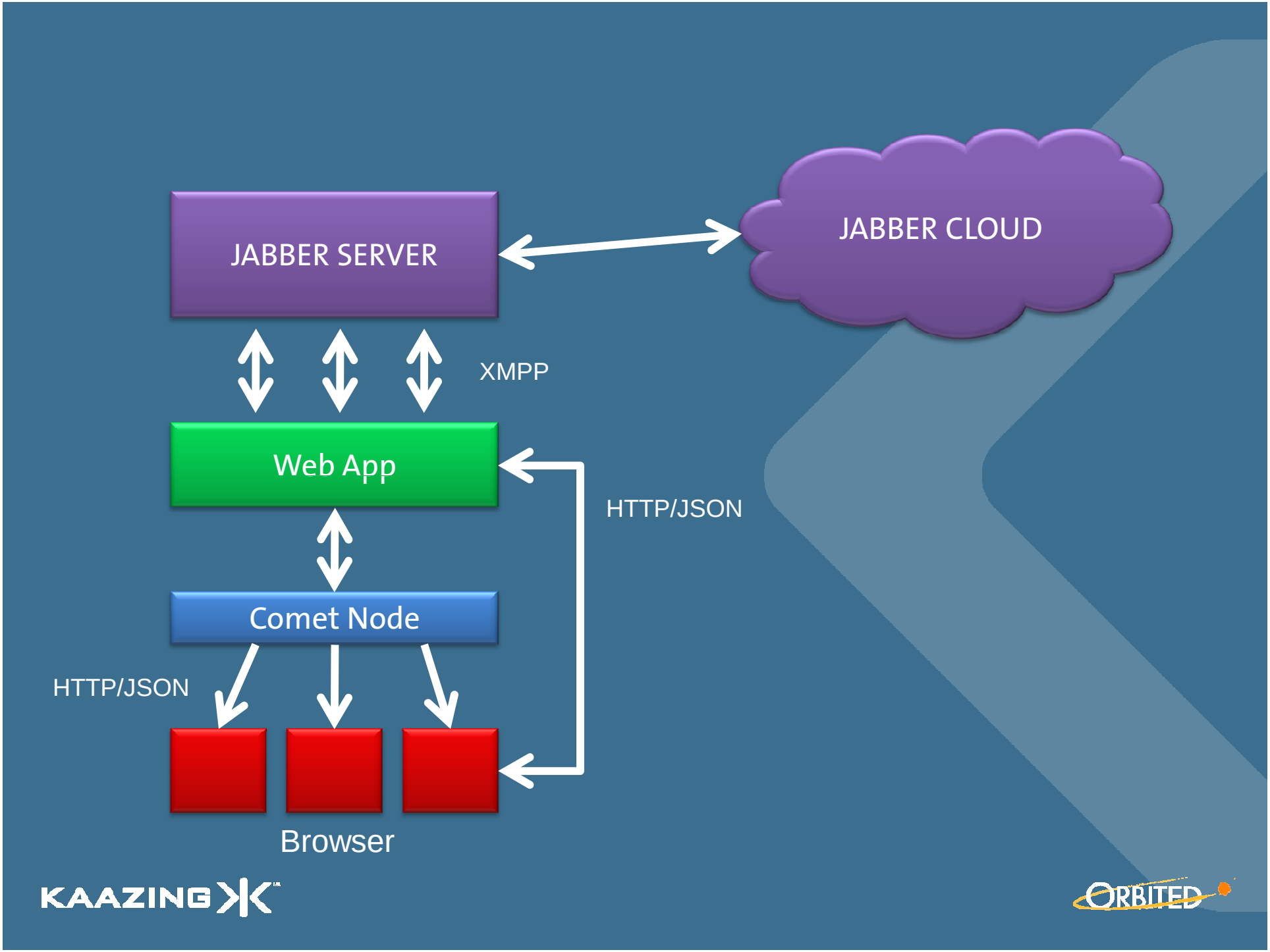
JABBER SERVER
JABBER CLOUD
XMPP
Web App
HTTP/JSON
Comet Node
HTTP/JSON
Browser
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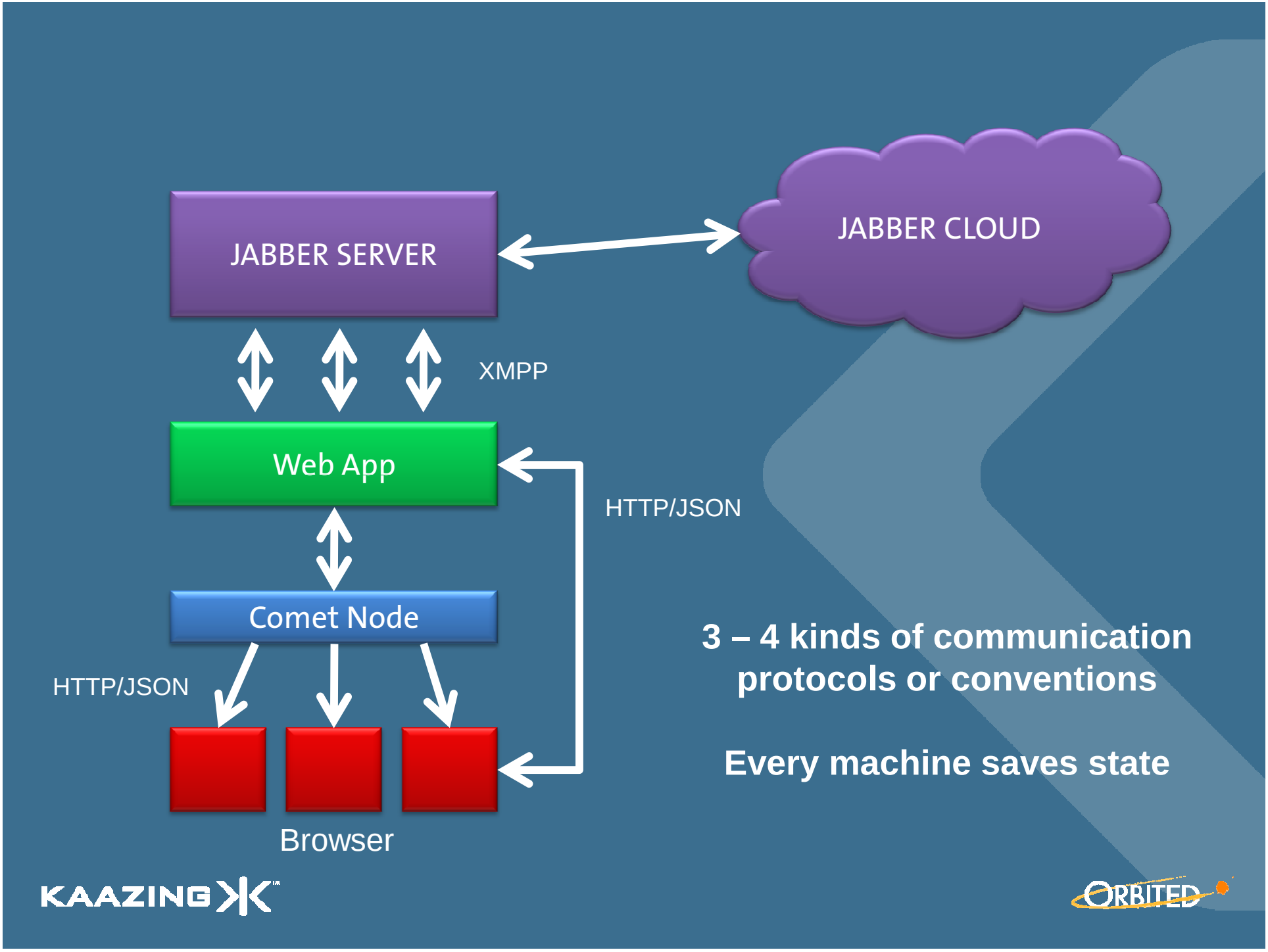
JABBER SERVER
JABBER CLOUD
XMPP
Web App
HTTP/JSON
Comet Node
HTTP/JSON
Browser
3 – 4 kinds of communication protocols or conventions
Every machine saves state
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# TCPConnection

