

# 沪江 APIGateway 实践

## 关于我

- 夏志培
- 沪江网运维架构师/基础运维团队负责人,10+ 年运维经验。
- 负责沪江 Redis/Codis,DNS,APIGateway,RabbitMQ,ELK,Ceph 等基础组件运维和架构工作。
- 对系统底层以及开源的软件有浓厚的兴趣。
- 微信: summer\_xia\_027



# 目录

## CONTENTS

01

背景和目的

02

APIGateway 架构

03

APIGateway 的实现

04

APIGateway 部署/性能

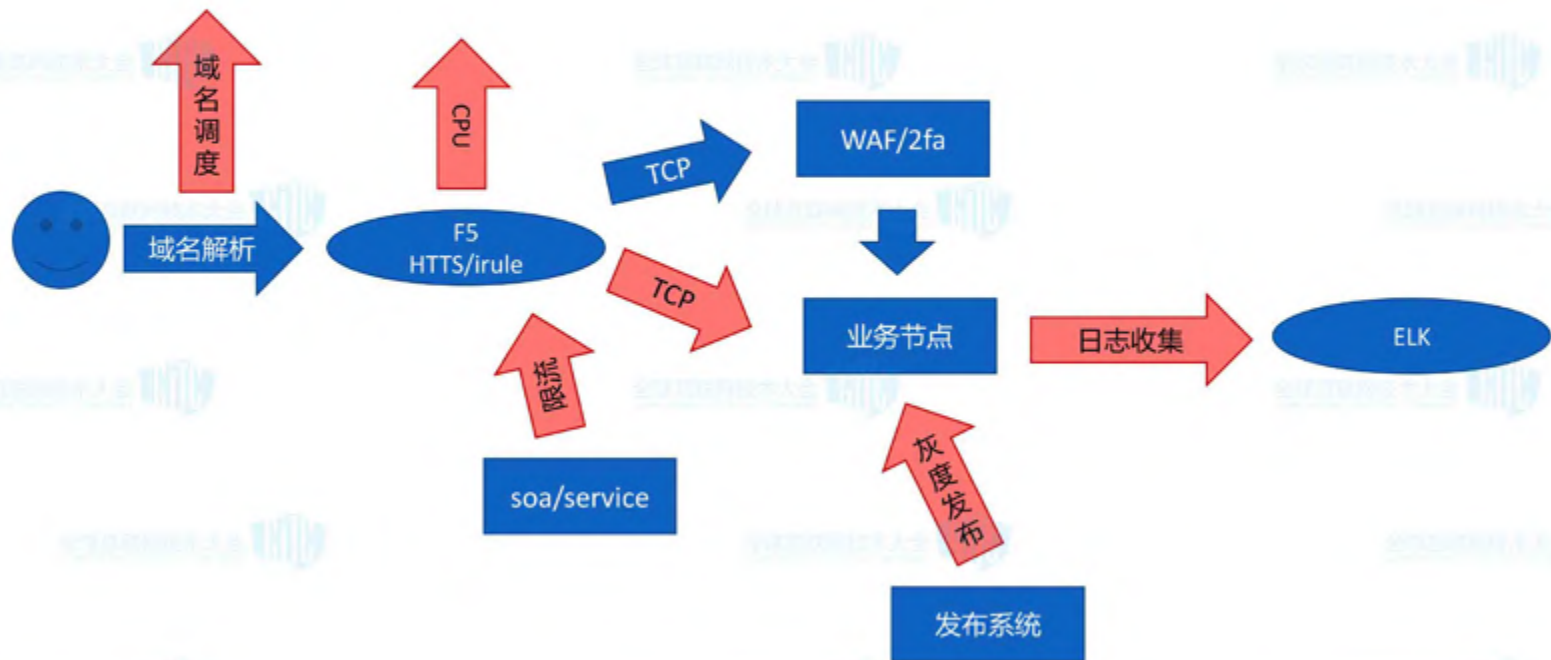
05

QA

# 01

## 背景和目标

# | 项目背景



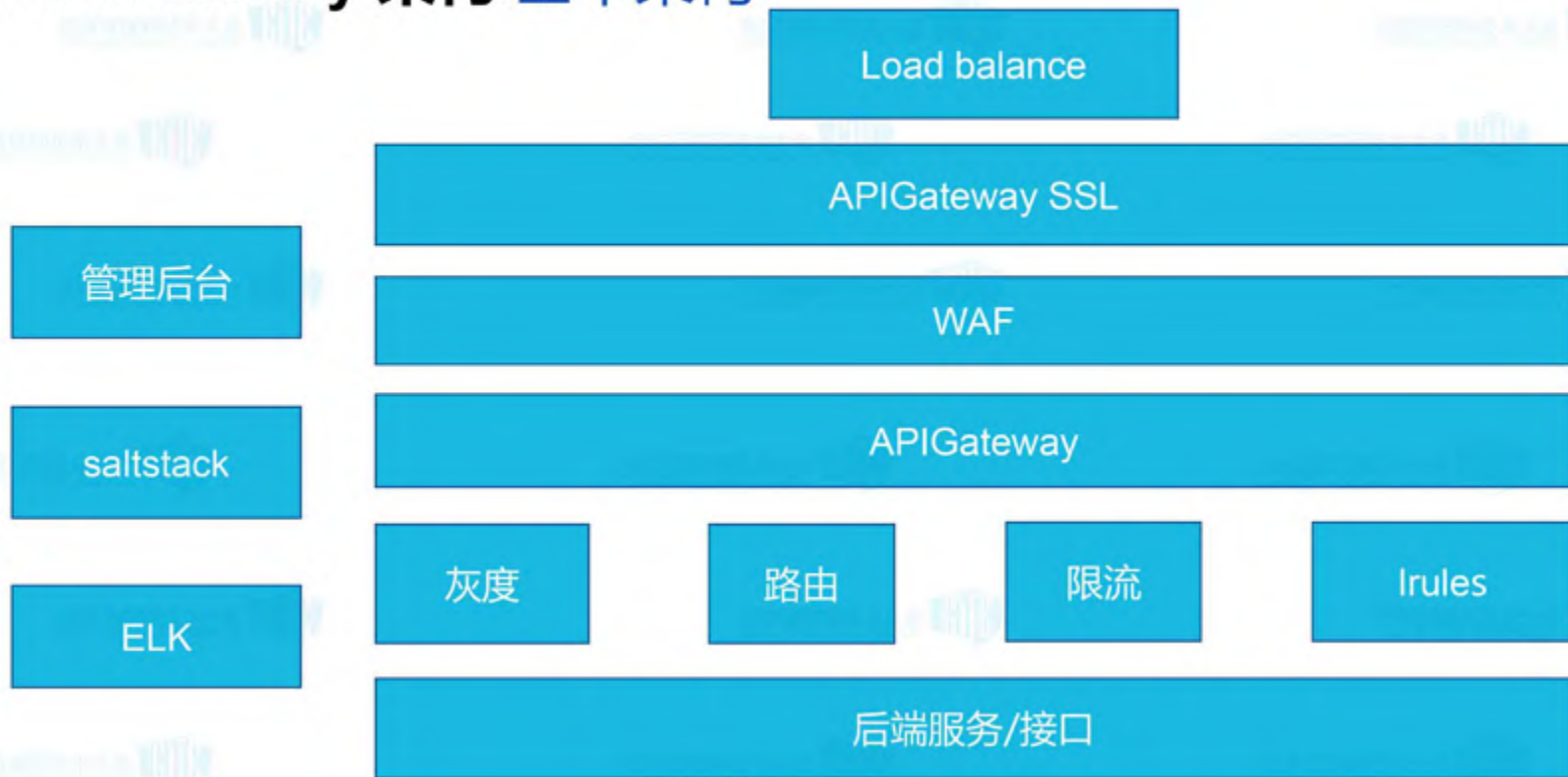
## | 目标

1. 流量调度
2. 协议适配/SSL卸载/路由/足够的扩展
3. 限流
4. 灰度发布/黑白名单
5. 统一日志收集
6. 贴近业务的 health\_check
7. 轻松运维
8. openresty+LUA

