

Cloud Virtual Machine

Windows CVM Operation Manual

Product Introduction



Tencent  
Cloud

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Windows CVM Operation Manual

## Format Data Disks of Windows CVMs

### Data Disk Partition and Formatting of Windows CVMs

By default, the data disks purchased on the CVM purchase page are not automatically mounted under an offline state. Data disks that are not partitioned and formatted cannot be used. This tutorial will guide you to mount, partition and format data disks in a Windows system.

The path to the "Disk Management" interface may vary with the Windows version (Windows 2012, Windows 2008, Windows 2003, etc.), but the steps to partition and format the disks are basically the same.

This article provides the guide on how to mount, partition and format data disks on Windows 2012 and Windows 2008.

Note:

Once formatted, all the data in the disk will be cleared. Make sure that there is no data left in the disk or the important data has been backed up before formatting. To avoid any service exception, make sure that the CVM has stopped providing services before formatting.

## 1. Disk Partitioning and Formatting on Windows 2012

On Windows 2012, the path to Disk Management is "Start" - "Server Management" - "Tools" - "Computer Management" - "Disk Management".

"Disk 1" is an unpartitioned disk. Here, the process is illustrated by creating one partition for "Disk 1". Right click on Disk 1, then select "Online". Right click again, then select "Initialize Disk". Select "GPT" or "MBR" depending on the partitioning method, and click on the "OK" button.

Note: Make sure to select GPT as the partitioning method if the disk is larger than 2TB.

Right click on the unallocated space, and select "New Simple Volume". In the "New Simple Volume Wizard" pop-up window, click "Next".

Enter the desired disk size for the partition, then click "Next". Enter the drive letter, then click "Next". Select "File System", then "Format Partition", and click "Next". Upon completing the New Simple Volume Wizard, click "Finish".

## 2. Disk Partitioning and Formatting on Windows 2008

On Windows 2008, the path to "Disk Management", different from that on Windows 2012, is "Server Management" - "Storage" - "Disk Management".

"Disk 1" is an unallocated disk. Here, the process is illustrated by creating one partition for "Disk 1".

"Disk 1" is not online in the initial state. Right click "Disk 1", and then click "Online" in the pop-up menu.

Again, right click "Disk 1", and then click "Initialize Disk" in the pop-up menu.

Select the GPT initialization method, and click the "OK" button.

Note: Make sure to select GPT as the partitioning method if the disk is larger than 2TB.

Right click on the unallocated region behind "Disk 1", and select "New Simple Volume" in the shortcut menu that pops up.

As prompted by the Wizard, enter the size of the disk partition, then click "Next".

Select "File System", then "Format Partition", and click "Next".

Upon completing the New Simple Volume Wizard, click "Finish".

"Formatting..." is displayed.

At this point, the newly partitioned data disk can be seen on the computer screen.

Note: Do not convert a basic hard disk to a dynamic hard disk. We are not liable for any data loss arising out of this action.

### 3. Online Settings

Under a Windows operating system, online settings are often needed in Disk Management. To help you make better use of Elastic Cloud Block Storage, we recommend that you modify the operating system as follows:

Open the cmd line and run the following command

```
diskpart  
san policy = onlineall
```

Once remounted to the Windows CVM, the Elastic Cloud Block Storage can be used directly without any user action as long as it contains a valid file system.

## Read/write EXT Data Disks after Reinstalling a Linux CVM to Windows CVM

The file system format of Windows is generally NTFS or FAT32, while that of Linux is EXT series. When the operating system is reinstalled and changed from Linux to Windows, its type has changed but the data disk remains the old format. Thus, denied access to the data disk file system may occur in the reinstalled system. You can perform the following operations on the reinstalled Windows CVM to read data from the data disk of the original Linux system:

1) Assume that the data disk of Linux CVM has two partitions:

```
Disk /dev/vdb: 21.5 GB, 21474836480 bytes
16 heads, 63 sectors/track, 41610 cylinders
Units = cylinders of 1008 * 512 = 516096 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x29cc8ca2
```

Device	Boot	Start	End	Blocks	Id	System
/dev/vdb1		2000	41610	19963944	83	Linux
/dev/vdb2		1	1999	1007464+	83	Linux

2) Download and install DiskInternals Linux Reader software on the reinstalled Windows CVM (For download address, please click [here](#)).

3) Mount the data disk under Linux to Windows CVM. Skip this step if the data disk has already been mounted.

Log into Tencent Cloud console, enter "Cloud Virtual Machine" - "Cloud Block Storage" tab, click on the Linux data disk, and then click "More" - "Mount to Cloud Virtual Machine" button. Select reinstalled Windows CVM in the pop-up box, then click "Confirm".

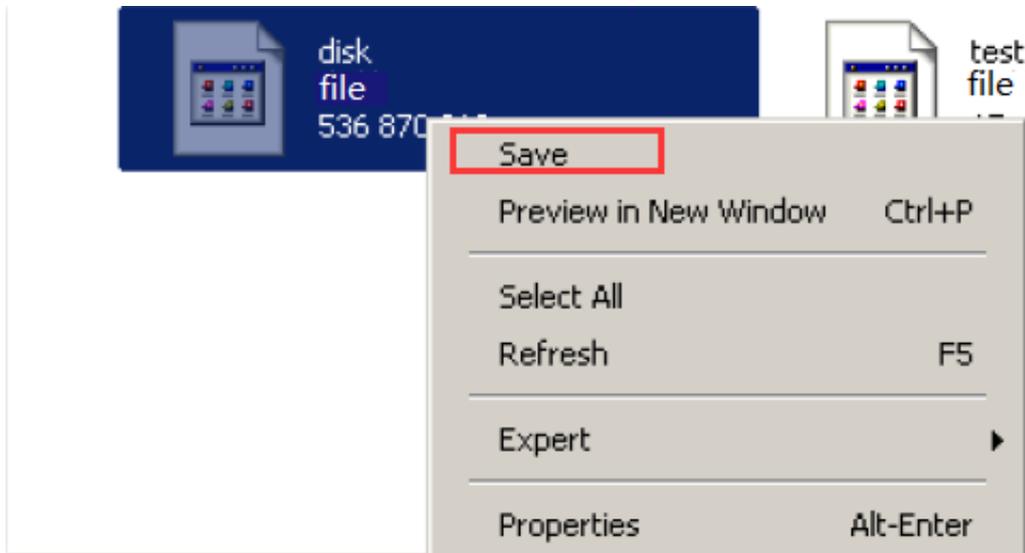
4) Click to run DiskInternals, and you can see the information of data disk just mounted. /root/mnt and /root/mnt1 are for partitions vdb1 and vdb2 respectively:



**Physical drives**



5) Click to enter /root/mnt, and right-click the file you want to copy, and select Save to save the file.



