Cloud Class Solution Cookbook (V1.0)

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Preface

This article provides a systematic approach to identifying and remedying problems that may arise as you use your cloud class product over a period of time. This guide is not intended to replace configuration guide or to be an all-inclusive guide for every application. Rather, it is an attempt to provide you with the knowledge and skills necessary to correct the most common issues that you may encounter.
This article introduces the basic concepts, methodology, and general troubleshooting guidelines for problems that may occur when you configure and use cloud class product.

Audience

- Network Engineers
- Network Administrator

Obtain Technical Assistance

- Ruijie Networks Websites : http://www.ruijienetworks.com
- Ruijie Service Portal : http://caseportal.ruijienetworks.com

Welcome to report error and give advice in any Ruijie manual to Ruijie Service Portal

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2 Preface

With the maturation of the cloud computing technology and the increase of customer problems, fat access points (APs) are not the most ideal solution for the PC equipment room. The RG-RCC Solution is a Ruijie homegrown product that is committed to resolving management problems occurring in conventional traditional computer classrooms, and effectively enhancing the user experience. Ruijie Cloud Class (RCC) is a new-generation computer classroom construction solution developed according to the ideas of continuous integrating and optimizing devices in the campus equipment rooms, in combination with the actual situations of numerous general education schools. The deployment of only one RCD Server in each classroom can provide dozens of Cloud Desktops that outperform common PCs. Students can experience vivid cloud desktop environment from the Thin Clients served by these Cloud Desktops. The RCC provides a variety of teaching system images based on courses and closely integrates cloud technologies and education scenarios, thereby achieving centralized teaching, intelligent management, and simple maintenance, and bringing the computer classroom into the cloud era.

The RG-RCC solution consists of the following product components:

- RG-RCD Server: It is a high-performance cloud desktop server. One RCD Server supports 30–60 concurrent cloud desktops. RCD Servers can be independently managed through the Web management UI.
- RG-Rain Thin Client: It is the Thin Client used by a student. The Thin Client is embedded with the operating system (OS), ClassManager_Student, and ClassManager Rainbow. The Thin Client is interconnected to the RCD Server through a 1000M network and displays the teaching desktop pushed by the RCD Server. Currently, there are various models of Thin Clients such as Rain100 and Rain200.
- RG-ClassManager_Teacher: It is teaching management software used by teachers. It provides various functions such as course preparation, class instruction, class discipline, class interaction, exercise guidance, and review and testing.

This document, based on typical case sets, describes operation steps and precautions of each functional module by scenario in the implementation and configuration of the RCC solution. Network engineers check the hardware and software according to requirement information collected prior to network deployment, and select appropriate network scenarios and product deployment modes that cater to the requirements. After the deployment, network engineers need to check the running of the device.

The deployment includes the following steps:

1. Preparations before deployment
2. Typical scenario selection
3. Scenario and function selection
4. Function configuration
5. Function configuration commissioning
6. Device running check after deployment

3 Deployment Strategy (Required)

I. Deployment Process

1. Preparations (including network address planning)
2. Installation and racking (including the racking of the RCD Servers, Rain Thin Clients, and switches and software installation)
3. Software upgrade
4. Software configuration and image creation
5. Data synchronization (mandatory in cluster mode)

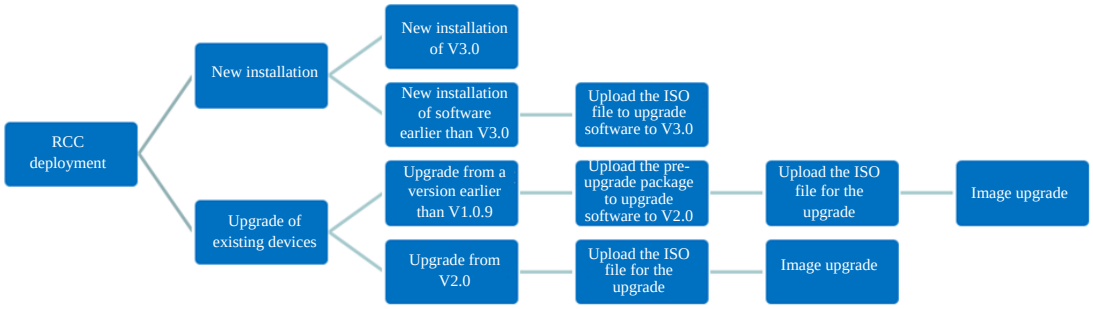
II. Key Upgrade Steps

If you need to upgrade the version that has been deployed in classrooms, back up data of the RCD Server (mainly RCD data, including image files and database data).

Note:

1. The RCD Server upgrade using an ISO file takes about 25–30 minutes. Please wait patiently.
2. Because the hard disk controller of the Cloud Desktop is upgraded in V3.0, all images need to be edited using the Admin-Tool when the RCD Server is upgraded from an earlier version to V3.0. The Guest-Tool is automatically upgraded during image editing. You can normally use the images only after the new hard disk driver is installed. You must restart the system to access the new images and then install the Guest-Tool to validate the functions.

The following figure shows the procedure for upgrading the RCD Server to V3.0.



III. Precautions

1. If a customer uses the convergent computing function, communicate with the customer to obtain the software and then upgrade the version, and ensure that the upgrade time is sufficient (because the software installed in the Rain system needs to be recovered).

2. Generally, version rollback (rollback between major versions is not supported) is performed when the upgrade is abnormal. Do not perform version rollback in normal situations. Especially if you use the current version for a long period of time, version rollback may cause anomalies to cooperative products such as Rain.
3. The entrances for image distribution vary with hardware architectures of the Rain Thin Clients. Simply, the Rain100 and Rain200 adopt the x86 hardware architecture and use the Windows or Linux OS as the underlying system. Therefore, they adopt the iPXE technical solution. The Rain100S adopts the ARM hardware architecture and uses the Android OS as the underlying system. Therefore, the Rain100S adopts the OTA technical solution.
4. You can select the multicast or unicast mode for image distribution by the iPXE and OTA according to the network conditions. If the network condition is good (1000M switch + 1000M network cable), the multicast mode is recommended; if the network condition is poor or the multicast mode is unavailable, the unicast mode is recommended. If you have no idea of the network condition, use the multicast mode.
5. Authorization must be performed after the version upgrade. Otherwise, the ClassManager Rainbow is valid for 45 days by default. Then, the software becomes unavailable upon expiration.

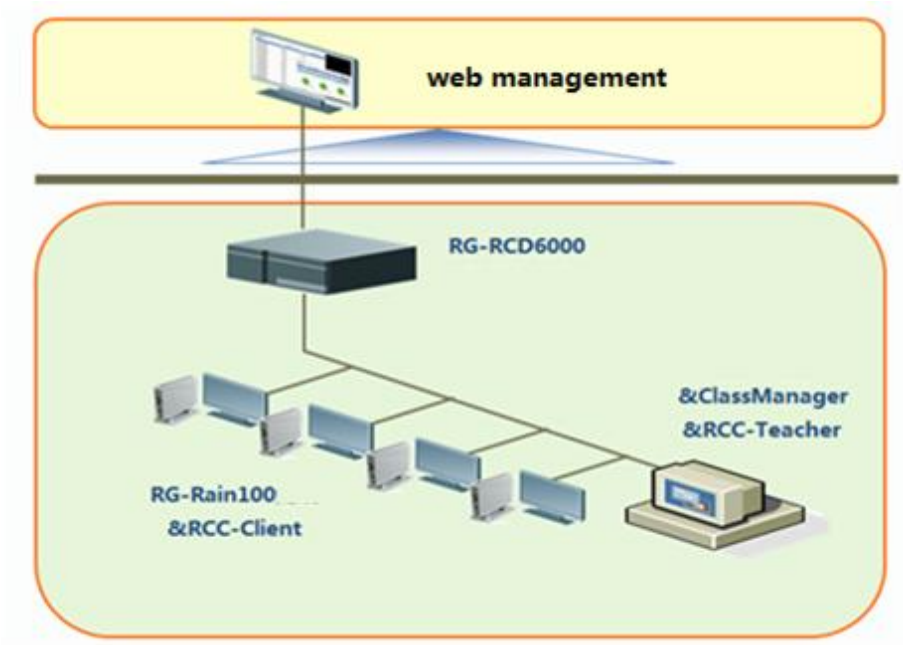
4 Deployment Preparation

4.1 Information Collection

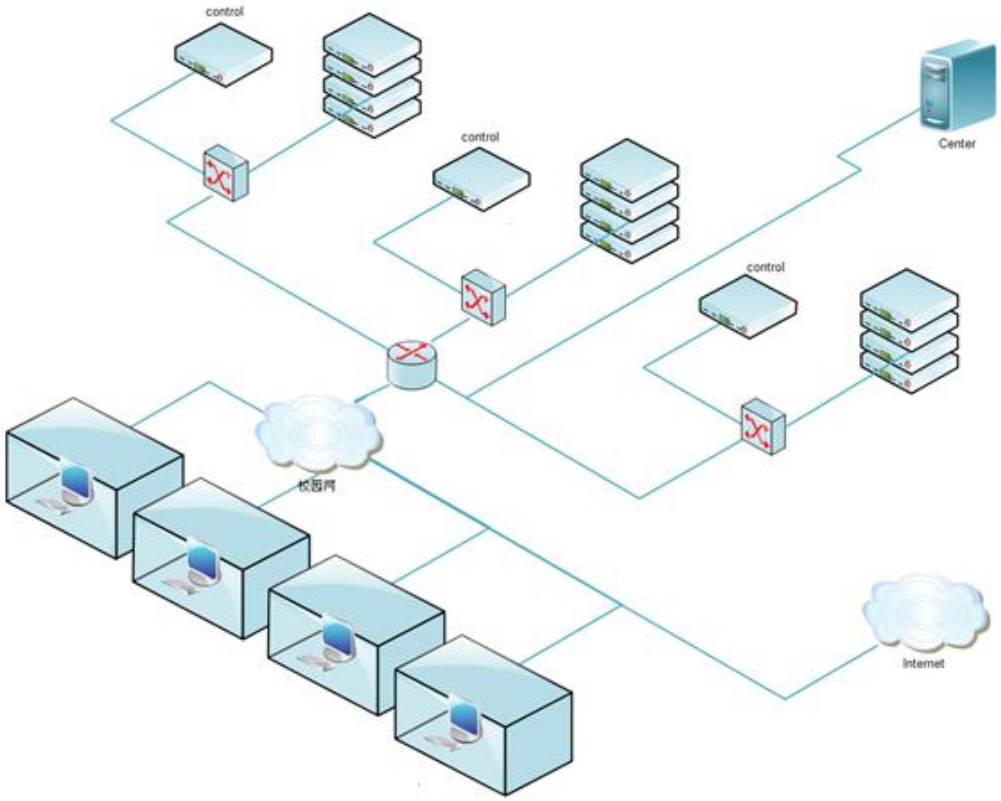
The RCC product relies on the infrastructure of the computer classrooms and the campus network. Therefore, before product deployment, learn about the situation of the equipment room, cable layout in classrooms, and network topology, to determine the project deployment schedule.

I. Network Topology

Single-classroom cluster deployment:



Multi-classroom cluster deployment:



II. Device List

Before product deployment, check whether the device list is complete. The following table lists devices and tools used in the single-classroom deployment.

Device	Qty	Description	Necessary
RG-RCD 6000	1		✓
RG-Rain 100	60		✓
RG-Class Manager	1		✓
Gigabit Switch	2		✓
Teacher PC	1		✓
Monitor, Mouse, etc..	60		✓
Cables	Some		✓
Screwdriver	1		
Knife	1		
USB	some		✓

III. Software Checking

1. Clarify customer requirements, and check the device list and software version.
2. Determine the software used in current teaching and requirements for the version of the teaching software.
3. Before deployment, confirm with teachers about the list of software versions to be installed. It is recommended that the software be provided by the customer. Help the customer learn how to create OS images and install software.
4. Get gigabit switches and Category 6 network cables ready. Ensure that keyboard and mouse suites with USB ports are configured for Thin Clients.
5. Check whether the customer uses teaching management software such as Red Spider and Mythware. If the customer uses the RG-ClassManager, confirm the common functions used by the customer, such as screen broadcast and document delivery.
6. Get a separate PC ready for installing the RG-ClassManager.

4.2 Network Planning

4.2.1 Network Planning for the Cloud Class

1. Check the existing network environment and IP address segment planning of the equipment room. It is recommended that an independent Class-C network segment be configured for each classroom.

2. Configure two IP addresses for each Thin Client (one for Thin Client and one for Cloud Desktop), two IP addresses for each RCD Server, and one IP address for each ClassManager_Teacher.

3. Clarify the planned gateway, subnet mask, and DNS server of the school.

Network address policy: Cloud Desktop Campus Network and Thin Client Campus Network (This network address policy is recommended. You can configure it on the configuration wizard of the RCD Server management screen.)

For example, for a classroom containing 60 Thin Clients, you can allocate network segment 192.168.1.0/24 (IP addresses in this network segment can be used to directly access the network) to this classroom.

IP network segment for the Rain Thin Client: 192.168.1.11–192.168.1.70

Virtual IP network segment for the Cloud Desktop: 192.168.1.111–192.168.1.170

RCD Server: master IP address: 192.168.1.100; slave IP address: 192.168.1.101

ClassManager_Teacher: 192.168.1.10

Gateway IP address: 192.168.1.1; mask: 255.255.255.0; DNS: 192.168.0.254 (subject to the actual configurations)

4.2.2 Deployment Planning for the Cloud Class

In local deployment mode, a single RCD6000 supports 60 Thin Clients only in one classroom. If there are more than 60 Thin Clients in one classroom, you need to configure additional RCD Servers.

In local stack mode, more Thin Clients can be configured in a single classroom and each Thin Client has higher performance. Currently, there are three models of RCD Servers: RCD3000, RCD4500, and RCD6000, which can be stacked together.

In cluster deployment mode, multiple RCD Servers can be deployed in a cluster to serve multiple classrooms.

For example:

Scenario 1: One classroom has 90 Thin Clients. You need to configure two RCD6000 Servers as a cluster to work in active/standby mode, to satisfy teaching requirements.

Scenario 2: There are two classrooms and each classroom has 90 Thin Clients. You can configure three RCD6000 servers in a centralized manner or set up two new classrooms.

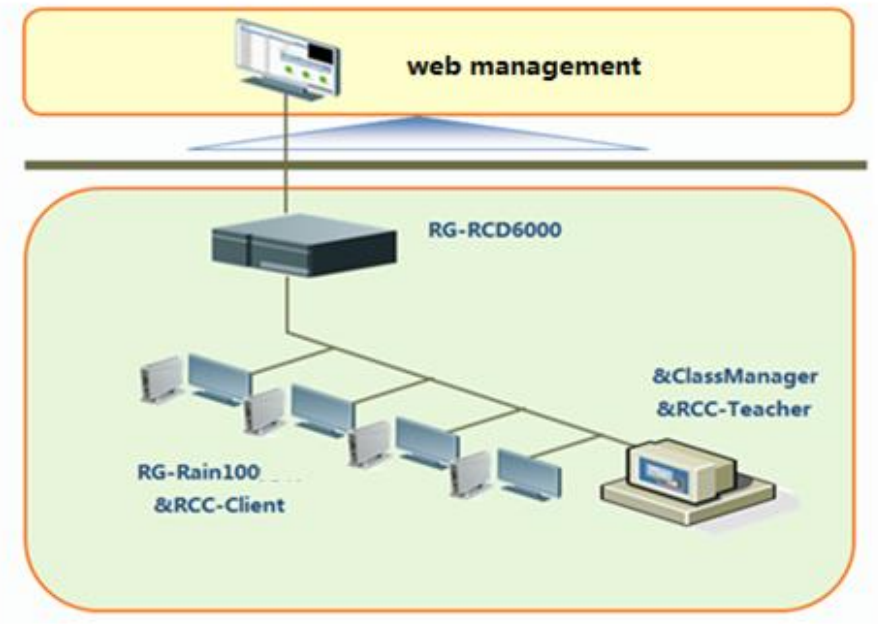
Scenario 3: A classroom can be deployed with 60 Thin Clients in the case of standard configuration. If high-performance virtual Cloud Desktops (2 GB memory) are used, one RCD6000 supports 30 Thin Clients at most. You can deploy two RCD Servers in stack mode or cluster mode, to support 60 high-performance Thin Clients.

5 Deployment

5.1 Installation and Configuration

5.1.1 Installing the RCD Server

I. Network Topology



II. Topology Description

This topology is applicable to the new deployment scenario of the RG-RCC solution and includes the RG-RCD Server, RG-ClassManager, and RG-Rain Thin Client.

III. Key Steps

1. Deploy the RCD Server.

   Key configuration points: set IP addresses, create Cloud Desktop, and configure the network mode.

2. Deploy the Rain Thin Client.

   Key configuration points: set an IP address for the Thin Client and distribute images in PXE mode.

3. Deploy the teaching PC.

   Key configuration points: install the RG-ClassManager and complete deployment in one-click mode.

4. Manage courses.

   Key configuration point: create images.

5. Verify functions.

   Key verification points: start a class, end a class, broadcast the screen, and broadcast a video.

5.1.2 Installing the ClassManager_Teacher PC

I. Installation Description

Minimum hardware configuration:

1. ClassManager_Teacher PC:

- CPU: dual-core processor at 2.0 GHz or higher
- Memory: 2 GB or higher
- Hard disk: 128 GB or higher
- Accessories: display, mouse, and keyboard

2. Thin Client

- Accessories: Thin Clients supporting Ruijie Cloud Class, mouse, display, and keyboard

3. Workspace server

The workspace is used for account management, class management and homework management. The workspace server can be deployed on an RCD Server (recommended) or an independent server. After RCD V2.1 is installed, the workspace will be automatically installed.

Minimum configuration of the independent server (for only one classroom)

- CPU: dual-core processor at 2.0 GHz or higher
- Memory: 2 GB or higher
- NIC: 100 Mbit/s or higher
- Hard disk: 256 GB or higher

Software configuration:

OS of the ClassManager_Teacher and ClassManager_Student:

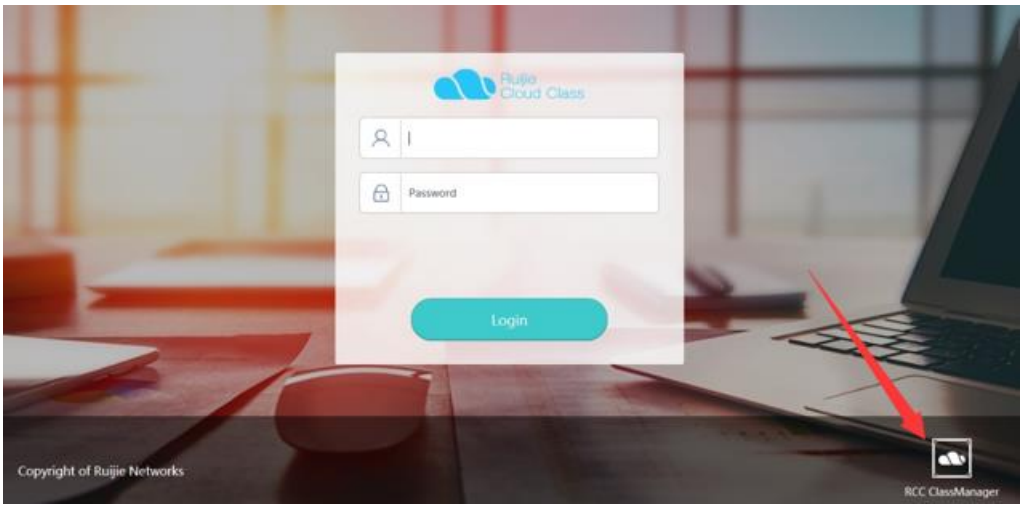
Note: The ClassManager_Teacher and ClassManager_Student provide full functions and support 32-bit and 64-bit OSs (64-bit images are supported since V2.1).

Key configuration points:

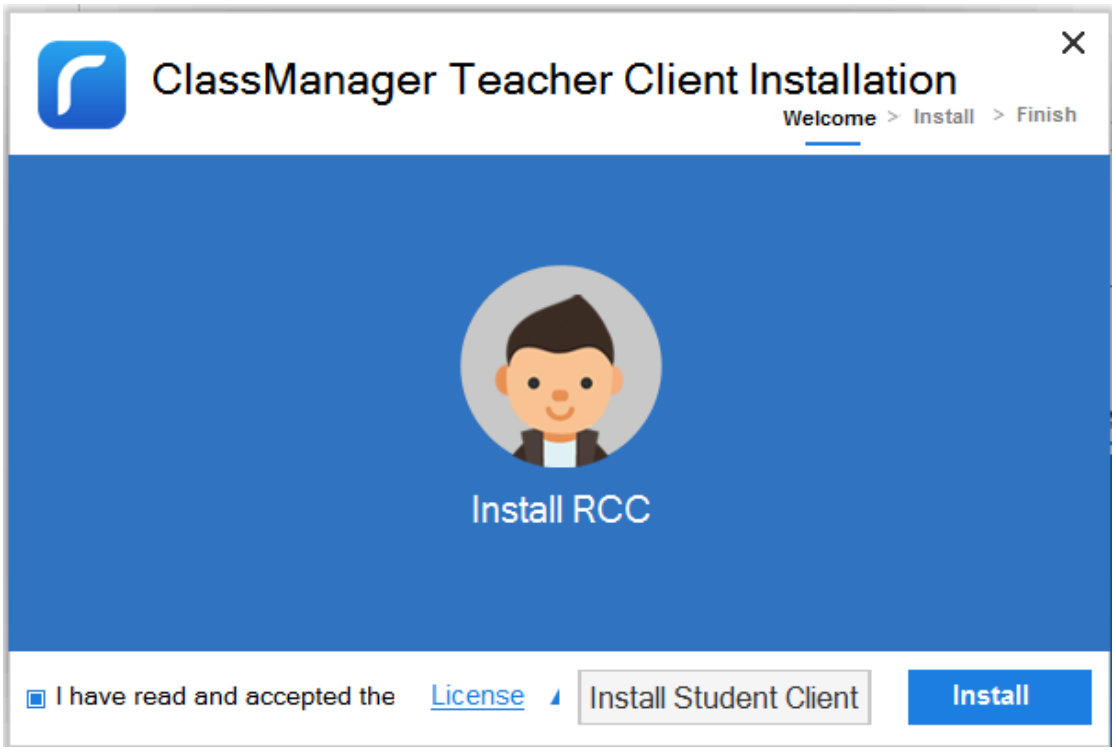
1. After installing the ClassManager_Teacher on the teacher PC, authorize the software and install the workspace server as required.
2. If the voice broadcast function available in V3.0 is used, ensure that the OS is Windows 7, Windows 10 Enterprise Edition, Windows 8, Vista, or a higher version. Other OSs are not supported.

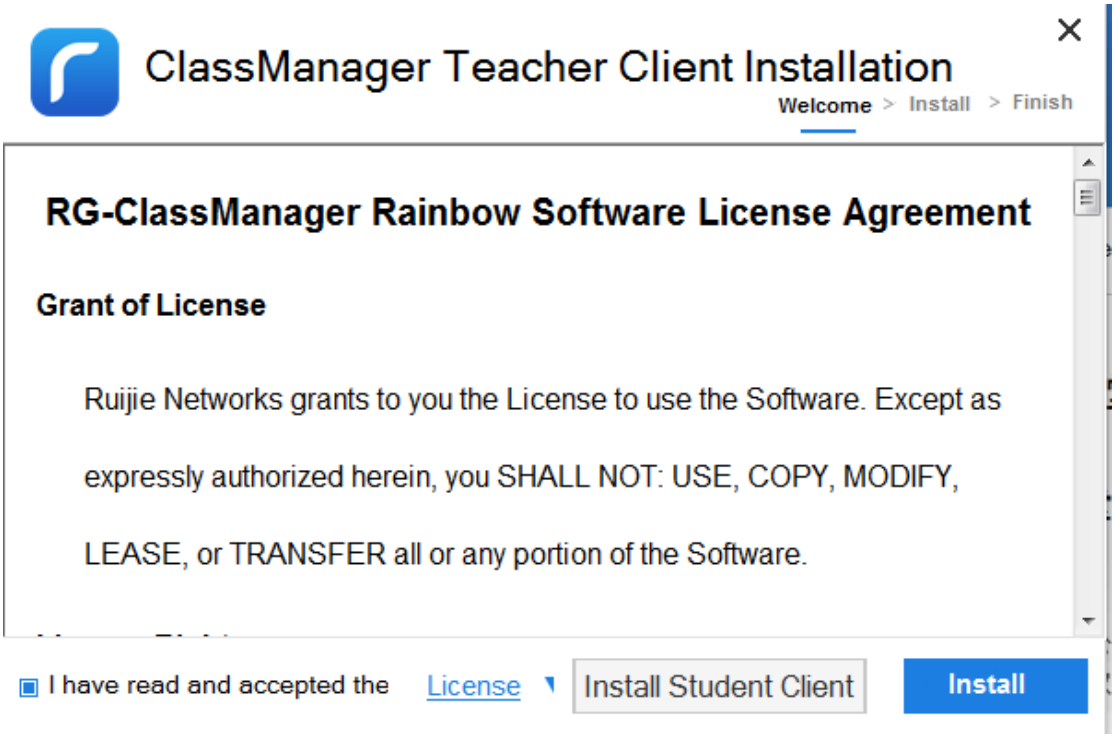
II. Installing the RG-ClassManager_Teacher

1. By default, the ClassManager_Teacher is integrated into the login page of the RCD Server. You can directly download and install the software.



2. Click **License** and read the license agreement of the software.

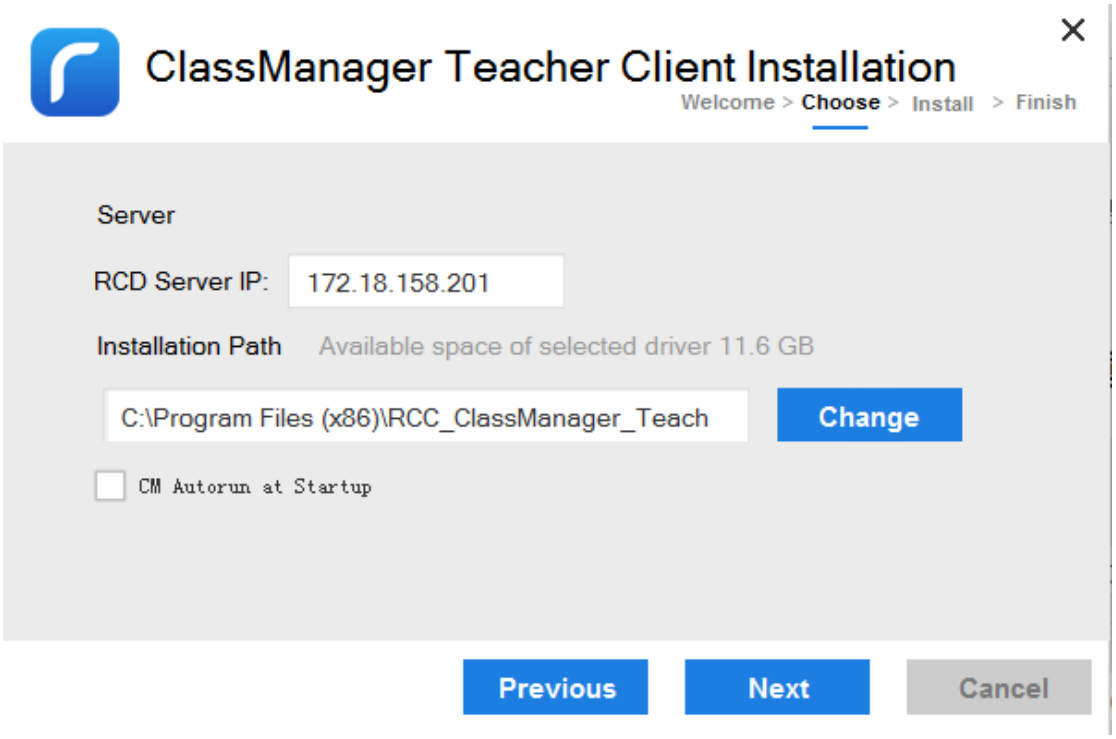




3. Select I have read and accepted the license agreement and click Install.

Set IP addresses for the RCD Server and workspace server, to ensure that the teacher PC can successfully connect to the RCD Server and workspace server. In addition, you can adopt the default installation path or click **Change** to select the required installation directory.

Note: if the workspace is deployed locally, no need to configure the workspace server in this step.



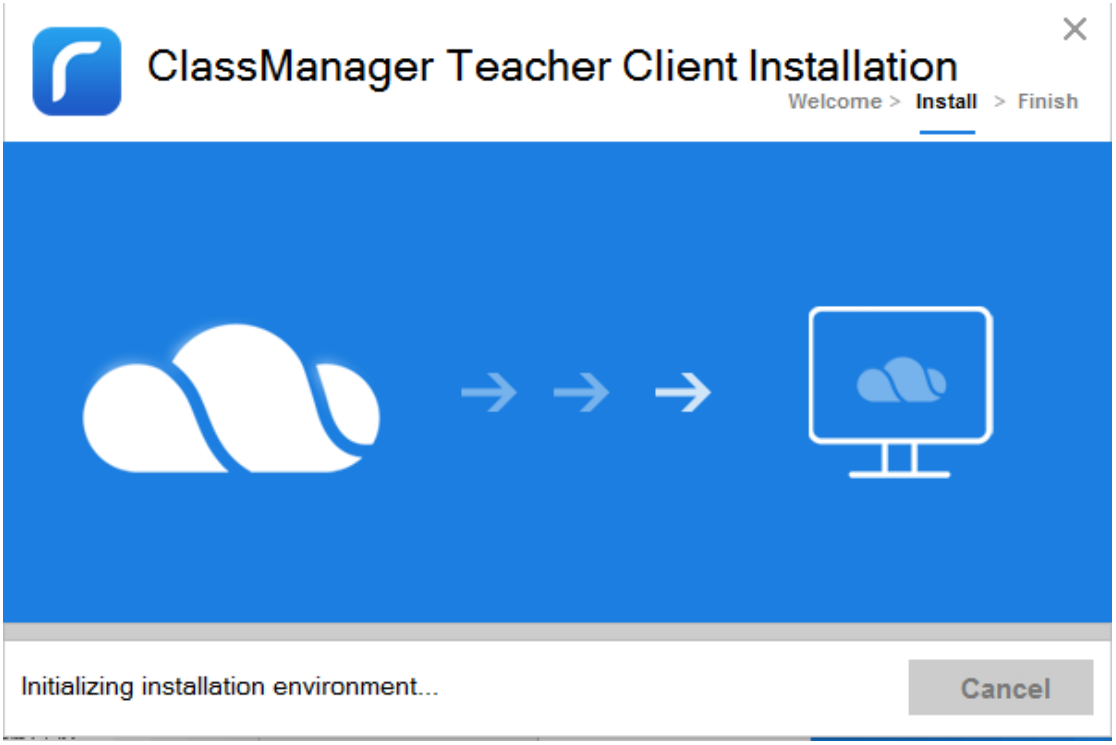
Note:

1) If the deployment mode is Cloud Desktop Campus Network and Thin Client Campus Network, the RCD Server IP is the LAN1 ip address, if the deployment mode is Cloud Desktop Campus Network and Thin Client Private Network or Cloud Desktop Private Network and Thin Client Private Network, the RCD Server IP address is the WAN ip address.

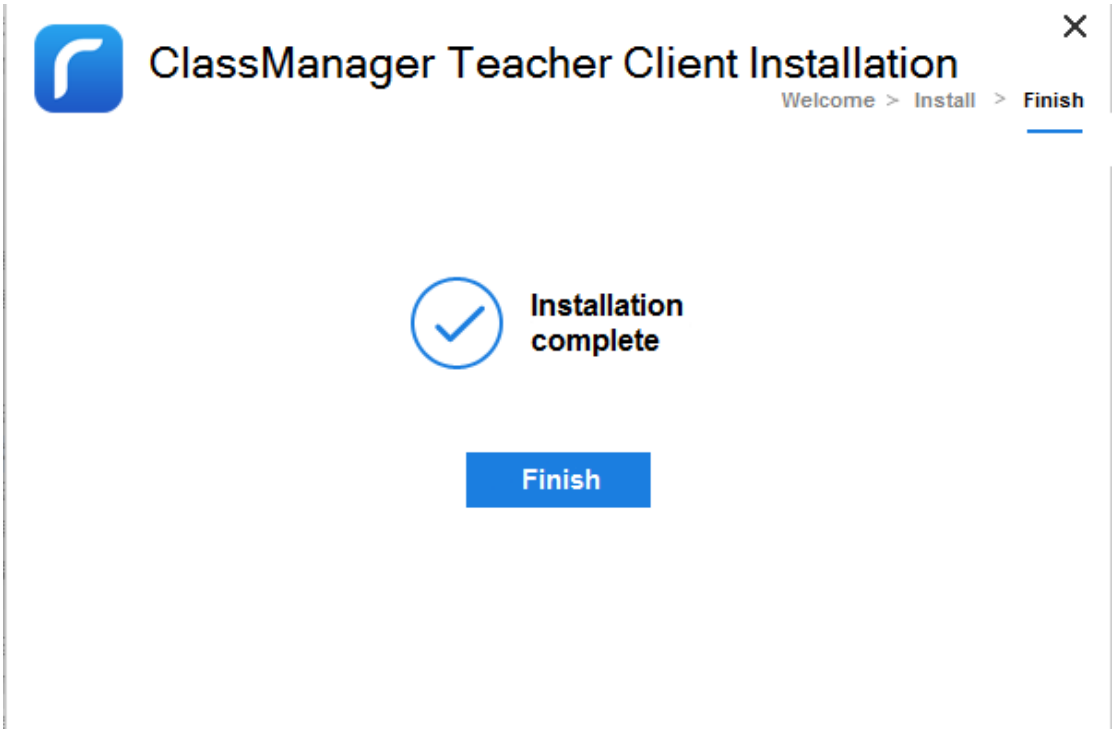
2) The ClassManager and workspace can be used independently. Generally, the workspace server uses the RCD Server. In V2.1 and later versions, after the ClassManager is installed, the workspace is automatically installed. If the workspace is installed on an independent server, you need to enter a correct IP address in System > Workspace> Parameter on the RCD Server web UI.

3) In cluster mode, both the master and slave RCD Servers can provide functions of the workspace server, depending on the RCD Server where the workspace server is installed. The workspace server uses the IP address of the RCD Server where the workspace server is installed.

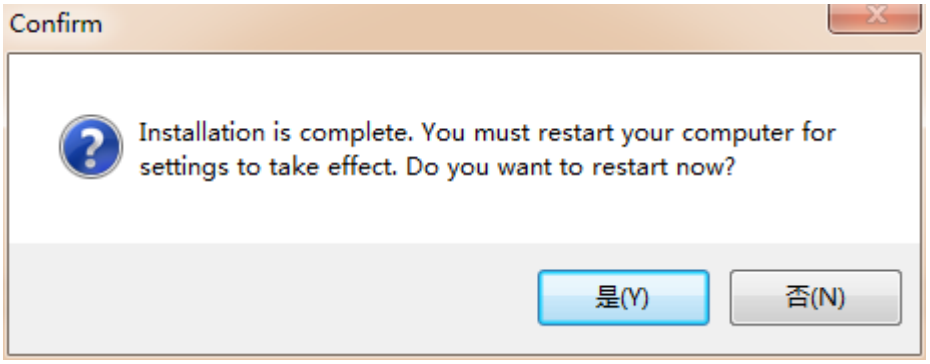
4. After **RCD Server IP** is correctly set and a correct installation path is selected, click **Next**. The system starts to install the software. After the software is installed, the system automatically jumps to the finish screen.



5. Finish.



6. After the software is installed, some functions are available only after the PC is restarted. As shown in the following figure, click **Yes**. You can normally use the ClassManager_Teacher after the PC is restarted.

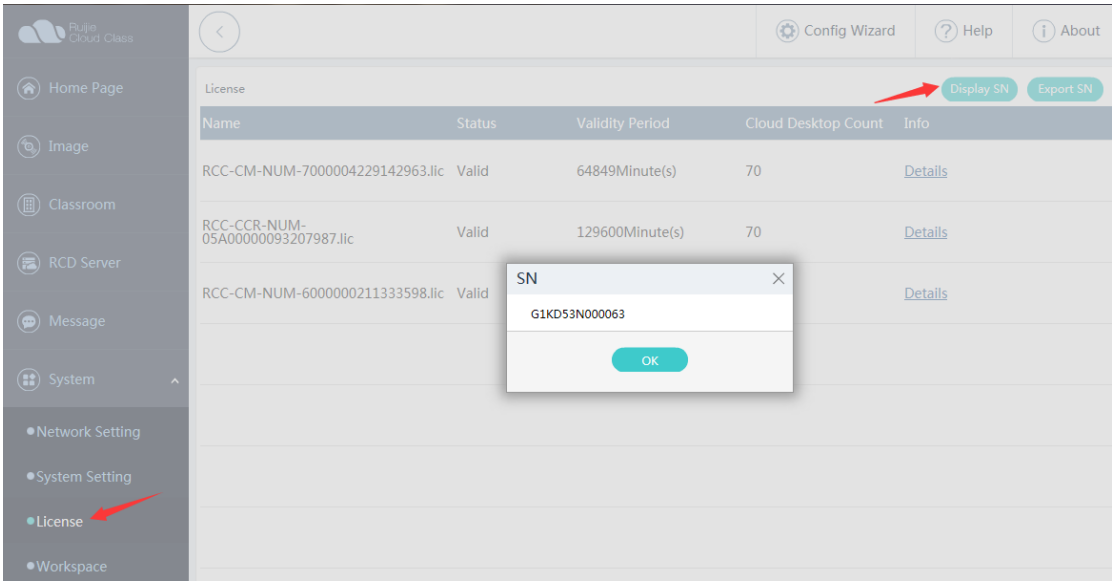


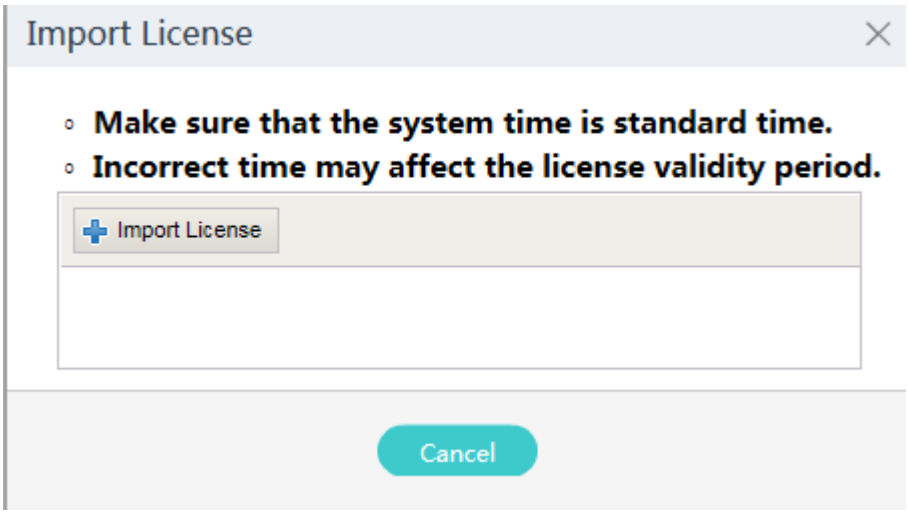
Note: If the ClassManager_Teacher fails to scan Thin Clients after upgrade but can start or end a class, you can set the firewall to permit the ClassManager_Teacher. Then, all functions become available.

III. Authorizing the RG-ClassManager Rainbow

Apply for an authorization file by referring to the Appendix "**ClassMananger Software Authorization**".

Log in to the RCD Server. Query and export the hardware SN, and make a license file in the back-end PA system (see 6.2.1 Generating the License File Using an Authorization Code below). Then, on the management page, click **Import license** to import the license file.





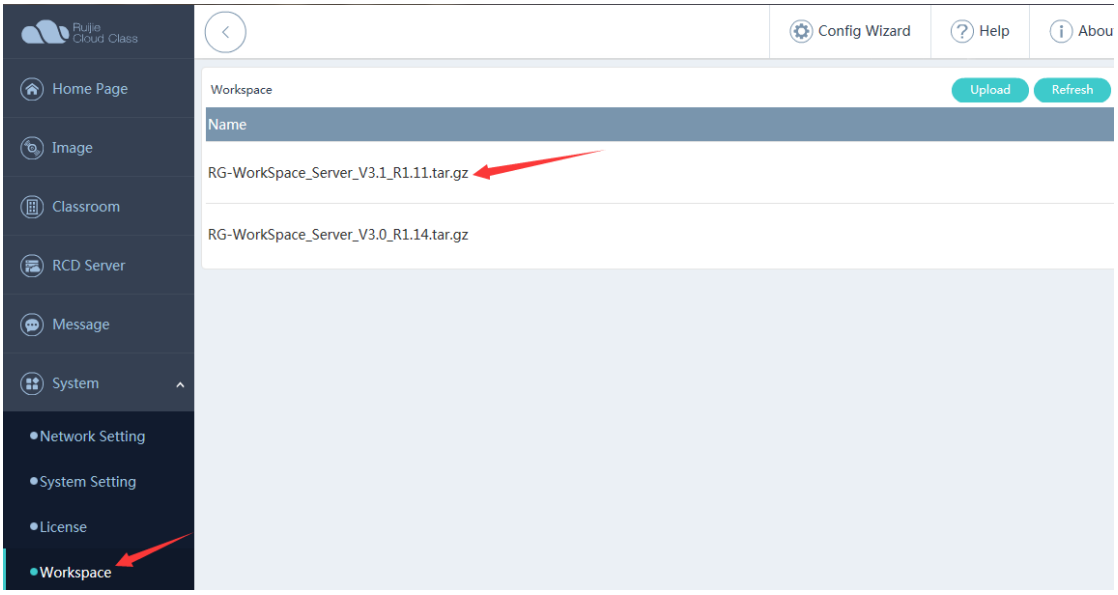
Ensure that the license file is successfully imported.

IV. Installing the RG-ClassManager Rainbow Workspace

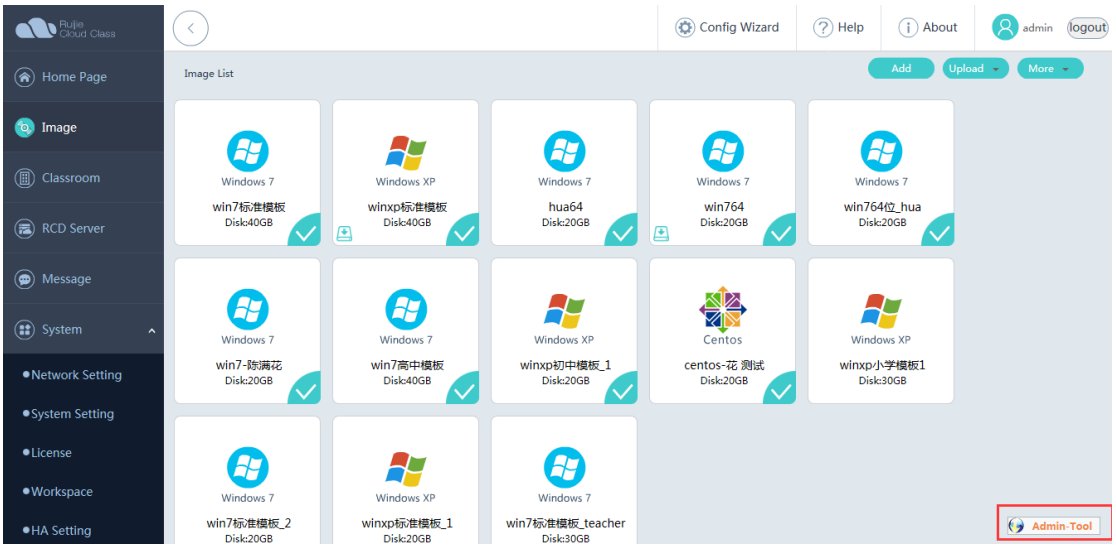
Workspace is a component of the ClassMananger Rainbow. It can be installed on an independent server or on an RCD Server. If the workspace serves a large number of students (exceeding 200), it is recommended that the workspace be installed on an independent server.

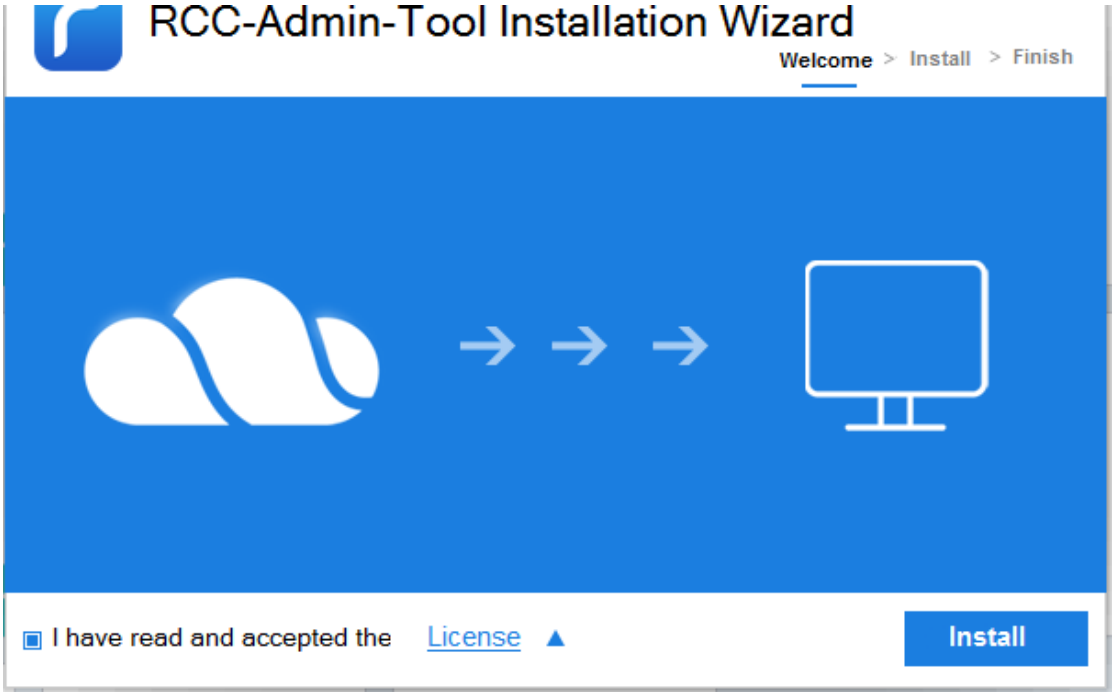
To install the workspace on the RCD Server, do as follows:

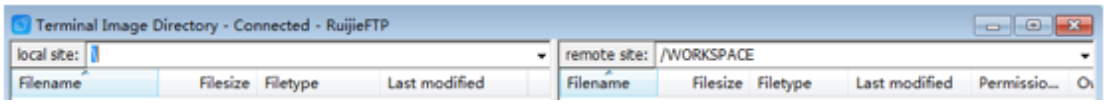
1. Log in to the RCD Server as an administrator. Note: In RCD V3.0 or later versions, the workspace is automatically installed (the latest installation package is embedded into the new version).



