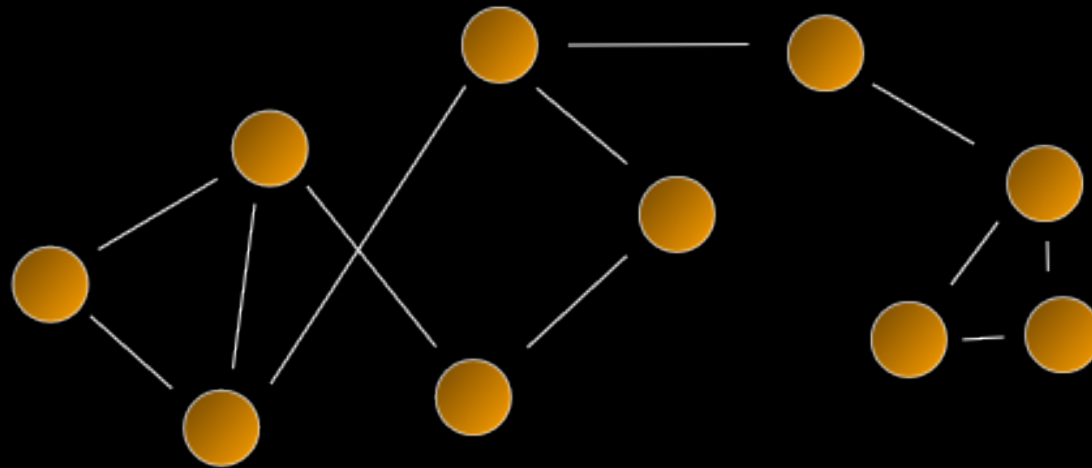


Social Network distribuiti e opensource





Rete Sociale

“ Una rete sociale (in inglese social network) consiste di un qualsiasi gruppo di persone connesse tra loro da diversi legami sociali, che vanno dalla conoscenza casuale, ai rapporti di lavoro, ai vincoli familiari.

Wikipedia



Servizi di Social Network

“ Un servizio di rete sociale, o servizio di social network, consiste in una struttura informatica che gestisce nel Web le reti basate su relazioni sociali. La struttura è identificata per mezzo di un sito web di riferimento del social network.



Wikipedia





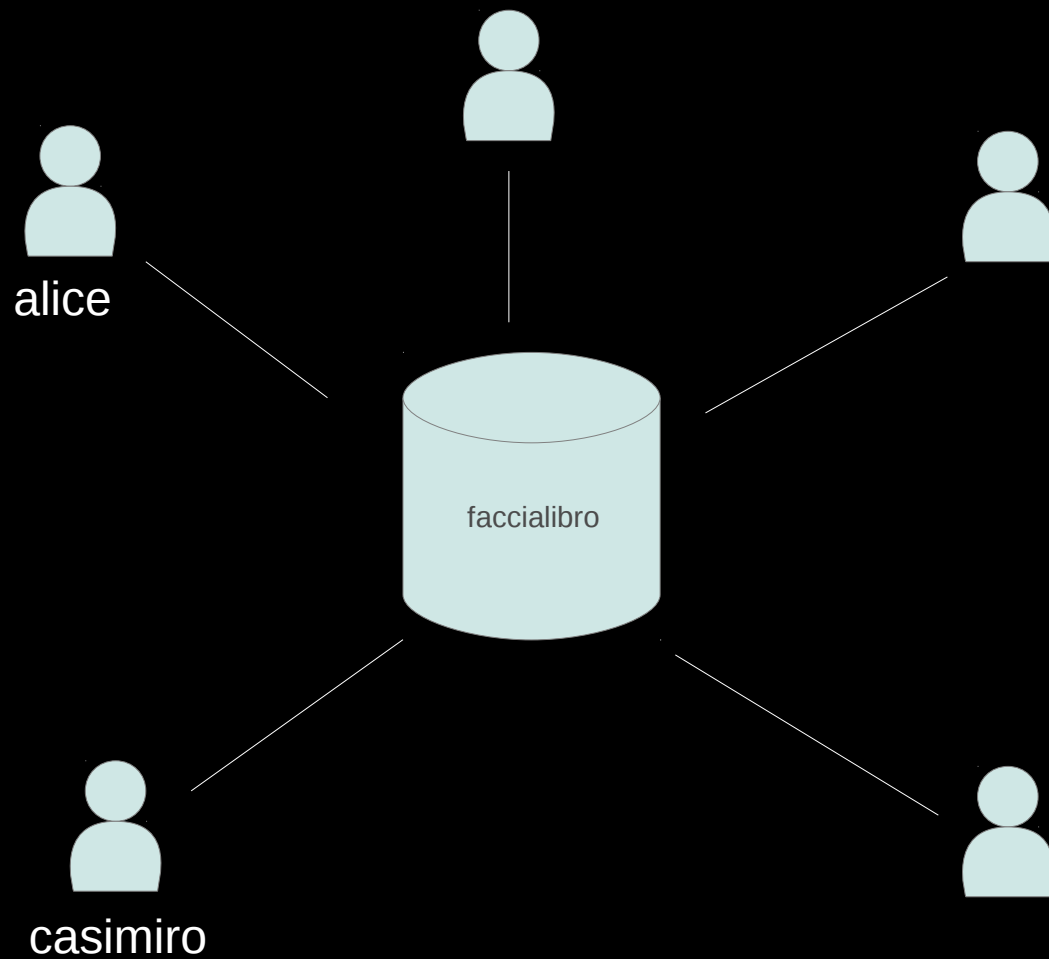
Centralizzati

Chiusi

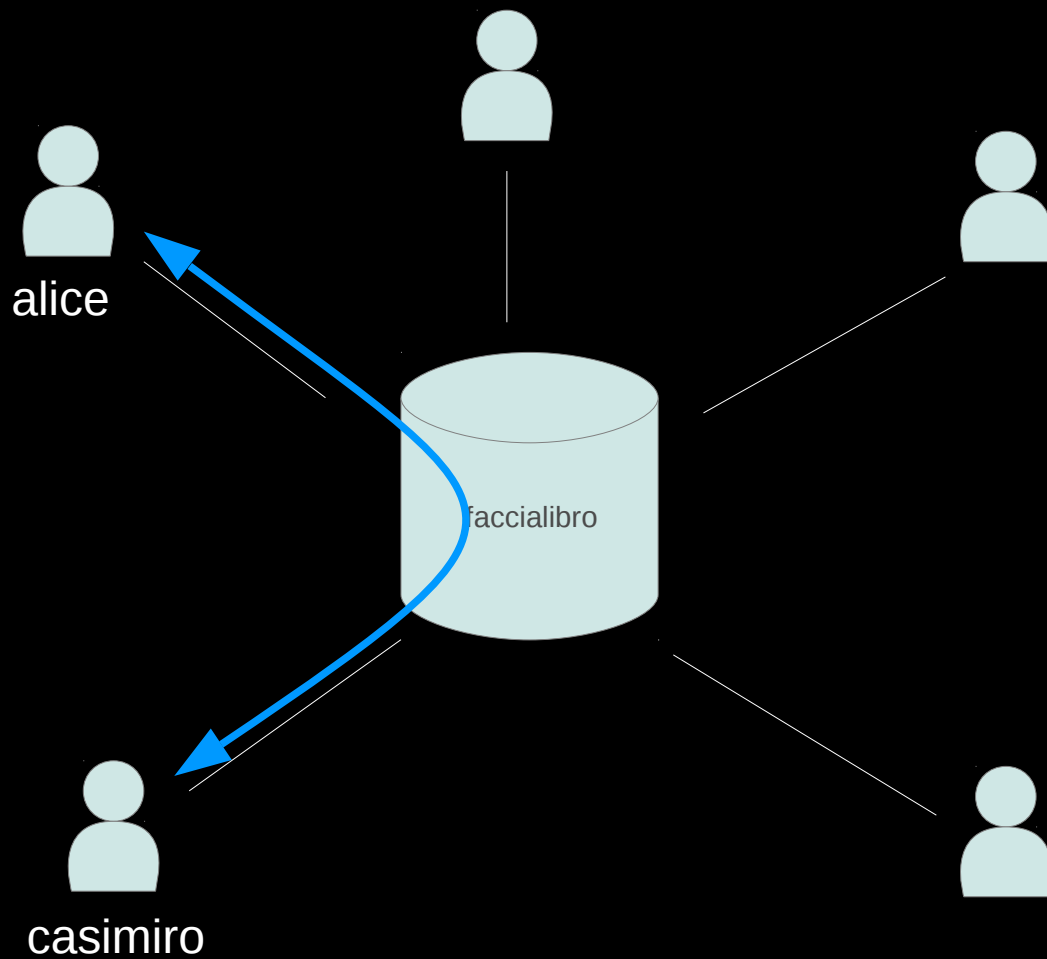
Controllati



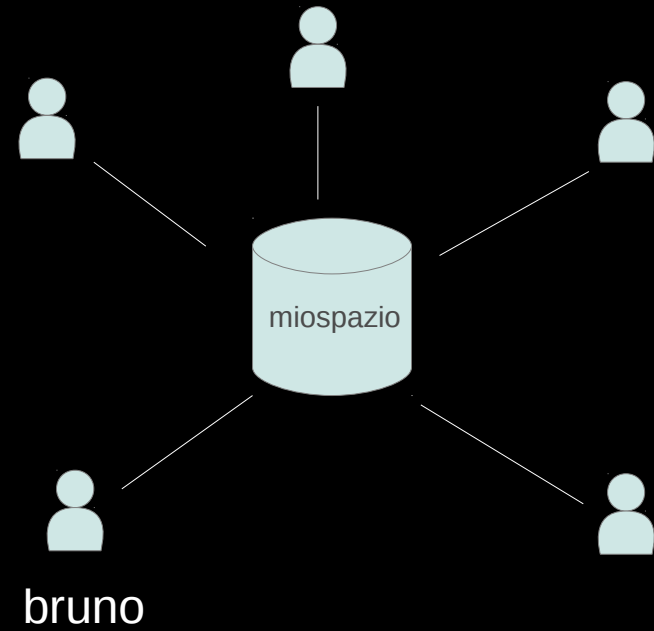
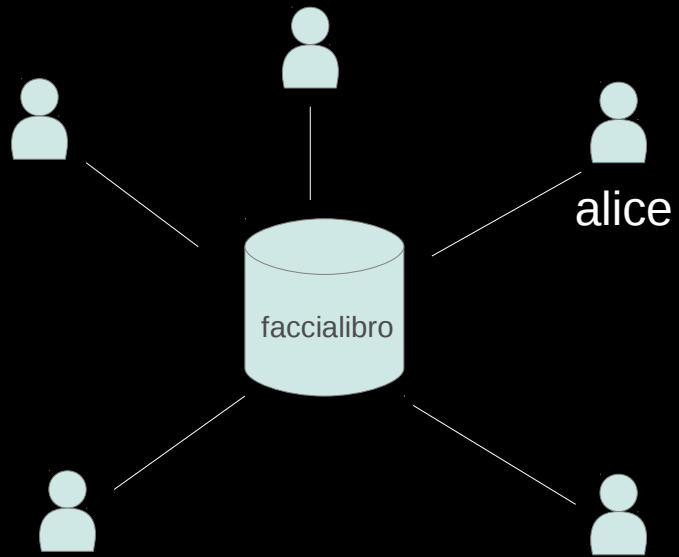
centralizzato