# 02

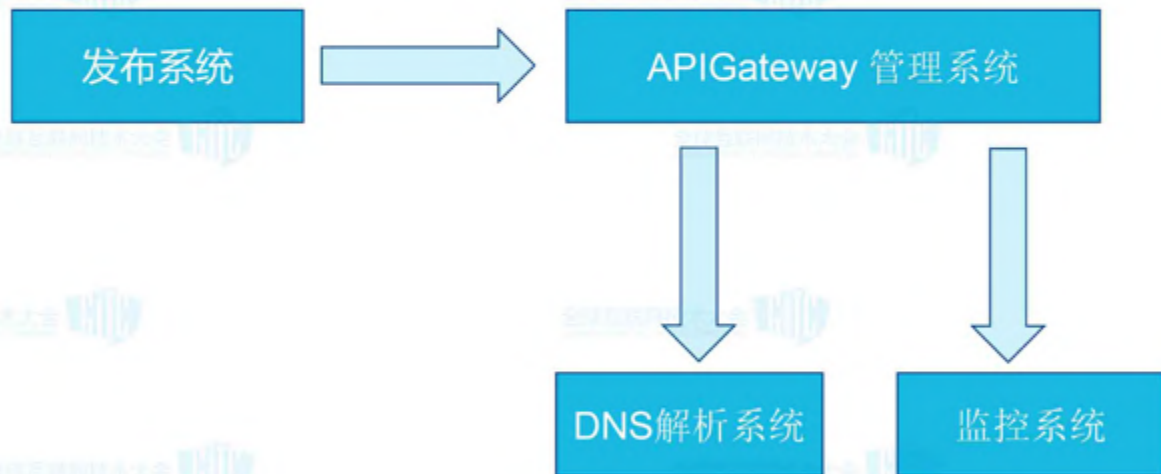
## APIGateway 架构

## | APIGateway 架构:基本架构





## | APIGateway 架构:系统边界



## 03

## APIGateway 的实现

## | APIGateway 实现：流量调度-调度域名

A机房SSL的调度域名

group1.idcA.CNC.ssl.cname.com

A机房APIGateway的调度域名

