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# 用NSQ&Redis实现动态流

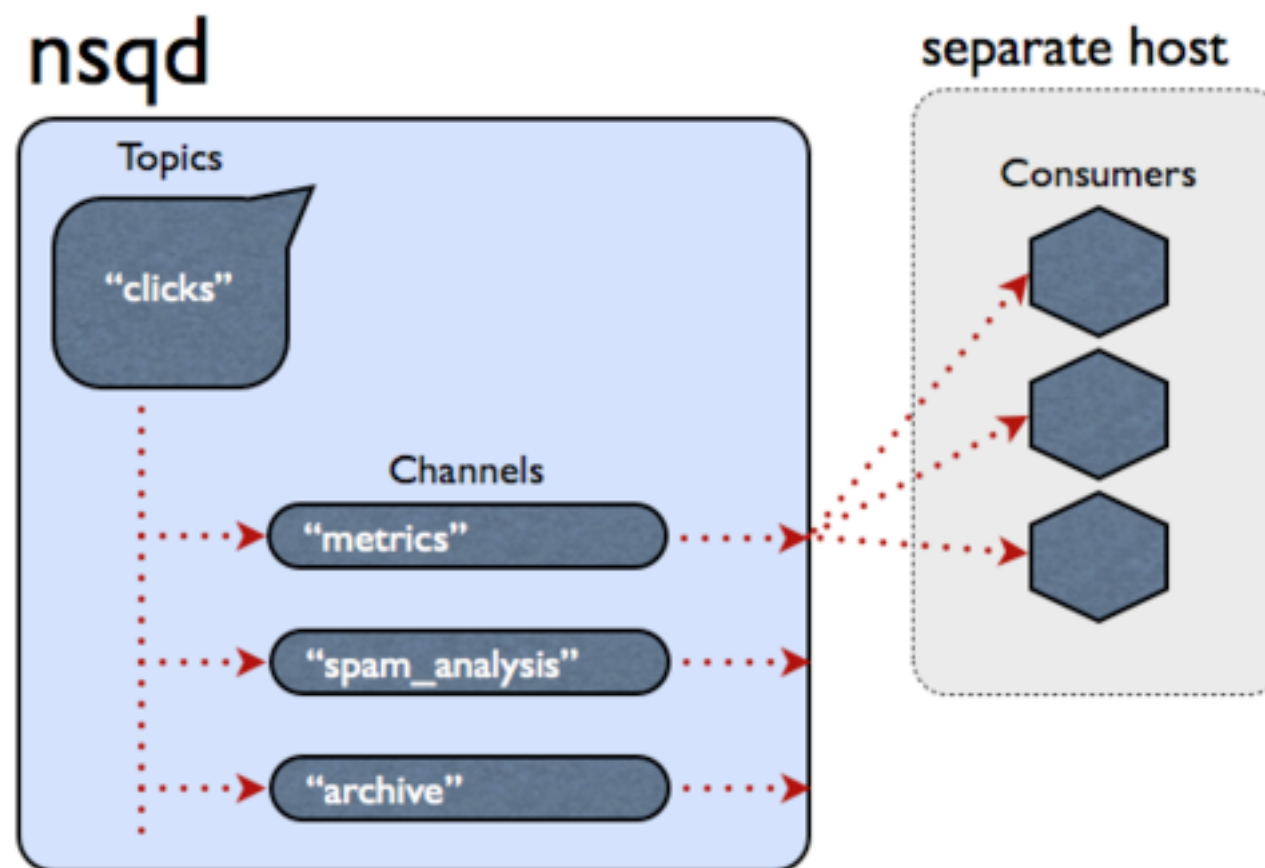
@飞龙非龙 <http://feilong.me>

# NSQ

- NSQ is a realtime distributed messaging platform
- realtime
- distributed
- decentralized
- fault tolerance
- message delivery guarantee
- developed in Go Language
- developed by bitly



# Topic&Channel



# pynsq

- It provides high-level `nsq.Reader` and `nsq.Writer` classes for building consumers and producers.
- The `async` module is built on top of the Tornado `IOLoop` and as such requires `tornado` to be installed.

