JoinVDI Virtualization Manger
Installation Guide

REV9：11. 01. 21

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1. Prerequisites

1.1 List of hardware equipment

Hardware Equipment	Quantity
Server for installing CentOS	1
Ordinary U disk	1
Windows OS machine	1

1.2 Windows software tools

Tools	Purpose
JoinVDI Installation Tool	For easier installation of the JoinVDI platform.
Virt-viewer	For running the VM console at the JoinVDI Virtualzation manager.
Rufus	For installing CentOS system with U disk.
Hash	For image files of JoinVDI and CentOS verification.
Chrome browser	For accessing the JoinVDI management console.

1.3 Installers

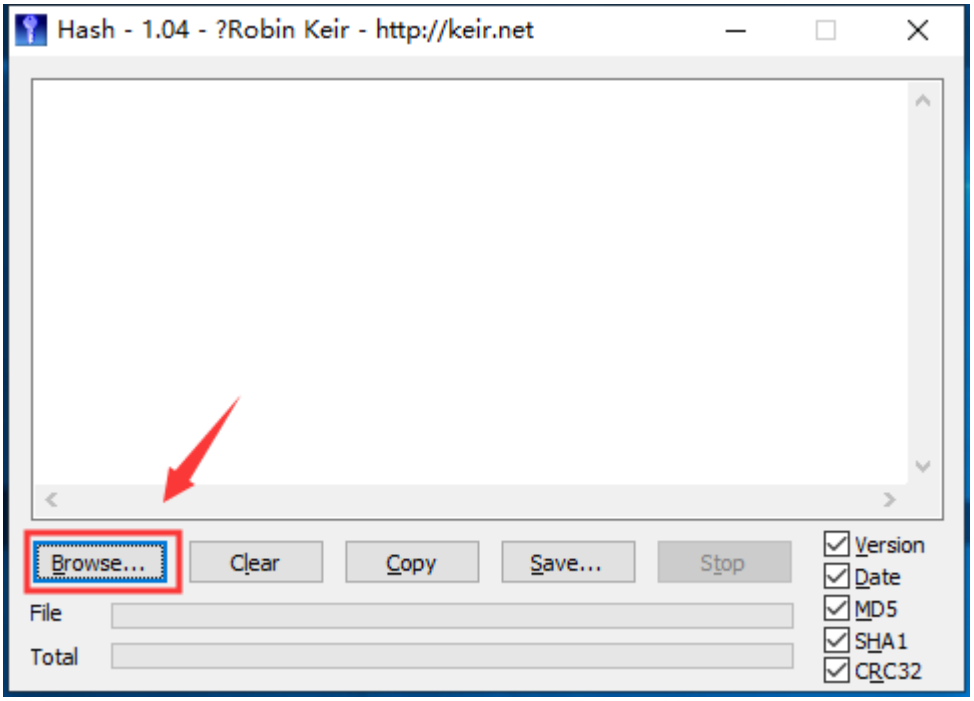
Installer	Purpose
Centos 7 Minimal 1810	CentOS system image
JoinVDI image	JoinVDI platform image
JoinVDI MD5code	For verifying the JoinVDI image
The VM system image (example in this guide: Windows 10 X64 Enterprise Edition)	For system installations for the VMs

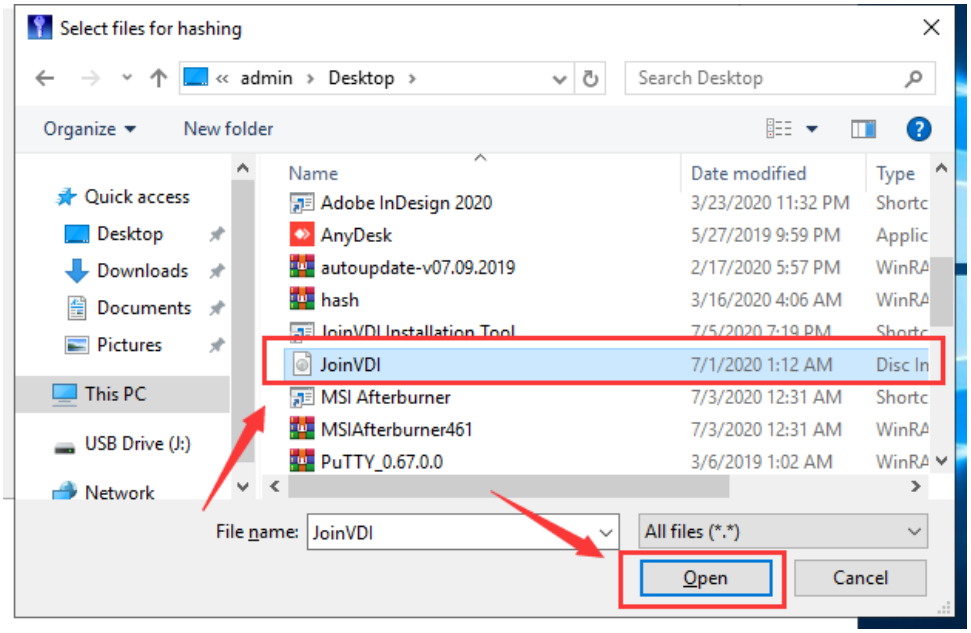
1.4 Windows machine preparation

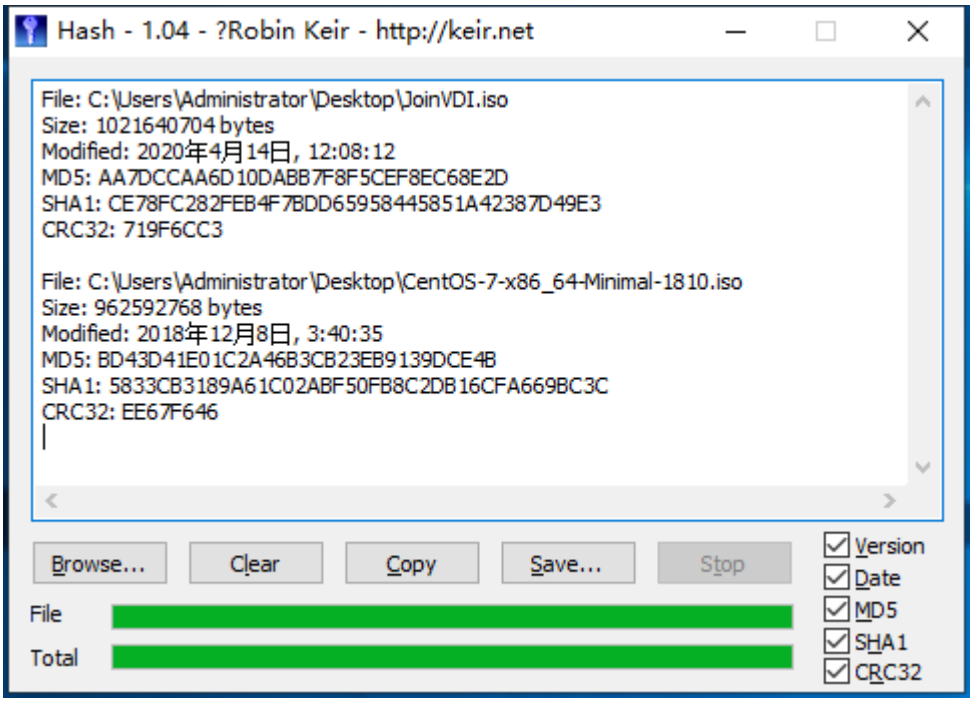
1.4.1 Install Hash and verify Centos and JoinVDI images

- Download "Hash" to verify file integrity。
- Download address: http://keir.net/hash.html.

Open the Hash software on the Windows host, select "Browse" → "CentOS-7-x86_64-Minimal-1810" → "JoinVDI" → Open, and calculate the MD5 value of the JoinVDI and CentOS image files.





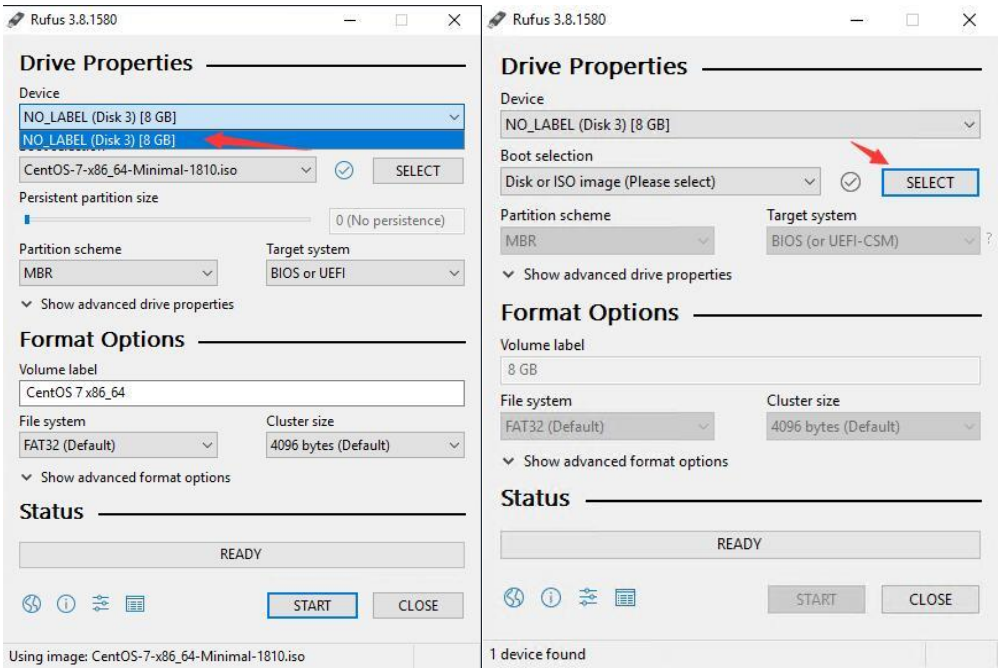


- If the calculated MD5 value is not the same as the MD5 value we provide, please download again.
- The MD5 in the screenshot is only a demonstration, please refer to the MD5 we actually provide.

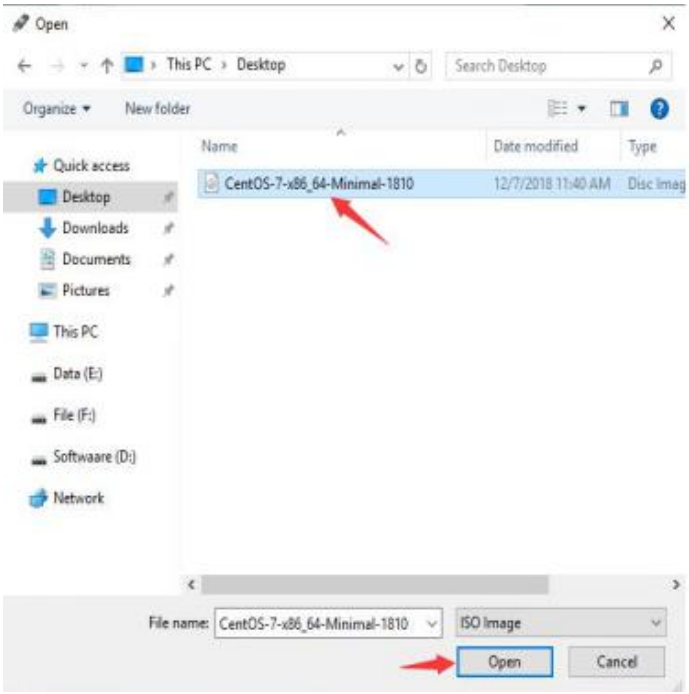
1.4.2 Install Rufus and make a CentOS startup USB disk

- Rufus is recommended as the production tool, and other tools may have compatibility problems.
- Rufus official website: http://rufus.ie/
- Download url: https://github.com/pbatard/rufus/releases/download/v3.8/rufus-3.8.exe
- The system must be CentOS 7 1810 Minimal. Other system versions may cause installation failure.

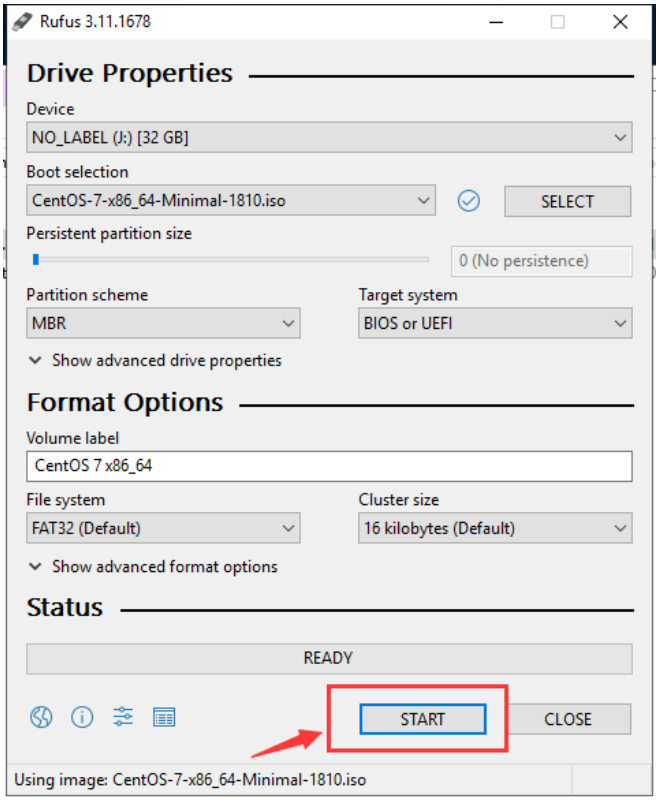
1) Run Rufus and select the USB disk to write ISO in the option of devices → "Select" .



2) Select "CentOS-7-x86_64-Minimal-1810" → "Open" .

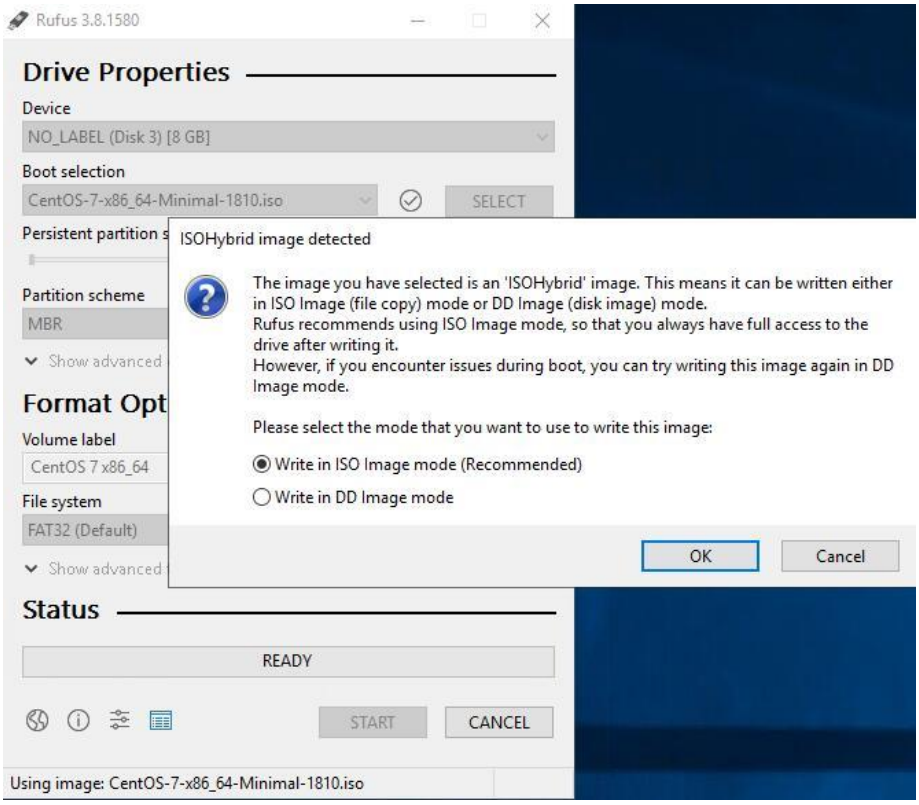


3) Click "Start" to start writing in.



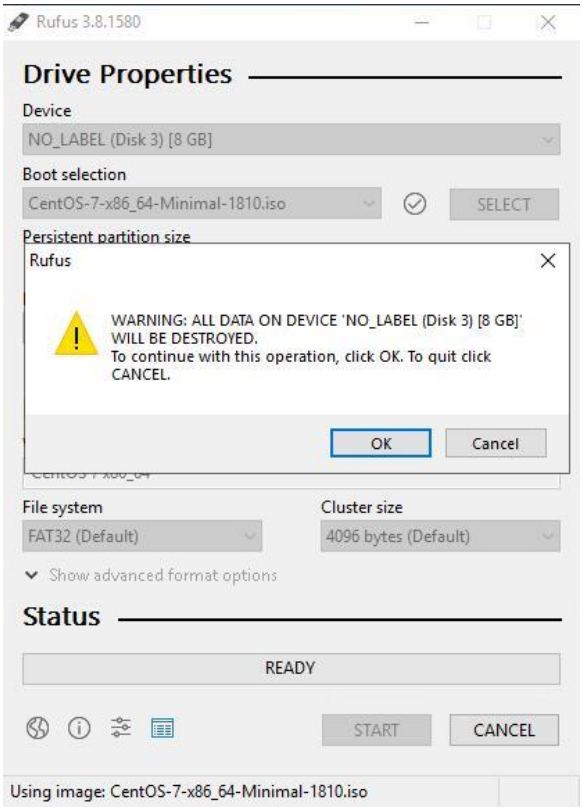
4) Leave the options in the pop-up prompt window as the default, and click "OK".

- If CentOS installer cannot be started normally, re-create the boot disk and change the writing mode to "Write in DD image mode".

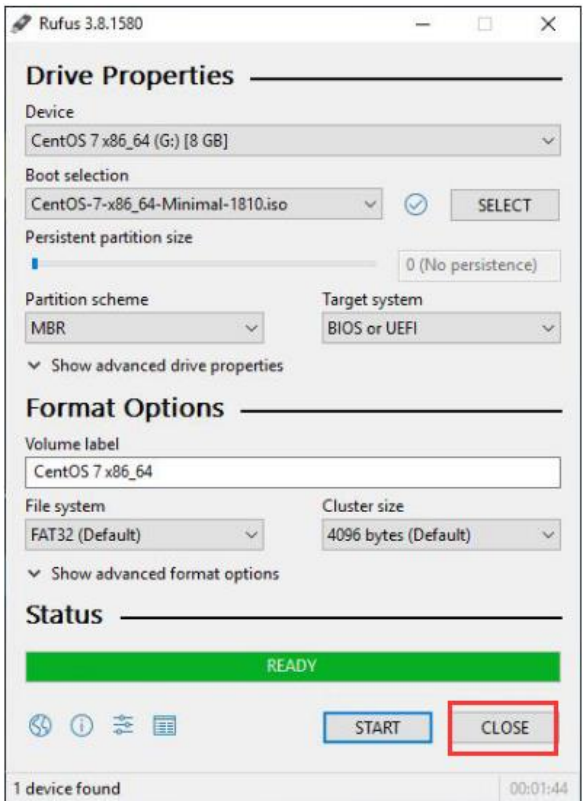


5) Click "OK" to write ISO file into the USB disk.

➢ Note! This operation will empty all the files in the USB flash disk!



3) Click "CLOSE" to eject the disk after writing.

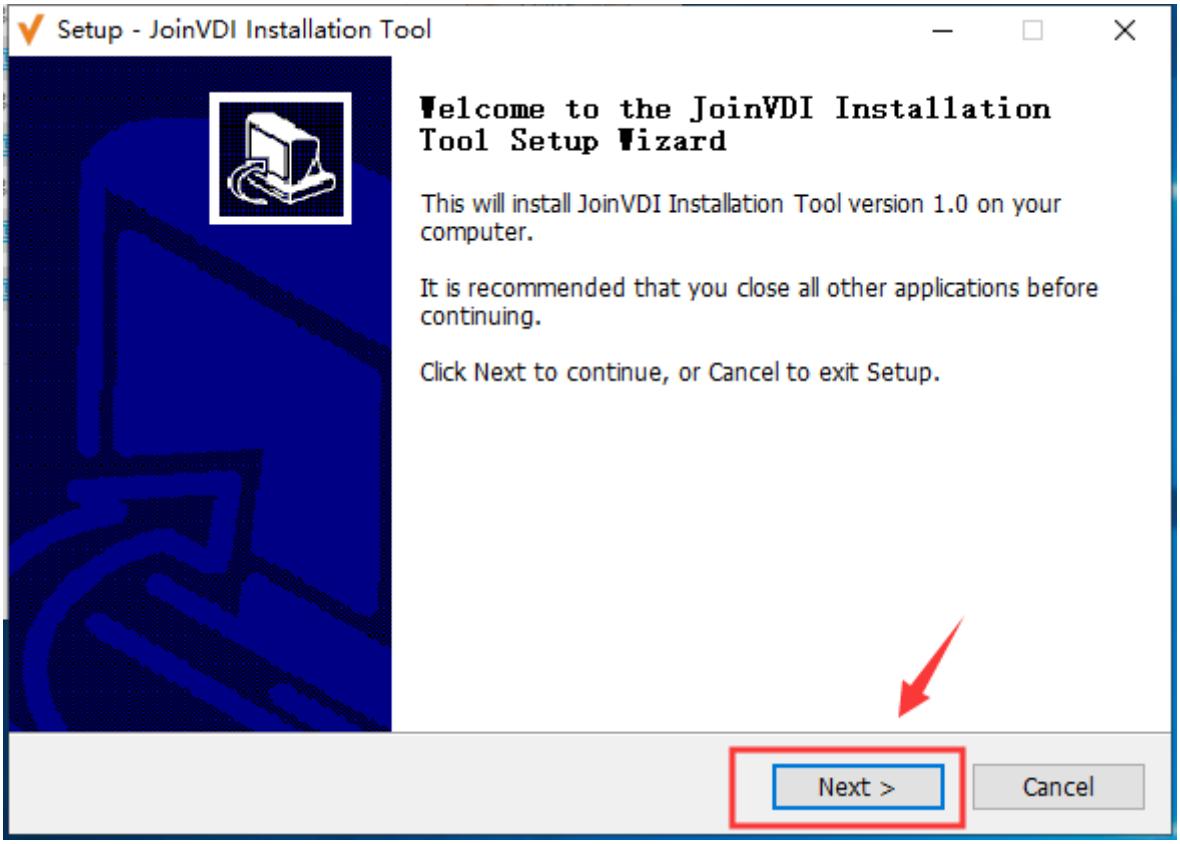


1.4.3 Install Chrome browser on the Windows machine

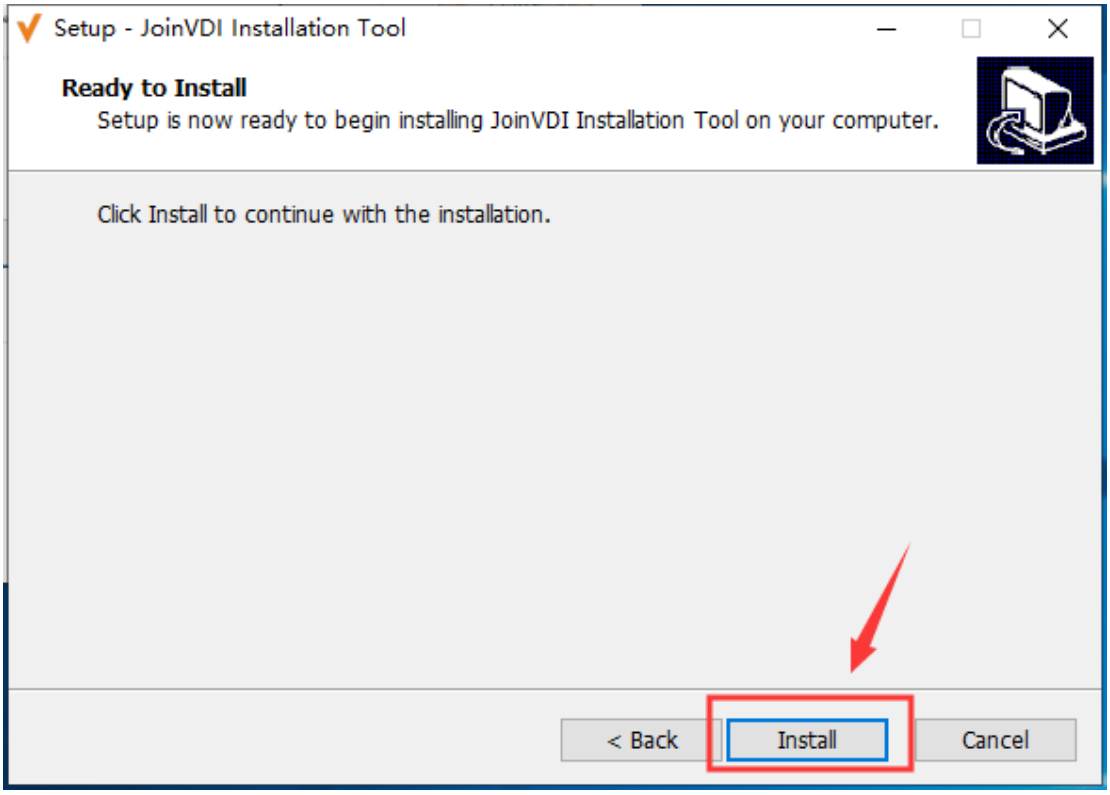
You can download Chrome browser at https://www.google.com/chrome/.
Chrome can be installed in one-click. After installation, the shortcut icon will be placed on the desktop.

1.4.4 Install JoinVDI Installation Tool on the Windows machine

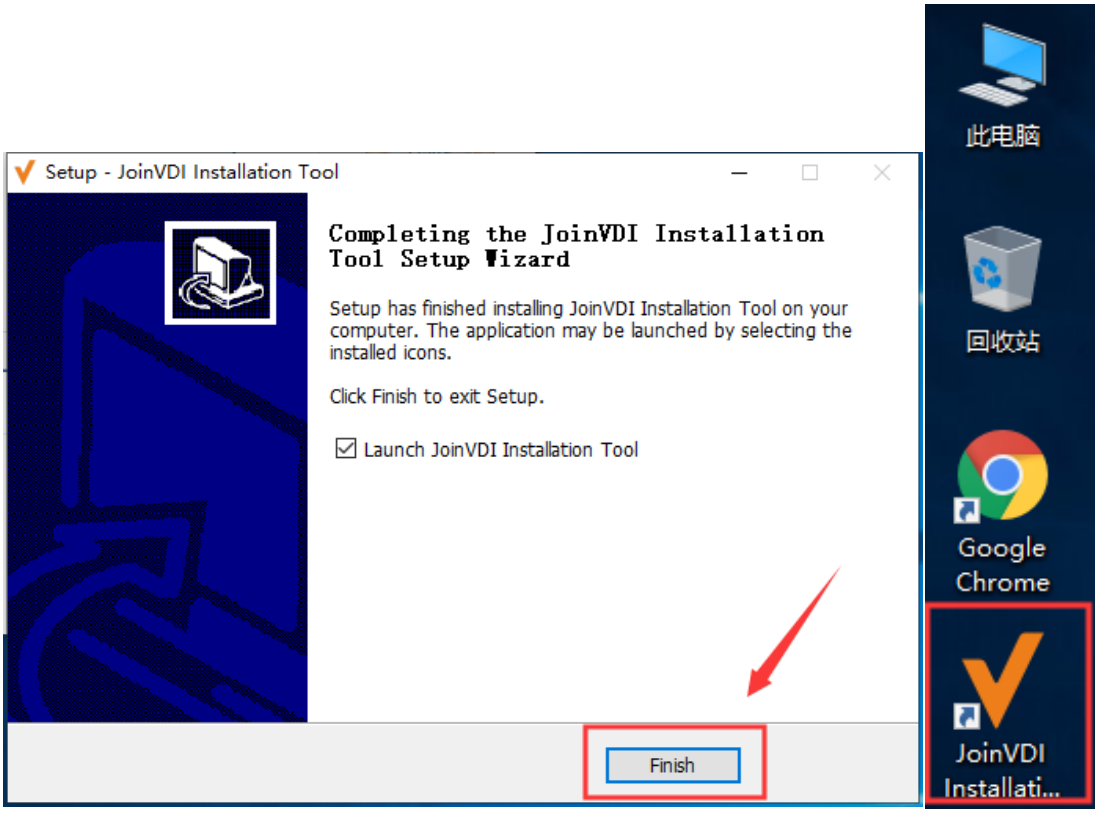
1) Run the JoinVDI Installation Tool installer, click "Next".



2) Click "Install".



3) Click "Finish" to complete installation. The shortcut icon of JoinVDI Installation Tool will be placed on the desktop.

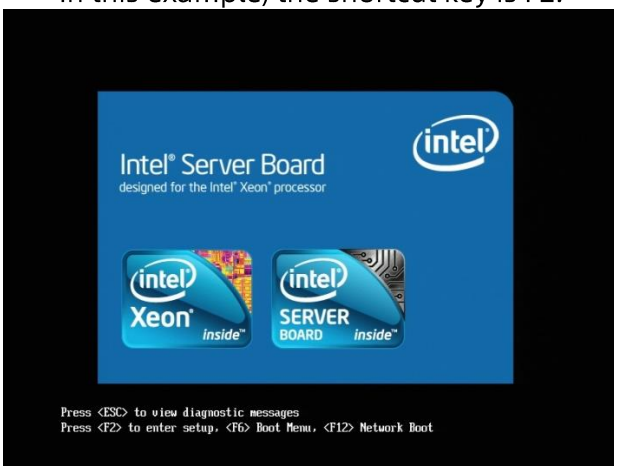


1.4.5 Install Virt-viewer on the Windows machine.

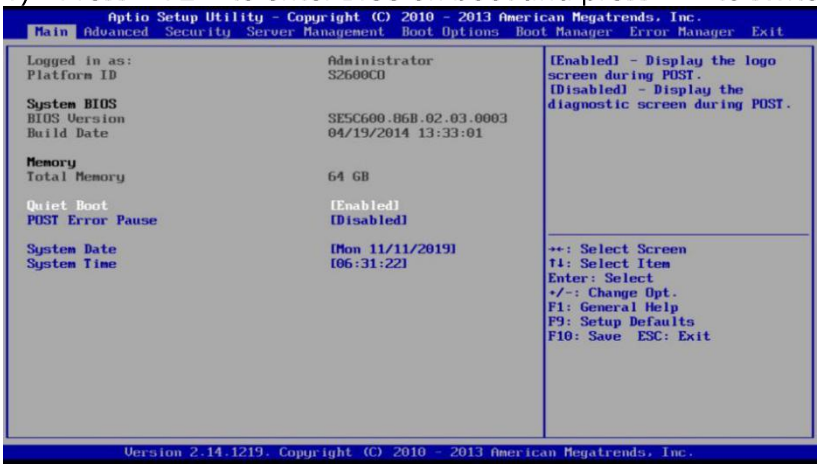
Virt-viewer can be installed in one-click. Please use the corresponding 64-bit or 32-bit installation package according to the system. There is no successful message and no shortcut icon will be generated after the installation.

1.5 Configure Bios settings on the server

- This step is for reference only. Settings may vary depending on the motherboard.
- CPU virtualization and directed IO virtualization need to be turned on in the BIOS before starting the installation.
- In this example, the shortcut key is F2.

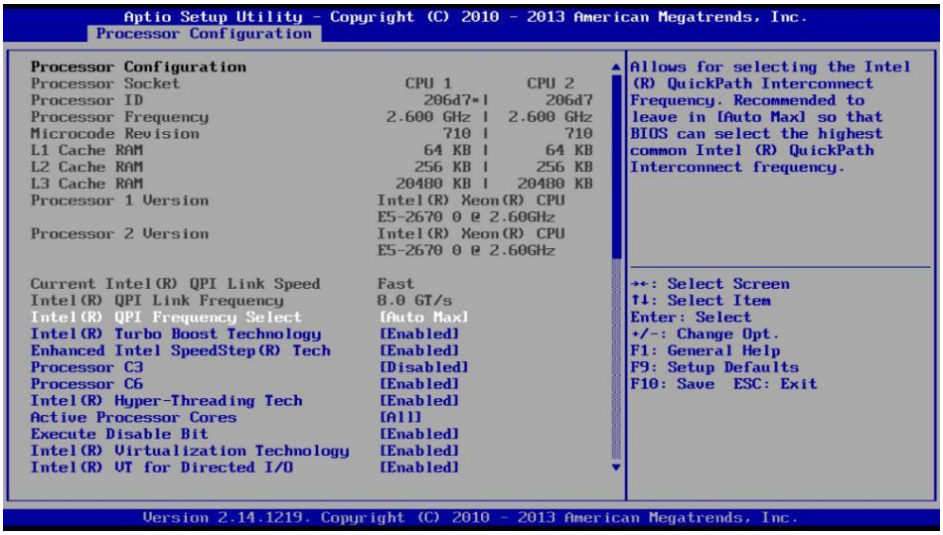


1) Press “F2” to enter BIOS on boot and press "→" to switch to "Advanced”.

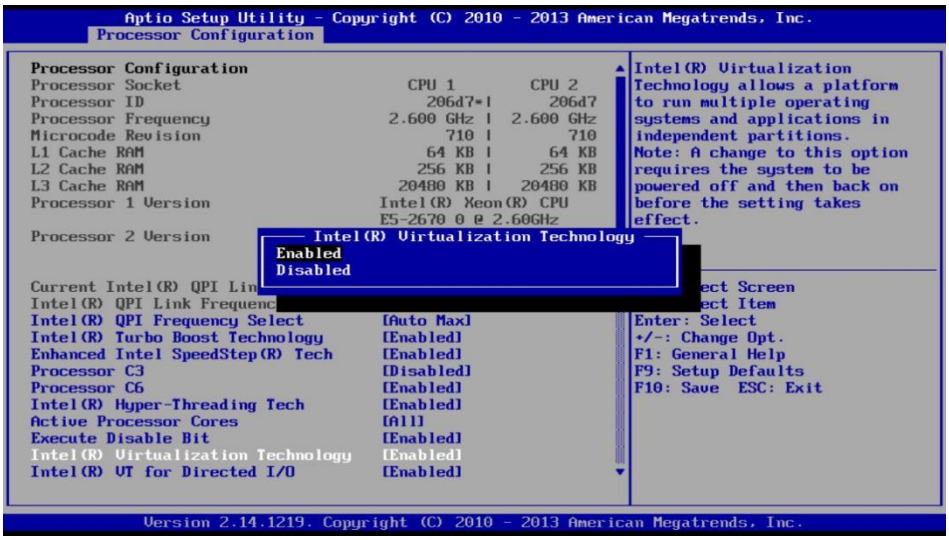


2) Go to the “Processor Configuration” page.

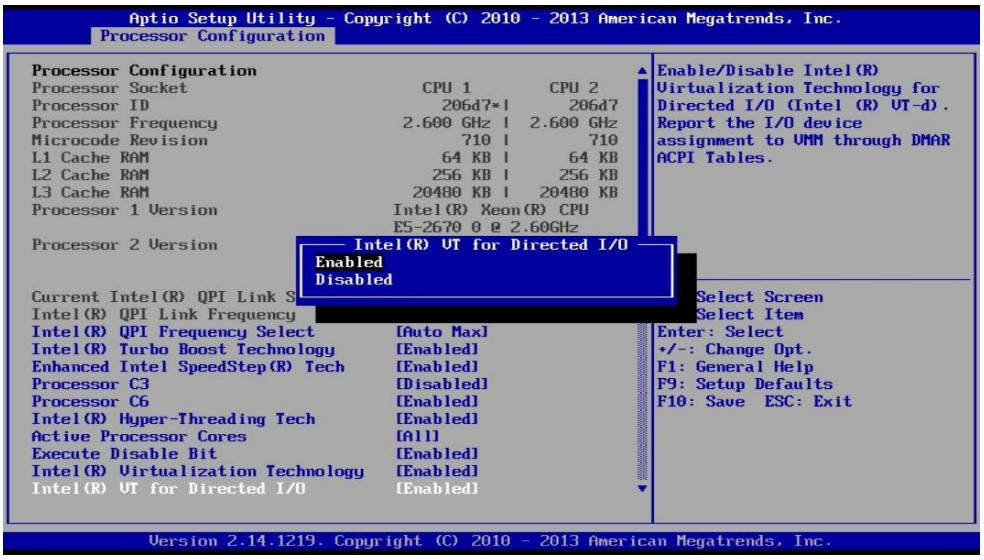
3) Press "↓" to enter Intel(R) Virtualization Technology option;



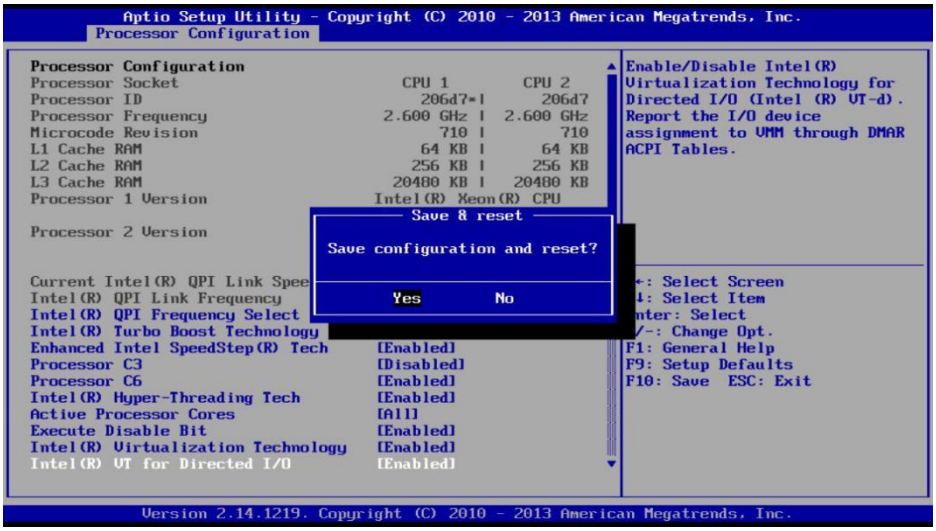
4) Press "Enter", and then "↓" to modify the option of "Enabled", and apply.



5) Press"↓" to the "Intel(R) VT for Directed I/O" option, and modify the option to be be "Enabled".



6) Press “F10” to save and exit. Reboot.

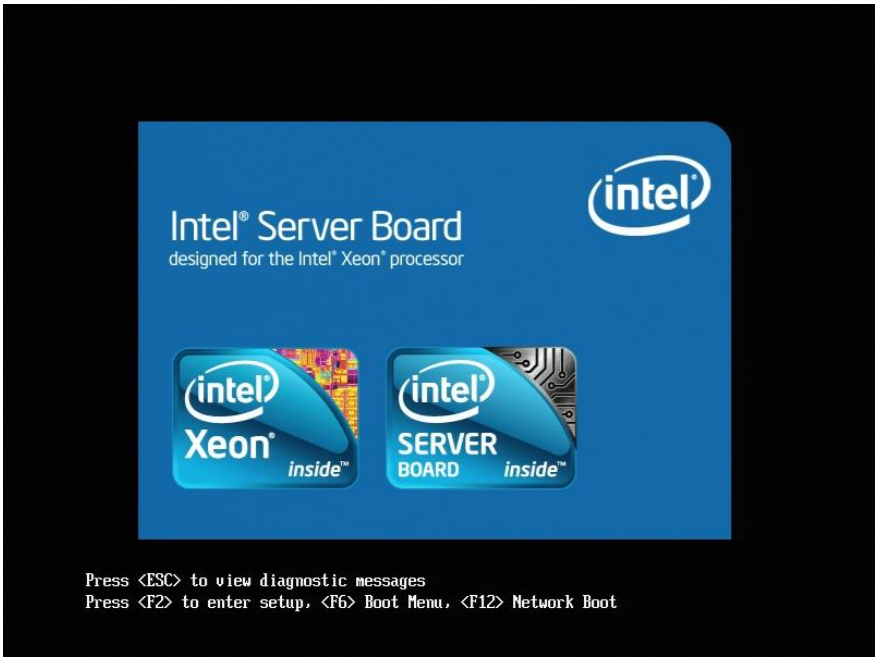


2. Install Centos Minimal on the Server

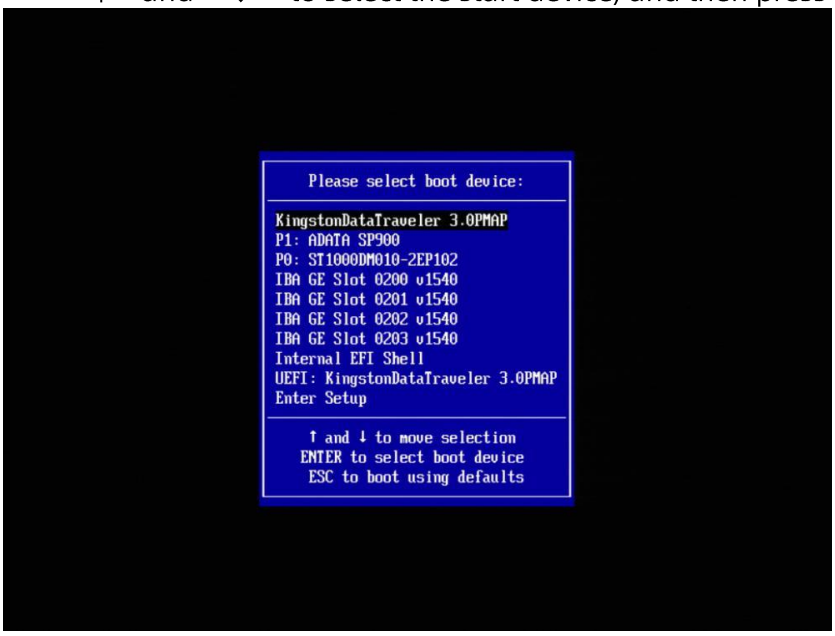
➢ JoinVDI needs to be installed on the physical machine. Installing it in a virtual machine will result in failure to add a host or create a virtual machine!

2.1 Boot from U disk

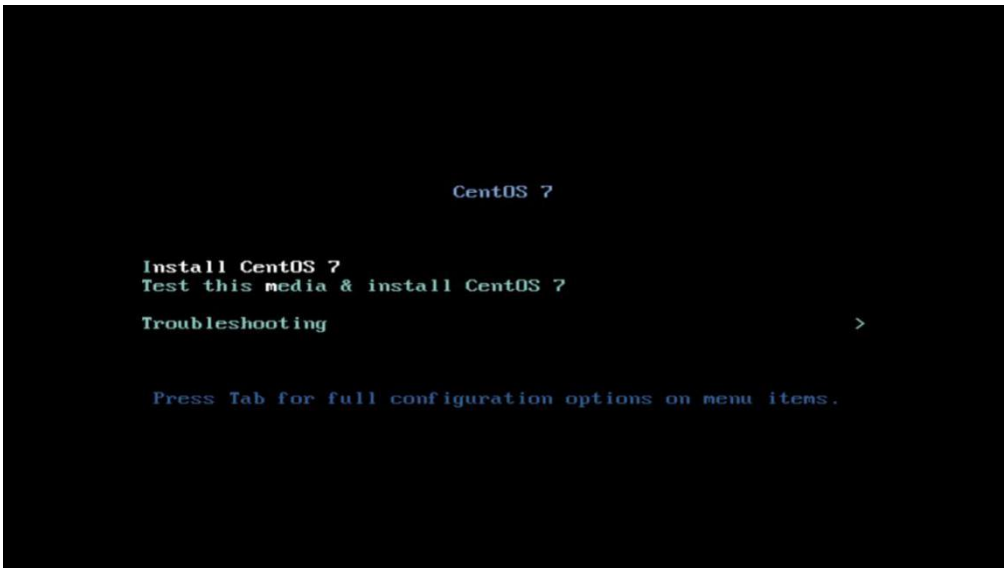
- Attach the U disk to the server. Start the server. During boot up, press the shortcut key to enter the boot menu. Refer to the motherboard manual for the shortcut key or check the screen prompt while booting.
- In this example, the keyboard shortcut is F6.
- The IP address of the CentOS server in the example is: 192.168.1.45, the subnet mask: 24.



1) Press “F6” to enter the boot menu. After entering Boot Menu, press “↑” and ” ↓” to select the start device, and then press “Enter” to confirm.

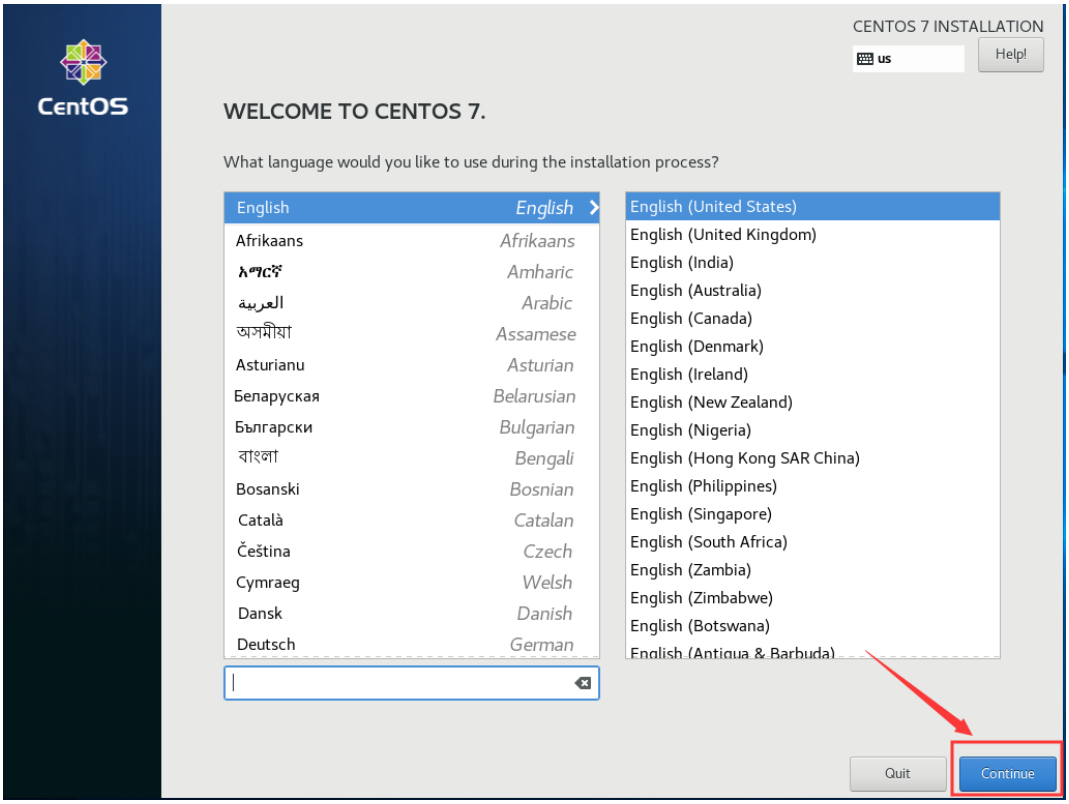


2) Enter CentOS installer and press the arrow key “↑” to select “Install Centos 7” and press “Enter” ky to start CentOS installation.

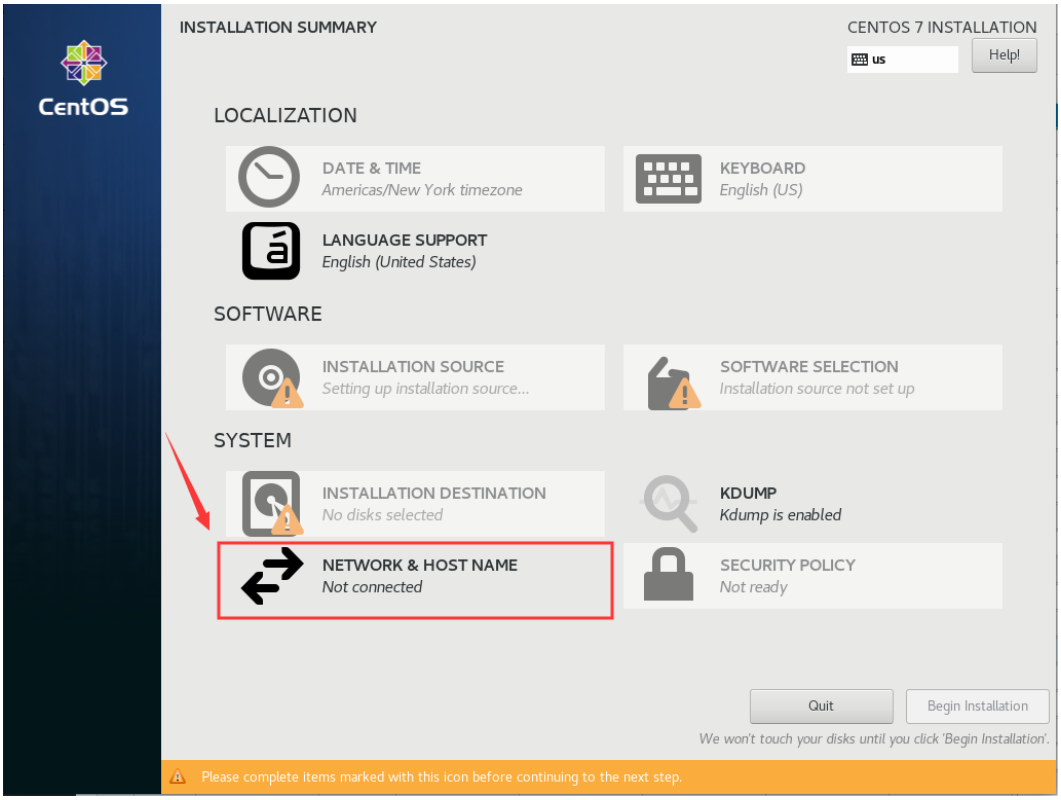


2.2 Install CentOS

1) English is the default language. Choose your language and click "Continue".



2) Enter the page, and click "NETWORK&HOSTNNAME" to set network and host name.

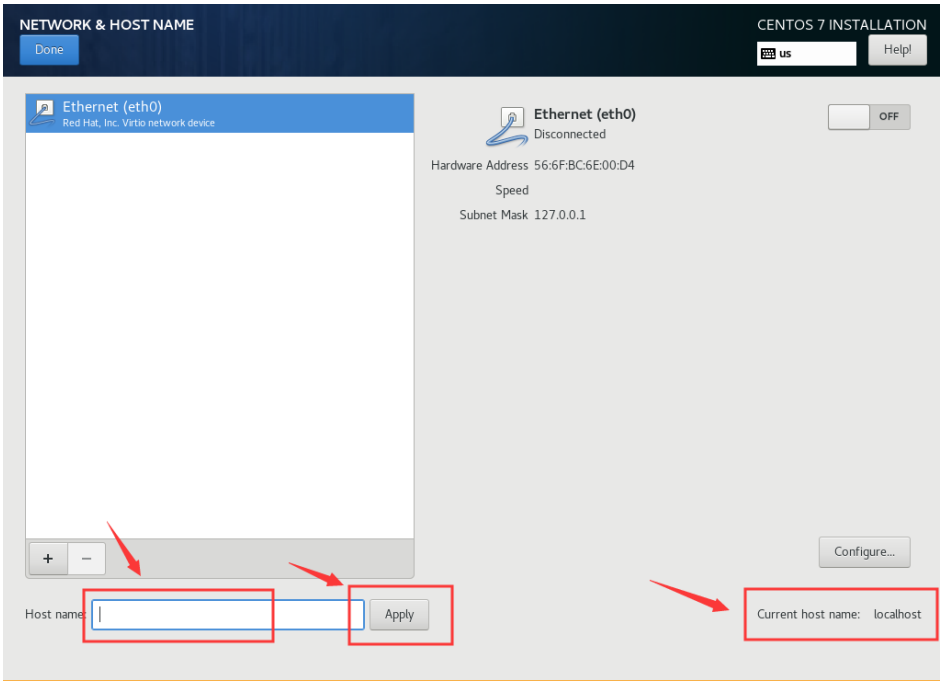


2.2.1 Set host name and network

1) Enter host name in the "Host Name" field.

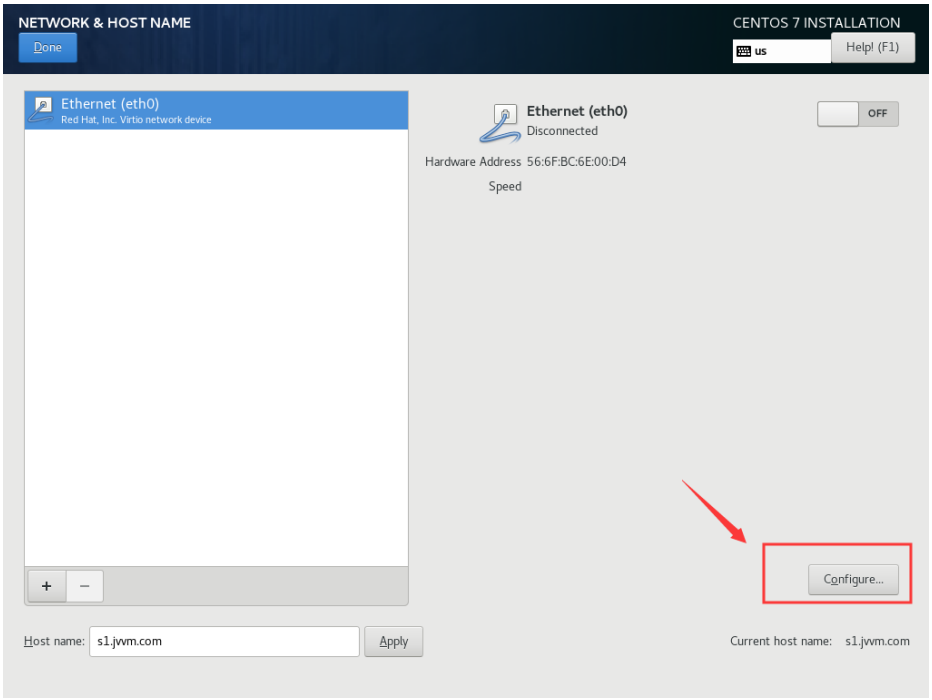
- The recommended format for the host name is xxx.xxx.xxx.

2) After finishing entering and confirming OK, click "Apply" and the "Current host name" on the right will become the entered host name.

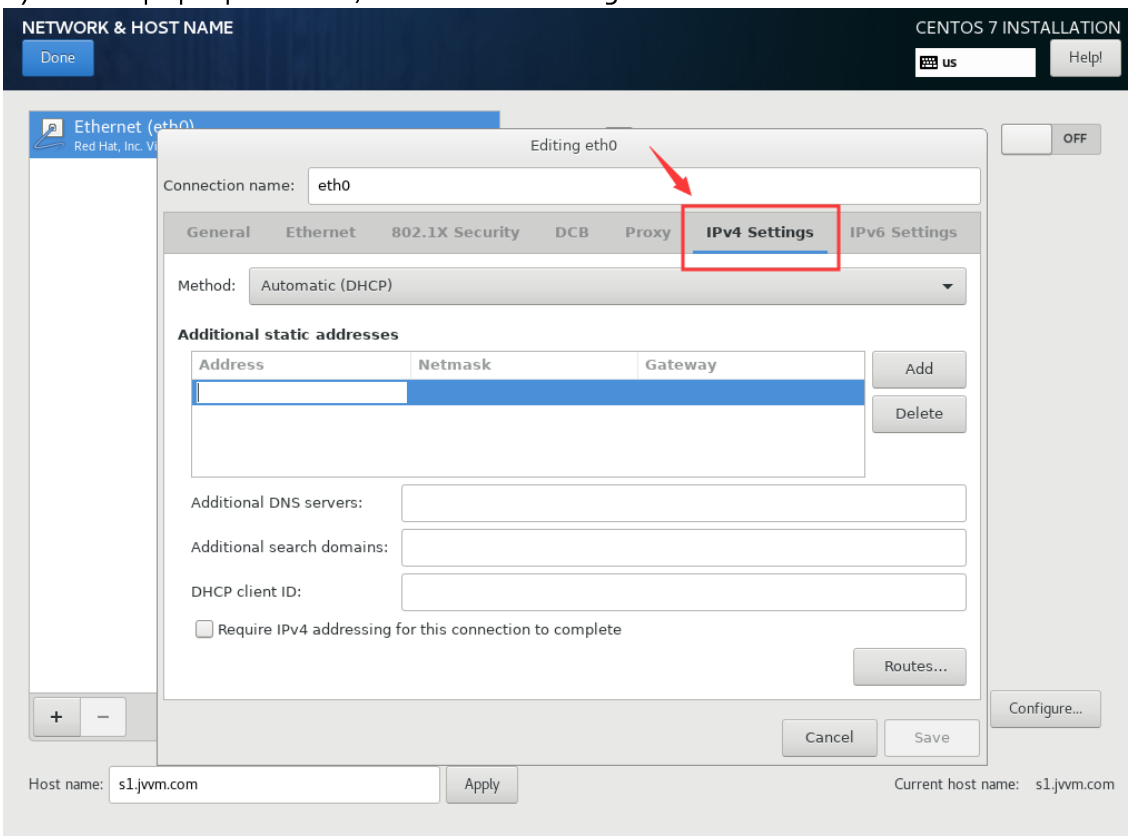


2.2.2 Set the static IP address

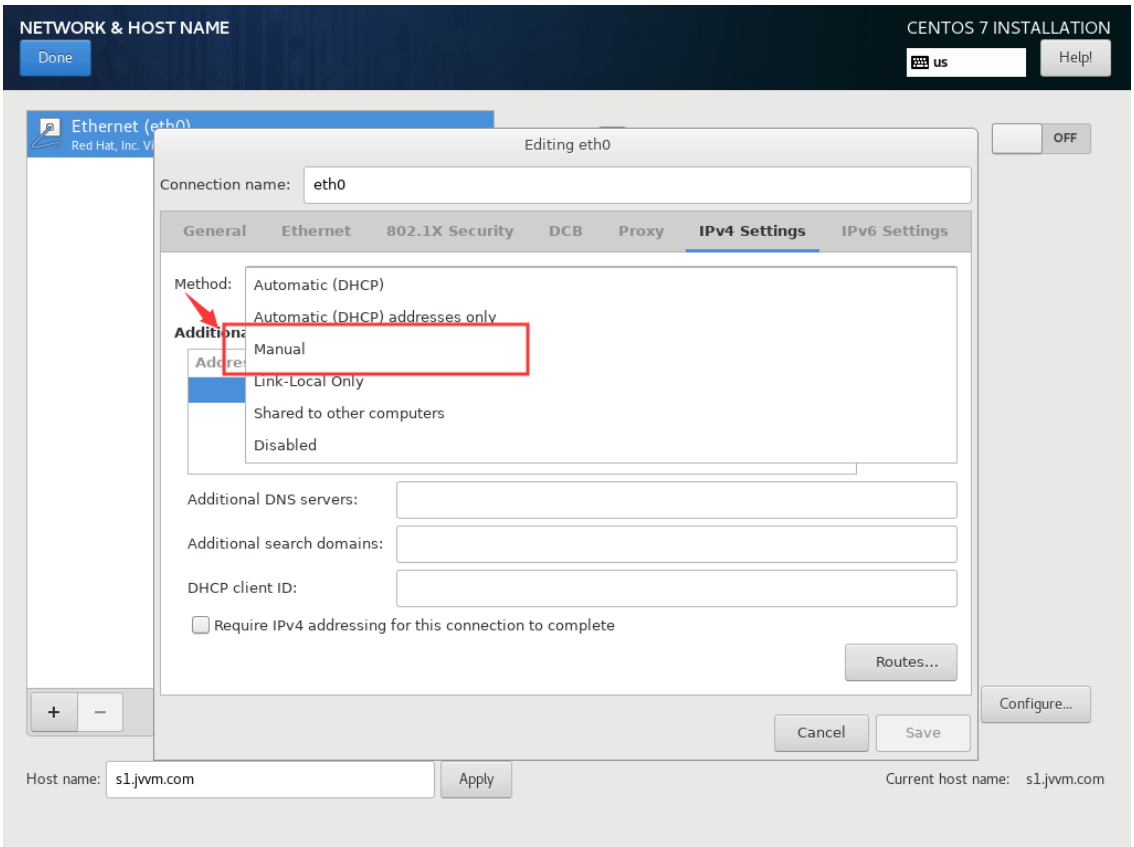
1) Click "Configure".



