



# XMPP Protocol

The Extensible Messaging and Presence Protocol

Tehran Linux User Group  
Hamidreza Soleimani  
September 01, 2014

## What is it

It is

- eXtensible
- Messaging & Presence
- Protocol

It is not

- Binary Protocol
- General Purpose
- Server or Daemon

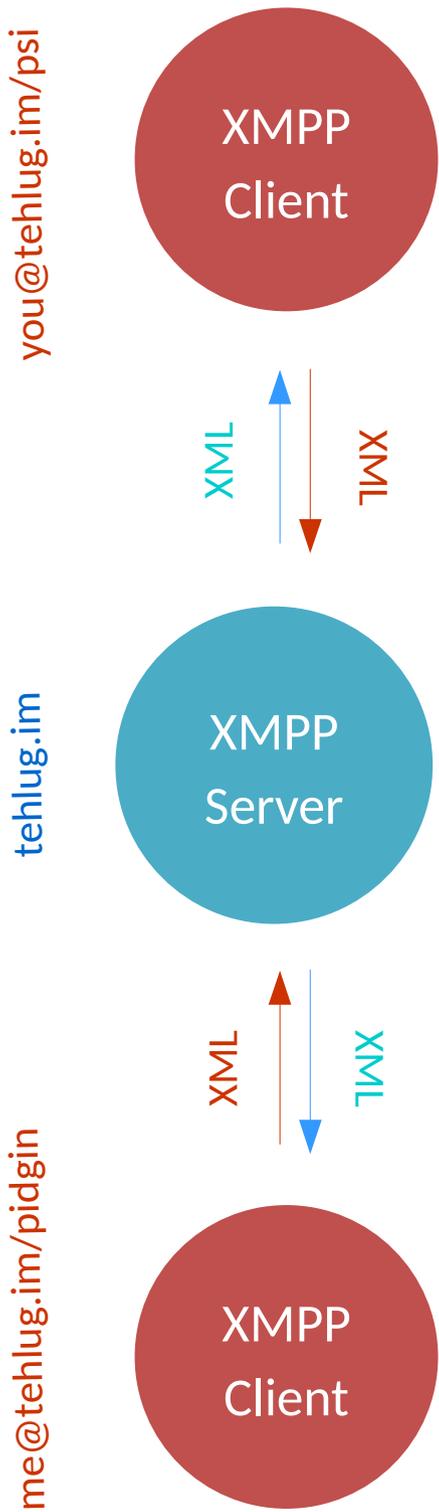
And also

- Open Protocol
- Application Layer
- XML Based
- Asynchronous
- Long Lived Connection



- 1998** **Jabber Protocol Was Invented**  
By Jeremie Miller to scratch his itch
- 1999** **First Release of JabberD**
- 2000** **Open-Source Community and Jabber**  
Many open-source clients were developed  
Its Java and Perl library were developed  
Details of its wire protocol was documented  
JabberD version 1.0 was released
- 2004** **IETF and Jabber**  
XMPP Protocol published [RFC 3290-1]
- 2005** **Google and XMPP**  
GTalk launched over XMPP
- 2008** **Cisco and XMPP**  
Jabber Inc. was acquired by Cisco Co.
- 2010** **Facebook and XMPP**  
Facebook opened up XMPP interface for its chat
- 2011** **Modified XMPP by IETF**  
[RFC 6120-1]

# Primitives



XML Stream

```
<presence
  from="me@tehlug.im/pidgin"
  to="tehlug.im"/>

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

<message
  from="me@tehlug.im/pidgin"
  to="you@tehlug.im">
  <body>Hello dude!</body>
</message>

[ ... ]

<presence
  from="me@tuhlug.im/pidgin"
  to="tehlug.im"
  type="unavailable"/>
```