# nsqworker

```
import logging
from tornado.options import options, define
from nsqworker import Worker

define("demoname", "demo")

class DemoPageviewWorker(Worker):
    def demo_handler(self, message):
        logging.info("%s: %s/%s, clicks %s", options.demoname,
                    options.topic, options.channel, message.body.get("clicks", 1))

        return True
```

# Redis - set/zset

- Sets: collections of unique, unsorted string elements.
- Sorted sets, similar to Sets but where every string element is associated to a floating number value, called score.

# 发布NSQ消息

```
feed_id = feeds_h.publish(  
    self.current_user.id, circle_id, content, photos)  
if feed_id:  
    feed = self.wrap("feeds", feed_id)  
    self.pub(consts.NSQ_TOPIC_ACTIONS,  
        {"action": consts.NSQ_ACTION_PUBLISH_FEED,  
         "id": feed_id,  
         "user_id": self.current_user.id,  
         "circle_id": feed.circle.id,  
         "created_at": feed.created_at})
```



# 处理NSQ消息

```
class ActionsDispatchWorker(Worker):

    @filter_action(consts.NSQ_ACTION_PUBLISH_FEED)
    def publish_feed_handler(self, message):
        # author
        p.zadd(fkeys.F_USERS_FEEDS_Z_D % user_id, feed_id, created_at)
        p.zadd(fkeys.F_USERS_FEEDS_TIMELINE_Z_D % user_id,
                combine(circle_id, feed_id), created_at)
        p.zadd(fkeys.F_USERS_CIRCLES_FEEDS_Z_DD %
                (user_id, circle_id), feed_id, created_at)

        # circle
        p.zadd(fkeys.F_CIRCLES_FEEDS_Z_D % circle_id, feed_id, created_at)
        day_key = fkeys.F_CIRCLES_FEEDS_RANK_DAY_Z_DD % (circle_id, day)
        p.zadd(day_key, feed_id, 1)
        p.expire(day_key, 30 * 24 * 3600)

        # for user's followers
        count, followers = users_m.get_followers(user_id, 0, -1)
        for follower in followers:
            p.zadd(fkeys.F_USERS_FEEDS_TIMELINE_Z_D %
                    follower, combine(circle_id, feed_id), created_at)
        p.execute()
```