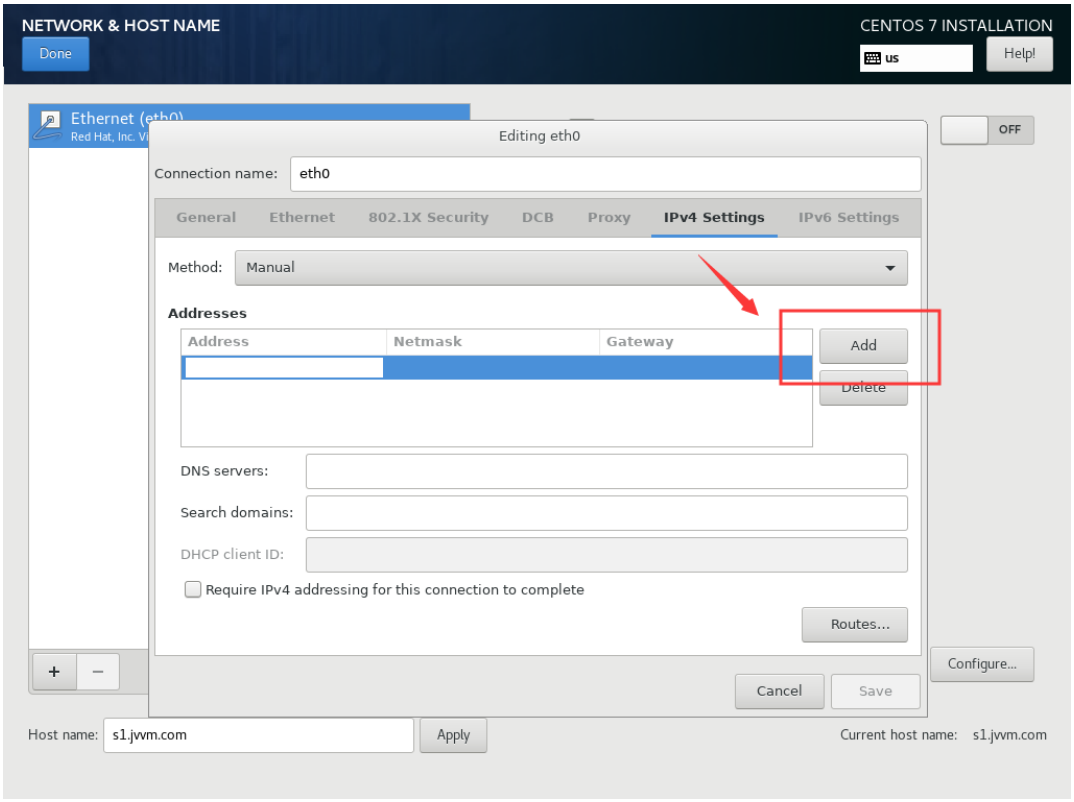
2) In the pop-up window, click "IPv4 Settings".



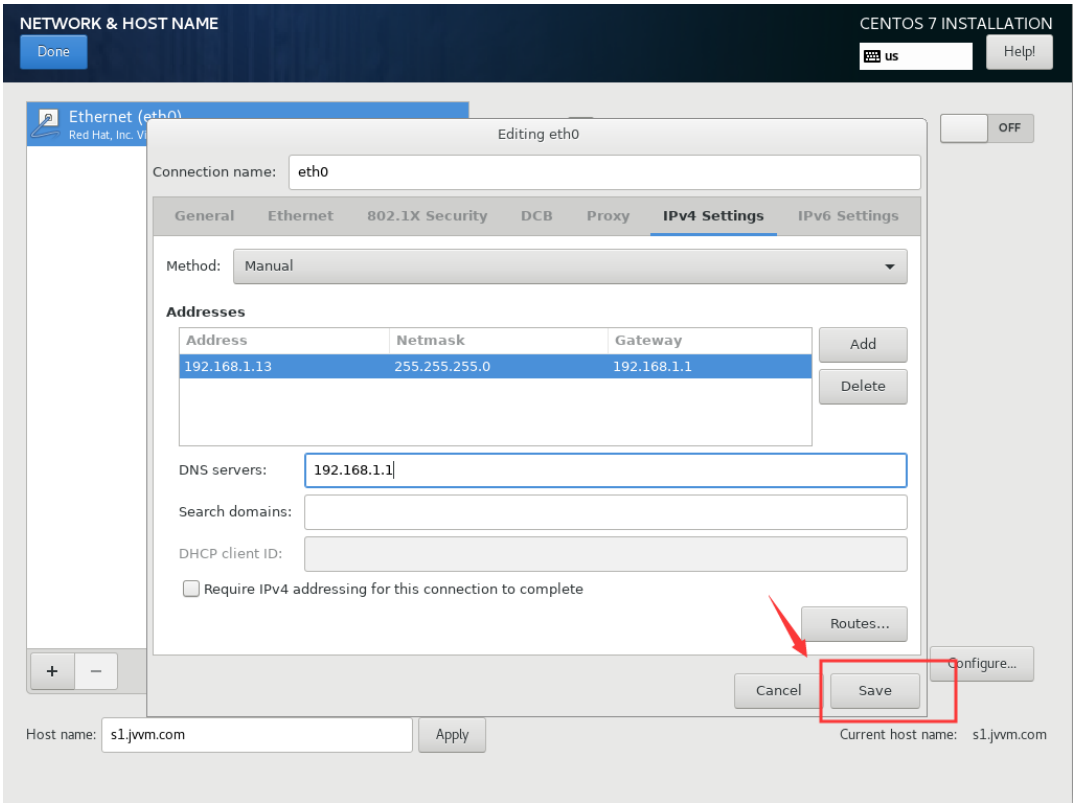
3) Change the option under the "Method" menu to "Manual".



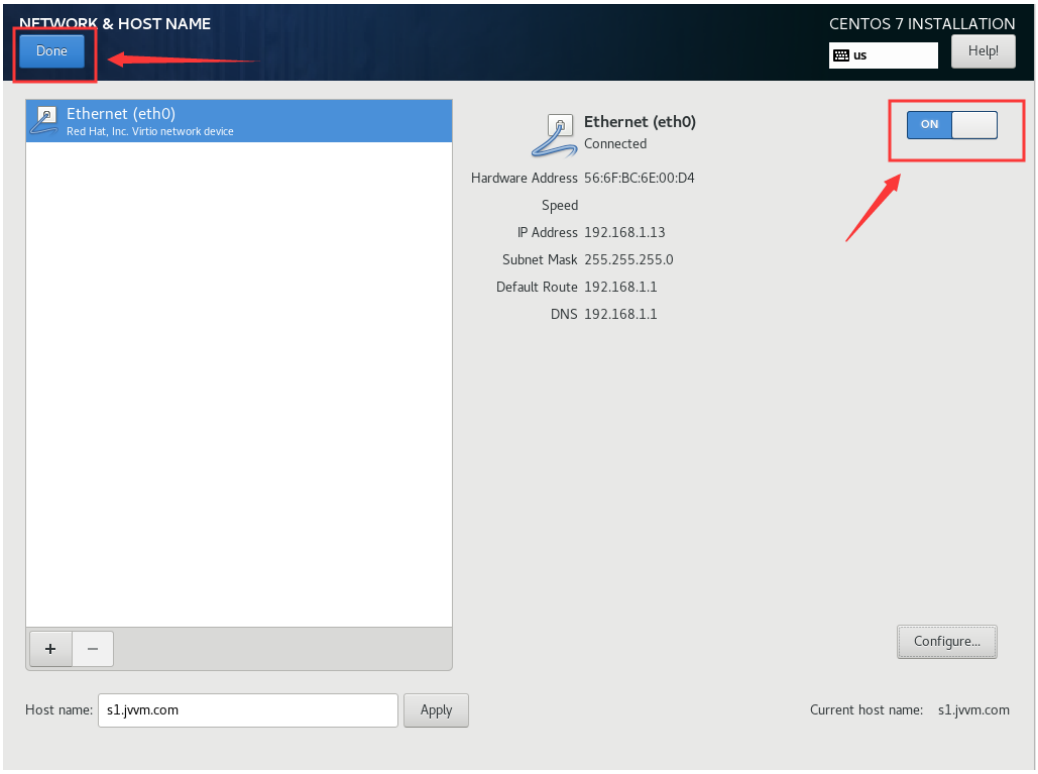
4) Click "Add" to enter an IP address.



5) Enter IP address, subnet mask, gateway, DNS address, and click "Save" when completed.

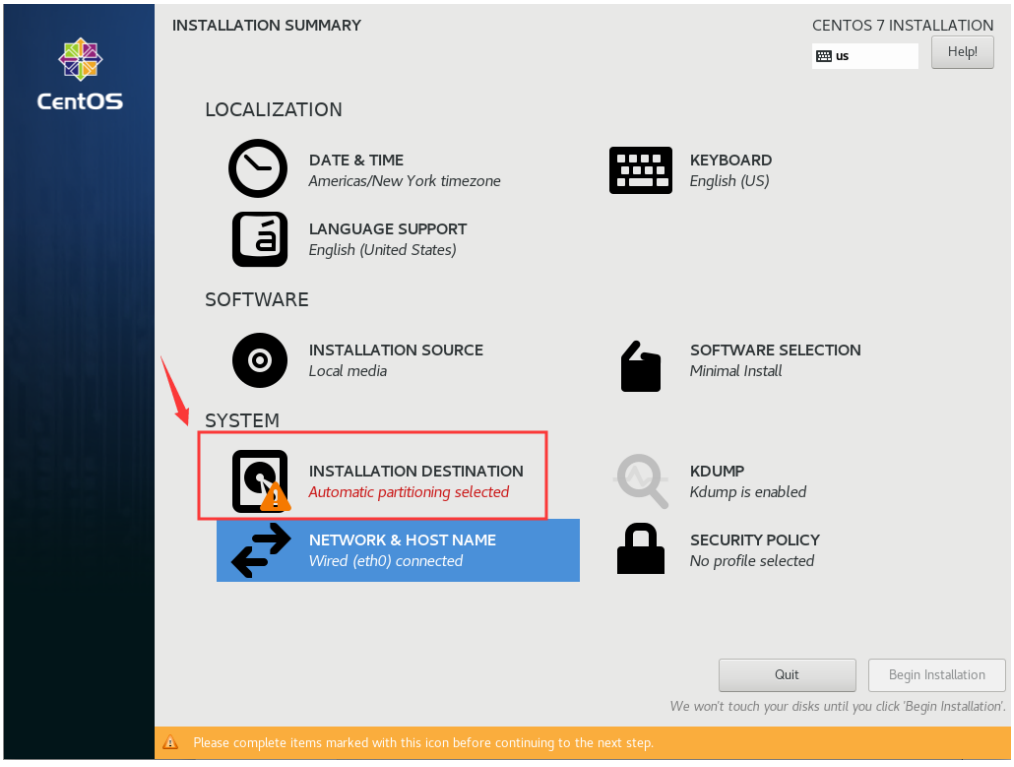


6) Go back to the page, click the icon pointed by the arrow on the right, open the network card, and then click "Done".

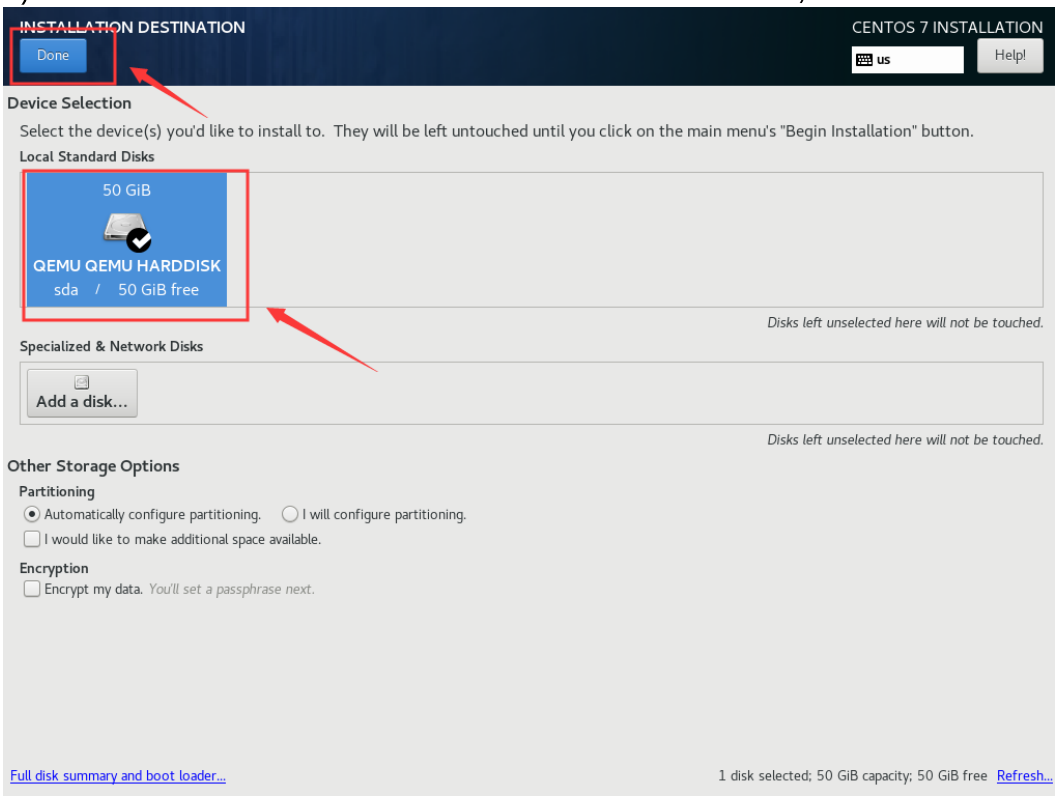


2.2.3 Select to install hard disk

1) After clicking "Done" in the previous step, you will return to the interface, and then click "INSTALLATION DESTINATION" to choose disk for installation.

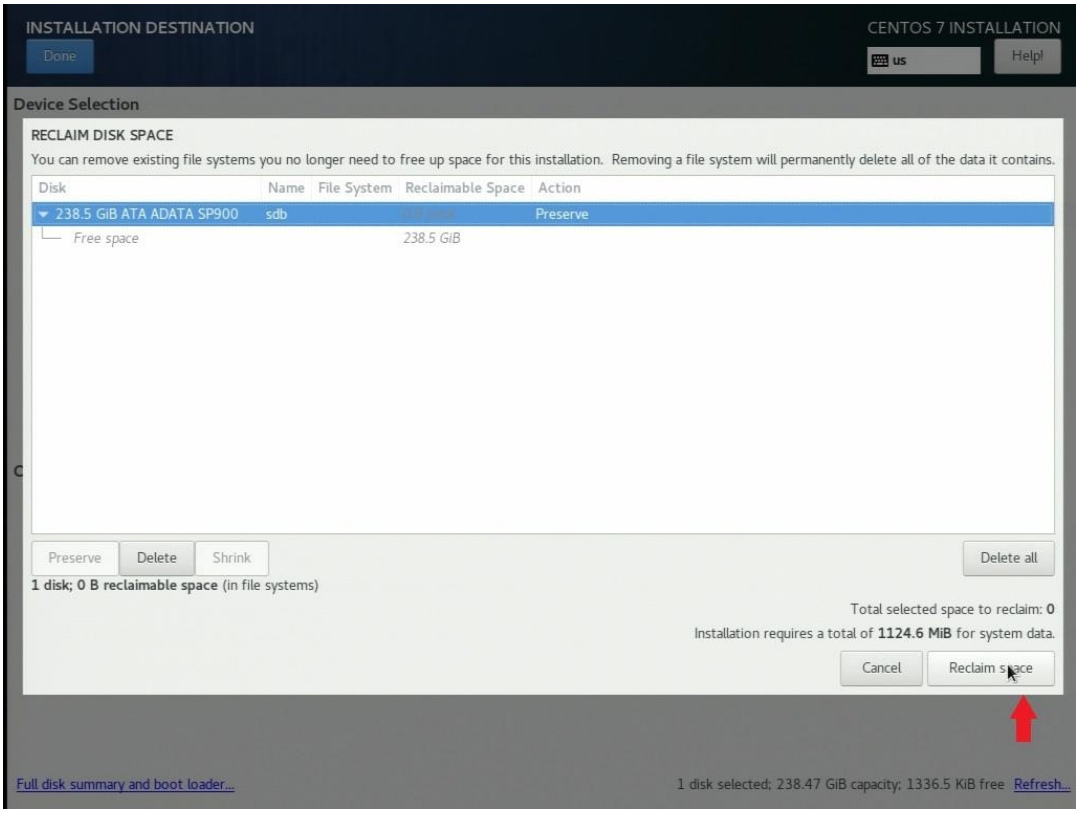


2) Select the hard disk where CentOS needs to be installed, and then click Done.

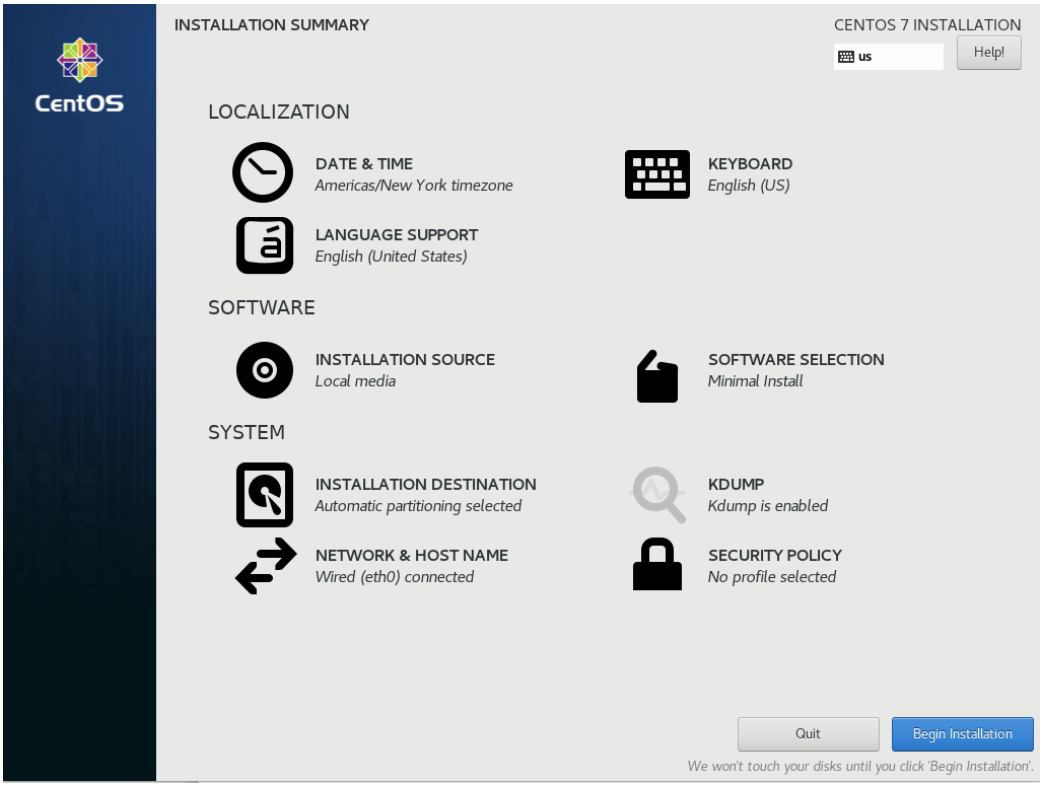


2.2.3.1 If the hard disk does not have any partitions

1) Click "Reclaim space", and the installer will create partitions automatically.

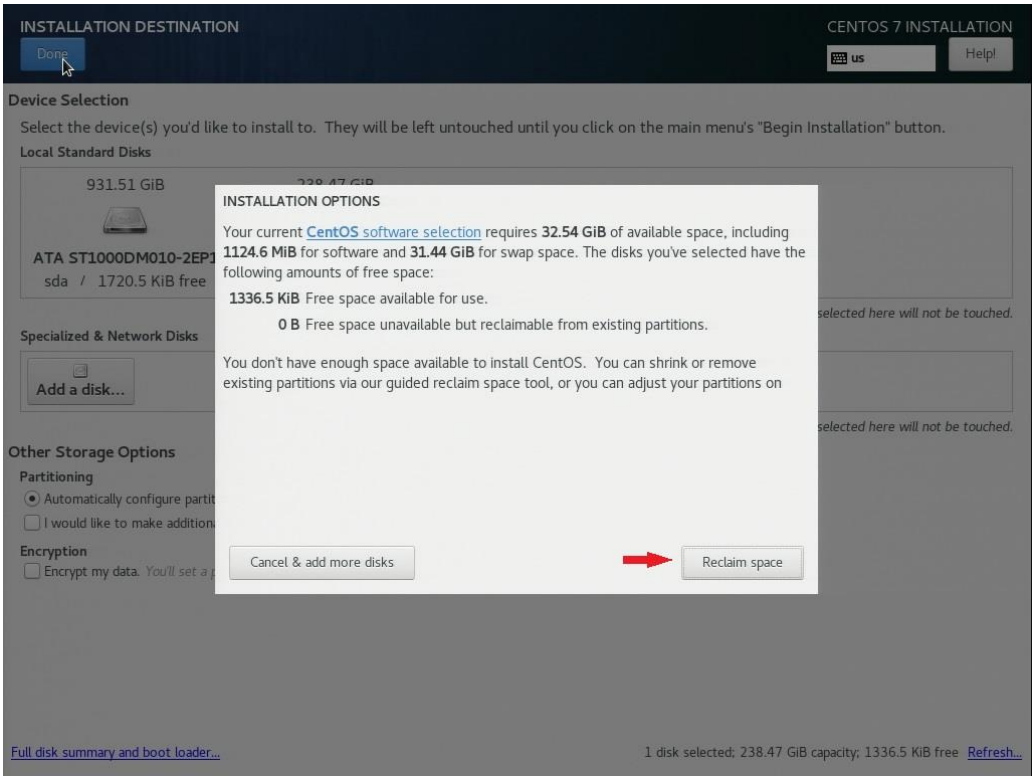


2) You will return to this interface after clicking "Reclaim space".



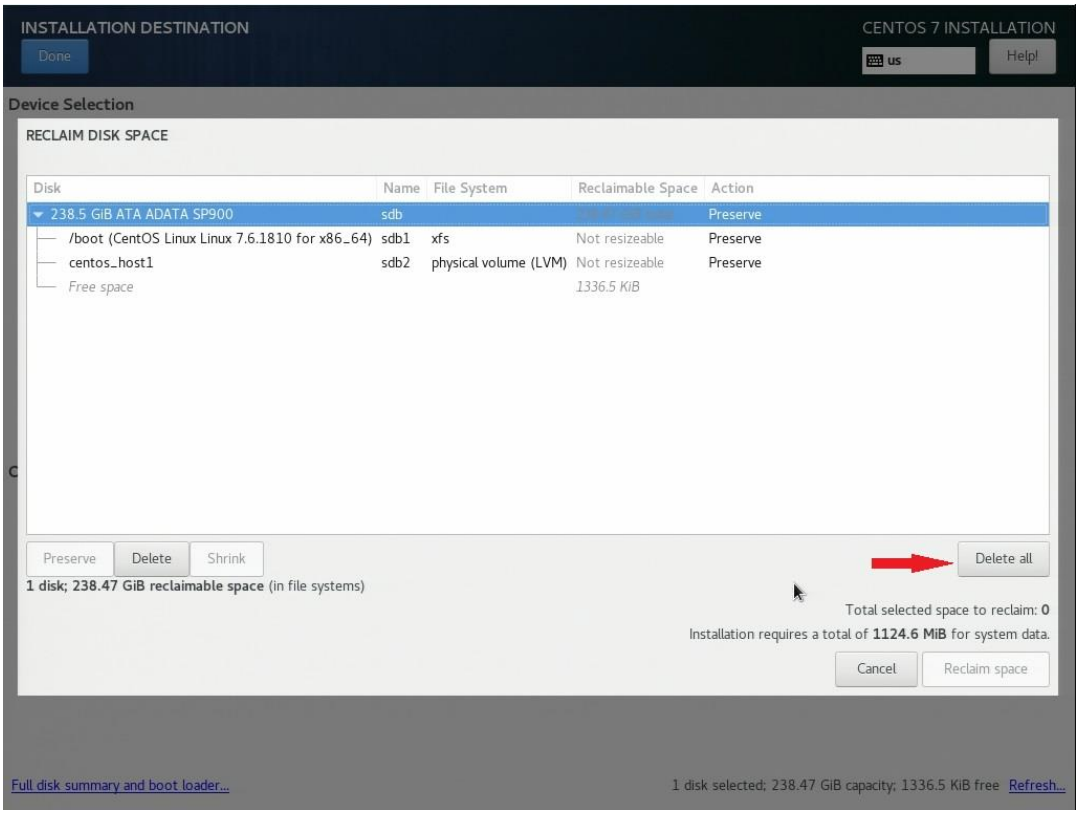
2.2.3.2 If the hard disk has any partitions

1) When the remaining partition is not enough for installing CentOS, the "INSTALLATION OPTIONS" windows will prompt. Click "Reclaim space".

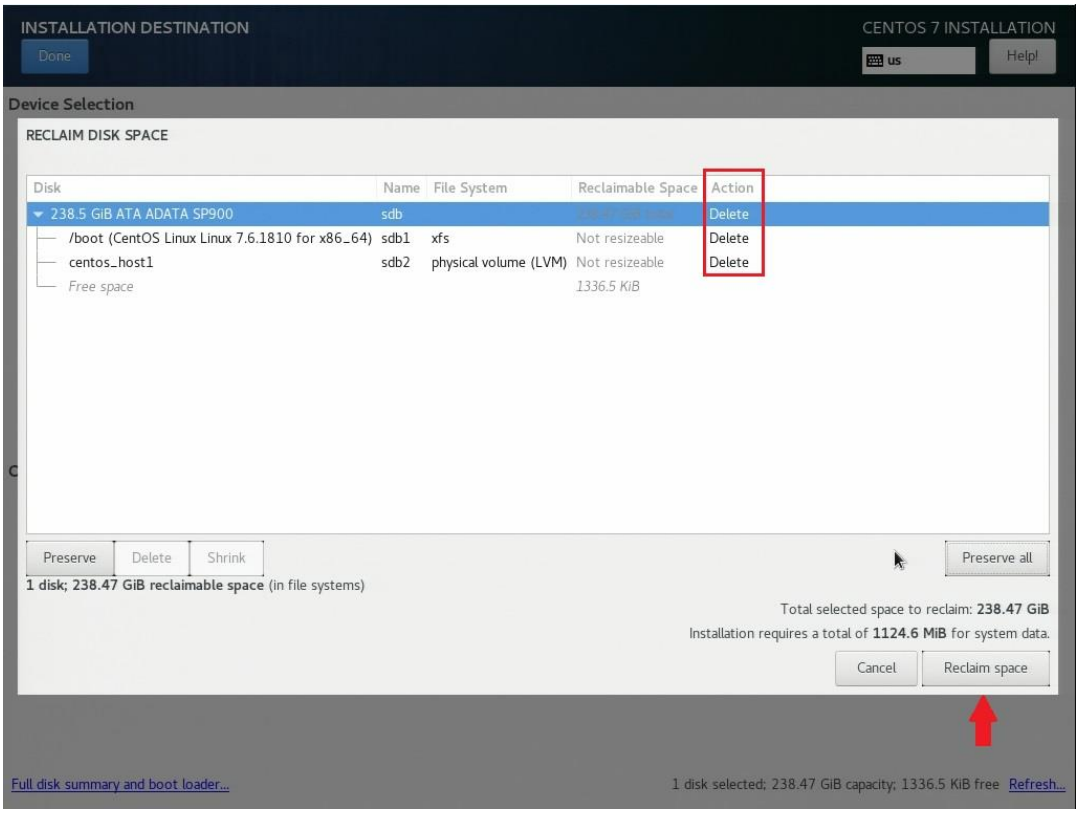


2) Click "Delete all" to delete all partitions.

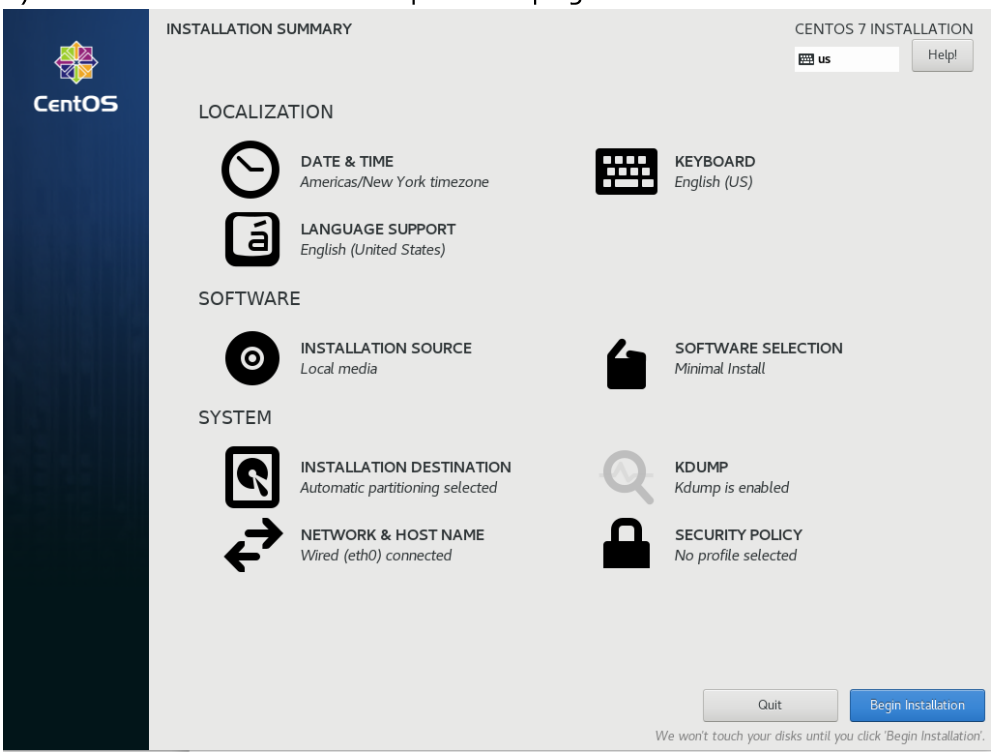
➢ Make sure the data is backed up before deleting the partition!



3) The "Preserve" option under the "Action" tab has been changed into "Delete", and then click "Reclaim space".



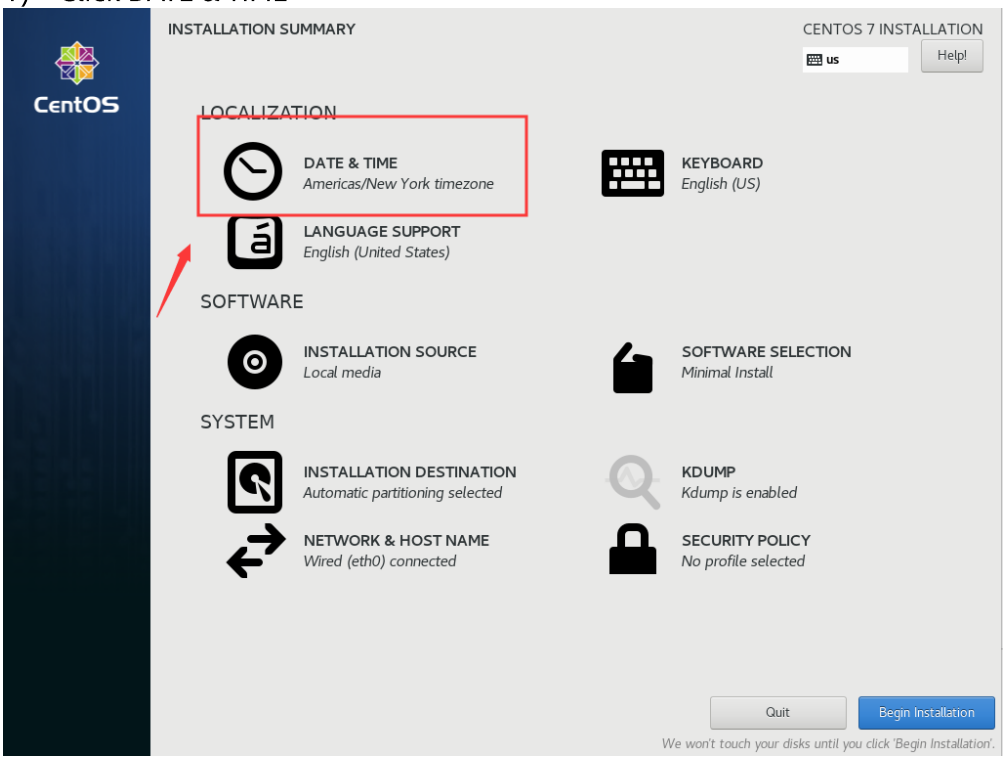
4) You will then return to the previous page for disk selection.



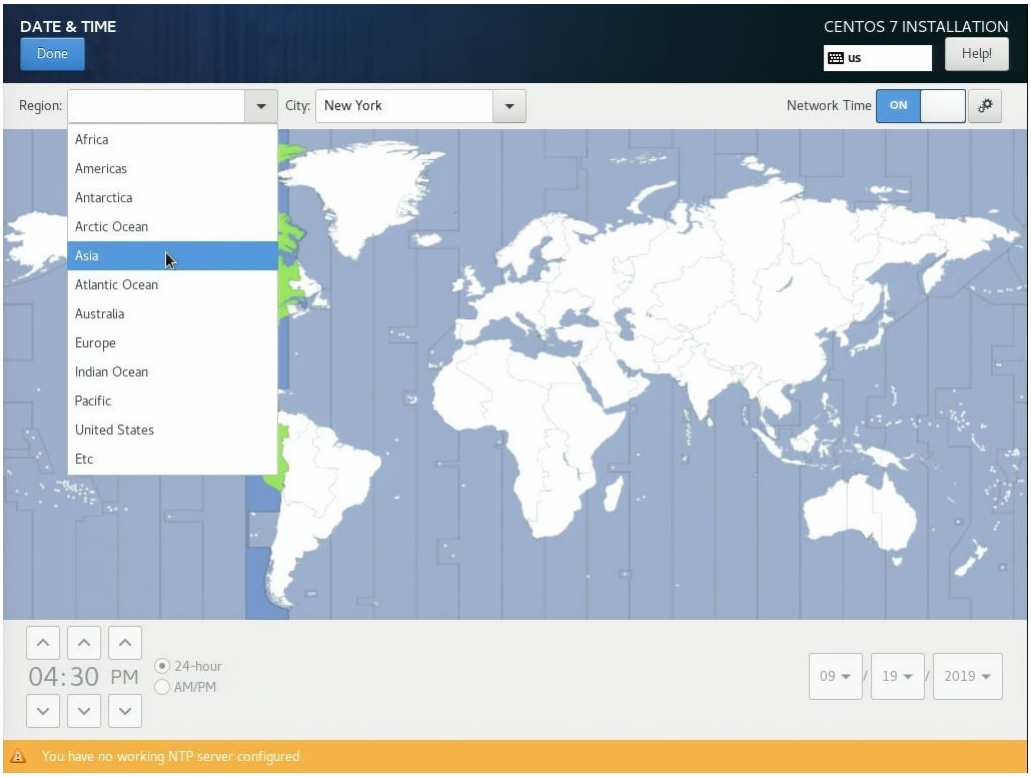
2.2.4 Set time zone

- Note: Do not set the time zone until the other settings are completed, and check the time zone before starting the installation. Incorrect time zone setting may cause vCertix installation failed.
- The time zone selected in this example is "Shanghai, China".

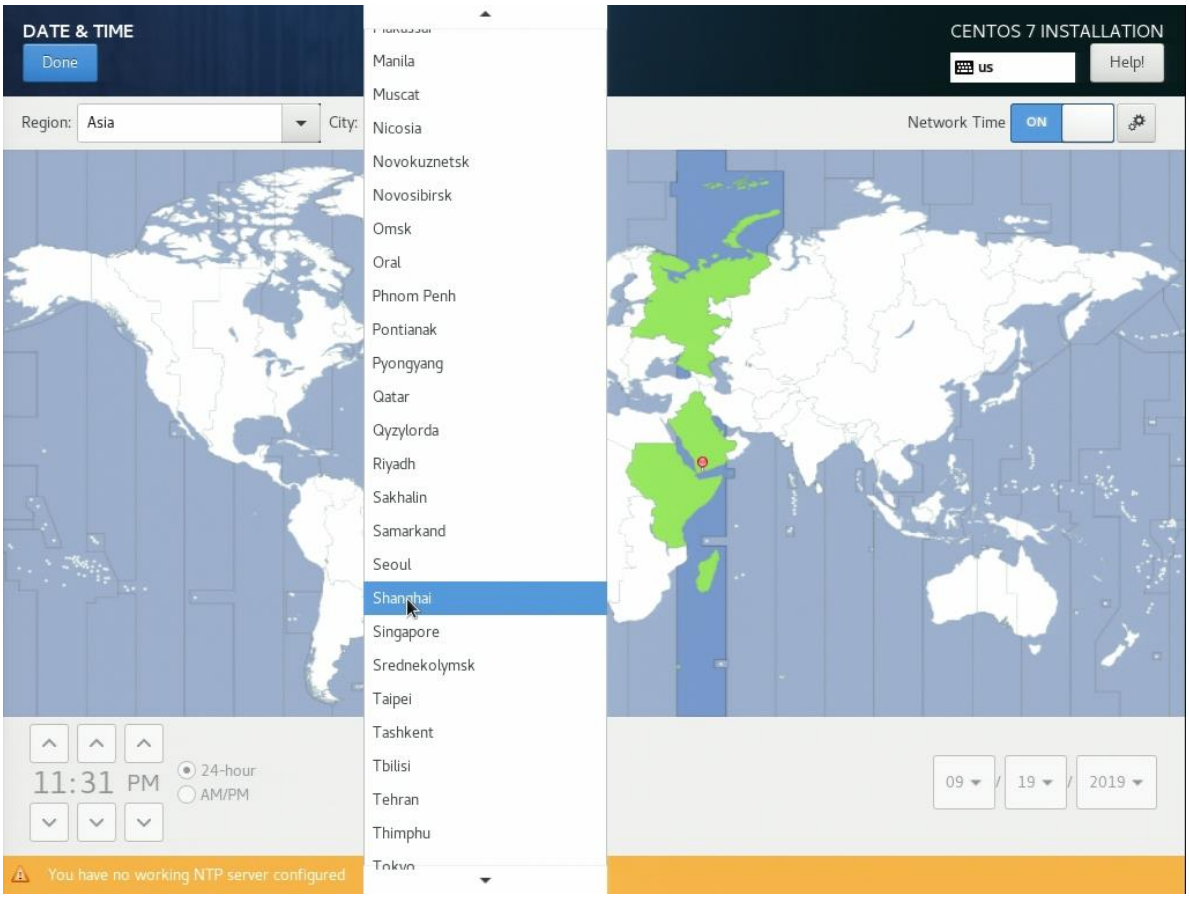
1) Click DATE & TIME



2) Click the selection box after "Region" and select your region;



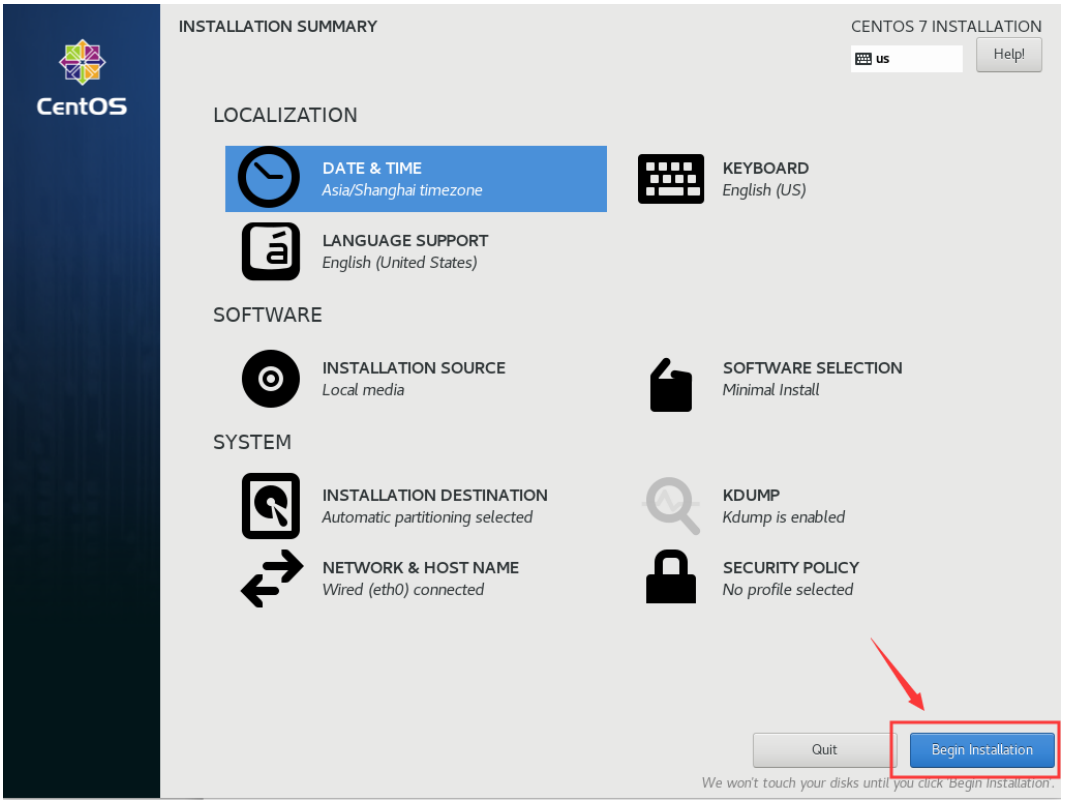
3) Click the selection box after "City" and select your city;



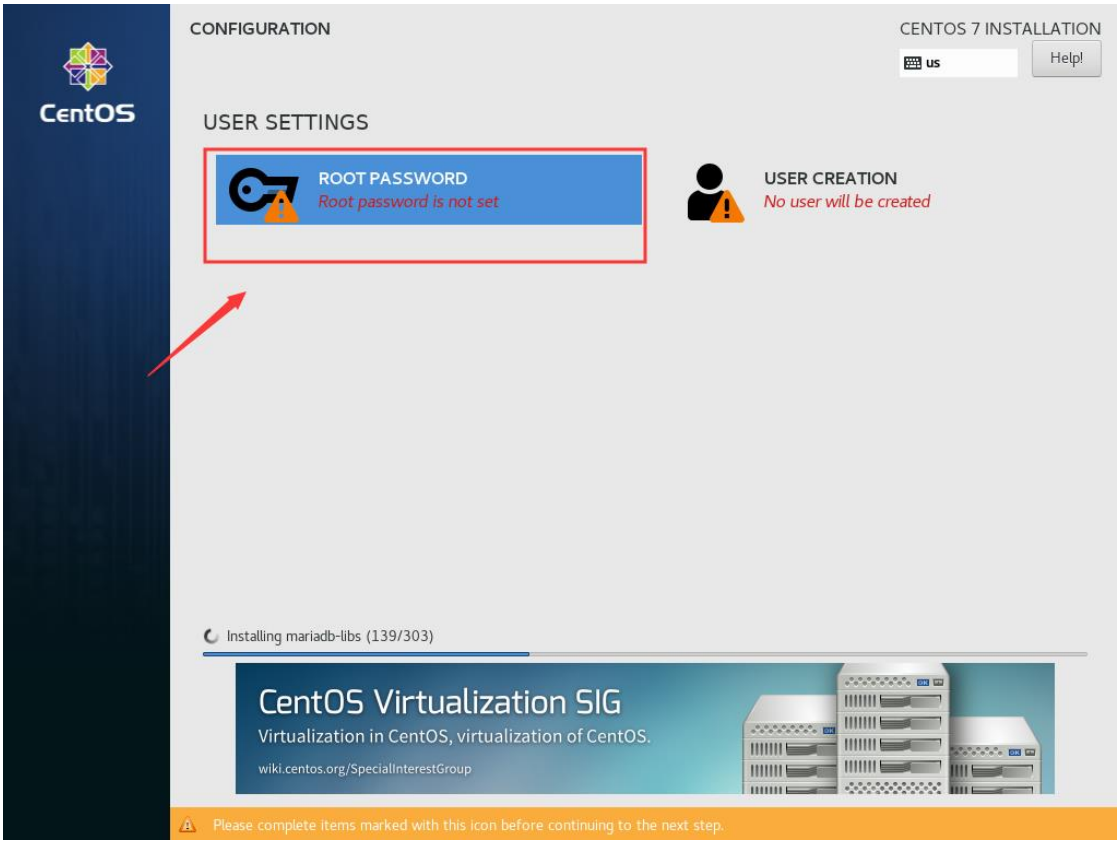
4) You can also click on the host country on the map.

2.2.5 Install CentOS into the hard disk

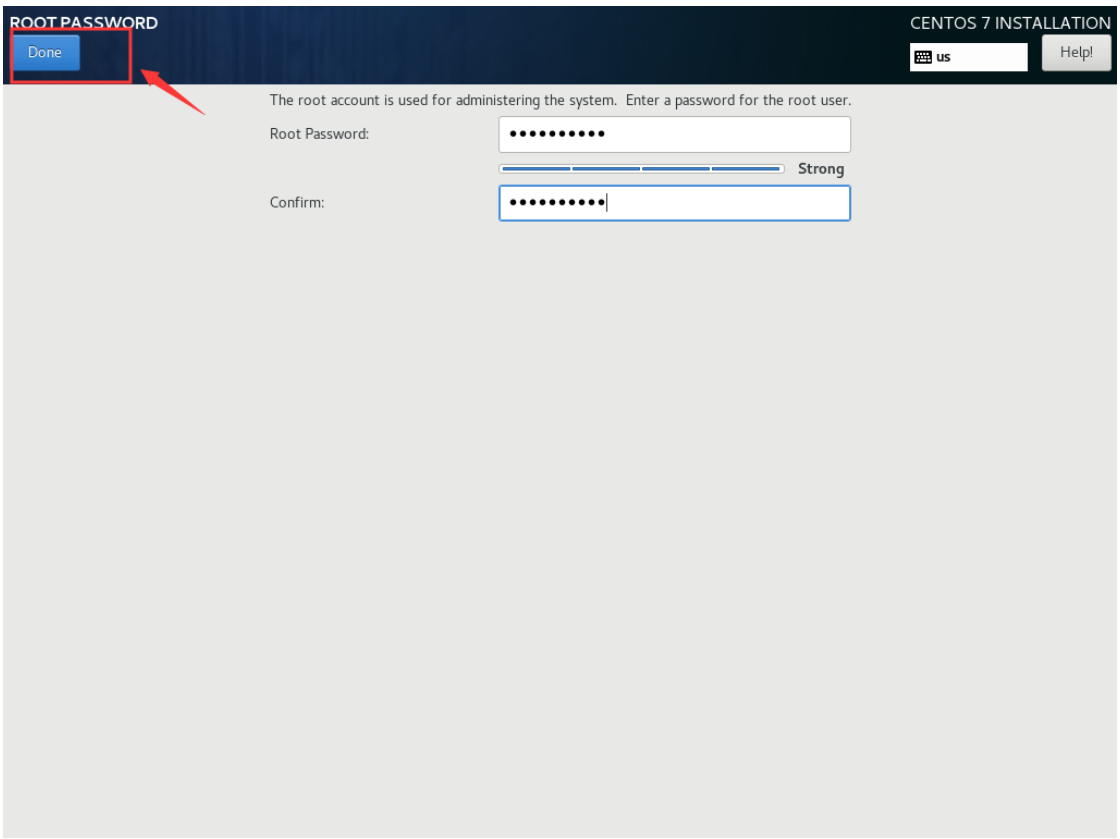
1) After completing all the above steps, click Begin Installation to start installing CentOS.



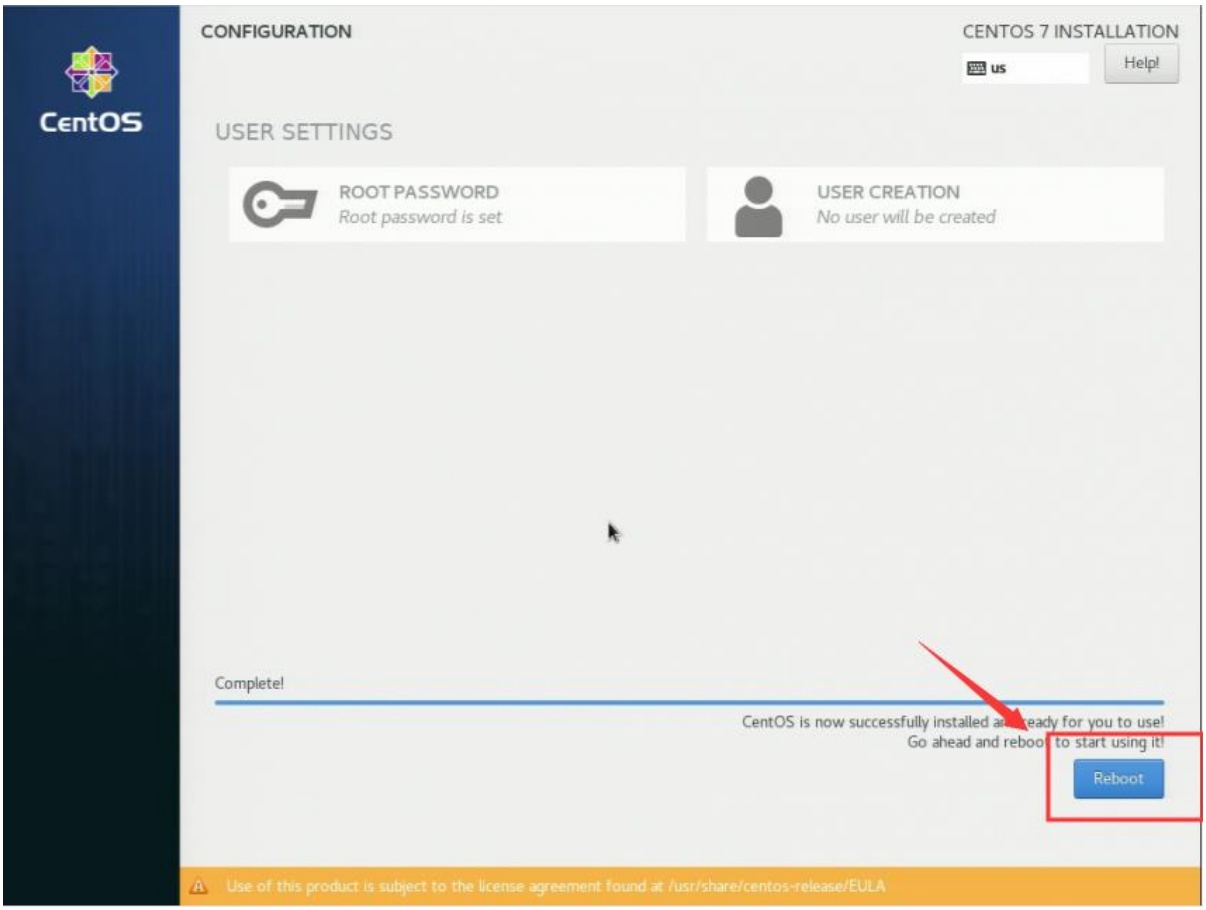
2) Click the key icon to set the password for root user.



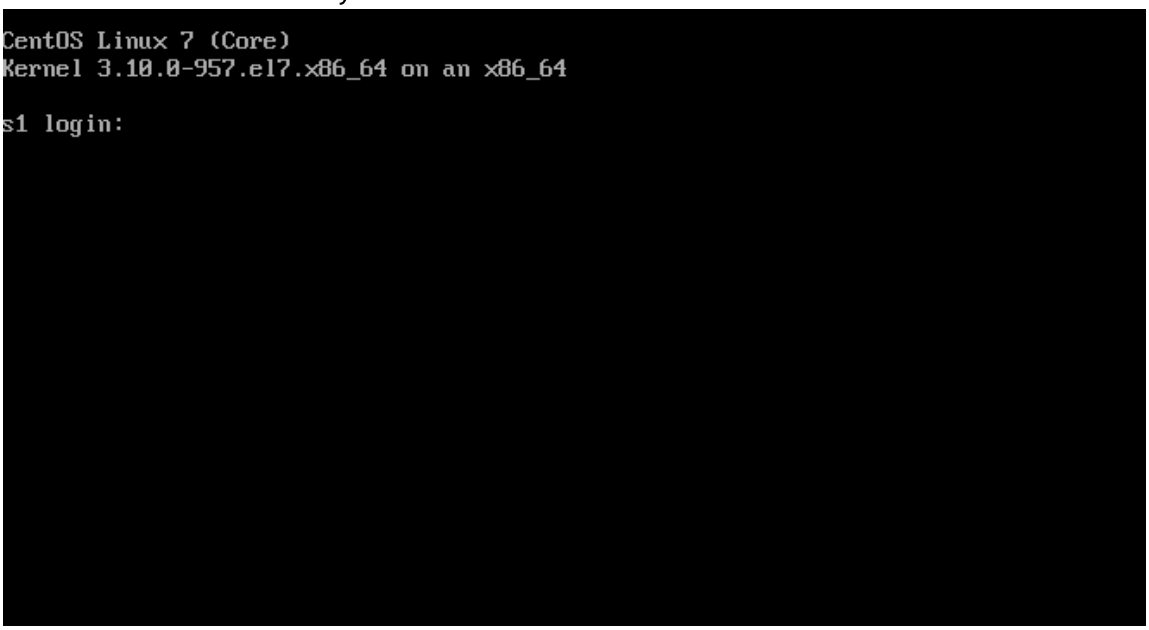
3) After finishing entering, click Done and wait for CentOS to be installed.



4) After the installation is completed, click "Reboot" to restart the server, and unplug the CentOS installation USB disk.



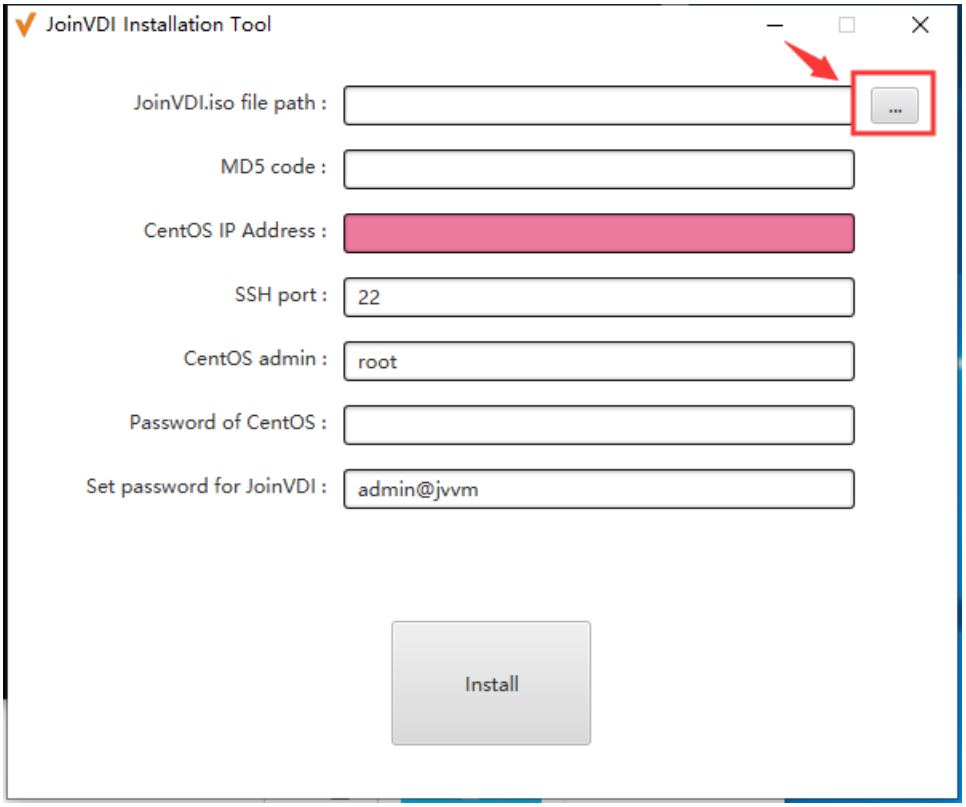
5) The page is shown after restarting, indicating that you have successfully entered the CentOS system.



