k3s lab Cheat Sheet

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Installation Raspberry Pi Ubuntu Server 64-bit

1. install control plane/-master	controller1$: curl -sfL https://get.k3s.io | INSTALL_K3S_EXEC="--tls-san 192.168.1.10 --node-taint CriticalAddonsOnly=true:NoExecute" sh -
2. generate a k3s token	controller1$: sudo cat /var/lib/rancher/k3s/server/node-token > node-token.txt
3. ssh into worker[x] copy token	worker1$: scp ubuntu@192.168.1.10:/home/ubuntu/node-token.txt /tmp/node-token.txt
4. install worker and join controller	worker1$: curl -sfL https://get.k3s.io \| \ K3S_URL=https://192.168.1.7:6443 \ K3S_TOKEN=$(cat /tmp/node-token.txt) \ sh -
5. check node installed and in 'Ready' state	controller$: kubectl get nodes

Repeat Step 3 for every worker

Worker Nodes after install

add a config.yaml file	# /etc/rancher/k3s/config.yaml on worker1 node-ip: 192.168.1.8 node-name: "-worker1" node-label: ["kubernetes.io/role=worker", "project=homelab"]
restart agent	sudo systemctl restart k3s-agent

Change IP Address of K3S nodes

Remove any containers in the node	controller1$: kubectl drain worker1 --ignore-daemonsets --delete-emptydir-data
Remove the node from controller	controller1$: kubectl delete node worker1
Stop the worker k3s	worker1$: sudo systemctl stop k3s-agent
cleanup	worker$: sudo rm -rf /etc/rancher /var/lib/rancher

Regular Install steps

Add on Additional Control Plane / Master

Install	curl -sfL https://get.k3s.io | \ INSTALL_K3S_EXEC="server \ --server https://192.168.1.10:6443 \ --token <token> \ --tls-san 192.168.1.11 \ --node-taint CriticalAddonsOnly=true:NoExecute \ --cluster-init=false" \ sh -

Controller After Install

create config.yaml file	# /etc/rancher/k3s/config.yaml server: https://127.0.0.1:6443 name: default # /etc/rancher/k3s/config.yaml # Equivalent to advertiseAddress / LocalAPIEndpoint bind-address: 192.168.1.7 # Equivalent to nodeRegistration: name node-name: "controller" # Required so the SSL certificate matches the IP you advertised tls-san: - 192.168.1.7 # Optional: ensures your ubuntu user can read the k3s.yaml without sudo write-kubeconfig-mode: "0644"

MacOS Administration Machine

1. MACOS Install Kubectl	brew install kubernetes-cli
2. MACOS verify	kubectl version --client
3. MACOS SSH into K3s control plane	$> ssh ubuntu@192.xx.xxx
4. LINUX: Copy config to home drive	sudo cat /etc/rancher/k3s/k3s.yaml > k3s2.yaml
5. MACOS	scp ubuntu@192.168.1.7:/k3s2.yaml /Downloads/k3s.yaml

The kubeconfig file contains the credentials and endpoint information needed to connect securely to your K3s cluster. This file resides on your K3s server node

Development Workflow

MACOS install Rancher Desktop	brew install --cask rancher
MACOS Create project add docker file	FROM payara/micro:latest COPY target/my-jsf-app.war /opt/payara/micro/deployments/ CMD ["--clustermode", "kubernetes"]

Troubleshooting

view system error logs	sudo journalctl -u k3s-agent -n 50 --no-pager



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