

Ejabberd Internals

simpcl
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Introduction

- Brief Introduction
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Brief Introduction

- Ejabberd是什么？ Erlang实现的IM服务端程序
- Erlang？ 解释性函数式编程语言，轻量级进程，ets, Node, 天然支持分布式, Mnesia
- JID三要素？ User@Domain/Resource
- Host or Domain?
- One domain one cluster?

Ejabberd Internals

Data Modules

one or several backends

Profile - VCards

- Mnesia
- SQL (MySQL, Postgres)
- LDAP

Message archive

- Mnesia
- SQL (MySQL, Postgres)

Contacts - Rosters

- Mnesia
- SQL (MySQL, Postgres)
- NoSQL (Riak)
- LDAP
- Rest API

Authentication

- Mnesia
- SQL (MySQL, Postgres)
- NoSQL (Riak)
- LDAP
- PAM
- Rest API

ejabberd node

s2s
(federation)



router



session manager
c2s

Parsing - Sockets - Clustering

Features Modules

Multi-User Chat

Offline

Last activity

Logging

Pubsub

Personal events

Anonymous access

Media transfer

Reliability & Security Modules

Carbon copy

Stream management

Message traceability

Shaping / anti DOS

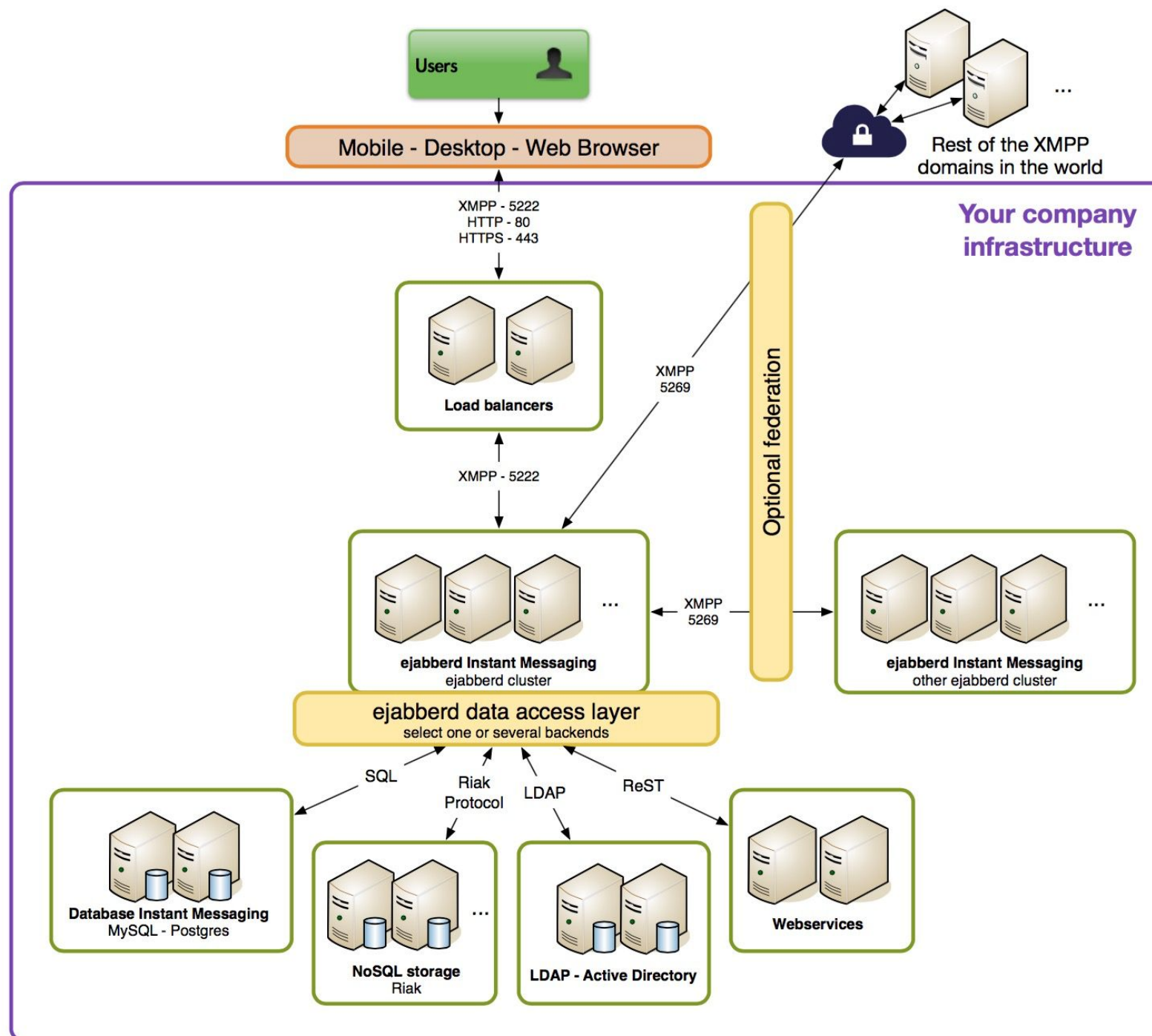
