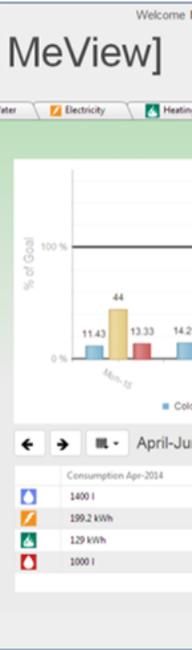
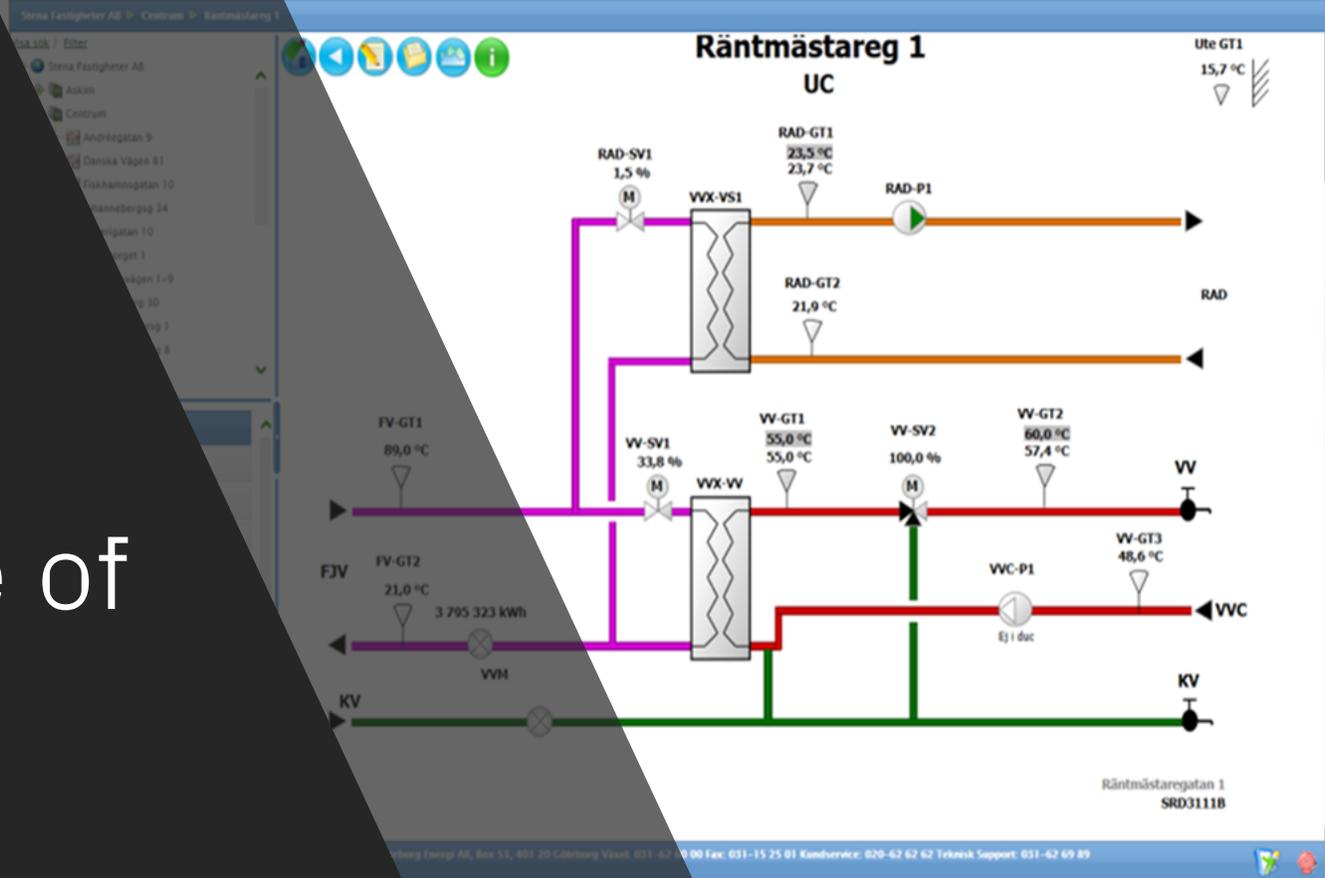


Me



20 Years experience of Building Automation



2007

Telia Servicekanalen

Den smarta vägen till kommunikation med hushållen

...boka tvättid

...kolla elförbrukningen

...kolla busstider

...meddelande till boende

Så här använder du Servicekanalen

Hjälpknappen

När du trycker på den här knappen får du en beskrivning av de funktioner som visas på skärmen. Hjälpknappen finns med på alla sidor.

Hem till huvudmenyn

Hemknappen tar dig omedelbart tillbaka till startsidan. Den finns med på alla sidor.

10

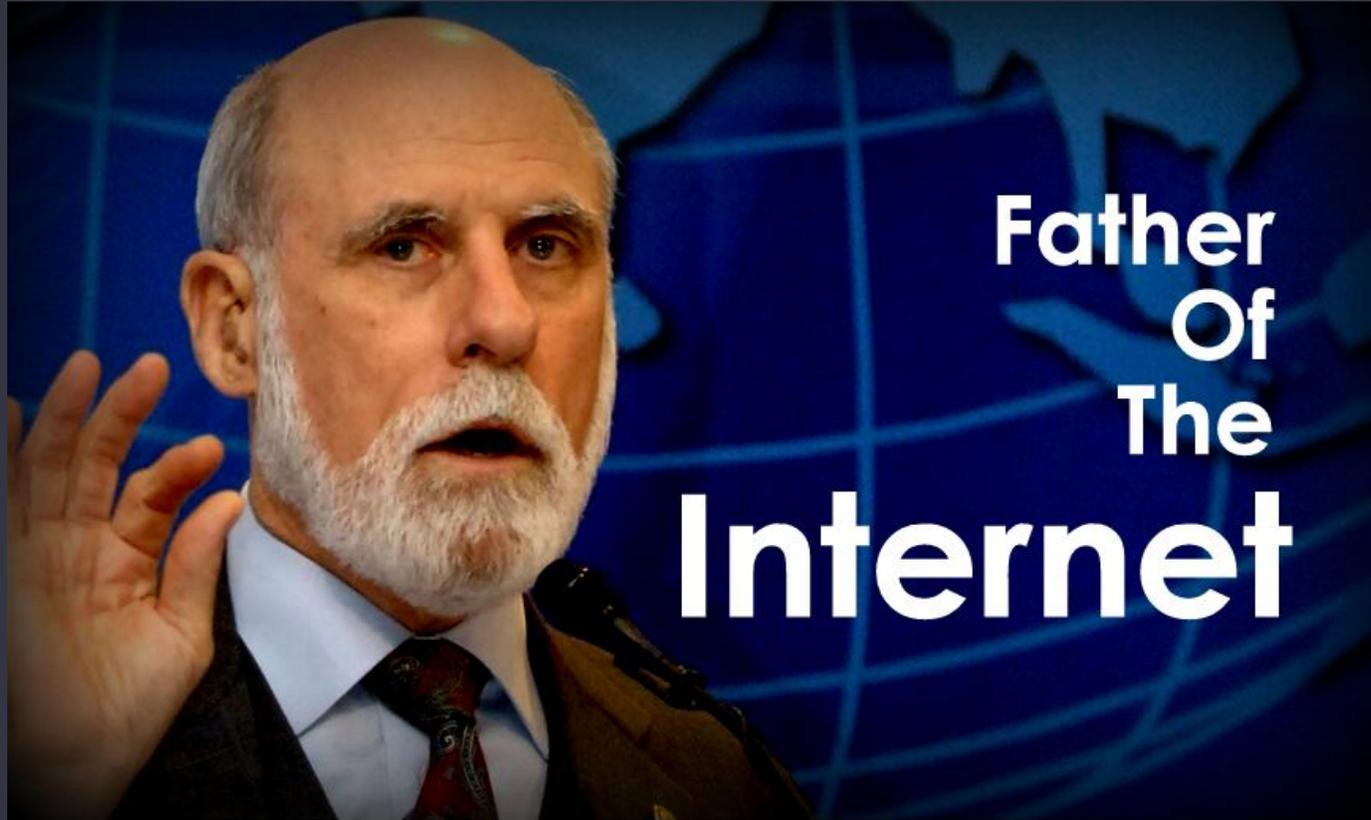


Network Society
Research



SINGULARITY
UNIVERSITY

Internet of Things Ambassador



“I would not propose HTTP for IOT interoperability either for a lot of reasons.”
– Vint Cerf (email to me)



IEEE

Member of ISO/IEC/IEEE WD 21451-1-4

Standard for a Smart Transducer Interface for Sensors, Actuators, and Devices
- eXtensible Messaging and Presence Protocol (XMPP) for Networked Device
Communication.



Committee of ISO/IEC JCT1/WG10

This work item specifies IoT conceptual reference model, and reference architecture from different architectural views, common entities, and interfaces between IoT domains.



