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Topic

Version

Author	Version	Last update	Comment
tinaxiao@cn.ibm.com	V1.0	03/16/18	Create the document

Install kubectl binary via curl

From <<https://kubernetes.io/docs/tasks/tools/install-kubectl/#before-you-begin>>

Download the latest release

```
[root@sbybz3137 ~]# curl -LO https://storage.googleapis.com/kubernetes-release/release/$(curl -s https://storage.googleapis.com/kubernetes-release/release/stable.txt)/bin/linux/amd64/kubectl
```

```
% Total      % Received % Xferd  Average Speed   Time    Time     Time  Current
100 64.4M  100 64.4M    0     0  5828k      0  0:00:11  0:00:11 --:--:-- 6067k
```

```
[root@sbybz3137 ~]# chmod +x ./kubectl && mv ./kubectl /usr/local/bin/kubectl
```

Minikube v0.25.0 Installation

The following describe is not correct.

I just wanted to add that **Virtual Box does not support VT-X/AMD-v in nested virtualisation**. See this [ticket/feature request](#) on virtualbox.org.

There are also some more questions and answers here on SO discussing [this topic](#).

Possible solutions:

1. As already mentioned: **Use a different hypervisor** that does support VT-X/AMD-v in nested virtualisation (like Xen, KVM or VMware).

2. Install Minikube on the host OS and not in a VM.

```
[root@sbybz3137 ~]# curl -Lo minikube https://storage.googleapis.com/minikube/releases/v0.25.0/minikube-linux-amd64 && chmod +x minikube
&& mv minikube /usr/local/bin/
```

% Total	% Received	% Xferd	Average Speed		Time	Time	Time	Current
			Dload	Upload	Total	Spent	Left	Speed
100 41.4M	100 41.4M	0 0	5525k	0	0:00:07	0:00:07	--:--:--	6005k

```
[root@sbybz3137 ~]# minikube start
```

```
Starting local Kubernetes v1.9.0 cluster...
```

```
Starting VM...
```

```
Downloading Minikube ISO
```

```
142.22 MB / 142.22 MB [=====] 100.00% 0s
```

```
E0313 01:05:12.747598 17876 start.go:159] Error starting host: Error creating host: Error executing step: Running precreate checks.
```

```
: VBoxManage not found. Make sure VirtualBox is installed and VBoxManage is in the path.
```

```
Retrying.
```

```
E0313 01:05:12.747960 17876 start.go:165] Error starting host: Error creating host: Error executing step: Running precreate checks.
```

```
: VBoxManage not found. Make sure VirtualBox is installed and VBoxManage is in the path
```

```
=====
```

```
An error has occurred. Would you like to opt in to sending anonymized crash
information to minikube to help prevent future errors?
```

```
To opt out of these messages, run the command:
```

```
minikube config set WantReportErrorPrompt false
```

```
=====
```

```
Please enter your response [Y/n]:
```

Download and install virtualbox5.2

```
[root@sbybz3137 DST]# wget https://download.virtualbox.org/virtualbox/5.2.8/VirtualBox-5.2-5.2.8_121009_el7-1.x86_64.rpm
```

```
--2018-03-13 01:18:30-- https://download.virtualbox.org/virtualbox/5.2.8/VirtualBox-5.2-5.2.8_121009_el7-1.x86_64.rpm
```

```
Resolving download.virtualbox.org (download.virtualbox.org)... 104.100.180.166
```

```
Connecting to download.virtualbox.org (download.virtualbox.org)|104.100.180.166|:443... connected.
```

```
HTTP request sent, awaiting response... 200 OK
```

```
Length: 79686360 (76M) [application/x-redhat-package-manager]
```

```
Saving to: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64.rpm
```

```
100%[=====>]
```

```
79,686,360 9.62MB/s in 8.1s
```

```
2018-03-13 01:18:39 (9.40 MB/s) - VirtualBox-5.2-5.2.8_121009_el7-1.x86_64.rpm saved [79686360/79686360]
```