6) Please note that the Linux data disk is read-only at this time. If you need to perform read and write operations on the data disk as Windows data disk, please first back up the files you need and then re-format it into a standard type supported by Windows operating system. For specific operations, please see [here](#).

# Windows OS Configuraiton

## Install and Configure IIS

NOTE: Do not install any anti-virus software of PC type on Windows CVM. Such software may block the telnet port of the CVM, making it impossible to log in to the CVM.

### 1. Installation and configuration of IIS

#### 1.1. Example for Windows2012R2

1) Click "Start" at the bottom left corner of Windows CVM, select "Server Manager" to open the Server Manager interface.

2) Select "Add Roles and Features", then in "Before You Begin" in the "Add Roles and Features Wizard" pop-up box, click "Next". In "Installation Type", select "Role-based or Feature-based Installation", then click "Next".

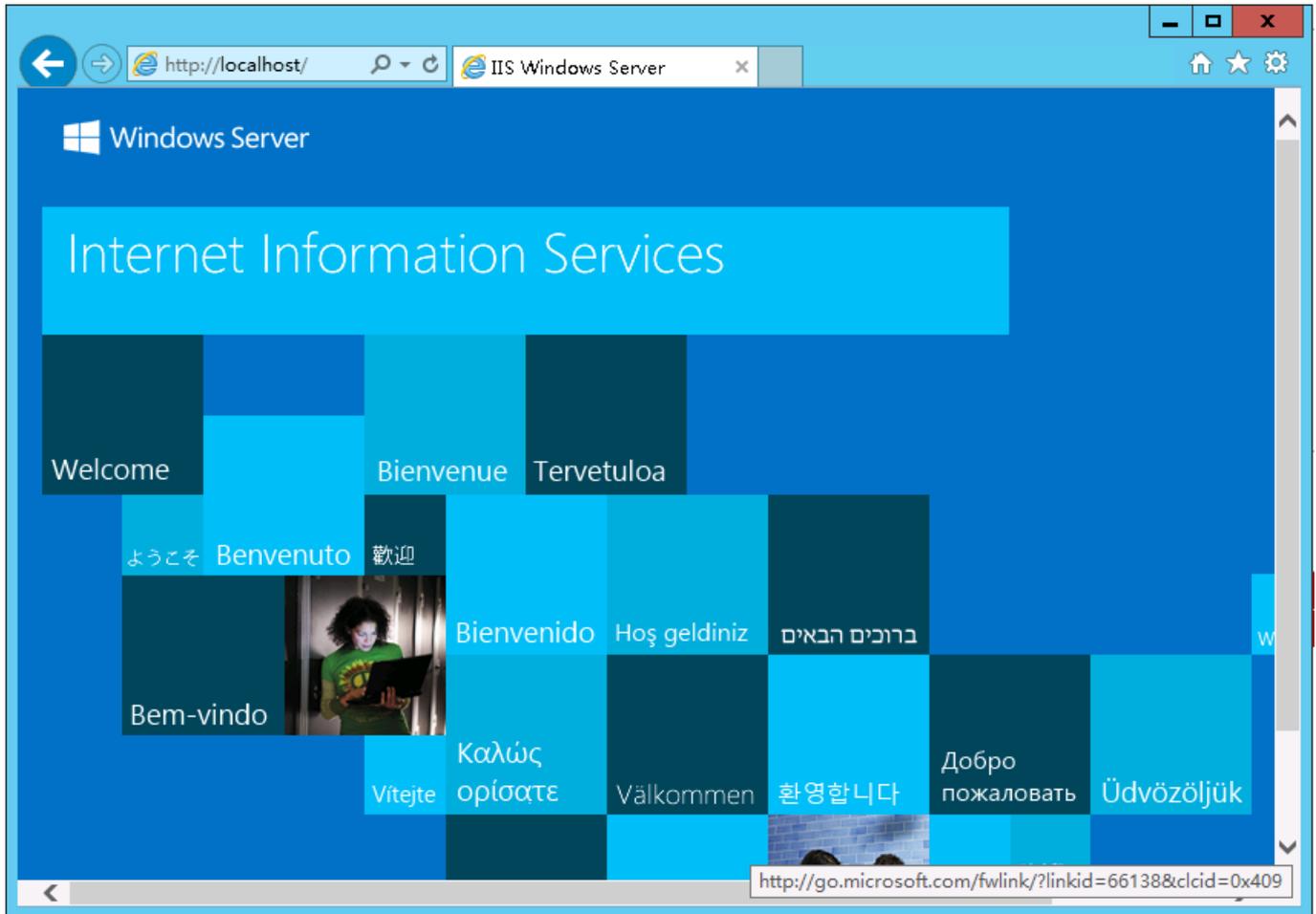
3) In the left side of the window, select "Server Role" tab, check "Web Server (IIS)", click "Add Features" button in the pop-up box, and then click "Next".

4) In the "Features" tab, click "Next", and in the "Web Server Role (IIS)" tab, also click "Next".

5) In the "Role Services" tab, check the "CGI" option, then click "Next".