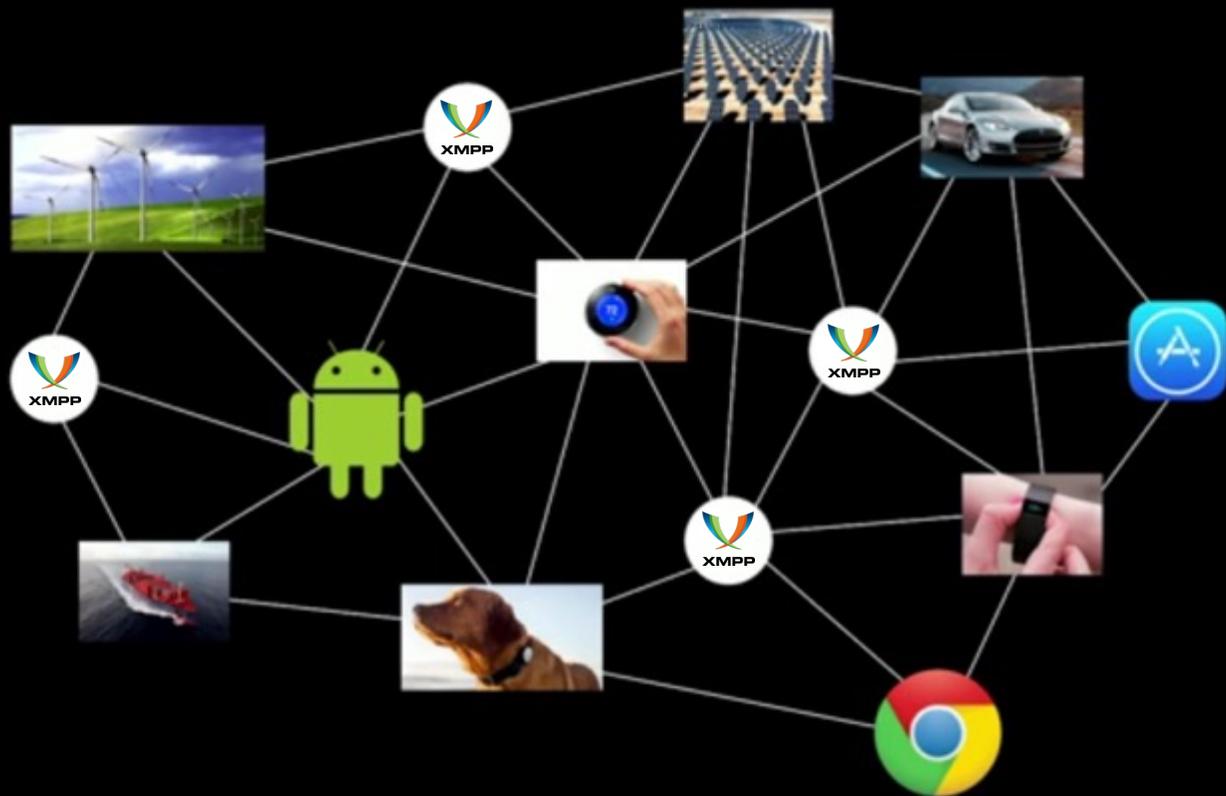


Lead at IoT
Special
Interest
Group



XMPP



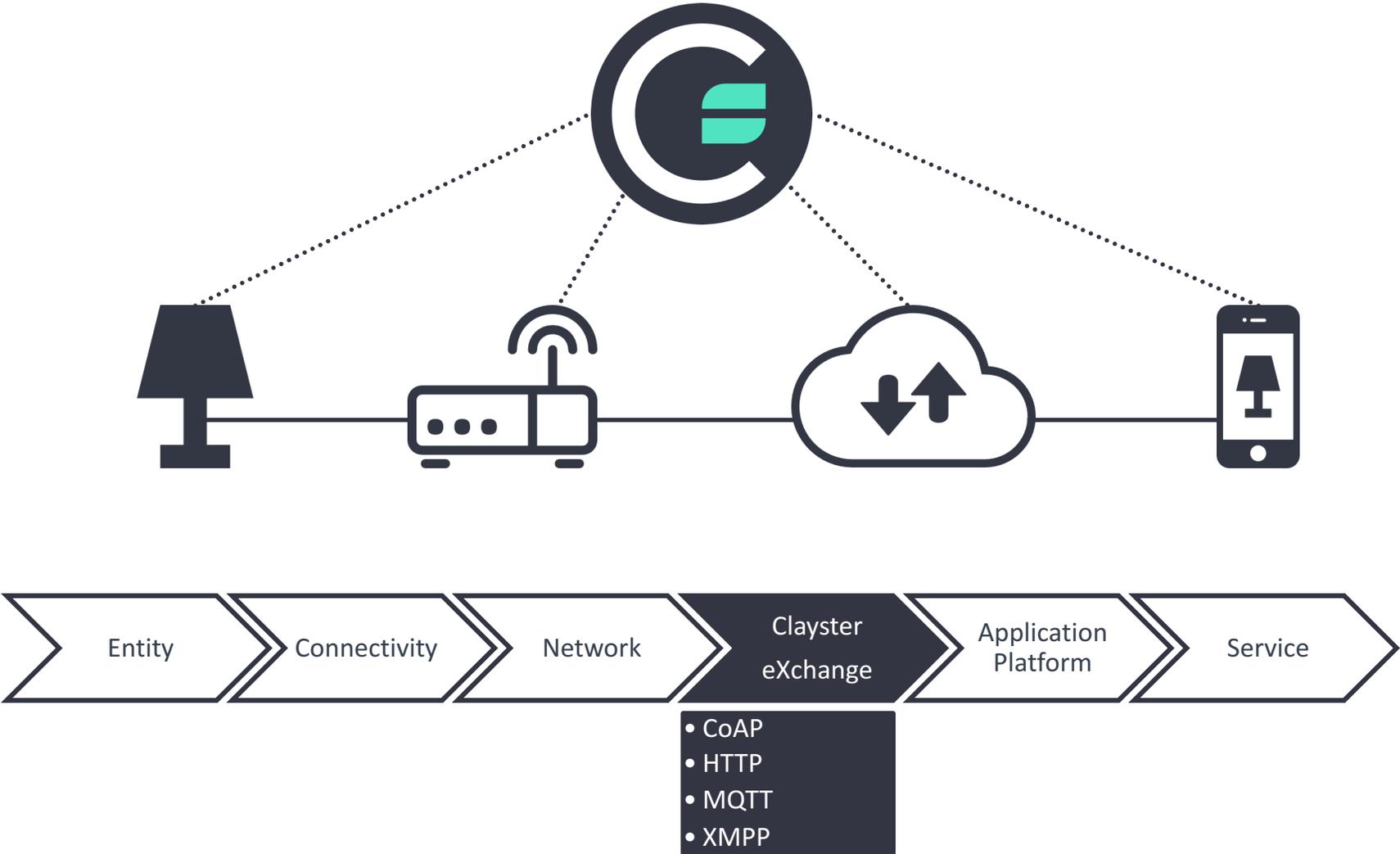


Clayster

Give Physical a Secure Digital Life.



Clayster eXchange (TTP): "It represents an entity that can broker trust relationships between entities that may belong within the same administrative domain or outside. The TTP may also facilitate in providing credential registration as well as credential requisition services." – oneM2M





RISK ASSESSMENT —

Brace yourselves—source code powering potent IoT DDoSes just went public

Release could allow smaller and more disciplined Mirai botnet to go mainstream.

DAN GOODIN - 10/3/2016, 12:39 AM



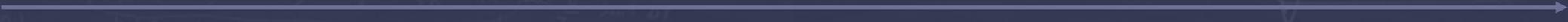
Michael Theis

confidential

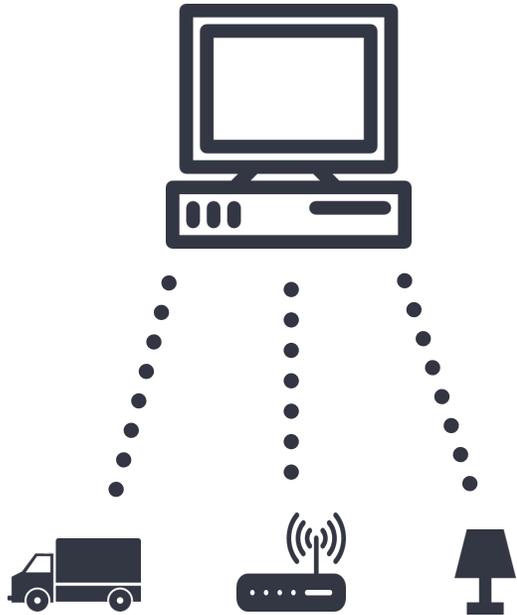




From Centralized to Distributed



One – To – One



Yesterday

One – To – Many



Today

Many – To – Many



Tomorrow





XMPP

e**X**tensible **M**essaging and **P**resence **P**rotocol



XMPP

TLS

TCP

IP

Why XMPP

Open

The XMPP protocols are free, open, public, and easily understandable.

Standard

The Internet Engineering Task Force (IETF) has formalized the core XML streaming protocols as an approved instant messaging and presence technology.

Proven

The first Jabber/XMPP technologies were developed by Jeremie Miller in 1998.

Decentralized

The architecture of the XMPP network is similar to email. No single point of failure. No central master server.

Secure

Robust security using SASL and TLS has been built into the core XMPP specifications. The XMPP developer community is actively working on end-to-end encryption to raise the security bar even further.

Extensible

Anyone can build custom functionality on top of the core protocols; to maintain interoperability, common extensions are published in the XEP series.





“WhatsApp uses a customized version of the open standard eXtensible Messaging and Presence Protocol (XMPP)” – Wikipedia

