Installation Instruction (Windows 10 Chinese)

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JUNO Geant4 School

2017/05/15 – 2017/05/15

Outline

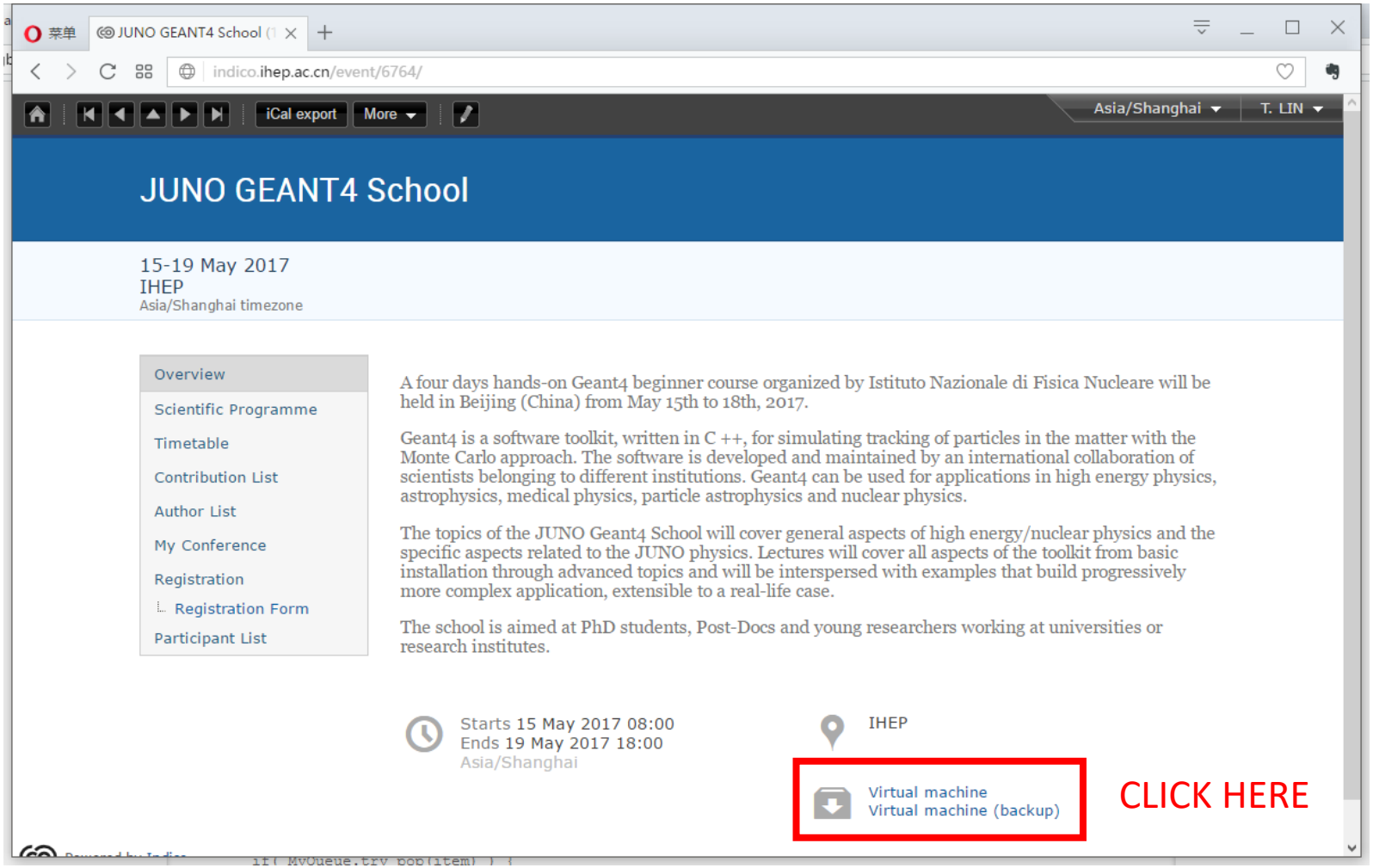
- Download and install virtualbox
- Download virtual machine
- Unzip virtual machine
- Open virtual machine
- Login / password
- Run a Geant4 example
- Shutdown
- Configure virtual machine (CPU, memory, GPU)
- Enable hardware virtualization (VT-x/AMD-v)

0. Download and install virtualbox

URL: https://www.virtualbox.org/wiki/Downloads

1. Download virtual machine

URL: http://indico.ihep.ac.cn/event/6764/



2. Unzip the virtual machine

INFN-Geant4-VM-2017.zip	2017/04/14 20:24	压缩(zipped)文件...	8,164,892 KB

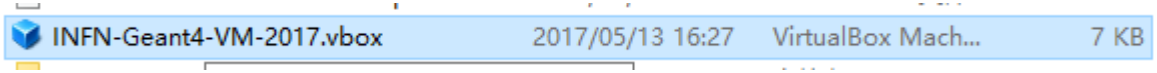
After unzip the file, you will get three files.

名称	修改日期	类型	大小
INFN-Geant4-VM-2017.vdi	2017/05/09 14:24	Virtual Disk Ima...	21,199,87...
INFN-Geant4-VM-2017.vbox-prev	2017/05/09 14:10	VBOX-PREV 文件	8 KB
INFN-Geant4-VM-2017.vbox	2017/05/09 14:24	VirtualBox Mach...	7 KB

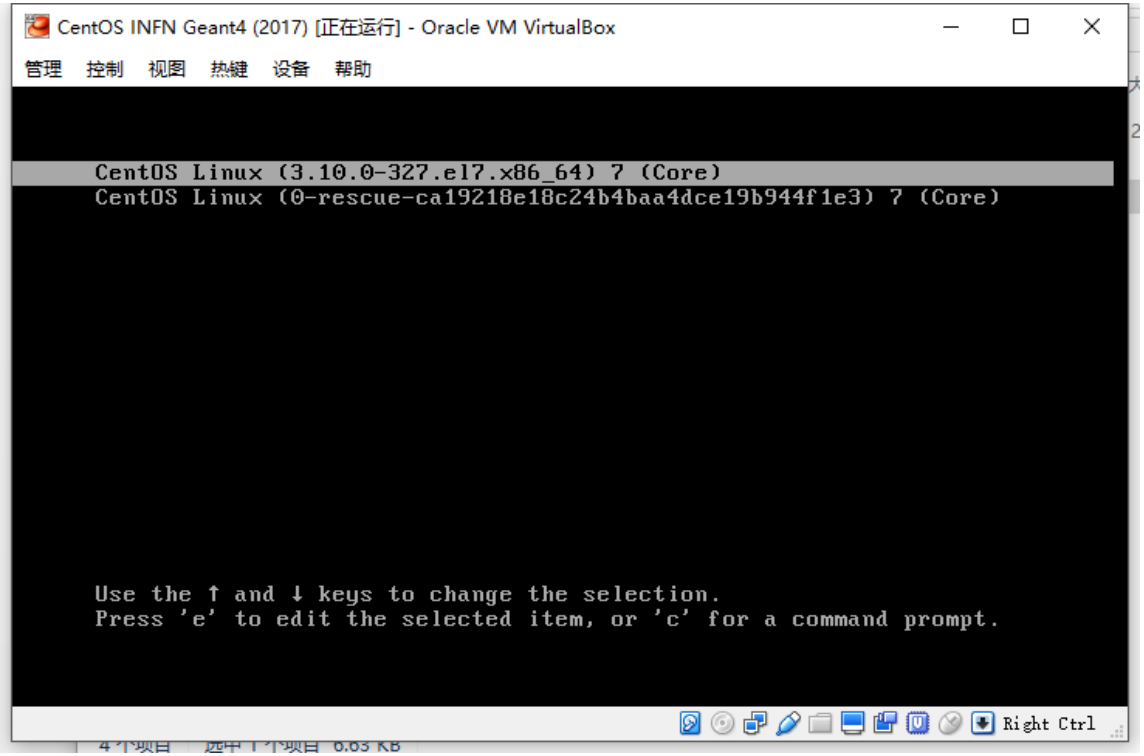
For windows user, because we already installed virtual box, so .vbox extension is associated with virtual box automatically.