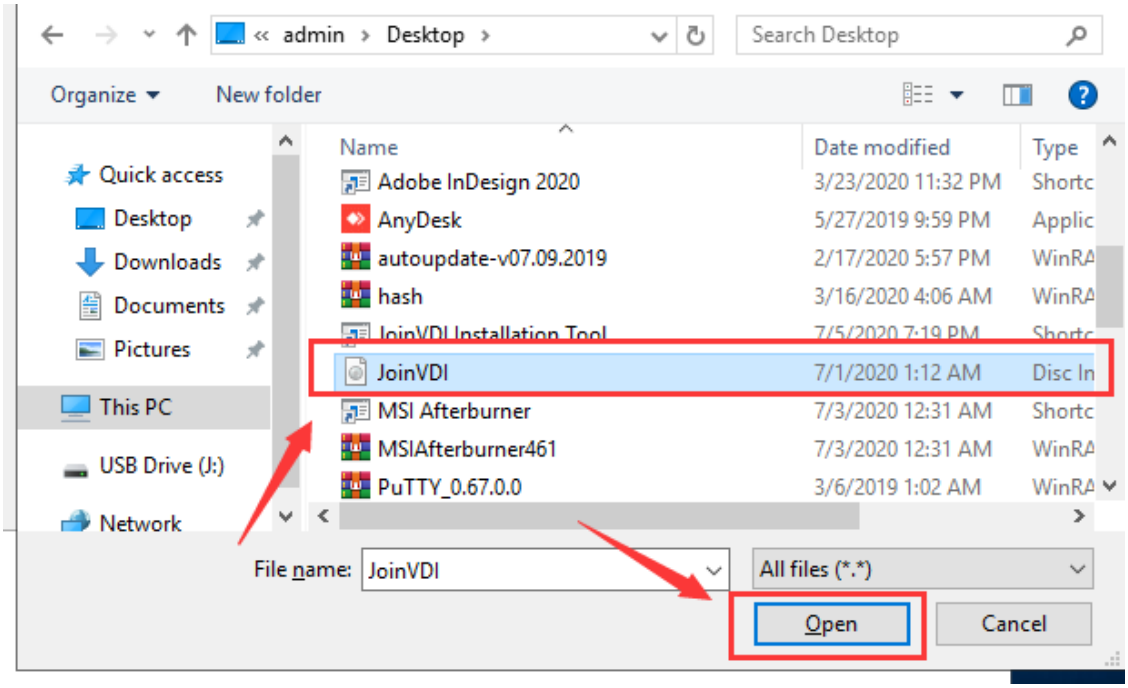
3. Install JoinVDI

- CentOS server IP address in this example: 192.168.1.13

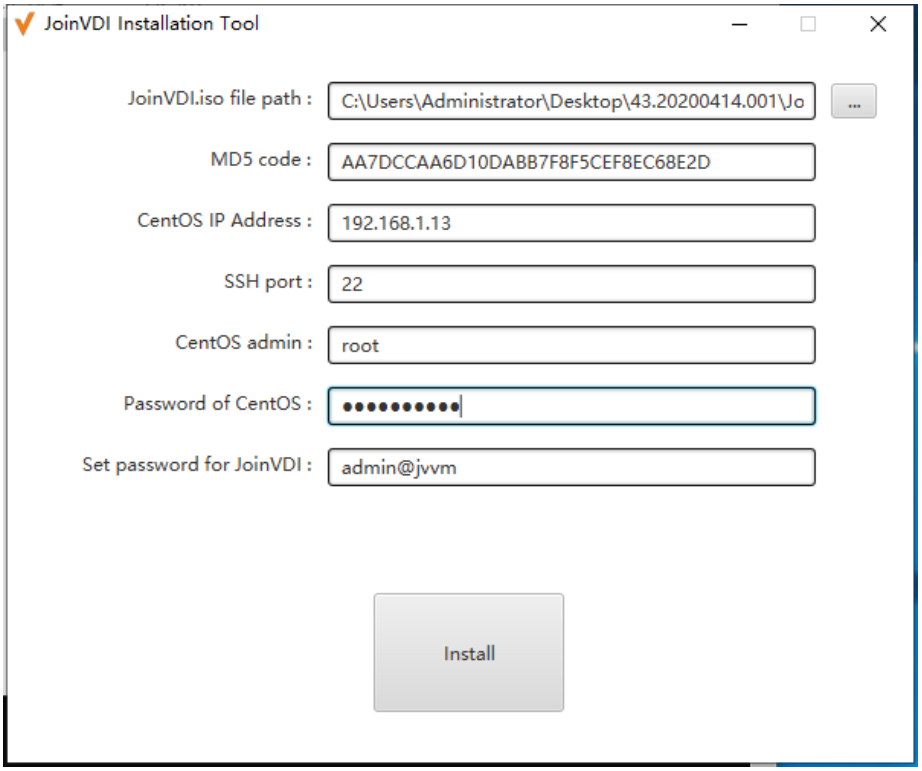
1) Run the JoinVDI Installation Tool on the Windows machine. Click " ..." .



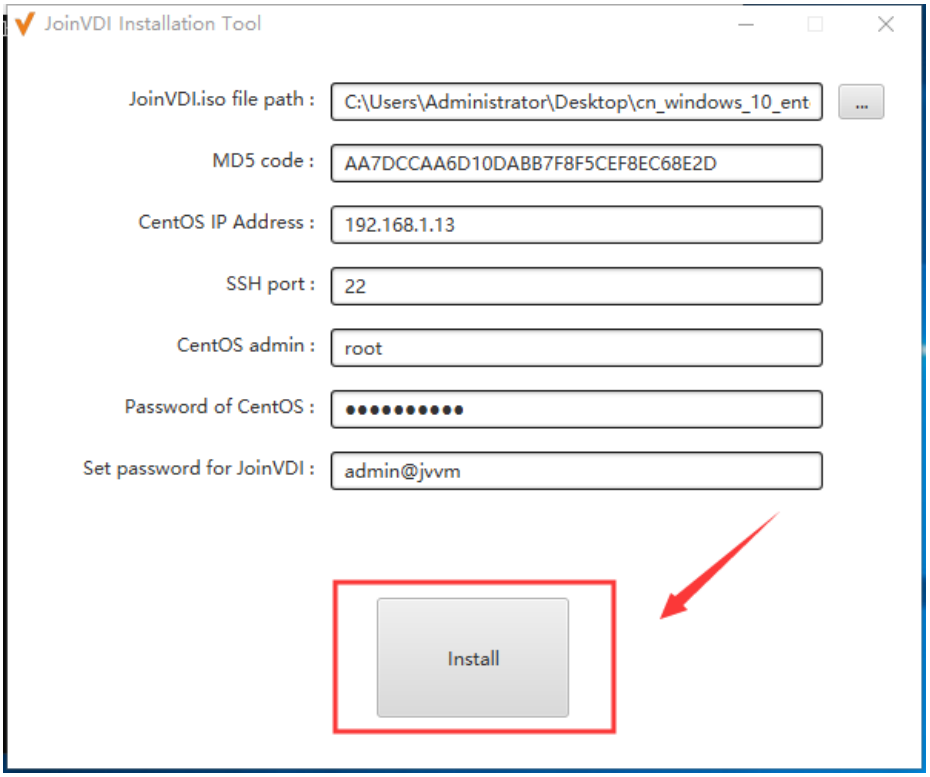
2) Select "JoinVDI.iso" image and click" Open" .

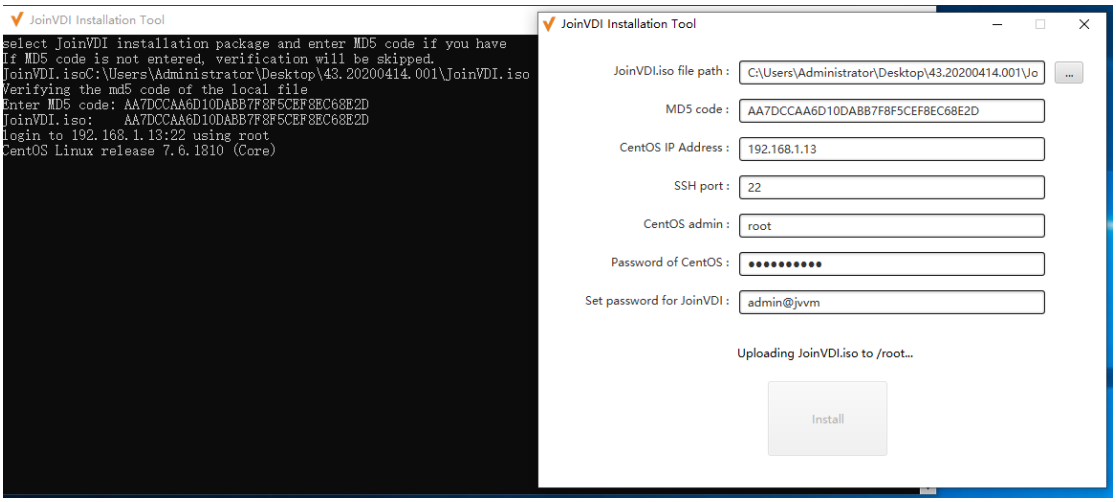


3) Enter the MD5 code to ensure the installation package is fine. And enter the IP address of the CentOS server. Leave the SSH port as default of 22. Default CentOS admin username is "root". Enter the CentOS password and set admin password for JoinVDI platform.

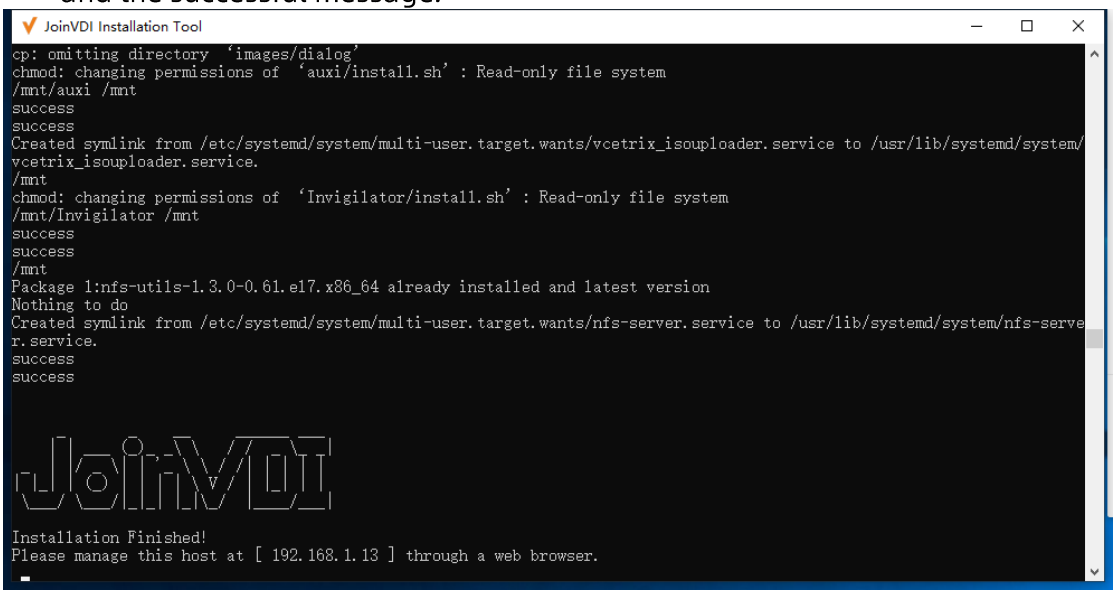


4) Click "Install" to start installation.





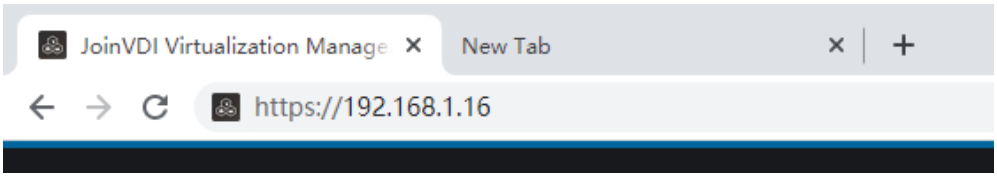
5) When the installation is successful done, you may see the "JoinVDI" characters and the successful message.



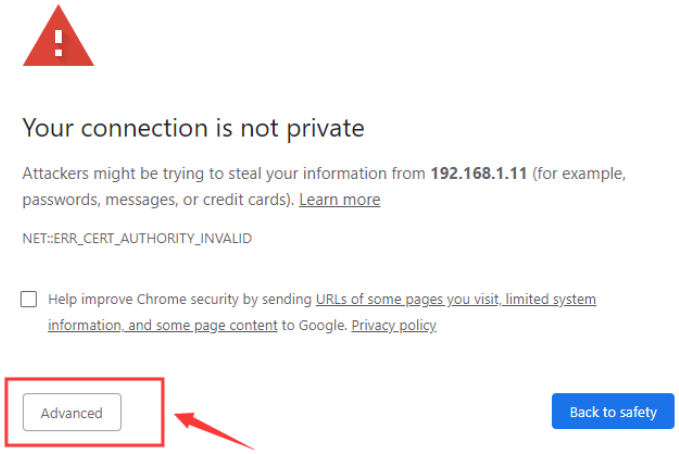
4. Configure JoinVDI

4.1 Enter JoinVDI web management console

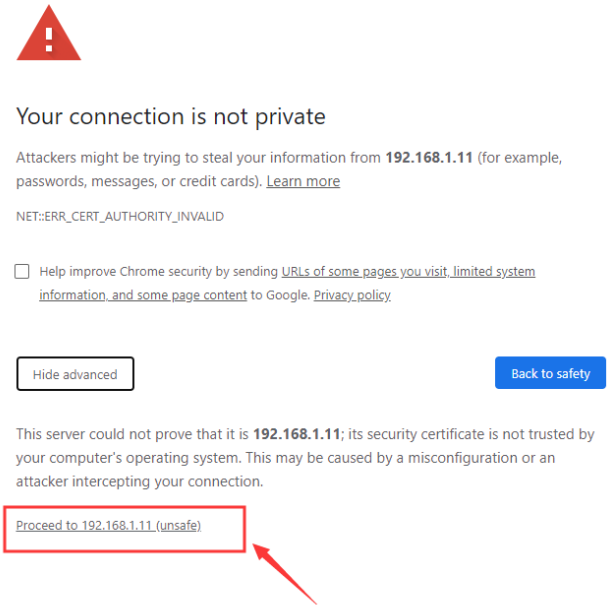
1) Run a browser and enter CentOS' IP address in the search bar.



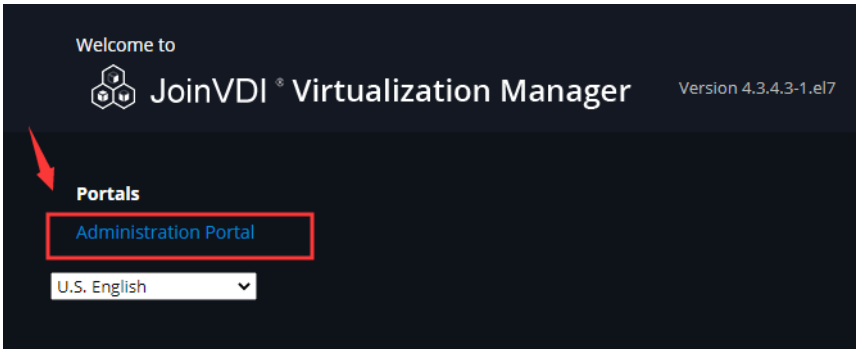
2) Ignore the risk prompt, click "Advanced" .



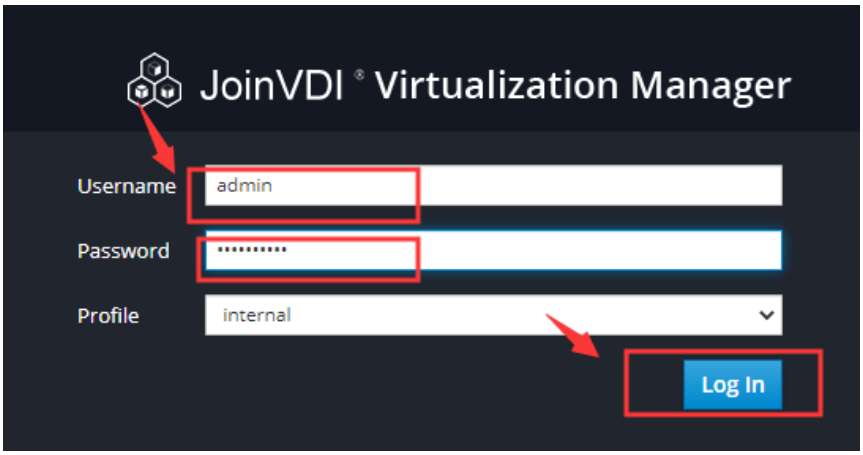
3) Accept risk and proceed to the site.

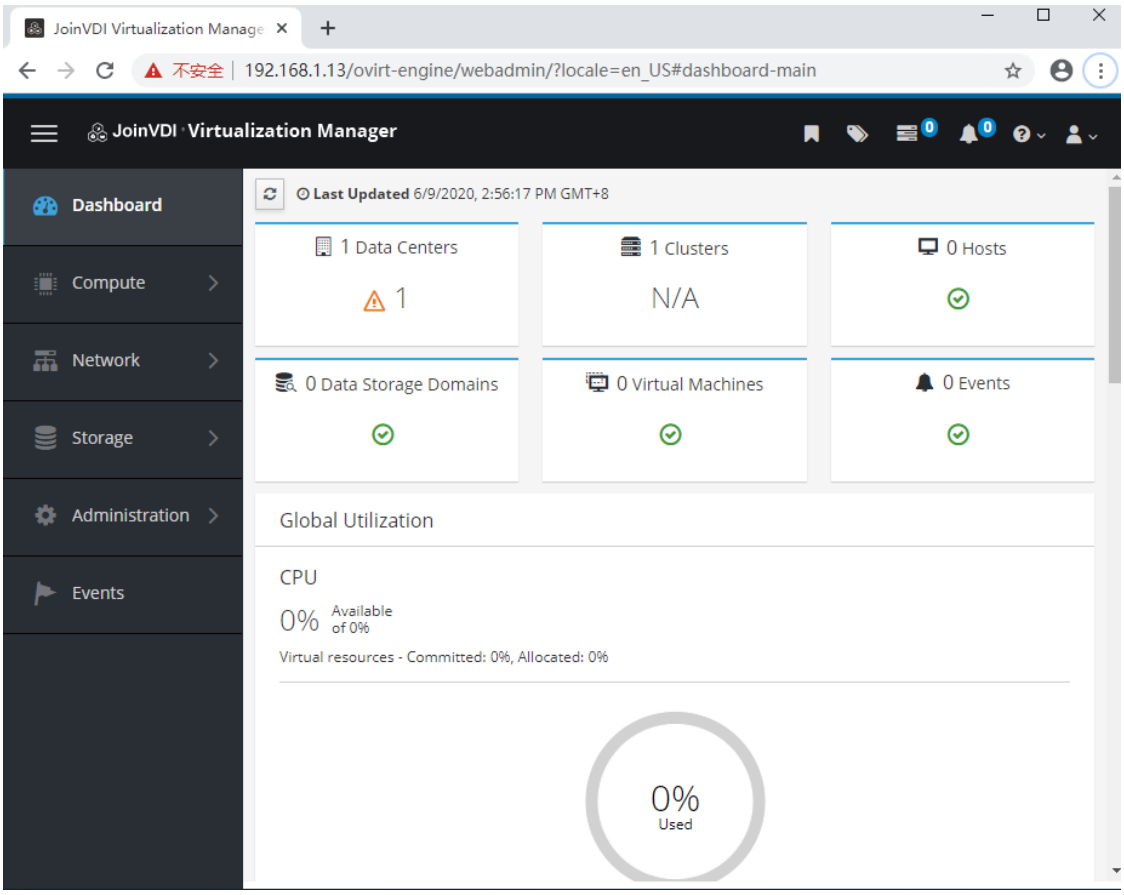


4) Click "Administration Portal" at the bottom of the page.



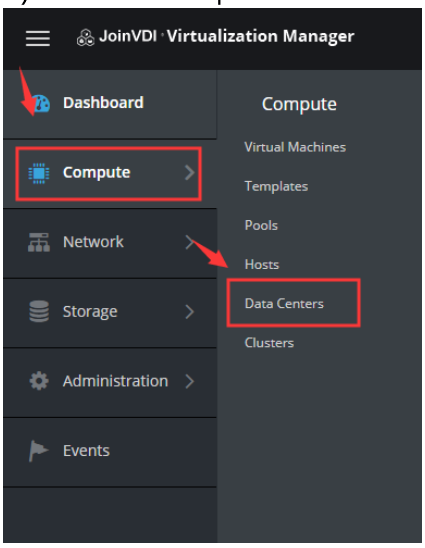
5) Enter admin username and password, and click "Login".



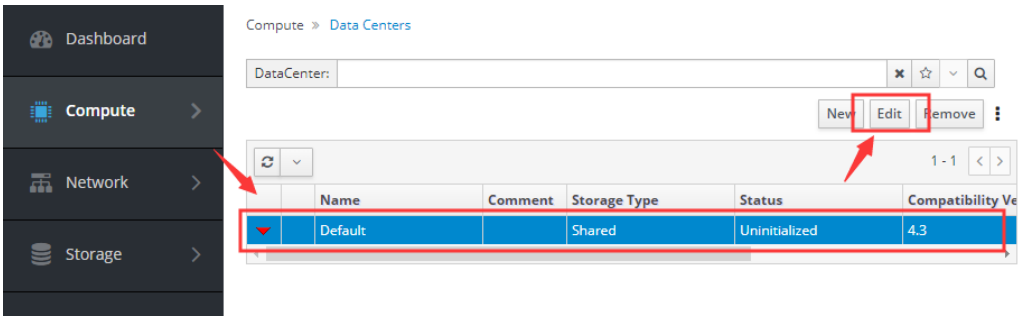


4.2 Set data center

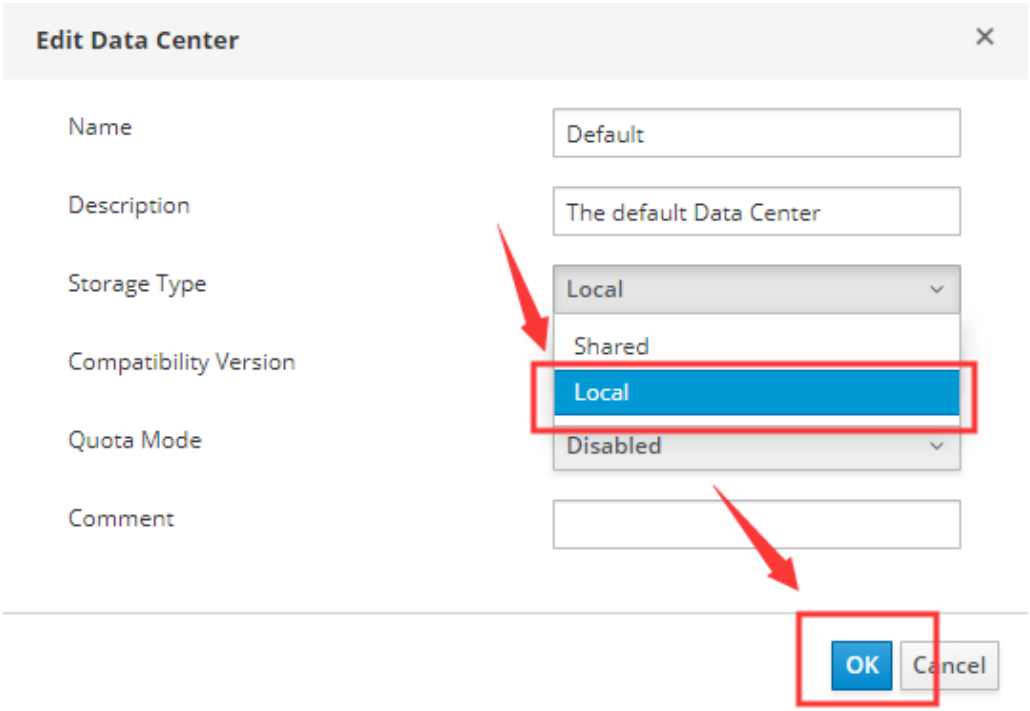
1) Click "Compute" and then " Data Centers" on the left.



2) Click "Edit".

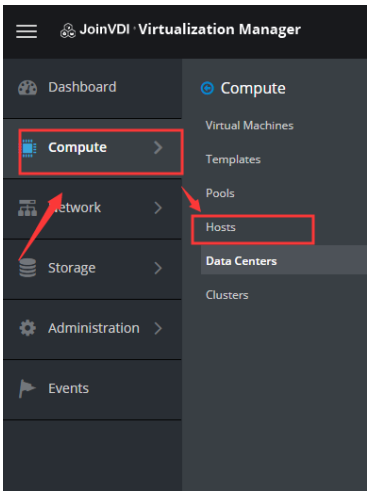


3) Change the storage type to "Local", and click "OK" after the change.

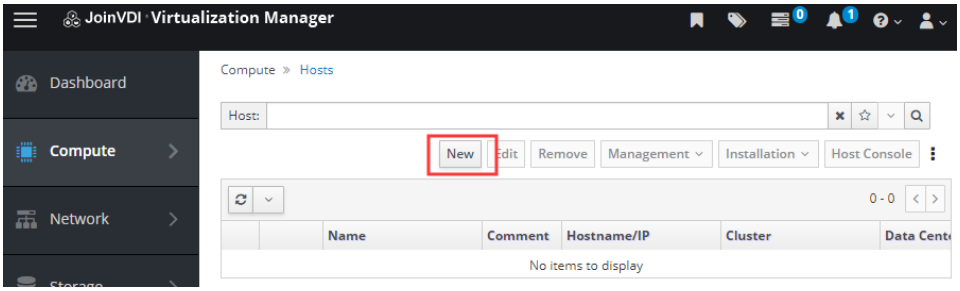


4.3 Add a host

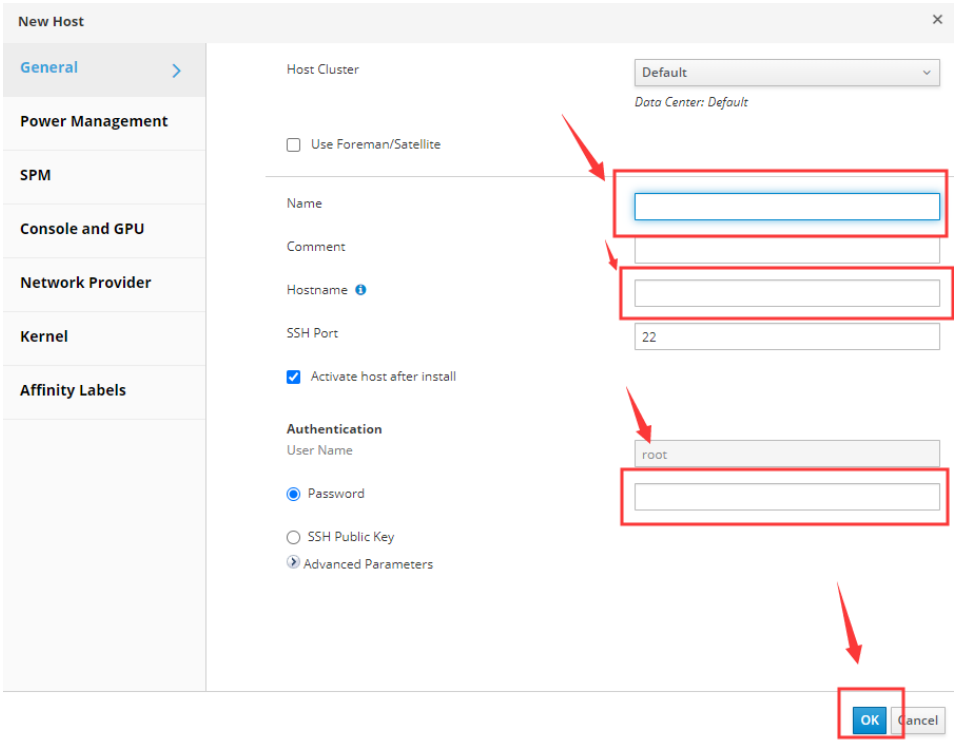
1) Click "Compute" and then "Hosts" on the left.



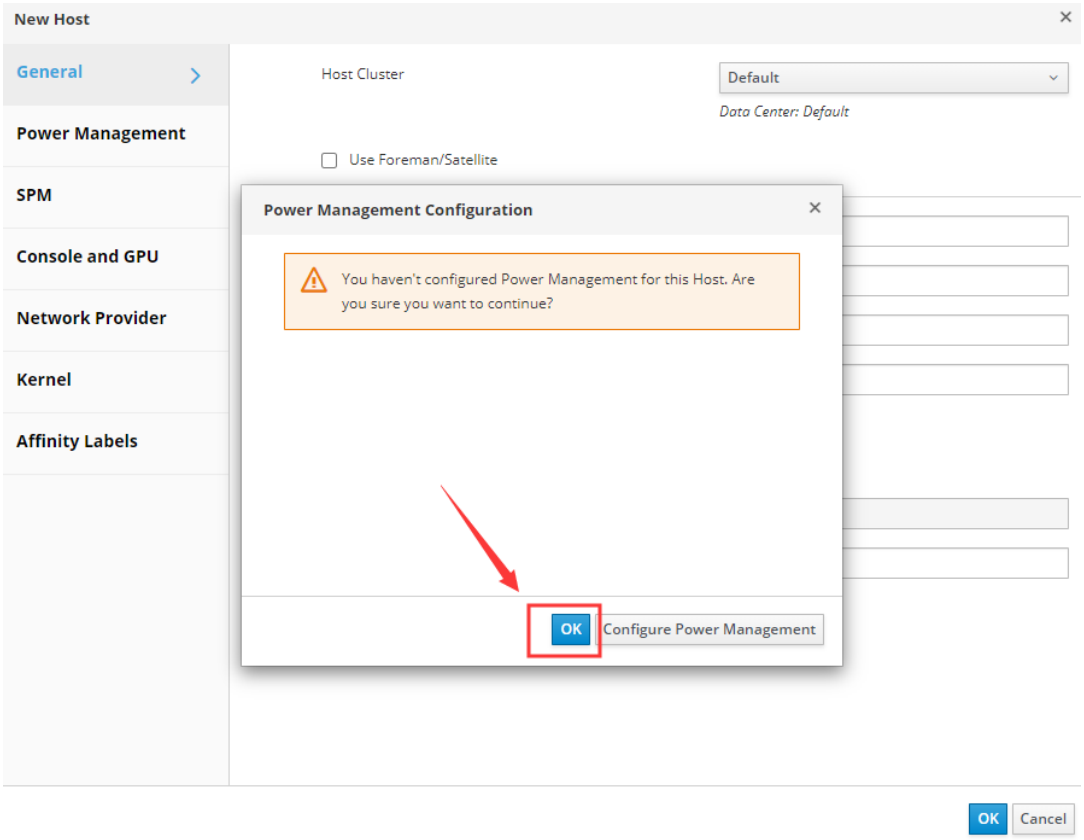
2) Click "New".



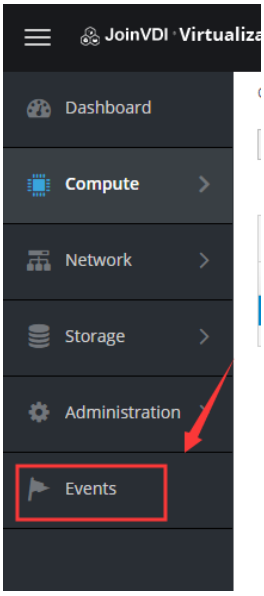
3) Enter a custom host name in the "Name" field, Centos server IP in the "hostname field", and password of the root user of the CentOS system in the "Password" filed, and then click "OK".



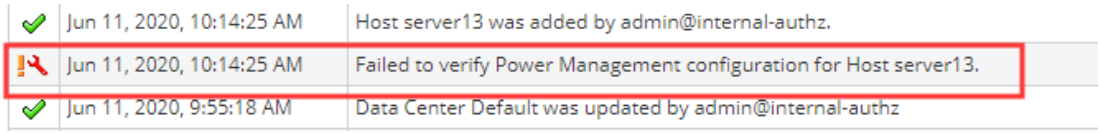
4) Ignore the power management configuration prompt and click "OK" to start installation.

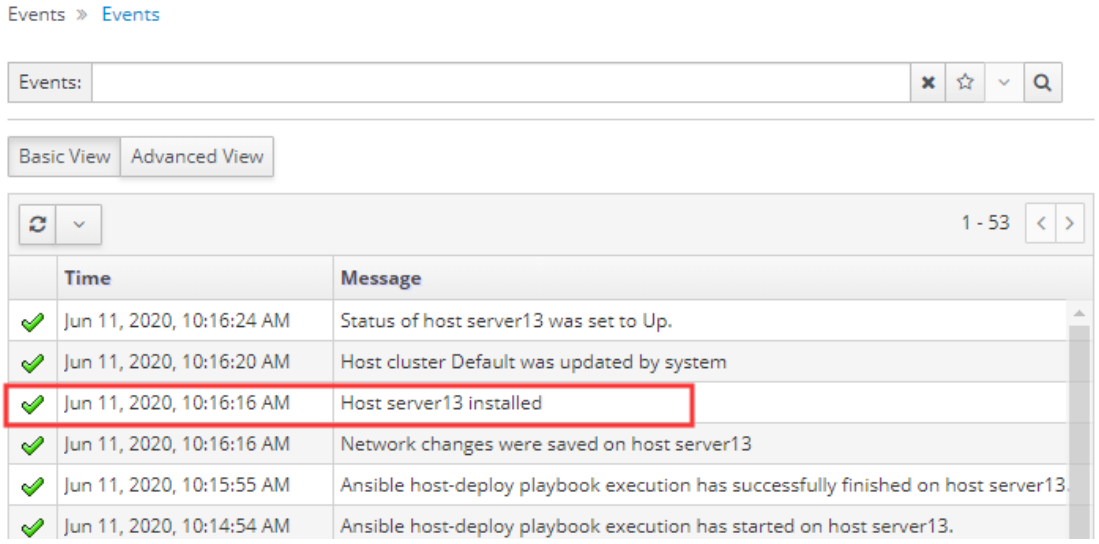


5) Go to the "Events" page to see the installation progress;

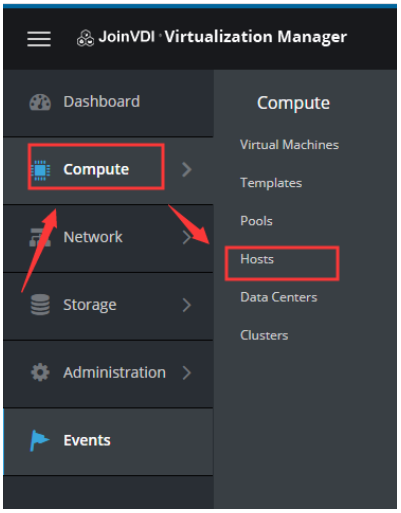


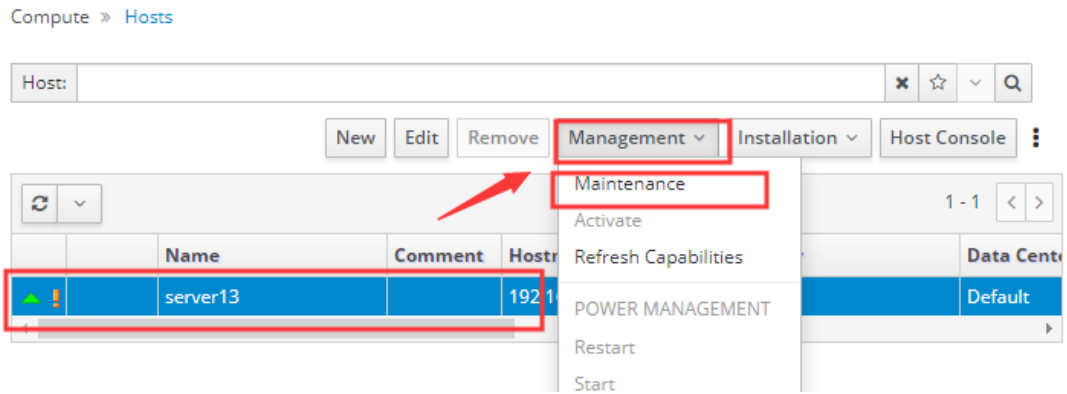
6) The installation is successful if there is no any errors at the " Event" page except for those about power management.



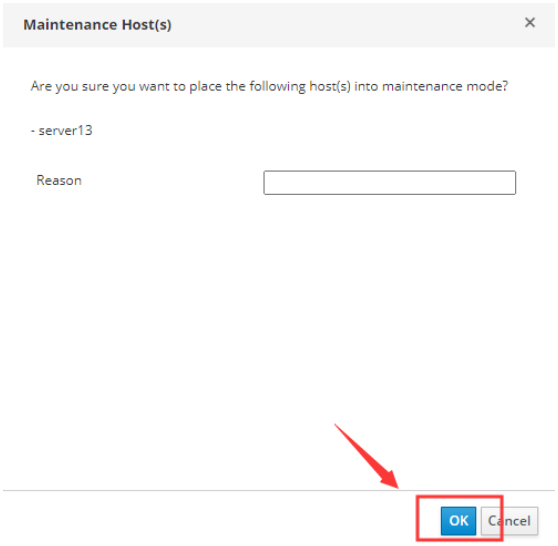


7) Click "Compute" → "Host" to return to the host page;click "Management" → "Maintenance".

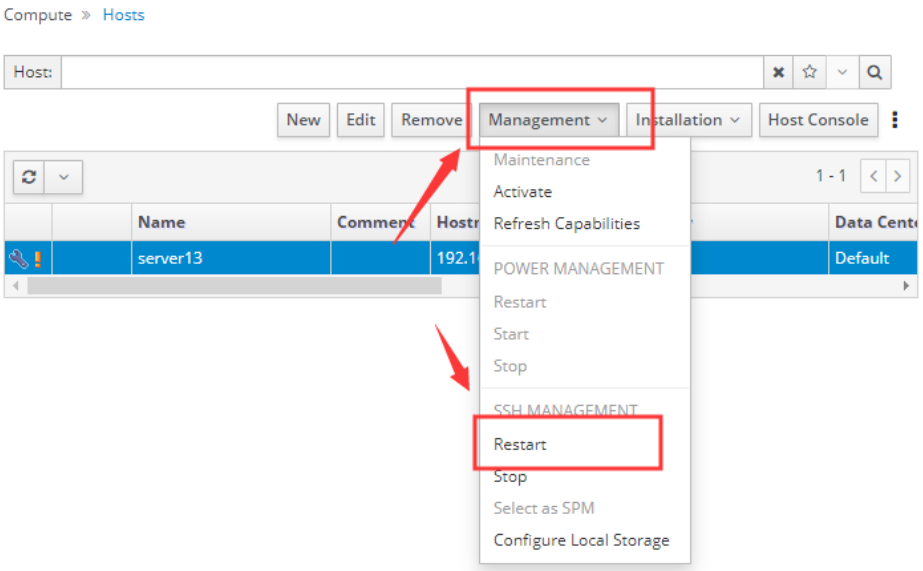


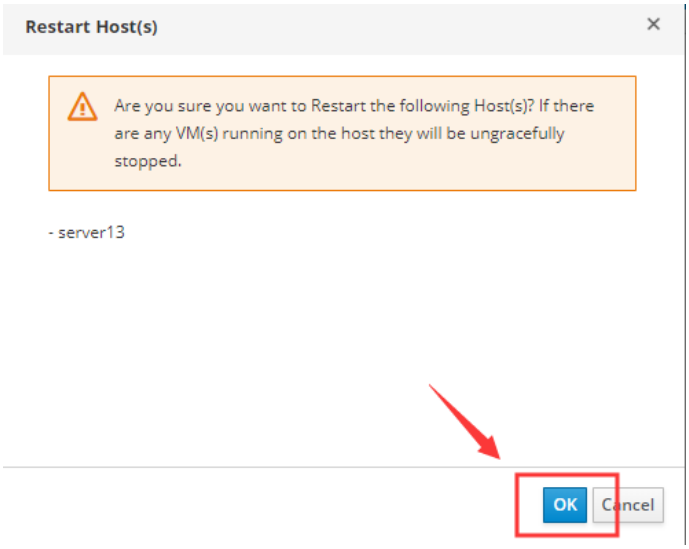


8) Click "OK" in the maintenance page.



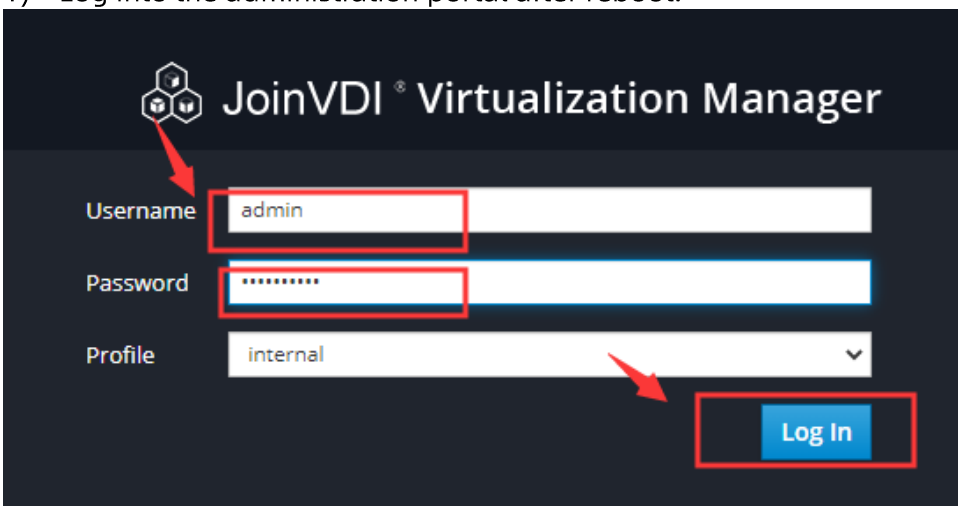
9) Click "Administration" → "Restart" → "OK" to restart the host.



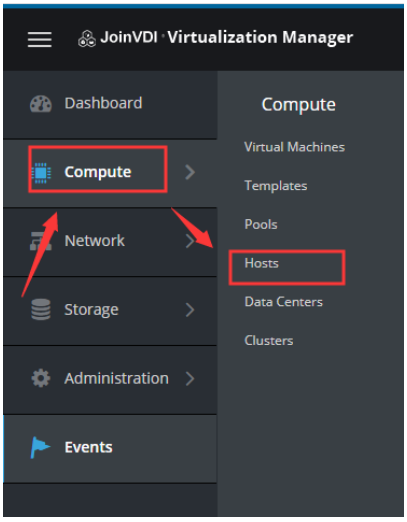


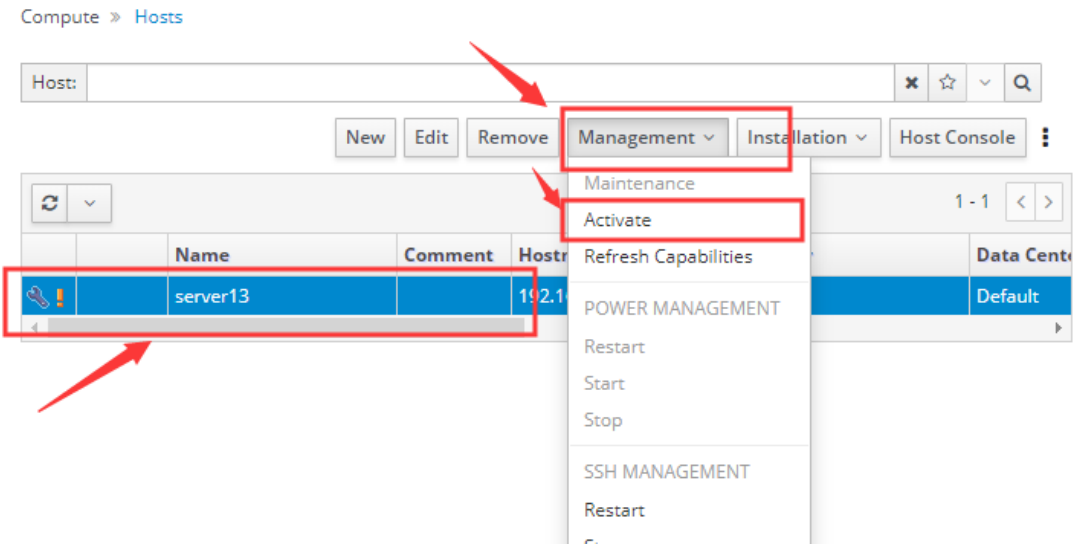
4.4 Add a storage domain

1) Log into the administration portal after reboot.

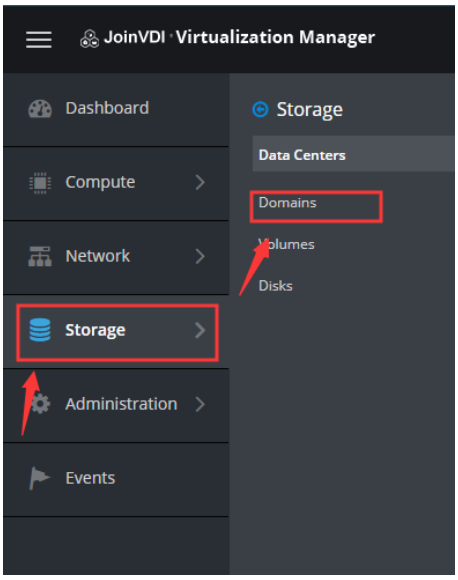


2) Click "Compute" → "Host" → "Management" → " Activate" .

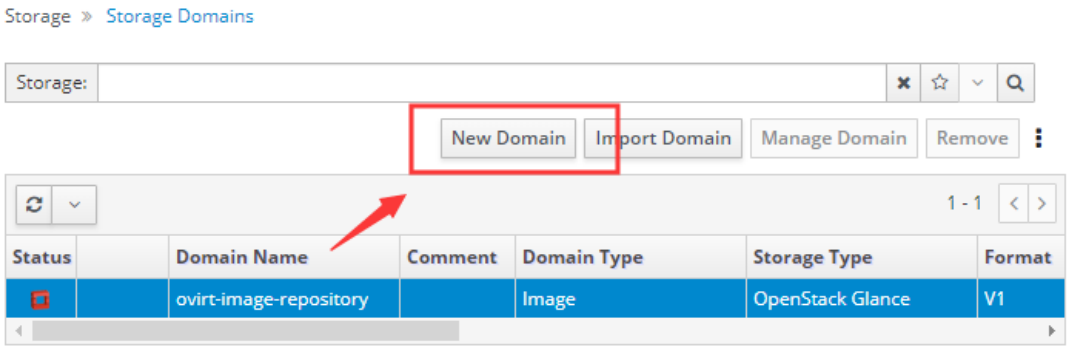




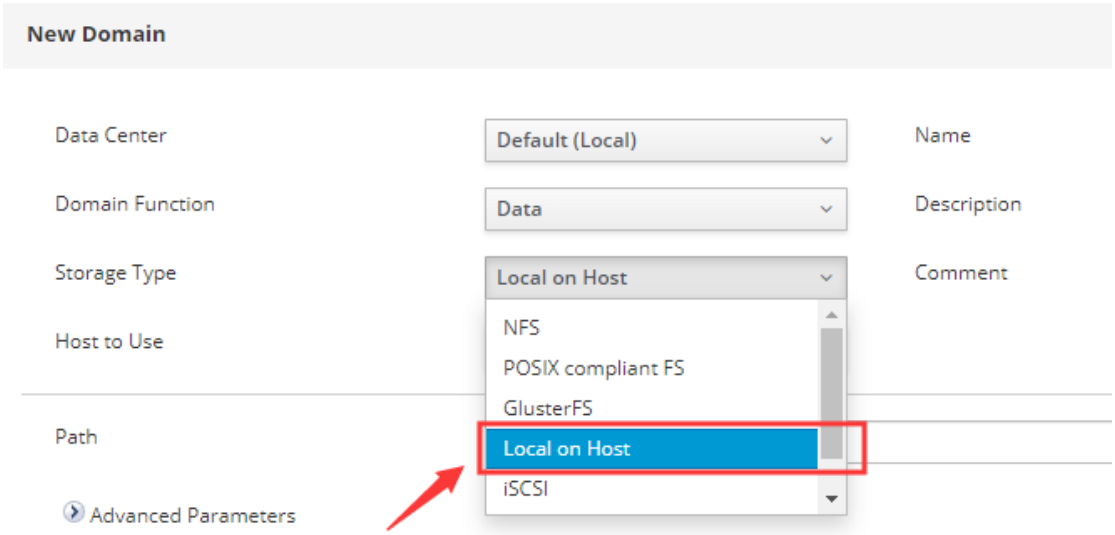
3) Click "Storage" → "Domains" on the left.



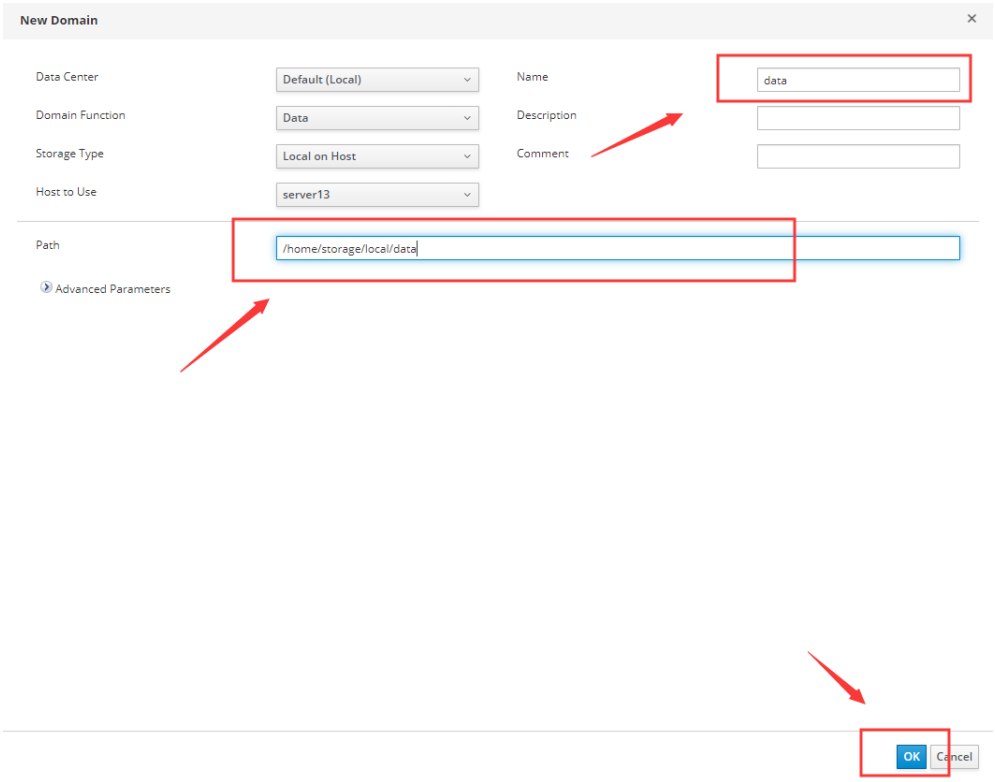
4) Click "New Domain".



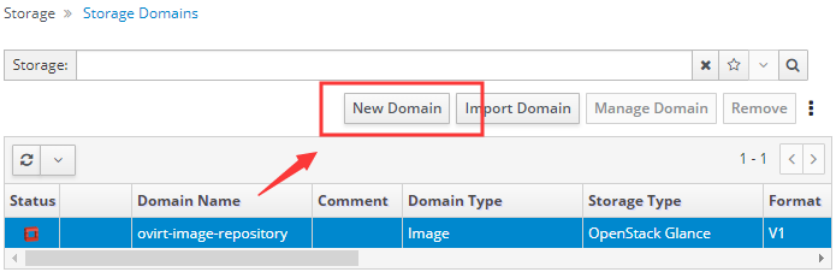
5) Change the storage type to "Local on Host".



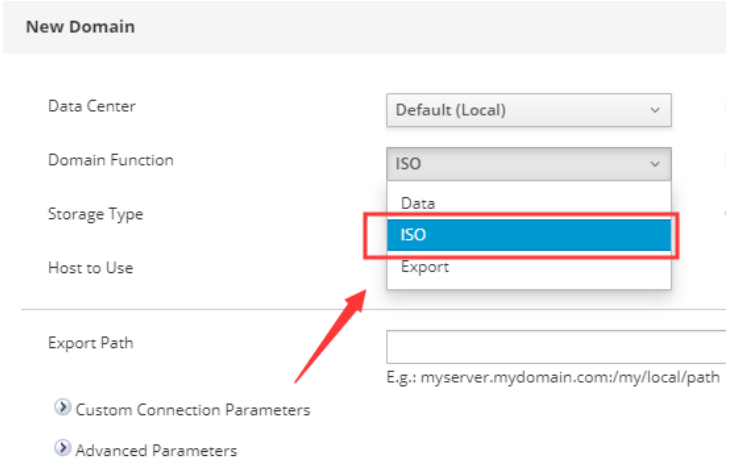
6) Enter a name, e.g., "LOCAL_DATA" , and enter "/home/storage/data" for in the "Path" field, then click "OK" .



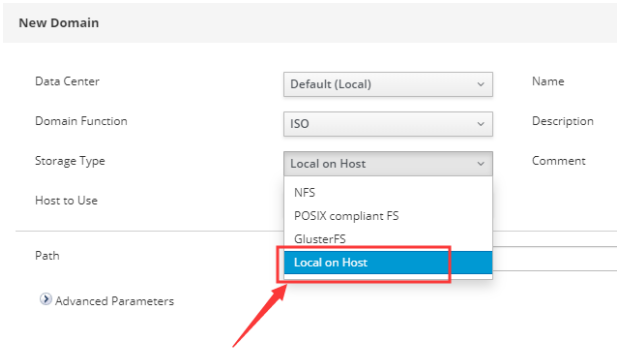
7) Click "New Domain" again.



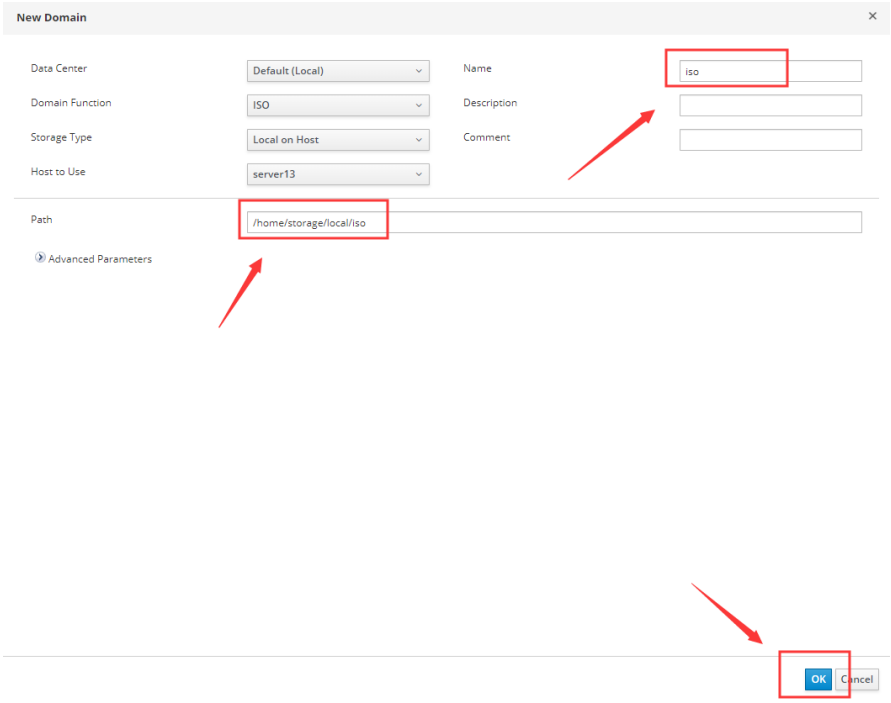
8) Chang "Domain Function" to "ISO" .



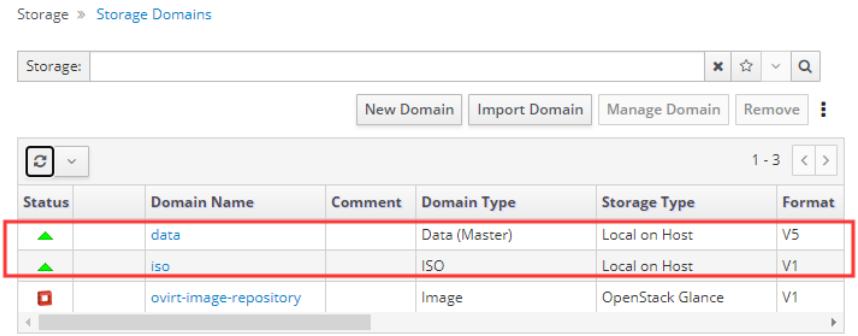
9) Change "Storage Type" to "Local Host".



10) Enter a name, e.g., "ISO", and enter "/home/storage/iso" in the "Path" field, and then click "OK".



