

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