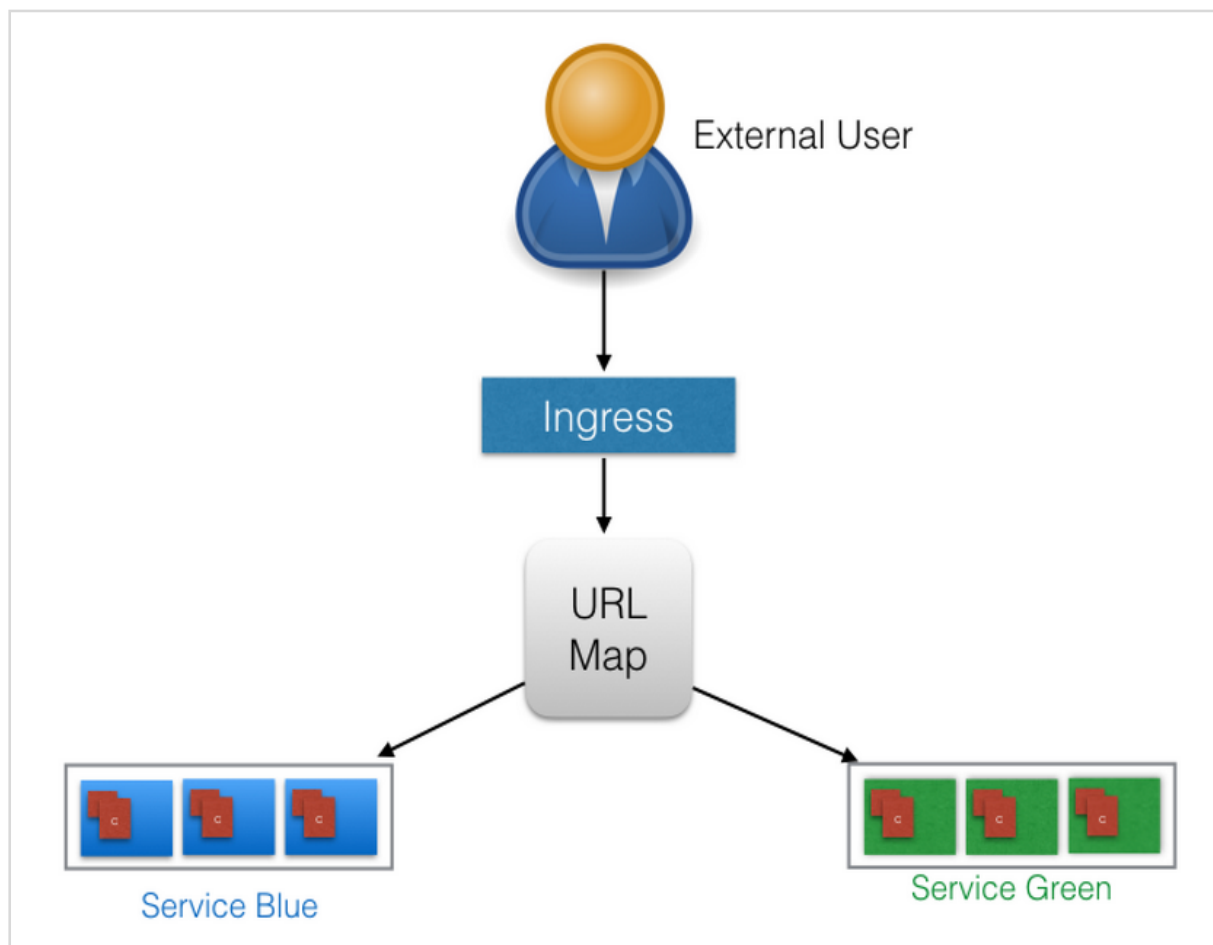


## Chapter 14 Ingress

An Ingress is a collection of rules that allow inbound connections to reach the cluster Services

- Abstraction deployed in front of the Service API resources
- Offers a unified method of managing access to our applications from the external world
- Centralize the routing rules management
- Configures a Layer 7 HTTP/HTTPS load balancer for Services and provides:
  - TLS
  - Name-based virtual hosting
  - Fanout routing
  - Load balancing
  - Custom rules