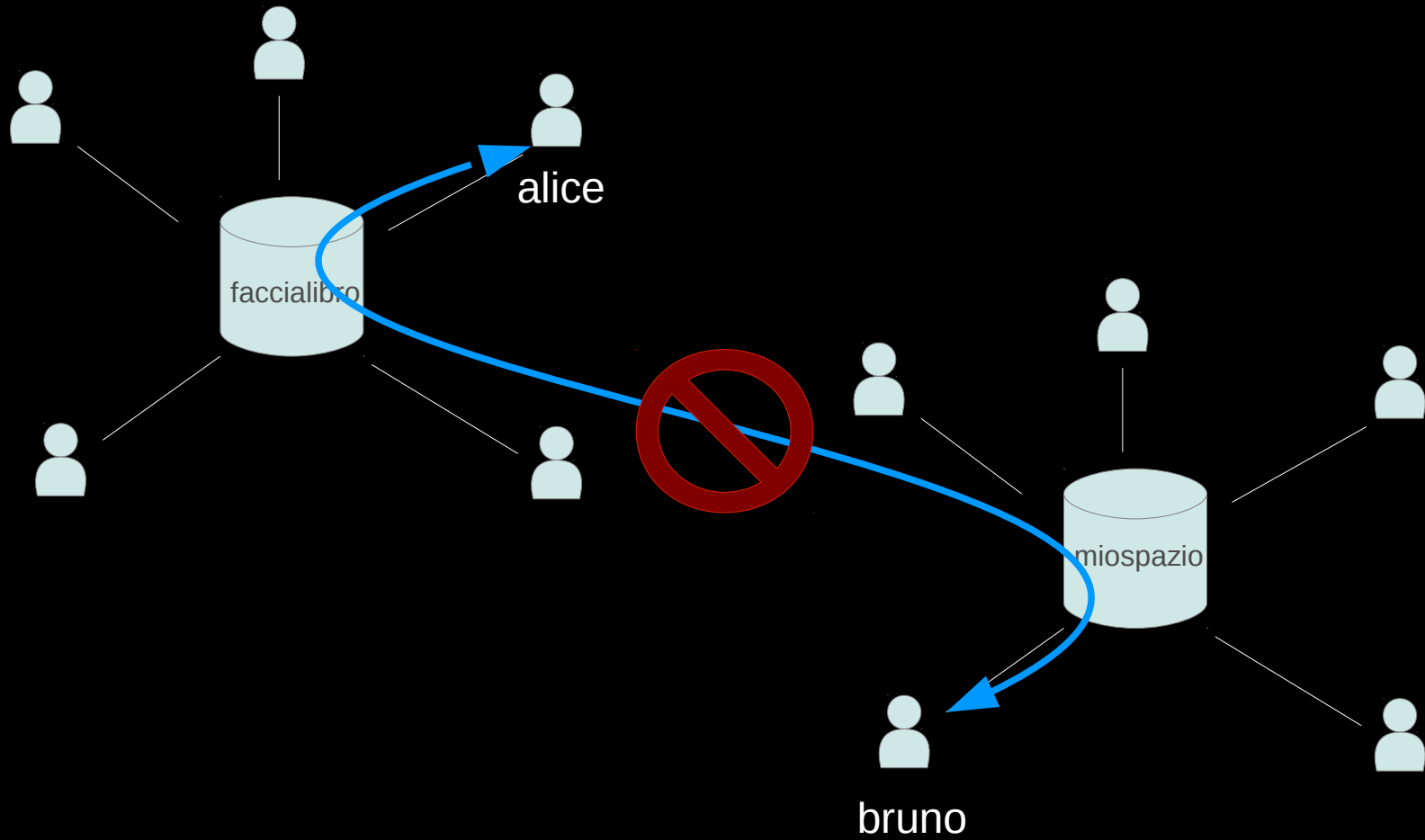
centralizzato



chiuso



chiuso



controllato

Censura

Tracciamento degli utenti

Proprietà intellettuale



Servizi di Social Network Distribuiti



Servizi di Social Network Distribuiti

“ Un servizio di rete sociale, o servizio di social network, consiste in una struttura informatica che gestisce nel Web le reti basate su relazioni sociali. La struttura è identificata per mezzo di un sito web di riferimento del social network.



Wikipedia



Servizi di Social Network Distribuiti

“ Un servizio di rete sociale, o servizio di social network, consiste in una struttura informatica che gestisce nel Web le reti basate su relazioni sociali. ~~La struttura è identificata per mezzo di un sito web di riferimento del social network.~~



Wikipedia



Ognuno si può installare il
software sul proprio server

O puo' scegliere di iscriversi
su un server di cui si fida

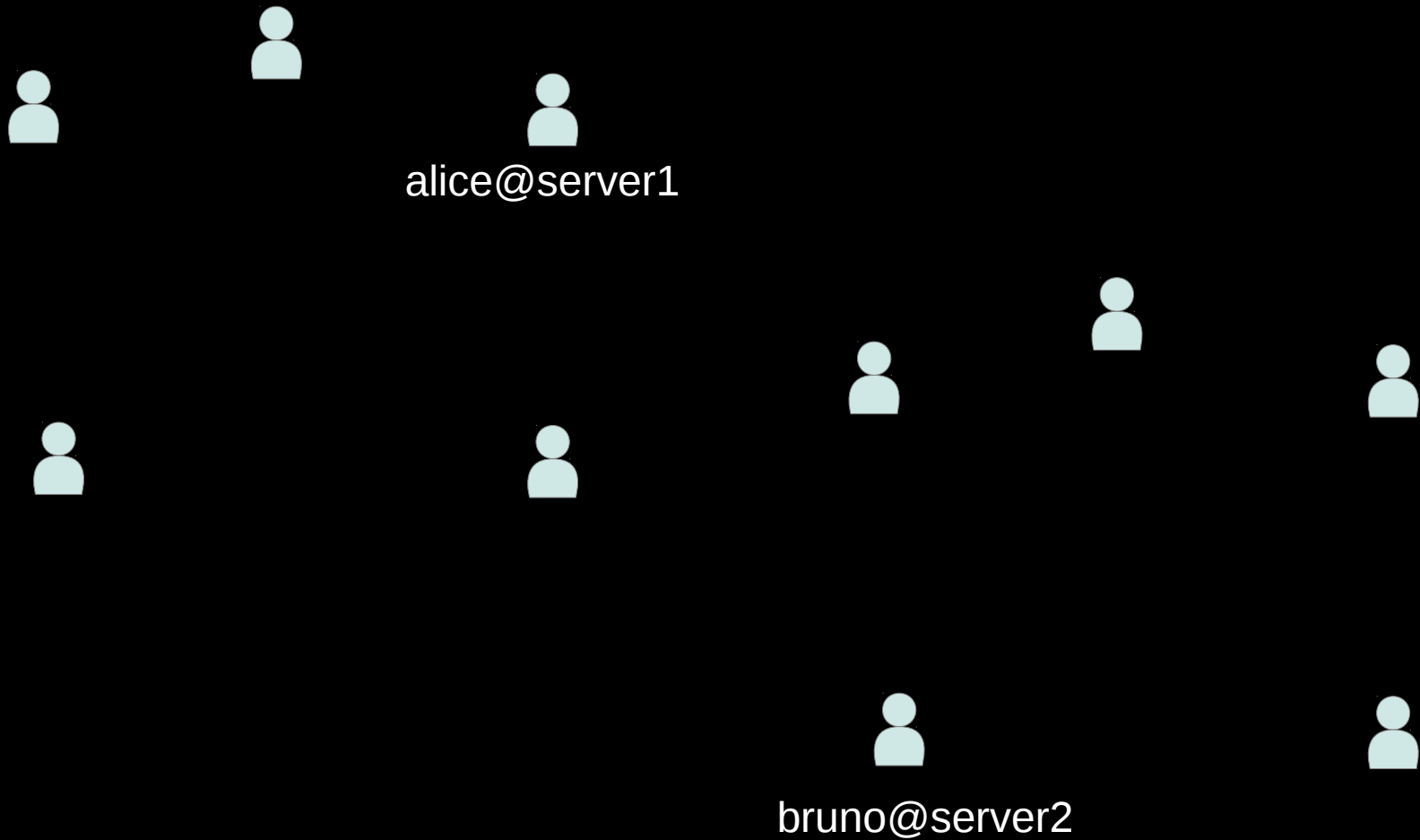


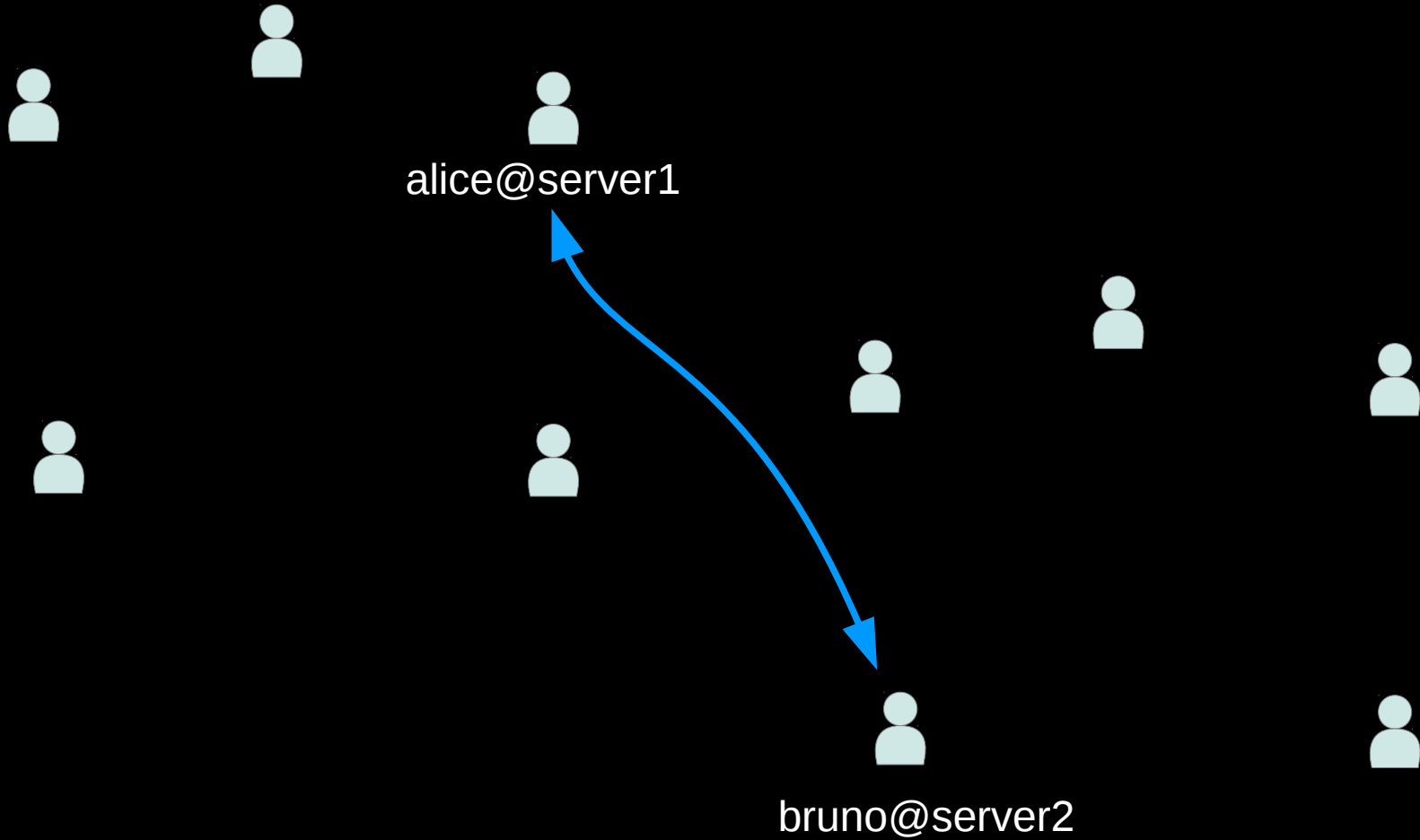
I dati caricati rimangono in proprio possesso