Message acks

Ping

Privacy

Audit

Ejabberd Large Scale



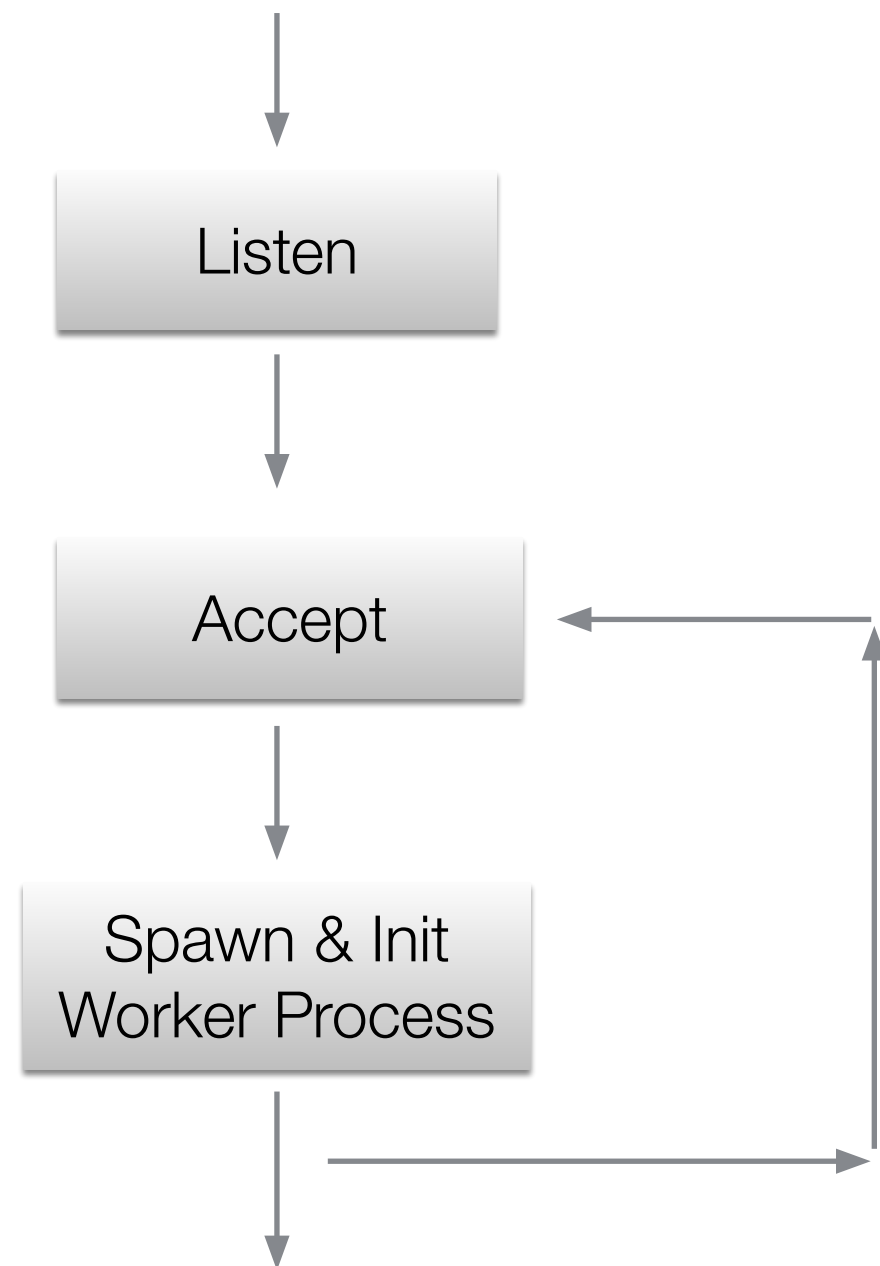
Typical large scale ejabberd deployment

Network

- 网络模型
- 请求处理
- c2s模块

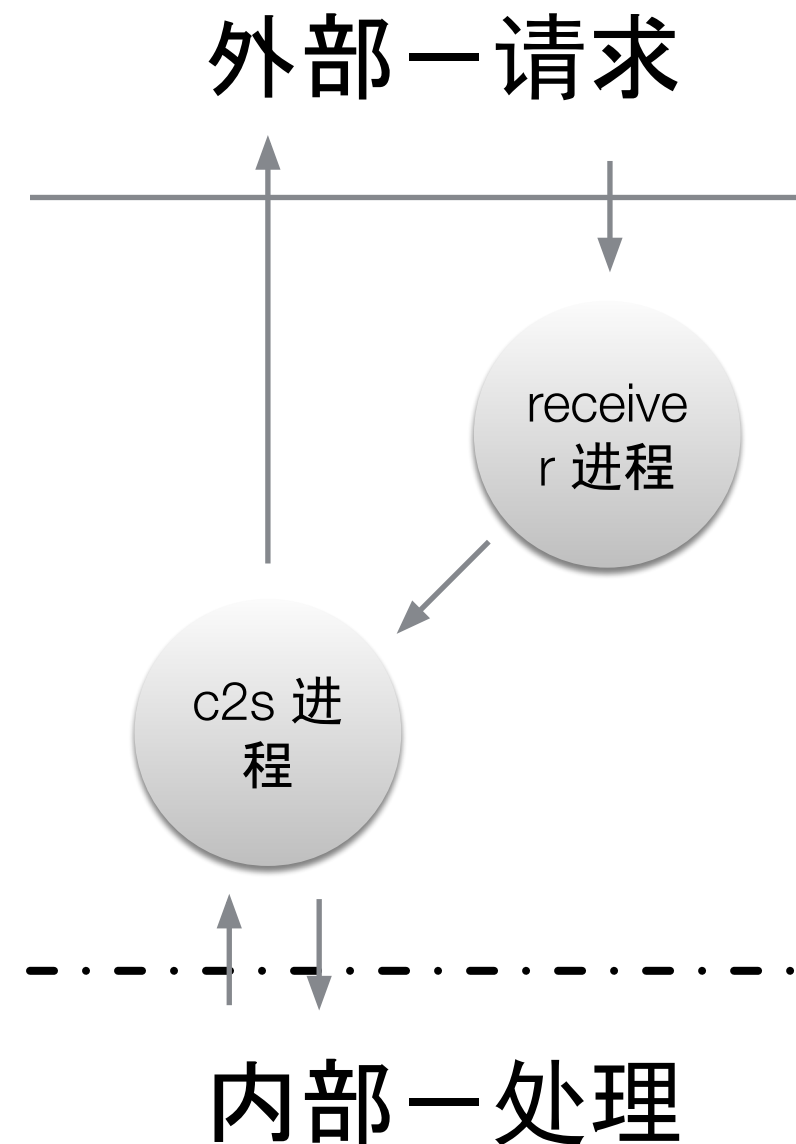
网络模型

- 启动一个进程监听TCP端口，并等待客户端连接
- 连接到来时，创建并初始化Worker进程
- 继续等待客户端连接



请求处理

- 接收到客户端TCP请求依次创建receiver进程和c2s进程
- receiver进程负责接收数据
- c2s进程负责处理XMPP协议
- http连接的处理方式详见ejabberd_http模块



c2s模块

- 状态机, XMPP协议解析, 根据客户端的请求数据, 状态进行变换
- 在状态变换时, 不同的时机和情景, 路由消息、执行预设的hooks处理、以及执行iq处理函数
- 具体XMPP协议解析及状态变换详见 @光右 的文档

