

Life Cycle of an OSRF Message

- OSRF: middleware for RPC
- Defining “client” and “server”
- Jabber as core of OSRF network
- Message stanzas: XML with JSON payload
- Routing through the router
- Bypassing the router



Defining Terms: Server and Client

Software, not hardware.

Client: A software process, or collection of closely related processes, running within an operating system.

Server: The same.

A server performs services at the request of clients.



Client and Server as Defined by Socket Calls

Client:

send()
sendto()
write()

recv()
recvfrom()
read()

Server:

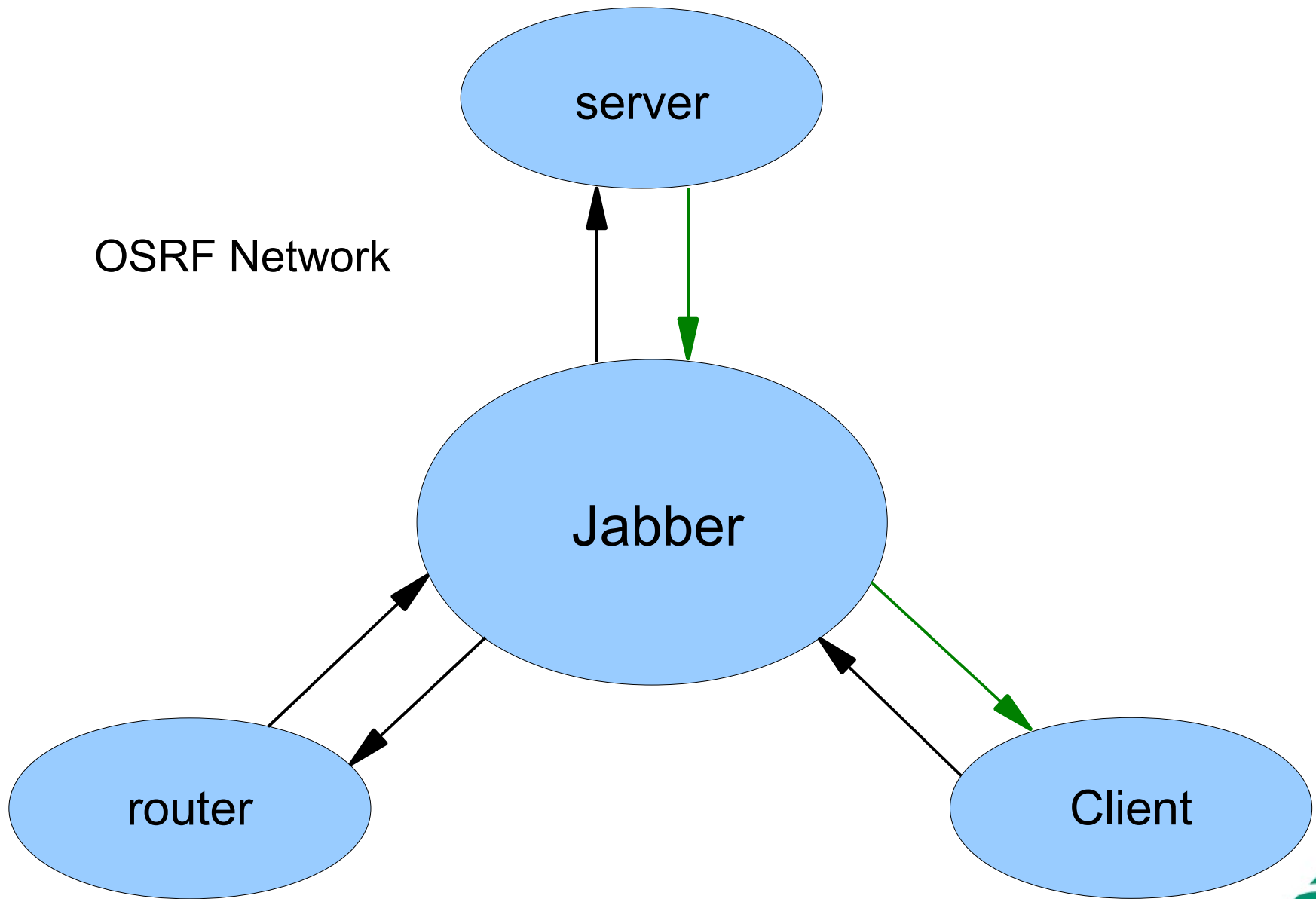
listen()

accept()

recv()
recvfrom()
read()

send()
sendto()
write()