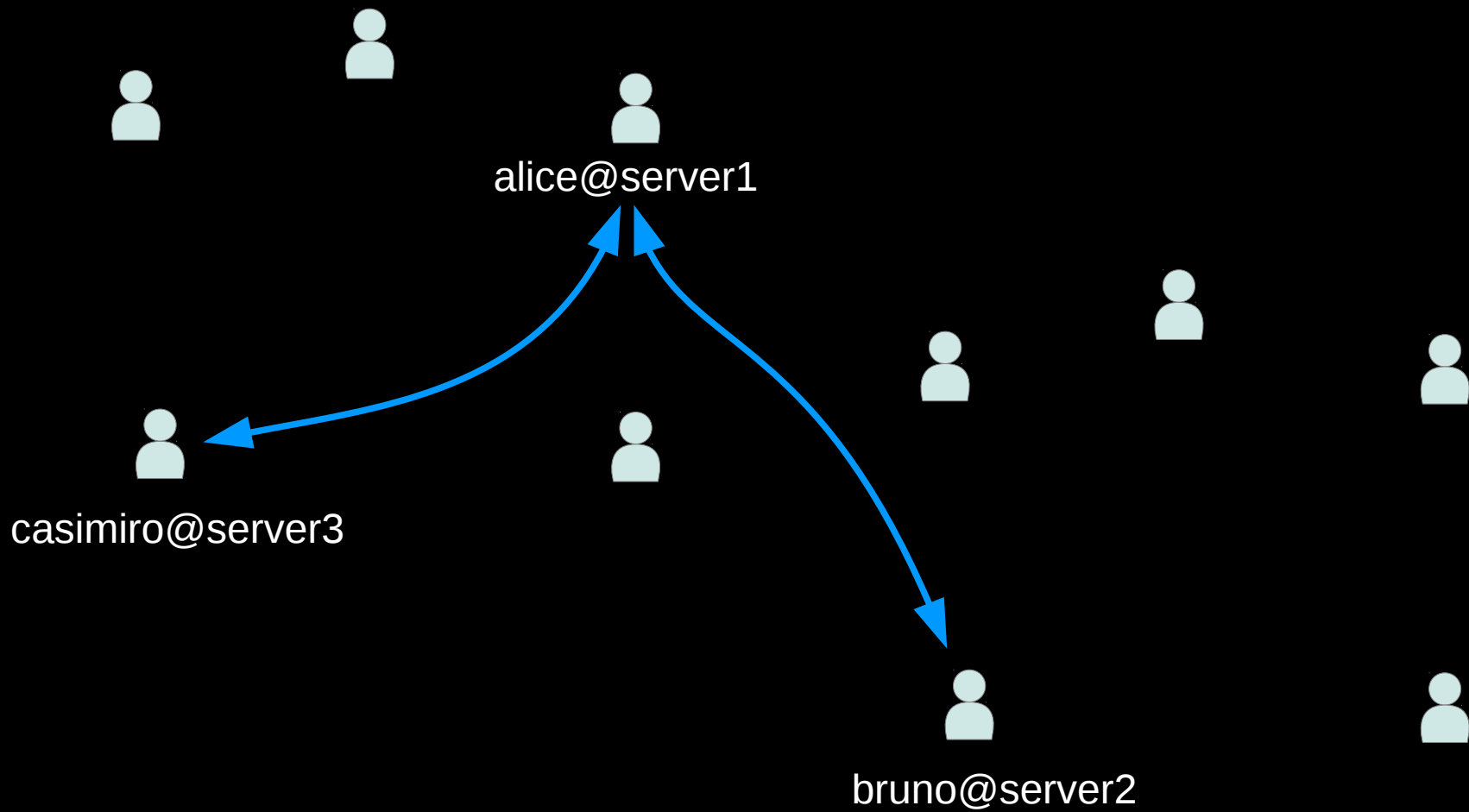


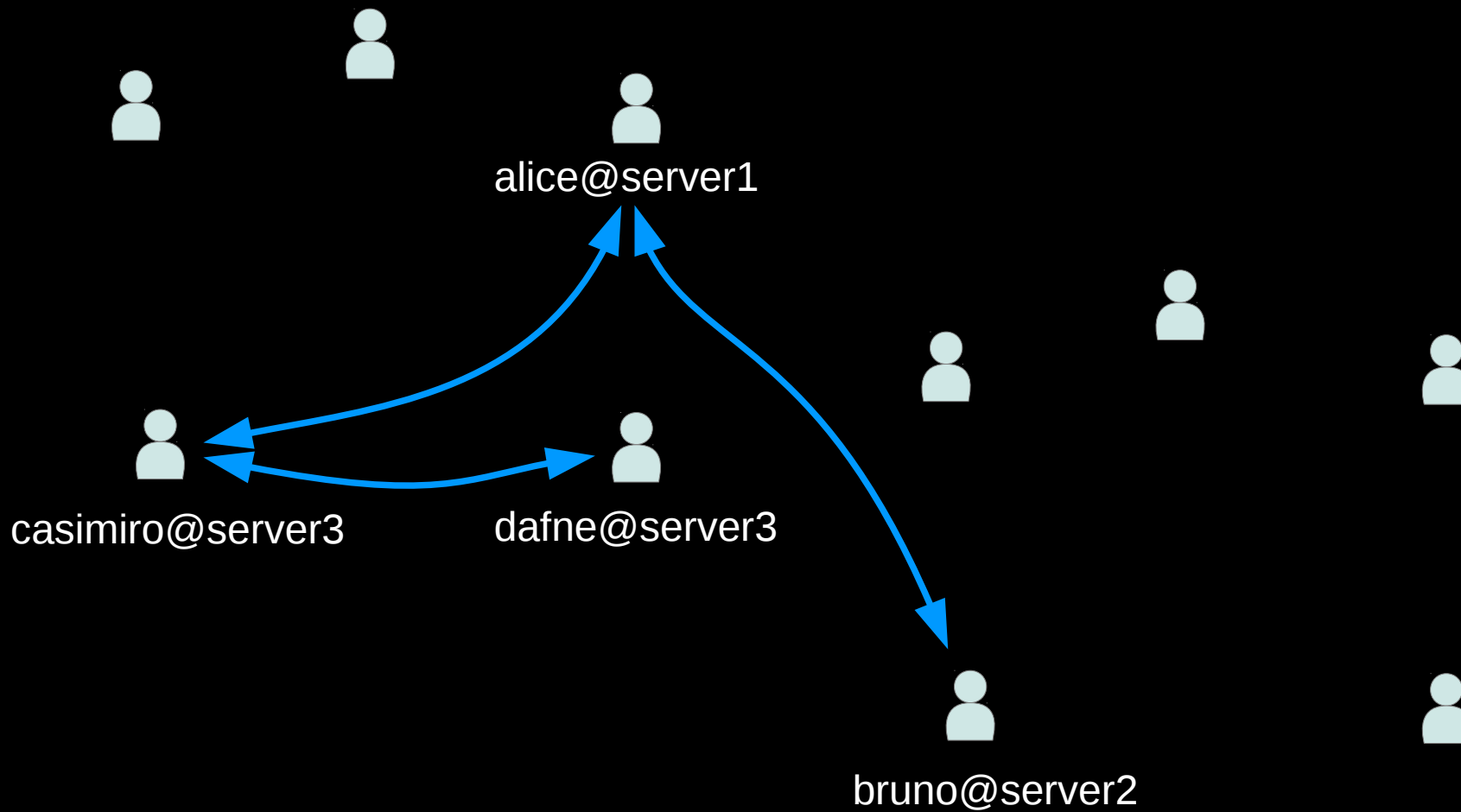
Le comunicazioni avvengono anche
tra utenti registrati su server diversi
(come per le email)

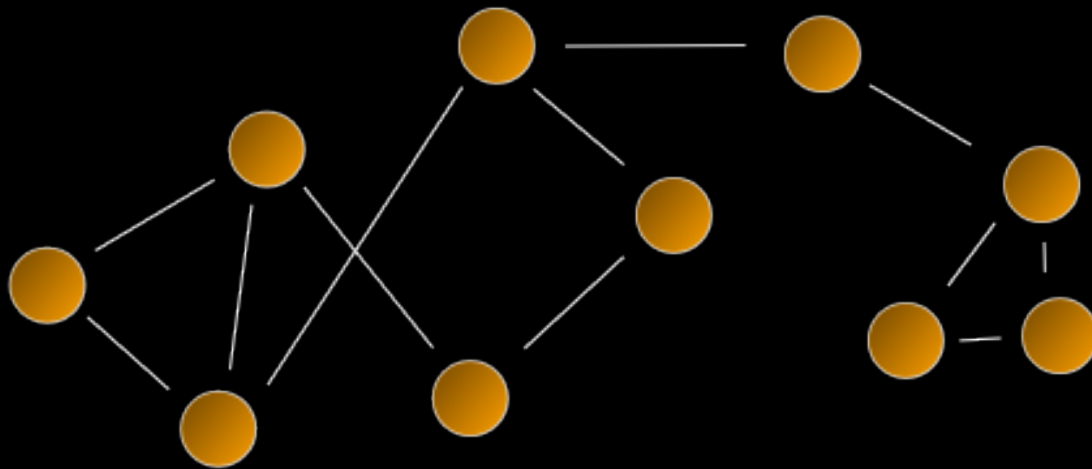












Rete Sociale



Rete aperta

Interoperabile (quasi)

Sicura

Rispetto della privacy



Status.net / Identi.ca

Diaspora*

Appleseed

Jappix

Buddycloud

Friendica

...



Status.net / Identi.ca

Micro blogging

!Gruppi (solo locale)

#Hashtag

@Menzioni

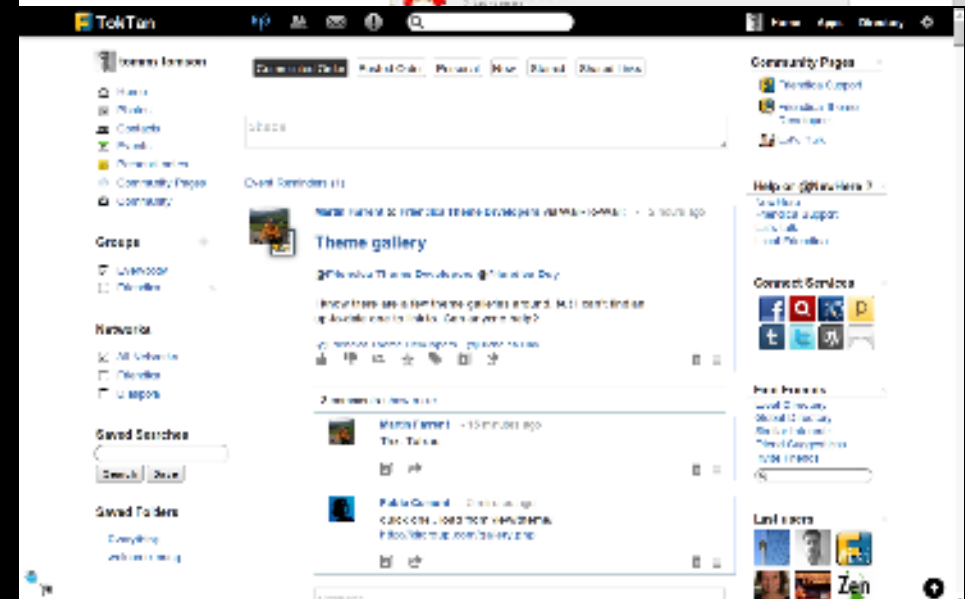
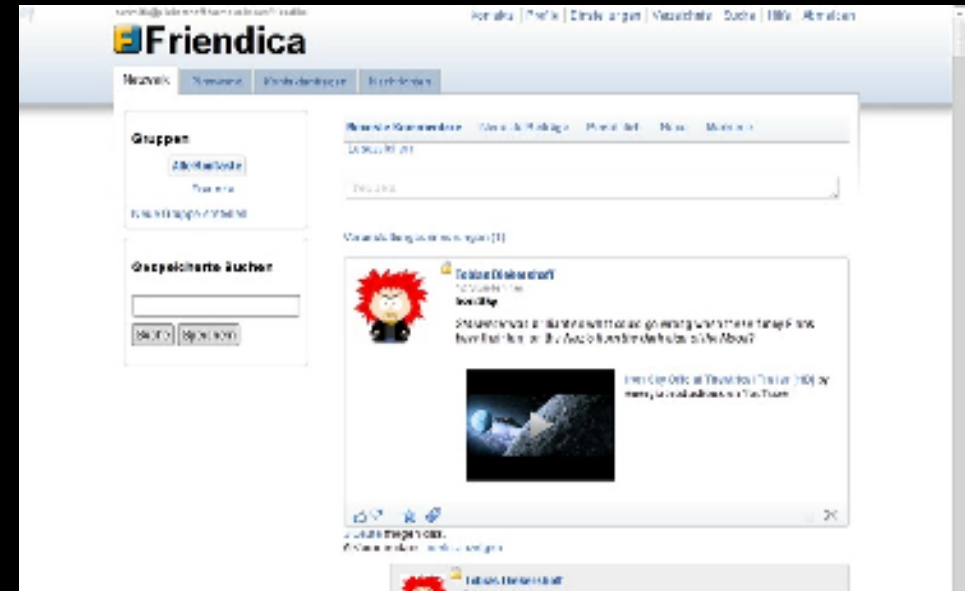
Tutto pubblico
(messaggi privati solo locale)