OPEN_STREAM_TIMEOUT	60s
C2S_HIBERNATE_TIMEOUT	90s

Modules & Hooks

- `gen_mod` behavior
- `ejabberd_hooks` module
- `ejabberd_hooks:add/ejabberd_hooks:delete/ejabberd_hooks:run`
- ets “hooks”
- `[io:format("~p ~n", [Hook]) || {{Hook, Domain}, L} <- ets:tab2list(hooks)]`.

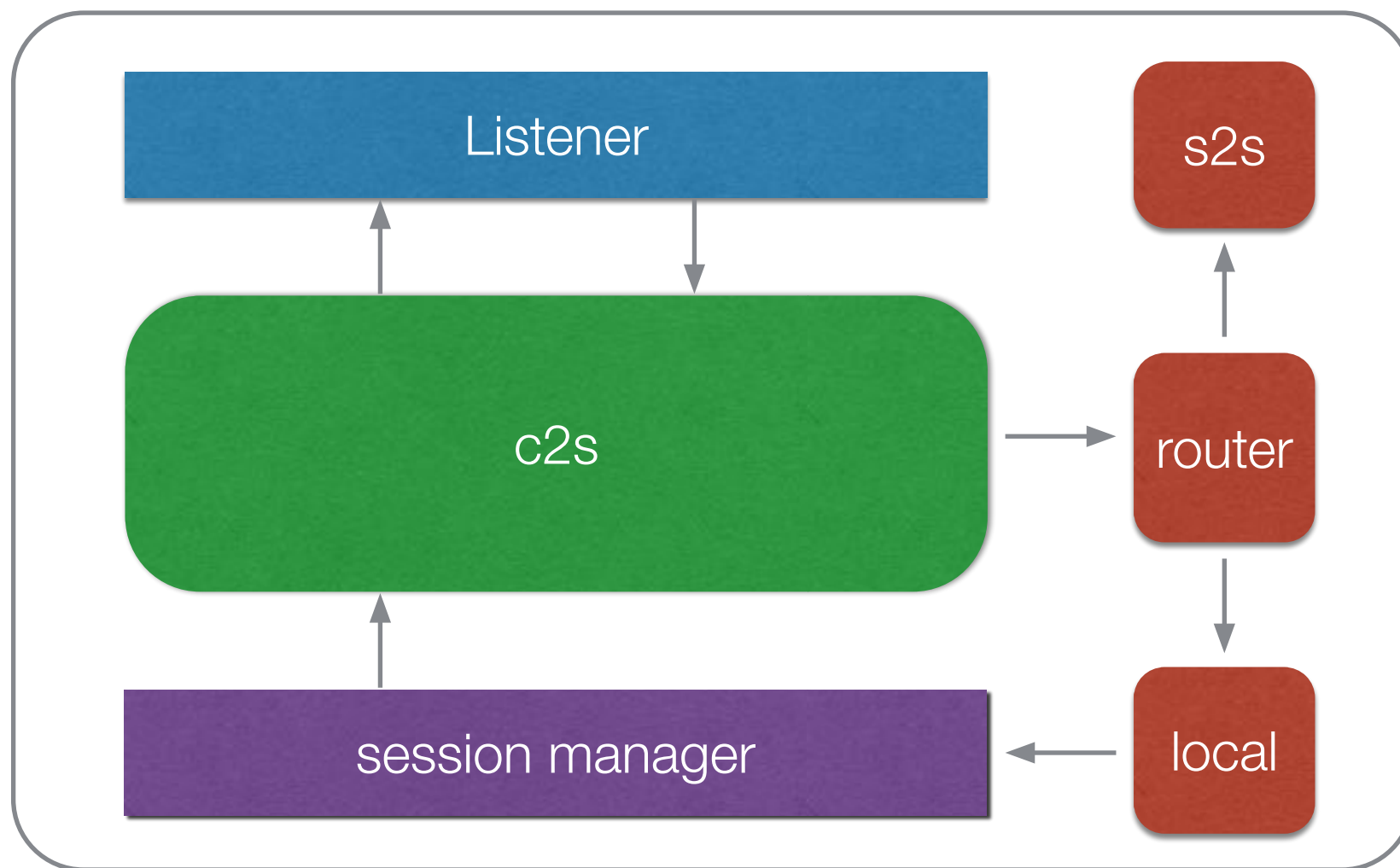
Route

- 消息类型
- 消息路由路径
- 路由模块
- IQ处理机制

消息类型

- presence
- iq
- message

消息路由路径



- listener
- c2s
- router
- local router
- session manager
- s2s manager

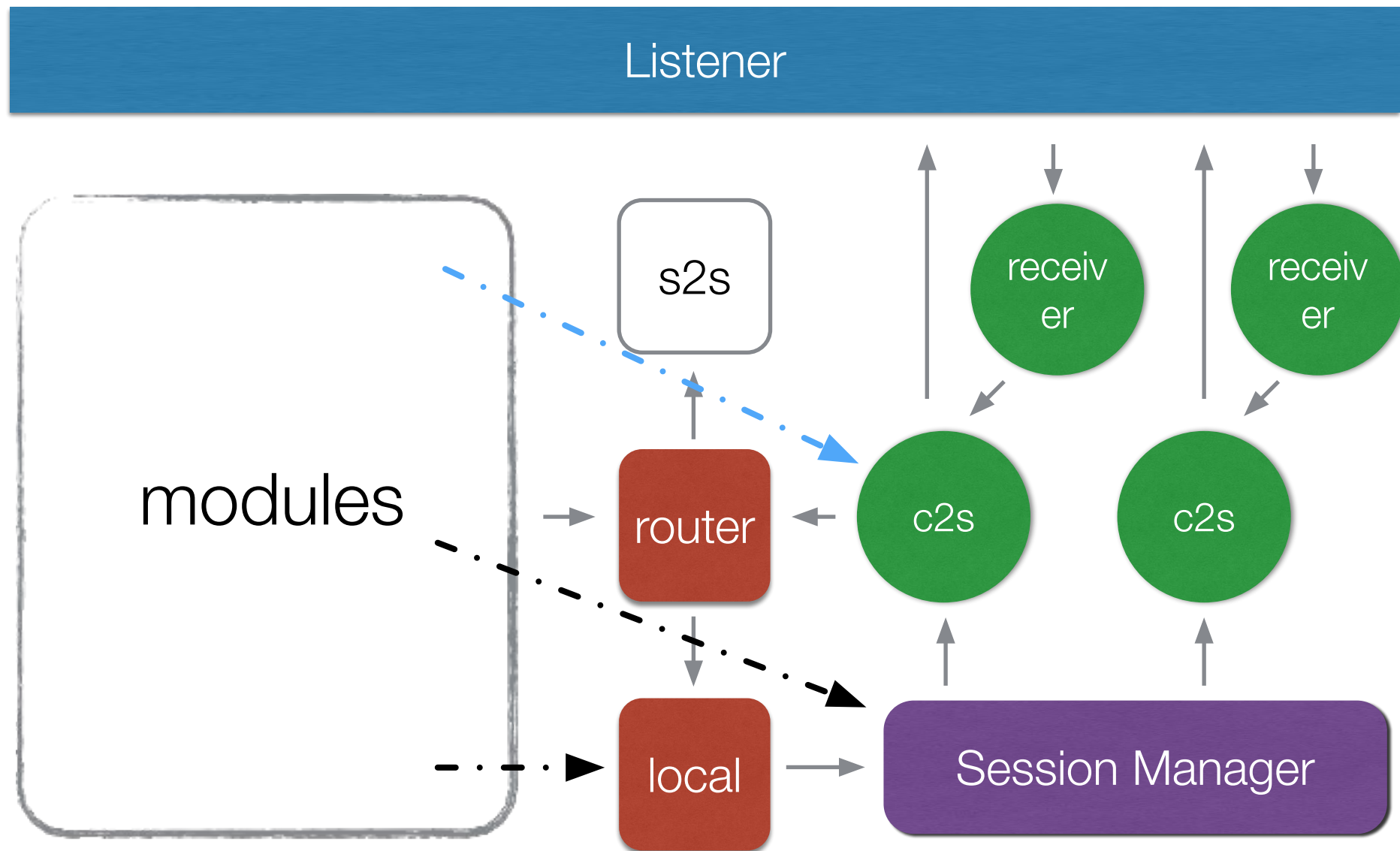
路由模块

- Router
- Local Router