11) Creation of storage domain is completed;



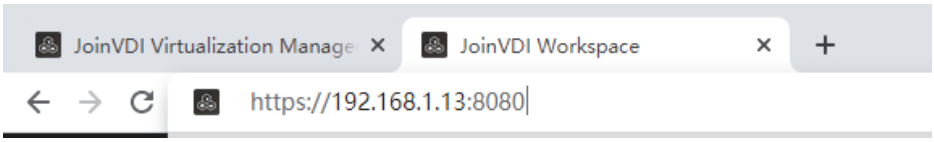
- When adding a storage domain, the name and path can be customized. When using a custom path, the path must exist.
- After installing JoinVDI, 3 directories "data/", "export/", "iso" will be created under/ home/ storage/
- If you need to use other hard disks as storage domains, please refer to Appendix: 1. Add Hard Disks.

5. Create virtual machines

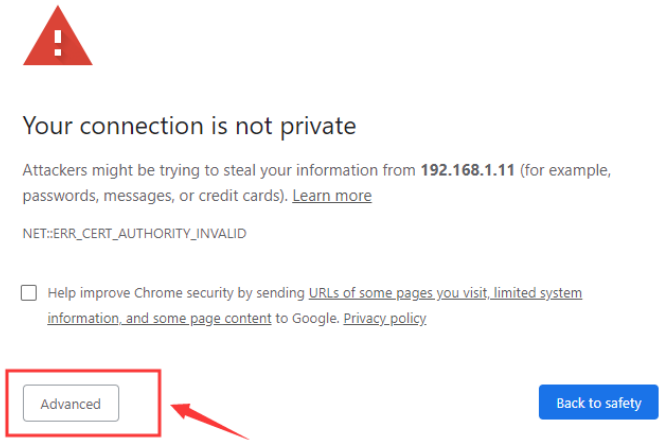
5.1 Create virtual machines

5.1.1 Upload ISO image

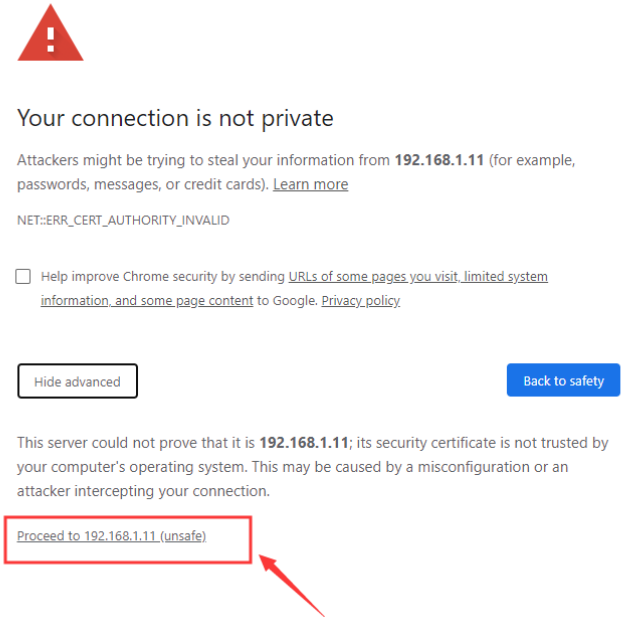
1) Enter http://<CentOS IP >:8080/ in the browser window, e.g: http://192.168.1.13:8080



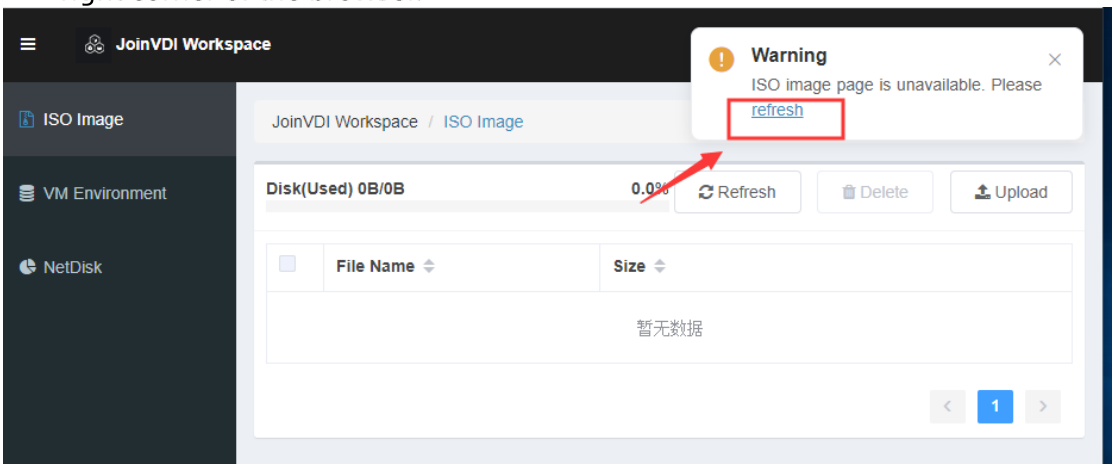
2) Ignore the security prompt and click" Advanced" .



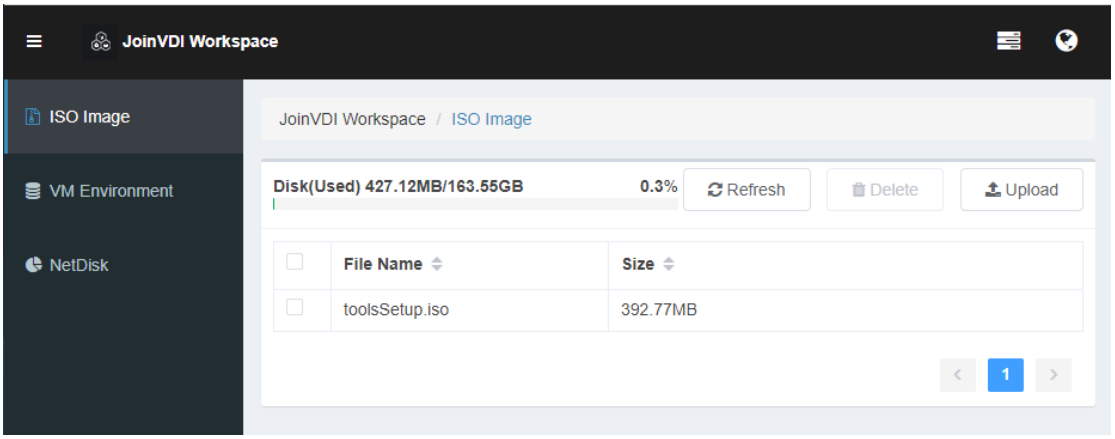
3) Accept the risk and proceed to the site.



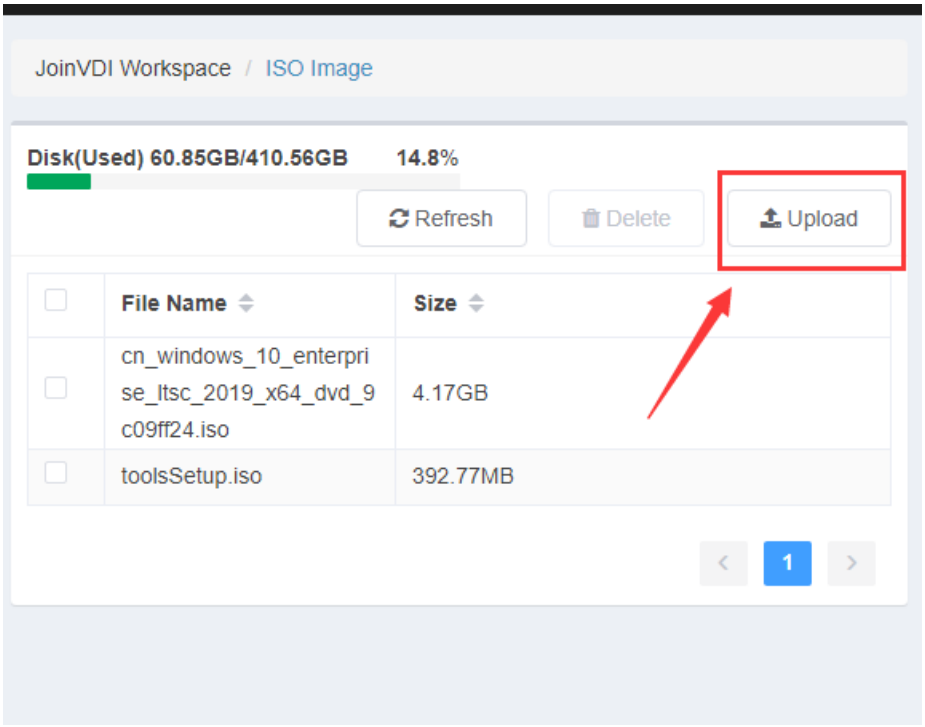
4) Click "Refresh the page" when you see the warning message at the upper right corner of the browser.



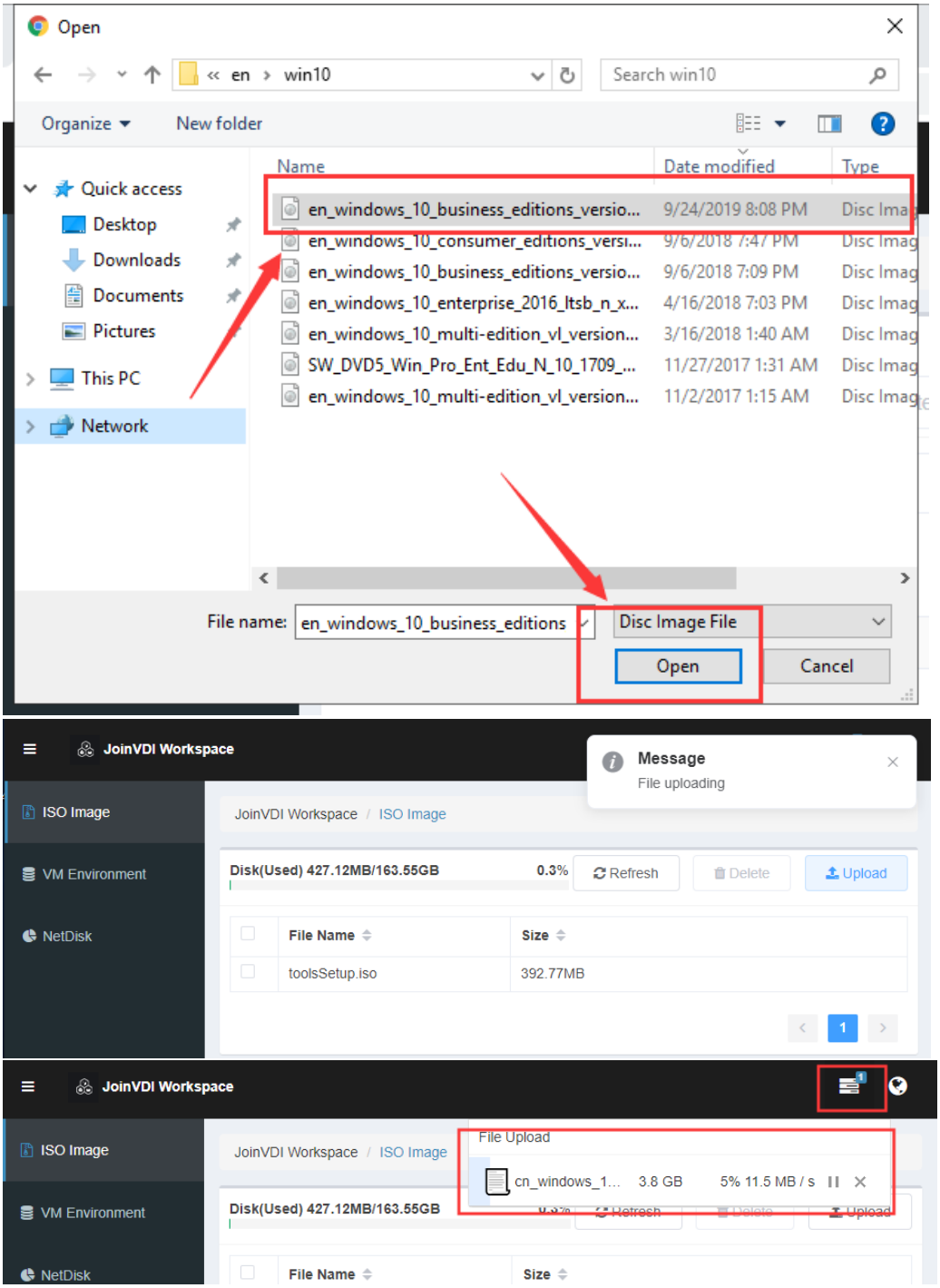
5) Wait for the page to refresh.



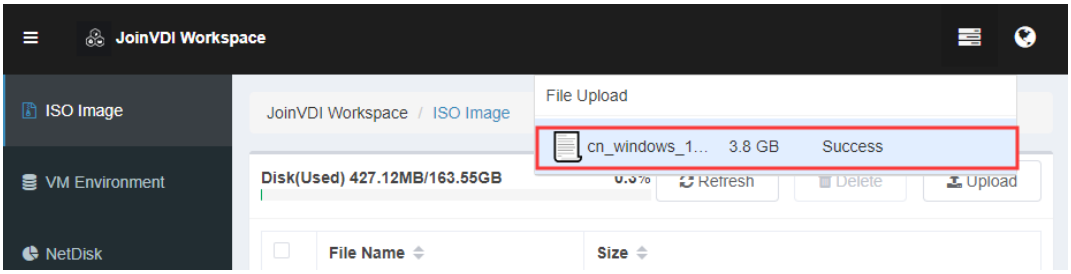
6) Click "Upload".



7) Select ISO file, click "Open" and start uploading.

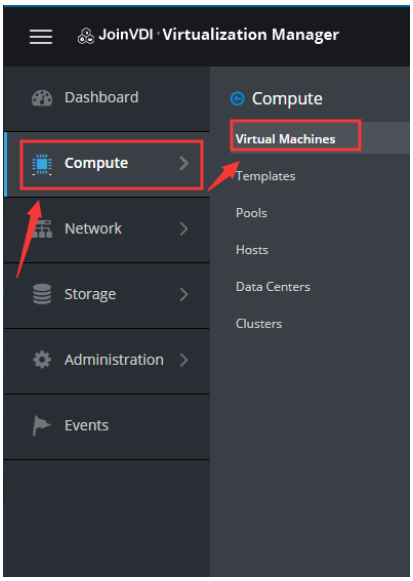


8) Uploading is completed.

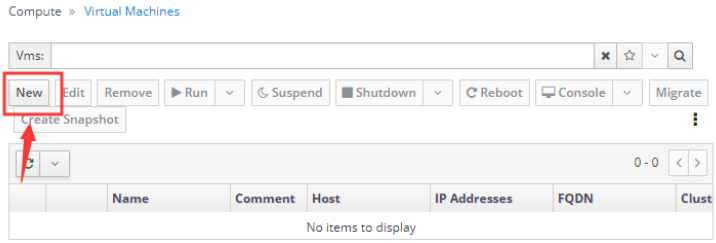


5.1.2 Create a virtual machine

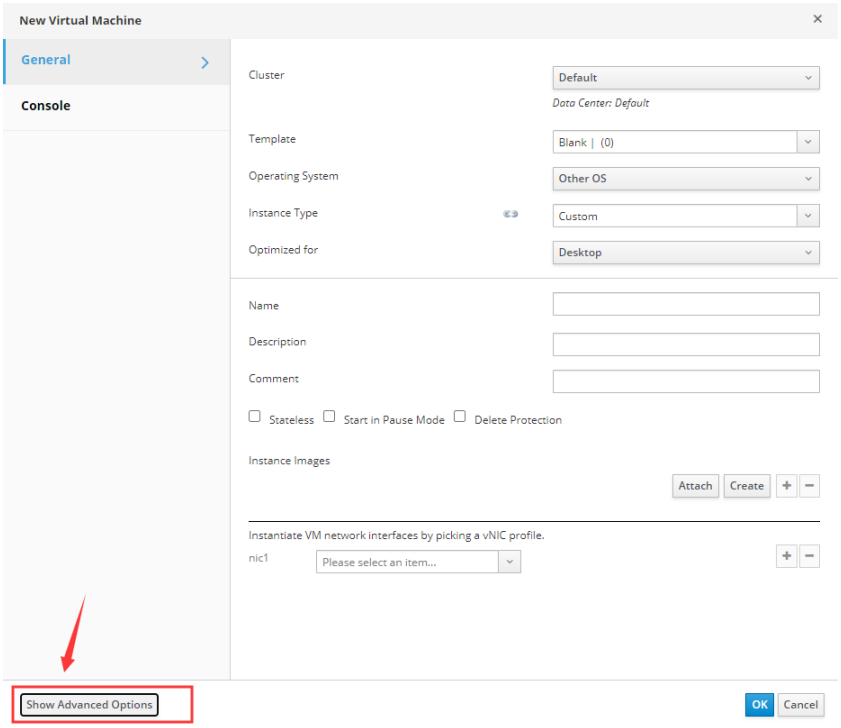
1) Click "Compute" → " Virtual machines" on the left.



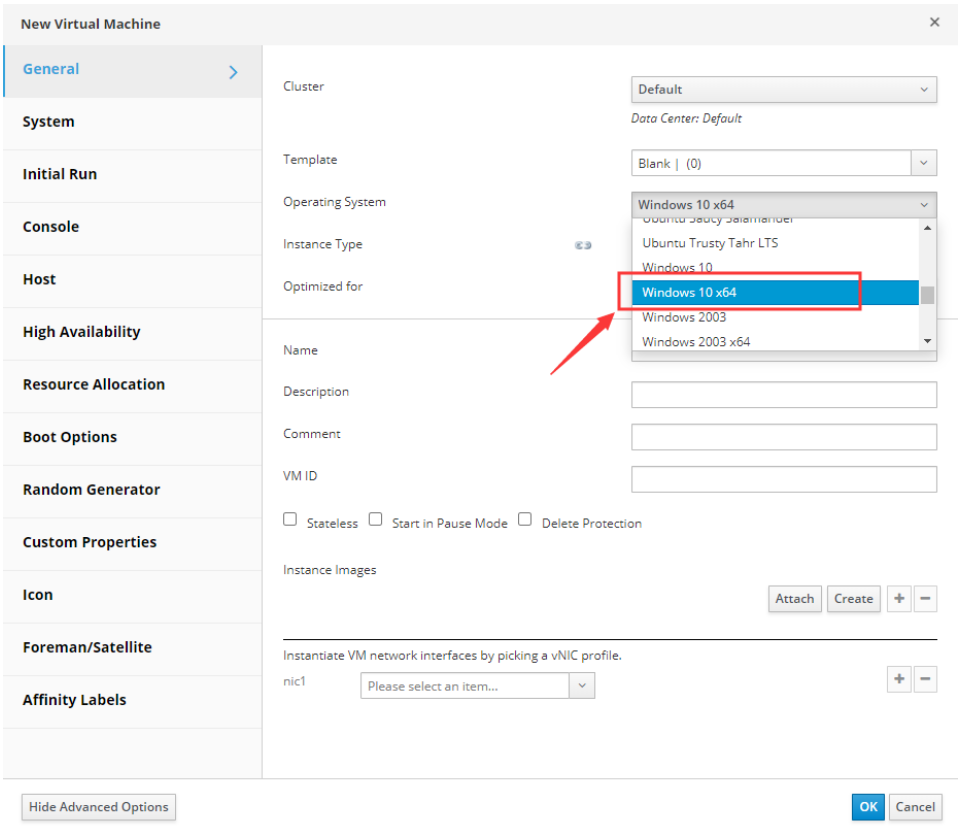
2) Click "New".



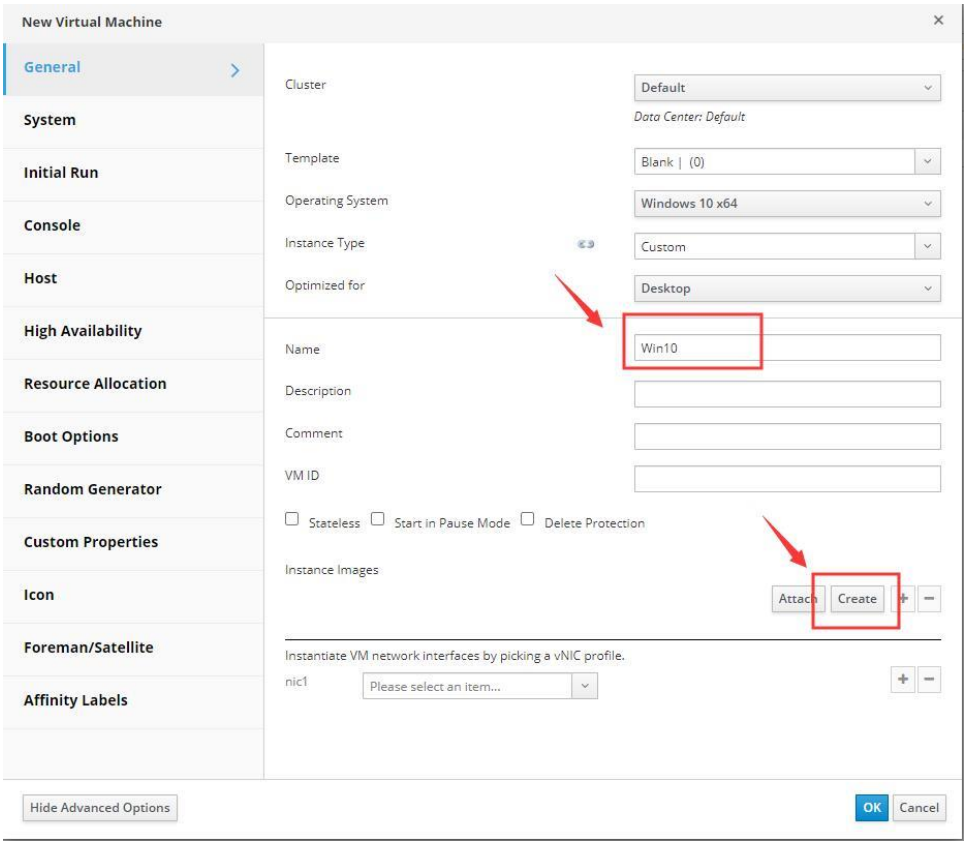
3) Click "Show Advanced Options".



4) At the "Operating system" option, select the right OS to be installed.

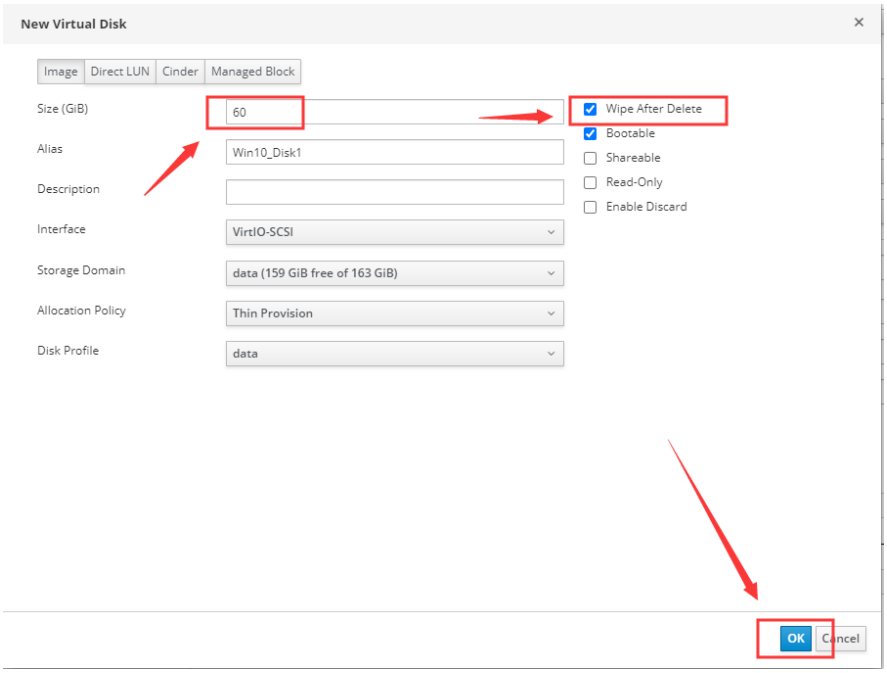


5) Enter a name for the virtual machine, and then click "create" to create an instance (virtual disk).

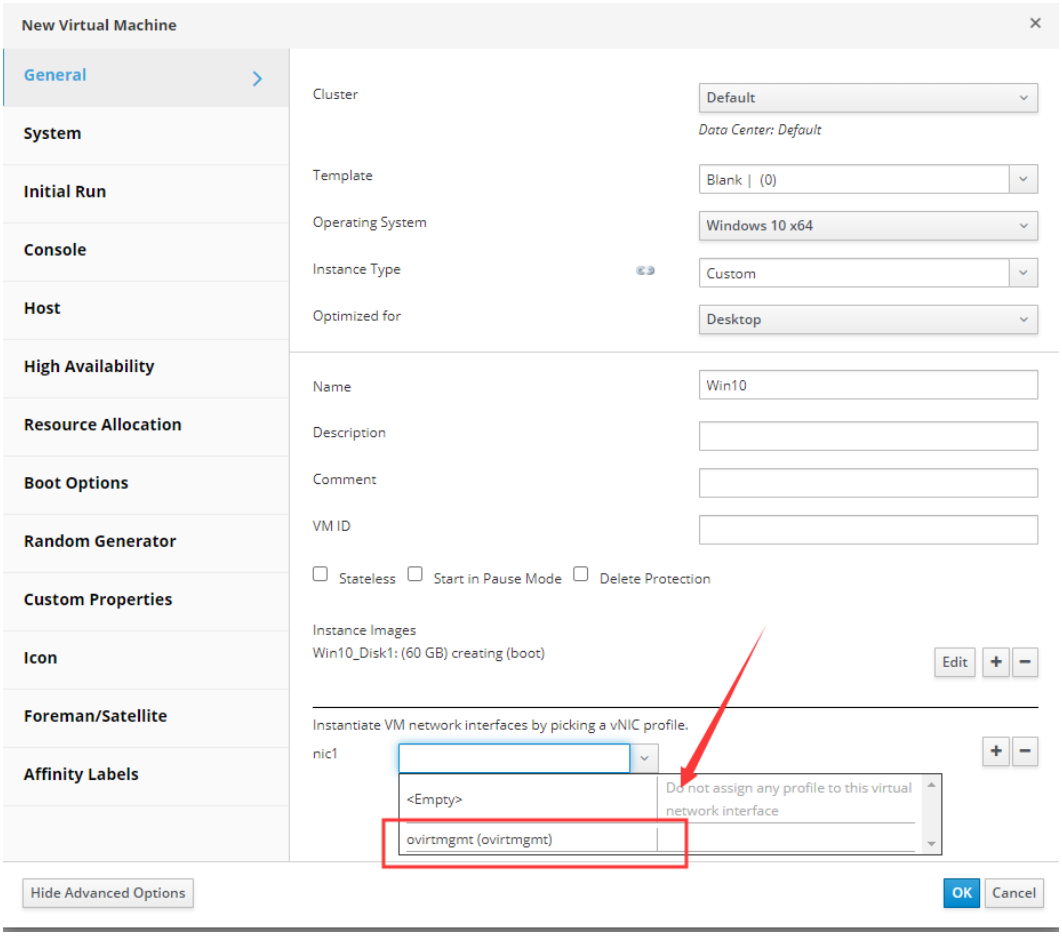


6) In the "Size" field, enter the size of the disk according to your needs, for example: "60", → check "Wipe After Delete" → "OK"

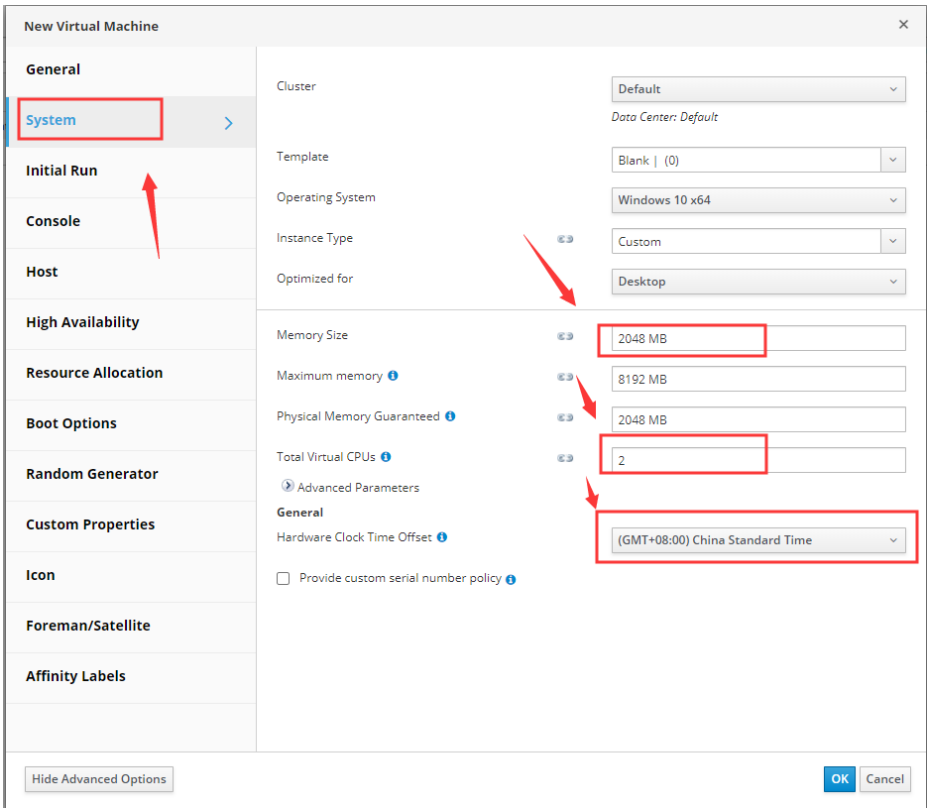
➢ Wipe After Delete: free up physical hard disk space after deleting files on the virtual hard disk.



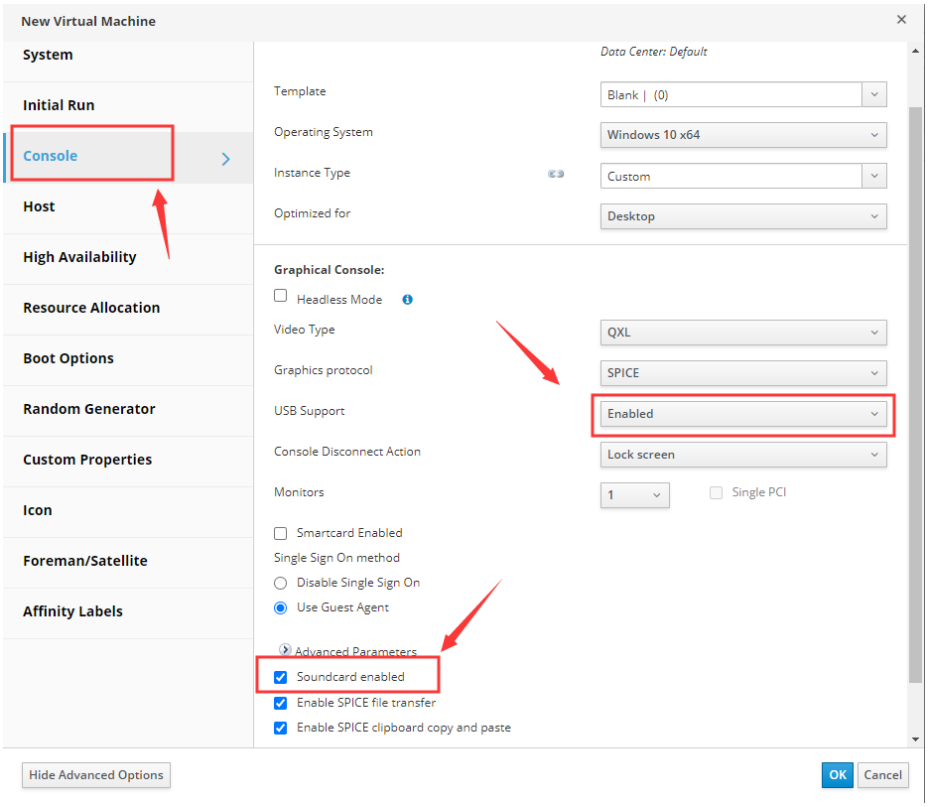
7) Go back to the "New Virtual Machine" page, in the "nic1" field, select "ovirtmgmt (ovirtmgmt)".



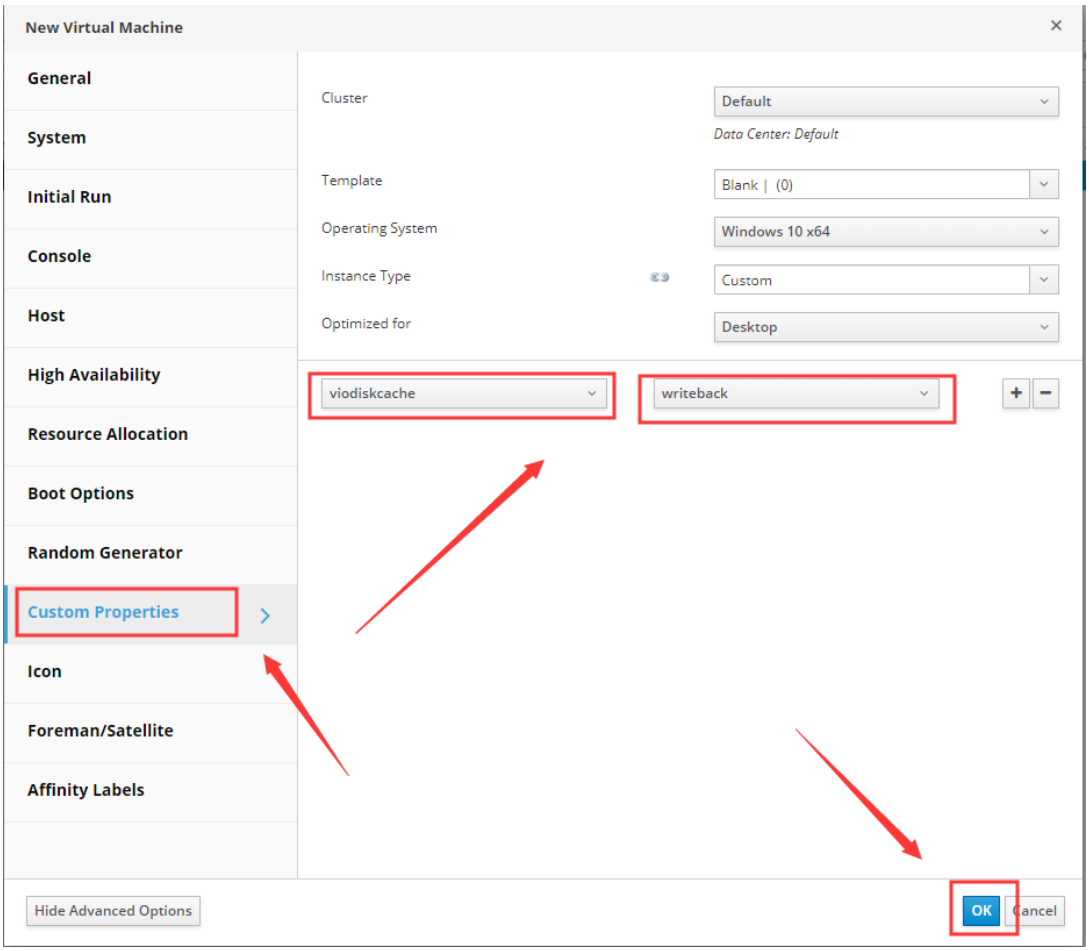
8) Click "system" → "Memory Size"; enter the memory size, e.g., "2048MB", and the number of vCPUs e.g., "2", according to your needs

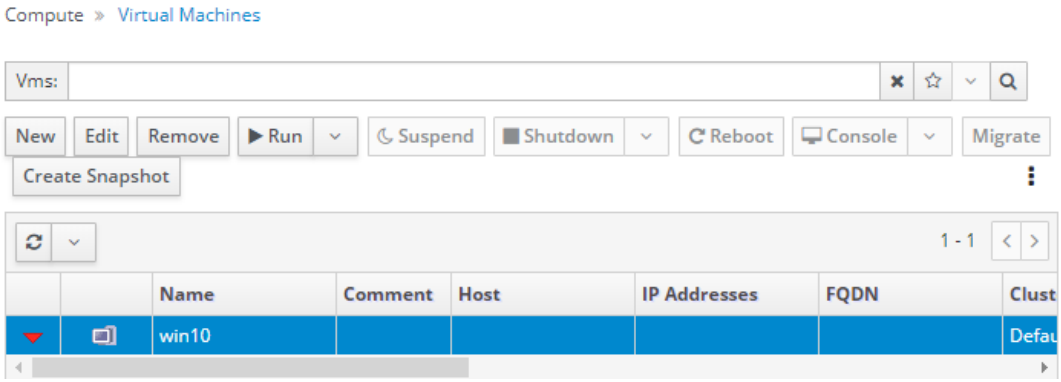


9) Click on the left "Console" on the left, modify "USB support" to "Enabled" and check "Soundcard enabled".



10) Click "Custom Property" on the left → "viodiskcache" → "writeback" → "OK".

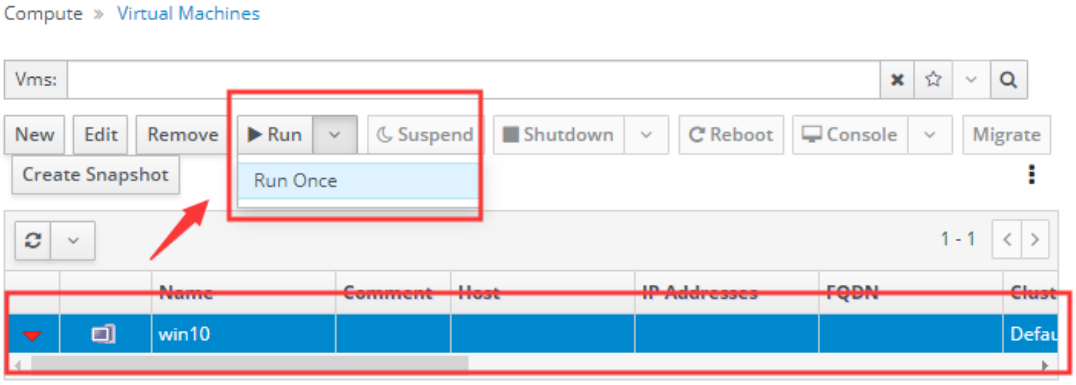




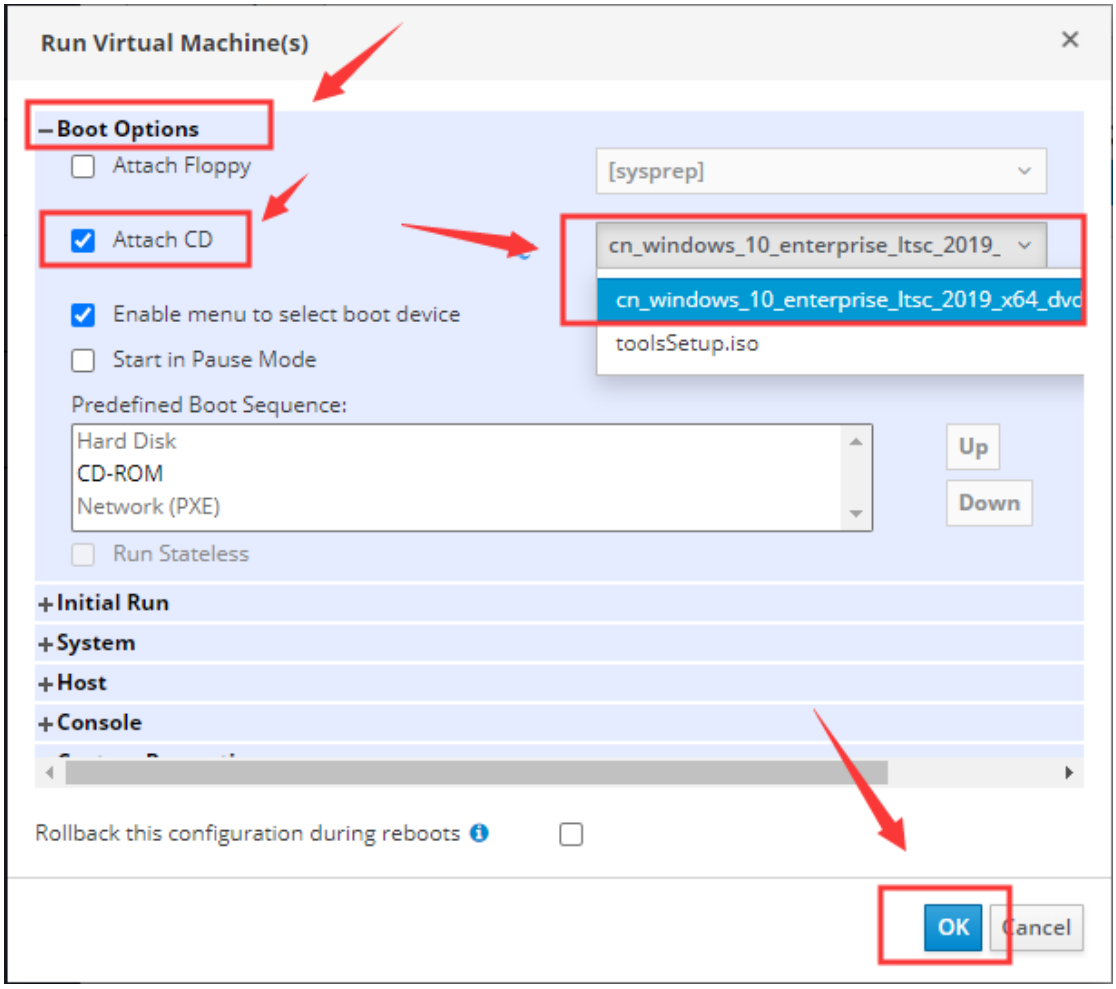
5.1.3 Install OS

5.1.3.1 Launch Windows installer from the ISO image

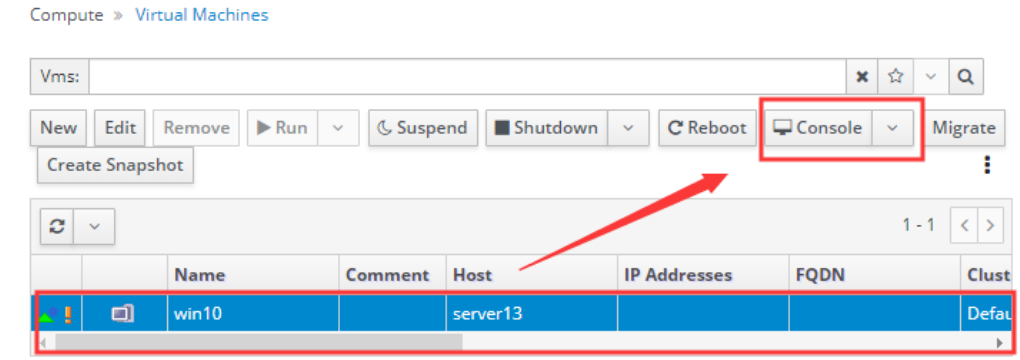
1) Select the virtual machine, click the down-arrow icon, and click to run only once.

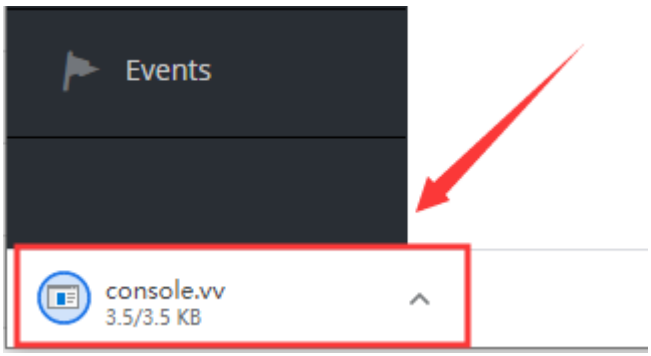


2) Select "Attach CD" → select the system ISO image → Click "OK".

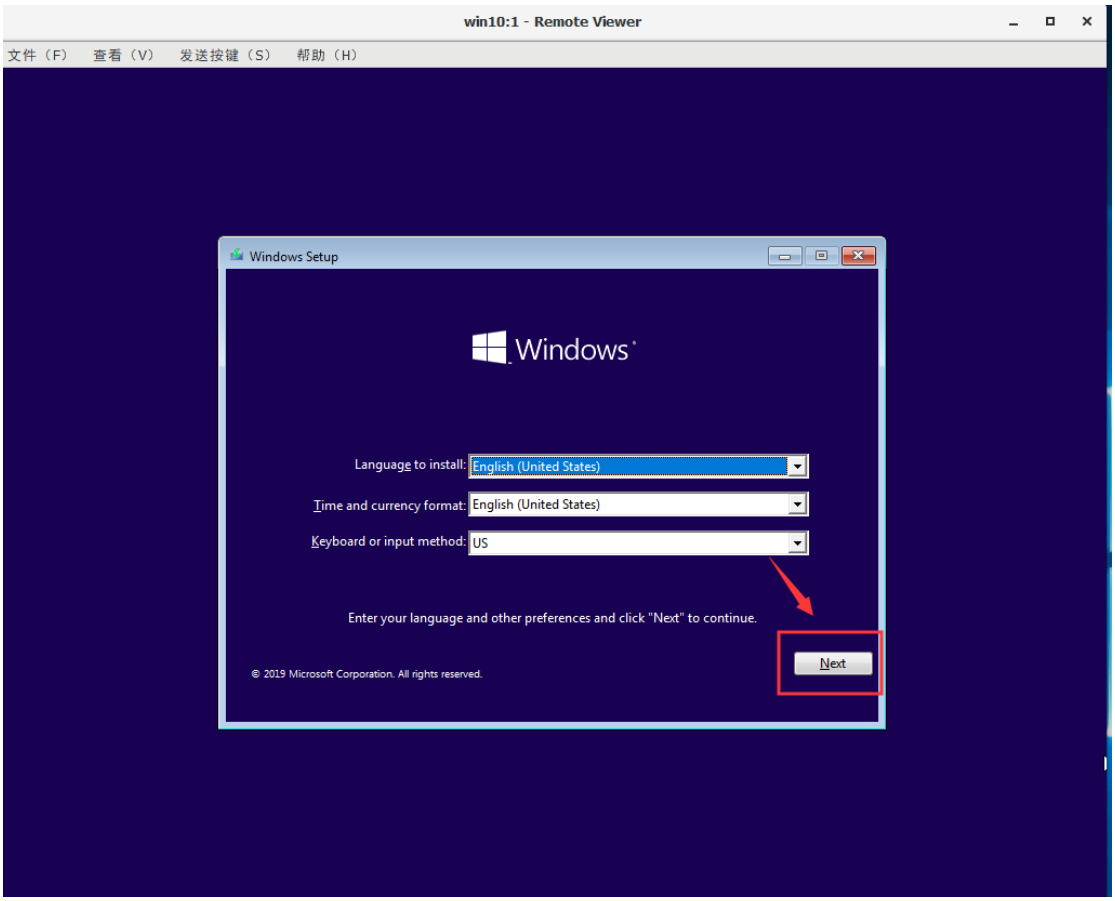


3) Select the virtual machine, click the console, and a file name "console.vv" will be downloaded. Click to open it using "VirtViewer" to access the console of the virtual machine.

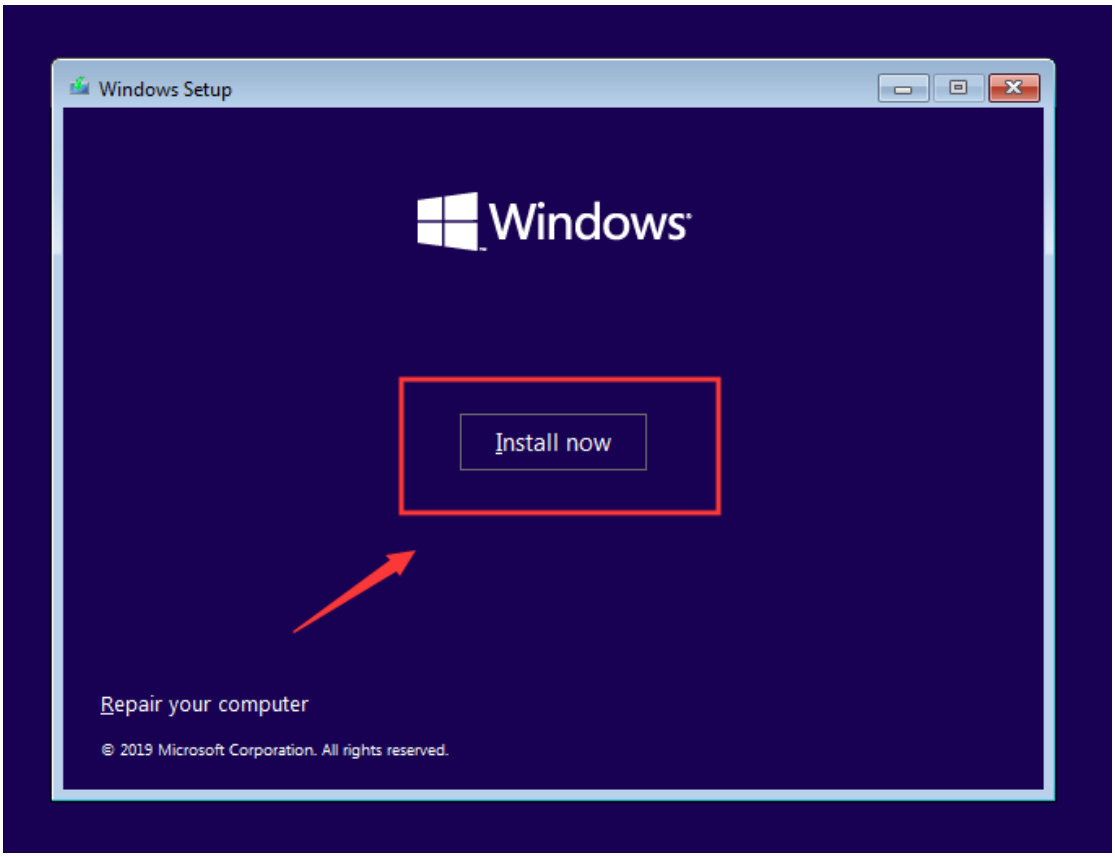




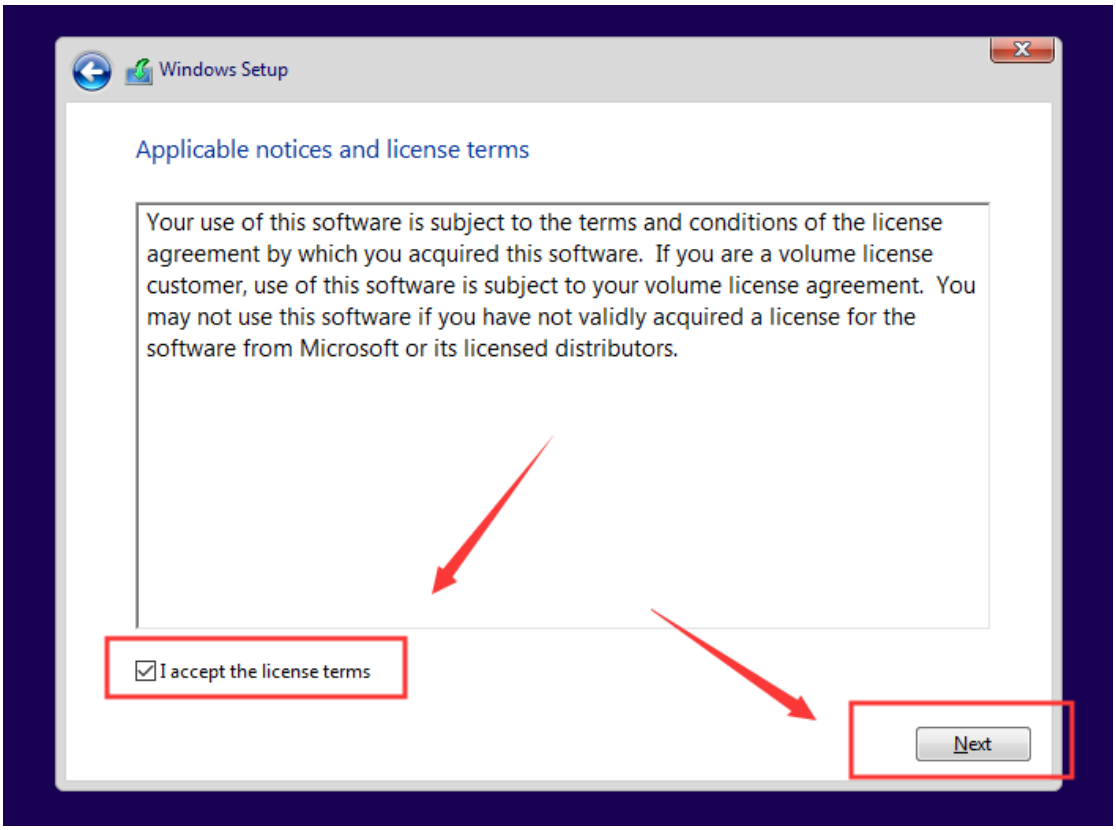
4) Click "Next".



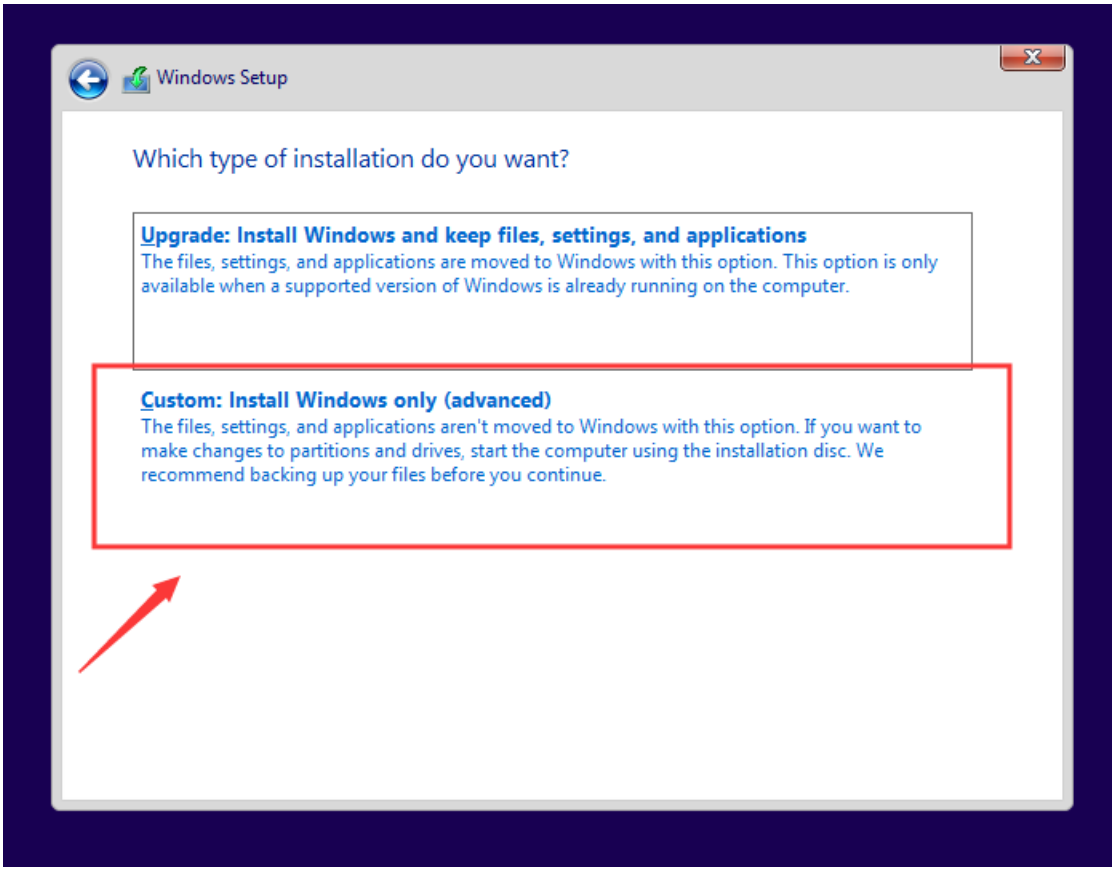
5) Click Install now;



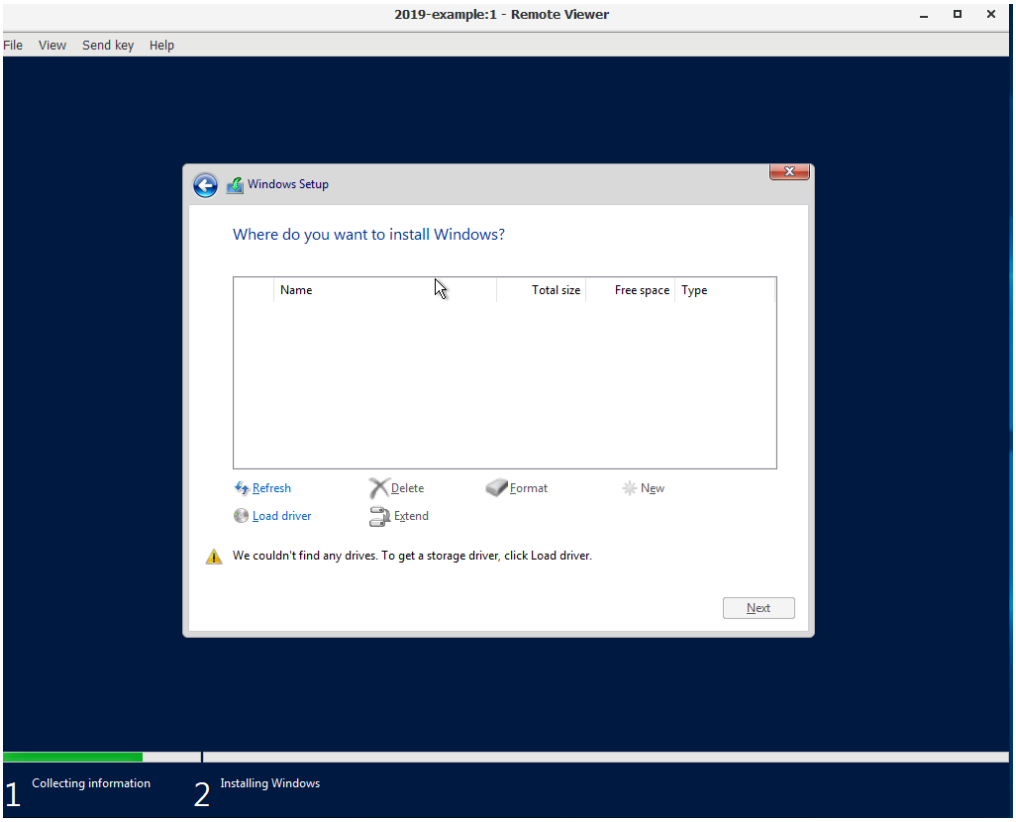
6) Check "Accept" and click "Next".



