

Ingress does not automatically install SSL by default. However, you can set up SSL encryption for your Ingress by using an **Ingress Controller** (like NGINX) and integrating it with **cert-manager** to automatically manage and renew SSL/TLS certificates, such as using **Let's Encrypt**.

Steps to Enable SSL with Ingress:

1. Install an Ingress Controller (if you haven't already):

- For NGINX Ingress:

```
kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-nginx/main/deploy/static/provider/cloud/deploy.yaml
```

2. Install **cert-manager** to handle SSL certificates:

- Add the cert-manager repository:

```
kubectl apply -f https://github.com/jetstack/cert-manager/releases/download/v1.10.0/cert-manager.yaml
```

3. Create an Issuer or ClusterIssuer for Let's Encrypt (Free SSL Certificates):

- Example of a **ClusterIssuer** YAML for Let's Encrypt:

```
apiVersion: cert-manager.io/v1
kind: ClusterIssuer
metadata:
  name: letsencrypt-prod
spec:
  acme:
    email: your-email@example.com
    server: https://acme-v02.api.letsencrypt.org/directory
    privateKeySecretRef:
      name: letsencrypt-prod
    solvers:
      - http01:
```

```
ingress:
  class: nginx
```

4. Create an Ingress Resource with SSL/TLS annotations:

- Example of an Ingress definition with SSL:

```
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: my-ingress
  annotations:
    nginx.ingress.kubernetes.io/rewrite-target: /
    cert-manager.io/cluster-issuer: letsencrypt-prod
spec:
  rules:
  - host: your-domain.com
    http:
      paths:
      - path: /
        pathType: Prefix
        backend:
          service:
            name: your-service-name
            port:
              number: 80
    tls:
    - hosts:
      - your-domain.com
      secretName: your-domain-tls
```

- When the Ingress is created, **cert-manager** will automatically request an SSL certificate from Let's Encrypt and store it in a Kubernetes secret (`your-domain-tls`).

5. Verify SSL Certificate:

- After a successful cert-manager process, your domain should have SSL enabled, and your site should be accessible via HTTPS.