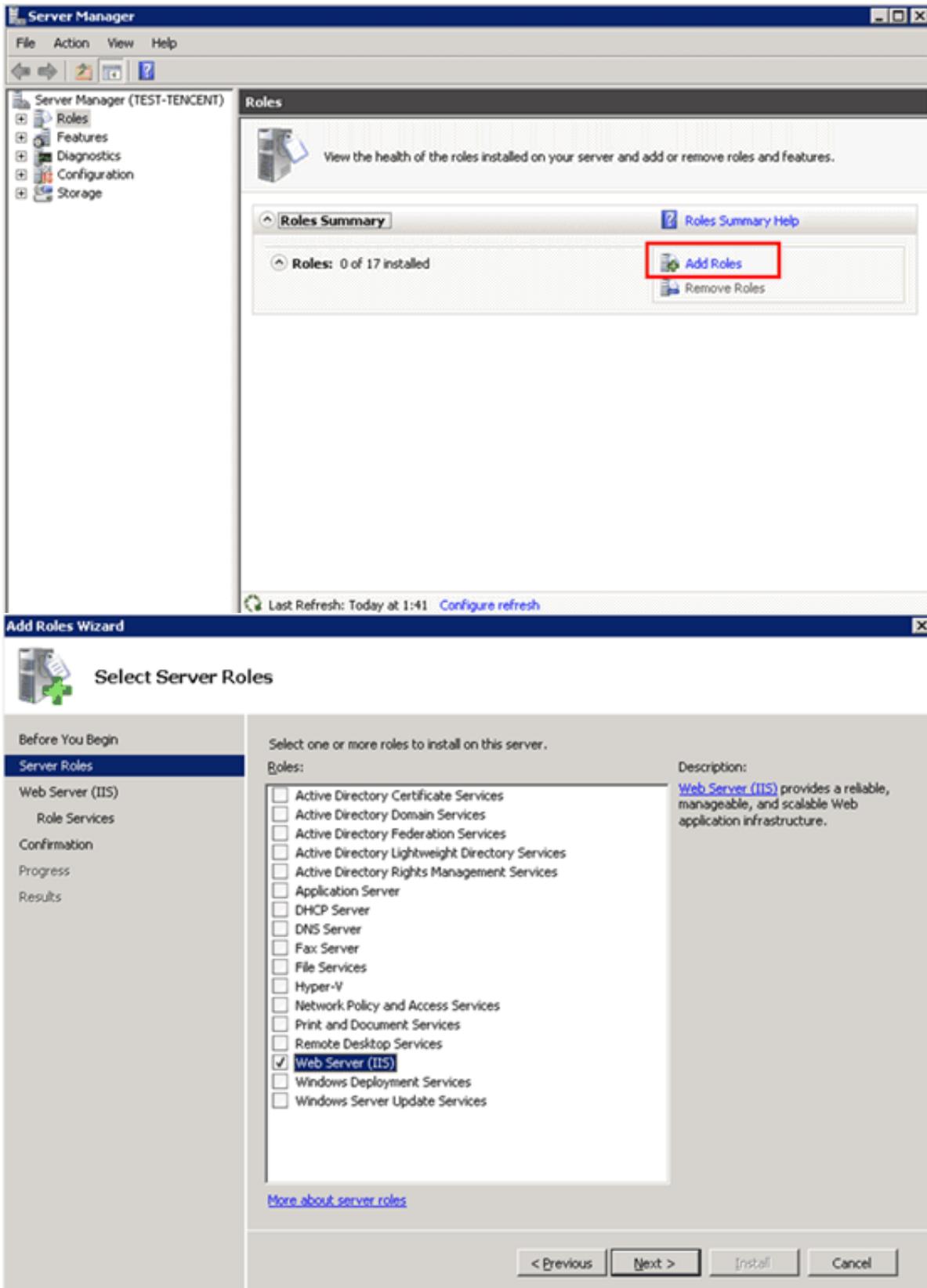
6) Confirm the installation and wait for the installation to be completed.

7) When the installation has been completed, access localhost in the browser of CVM to verify whether the installation is successful. The appearance of the following page indicates that the installation has been completed successfully.