3. Open the virtual machine

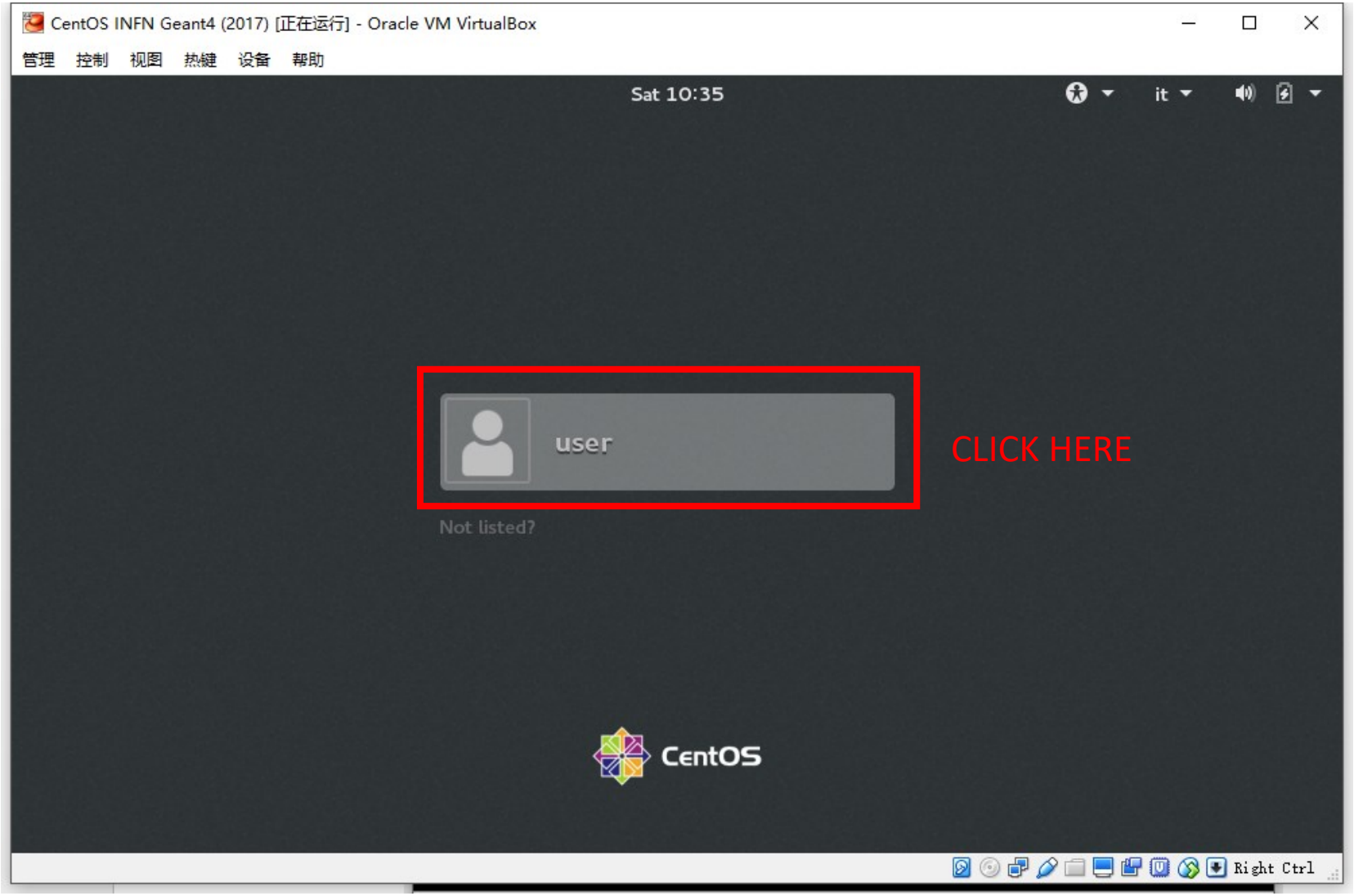
Double click this file:



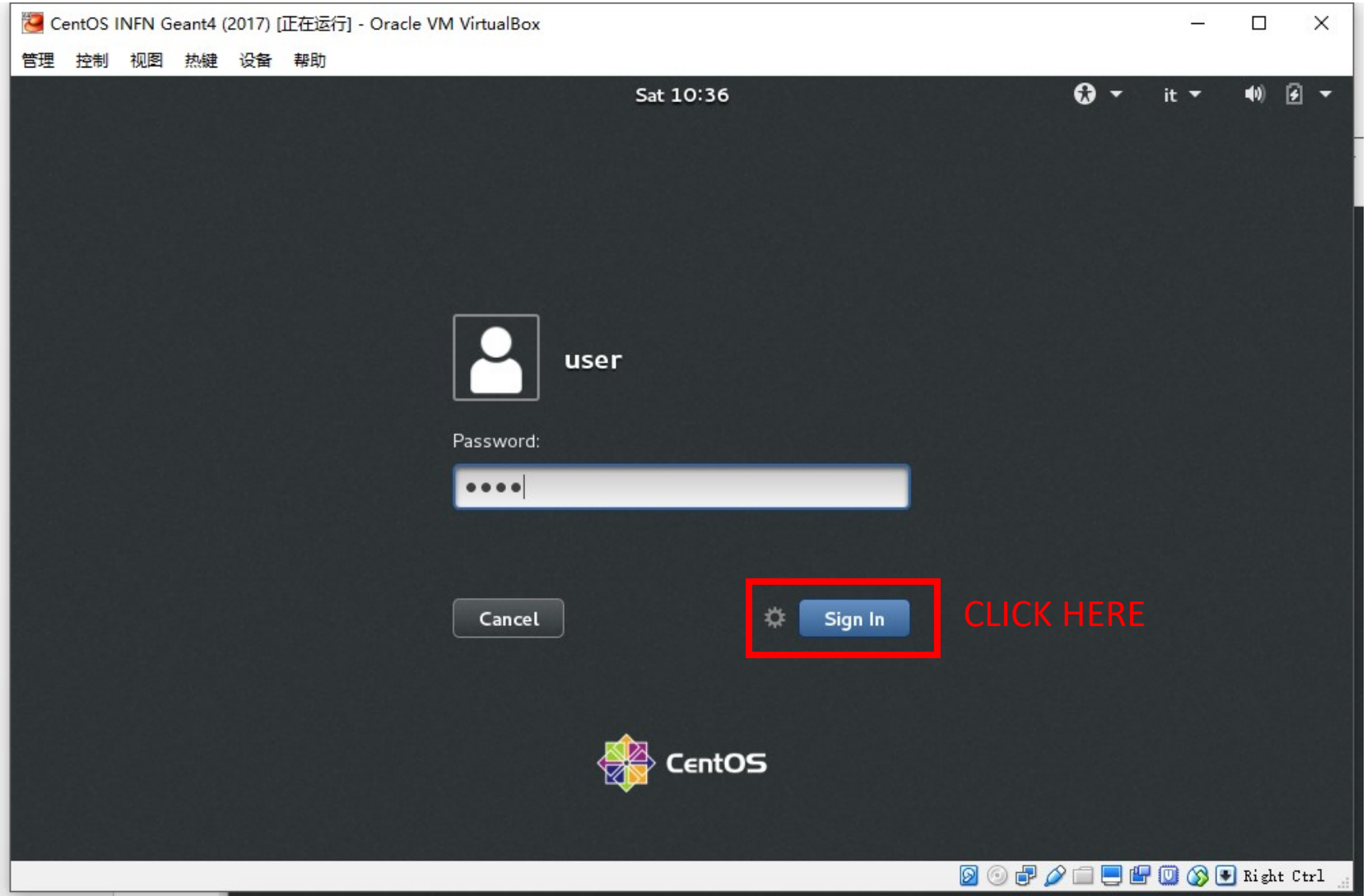
The machine will start.



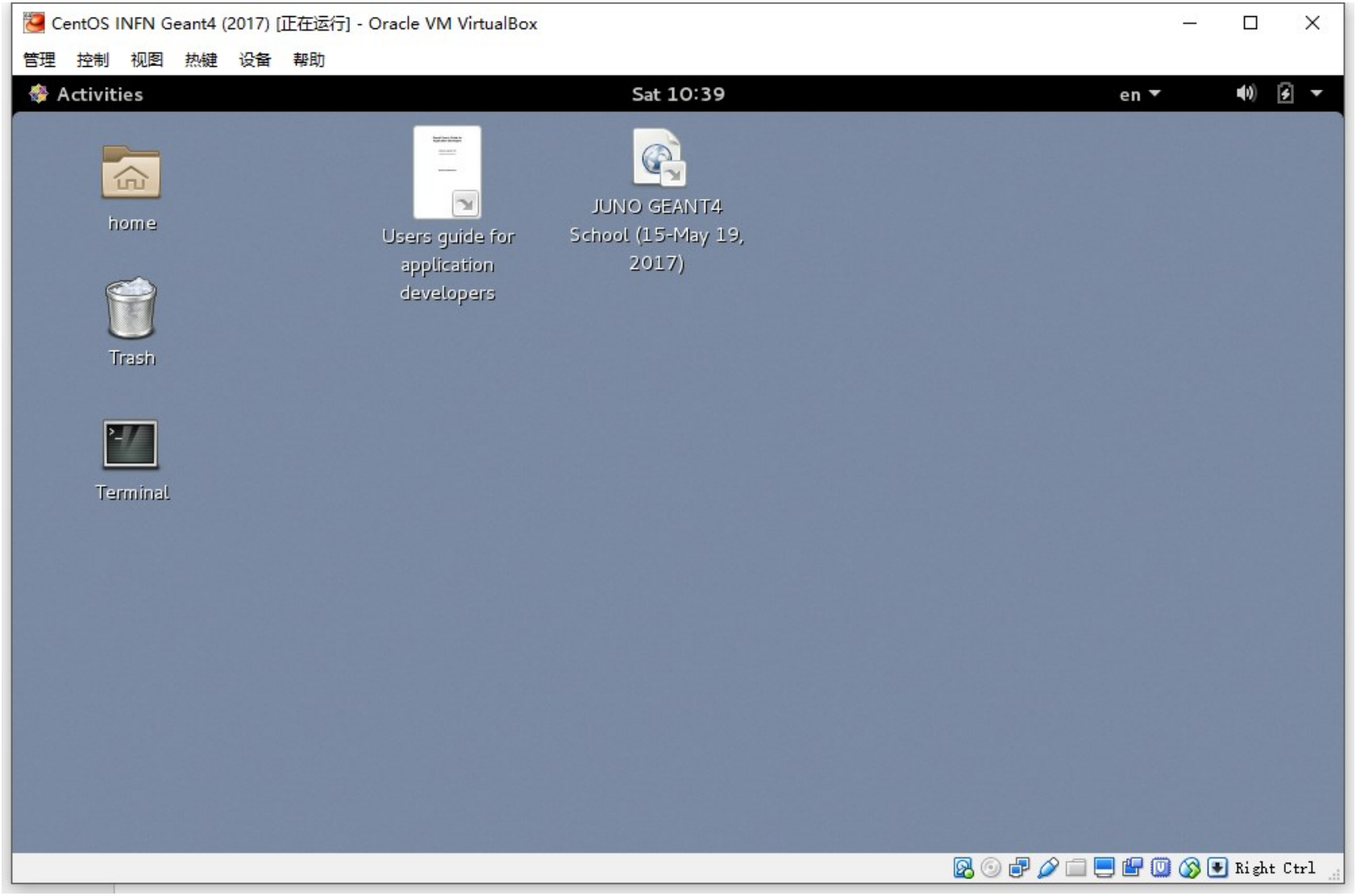
4. Login


CentOS INFN Geant4 (2017) [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Sat 10:35
it
user
Not listed?
CLICK HERE
CentOS
Right Ctrl

