

Hand On Lab 1 : Installing Docker CE on Windows Server 2016

Objective:

To learn docker support on windows server 2016 on Microsoft azure. This LAB uses azure VM with pre-installed Docker and TWO Base images.

Duration **30 Minutes**

Prerequisites:

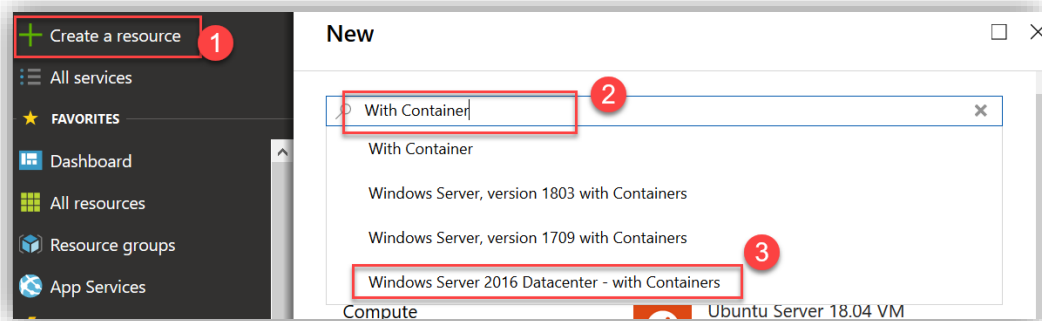
1. Azure Subscription
2. Internet Connection
3. Remote Desktop client (Built in Windows)
4. Web Browser (Any)

Steps :

I. Create Windows Server 2016 with Containers VM

1. Login into your azure portal (<https://portal.azure.com>)
2. Click on “Create Resource” to start creating new windows VM.

Search for “With Container”, portal should give you several suggestions, choose one “Windows Server 2016 with Containers”



3. Now, in next screen click “Create” button to start VM Creation
4. In Basics tab, select an existing resource group or use “create new” button to create new one.

Then enter name of new VM : DockerVM1 and then scroll down for more settings.

Home > New > Windows Server 2016 Datacenter - with Containers > Create a virtual machine

Create a virtual machine

Basics Disks Networking Management Guest config Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization.
Looking for classic VMs? [Create VM from Azure Marketplace](#)

PROJECT DETAILS

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

* Subscription ⓘ Visual Studio Enterprise

* Resource group ⓘ test
[Create new](#)

INSTANCE DETAILS

* Virtual machine name ⓘ DockerVM1

- On next section, provide user credentials and port to be open for RDP access.

Create a virtual machine

* Size ⓘ **Standard DS1 v2**
1 vcpu, 3.5 GB memory
[Change size](#)

ADMINISTRATOR ACCOUNT

* Username ⓘ dockeradmin ✓ **1**

* Password ⓘ ✓

* Confirm password ⓘ ✓

INBOUND PORT RULES

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

* Public inbound ports ⓘ ☐ None ☒ Allow selected ports **2**

* Select inbound ports RDP **3**

[Review + create](#) [Previous](#) [Next : Disks >](#) **4**

Click “Next : Disk ”

- Again click “Next: Networking” to skip the disk configuration (Accept defaults).
- Click “Next : Management” to skip networking (Accept defaults)
- Now, Turn off both diagnostics and click “Review + Create”

Basics Disks Networking **Management** Guest config Tags Review + create

Configure monitoring and management options for your VM.