Install VirtualBox

```
[root@sbybz3137 DST]# yum -y install VirtualBox-5.2-5.2.8_121009_el7-1.x86_64.rpm
```

```
Loaded plugins: langpacks, product-id, search-disabled-repos, subscription-manager
```

```
Examining VirtualBox-5.2-5.2.8_121009_el7-1.x86_64.rpm: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
Marking VirtualBox-5.2-5.2.8_121009_el7-1.x86_64.rpm to be installed
```

```
Resolving Dependencies
```

```
--> Running transaction check
```

```
--> Package VirtualBox-5.2.x86_64 0:5.2.8_121009_el7-1 will be installed
```

```
--> Processing Dependency: libpng15.so.15(PNG15_0)(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
--> Processing Dependency: libGL.so.1()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
--> Processing Dependency: libICE.so.6()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
--> Processing Dependency: libSDL-1.2.so.0()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
--> Processing Dependency: libSM.so.6()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
--> Processing Dependency: libX11-xcb.so.1()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
--> Processing Dependency: libX11.so.6()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
--> Processing Dependency: libXcursor.so.1()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
--> Processing Dependency: libXext.so.6()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```
--> Processing Dependency: libXinerama.so.1()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
```

```

--> Processing Dependency: libXmu.so.6()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
--> Processing Dependency: libXrender.so.1()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
--> Processing Dependency: libXt.so.6()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
--> Processing Dependency: libasound.so.2()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
--> Processing Dependency: libfontconfig.so.1()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
--> Processing Dependency: libfreetype.so.6()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
--> Processing Dependency: libpng15.so.15()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
--> Processing Dependency: libvpx.so.1()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
--> Processing Dependency: libxcb.so.1()(64bit) for package: VirtualBox-5.2-5.2.8_121009_el7-1.x86_64
--> Running transaction check
--> Package SDL.x86_64 0:1.2.15-14.el7 will be installed
--> Package alsa-lib.x86_64 0:1.1.3-3.el7 will be installed
--> Package fontconfig.x86_64 0:2.10.95-11.el7 will be installed
--> Processing Dependency: fontpackages-filesystem for package: fontconfig-2.10.95-11.el7.x86_64
--> Processing Dependency: font(:lang=en) for package: fontconfig-2.10.95-11.el7.x86_64
--> Package freetype.x86_64 0:2.4.11-15.el7 will be installed
--> Package libICE.x86_64 0:1.0.9-9.el7 will be installed
--> Package libSM.x86_64 0:1.2.2-2.el7 will be installed
--> Package libX11.x86_64 0:1.6.5-1.el7 will be installed
--> Processing Dependency: libX11-common >= 1.6.5-1.el7 for package: libX11-1.6.5-1.el7.x86_64
--> Package libXcursor.x86_64 0:1.1.14-8.el7 will be installed
--> Processing Dependency: libXfixes.so.3()(64bit) for package: libXcursor-1.1.14-8.el7.x86_64
--> Package libXext.x86_64 0:1.3.3-3.el7 will be installed
--> Package libXinerama.x86_64 0:1.1.3-2.1.el7 will be installed
--> Package libXmu.x86_64 0:1.1.2-2.el7 will be installed
--> Package libXrender.x86_64 0:0.9.10-1.el7 will be installed
--> Package libXt.x86_64 0:1.1.5-3.el7 will be installed
--> Package libpng.x86_64 2:1.5.13-7.el7_2 will be installed
--> Package libvpx.x86_64 0:1.3.0-5.el7_0 will be installed
--> Package libxcb.x86_64 0:1.12-1.el7 will be installed
--> Processing Dependency: libXau.so.6()(64bit) for package: libxcb-1.12-1.el7.x86_64
--> Package mesa-libGL.x86_64 0:17.0.1-6.20170307.el7 will be installed
--> Processing Dependency: mesa-libglapi = 17.0.1-6.20170307.el7 for package: mesa-libGL-17.0.1-6.20170307.el7.x86_64
--> Processing Dependency: libxshmfence.so.1()(64bit) for package: mesa-libGL-17.0.1-6.20170307.el7.x86_64

```

```

--> Processing Dependency: libglapi.so.0()(64bit) for package: mesa-libGL-17.0.1-6.20170307.el7.x86_64
--> Processing Dependency: libdrm.so.2()(64bit) for package: mesa-libGL-17.0.1-6.20170307.el7.x86_64
--> Processing Dependency: libXxf86vm.so.1()(64bit) for package: mesa-libGL-17.0.1-6.20170307.el7.x86_64
--> Processing Dependency: libXdamage.so.1()(64bit) for package: mesa-libGL-17.0.1-6.20170307.el7.x86_64
--> Running transaction check
--> Package fontpackages-filesystem.noarch 0:1.44-8.el7 will be installed
--> Package libX11-common.noarch 0:1.6.5-1.el7 will be installed
--> Package libXau.x86_64 0:1.0.8-2.1.el7 will be installed
--> Package libXdamage.x86_64 0:1.1.4-4.1.el7 will be installed
--> Package libXfixes.x86_64 0:5.0.3-1.el7 will be installed
--> Package libXxf86vm.x86_64 0:1.1.4-1.el7 will be installed
--> Package libdrm.x86_64 0:2.4.74-1.el7 will be installed
--> Processing Dependency: libpciaccess.so.0()(64bit) for package: libdrm-2.4.74-1.el7.x86_64
--> Package libxshmfence.x86_64 0:1.2-1.el7 will be installed
--> Package lyx-fonts.noarch 0:2.2.3-1.el7 will be installed
--> Package mesa-libglapi.x86_64 0:17.0.1-6.20170307.el7 will be installed
--> Running transaction check
--> Package libpciaccess.x86_64 0:0.13.4-3.1.el7_4 will be installed
--> Finished Dependency Resolution

```

Dependencies Resolved

=====				
Package	Arch	Version	Repository	Size
=====				
Installing:				
VirtualBox-5.2	x86_64	5.2.8_121009_el7-1	/VirtualBox-5.2-5.2.8_121009_el7-1.x86_64	172 M
Installing for dependencies:				
SDL	x86_64	1.2.15-14.el7	ftp3	204 k
alsa-lib	x86_64	1.1.3-3.el7	ftp3	421 k
fontconfig	x86_64	2.10.95-11.el7	ftp3	229 k
fontpackages-filesystem	noarch	1.44-8.el7	ftp3	9.9 k
freetype	x86_64	2.4.11-15.el7	ftp3	392 k
libICE	x86_64	1.0.9-9.el7	ftp3	66 k