4. Password: user

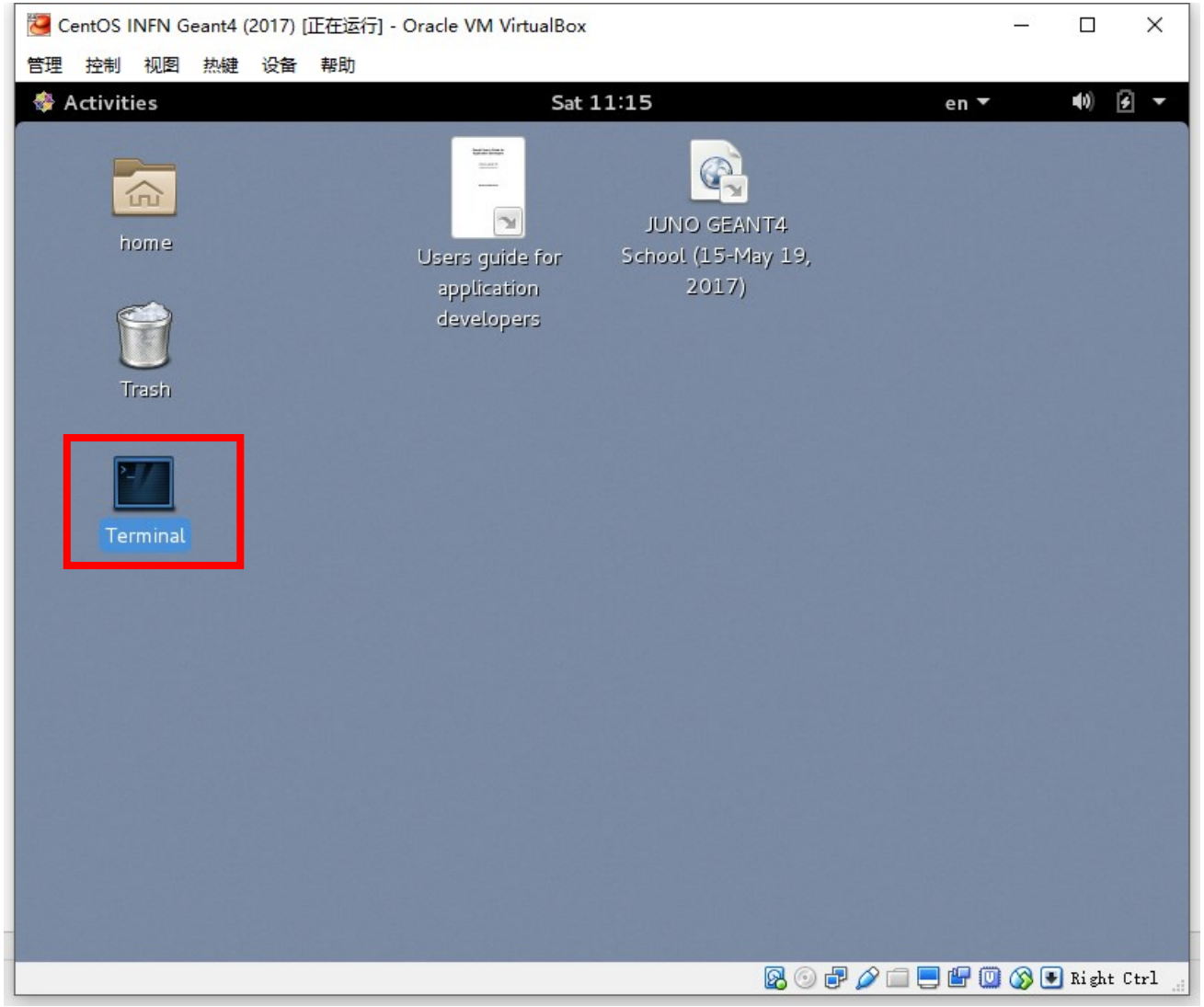


5. Desktop


CentOS INFN Geant4 (2017) [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Activities
Sat 10:39
en
home
Users guide for application developers
JUNO GEANT4 School (15-May 19, 2017)
Trash
Terminal
Right Ctrl

5. Run a Geant4 Example (1)

DOUBLE CLICK HERE to open a terminal



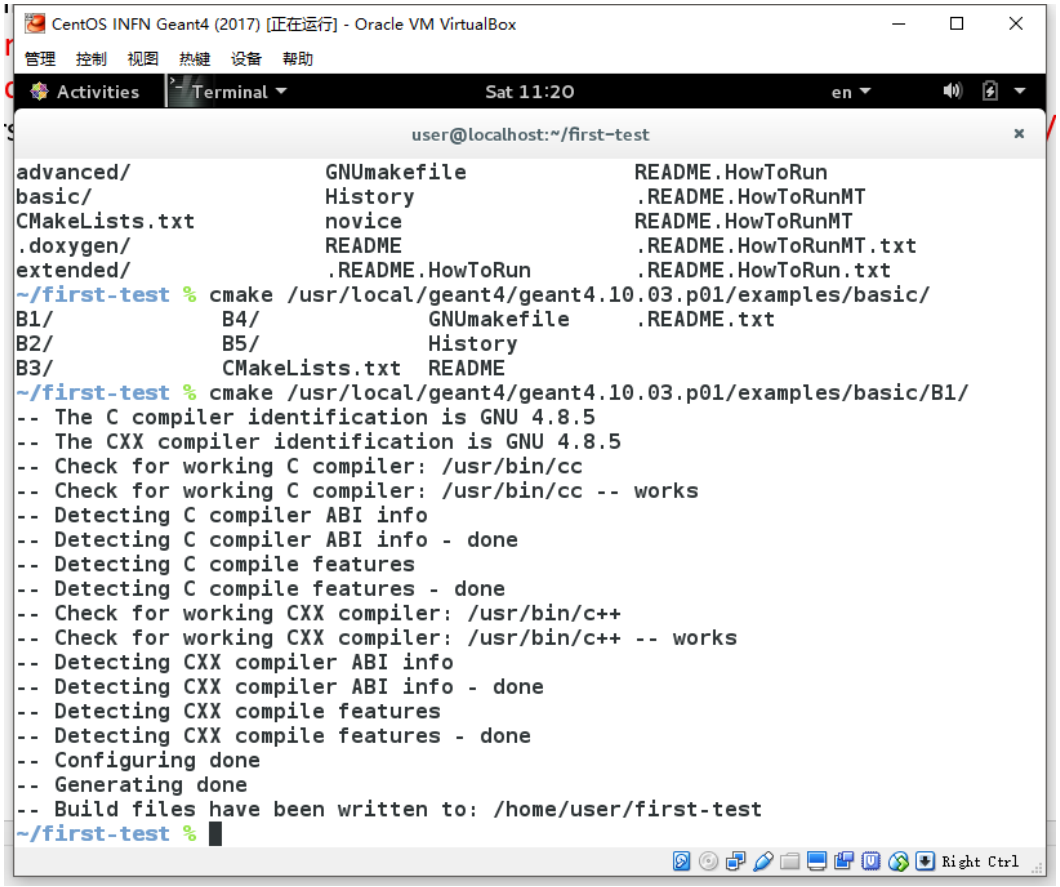
5. Run a Geant4 Example (2)

Commands in terminal:

~ % mkdir first-test

~ % cd first-test/

~/first-test % cmake /usr/local/geant4/geant4.10.03.p01/examples/basic/B1/



5. Run a Geant4 Example (3)

Commands in terminal:

