

# K8S Troubleshooting

## Node

### Insufficient Node Resources

- Too many pods
  - Add more nodes
- Resource limit exceeds maximum usage
  - Readjust resource limit or expand node resource
- System OOM encountered
  - Check memory usage and make adjustment accordingly

## Namespace

### Namespace Stuck in Terminating State

- Check errors
  - kubectl get ns <name> -oyaml
- Identify resources not deleted
  - kubectl api-resources --verbs=list --namespaced -o name
- Describe resources not deleted
  - kubectl describe APIService <version>.<api-resource>
- Force delete

## Network

### Core DNS

- Check DNS service at node level
  - telnet node\_ip
- Check iptables rules
  - iptables -L
- Use network multitool
  - wbitt/network-multitool container
- Check DNS Pod health
  - kubectl get po -l k8s-app=kube-dns
- Check DNS service
  - kubectl get svc -A -l k8s-app=kube-dns
- Check CoreDNS permission
  - kubectl describe clusterrole system:coredns
- Try different network add-on

## Storage

## Pod

### ImagePullBackOff

- Check image name/tag
- Check image registry
- Check image availability
- Check network status
  - ping/ipvs/iptables/nslookup
- Check image pull secret
  - kubectl get secret -oyaml
- Check pod log
  - kubectl logs pod\_name
- Check container log
  - kubectl logs pod\_name -c container
- Check pod resource limits
  - kubectl describe pod pod\_name

### CrashLoopBackOff

- Incorrect Pod Configuration
- Container image issues
- Resource constraints
- Incompatible environment
- Application bugs
- DNS error
- Missing Dependencies
- Check Pod logs
  - kubectl logs pod\_name
- Check Pod events
  - kubectl describe pod pod\_name

### Zombie Process

- Use pause container
  - Enable shareProcessNamespace
- Use Tini
  - ENTRYPOINT ["/tini", "--"]

## WorkNode

## MasterNode