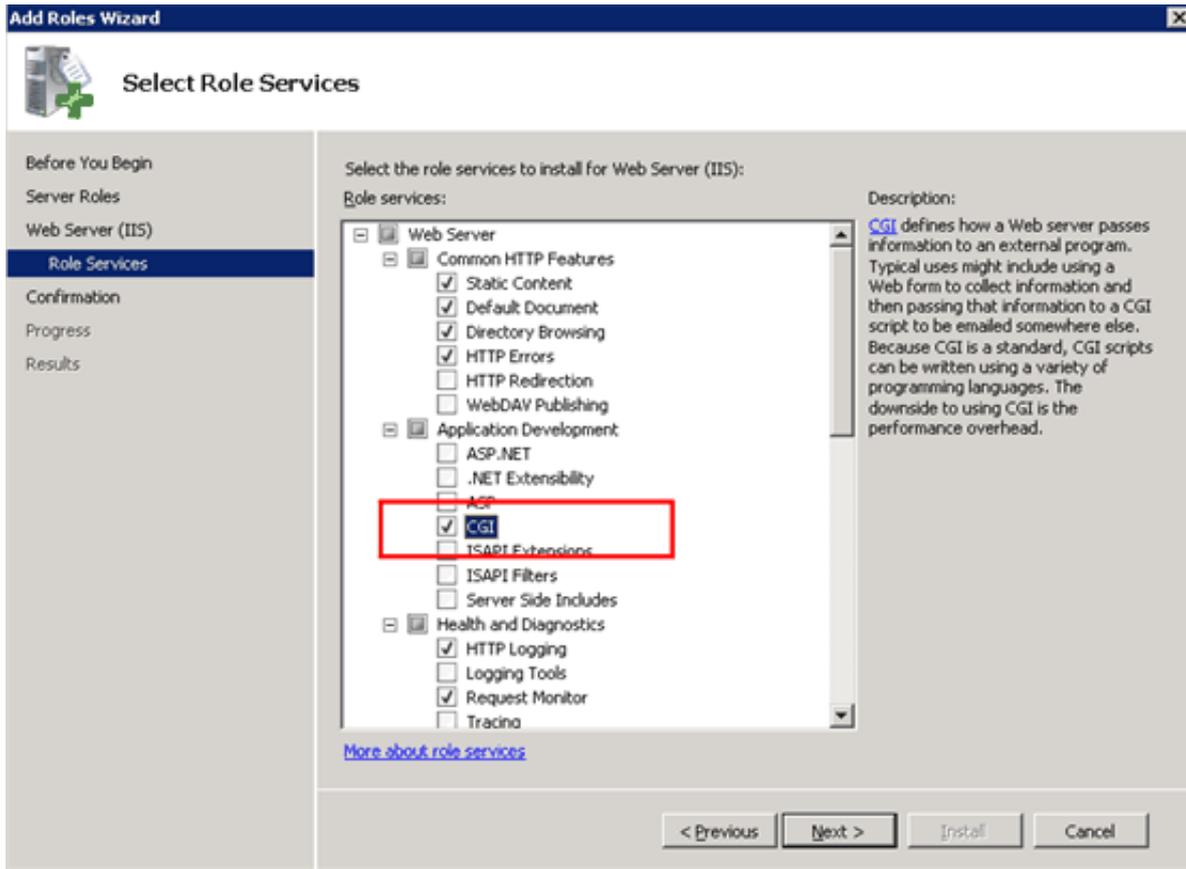


## 1.2. Example for Windows2008

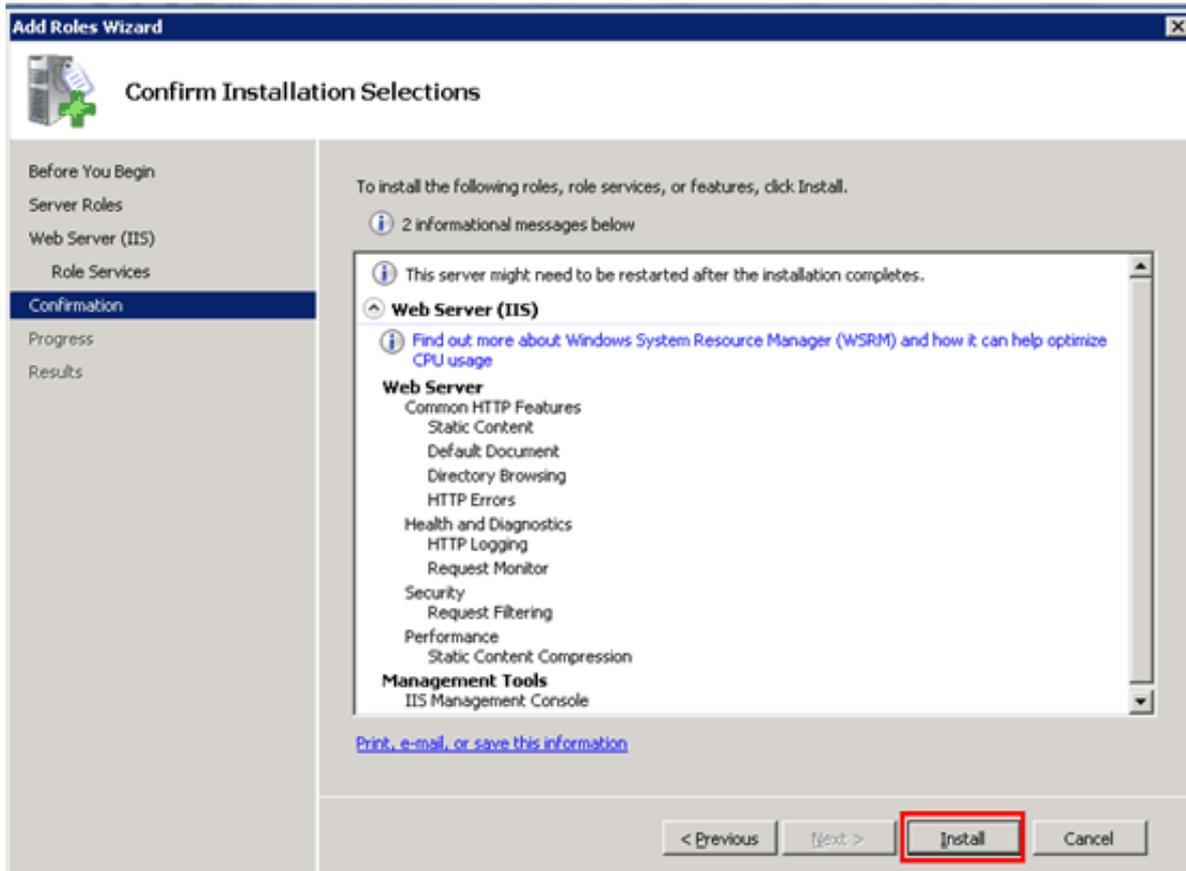
- 1) Click "Server Manager" in the "Management Tool" in the "Start" menu at the bottom left corner of Windows CVM to open the Server Manager interface.
- 2) Click "Add Roles and Features" to add server roles. In this case, select "Web Server (IIS)", as shown below:



3) Click "Next". When selecting role services, check "CGI", as shown below:



4) After the settings are made, click "Install" to proceed with the installation:



5) Access the public network IP of Windows CVM via browser to check whether the IIS service is running normally. The appearance of the following page indicates that IIS has been installed and configured successfully.



## 2. Installation and configuration of PHP

### 2.1. Installation of PHP 5.3 and earlier versions

1) Download the PHP installer (Download from: <http://windows.php.net/download/>), select the installer indicated in the following figure:

**PHP 5.3 (5.3.29)**

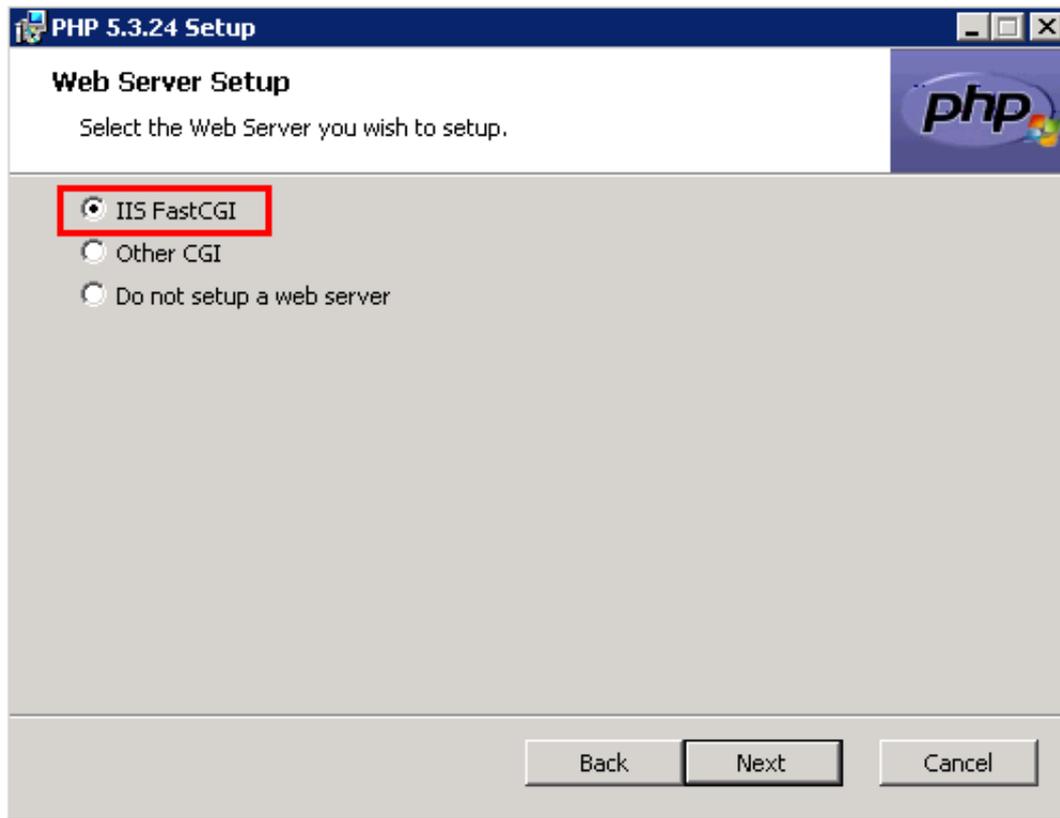
---

[Download source code](#) [19.9MB]