~/first-test % make

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管理 控制 视图 热键 设备 帮助

Activities Terminal Sat 11:21 en

user@localhost:~/first-test

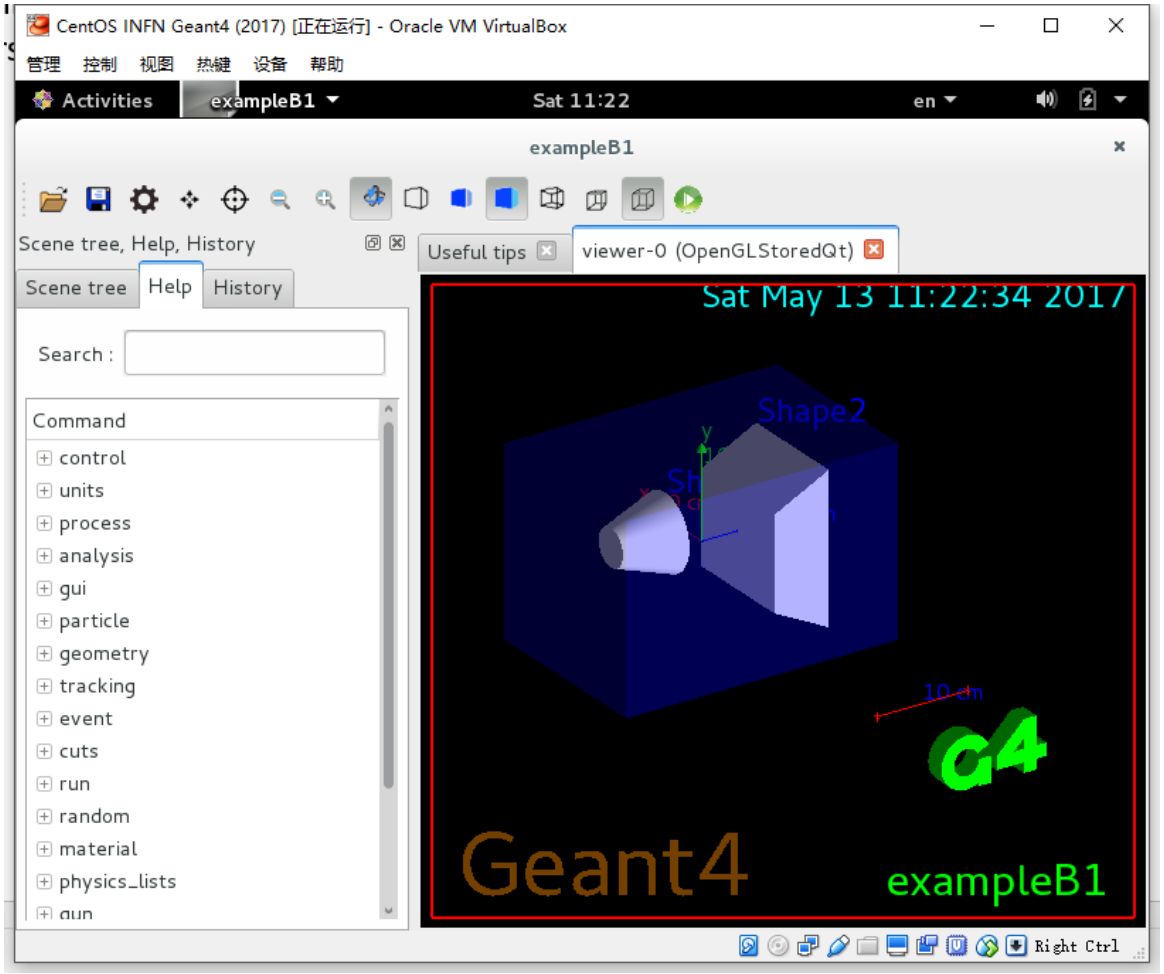
```
-- Detecting C compiler ABI info
-- Detecting C compiler ABI info - done
-- Detecting C compile features
-- Detecting C compile features - done
-- Check for working CXX compiler: /usr/bin/c++
-- Check for working CXX compiler: /usr/bin/c++ -- works
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
-- Detecting CXX compile features
-- Detecting CXX compile features - done
-- Configuring done
-- Generating done
-- Build files have been written to: /home/user/first-test
~/first-test % make
Scanning dependencies of target exampleB1
[ 12%] Building CXX object CMakeFiles/exampleB1.dir/exampleB1.cc.o
[ 25%] Building CXX object CMakeFiles/exampleB1.dir/src/B1RunAction.cc.o
[ 37%] Building CXX object CMakeFiles/exampleB1.dir/src/B1SteppingAction.cc.o
[ 50%] Building CXX object CMakeFiles/exampleB1.dir/src/B1DetectorConstruction.
cc.o
[ 62%] Building CXX object CMakeFiles/exampleB1.dir/src/B1PrimaryGeneratorActio
n.cc.o
[ 75%] Building CXX object CMakeFiles/exampleB1.dir/src/B1EventAction.cc.o
[ 87%] Building CXX object CMakeFiles/exampleB1.dir/src/B1ActionInitialization.
cc.o
[100%] Linking CXX executable exampleB1
[100%] Built target exampleB1
~/first-test %
```

Right Ctrl

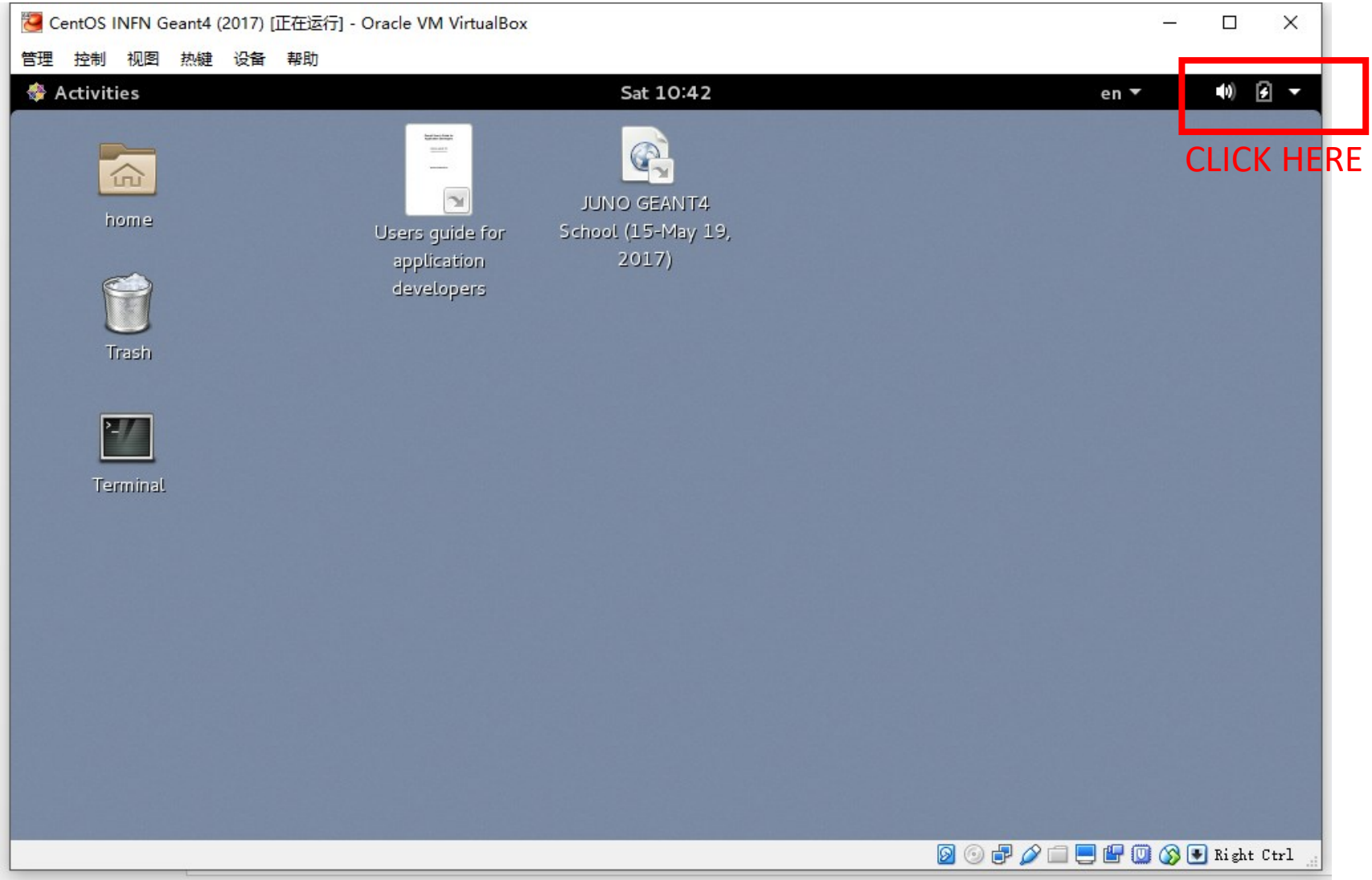
5. Run a Geant4 Example (4)

Commands in terminal:
~/first-test % ./exampleB1

Make sure visualization is OK for you.



6. shutdown (1)