group1.idcA.CNC.gateway.cname.com

B机房SSL的调度域名

group1.idcB.CNC.ssl.cname.com

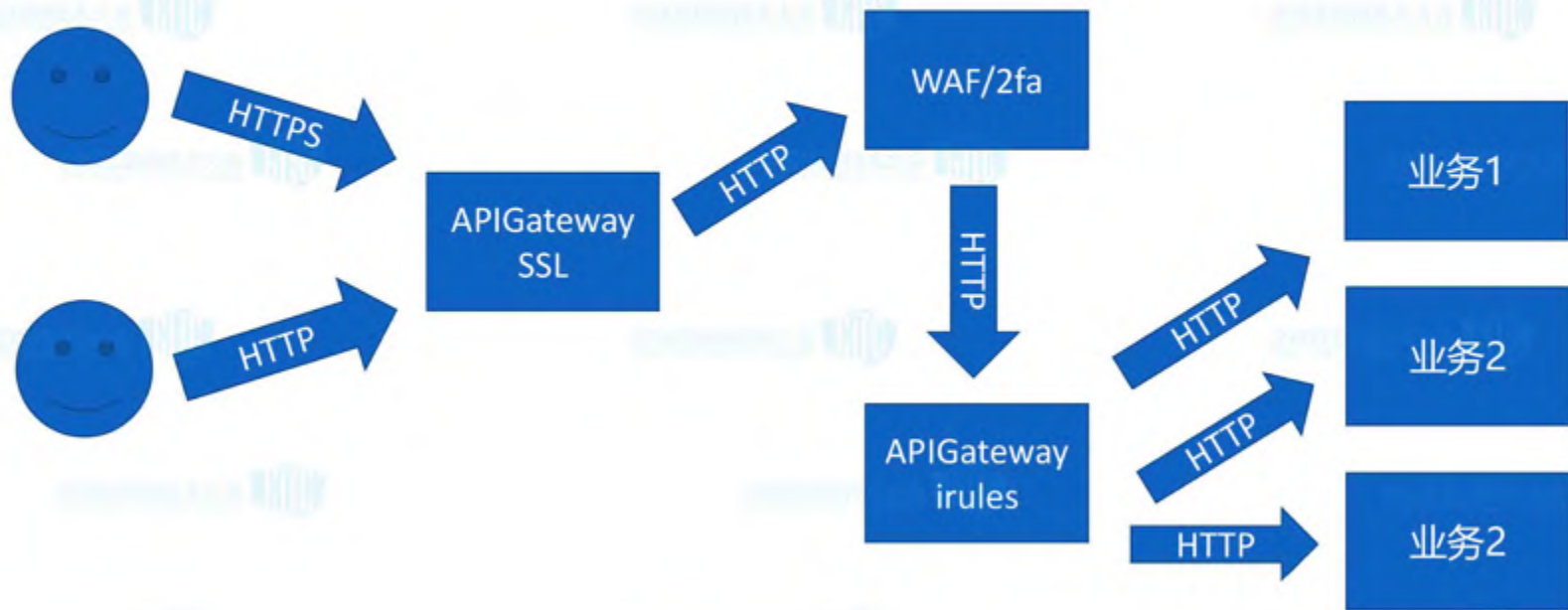
B机房APIGateway的调度域名

group1.idcB.CNC.gateway.cname.com

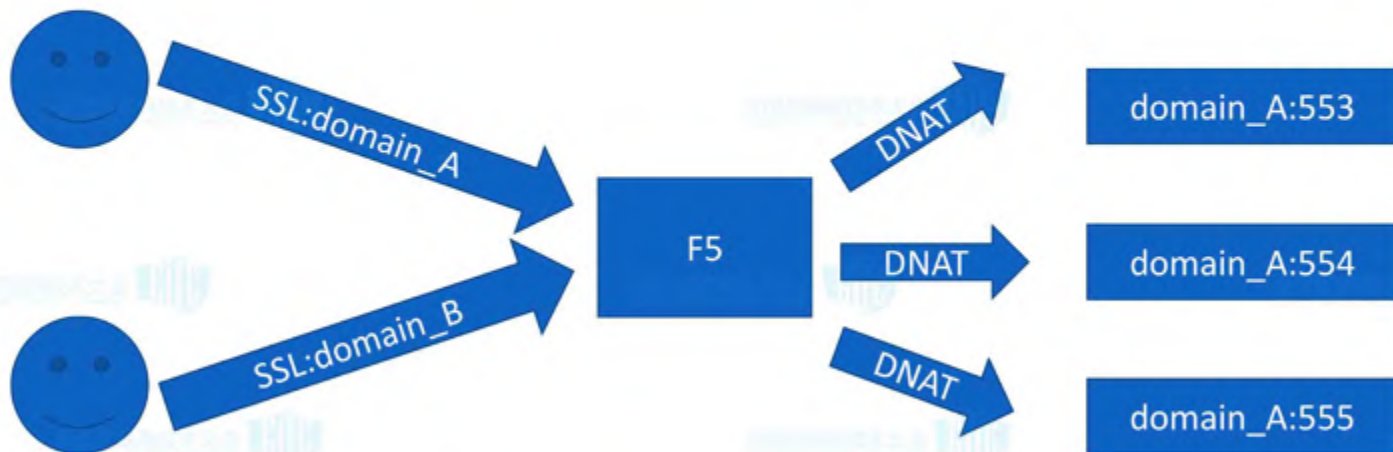
## | APIGateway 实现：流量调度-流量转发



## | APIGateway 