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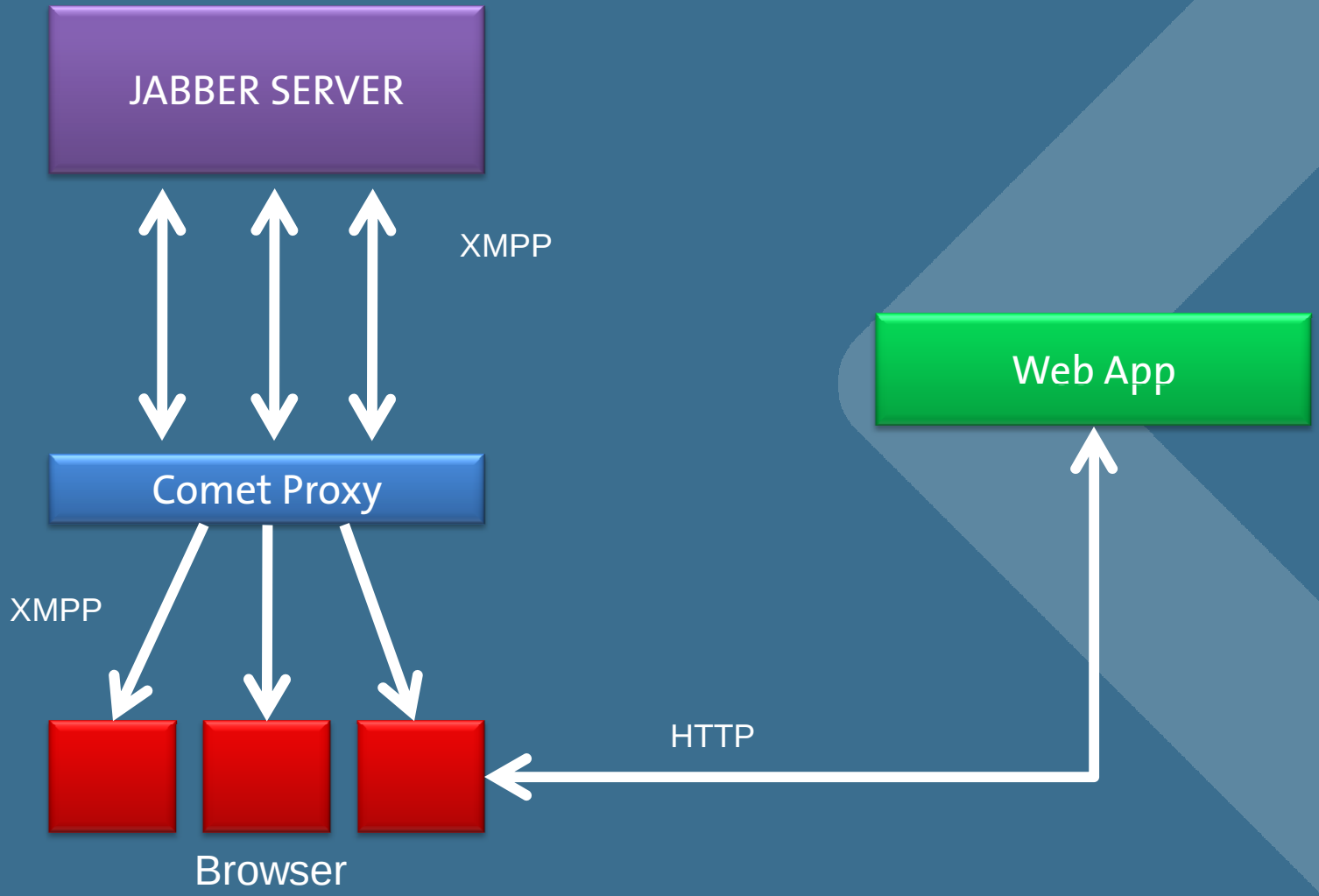