CentOS INFN Geant4 (2017) [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Activities
Sat 10:42
en
CLICK HERE
home
Users guide for application developers
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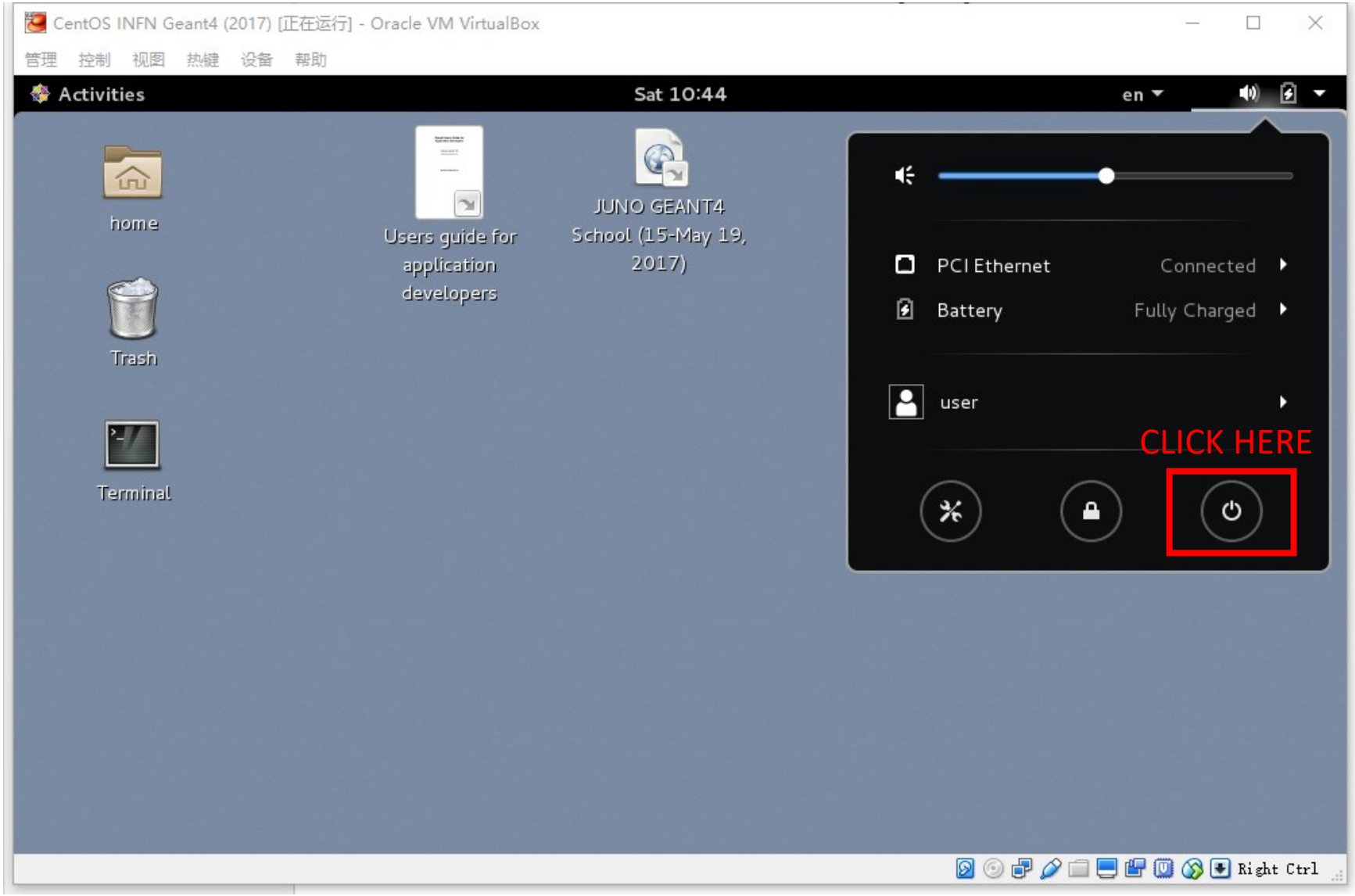
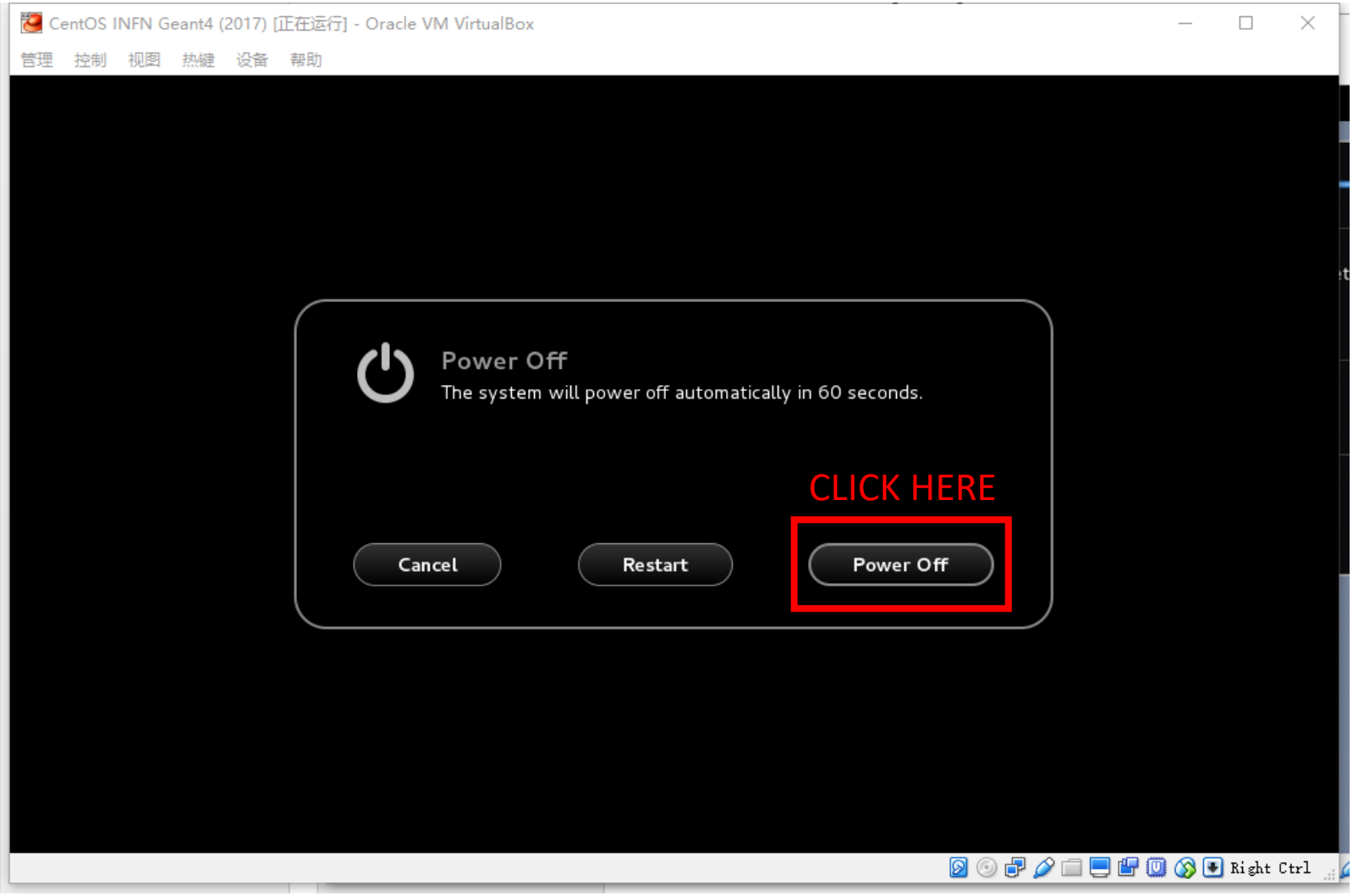
Trash
Terminal
Right Ctrl

6. shutdown (2)


CentOS INFN Geant4 (2017) [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Activities
Sat 10:44
en
home
Trash
Terminal
Users guide for application developers
JUNO GEANT4 School (15-May 19, 2017)
PCI Ethernet
Connected
Battery
Fully Charged
user
CLICK HERE
Right Ctrl

6. shutdown (3)

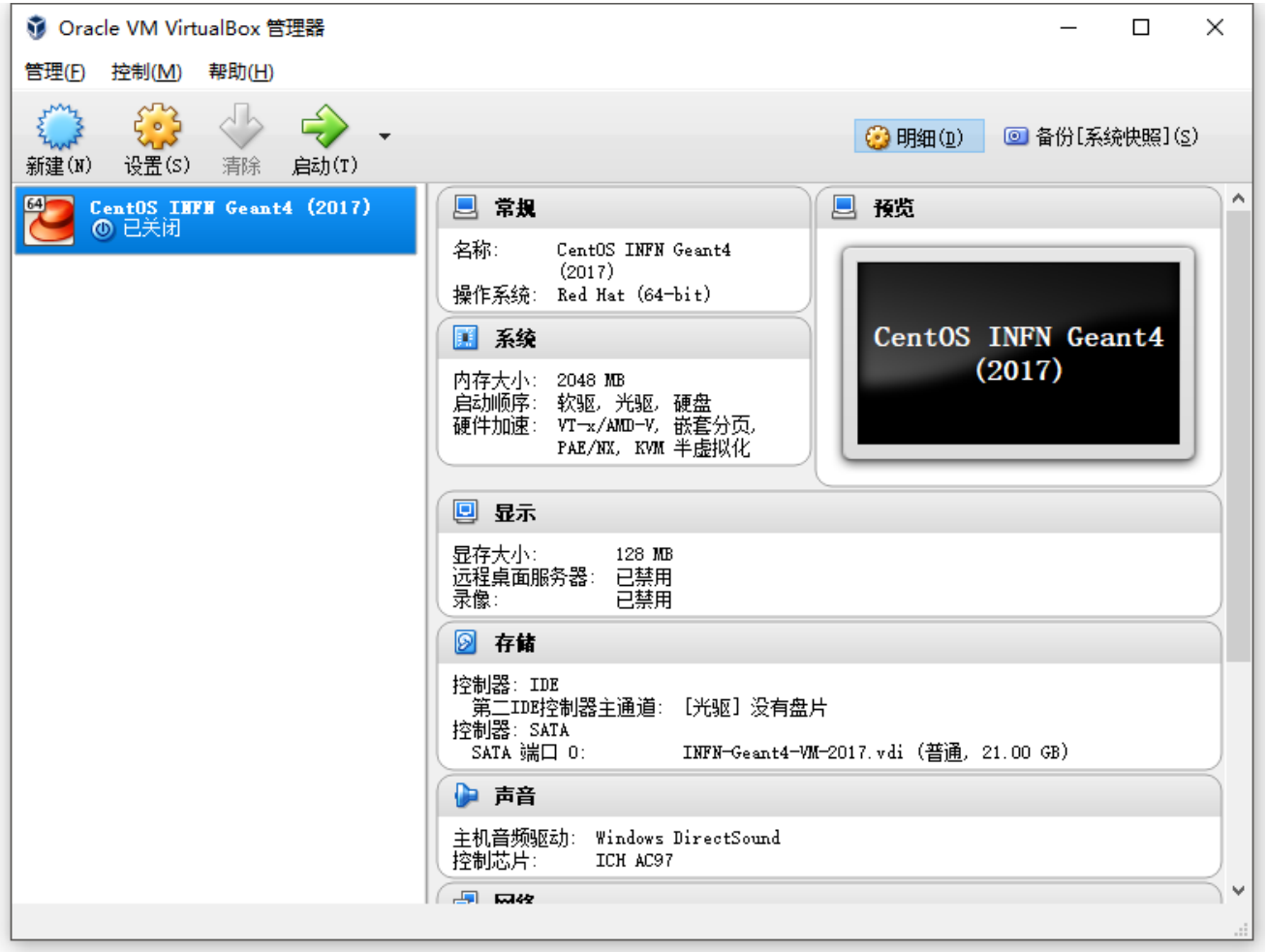

CentOS INFN Geant4 (2017) [正在运行] - Oracle VM VirtualBox
管理 控制 视图 热键 设备 帮助
Power Off
The system will power off automatically in 60 seconds.
CLICK HERE
Cancel
Restart
Power Off
Right Ctrl

7. Configure virtual machine (1)

User could configure CPU core numbers, Memory usage and so on.