Stanza

# Usage

Instant  
Messaging

Group Chat  
VOIP

Whats app  
Gtalk  
Nimbuzz

Chesspark

Gaming

Collaboration

Cisco WebEx

Vehicle  
Tracking

Geo-location

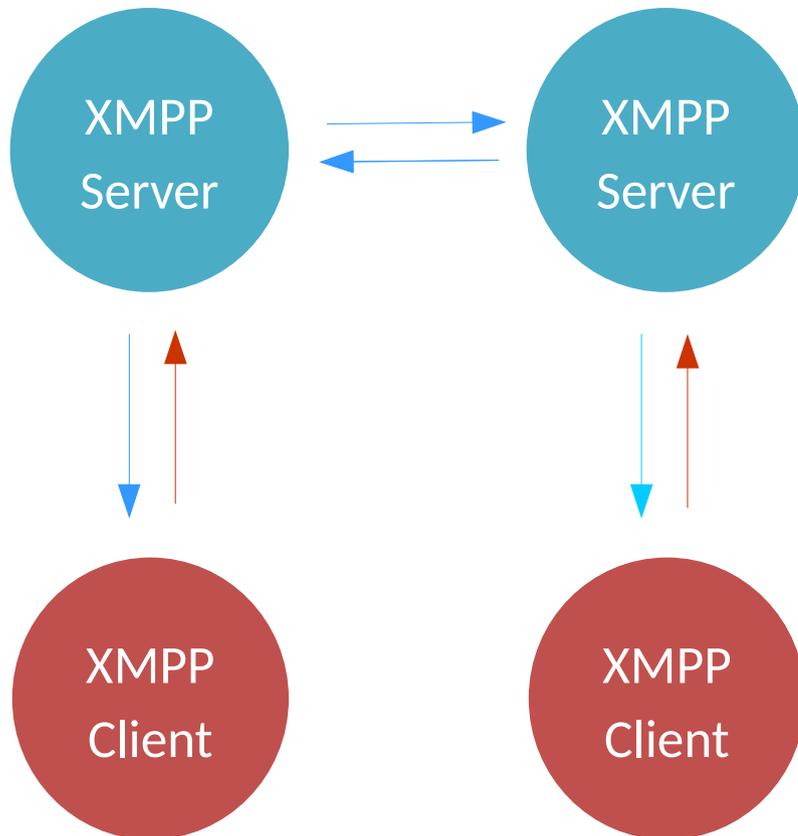
VM  
Management

Archipel

vs. HTTP

## XMPP

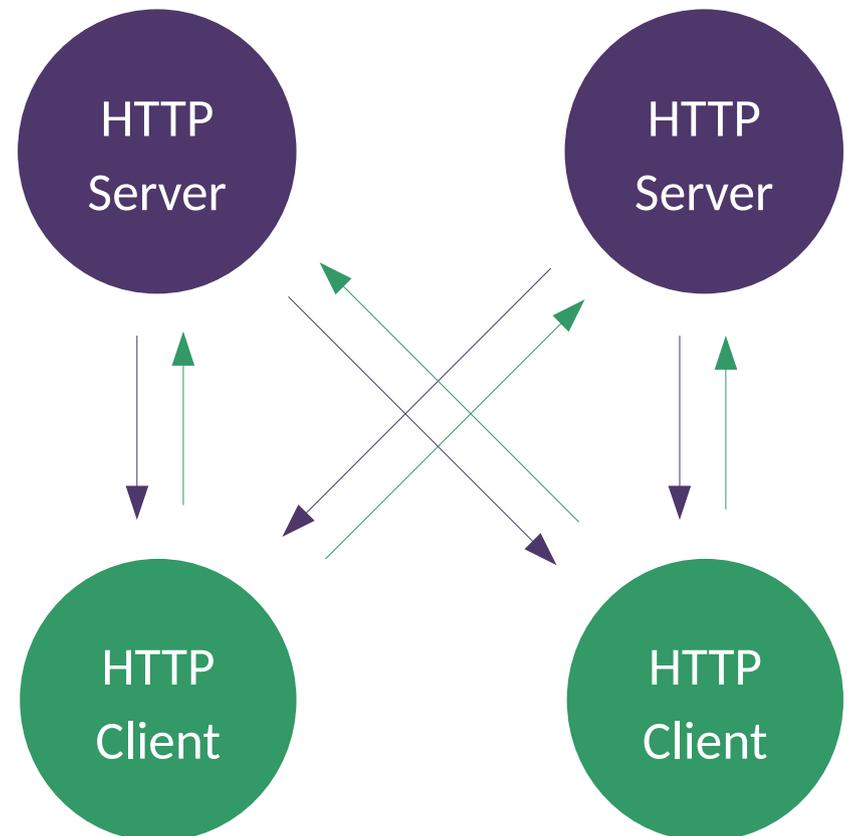
Asynchronous  
Federated  
Limited Purpose