Friendica

Messaggi non limitati
Gruppi/Pagine/Forum
#Hashtag
@Menzioni
Gruppi di contatti
Permessi sui contenuti
Profili multipli

“don't like”



Diaspora*

Messaggi non limitati

#Hashtag 'globali'

@Menzioni

Aspetti

Permessi sui contenuti

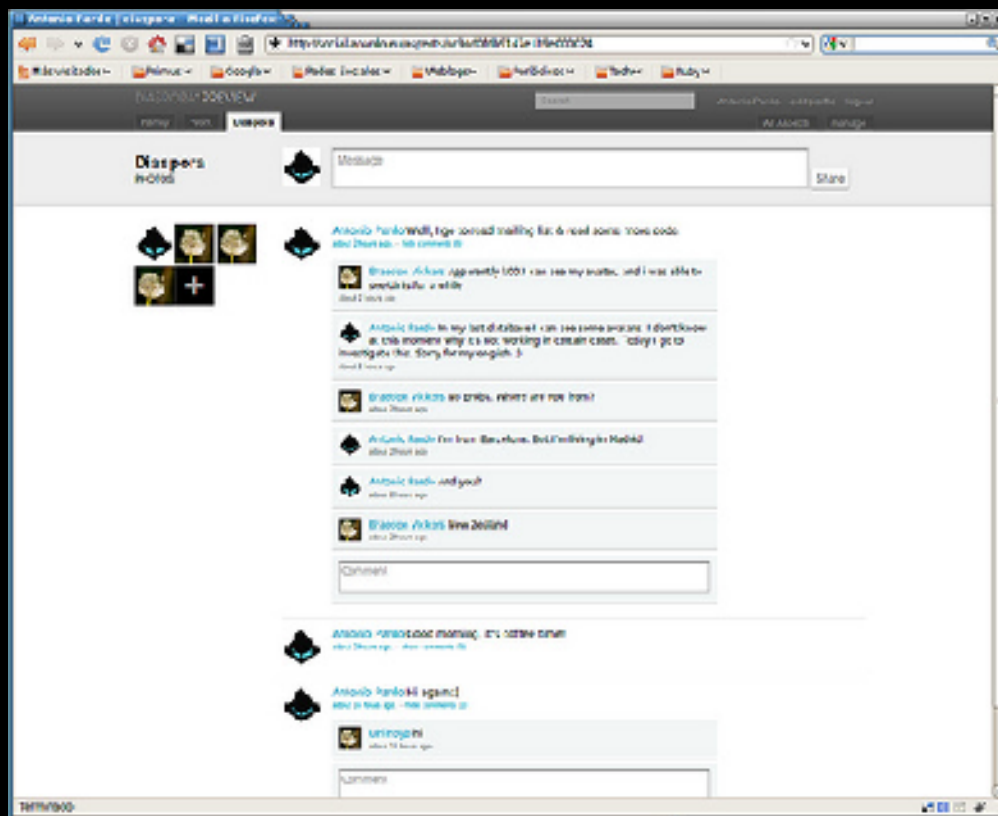


Immagine (cc) by-sa Antonio Pardo

<http://www.flickr.com/photos/apardo/5003809422/>

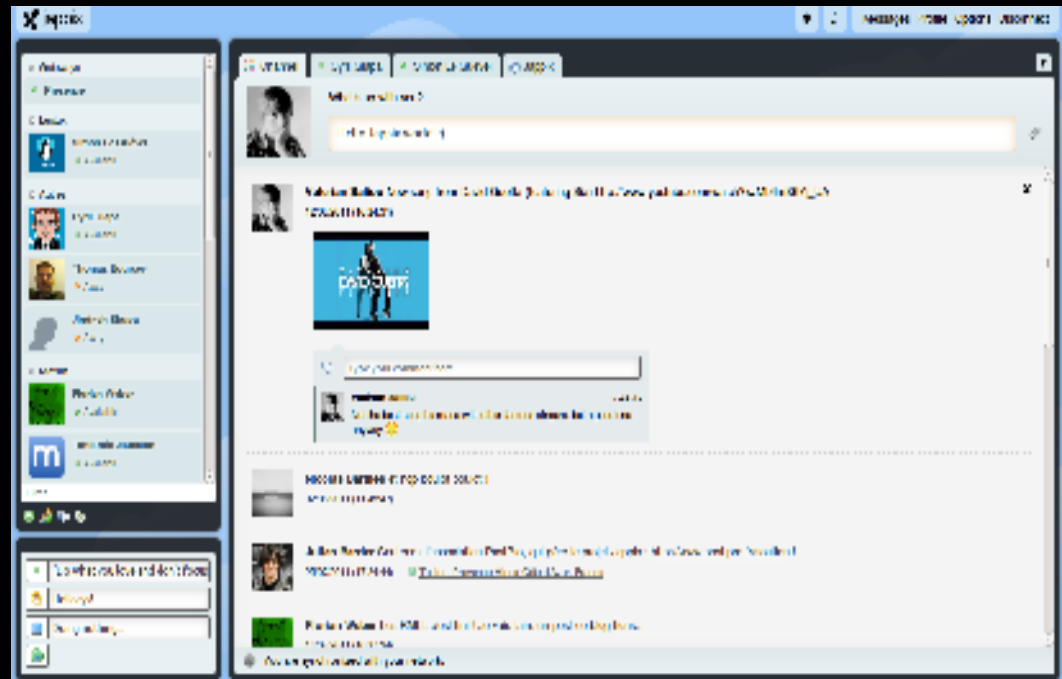


Jappix

Bacheca pubblica
per i contatti

Messaggistica istantanea

“Mood”



HTTP

XMMP

altro



HTTP

Appleseed

(QuickSocial)

Friendica

(DFRN + Ostatus + Diaspora)

Statusnet / identica

(Ostatus)

Diaspora*

(suo)



OStatus

Web Finger

Activity Streams

PushSubHubBub (!)

Salmon



<http://www.w3.org/community/ostatus/>



Web Finger

bruno@server2



<http://code.google.com/p/webfinger/wiki/WebFingerProtocol>



Web Finger

bruno@server2

<http://server2/.well-known/host-meta>



<http://code.google.com/p/webfinger/wiki/WebFingerProtocol>



Web Finger

bruno@server2

<http://server2/.well-known/host-meta>

“well-known” uri:

[/favicon.ico](#)

[/robots.txt](#)

[/crossdomain.xml](#)



<http://code.google.com/p/webfinger/wiki/WebFingerProtocol>



Web Finger

bruno@server2

<http://server2/.well-known/host-meta>

```
<XRD>  
  <hm:Host>server2</hm:Host>  
  <Link rel="lrdd" template="http://server2/xrd/?uri={uri}"/>  
  [...]  
</XRD>
```



<http://code.google.com/p/webfinger/wiki/WebFingerProtocol>



Web Finger

bruno@server2

<http://server2/.well-known/host-meta>

<http://server2/xrd/?uri=acct%3Abruno%40server2>

acct:bruno@server2



<http://code.google.com/p/webfinger/wiki/WebFingerProtocol>



Web Finger

bruno@server2

<http://server2/.well-known/host-meta>

<http://server2/xrd/?uri=acct%3Abruno%40server2>

```
<XRD>
  <Subject>bruno@server2</Subject>
  <Alias>http://server2/profile/bruno</Alias>
  <Link rel="http://webfinger.net/rel/profile-page" type="text/html"
        href="http://server2/profile/bruno" />
  <Link rel="http://webfinger.net/rel/avatar" type="image/jpeg"
        href="http://server2/photo/profile/1.jpg" />

  <Link rel="salmon" href="http://server2/salmon/bruno" />

  [...]
</XRD>
```



<http://code.google.com/p/webfinger/wiki/WebFingerProtocol>



Web Finger

bruno@server2

<http://server2/.well-known/host-meta>

<http://server2/xrd/?uri=acct%3Abruno%40server2>

<https://identi.ca/.well-known/host-meta>



<http://code.google.com/p/webfinger/wiki/WebFingerProtocol>



Activity Streams

Atom / JSON

“actor, verb, object”

“Alice ha caricato una foto”

“Bruno ha condiviso un video”



<http://activitystrea.ms/>



Activity Streams

```
[...]
<entry xmlns="http://www.w3.org/2005/Atom"
  xmlns:activity="http://activitystrea.ms/spec/1.0/">
  <id>tag:photopanic.example.com,2009:activity/4859/4352</id>
  <title>Geraldine posted a Photo on PhotoPanic</title>
  <published>2009-11-02T15:29:00Z</published>
  <link rel="alternate" type="text/html"
  href="http://example.com/geraldine/activities/4352" />
  <activity:verb>post</activity:verb>
  <activity:object>
    <id>tag:photopanic.example.com,2009:photo/4352</id>
    <title>My Cat</title>
    <published>2009-11-02T15:29:00Z</published>
    <link rel="alternate" type="text/html"
  href="http://example.com/geraldine/photos/4352" />
    <activity:object-type>photo</activity:object-type>
  </activity:object>
  <content type="html">
    &lt;p&gt;Geraldine posted a Photo on PhotoPanic&lt;/p&gt;
    &lt;img src="/geraldine/photos/4352.jpg"&gt;
  </content>
</entry>
[...]
```



Activity Streams

```
[...]
<entry xmlns="http://www.w3.org/2005/Atom"
  xmlns:activity="http://activitystrea.ms/spec/1.0/">
  <id>tag:photopanic.example.com,2009:activity/4859/4352</id>
  <title>Geraldine posted a Photo on PhotoPanic</title>
  <published>2009-11-02T15:29:00Z</published>
  <link rel="alternate" type="text/html"
    href="http://example.com/geraldine/activities/4352" />
  <activity:verb>post</activity:verb>
  <activity:object>
    <id>tag:photopanic.example.com,2009:photo/4352</id>
    <title>My Cat</title>
    <published>2009-11-02T15:29:00Z</published>
    <link rel="alternate" type="text/html"
      href="http://example.com/geraldine/photos/4352" />
    <activity:object-type>photo</activity:object-type>
  </activity:object>
  <content type="html">
    &lt;p&gt;Geraldine posted a Photo on PhotoPanic&lt;/p&gt;
    &lt;img src="/geraldine/photos/4352.jpg"&gt;
  </content>
</entry>
[...]
```



Activity Streams

```
[...]
<entry xmlns="http://www.w3.org/2005/Atom"
  xmlns:activity="http://activitystrea.ms/spec/1.0/">
  <id>tag:photopanic.example.com,2009:activity/4859/4352</id>
  <title>Geraldine posted a Photo on PhotoPanic</title>
  <published>2009-11-02T15:29:00Z</published>
  <link rel="alternate" type="text/html"
  href="http://example.com/geraldine/activities/4352" />
  <activity:verb>post</activity:verb>
  <activity:object>
    <id>tag:photopanic.example.com,2009:photo/4352</id>
    <title>My Cat</title>
    <published>2009-11-02T15:29:00Z</published>
    <link rel="alternate" type="text/html"
    href="http://example.com/geraldine/photos/4352" />
    <activity:object-type>photo</activity:object-type>
  </activity:object>
  <content type="html">
    &lt;p&gt;Geraldine posted a Photo on PhotoPanic&lt;/p&gt;
    &lt;img src="/geraldine/photos/4352.jpg"&gt;
  </content>
</entry>
[...]
```