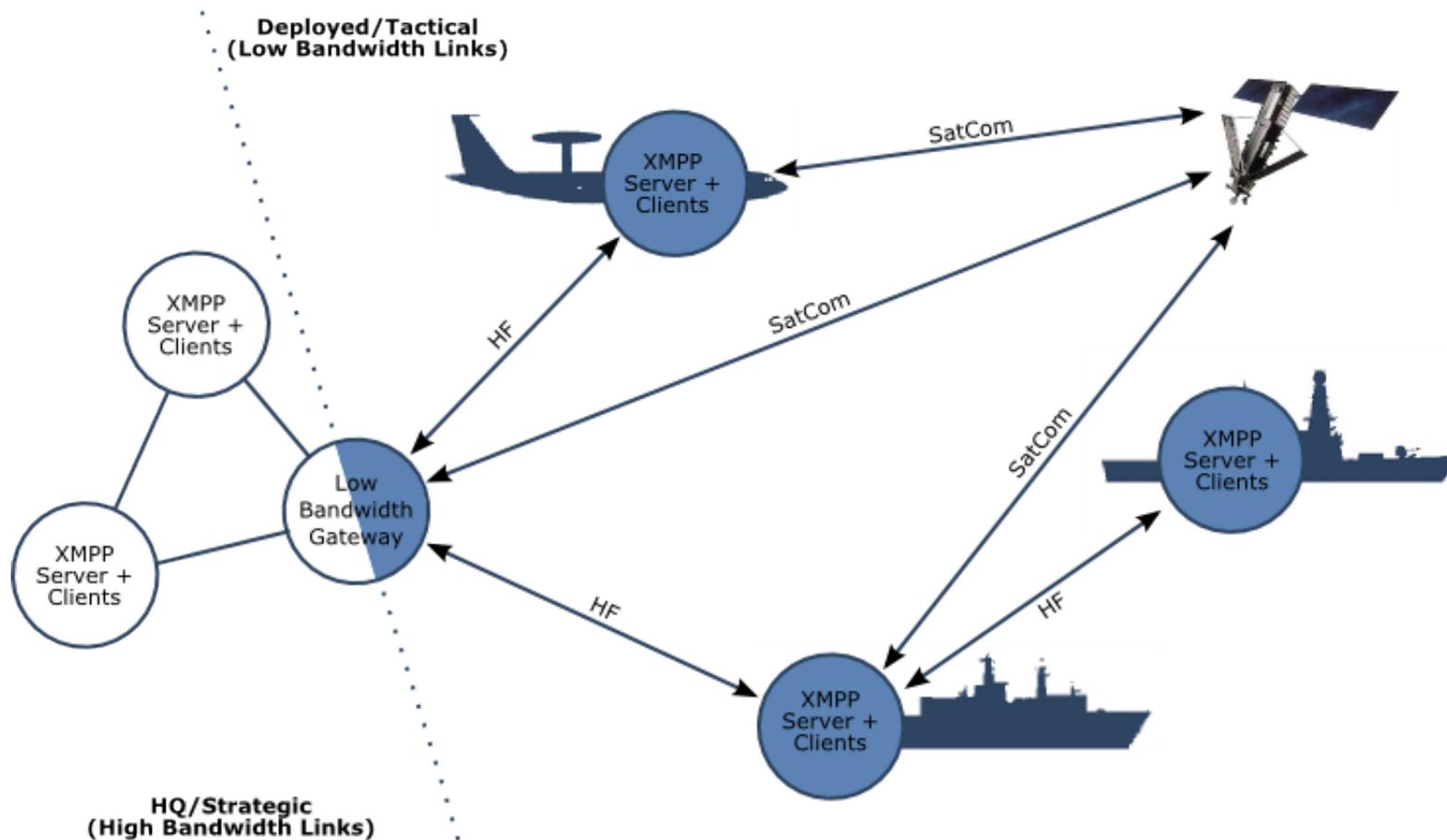
“It supports over 800 million active users and 30 billion messages daily and is an iconic example of a reliable and scalable messaging solution.” – Erlang Solutions

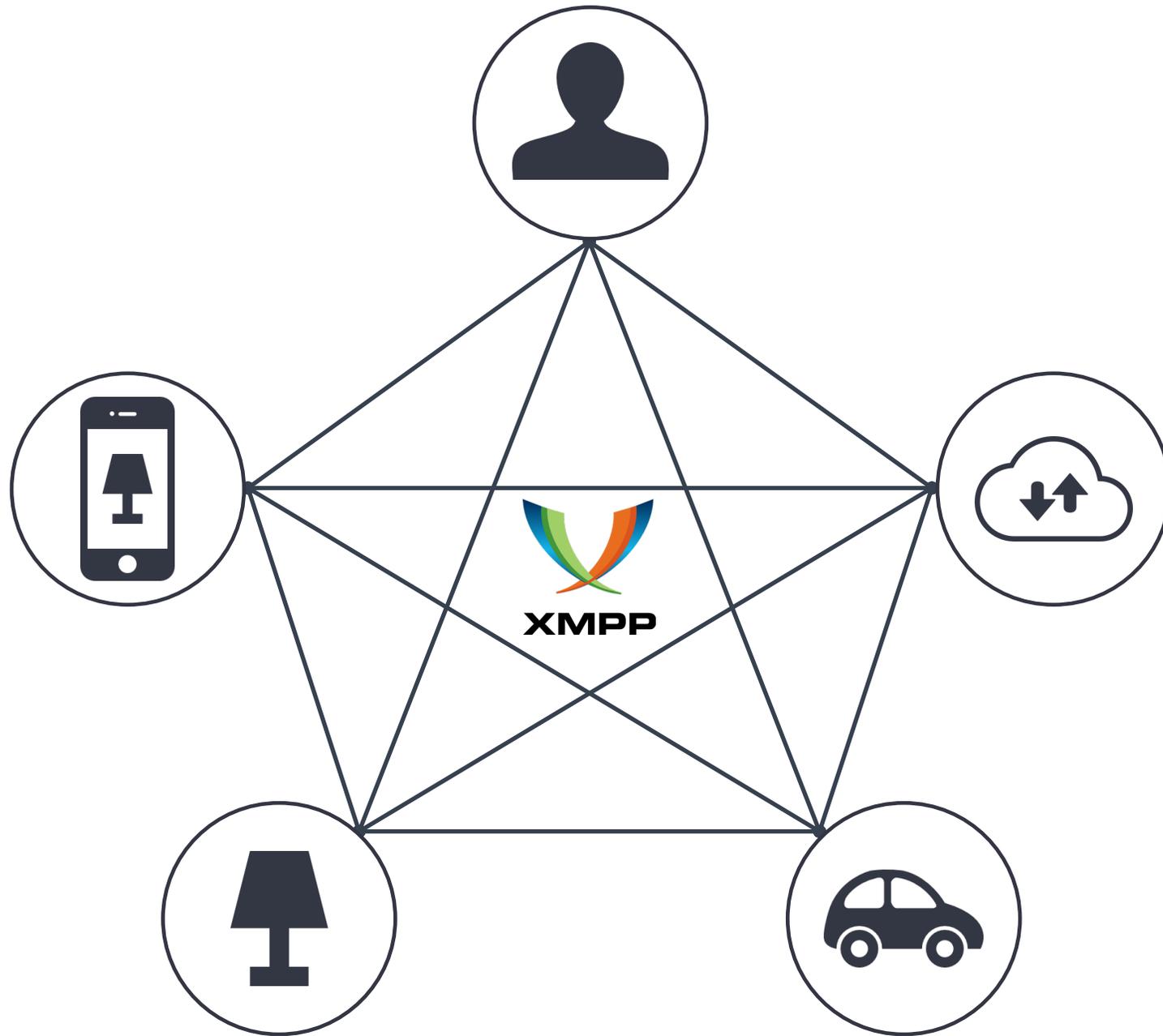


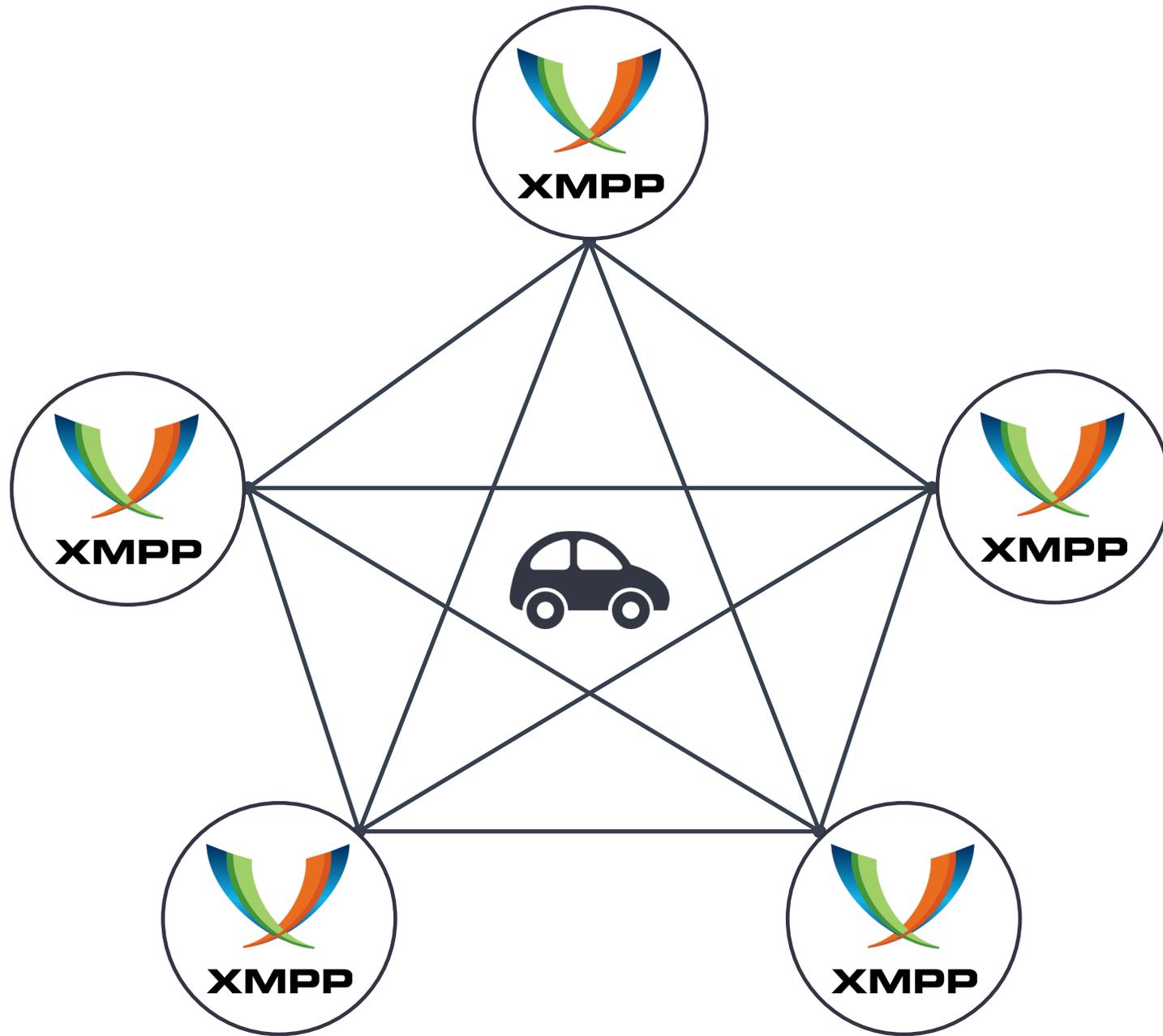
“How would you build a chat service that needed to handle 7.5 million concurrent players, 27 million daily players, 11K messages per second, and 1 billion events per server, per day?”