2. Refresh the page and click **Install**. Note: To use the upload function, install the Admin-Tool first.







3. After uploading the new upgrade package and clicking **Refresh**, click **Install** to install the workspace.

Note: please make sure the teacher PC can ping RCD server LAN1 ip address before start the admin tool.

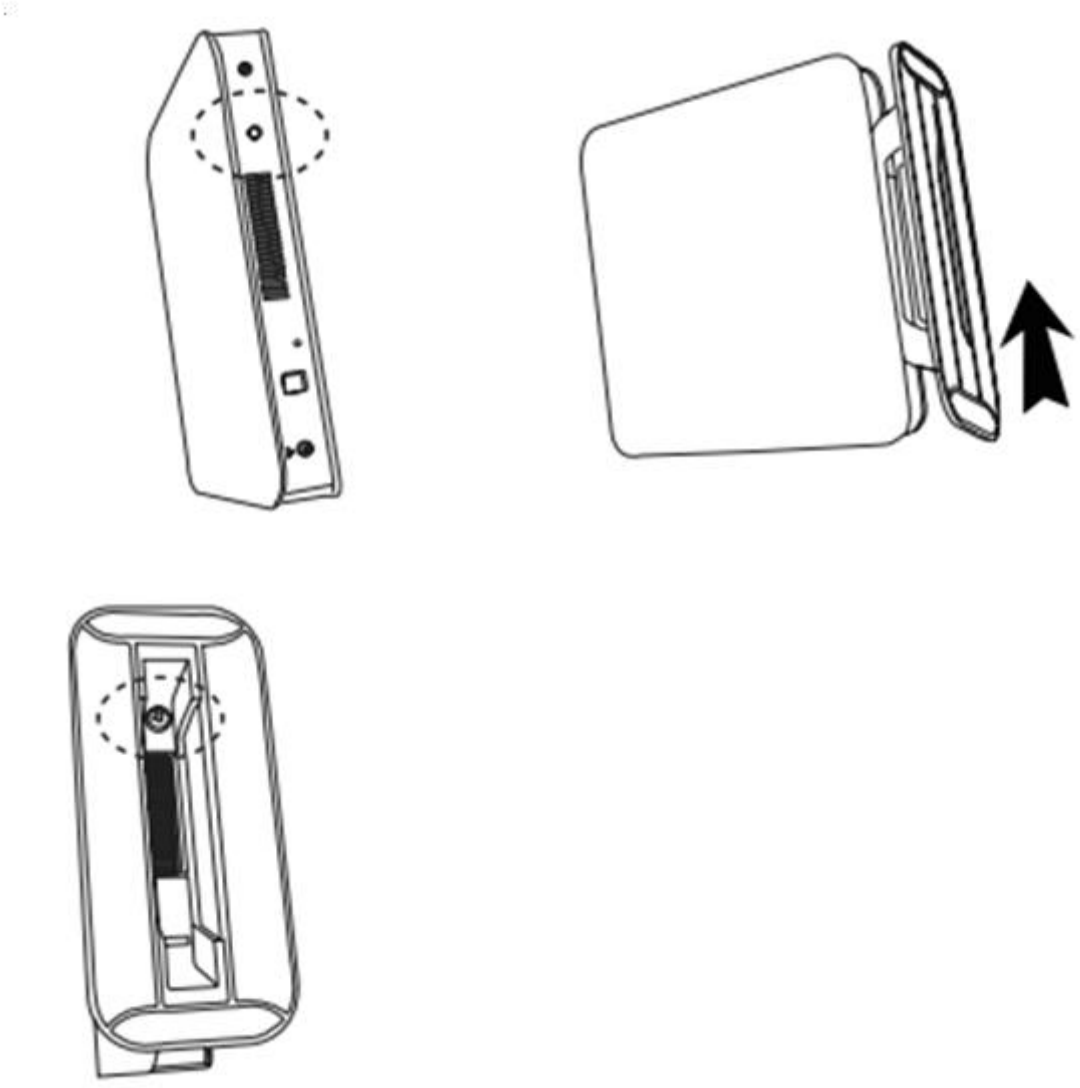
5.1.3 Installing the Thin Client

I. Racking the RG-Rain Thin Client

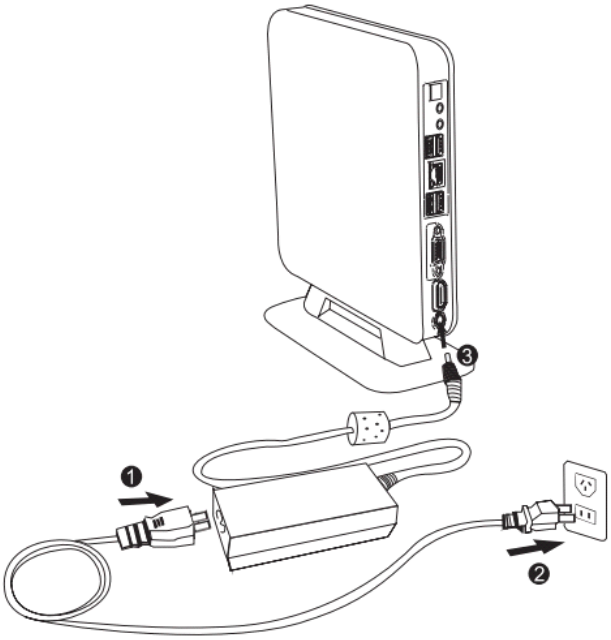
Unpack the chassis and connect the power cable, keyboard, mouse, display, and network cable. Ensure that all devices are connected to a 1000M switch.

This section uses the Rain100 as an example to describe how to rack the RG-Rain Thin Client. The installation methods of other Thin Clients are basically the same as the installation of the Rain100. For details, download the user manuals of related devices at Ruijie official website.

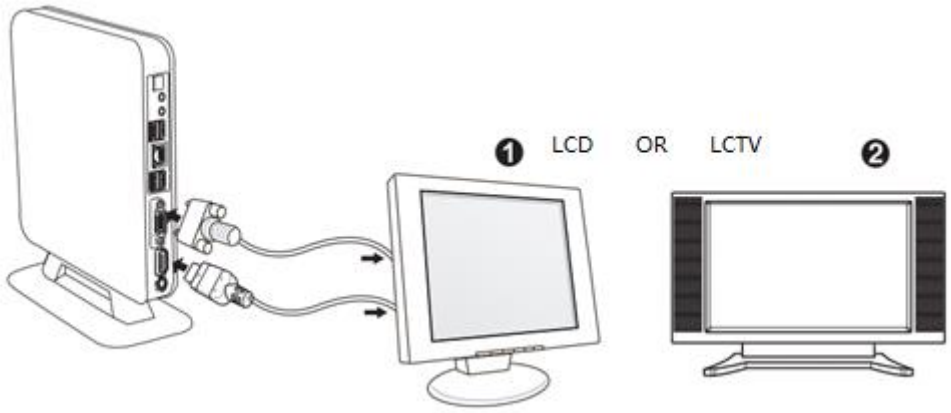
1. Install the device base.

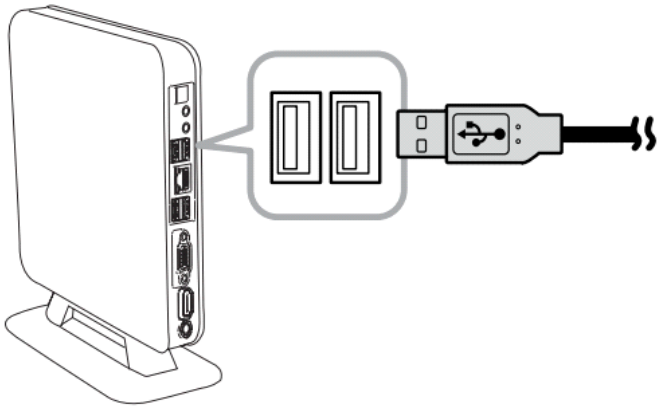


2. Connect the power cable.

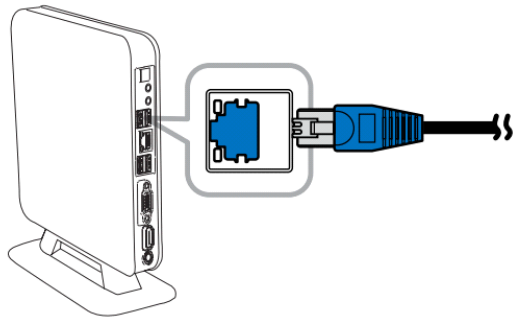


3. Connect the display, keyboard, and mouse.





4. Connect the network cable.



5. Press the power button to start the device.

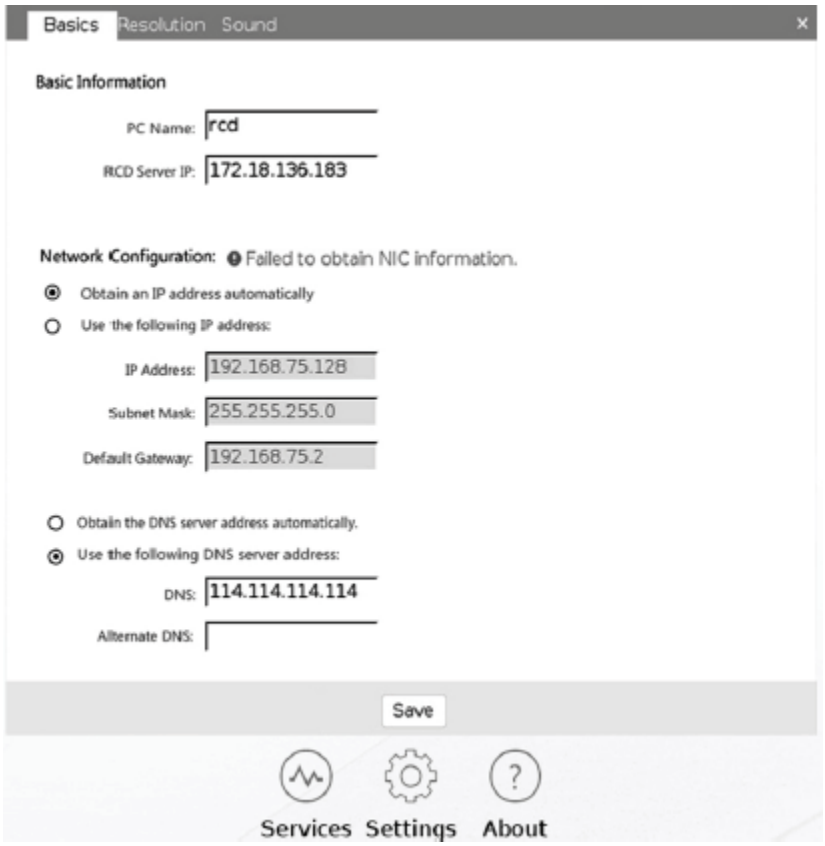
II. Configuring the RG-Rain Thin Client

You can configure Rain Thin Clients in two modes: configure them one by one or configure them in one-click mode (this mode is supported in V1.0.9 and later versions. For details, see "Typical Deployment Schemes – One-click Deployment").

The following describes how to configure the Rain Thin Client one by one:

1. Start the Rain Thin Client. The RCC logo page is displayed.
2. The Rain Thin Client fails to connect to the RCD Server at your first login because no network information is configured.

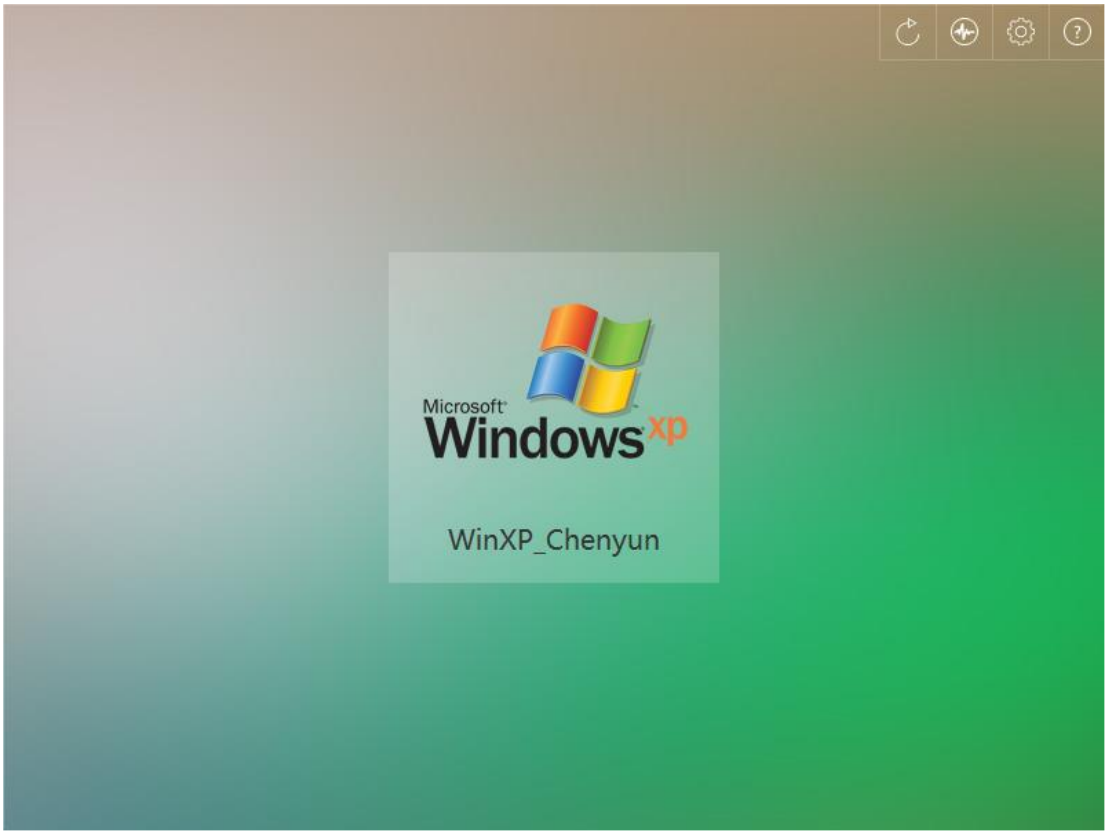
3. Click **Configure** in the upper right corner to access the configuration page.



Set the parameters as follows:

- The default password for accessing the configuration page is **ruijie.com**.
- Generally, you do not need to modify the PC name. If you change the PC name, you need to restart the Thin Client.
- **RCD Server IP** is the master IP address of the RCD Server.
- Click **Obtain an IP address automatically** or configure a static IP address as the IP address of the Thin Client.
- Note: If the switch is a NMS-type switch and the DHCP network segment has been configured for the RCD Server, it is recommended to click **Obtain an IP address automatically**. For a non-NMS-type switch, it is recommended to set a static IP address for the Thin Client. Otherwise, IP addresses allocated to Thin Clients in multiple classrooms may be disordered.

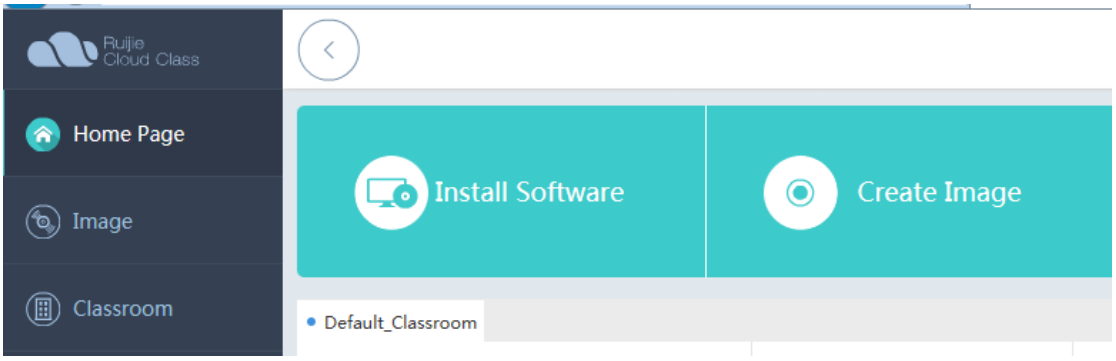
4. After the configuration is complete, connect the Thin Client to the RCD Server. If a course is available, a page as shown in the following figure is displayed:



5.1.4 Installing Images

I. Installation Description

By default, there is no available image in the RCD Server. Generally, you need to create images by using the ISO installation CD-ROM of the OS and the SN.



You can also directly access the image page.

Before installing images, ensure that the following operations are completed:

1. Install the Admin-Tool (download the software from the image page at your initial use, install the software, exit the browser, and log in to the system again).
2. Obtain the OS ISO CD-ROM (Windows, CentOS/Ubuntu) for image creation or obtain Ruijie demo images (The demo images are in the base format and must be deleted within 24 hours after download).
3. Enter share directory D disk, obtain the ClassManager_Student (install it on the Cloud Desktop image).
4. Obtain various types of professional software to be installed in images (such as Office and Photoshop).

Note: Currently, Supported image systems include Windows XP, Windows 7, Windows 8, Windows 10, Windows 2003/2008/2012/Vista (Windows 8 is not recommended because it does not support the redirection function).

The RCD server and supports 32-bit and 64-bit OSs (the RCD supports 64-bit images since V2.1).

Key installation steps:

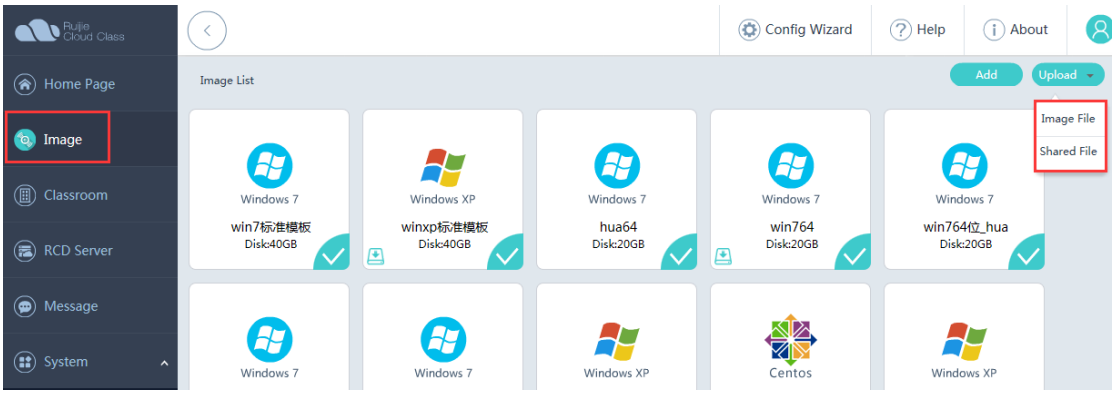
1. Upload the OS ISO image file (such as win7EnterpriseX64cn.iso) to the image directory on the RCD Server.
2. Create an image and set the parameters.
3. Completely install the OS.
4. Install the RCC-Guest Tool to ensure that the Cloud Desktop driver is correctly identified.
5. Install the ClassManager_Student and various types of professional software.
6. Power off the device. Then, the image is created completely

Note: Because the hard disk controller of the Cloud Desktop is upgraded in V3.0, all images need to be edited using the Admin-Tool when the RCD Server is upgraded from an earlier version to V3.0. The Guest-Tool is automatically upgraded during image editing. You can normally use the images only after the new hard disk driver is installed. You must restart the system to access the new images and then install the Guest-Tool to validate the functions.

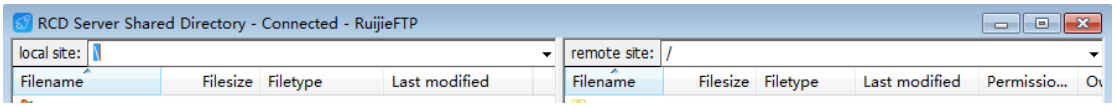
II. Installing the Images

To create an image, do as follows:

Step 1: Download the Admin-Tool. Choose **Image** on the navigation tree, and select **Image File** from the **Upload** drop-down list box.



Upload the OS ISO file or the demo image base file to the RCD Server.



Step 2: Create an image and set image parameters.

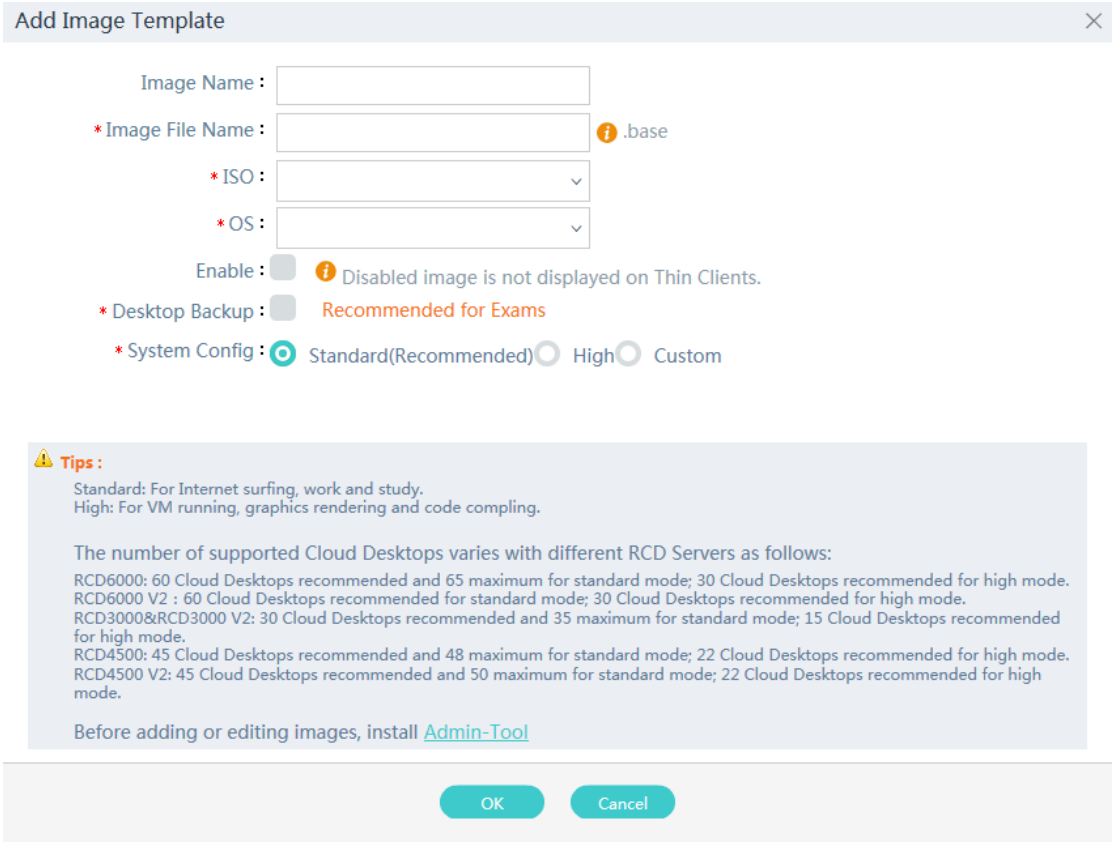
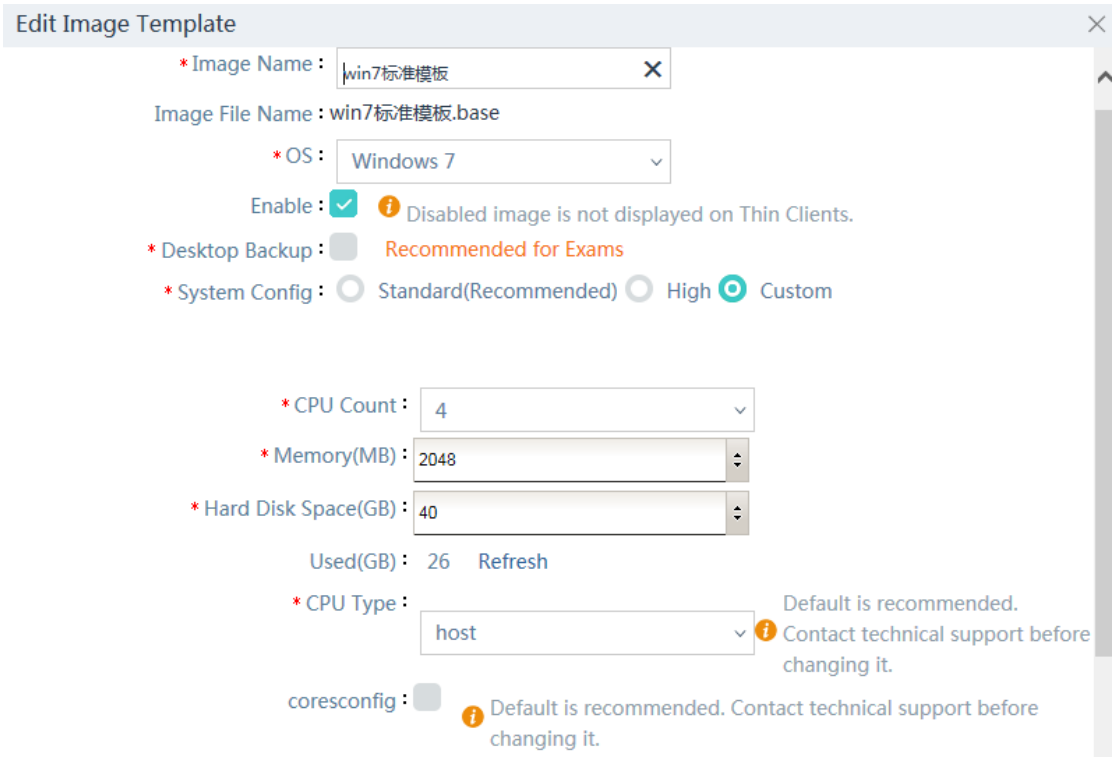


Image Name: The image name contains more than three characters. It cannot contain special characters except the underline (_).

ISO: Select the image file uploaded by the Admin_Tool. Ensure that the capacity of the image file is consistent with that of the uploaded image file. Otherwise, anomalies may occur.

OS: The displayed icon varies with the OS type.



Enable: When you select this option, disabled images is not displayed on Thin Clients. In open mode, students can select the OS for login for testing.

System Config:

1) When you set System Config to Standard (recommended, supporting 60 Cloud Desktops), the system displays different default configurations when you move the cursor here.

In standard mode, the number of Cloud Desktops is balanced with the system performance. This mode is applicable to Internet surfing, office, and learning.

The default configuration is as follows: CPU count: 1; memory: 1024 MB; hard disk: 20 GB

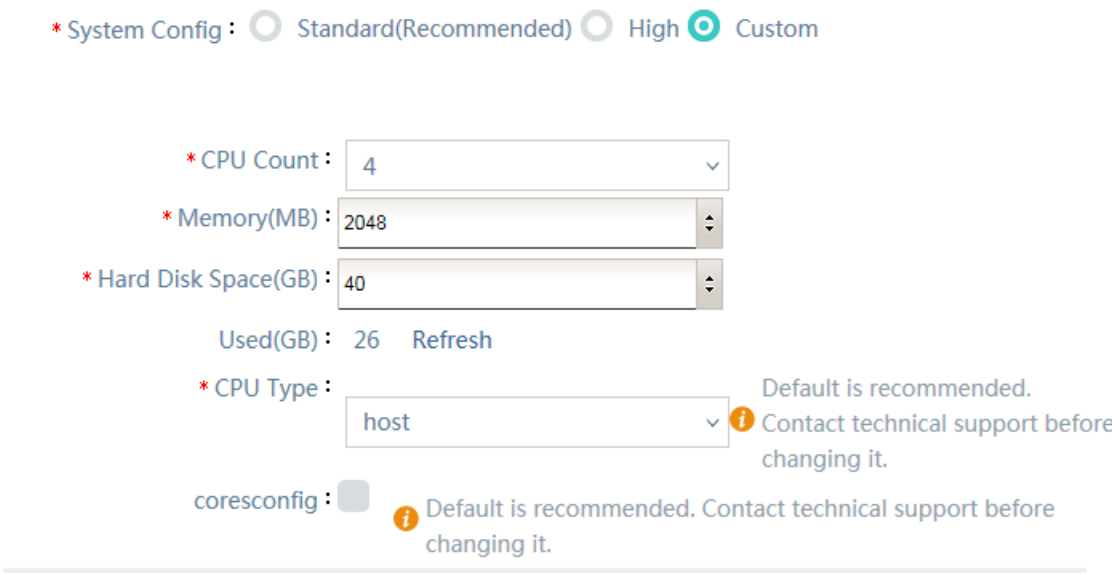
2) High (supporting 30 Cloud Desktops)

The processing performance is doubled. This mode is applicable to Cloud Desktop running, graphics rendering, and code compilation.

The default configuration is as follows: CPU count: 4; memory: 2048 MB; hard disk: 20 GB

3) Custom

The CPU count, memory capacity, and hard disk capacity can be customized. The maximum configuration is as follows: CPU count: 8; memory: 4 GB; hard disk: 40 GB

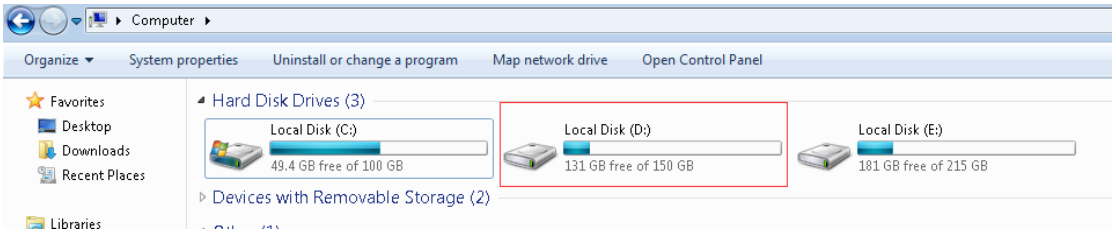


Note: Select proper hardware configuration for the Cloud Desktop based on the number of Thin Clients. Improper hardware configuration of the Cloud Desktop may cause performance bottleneck of the Cloud Desktop and system instability. Generally, the default standard configuration and high-performance configuration are recommended.

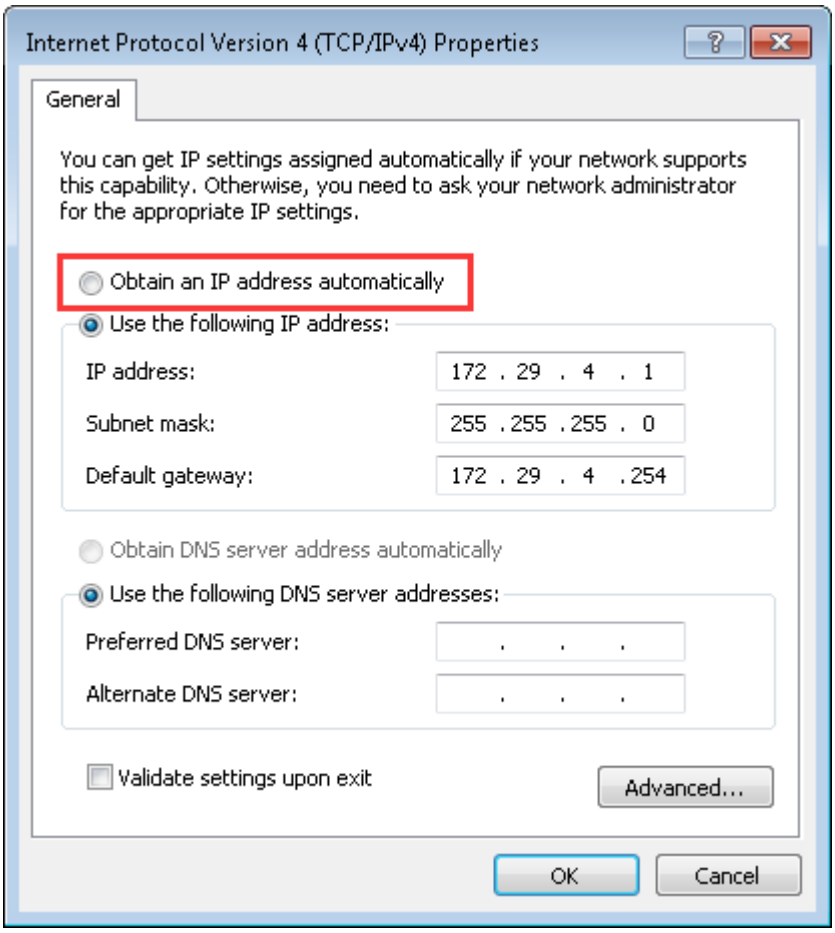
Step 3: Click **OK**.

Step 4: Install the RCC-Guest.

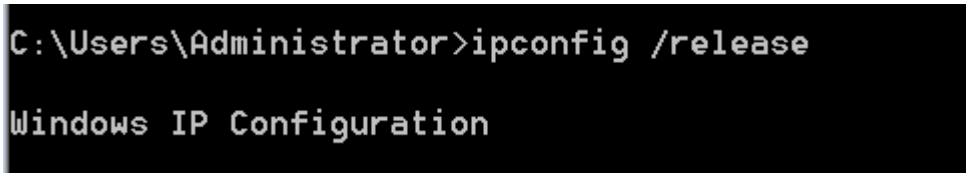
After the installation is complete, restart the system. The virtual shared disk (drive D) is displayed.



Step 5: Check the network configuration and set the DHCP mode.



Step 6: In **cmd**, run **ipconfig /release** to release the IP address.

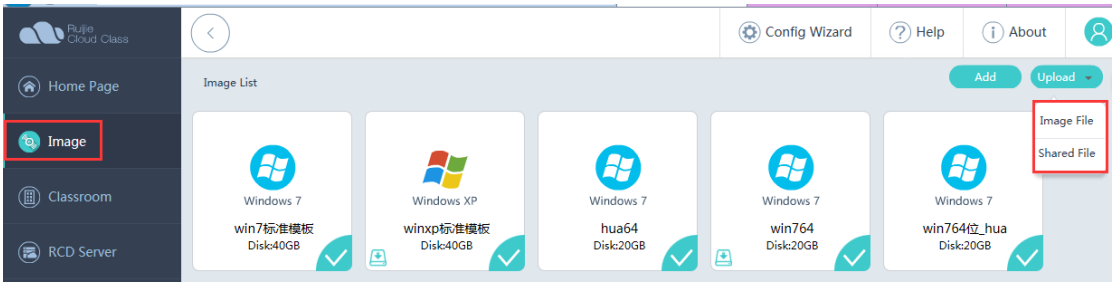


Step 7: Normally shut down the PC and save the modified image.

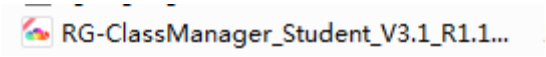
III. Editing Installed Images

Generally, after you create an image and install the virtual drive, you can install professional software.

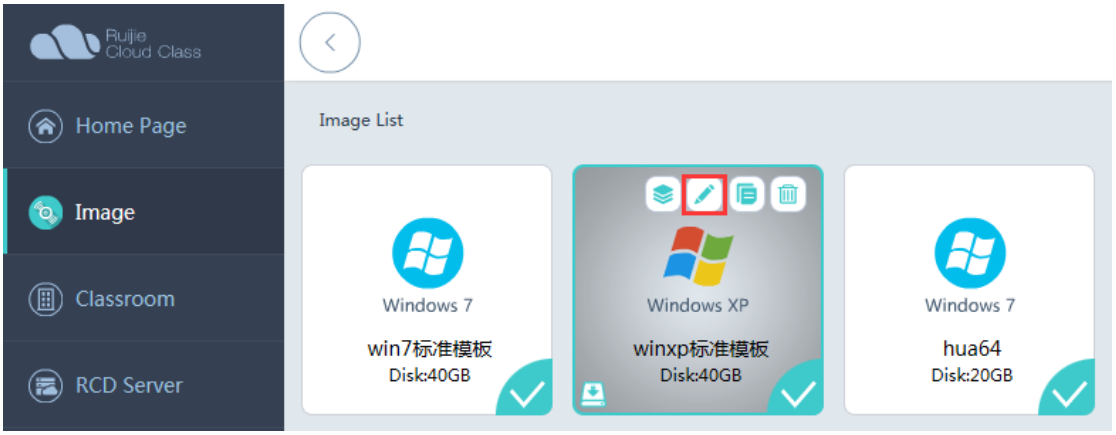
Step 1: Access the image directory of the RCD Server, and select **Shared File** from the **Upload** drop-down list box.



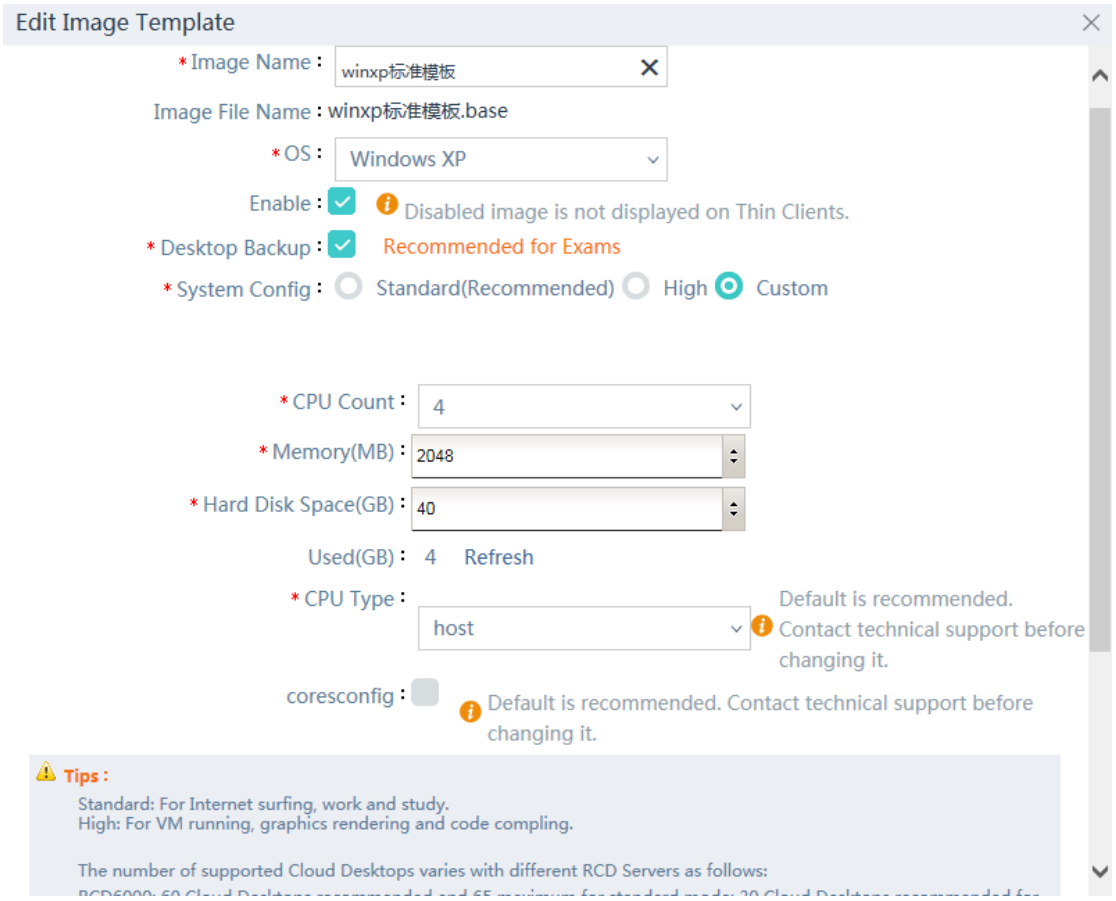
Select the software to be installed and upload it to the RCD Server (Note: Since V2.1, the ClassManager_Student is automatically uploaded and you can directly edit installed images).



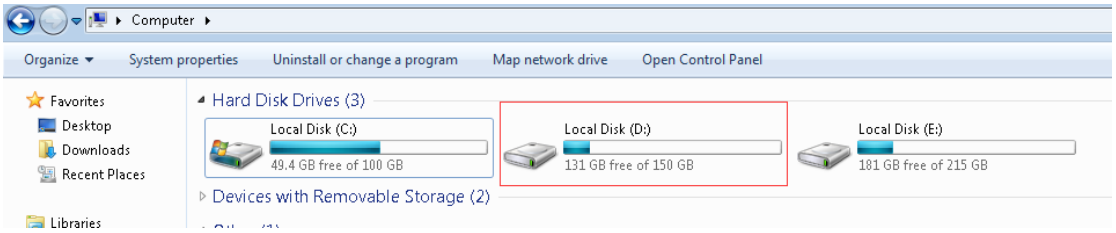
Step 2: Select the image to be edited and click the edit icon.



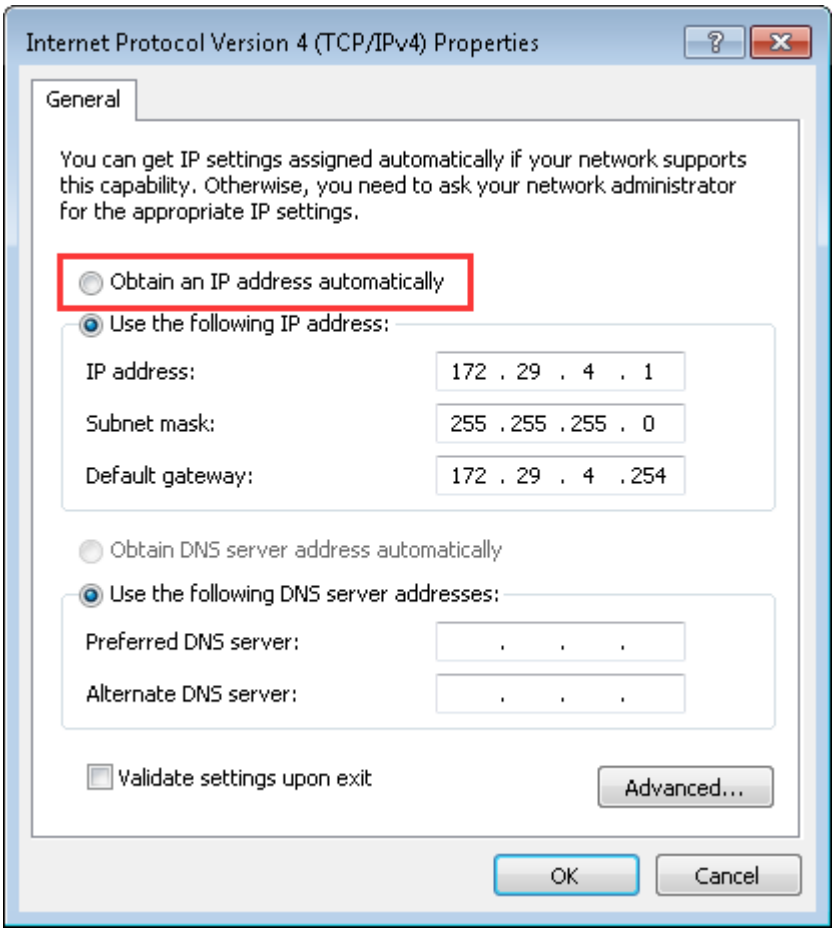
Step 3: Edit and enable the image template.



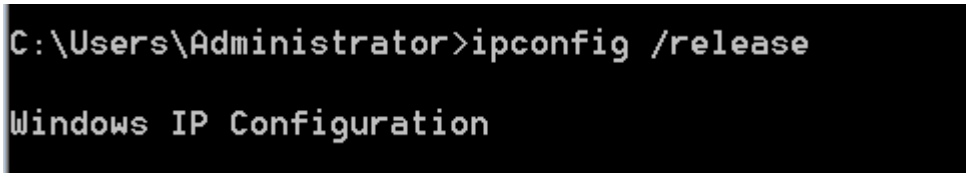
Step 4: Start the image edit mode and install or upload software. All software uploaded to the shared directory is in Drive D of the virtual system.



Step 5: After all software is installed, check the network configuration, and set the DHCP mode.



Step 6: In **cmd**, run **ipconfig /release** to release the IP address.



Step 7: Normally shut down the computer and save the modified image.

