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Access Docker Host Remotely



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Nano Server

Access Docker Host Remotely

In this blog, we will share you how to access docker host remotely using docker client.

REQUIREMENTS

- ◆ Nano Server with Docker Installed
- ◆ Client Machine to access the docker host through PowerShell

DOCKER ENGINE OVERVIEW

The docker engine is powered by **dockerd** in both windows and Linux. Dockerd is for Docker Daemon. This service has the ability to interface with docker client. It has lots of start-up options to customize the docker client service. We can start the service manually or we can setup in a configuration file. To configure the remote access to docker host, we can specify the IP and port number using the customize options.

For more information about the dockerd, please check this URL:

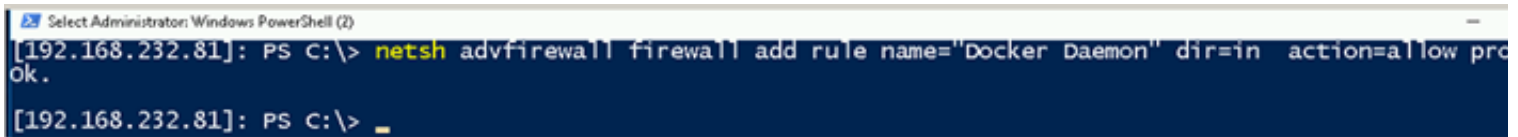
<https://docs.docker.com/engine/reference/commandline/dockerd/#windows-configuration-file>

(<https://docs.docker.com/engine/reference/commandline/dockerd/#windows-configuration-file>)

CONFIGURING FIREWALL

- ◆ We need to open a port a firewall on nano server (docker host). Execute the below command to open **port 2375**

netsh advfirewall firewall add rule name="Docker Daemon" dir=in action=allow protocol=TCP localport=2375



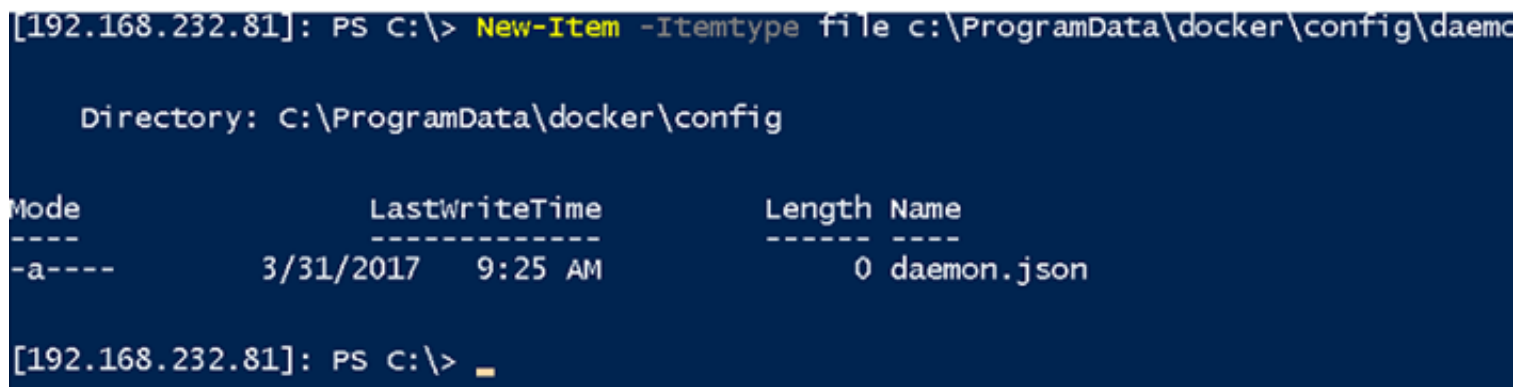
```
Select Administrator: Windows PowerShell (2)
[192.168.232.81]: PS C:\> netsh advfirewall firewall add rule name="Docker Daemon" dir=in action=allow protocol=TCP port=2375
[192.168.232.81]: PS C:\> _
```

(<https://www.assistanz.com/wp-content/uploads/2017/03/image-131.png>)

CREATING DAEMON FILE

- ◆ Create a blank file named **daemon.json** under **c:\programdata\docker\config** folder using below command.