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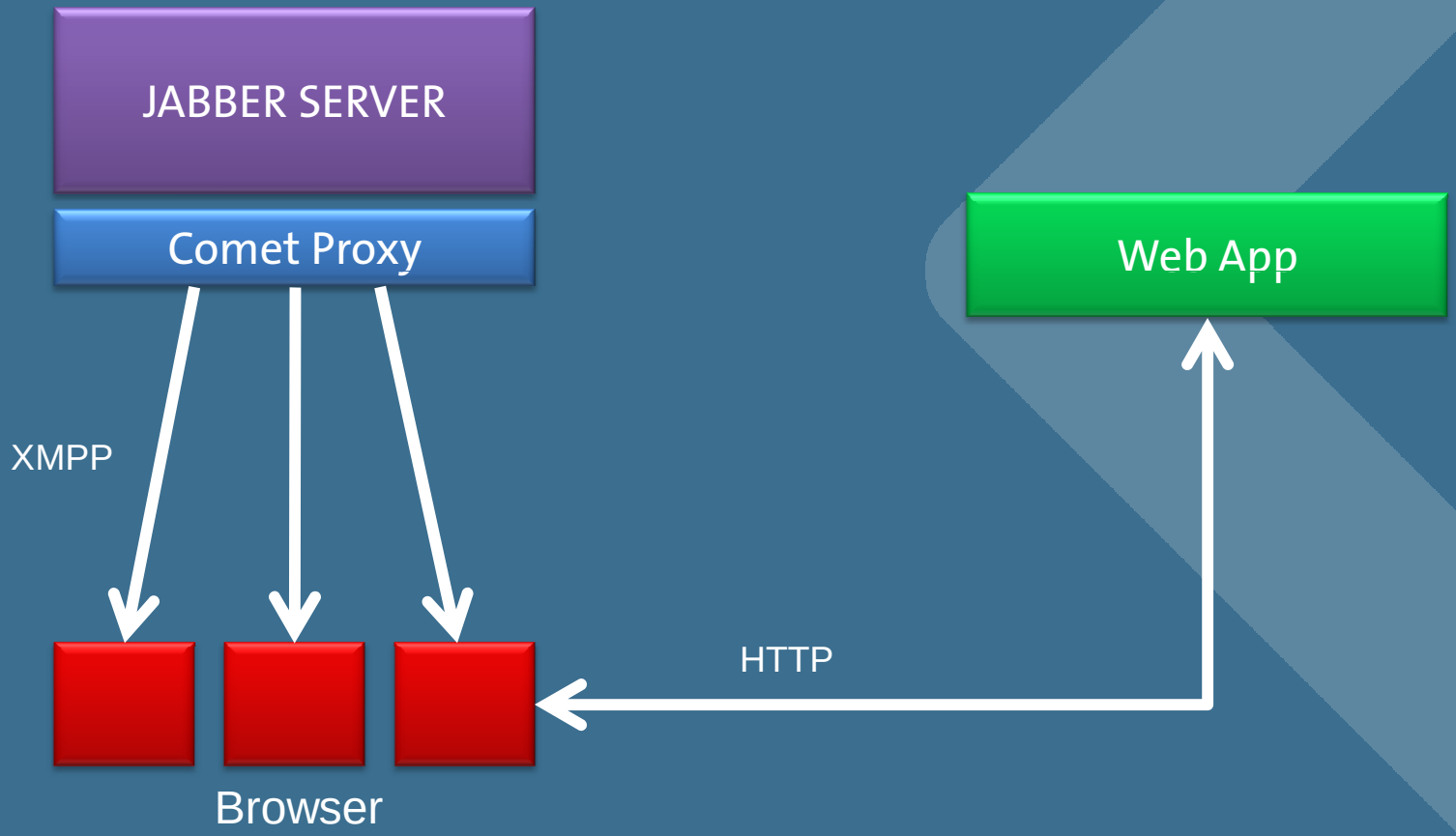