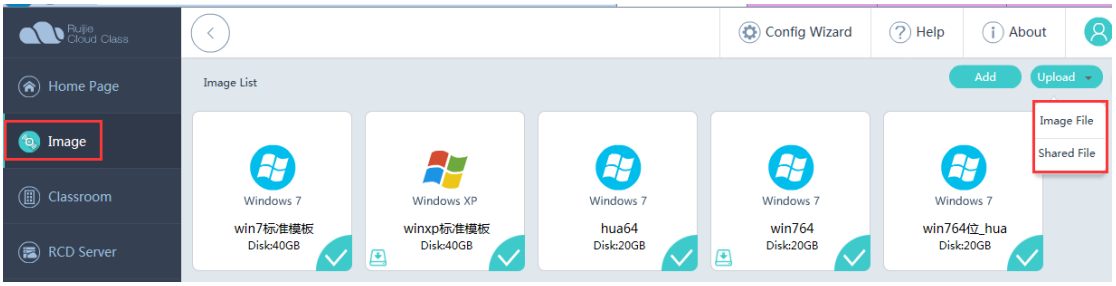
5.1.5 Installing Software in Images

I. Editing Installed Images

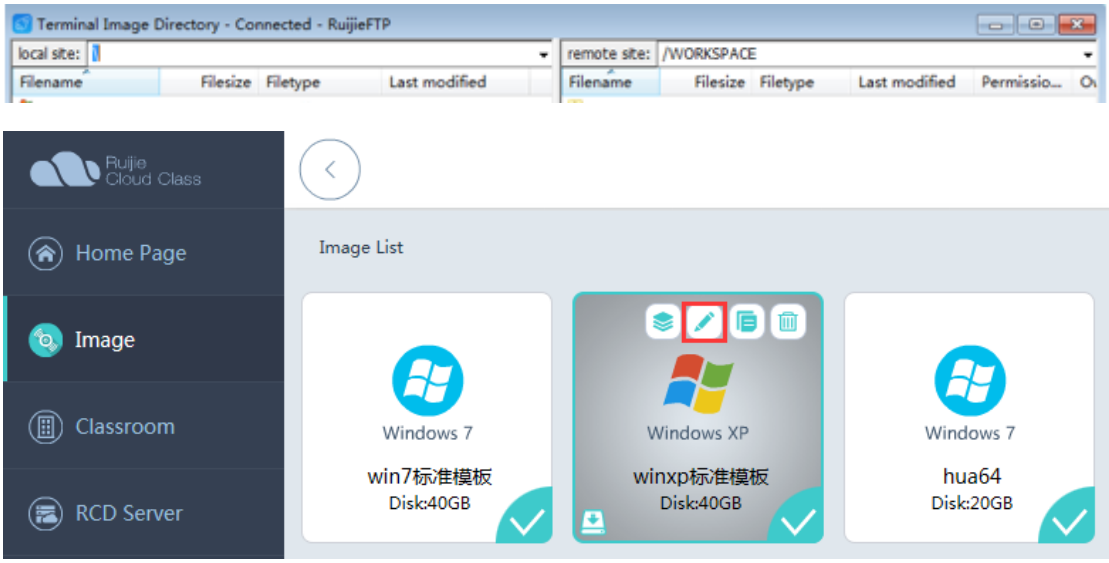
Generally, after you create an image and install the virtual drive, you can install professional software.

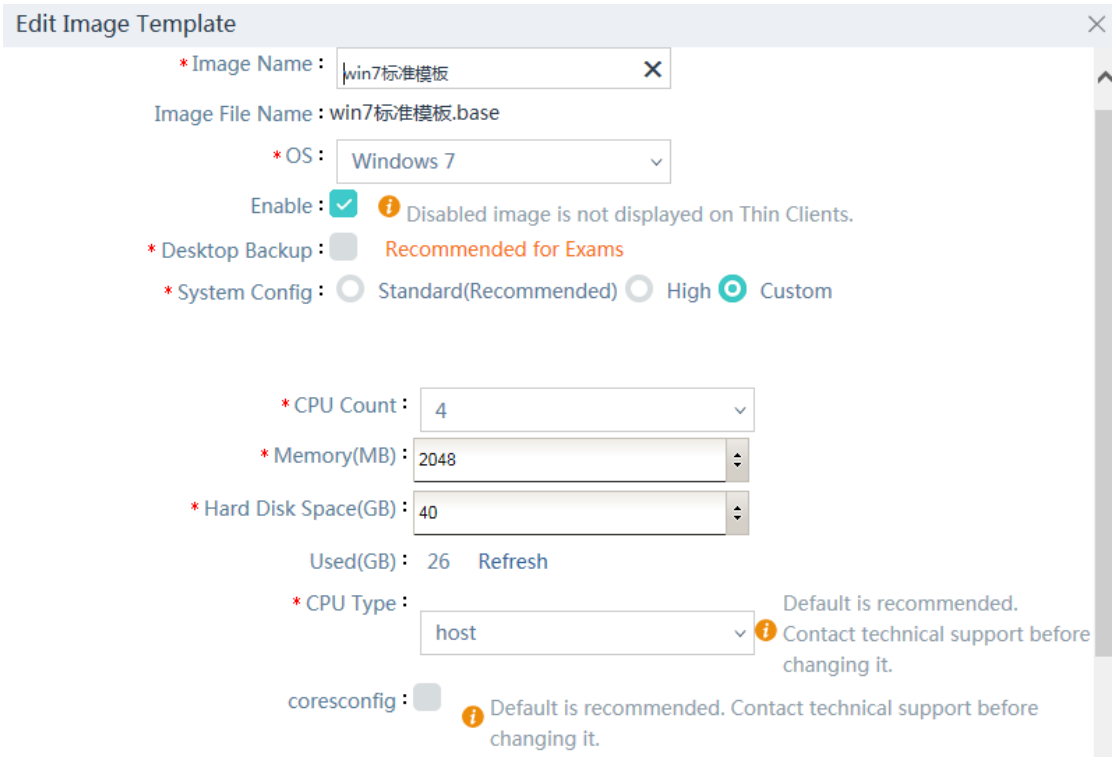
Note: Software cannot be installed in the shared Drive D because the system restores Drive D after shutdown or restart. Therefore, you are suggested to install software in a non-system disk. If you need to install software in Drive D, delete the drive letter of the shared Drive D and use another drive letter, add an image hard disk named Drive D, and then install software.

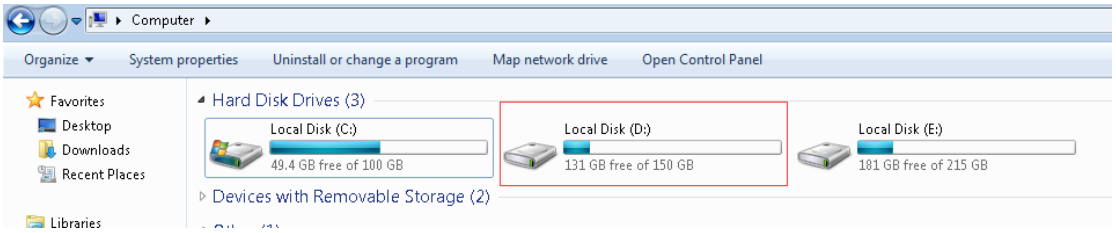
Step 1: Access the image directory of the RCD Server, and select **Shared File** from the **Upload** drop-down list box.

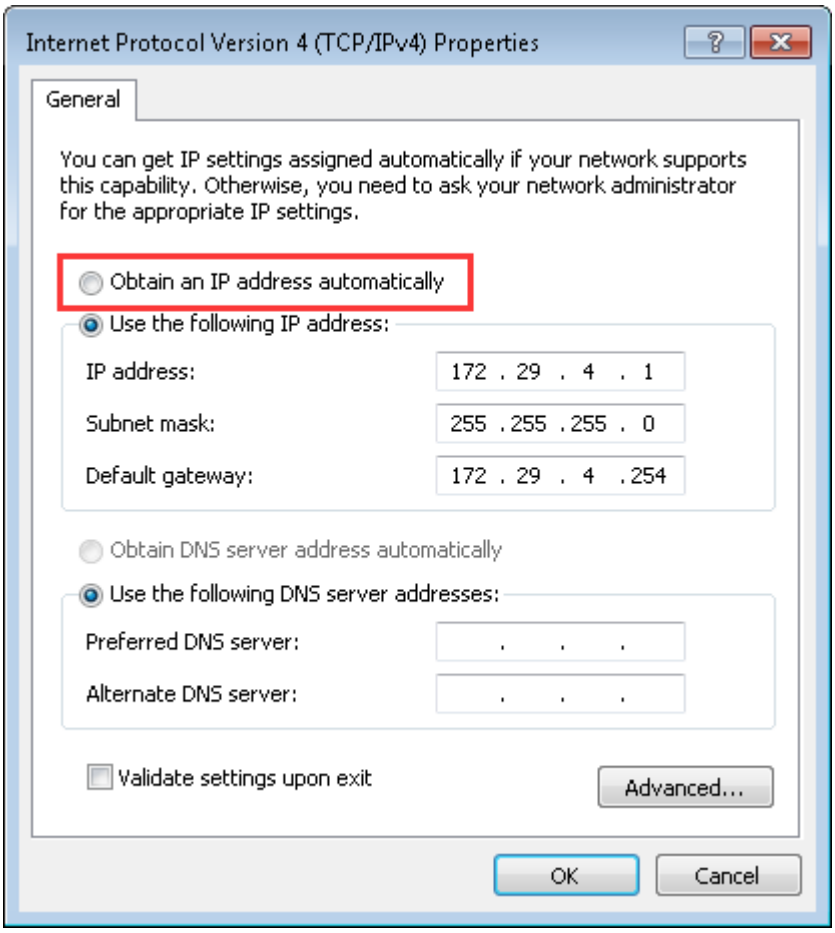


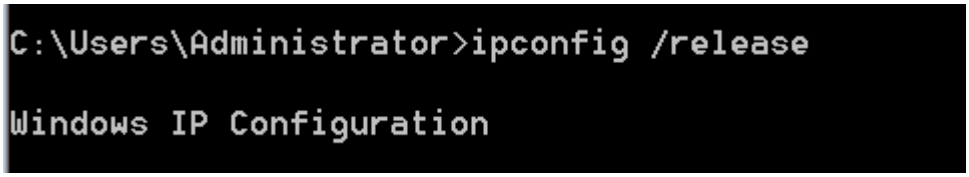
Upload the software to be installed to the RCD Server.




Edit Image Template
* Image Name : win7标准模板
Image File Name : win7标准模板.base
* OS : Windows 7
Enable : Disabled image is not displayed on Thin Clients.
* Desktop Backup : Recommended for Exams
* System Config : Standard(Recommended) High Custom
* CPU Count : 4
* Memory(MB) : 2048
* Hard Disk Space(GB) : 40
Used(GB) : 26 Refresh
* CPU Type : host
Default is recommended. Contact technical support before changing it.
coresconfig :
Default is recommended. Contact technical support before changing it.


Computer
Organize
System properties
Uninstall or change a program
Map network drive
Open Control Panel
Favorites
Desktop
Downloads
Recent Places
Libraries
Hard Disk Drives (3)
Local Disk (C:)
49.4 GB free of 100 GB
Local Disk (D:)
131 GB free of 150 GB
Local Disk (E:)
181 GB free of 215 GB
Devices with Removable Storage (2)





5.2 Version Upgrade

5.2.1 Upgrading the RCD Server

I. Version Upgrade Description

The RCD Server can be upgraded in two modes: Web mode and USB flash drive mode. Both upgrade modes use the same upgrade files. However, the upgrade using a patch package, such as the xxx.tar, supports only the Web upgrade mode.

The upgrade modes are described as follows:

1. In Web upgrade mode, the software version can be directly upgraded while historical data is retained.

2. In USB flash drive upgrade mode, the RCD Server is actually restored to factory settings. Once the system is restored to the factory settings, all data on the RCD Server is lost (if you select the factory upgrade mode, images will be formatted; if you select the online upgrade mode, the image data will be retained).

The operation difficulties in both modes are similar. The upgrade process in Web upgrade mode is simple. The USB flash drive upgrade mode supports one-click upgrade, but you need to prepare the USB flash drive in advance. You can select any upgrade mode and refer to the following suggestions:

1. For in-use RCD Servers, the Web upgrade mode must be used to retain existing data.
2. For initially deployed RCD Servers, either mode is acceptable. The Web upgrade mode is recommended. If the version is earlier than V1.0.9, you can directly use the USB flash drive mode to avoid cross-version upgrade.

Note:

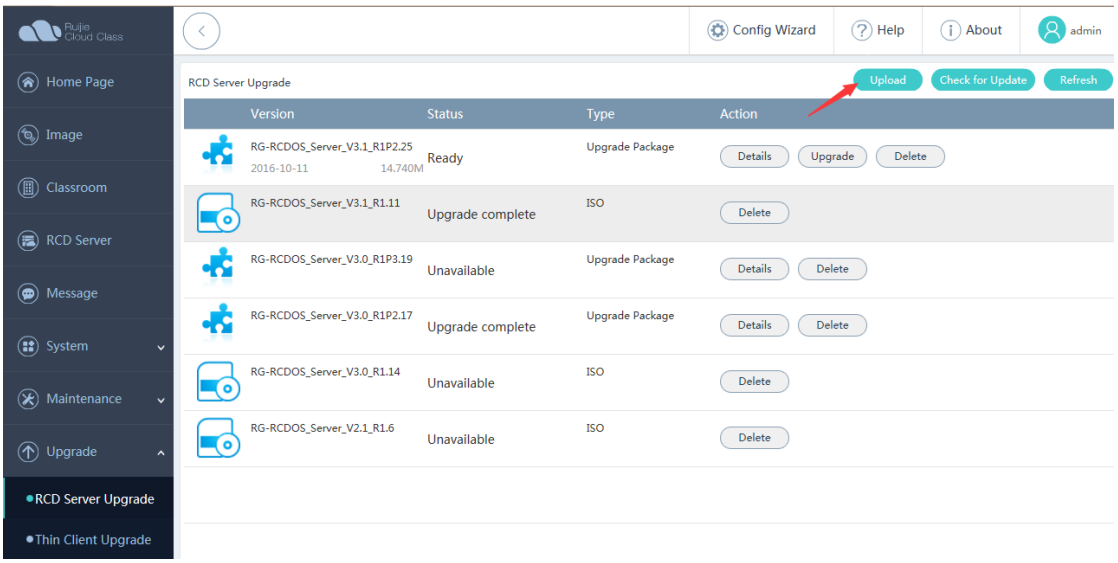
1. You need to use Google Chrome browser to log in to the RCD Server management UI in Web upgrade mode.
2. Do not randomly modify the name of the Web upgrade package. After the Web upgrade package is downloaded, check the integrity of files by using the MD5 tool.
3. In cluster and stack scenarios, you are recommended to upgrade the slave RCD Server and then the upgrade the master RCD Server.

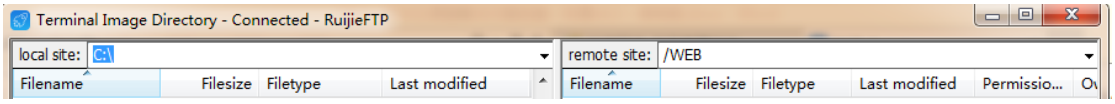
II. Web Upgrade Steps

1. The RCD Server upgrade using an ISO file takes about 25–30 minutes. Please wait patiently.

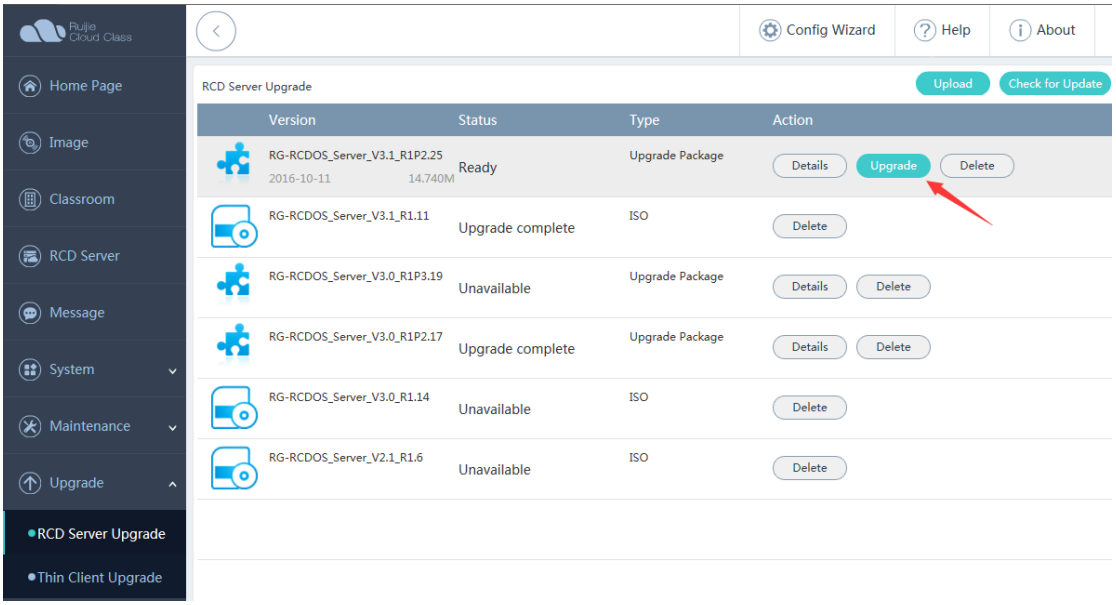
The following uses V3.1_R1.11 as an example to describe the operation steps:

Step 1: Upload the complete RCDOS package.



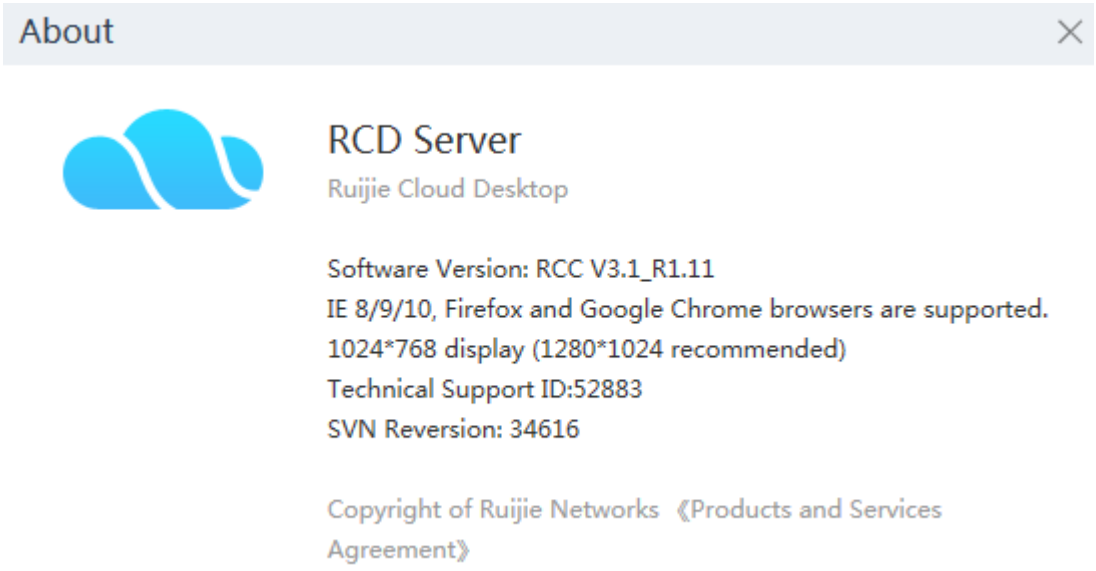


Step 2: Click **Upgrade**. The system runs the complete system package to start the upgrade.



Note: The upgrade takes about 25 minutes. You can connect a display to the RCD Server to view the upgrade progress. After upgrade is complete, wait until the system restarts.

After the upgrade, click **About** to check the version number of the RCD Server.



III. USB Flash Drive Upgrade Steps

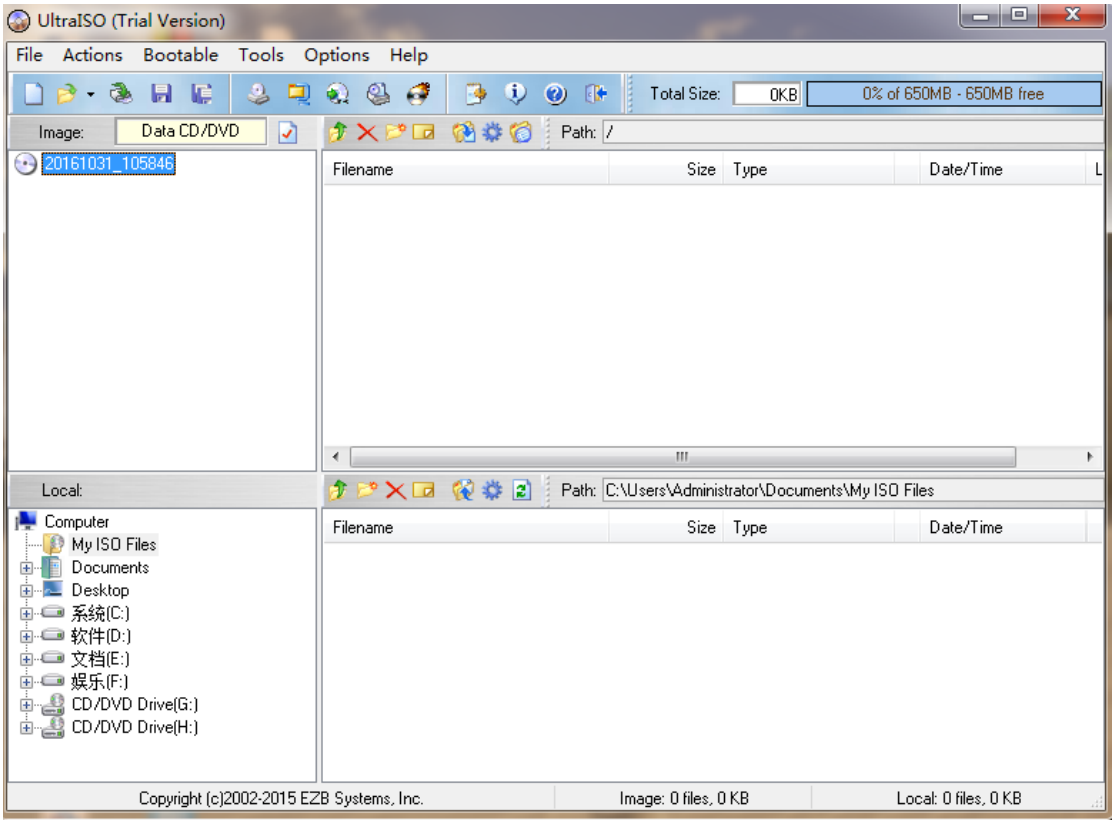
Preparations before upgrade:

1. Prepare a display and a keyboard and a mouse with USB ports.
2. Prepare a USB flash drive with a capacity of 8 GB, and format the USB flash drive.
3. Prepare the created ISO image for the RCDOS.
4. Select a tool that supports ISO image recording on the USB flash drive. In this example, the UltraISO is used.

Note: **UltraISO in version 9.5.5.2960 (**UltraISO_9.5.5.2960.zip**) is recommended because the UltraISO of other versions may result in a programming failure.**

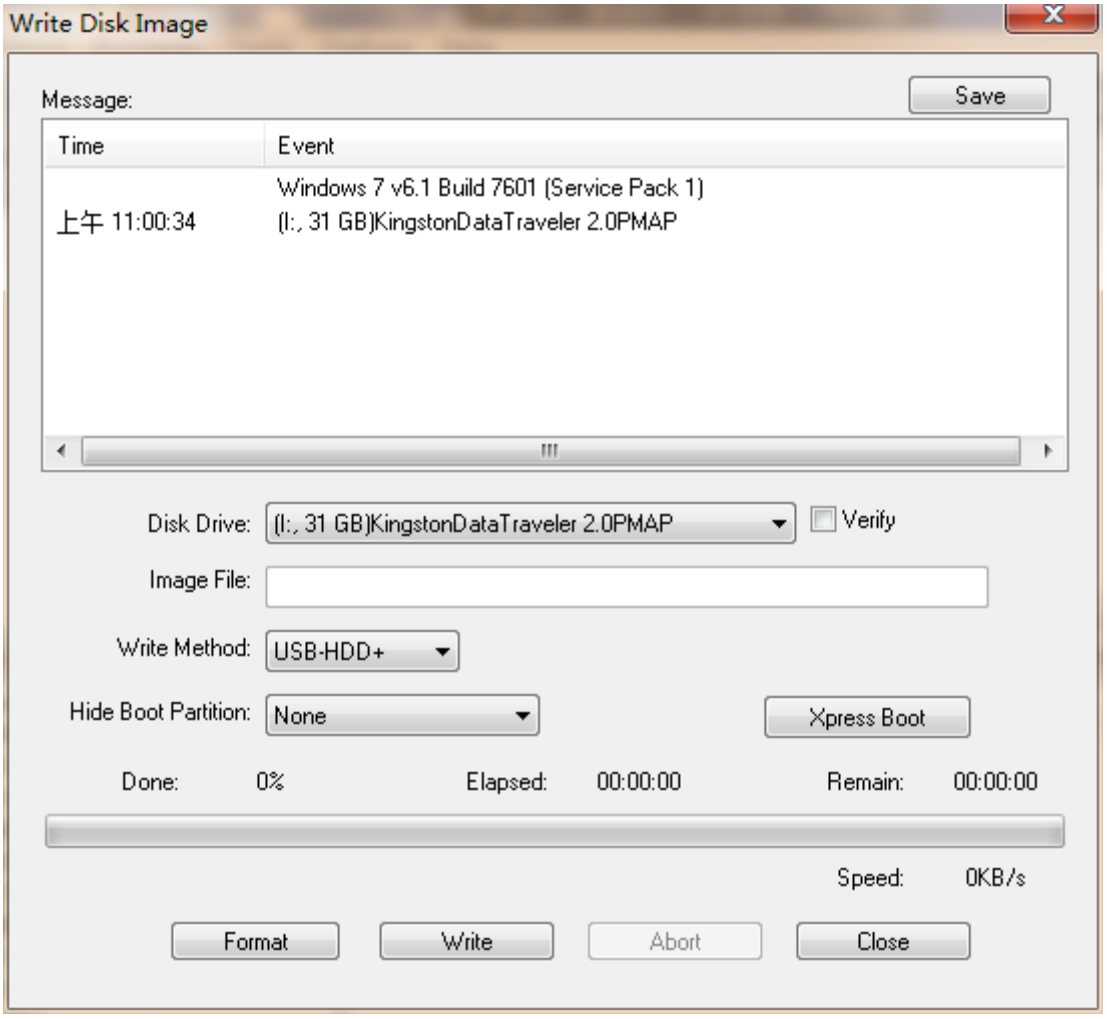
The upgrade process is detailed as follows:

1. Install the UltraISO in the Windows system. Insert the USB flash drive (≥4 GB). Start the UltraISO, click File on the menu bar, and open the downloaded image file.

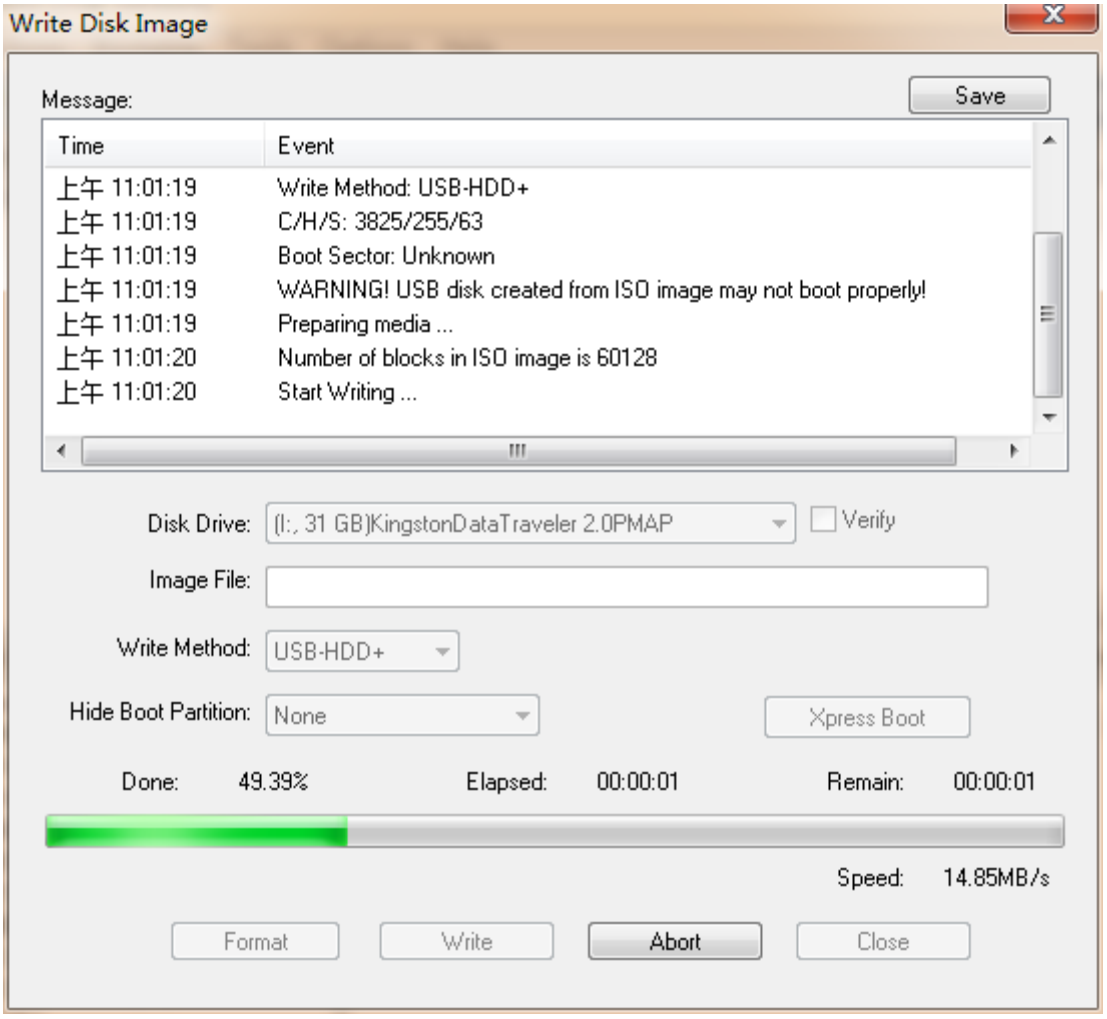


2. In the menu bar, click **Bootable** to write the image into the hard disk. In the window as shown in the following figure, set **Write Method** to **USB-HDD+**, and click **Write**.

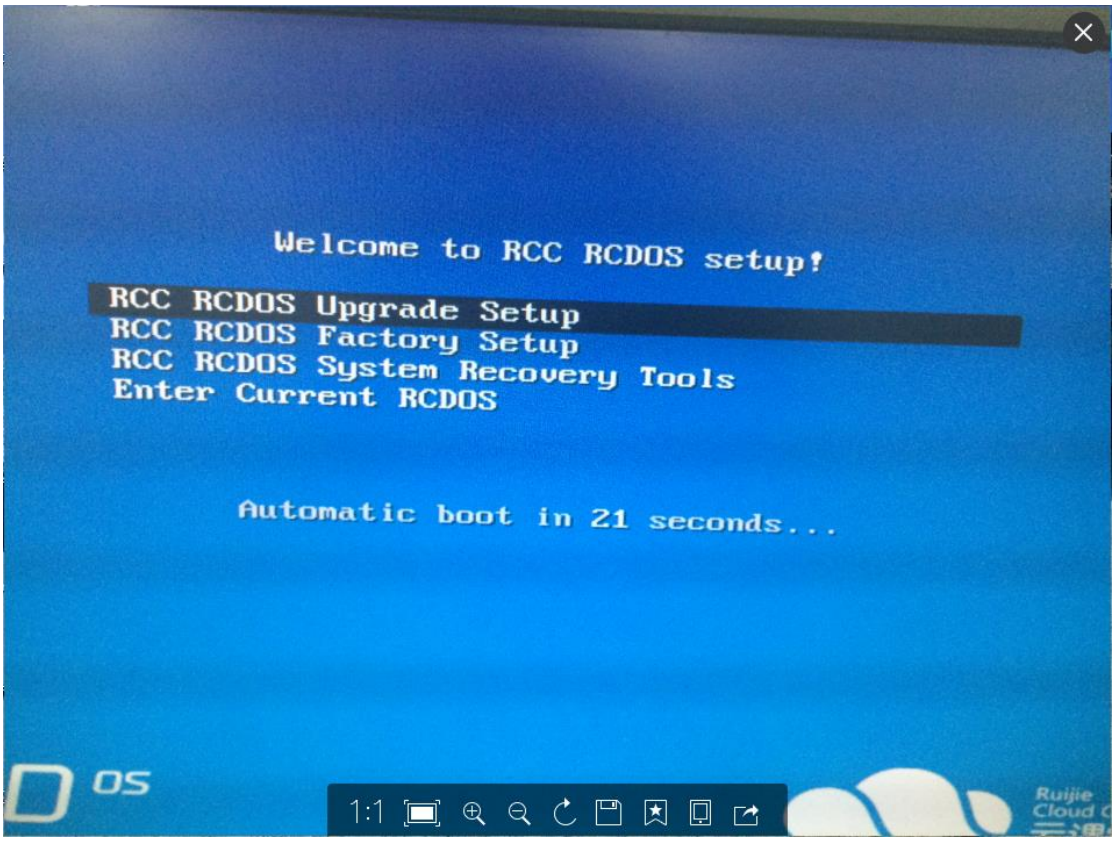
In the displayed dialog box, indicating that the data on the USB flash drive will be lost, click **Yes**.



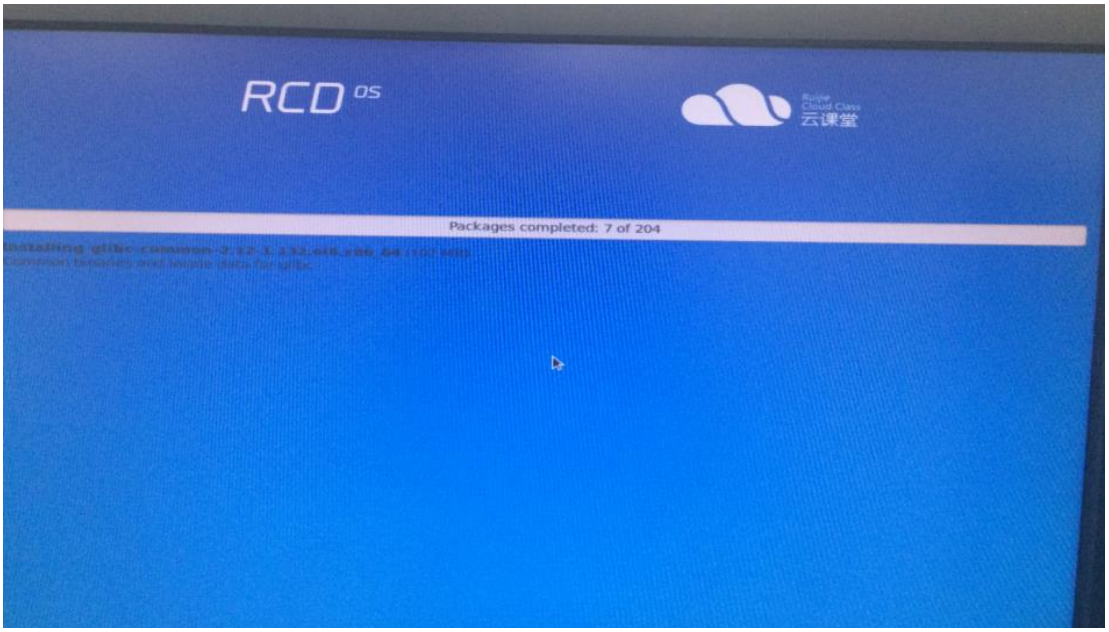
3. After the recording is complete, click **Close** and remove the USB flash drive.



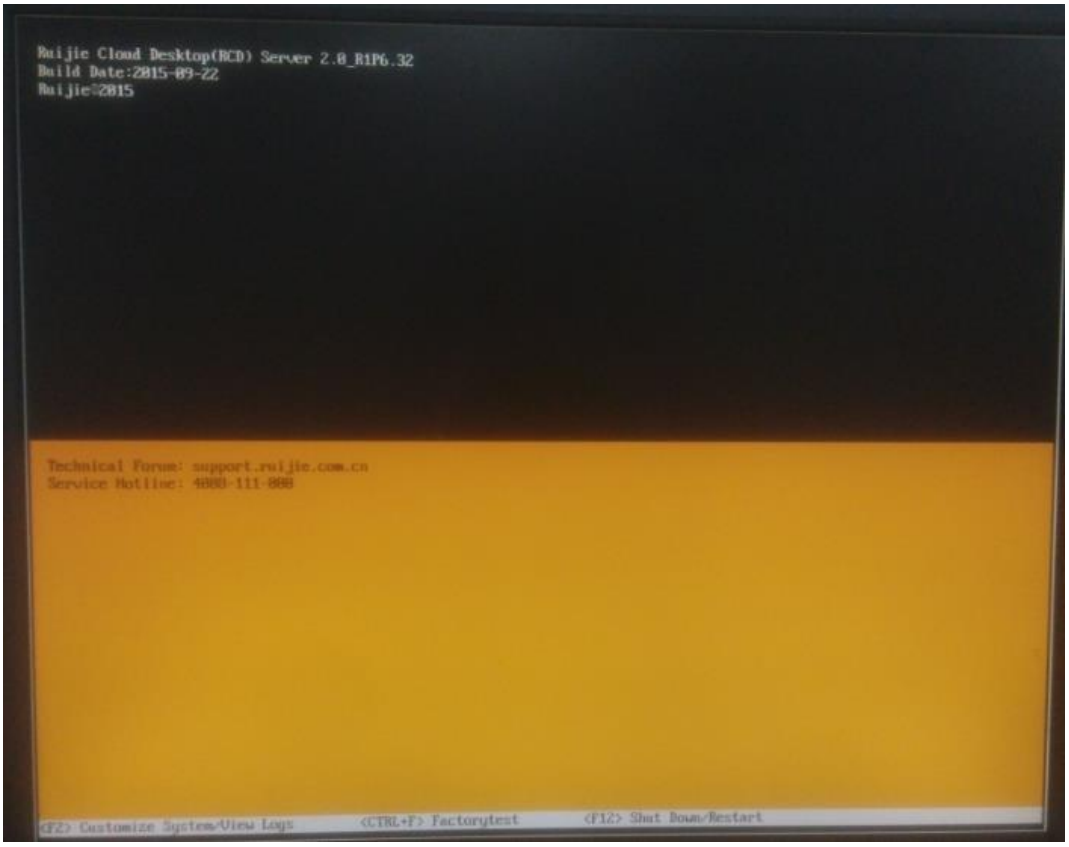
4. For currently delivered RCD Servers, the system is set to boot from the USB flash drive by default. Insert the USB flash drive and restart the RCD Server, and wait until a page as shown in the following figure is displayed.



5. Select the upgrade installation mode or factory installation mode according to actual situations. Press Enter, and wait until the RCD Server is completely installed.



6. Remove the USB flash drive and restart the system. If the login page as shown in the following figure is displayed after 3 minutes, the installation is successful. If the login page is not displayed, the installation fails, and you need to install it again.



5.2.2 Upgrading the ClassManager_Teacher

I. Upgrade Description

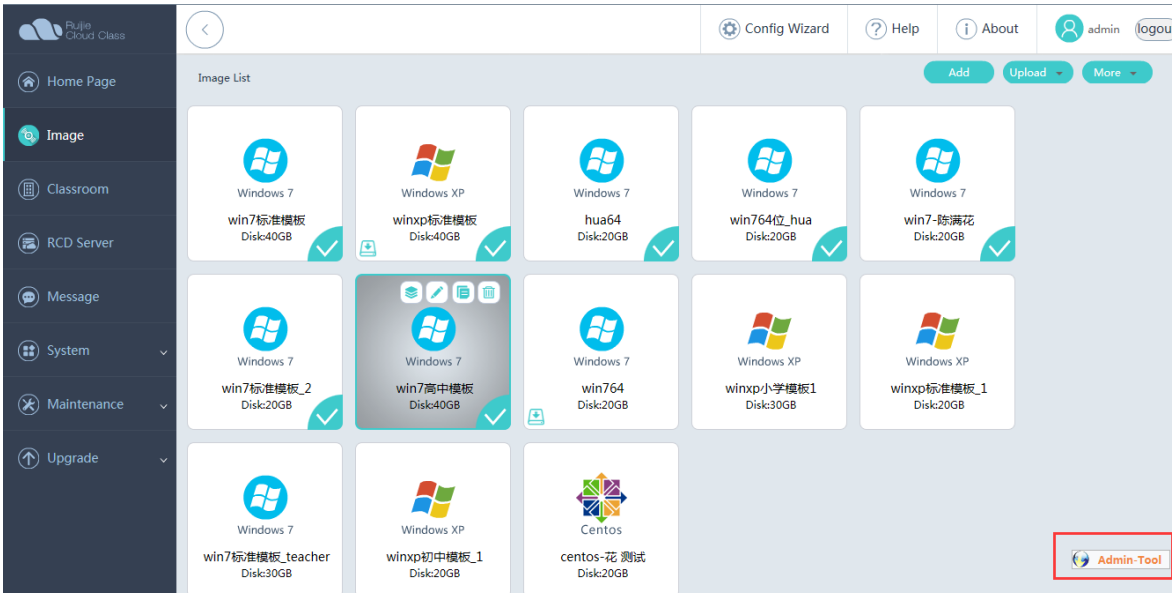
Note: Since RCC_1.1, the teaching software is formally switched to ClassManager Rainbow.

The version upgrade of the ClassManager_Teacher involves the version switching between two sets of software. During the upgrade, you need to uninstall the RCC-Teacher Tool and the ClassManager, and then install the ClassManager Rainbow.

II. Upgrade Steps

Step 1: Upgrade the RCC-Admin-Tool.

1. On the teacher PC or common management PC, choose **Control Panel** > **Add/Remove Programs** in Windows. Uninstall the existing RCC-Admin-Tool.
2. On the Web management page of the RCD Server, select **Image** on the left navigation tree. Click **Admin-Tool** in the lower right corner, and download and install the RCC-Admin-Tool of the latest version.



Step 2: Upgrade the RG-ClassManager_Teacher on the teacher PC.

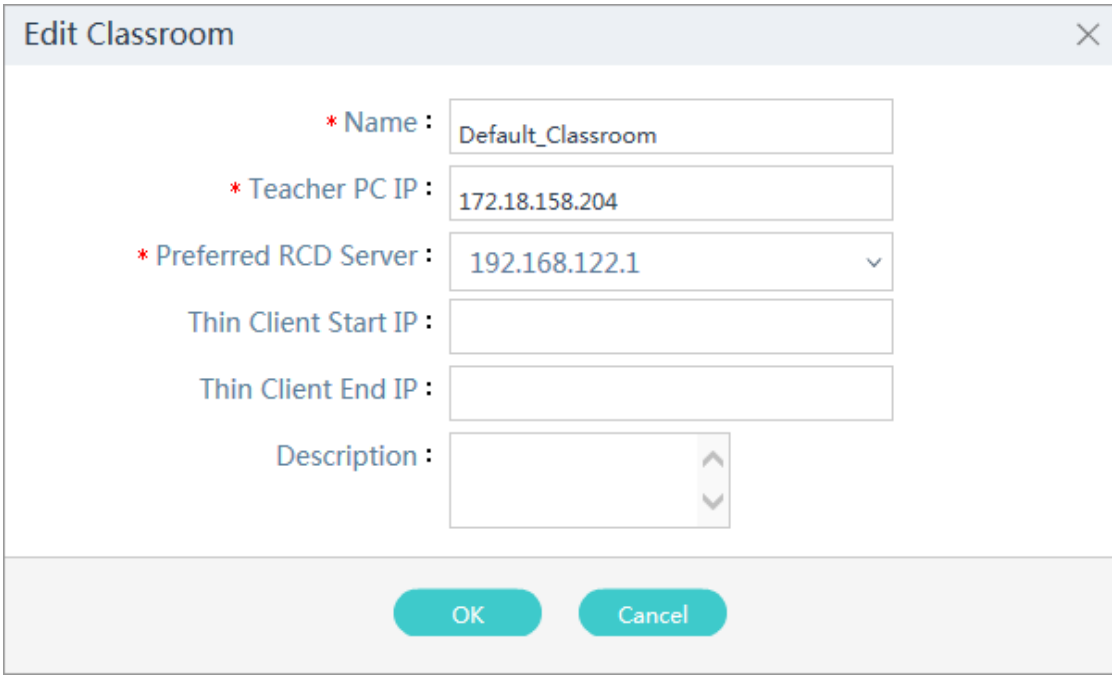
Note: If an earlier version ClassMananger1.X is installed, uninstall the RCC-Teacher and RG-ClassManager of the earlier versions and restart the PC.

1. Start the RG-ClassManager_Teacher installed on the teacher PC. After it connects to the server, it automatically complete the upgrade.

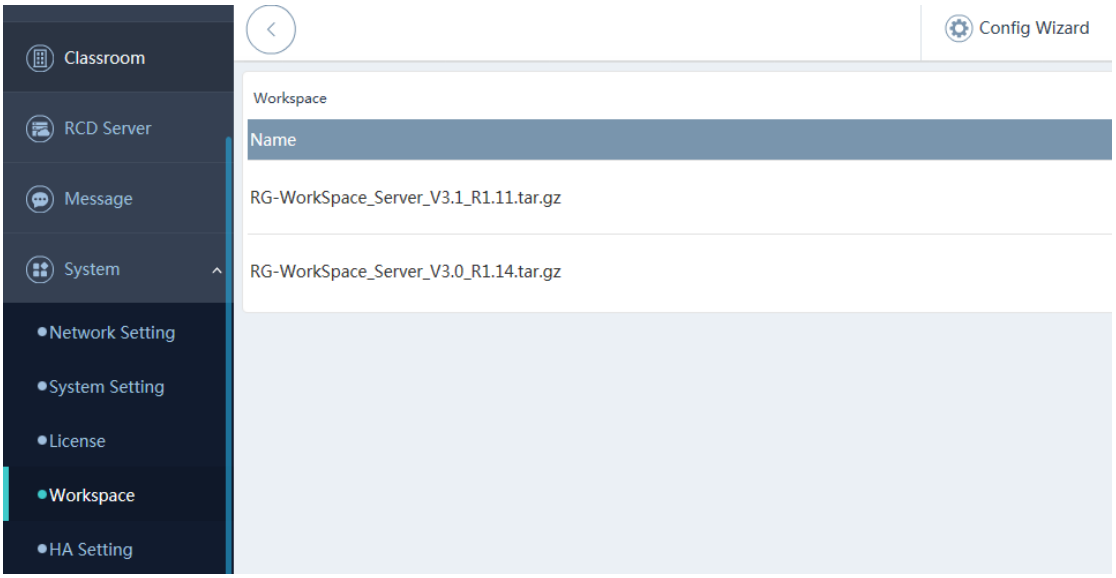
2. If the **RG-ClassManager_Teacher** program is not installed on the teacher PC, you can download and install the RG-ClassManager_Teacher_V3.1_R1.11.