Activity Streams

```
[...]
<entry xmlns="http://www.w3.org/2005/Atom"
  xmlns:activity="http://activitystrea.ms/spec/1.0/">
  <id>tag:photopanic.example.com,2009:activity/4859/4352</id>
  <title>Geraldine posted a Photo on PhotoPanic</title>
  <published>2009-11-02T15:29:00Z</published>
  <link rel="alternate" type="text/html"
    href="http://example.com/geraldine/activities/4352" />
  <activity:verb>post</activity:verb>
  <activity:object>
    <id>tag:photopanic.example.com,2009:photo/4352</id>
    <title>My Cat</title>
    <published>2009-11-02T15:29:00Z</published>
    <link rel="alternate" type="text/html"
      href="http://example.com/geraldine/photos/4352" />
    <activity:object-type>photo</activity:object-type>
  </activity:object>
  <content type="html">
    &lt;p&gt;Geraldine posted a Photo on PhotoPanic&lt;/p&gt;
    &lt;img src="/geraldine/photos/4352.jpg"&gt;
  </content>
</entry>
[...]
```

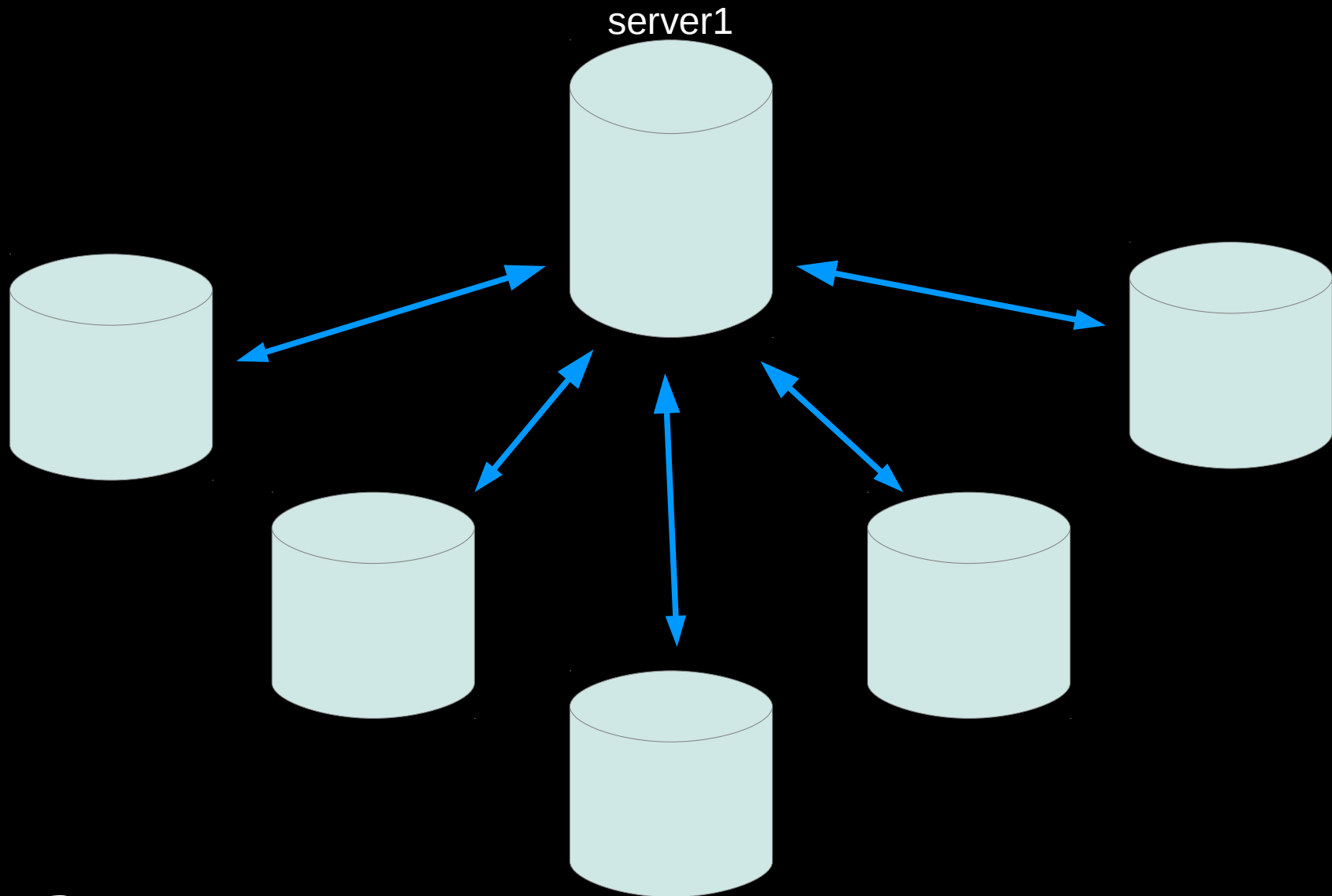


Activity Streams

```
[...]
<entry xmlns="http://www.w3.org/2005/Atom"
  xmlns:activity="http://activitystrea.ms/spec/1.0/">
  <id>tag:photopanic.example.com,2009:activity/4859/4352</id>
  <title>Geraldine posted a Photo on PhotoPanic</title>
  <published>2009-11-02T15:29:00Z</published>
  <link rel="alternate" type="text/html"
  href="http://example.com/geraldine/activities/4352" />
  <activity:verb>post</activity:verb>
  <activity:object>
    <id>tag:photopanic.example.com,2009:photo/4352</id>
    <title>My Cat</title>
    <published>2009-11-02T15:29:00Z</published>
    <link rel="alternate" type="text/html"
  href="http://example.com/geraldine/photos/4352" />
    <activity:object-type>photo</activity:object-type>
  </activity:object>
  <content type="html">
    &lt;p&gt;Geraldine posted a Photo on PhotoPanic&lt;/p&gt;
    &lt;img src="/geraldine/photos/4352.jpg"&gt;
  </content>
</entry>
[...]
```

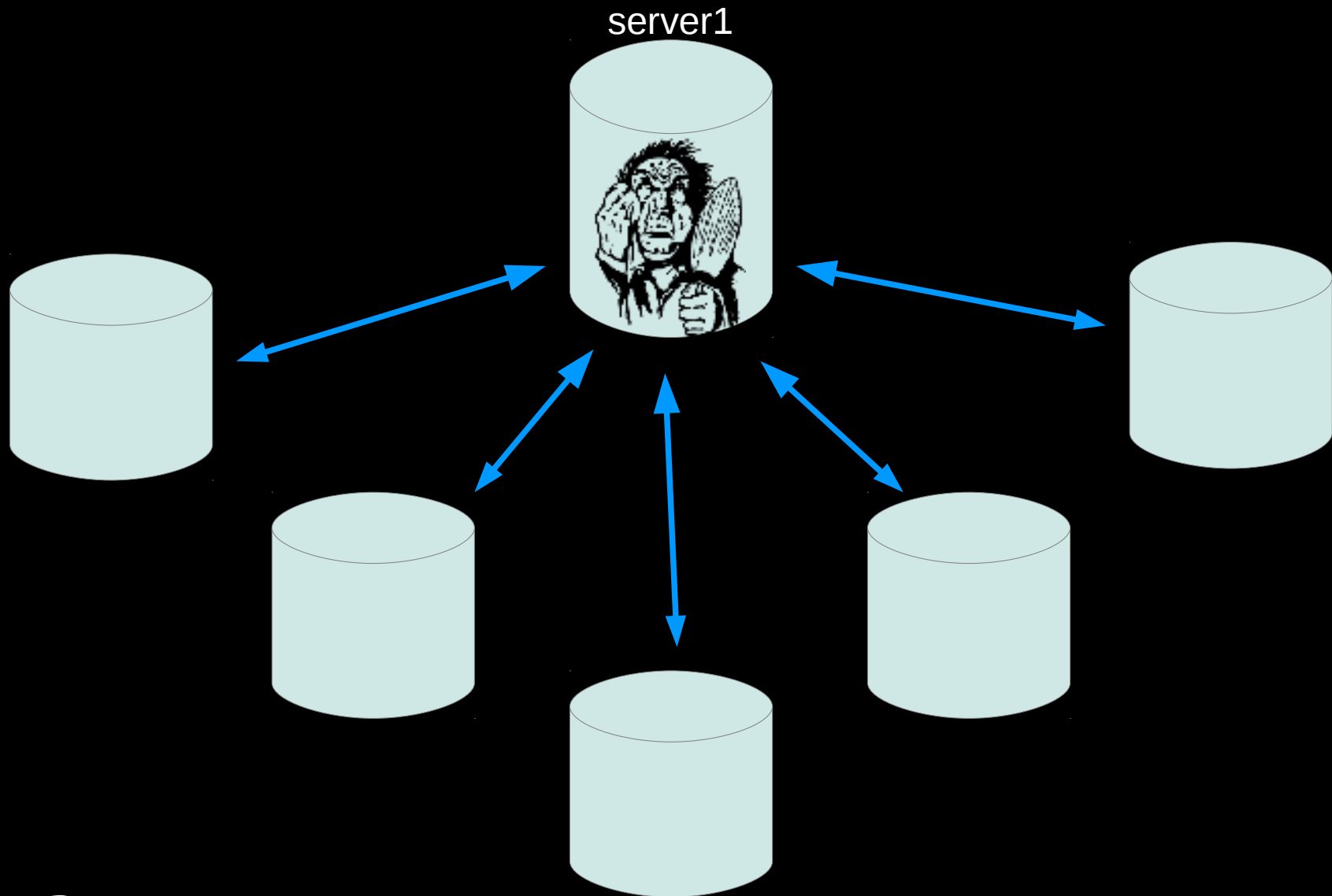


PushSubHubBub



<https://code.google.com/p/pubsubhubbub/>

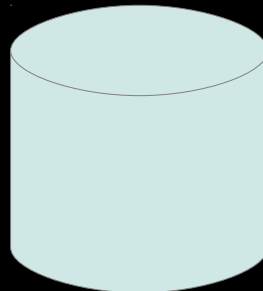
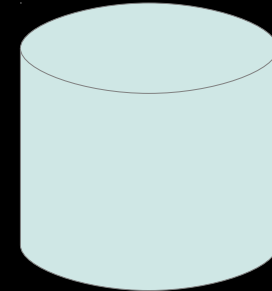
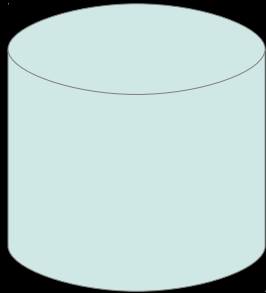
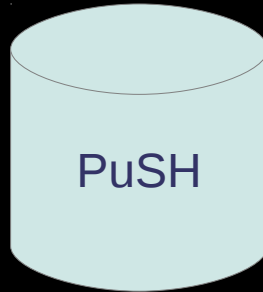
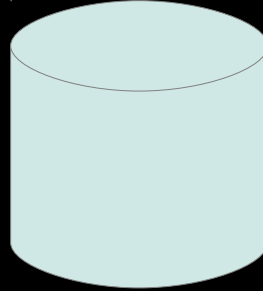
PushSubHubBub