Jabber Message Stanza

```
<message from="..." to="...">  
  <body>  
    ...  
  </body>  
</message>
```

Jabber ID:

username@domain/resource

OSRF messages:

- REQUEST
- RESULT
- STATUS
- CONNECT
- DISCONNECT



Use Case: srfsh Command

```
srfsh# request open-ils.cstore \  
open-ils.cstore.direct.actor.org_unit.retrieve 3
```

What srfsh knows:

- How to connect to Jabber (from configuration file)
- Name of router (from configuration file)
- Name of service (from command line)
- Name of method (from command line)
- Parameters (from command line)

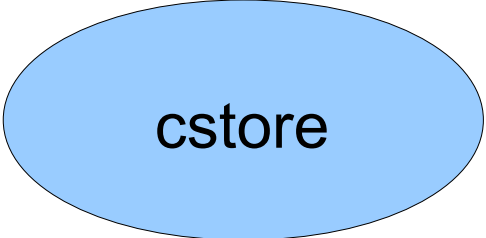
What srfsh doesn't know:

- IP address or Jabber ID of cstore server

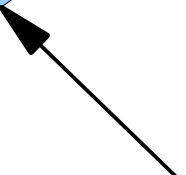
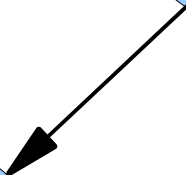
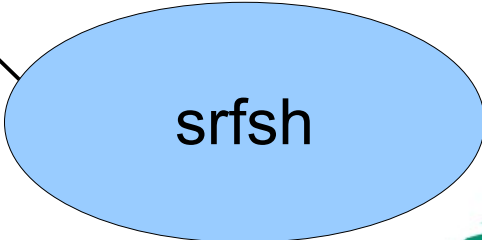
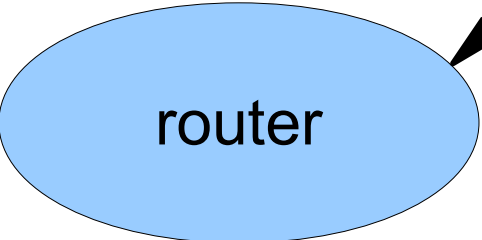
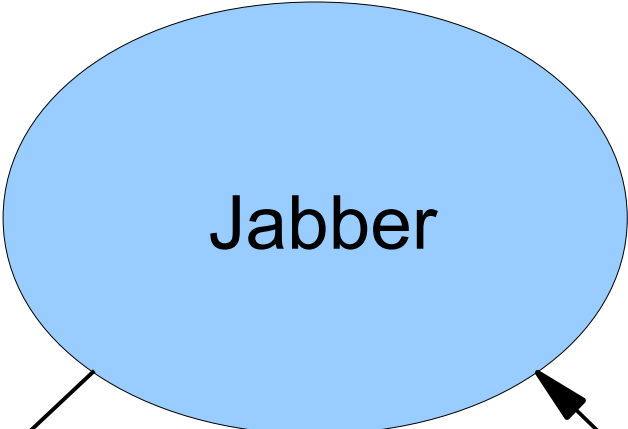
Construct Jabber ID, e.g.:

- router@private.localhost/open-ils.cstore





REQUEST
client to router



Router Processing

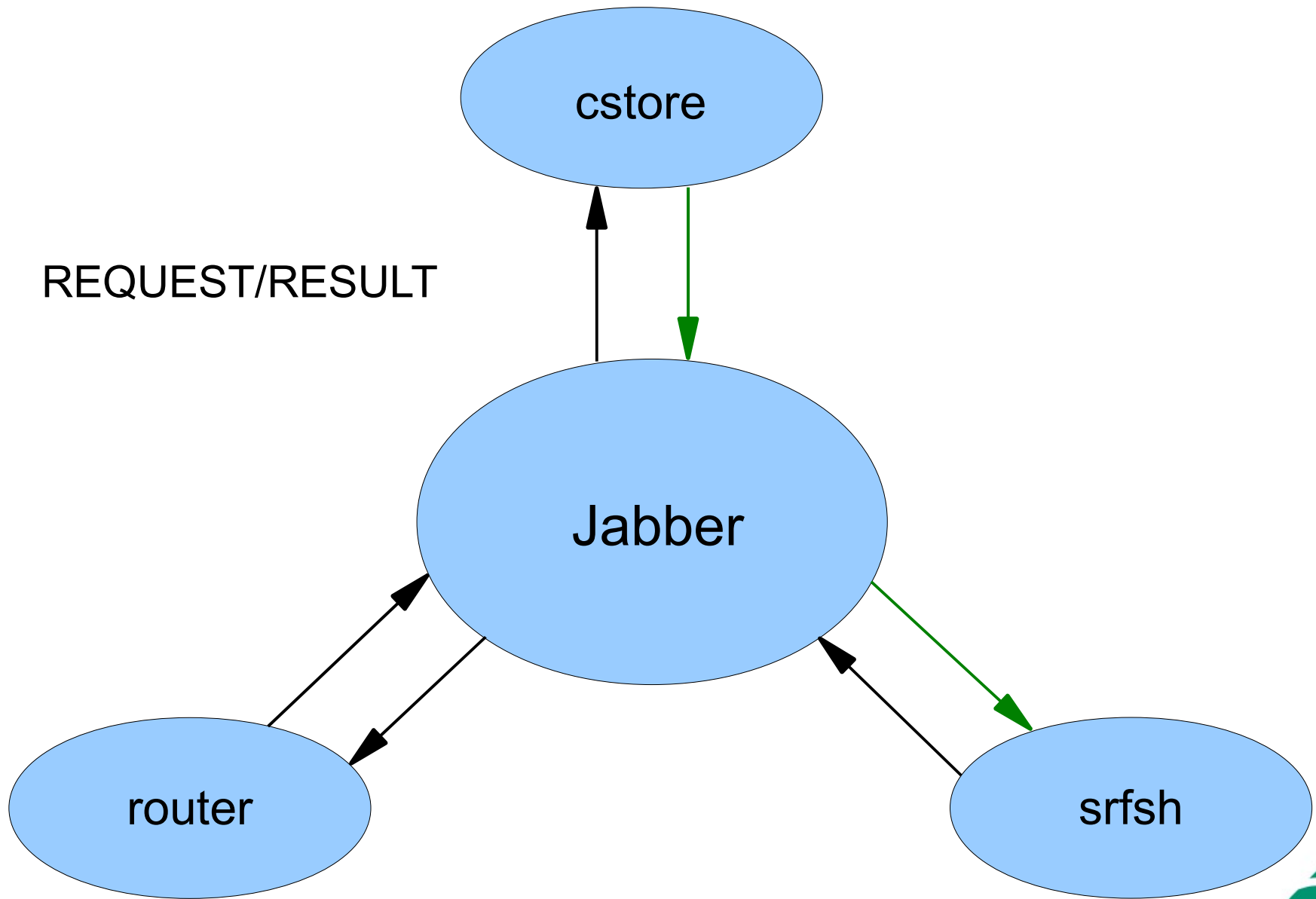
Router knows:

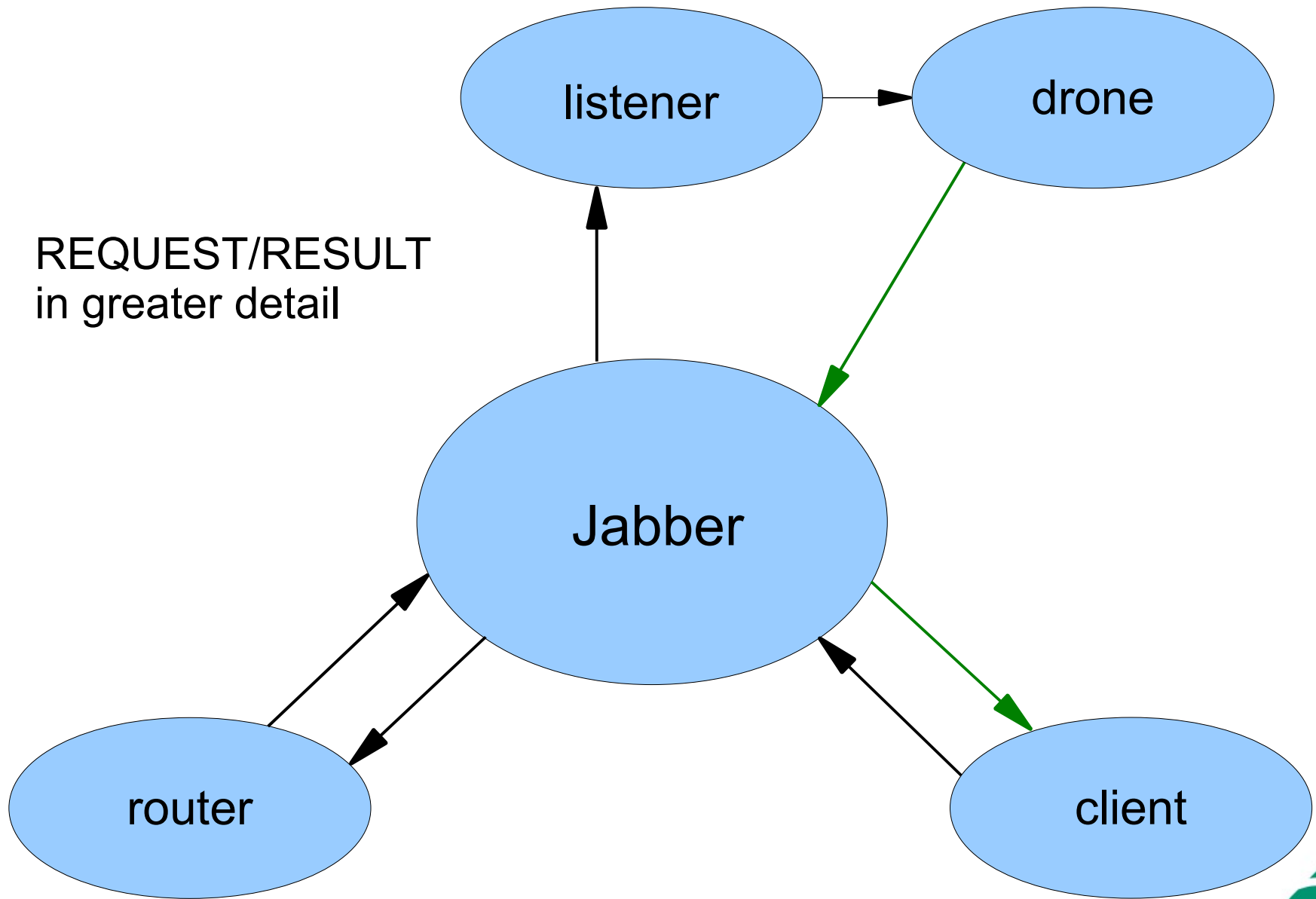
- How to connect to Jabber (from configuration file)
- Service names (from server registrations)
- Jabber IDS of servers (from server registrations)
- Name of service requested (based on choice of socket)
- Jabber ID of client (from Jabber server)

Construct a message:

- Copy the original
- Change the destination address
- Add a router_from attribute