New-Item -ItemType file c:\ProgramData\docker\config\daemon.json



```
[192.168.232.81]: PS C:\> New-Item -ItemType file c:\ProgramData\docker\config\daemon.json

Directory: C:\ProgramData\docker\config

Mode                LastWriteTime         Length Name
----                -
-a-----          3/31/2017   9:25 AM             0 daemon.json

[192.168.232.81]: PS C:\> _
```

(<https://www.assistanz.com/wp-content/uploads/2017/03/image-132.png>)

- ◆ Add the host key into the file using the below command.

Add-Content 'c:\ProgramData\docker\config\daemon.json' '{"hosts": ["tcp://0.0.0.0:2375", "npipe://"]}'



```
C:\> Add-Content 'c:\ProgramData\docker\config\daemon.json' '{"hosts": ["tcp://0.0.0.0:2375", "npipe://"]}'
```

(<https://www.assistanz.com/wp-content/uploads/2017/03/image-133.png>)

- ◆ To list the content from a file, use the below command.

Get-Content 'C:\ProgramData\docker\config\daemon.json'

```
[192.168.232.81]: PS C:\> Get-Content 'C:\ProgramData\docker\config\daemon.json'
{"hosts": ["tcp://0.0.0.0:2375", "npipe://"]} }
```

(<https://www.assistanz.com/wp-content/uploads/2017/03/image-134.png>)

- ◆ Restart the **Docker service** using below command.

Restart-service docker

```
[192.168.232.81]: PS C:\> restart-service docker
[192.168.232.81]: PS C:\> _
```

(<https://www.assistanz.com/wp-content/uploads/2017/03/image-135.png>)

content/uploads/2017/03/image-135.png)

INSTALLING DOCKER ENGINE IN CLIENT MACHINE

- ◆ Execute the bunch of PowerShell scripts given below.

\$package = "https://download.docker.com/components/engine/windows-server/cs-1.12/docker.zip"

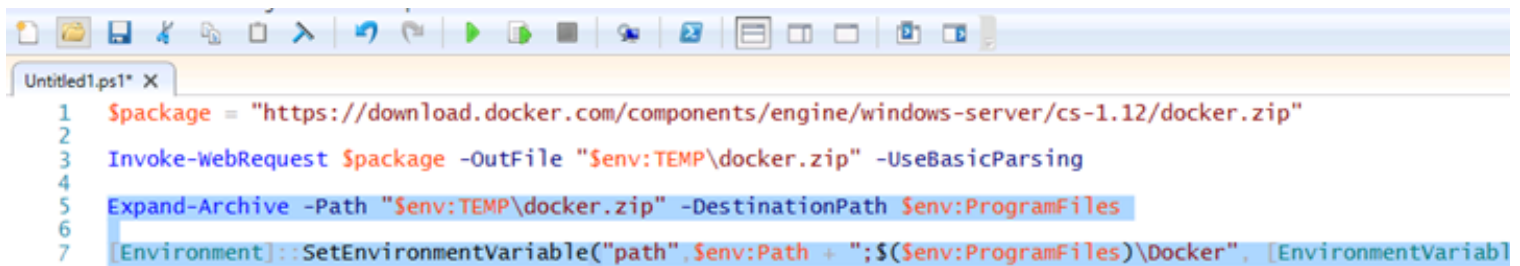
(<https://download.docker.com/components/engine/windows-server/cs-1.12/docker.zip>)