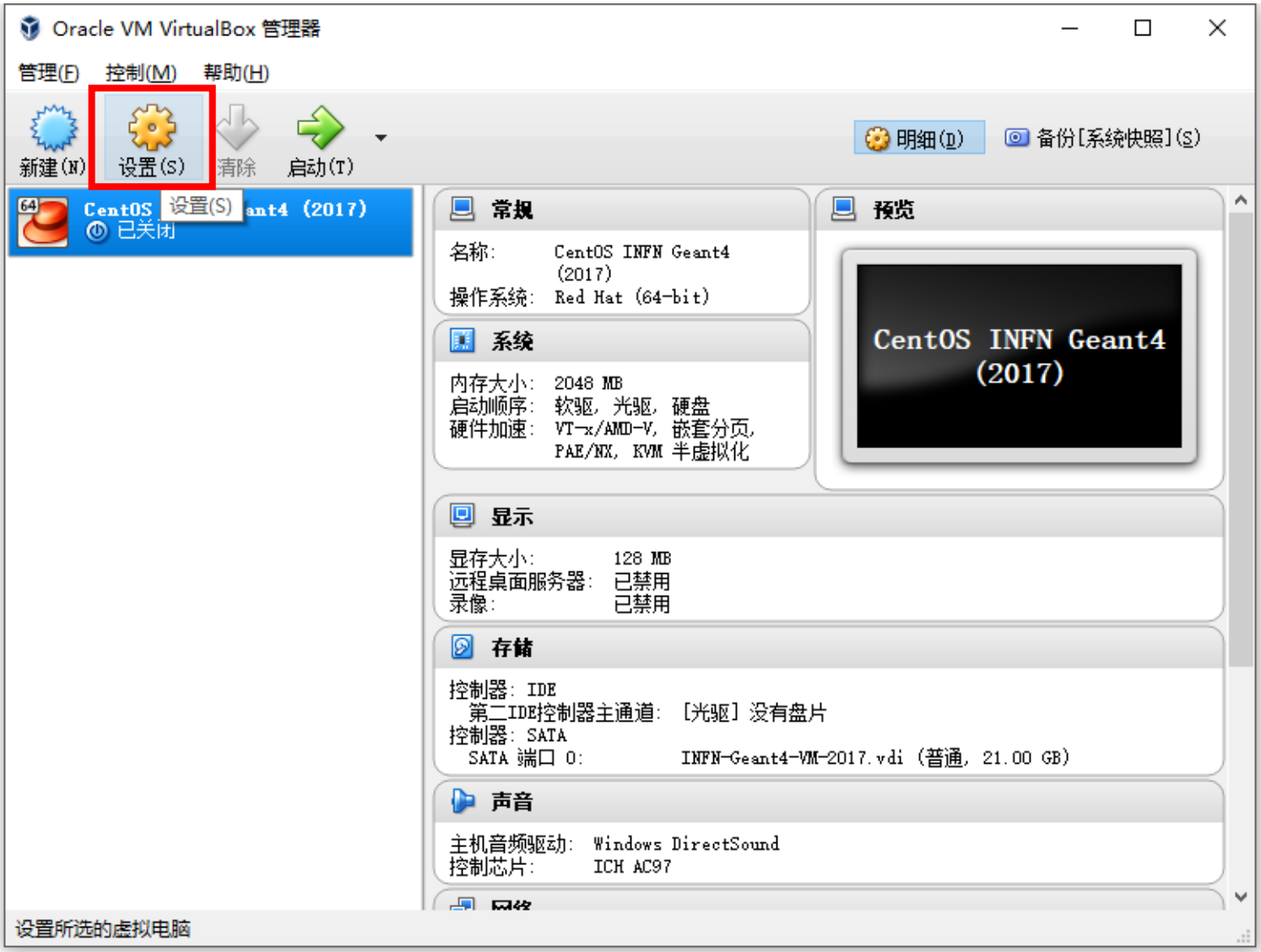
Run “Oracle VM VirtualBox” first.

You can configure it only when it’s shutdown.