vs.

## HTTP

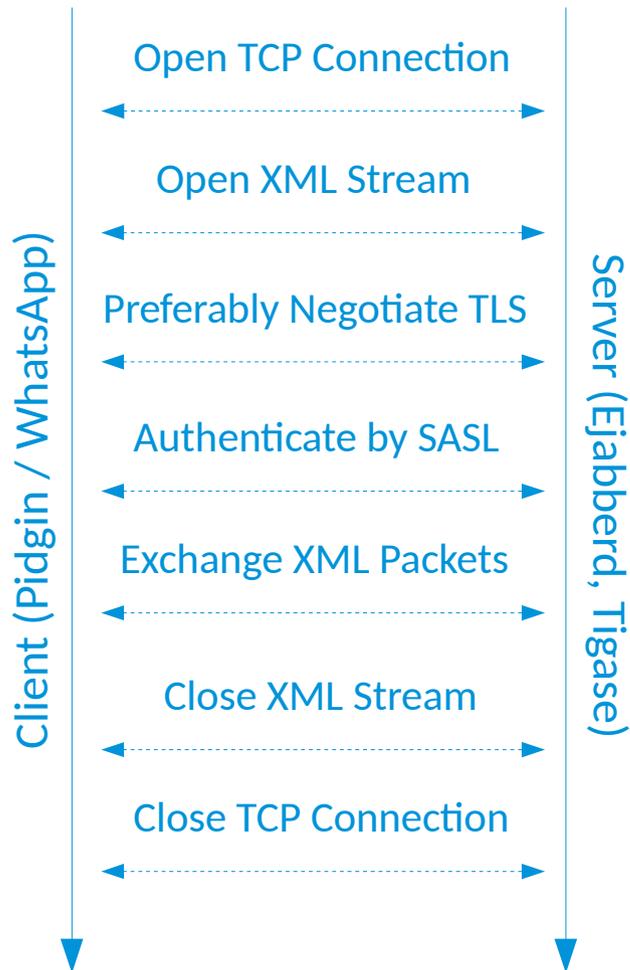
Synchronous  
Unfederated  
General Purpose