“Making it work meant starting with XMPP as a base for chat. WhatsApp followed the same strategy. Out of the box you get something that works and scales well...” - <http://highscalability.com/>

Military Grade Security





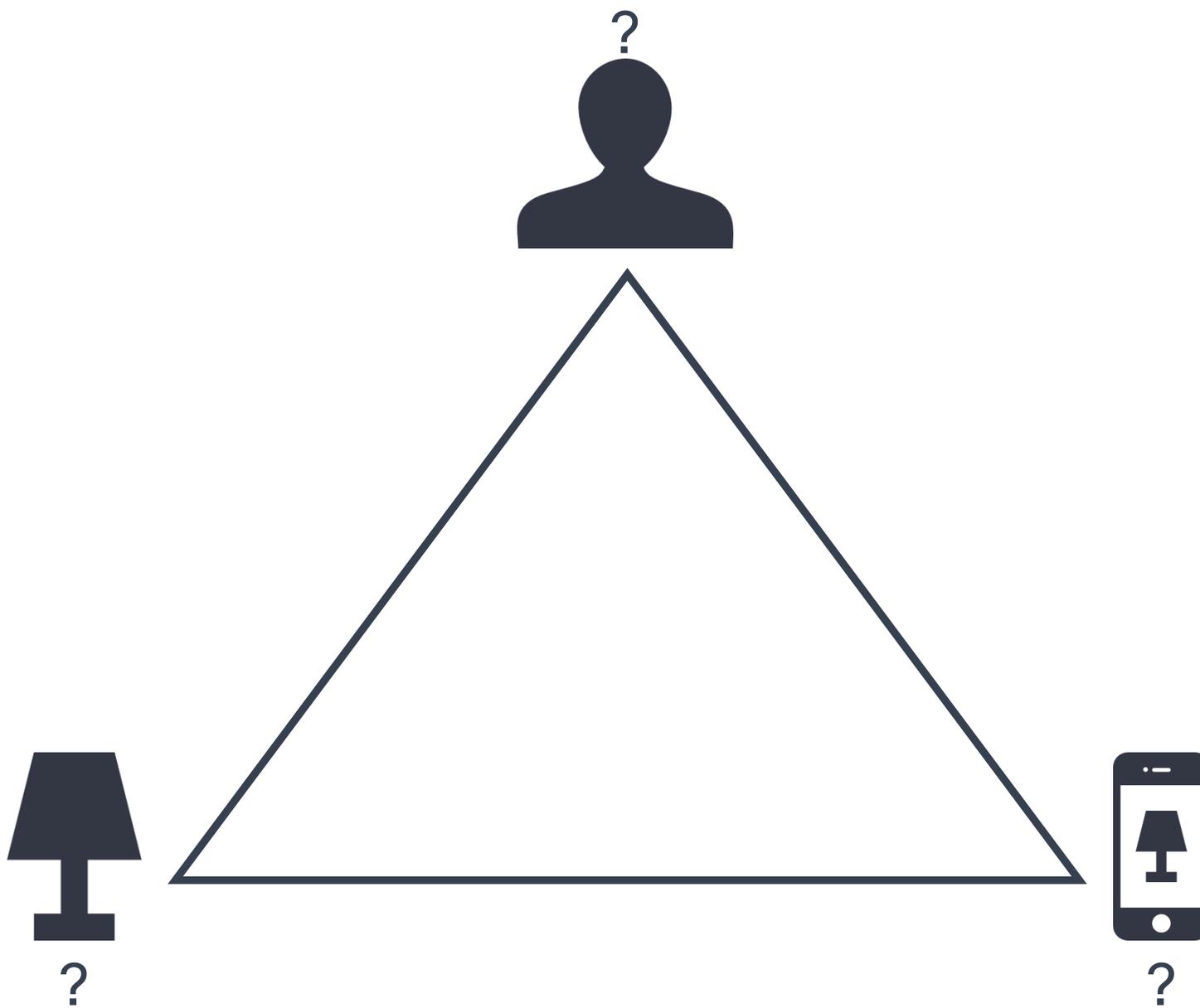




Identity, Security & Privacy

Identity





JID

name@domain.com



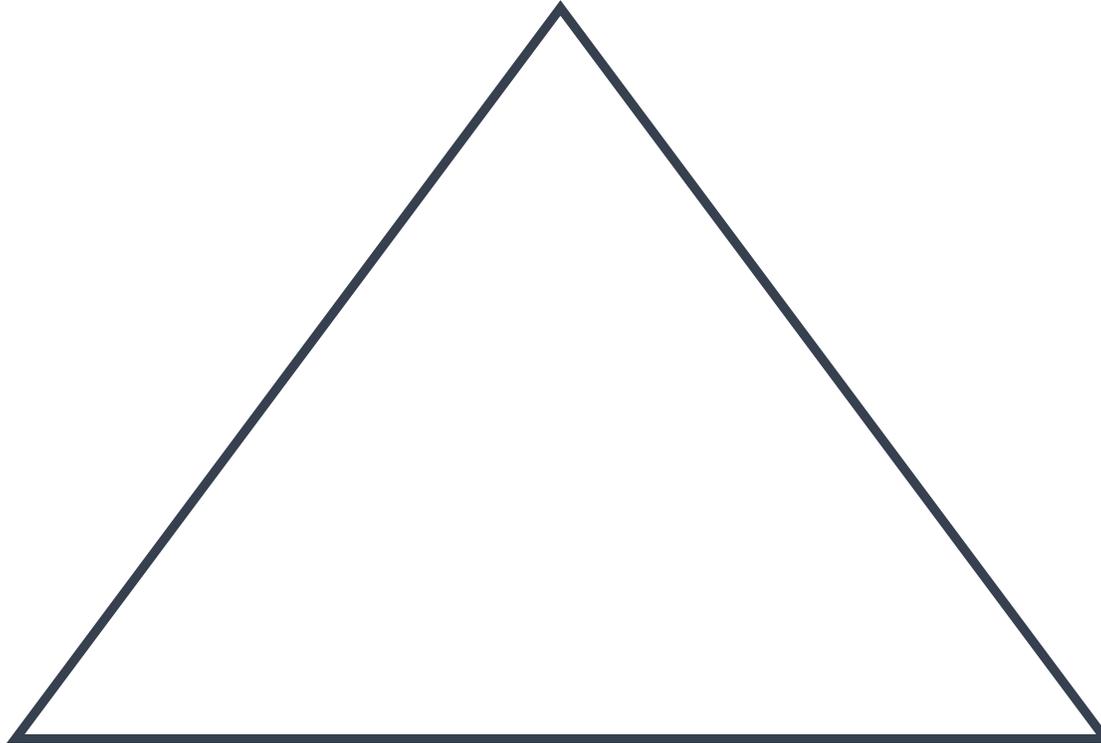
owner@domain.com



lamp@domain.com

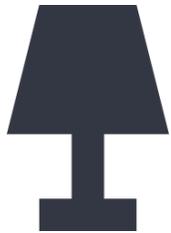


service@domain.com

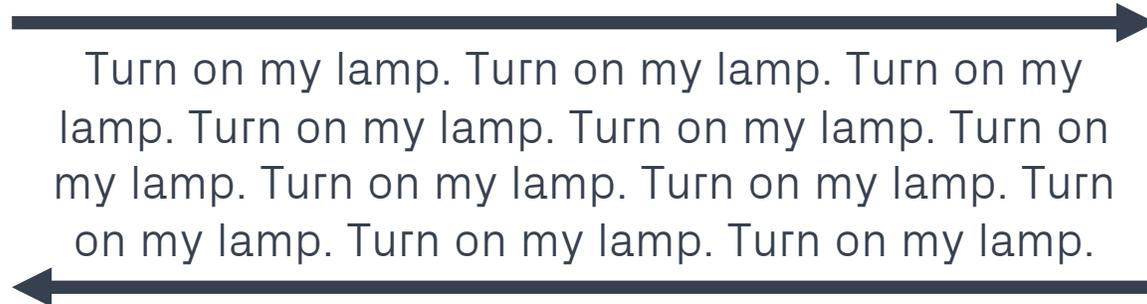


Security

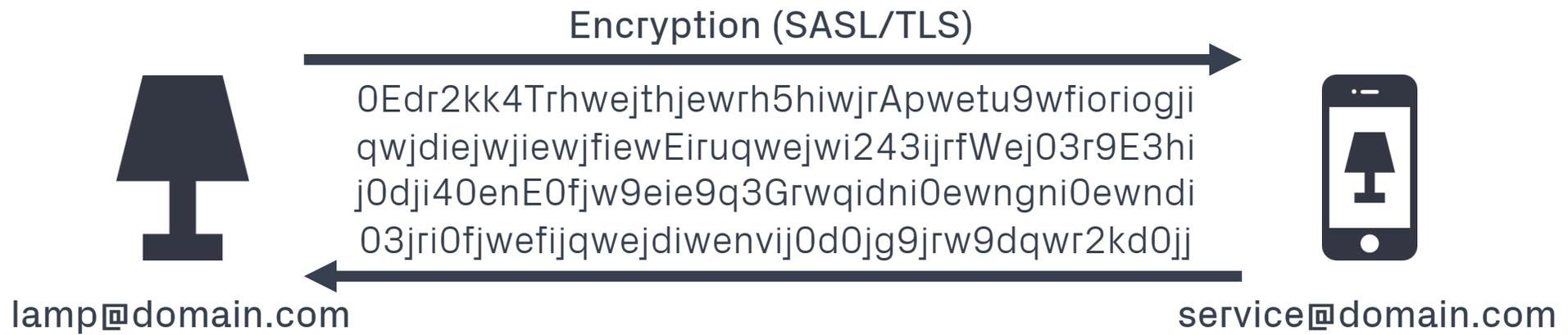




lamp@domain.com

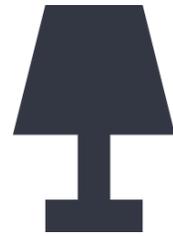


service@domain.com



Presence



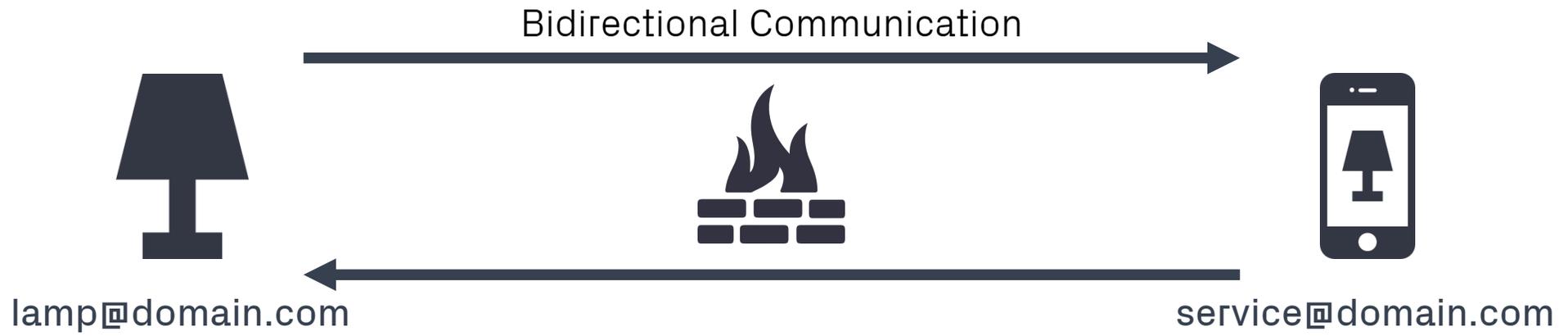


 Online

 Offline

Bidirectional





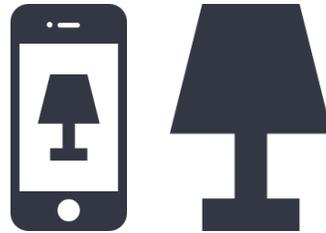
IoT XEP

Interoperability

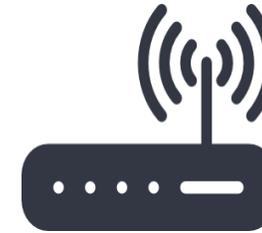




Discovery &
Provisioning



Sensor Data
& Control



Concentrator

Registry





```
<iq type='set'  
  from='thing@example.org/imc'  
  to='provisioning.example.org'  
  id='1'>  
  <register xmlns='urn:xmpp:iot:provisioning'>  
    <str name='SN' value='394872348732948723' />  
    <str name='MAN' value='www.ktc.se' />  
    <str name='MODEL' value='IMC' />  
    <num name='V' value='1.2' />  
    <str name='KEY' value='4857402340298342' />  
  </register>  
</iq>
```