Note: After you install or upgrade the RG-ClassManager_Teacher, you need to check whether the IP address of the teacher PC is set on the Web page.

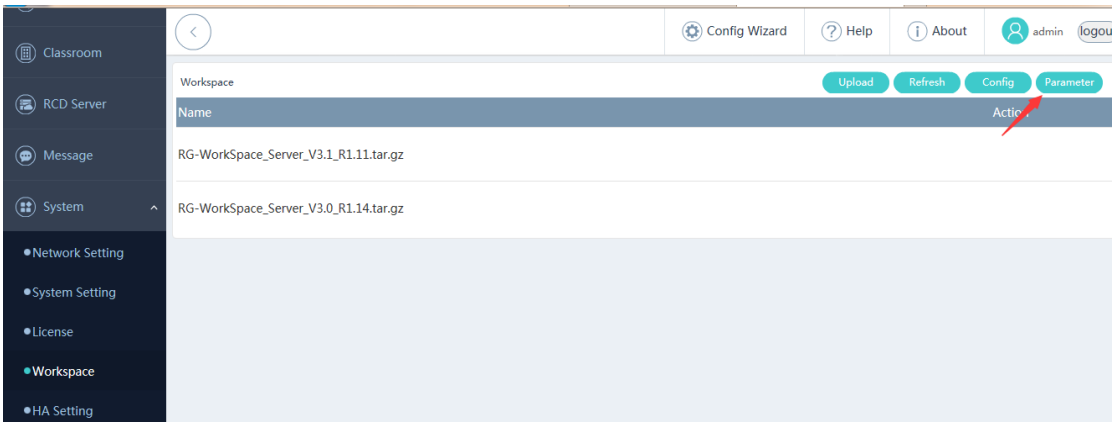
Check whether the IP address of the teacher PC is configured on the Web page.

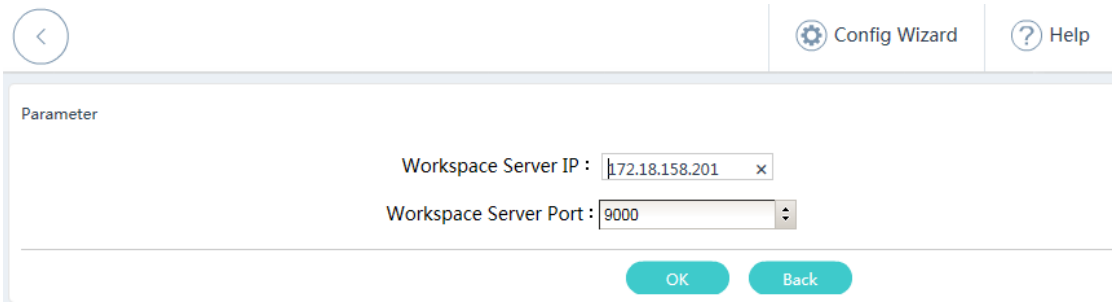


Installing the workspace: After the RCD Server is upgraded to V3.0, the workspace is automatically upgraded.



Set the parameters for the workspace server.





Note: For details about the installation of the RG-ClassManager Rainbow, see the "ClassManager_Teacher installation." You need to apply for a license and import the license.

5.2.3 Image Upgrade

I. Upgrade Description

The image upgrade mainly refers to the image-related software upgrade.

The upgrade includes the following aspects:

1. Upgrade the Guest-Tool and update the Cloud Desktop driver and other optimization schemes
2. Upgrade the ClassManager_Student.

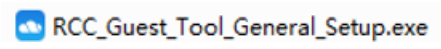
II. Upgrade Process

Step 1: Upgrade the RCC-Guest-Tool.

a) Log in to the RCD Server. On the menu bar, click **Image**. Click **Edit**. On the displayed page, click **Modify** and then enable the image.

(In normal situations, the RCC-Guest-Tool is automatically upgraded. If the automatic upgrade fails due to factors such as network disconnection, and the automatic upgrade prompt is not displayed, you can access Drive D and manually click **RCC_Guest_Tool_General_Setup.exe**.)

2. Access the Windows Cloud Desktop, choose **Control Panel** > **Add/Remove Programs**, uninstall the RCC-Guest-Tool, and restart the Windows Cloud Desktop.



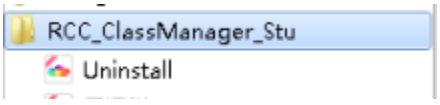
3. After the Windows Cloud Desktop is restarted, click **Cancel** in all displayed hardware discovery wizards.
4. In Windows, choose **Start** > **Computer** > **Drive D**, click and run the RCC-Guest-Tool of the latest version, for example, **RCC_Client_3.1_R1.11_Setup.exe**.
5. Restart the Windows Cloud Desktop. After the desktop is displayed, shut down Windows.
6. If there are multiple images, repeat the preceding steps.

Step 2: Upgrade the ClassMananger_Student.

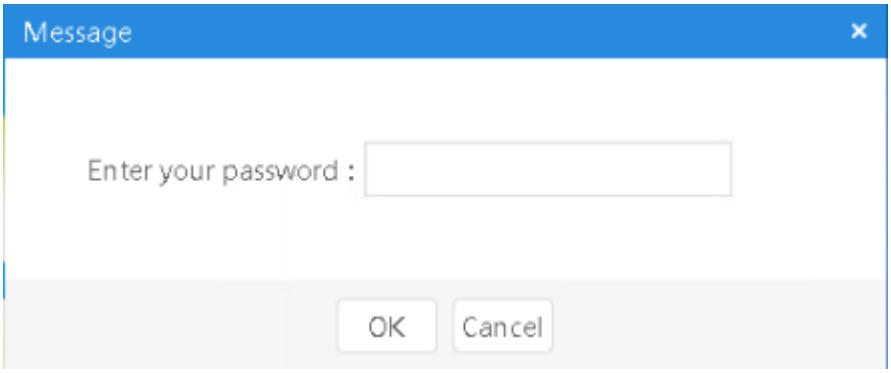
(In normal situations, the RCC-Guest-Tool is automatically upgraded. If automatic upgrade fails due to factors such as network disconnection, access Drive D and manually click the **RG-ClassManager_Student_V3.1_R1.11.exe**.)

Use the ClassManager as an example. You need to uninstall the existing ClassManager Rainbow and install the ClassManager_Student of the latest version.

1. Before editing the image, upload the latest ClassManager_Student version to the shared directory (after the RCD Server is installed, Drive D is automatically uploaded).
2. Edit the image Cloud Desktop. Locate the relevant program and click **Uninstall**.



Enter the password to start the uninstallation. The default password is **ruijie.com**.



3. After the ClassManager of the earlier version is uninstalled, restart the Cloud Desktop system. Access the shared directory of drive D, and install the latest version of the ClassManager_Student.
4. If there are multiple images, repeat the preceding steps.

5.2.4 Upgrading the Rain Thin Client

I. Upgrade Description

Log in to the RCD Server and perform the following operations:

Rain Thin Clients are classified into the following types by hardware architecture:

1. Rain Thin Clients using the x86 architecture: Typical devices are Rain100 and Rain200. The hardware architecture has no different from common PCs. For devices using this architecture, adopt the iPXE/PXE upgrade scheme. **For details, see the "iPXE/PXE Upgrade Scheme for Thin Clients" in the appendix.**
2. Rain Thin Clients using the ARM architecture: Typical devices are Rain100S and Rain200S. The Android system is used as the underlying system. Common devices using the ARM architecture include Mi Box and HiWiFi. For devices using this architecture, adopt the OTA upgrade scheme. **For details, see the "OTA Upgrade Scheme for Thin Clients" in the appendix.**

Pay attention to the following points if you use the PXE upgrade scheme to upgrade Thin Clients using the x86 architecture:

- In addition to batch upgrade using the PXE upgrade scheme, you can use a USB flash drive to upgrade a single Thin Client. For details, see step 3: Upgrade the Rain100/Rain200 using the USB flash drive in this chapter. Because there are a large number of Thin Clients, it is not recommended to upgrade the Thin Client one by one by using the USB flash drive.
- Before upgrading a Thin Client, ensure that the DHCP service is enabled and IP addresses in the specified address segment are sufficient. When you upgrade a Thin Client and restart the system, if the system remains at the page for obtaining the DHCP service, try to clear the lease, expand the DHCP address segment, and upgrade the system again.
- By default, the multicast upgrade mode is adopted. In scenarios with poor network conditions (such as the 100M network environment), you can use the unicast upgrade mode.

II. Web Upgrade Steps

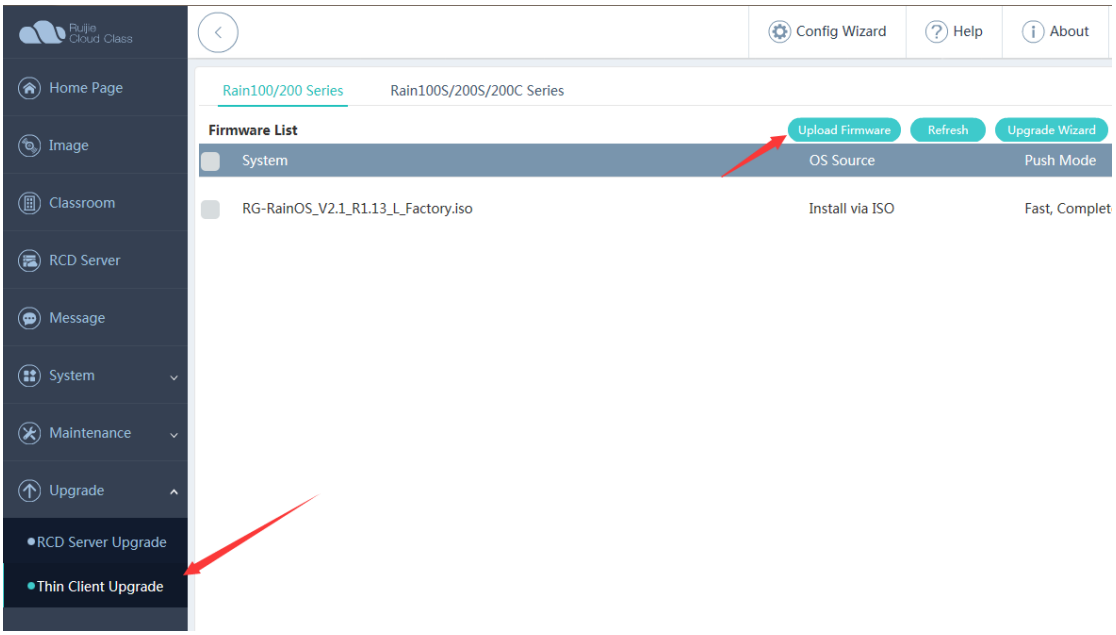
Note: The following describes how to upgrade the Thin Clients using the x86 architecture (Rain100 and Rain200) and the Thin Clients using the ARM architecture (Rain100S and Rain200S).

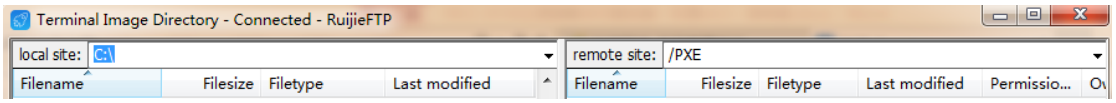
Step 1: Upload the Thin Client OS to the Web page of the RCD Server, and start all Rain Thin Clients.

All Thin Clients conduct automatic upgrade after connecting to the RCD Server.

After all Thin Clients are upgraded, the image selection page is displayed.

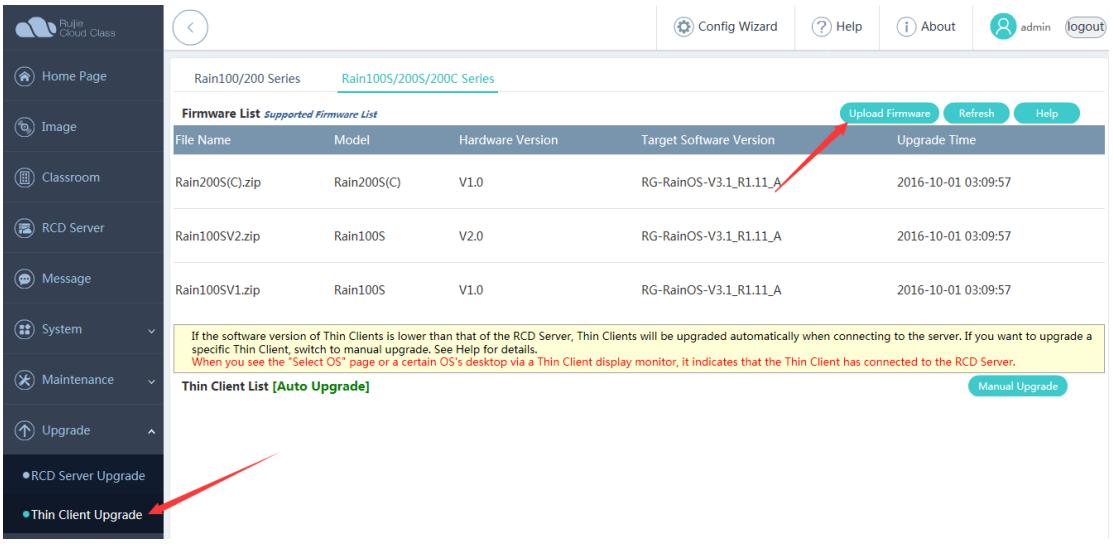
The upload scheme for Rain100 and Rain200 series is as follows:



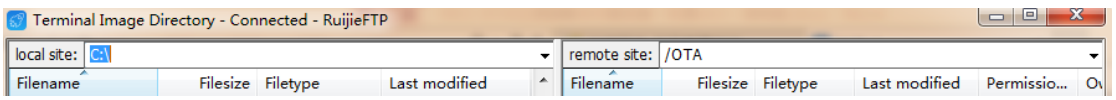


The upload scheme for Rain100S, Rain200, and Rain200C series is as follows:

Choose **Upgrade** > **Thin Client Upgrade**, click **Upload Firmware** and load the standard OTA upgrade package to the RCD Server. Ensure that the OTA upgrade package to be upgraded is the package for upgrading the Thin Client to the target version.



Click the upgrade package to be uploaded and upload it to the server.



After the upgrade package is uploaded, refresh the OTA service tab page. If the latest OTA version number is displayed, the upgrade is successful.

Step 2: Implement the iPXE/OTA image distribution function.

For details, see the "iPXE Upgrade for Thin Clients, PXE Upgrade for Thin Clients, and OTA Upgrade for Thin Clients" in the Appendix.

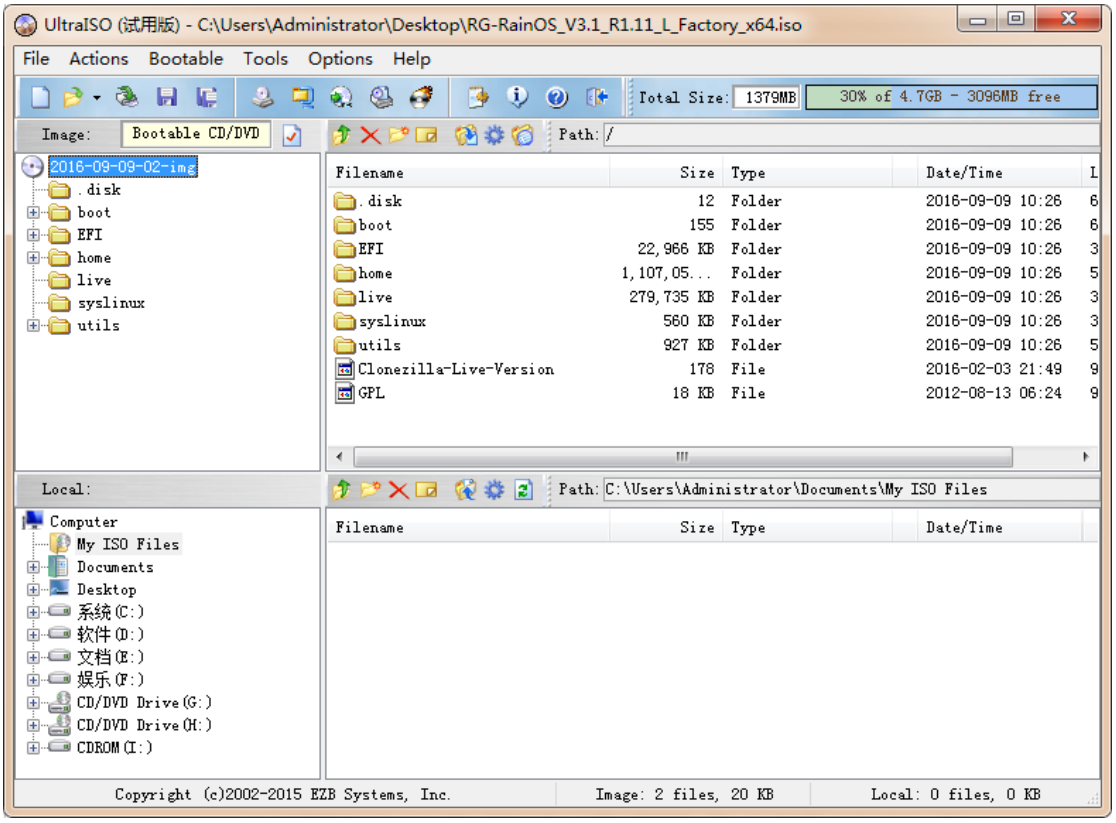
For the Rain100 and Rain200, the iPXE upgrade mode is recommended. If certain Thin Clients fail to be upgraded, use the PXE or USB flash drive upgrade mode.

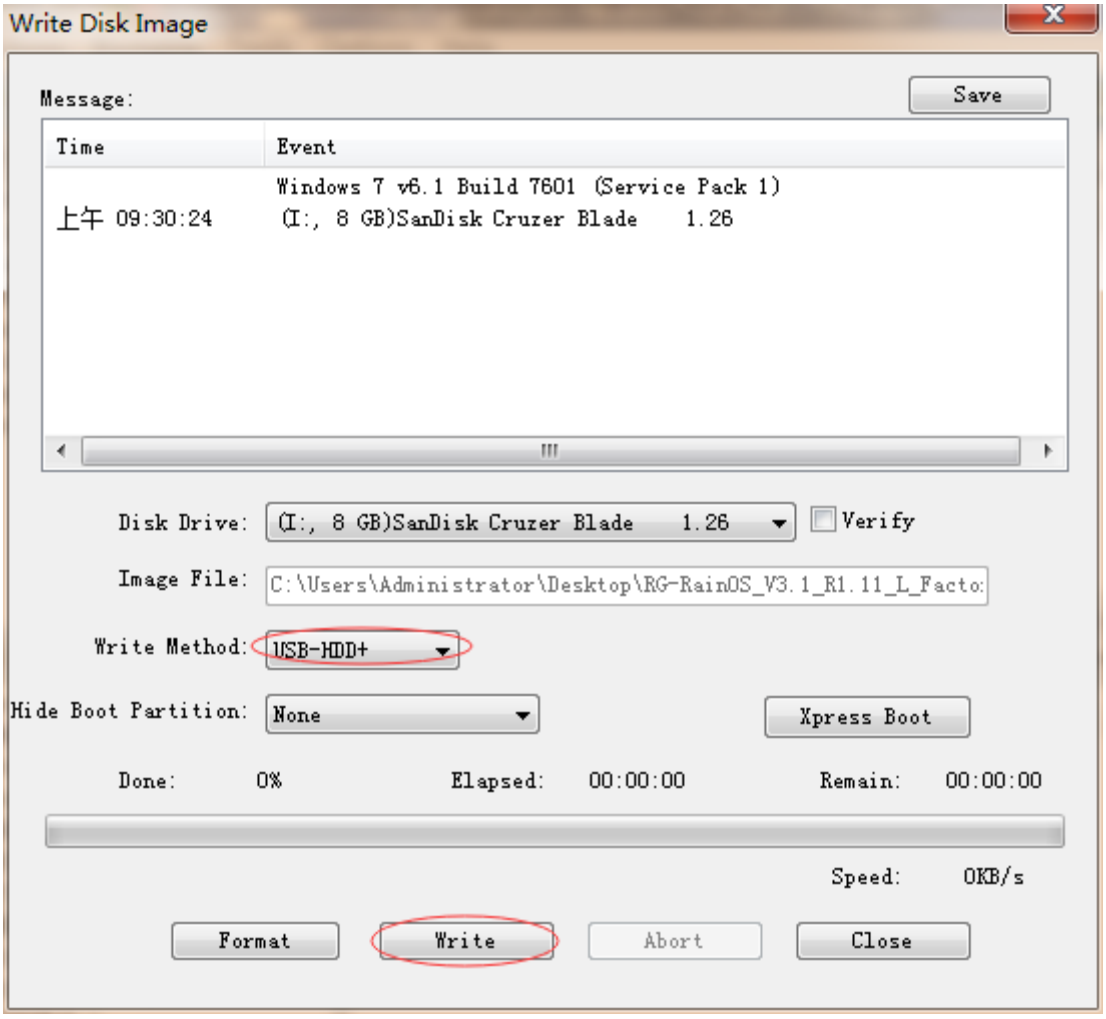
For Rain100S and Rain200S, the OTA upgrade mode is recommended.

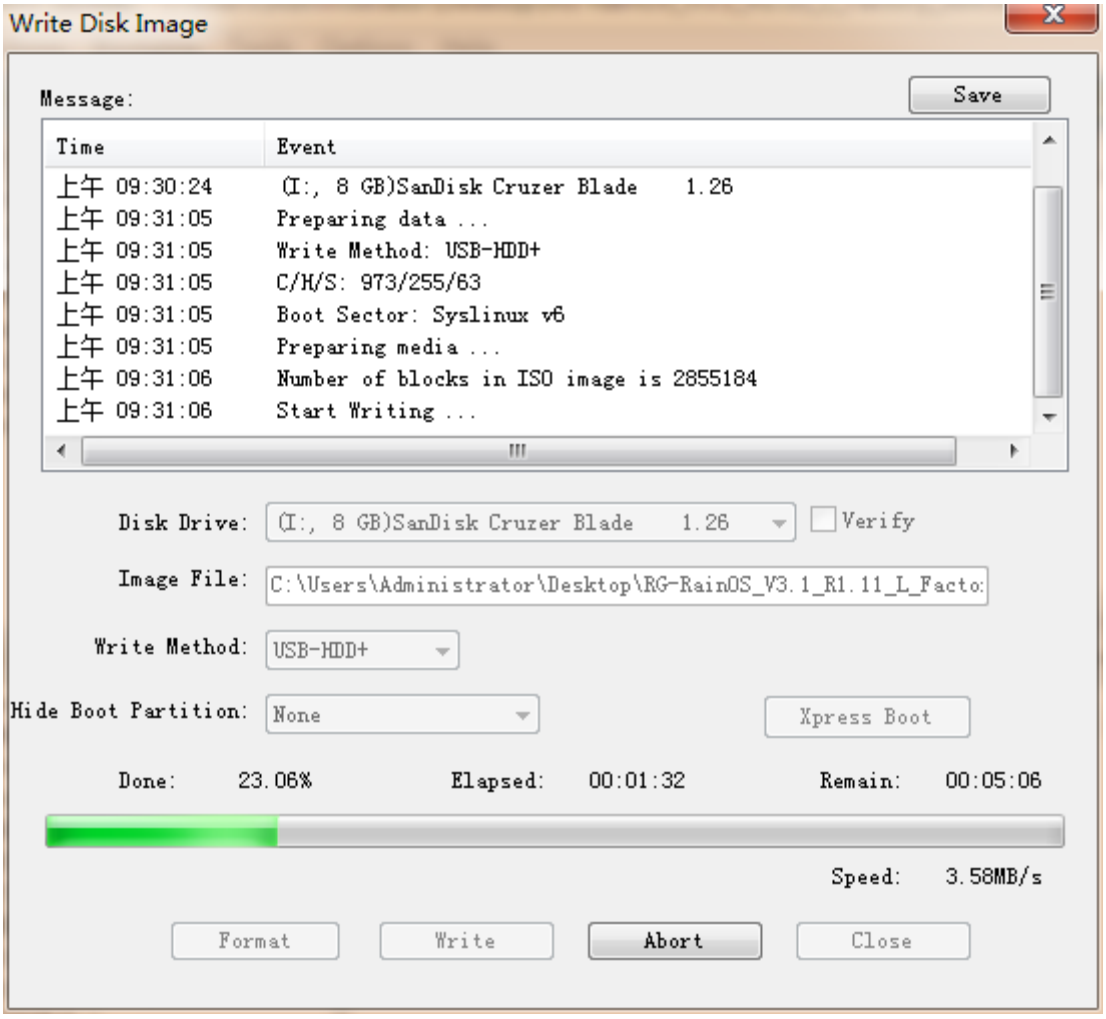
Step 3: Configure Thin Clients by using the RG-ClassManager 3.1 in a unified manner, and re-number the Thin Clients.

For details, see the "One-click Deployment" in "Typical Deployment Schemes".

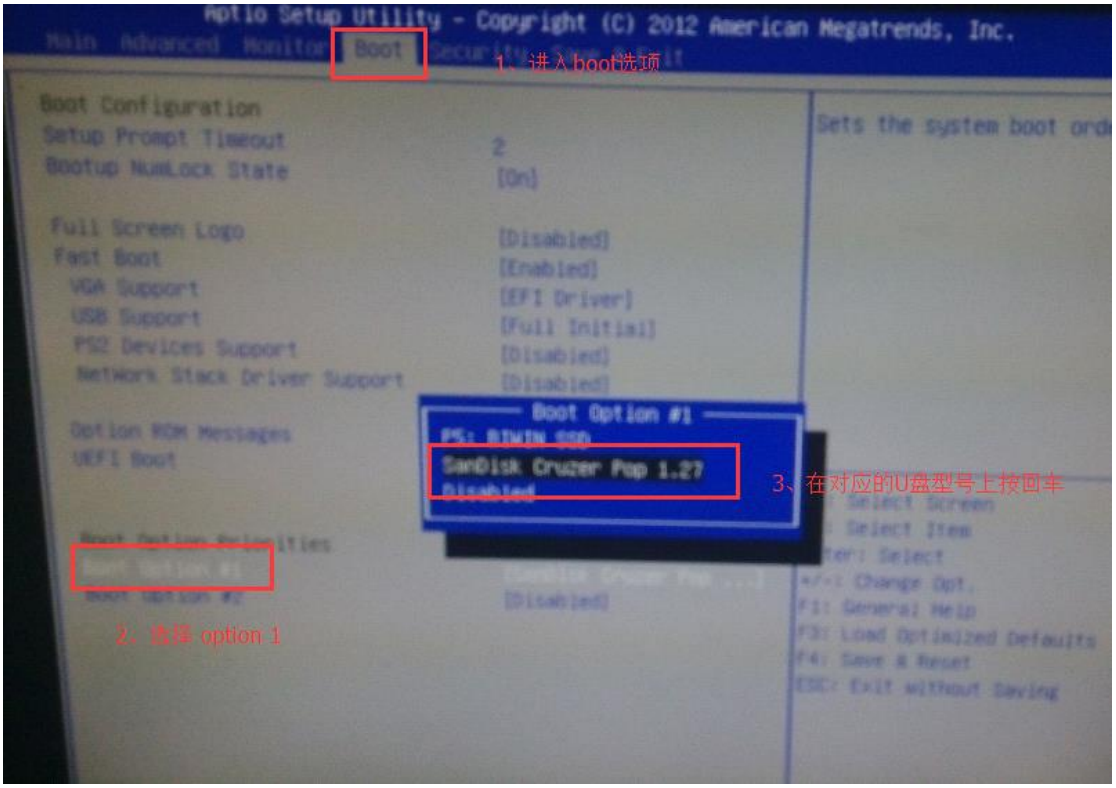
III. Upgrading the Rain100S and Rain200S by Using the USB Flash Drive




Write Disk Image
Message:
Save
Time
Event
Windows 7 v6.1 Build 7601 (Service Pack 1)
上午 09:30:24
(I:, 8 GB)SanDisk Cruzer Blade 1.26
Disk Drive:
(I:, 8 GB)SanDisk Cruzer Blade 1.26
Verify
Image File:
C:\Users\Administrator\Desktop\RG-RainOS_V3.1_R1.11_L_Facto
Write Method:
USB-HDD+
Hide Boot Partition:
None
Xpress Boot
Done: 0%
Elapsed: 00:00:00
Remain: 00:00:00
Speed: 0KB/s
Format
Write
Abort
Close

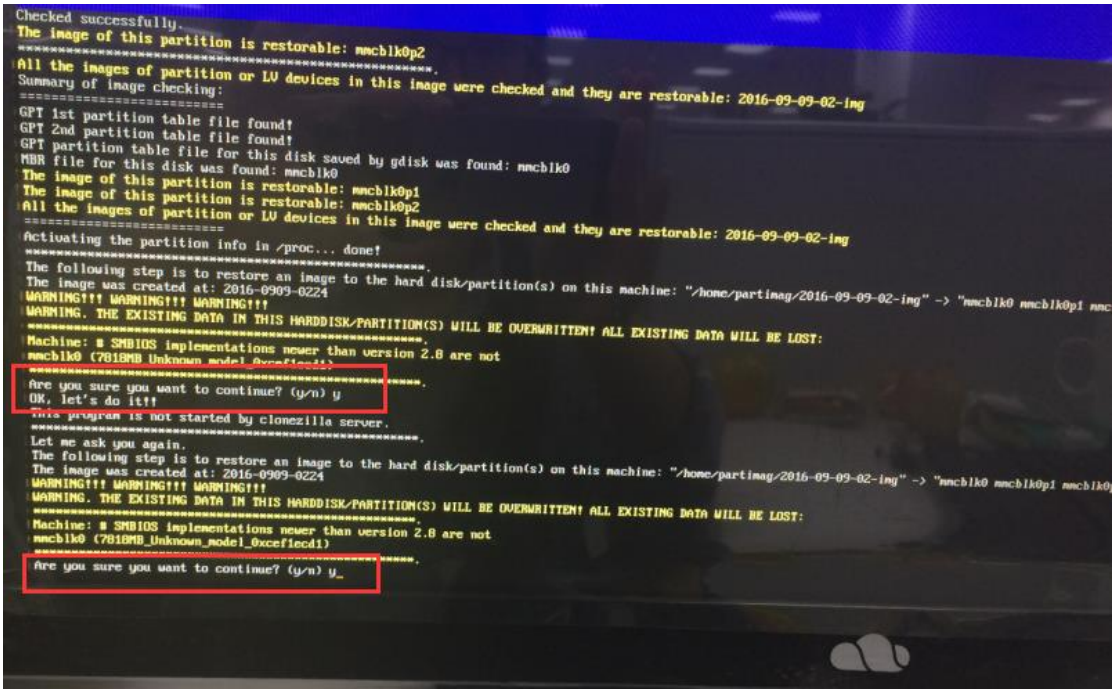


1. Insert the USB flash drive into a Thin Client and restart the Thin Client. For the Rain100, press **F2** or **Delete** to enter the BIOS. Set the startup items and press **F4** to save the settings and exit.

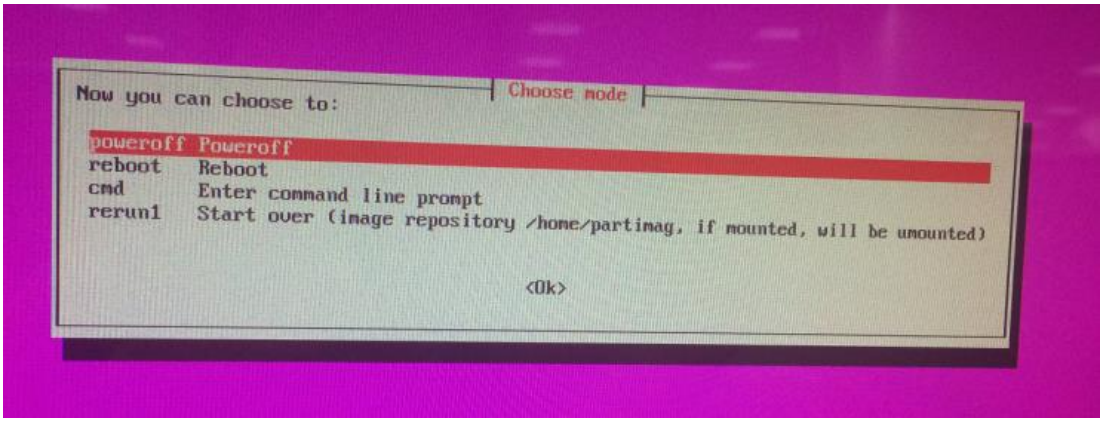


2. After booting from the USB flash drive, the system displays a page as shown in the following figure. Press **Enter** to enter the default options.

3. During the boot, the system displays two prompts, indicating that the data in the hard disk will be overwritten. Enter **y** and press **Enter**. Then, the system enters the restoration process.



4. After the system restoration is complete, the system displays a page as shown in the following figure. Select **Poweroff** and press **Enter**. The system is shut down, and the installation is completed.



5. Remove the USB flash drive, restart the system, and confirm the system version.

About
Ruijie Could Class
Thin Client
Software Version: RCC_Client_V3.1_R1.11
System Version: RCC_RainOS_V3.1_R1.11
Product Name: Rain200 V2
Hardware Version: V1.10
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6 Typical Deployment Schemes

6.1 Local Deployment Mode

6.1.1 Cloud Desktop Campus Network and Thin Client Campus Network

I. Scenario Description

1. Local deployment mode is recommended when the IP addresses of the campus network are sufficient. This deployment mode is the simplest among the three deployment modes.
2. Both the Thin Client and the Cloud Desktop use the IP address and gateway of the campus network to access the Internet, and each of them occupies one IP address.
3. You can determine whether to configure link aggregation for the server NIC according to the actual situations.

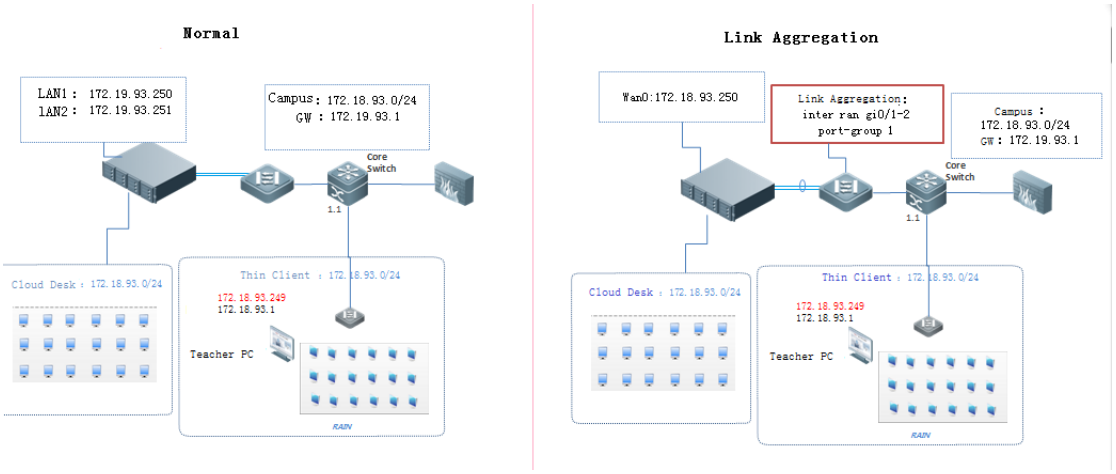
II. Key Configuration Points

1. Local deployment is recommended for the standalone deployment mode.
2. If the link aggregation function is enabled for the NIC, configure the port of the peer switch to work in port aggregation mode. If the switch supports LACP, enable LACP on the corresponding server.
3. Set the IP address of the master RCD Server configured on the Thin Client to the IP address of the first network port of the RCD Server. If two network ports are aggregated, use the IP address of the aggregate port.
4. Configure the IP address of the NIC of the teacher PC to be in the same network segment as the campus network.
5. On the RCD Server, set the IP address of the ClassManager_Teacher PC to the campus network IP address of the NIC of the teacher PC.
6. Set the RCD Server address of the ClassManager_Teacher to the campus network IP address of the RCD Server.

Note: The NIC link aggregation is to achieve link redundancy and improve the network reliability. This configuration is optional for the standalone deployment scheme. For new deployment, if link aggregation is required, configure port aggregation for the peer switch. Two network ports of the RCD Servers must ensure the network access through the 1000M switch.

III. Operation Steps

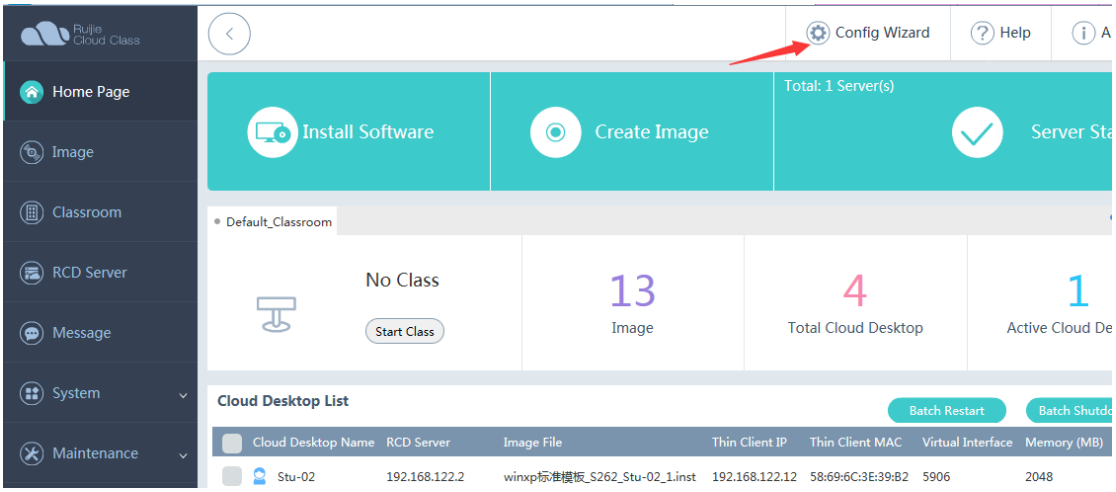
The following figure shows the topology in deployment mode 1.

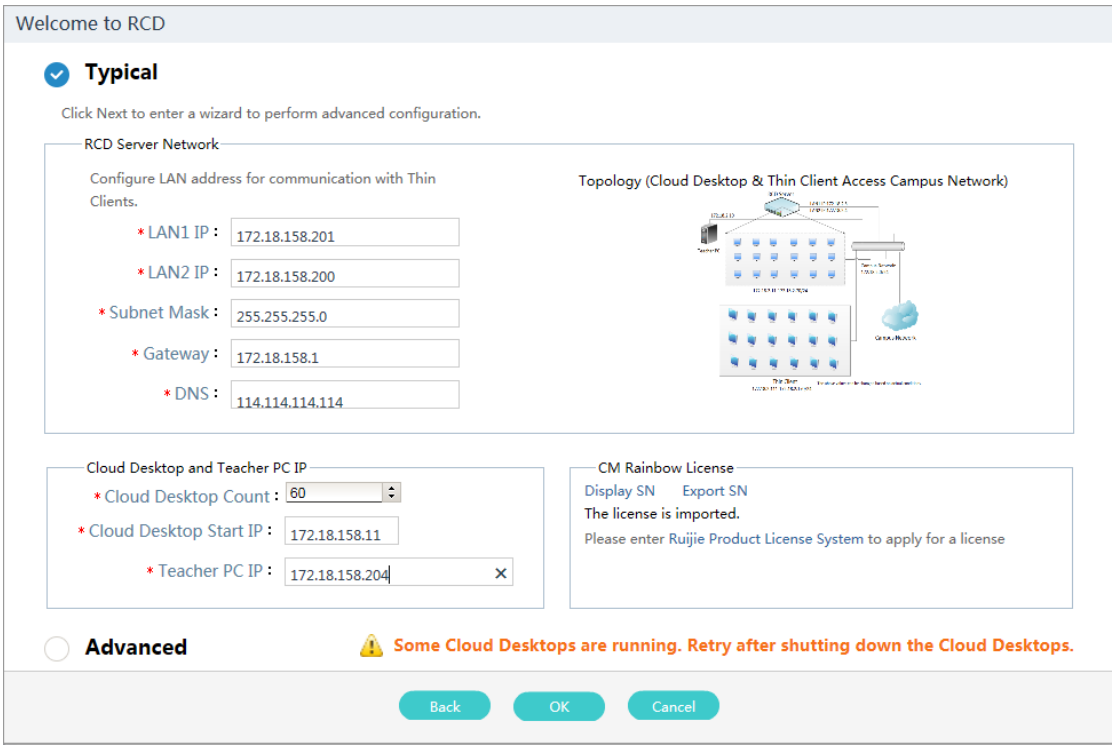


Detailed configuration steps are as follows:

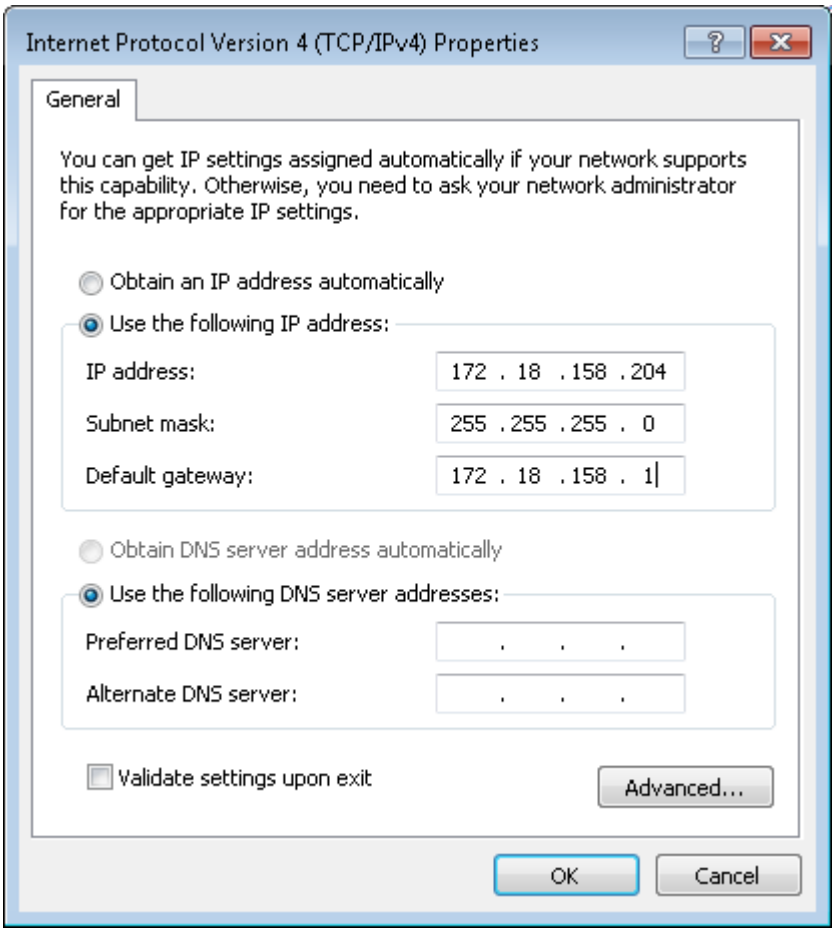
A: The link aggregation is not configured for the NIC of the RCD Server.

Step 1: Click Config Wizard to configure the system. Click OK to restart the system to make the configuration takes effect.