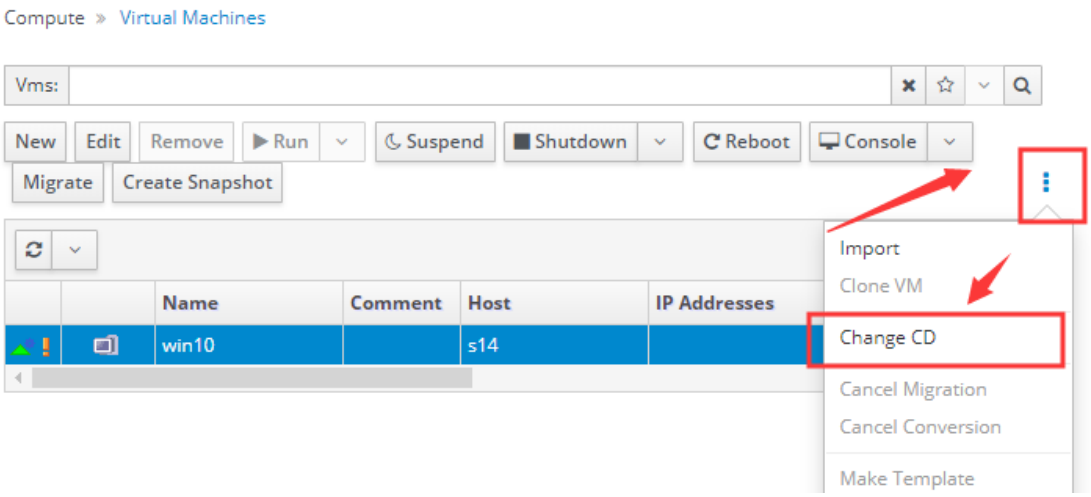
7) Select "Custom: Install Windows only (advanced)".



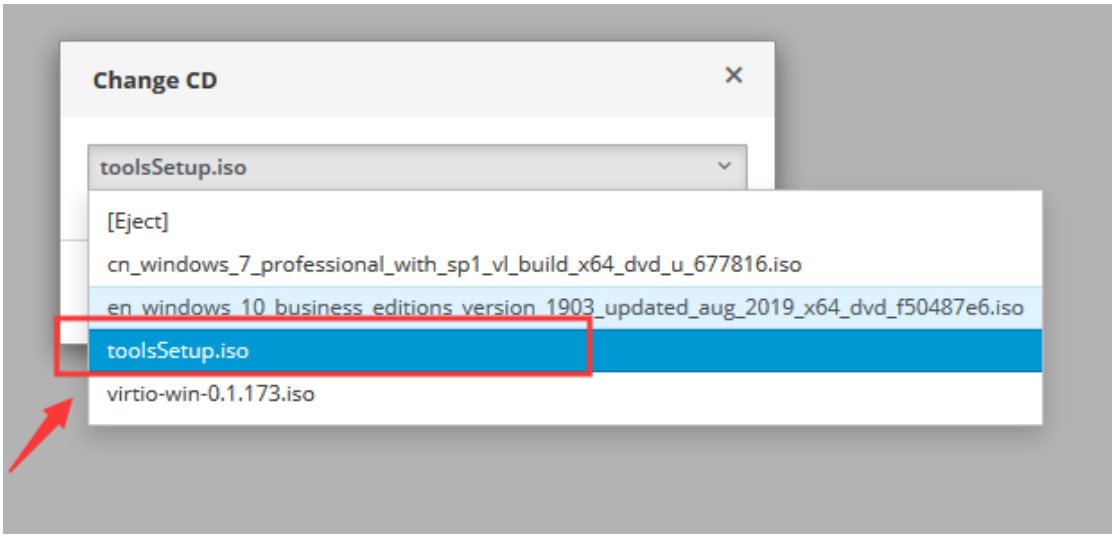
8) You will be prompted that " we couldn't find any drives. To get a storage driver, click Load driver." .

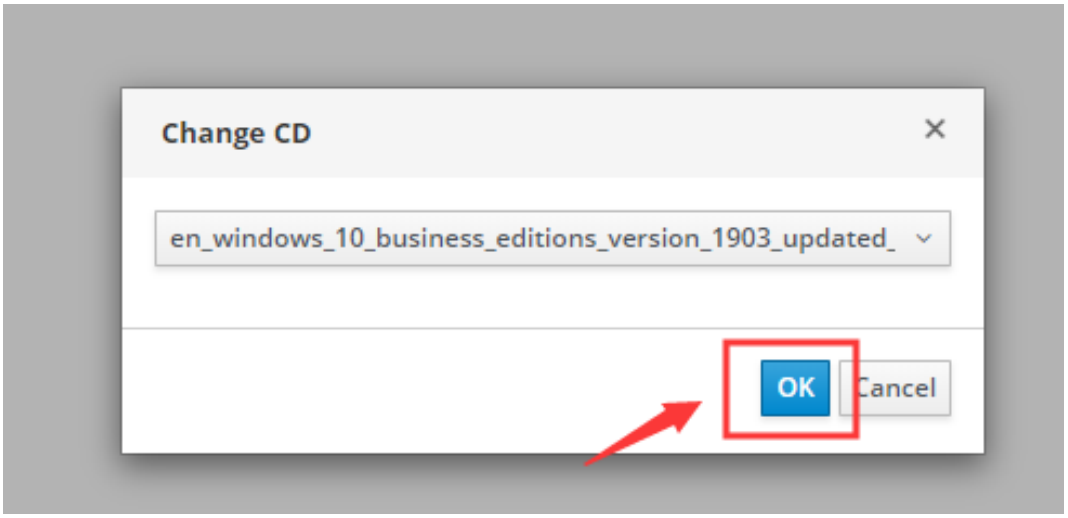


9) Press "Shift + F12" to exit the console, and click the "⋮" icon →" Change CD"



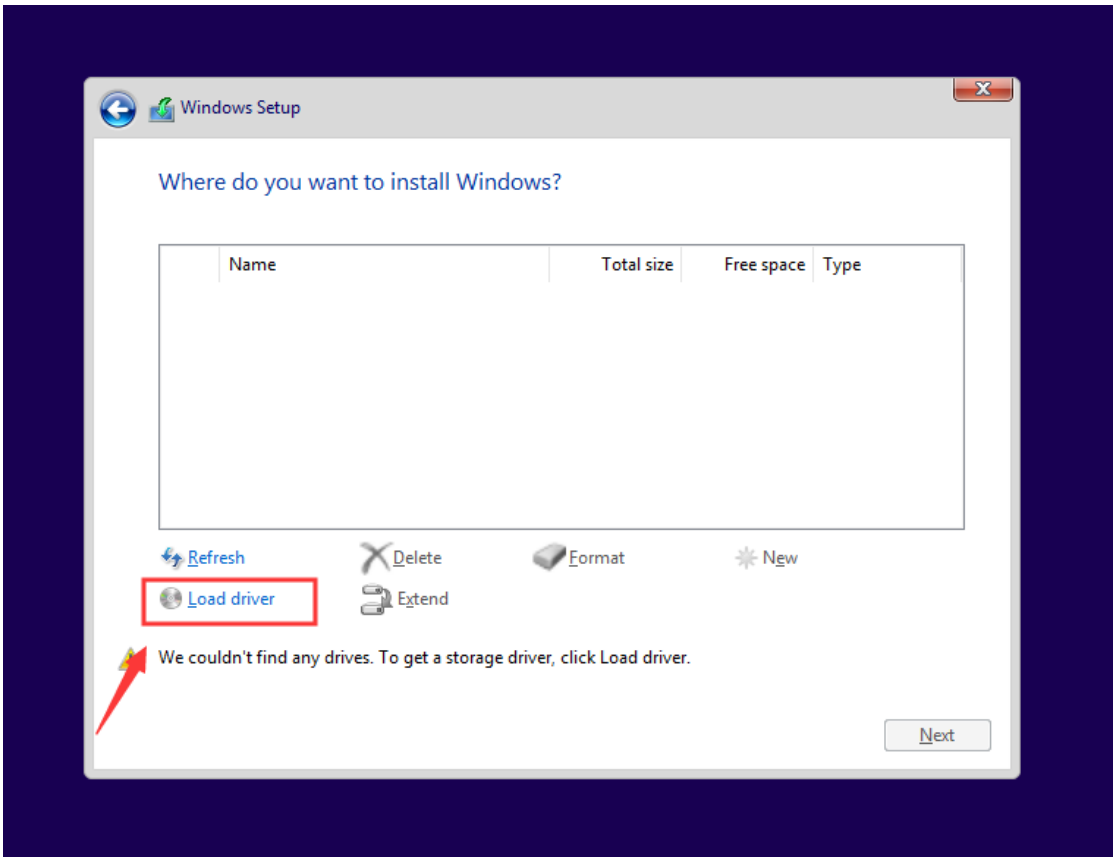
10) Click "toolsSetup.iso" and "OK" after selection.



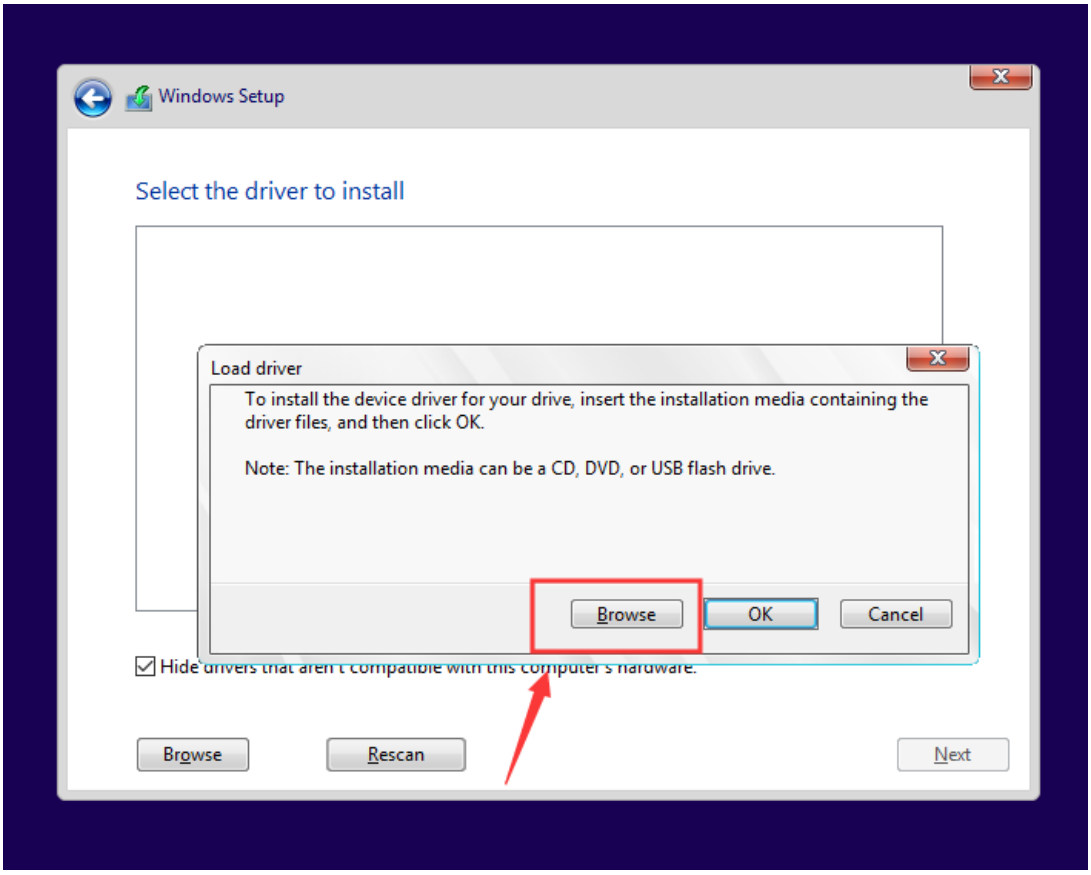


11) Click the console icon in the task bar to return to the console.

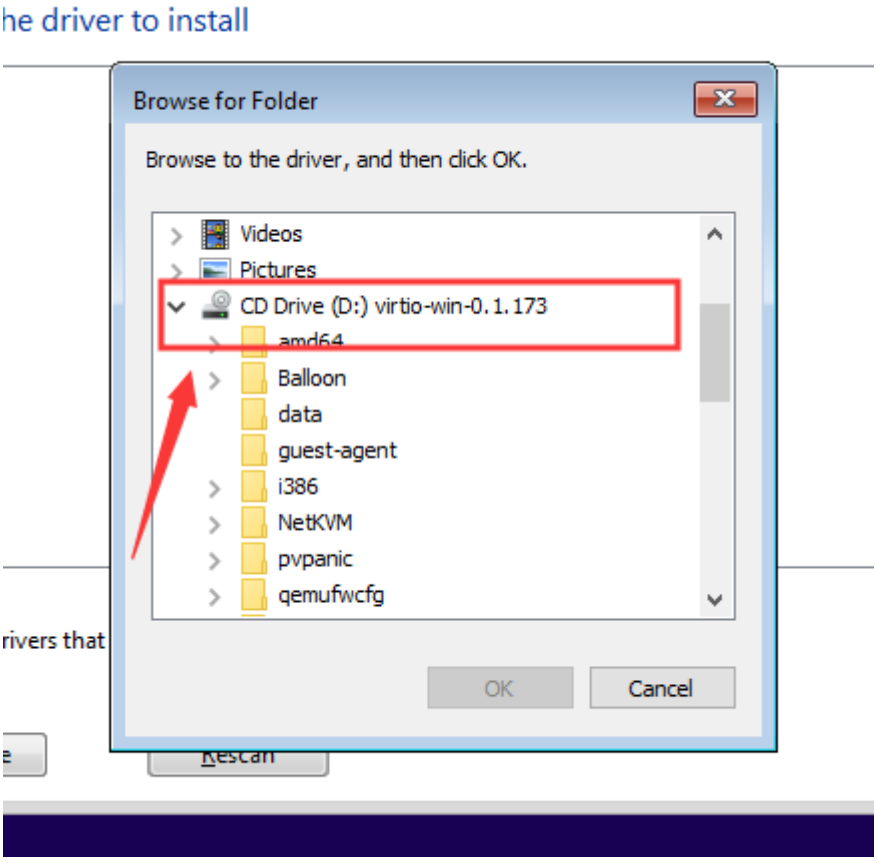
12) Click “Load driver”.

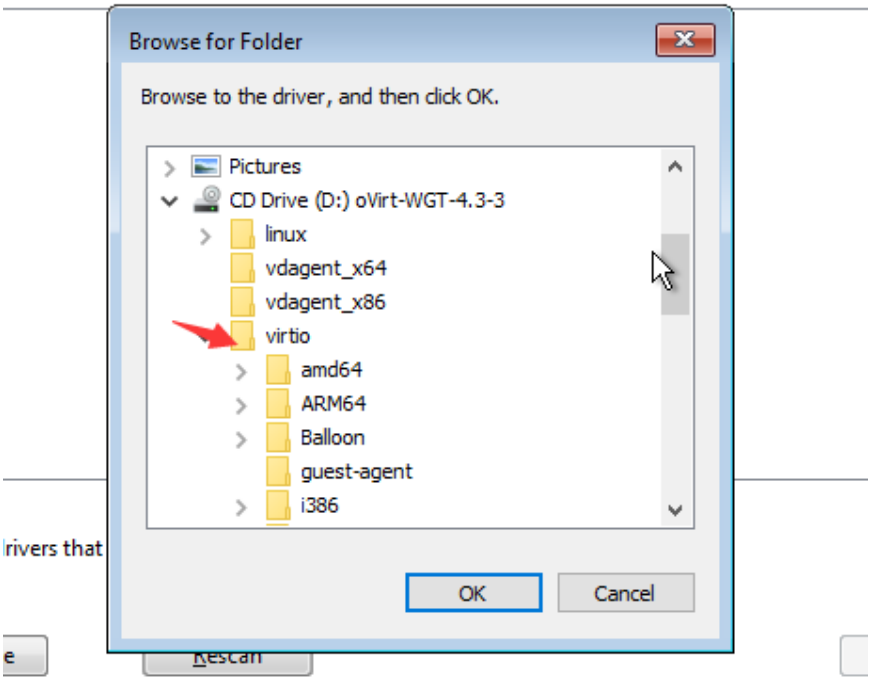


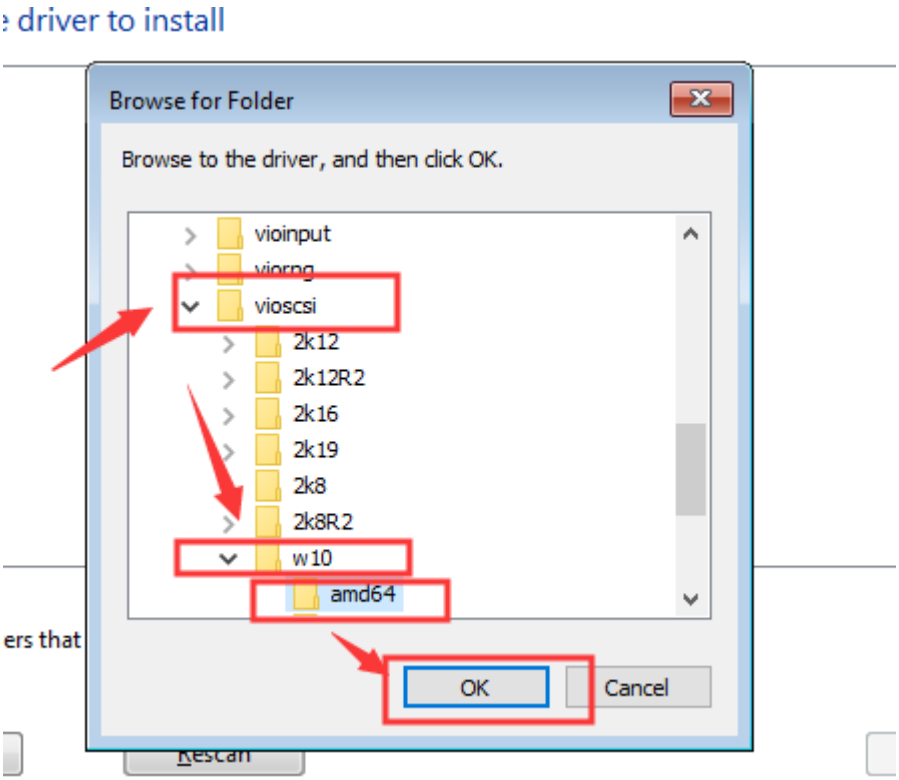
13) Click “Browse”.



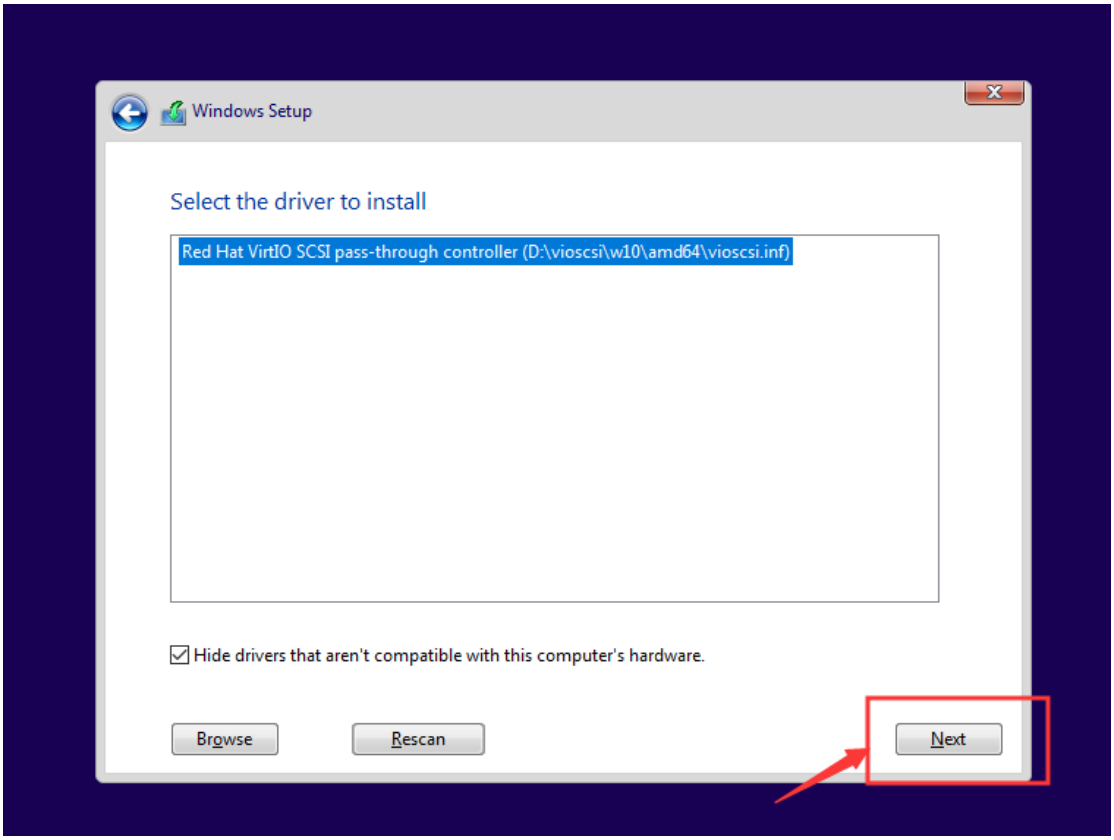
14) Unfold CD Drive → "virtio" → "vioscsi" → find corresponding version of the system, select x86 folder for the 32-bit system, and amd64 folder for 64-bit system, and then click OK;



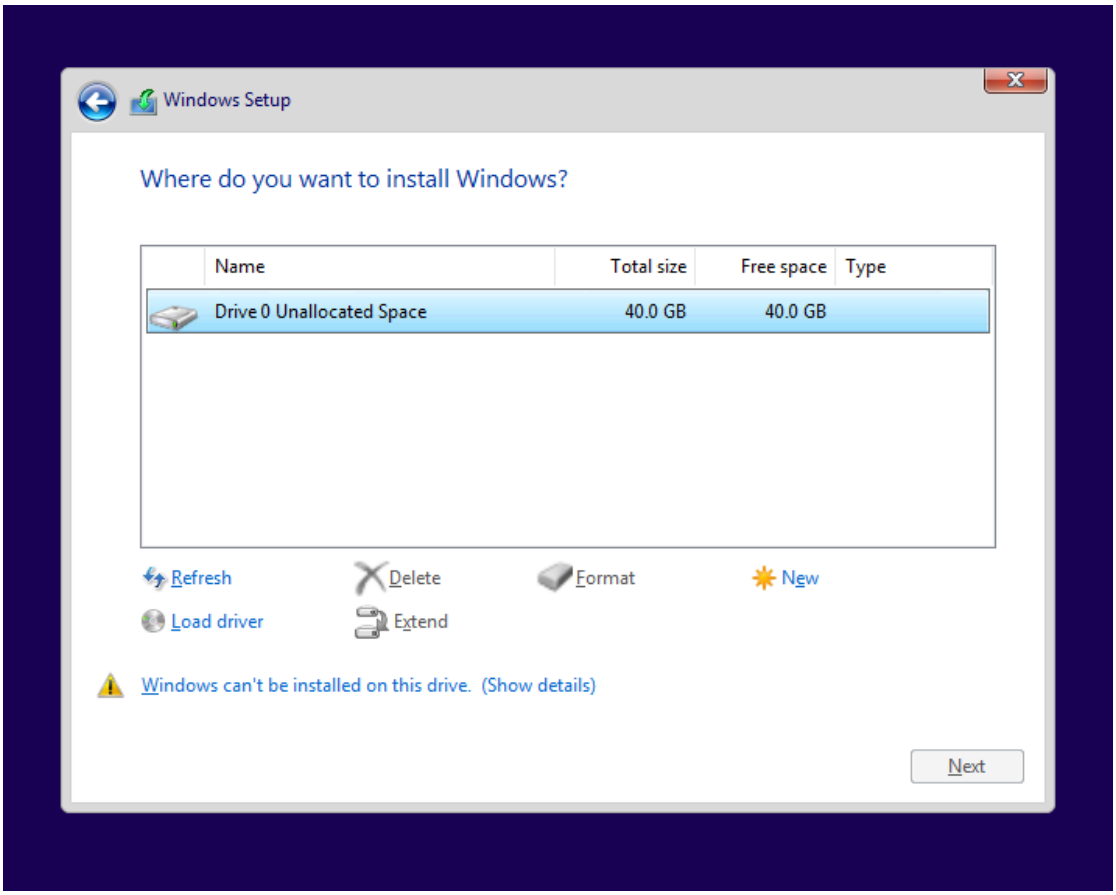


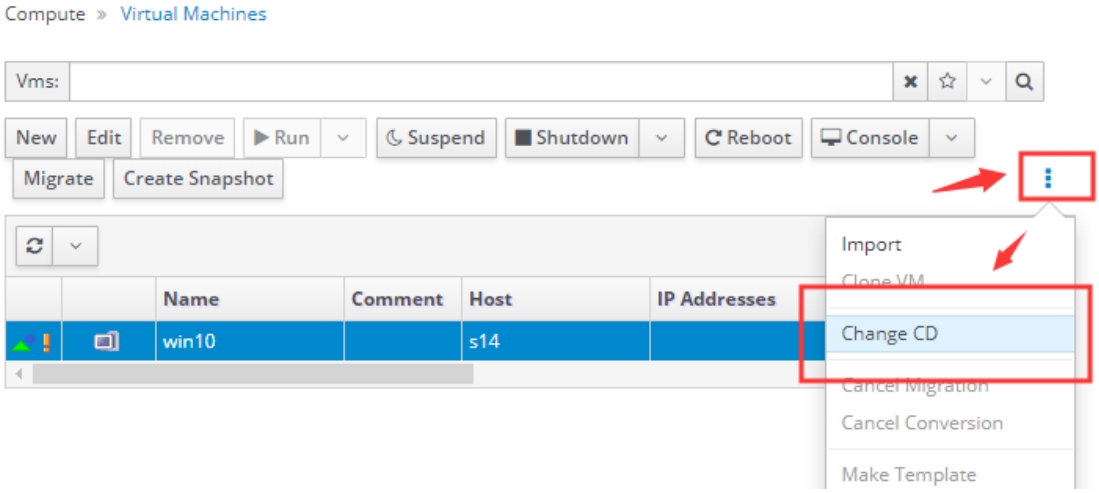


15) Select "Red Hat VirtIO SCSI pass-through controller" and click "Next" to begin installation.

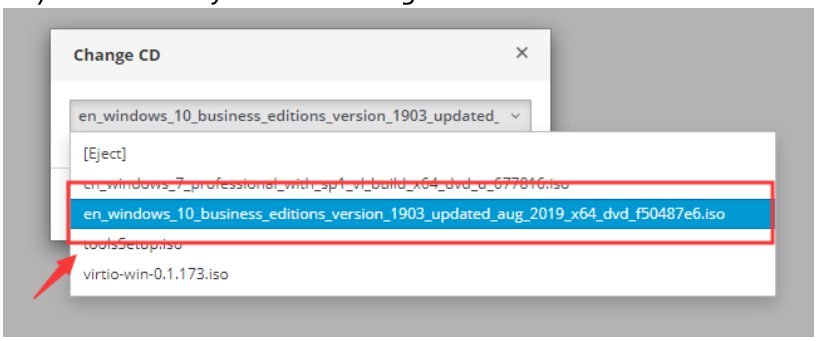


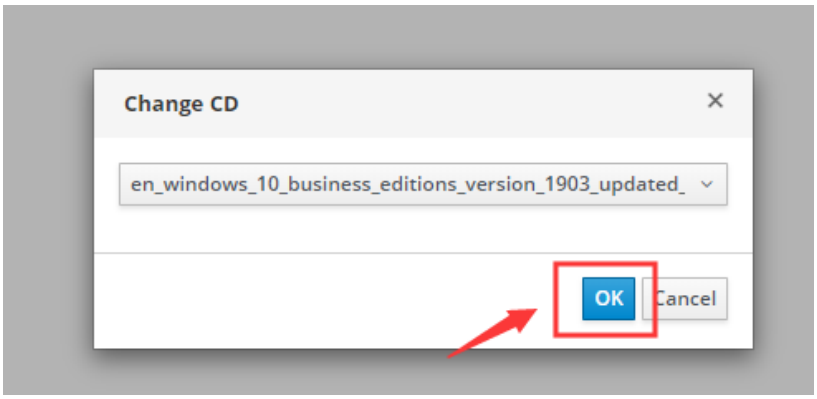
16) After the installation is completed, you can see the drive in the list, but it will prompt that Windows cannot be installed on the device. Press "Shift+F12" to exit the console, and click the "⋮" icon →" Change CD"



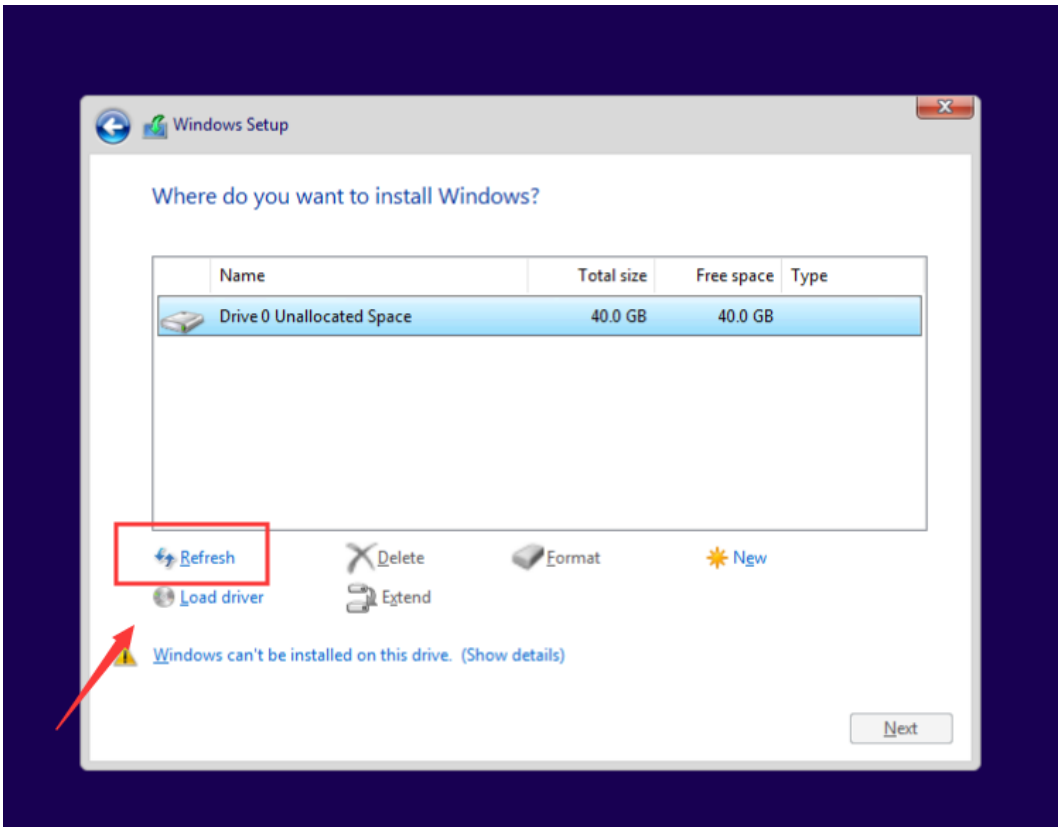


17) Select the system ISO image and click “OK”.

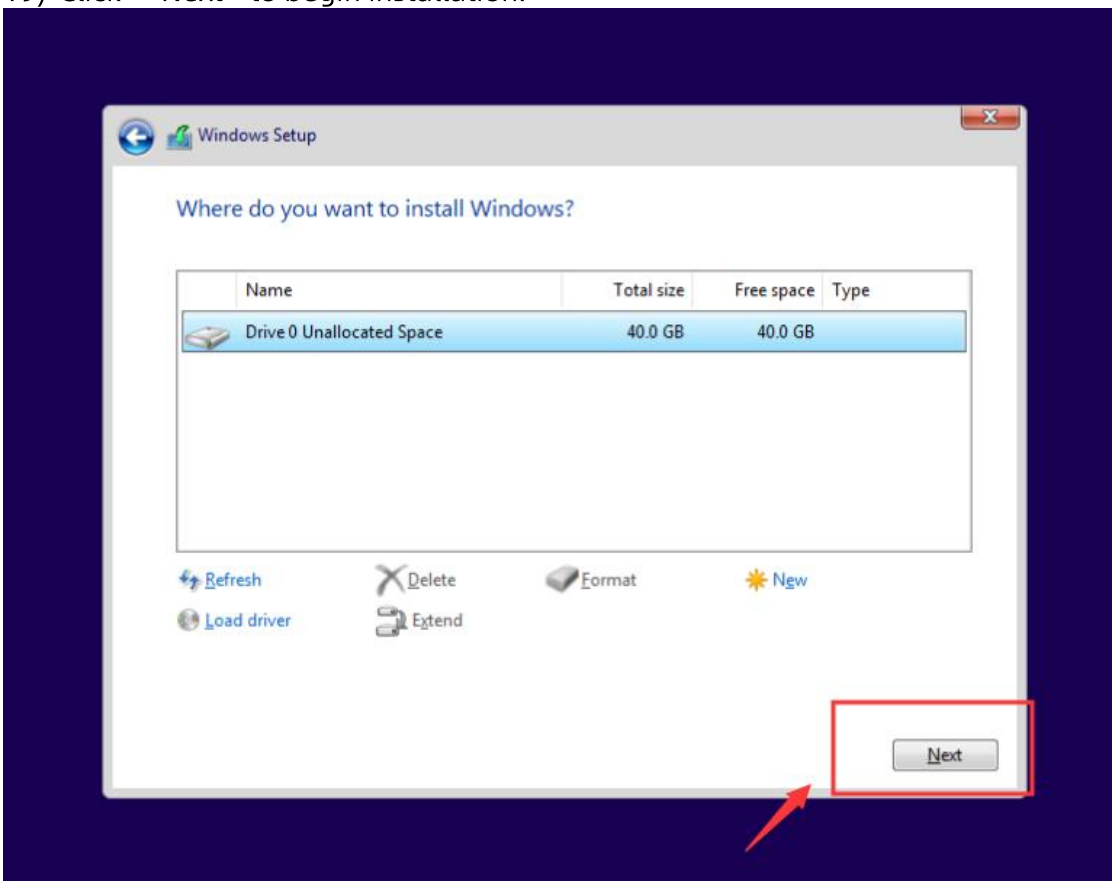


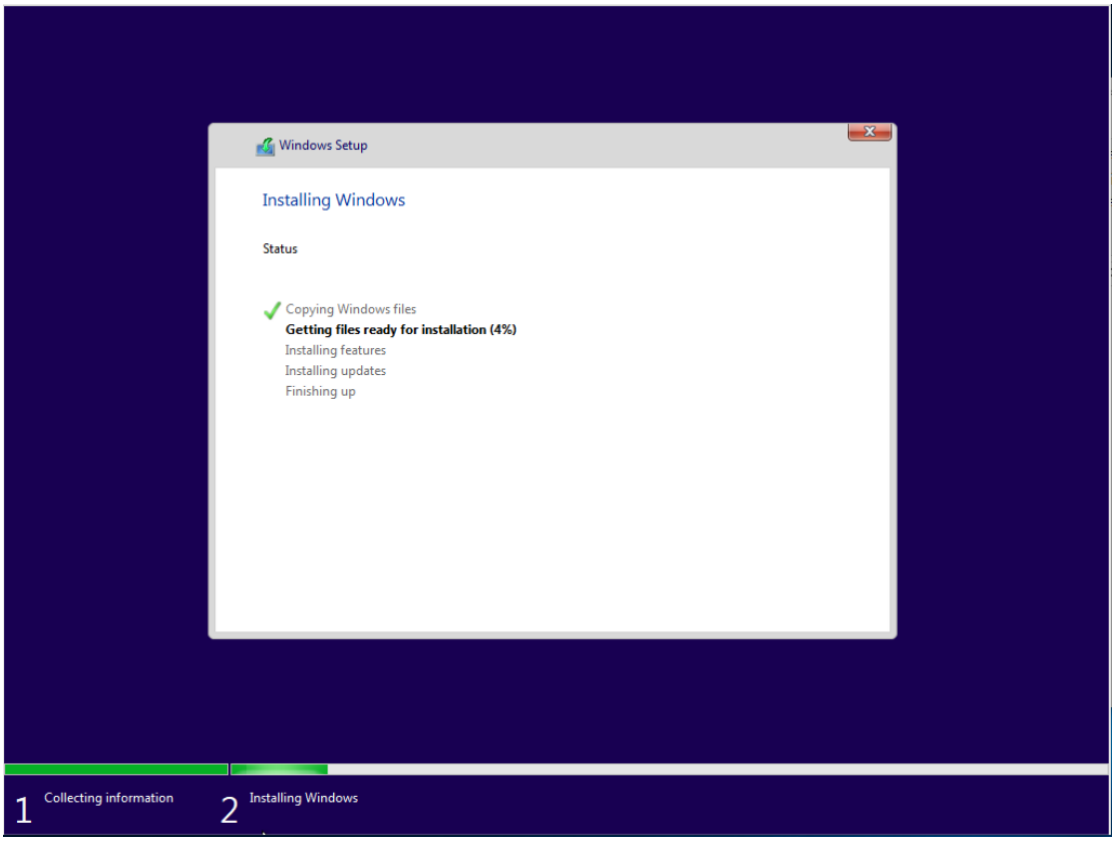


18) Click the console icon in the task bar to go back to the console and then click “Refresh”.

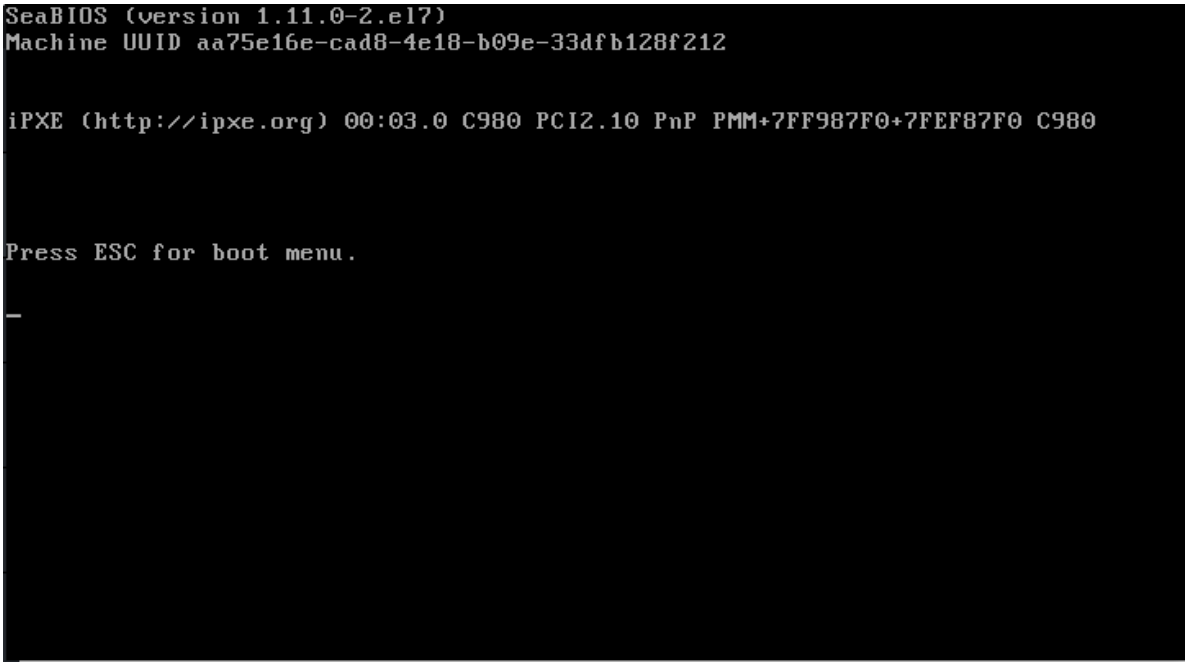


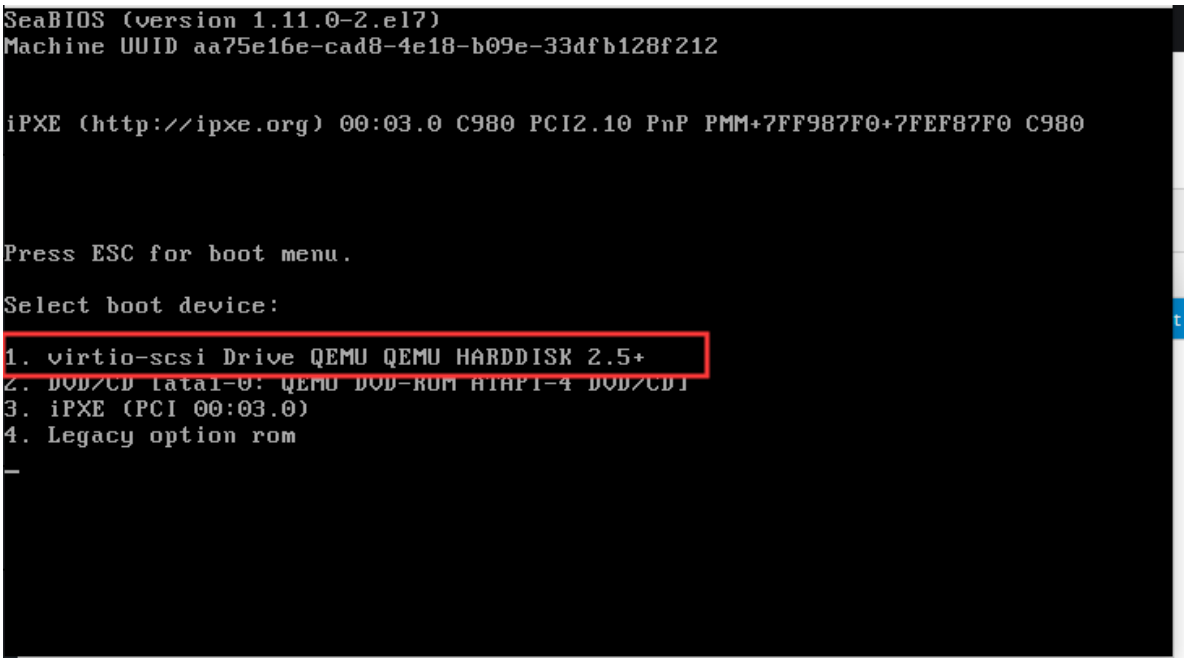
19) Click "Next" to begin installation.



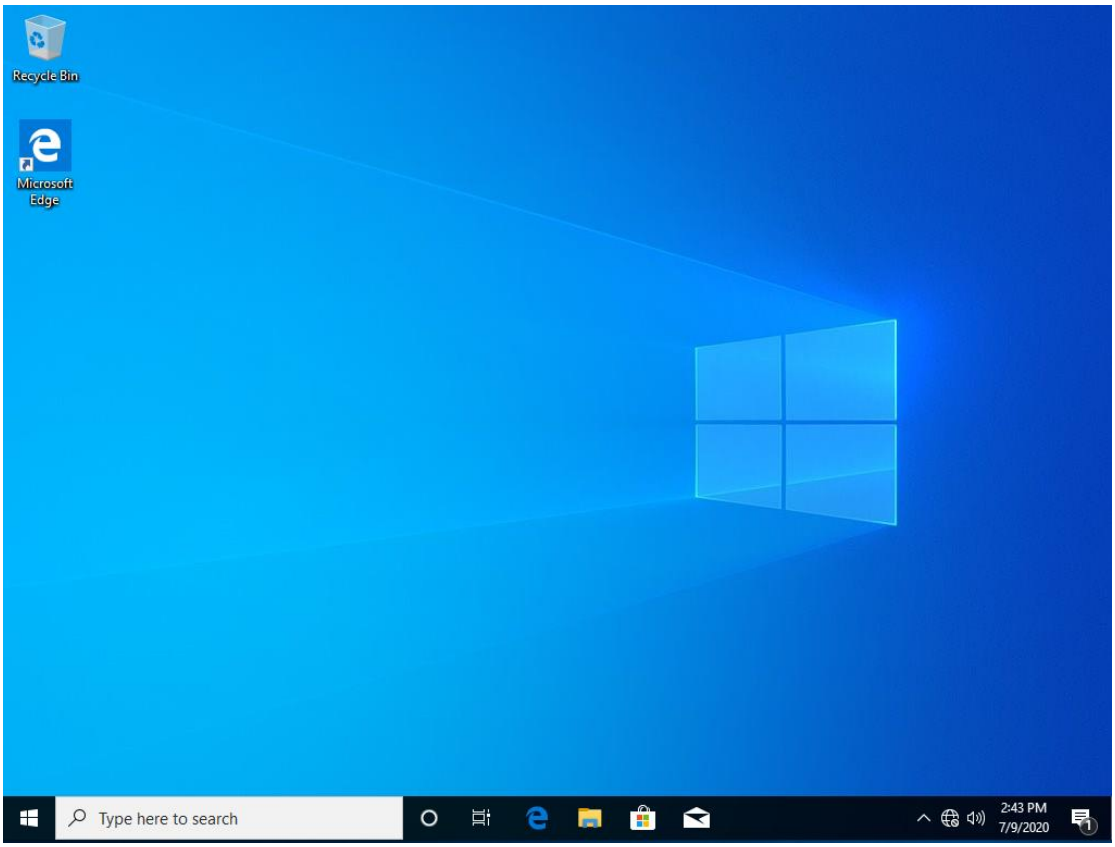


20) After system installation, the virtual machine will reboot and enter the boot page. Press “ESC” to enter the system.



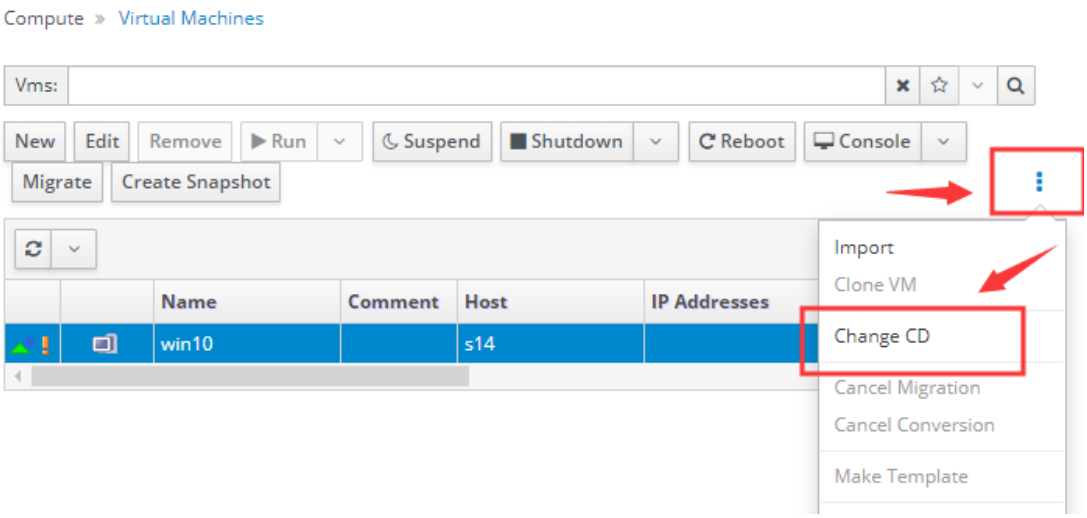


21) Configure the system after entering the operating system, and the installation is completed.

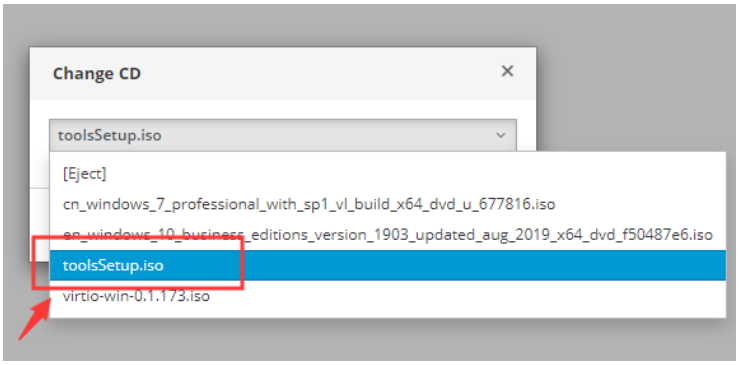


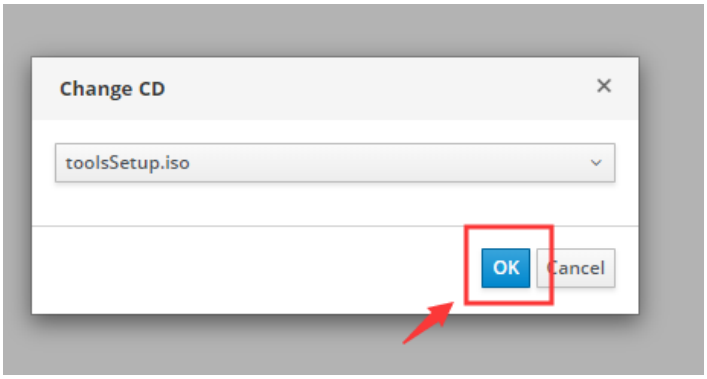
5.1.3.2 Install virtual machine enhancement tool

1) Press Shift+F12 to exit the console and click the "⋮" icon →" Change CD".

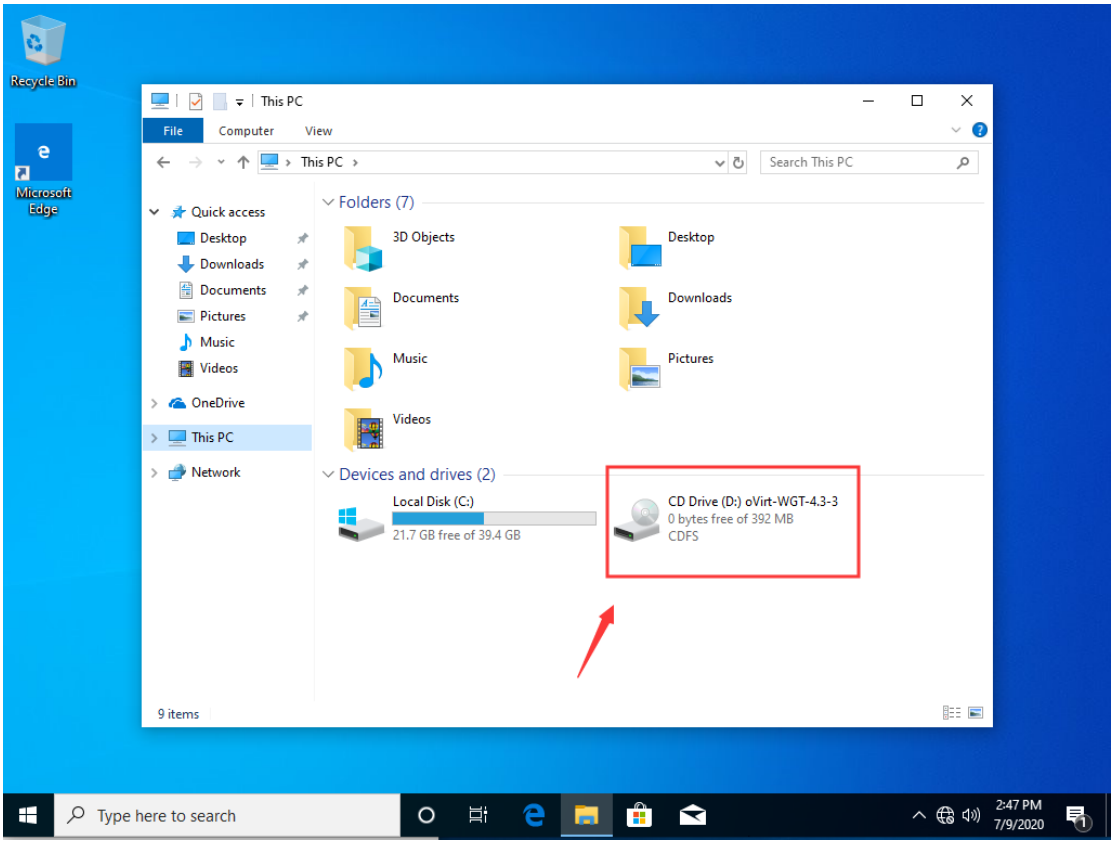


2) Click "toolsSetup.iso" in the "Change CD" window and click "OK".

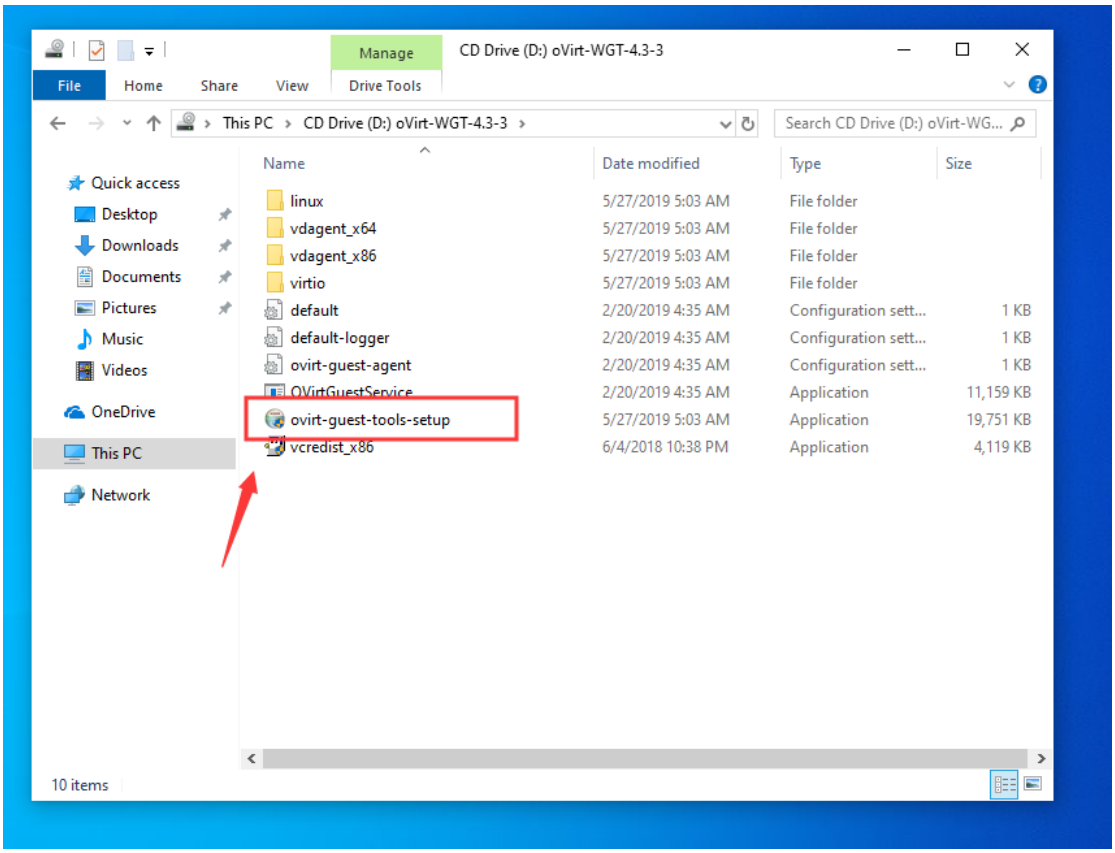




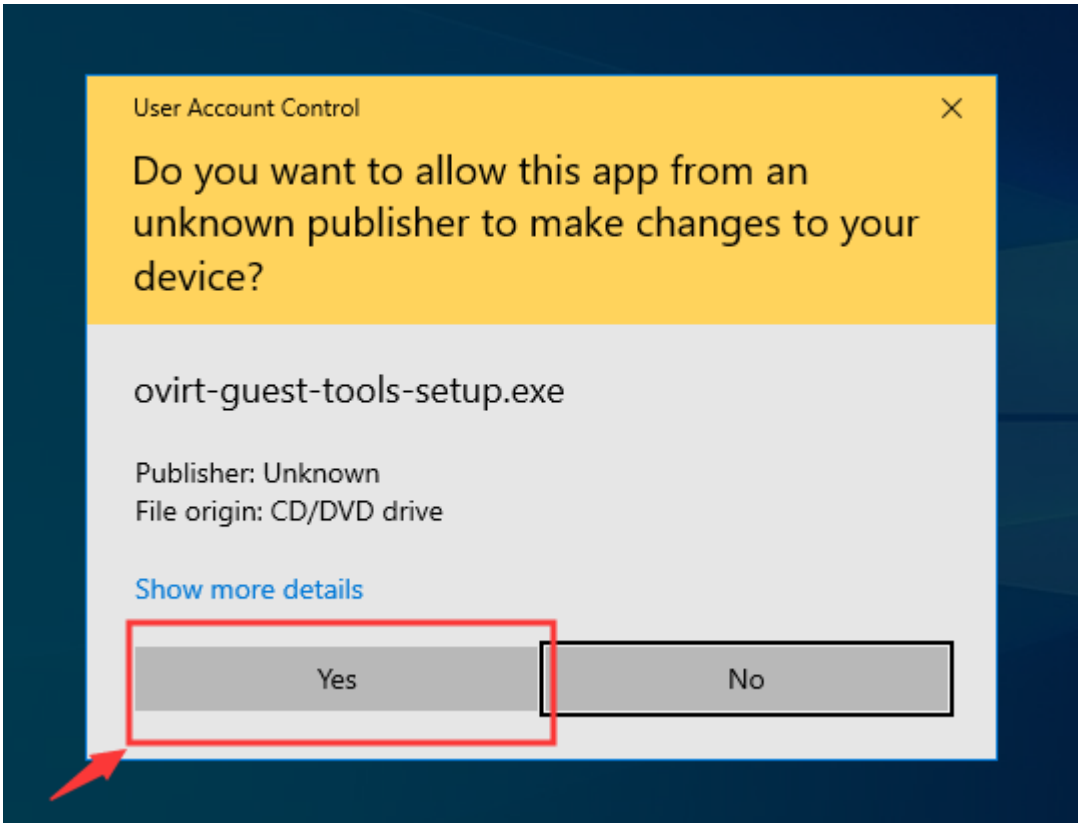
3) Click the console icon in the task bar to return to the console, double-click to open the "CD drive (D :) oVirt-WGT-4.3-3" in the File Explorer.



