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| **DOCUMENT RULES:** | |
| **Task Name:** | **Local Kubernetes setup using minikube** |
| **Task name & column name should be written:** | **Bold (CTRL+B)** |
| **Commands should be written in the after # sign:** | *Italic (CTRL+I) #hostname* |
| **Output photo should be cropped or compressed:**  **Photo could be more than one:**  **If you need extra lines, add the line next after it:** | ***Description photo should be with title bar (CTRL + I + B)*** |
| **All other text should be written:** | Standard |
| **Font name and text size:** | Calibri and 9 |
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| **Task names** | **Command steps and outputs** |
| 1. **Installation and configuration of Desktop Paravirtualization software on your Desktop:** 2. **Minimal installation of CentOS 7 or Ubuntu on the paravirtual software:** | **Info**: VMware Workstation is Installed with default configuration  **Info**: Guest OS version is Ubuntu 64 bit  **Info**: Installation media is mini-Ubuntu 18.04 Bionic Beaver.iso  ***Please, learn about an OS in lecture first.*** |
| 1. **Test internet access in the cli of Guest VM:** | *#ping 8.8.8.8* |
| 1. **Update** | #sudo apt-get update |
| 1. **and upgrade latest version:** | *#sudo apt-get upgrade* |
| 1. **Check status of firewall and take screenshot of the cli output:** | **For instance: start**, **stop**, **enable**, **disable, status**  *#* *firewall-cmd –state*  Info: the minimal installation is not installed firewall by default |
| 1. **Check Guest OS IP address** | # ip addr |
| 1. **Trouble shooting base command Ping the Guest VM from your desktop using CMD** | *#Ping 192.168.234.143* |
| 1. **Trouble shooting base command check SSH port status:** | *#Telnet 192.168.234.143 22* |
| 1. **Go to run in your windows desktop:** | *Appwiz.cpl*  Turn on windows fetures on or off -> tick the Telnet Client check box to be on |
| 1. **Take snapshoot of the Guest VM** | Take snapshoot -> Give a name = “Fresh Installation “  As you know there some limitations.  You can delete your unneeded snapshoot afterward. |
| 1. **Download minikube, then click copy command and install**   Installation 1 | <https://github.com/kubernetes/minikube>  See the [Getting Started Guide](https://minikube.sigs.k8s.io/docs/start/)  <https://minikube.sigs.k8s.io/docs/start/>  Use commands below to install **minikube**  *#curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64*  *#sudo install minikube-linux-amd64 /usr/local/bin/minikube* |
|  | If command not successful, try to install curl *#sudo apt install curl* -> hit enter button -> *y* -> hit enter then try previous command again to download **minikube** |
| Start your cluster 2 | Note: From a terminal with administrator access (but not logged in as root), run: *# minikube start*    Note: If **minikube** fails to start, see the [drivers page](https://minikube.sigs.k8s.io/docs/drivers/) for help setting up a compatible container or virtual-machine manager.  If you fail try to install container driver and go to driver page.  <https://minikube.sigs.k8s.io/docs/drivers/>  <https://minikube.sigs.k8s.io/docs/drivers/docker/>  install docker link  <https://hub.docker.com/search?q=&type=edition&offering=community&sort=updated_at&order=desc>  find Docker Engine – ubuntu (community)  Run this command to pull image: *#docker pull ubuntu*  If there are packages missed, try to install it *#sudo apt install docker.io -> hit enter -> y -> hit enter*  *Then repeat pulling images #docker pull ubuntu* Usage Start a cluster using the docker driver:  #*minikube start --driver=docker*  After installation finishes assign driver:  *# minikube config set driver docker*  Note: if you fail you need to set permission the current user: *#sudo usermod -aG docker $USER && newgrp docker* -> hit enter  Then assign driver again: *#minikube start --driver=docker* pulling process starts  At the end displays message: \* kubectl not found. If you need it, try: 'minikube kubectl -- get pods -A'  Try this command: *#minikube kubectl -- get pods -A*  **Troubleshooting** Verify Docker container type is Linux *docker info --format '{{.OSType}}'* |
| Interact with your cluster 3 | *#kubectl get po -A*  *#minikube kubectl -- get po -A*  *#minikube dashboard* |
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| Deploy applications 4 |  |
| **Addtirional command for students attention** | to use minikube kubectl to execute kubectl commands that don't require a --namespace flag:  test if minikube installed or not minikube kubectl get nodes |
| here is main tool for managing Kubernetes cluster is via CLI | *#kubectl get pods -A*  *#kubectl get* command lists all pods running  - A argument will show you all pods from all namespaces |
| **Minikube dashboard access** | it will show you link of the Kubernetes  *#minikube dashboard* if you want break the command press CTRL+C |
| **From remote** |  |
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