Invoke-WebRequest \$package -OutFile "\$env:TEMP\docker.zip" -UseBasicParsing

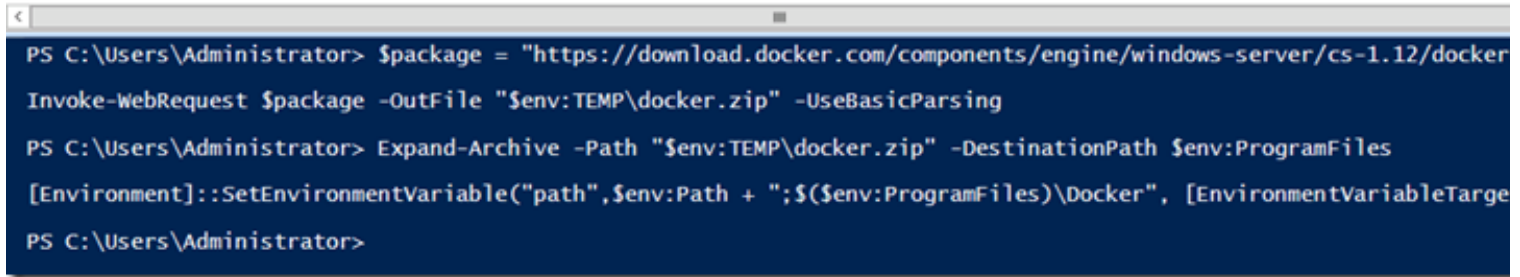
Expand-Archive -Path "\$env:TEMP\docker.zip" -DestinationPath \$env:ProgramFiles

**[Environment]::SetEnvironmentVariable("path",\$env:Path + ";\$(\$env:ProgramFiles)\Docker",
[EnvironmentVariableTarget]::Machine)**

Above scripts will download the docker.zip and extract the files under program files folder. Also, it adds the environment variable for Docker folder.

A screenshot of a text editor window titled 'Untitled1.ps1'. It contains a PowerShell script with seven lines of code. The code is as follows:

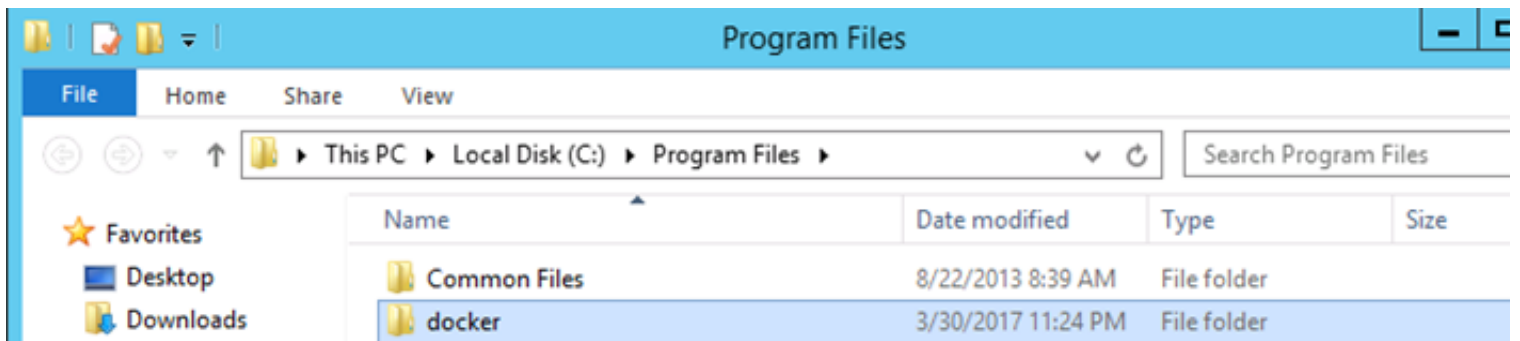
```
1 $package = "https://download.docker.com/components/engine/windows-server/cs-1.12/docker.zip"
2
3 Invoke-WebRequest $package -OutFile "$env:TEMP\docker.zip" -UseBasicParsing
4
5 Expand-Archive -Path "$env:TEMP\docker.zip" -DestinationPath $env:ProgramFiles
6
7 [Environment]::SetEnvironmentVariable("path",$env:Path + ";$($env:ProgramFiles)\Docker", [EnvironmentVariableTarget]::Machine)
```

A screenshot of a PowerShell command prompt window. It shows the execution of the PowerShell script from the previous image. The commands and their outputs are:

```
PS C:\Users\Administrator> $package = "https://download.docker.com/components/engine/windows-server/cs-1.12/docker.zip"
Invoke-WebRequest $package -OutFile "$env:TEMP\docker.zip" -UseBasicParsing
PS C:\Users\Administrator> Expand-Archive -Path "$env:TEMP\docker.zip" -DestinationPath $env:ProgramFiles
[Environment]::SetEnvironmentVariable("path",$env:Path + ";$($env:ProgramFiles)\Docker", [EnvironmentVariableTarget]::Machine)
PS C:\Users\Administrator>
```