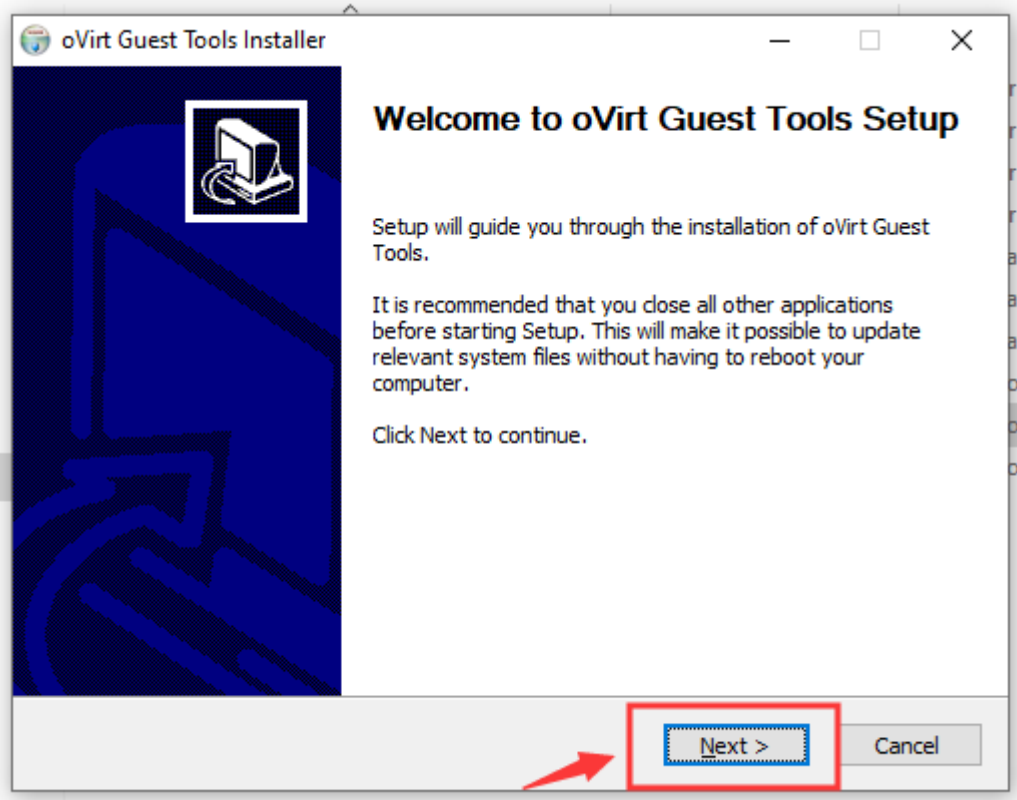
4) Double-click "ovirt-guest-tools-setup" to run the driver installation program;



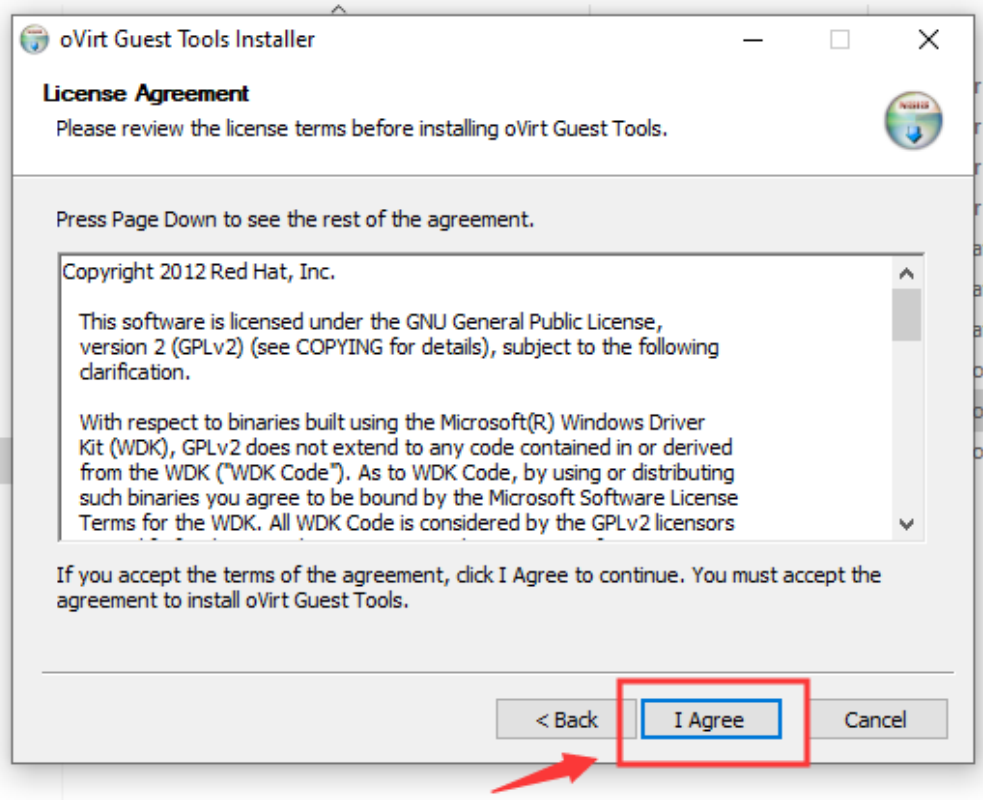
5) Click "Yes" in if there is a User Account Control prompt window.



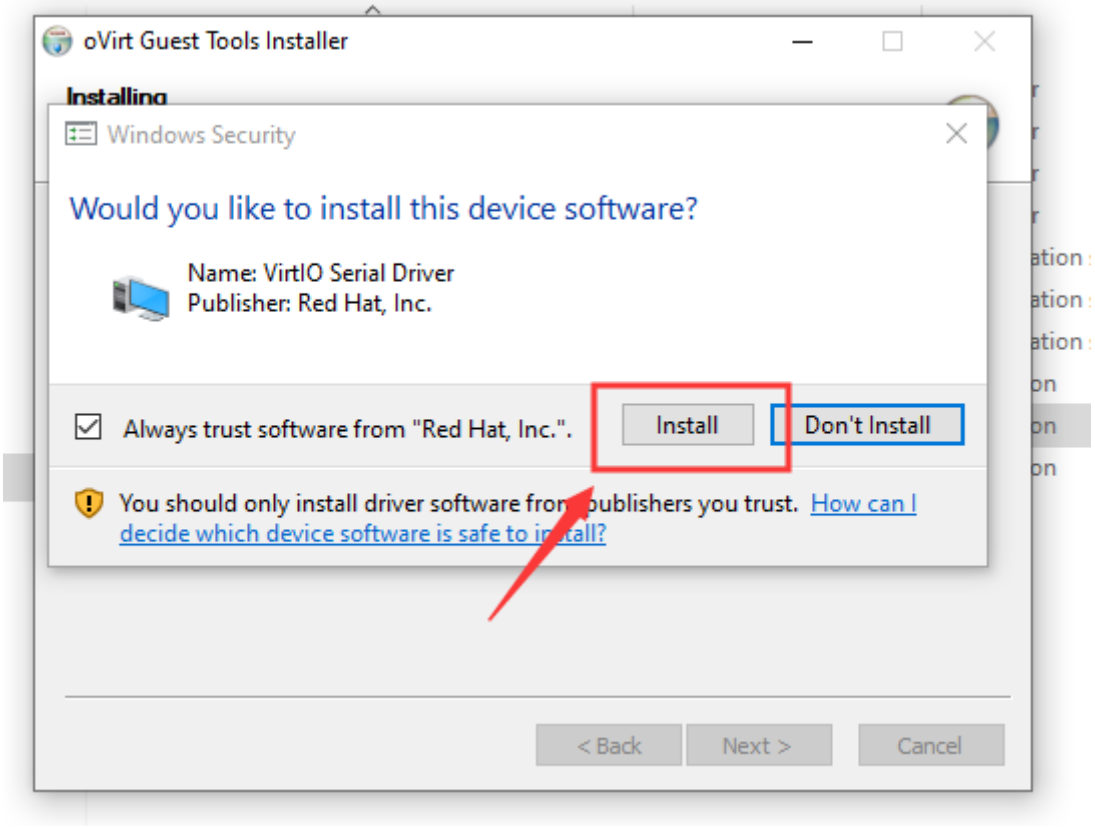
6) Click "Next" in the "oVirt Guest Tools Setup" Window.



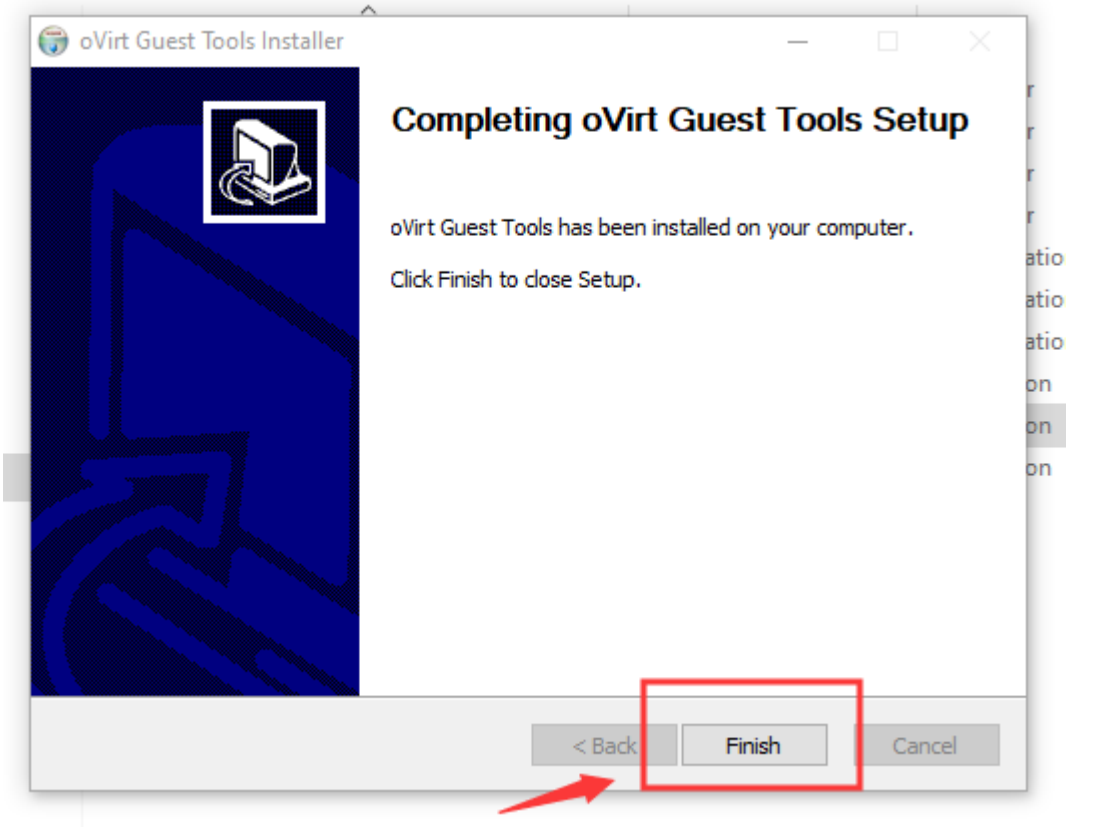
7) Click "I Agree" to begin the installation.



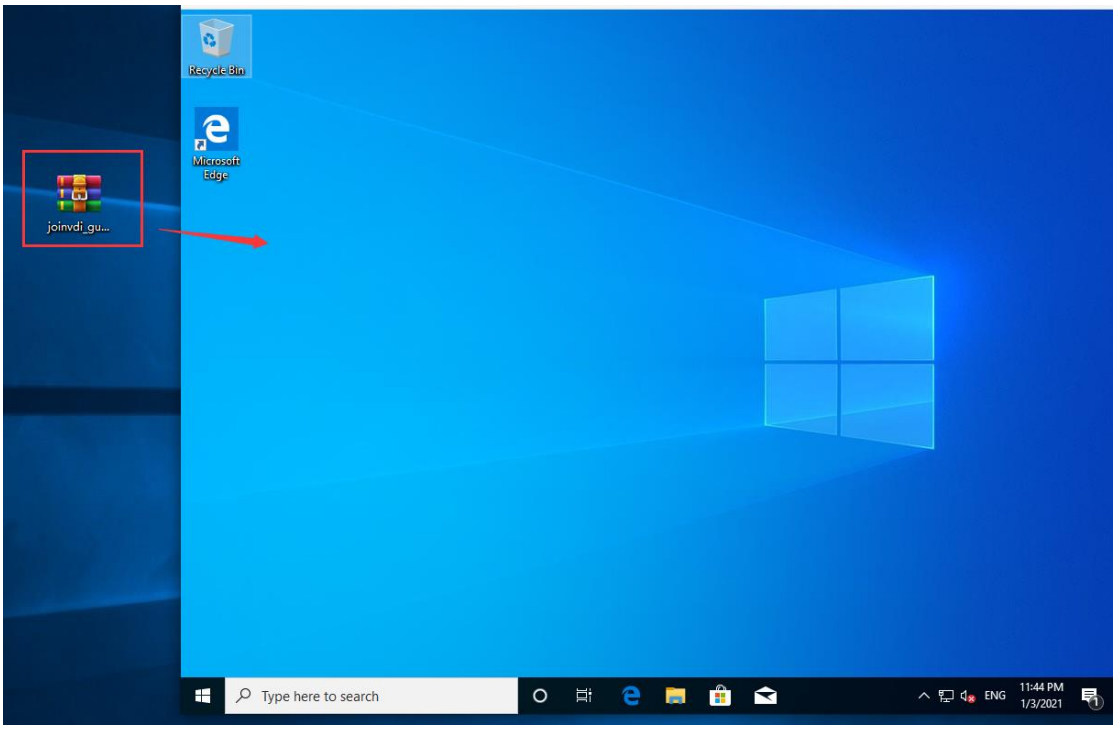
8) Click "Install" when a "Windows Security" prompt appears.



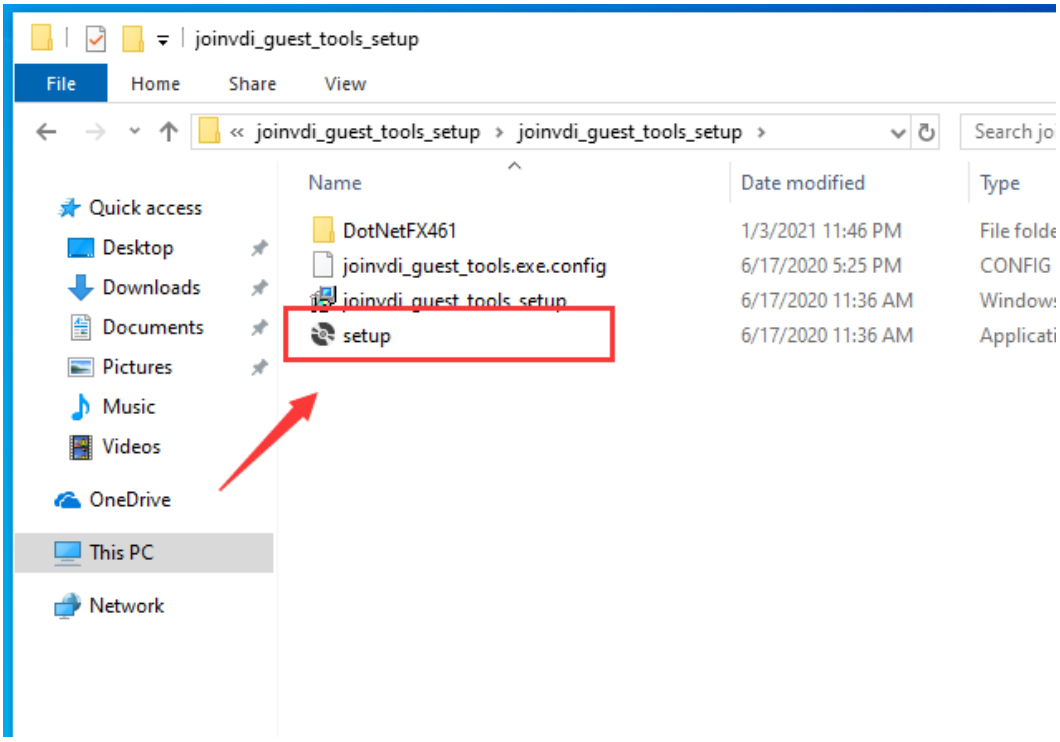
9) Click "Finish" to complete the installation.



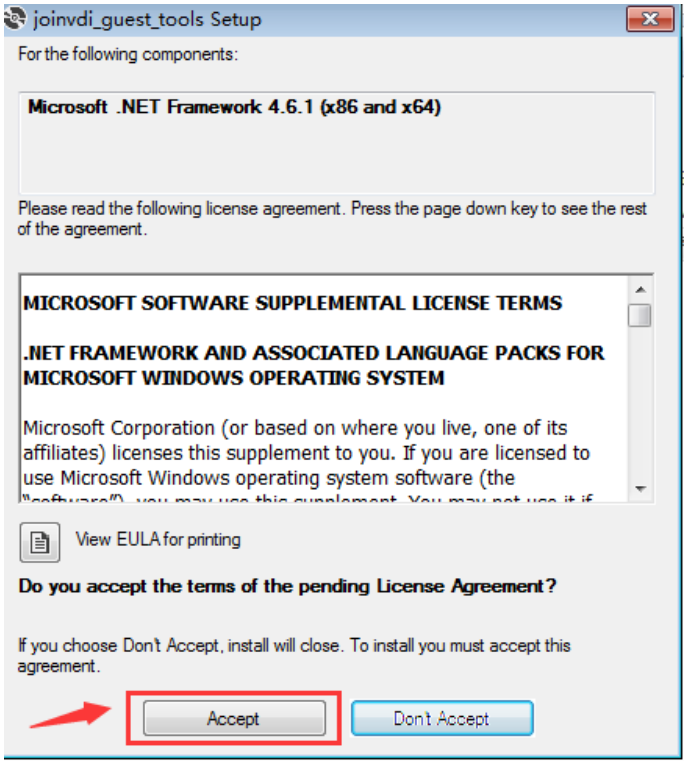
10) Drag the file "Joinvdi_guest_tools_setup.zip" to the console to transfer it to the virtual machine.

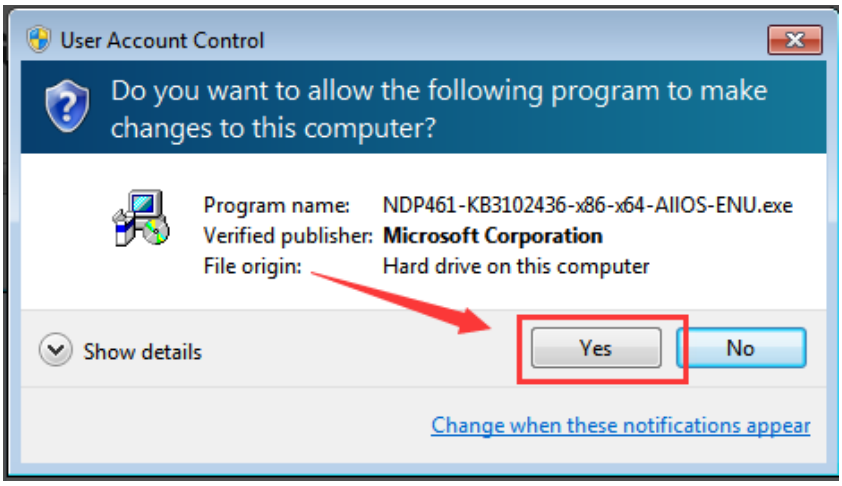


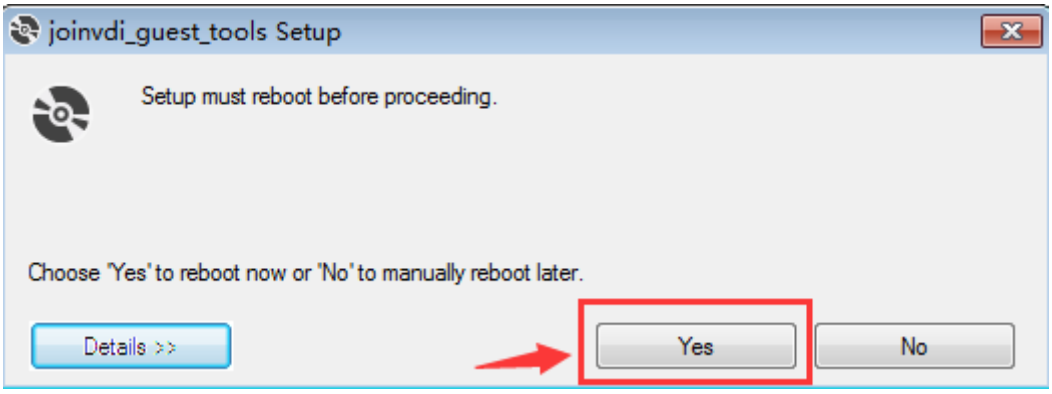
11) Extract the file "Joinvdi_guest_tools_setup.zip" on the desktop, enter the "joinvdi_guest_tools_setup" folder, run the program "setup".



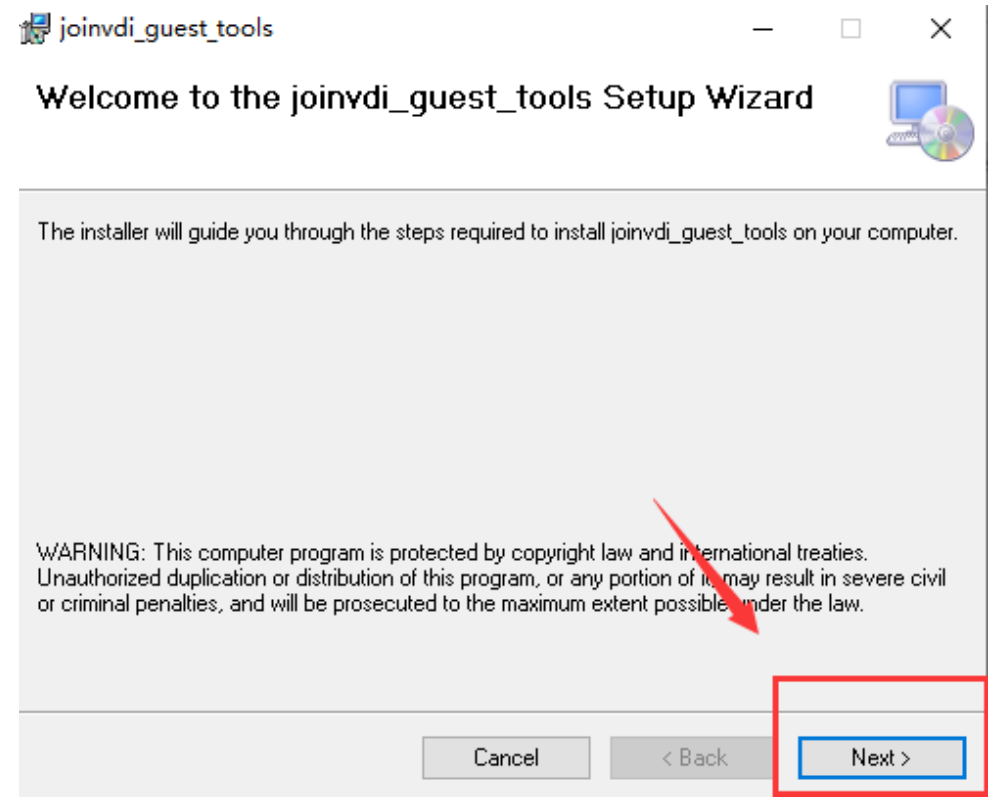
12) If you are running the setup program on a Windows7 system, .NET4.6.1 will run first, click "Accept"→"Yes(Y)"→"Yes" and wait for the restart to complete.

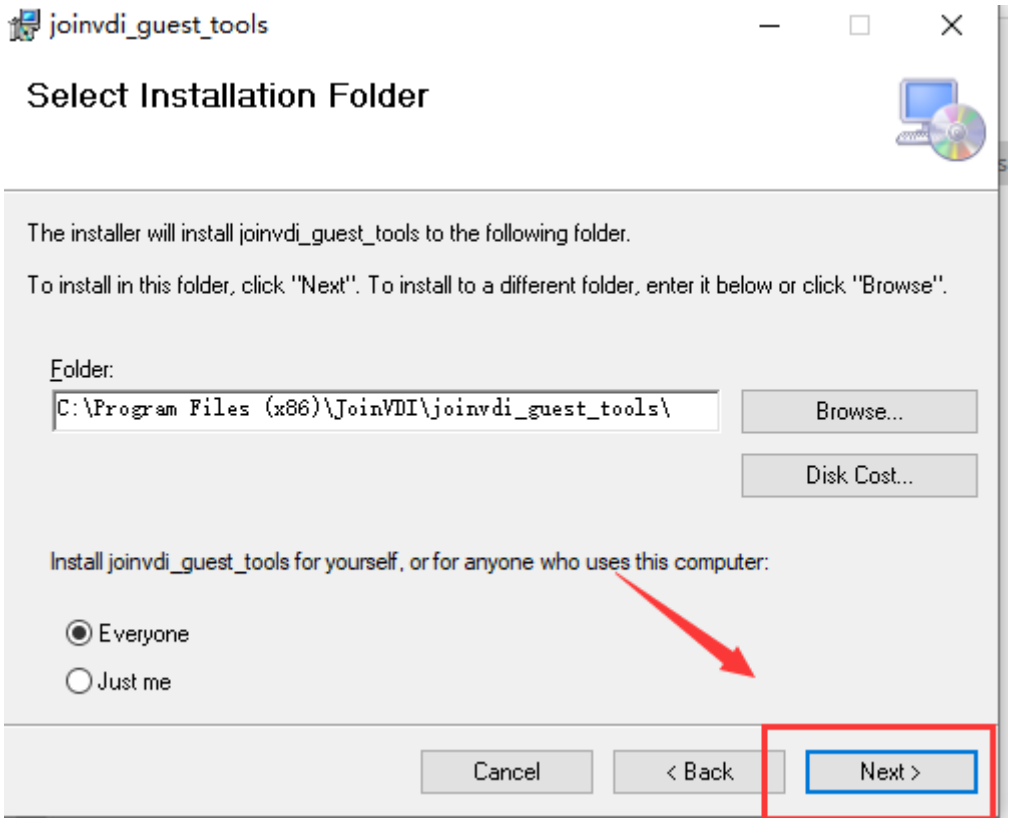


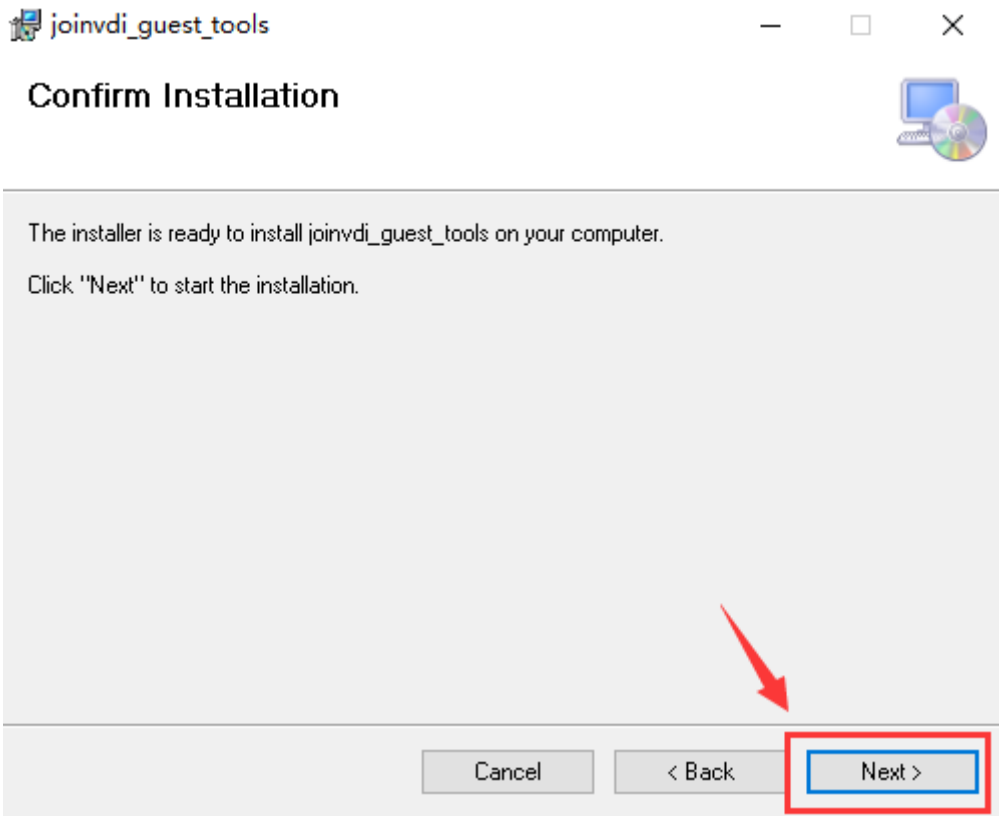


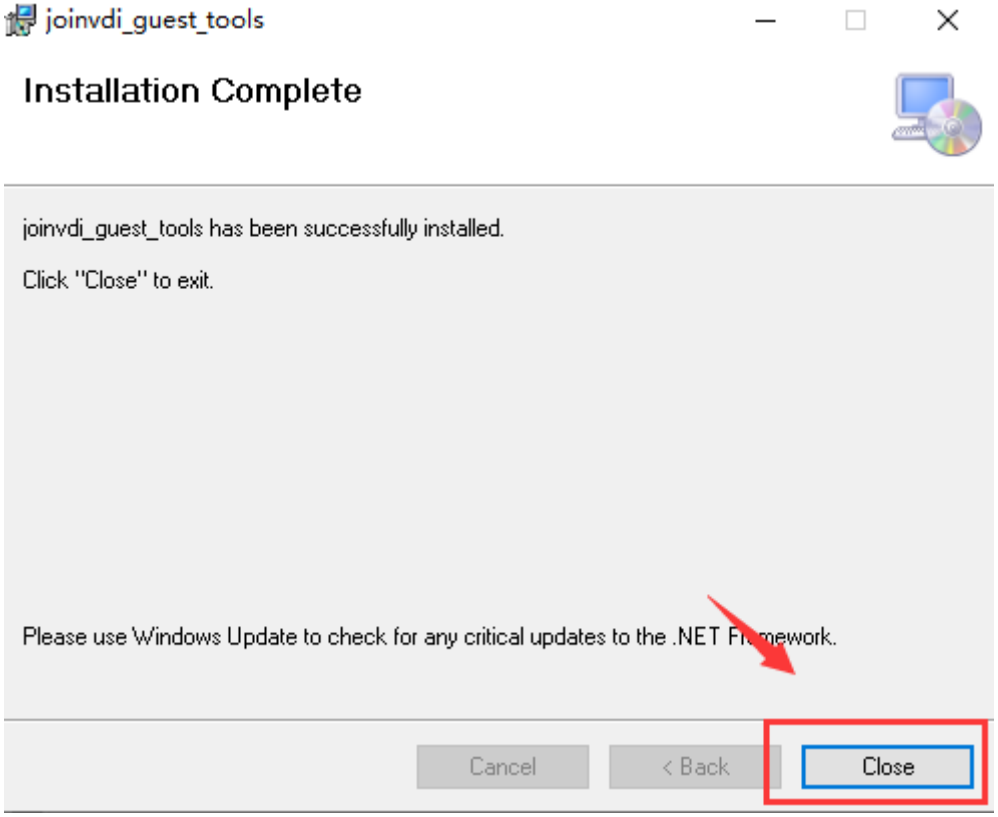


13) The software will run the installation program “joinvdi_guest_tools” , click "Next" by default until the installation is complete.

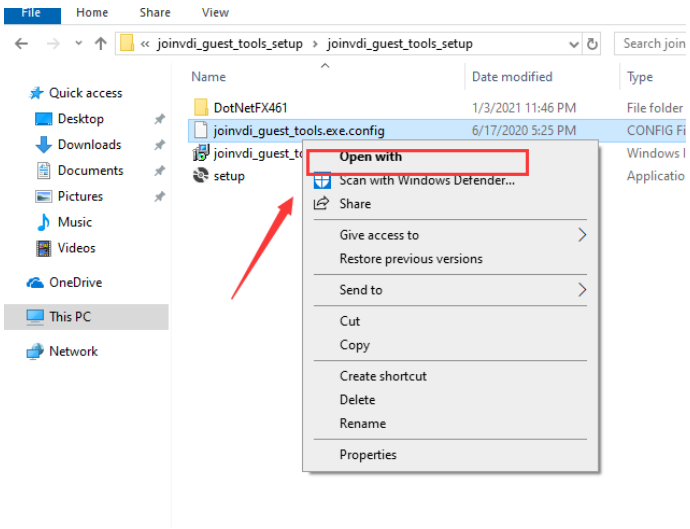


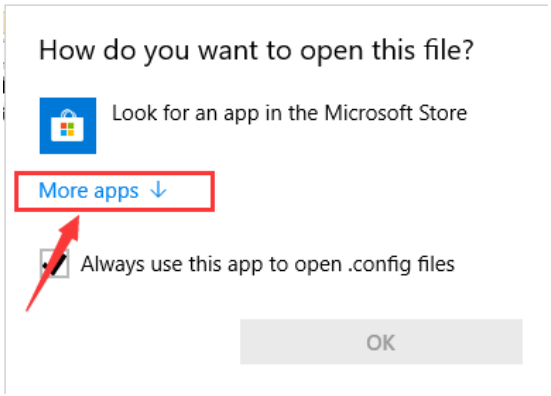


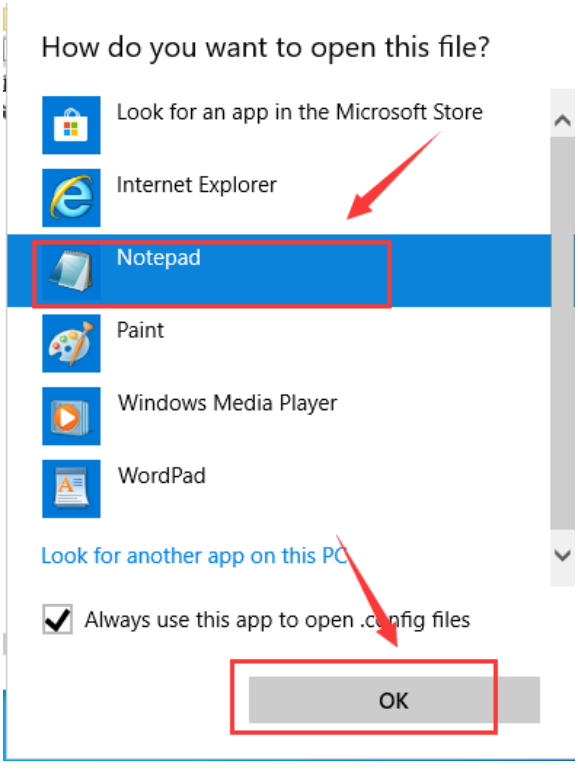

joinvdi_guest_tools
Confirm Installation
The installer is ready to install joinvdi_guest_tools on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >


joinvdi_guest_tools
Installation Complete
joinvdi_guest_tools has been successfully installed.
Click "Close" to exit.
Please use Windows Update to check for any critical updates to the .NET Fr mework.
Cancel
< Back
Close

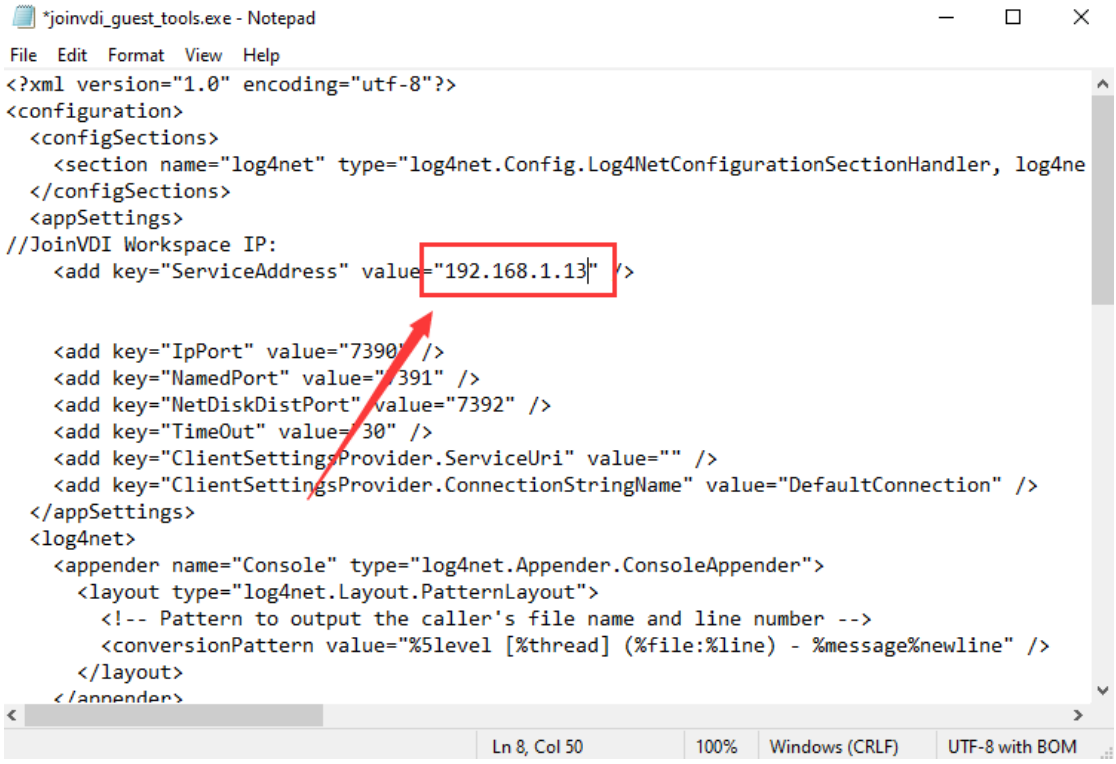
14) Right-click the "joinvdi_guest_tools.exe.config" file → select "Open with" → click "More apps" → "Notepad" → "OK".

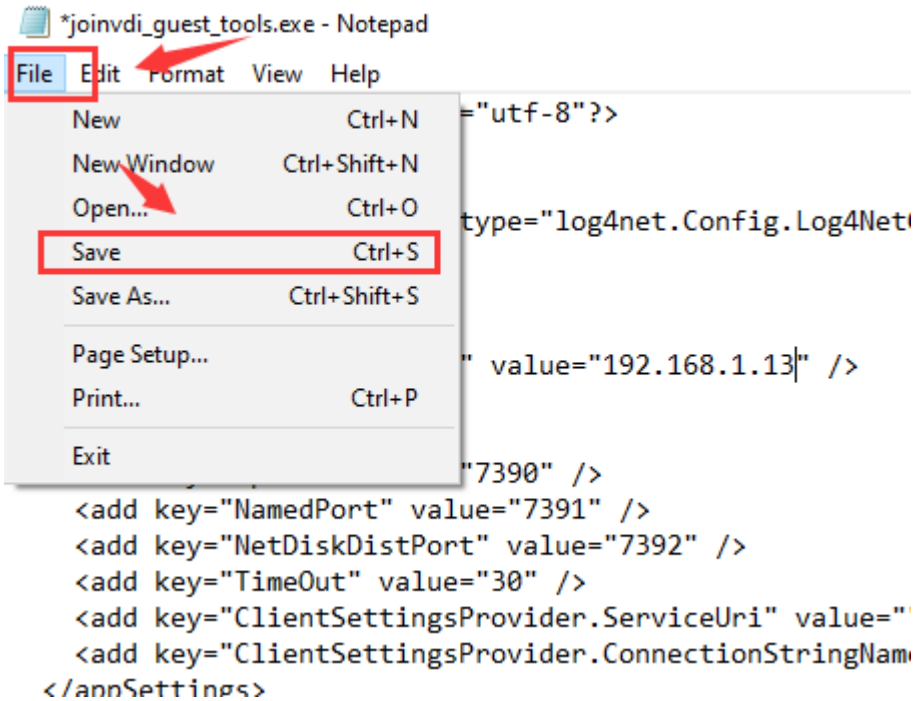




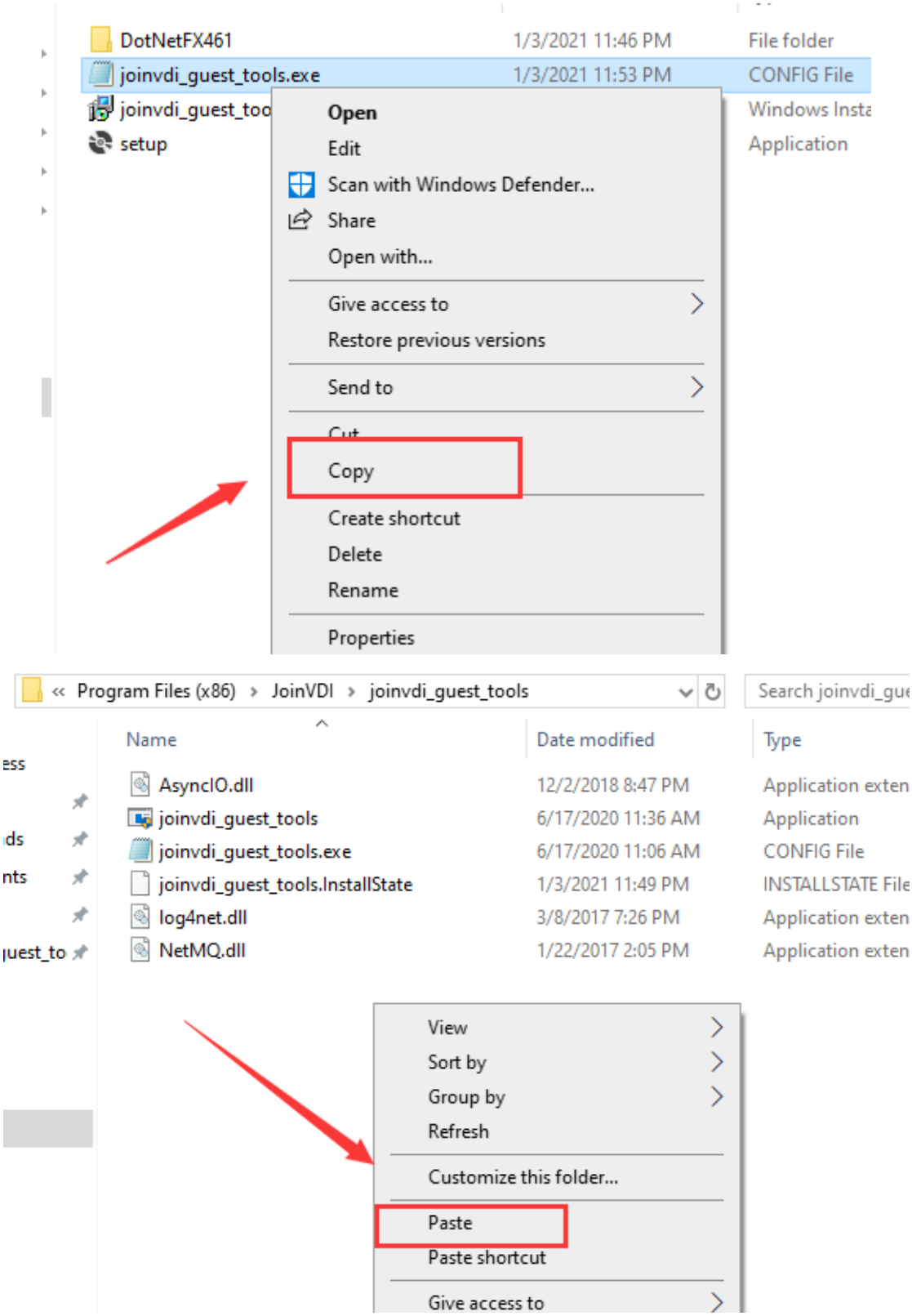


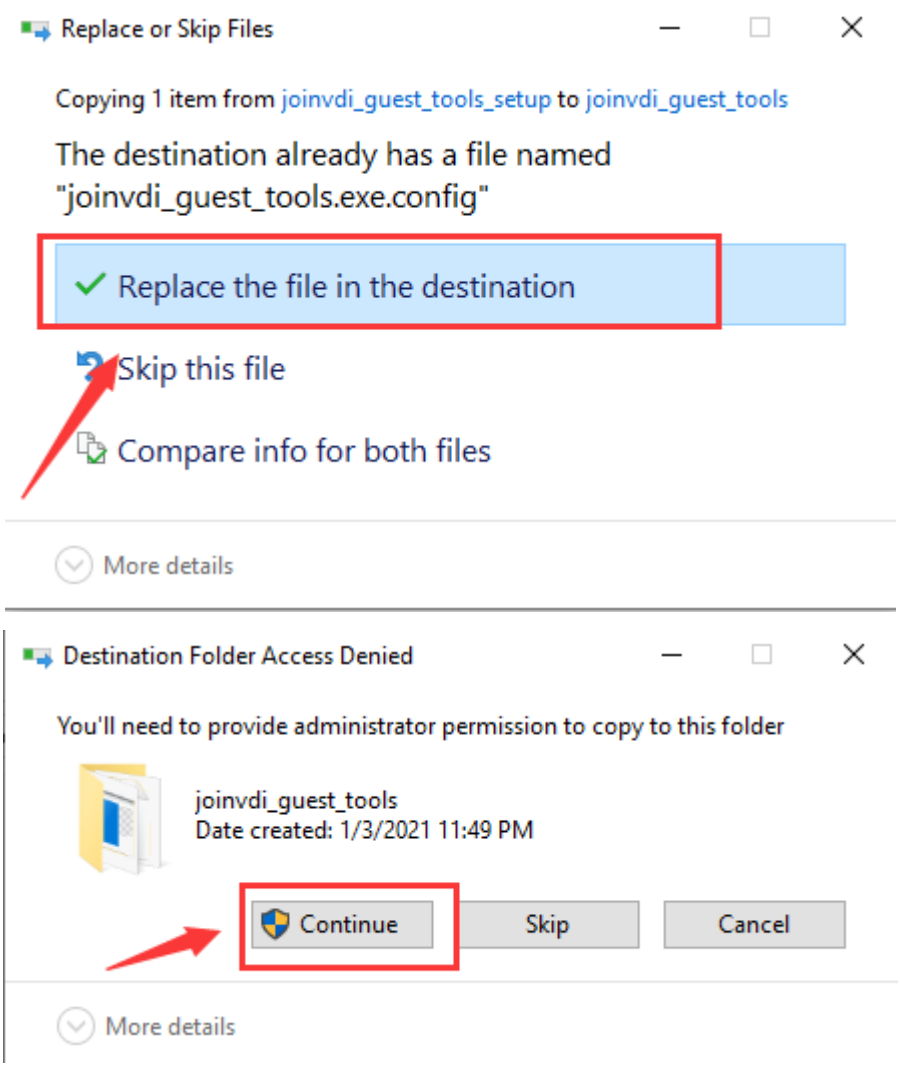
15) Modify the value of the IP address in the picture to the IP address of the server → "File" → "Save".



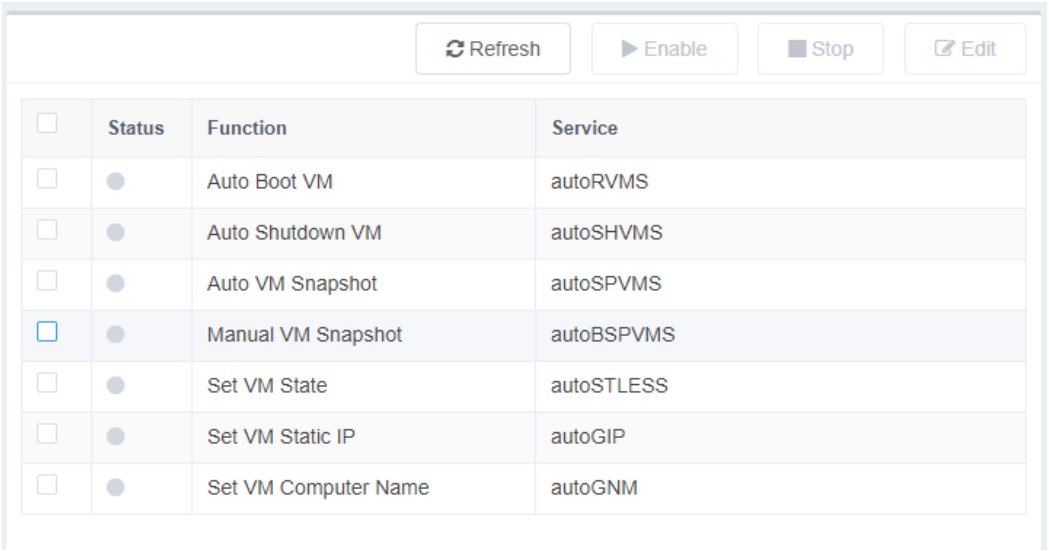


16) Copy the file "joinvdi_guest_tools.exe." to C:\Program Files (x86)\JoinVDI\joinvdi_guest_tools (For 32-bit systems, please copy to C:\Program Files\JoinVDI\joinvdi_guest_tools) → select "Replace the file in the destination (R)"→" Continue (C)" .





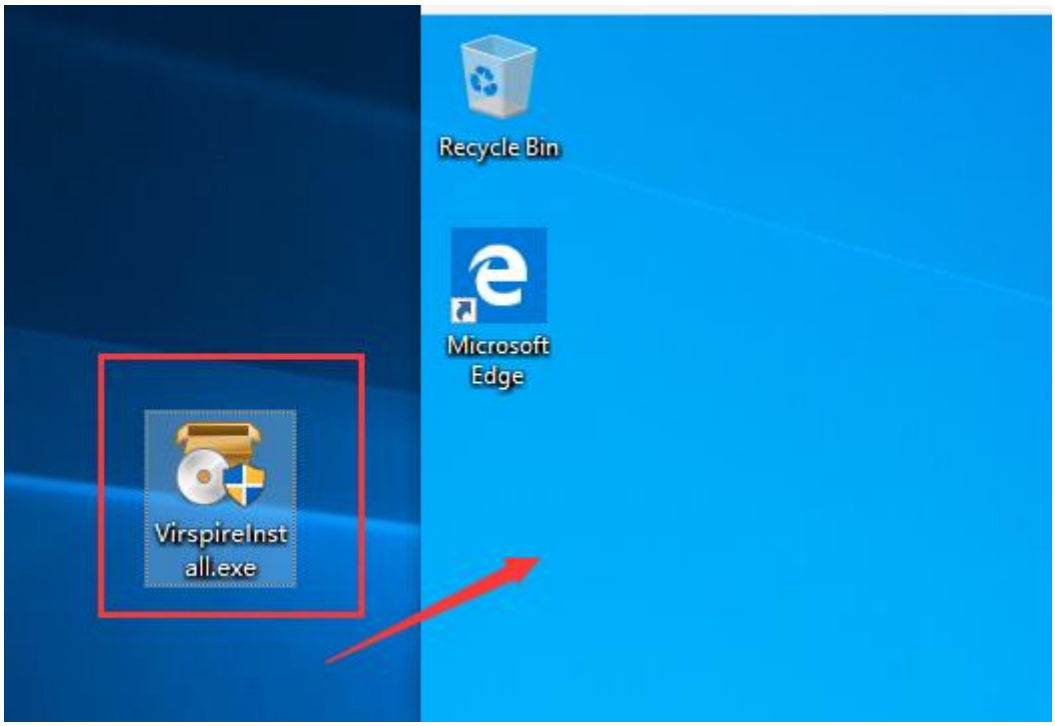
- After installing "joinvdi_guest_tools", you can use the functions of the "virtual machine environment" in "JoinVDI WorkSpace".



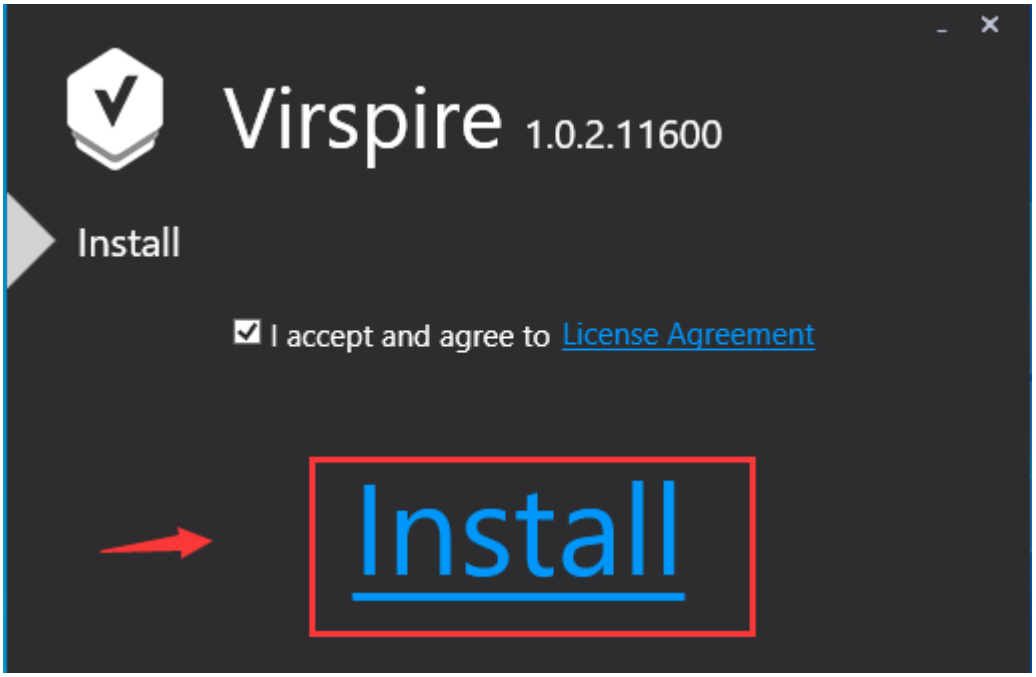
Status	Function	Service
	Auto Boot VM	autoRVMS
	Auto Shutdown VM	autoSHVMS
	Auto VM Snapshot	autoSPVMS
	Manual VM Snapshot	autoBSPVMS
	Set VM State	autoSTLESS
	Set VM Static IP	autoGIP
	Set VM Computer Name	autoGNM

5.1.4 Install virspire client

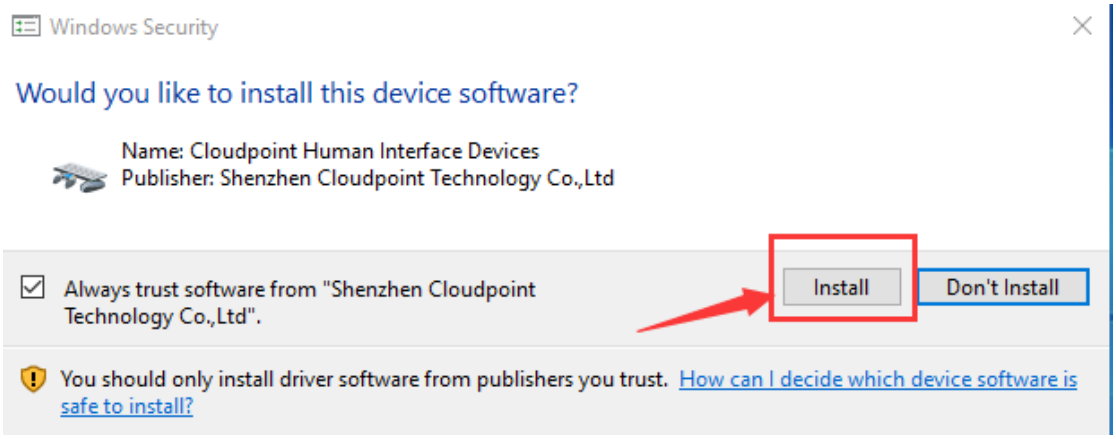
1) Drag the installation package "VirspireInstall.exe" into console.



2) Run the installation package "VirspireInstall.exe" and click "Install".