<https://code.google.com/p/pubsubhubbub/>

PushSubHubBub

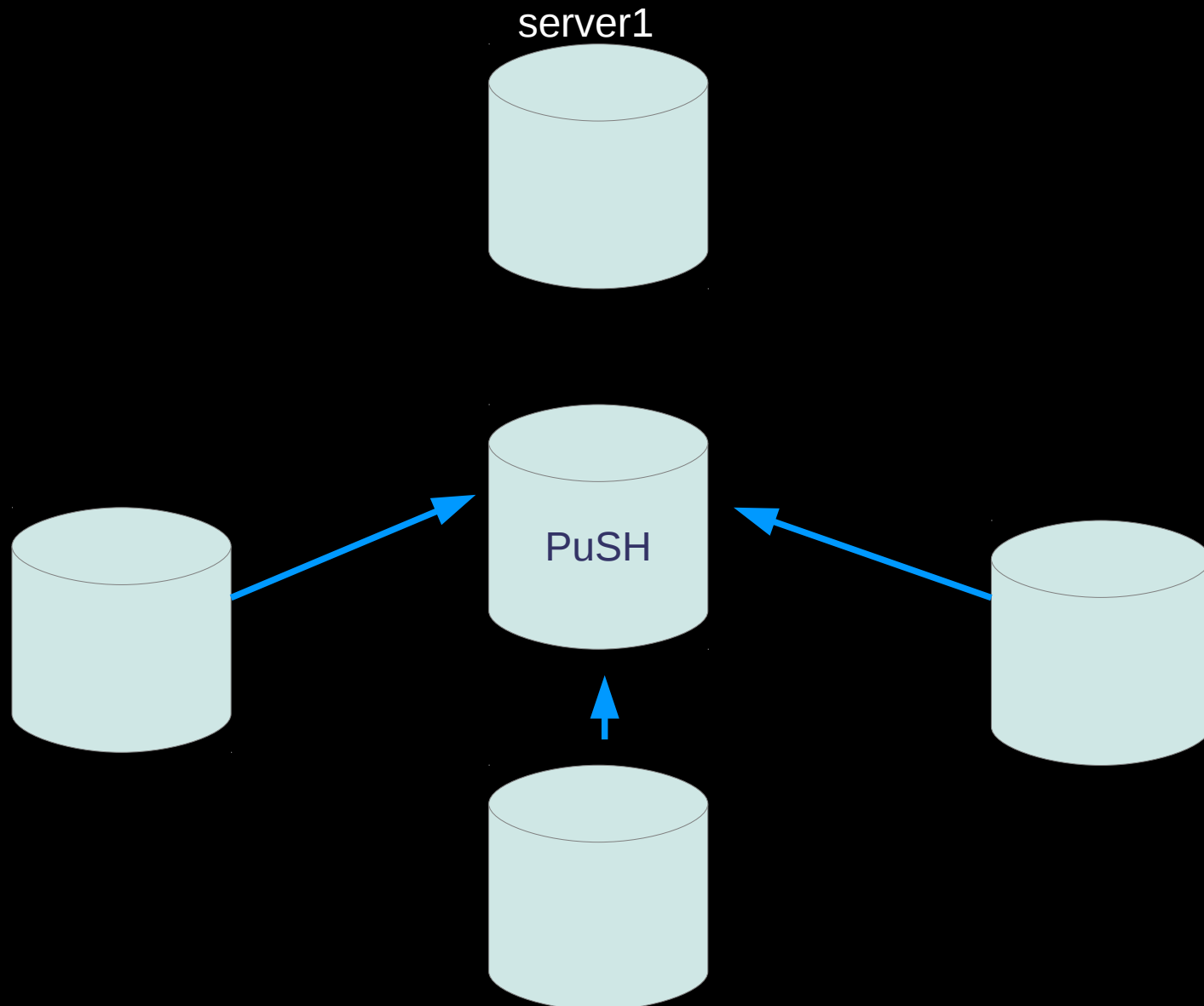
server1



<https://code.google.com/p/pubsubhubbub/>



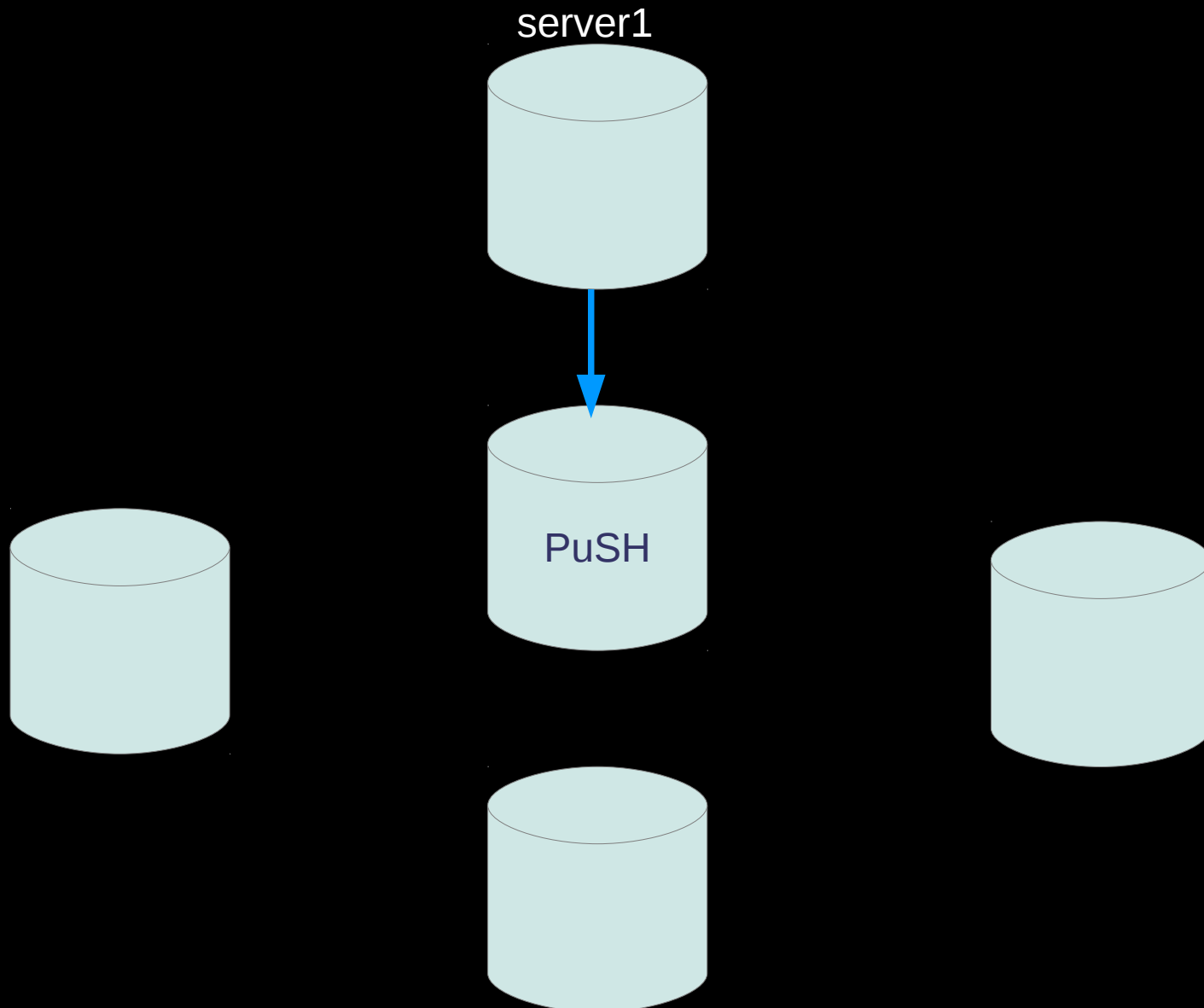
PushSubHubBub



<https://code.google.com/p/pubsubhubbub/>



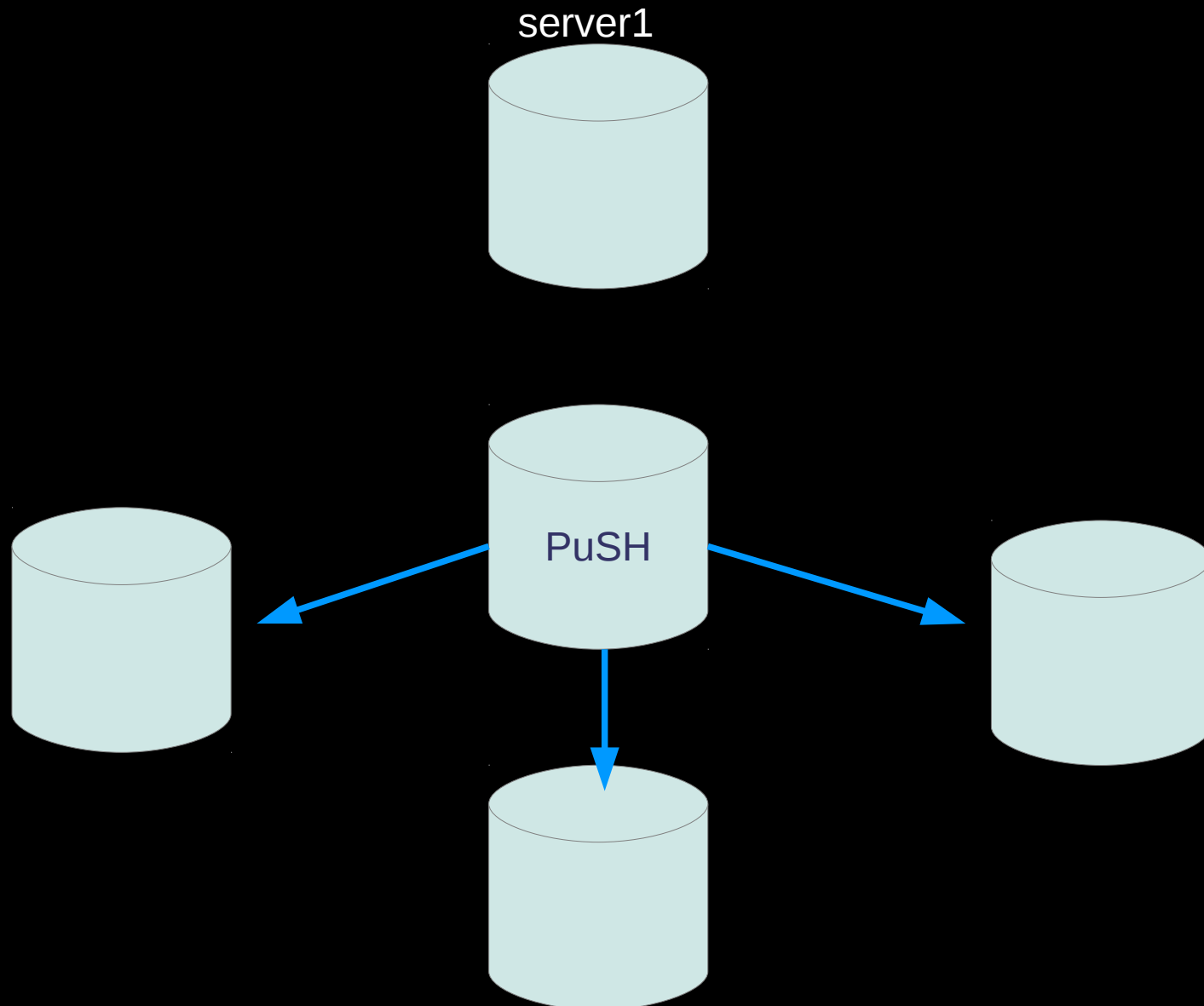
PushSubHubBub



<https://code.google.com/p/pubsubhubbub/>



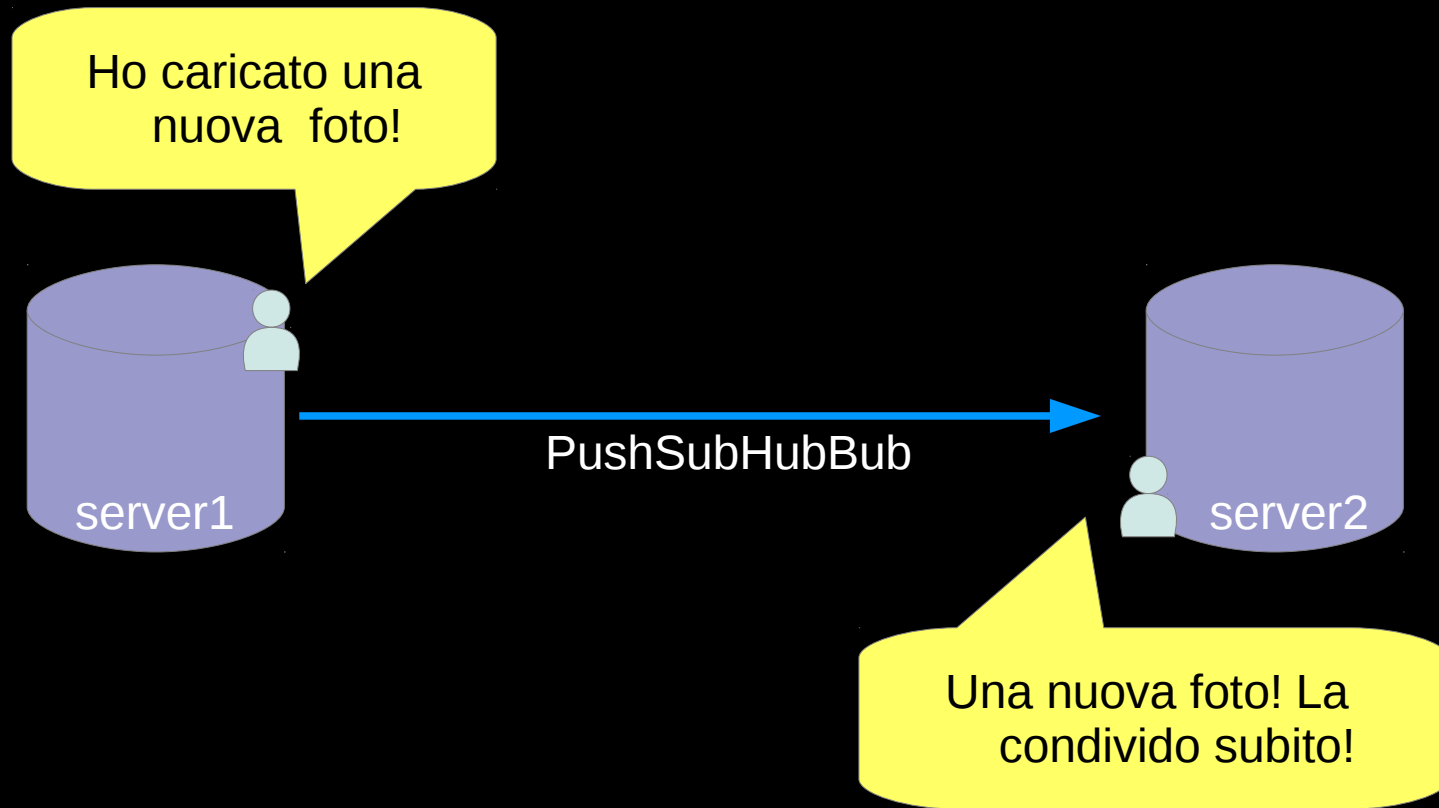
PushSubHubBub



<https://code.google.com/p/pubsubhubbub/>



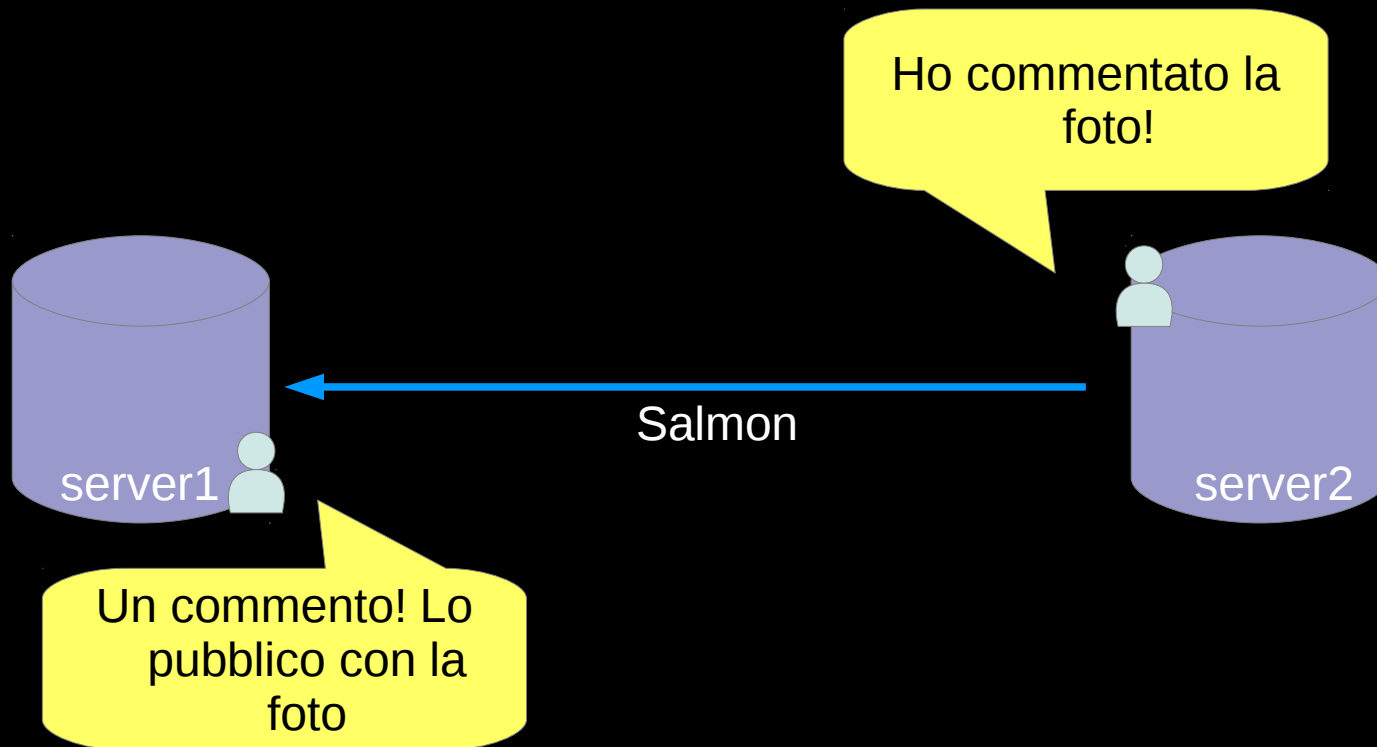
Salmon



<http://www.salmon-protocol.org/>

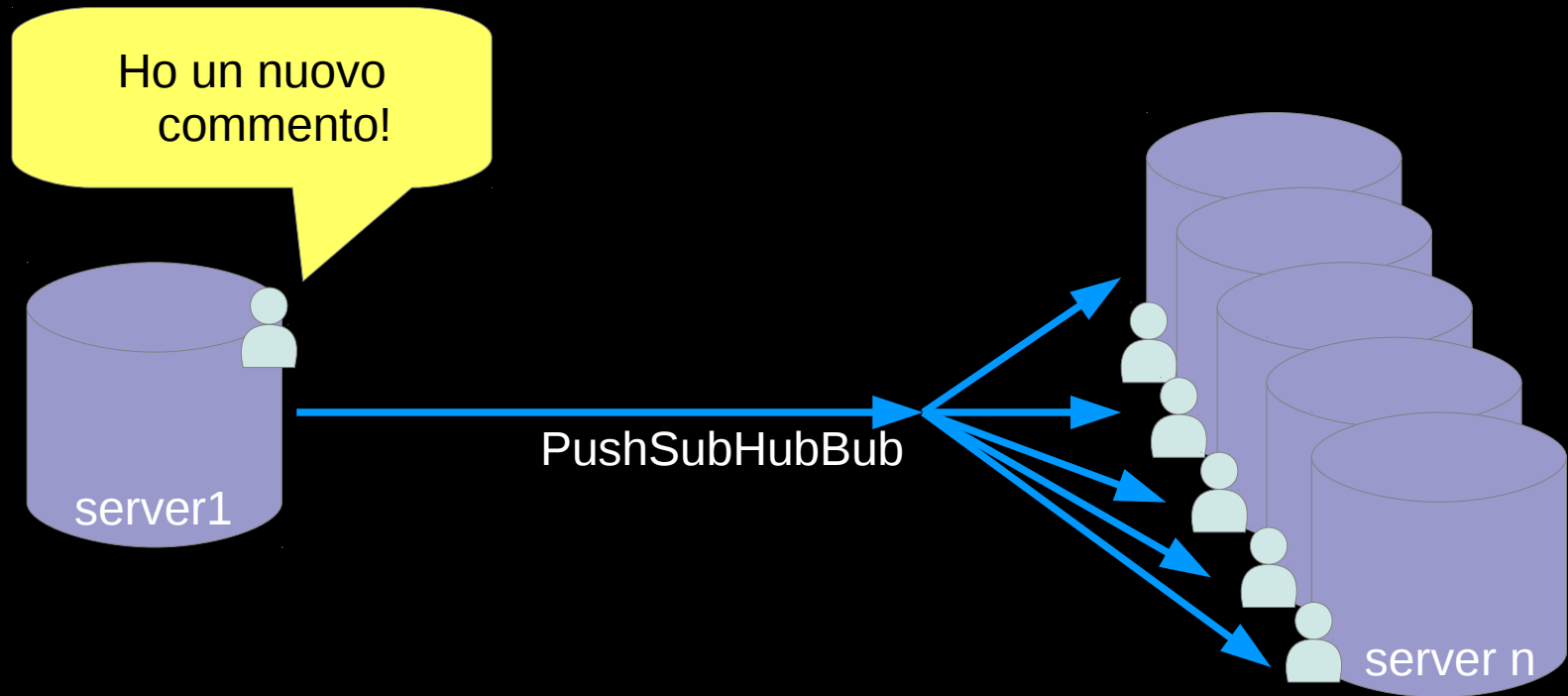


Salmon



<http://www.salmon-protocol.org/>

Salmon



<http://www.salmon-protocol.org/>



Salmon

Atom / JSON

Invio via HTTP POST
(url recuperato via web finger)

Identificazione del mittente
(messaggio firmato dal mittente, recupero chiave
attraverso web finger)



<http://www.salmon-protocol.org/>



Salmon

```
[...]  
<link rel="salmon" href="http://example.org/salmon-endpoint"/>  
[...]
```

```
POST /salmon-endpoint HTTP/1.1  