- Users don't directly connect to a Service
- Users reach the Ingress endpoint

- Request gets forwarded to the desired Service

```
apiVersion: networking.k8s.io/v1beta1
kind: Ingress
metadata:
  name: virtual-host-ingress
  namespace: default
spec:
  rules:
  - host: blue.example.com
    http:
      paths:
      - backend:
          serviceName: webserver-blue-svc
          servicePort: 80
  - host: green.example.com
    http:
      paths:
      - backend:
          serviceName: webserver-green-svc
          servicePort: 80
```

- User requests to both `blue.example.com` and `green.example.com` would go to the same Ingress endpoint
- Forwarded to `webserver-blue-svc` and `webserver-green-svc`

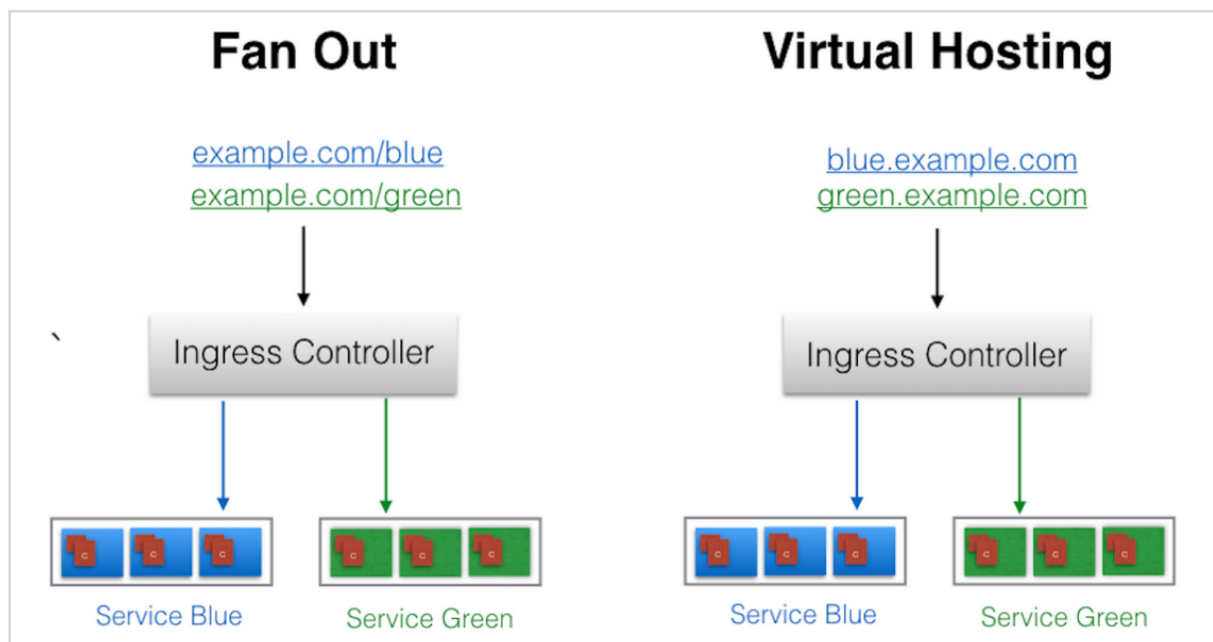
```
apiVersion: networking.k8s.io/v1beta1
kind: Ingress
metadata:
  name: fan-out-ingress
  namespace: default
spec:
  rules:
  - host: example.com
    http:
      paths:
      - path: /blue
```

```

backend:
  serviceName: webserver-blue-svc
  servicePort: 80
- path: /green
  backend:
    serviceName: webserver-green-svc
    servicePort: 80

```

- Requests to `example.com/blue` and `example.com/green` would be forwarded to `webserver-blue-svc` and `webserver-green-svc`



fan out ingress vs virtual hosting ingress

## Ingress Controller

- Watches the Master Node's API server for changes in the Ingress resources
- Updates the Layer 7 Load Balancer

```
minikube addons enable ingress
```

```
kubectl create -f name_based_virtual_hosting_ingress.yaml
```

- creates an Ingress resource using Ingress rule definition in file

```
$ cat /etc/hosts
127.0.0.1      localhost
::1           localhost
192.168.99.100 blue.example.com green.example.com
```