- Session Manager
- s2s Manager

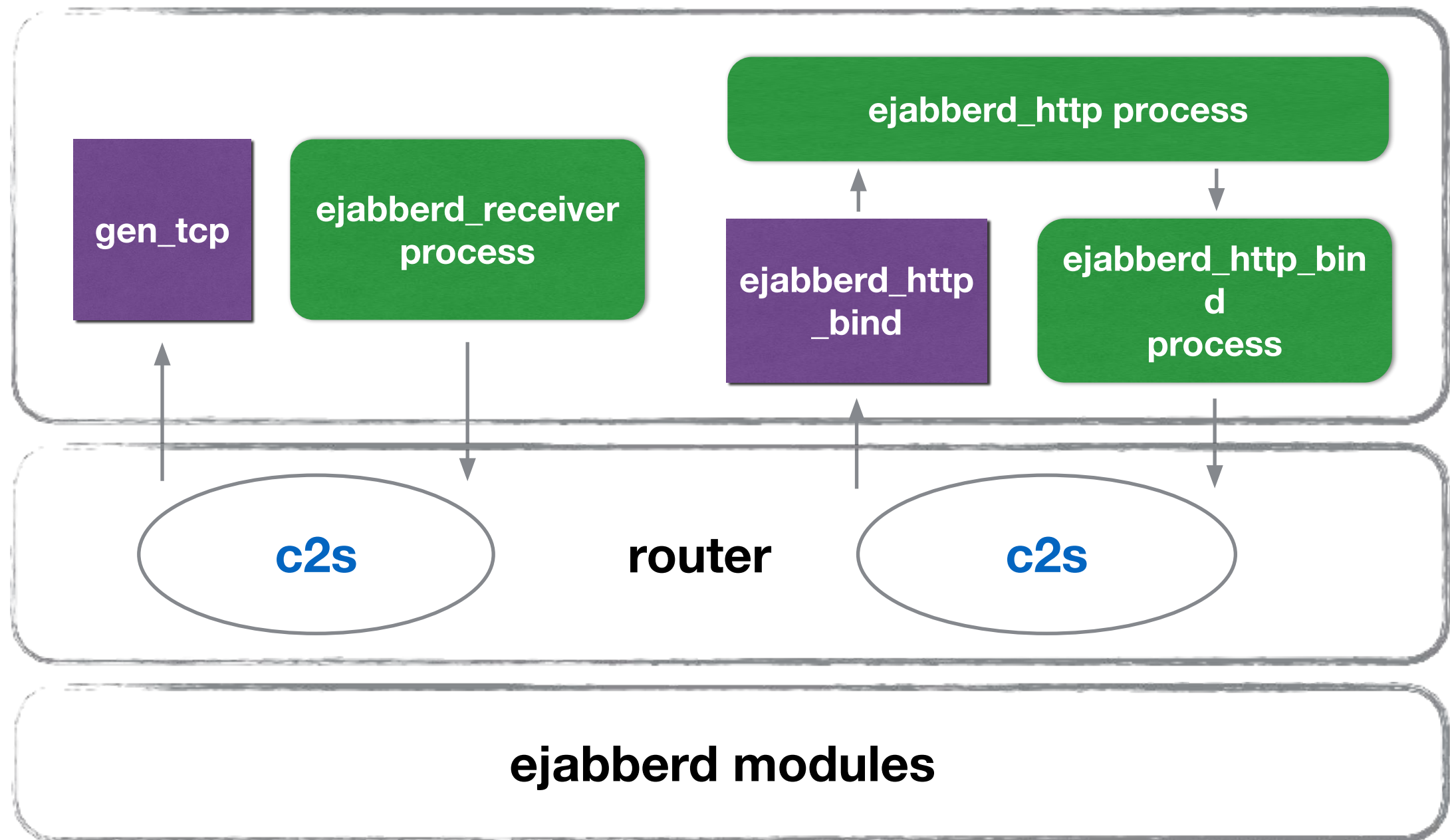
IQ处理机制

- IQ机制与hooks机制相似;IQ可与客户端交互, hooks不可
- gen_iq_handler模块
- add_iq_handler/remove_iq_handler/handle
- ets “local_iqtable” & “sm_iqtable”
- no_queue | one_queue | pos_integer() | parallel.