Ownership

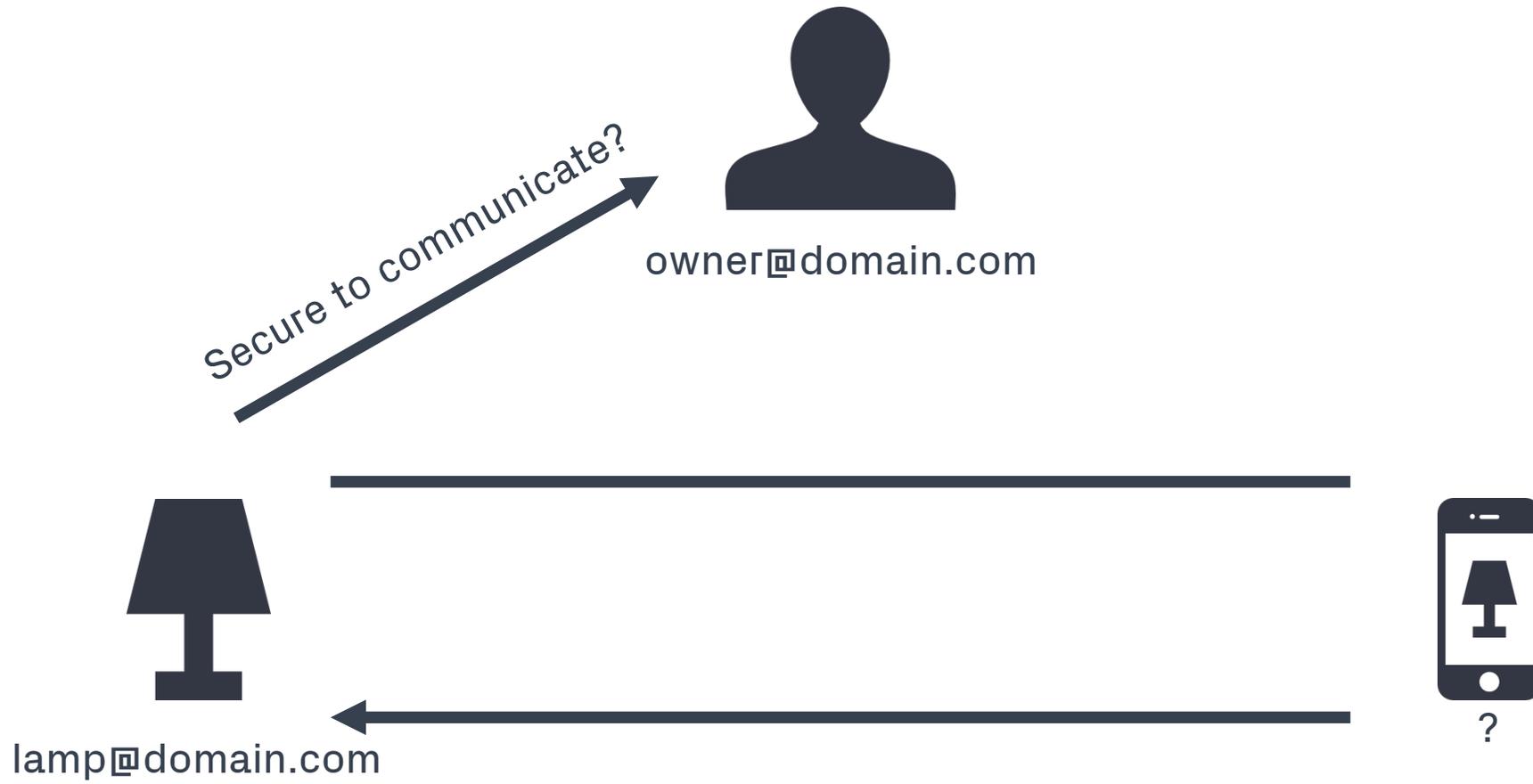


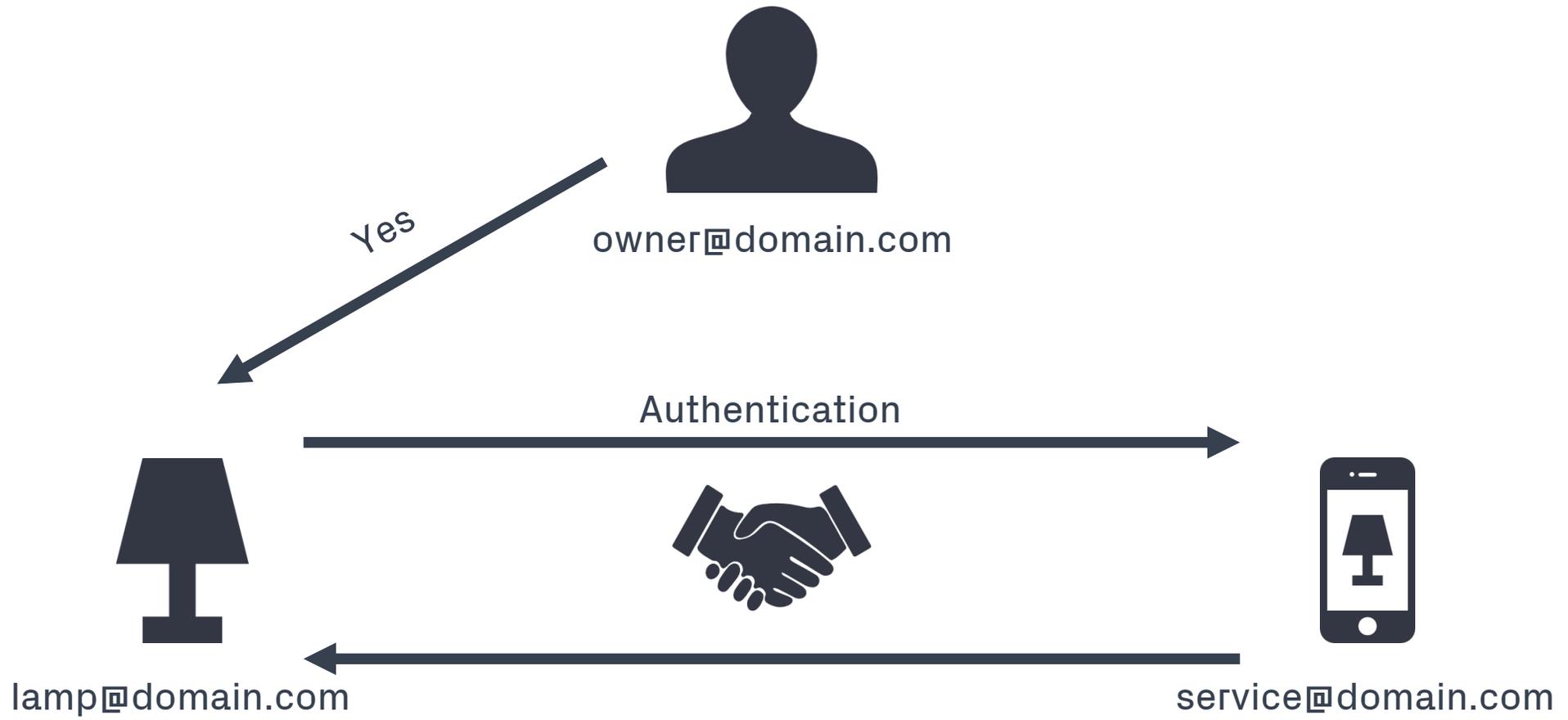


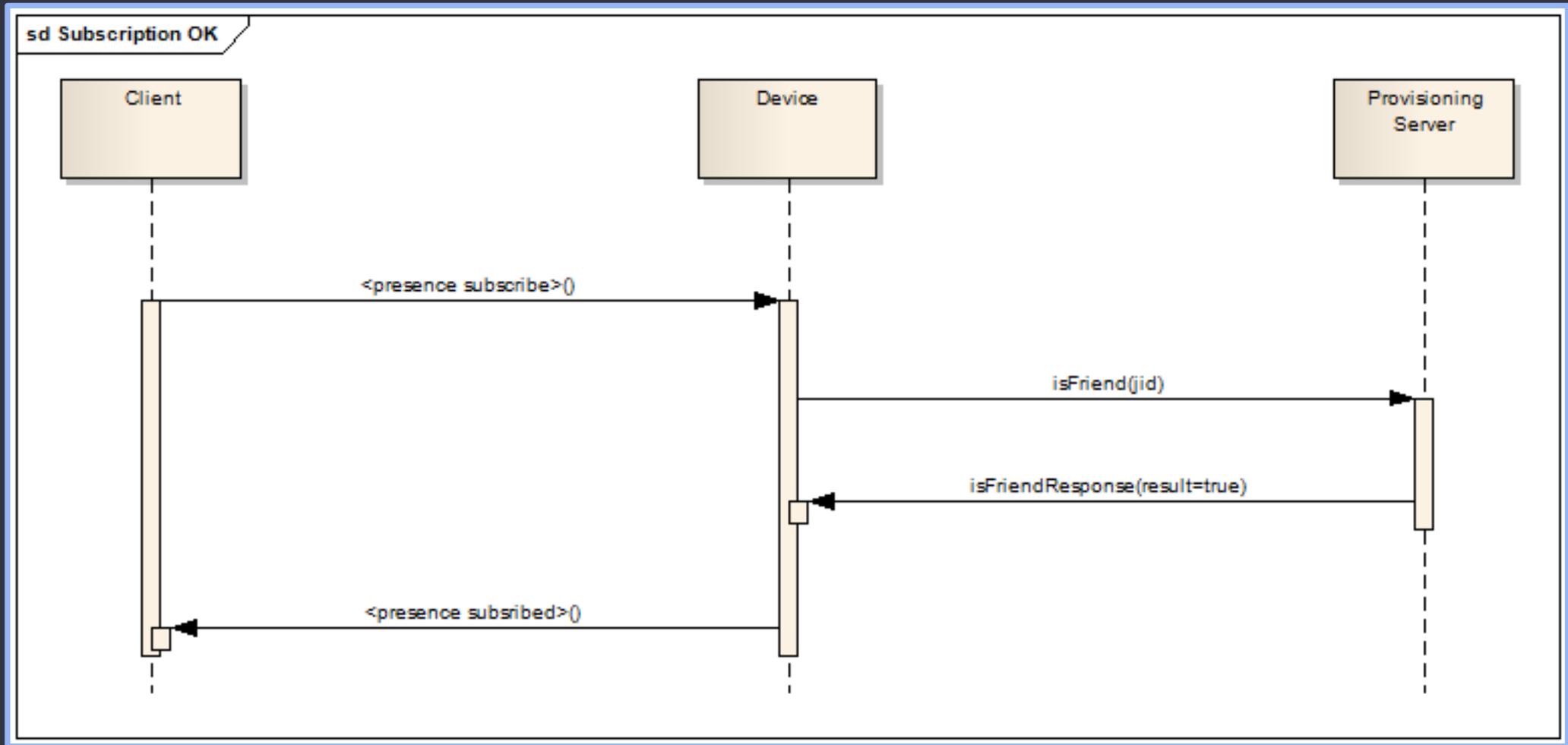
```
<iq type='set'  
  from='provisioning.example.org'  
  to='thing@example.org/imc'  
  id='5'>  
  <claimed xmlns='urn:xmpp:iot:provisioning'  
    jid='owner@example.org' />  
</iq>
```

Authentication









```
<iq type='get'  
  from='thing@example.org/imc'  
  to='provisioning.example.org'  
  id='9'>  
  <isFriend xmlns='urn:xmpp:iot:provisioning'  
    jid='client1@example.org' />  
</iq>
```

```
<iq type='result'  
  from='provisioning.example.org'  
  to='thing@example.org/imc'  
  id='9'>  
  <isFriendResponse xmlns='urn:xmpp:iot:provisioning'  
    jid='client1@example.org' result='true' />  
</iq>
```

Read & Control



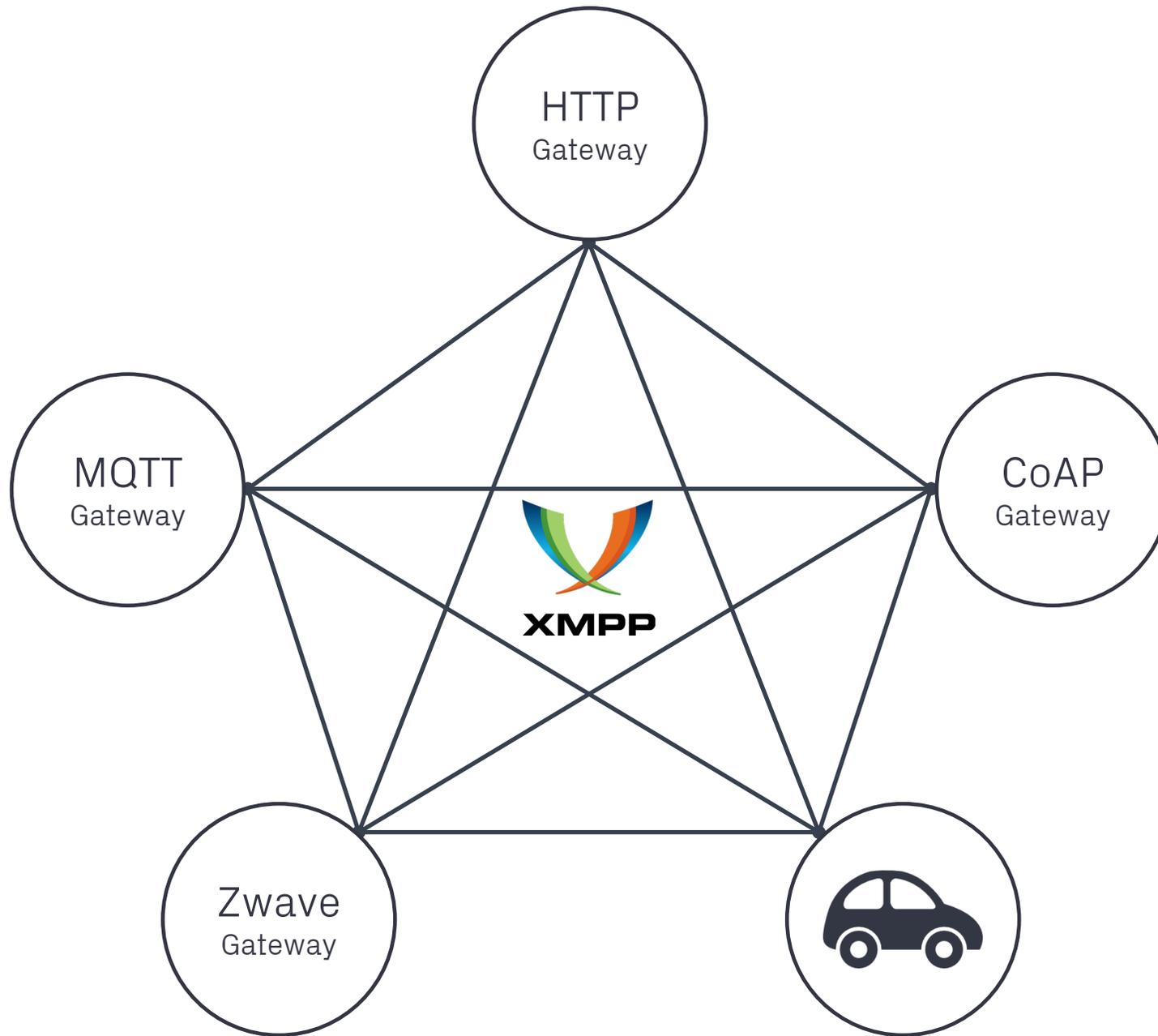
```
<iq type='get'  
  from='client@example.org/amr'  
  to='device@example.org'  
  id='S0006'>  
  <req xmlns='urn:xmpp:iot:sensordata' seqnr='6' momentary='true'>  
    <node nodeId='Device04' />  
    <field name='Energy' />  
    <field name='Power' />  
  </req>  
</iq>
```

```
<iq type='result'  
  from='device@example.org'  
  to='client@example.org/amr'  
  id='S0006'>  
  <accepted xmlns='urn:xmpp:iot:sensordata' seqnr='6' />  
</iq>
```

```
<message from='device@example.org'  
  to='client@example.org/amr'>  
  <fields xmlns='urn:xmpp:iot:sensordata' seqnr='6' done='true'>  
    <node nodeId='Device04'>  
      <timestamp value='2013-03-07T22:03:15'>  
        <numeric name='Energy' momentary='true' automaticReadout='true' value='12345.67' unit='MWh' />  
        <numeric name='Power' momentary='true' automaticReadout='true' value='239.4' unit='W' />  
      </timestamp>  
    </node>  
  </fields>  
</message>
```

