目前所有的访问都已经转向https了，大势所趋，ssl重要性这里不细说了；我这里是client到traefik加密，后端还是http，有更高要求的时候再来进步优化，先满足功能再说。

> *traefik http*部署我这里省略，详细可参考*kubeasz*中的*ingress*部分。

流程示意图

```
client ---https---> traefik ---http---> svc (本文)
client ---https---> traefik ---https---> svc
```

一、生成证书

> 我这里使用私签证书,*CN*是域名，根据实际需求填写

```
openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout tls.key -out tls.crt -subj "/CN=tr
```

二、创建一个configmap，保存traefix的配置。这里的traefix中配置了把所有http请求全部rewrite为https的规则，并配置相应的证书位置

1、配置证书traefik-cert cm

```
kubectl -n kube-system create secret tls traefik-ingress-controller-default-cer
```

2、查看证书并且导入到yaml文件

```
kubectl get secret traefik-ingress-controller-default-cert -o yaml >> secret.yaml
```

3、复制tls.crt和tls.key的值到traefik-ingress.yaml

4、配置https重定向配置文件

注意:如果修改了cmp配置，需要停止pod重新启动才生效

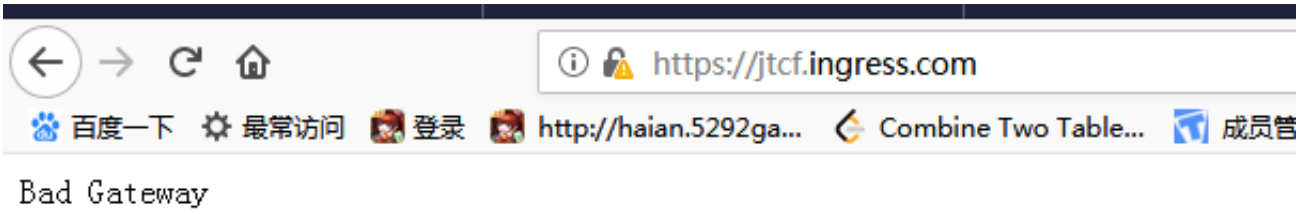
```
kubectl delete -f traefik-ingress.yaml
```

配置文件内容如下:

```
[root@by-deploy01 ingress]# cat traefik.yaml
kind: ConfigMap
metadata:
  name: traefik-ingress-controller-config-map
  namespace: kube-system

apiVersion: v1
data:
  traefik.toml: |+
    logLevel = "INFO"
    defaultEntryPoints = ["http","https"]
    [entryPoints]
      [entryPoints.http]
      address = ":80"
        [entryPoints.http.redirect]
        entryPoint = "https"
      [entryPoints.https]
      address = ":443"
        [entryPoints.https.tls]
          [[entryPoints.https.tls.certificates]]
          certFile = "/ssl/tls.crt"
          keyFile = "/ssl/tls.key"
      [entryPoints.traefik]
      address = ":8080"
```

```
      [entryPoints.traefik]
      address = ":8000"
    [kubernetes]
    [traefikLog]
         format = "json"
    [api]
         entryPoint = "traefik"
         dashboard = true

##其中tls.crt和tls.key就是证书文件，注意必须要改为这个文件名。

# 配置traefik-conf cm

kubectl apply -f traefik.yaml

如果是toml文件就用下列命令：
kubectl create configmap traefik-conf --from-file=traefik.toml -n kube-system
##查看

kubectl get cm -n kube-system
```