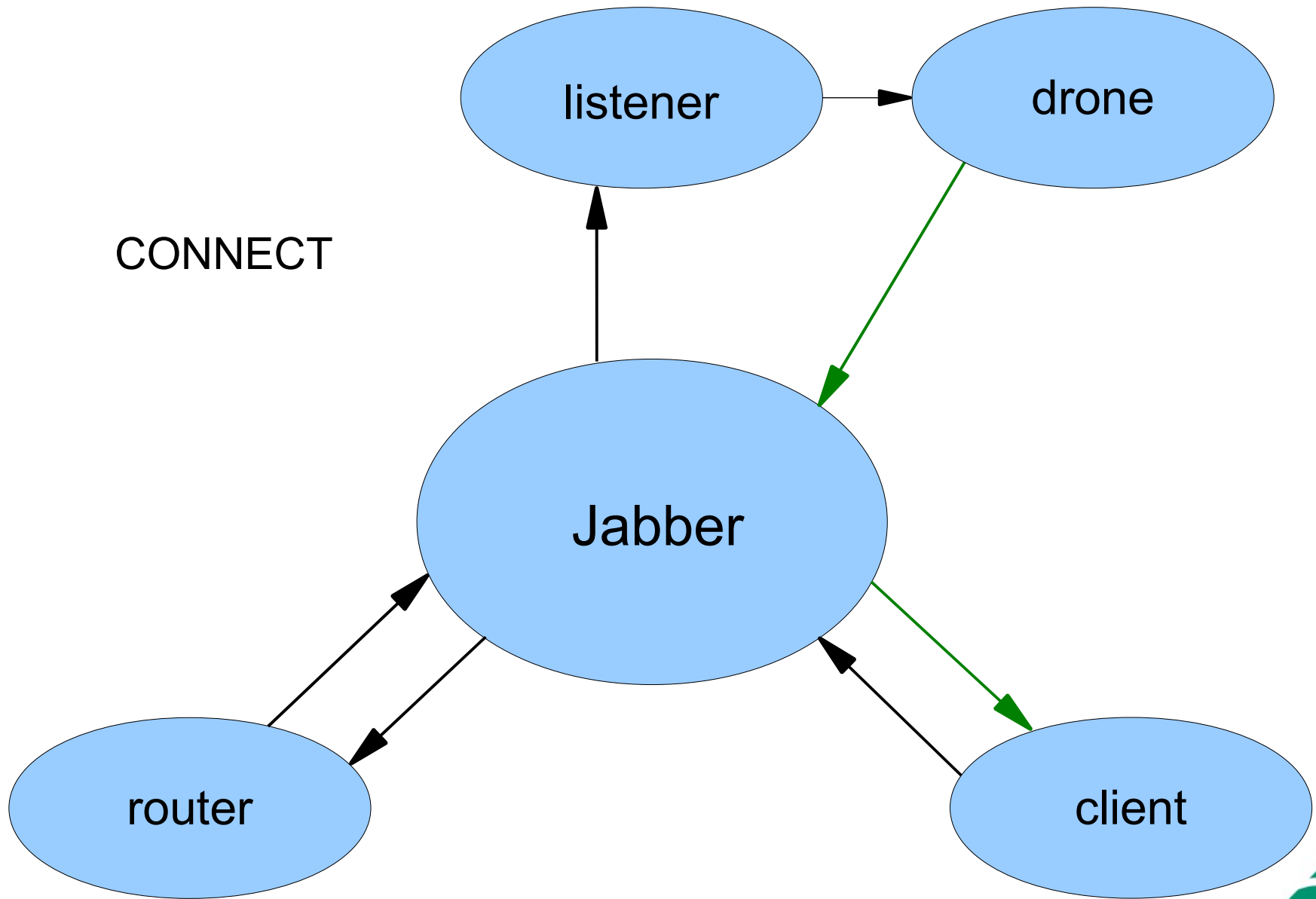


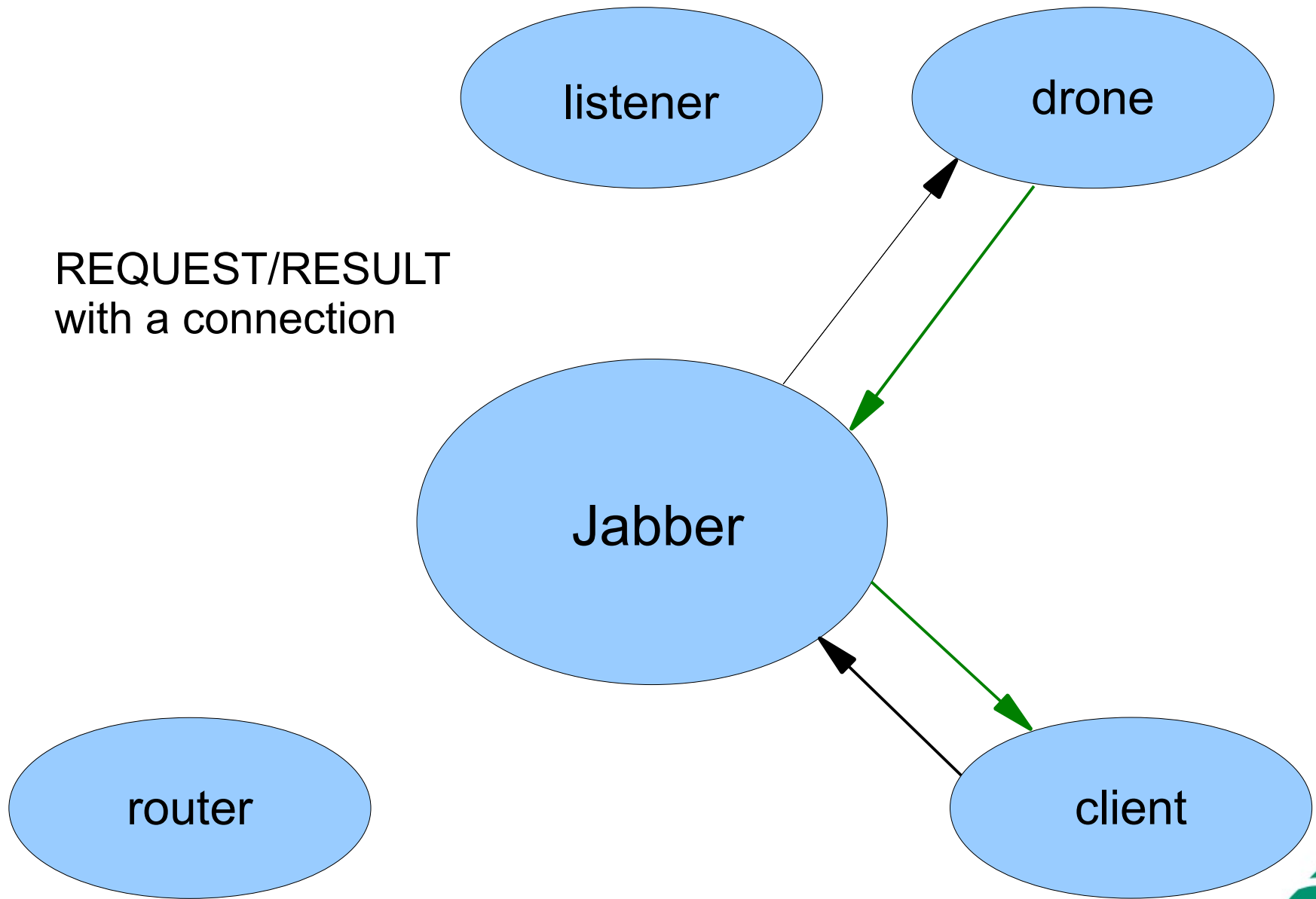


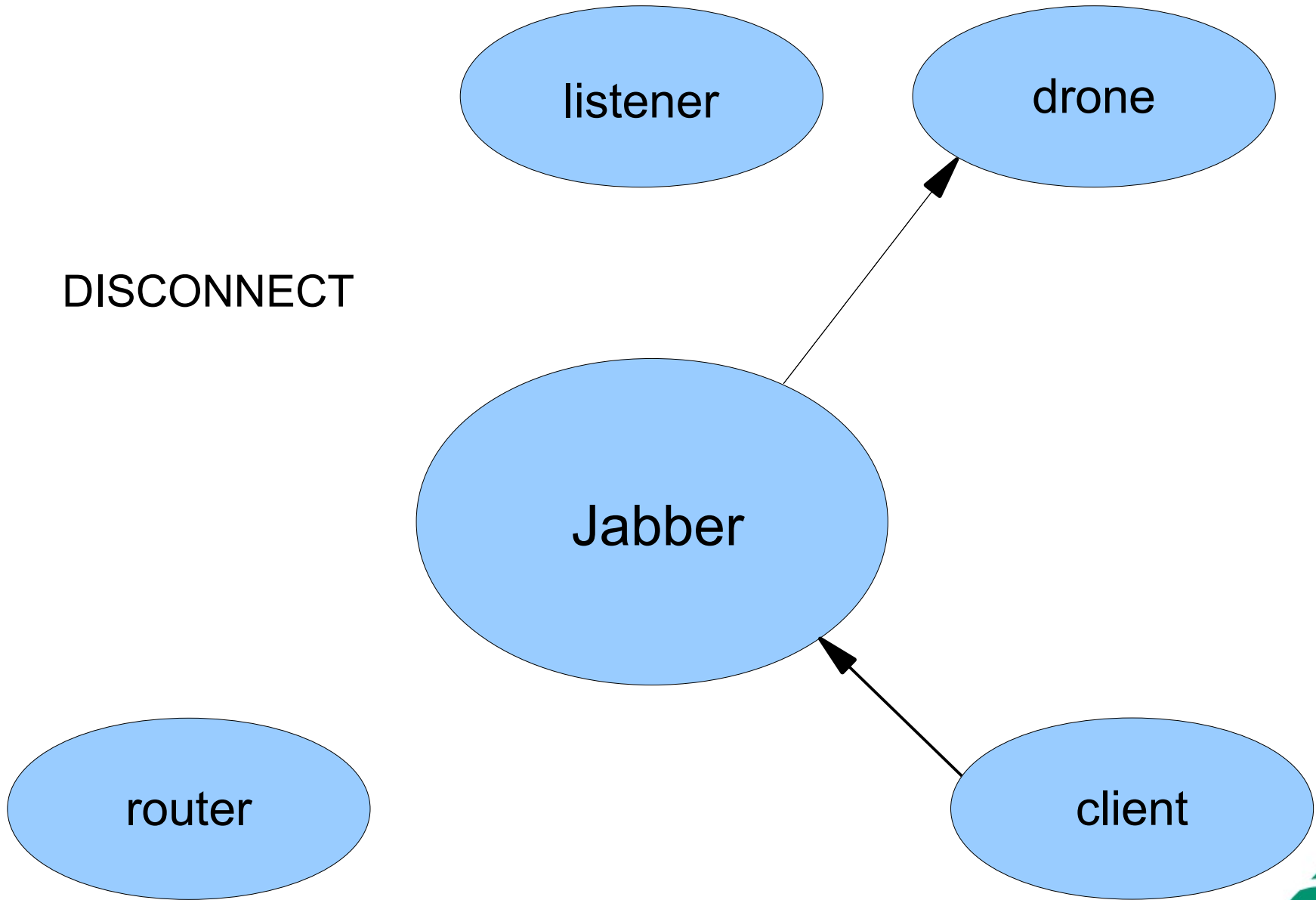


REQUEST/RESULT
in greater detail









Summary

1. Everybody but Jabber is a client, as defined by the socket calls
2. All messages go through Jabber
3. Jabber traffics in XML fragments (message stanzas)
4. Each OSRF message is JSON embedded in a message stanza
5. The router translates service names to Jabber IDs
6. CONNECT enables you to bypass the router
7. CONNECT monopolizes a server drone for the duration
8. CONNECT is necessary for a database transaction

