Manual

Install Docker Toolbox for Windows

Prerequisite

Enable Virtualization Technology (vt-x/AMD-v) on BIOS:

Normally virtualization technology should be enable by default.

Checking Feature via Utility Tools

Install Docker Toolbox

1. Open PowerShell by "select windows powershell" and run as administrator

2. Run command " Disable-WindowsOptionalFeature -Online -FeatureName Microsoft-Hyper-V-All"

3. Right Click and "Run as administrator" on "DockerToolbox" and confirm "yes" on user account control.

4. Following screen for setup

Setup - Docker Toolbox
Ready to Install
Setup is now ready to begin installing Docker Toolbox on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\Program Files\Docker Toolbox
Setup type:
Full installation
Selected components:
Docker Client for Windows
Docker Machine for Windows
Docker Compose for Windows
VirtualBox
Kitematic for Windows (Alpha)
Git for Windows
< Back
Install
Cancel

Setup - Docker Toolbox
Installing
Please wait while Setup installs Docker Toolbox on your computer.
Extracting files...
C:\Program Files\Docker Toolbox\docker-compose.exe
Cancel

Windows Security
Would you like to install this device software?
Name: Oracle Corporation Universal Serial Bus ...
Publisher: Oracle Corporation
Always trust software from "Oracle Corporation".
Install
Don't Install
You should only install driver software from publishers you trust. How can I decide which device software is safe to install?

Setup - Docker Toolbox
Completing the Docker Toolbox Setup Wizard
Setup has finished installing Docker Toolbox on your computer. The application may be launched by selecting the installed shortcuts.
Click Finish to exit Setup.
View Shortcuts in File Explorer
Finish

5. Open new powershell (Run as Administrator) and check version of docker by “docker version”

Install minikube

1. Right Click and Copy “minikube.exe,kubectl” to c:\windows\system32
    a. minikube

b. kubectl

Application Tools
Windows
File
Home
Share
View
Manage
Training › Software_Package › kubernetes › Windows
Search Windows
Name
Date modified
Type
Size
kubectl
Application
69,370 KB
minikub
Application
80,652 KB
Open
Run as administrator
Troubleshoot compatibility
Pin to Start
Scan with Windows Defender...
Open on Mac
Show in Finder
Share on
Restore previous versions
Send to
Cut
Copy
Paste
Create shortcut
Delete
Rename
Properties
2 items
1 item selected 67.7 MB

System32
File
Home
Share
View
This PC › Local Disk (C:) › Windows › System32
Search System32
Name
Date modified
Type
Size
mimefilt.dll
19/3/2560 3:58
Application extens...
38 KB
mimofcodec.dll
19/3/2560 3:57
Application extens...
153 KB
minikube
21/6/2560 19:46
Application
80,652 KB
MinstoreEvents.dll
12 KB
Destination Folder Access Denied
You'll need to provide administrator permission to copy to this folder
System32
Date created: 18/3/2560 18:40
Continue
Skip
Cancel
More details
mmc
19/3/2560 3:57
Application
1,868 KB

Application Tools
System32
File
Home
Share
View
Manage
This PC › Local Disk (C:) › Windows › System32
Search System32
Quick access
Desktop
Downloads
Documents
Pictures
iCloud Drive
Autosaved C
Movies
Music
PendingCapture
Name
Date modified
Type
Size
kubectl
24/6/2560 14:06
Application
69,370 KB
l_intl.nls
19/3/2560 3:57
NLS File
10 KB
l2gpstore.dll
19/3/2560 3:58
Application extens...
69 KB
l2nacp.dll
19/3/2560 3:57
Application extens...
61 KB
L2SecHC.dll
19/3/2560 3:57
Application extens...
182 KB
l3codeca.acm
19/3/2560 3:56
ACM File
83 KB
l3codecp.acm
19/3/2560 3:56
ACM File
177 KB
label
19/3/2560 3:57
Application
17 KB
LangCleanupSysprepAction.dll
19/3/2560 3:58
Application extens...
16 KB
LanguageComponentsInstaller.dll
19/3/2560 3:58
Application extens...
180 KB
LanguageComponentsInstallerComHand...
19/3/2560 3:58
Application
49 KB
4,129 items
1 item selected 67.7 MB