的在traefik.toml里面定义了端口重定向，如果没设置对应端口https重定向无效，如下



图：

注意：配置文件的目录和证书的目录不能一样

deploy引用

```
kind: Deployment
apiVersion: apps/v1beta1
metadata:
  name: traefik-ingress-controller
```

```
  namespace: kube-system
  labels:
    k8s-app: traefik-ingress-lb
spec:
  replicas: 1
  selector:
    matchLabels:
      k8s-app: traefik-ingress-lb
  template:
    metadata:
      labels:
        k8s-app: traefik-ingress-lb
        name: traefik-ingress-lb
    spec:
      serviceAccountName: traefik-ingress-controller
      terminationGracePeriodSeconds: 60
      containers:
      - image: traefik:v1.7.2
        imagePullPolicy: IfNotPresent
        name: traefik-ingress-lb
#修改了之前的内容
        volumeMounts:
        - mountPath: /config
          name: config
        - mountPath: /ssl
          name: ssl
        - mountPath: /etc/localtime
          name: time
        ports:
        - name: http
          containerPort: 80
          hostPort: 80
          protocol: TCP
        - name: https
          containerPort: 443
          hostPort: 443
          protocol: TCP
        - name: traefik-web
          containerPort: 8080
          hostPort: 8080
```

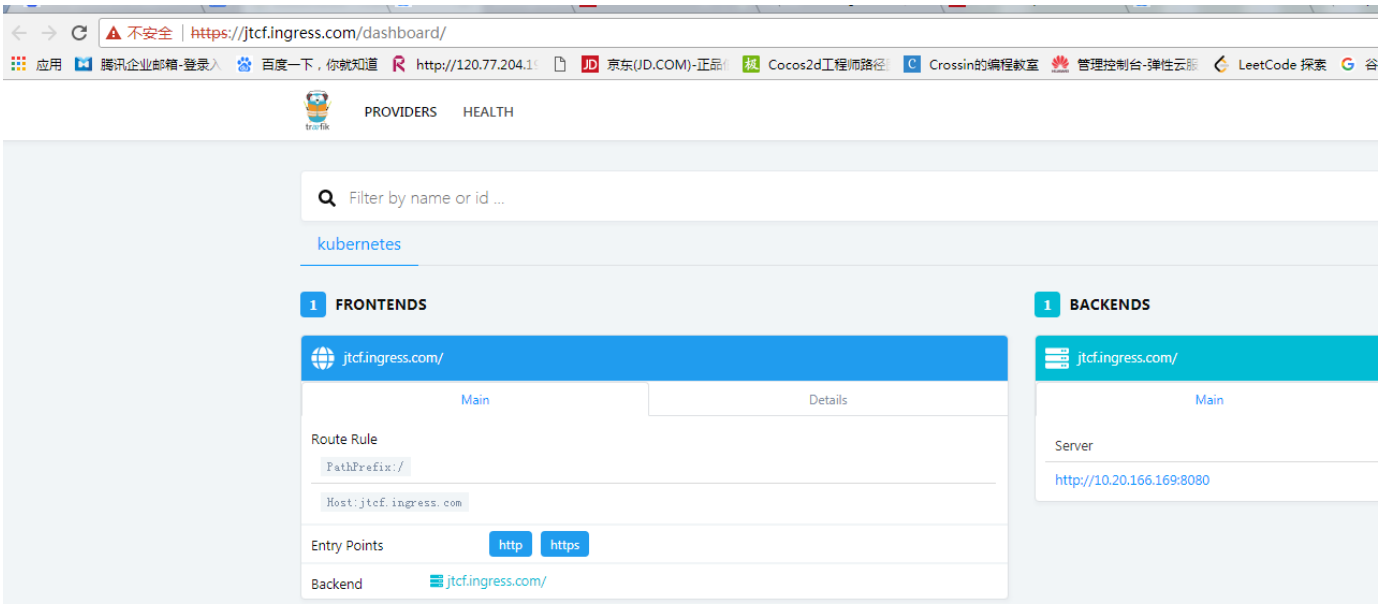
```
          protocol: TCP
        args:
        - --configfile=/config/traefik.toml
      volumes:
      - name: config
        configMap:
          name: traefik-ingress-controller-config-map
      - name: ssl
        secret:
          secretName: traefik-ingress-controller-default-cert
      - name: time
        hostPath:
          path: /etc/localtime
# 修改结束


---
kind: Service

.....
# 生效
  kubectl apply -f traefik_deploy.yaml
```