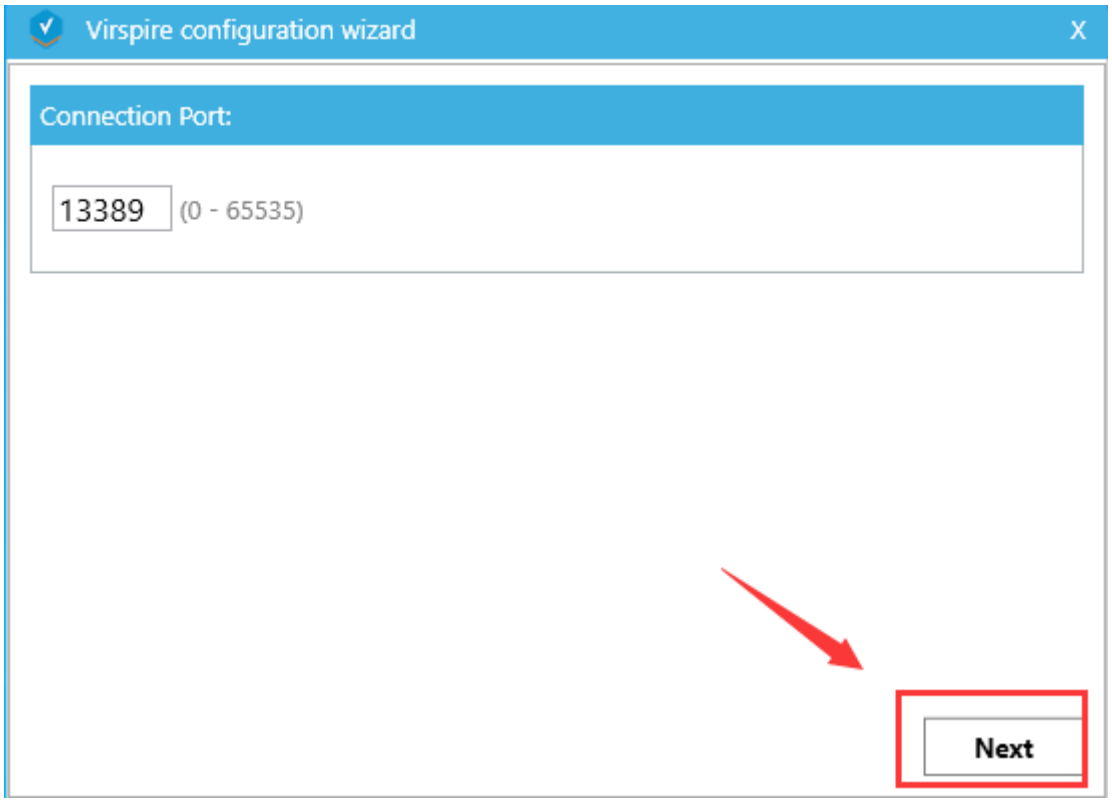


3) Click "Install" when a "Windows Security" prompt appears during installation.

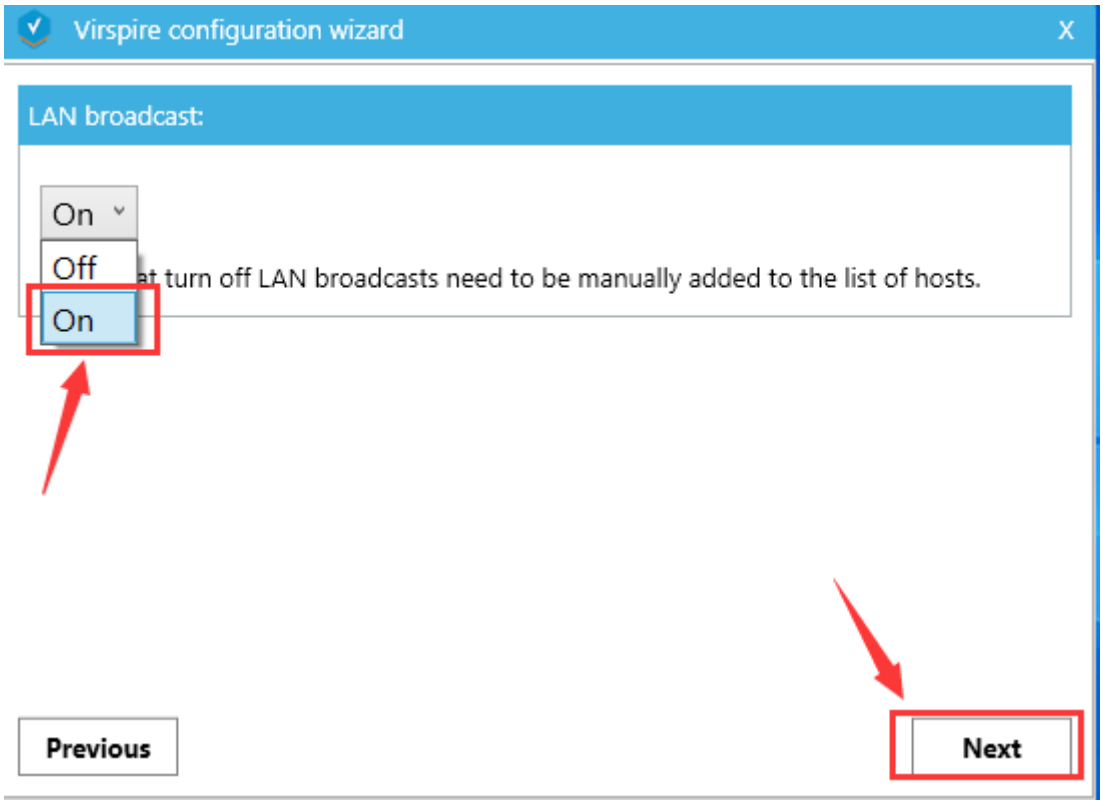


4) After the installation is complete, click "Install Completed" to enter the configuration wizard of Virspire.

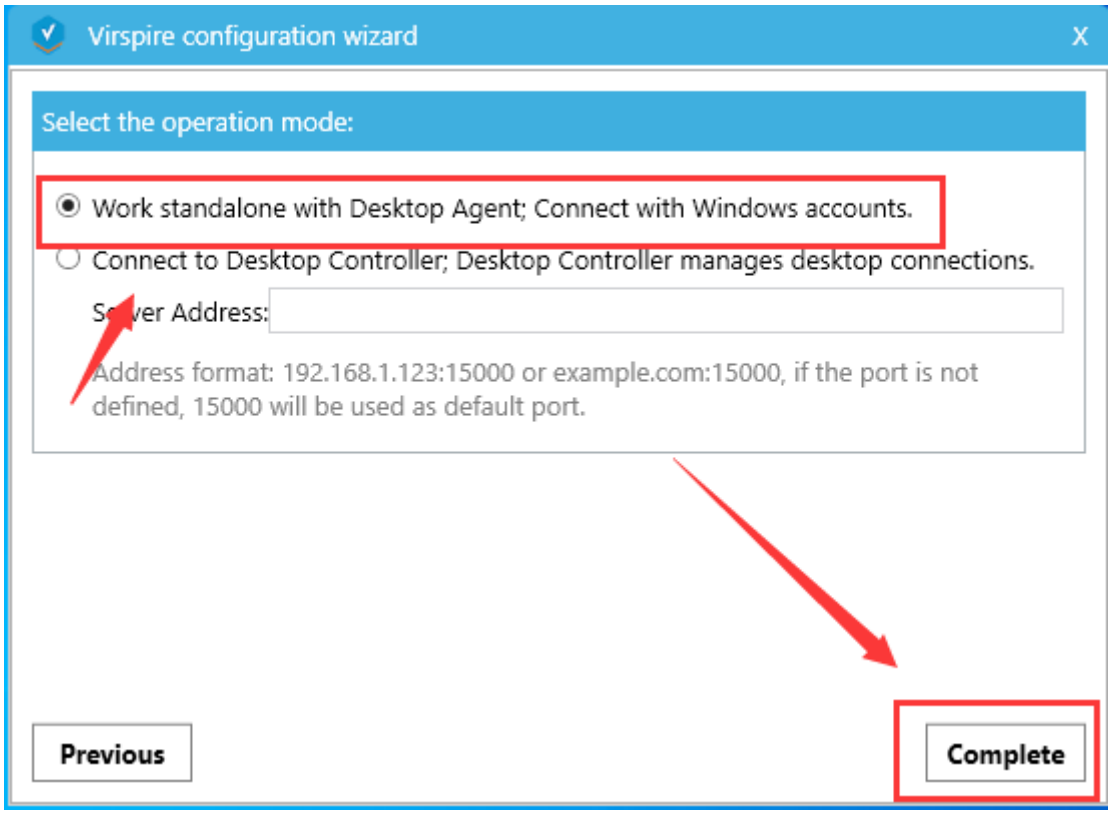
5) The default port is 13389, if there is no special requirement, please keep the default setting and click "Next".



6) Select "on" in the LAN broadcast, and click "Next".



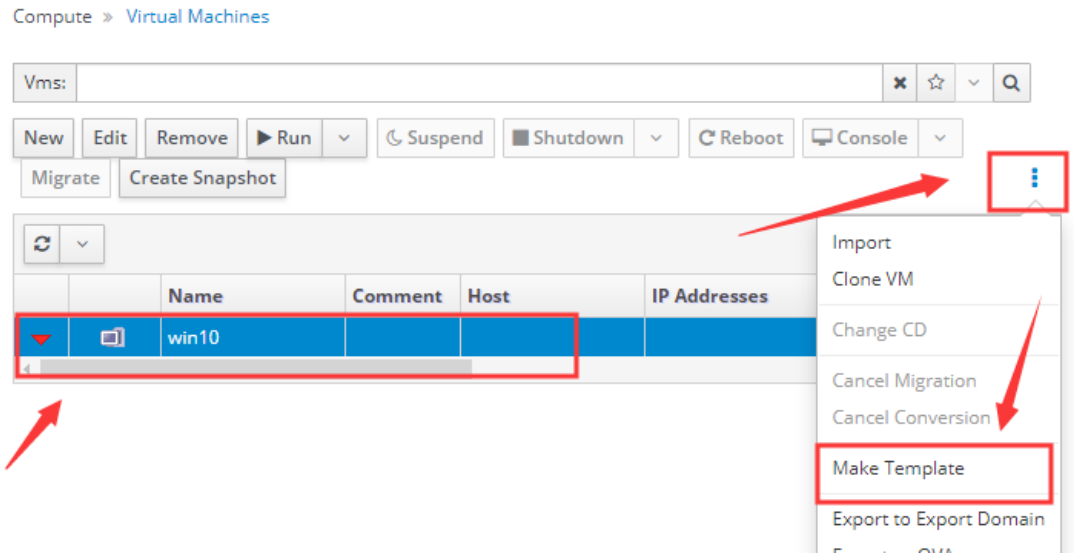
7) Select “Work standalone with Desktop Agent; Connect with Windows accounts” in the Virspire configuration wizard, and click “Complete”.



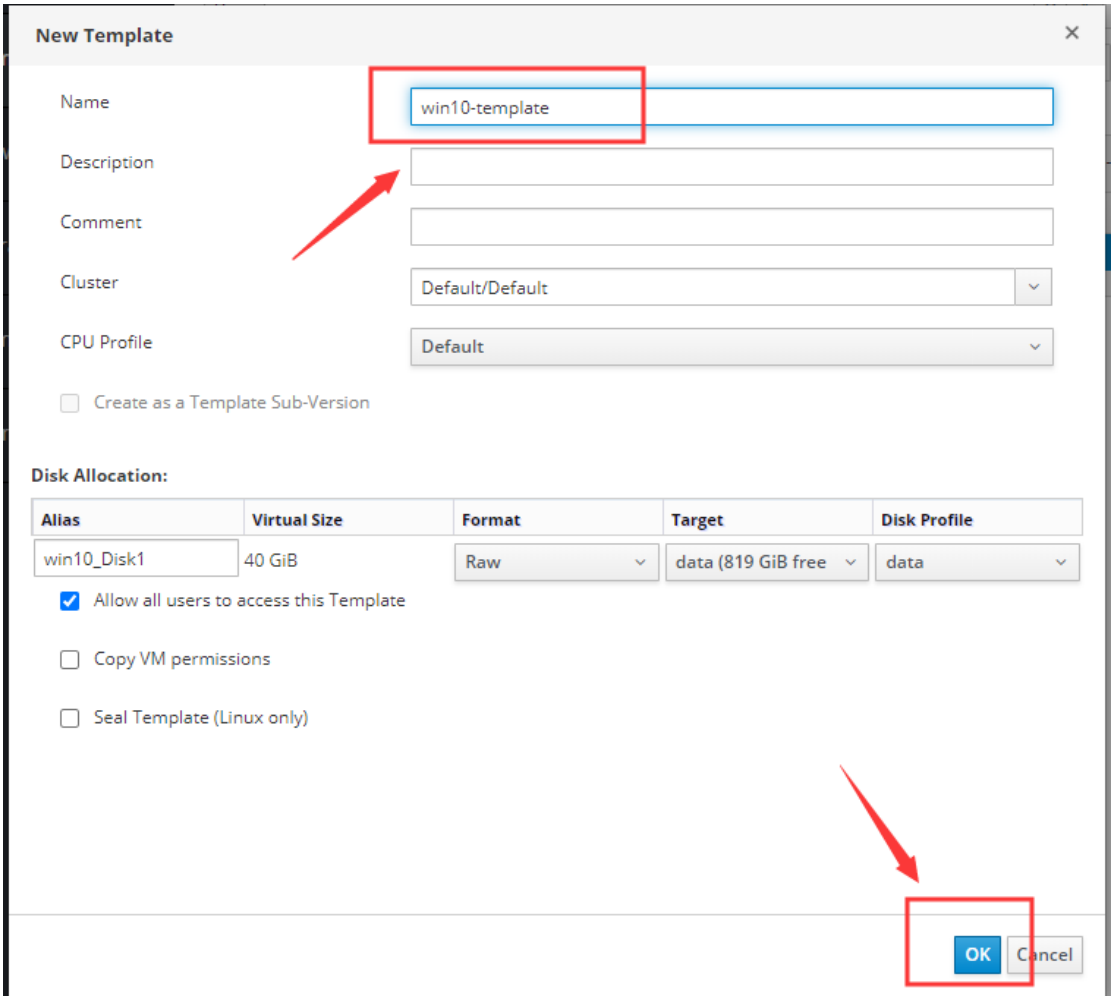
8) Click "Yes" to restart the virtual machine. After the virtual machine restarts, it will appear in the host list of the zeroclient. Select the virtual machine in the zeroclient and enter the Windows account and password to log in to the desktop.

5.2 Make a template

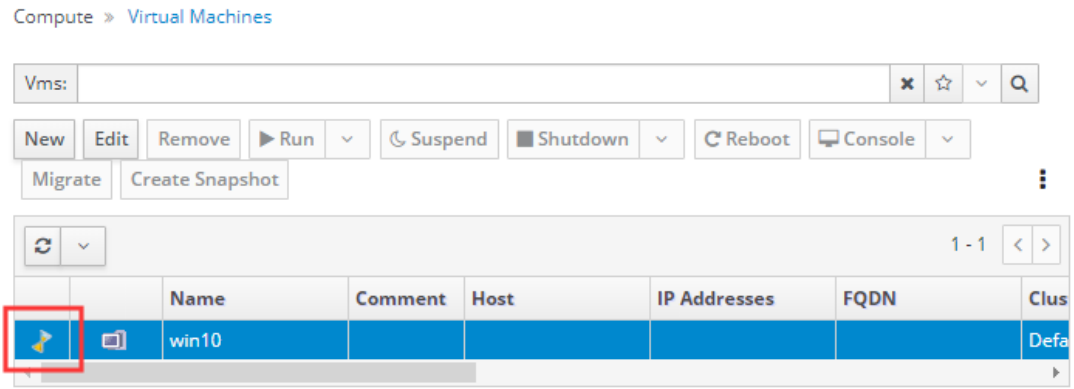
1) Select the shutdown virtual machine, click the "⋮" icon → "Make template".

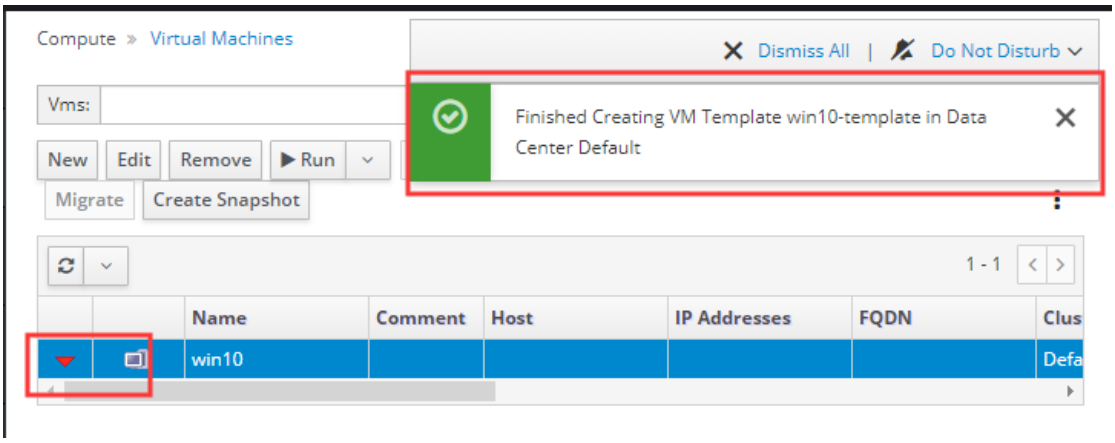


2) Enter the template name, select the storage target of the template disk, and click "OK".

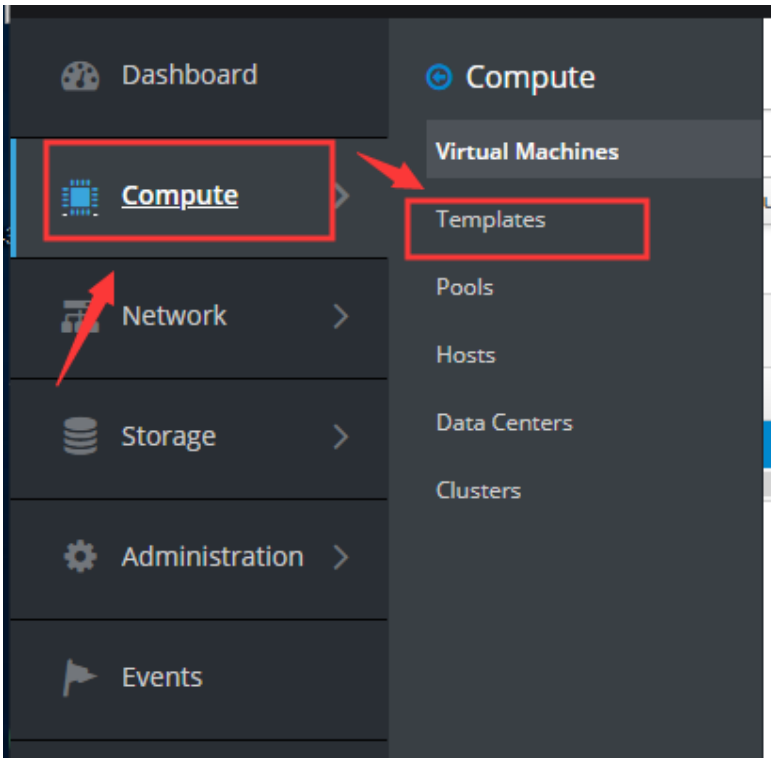


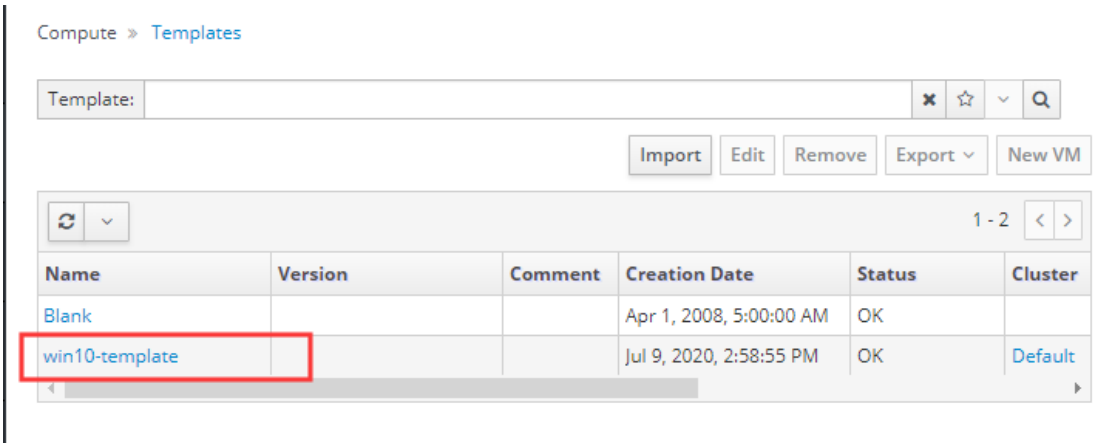
3) The virtual machine disk is locked when the template is being made; the virtual machine status will turn into "Down" after completion.





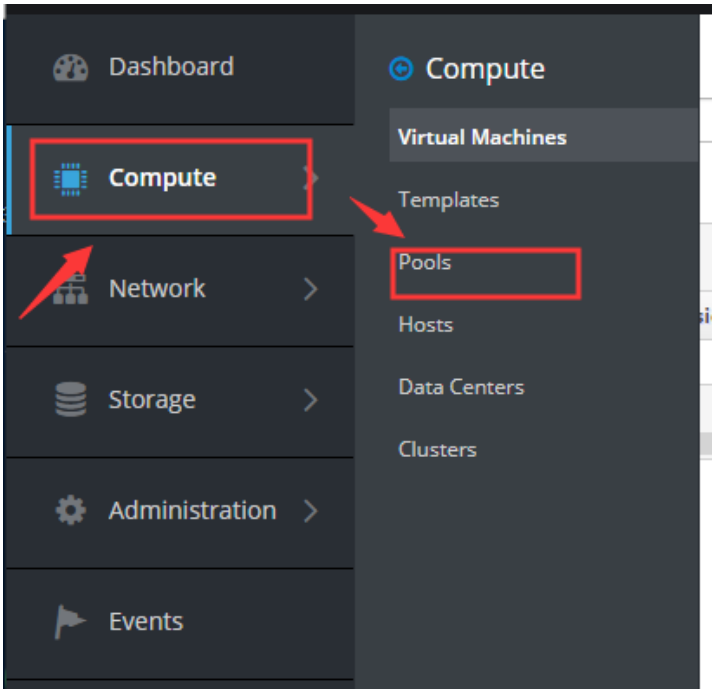
4) Click "Compute" → "Template" to see the created template.



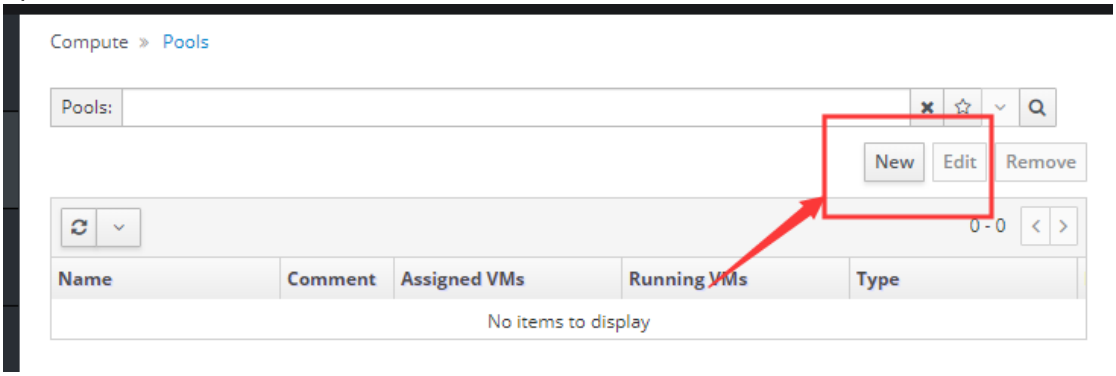


5.3 Create a virtual machine pool

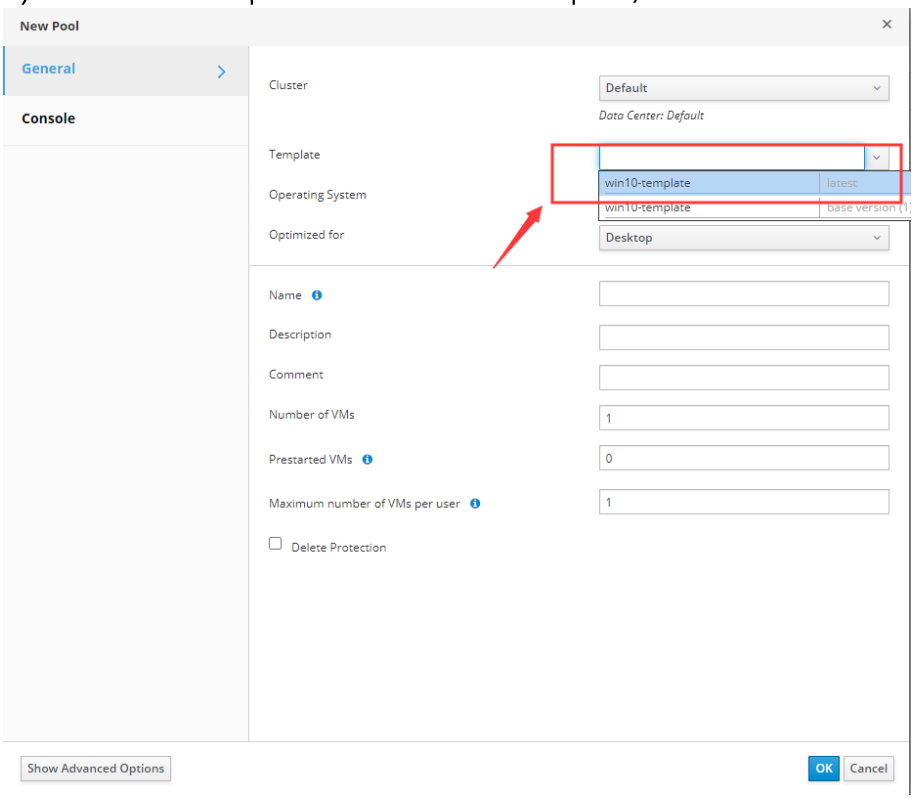
1) Click "Compute" → "Pools".



2) Click "New".

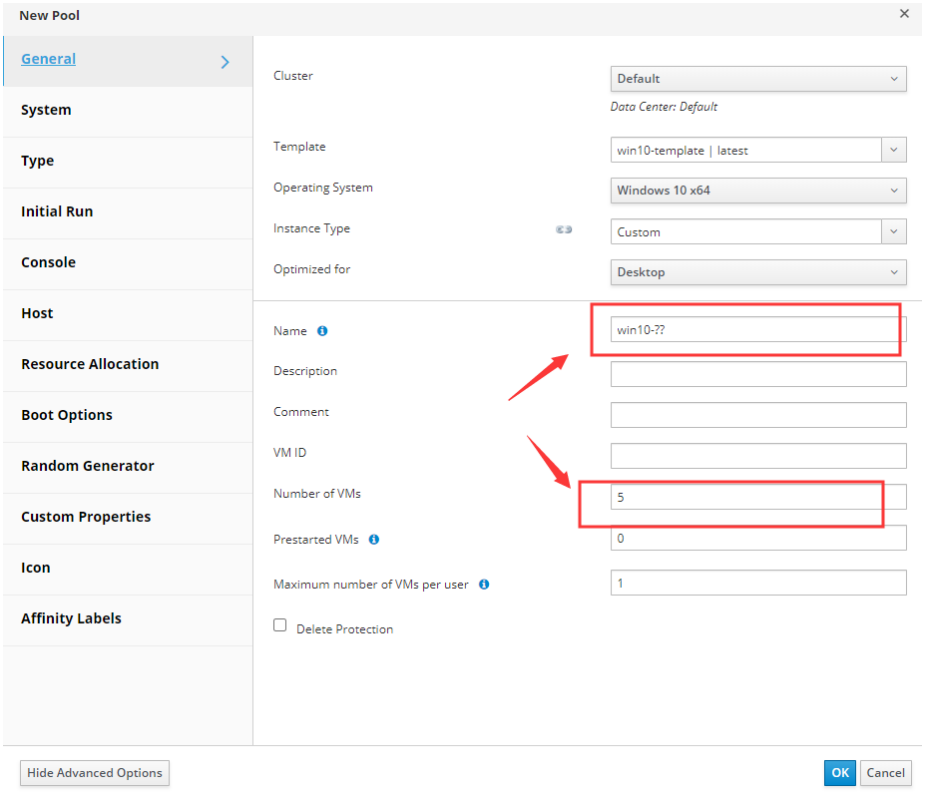


3) Select the template used to create the pool;



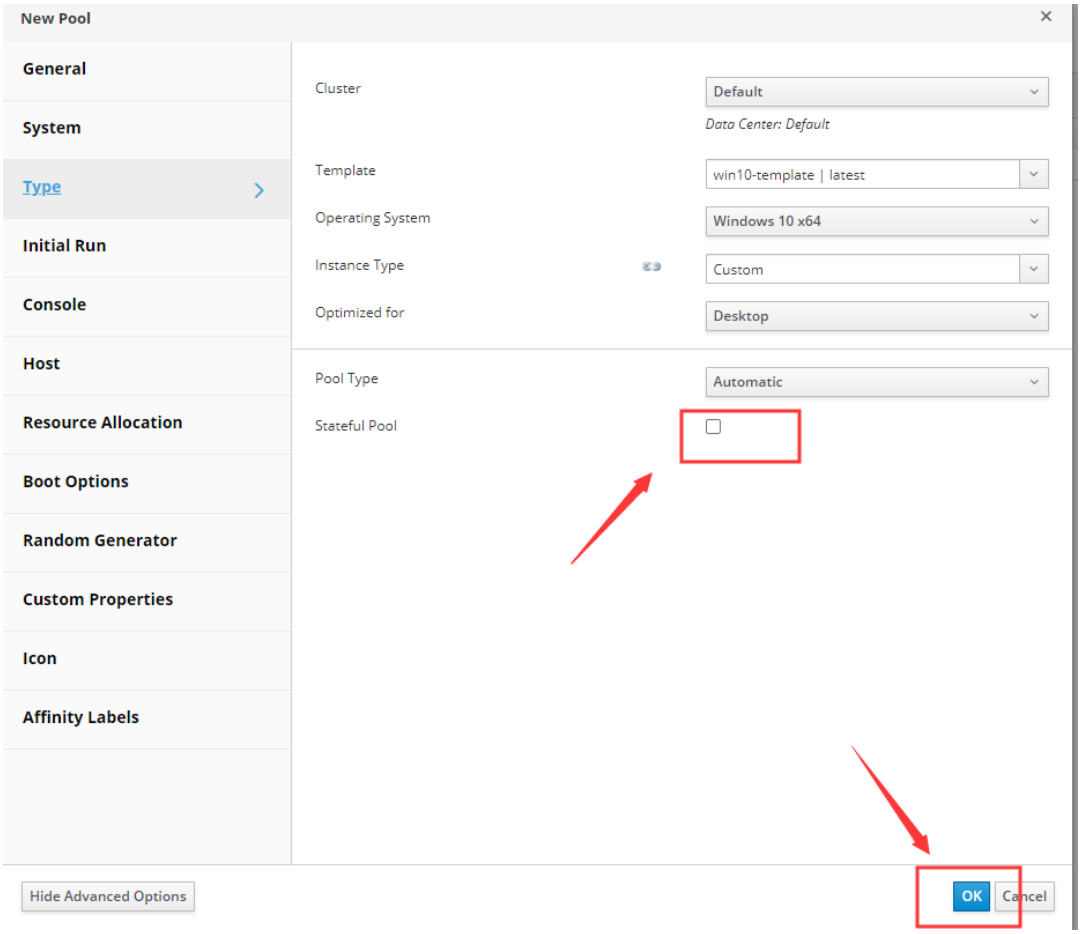
4) Enter a name and the number of virtual machines for the pool. And click "Show Advanced Options".

- The name you enter will be used as the prefix as the virtual machine names in the pool, e.g., if the name entered is "Win10A", the virtual machine names in the pool will be "Win10A-1"," Win10A-2" ...

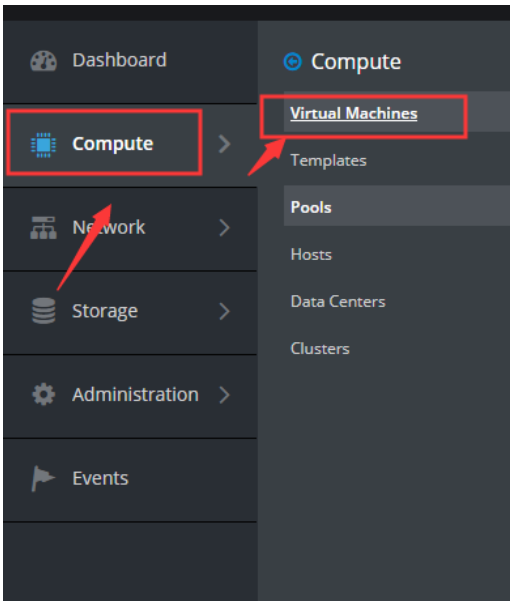


5) Click "Type" on the left panel; check the "Stateful Pool" option and click "OK".

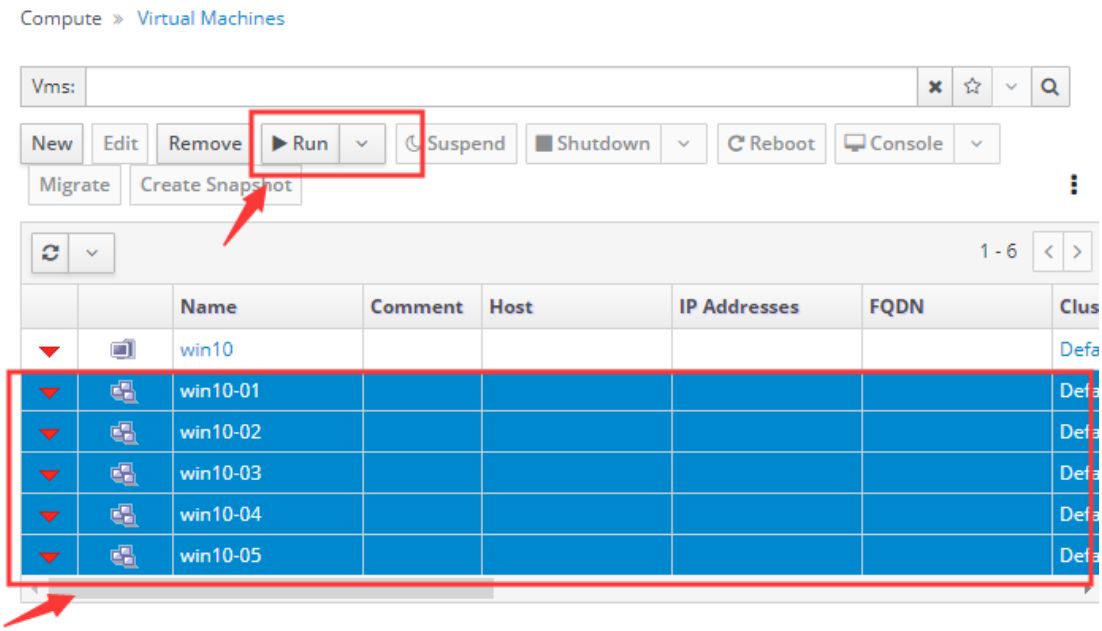
- If the "Stateful Pool" option is not checked, changes to the virtual machines will be automatically removed on every time they restart.



6) Then you will be prompted that the virtual machine pool is created successfully; After the pool is created, the virtual machines in the pool can be viewed in "Compute" → "Virtual machine".



7) Select the virtual machines and click "run" to start the virtual machines.

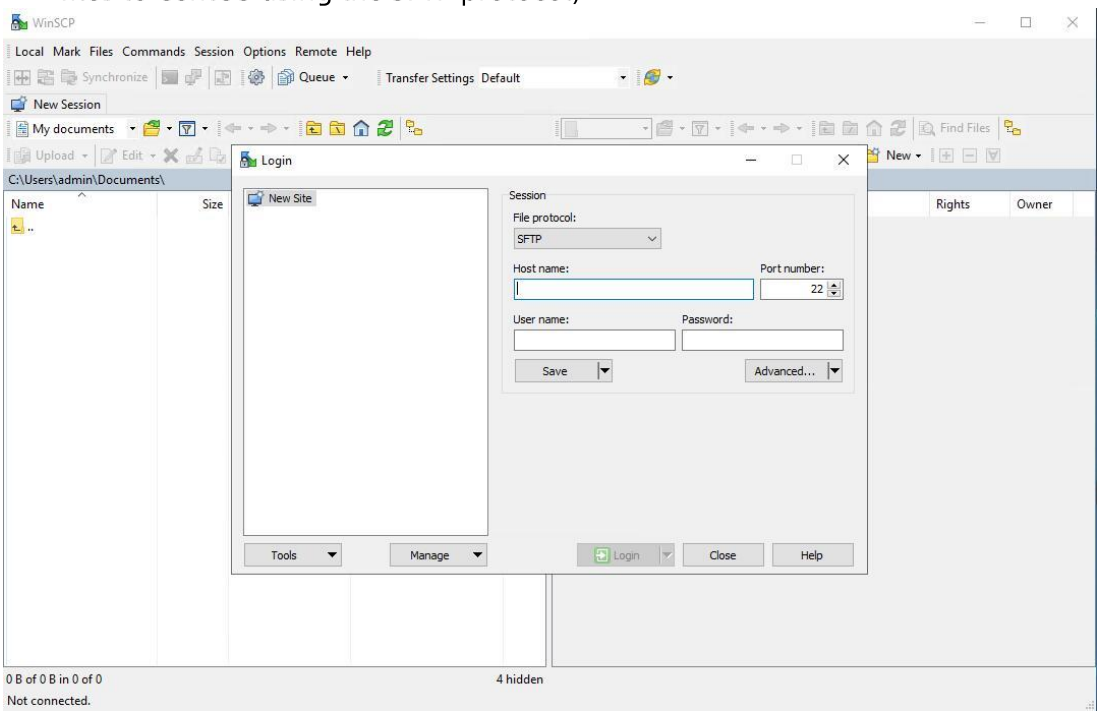


Appendixes

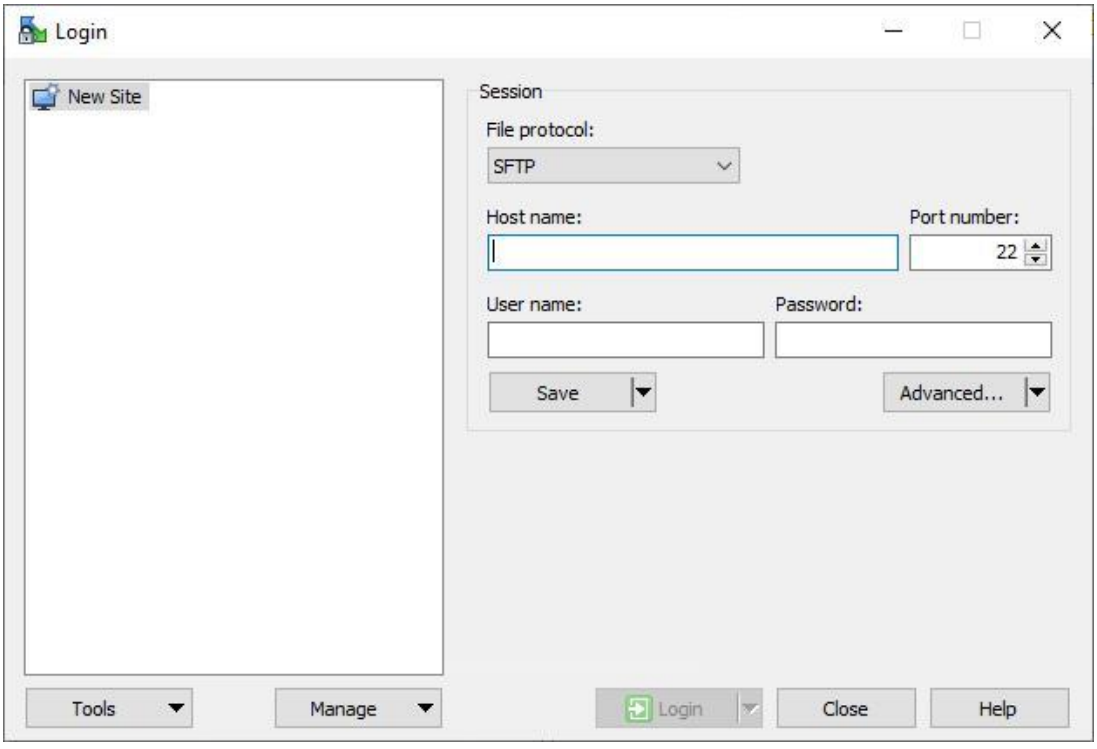
1. Upload JoinVDI installation image

- Upload images with WinSCP, download address: https://winscp.net/eng/download.php.

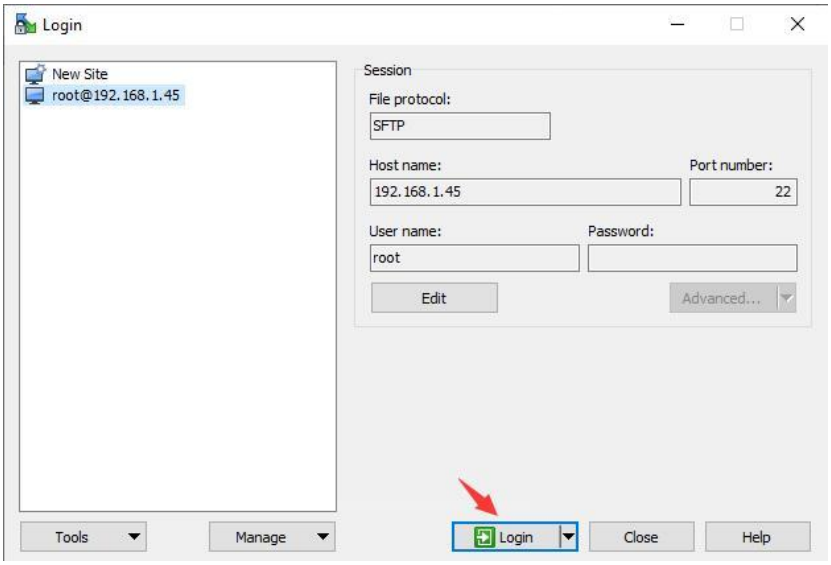
1) Run WinSCP with a computer on the same LAN as the CentOS host, and upload files to CentOS using the SFTP protocol;



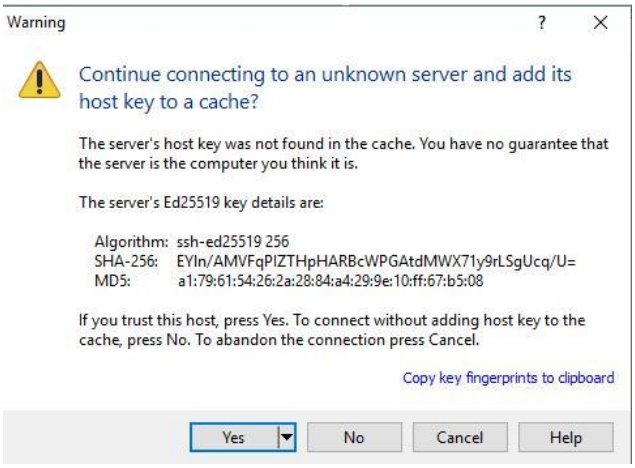
2) Enter CentOS' IP address in "Host name" and root in "User name";



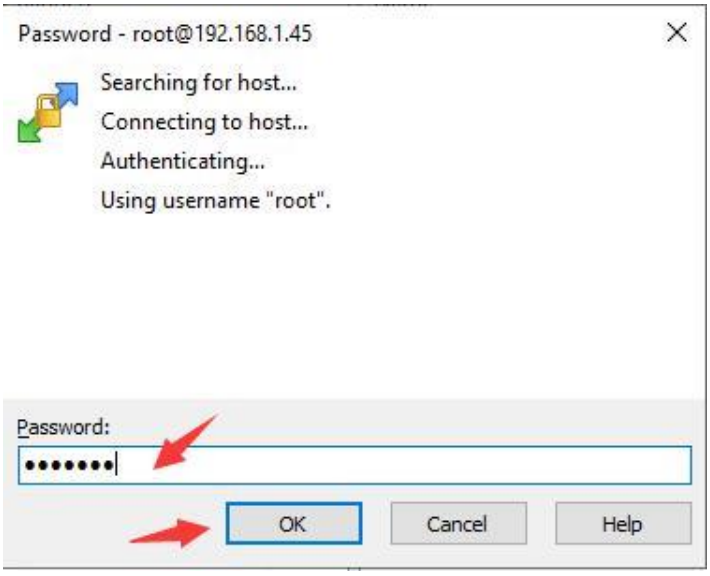
3) After finishing entering, click "Login" and connect to CentOS;



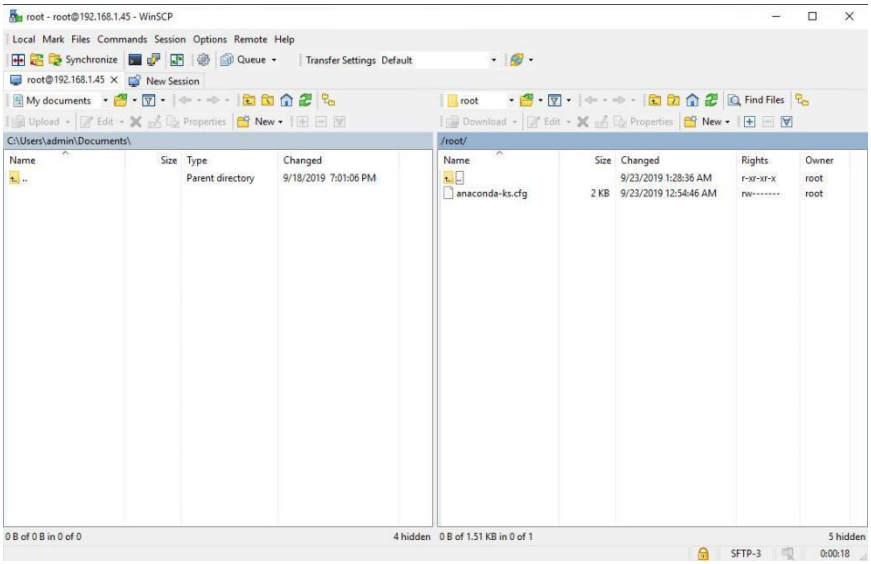
4) Click "YES" in the pop-up window;



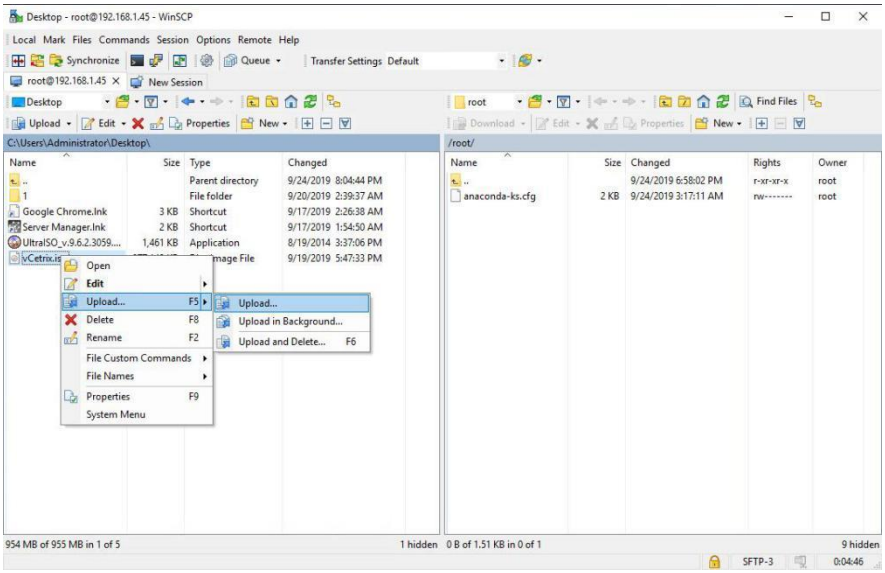
5) Enter root user's password, which is the password set during CentOS is installation, and click "OK";



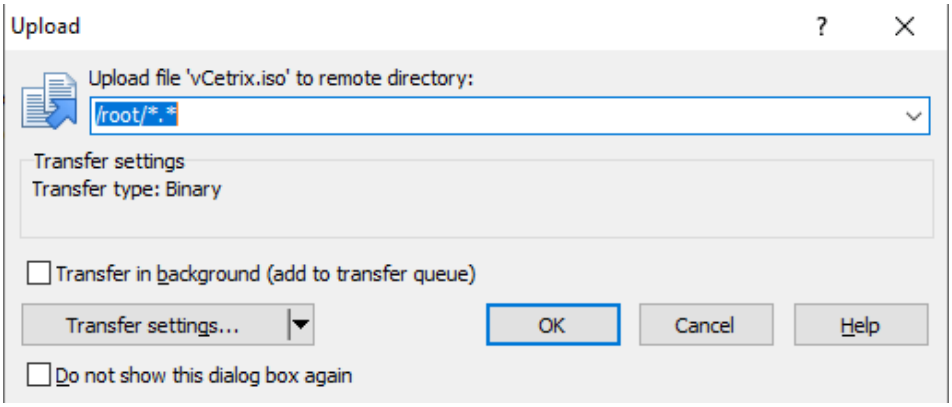
6) The following interface indicates that CentOS has been successfully connected.

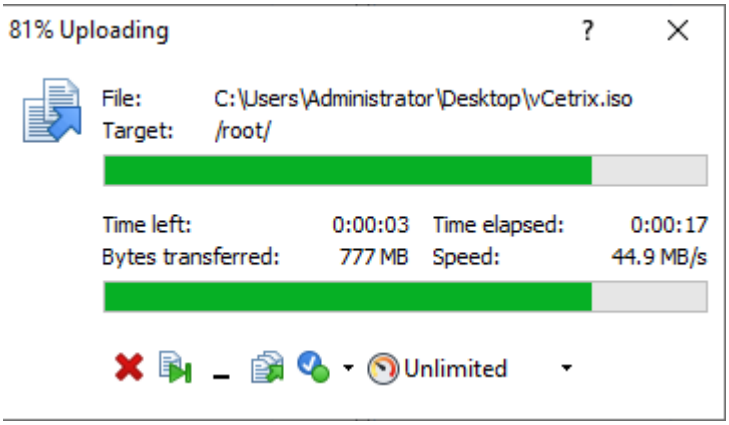


7) Switch to the directory where JoinVDI folder is located in the left column, and leave the directory on the right side as the default; Select the JoinVDI image file, right click, select "Upload" → "Upload" to upload "JoinVDI. Iso" to the CentOS directory on the right side.



8) Click OK in the pop-up window to start uploading.

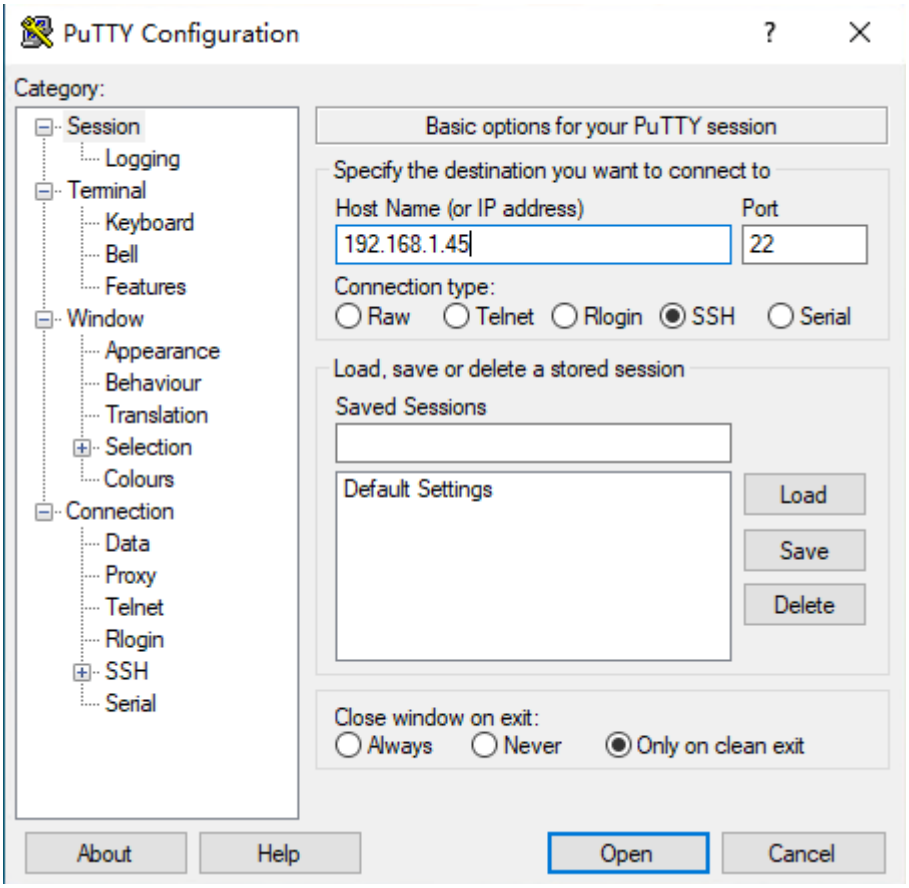



81% Uploading
File: C:\Users\Administrator\Desktop\vCetrix.iso
Target: /root/
Time left: 0:00:03
Time elapsed: 0:00:17
Bytes transferred: 777 MB
Speed: 44.9 MB/s
Unlimited

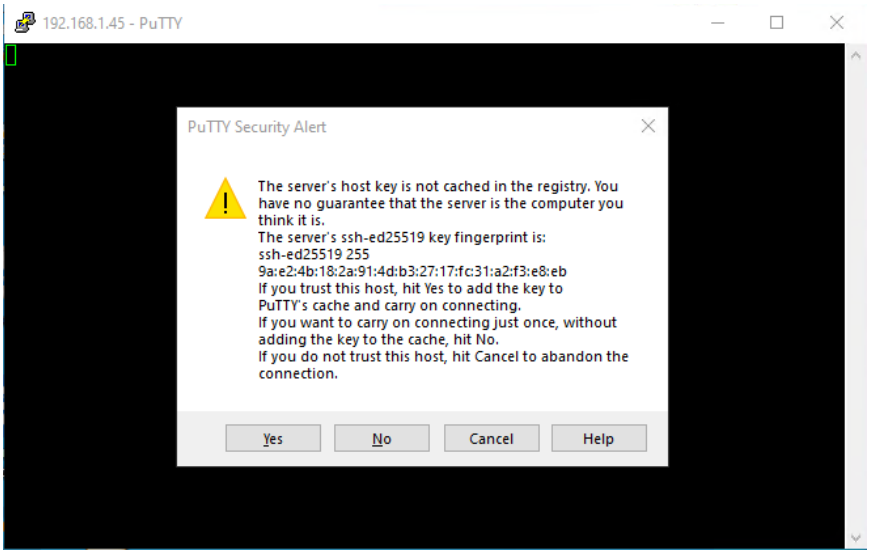
2. Connect to CentOS with Putty SSH client

1) Download and install Putty from https://www.chiark.greenend.org.uk/~sgtatham/putty/;

2) Open the software, enter the IP address of CentOS in "HostName", keep the default options, and click "Open";

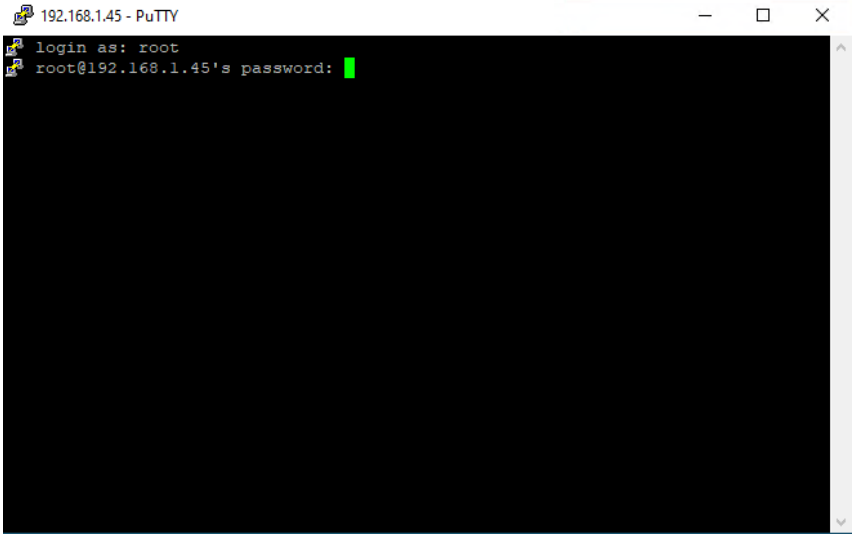


3) Click "Yes" in the pop-up window;

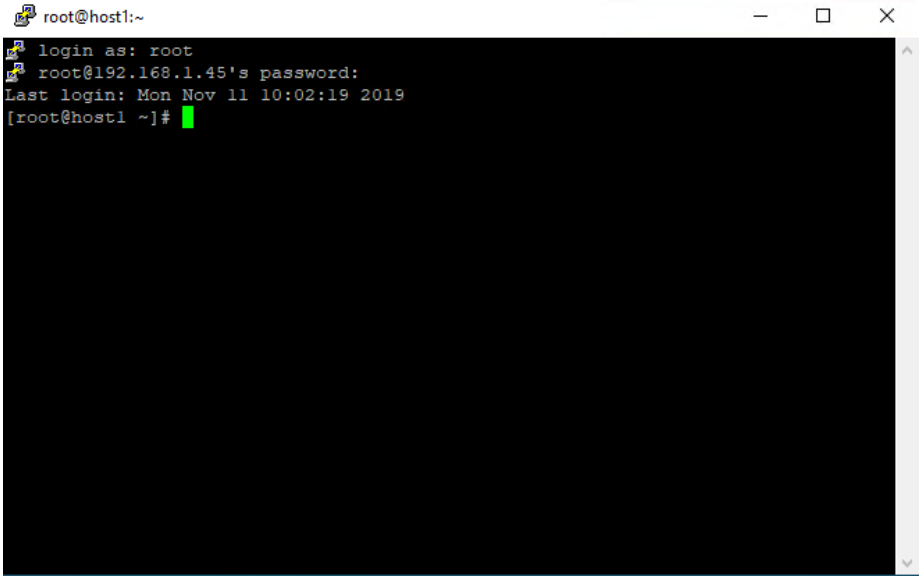


4) Enter the username "root" and press the "Enter" key;

5) Enter the password of CentOS; the password input is invisible. Press the "Enter" key when the input is finished;

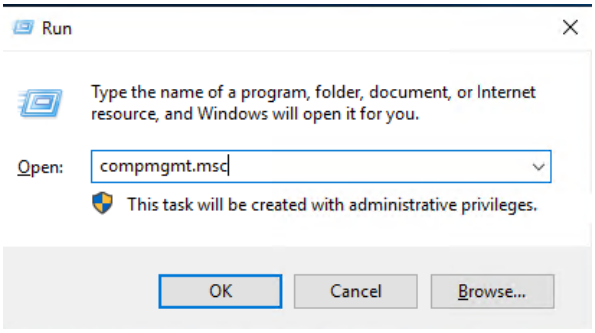


6) And you have successfully logged in.