2. Check minikube active command from powershell

Administrator: Windows PowerShell

```
PS C:\WINDOWS\system32> minikube
Minikube is a CLI tool that provisions and manages single-node Kubernetes clusters optimized for development workflows.

Usage:
  minikube [command]

Available Commands:
  addons          Modify minikube's kubernetes addons
  completion      Outputs minikube shell completion for the given shell (bash)
  config          Modify minikube config
  dashboard       Opens/displays the kubernetes dashboard URL for your local cluster
  delete          Deletes a local kubernetes cluster
  docker-env      Sets up docker env variables; similar to '$(docker-machine env)'
  get-k8s-versions Gets the list of available kubernetes versions available for minikube
  ip              Retrieve the IP address of the running cluster.
  logs            Gets the logs of the running localkube instance, used for debugging minikube, not user code
  mount           Mounts the specified directory into minikube
  profile         Profile sets the current minikube profile
  service         Gets the kubernetes URL(s) for the specified service in your local cluster
  ssh             Log into or run a command on a machine with SSH; similar to 'docker-machine ssh'
  ssh-key         Retrieve the ssh identity key path of the specified cluster
  start           Starts a local kubernetes cluster
  status          Gets the status of a local kubernetes cluster
  stop            Stops a running local kubernetes cluster
  version         Print the version of minikube

Flags:
      --alsologtostderr                  log to standard error as well as files
  -h, --help                             help for minikube
      --log_backtrace_at traceLocation   when logging hits line file:N, emit a stack trace (default :0)
      --log_dir string                   If non-empty, write log files in this directory
      --logtostderr                      log to standard error instead of files
  -p, --profile string                   The name of the minikube VM being used.
        This can be modified to allow for multiple minikube instances to be run independently (default "minikube")
      --show-libmachine-logs             Deprecated: To enable libmachine logs, set --v=3 or higher
      --stderrthreshold severity         logs at or above this threshold go to stderr (default 2)
      --test.bench string                regular expression per path component to select benchmarks to run
      --test.benchmem                    print memory allocations for benchmarks
      --test.benchtime duration          approximate run time for each benchmark (default 1s)
      --test.blockprofile string         write a goroutine blocking profile to the named file after execution
      --test.blockprofilerate int        if >= 0, calls runtime.SetBlockProfileRate() (default 1)
      --test.count n                     run tests and benchmarks n times (default 1)
      --test.coverprofile string         write a coverage profile to the named file after execution
      --test.cpu string                  comma-separated list of number of CPUs to use for each test
      --test.cpuprofile string           write a cpu profile to the named file during execution
      --test.memprofile string           write a memory profile to the named file after execution
      --test.memprofilerate int          if >=0, sets runtime.MemProfileRate
      --test.outputdir string            directory in which to write profiles
      --test.parallel int                maximum test parallelism (default 4)
      --test.run string                  regular expression to select tests and examples to run
```

3. Check kubectl active command from powershell

Select Administrator: Windows PowerShell

```
PS C:\WINDOWS\system32> kubectl
kubectl controls the Kubernetes cluster manager.

Find more information at https://github.com/kubernetes/kubernetes.

Basic Commands (Beginner):
  create        Create a resource by filename or stdin
  expose        Take a replication controller, service, deployment or pod and expose it as a new Kubernetes Service
  run           Run a particular image on the cluster
  set           Set specific features on objects

Basic Commands (Intermediate):
  get           Display one or many resources
  explain       Documentation of resources
  edit          Edit a resource on the server
  delete        Delete resources by filenames, stdin, resources and names, or by resources and label selector

Deploy Commands:
  rollout       Manage a deployment rollout
  rolling-update Perform a rolling update of the given ReplicationController
  scale         Set a new size for a Deployment, ReplicaSet, Replication Controller, or Job
  autoscale     Auto-scale a Deployment, ReplicaSet, or ReplicationController

Cluster Management Commands:
  certificate   Modify certificate resources.
  cluster-info  Display cluster info
  top           Display Resource (CPU/Memory/Storage) usage.
  cordon        Mark node as unschedulable
  uncordon      Mark node as schedulable
  drain         Drain node in preparation for maintenance
  taint         Update the taints on one or more nodes

Troubleshooting and Debugging Commands:
  describe      Show details of a specific resource or group of resources
  logs          Print the logs for a container in a pod
  attach        Attach to a running container
  exec          Execute a command in a container
  port-forward  Forward one or more local ports to a pod
  proxy         Run a proxy to the Kubernetes API server
  cp            Copy files and directories to and from containers.
  auth          Inspect authorization
```

4. Create Directory ".minikube" and ".minikube\cache\iso" ".minikube\cache\localkube" on C:\Users\<username>\ by powershell script below:

   "mkdir $env:userprofile\.minikube\cache\iso"