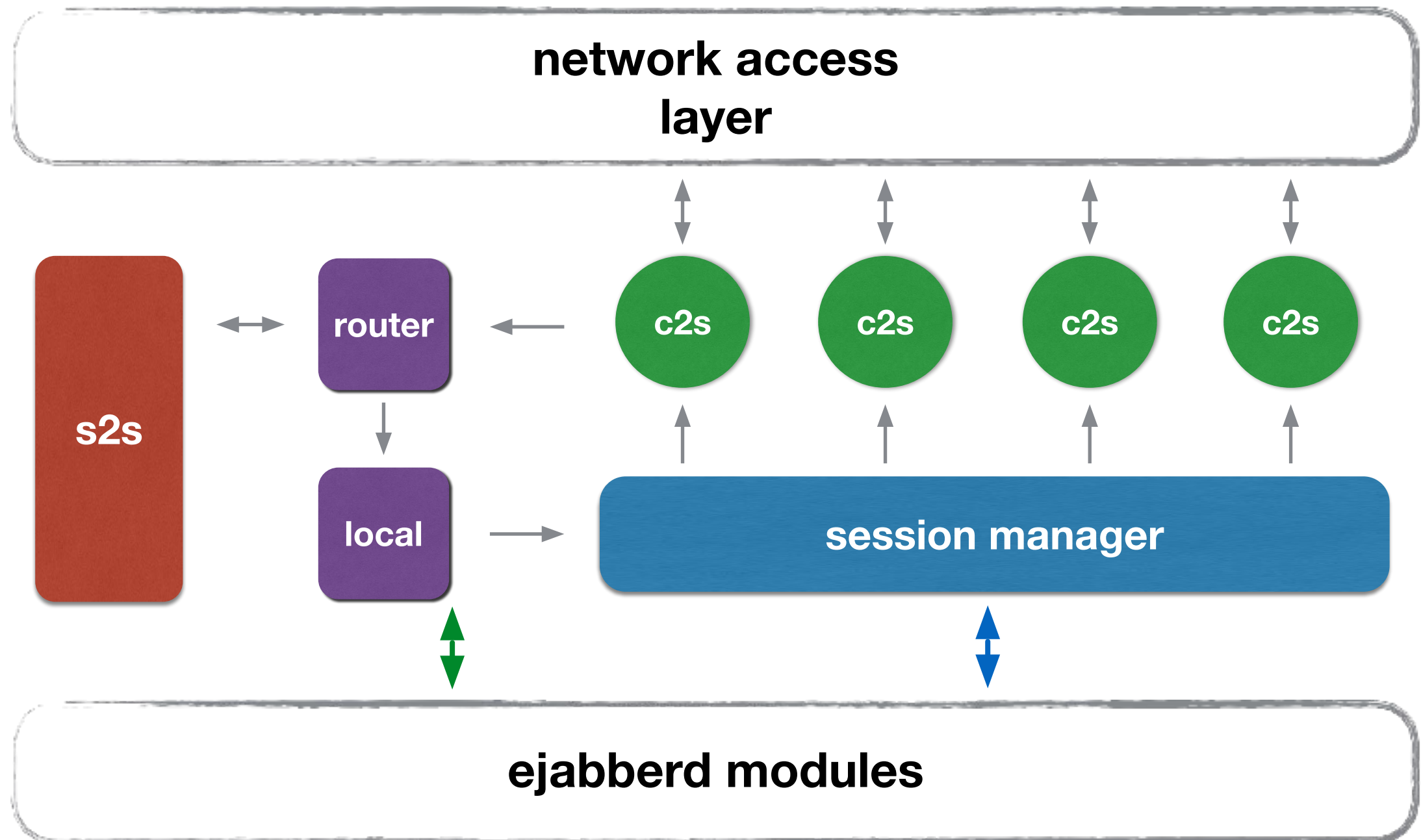
Summary



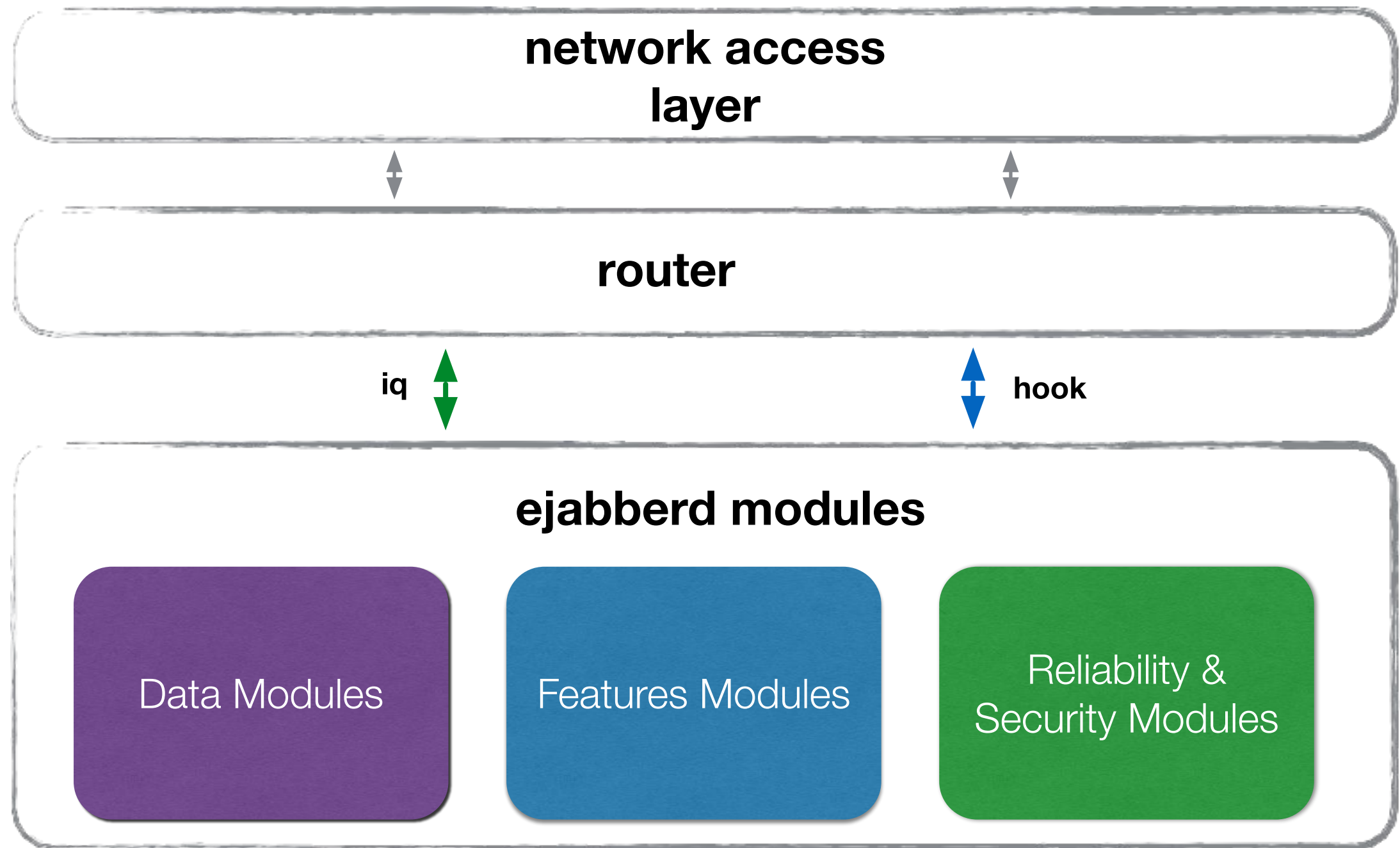
Network Access Layer



Router



Ejabberd Modules



Thanks.

Q & A