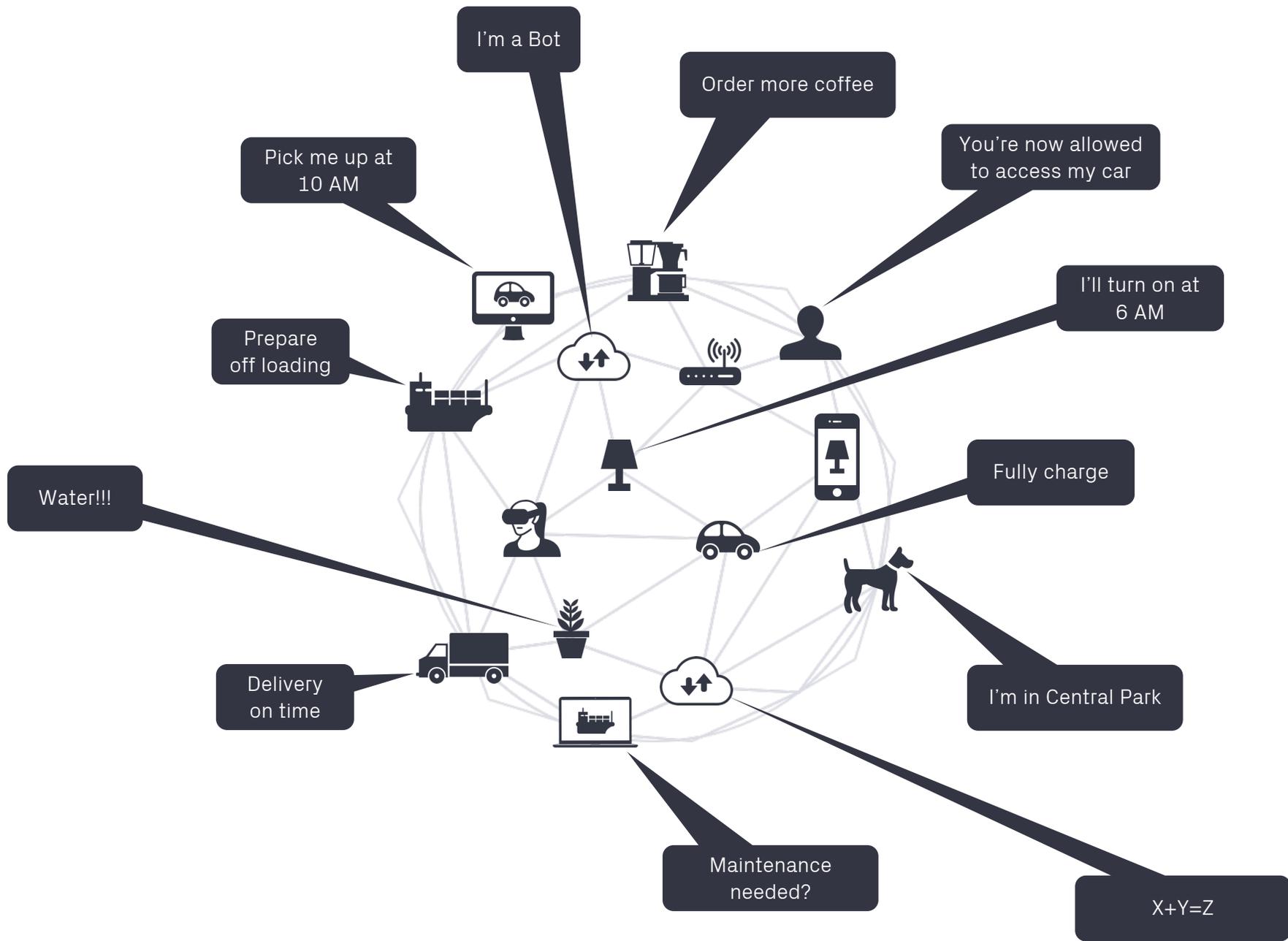
Concentrator





Relationships







SDK

Example Code & Developer Kit

XMPP Internet of Things

Jump start with the most proven IoT infrastructure

Start Tutorial

or

Look into the basics

Help out with the site

>10 years scalability and security

Takes the advantage of more than 10 years of profound scalability and security tests. There are massive amounts of servers and millions of users across the planet. That has run XMPP over many years. As from spring 2014 no public servers may run unencrypted

Truly open in all aspects

XMPP is an open community based IoT standard. No proprietary groups or memberships needed everything is on the [XSF foundation site](#). There is only one point where changes are done

Every language

Software is available in any programming language, Servers, clients, toolkits even browser implementations. This makes it not only an easy start but also a future proof solution

Federation between businesses

Federation between servers is core functionality, gives you ability to share your systems and businessmodels with others without creating yet another REST api. Only hook up certificates and your business domain can talk to other companies anywhere on internet.

 **Ignite Realtime Blog**

F Support for IoT XEPs added to Smack

Posted by [Flow](#) in [Ignite Realtime Blog](#) on Jul 23, 2016 6:52:50 AM

Starting with [b91978dcc4ae](#) partial support for the IoT XEPs was added to Smack. The XEPs consists, amongst other XEPs, of

- XEP-0323: Data
- XEP-0324: Provisioning
- XEP-0325: Control
- XEP-0347: Discovery

The XEPs are in experimental state, which means changes to them are possible.

Smack does currently only support a partial set of the mechanisms specified, especially when it comes to Data and Control. For example only boolean and integer values can be read and written But support for more data types can be easily added.

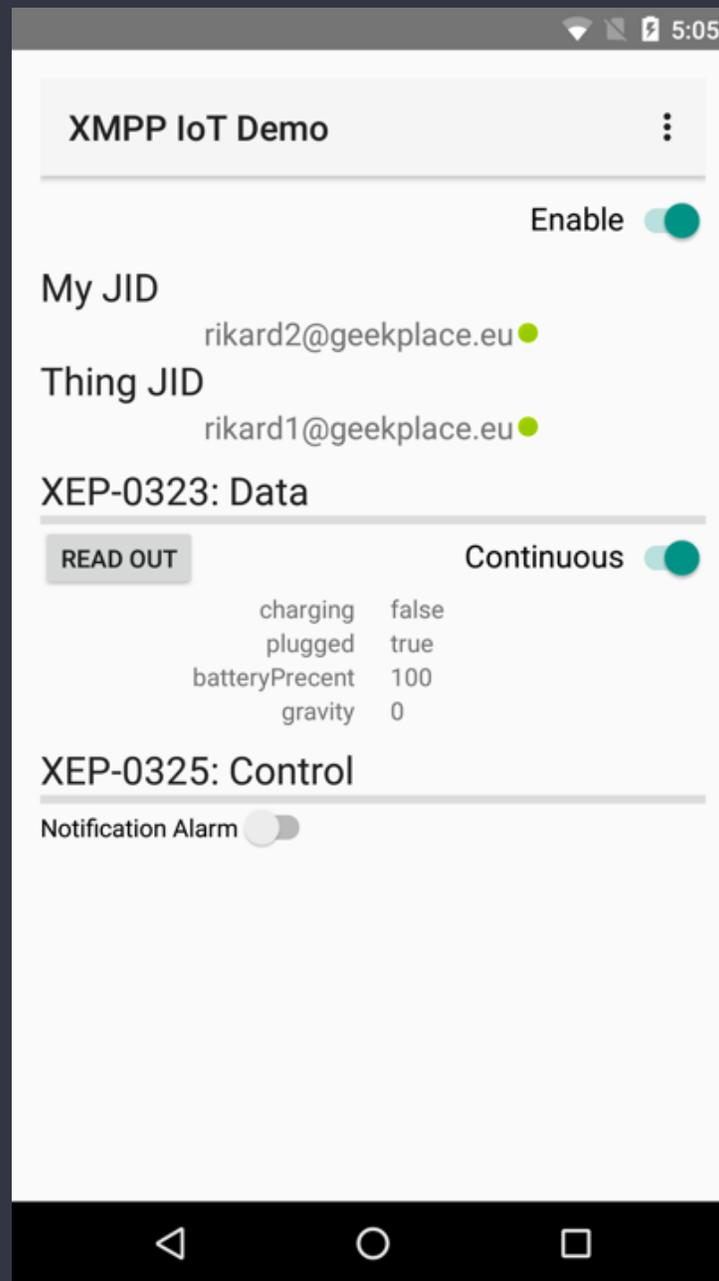
The IoT API for those XEPs is available in the latest snapshot builds of Smack, which are available via [Maven Central's snapshot repository](#). A quick start guide can be found [here](#).

The development of the API was sponsored by [Clayster](#).

Clayster creates technology to secure trust in the transactions between physical and digital entities, and strives to be that generic foundation for your physical assets digital life.

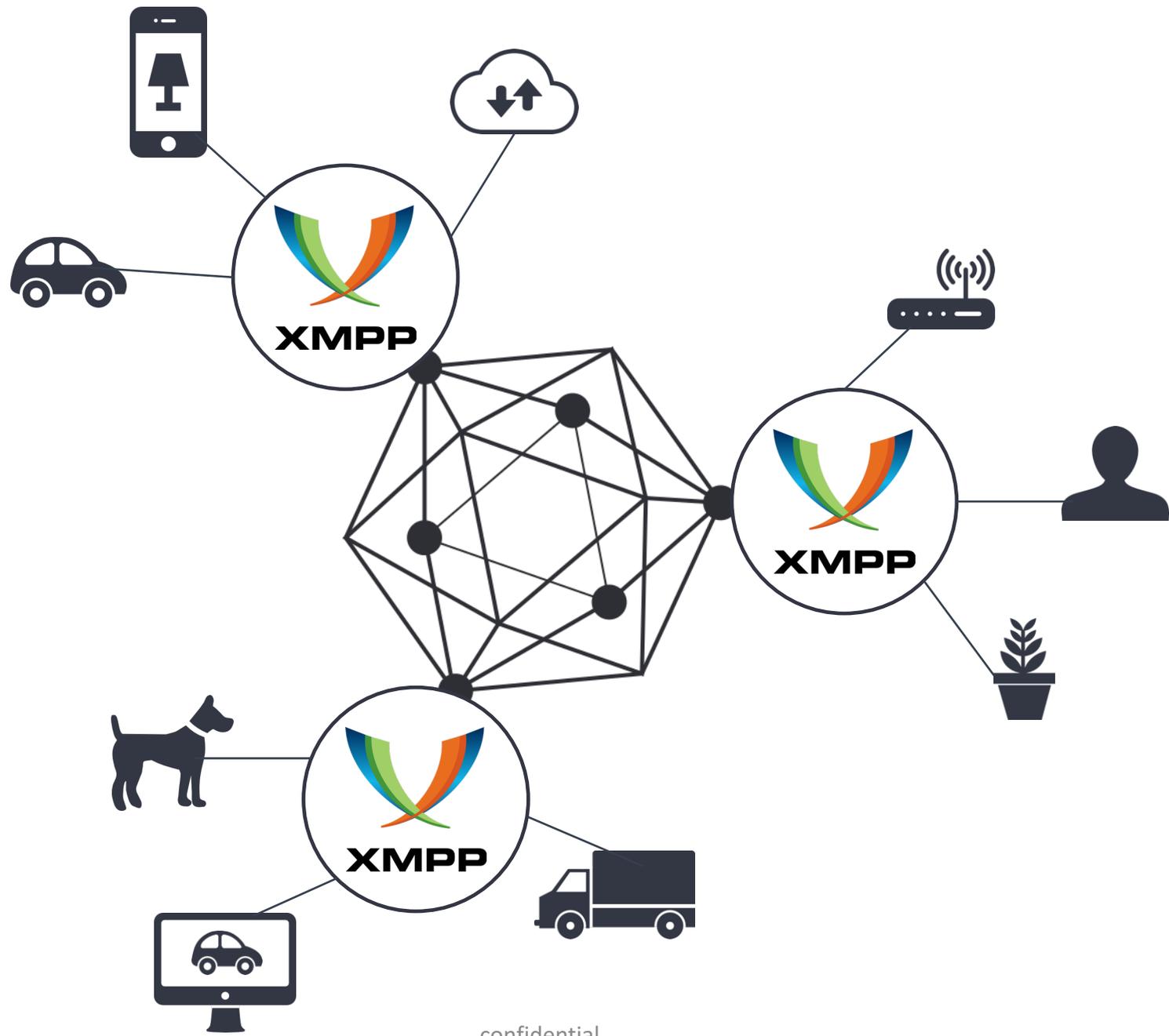
Clayster has an IoT discovery and provisioning platform supporting XEP-0347 and XEP-0324. The platform is available for those who are interested to explore XMPP and IoT further. If you don't want to run your own infrastructure, Clayster is able to provide an XMPP Server and the discovery/provisioning platform for you. Feel free to reach out to rikard at clayster.com if you are interested to learn more about using XMPP for your next IoT project. [www.clayster.com](#)

1513 Views  Tags: [planetjabber](#), [smack](#)



XMPP & Blockchain





Sensor Data

This specification provides the common framework for sensor data interchange over XMPP networks.