Host: example.org  
Content-Type: application/atom+xml
```

```
<?xml version='1.0' encoding='UTF-8'?>  
<me:env xmlns:me="http://salmon-protocol.org/ns/magic-env">  
  <me:data type='application/atom+xml'>  
    PD94bWwgdmVyc2lvbj0nMS4wJyBlbmNvZGluZz0nVVRGLTgnPz4KPGVudHJ5IHhtbG5zPS  
    dodHRwOi8vd3d3LnczLm9yZy8yMDA1L0F0b20nPgogIDxpZD50YWc6ZXhhbXBsZS5jb20s  
    MjAwOTpjbXQtMC40NDc3NTcxODwvaWQ-ICAKICA8YXV0aG9yPjxuYW1lPnRlc3RAZXhhbX  
    [...]  
  </me:data>  
  <me:encoding>base64url</me:encoding> <me:alg>RSA-SHA256</me:alg>  
  <me:sig>  
    EvGSD2vi8qYcveHnb-rrlok07qnCXjn8YSeCDDXlbhILSabgvNsPpbe76up8w63i2f  
    WHvLKJzeGLKfyHg8ZomQ  
  </me:sig>  
</me:env>
```



nessun controllo
sulla privacy



DSPN
Diaspora
DFRN
Zot!



DSPN

(Distributed Social Networking Protocol)

Comunicazione su SSL

Single sign-on

Messaggi via testo / Base64url

Criptazione con RSA

Demone specifico



<http://www.complang.org/dsnp/>



Diaspora

Messaggi via HTTP / JSON (?)

Certificati SSL server validi (?)