**VC9 x86 Non Thread Safe (2014-Aug-15 20:02:11)**

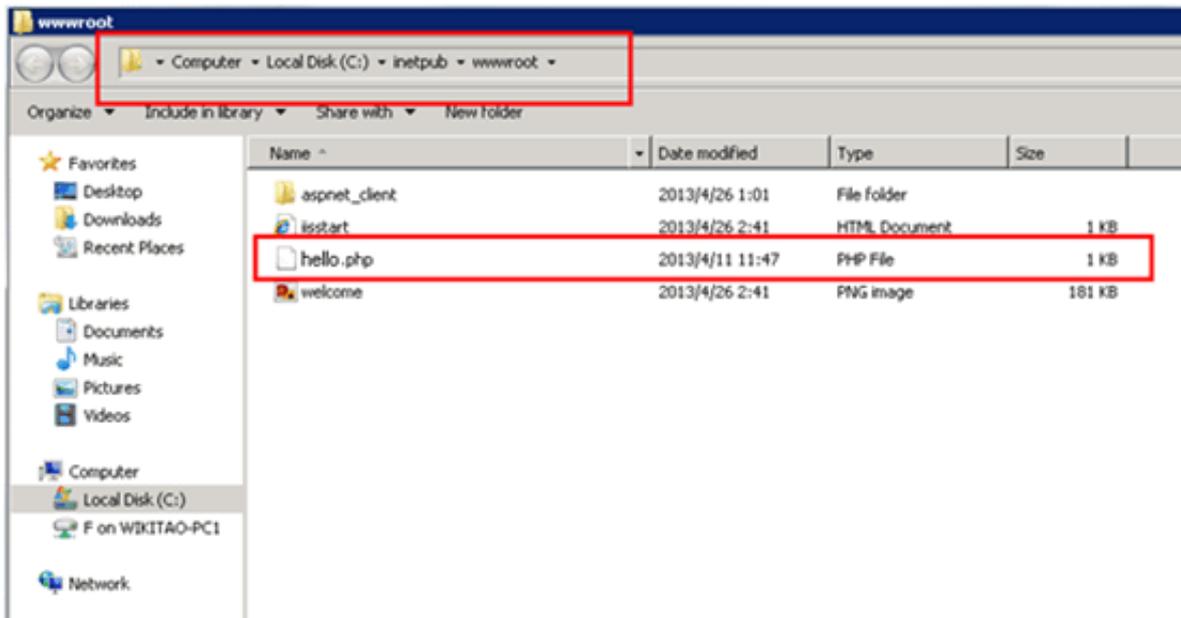
- [Zip](#) [16.25MB]  
sha1: a9e70bfc979586cd71d946cada2f1a9800eb9f43
- [Installer](#) [38.26MB]  
sha1: e52b0dbb62e5fe113cf6eb66815ff8e62ede399c
- [Debug Pack](#) [8.37MB]  
sha1: 8878837b8aca776469ee95a54b75b8323a0cf961

2) After the download, install PHP. When you need to select Web service, select "IIS FastCGI", as shown below:



3) Complete the installation of PHP under the guidance of installation interface.

4) Create a PHP file hello.php under C: / inetpub / wwwroot, as shown below:



The following content is written to the hello.php file:

```
Test Page";  
echo "hello world";  
?>
```

5) Access the public network IP of Windows CVM via browser to check whether the environment configuration has been completed successfully.

## 2.2. Installation of PHP versions above 5.3

For PHP versions above 5.3, the installer mode has been canceled, and the installation is only performed through zip file or debug pack. The following example shows the zip installation in Windows Server 2012R2 environment.

1) Download the PHP zip installer. Please note that you must select Non Thread Safe (NTS) x86 package when running under IIS. (If you have to select x64 package for PHP in Windows Server 32bit (x64), you cannot select IIS. In this case, you can use Apache as an alternative option)

Select the installer as shown below:

**PHP 7.0 (7.0.6)**

---

[Download source code](#) [24.08MB]

**VC14 x86 Non Thread Safe (2016-Apr-29 00:38:17)**

- [Zip](#) [20.93MB]  
sha1: cf0548e3f4def7e22f140dab243709b0676077aa
- [Debug Pack](#) [14.65MB]  
sha1: d17bfc88bda7a716dde0dad0e11424b7588ac0db

**PHP 5.6 (5.6.21)**

---

[Download source code](#) [24.15MB]

**VC11 x86 Non Thread Safe (2016-Apr-28 06:19:34)**

- [Zip](#) [20.29MB]  
sha1: 46f159ee7be2307aca4d8d5f80034f11c7fff5d2
- [Debug Pack](#) [9.68MB]  
sha1: 6aba9b880ddc8c5c6ed73559bfb63649d2c82f9

**PHP 5.5 (5.5.35)**

---

[Download source code](#) [23.33MB]

**VC11 x86 Non Thread Safe (2016-Apr-28 00:53:27)**

- [Zip](#) [18.77MB]  
sha1: 034735285c257e7611532af811c5a17ef719718d
- [Debug Pack](#) [9.33MB]  
sha1: af3dbcb981551098ea4b6321938dfdd2175d7968

2) The installation of PHP versions above 5.3 depends on Visual C ++ Redistributable Update. Download and install VC Update Installer according to the name of downloaded PHP installer by referring to the relations as shown in the following table:

PHP Installer Name	Download Link for Visual C ++ Redistributable Installer
Php-xxx-nts-Win32-VC14-x86.zip	<a href="#">Visual C ++ Redistributable for Visual Studio 2015</a>
Php-xxx-nts-Win32-VC11-x86.zip	<a href="#">Visual C ++ Redistributable for Visual Studio 2012 Update 4</a>
Php-xxx-nts-Win32-VC9-x86.zip	<a href="#">Microsoft Visual C ++ 2008 SP1 Redistributable Package (x86)</a>

For example, if the downloaded PHP installer is the one shown as below,

 php-7.0.6-nts-Win32-VC14-x86.zip

then download the installer for VS2015 version based on the relation indicated in the first row, and download and install the .exe file.

3) Unzip the PHP zip installer (in this case, extract to C:\PHP), copy php.ini-production and rename it to php.ini.

4) Click "Server Manager" - "IIS"; On the local IIS, right-click and select IIS Manager.

Click on the host name (IP) on the left to go to the home page, then double-click "Handler Mappings".

Click "Add Module Mappings" button on the right, fill in the following information in the pop-up box, and click "OK" to save.