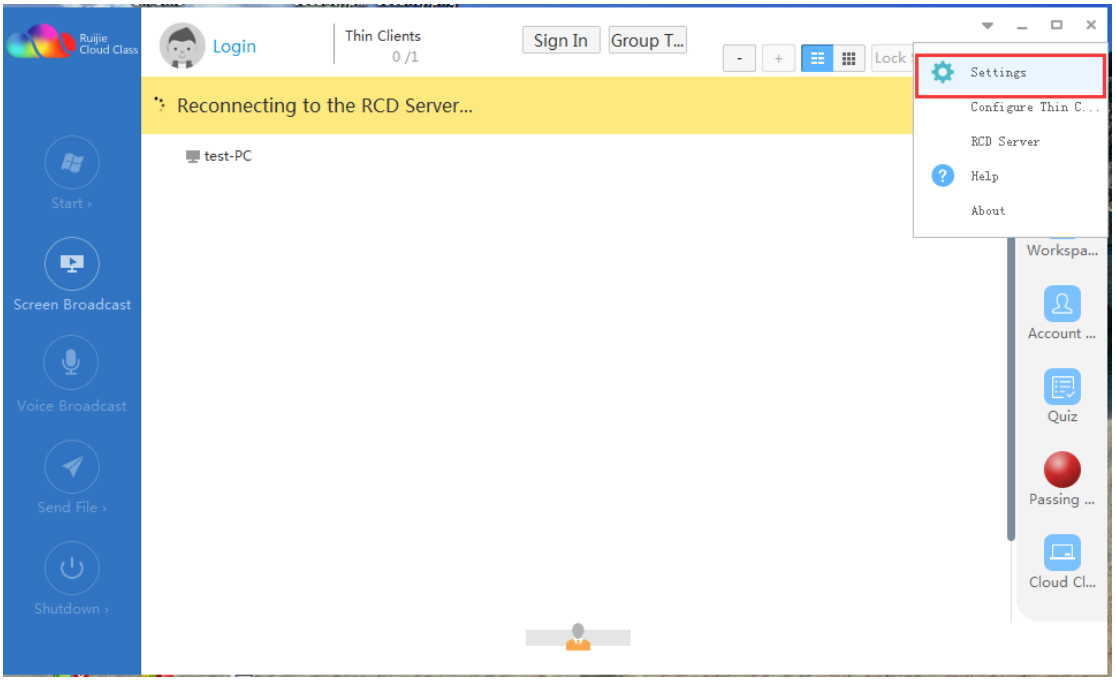


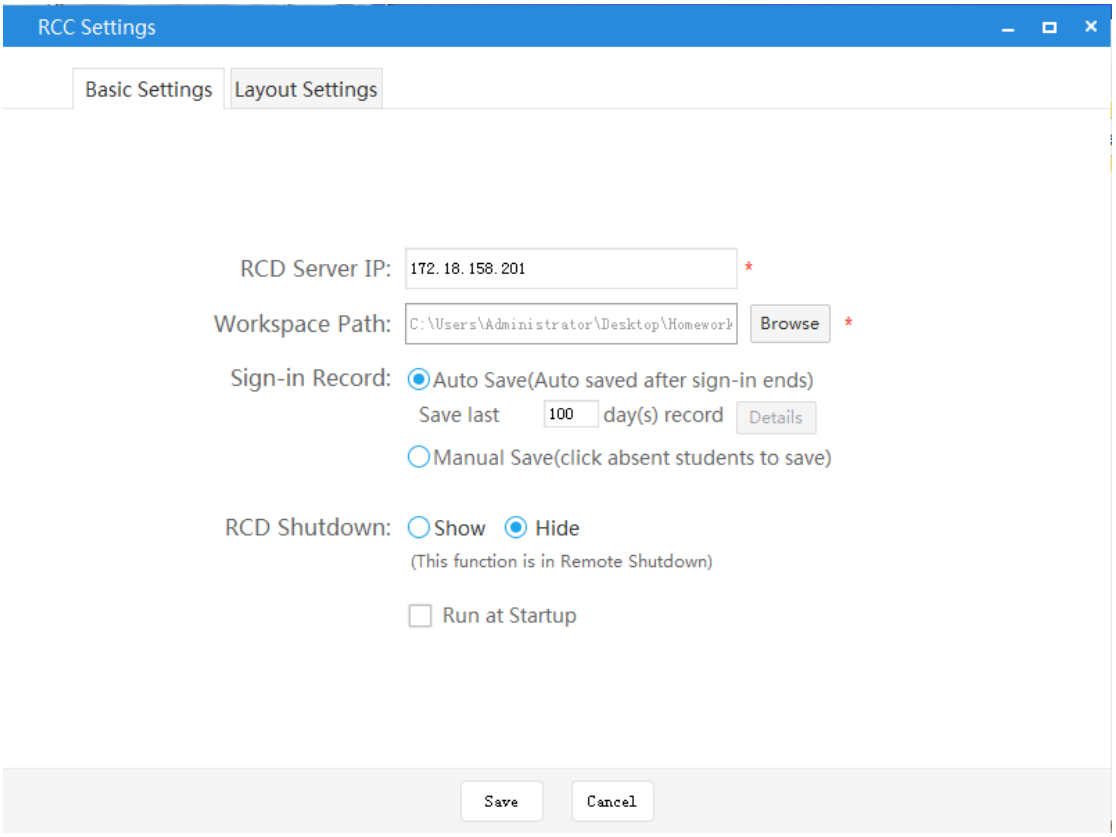


Step 2: Configure the NIC address for the ClassManager_Teacher PC.



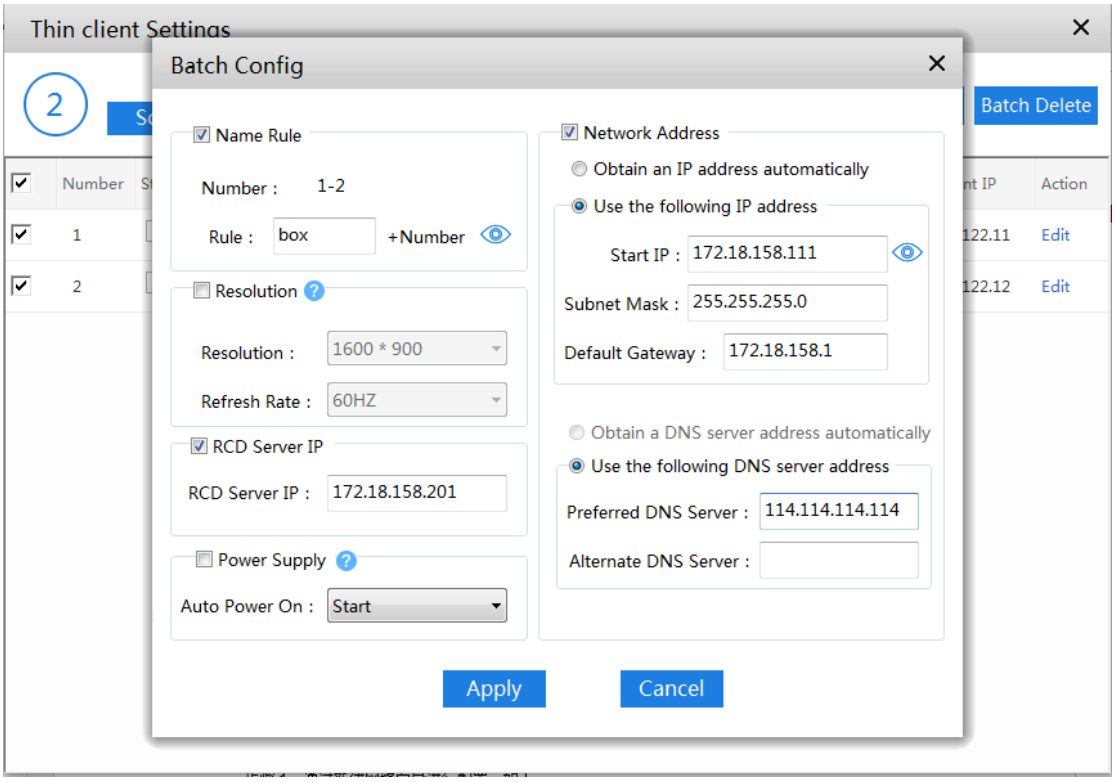
Step 3: Configure the ClassManager_Teacher. Set **RCD Server IP** to the IP address of the RCD Server used to access the campus network.





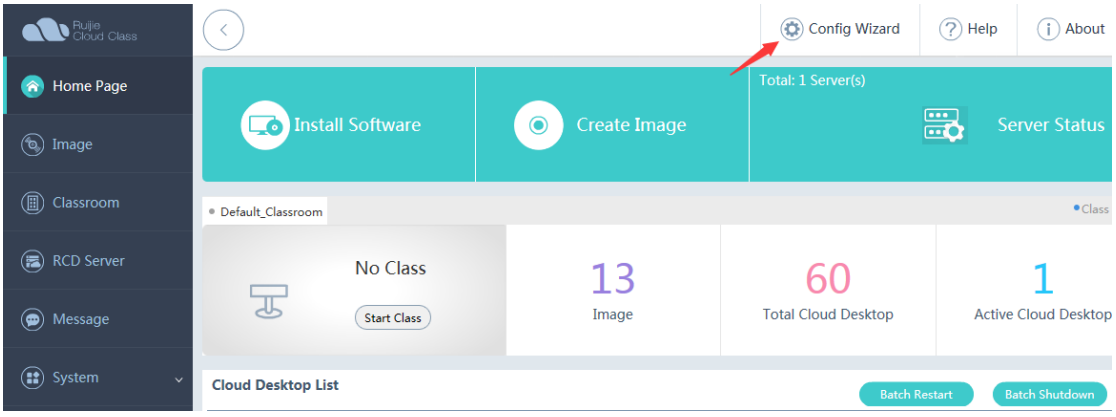
Step 4: Configure Thin Clients in batches on the ClassManager configuration.

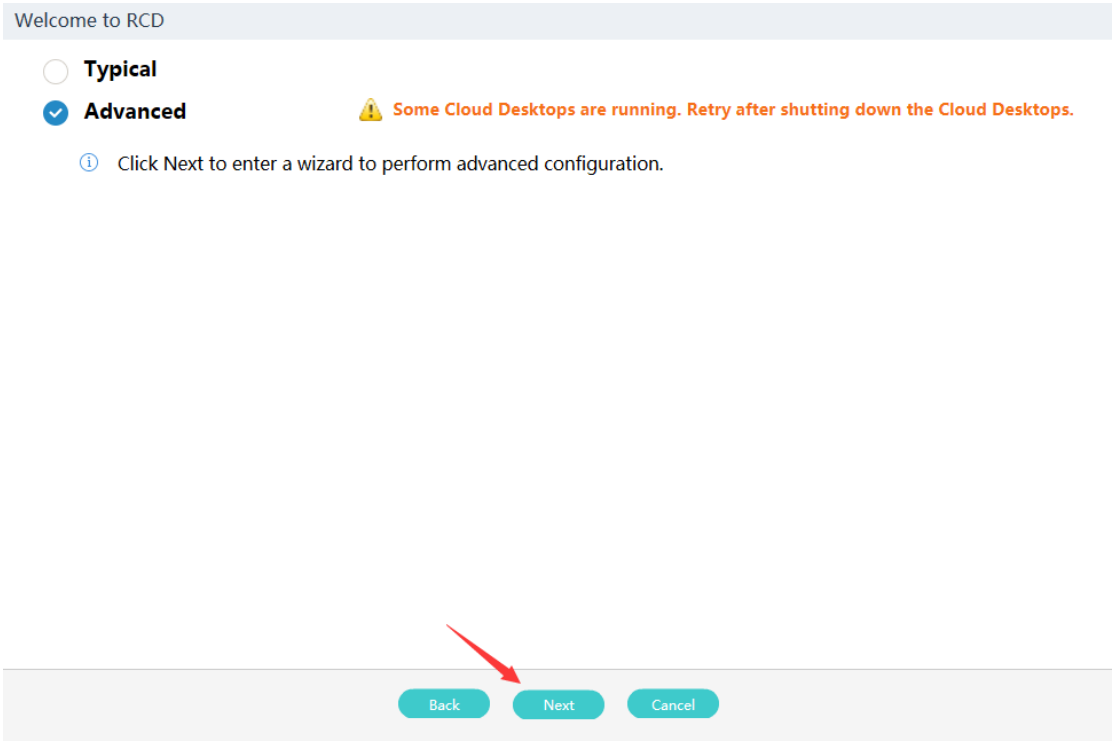
Note: Set **RCD Server IP** to the IP address of the first network port on the master RCD Server.

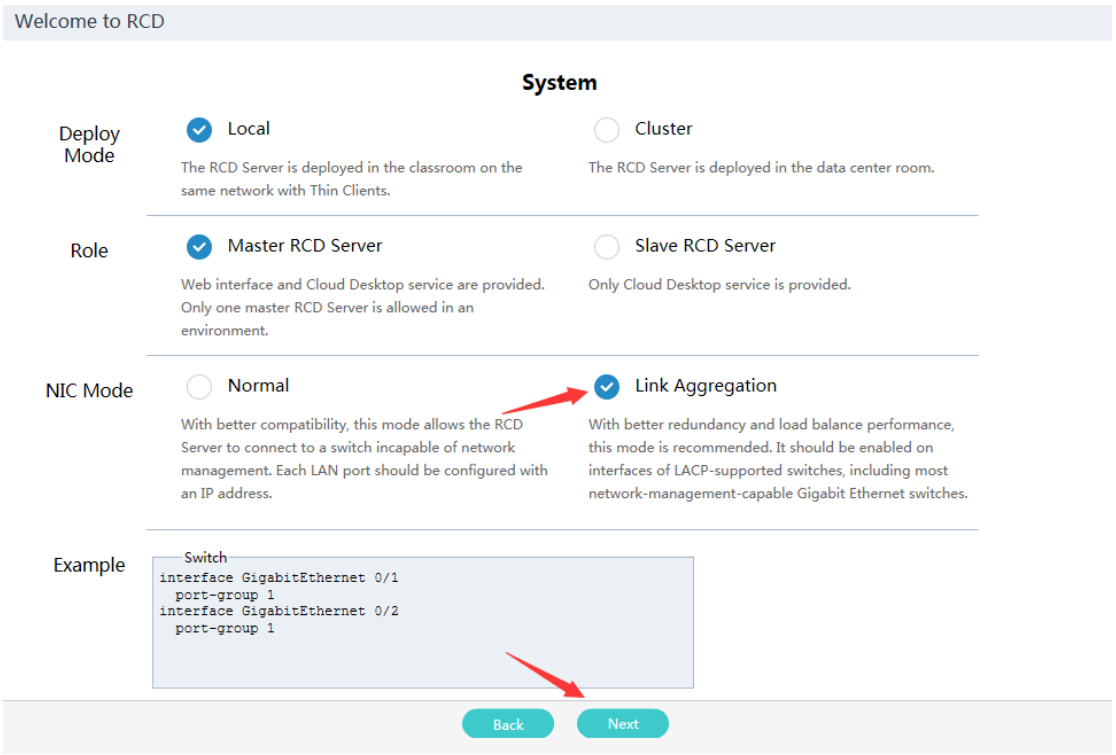


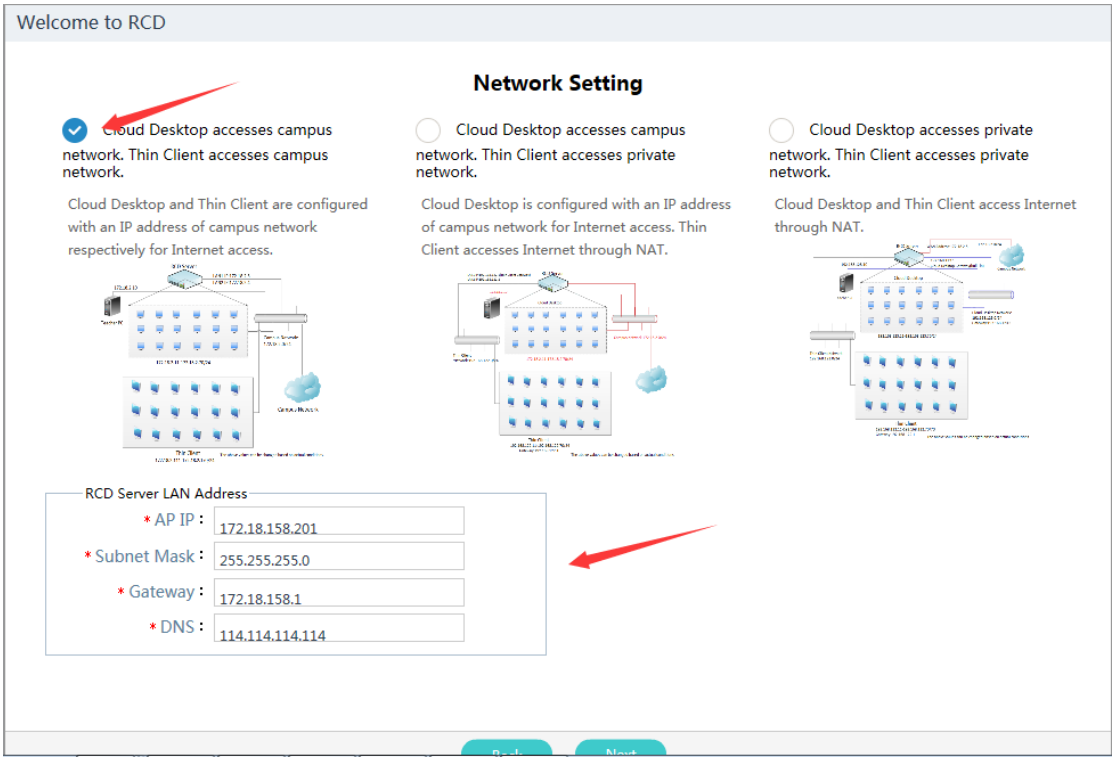
B. The link aggregation is configured for the NIC of the RCD Server.

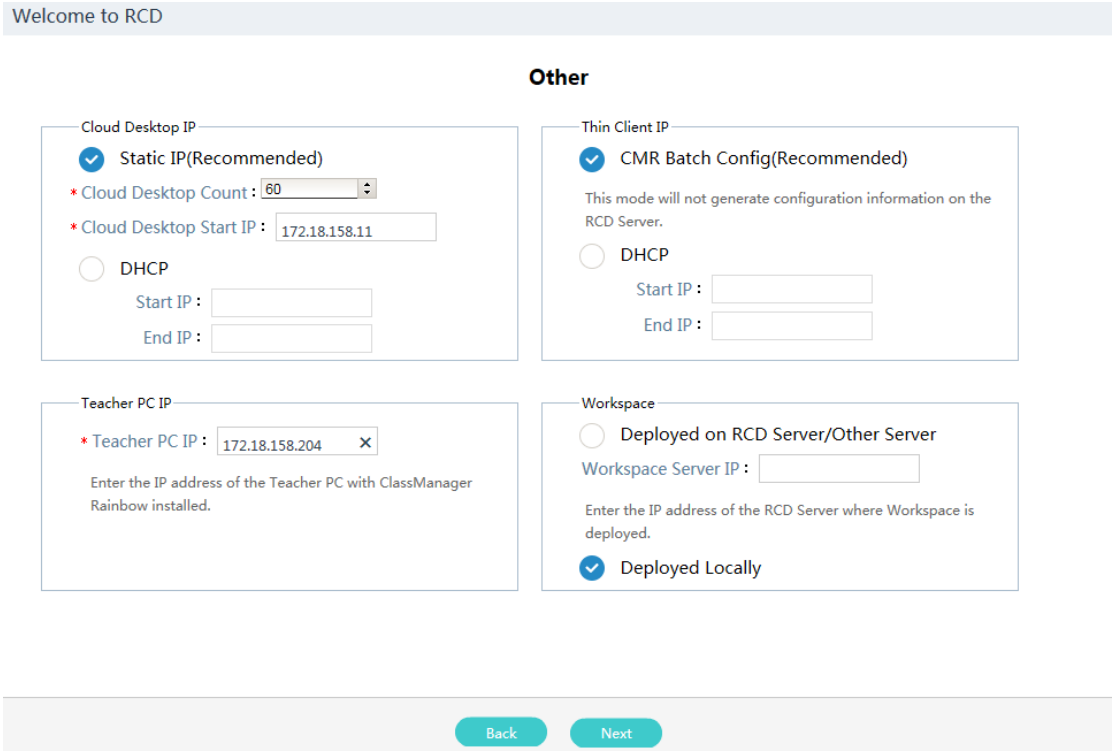
Step 1: Click **Config Wizard** to configure the system.

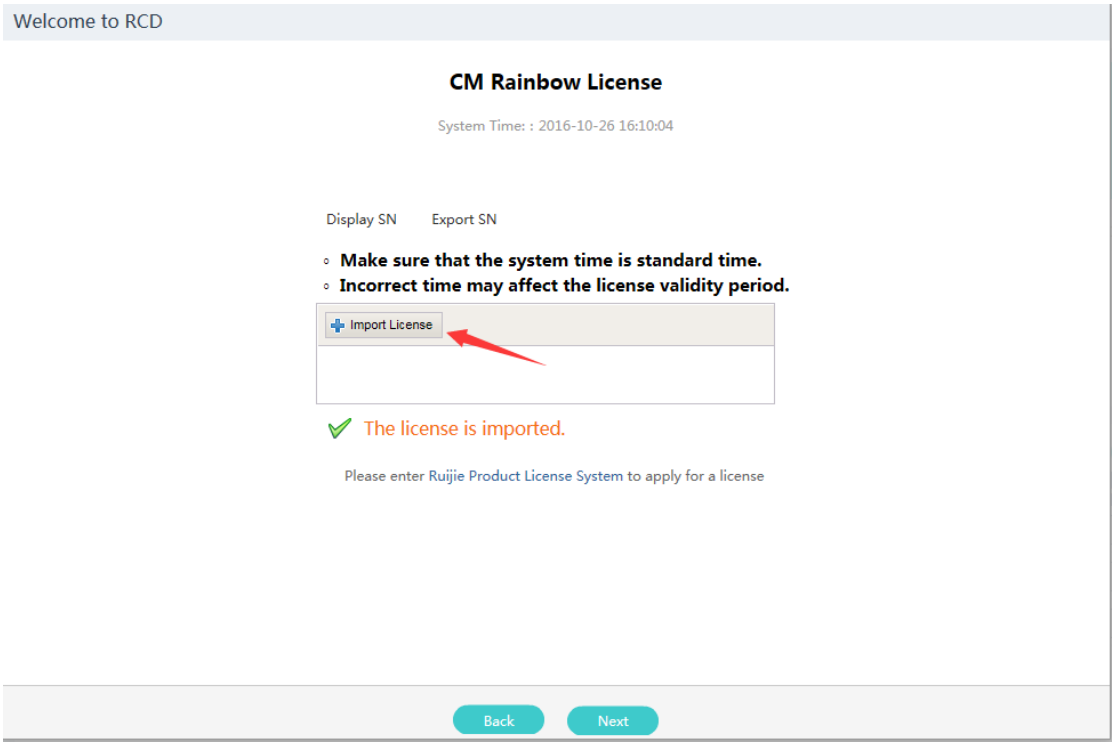



Welcome to RCD
Typical
Advanced
Some Cloud Desktops are running. Retry after shutting down the Cloud Desktops.
Click Next to enter a wizard to perform advanced configuration.
Back
Next
Cancel

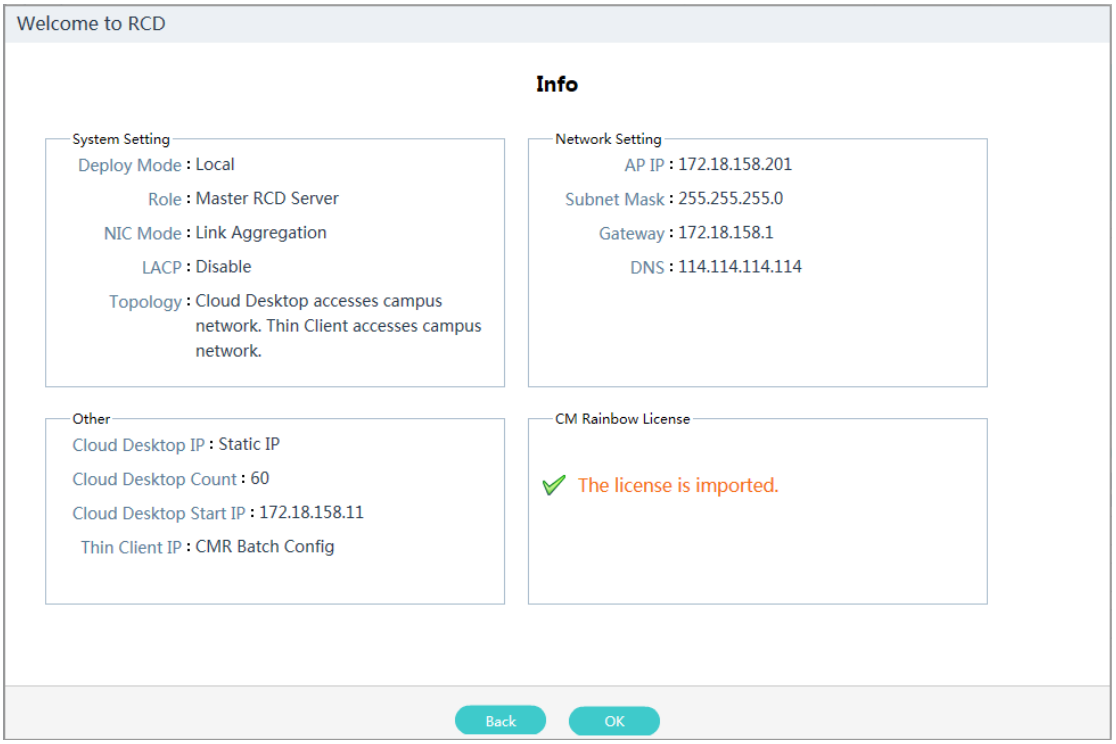

Welcome to RCD
System
Deploy Mode
Local
The RCD Server is deployed in the classroom on the same network with Thin Clients.
Cluster
The RCD Server is deployed in the data center room.
Role
Master RCD Server
Web interface and Cloud Desktop service are provided. Only one master RCD Server is allowed in an environment.
Slave RCD Server
Only Cloud Desktop service is provided.
NIC Mode
Normal
With better compatibility, this mode allows the RCD Server to connect to a switch incapable of network management. Each LAN port should be configured with an IP address.
Link Aggregation
With better redundancy and load balance performance, this mode is recommended. It should be enabled on interfaces of LACP-supported switches, including most network-management-capable Gigabit Ethernet switches.
Example
Switch
interface GigabitEthernet 0/1
port-group 1
interface GigabitEthernet 0/2
port-group 1
Back
Next


Welcome to RCD
Network Setting
Cloud Desktop accesses campus network. Thin Client accesses campus network.
Cloud Desktop and Thin Client are configured with an IP address of campus network respectively for Internet access.
Cloud Desktop accesses campus network. Thin Client accesses private network.
Cloud Desktop is configured with an IP address of campus network for Internet access. Thin Client accesses Internet through NAT.
Cloud Desktop accesses private network. Thin Client accesses private network.
Cloud Desktop and Thin Client access Internet through NAT.
RCD Server LAN Address
* AP IP : 172.18.158.201
* Subnet Mask : 255.255.255.0
* Gateway : 172.18.158.1
* DNS : 114.114.114.114

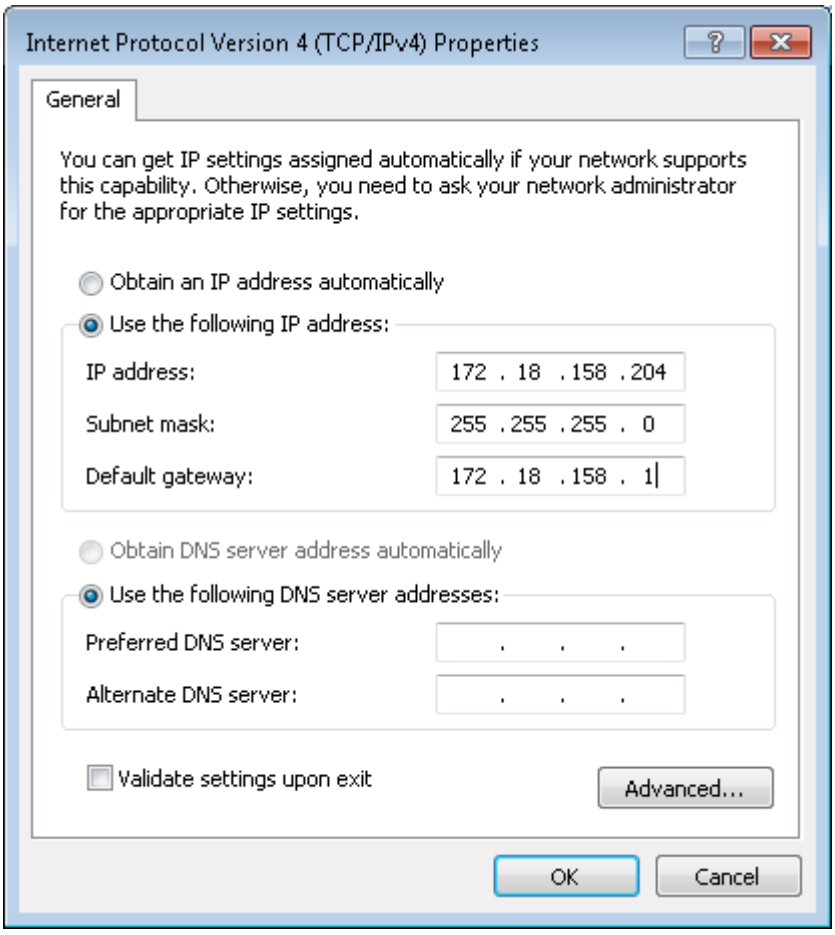

Welcome to RCD
Other
Cloud Desktop IP
Static IP(Recommended)
* Cloud Desktop Count : 60
* Cloud Desktop Start IP : 172.18.158.11
DHCP
Start IP :
End IP :
Thin Client IP
CMR Batch Config(Recommended)
This mode will not generate configuration information on the RCD Server.
DHCP
Start IP :
End IP :
Teacher PC IP
* Teacher PC IP : 172.18.158.204
Enter the IP address of the Teacher PC with ClassManager Rainbow installed.
Workspace
Deployed on RCD Server/Other Server
Workspace Server IP :
Enter the IP address of the RCD Server where Workspace is deployed.
Deployed Locally
Back
Next



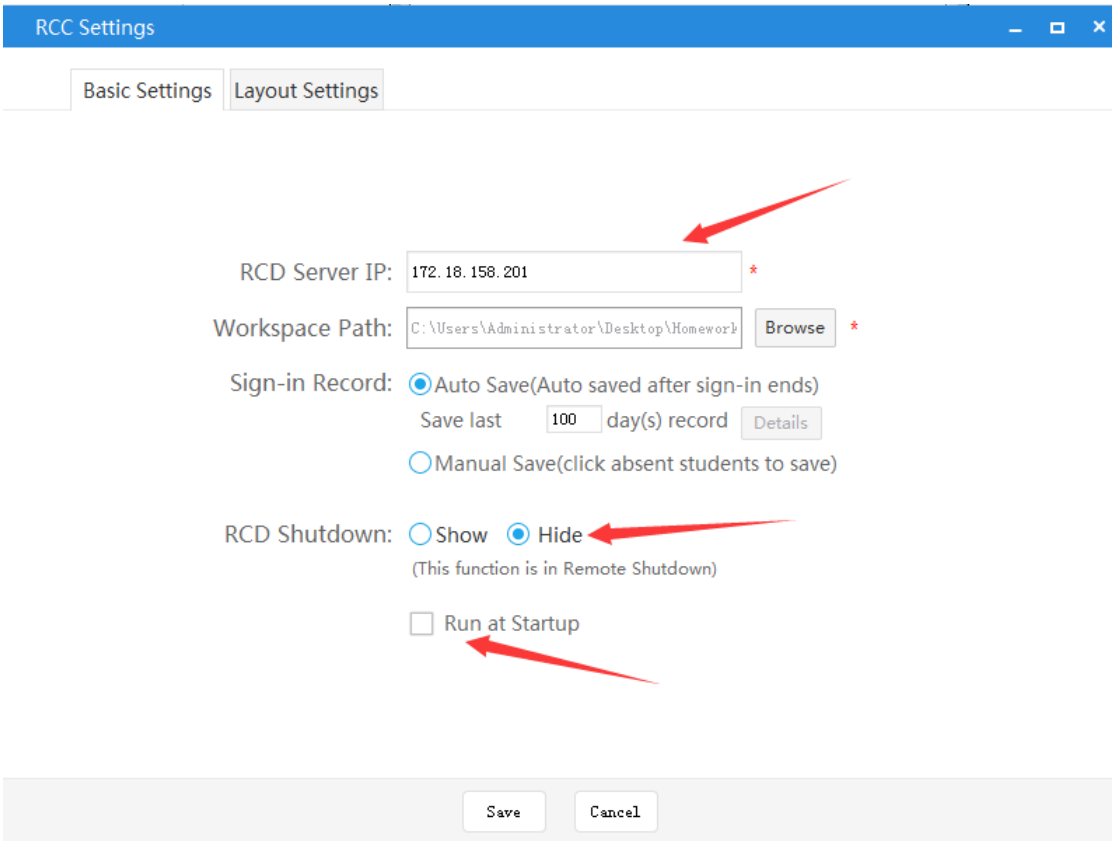
After checking that the configuration is correct, click **OK**.



Step 2: Configure the NIC address for the ClassManager_Teacher PC.

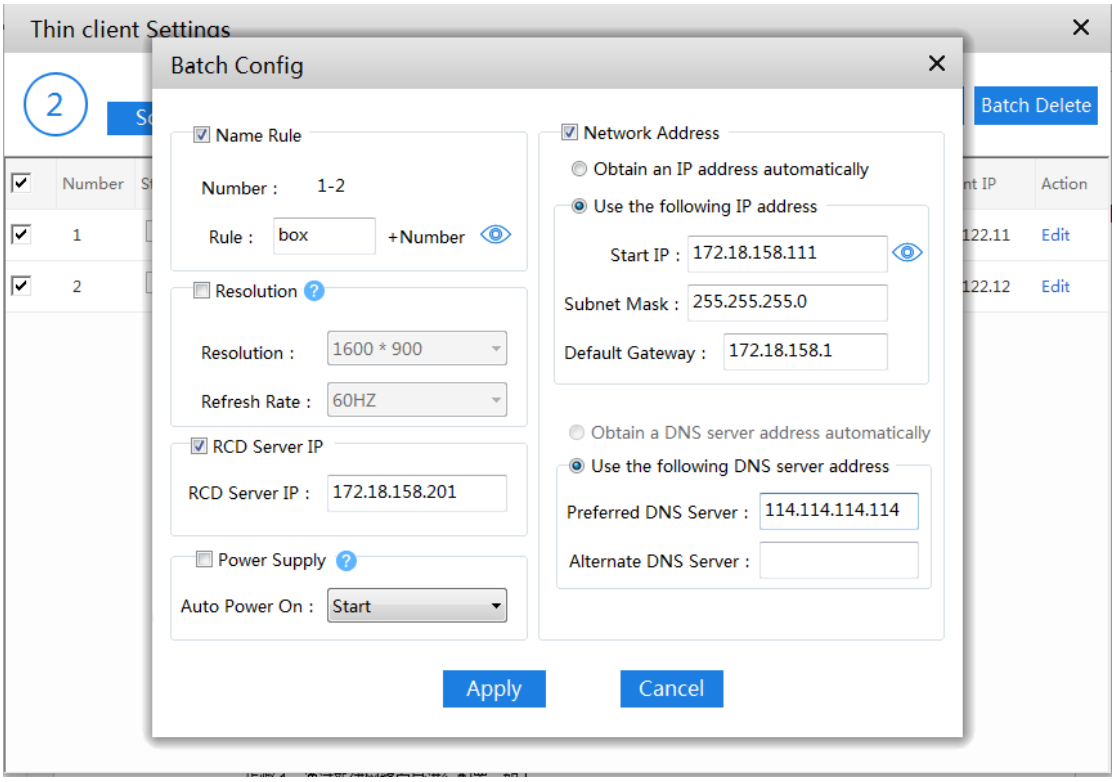


Step 3: Configure the ClassManager_Teacher. Set **RCD Server IP** to the IP address of the RCD Server used to access the campus network.



Step 4: Configure Thin Clients in batches on the ClassManager.

Note: Set **RCD Server IP** to the IP address of the aggregate network port on the master RCD Server.



Switch configuration:

1. When link aggregation is not configured for the RCD Server, generally, use default settings on the switch. If special planning requirements are raised for the campus network, the IP address of the switch that connects the RCD Server and the Thin Client can be configured in the same network segment (VLAN) as the campus network.
2. When link aggregation is configured for the RCD Server, you need to configure port aggregation on the switch. When LACP is enabled on the RCD Server, LACP needs to be configured on the switch port and the switch port needs to be configured to work in passive mode.

The configuration of the switch connecting to the RCD Server is as follows:

LACP is not enabled:

```
inter ran gi0/1-2
descr to server1
port-group 1
exit
```

LACP is enabled:

Note: If you are not clear whether the switch supports LACP, it is recommended that LACP be disabled because incompatible modes at both ends will cause various anomalies.

```
inter ran gi0/1-2
descr to server1
```

```
port-group 1 mode pass
exit
```

6.1.2 Cloud Desktop Campus Network and Thin Client Private Network

I. Scenario Description

1. The local deployment mode is recommended because it can save campus network IP addresses and is close to the actual application scenarios. Each Cloud Desktop can be understood as one network node on the campus network.
2. The Cloud Desktop connects to the network by using a campus network IP address and gateway. The Thin Client does not occupy a campus network IP address. It connects to the network by using the IP address translated by NAT of the RCD Server.

II. Key Configuration Points

1. Set the IP address of the master RCD Server to the IP address of the first network port of the RCD Server for the Thin Client. In link aggregation mode, two network ports are aggregated as one aggregate port and there is only one network port address. In this case, set the IP address of the master RCD Server to the IP address of the aggregate port for the Thin Client.
2. Set the IP address of the ClassManager_Teacher NIC to a campus network IP address, and set the gateway to the campus network gateway.
3. On the RCD Server, set the IP address of the ClassManager_Teacher PC to the master IP address of the ClassManager_Teacher NIC, that is, the campus network IP address.
4. Set the IP address of the RCD Server on the ClassManager_Teacher to the campus network IP address of the RCD Server.

6.1.3 Cloud Desktop Private Network and Thin Client Private Network

I. Scenario Description

1. The local deployment mode is applicable to the scenarios where the campus network addresses are extremely insufficient. Otherwise, it is not recommended.
2. The Cloud Desktop and Thin Client do not occupy campus network IP addresses. They can access the network after their addresses are translated by NAT of the RCD Server. The NAT process affects the performance of the RCD Server NIC.

II. Key Configuration Points

1. Set the IP address of the master RCD Server to the IP address of the first network port of the RCD Server for the Thin Client. In link aggregation mode, two network ports are aggregated as one aggregate port and there is only one network port address. In this case, set the IP address the master RCD Server to the IP address of the aggregated port for the Thin Client.
2. Set the IP address of the ClassManager_Teacher NIC to be in the same network segment as the Cloud Desktop, that is, network segment 192.168.123, and set the gateway address to 192.168.123.1.
3. On the RCD Server, set the IP address of the ClassManager_Teacher PC to the IP address of the NIC of the teacher PC.
4. Set the IP address of the RCD Server on the ClassManager_Teacher to the campus network IP address of the RCD Server.

6.2 Stack Deployment

I. Scenario Description

The stack deployment scheme can address the following problems:

1. A single classroom contains excessive Thin Clients, and a single RCD Server cannot serve all the Thin Clients. Multiple RCD Servers are required to jointly manage the Thin Clients.

For example, a classroom contains 90 Thin Clients. You need to configure two RCD Servers in stack mode to satisfy the teaching requirements.

2. High-performance Cloud Desktops are required and a single RCD Server cannot support these Cloud Desktops simultaneously. Multiple RCD Servers are required to share the load.

For example, high-performance Cloud Desktops (2 GB memory) are required in a classroom. One RCD6000 supports 30 Thin Clients at most. If 60 Thin Clients are required, you need to configure two RCD6000s in stack mode.

In stack mode, you can dynamically calculate the number of Cloud Desktops served by each RCD Server based on the required number of Thin Clients and upper load limit of the RCD Server. Ensure that the data on each RCD Server is consistent.

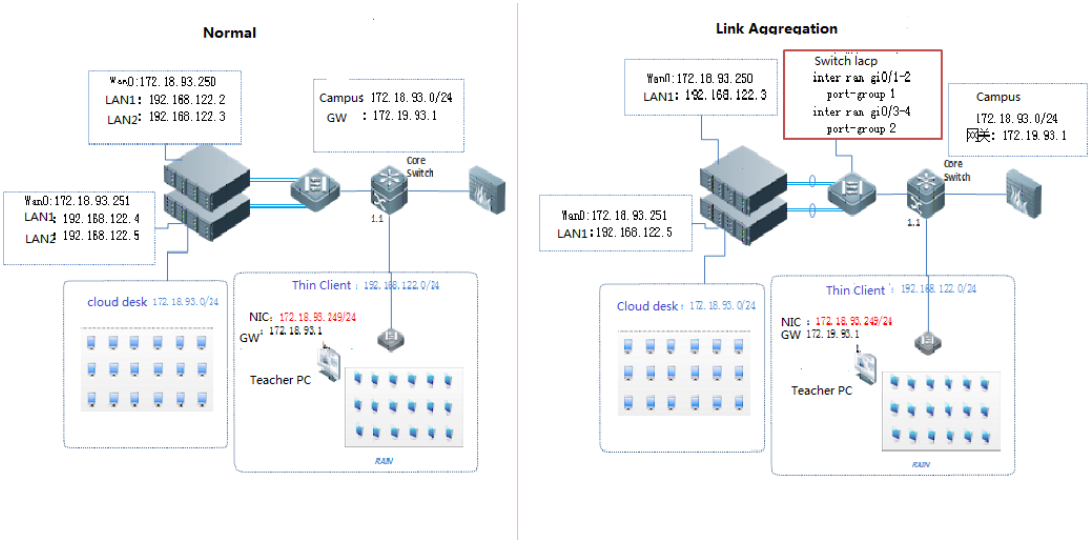
II. Key Configuration Points

1. The models of RCD Servers are not restricted when they are stacked. For example, the RCD3000 and RCD6000 can be stacked, or two RCD4500s can be stacked. Each the RCD Server supports 90 Thin Clients.
2. In RCD stack mode, one master RCD Server and multiple slave RCD Servers are deployed. All management operations are implemented on the master RCD Server. You need to only configure IP addresses for the slave RCD Servers and add them to the stack.
3. After the stack mode is configured, you only need to manage the master RCD Server in web mode. Set the server IP addresses configured for all Rain Thin Clients to the master IP address of the master RCD Server. Data is synchronized from the master RCD Server to the slave RCD Servers.

4. Note: Currently, the stack scheme does not support automatic data synchronization, and you need to manually synchronize the data. Otherwise, the Thin Clients may be unavailable or no IP address can be allocated to Cloud Desktops due to data inconsistency.
5. When multiple RCD Servers are stacked, you only need to connect each RCD Server to the network normally and no extra cable connections are required.
6. In stack deployment mode, if the link aggregation function is enabled for the NIC, it is recommended to enable link aggregation on the peer switch when the peer switch supports port aggregation. If the switch supports LACP, you can enable LACP on the corresponding server.

III. Operation Steps

The following figure shows the topology of the stack deployment scheme (using the Cloud Desktop Campus Network and Thin Client Private Network as an example).

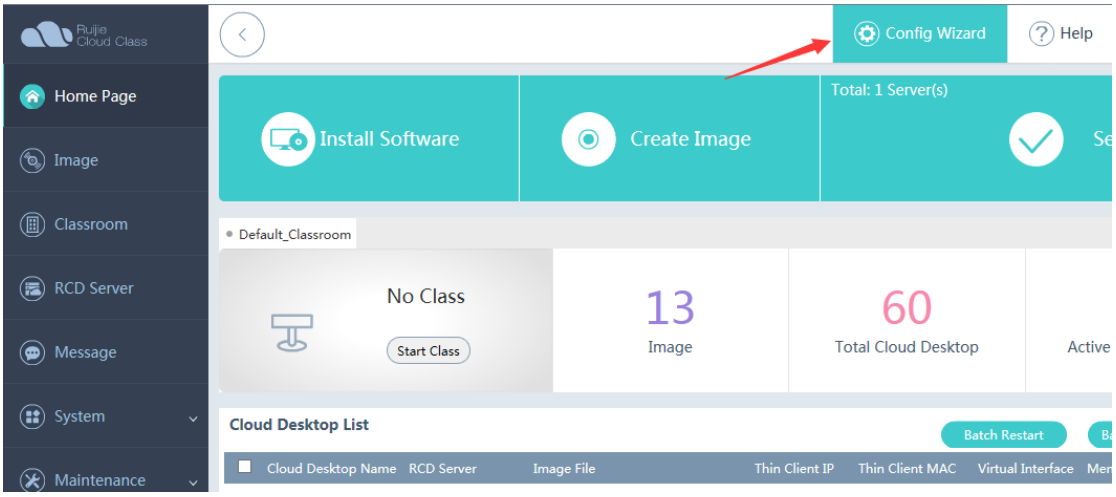


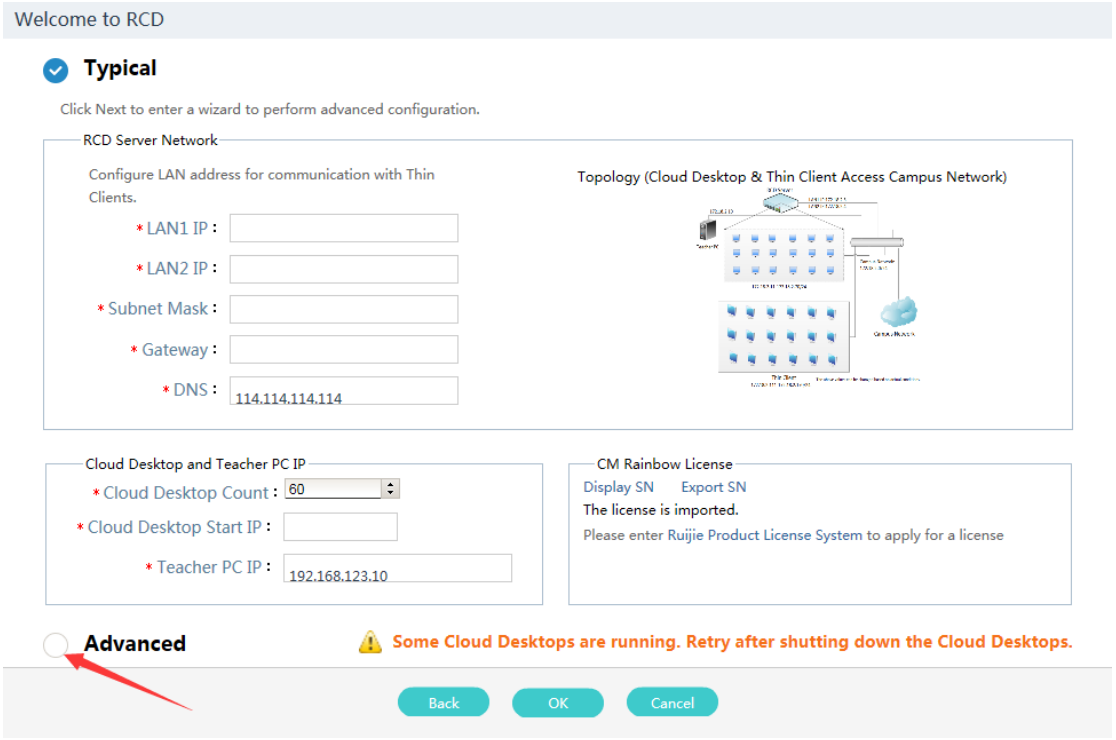
Detailed configuration steps are as follows:

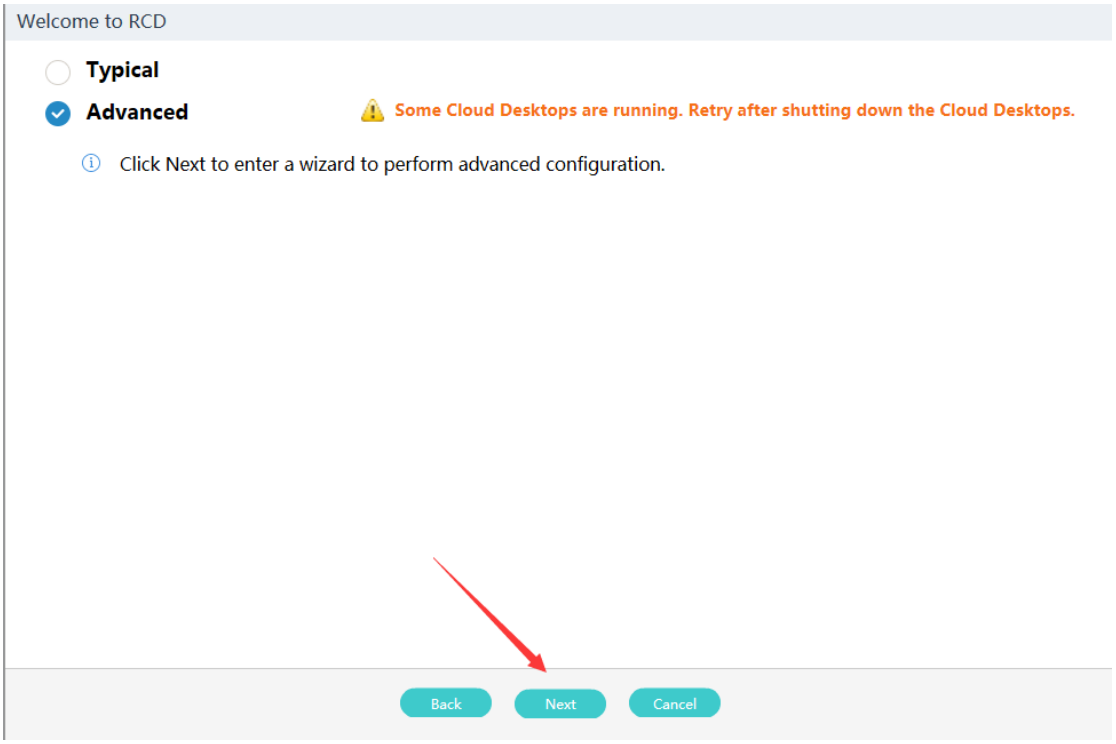
A: The link aggregation is not configured for the NIC of the RCD Server.