实现：协议适配

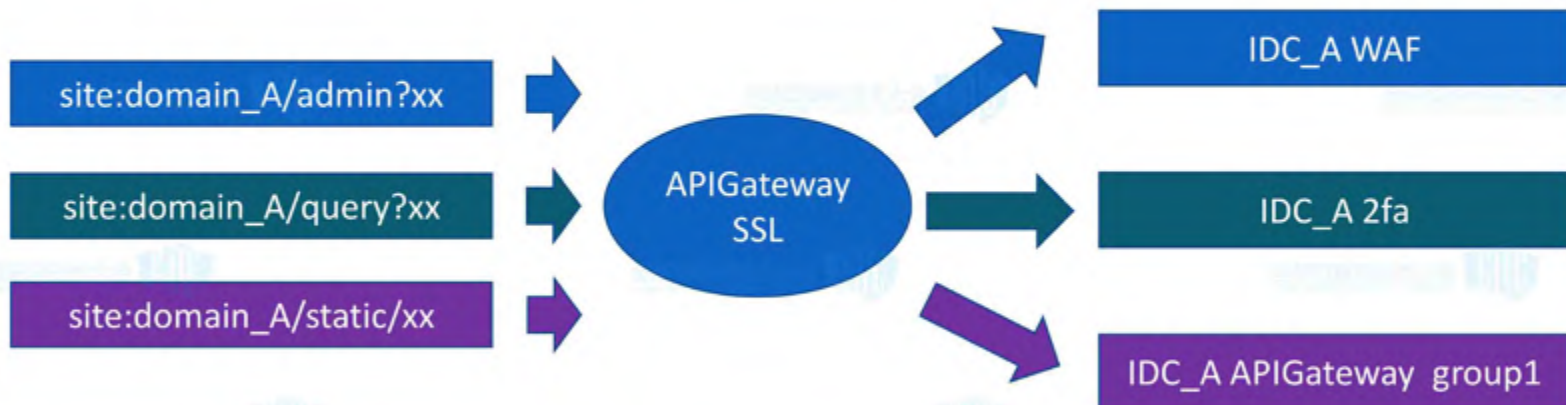


# | APIGateway 实现：协议适配(SSL-offload)

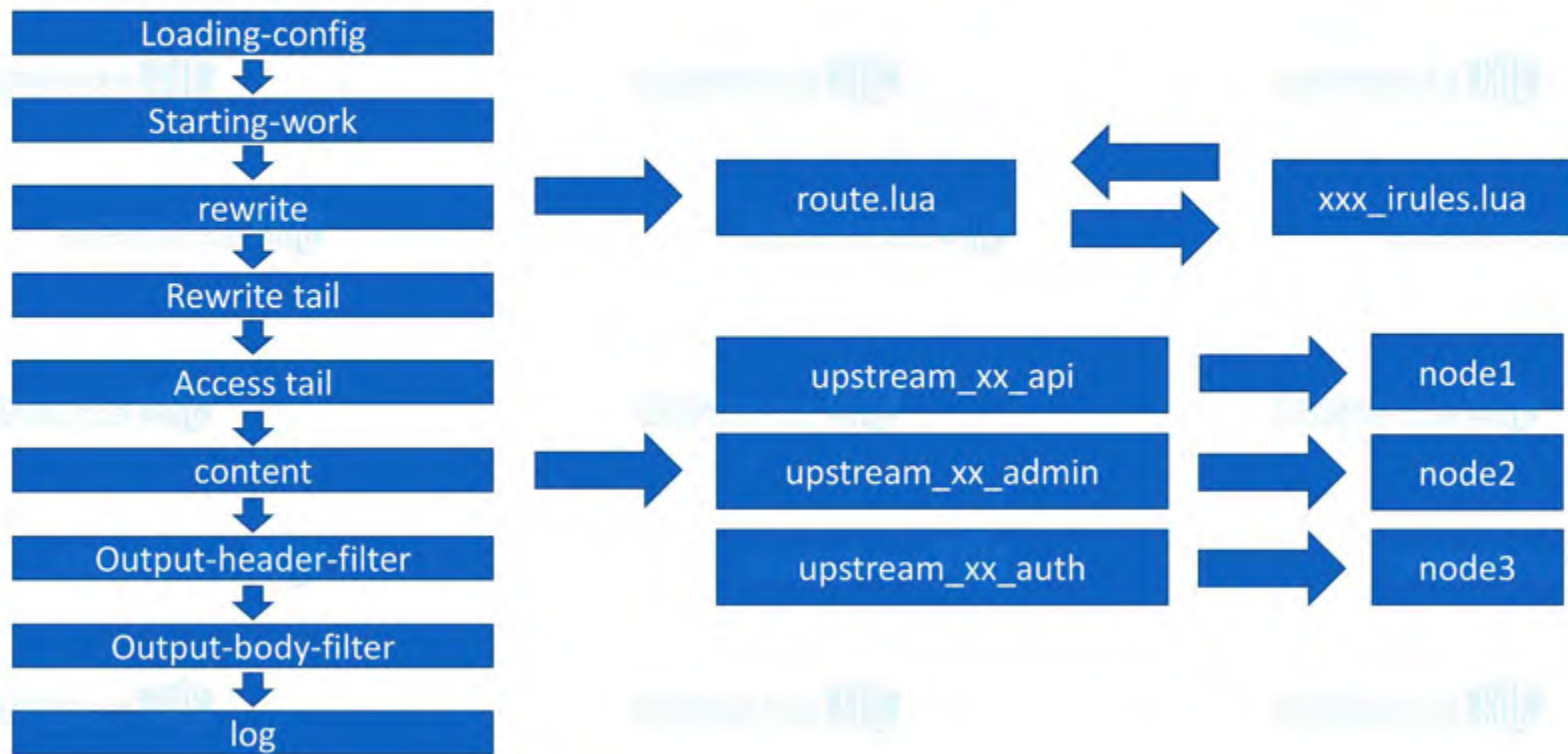




## | APIGateway 实现：路由(SSL 路由)



## | APIGateway 实现：路由





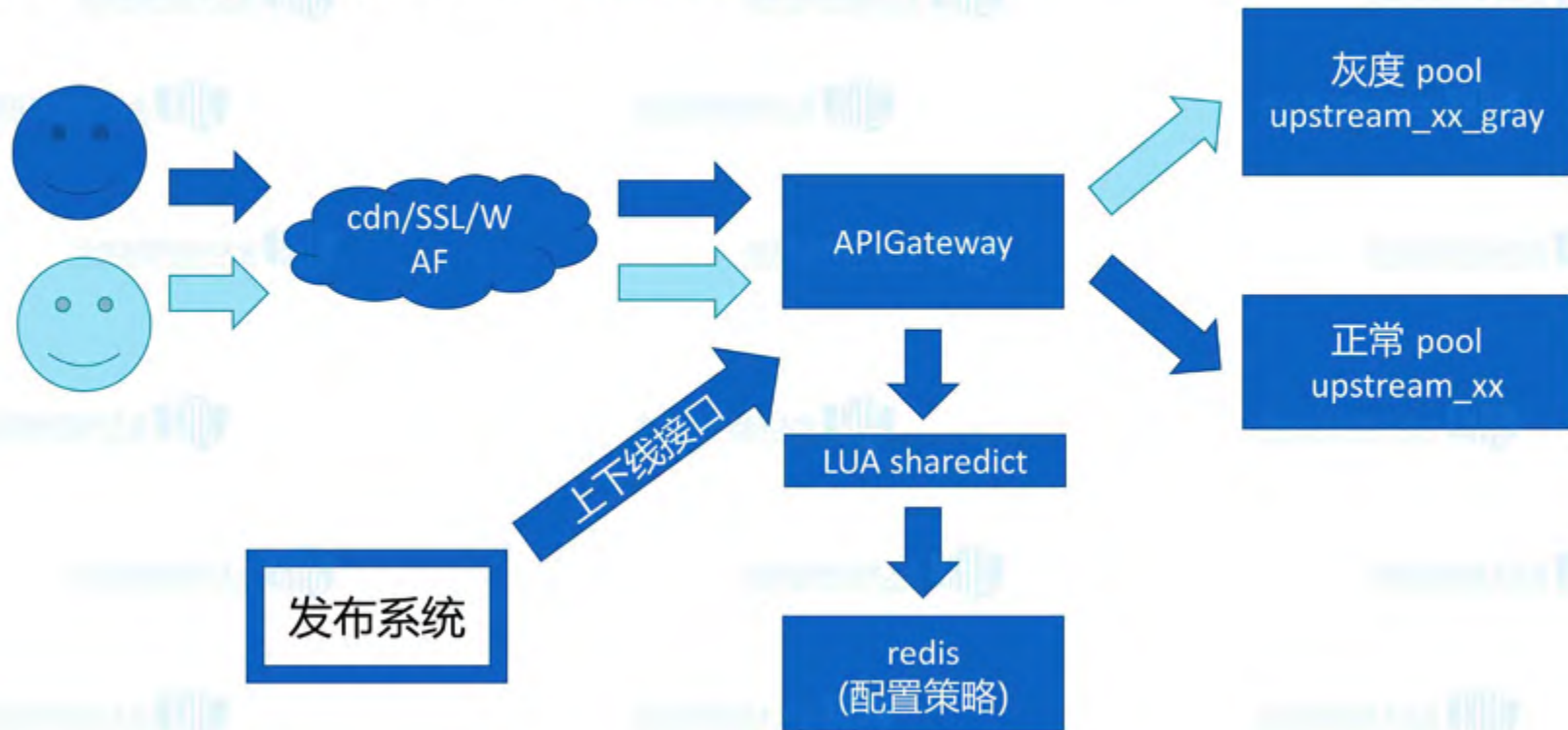
## | APIGateway 实现：限流(客户端/服务器端)

```
limit_req_zone $x_forwarded_for zone=domainx_C:50m rate=100r/s;  
limit_req_zone $remote_addr zone=domainx_S:50m rate=300r/s;
```

```
limit_req zone=domainx_C_client burst=1000;  
limit_req zone=domainx_S burst=1000;
```