至此配置完成可以用浏览器测试下！

最后我们来测试下是否成功，这里我们可以登陆traefik-ui界面，可以看到原本http的访问，traefik会直接给我们重定向至https。

输入jtcf.ingress.com::23456

自动重定向到https



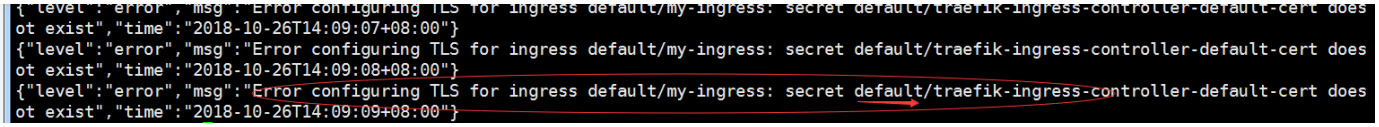
注意：如果在ingress上开启了tls，那么证书必须与域名相关

```
---
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: traefik-web-ui
  namespace: kube-system
spec:
  tls:
  - secretName: traefik-ingress-controller-default-cert
  rules:
  - host: jtcf.ingress.com
    http:
      paths:
      - path: /
        backend:
          serviceName: traefik-ingress-service
          servicePort: 8080
[root@master ssl]#
```

在ingress上不开启tls则使用的是默认证书，下面是注释了tls

```
kind: Ingress
metadata:
  name: my-ingress
#  namespace: kube-system
spec:
#  tls:
#  - secretName: traefik-ingress-contro
  rules:
  - host: jtcf.nginx.com
    http:
      paths:
      - path: /
        backend:
          serviceName: nginx
          servicePort: 8000
  - host: jtcf.tomcat.com
    http:
      paths:
      - path: /
        backend:
          serviceName: myweb
          servicePort: 8080
```

证书必须和ingress在一个命名空间，不然无法访问，报错如下：比如我们证书是在kube-system



Error configuring TLS for ingress default/my-ingress: secret default/traefik-ingress-controller-default-cert does not exist

单独创建证书只需要执行：

```
kubectl -n default create secret tls nginx-secret --key=tls.key --cert=tls.crt
```

创建好之后直接在ingress填写证书名称就可以使用
下面是我单独创建了一根default空间的证书给Ingress使用

```yaml
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: my-ingress
spec:
  tls:
  - secretName: nginx-secret
  rules:
  - host: jtcf.nginx.com
    http:
      paths:
      - path: /
        backend:
          serviceName: nginx
          servicePort: 8000
  - host: jtcf.tomcat.com
    http:
      paths:
      - path: /
        backend:
          serviceName: myweb
          servicePort: 8080
```

或者把证书创建与ingress放一个yaml：

Secret:

```
[root@master ~]# cat ingress-yaml
---
apiVersion: v1
kind: Secret
metadata:
  name: my-ingress-secret
  namespace: default
type: Opaque
data:
  tls.crt: LS0tLS1CRUdJTiBDRVJUSUZJQ0FURS0tLS0tCk
VEFsaFlNUlV3RXdZRFZRUUhEQXhFWldaaGRXeDBJRU5wZEhre
reE1ESTENRE0wTlRBMldqQkNNUXN3CkNRWURWUVFHRXdKWVdE
```

ingress：

```yaml
---
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: my-ingress
spec:
  tls:
  - secretName: my-ingress-secret
  rules:
  - host: jtcf.nginx.com
    http:
      paths:
      - path: /
        backend:
          serviceName: nginx
          servicePort: 8000
  - host: jtcf.tomcat.com
    http:
      paths:
      - path: /
        backend:
          serviceName: myweb
          servicePort: 8080
```