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# Phew!

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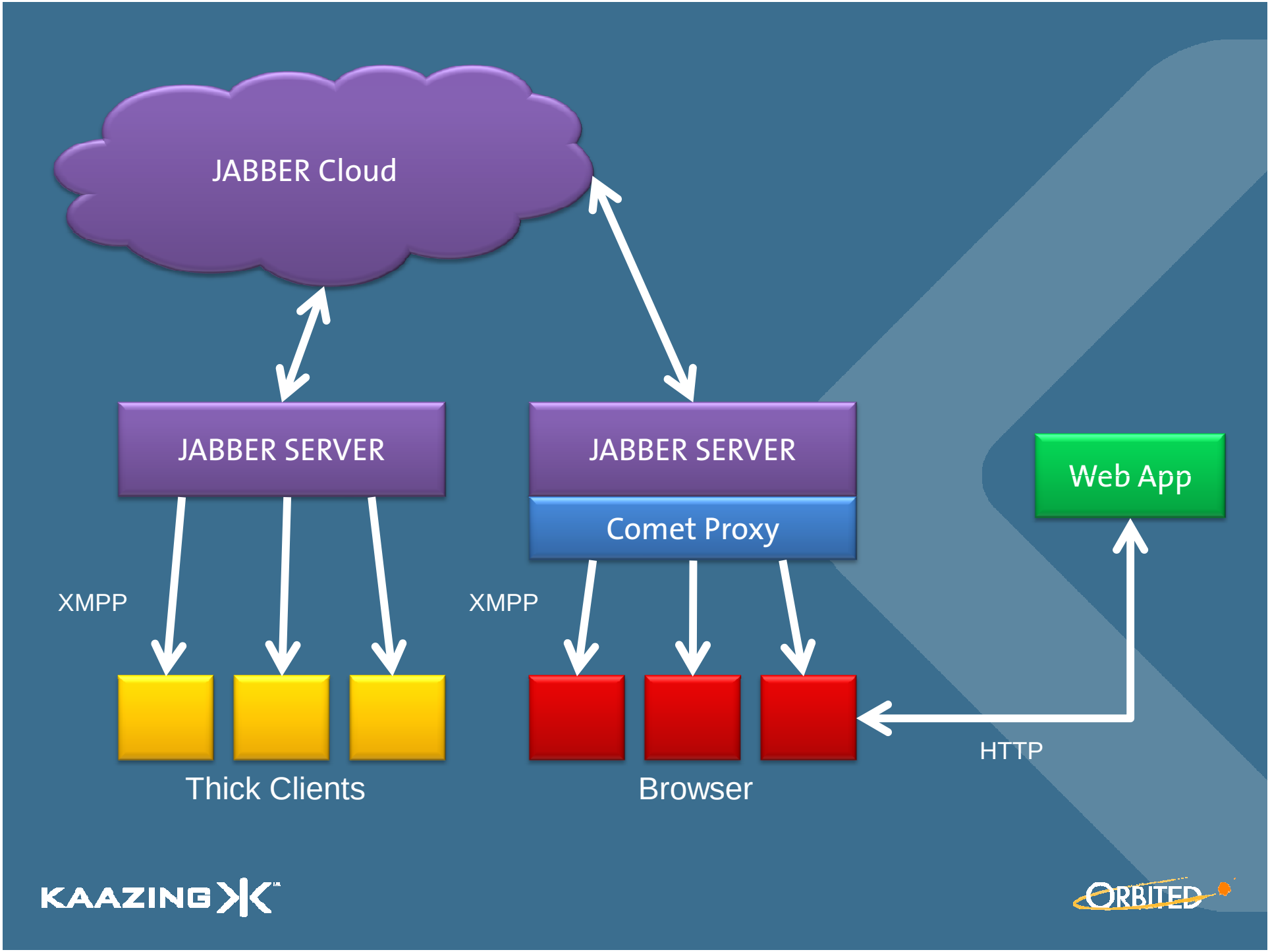
JABBER Cloud
JABBER SERVER
JABBER SERVER
Comet Proxy
Web App
XMPP
XMPP
HTTP
Thick Clients
Browser