libSM	x86_64	1.2.2-2.el7	ftp3	39 k	
libX11	x86_64	1.6.5-1.el7	ftp3	606 k	
libX11-common	noarch	1.6.5-1.el7	ftp3	164 k	
libXau	x86_64	1.0.8-2.1.el7	ftp3	29 k	
libXcursor	x86_64	1.1.14-8.el7	ftp3	30 k	
libXdamage	x86_64	1.1.4-4.1.el7	ftp3	20 k	
libXext	x86_64	1.3.3-3.el7	ftp3	39 k	
libXfixes	x86_64	5.0.3-1.el7	ftp3	18 k	
libXinerama	x86_64	1.1.3-2.1.el7	ftp3	14 k	
libXmu	x86_64	1.1.2-2.el7	ftp3	71 k	
libXrender	x86_64	0.9.10-1.el7	ftp3	26 k	
libXt	x86_64	1.1.5-3.el7	ftp3	173 k	
libXxf86vm	x86_64	1.1.4-1.el7	ftp3	18 k	
libdrm	x86_64	2.4.74-1.el7	ftp3	146 k	
libpciaccess	x86_64	0.13.4-3.1.el7_4	ftp3	26 k	
libpng	x86_64	2:1.5.13-7.el7_2	ftp3	213 k	
libvpx	x86_64	1.3.0-5.el7_0	ftp3	498 k	
libxcb	x86_64	1.12-1.el7	ftp3	211 k	
libxshmfence	x86_64	1.2-1.el7	ftp3	7.1 k	
lyx-fonts	noarch	2.2.3-1.el7	epel	159 k	
mesa-libGL	x86_64	17.0.1-6.20170307.el7	ftp3	155 k	
mesa-libglapi	x86_64	17.0.1-6.20170307.el7	ftp3	41 k	

Transaction Summary

=====

Install 1 Package (+28 Dependent packages)

Total size: 176 M

Total download size: 3.9 M

Installed size: 183 M

Downloading packages:

(1/28): SDL-1.2.15-14.el7.x86_64.rpm	204 kB 00:00:00
(2/28): alsa-lib-1.1.3-3.el7.x86_64.rpm	421 kB 00:00:01
(3/28): fontconfig-2.10.95-11.el7.x86_64.rpm	229 kB 00:00:00

(4/28): fontpackages-filesystem-1.44-8.el7.noarch.rpm	9.9 kB 00:00:00
(5/28): libICE-1.0.9-9.el7.x86_64.rpm	66 kB 00:00:00
(6/28): freetype-2.4.11-15.el7.x86_64.rpm	392 kB 00:00:00
(7/28): libSM-1.2.2-2.el7.x86_64.rpm	39 kB 00:00:00
(8/28): libX11-1.6.5-1.el7.x86_64.rpm	606 kB 00:00:00
(9/28): libX11-common-1.6.5-1.el7.noarch.rpm	164 kB 00:00:00
(10/28): libXau-1.0.8-2.1.el7.x86_64.rpm	29 kB 00:00:00
(11/28): libXcursor-1.1.14-8.el7.x86_64.rpm	30 kB 00:00:00
(12/28): libXdamage-1.1.4-4.1.el7.x86_64.rpm	20 kB 00:00:00
(13/28): libXext-1.3.3-3.el7.x86_64.rpm	39 kB 00:00:00
(14/28): libXfixes-5.0.3-1.el7.x86_64.rpm	18 kB 00:00:00
(15/28): libXinerama-1.1.3-2.1.el7.x86_64.rpm	14 kB 00:00:00
(16/28): libXrender-0.9.10-1.el7.x86_64.rpm	26 kB 00:00:00
(17/28): libXmu-1.1.2-2.el7.x86_64.rpm	71 kB 00:00:00
(18/28): libXxf86vm-1.1.4-1.el7.x86_64.rpm	18 kB 00:00:00
(19/28): libXt-1.1.5-3.el7.x86_64.rpm	173 kB 00:00:00
(20/28): libpciaccess-0.13.4-3.1.el7_4.x86_64.rpm	26 kB 00:00:00
(21/28): libdrm-2.4.74-1.el7.x86_64.rpm	146 kB 00:00:00
(22/28): libpng-1.5.13-7.el7_2.x86_64.rpm	213 kB 00:00:00
(23/28): libvpx-1.3.0-5.el7_0.x86_64.rpm	498 kB 00:00:00
(24/28): libxshmfence-1.2-1.el7.x86_64.rpm	7.1 kB 00:00:00
(25/28): libxcb-1.12-1.el7.x86_64.rpm	211 kB 00:00:00
(26/28): lyx-fonts-2.2.3-1.el7.noarch.rpm	159 kB 00:00:00
(27/28): mesa-libGL-17.0.1-6.20170307.el7.x86_64.rpm	155 kB 00:00:00
(28/28): mesa-libglapi-17.0.1-6.20170307.el7.x86_64.rpm	41 kB 00:00:00