MONITORING

Boot diagnostics ⓘ ☐ On ☒ Off

OS guest diagnostics ⓘ ☐ On ☒ Off

IDENTITY

Managed service identity ⓘ ☐ On ☒ Off

AUTO-SHUTDOWN

Enable auto-shutdown ⓘ ☐ On ☒ Off

Review + create Previous Next : Guest config >

9. On final page, click “Create” button [Validation must be passed]

Create a virtual machine

✓ Validation passed

Basics Disks Networking Management Guest config Tags **Review + create**

PRODUCT DETAILS

Standard DS1 v2
by Microsoft
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ⓘ
5.2216 INR/hr
[Pricing for other VM sizes](#)

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

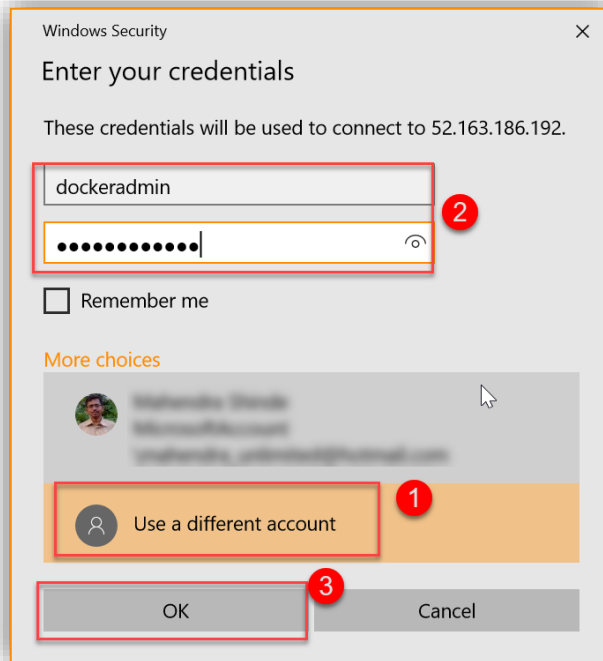
BASICS

Create Previous Next [Download a template for automation](#)

10. Wait for VM Provisioning to finish.

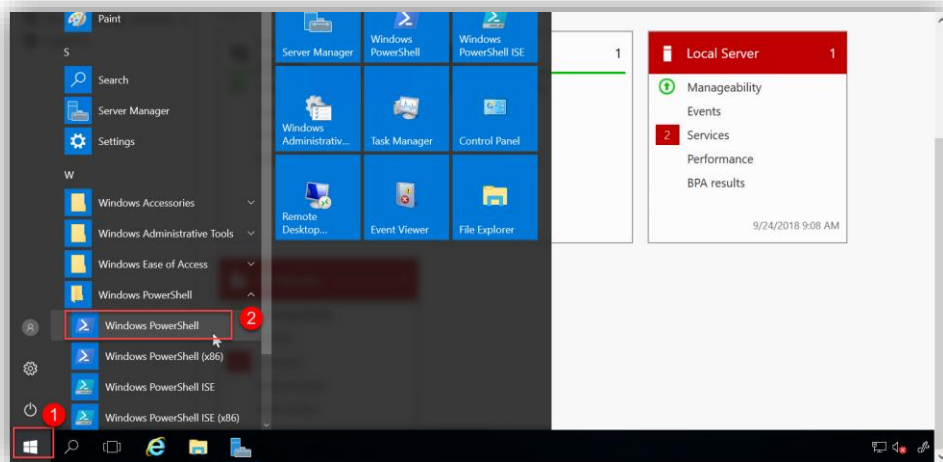
II. Validate installation of docker, install docker-compose

- Once VM is Ready, Click on Connect button to start RDP Session
Choose “Use different account” in login box and then enter username & password.



You may have to accept server certificate to begin session.