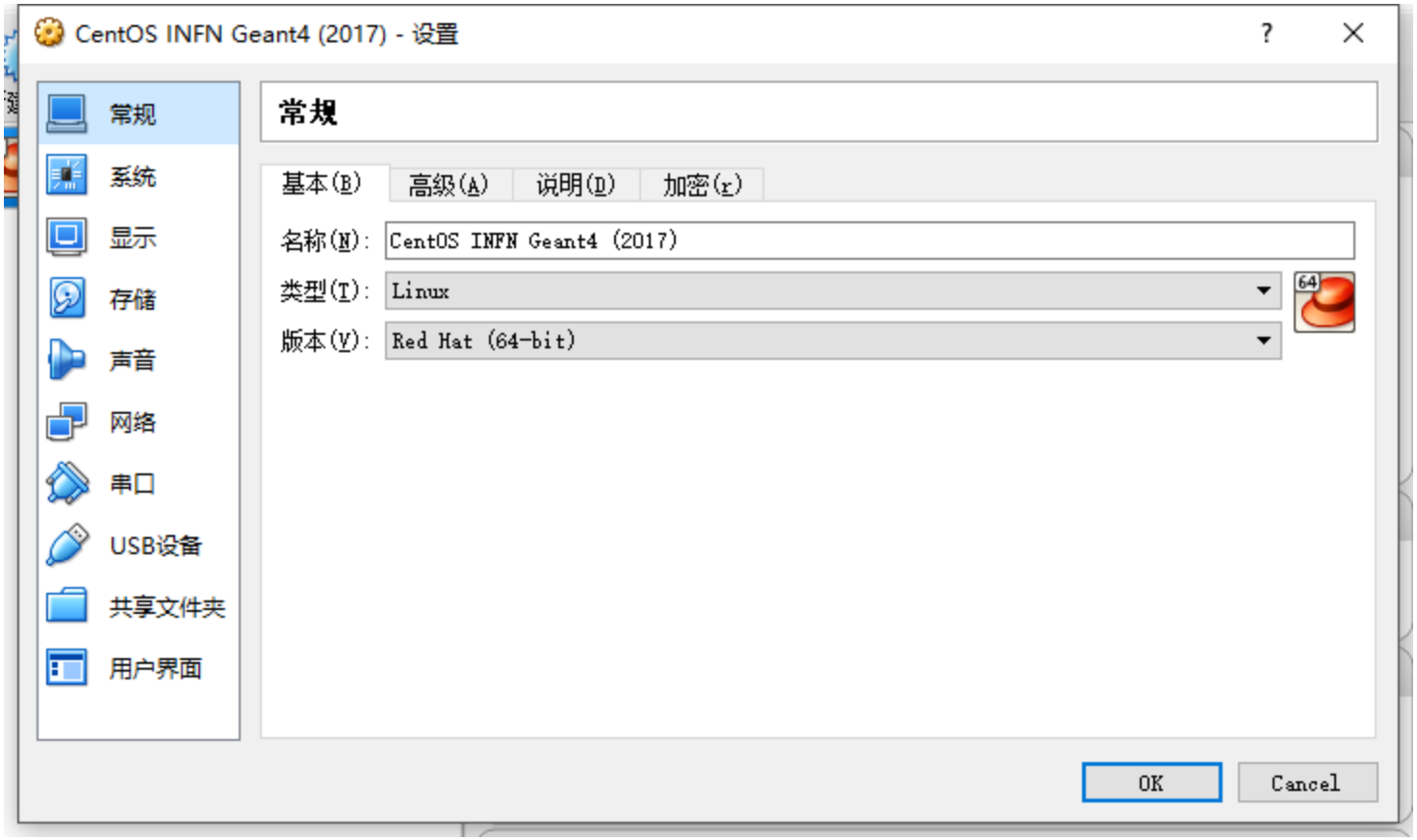


7. Configure virtual machine (2)

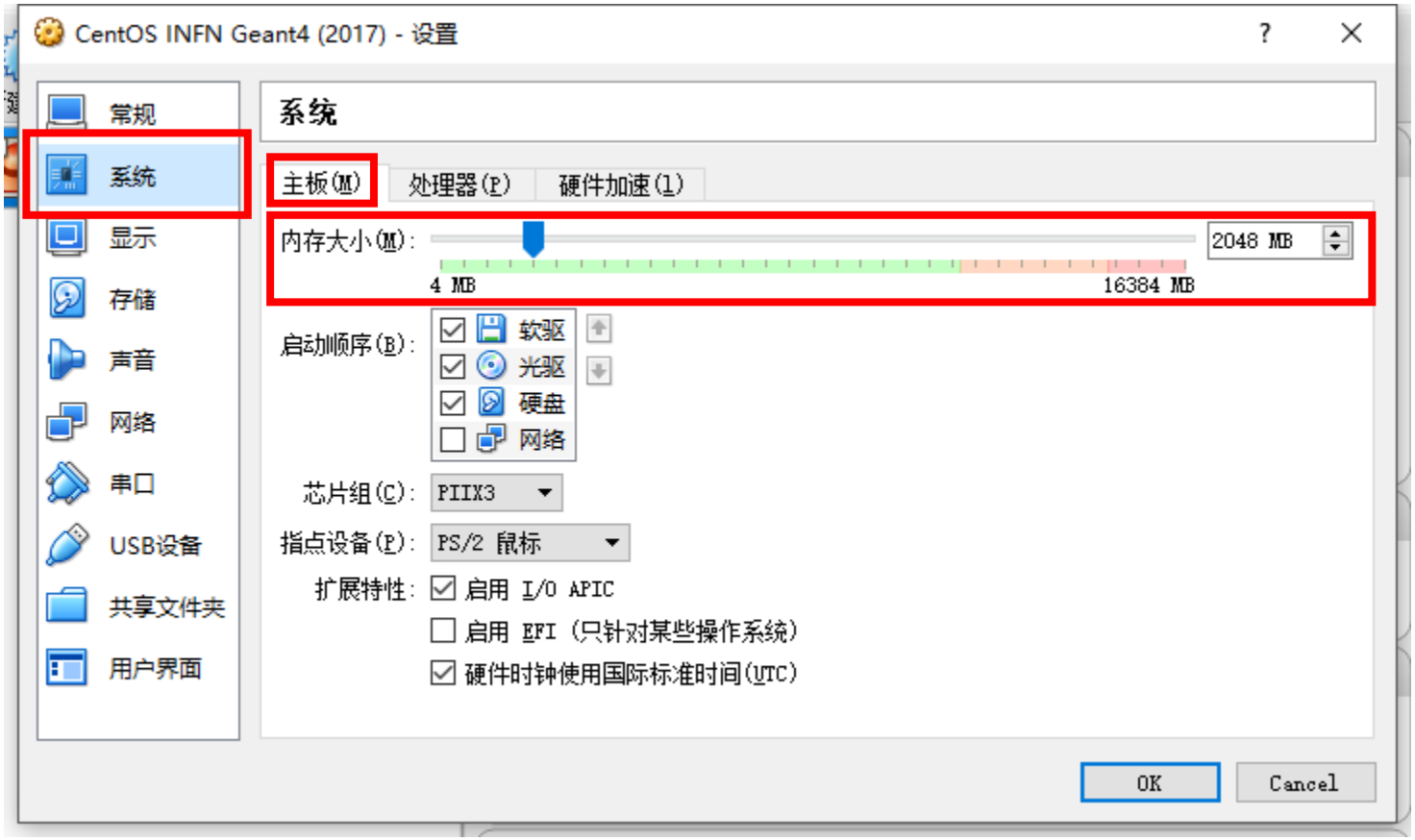
CLICK HERE



7. Configure virtual machine (3)

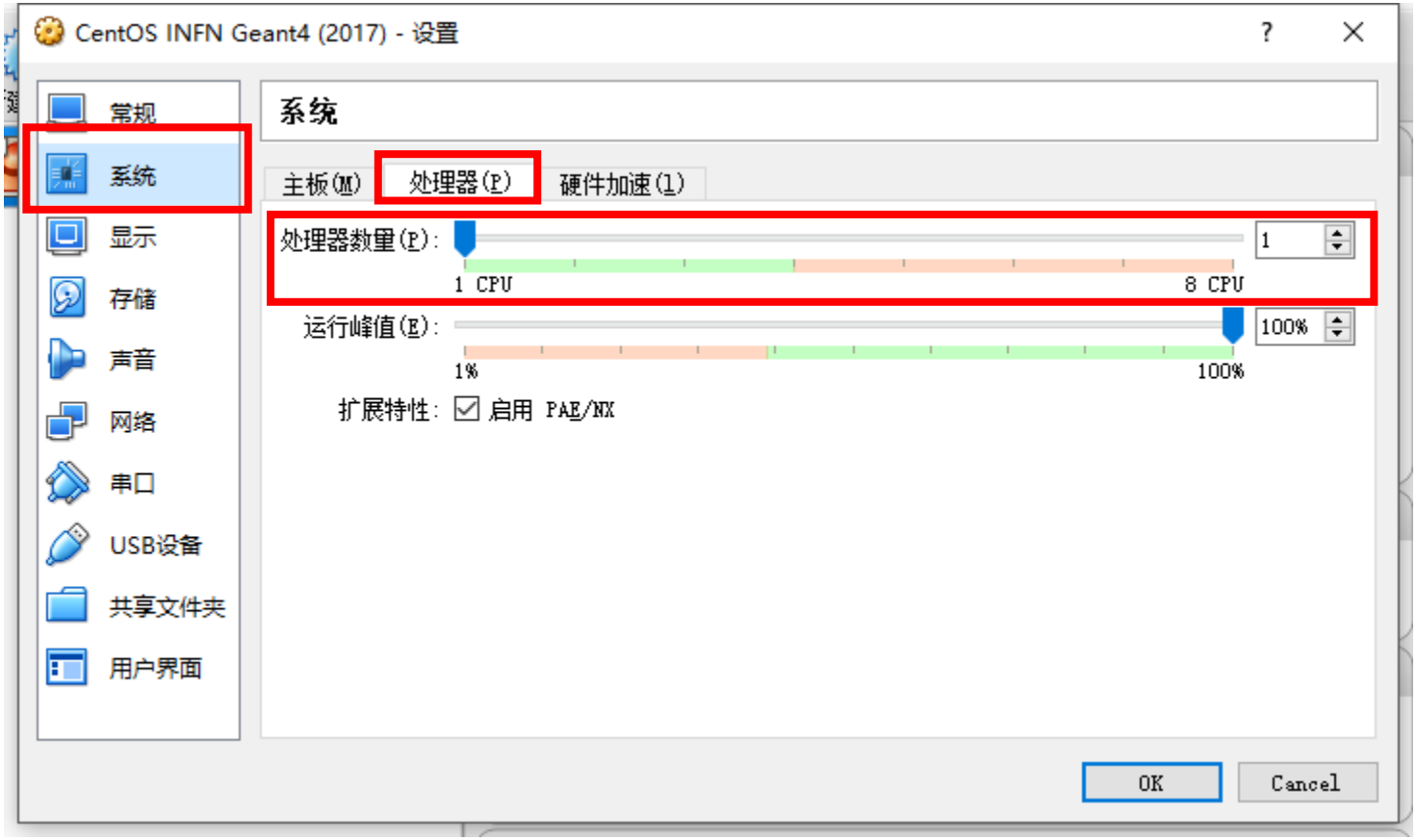


7. Change Memory Size



7. Change CPU core numbers

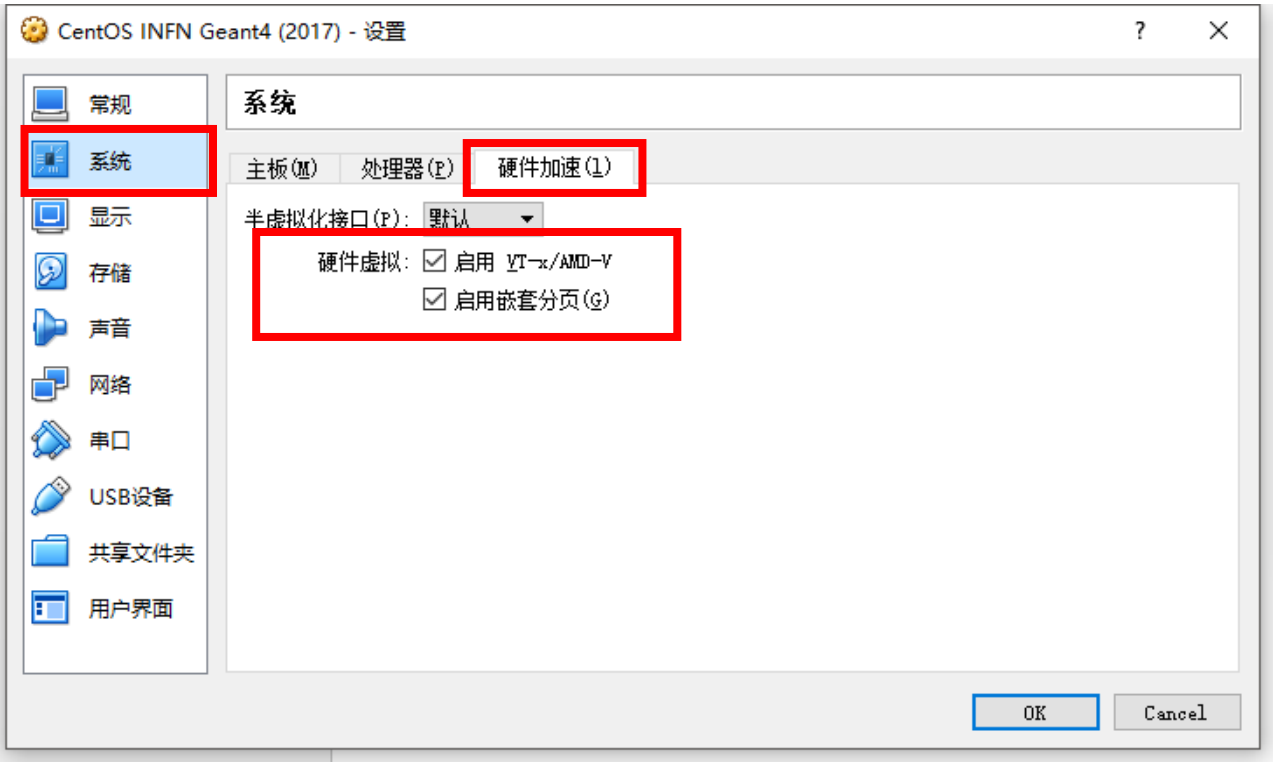
For multiple threads application, it’s better to set number >= 2.



7. Change GPU memory size

For graphics compatibility, don’t enable 3D acceleration.