Rich text via Markdown

Ogni “Pod” cerca di replicare la parte di rete che conosce

Cancellazione dei contenuti
“hashtag-effect”



<https://github.com/diaspora/diaspora/wiki/Diaspora's-federation-protocol>



DFRN

(Distributed Friends & Relations Network)

Web Finger

Atom / Activity Stream

Rich text via BBCode

Controllo privacy

Piuttosto complesso

Autenticazione remota non user-friendly

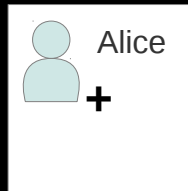


<https://macgirvin.com/spec/dfrn2.pdf>



DFRN

(Distributed Friends & Relations Network)



alice@server1

bruno@server2



Web Finger

```
<XRD xmlns="http://docs.oasis-open.org/ns/xri/xrd-1.0">
  <Subject>bruno@server2</Subject>
  <Link rel="http://purl.org/macgirvin/dfrn/1.0"
        Href="http://server2/profile/bruno"/>
  [...]
</XRD>
```

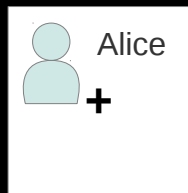


<https://macgirvin.com/spec/dfrn2.pdf>



DFRN

(Distributed Friends & Relations Network)



bruno@server2



Web Finger

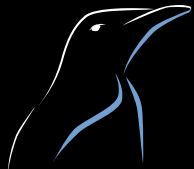
alice@server1

```
<XRD xmlns="http://docs.oasis-open.org/ns/xri/xrd-1.0">
  <Subject>bruno@server2</Subject>
  <Link rel="http://purl.org/macgirvin/dfrn/1.0"
        Href="http://server2/profile/bruno"/>
  [...]
</XRD>
```



```
<!DOCTYPE html >
<html>
[...
  <link rel="dfrn-request" href="http://server2/dfrn_request/bruno" />
  <link rel="dfrn-confirm" href="http://server2/dfrn_confirm/bruno" />
  <link rel="dfrn-notify" href="http://server2/dfrn_notify/bruno" />
  <link rel="dfrn-poll" href="http://server2/dfrn_poll/bruno" />
  <link rel="dfrn-poco" href="http://server2/poco/bruno" />
[...
...

```

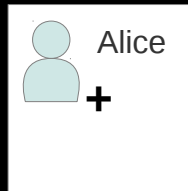


<https://macgirvin.com/spec/dfrn2.pdf>



DFRN

(Distributed Friends & Relations Network)



alice@server1

bruno@server2

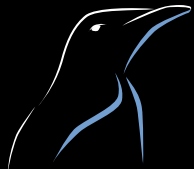


Web Finger

```
<XRD xmlns="http://docs.oasis-open.org/ns/xri/xrd-1.0">
  <Subject>bruno@server2</Subject>
  <Link rel="http://purl.org/macgirvin/dfrn/1.0"
    Href="http://server2/profile/bruno"/>
  [...]
</XRD>
```



```
<!DOCTYPE html >
<html>
[...
<link rel="dfrn-request" href="http://server2/dfrn_request/bruno" />
<link rel="dfrn-confirm" href="http://server2/dfrn_confirm/bruno" />
<link rel="dfrn-notify" href="http://server2/dfrn_notify/bruno" />
<link rel="dfrn-poll" href="http://server2/dfrn_poll/bruno" />
<link rel="dfrn-poco" href="http://server2/poco/bruno" />
[...
...
```

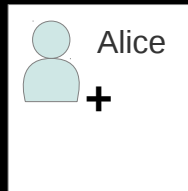


<https://macgirvin.com/spec/dfrn2.pdf>



DFRN

(Distributed Friends & Relations Network)



alice@server1

bruno@server2



Web Finger

```
<XRD xmlns="http://docs.oasis-open.org/ns/xri/xrd-1.0">
  <Subject>bruno@server2</Subject>
  <Link rel="http://purl.org/macgirvin/dfrn/1.0"
        Href="http://server2/profile/bruno"/>
  [...]
</XRD>
```



```
<!DOCTYPE html >
<html>
[...]
  <link rel="dfrn-request" href="http://server2/dfrn_request/bruno" />
  <link rel="dfrn-confirm" href="http://server2/dfrn_confirm/bruno" />
  <link rel="dfrn-notify" href="http://server2/dfrn_notify/bruno" />
  <link rel="dfrn-poll" href="http://server2/dfrn_poll/bruno" />
  <link rel="dfrn-poco" href="http://server2/poco/bruno" />
[...]
...
```

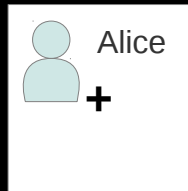


<https://macgirvin.com/spec/dfrn2.pdf>



DFRN

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alice@server1

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```



```
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<html>
[...
  <link rel="dfrn-request" href="http://server2/dfrn_request/bruno" />
  <link rel="dfrn-confirm" href="http://server2/dfrn_confirm/bruno" />
  <link rel="dfrn-notify" href="http://server2/dfrn_notify/bruno" />
  <link rel="dfrn-poll" href="http://server2/dfrn_poll/bruno" />
  <link rel="dfrn-poco" href="http://server2/poco/bruno" />
[...
...

```



<https://macgirvin.com/spec/dfrn2.pdf>



DFRN

(Distributed Friends & Relations Network)

Bruno chiede di entrare in contatto con Alice.

Bruno visita il profilo di Alice, clicca su “Connetti” e inserisce il suo indirizzo
(<http://server2/profile/bruno> o bruno@server2)

server1 carica il profilo di Bruno e trova il link http://server2/dfrn_request/bruno

Bruno viene indirizzato su

[http://server2/dfrn_request/bruno?dfrn_url=\[...\]&confirm_key=ABC123](http://server2/dfrn_request/bruno?dfrn_url=[...]&confirm_key=ABC123)

Bruno conferma la richiesta

Server2 richiede in GET

http://server1/dfrn_confirm/?confirm_key=ABC123

Server1 notifica Alice della richiesta di contatto



<https://macgirvin.com/spec/dfrn2.pdf>



DFRN

(Distributed Friends & Relations Network)

Alice conferma il contatto con Bruno

Server1 genera una coppia di chiavi RSA, memorizza la chiave privata
Server1 genera un DFRN-id random

Server1 chiama in POST

```
http://server2/dfrn_request/bruno?dfrn_url=[...]&confirm_key=ABC123
```

“public_key” => DFRN-public-key criptata con “aes_key”

“dfrn_id” => DFRN-id criptata con la chiave privata di server1

“source_url” => DFRN-url di server1 criptata con la chiave pubblica di server2

“aes_key” => stringa random criptata con la chiave pubblica di server2

“duplex” => optional. 1 or 0. Default is 0.

“dfrn_version” => 2.2



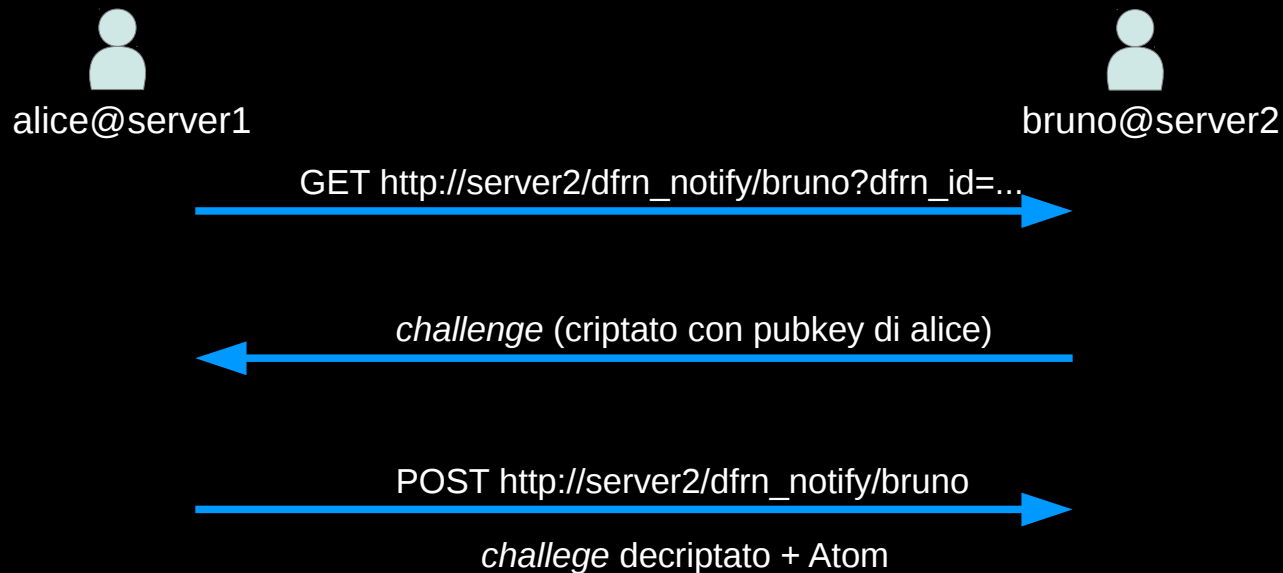
<https://macgirvin.com/spec/dfrn2.pdf>



DFRN

(Distributed Friends & Relations Network)

Alice scrive un post privato



Ritenta in caso di errore
Blocca il contatto dopo n errori



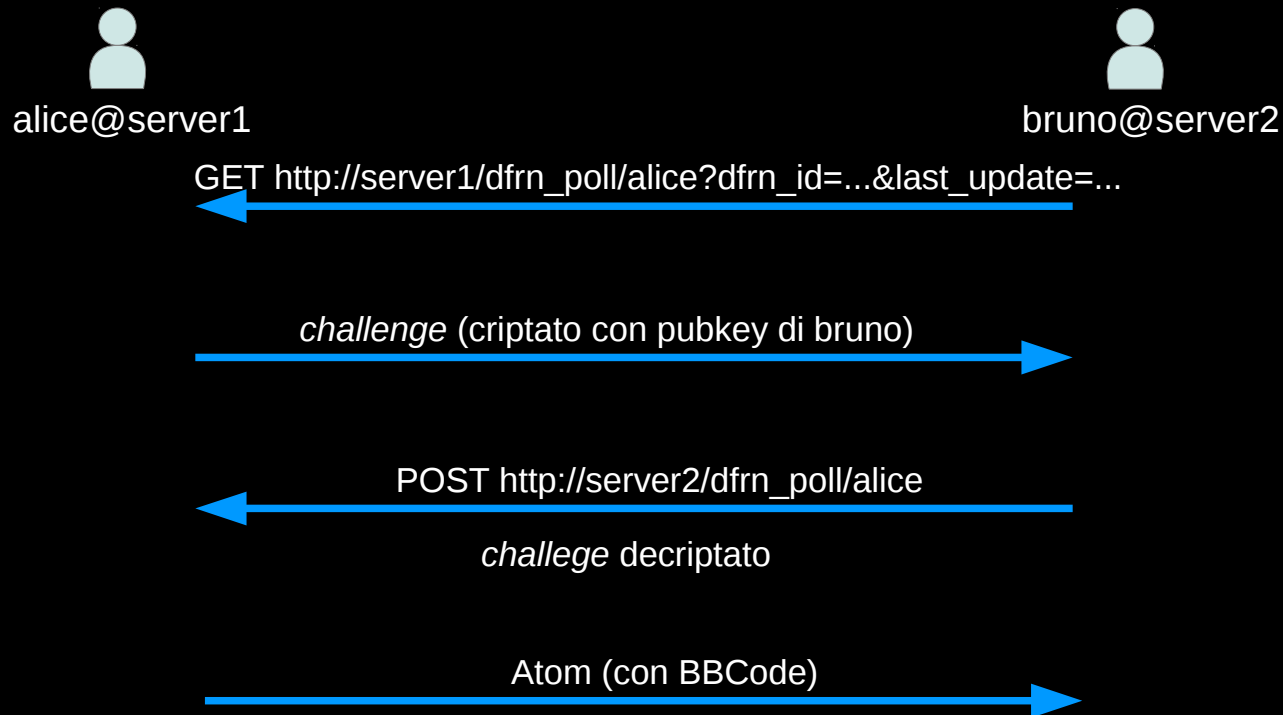
<https://macgirvin.com/spec/dfrn2.pdf>



DFRN

(Distributed Friends & Relations Network)

Bruno controlla aggiornamenti da Alice



XMPP

(Jappix, Buddycloud)

XEP-0060: Publish-Subscribe

<http://xmpp.org/extensions/xep-0060.html>

XEP-0313: Message Archive Management

<http://xmpp.org/extensions/xep-0313.html>



Futuro