   "mkdir $env:userprofile\.minikube\cache\localkube"

```
PS C:\Users\praparn> mkdir $env:userprofile\.minikube\cache\iso

    Directory: C:\Users\praparn\.minikube\cache

Mode                LastWriteTime         Length Name
----                -------------         ------ ----
d-----        11/6/2017   10:24 PM                iso

PS C:\Users\praparn> mkdir $env:userprofile\.minikube\cache\localkube

    Directory: C:\Users\praparn\.minikube\cache

Mode                LastWriteTime         Length Name
----                -------------         ------ ----
d-----        11/6/2017   10:24 PM                localkube

PS C:\Users\praparn>
```

5. Copy "minikube-v0.23.0.iso" from Software_Package/kubernetes/ISO to Users/<username>/.minikube/cache/iso

6. Copy "localkube-v1.7.0" from Software_Package/kubenetes/localkube to Users/<username>/.minikube/cache/localkube

7. Configure minikube for use kubernetes version 1.7.0 on Powershell by command:

"minikube config set WantUpdateNotification false"

"minikube config set kubernetes-version v1.7.0"

8. Create minikube virtual machine on Powershell by command:

"minikube start --vm-driver=virtualbox profile=minikubelab1 --iso-url=https://storage.googleapis.com/minikube/iso/minikube-v0.23.0.iso"

9. Check status of minikube's machine by command: "minikube status","minikube ip"

10. Test ssh to minikube's machine via putty: (user: docker, password: tcuser) and exit

11. Check health of kubenetes cluster by command
    a. kubectl get nodes ➔ check node status
    b. kubectl get cs ➔ check cluster status

```
PS C:\Users\praparn> kubectl get nodes
NAME       STATUS    AGE       VERSION
minikube   Ready     4m        v1.7.0-alpha.2
PS C:\Users\praparn> kubectl get cs
NAME                 STATUS    MESSAGE              ERROR
scheduler            Healthy   ok
controller-manager   Healthy   ok
etcd-0               Healthy   {"health": "true"}
PS C:\Users\praparn>
```

12. Check status of kubenetest's elements by command
    a. kubectl get pods ➔ check pods element
    b. kubectl get deployment ➔ check deployment element
    c. kubectl get svc ➔ check service deploy on kubenetes
    d. kubectl describe svc ➔ check service description on kubenetes

Administrator: Windows PowerShell

```
PS C:\Users\praparn> kubectl get pods
No resources found.
PS C:\Users\praparn> kubectl get deployment
No resources found.
PS C:\Users\praparn> kubectl get svc
NAME         CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
kubernetes   10.0.0.1     <none>        443/TCP   7m
PS C:\Users\praparn> kubectl describe svc
Name:                   kubernetes
Namespace:              default
Labels:                 component=apiserver
                        provider=kubernetes
Annotations:            <none>
Selector:               <none>
Type:                   ClusterIP
IP:                     10.0.0.1
Port:                   https   443/TCP
Endpoints:              10.0.2.15:8443
Session Affinity:       ClientIP
Events:                 <none>
PS C:\Users\praparn>
```

13. Test deployment "nginx" web server by command:
    a. kubectl run webtest --image=labdocker/nginx:latest --port=80 ➔ deployment nginx (image: labdocker/nginx:latest) with port 80 service
    b. kubectl expose deployment webtest --target-port=80 --type=NodePort ➔ expose pods with service 80 (http)

```
PS C:\Users\praparn> kubectl run webtest --image=labdocker/nginx:latest --port=80
deployment "webtest" created
PS C:\Users\praparn> kubectl expose deployment webtest --target-port=80 --type=NodePort
service "webtest" exposed
PS C:\Users\praparn>
```

14. Check port mapping for service with host by command:
    a. kubectl get svc webtest ➔ check mapping service
    b. kubectl describe svc webtest ➔ check description of service (Check port for access. This example is "32114"

```
PS C:\Users\praparn> kubectl get svc webtest
NAME      CLUSTER-IP   EXTERNAL-IP   PORT(S)        AGE
webtest   10.0.0.34    <nodes>       80:32114/TCP   2m
PS C:\Users\praparn> kubectl describe svc webtest
Name:                     webtest
Namespace:                default
Labels:                   run=webtest
Annotations:              <none>
Selector:                 run=webtest
Type:                     NodePort
IP:                       10.0.0.34
Port:                     <unset> 80/TCP
NodePort:                 <unset> 32114/TCP
Endpoints:                172.17.0.4:80
Session Affinity:         None
Events:                   <none>
PS C:\Users\praparn>
```

15. Open browser for access test (Default IP: 192.168.99.100)

16. Stop deployment by command and recheck again
    a. kubectl delete svc webtest
    b. kubectl delete deployment webtest

```
PS C:\Users\praparn> kubectl delete svc webtest
service "webtest" deleted
PS C:\Users\praparn> kubectl delete deployment webtest
deployment "webtest" deleted
PS C:\Users\praparn>
```