Total	878 kB/s 3.9 MB 00:00:04
-------	----------------------------

Running transaction check

Running transaction test

Transaction test succeeded

Running transaction

Installing : libICE-1.0.9-9.el7.x86_64 1/29

Installing : libSM-1.2.2-2.el7.x86_64 2/29

Installing : fontpackages-filesystem-1.44-8.el7.noarch 3/29

Installing : freetype-2.4.11-15.el7.x86_64	4/29
Installing : lyx-fonts-2.2.3-1.el7.noarch	5/29
Installing : fontconfig-2.10.95-11.el7.x86_64	6/29
Installing : alsa-lib-1.1.3-3.el7.x86_64	7/29
Installing : libvpx-1.3.0-5.el7_0.x86_64	8/29
Installing : libXau-1.0.8-2.1.el7.x86_64	9/29
Installing : libxcb-1.12-1.el7.x86_64	10/29
Installing : libxshmfence-1.2-1.el7.x86_64	11/29
Installing : libX11-common-1.6.5-1.el7.noarch	12/29
Installing : libX11-1.6.5-1.el7.x86_64	13/29
Installing : libXext-1.3.3-3.el7.x86_64	14/29
Installing : libXfixes-5.0.3-1.el7.x86_64	15/29
Installing : libXrender-0.9.10-1.el7.x86_64	16/29
Installing : libXt-1.1.5-3.el7.x86_64	17/29
Installing : libXmu-1.1.2-2.el7.x86_64	18/29
Installing : libXcursor-1.1.14-8.el7.x86_64	19/29
Installing : libXdamage-1.1.4-4.1.el7.x86_64	20/29
Installing : libXinerama-1.1.3-2.1.el7.x86_64	21/29
Installing : libXxf86vm-1.1.4-1.el7.x86_64	22/29
Installing : mesa-libglapi-17.0.1-6.20170307.el7.x86_64	23/29
Installing : SDL-1.2.15-14.el7.x86_64	24/29
Installing : libpciaccess-0.13.4-3.1.el7_4.x86_64	25/29
Installing : libdrm-2.4.74-1.el7.x86_64	26/29
Installing : mesa-libGL-17.0.1-6.20170307.el7.x86_64	27/29
Installing : 2:libpng-1.5.13-7.el7_2.x86_64	28/29
Installing : VirtualBox-5.2-5.2.8_121009_el7-1.x86_64	29/29

Creating group 'vboxusers'. VM users must be member of that group!

This system is currently not set up to build kernel modules.

Please install the Linux kernel "header" files matching the current kernel for adding new hardware support to the system.

The distribution packages containing the headers are probably:

kernel-devel kernel-devel-3.10.0-693.21.1.el7.x86_64

This system is currently not set up to build kernel modules.

Please install the Linux kernel "header" files matching the current kernel for adding new hardware support to the system.

The distribution packages containing the headers are probably:

kernel-devel kernel-devel-3.10.0-693.21.1.el7.x86_64

There were problems setting up VirtualBox. To re-start the set-up process, run

/sbin/vboxconfig

as root.

Verifying : libXext-1.3.3-3.el7.x86_64	1/29
Verifying : libX11-1.6.5-1.el7.x86_64	2/29
Verifying : lyx-fonts-2.2.3-1.el7.noarch	3/29
Verifying : libICE-1.0.9-9.el7.x86_64	4/29
Verifying : libXinerama-1.1.3-2.1.el7.x86_64	5/29
Verifying : libXrender-0.9.10-1.el7.x86_64	6/29
Verifying : libXxf86vm-1.1.4-1.el7.x86_64	7/29
Verifying : 2:libpng-1.5.13-7.el7_2.x86_64	8/29
Verifying : libXt-1.1.5-3.el7.x86_64	9/29
Verifying : freetype-2.4.11-15.el7.x86_64	10/29
Verifying : libpciaccess-0.13.4-3.1.el7_4.x86_64	11/29
Verifying : fontpackages-filesystem-1.44-8.el7.noarch	12/29
Verifying : SDL-1.2.15-14.el7.x86_64	13/29
Verifying : libxcb-1.12-1.el7.x86_64	14/29
Verifying : libXdamage-1.1.4-4.1.el7.x86_64	15/29
Verifying : mesa-libGL-17.0.1-6.20170307.el7.x86_64	16/29
Verifying : libXcursor-1.1.14-8.el7.x86_64	17/29
Verifying : libXmu-1.1.2-2.el7.x86_64	18/29
Verifying : mesa-libglapi-17.0.1-6.20170307.el7.x86_64	19/29
Verifying : libX11-common-1.6.5-1.el7.noarch	20/29
Verifying : libxshmfence-1.2-1.el7.x86_64	21/29
Verifying : libXau-1.0.8-2.1.el7.x86_64	22/29
Verifying : libSM-1.2.2-2.el7.x86_64	23/29
Verifying : fontconfig-2.10.95-11.el7.x86_64	24/29
Verifying : libdrm-2.4.74-1.el7.x86_64	25/29

Verifying : libXfixes-5.0.3-1.el7.x86_64	26/29
Verifying : libvpx-1.3.0-5.el7_0.x86_64	27/29
Verifying : alsa-lib-1.1.3-3.el7.x86_64	28/29
Verifying : VirtualBox-5.2-5.2.8_121009_el7-1.x86_64	29/29

Installed:

VirtualBox-5.2.x86_64 0:5.2.8_121009_el7-1

Dependency Installed:

SDL.x86_64 0:1.2.15-14.el7	alsa-lib.x86_64 0:1.1.3-3.el7	fontconfig.x86_64 0:2.10.95-11.el7
fontpackages-filesystem.noarch 0:1.44-8.el7	freetype.x86_64 0:2.4.11-15.el7	libICE.x86_64 0:1.0.9-9.el7
libSM.x86_64 0:1.2.2-2.el7	libX11.x86_64 0:1.6.5-1.el7	libX11-common.noarch 0:1.6.5-1.el7
libXau.x86_64 0:1.0.8-2.1.el7	libXcursor.x86_64 0:1.1.14-8.el7	libXdamage.x86_64 0:1.1.4-4.1.el7
libXext.x86_64 0:1.3.3-3.el7	libXfixes.x86_64 0:5.0.3-1.el7	libXinerama.x86_64 0:1.1.3-2.1.el7
libXmu.x86_64 0:1.1.2-2.el7	libXrender.x86_64 0:0.9.10-1.el7	libXt.x86_64 0:1.1.5-3.el7
libXxf86vm.x86_64 0:1.1.4-1.el7	libdrm.x86_64 0:2.4.74-1.el7	libpciaccess.x86_64 0:0.13.4-3.1.el7_4
libpng.x86_64 2:1.5.13-7.el7_2	libvpx.x86_64 0:1.3.0-5.el7_0	libxcb.x86_64 0:1.12-1.el7
libxshmfence.x86_64 0:1.2-1.el7	lyx-fonts.noarch 0:2.2.3-1.el7	mesa-libGL.x86_64 0:17.0.1-6.20170307.el7
mesa-libglapi.x86_64 0:17.0.1-6.20170307.el7		

Complete!

Start minikube and problem fix

Could not start

```
[root@sbybz3137 DST]# minikube start
```

```
Starting local Kubernetes v1.9.0 cluster...
```

```
Starting VM...
```

```
E0313 01:24:00.395077 18904 start.go:159] Error starting host: Error creating host: Error executing step: Running precreate checks.
```

```
: We support Virtualbox starting with version 5. Your VirtualBox install is "WARNING: The vboxdrv kernel module is not loaded. Either there is no module\n    available for the current kernel (3.10.0-693.21.1.el7.x86_64) or it failed to\n    load. Please recompile the kernel module and install it by\n\n    sudo /sbin/vboxconfig\n\n    You will not be able to start VMs until this problem is fixed.\n5.2.8r121009". Please upgrade at https://www.virtualbox.org.
```

```
Retrying.
```

```
E0313 01:24:00.395502 18904 start.go:165] Error starting host: Error creating host: Error executing step: Running precreate checks.
```

```
: We support Virtualbox starting with version 5. Your VirtualBox install is "WARNING: The vboxdrv kernel module is not loaded. Either there is no module\n    available for the current kernel (3.10.0-693.21.1.el7.x86_64) or it failed to\n    load. Please recompile the kernel module and install it by\n\n    sudo /sbin/vboxconfig\n\n    You will not be able to start VMs until this problem is fixed.\n5.2.8r121009". Please upgrade at https://www.virtualbox.org
```

```
=====  
An error has occurred. Would you like to opt in to sending anonymized crash information to minikube to help prevent future errors?
```

```
To opt out of these messages, run the command:
```

```
minikube config set WantReportErrorPrompt false
```

```
=====  
Please enter your response [Y/n]:
```

```
[root@sbybz3137 DST]# VBoxManage --version
```

```
WARNING: The vboxdrv kernel module is not loaded. Either there is no module available for the current kernel (3.10.0-693.21.1.el7.x86_64) or it failed to load. Please recompile the kernel module and install it by
```

```
sudo /sbin/vboxconfig
```

You will not be able to start VMs until this problem is fixed.

5.2.8r121009

Fix the problem

```
[root@sbybz3137 DST]# yum -y install kernel-devel
```

```
[root@sbybz3137 DST]# /usr/lib/virtualbox/vboxdrv.sh setup
```

vboxdrv.sh: Stopping VirtualBox services.

vboxdrv.sh: Building VirtualBox kernel modules.

vboxdrv.sh: failed: Look at /var/log/vbox-install.log to find out what went wrong.

```
[root@sbybz3137 DST]# cat /var/log/vbox-install.log
```

```
/tmp/vbox.0/Makefile.include.header:141: *** Error: unable to find the headers of the Linux kernel to build against. Specify KERN_VER=<version> (currently 3.10.0-693.21.1.el7.x86_64) and run Make again. Stop.
```

```
/tmp/vbox.0/Makefile.include.header:141: *** Error: unable to find the headers of the Linux kernel to build against. Specify KERN_VER=<version> (currently 3.10.0-693.21.1.el7.x86_64) and run Make again. Stop.
```

```
make V=1 CONFIG_MODULE_SIG= -C /lib/modules/3.10.0-693.21.1.el7.x86_64/build SUBDIRS=/tmp/vbox.0 SRCROOT=/tmp/vbox.0 -j4 modules
```

```
arch/x86/Makefile:166: *** CONFIG_RETPOLINE=y, but not supported by the compiler. Toolchain update recommended.. Stop.
```

```
make: *** [vboxdrv] Error 2
```

```
make V=1 CONFIG_MODULE_SIG= -C /lib/modules/3.10.0-693.21.1.el7.x86_64/build SUBDIRS=/tmp/vbox.0 SRCROOT=/tmp/vbox.0 -j4 modules
```

```
arch/x86/Makefile:166: *** CONFIG_RETPOLINE=y, but not supported by the compiler. Toolchain update recommended.. Stop.
```

```
make: *** [vboxdrv] Error 2
```

```
[root@sbybz3137 DST]# yum -y install kernel-headers
```

```
[root@sbybz3137 DST]# /sbin/rcvboxdrv setup
```

vboxdrv.sh: Stopping VirtualBox services.