# | APIGateway 实现：灰度发布



## | APIGateway 实现：灰度发布

策略处理-灰度分流处理

Local cache 格式

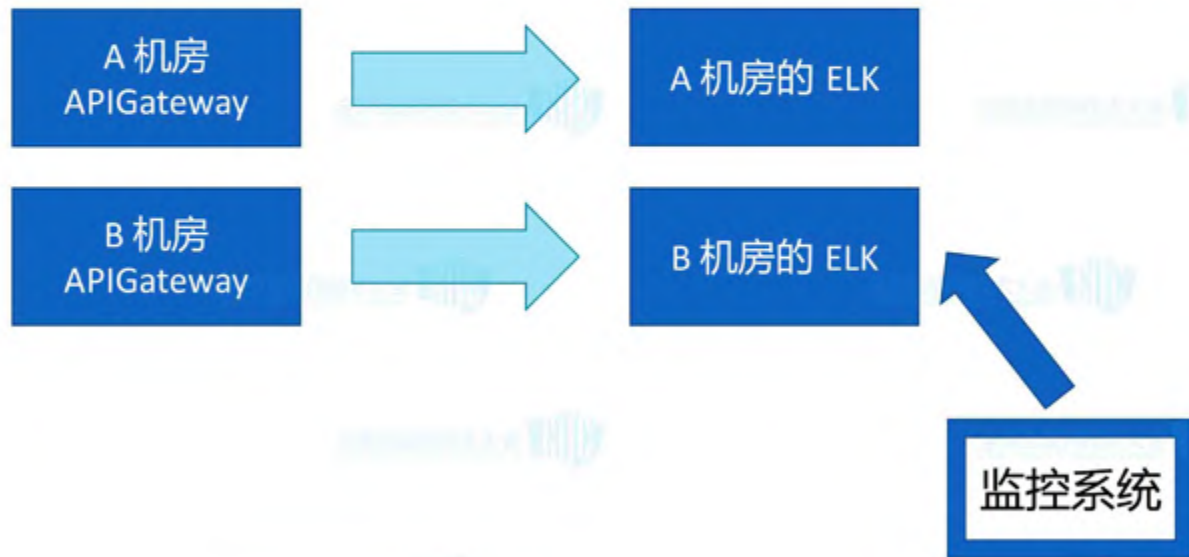
```
{“api:gateway:process:iproute:vhost:192.168.11.124”:“gray_upstream”}
```

Redis 格式

```
{“api:gateway:process:iproute:vhost”:“192.168.11.124”}
```

## | APIGateway 实现：日志收集/监控

- 1.单域名的流量
- 2.单域名的TPS
- 3.请求HTTP CODE
- 4.设备ua
- 5.响应时间



# | APIGateway 实现 : health\_check

nginx\_upstream\_check\_module-0.3.0



# 04

## APIGateway 部署和性能

## | APIGateway/SSL 的部署以及性能参数

安装: `yum install apigateway redis -y`

服务器的内核参数:

```
net.ipv4.tcp_tw_timeout = 5
```

```
net.ipv4.tcp_tw_reuse = 1
```

```
net.ipv4.tcp_tw_recycle = 0
```



## | APIGateway 的部署以及性能参数

Nginx 的部署参数:

前端开启keepalive

keepalive\_timeout

keepalive\_requests

后端开启keepalive

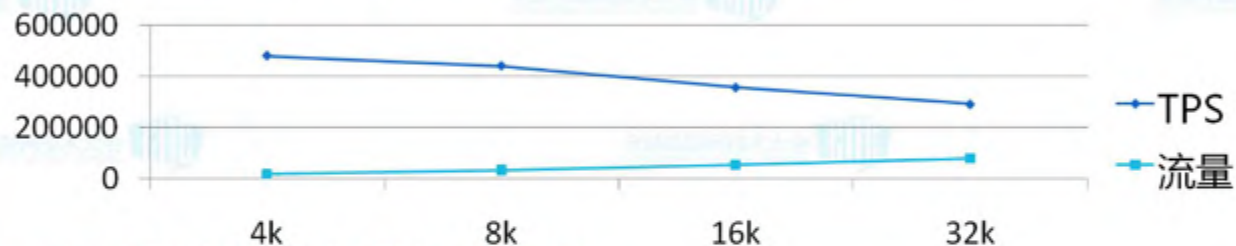
upstream keepalive

location proxy\_http\_version

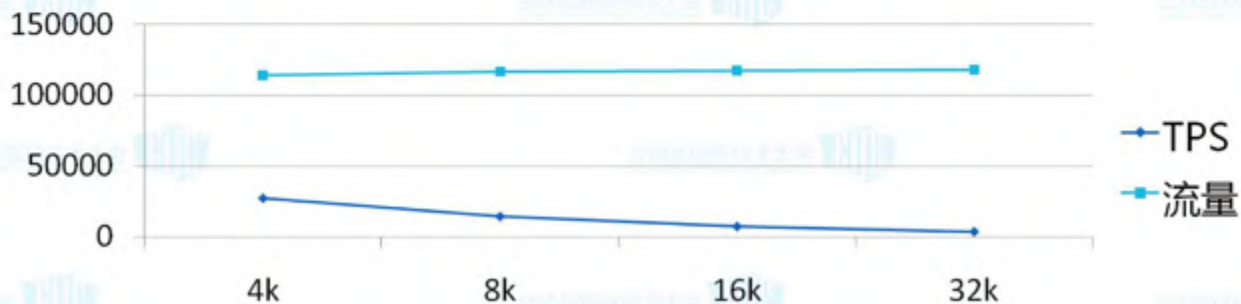


# | APIGateway 的部署和性能

APIGateway SSL的压力测试数据(不跨网络):