If you are unable to select php-cgi.exe as the executable file, please change the file name extension of the selected file to .exe.

5) Click on the host name (IP) on the left to return to the home page, then double-click "Default Document".

Click "Add" button on the right to add the default document with the name of index.php.

6) Click on the host name (IP) on the left to return to the home page, then double-click "FastCGI Settings".

Select the path, click the "Edit" button on the right, then in the "Monitor the Changes Made to File", select the php.ini path.

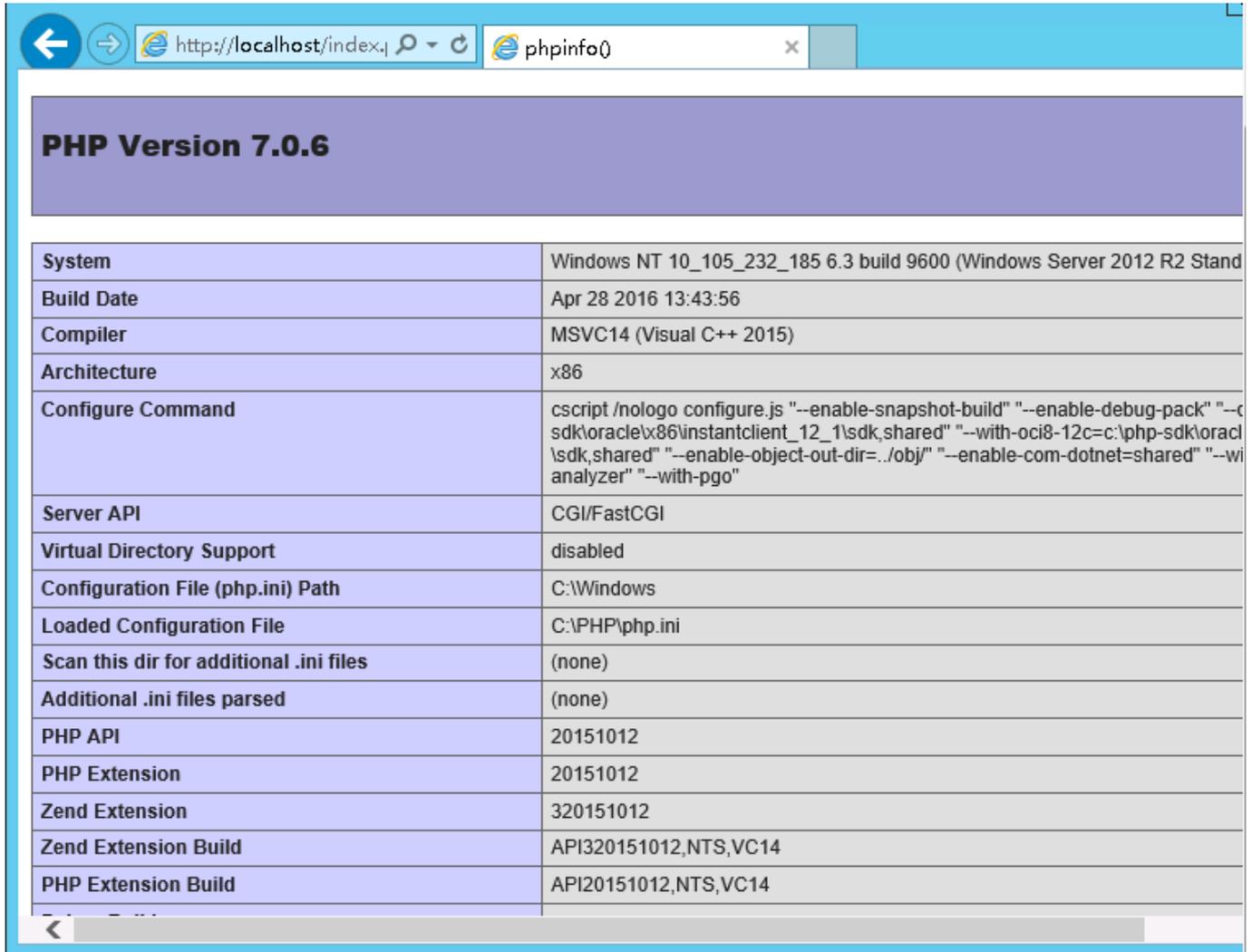
7) Create a PHP file index.php under C:\inetpub\wwwroot, to which the following content is written:

```
<?php
```

```
phpinfo ();
```

```
?>
```

Save, visit <http://localhost/index.php> within from the CVM to verify whether PHP has been installed successfully:



## Change SID on Windows CVMs

Note: This only applies to Windows Server 2008 R2 and Windows Server 2012. For any need to batch edit SID, you can create a custom image (select "Run Sysprep to Create an Image").

### 1. Background

Microsoft's operating system uses a security identifier (SID) to identify computers and users. When there is a need to build a Windows domain environment, modification of SIDs is required to overcome the inability to join the domain due to the fact that CVM SIDs generated based on the same image are the same.

### 2. Operation Steps

1) Log into the CVM using the console VNC

2) Save the current network configuration

Click "Start" - "Run". Type cmd to open the command line. Run the command ipconfig / all. Keep record or save screenshots of the result information.

3) Open the Sysprep tool

Run the sysprep.exe program under the folder C: \ windows \ system32 \ sysprep.

As shown below, select "Enter System Out-of-Box Experience (OOBE)" under "System Cleanup Action", and meanwhile check the "General" option. Select "Restart" under "Shutdown Options".

4) Clicking on "OK" will restart the system. When the restart is done, complete the configuration

steps following the wizard (select language, reset password, etc.)

#### 5) Verify SID

Click "Start" - "Run". Type cmd to open a command line. Run the whoami / user command and refer to the figure below to verify if SID has been modified.

6) Refer to the configuration saved in Step 2 to reset network card information (IP address, gateway address, DNS, etc.).

## Install Windows Programs

### Upload Files to Windows CVMs

- 1) Open the "Remote Desktop Connection" dialog box, click "Options".
- 2) In the "Local Resources" tab, click "Detail" button.
- 3) In the drive module, select the local hard disk where the file you want to upload to Windows CVM is located.
- 4) After the configuration, log in to Windows CVM, select "Start" - "Computer" to view the local hard disk that is mounted to the CVM.
- 5) Copy the code files in the local hard disk to the Windows CVM to complete the file upload.

## system maintenance

### Closean CVM

#### 1. Analysis on the Shutdown of Virtual Clients

The following is the shutdown process of Windows virtual machine on Tencent Cloud.