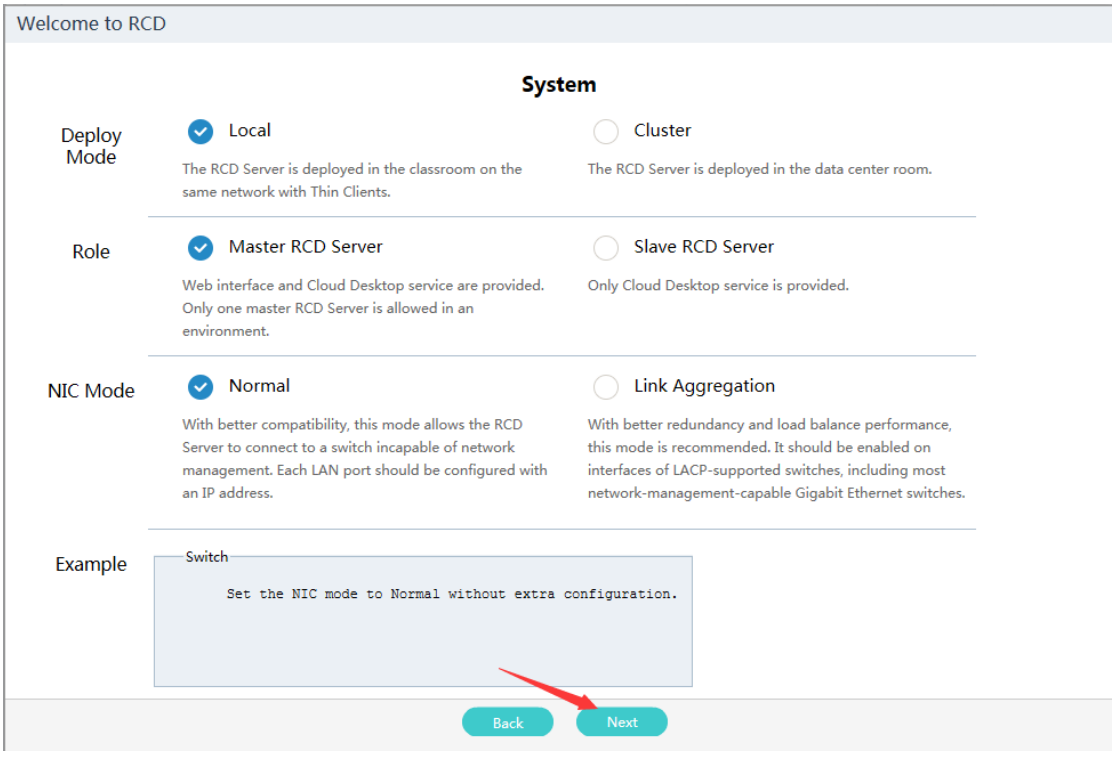
Step 1: Set a RCD Server that is successfully upgraded as the master RCD Server. Click **Config Wizard** to configure the system.

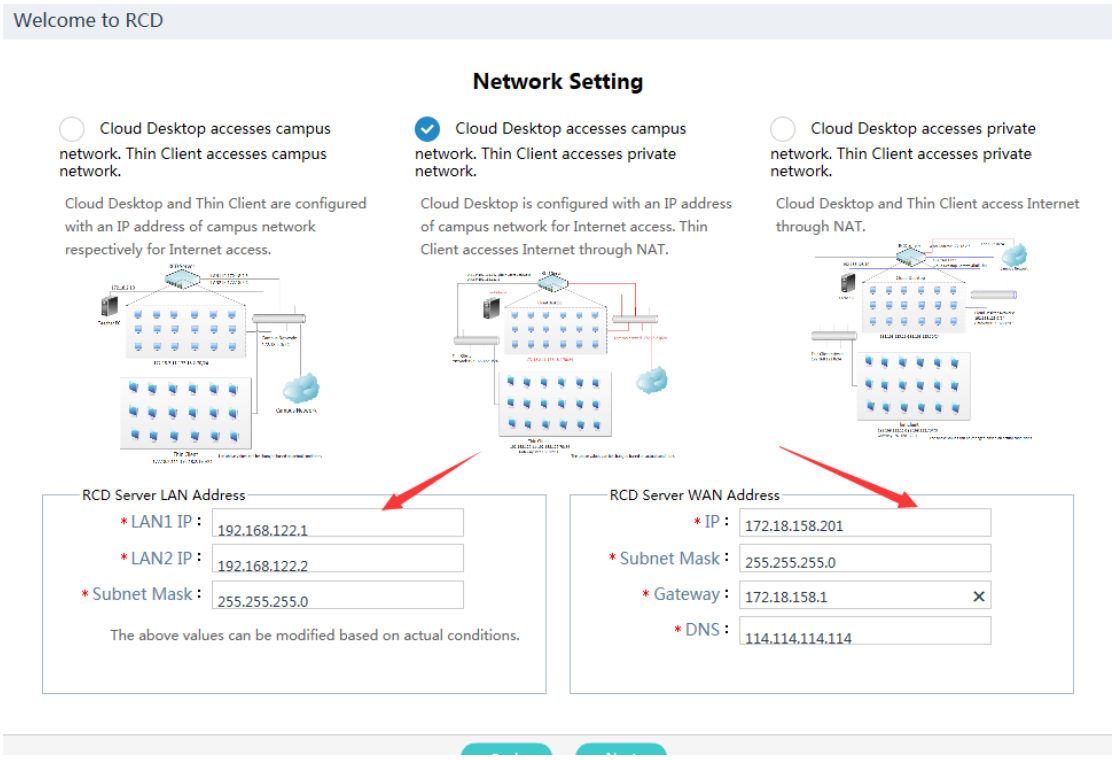
Note: Set the stack deployment position to local deployment.

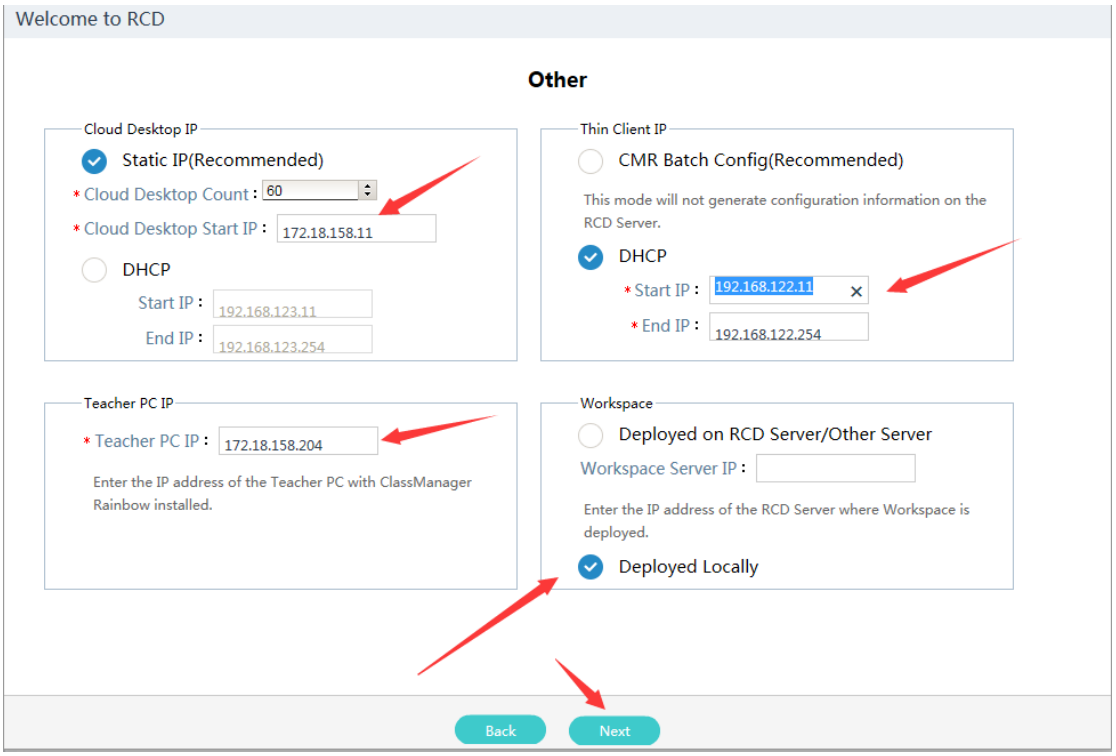

Ruijie Cloud Class
Config Wizard
Help
Home Page
Image
Classroom
RCD Server
Message
System
Maintenance
Install Software
Create Image
Total: 1 Server(s)
Default_Classroom
No Class
Start Class
13
Image
60
Total Cloud Desktop
Active
Cloud Desktop List
Batch Restart
Cloud Desktop Name
RCD Server
Image File
Thin Client IP
Thin Client MAC
Virtual Interface

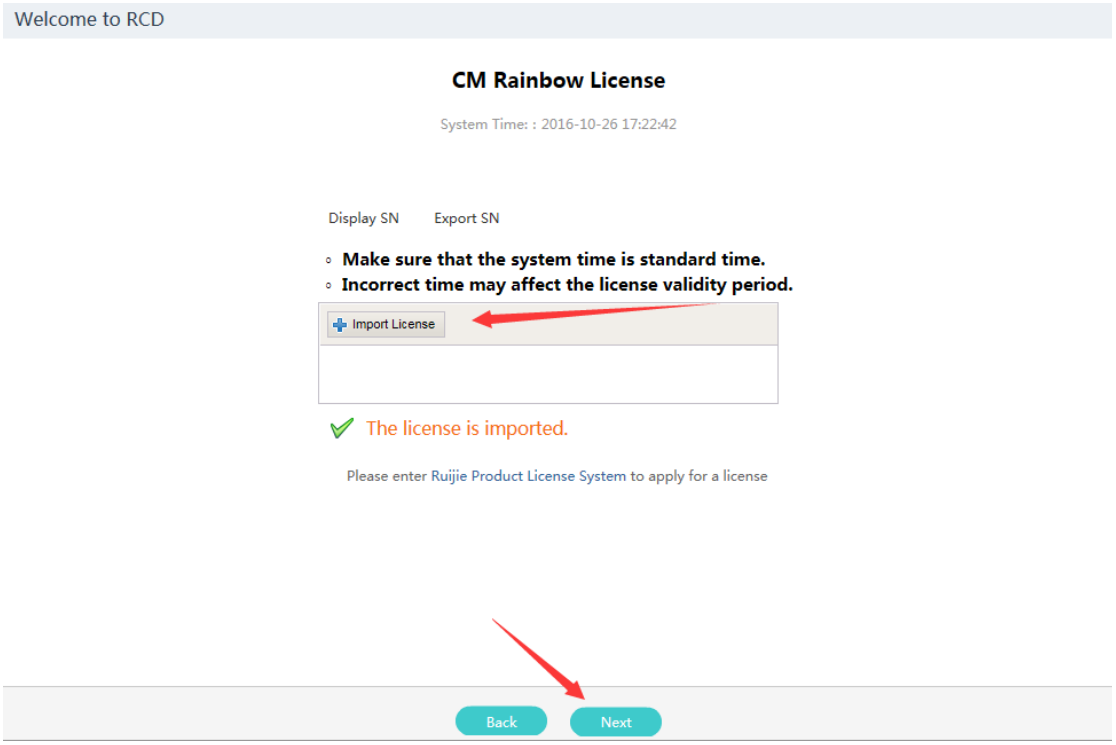

Welcome to RCD
Typical
Click Next to enter a wizard to perform advanced configuration.
RCD Server Network
Configure LAN address for communication with Thin Clients.
* LAN1 IP :
* LAN2 IP :
* Subnet Mask :
* Gateway :
* DNS :
114.114.114.114
Topology (Cloud Desktop & Thin Client Access Campus Network)
Cloud Desktop and Teacher PC IP
* Cloud Desktop Count :
60
* Cloud Desktop Start IP :
* Teacher PC IP :
192.168.123.10
CM Rainbow License
Display SN
Export SN
The license is imported.
Please enter Ruijie Product License System to apply for a license
Advanced
Some Cloud Desktops are running. Retry after shutting down the Cloud Desktops.
Back
OK
Cancel


Welcome to RCD
Typical
Advanced
Some Cloud Desktops are running. Retry after shutting down the Cloud Desktops.
Click Next to enter a wizard to perform advanced configuration.
Back
Next
Cancel

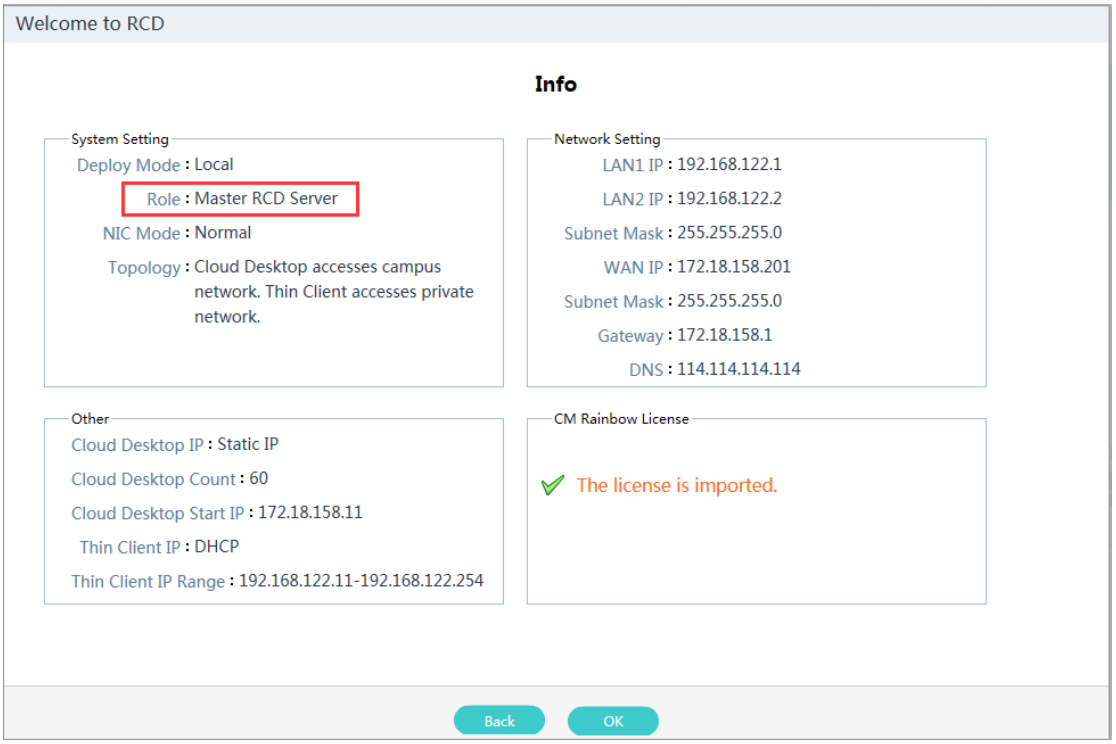

Welcome to RCD
System
Deploy Mode
Local
The RCD Server is deployed in the classroom on the same network with Thin Clients.
Cluster
The RCD Server is deployed in the data center room.
Role
Master RCD Server
Web interface and Cloud Desktop service are provided. Only one master RCD Server is allowed in an environment.
Slave RCD Server
Only Cloud Desktop service is provided.
NIC Mode
Normal
With better compatibility, this mode allows the RCD Server to connect to a switch incapable of network management. Each LAN port should be configured with an IP address.
Link Aggregation
With better redundancy and load balance performance, this mode is recommended. It should be enabled on interfaces of LACP-supported switches, including most network-management-capable Gigabit Ethernet switches.
Example
Switch
Set the NIC mode to Normal without extra configuration.
Back
Next


Welcome to RCD
Network Setting
Cloud Desktop accesses campus network. Thin Client accesses campus network.
Cloud Desktop and Thin Client are configured with an IP address of campus network respectively for Internet access.
Cloud Desktop accesses campus network. Thin Client accesses private network.
Cloud Desktop is configured with an IP address of campus network for Internet access. Thin Client accesses Internet through NAT.
Cloud Desktop accesses private network. Thin Client accesses private network.
Cloud Desktop and Thin Client access Internet through NAT.
RCD Server LAN Address
* LAN1 IP : 192.168.122.1
* LAN2 IP : 192.168.122.2
* Subnet Mask : 255.255.255.0
The above values can be modified based on actual conditions.
RCD Server WAN Address
* IP : 172.18.158.201
* Subnet Mask : 255.255.255.0
* Gateway : 172.18.158.1
* DNS : 114.114.114.114


Welcome to RCD
Other
Cloud Desktop IP
Static IP(Recommended)
* Cloud Desktop Count : 60
* Cloud Desktop Start IP : 172.18.158.11
DHCP
Start IP : 192.168.123.11
End IP : 192.168.123.254
Thin Client IP
CMR Batch Config(Recommended)
This mode will not generate configuration information on the RCD Server.
DHCP
* Start IP : 192.168.122.11
* End IP : 192.168.122.254
Teacher PC IP
* Teacher PC IP : 172.18.158.204
Enter the IP address of the Teacher PC with ClassManager Rainbow installed.
Workspace
Deployed on RCD Server/Other Server
Workspace Server IP :
Enter the IP address of the RCD Server where Workspace is deployed.
Deployed Locally
Back
Next



After loading the license, click **Next**. The configuration of the master RCD Server is completed.



Step 2: Set other RCD Servers as slave RCD Servers by referring to Step 1.

Welcome to RCD

System

Deploy Mode

- Local: The RCD Server is deployed in the classroom on the same network with Thin Clients.
- Cluster: The RCD Server is deployed in the data center room.

Role

- Master RCD Server: Web interface and Cloud Desktop service are provided. Only one master RCD Server is allowed in an environment.
- Slave RCD Server: Only Cloud Desktop service is provided.

NIC Mode

- Normal: With better compatibility, this mode allows the RCD Server to connect to a switch incapable of network management. Each LAN port should be configured with an IP address.
- Link Aggregation: With better redundancy and load balance performance, this mode is recommended. It should be enabled on interfaces of LACP-supported switches, including most network-management-capable Gigabit Ethernet switches.

Example

Switch

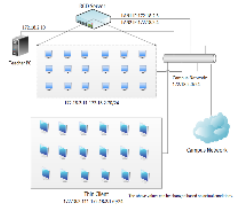
```
Set the NIC mode to Normal without extra configuration.
```

Back Next

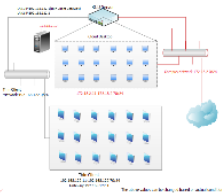
Welcome to RCD

Network Setting

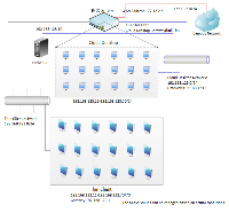
- Cloud Desktop accesses campus network. Thin Client accesses campus network.
  Cloud Desktop and Thin Client are configured with an IP address of campus network respectively for Internet access.



- Cloud Desktop accesses campus network. Thin Client accesses private network.
  Cloud Desktop is configured with an IP address of campus network for Internet access. Thin Client accesses Internet through NAT.



- Cloud Desktop accesses private network. Thin Client accesses private network.
  Cloud Desktop and Thin Client access Internet through NAT.



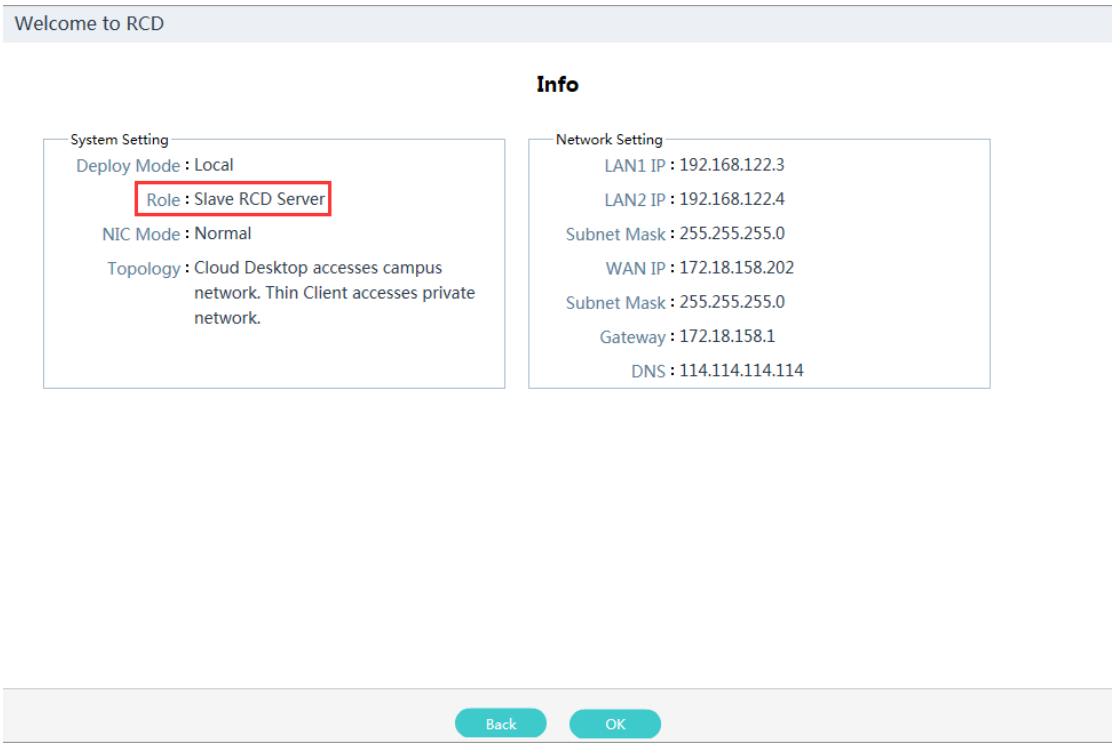
RCD Server LAN Address

* LAN1 IP : 192.168.122.3
* LAN2 IP : 192.168.122.4
* Subnet Mask : 255.255.255.0

The above values can be modified based on actual conditions.

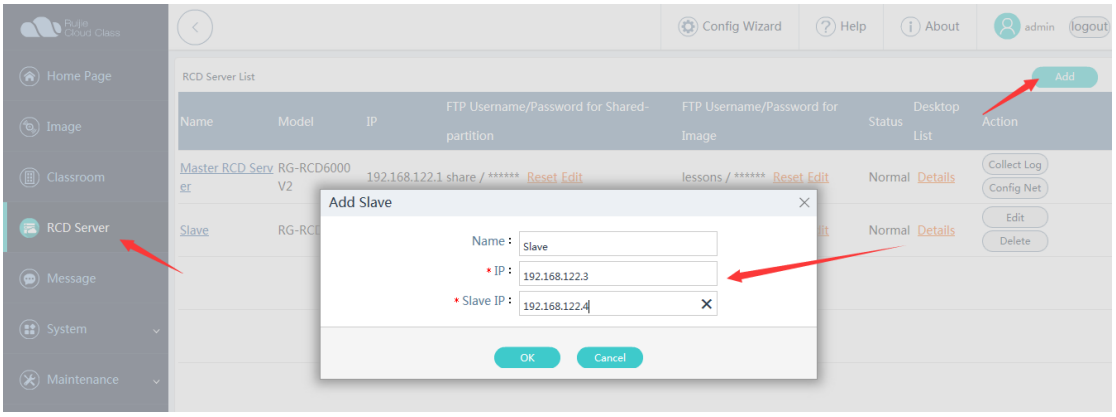
RCD Server WAN Address

* IP : 172.18.158.202
* Subnet Mask : 255.255.255.0
* Gateway : 172.18.158.1
* DNS : 114.114.114.114



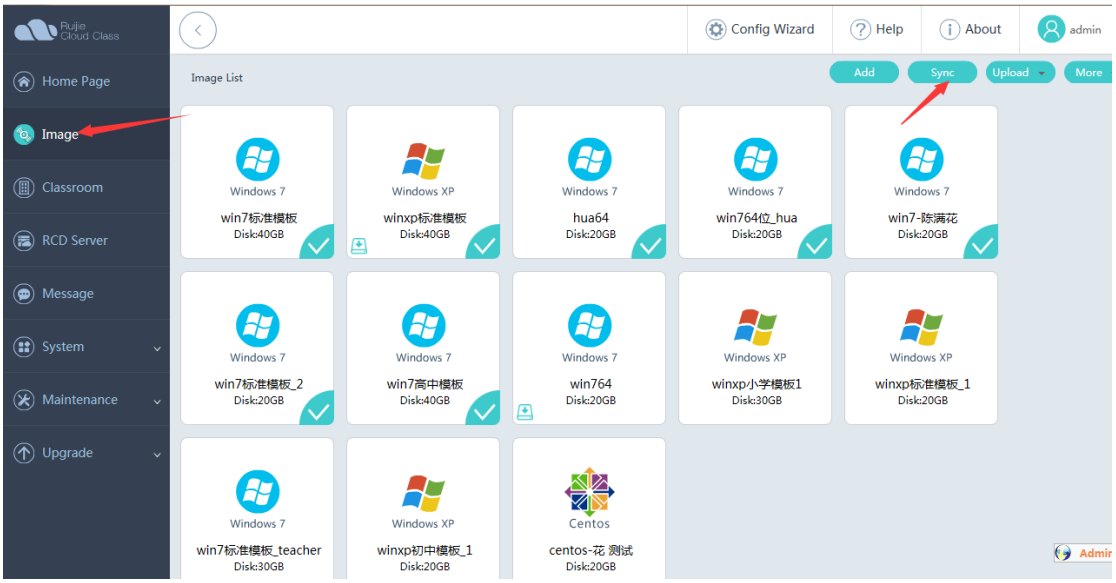
Step 3: On the master RCD Server, click **Add**, and add the slave RCD Servers in sequence.

Note: If multiple slave RCD Servers exist, repeat this operation to add them all.

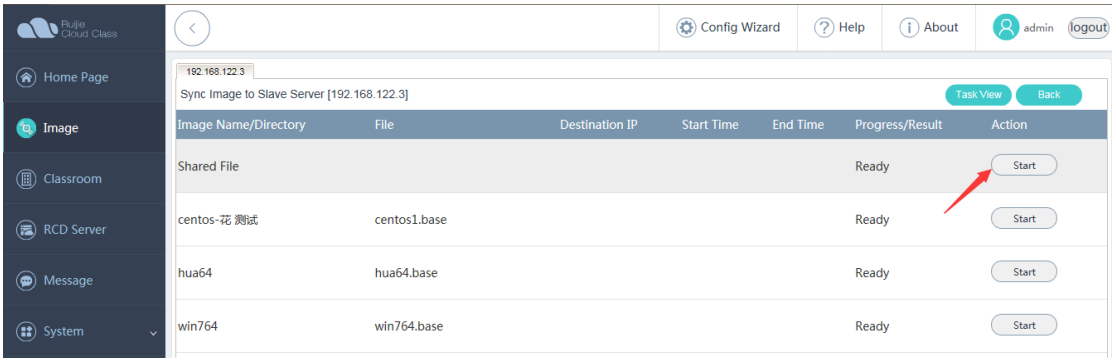


Step 4: On the main page of the master RCD Server, click **View** to display the status of the stacked RCD Servers. The RCD Servers are in the normal state. The stack mode deployment is completed.

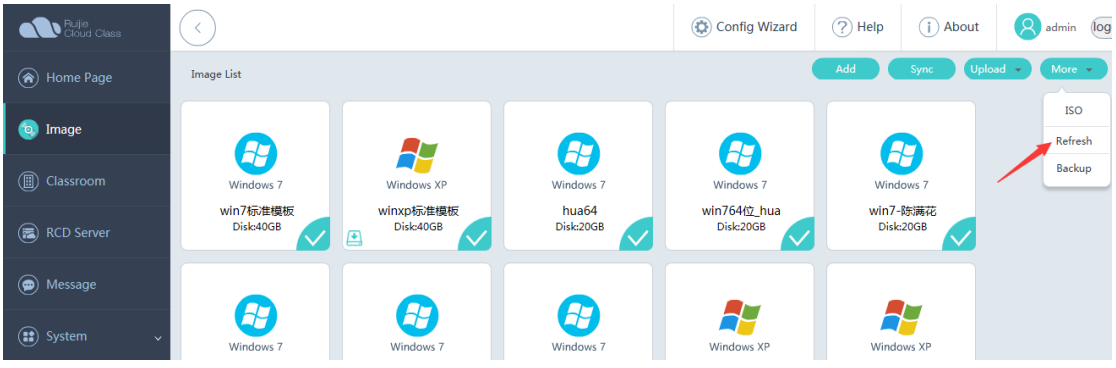
Step 5: On the main page of the master RCD Server, click **Image** on the left navigation tree. Click **Sync** to access the synchronization page. Synchronize all images and shared directories.



Step 6: Click **Start** to synchronize the images and shared directories.

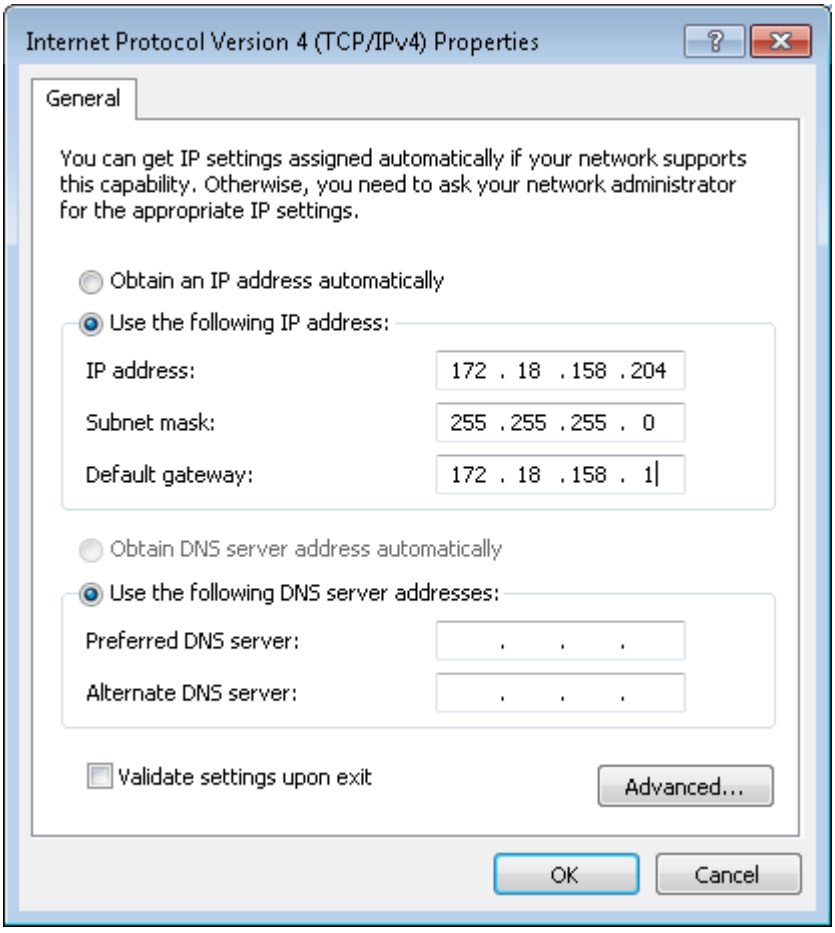


Step 7: On the main page of a slave RCD Server, click **Image** on the left navigation tree. Click **More** and select **Refresh**. The data synchronized from the master RCD Server is displayed. At this time, the configurations, images, and directories in this stack are all synchronized.

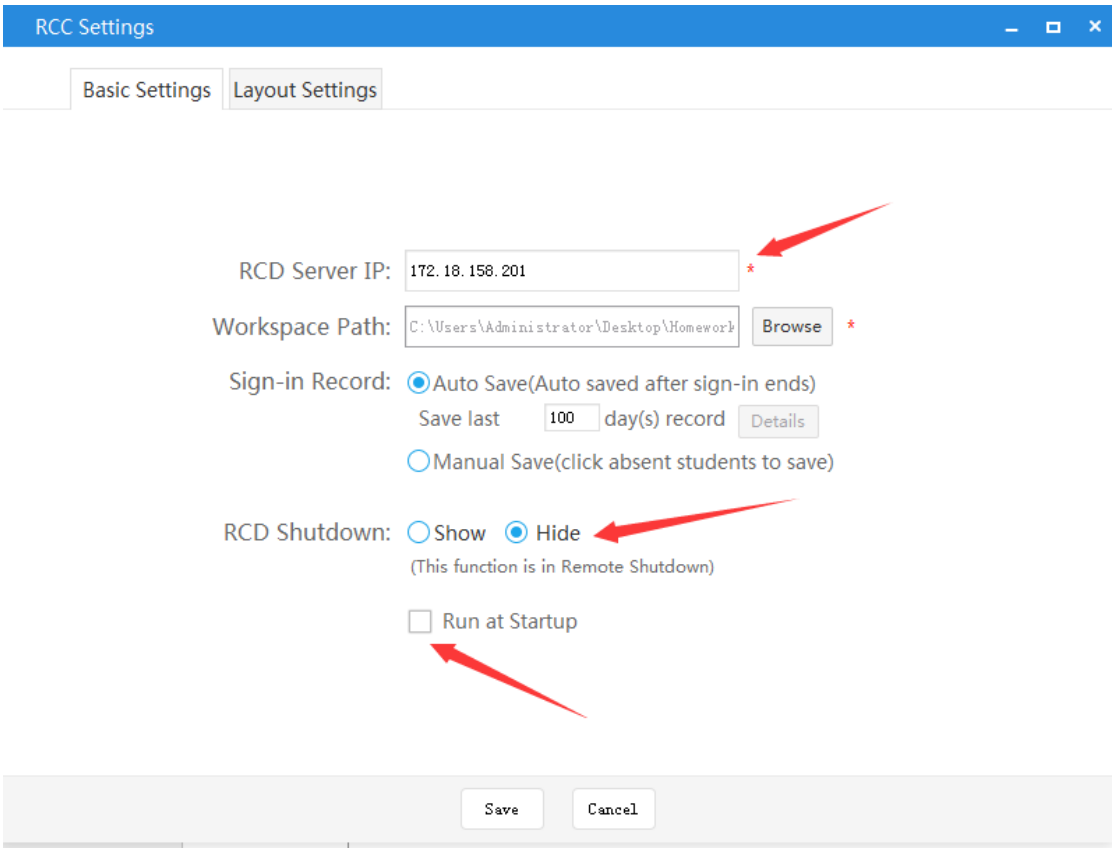


Step 8: Configure the NIC address for the ClassManager_Teacher.

Note: The NIC IP address of the ClassManager_Teacher needs to be set to the campus network IP address and consistent with the IP address of the ClassManager_Teacher configured on the master RCD Server. To set the gateway of the campus network, click **Advanced** and add the secondary IP address of the private network.

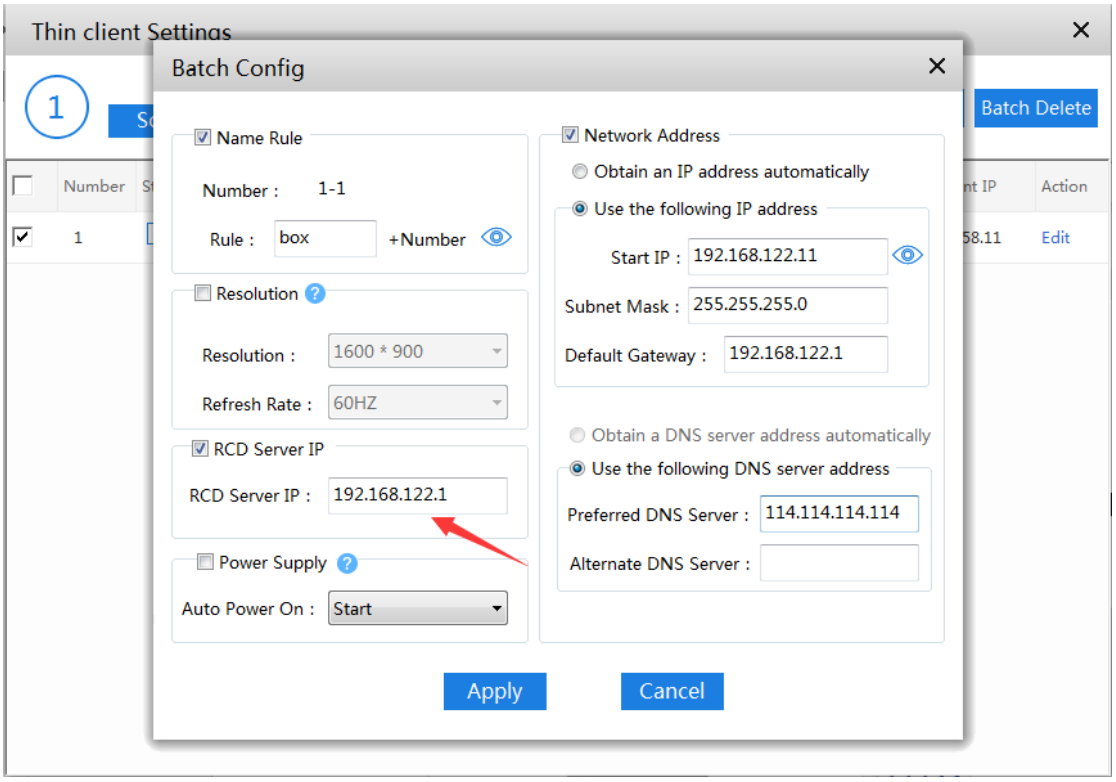


Step 9: Configure the ClassManager_Teacher on the teacher PC. Set **RCD Server IP** to the IP address of the RCD Server used to access the campus network.



Step 10: Configure Thin Clients in batches on the ClassManager.

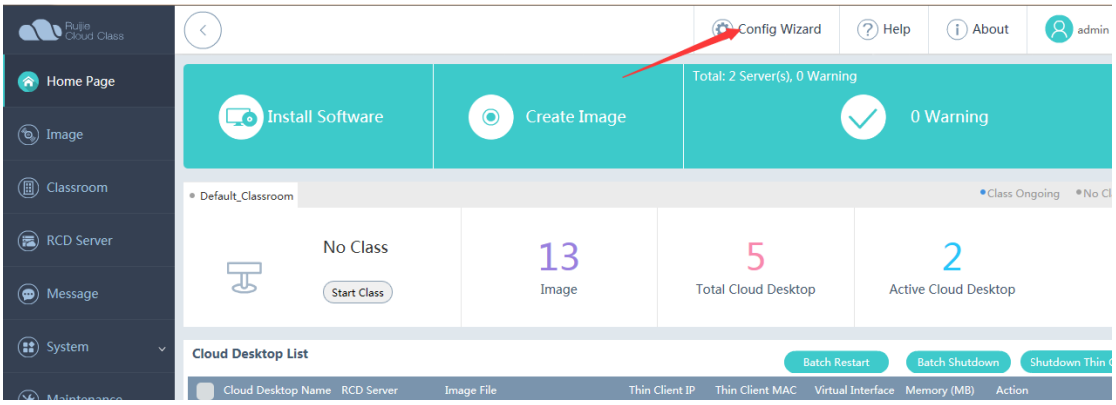
Note: Set **RCD Server IP** to the IP address of the first network port on the master RCD Server.

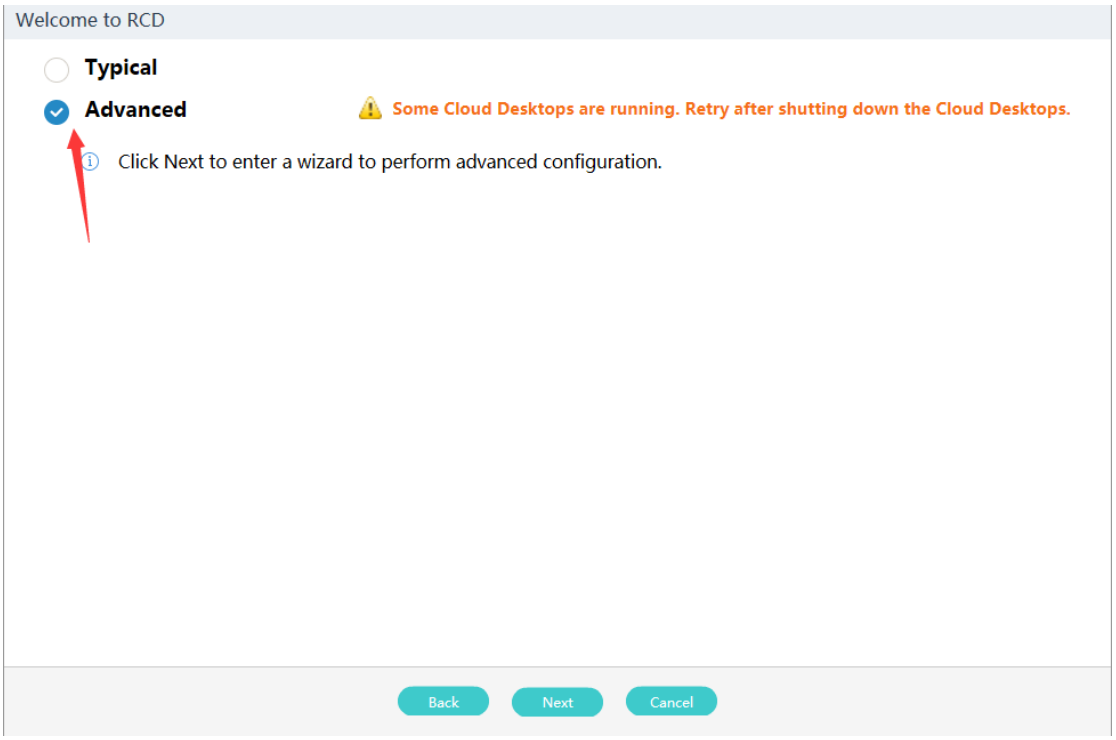


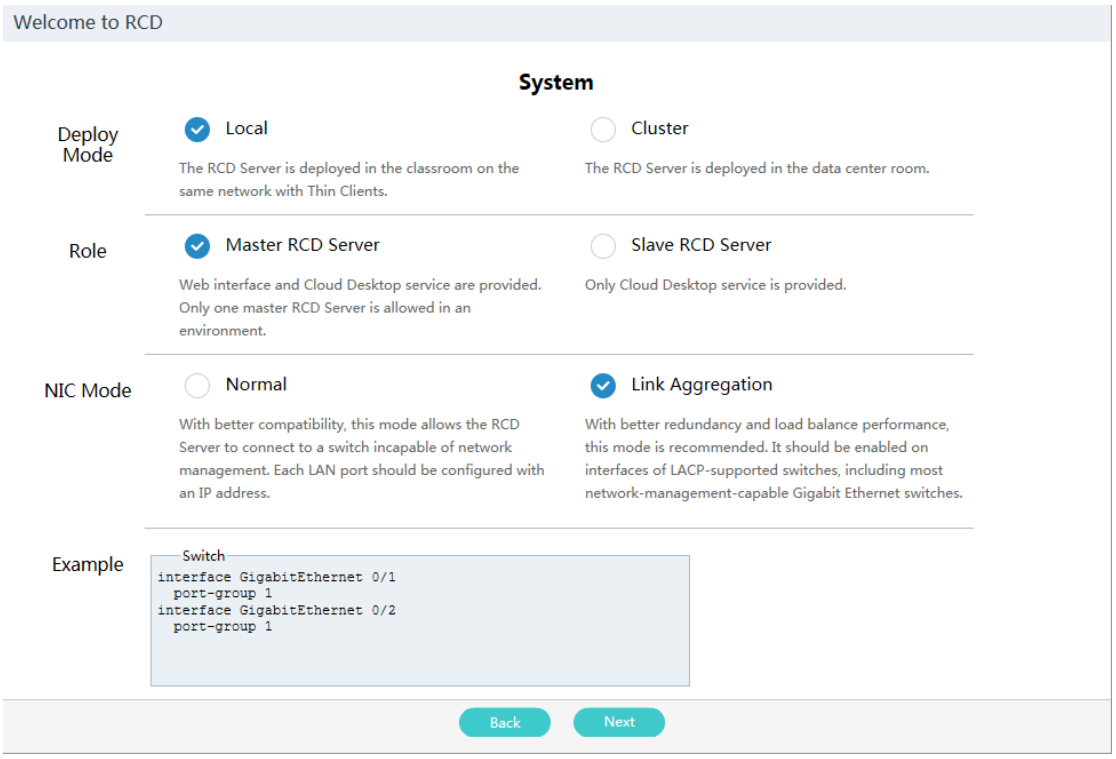
B. The link aggregation is configured for the NIC of the RCD Server.