vboxdrv.sh: Building VirtualBox kernel modules.

vboxdrv.sh: failed: Look at /var/log/vbox-install.log to find out what went wrong.

```
[root@sbybz3137 DST]# cat /var/log/vbox-install.log
```

```
/tmp/vbox.0/Makefile.include.header:141: *** Error: unable to find the headers of the Linux kernel to build against. Specify KERN_VER=<version> (currently 3.10.0-693.21.1.el7.x86_64) and run Make again. Stop.
```

```
/tmp/vbox.0/Makefile.include.header:141: *** Error: unable to find the headers of the Linux kernel to build against. Specify KERN_VER=<version> (currently 3.10.0-693.21.1.el7.x86_64) and run Make again. Stop.
```

```
make V=1 CONFIG_MODULE_SIG= -C /lib/modules/3.10.0-693.21.1.el7.x86_64/build SUBDIRS=/tmp/vbox.0 SRCROOT=/tmp/vbox.0 -j4 modules arch/x86/Makefile:166: *** CONFIG_RETPOLINE=y, but not supported by the compiler. Toolchain update recommended.. Stop.
```

```
make: *** [vboxdrv] Error 2
```

```
make V=1 CONFIG_MODULE_SIG= -C /lib/modules/3.10.0-693.21.1.el7.x86_64/build SUBDIRS=/tmp/vbox.0 SRCROOT=/tmp/vbox.0 -j4 modules arch/x86/Makefile:166: *** CONFIG_RETPOLINE=y, but not supported by the compiler. Toolchain update recommended.. Stop.
```

```
make: *** [vboxdrv] Error 2
```

```
make V=1 CONFIG_MODULE_SIG= -C /lib/modules/3.10.0-693.21.1.el7.x86_64/build SUBDIRS=/tmp/vbox.0 SRCROOT=/tmp/vbox.0 -j4 modules arch/x86/Makefile:166: *** CONFIG_RETPOLINE=y, but not supported by the compiler. Toolchain update recommended.. Stop.
```

```
make: *** [vboxdrv] Error 2
```

```
make V=1 CONFIG_MODULE_SIG= -C /lib/modules/3.10.0-693.21.1.el7.x86_64/build SUBDIRS=/tmp/vbox.0 SRCROOT=/tmp/vbox.0 -j4 modules arch/x86/Makefile:166: *** CONFIG_RETPOLINE=y, but not supported by the compiler. Toolchain update recommended.. Stop.
```

```
make: *** [vboxdrv] Error 2
```

Install the dependency

```
[root@sbybz3137 DST]# yum -y install gcc make patchdkms qt libgomp
```

```
[root@sbybz3137 DST]# yum install kernel-headers kernel-devel fontforge binutils glibc-headers glibc-devel
```

Set the environment variability

```
[root@sbybz3137 DST]# export KERN_VER=3.10.0-693.21.1.el7.x86_64
```

```
[root@sbybz3137 DST]# rcvboxdrv setup
```

```
vboxdrv.sh: Stopping VirtualBox services.
```

```
vboxdrv.sh: Building VirtualBox kernel modules.
```

```
vboxdrv.sh: Starting VirtualBox services.
```

```
[root@sbybz3137 DST]# VBoxManage --version
```

```
5.2.8r121009
```

```
[root@sbybz3137 DST]# minikube start
```

```
Starting local Kubernetes v1.9.0 cluster...
```

```
Starting VM...
```

```
E0313 02:08:13.090279 3266 start.go:159] Error starting host: Error creating host: Error executing step: Running precreate checks.
```

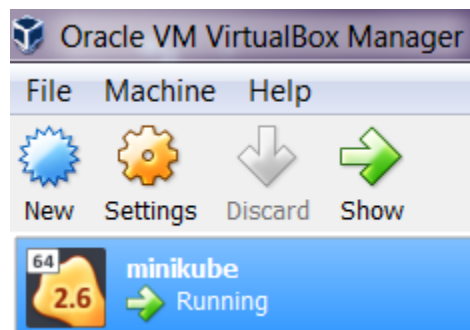
```
: This computer doesn't have VT-X/AMD-v enabled. Enabling it in the BIOS is mandatory.
```

```
Retrying.
```

```
E0313 02:08:13.091174 3266 start.go:165] Error starting host: Error creating host: Error executing step: Running precreate checks.
```

```
: This computer doesn't have VT-X/AMD-v enabled. Enabling it in the BIOS is mandatory
```