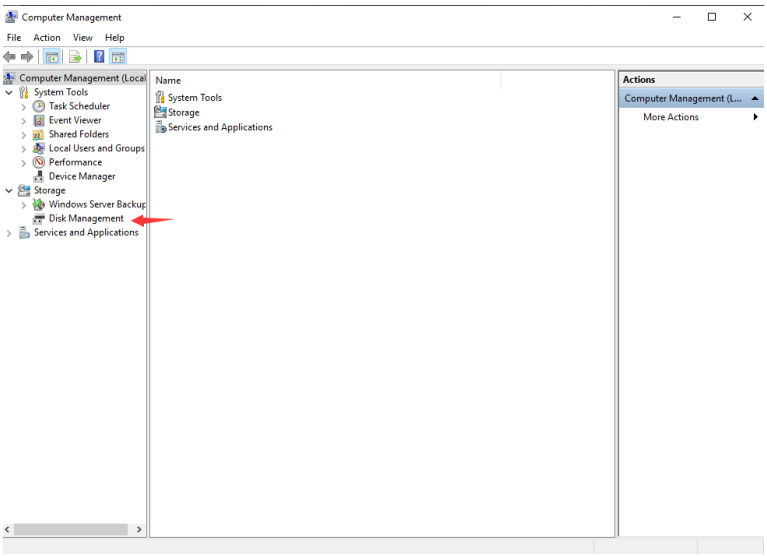


3. Hide the CD drive

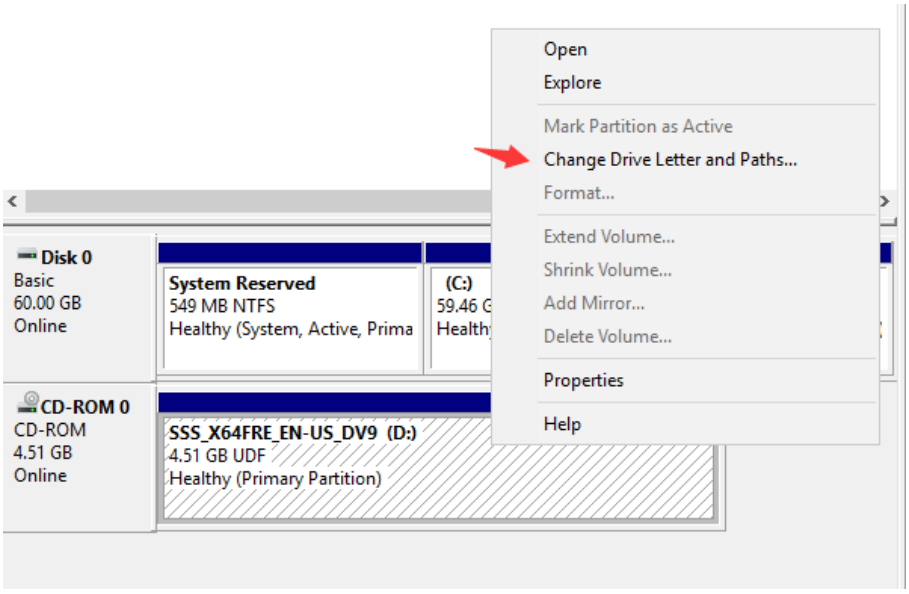
1) Press Win+R, enter compmgmt.msc, press Enter to open computer management.



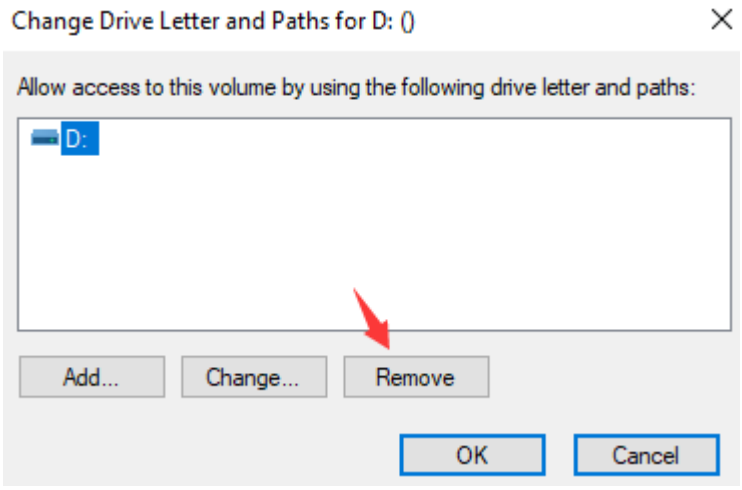
2) Click "Disk Management".



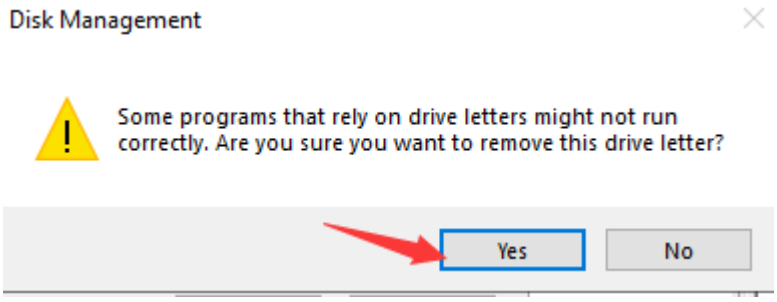
3) Right-click on the shaded area to the right of the drive and click "Change Drive Letter and Paths...".



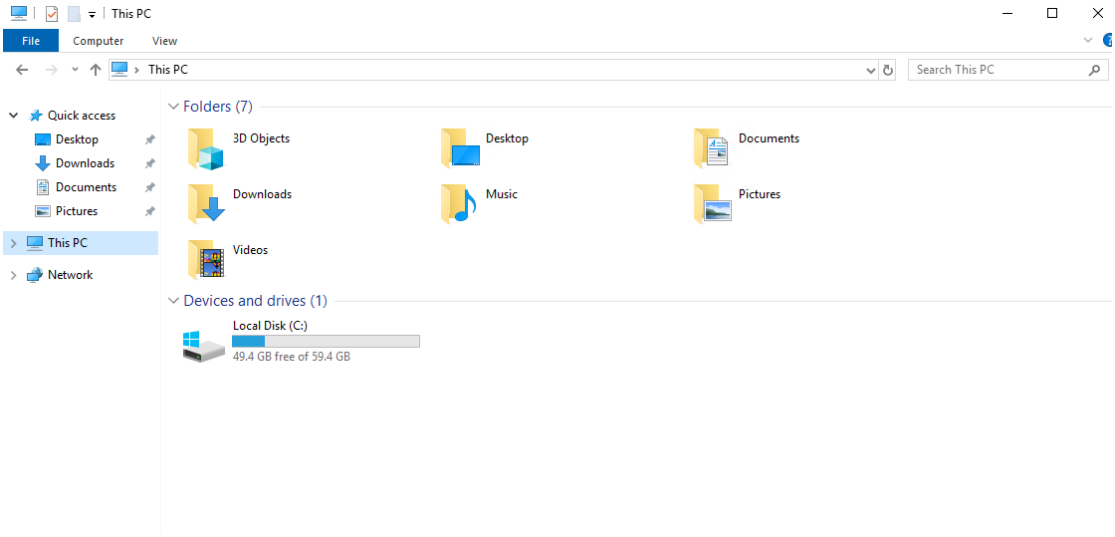
4) Click "Delete".



5) Click "Yes".



6) The CD drive is hidden successfully.

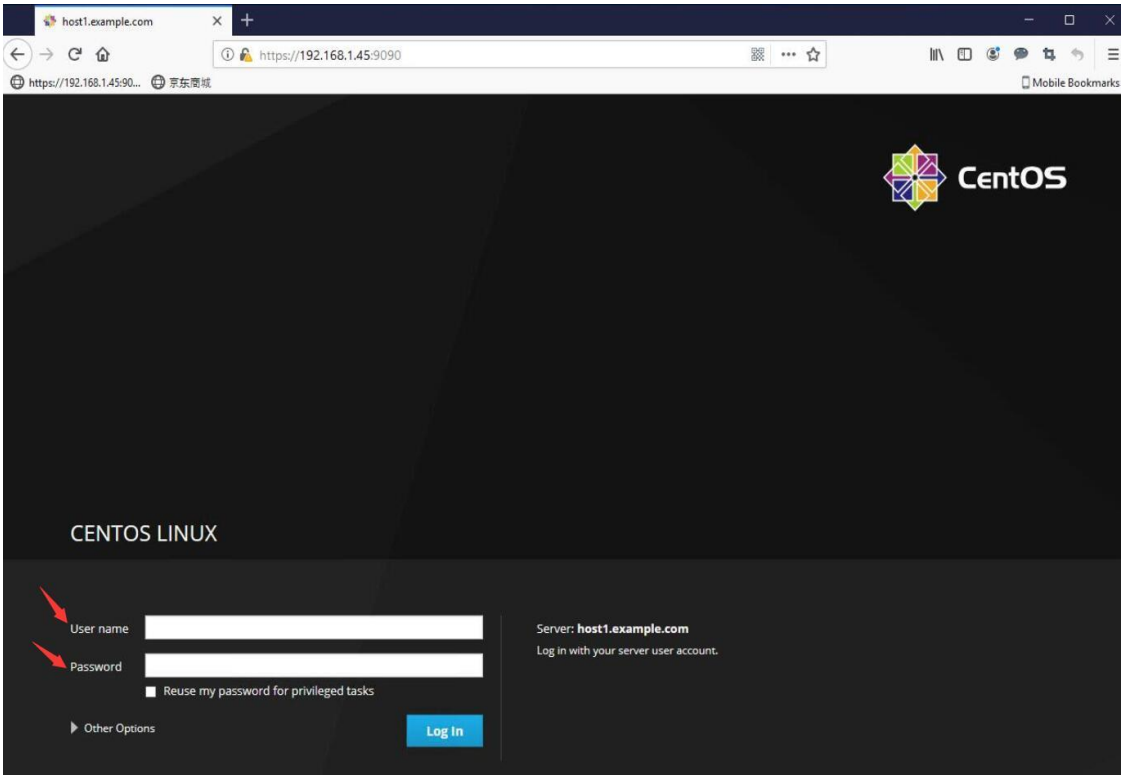


4. Add a hard disk

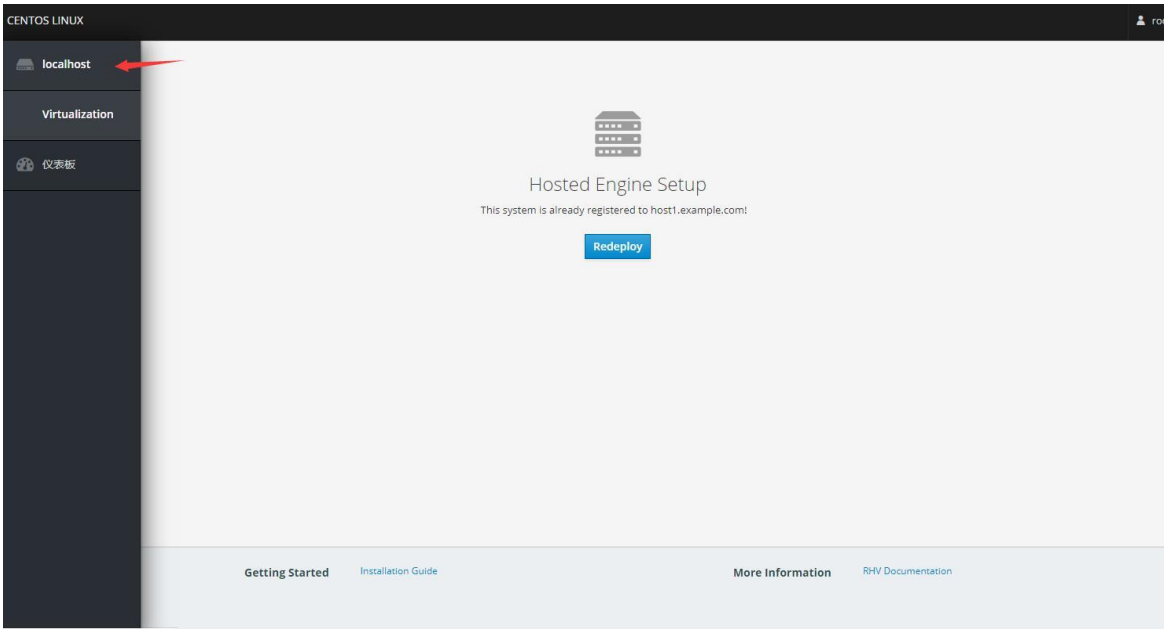
4.1 Add a hard disk to the system

4.1.1 Format and mount the hard disk

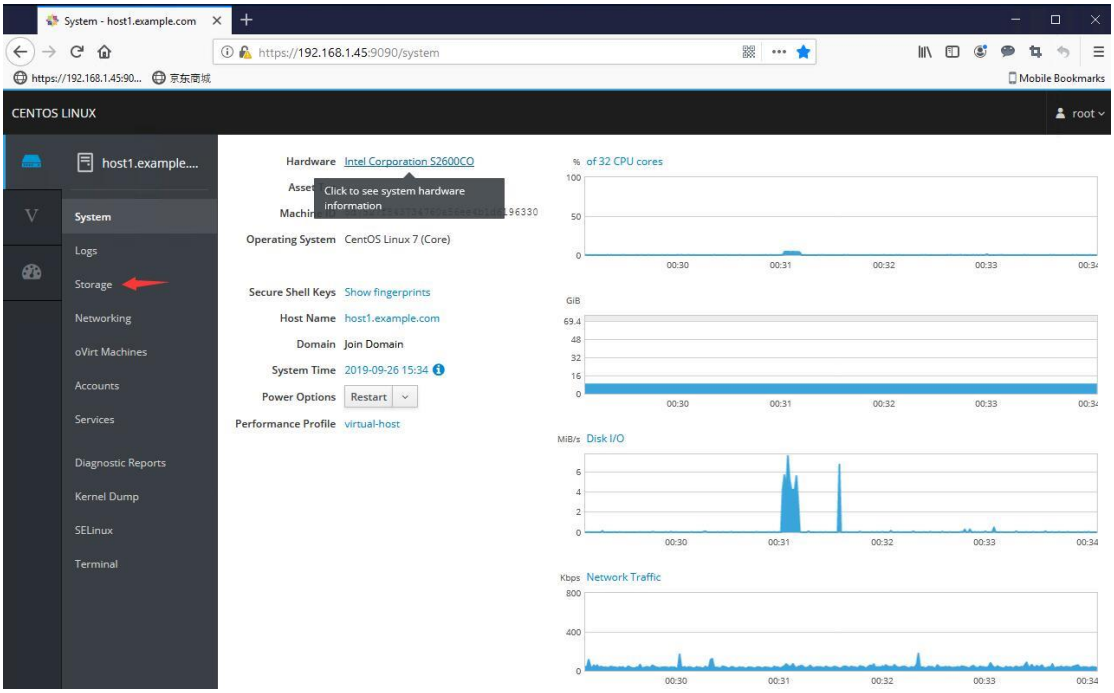
1) Enter https://<CentOS IP>:9090 in the browser; e.g: https://192.168.1.45:9090, enter root in User name, enter root user's password in Password, and click "Login".



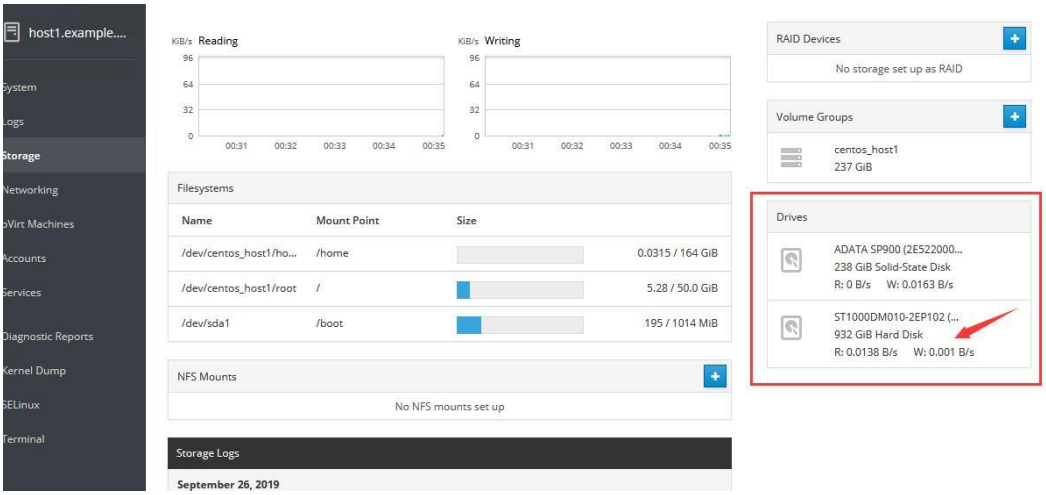
2) Click "localhost" on the left.

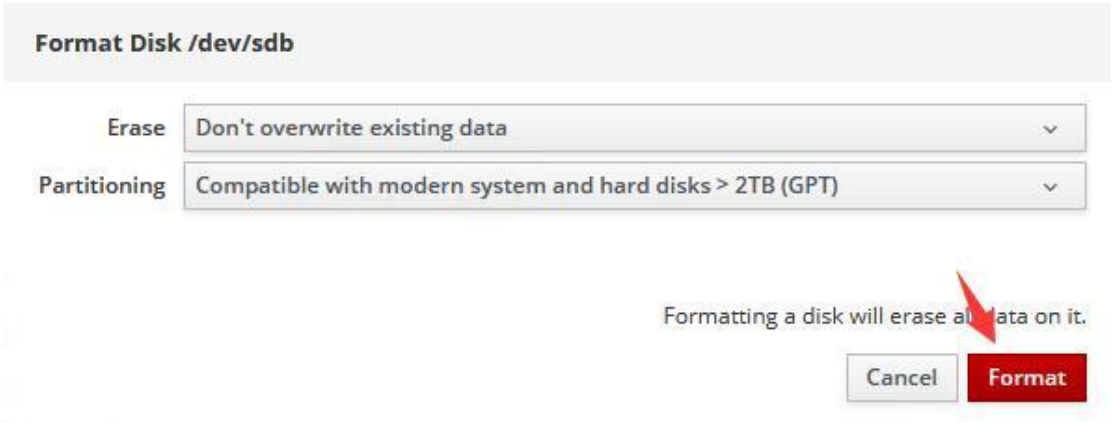


3) Then click "Storage".

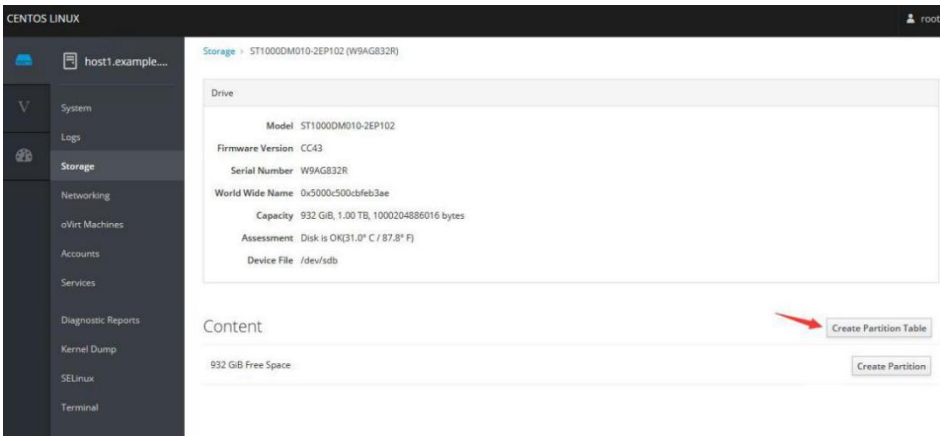


4) You can see all the hard disks on the host on the right, click the newly added hard disk.

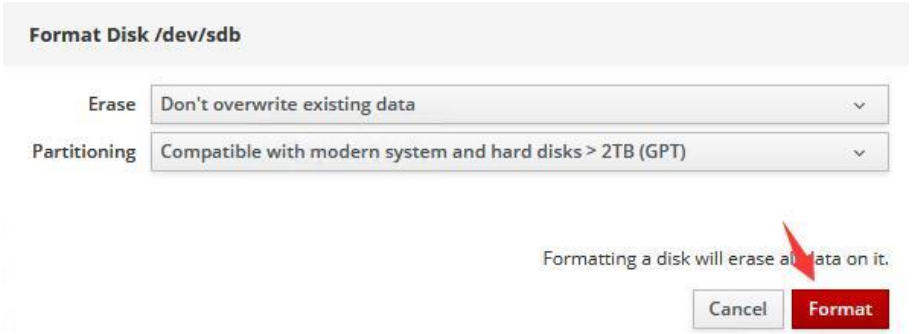




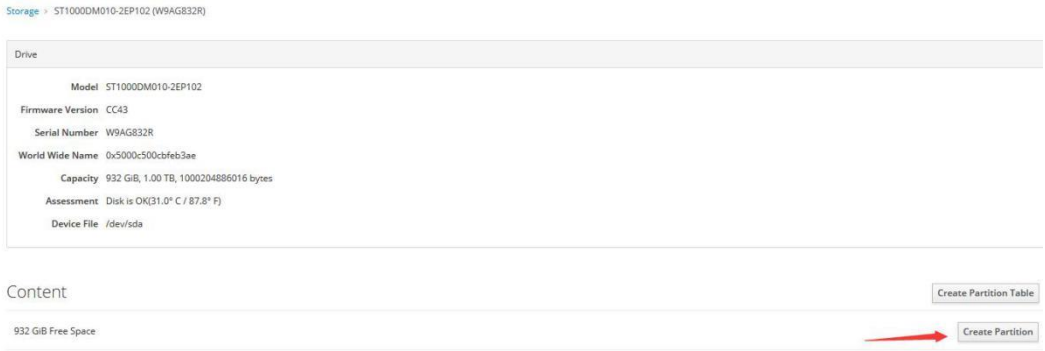
5) Click "Create partition table".



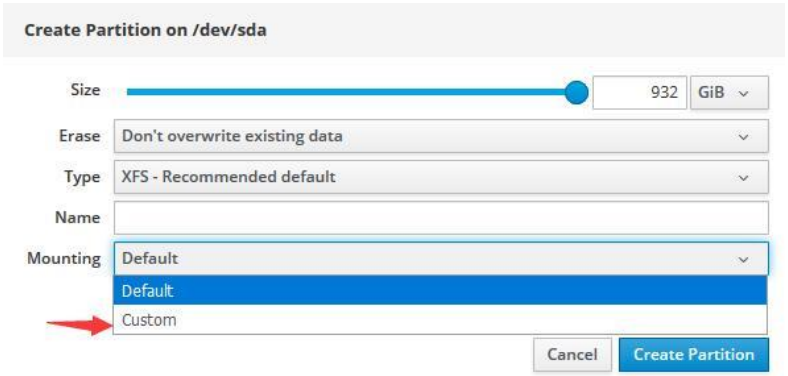
6) In the pop-up window, leave the option as default and click format.



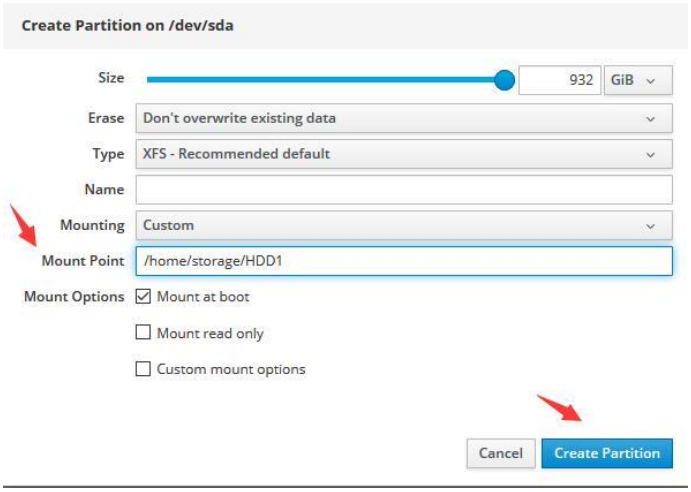
7) Click "Create partition table"



8) Change the mounting option from "Default" to "Custom".



9) Enter the mounting path at the mount point, e.g. /home/storage/HDD1, and click "Create partition" when you are done.

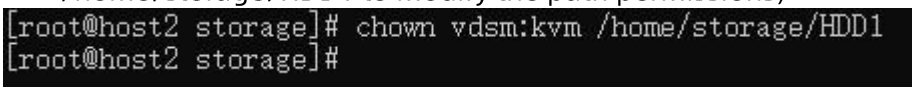


10) The partition is created successfully.

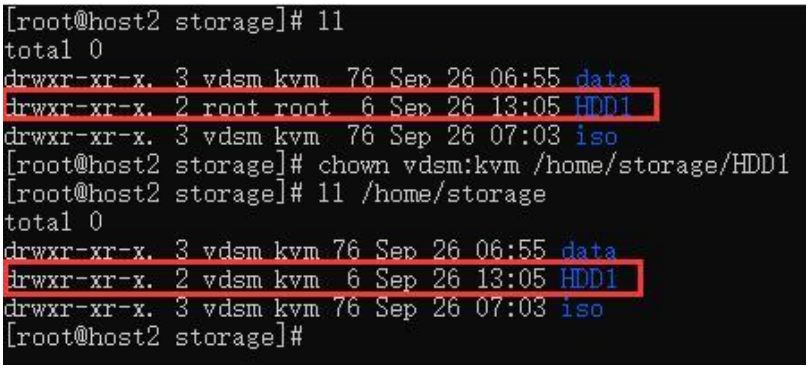
4.1.2 Modify permission

1) Connect to CentOS using SSH and enter the command: "ll /home/storage" to view permissions;

2) Enter the command: chown VDSM: KVM < mount path >, e.g: chown VDSM: KVM /home/storage/HDD1 to modify the path permissions;

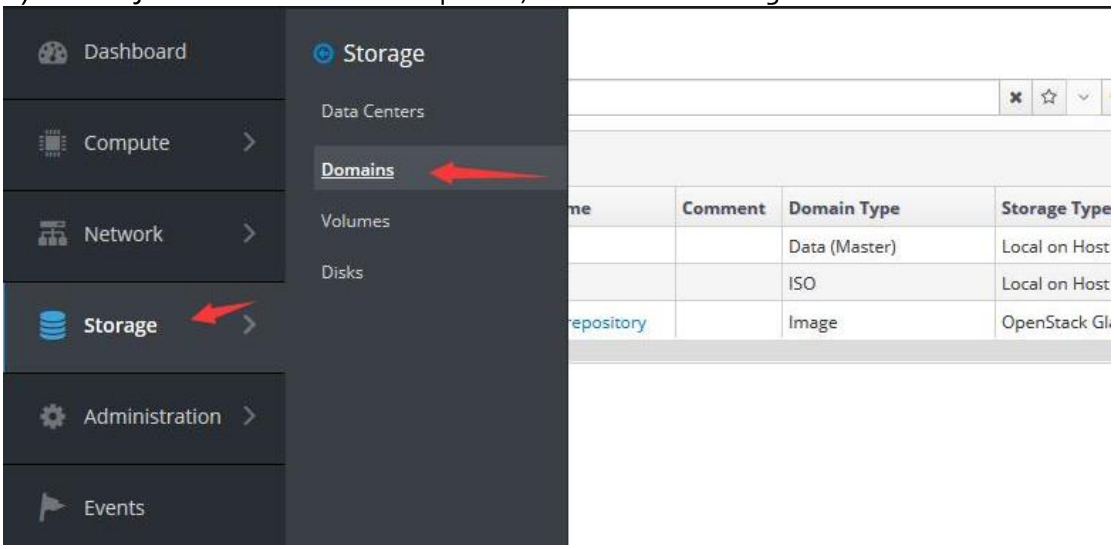


3) After the input is completed, you can enter the command ll /home/storage again to check whether the permissions have been modified successfully.



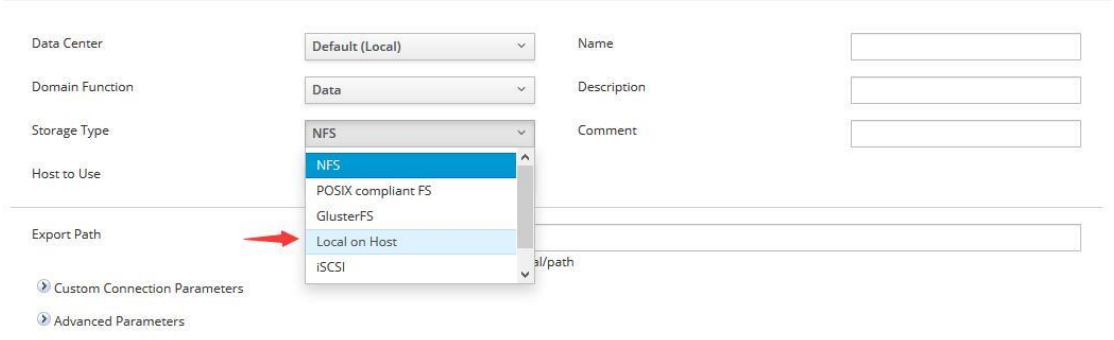
4.2 Create a storage domain

1) Enter JoinVDI administration portal, and click "Storage" → "Domain".

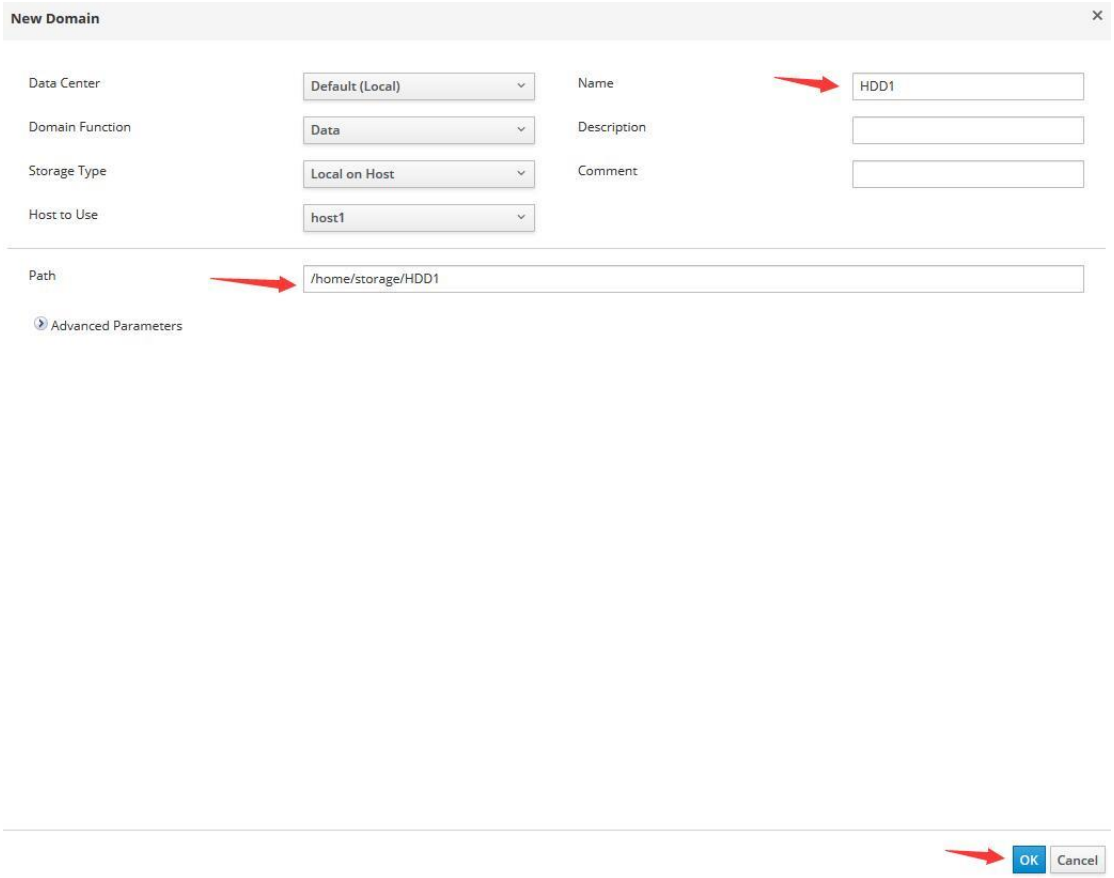


2) Click "New" to create a new storage domain.

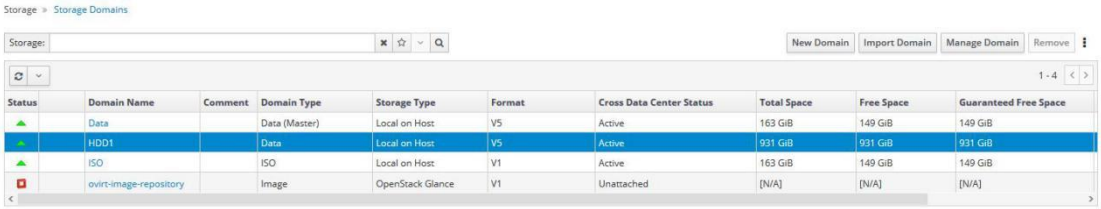
3) Change storage type to "Local Host".



4) Enter the name, such as “HDD1”, and the path to enter the hard disk mounted path, such as ”/home/storage/HDD1”, after the input is completed, click “OK” to create the storage domain.

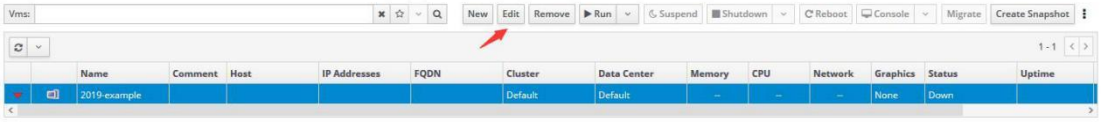


5) The storage domain is created successfully.

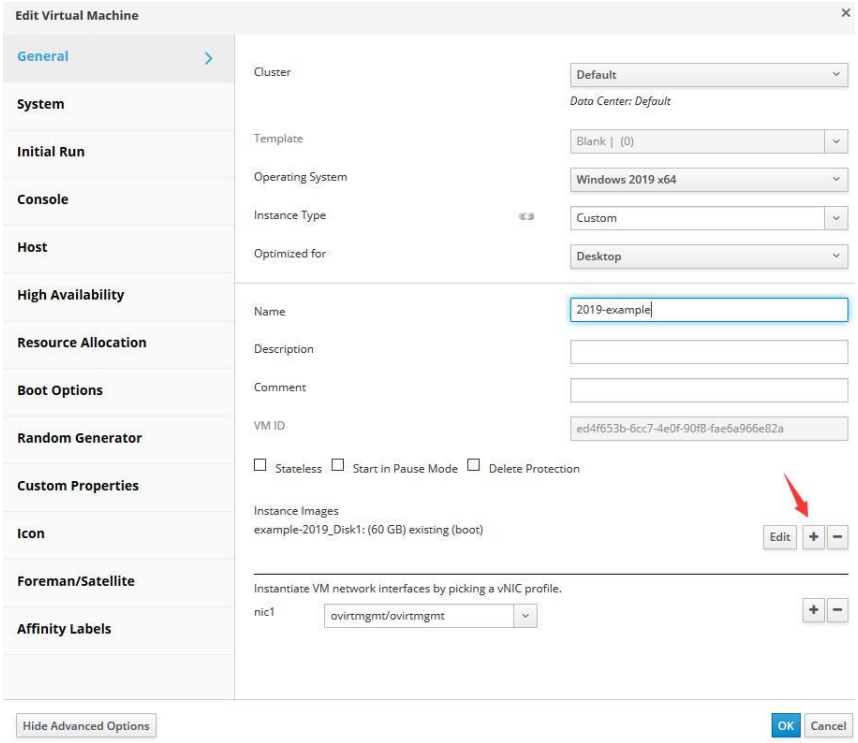


4.3 Add a data disk to the virtual machine

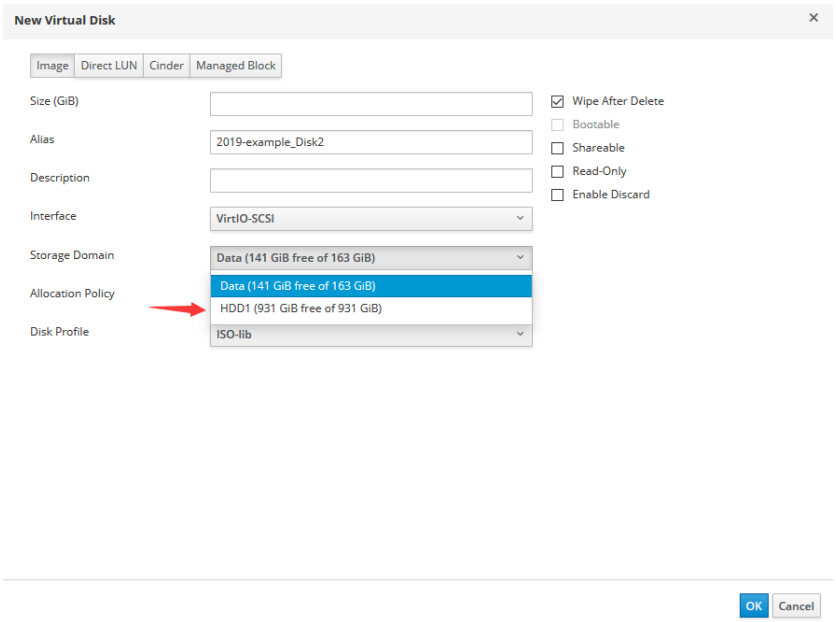
1) Select the virtual machine and click “Edit”.



2) Click"+".

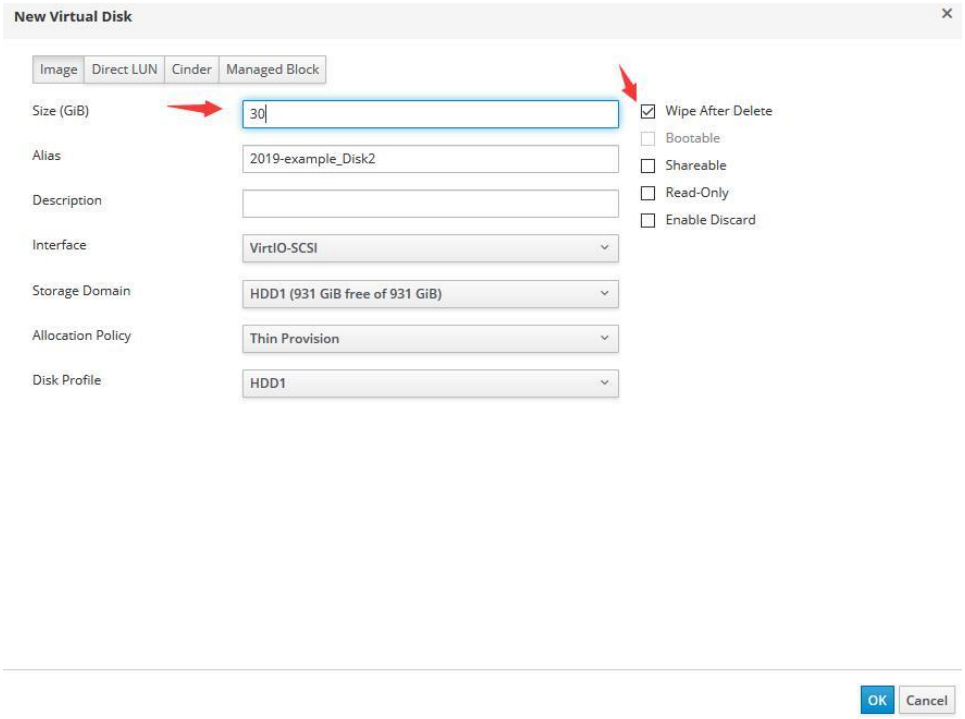


3) Click to change the storage domain to the newly created one.

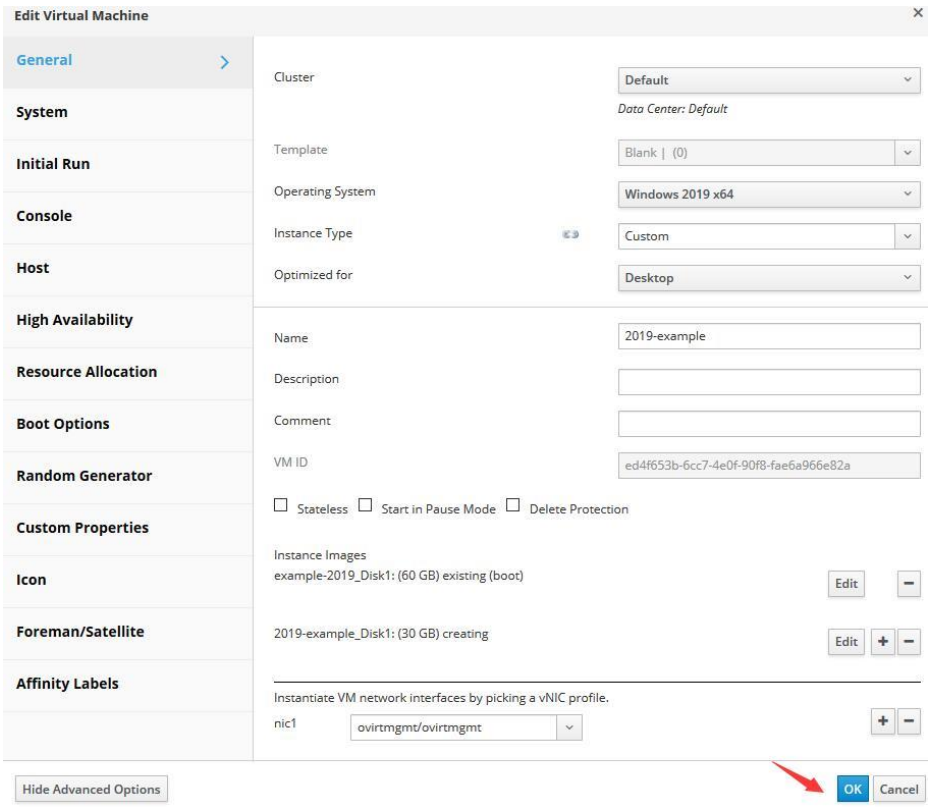


4) Enter the capacity as required, and click OK after the input is completed. It is suggested to tick "Wipe After Delete" to create a virtual disk.

➢ Wipe After Delete: To free physical disk space after deleting files from a virtual disk.

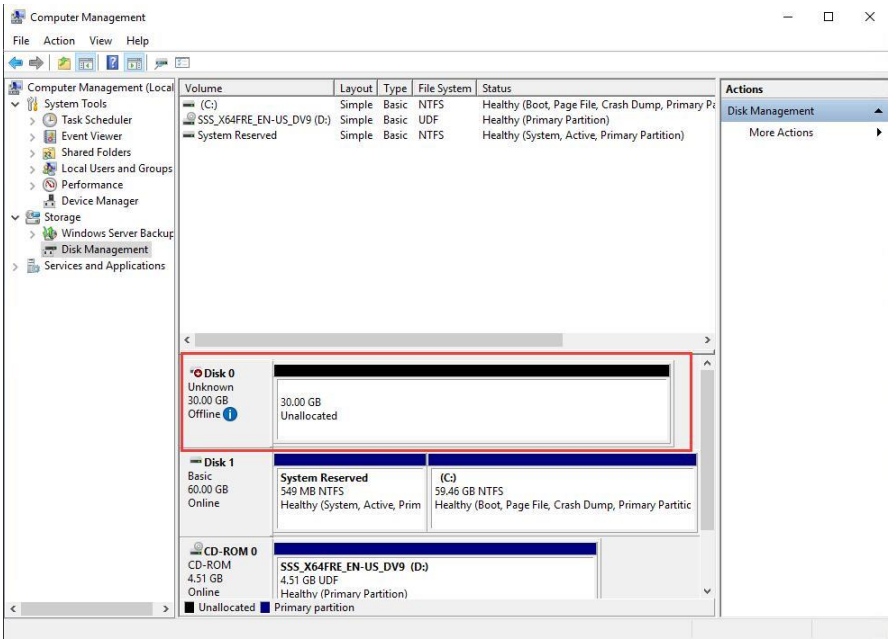


5) Click "OK" again to save configuration for the virtual machine.

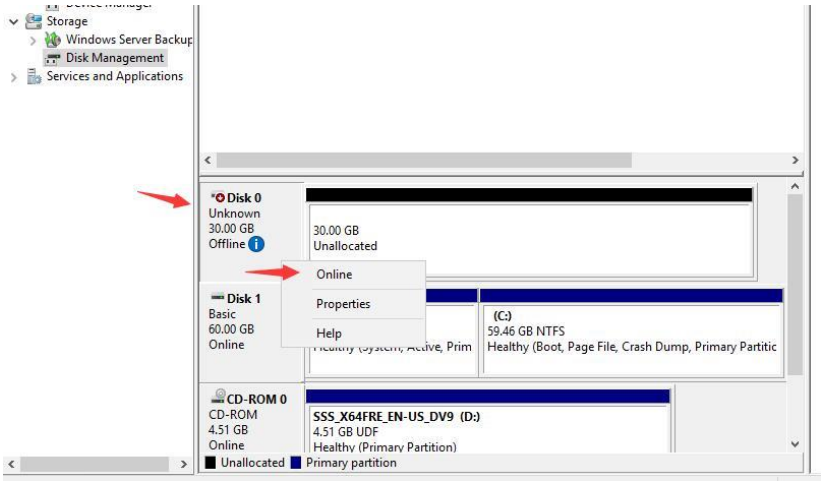


4.4 Partition the added hard disk in the virtual machine

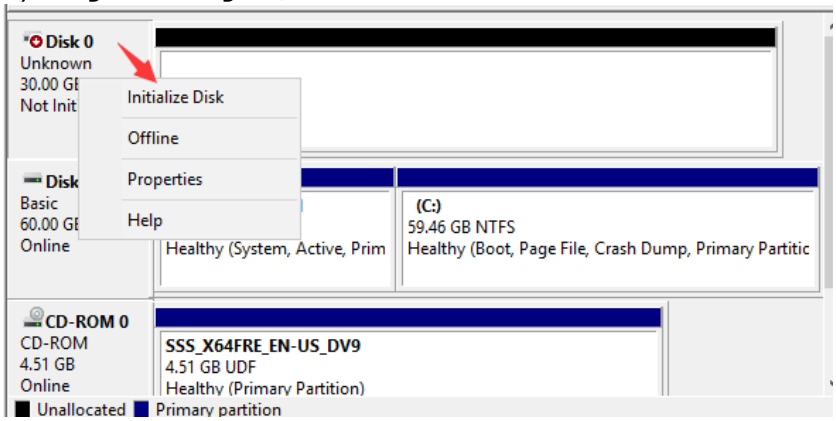
1) Open "Computer Management" - > "Disk Management", and you can see the newly added hard disk.



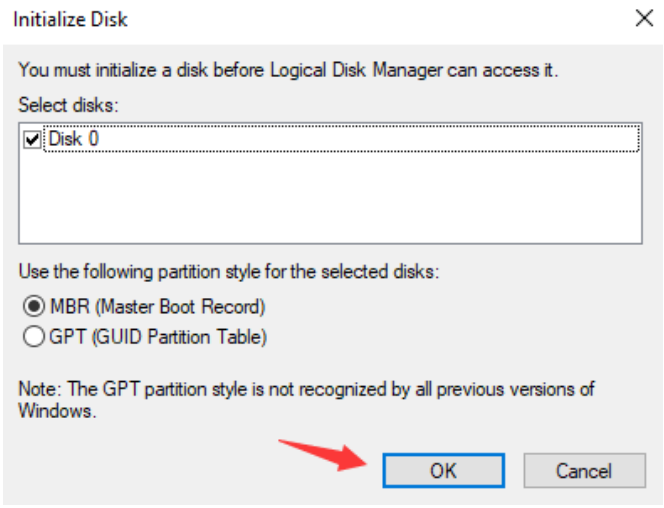
2) Right click to connect "online".



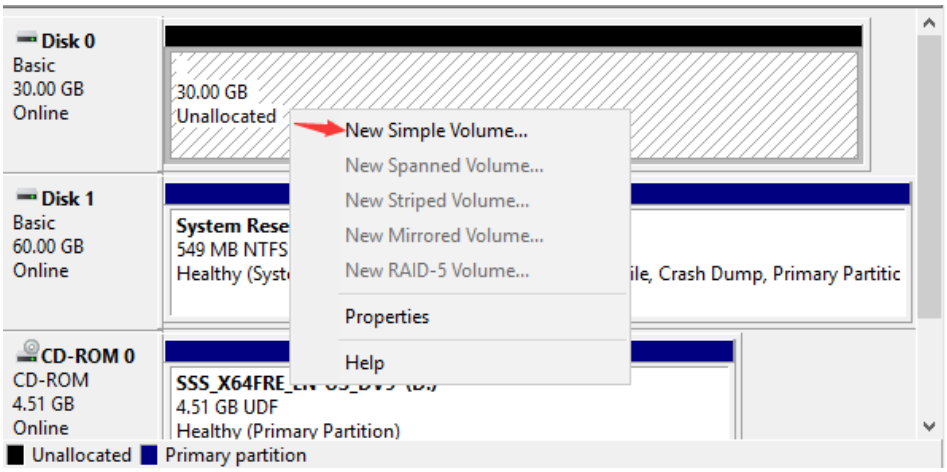
3) Right click again, and click "Initialize Disk".



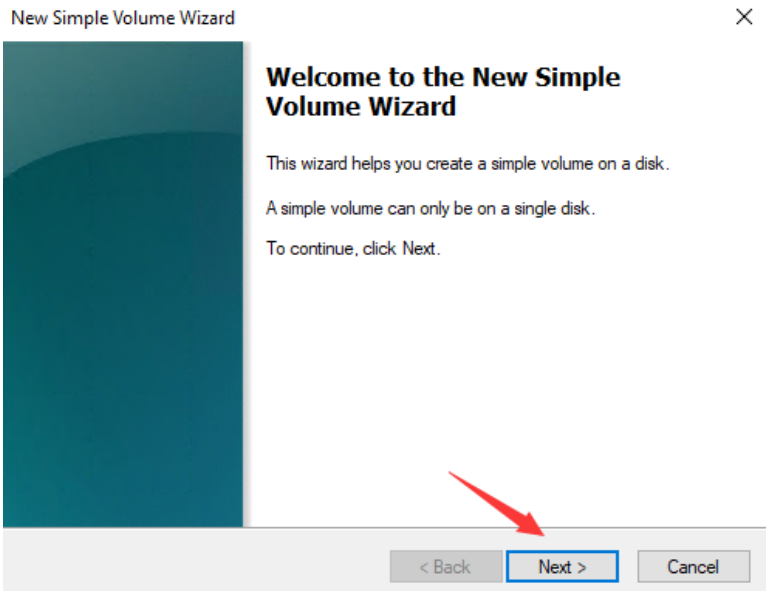
4) Click "OK" to initialize the hard disk.



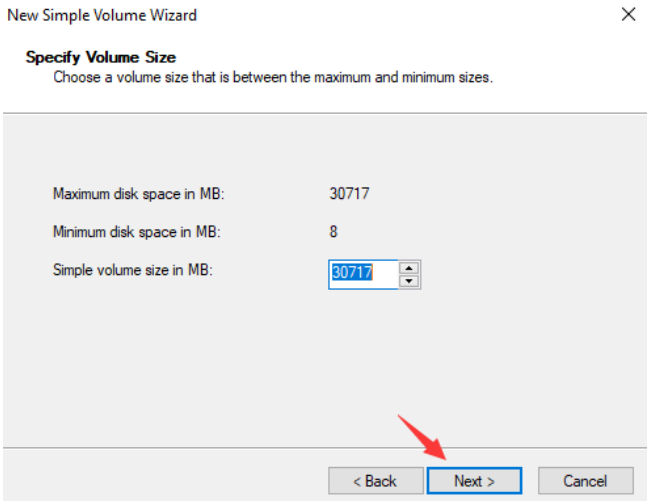
5) Right click on the shaded area on the right and click the new simple volume.



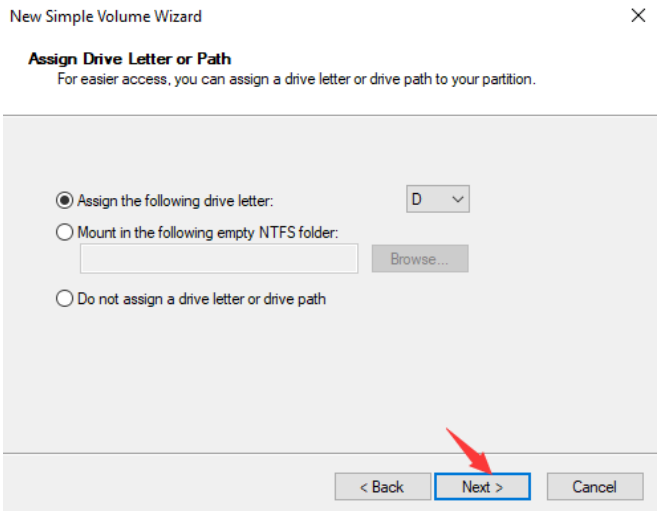
6) Click "Next".



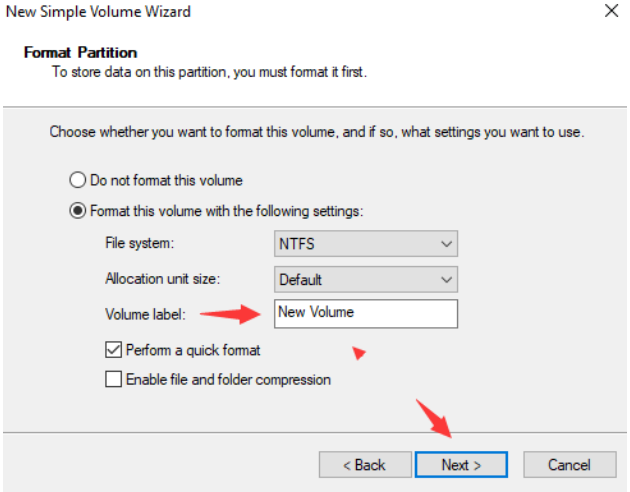
7) Keep size the default value, and if you need to create several partitions, enter the capacity manually, and then click "Next".



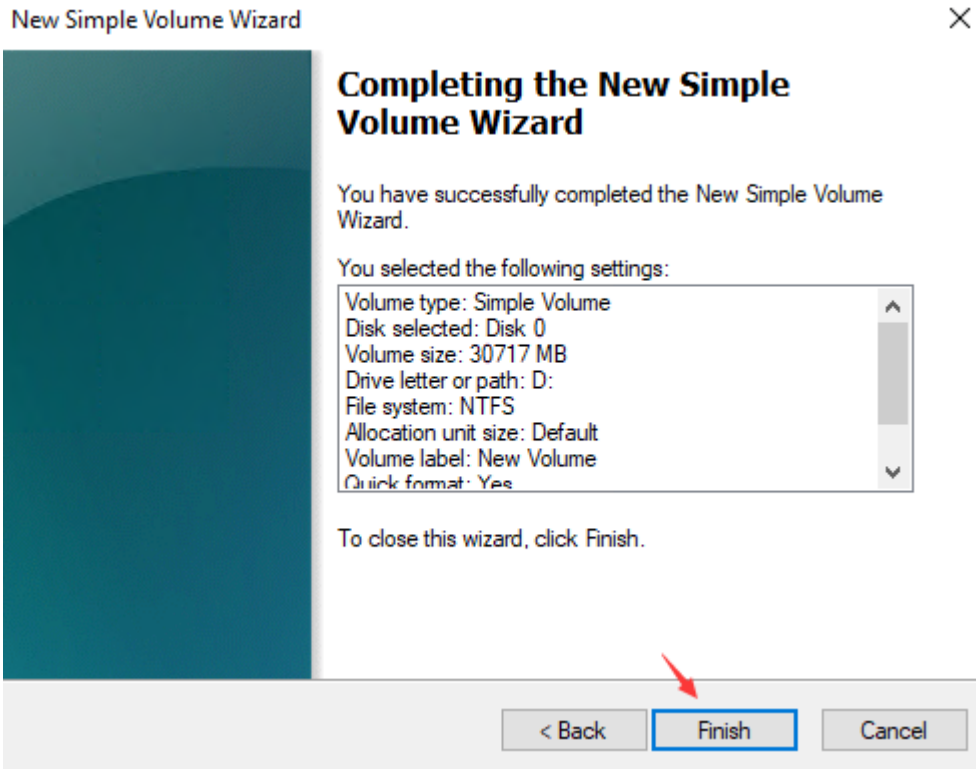
8) Add a drive number to the new partition and leave it as default; Click "Next".



9) Leave sizes of the file system and allocation unit the default value, and leave volume labels as the default ones, and you can modify them by yourself or leave them blank, and then click "Next".



10) Click "Finish".



11) A hard disk is added for the virtual machine successfully.