# 处理NSQ消息

```
# rank
p.zincrby(keys.M_USERS_ACTIVITY_RANK_Z,
          user_id, options.FEED_FEED_SCORE)
p.zincrby(keys.M_USERS_ACTIVITY_RANK_DAY_Z_D % day,
          user_id, options.FEED_FEED_SCORE)

p.zincrby(keys.M_USERS_ACTIVITY_RANK_IN_CIRCLE_Z_D %
          circle_id, user_id, options.FEED_FEED_SCORE)
p.zincrby(keys.M_USERS_ACTIVITY_RANK_IN_CIRCLE_DAY_Z_DD %
          (circle_id, day), user_id, options.FEED_FEED_SCORE)

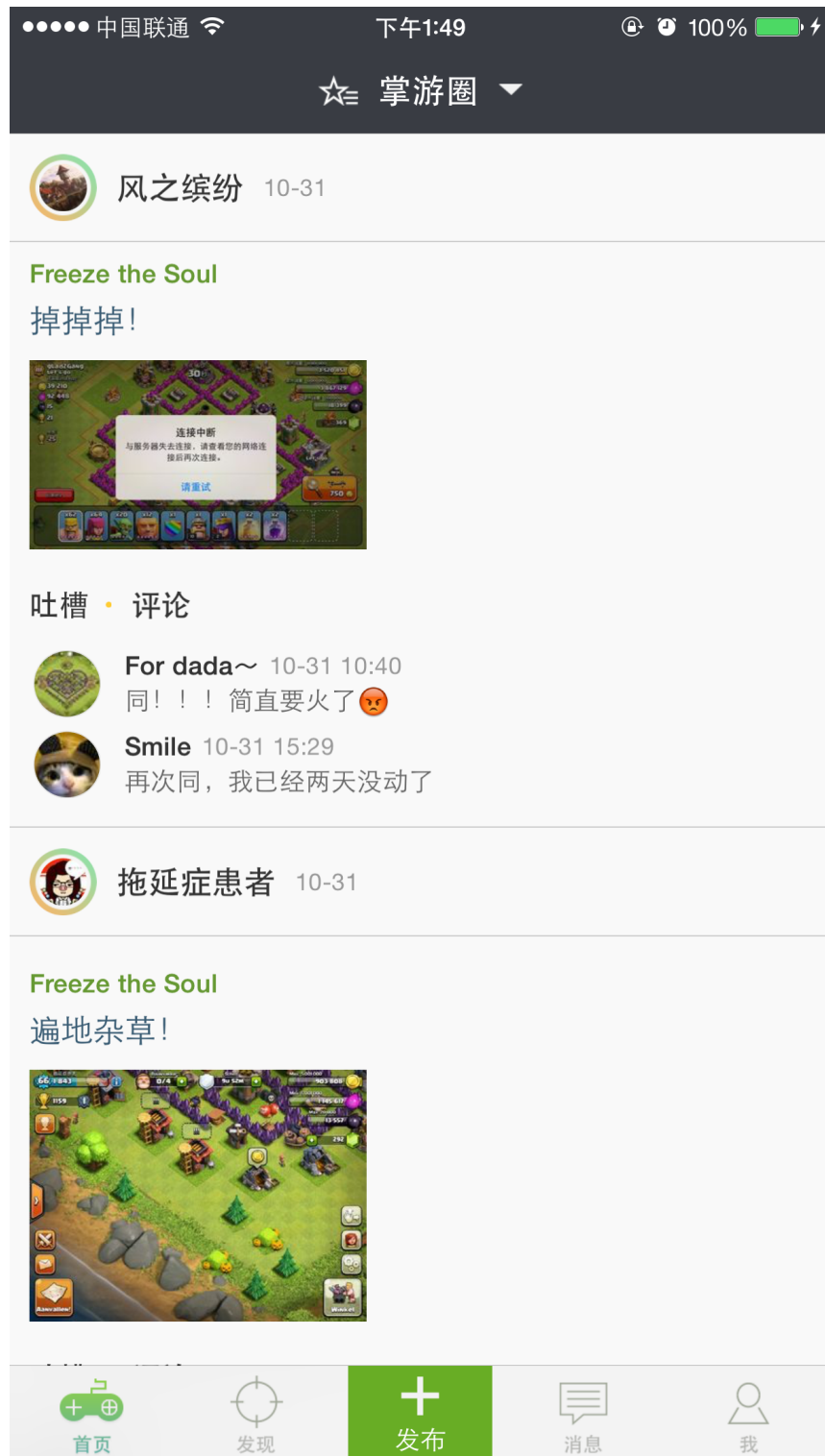
p.execute()
```

# 动态流

```
def get_timeline(self, user_id, offset=0, limit=None):  
    if limit is not None:  
        limit = offset + limit  
    fr = self.redis(keydef.FeedsRedisKeys)  
    circle_feed_ids = fr.zrevrange(  
        keydef.FeedsRedisKeys.F_USERS_FEEDS_TIMELINE_Z_D % user_id,  
        offset, limit)
```

# 数据填充

- Redis中记录时间线的feed ids
- MySQL持久存储feed
- memcached缓存feed相关数据



<https://itunes.apple.com/us/app/id896053611?ls=1&mt=8>

# 参考资料

- <https://github.com/bitly/nsq>
- <https://github.com/bitly/pynsq>
- <https://github.com/felixx/nsqworker>
- <http://feilong.me/2013/05/nsq-realtime-message-processing-system>

“We are hiring”

<http://feilong.me/2014/09/palmhold-is-hiring>

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