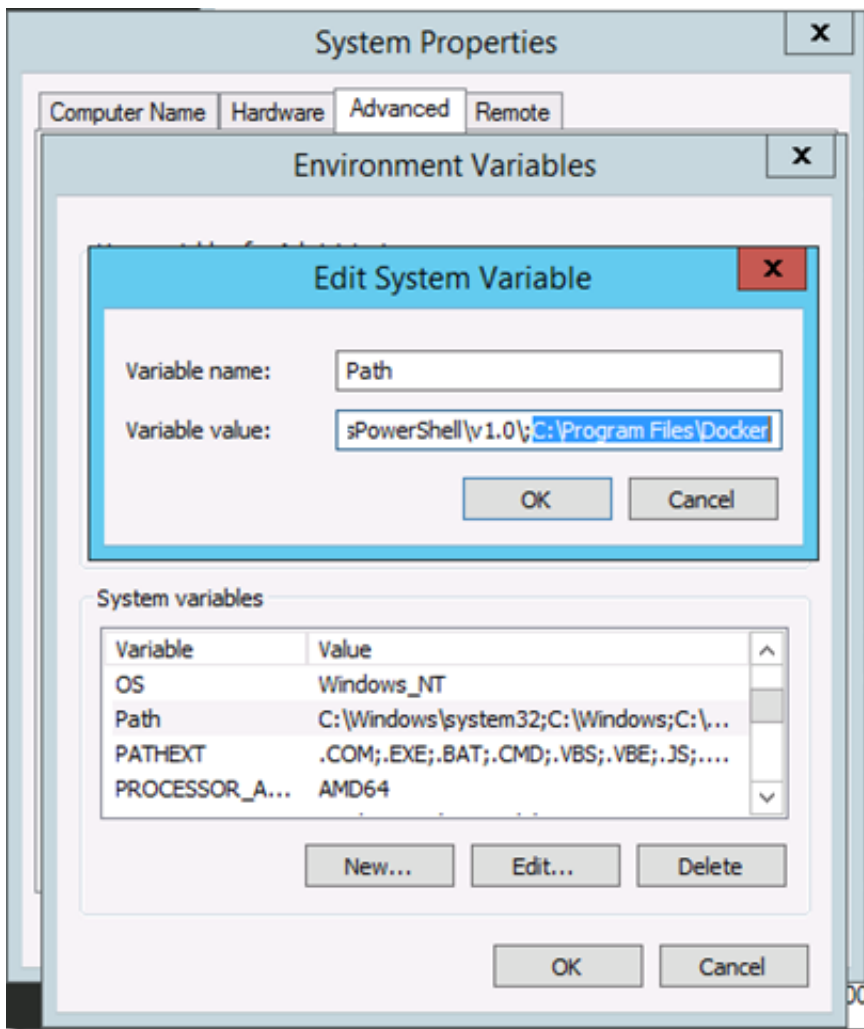
(<https://www.assistanz.com/wp-content/uploads/2017/03/image-136.png>)

- ◆ Now Docker folder will be available in C:\Program Files folder.



(<https://www.assistanz.com/wp-content/uploads/2017/03/image-137.png>)

- ◆ Environment variable will also available for docker.



(<https://www.assistanz.com/wp->

content/uploads/2017/03/image-138.png)

ACCESS DOCKER HOST REMOTELY

- ◆ Go to PowerShell and execute the below command to access the docker host remotely.

docker -H tcp://192.168.232.81:2375 version

The IP 192.168.232.81 belongs to nano server docker host. The **version** is a command to execute on the rem server.

```
PS C:\> docker -H tcp://192.168.232.81:2375 version
Client:
Version:      1.12.2-cs2-ws-beta
API version:  1.25
Go version:   go1.7.1
Git commit:   050b611
Built:        Tue Oct 11 02:35:40 2016
OS/Arch:      windows/amd64

Server:
Version:      17.03.0-ee-1
API version:  1.26
Go version:   go1.7.5
Git commit:   9094a76
Built:        Wed Mar  1 00:49:51 2017
OS/Arch:      windows/amd64
PS C:\> _
```

(<https://www.assistanz.com/wp>

content/uploads/2017/03/image-139.png)

VIDEO