- 1) Libvirt on the parent host sends shutdown command to qemu component via qmp protocol;
- 2) Qemu component transfers shutdown command to child host by injecting acpi interruption (For details, see technical documents on vmcs);
- 3) When receiving the shutdown signal, Windows tells applications and service processes to exit;
- 4) Close the core service process;
- 5) Turn off the power.

The shutdown process on Windows is basically the same as shown above. The sequence in which the applications and services are closed in step 3-4 may vary with the settings of system.

As a closed-source system, Windows provides some APIs to allow the programs with kernel mode and user mode to intervene in the shutdown process. And some services of Windows will also affect the shutdown process during operation, making the shutdown impossible. In some cases, Windows shutdown process can be very time-consuming to prevent the computer from being shut down.

In virtual scenarios, besides informing the Windows itself to shut down by sending a message, another means, which is similar to powering off a physical machine, is provided to stop a virtual client. This means is called "hard shutdown". Correspondingly, the shutdown action initiated by a system signal is called "soft shutdown".

Hard shutdown has some impact on the Windows itself and the user experience, mainly in the following two ways:

- 1) A hard shutdown interrupts some services and applications, which as a result may operate improperly, such as unsaved documents, and unfinished Windows Update processes;
- 2) As the NTFS system (or the earlier FAT32 system) of Windows writes some key data during the

shutdown process, a hard shutdown may result in the failure to write such key data to the disk, which would lead Windows to determine that the NTFS file system is damaged.

For these reasons, it's recommended Tencent Cloud users **take soft shutdown as the preferred way** to shut down Windows.

## 2. Several Scenarios of Shutdown Failure

However, as mentioned above, there may be some issues within the Windows system that interfere with the shutdown process and result in shutdown failure. The scenarios include but not limited to:

- 1) A Windows Update process may extend the shutdown time. For some patch operations, the Windows system may take some actions during the shutdown process, by which time messages like "Please do not power off or unplug your machine" will display.
- 2) If "Shutdown Event Tracker" mechanism is enabled on the Windows system, when the system is shut down due to any error in the system service and driver, the system will provide user with a prompt box based on the configuration or fill in the error description to wait for the user to complete these operations. Windows will not turn off the power until the user has completed these operations.
- 3) Windows can be set to not allow shutdown while the user is not logged in to the system. In this case, the soft-shutdown command sent from the virtual host will be discarded by Windows so that the shutdown cannot be achieved.
- 4) Before the shutdown, Windows will broadcast a message to every service and application. If the applications responding to this message do not send a response that allows the shutdown, Windows will not initiate the shutdown. In this scenario, some settings can be made on Windows to ignore this process.
- 5) In the power management-related operation "What will Windows do when you press the power button ", if Windows is set to ignore it or do nothing, Windows will ignore the shutdown event of the virtualized parent host.
- 6) Based on the settings of power management, Windows will go into Sleep and not handle

shutdown event.

7) In case of initial purchase of Windows, the initialization process is slightly longer due to the use of sysprep for distributing images. Windows will ignore the shutdown event until the initialization has been finished.

8) If the Windows system itself is damaged due to some malicious software installed within it or infection with Trojan virus or other viruses, Windows can be prevented from shutdown.

Tencent Cloud has optimized most of the above scenarios when publishing Windows public images so that the soft-shutdown can be completed successfully. These optimization measures are integrated into the script of [Windows Power Management](#) to be used for making adjustments to Windows features such as power management, turn-off of "Shutdown Event Tracker" and shutdown while user is not logged in to the system.

But these optimization measures cannot solve the scenarios where Windows is infected with viruses and Trojans or the system is damaged; In addition, if these relevant settings in the Windows virtual machine of user are adjusted again, there is no guarantee that the soft-shutdown can be completed successfully. In some cases, forced shutdown would pose a risk. For example, in the process of Windows Update, it is necessary to wait for the update to complete. During the soft-shutdown process, user needs to check the scenarios of shutdown failure by opening VNC, so as to conduct appropriate processing as required. Please perform hard-shutdown only if it is very necessary to do so.

## Continue Using Windows 2003

### 1. Recommendations

Microsoft has announced to stop providing extended support for Windows Server 2003 and Windows Server 2003 R2 as of July 14, 2015. At the same time Tencent CVMs that run a Windows 2003 system will no longer have access to updates and patches from Microsoft and may be exposed to issues and risks like program incompatibility, instability and insecurity. In order to ensure the security and stability of your businesses, it's recommended that you migrate the CVMs that are currently running the Windows Server 2003 system to a Windows Server 2008 R2 version.

### 2. Instructions for Use

Starting September 14, 2015, Tencent Cloud will stop providing Windows 2003 system images (including public image, custom image and Image Marketplace image) to all users. If you are currently running Windows 2003 for your CVM, and want to continue to use it, you can submit a request using a work order. Upon approval you can apply for the continued access to the entryway to purchase Windows 2003 systems for the requested period.

Note: Request for renewal of the 2003 system is supported in Guangzhou, Guangzhou OPEN, Shanghai, Beijing and Hong Kong

### 3. Risk Warning

Tencent Cloud reminds you to be fully aware of the following risks before applying for the continued use of Windows Server 2003 / Windows Server 2003 R2:

1) Continue to use the Tencent CVMs that contain Windows Server 2003 operating system. As of July 14, 2015, these Tencent CVMs will no longer receive updates and patches from Microsoft, and your applications and businesses may be exposed to a variety of risks, including but not limited to security issues, application incompatibility, compliance requirements, and other uncertain security risks

arising from non-functional issues.

2) If you continue to use Tencent CVMs running Windows Server 2003 after July 14, 2015, Tencent Cloud will not be held responsible for any fault, security issue, incompatibility or other uncertain risks due to lack of support from Microsoft, and you will have to bear the risks, consequences and liabilities arising therefrom all by yourself.

## 4. Service Contents

Once you are fully aware of the risks and are willing to bear the possible consequences and liabilities, you can access the service that Tencent Cloud provides for you to continue to use Windows Server 2003, which contains:

- the ability to continue to use Tencent CVMs running the existing Windows Server 2003 operating system.
- the ability to continue to use a Windows Server 2003 image (including system image, existing custom image, Image Marketplace image) to purchase and create Tencent CVMs.
- the ability to query the Windows Server 2003 image lists provided by Tencent Cloud through the Console and Cloud API. (Creating custom images is not supported)
- the ability to continue to request annual and monthly renewals for your Tencent CVMs that are running Windows Server 2003.

## 5. Service Fee

No additional cost will apply to your continued use of Tencent CVMs running Windows Server 2003, while an appropriate service fee will be charged for purchases and renewals of Tencent CVMs.