Windows only have [Experimental] minikube and there are problems



```
C:\Users\IBM_ADMIN>kubectl version
Client Version: version.Info{Major:"1", Minor:"9", GitVersion:"v1.9.0", GitCommit:"925c127ec6b946659ad0fd596fa959be43f0c
c05", GitTreeState:"clean", BuildDate:"2017-12-15T21:07:38Z", GoVersion:"go1.9.2", Compiler:"gc", Platform:"windows/amd6
4"}
Unable to connect to the server: dial tcp 127.0.0.1:8080: connectex: No connection could be made because the target mach
ine actively refused it.

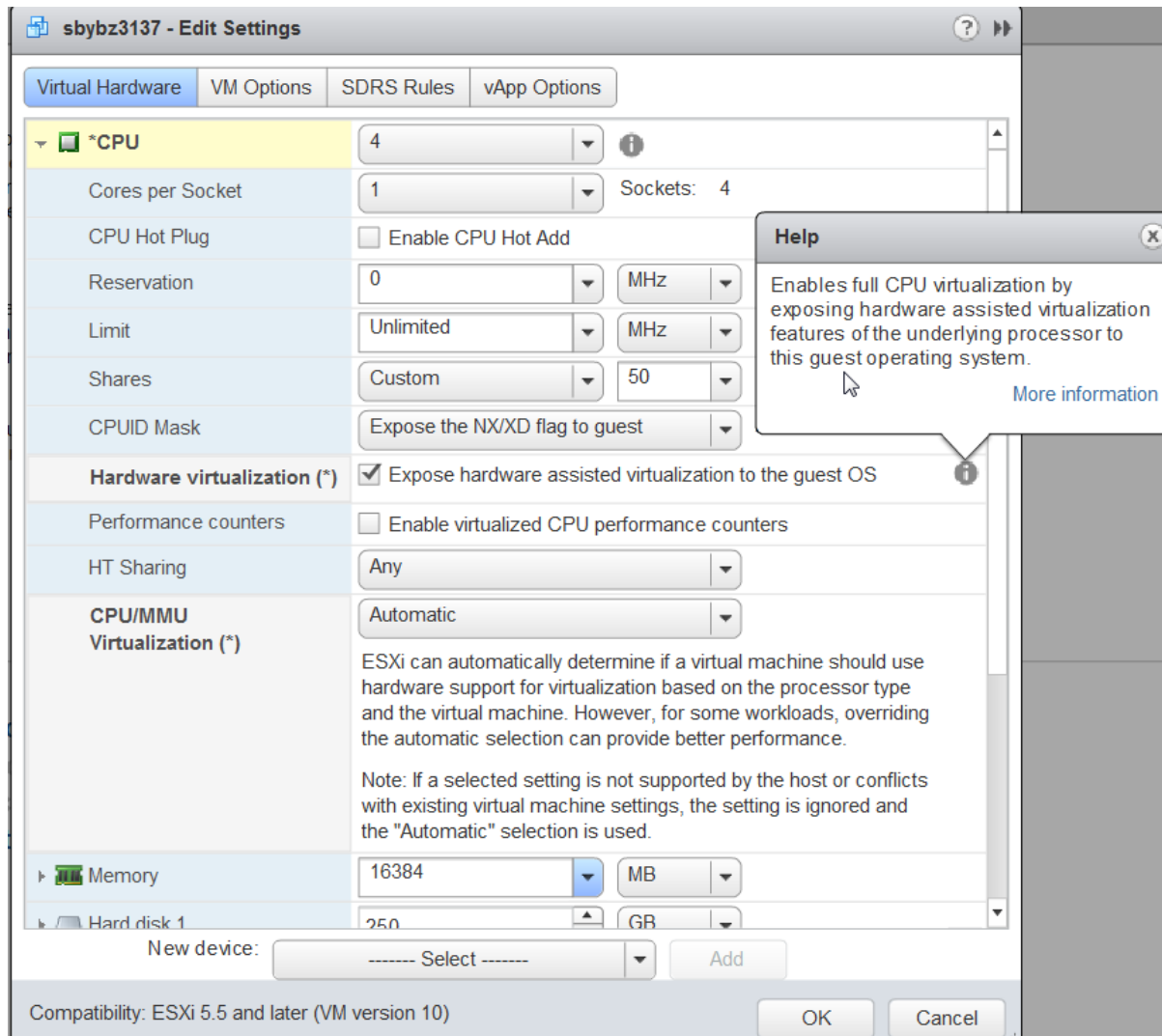
C:\Users\IBM_ADMIN>kubectl cluster-info
Kubernetes master is running at http://localhost:8080

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
Unable to connect to the server: dial tcp 127.0.0.1:8080: connectex: No connection could be made because the target mach
ine actively refused it.

C:\Users\IBM_ADMIN>kubectl get nodes
Unable to connect to the server: dial tcp 127.0.0.1:8080: connectex: No connection could be made because the target mach
ine actively refused it.
```

Enable VT-X/AMD-v for the Linux VM

Make 'Hardware virtualization' is checked from the VCenter



You can expose full CPU virtualization to the guest operating system so that applications that require hardware virtualization can run on virtual machines without binary translation or paravirtualization.

Prerequisites

- Verify that the virtual machine compatibility is ESXi 5.1 and later.
- Intel Nehalem Generation (Xeon Core i7) or later processors or AMD Opteron Generation 3 (Greyhound) or later processors.
- Verify that Intel VT-x or AMD-V is enabled in the BIOS so that hardware assisted virtualization is possible.
- Required Privileges: Virtual machine > Configuration > Settings set on the vCenter Server system.