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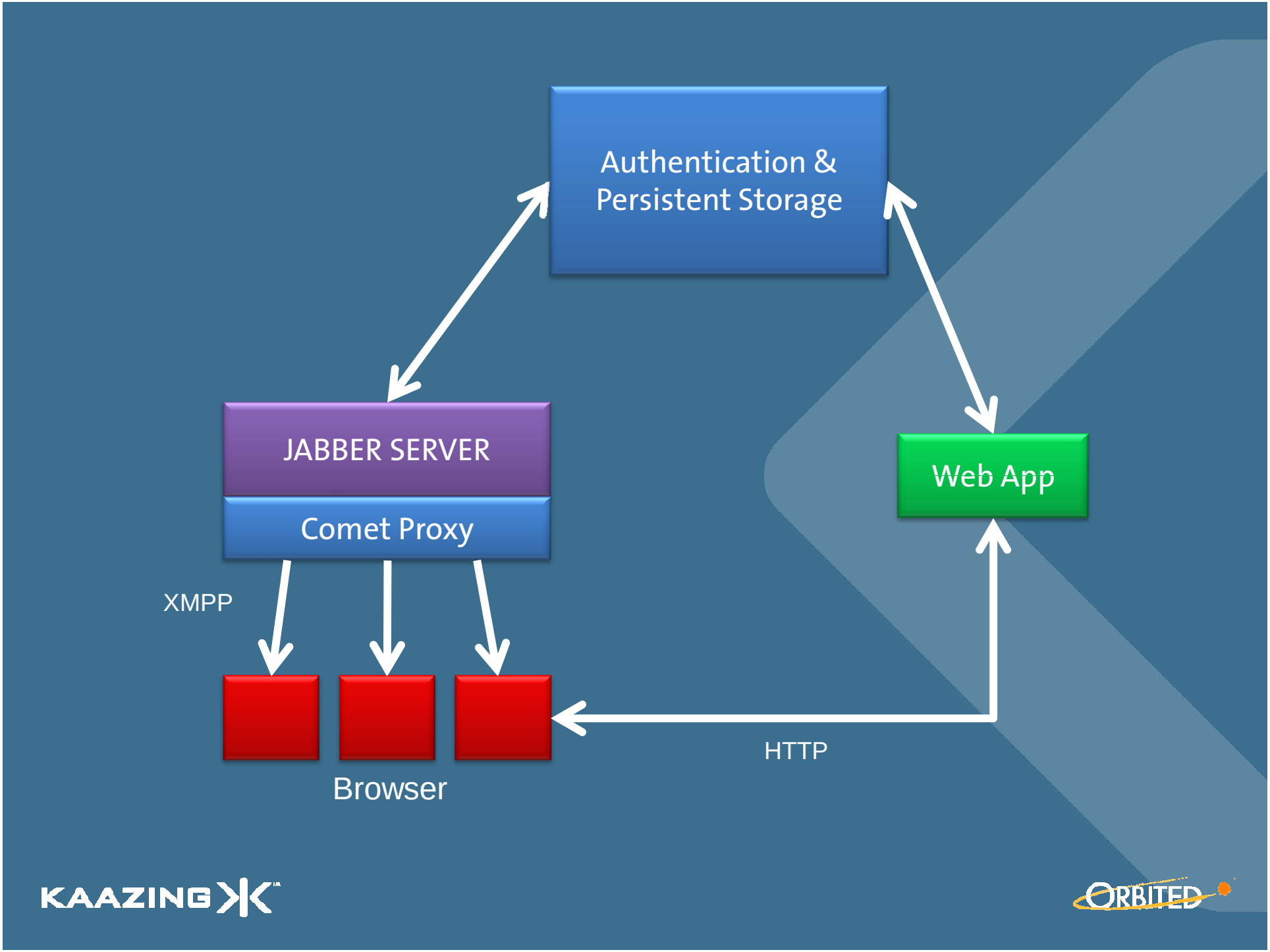
Authentication &
Persistent Storage
JABBER SERVER
Comet Proxy
Web App
XMPP
HTTP
Browser

# Aim Right the First Time!

photo by Diane Allison-Stroud

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# DEMO

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# Q&A

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# Michael Carter

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