## 6. Notes

Because Microsoft has ended the support for Windows Server 2003, you understand and agree that the following situations shall not be considered substandard service quality, failure or responsibility on the part of Tencent Cloud:

- 1) Your instance that is running Windows Server 2003 may be exposed to high risk of failure, various security issues, incompatibilities, inability to work properly, or even total breakdown of the system.
  
- 2) In the case any application running in your Windows Server 2003 instance experiences any failure that needs to be resolved by installing Microsoft patches or through OS-level troubleshooting by Microsoft, we can only provide assistance in troubleshooting, and may not be able to provide a complete solution to the issue.
  
- 3) Due to limitations in terms of hardware compatibility and driver-related issues, new Tencent CVMs in the future may not be able to support the running of Windows Server 2003 images.

During the renewal period, you have the responsibility to protect the Tencent CVMs that are running Server 2003, and to monitor the security threats reported in Windows Server 2003 to avoid any impact on other Tencent Cloud users.

Although Tencent Cloud provides you with the ability to continue to use Windows Server 2003, we advise and encourage you to migrate the existing instances of Windows Server 2003 to the instances of Windows Server 2008 R2 and Windows Server 2012 R2 to protect your data and businesses.

## Power Management Configuration

High-performance power management options need to be set on Windows Server to enable soft-shutdown of virtual machine. Otherwise, the virtual machine only can be shut down by console in a hard-shutdown manner. Take Windows 2012 as an example, the power management is set as follows:

NOTE: You do not need to restart the computer to change power management.

1) Download power change and setup tools of Tencent Cloud to execute in the console (private network address: <http://mirrors.tencentyun.com/install/windows/power-set-win.bat>, save to C:\Later, then execute it in the console).

After execution, use `powercfg -L` to view the current power management scheme.

2) In "Control Panel" - "System and Security" - "Power Options", change the idle time limit and turn-off time of display and hard drive.

## Activate Windows License

Tencent CVM uses KMS for granting authorization to Windows server. Currently, only Windows 2008 and Windows 2012 need such authorization.

### 1. Automatic activation tool

Tencent Cloud encapsulates a script for Windows activation on QCloud that simplifies the steps for manual activation. Please visit the following address on Windows CVM for download (<http://mirrors.tencentyun.com/install/windows/activate-win.bat>), and execute the script after the download.

### 2. Run the activation manually.

1) Click "Start" - "Run", enter cmd.exe to open the console window.

2) Enter the following commands in turn:

```
cscript /nologo %windir%/system32/slmgr.vbs -skms kms.tencentyun.com:1688
```

```
cscript /nologo %windir%/system32/slmgr.vbs -ato
```

Note 1:

On some systems, if there is a problem with the system clock, error will occur during manual activation. In this case, you need to synchronize the system clocks. The synchronization between clocks is performed as follows: Enter the following commands in the console window:

```
w32tm /config /syncfromflags:manual /manualpeerlist:"ntpupdate.tencentyun.com"
```

```
w32tm /resync
```

Note 2:

SPP Notification Service on Windows is used to perform activation-related services and its normal operation needs to be ensured.

Some optimization software may disable the change to execute permissions of service-related executables. For example, the change to the execute permission of sppsvc.exe process can cause abnormal operation of service.

Before you attempt to activate Windows, make sure the service and other basic functions on Windows are in a normal condition.

## System Updates

### 1. Obtain updates via the public network.

Users can install the patch program through the Windows Update service program of the system. The steps are as follows:

Click "Start" - "Control Panel" - "Windows Updates", click "Check for Updates" button. After the check completes, you'll be notified of the availability of several update packages.

Click "Available Updates", then "Choose the Update to Install" pop-up box will appear. Select the update to install, click "Install", then wait until the appearance of the message that the installation is completed.

If you are prompted to restart your system after the update is completed, please restart the CVM.

Note: When you restart the CVM after the patch is updated, please observe the CVM through VNV. If the message that "Updating...Do not turn off the power" or "Configuration has not been completed" appears, do not perform a hard-shutdown, which can damage your CVM.

### 2. Obtain updates via the private network.

If the CVM cannot be connected to the public network, the user can set it to use patch server of Tencent Cloud private network to install the updates. Windows patch server of Tencent Cloud contains most patch updating programs that are often used on Windows, but does not include hardware driver packages and some seldom-used server update packages.

For some seldom-used services, update patch may not be found on the patch server of Tencent Cloud private network. To address this problem, Tencent Cloud is still making efforts in improving more patch programs.

If you want to use patch server of Tencent Cloud private network, do as follows:

1) After logging in to Windows CVM, download the setup tool wusin.bat at Tencent Cloud private network through IE:

<http://mirrors.tencentyun.com/install/windows/wusin.bat>

2) Save it to C:\wusin.bat, and open the console to execute.

NOTE: When this script is directly executed through IE, console window will be closed automatically and you are unable to view the output messages.

If you no longer need to use the Windows patch server of Tencent Cloud private network, you can download the cleanup tool wusout.bat as follows:

1) After logging in to Windows CVM, download cleanup tool wuout.bat through IE:

<http://mirrors.tencentyun.com/install/windows/wusout.bat>

2) Save it to C:\wusout.bat, and open the console to execute.

NOTE: When this script is directly executed through IE, console window will be closed automatically and you are unable to view the output messages.

## Update Virtio Network Card Drive

Tencent Cloud CVM Windows Server 2008 R2 Enterprise Edition SP1 and Windows Server 2012 R2 have been equipped with VirtIO NIC driver to optimize the network performance of virtual hardware. Tencent Cloud will continue to make improvements to NIC driver for enhanced performance and troubleshooting. Users can download the latest version of NIC driver.

- Users can right-click "Computer" - "Property", and view the system version information in "View Basic Information About Your Computer".
- The network will flash during the upgrade. Check whether it will affect the business before the upgrade. You need to restart the computer after the upgrade.

Tencent Cloud users can download VirtIO NIC driver installation file for Windows Server 2008 R2 and Windows Server 2012 R2 from the following private network address. Private network download address: [http://irrors.tencentyun.com/install/windows/virtio\\_64\\_10003.msi](http://irrors.tencentyun.com/install/windows/virtio_64_10003.msi)

Double-click to start the installer, select "Typical" installation mode, then click "Install" button.

Security tips will appear during installation, check "Always trust software from Tencent Technology (Shenzhen) Company Limited", then click "Install" button.

When the following pop-up box appears, select "Always install this driver software".

After installation is completed, you will be prompted to restart your computer to take effect. In this case, restart the computer.