Start minikube and play with it

```
[root@sbybz3137 ~]# systemctl start docker
[root@sbybz3137 ~]# rcvboxdrv setup
vboxdrv.sh: Stopping VirtualBox services.
vboxdrv.sh: Building VirtualBox kernel modules.
vboxdrv.sh: Starting VirtualBox services.
[root@sbybz3137 ~]# minikube start
Starting local Kubernetes v1.9.0 cluster...
Starting VM...
Getting VM IP address...
Moving files into cluster...
Downloading localkube binary
 162.41 MB / 162.41 MB [=====] 100.00% 0s
  0 B / 65 B [-----] 0.00%
 65 B / 65 B [=====] 100.00% 0sSetting up certs...
Connecting to cluster...
Setting up kubeconfig...
Starting cluster components...
Kubectl is now configured to use the cluster.
Loading cached images from config file.
```

```

[root@sbybz3137 ~]# kubectl run hello-minikube --image=k8s.gcr.io/echoserver:1.4 --port=8080
deployment "hello-minikube" created
[root@sbybz3137 ~]# kubectl expose deployment hello-minikube --type=NodePort
service "hello-minikube" exposed
[root@sbybz3137 ~]# kubectl get pod
NAME                                READY    STATUS    RESTARTS   AGE
hello-minikube-c6c6764d-jvwsf      1/1      Running   0           1h
[root@sbybz3137 ~]# curl $(minikube service hello-minikube --url)
CLIENT VALUES:
client_address=172.17.0.1
command=GET
real path=/
query=nil
request_version=1.1
request_uri=http://192.168.99.100:8080/

SERVER VALUES:
server_version=nginx: 1.10.0 - lua: 10001

HEADERS RECEIVED:
accept=/*/*
host=192.168.99.100:30065
user-agent=curl/7.29.0
BODY:
-no body in request-[root@sbybz3137 ~]# docker images

```

```
[root@sbybz3137 ~]# kubectl cluster-info
Kubernetes master is running at https://192.168.99.100:8443

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
[root@sbybz3137 ~]# kubectl get nodes
```

NAME	STATUS	ROLES	AGE	VERSION
minikube	Ready	<none>	2h	v1.9.0

```
[root@sbybz3137 ~]# kubectl get deployment
```

NAME	DESIRED	CURRENT	UP-TO-DATE	AVAILABLE	AGE
hello-minikube	1	1	1	1	1h

```
[root@sbybz3137 ~]# kubectl proxy
Starting to serve on 127.0.0.1:8001
```

```
[root@sbybz3137 ~]# kubectl version
```

```
Client Version: version.Info{Major:"1", Minor:"9", GitVersion:"v1.9.4", GitCommit:"bee2d1505c4fe820744d26d41ecd3fdd4a3d6546",
GitTreeState:"clean", BuildDate:"2018-03-12T16:29:47Z", GoVersion:"go1.9.3", Compiler:"gc", Platform:"linux/amd64"}
Server Version: version.Info{Major:"", Minor:"", GitVersion:"v1.9.0", GitCommit:"925c127ec6b946659ad0fd596fa959be43f0cc05", GitTreeState:"clean",
BuildDate:"2018-01-26T19:04:38Z", GoVersion:"go1.9.1", Compiler:"gc", Platform:"linux/amd64"}
```

```
[root@sbybz3137 ~]# curl http://localhost:8001/version
```

```
{
  "major": "",
  "minor": "",
  "gitVersion": "v1.9.0",
  "gitCommit": "925c127ec6b946659ad0fd596fa959be43f0cc05",
  "gitTreeState": "clean",
  "buildDate": "2018-01-26T19:04:38Z",
  "goVersion": "go1.9.1",
  "compiler": "gc",
  "platform": "linux/amd64"
}
```

```
[root@sbybz3137 ~]# kubectl get services
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
hello-minikube	NodePort	10.105.78.121	<none>	8080:30065/TCP	2h
kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	3h

```
[root@sbybz3137 ~]# kubectl get deployments
```

NAME	DESIRED	CURRENT	UP-TO-DATE	AVAILABLE	AGE
hello-minikube	1	1	1	1	3h

```
[root@sbybz3137 ~]# kubectl describe deployments/hello-minikube
```

```
Name:          hello-minikube
Namespace:     default
CreationTimestamp:  Tue, 13 Mar 2018 22:49:13 -0500
Labels:       run=hello-minikube
Annotations:  deployment.kubernetes.io/revision=1
Selector:     run=hello-minikube
Replicas:     1 desired | 1 updated | 1 total | 1 available | 0 unavailable
StrategyType: RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 1 max unavailable, 1 max surge
Pod Template:
  Labels:  run=hello-minikube
  Containers:
    hello-minikube:
      Image:   k8s.gcr.io/echoserver:1.4
      Port:    8080/TCP
      Environment: <none>
      Mounts:     <none>
      Volumes:    <none>
Conditions:
  Type           Status Reason
  ----           -
  Available      True   MinimumReplicasAvailable
```

OldReplicaSets: <none>

NewReplicaSet: hello-minikube-c6c6764d (1/1 replicas created)

Events: <none>

[root@sbybz3137 ~]# **kubectl scale deployments/hello-minikube --replicas=3**

deployment "hello-minikube" scaled

[root@sbybz3137 ~]# kubectl get deployments

NAME	DESIRED	CURRENT	UP-TO-DATE	AVAILABLE	AGE
hello-minikube	3	3	3	3	3h

[root@sbybz3137 ~]# **kubectl get pods -o wide**

NAME	READY	STATUS	RESTARTS	AGE	IP	NODE
hello-minikube-c6c6764d-cmq2d	1/1	Running	0	3m	172.17.0.5	minikube
hello-minikube-c6c6764d-jvwsf	1/1	Running	0	3h	172.17.0.4	minikube
hello-minikube-c6c6764d-pdg6z	1/1	Running	0	3m	172.17.0.6	minikube