Step 1: Set a RCD Server that is successfully upgraded as the master RCD Server. Click Config Wizard to configure the system.

Note: Set the stack deployment position to local deployment.




Welcome to RCD
Typical
Advanced
Some Cloud Desktops are running. Retry after shutting down the Cloud Desktops.
Click Next to enter a wizard to perform advanced configuration.
Back
Next
Cancel

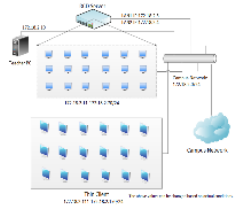

Welcome to RCD
System
Deploy Mode
Local
The RCD Server is deployed in the classroom on the same network with Thin Clients.
Cluster
The RCD Server is deployed in the data center room.
Role
Master RCD Server
Web interface and Cloud Desktop service are provided. Only one master RCD Server is allowed in an environment.
Slave RCD Server
Only Cloud Desktop service is provided.
NIC Mode
Normal
With better compatibility, this mode allows the RCD Server to connect to a switch incapable of network management. Each LAN port should be configured with an IP address.
Link Aggregation
With better redundancy and load balance performance, this mode is recommended. It should be enabled on interfaces of LACP-supported switches, including most network-management-capable Gigabit Ethernet switches.
Example
Switch
interface GigabitEthernet 0/1
port-group 1
interface GigabitEthernet 0/2
port-group 1
Back
Next

Welcome to RCD

Network Setting

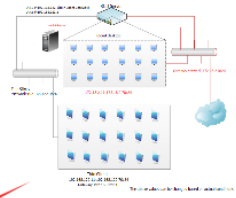
Cloud Desktop accesses campus network. Thin Client accesses campus network.

Cloud Desktop and Thin Client are configured with an IP address of campus network respectively for Internet access.



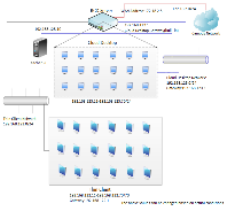
Cloud Desktop accesses campus network. Thin Client accesses private network.

Cloud Desktop is configured with an IP address of campus network for Internet access. Thin Client accesses Internet through NAT.



Cloud Desktop accesses private network. Thin Client accesses private network.

Cloud Desktop and Thin Client access Internet through NAT.



RCD Server LAN Address

* AP IP : 192.168.122.1

* Subnet Mask : 255.255.255.0

The above values can be modified based on actual conditions.

RCD Server WAN Address

* IP : 172.18.158.201

* Subnet Mask : 255.255.255.0

* Gateway : 172.18.158.1

* DNS : 114.114.114.114

Welcome to RCD

Other

Cloud Desktop IP

Static IP(Recommended)

* Cloud Desktop Count : 60

* Cloud Desktop Start IP : 172.18.158.11

DHCP

Start IP :

End IP :

Thin Client IP

CMR Batch Config(Recommended)

This mode will not generate configuration information on the RCD Server.

DHCP

* Start IP : 192.168.122.11

* End IP : 192.168.122.254

Teacher PC IP

* Teacher PC IP : 172.18.158.204

Enter the IP address of the Teacher PC with ClassManager Rainbow installed.

Workspace

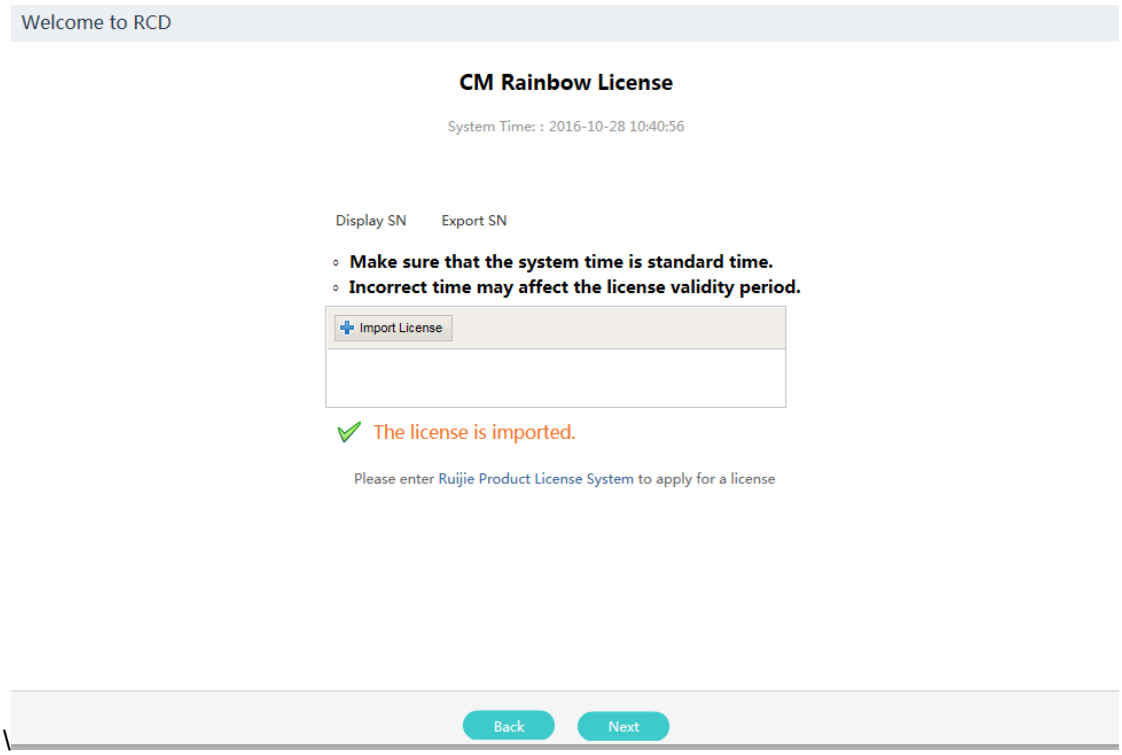
Deployed on RCD Server/Other Server

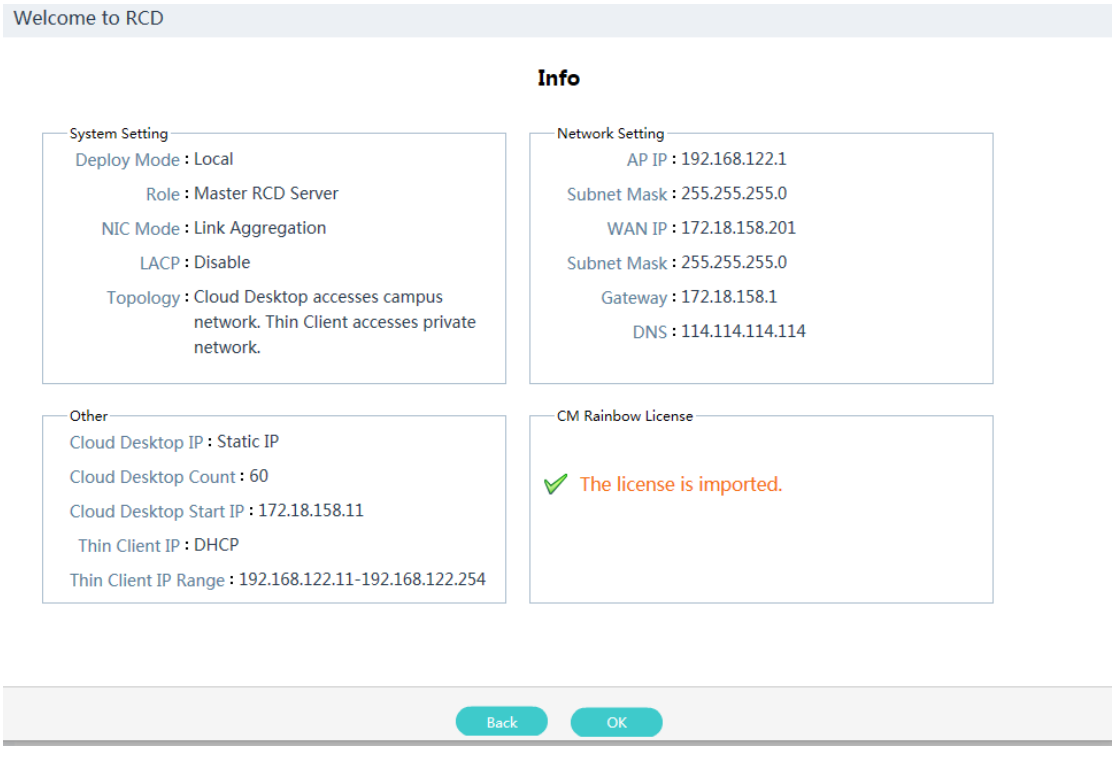
Workspace Server IP :

Enter the IP address of the RCD Server where Workspace is deployed.

Deployed Locally

Back Next





Step 2: Set other RCD Servers as slave RCD Servers by referring to Step 1.

Welcome to RCD

System

Deploy Mode

- Local — The RCD Server is deployed in the classroom on the same network with Thin Clients.
- Cluster — The RCD Server is deployed in the data center room.

Role

- Master RCD Server — Web interface and Cloud Desktop service are provided. Only one master RCD Server is allowed in an environment.
- Slave RCD Server — Only Cloud Desktop service is provided.

NIC Mode

- Normal — With better compatibility, this mode allows the RCD Server to connect to a switch incapable of network management. Each LAN port should be configured with an IP address.
- Link Aggregation — With better redundancy and load balance performance, this mode is recommended. It should be enabled on interfaces of LACP-supported switches, including most network-management-capable Gigabit Ethernet switches.

Example

Switch

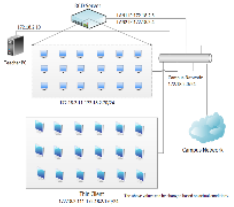
```
interface GigabitEthernet 0/1
  port-group 1
interface GigabitEthernet 0/2
  port-group 1
```

Back Next

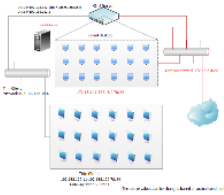
Welcome to RCD

Network Setting

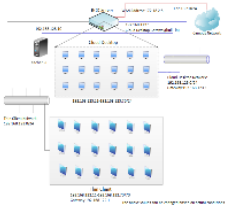
- Cloud Desktop accesses campus network. Thin Client accesses campus network. — Cloud Desktop and Thin Client are configured with an IP address of campus network respectively for Internet access.



- Cloud Desktop accesses campus network. Thin Client accesses private network. — Cloud Desktop is configured with an IP address of campus network for Internet access. Thin Client accesses Internet through NAT.



- Cloud Desktop accesses private network. Thin Client accesses private network. — Cloud Desktop and Thin Client access Internet through NAT.



RCD Server LAN Address

* AP IP : 192.168.122.3

* Subnet Mask : 255.255.255.0

The above values can be modified based on actual conditions.

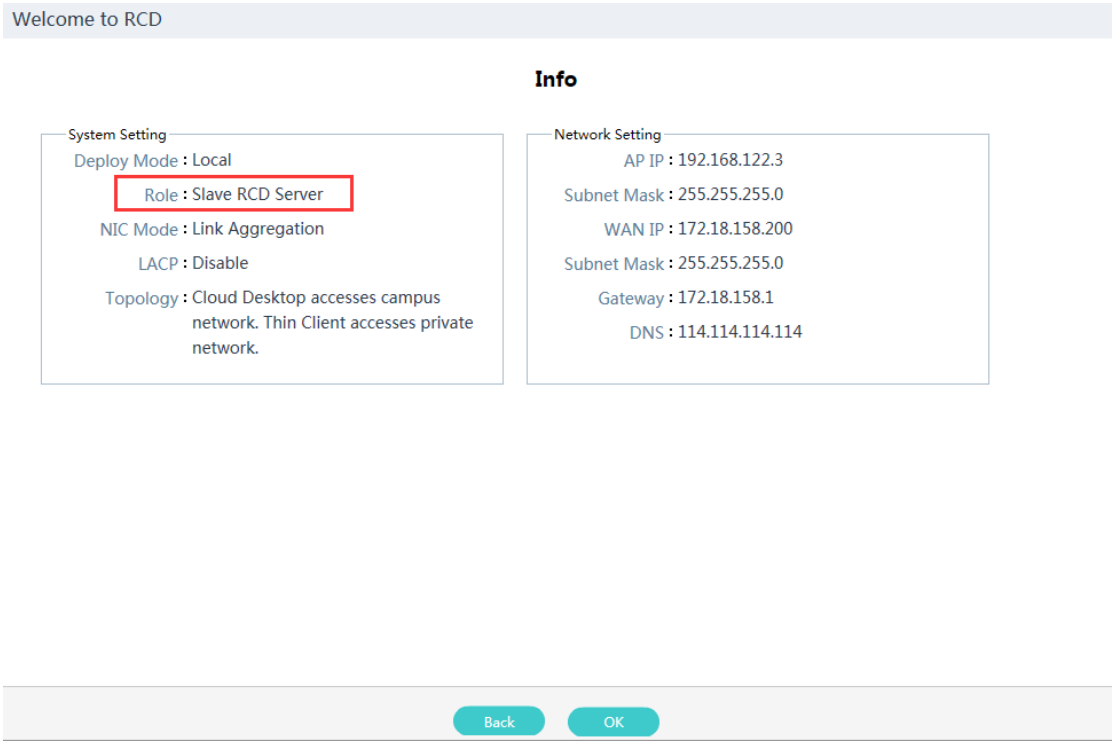
RCD Server WAN Address

* IP : 172.18.158.200

* Subnet Mask : 255.255.255.0

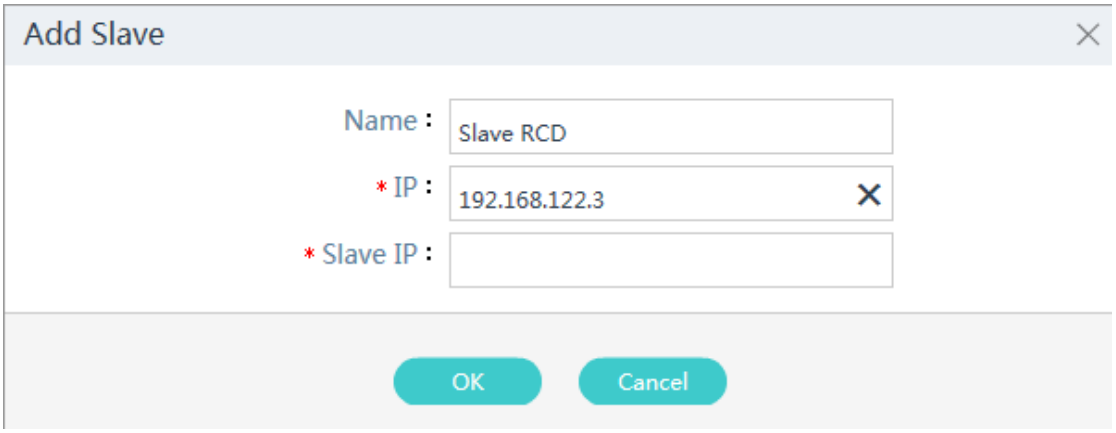
* Gateway : 172.18.158.1

* DNS : 114.114.114.114

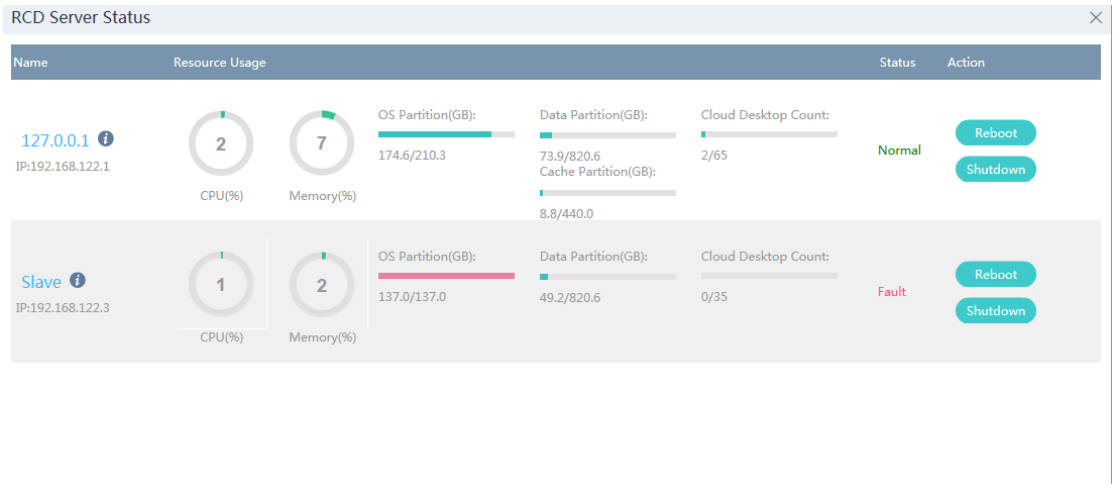


Step 3: On the master RCD Server, click **Add** to add the slave RCD Servers in sequence.

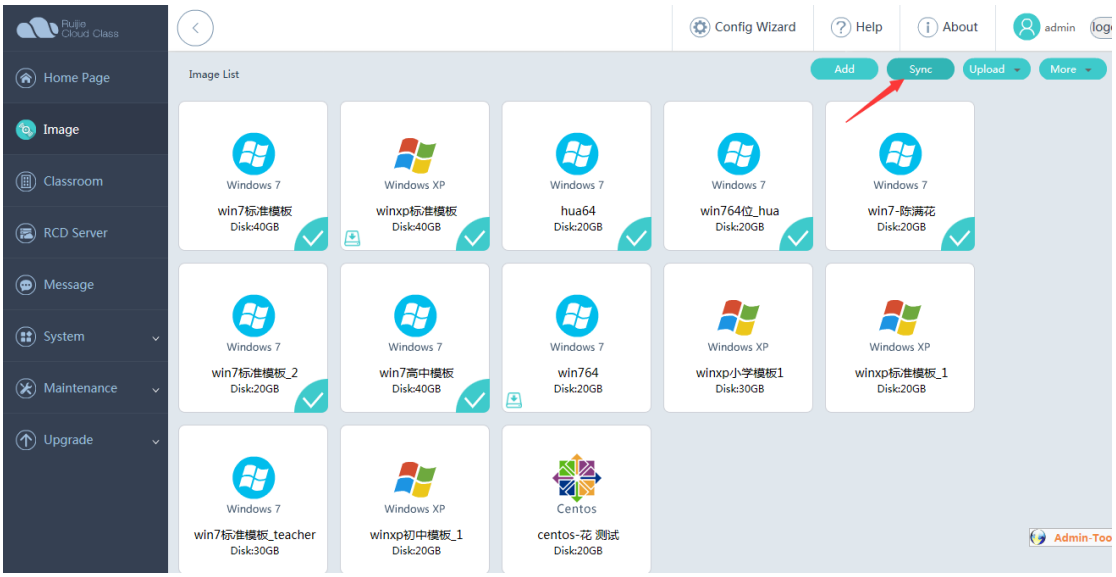
Note: If multiple slave RCD Servers exist, repeat this operation to add them all.



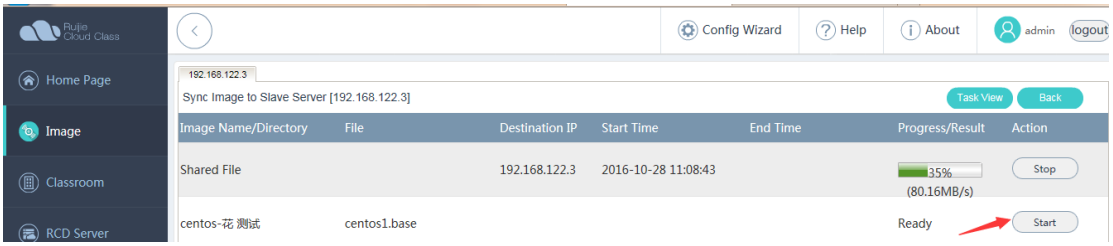
Step 4: On the main page of the master RCD Server, click **View** to display the status of the stacked RCD Servers. The RCD Servers are in the normal state. The stack mode deployment is completed.



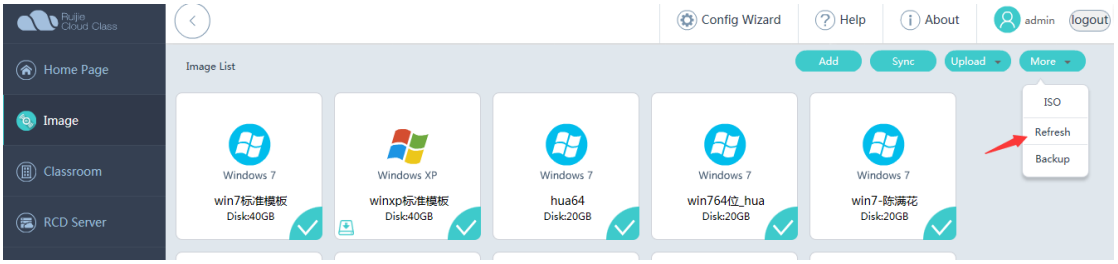
Step 5: On the main page of the master RCD Server, click **Image** on the left navigation tree. Click **Sync** to access the synchronization page. Synchronize all images and shared directories.



Step 6: Click **Start** to synchronize the images and shared directories.

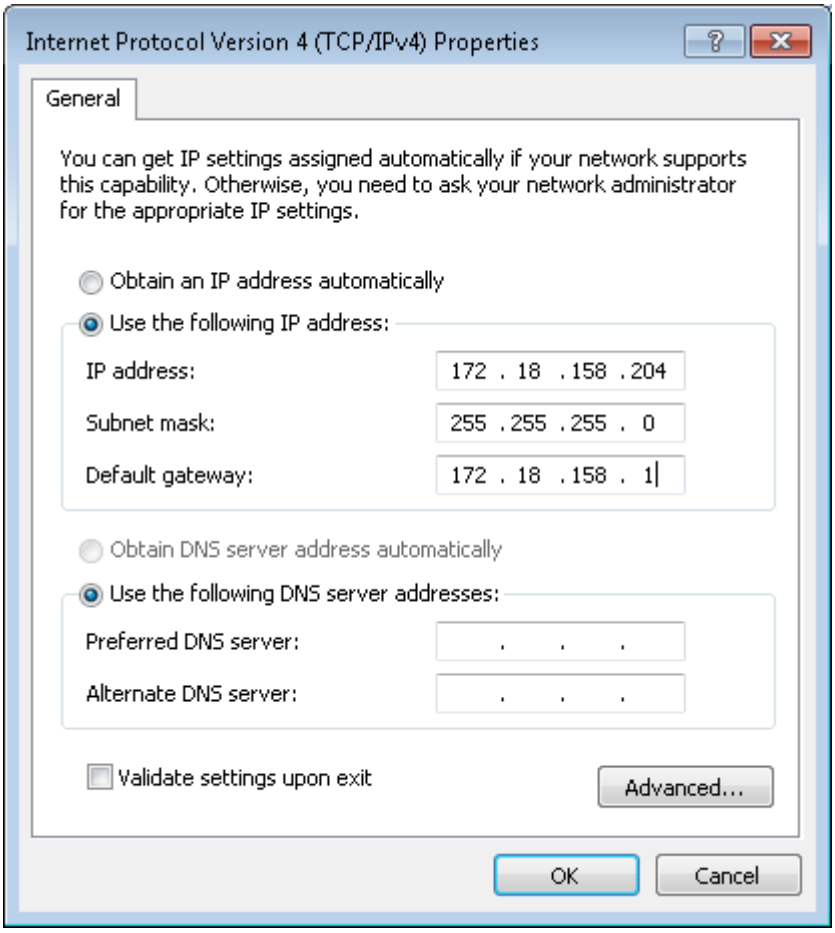


Step 7: On the main page of the slave RCD Server, click **Image** on the left navigation tree. Click **More** and select **Refresh**. Then, data synchronized from the master RCD Server is displayed. At this time, the configurations, images, and directories in this stack are all synchronized.

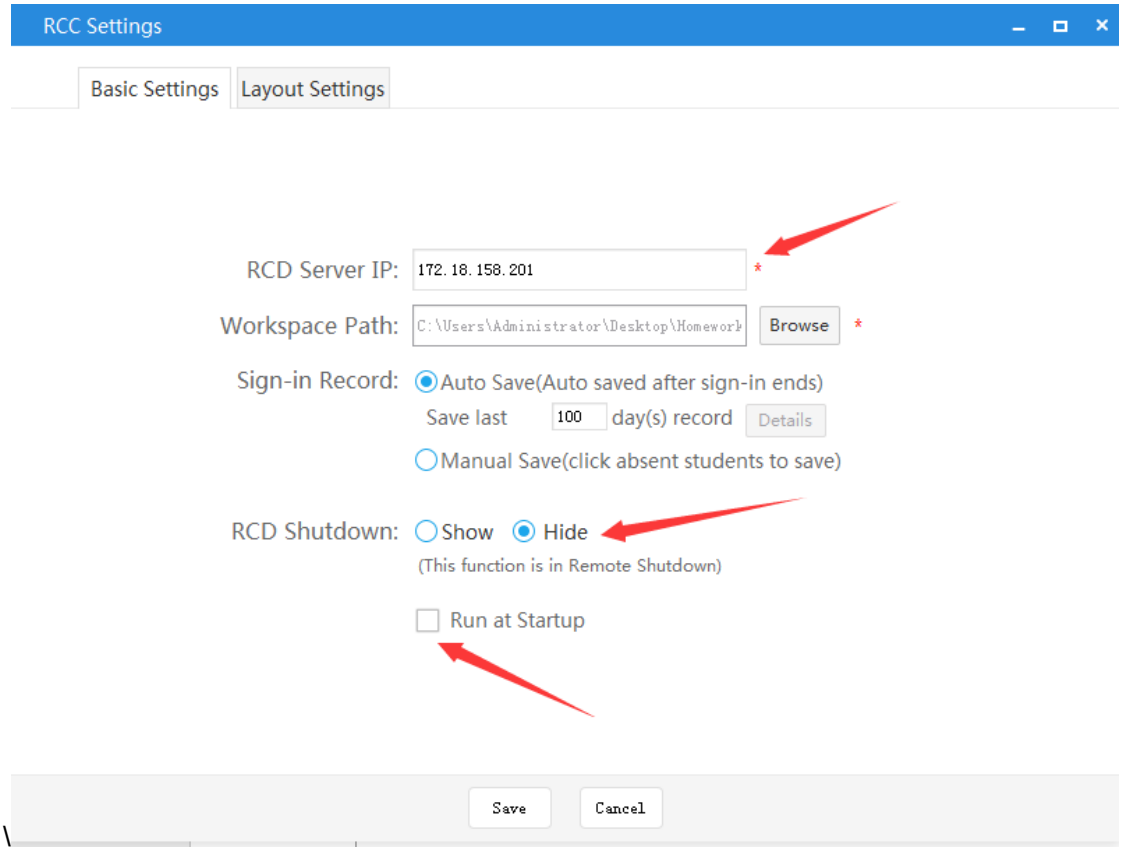


Step 8: Configure the NIC address for the ClassManager_Teacher PC.

Note: The NIC IP address of the ClassManager_Teacher needs to be set to the campus network IP address and consistent with the IP address of the ClassManager_Teacher configured on the master RCD Server. To set the gateway of the campus network, click **Advanced** and add the secondary IP address of the private network.

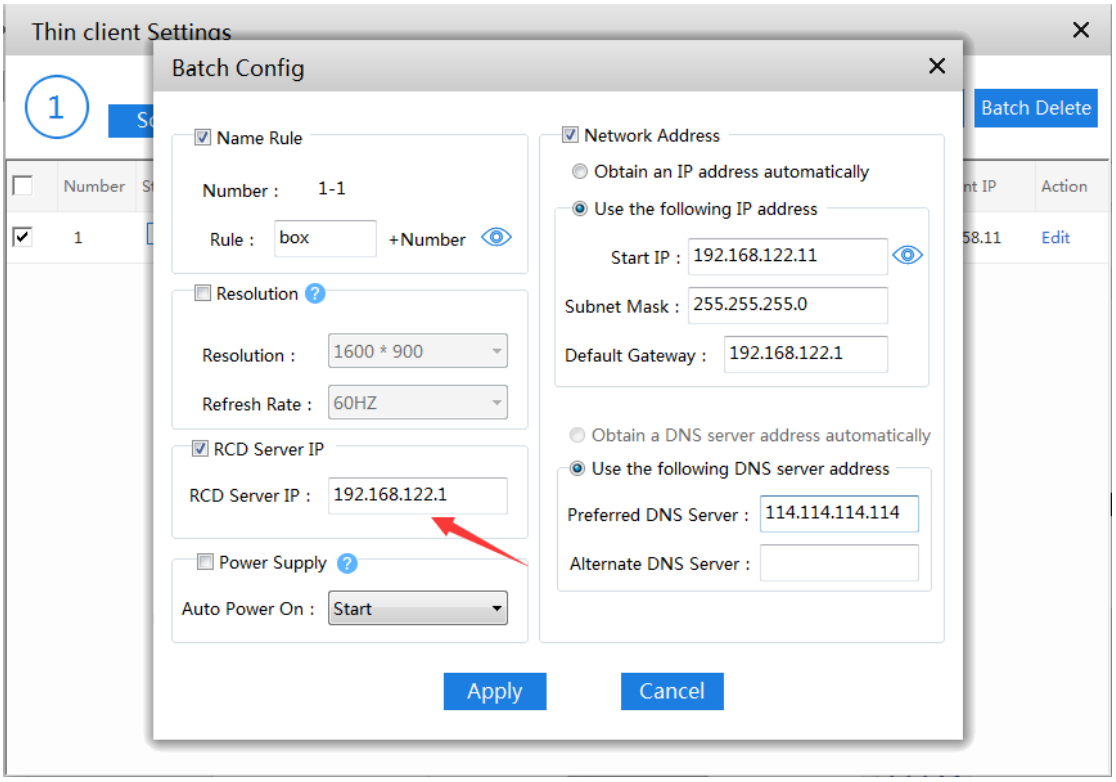


Step 9: Configure the ClassManager_Teacher on the teacher PC. Set **RCD Server IP** to the IP address of the RCD Server used to access the campus network.



Step 10: Configure Thin Clients in batches on the ClassManager.

Note: Set **RCD Server IP** to the IP address of the aggregate port on the master RCD Server.



Note:

1. In local deployment mode (including the stack mode), if you configure the link aggregation for the NIC of the RCD Server, ensure that the switch supports link aggregation and link aggregation is configured on the switch.
2. In stack mode, if you enable LACP for the NIC of the RCD Server, ensure that the switch supports LACP and LACP is configured on the switch, and set LACP mode of the switch port to passive mode.
3. Different from the cluster mode, the stack mode supports NAT and DHCP services.
4. The PA authorization in stack mode is relatively special. You need to import the license files of all RCD Servers to the master RCD Server in a unified manner.
5. In stack mode, if the master RCD Server breaks down, all Thin Clients cannot connect to the RCD Server, because the RCD Server IP address configured for the Thin Clients can be only set to the IP address of the master RCD Server.
6. The port connected to the NIC of the RCD Server and the network deployed in a classroom need to be connected to a 1000M or higher-level switch.
7. The stack scheme does not support automatic data synchronization, and you need to manually synchronize the data. Otherwise, the Thin Clients may be unavailable or no IP address can be allocated to Cloud Desktops due to data inconsistency.
8. Different classrooms cannot be created in stack mode but can be in cluster mode.

6.3 Cluster Deployment

I. Scenario Description

To meet load balancing and failover requirements in RCC teaching scenarios, the cluster deployment scheme is unveiled, which has the following features:

1. It breaks through the barriers of the single-classroom deployment in conventional cloud class solution, and supports multiple RCD Servers shared by multiple classrooms.
2. Load balancing: Cloud Desktops allocated by the master RCD Server to Thin Clients in each classroom are evenly distributed to each computing node, including the master and slave RCD Servers.
3. Redundancy of computing nodes: When the master engine detects a fault on a computing node, the master engine distributes the services borne by the faulty computing node to other computing nodes.
4. Recovery of the computing node: When the master engine detects the recovery of the faulty computing node, it adds the recovered computing node to the server cluster again and distributes services to the recovered computing node.
5. HA switchover between active and standby nodes: When the active node is faulty and cannot provide services, the standby node automatically becomes the active node and continues to provide services. After the previous active node is recovered, the previous active automatically becomes the standby node and monitors the heartbeat of the active node.

II. Key Configuration Points

1. In cluster deployment mode, configure the slave RCD Servers and then configure the master RCD Server.
2. Check the network environment. The switch connecting to the RCD Servers must be a 1000M switch and supports the port aggregation function. On the switch, two independent VLANs can be independently planned for each classroom, with one for Thin Clients and one for Cloud Desktops, and one separate VLAN can be planned for the RCD Server. Setting independent VLANs for Thin Clients and Cloud Desktops is to protect the Cloud Desktops against viruses (ARP attack).
3. Upgrade the RCD Server and Thin Clients to the latest versions.

Note: Thin Clients (non-Android system) of a version earlier than V3.1_R1.11 do not support fast upgrade but rely on the iPXE and PXE technologies. It is recommended that one independent RCD Server be configured to enable the DHCP server. You can upgrade different Thin Clients by means of network adjustment. Thin Clients of V3.1_R1.11 and later versions support fast upgrade. Therefore, the DHCP function is not required.

3. It is recommended to configure the master and slave RCD Servers and computing nodes by following the configuration wizard for a new network. Add slave RCD Servers and computing nodes on the master RCD Server. Do not enable the HA service in the configuration wizard.

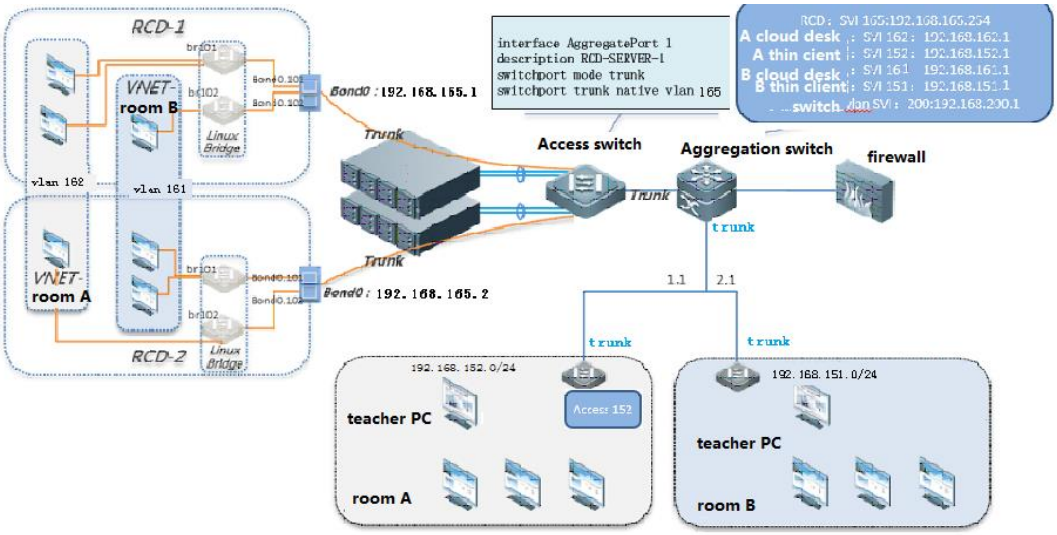
Note: If the HA service is required, you are recommended to configure the IP address of the slave RCD Server and then enable the HA service on the master RCD Server to automatically synchronize the HA service between the master and slave RCD Servers.

6. The static IP addresses are recommended for Thin Clients and Cloud Desktops, because static IP addresses can reduce the number of L2 and L3 entries on the DHCP server on the campus network.
7. When you establishing a new classroom, you are suggested to select common RCD Servers from computing nodes.
8. In cluster mode, you need to import license files of all RCD Servers to the master RCD Server in a unified manner during the PA authorization, instead of adding the license files to the computing nodes and slave RCD Servers.

Note: For the precautions, see Note at the end of this chapter.

III. Operation Steps

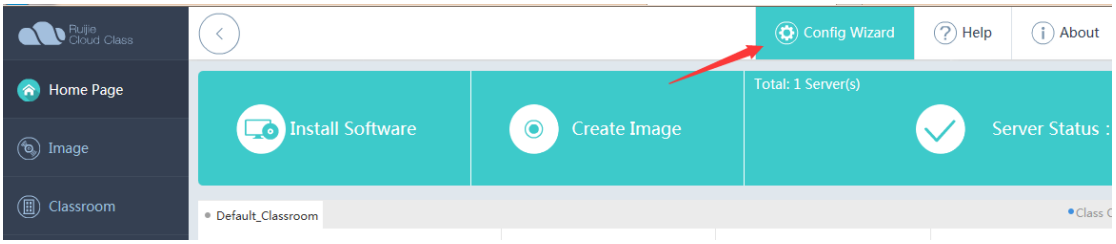
The following figure shows the topology of the cluster deployment scheme (VLANs and IP addresses are only for reference and subject to the actual network).



Server configuration:

Step 1: In cluster deployment, you must upgrade the RCD Servers and Thin Clients before establishing the cluster mode. (You can only update images on the master RCD Server and then synchronize the images to other RCD Servers.)

Step 2: Set a RCD Server that is successfully upgraded as the slave RCD Server. Click **Config Wizard** to configure the system.



Welcome to RCC

Typical

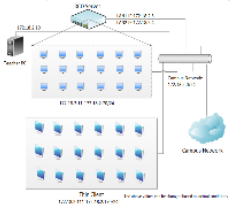
Click Next to enter a wizard to perform advanced configuration.

RCD Server Network

Configure LAN address for communication with Thin Clients.

* LAN1 IP :
* LAN2 IP :
* Subnet Mask :
* Gateway :
* DNS : 114.114.114.114

Topology (Cloud Desktop & Thin Client Access Campus Network)



Cloud Desktop and Teacher PC IP

* Cloud Desktop Count : 60
* Cloud Desktop Start IP :
* Teacher PC IP :

CM Rainbow License

Display SN Export SN

The license is imported.

Please enter Ruijie Product License System to apply for a license

Advanced

Some Cloud Desktops are running. Retry after shutting down the Cloud Desktops.

Back OK Cancel

Welcome to RCD

System

Deploy Mode

Local

The RCD Server is deployed in the classroom on the same network with Thin Clients.

Cluster

The RCD Server is deployed in the data center room.

Role

Master RCD Server

Web interface and Cloud Desktop service are provided. Only one master RCD Server is allowed in an environment.

Slave RCD Server

Only Cloud Desktop service is provided.

NIC Mode

Normal

With better compatibility, this mode allows the RCD Server to connect to a switch incapable of network management. Each LAN port should be configured with an IP address.

Link Aggregation

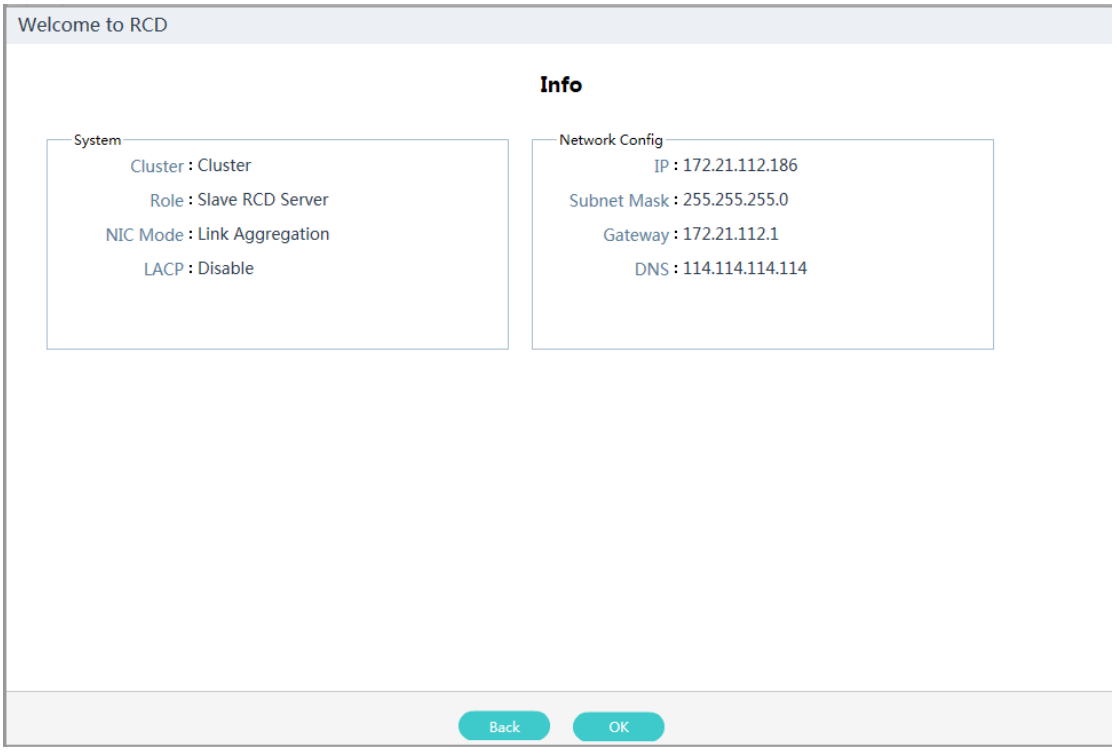
With better redundancy and load balance performance, this mode is recommended. It should be enabled on interfaces of LACP-supported switches, including most network-management-capable Gigabit Ethernet switches.

Example

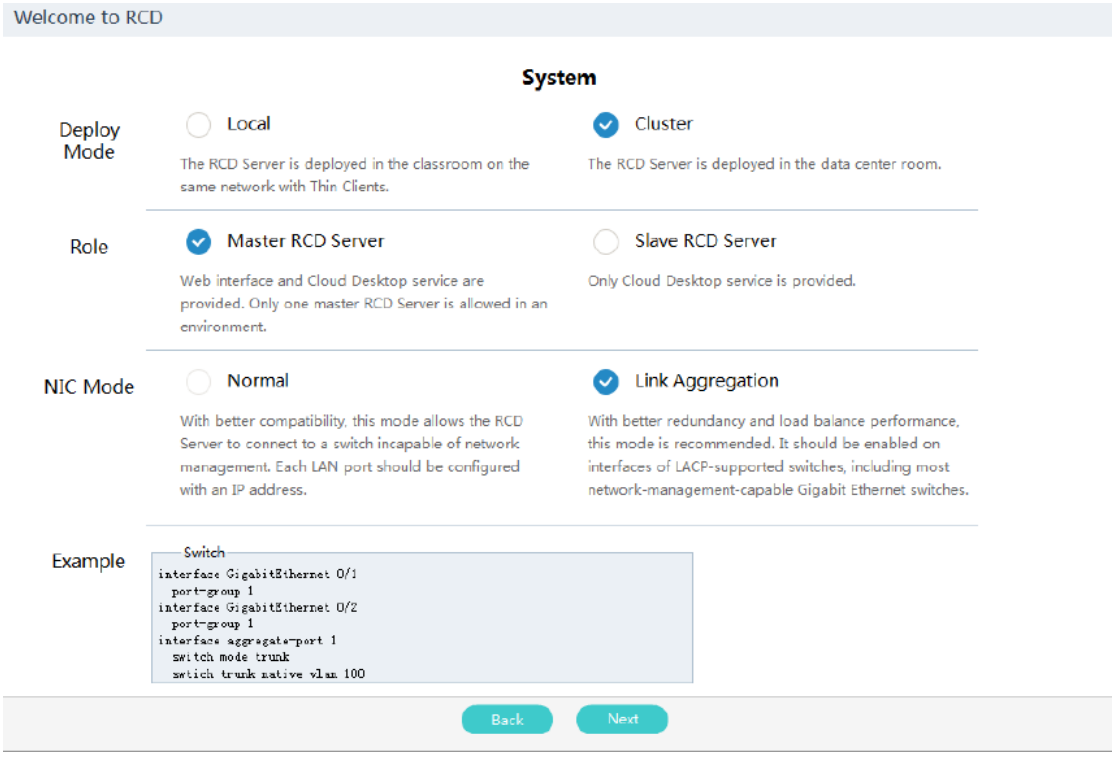
Switch

```
interface GigabitEthernet 0/1
  port-group 1
interface GigabitEthernet 0/2
  port-group 1
interface aggregate-port 1
  switch mode trunk
  swtich trunk native vlan 100
```

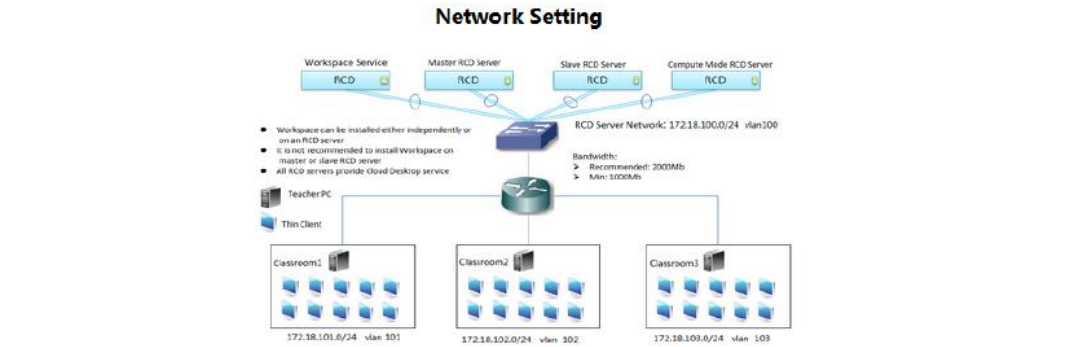
Back Next



Step 3: Set a RCD Server that is successfully upgraded as the master RCD Server. Click **Config Wizard** to configure the system.