8. Enable Hardware Virtualization



- Can't start VM

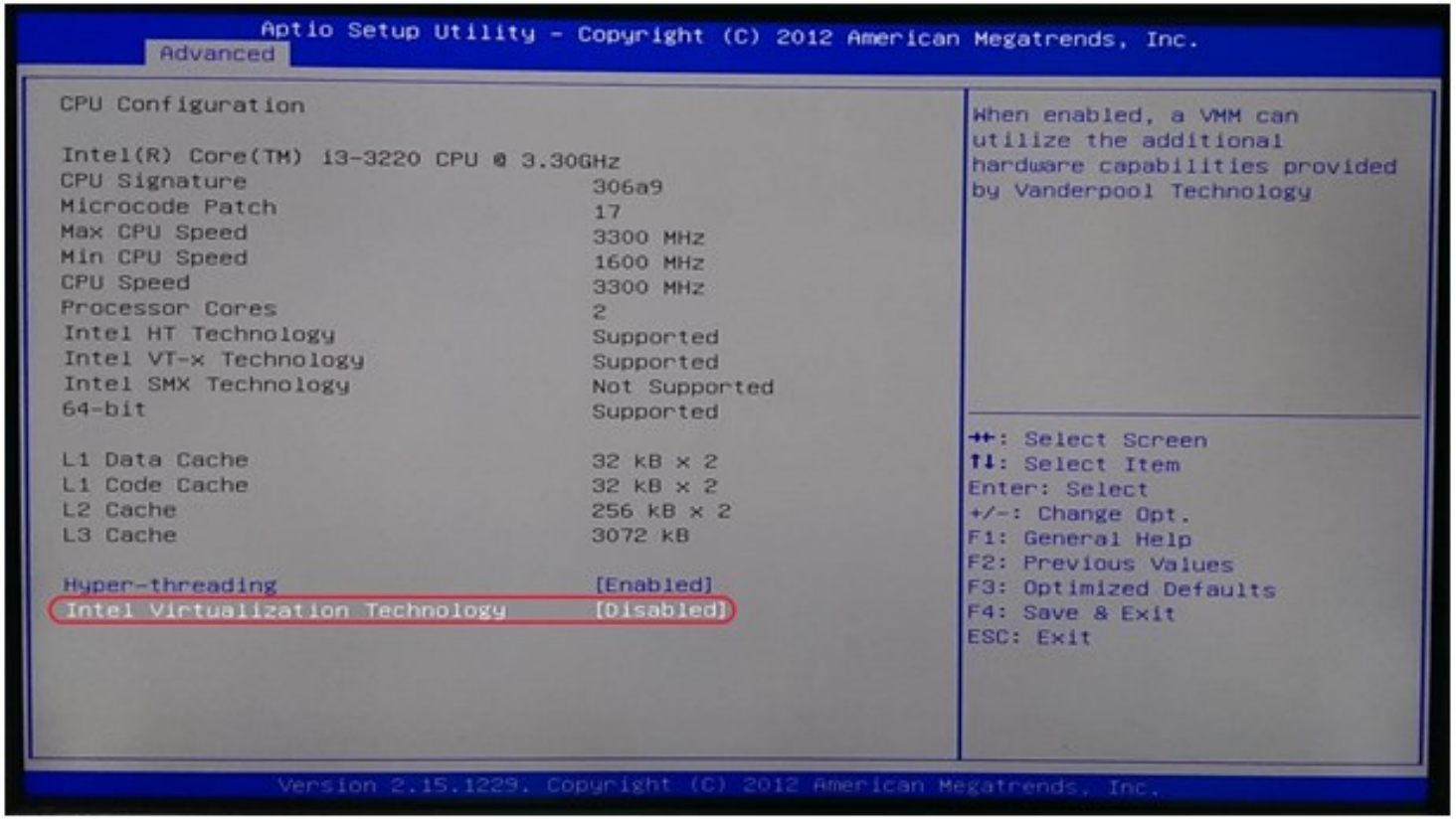
- Option is not available

If you got errors such as "VT-x/AMD-V hardware acceleration is not available" or this option is not available, you need to enable virtualization in your BIOS. (see next slide)

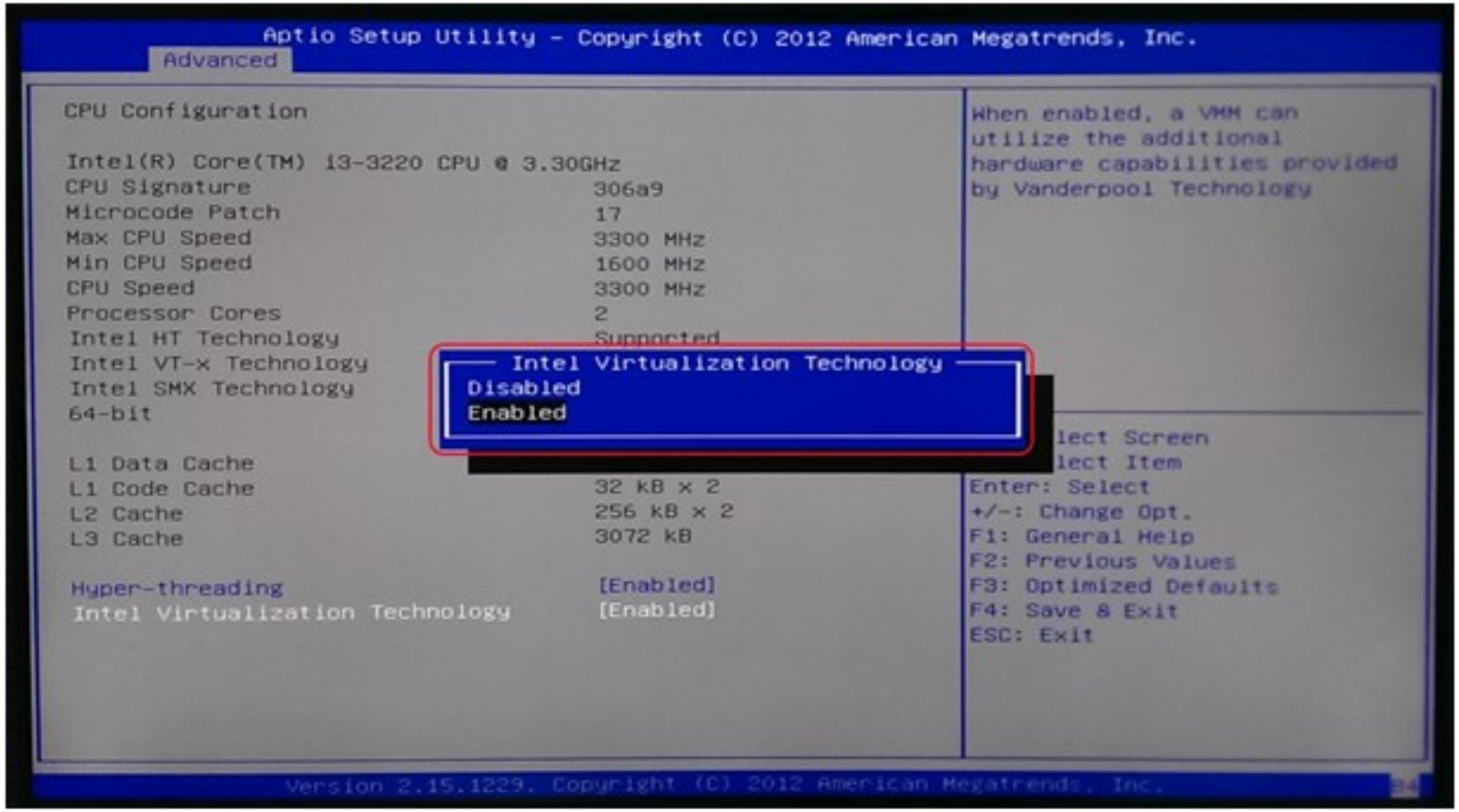
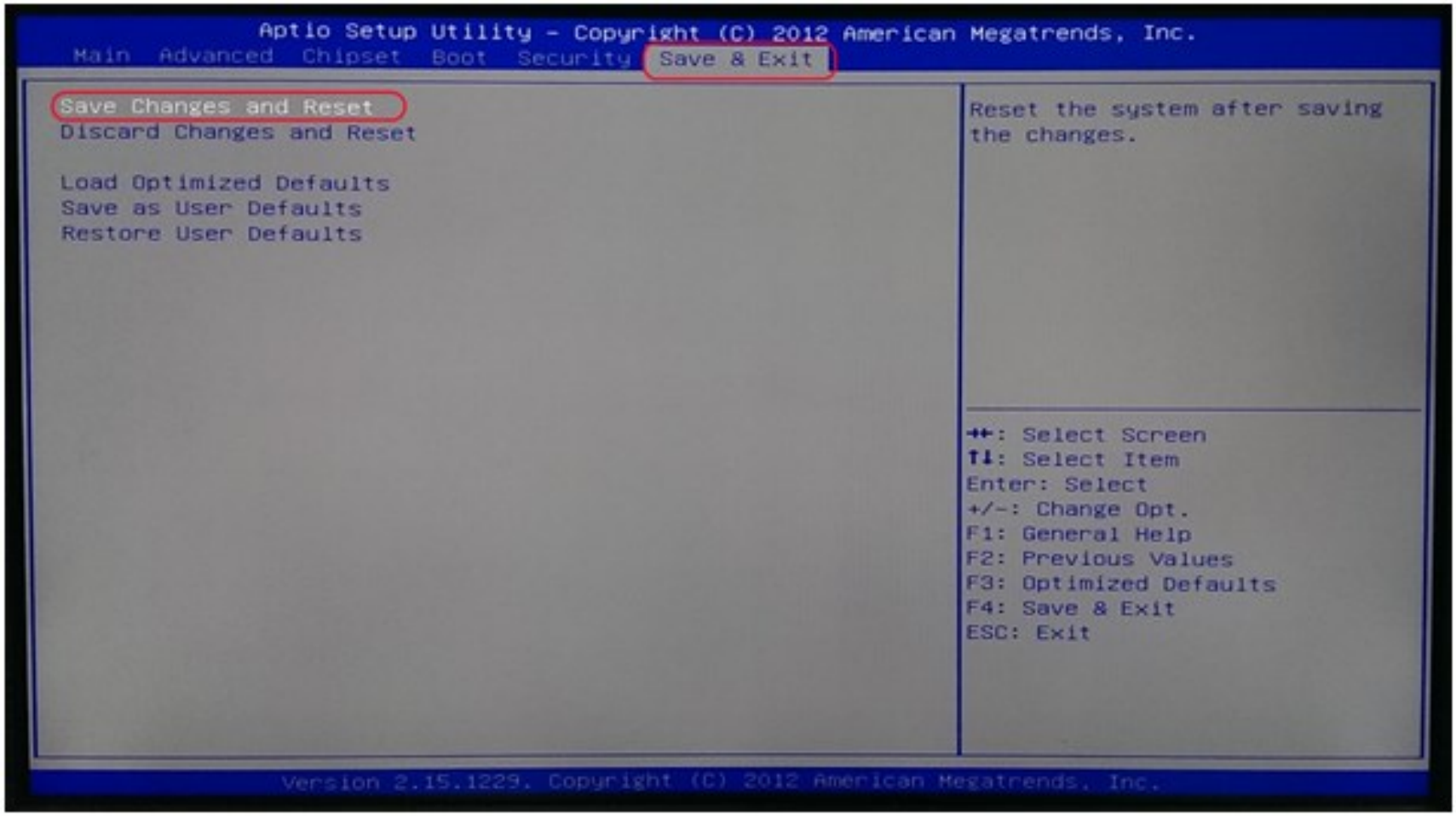
8. Enable Virtualization in BIOS

Reboot your computer, press F12 or DEL (according to your machine) to enter BIOS. Try to find options like “Intel Virtualization Technology” or “VT-x”, enable it!

An example: Find virtualization option



8. Enable virtualization



8. Save changes in BIOS