2. Now, Goto Start menu and click on "Windows Powershell"



3. Try command "docker info" to test whether docker is installed.

```

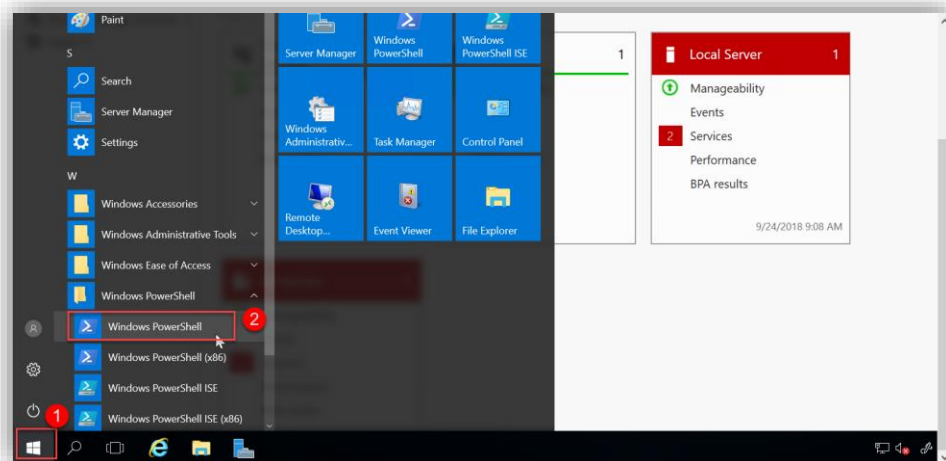
Administrator: Windows PowerShell
Windows PowerShell
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PS C:\Users\dockeradmin> docker info
Containers: 0
  Running: 0
  Paused: 0
  Stopped: 0
Images: 2
Server Version: 17.06.2-ee-16
Storage Driver: windowsfilter
Logging Driver: json-file
Plugins:
  Volume: local
  Network: l2bridge l2tunnel nat null overlay transparent
  Log: awslogs etwlogs fluentd json-file logentries splunk syslog
Swarm: inactive
Default Isolation: process
Kernel Version: 10.0 14393 (14393.2485.amd64fre.rs1_release.180827-1809)
Operating System: Windows Server 2016 Datacenter
OSType: Windows
Architecture: x86_64
CPUs: 1
Total Memory: 3.5GiB
Name: DockerVM1
ID: 4NEO:KDKU:EHV6:WCOX:ABB4:YMEA:OUVJ:2EXZ:ILXL:6YNU:ADV3:YVXW
Docker Root Dir: C:\ProgramData\docker
Debug Mode (client): false
Debug Mode (server): false
Registry: https://index.docker.io/v1/
Experimental: false
Insecure Registries:
  127.0.0.0/8
Live Restore Enabled: false

PS C:\Users\dockeradmin>
  
```

NOTE: You may use “cmd” instead of powershell to check if docker is installed.

4. To install docker-compose, open powershell



5. Type following commands to download from git hub

```

$ [Net.ServicePointManager]::SecurityProtocol =
[Net.SecurityProtocolType]::Tls12

$ Invoke-WebRequest
"https://github.com/docker/compose/releases/download/1.21.2/docker-
compose-Windows-x86_64.exe" -UseBasicParsing -OutFile
$Env:ProgramFiles\docker\docker-compose.exe
  
```

```
Administrator: Windows PowerShell
Windows PowerShell
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Writing web request
Writing request stream... (Number of bytes written: 4811868)
```

- Once installed, docker-compose can be invoked from powershell or command prompt.

```
Select Administrator: Windows PowerShell
Windows PowerShell
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PS C:\Users\dockeradmin> [Net.ServicePointManager]::SecurityProtocol = [Net.SecurityProtocolType]::Tls12
PS C:\Users\dockeradmin> Invoke-WebRequest 'https://github.com/docker/compose/releases/download/1.21.2/docker-compose.exe' -UseBasicParsing -OutFile $Env:ProgramFiles\docker\docker-compose.exe
PS C:\Users\dockeradmin> docker-compose
Define and run multi-container applications with Docker.

Usage:
  docker-compose [-f <arg>...] [options] [COMMAND] [ARGS...]
  docker-compose -h|--help

Options:
  -f, --file FILE             Specify an alternate compose file
                              (default: docker-compose.yml)
  -p, --project-name NAME     Specify an alternate project name
                              (default: directory name)
  --verbose                   Show more output
  --log-level LEVEL           Set log level (DEBUG, INFO, WARNING, ERROR, CRITICAL)
  --no-ansi                   Do not print ANSI control characters
  -v, --version               Print version and exit
  -H, --host HOST             Daemon socket to connect to
```