# Transports

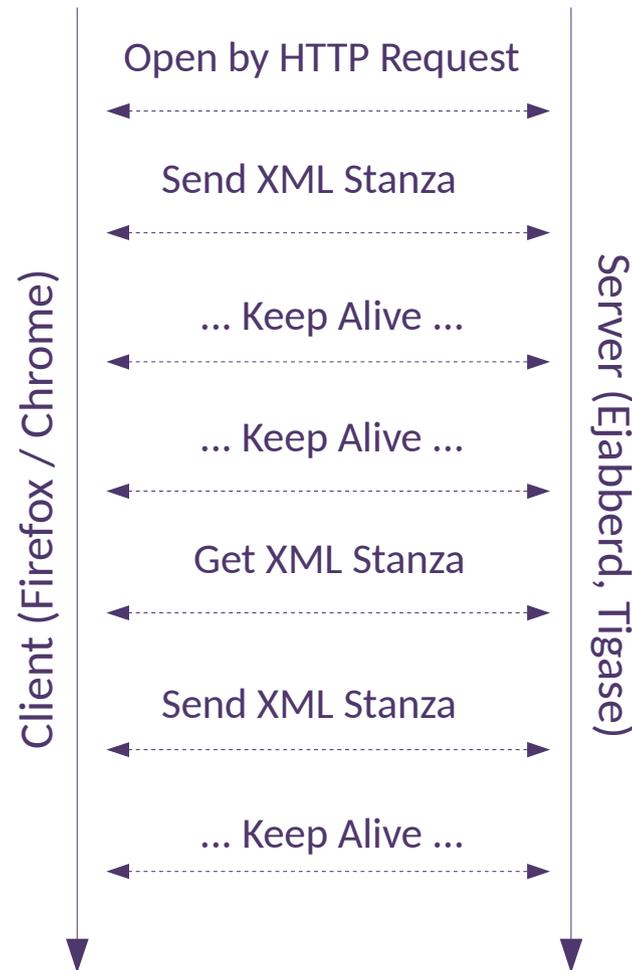
## TCP

Transmission Control Protocol



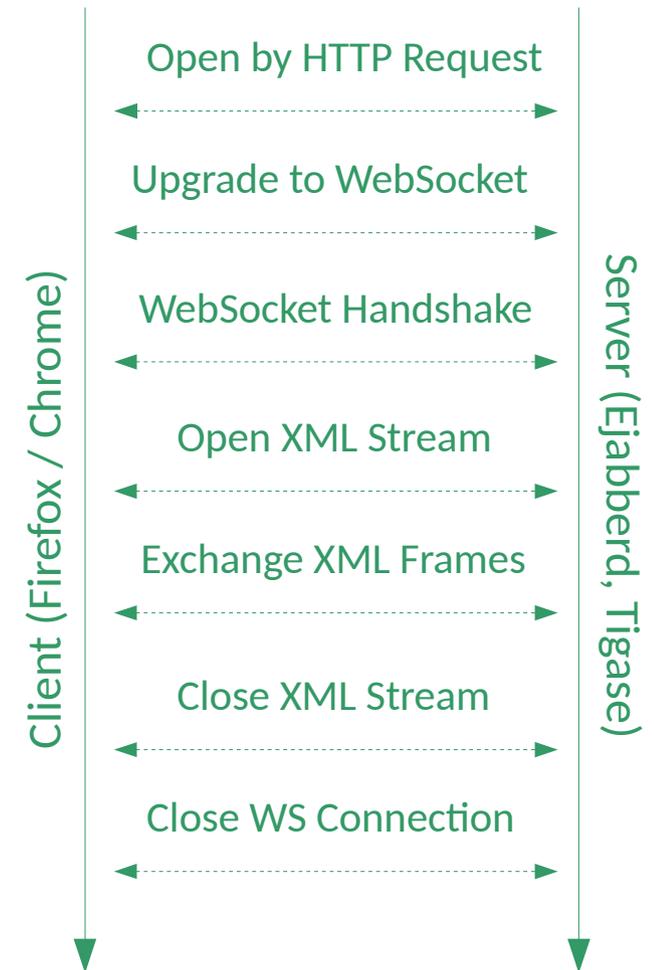
## BOSH

Bidirectional stream Over Synchronous HTTP

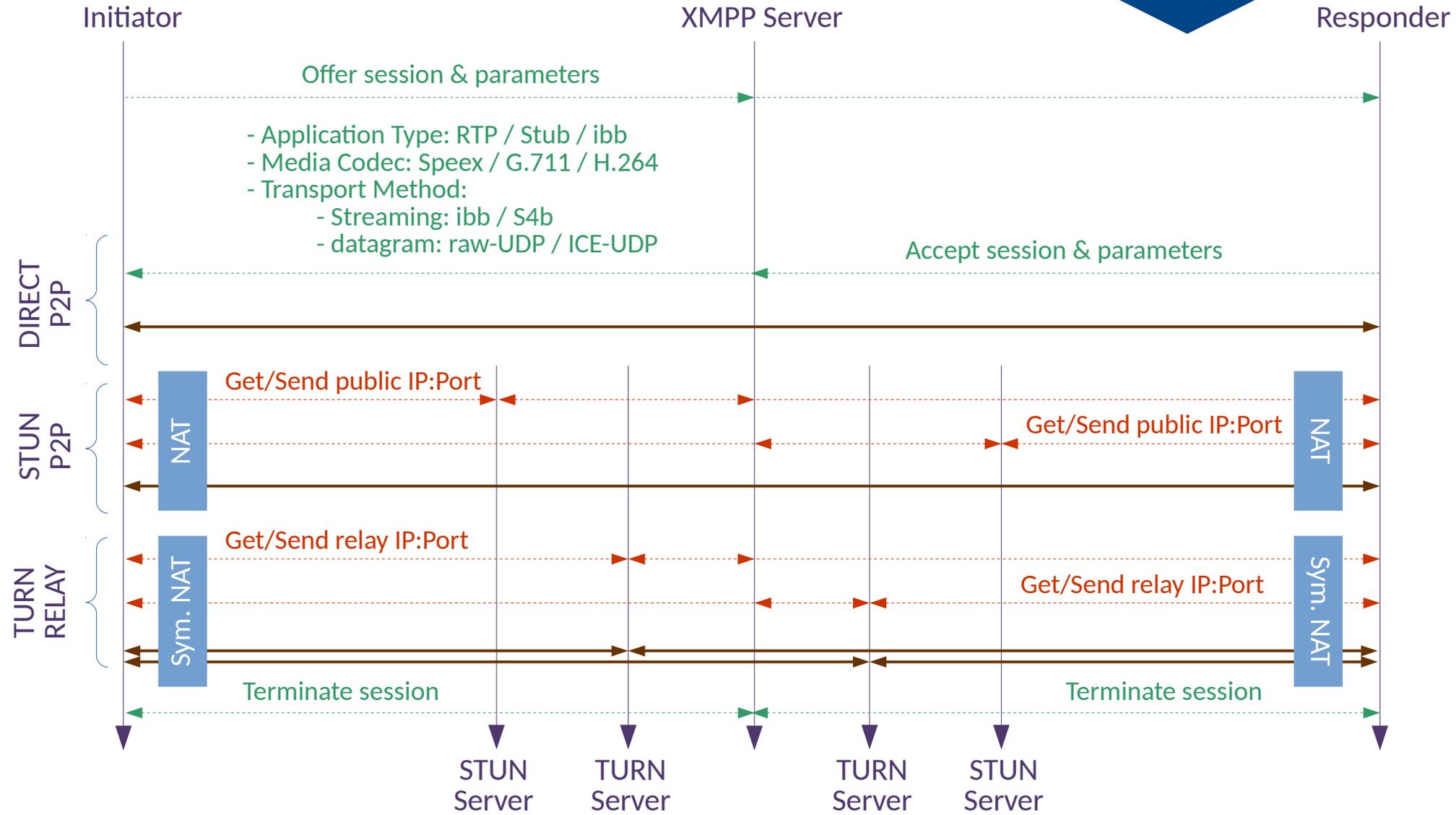


## WebSocket

Long Lived Connection Over HTTP



# Jingle



- ↔ XMPP Signaling Channel
- ↔ ICE Signaling Channel
- ↔ Media Exchange Channel

- ICE: Interactive Communication Establishment
- STUN: Session Traversal Utilities for NAT
- TURN: Traversal Using Relay around NAT



Question?

[Hamidreza-s.github.com](https://github.com/Hamidreza-s)