<http://xmpp.org/extensions/xep-0323.html>

Provisioning

This specification describes an architecture for efficient provisioning of services, access rights and user privileges in for the Internet of Things, where communication between Things is done using the XMPP protocol.

<http://xmpp.org/extensions/xep-0324.html>

Control

This specification describes how to control devices or actuators in an XMPP-based sensor network.

<http://xmpp.org/extensions/xep-0325.html>

Concentrators

This specification describes how to manage and get information from concentrators of devices over XMPP networks.

<http://xmpp.org/extensions/xep-0326.html>

Discovery

This specification describes an architecture based on the XMPP protocol whereby Things can be installed and safely discovered by their owners and connected into networks of Things.

<http://xmpp.org/extensions/xep-0347.html>



<http://www.xmpp-iot.org>

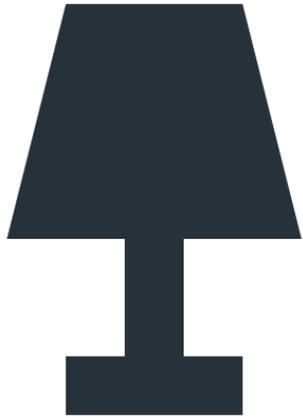
<https://community.igniterealtime.org/blogs/ignite/2016/07/23/support-for-iot-xeps-added-to-smack>

<https://blog.securitycompass.com/xmpp-swiss-army-knife-for-internet-of-things-iot-9eff783c44ba#.kl6tb66fi>



Thank you for your time
rikard@clayster.com





Vendor



Owner



Application



Logged in as
Hen Johansson

Discover Applications

Search

Claim

My Devices

- Car Info  
- Lamp Info 
- Fridge Info 
- El-Meter Info 
- Heat pump Info 
- Door Info 

My Applications

- ICA Info
- KTC Info
- Healthcare Info
- Shell Info
- Verisure Info
- Skandia Info
- Volvo Info

Logged in as
Hen Johansson

Discover Applications

Claim

My Devices

- Car [Info] [Trash]
- Lamp [Info] [Trash]
- Fridge [Info] [Trash]
- El-Meter [Info] [Trash]
- Heat pump [Info] [Trash]
- Door [Info] [Trash]

My Applications

- ICA [Info]
- KTC [Info]
- Healthcare [Info]
- Shell [Info]
- Verisure [Info]
- Skandia [Info]
- Volvo [Info]

Relationship with Car

ICA	Accept
Volvo	Accept
Shell	Denial
Skandia	Denial

Logged in as
Hen Johansson

Discover Applications

Claim

My Devices

- Car [Info] [Trash]
- Lamp [Info] [Trash]
- Fridge [Info] [Trash]
- El-Meter [Info] [Trash]
- Heat pump [Info] [Trash]
- Door [Info] [Trash]

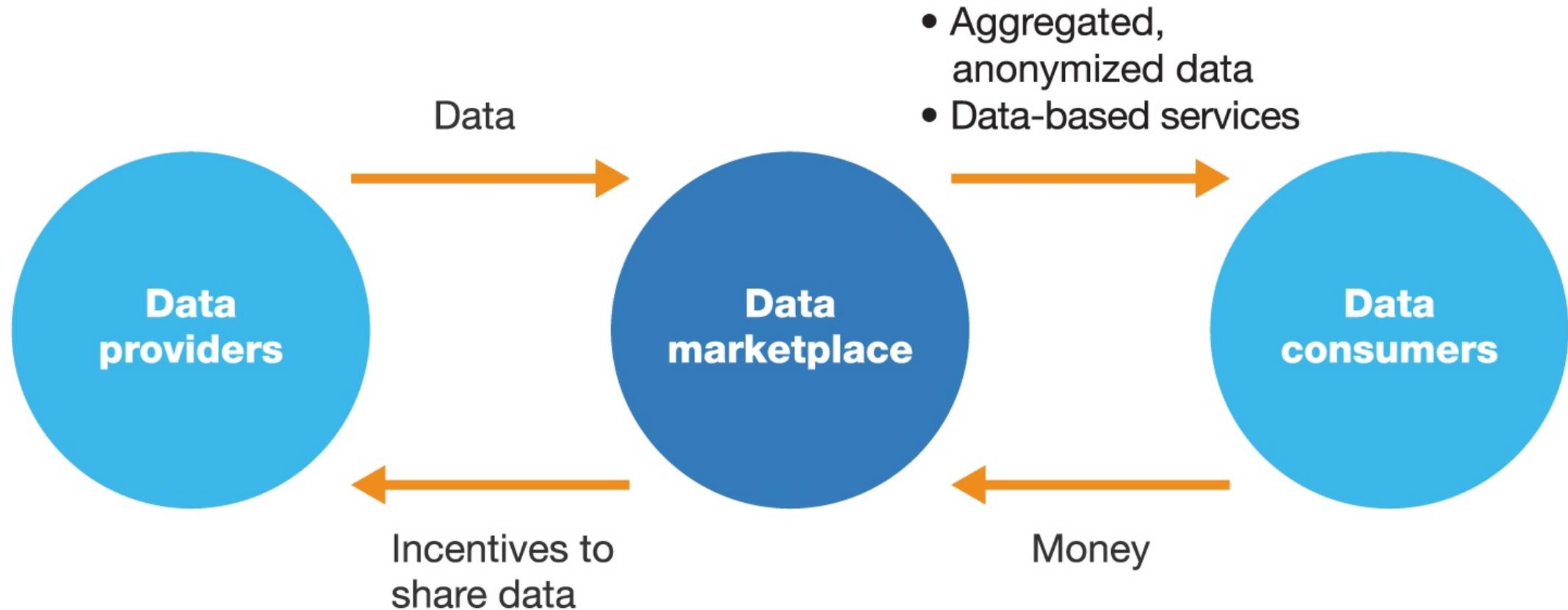
My Applications

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- KTC [Info]
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- Shell [Info]
- Verisure [Info]
- Skandia [Info]
- Volvo [Info]

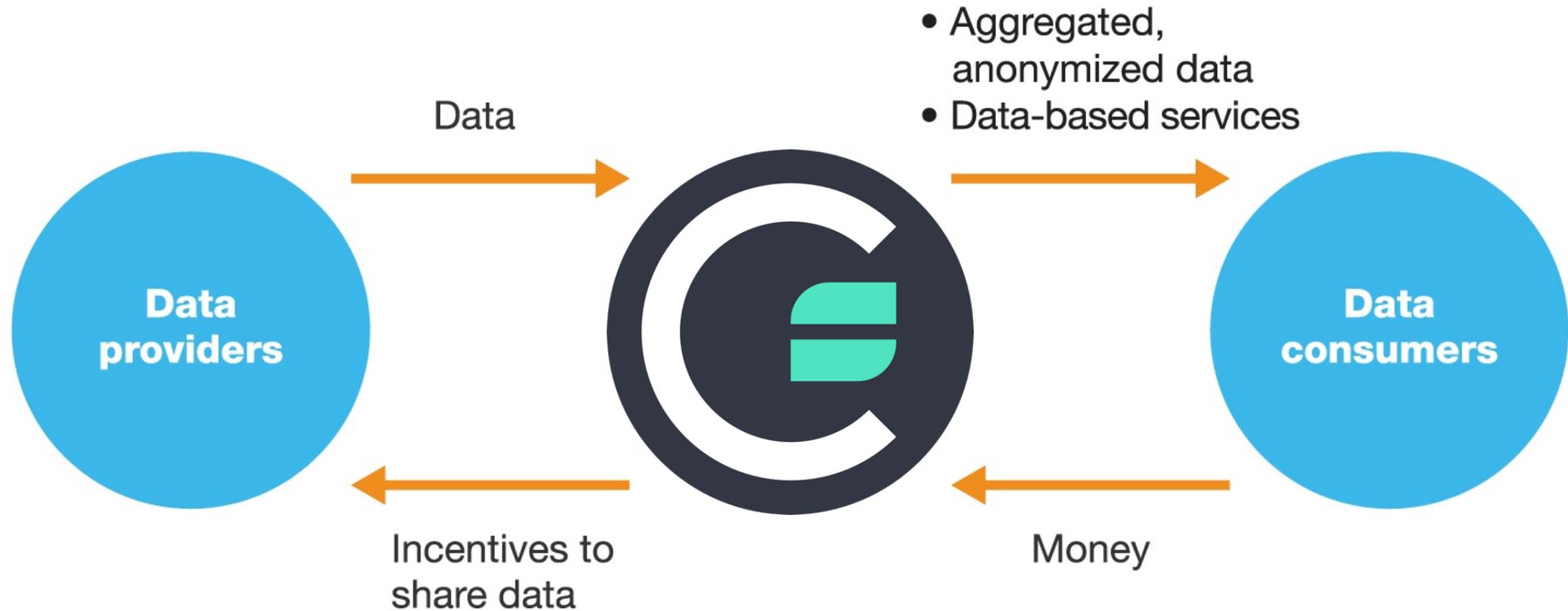
Relationship with ICA

Fridge	Accept
Car	Accept
Door	Denial

Aggregated data can be an incentive for providers to share information.



Aggregated data can be an incentive for providers to share information.



Unified Data Exchange

