



Part 14: Kubernetes Real-Time Troubleshooting

Introduction

Welcome to the world of Kubernetes troubleshooting, where every challenge is an opportunity to sharpen your skills and emerge victorious. Join us as we embark on a journey through common real-time scenarios, unraveling mysteries, and uncovering solutions along the way.



PART 14- KUBERNETES REAL-TIME TROUBLESHOOTING

 Follow

 **kubernetes**

- Node Network Partition
- Node NotSchedulable Error
- Container Logs Not Available
- Cluster Network Partition Error
- Helm Release Rollback Issues

Scenario 66: Node Network Partition

kubernetes/kubernetes

#105617 **NodeLifecycleC**
all pods are marked as
not ready making...



38 comments



iyashu opened on October 11, 2021





Symptoms: Nodes become partitioned from the cluster network, causing them to be marked as not ready and leading to pod evictions.

Diagnosis: Inspect the node status (`kubectl get nodes`) and describe the affected nodes (`kubectl describe node <node_name>`). Check for network connectivity issues and events indicating network partition.

Solution:

1. Verify the network configuration and connectivity between the nodes and the cluster's control plane.
2. Check for any network policies or firewall rules that may cause network partitions and adjust them.
3. Use network monitoring and logging tools to diagnose and resolve network connectivity issues.
4. Restart the network services or components on the affected nodes to re-establish network connectivity.

Scenario 67: Node NotSchedulable Error

```
root@kube-master:~# kubectl describe nodes kube-worker2 | grep -i taint
Taints:
    new-taint=taint_demo:NoExecute
    new-taint=taint_demo:NoSchedule
root@kube-master:~#
root@kube-master:~#
root@kube-master:~# kubectl taint node kube-worker2 new-taint:NoSchedule-
node/kube-worker2 untainted
root@kube-master:~#
root@kube-master:~# kubectl describe nodes kube-worker2 | grep -i taint
Taints:
    new-taint=taint_demo:NoExecute
root@kube-master:~#
root@kube-master:~#
root@kube-master:~# kubectl taint node kube-worker2 new-taint:NoExecute-
node/kube-worker2 untainted
root@kube-master:~#
root@kube-master:~# kubectl describe nodes kube-worker2 | grep -i taint
Taints:
    <none>
root@kube-master:~#
root@kube-master:~# |
```

Symptoms: Nodes are marked as NotSchedulable, preventing new pods from being scheduled on them.

Diagnosis: Describe the affected nodes (`kubectl describe node <node_name>`) and check the taints and conditions.

Solution:

1. Remove the taint preventing pod scheduling (`kubectl taint nodes <node_name> key:NoSchedule-`).
2. Investigate and resolve any issues causing the node to be marked as NotSchedulable (e.g., resource exhaustion, node maintenance).
3. Use `kubectl cordon` and `kubectl uncordon` commands to manage node scheduling status during maintenance.



Scenario 68: Container Logs Not Available

aws/apprunner-roadmap



#184 Container Logs are not available if the container does not start

1 comment

 kpconnell opened on April 6, 2023



Symptoms: Unable to access logs for containers in a pod.

Diagnosis: Use `kubectl logs <pod_name> -c <container_name>` to retrieve logs and verify if the container runtime is operational.

Solution:

1. Ensure that the container logging driver is correctly configured and functional.
2. Check node disk space and clear old logs if necessary.
3. Implement centralized logging solutions (e.g., ELK stack, Fluentd, Grafana Loki) to aggregate and manage logs efficiently.

Scenario 69: Cluster Network Partition Error

kubernetes/kubernetes



#36950 [k8s.io] Network Partition [Disruptive] [Slow] [k8s.io] [Job]...

6 comments

 k8s-github-robot opened on November 17, 2016





Symptoms: Nodes or pods become unreachable due to a network partition within the cluster.

Diagnosis: Use `kubectl get nodes` and `kubectl get pods -o wide` to check node and pod statuses and their IPs. Verify network connectivity between nodes and pods.

Solution:

1. Diagnose and resolve underlying network issues (e.g., firewall rules, network misconfigurations).
2. Use a robust CNI plugin (e.g., Calico, Weave) to manage network policies and ensure network resilience.
3. Implement multi-zone or multi-region clusters to minimize the impact of network partitions.

Scenario 70: Helm Release Rollback Issues

helm/helm

#12436 **Helm rollback fails when the deleted resource is created...**



11 comments



ra-grover opened on September 29, 2023



Symptoms: Rolling back a Helm release fails or does not revert to the desired state.

Diagnosis: Check the Helm release history (`helm history <release_name>`) and inspect the release status (`helm status <release_name>`).

Solution:

1. Use `helm rollback <release_name> <revision>` to revert to a specific revision.
2. Investigate and resolve any configuration changes or resource conflicts preventing rollback.
3. Implement version control for Helm charts and configuration files to manage release states effectively.



In the up-coming parts, we will discuss on more troubleshooting steps for the different Kubernetes based scenarios. So, stay tuned for the and follow @Prasad Suman Mohan for more such posts.