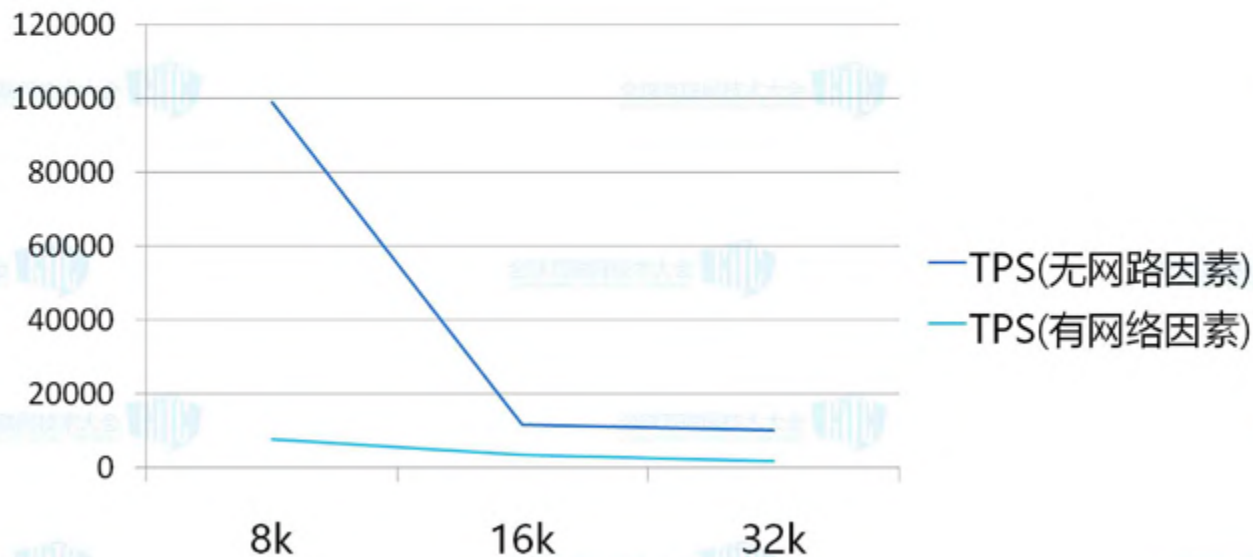


APIGateway SSL的压力测试数据:(跨网络)

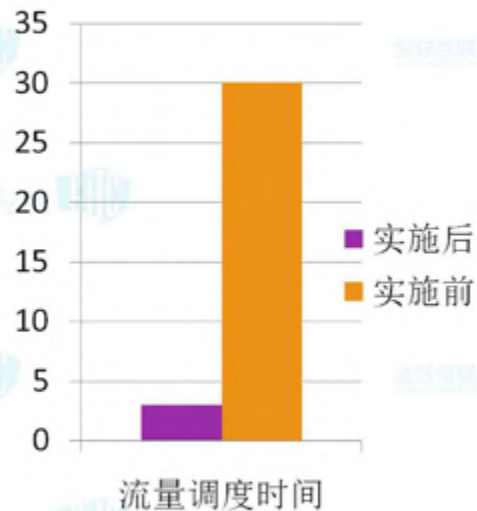
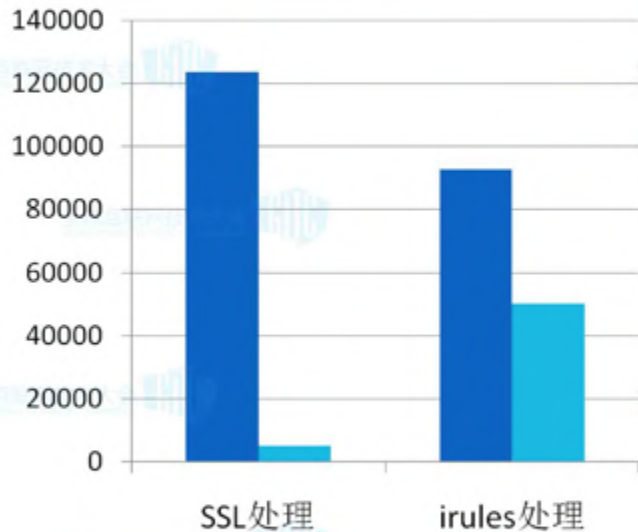


# | APIGateway 的部署和性能

APIGateway 的压力测试数据(不跨网络):



## | APIGateway 实施后的效果



# | APIGateway 实施过程中的 TIP

1. 证书链 / SNI
2. Nginx 加载配置文件
3. Lua 的变量