Welcome to RCD



RCD Server LAN Address

* IP : 172.21.112.185

* Subnet Mask : 255.255.255.0

* Gateway : 172.21.112.1

* DNS : 114.114.114.114

Workspace

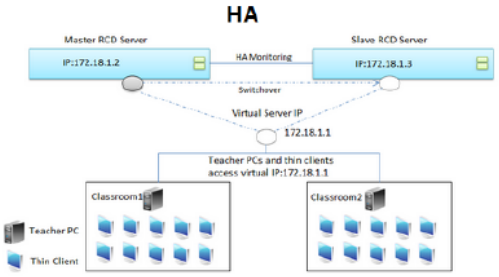
Deployed on RCD Server/Other Server

Workspace Server IP : 172.21.112.213

Deployed Locally

Back Next

Welcome to RCD



* Enable HA :

Virtual IP :

Slave Server IP : Make sure the IP address is accessible.

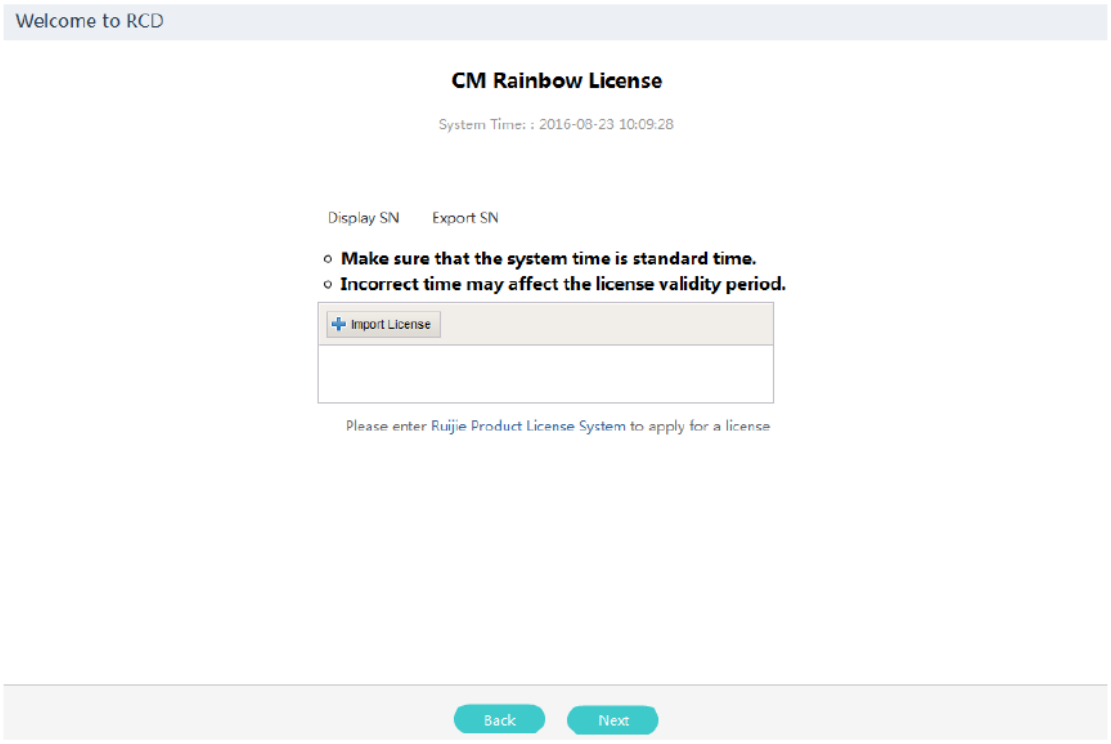
Subnet Mask : 255.255.255.0

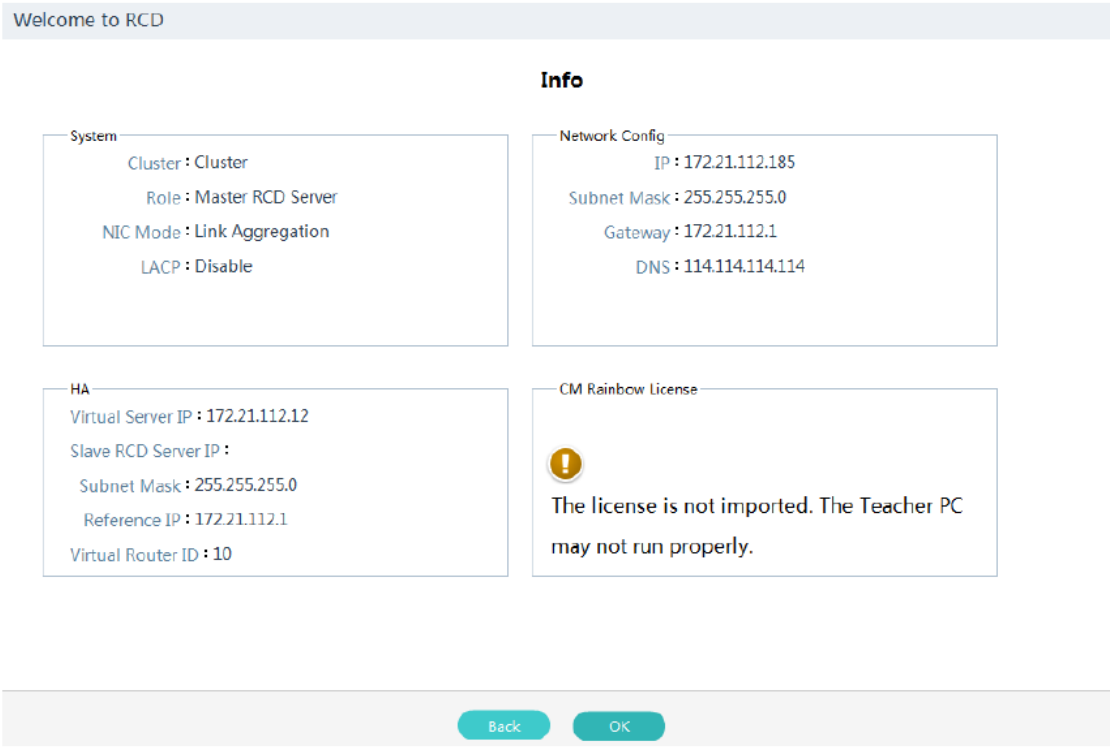
Reference IP : 172.21.112.1 Gateway address is recommended.

Virtual Router ID : 10 It is used to differentiate clusters.

Make sure the IP address of the slave RCD Server is accessible.
You can also go to System > HA on master or slave RCD Server to set it.

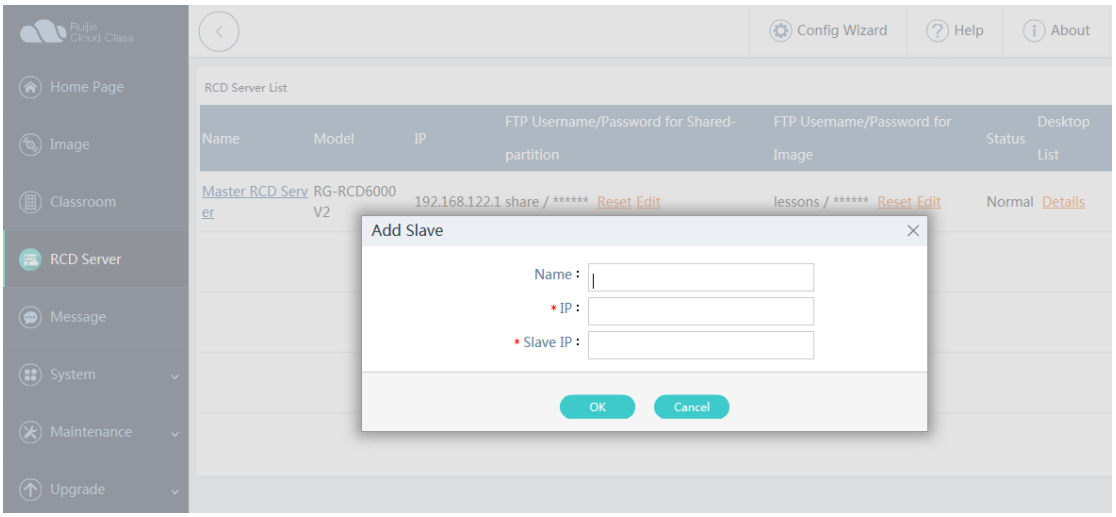
Back Next





After the configuration is complete, this RCD Server is configured as the master RCD Server.

Step 4: On the master RCD Server, click **Add** and add slave RCD Servers in sequence.



Create a classroom, bind the RCD Servers to the classroom, set the IP address of the ClassManager_Teacher, VLAN ID of the Cloud Desktops, and IP address range of the Thin Clients.

If there are multiple slave RCD severs and multiple classrooms, repeat the preceding operation.

Step 5: Set the number of Cloud Desktops for each classroom.

Note:

1. In cluster deployment mode, you can configure only the link aggregation for the NIC of the RCD Server, and ensure that the switch supports link aggregation and link aggregation is configured on the switch.
2. In cluster mode, if you enable LACP for the NIC of the RCD Server, ensure that the switch supports LACP and LACP is configured on the switch, and set LACP mode of the switch port to passive mode.
3. In cluster mode, the NAT and DHCP services are unavailable.
4. In cluster mode, iPXE and PXE upgrade is not supported. Upgrade is supported since V3.25 and it no longer relies on the DHCP service of the RCD Server.
5. In cluster mode, you need to allocate different VLANs for each classroom, and it is strongly recommended that the VLAN of the Thin Clients is different from that of Cloud Desktops in the same classroom.
6. In cluster mode, set IP addresses of Thin Clients and Cloud Desktops to the IP address of the campus network.
7. RCD Servers in the cluster must be within the same VLAN.
8. Parameters of the HA service must be consistent on the master RCD Server and slave RCD Server. You can configure the HA service parameters in advance. After the HA service is enabled and configured on the master RCD Server, the parameter configuration will be automatically synchronized to the slave RCD Server.

9. The IP addresses of RCD Servers connecting to all Thin Clients and ClassManager_Teacher PC must be set to the IP address of the master RCD Server. If the HA service is enabled, IP addresses of RCD Servers connecting to all Thin Clients and ClassManager_Teacher PC must be set to the virtual floating IP address of the HA service.
10. The port connected to the NIC of the RCD Server and the network deployed in a classroom need to be connected to a 1000M or higher-level switch.
11. The PA authorization in cluster mode is relatively special. You need to import the license files of all RCD Servers to the master RCD Server in a unified manner.

6.4 One-click Deployment

I. Scenario Description

The one-click deployment function can eliminate tedious and repetitive work for configuring Rain Thin Clients one by one. You can use the RCC-Teacher or RG-ClassManager Rainbow to configure all Thin Clients in the classroom in a unified manner, including the number, RCD Server name, resolution, RCD Server address, and IP address.

The one-click deployment function is not only used for the first deployment, but can be also used for actual teaching activities and PC equipment room maintenance. For example, it can be used to modify the resolution in batches (certain software has special resolution requirements) and replace faulty Thin Client components, thereby rapidly addressing problems of users.

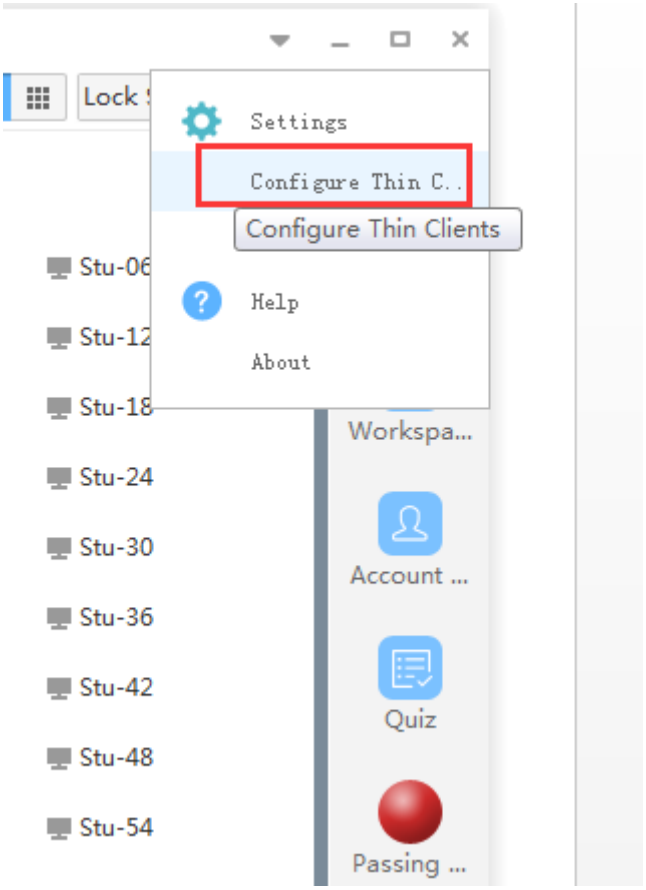
II. Key Configuration Points

1. Before unified configuration, remove the external network cable from the ClassManager_Teacher PC, to prevent the ClassManager_Teacher PC from scanning Thin Clients in other classrooms.
2. During automatic numbering, if the prompt requesting you to press **Enter** is not displayed on the Thin Client, access the batch configuration and correctly set the IP address of the RCD Server. Then, automatic numbering starts.
3. Automatic numbering is not mandatory. Generally, numbering Thin Clients is required only when IP addresses are bound with the numbers.

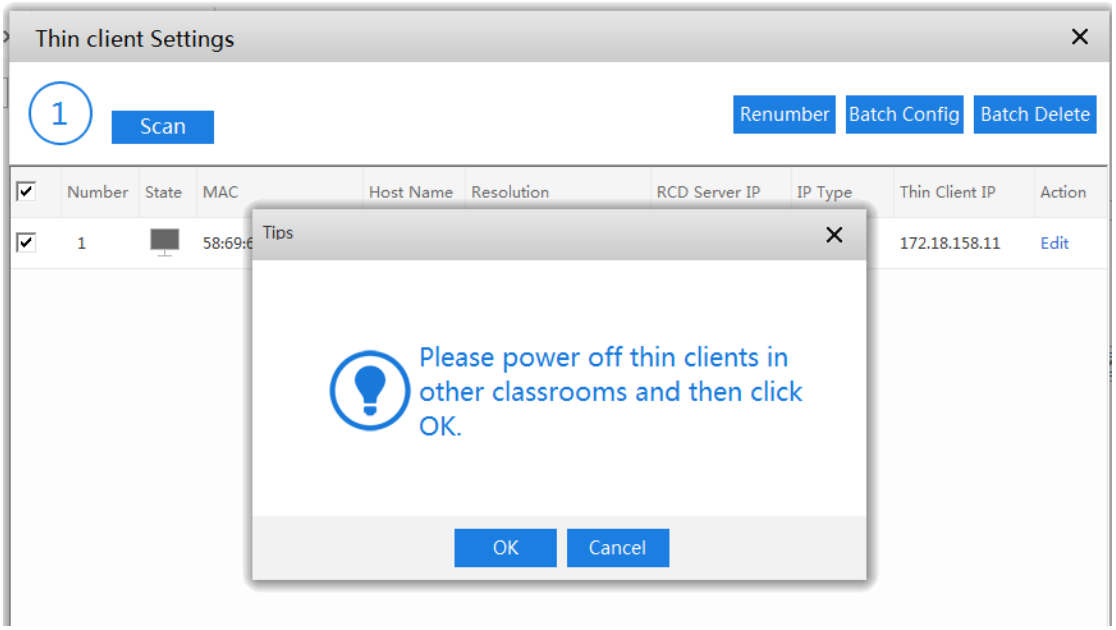
III. Operation Steps

The one-click deployment function of the latest version is integrated into the ClassManager_Teacher. For versions earlier than V1.1, the RCC-Teacher software can be used to uniformly configure the Thin Clients. Functions between earlier and later versions are basically the same except the function entrance.

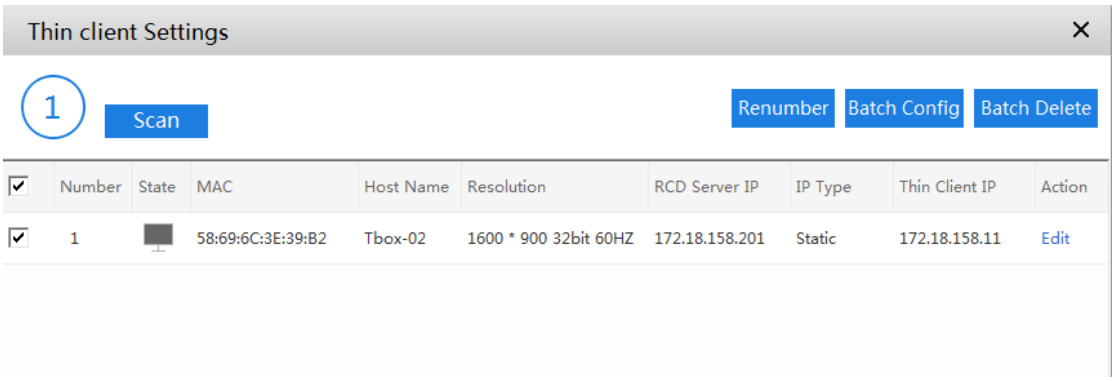
1. Start all Thin Clients, start the ClassManager_Teacher, and access the unified configuration menu.



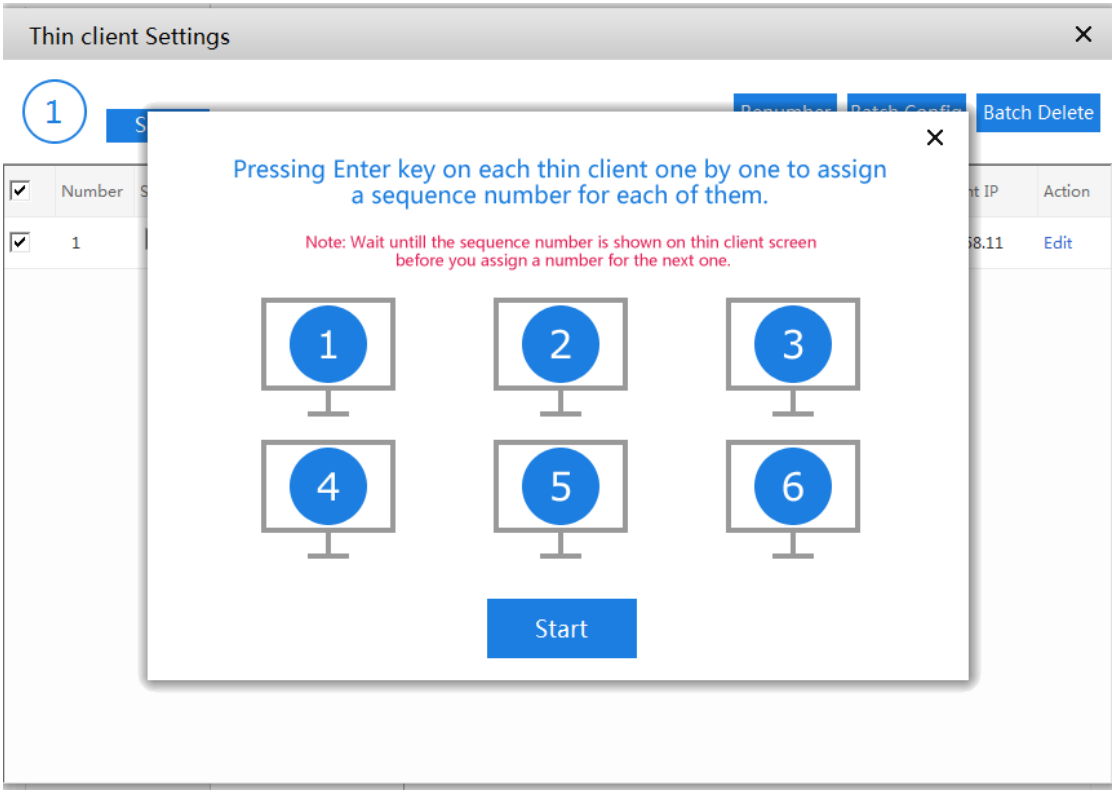
2. Click **Scan**.



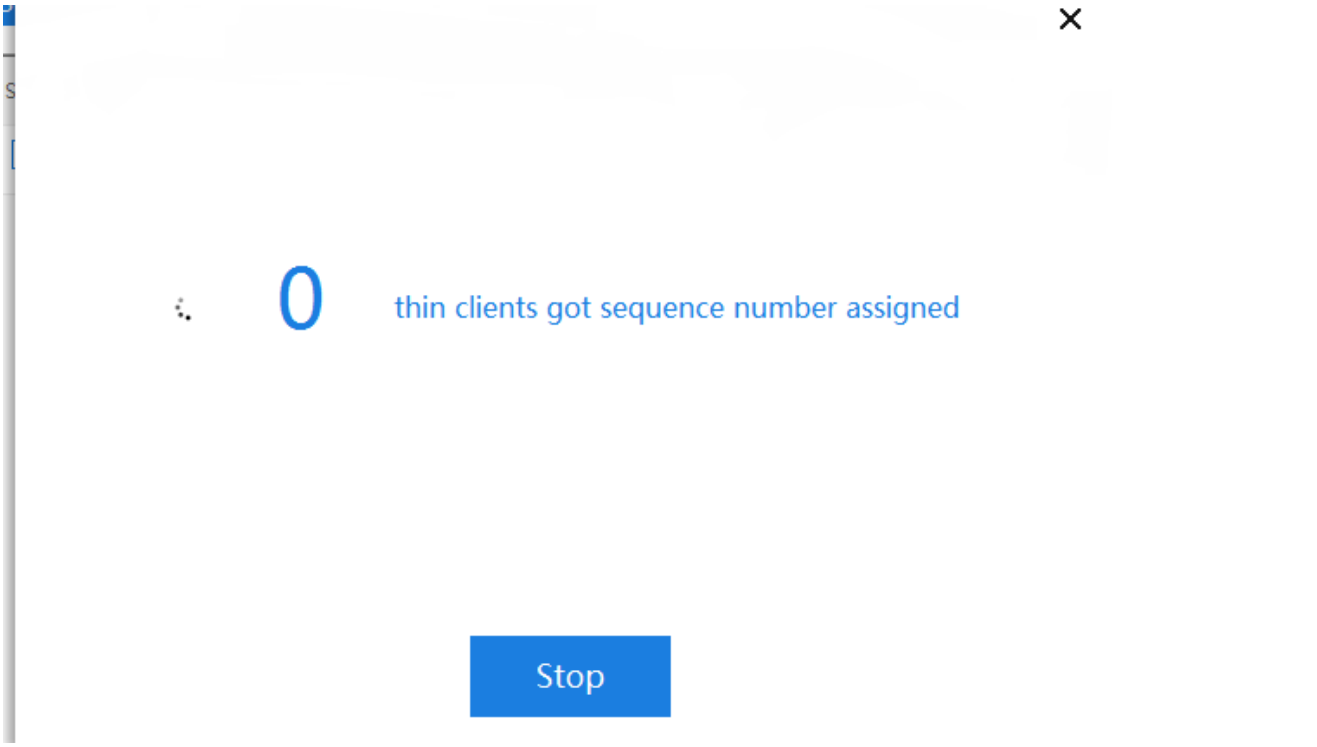
As shown in the following figure, one Thin Client is scanned.



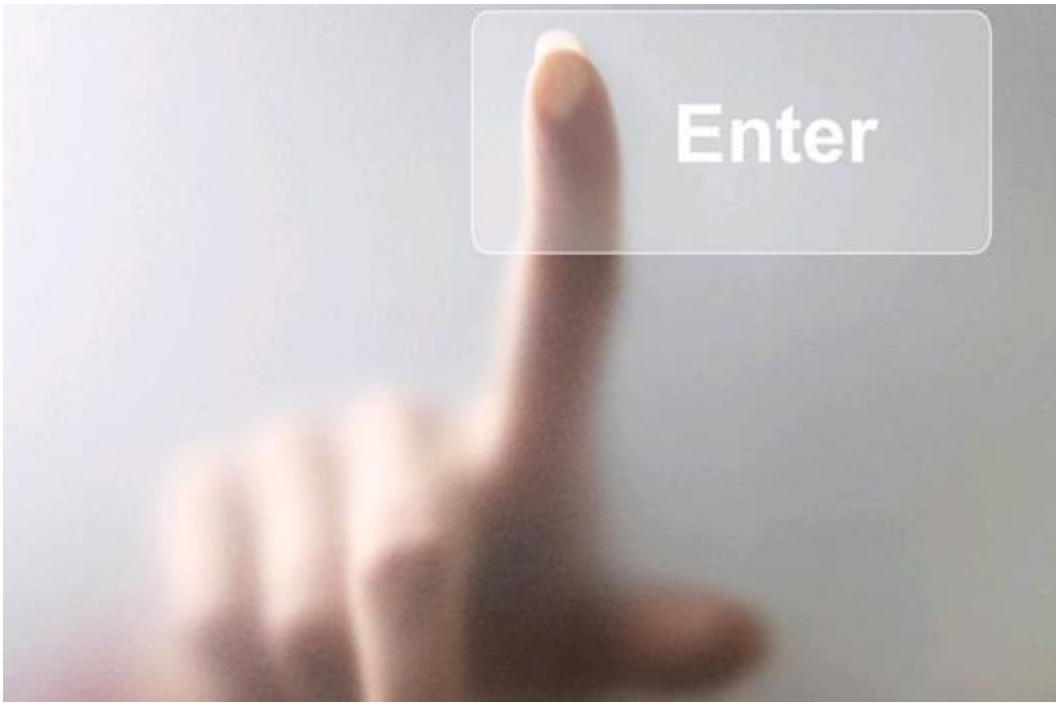
3. Click **Renumber** To assign sequence numbers to Thin Clients identified during scanning.



Click **Start**. A numbering page is displayed. Wait Thin Clients to send numbering commands.



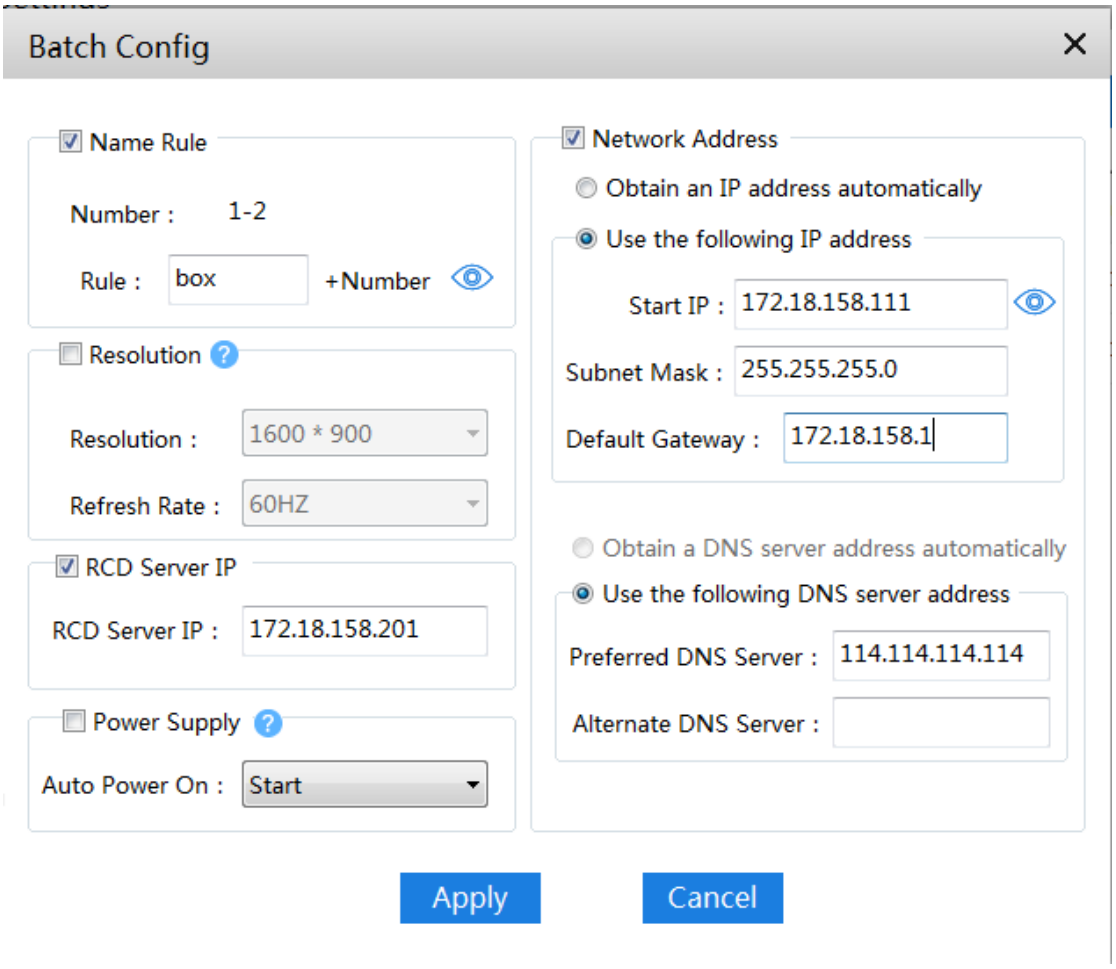
A page as shown in the following figure is displayed. Press **Enter** in sequence to generate the sequence number.



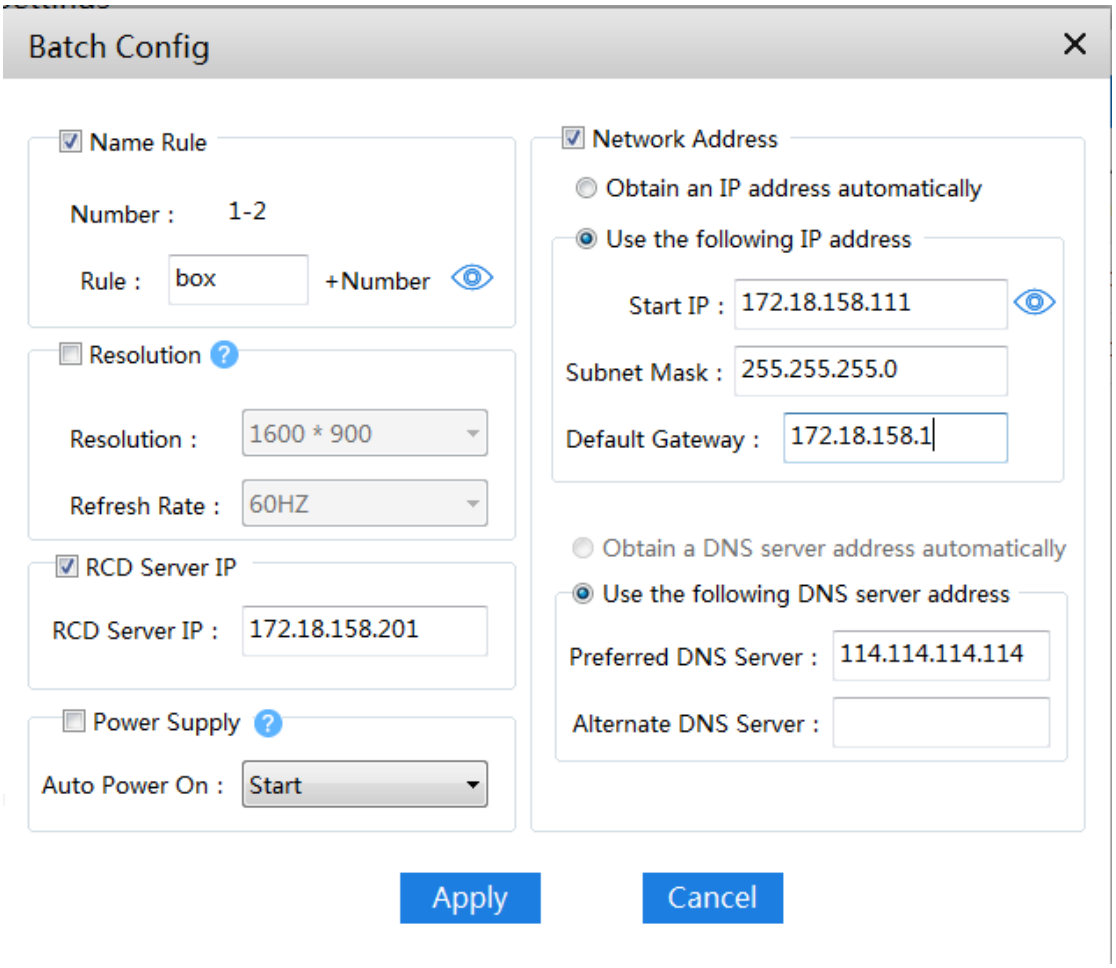
Press **Enter**.

After all Thin Clients are numbered, the numbering page automatically disappears, indicating the numbering operation is complete. You can also click **Stop** to stop manual assignment. Then, the software automatically assigns sequence numbers to remaining Thin Clients.

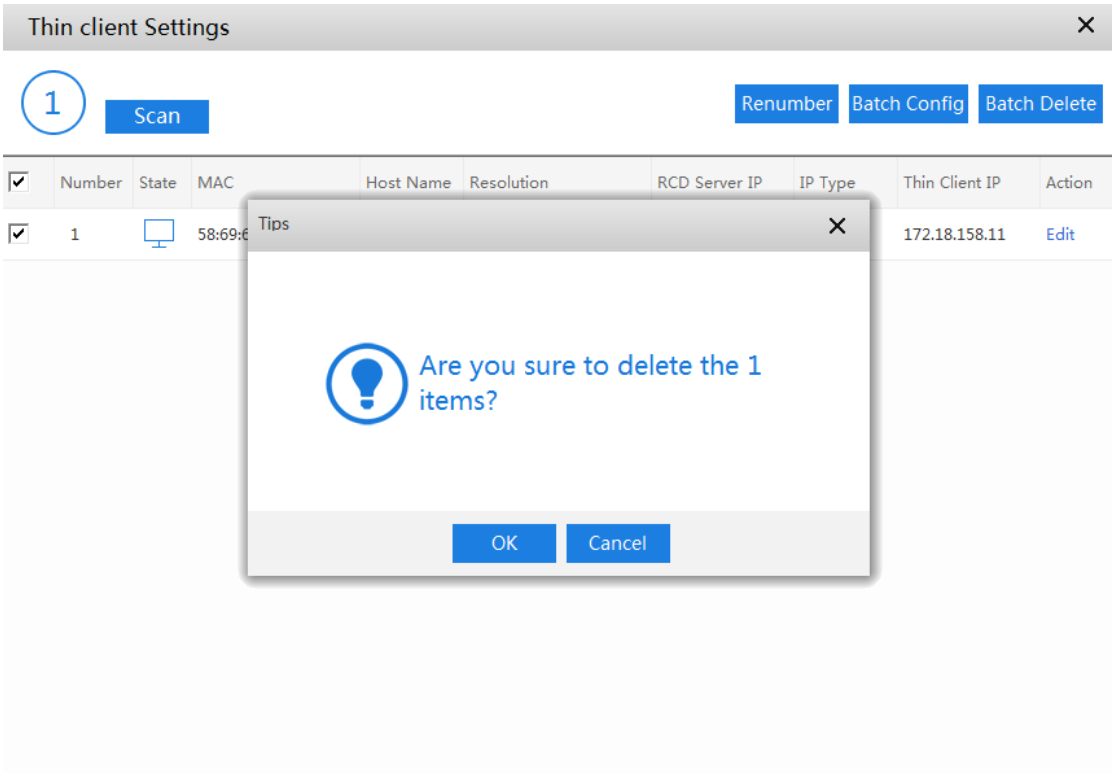
Note: If the automatic numbering page is not displayed on a Thin Client, access the **Batch Config** page to change the IP address of the RCD Server. **Select RCD Server IP only here**. Then, start automatic numbering.



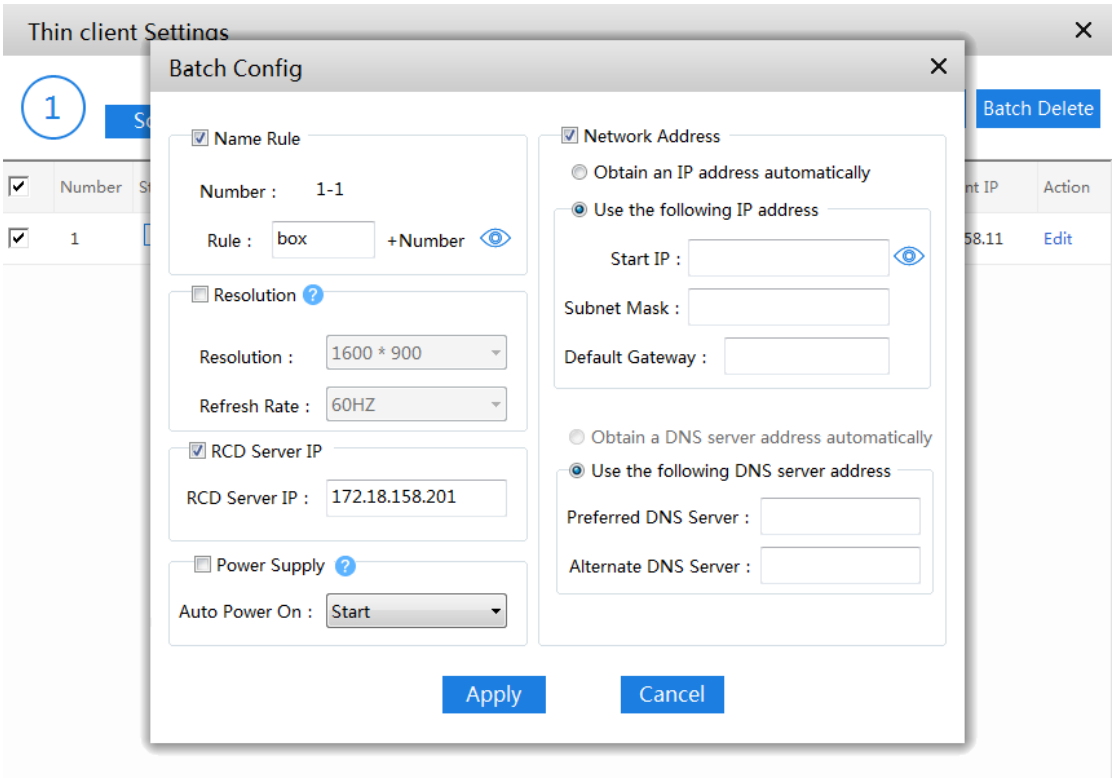
4. After automatic numbering is completed, click **Batch Config** to configure **Name Rule**, **Resolution**, **RCD Server IP**, and **Network Address** for all selected Thin Clients.



5. If Thin Clients are added or replaced, you can delete Thin Clients in batches and then re-scan Thin Clients for configuration.



6. You can also modify the configuration of a single Thin Client, including the Thin Client name, resolution, RCD Server IP address, and IP address.



6.5 RCD Server Binding

I. Scenario Description

PCs are allocated with fixed numbers in most PC rooms. This method can help you easily find the PCs, identify faults, and locate student positions.

The RCC solution involves hardware Thin Clients and Cloud Desktops. By default, the boot sequence of Cloud Desktops, Cloud Desktop names, and allocated IP addresses are random. In such a case, a fixed number cannot be used to identify a specific device.

Therefore, the RCC solution provides the function of binding Rain Thin Clients with fixed numbers, thereby achieving multi-attribute binding and addressing the fixed numbering issues of the PC rooms.

For example:

Desktop numbers: 01, 02, 03, …

Names of Rain Thin Clients: Rain01, Rain02, Rain03, …

IP addresses of Rain Thin Clients: 192.168.122.11, 192.168.122.12, 192.168.122.13, …

Names of Cloud Desktops: Stu01, Stu02, Stu03, …

IP addresses of Cloud Desktops: 192.168.123.11, 192.168.123.12, 192.168.123.13, …

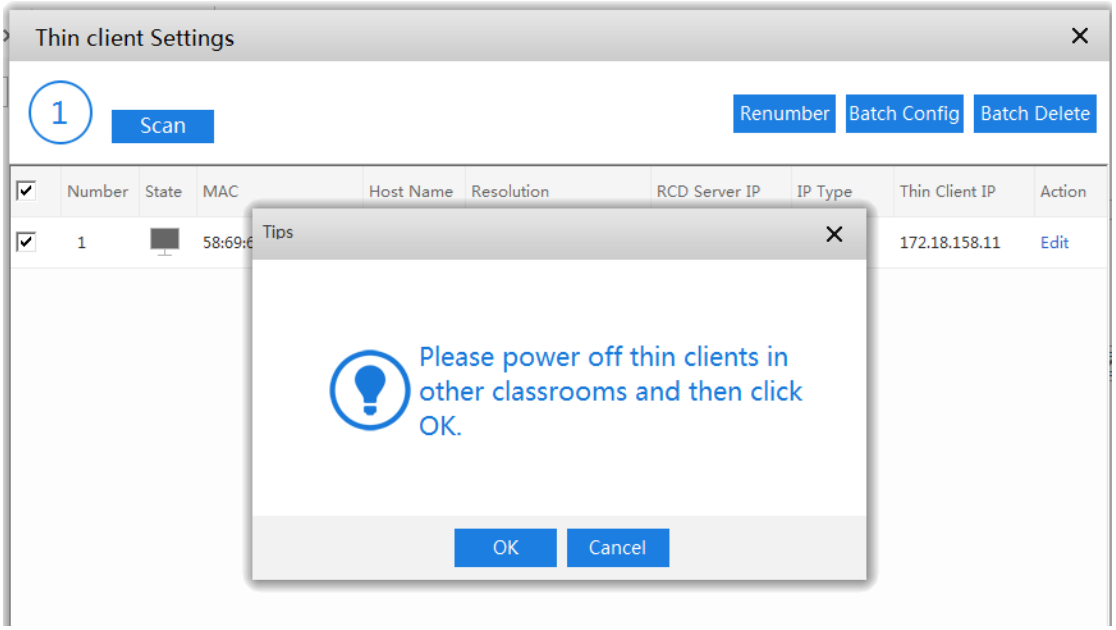
After the Thin Clients are bound based on numbers, the following mapping is established: The name of the Thin Client on desktop 01 is Rain01, and the IP address is 192.168.122.11. After Cloud Desktop is started on the Thin Client, the name of the Cloud Desktop is fixed to Stu01, and the IP address of the Cloud Desktop is 192.168.123.111. The rest can be deducted by the same analog.

II. Key Configuration Points

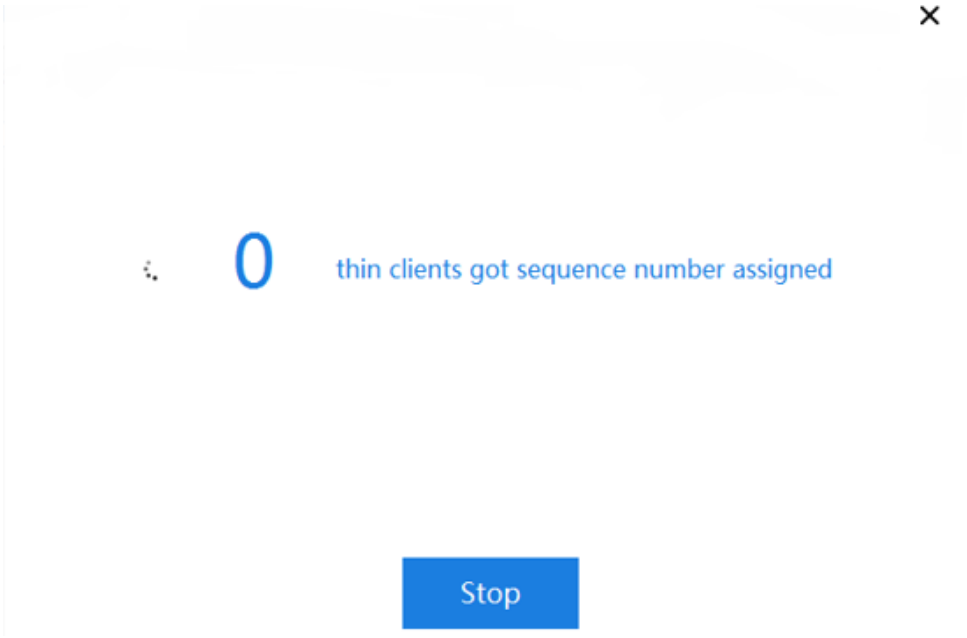
1. The Cloud Class of a version later than V1.0.9 supports the one-click deployment function and can rapidly deliver the binding relationship.
2. The binding sequence is determined based on the sequence of requests and responses transmitted between a Thin Client and the RCD Server. Therefore, it is recommended that one person be responsible for completing the binding in sequence, and bind another Thin Client only after a binding response is displayed on one Thin Client.
3. If the binding is out of order, missing, or incorrect, it is recommended to stop the current numbering and start numbering again (manual adjustment can cause errors easily).

III. Operation Steps

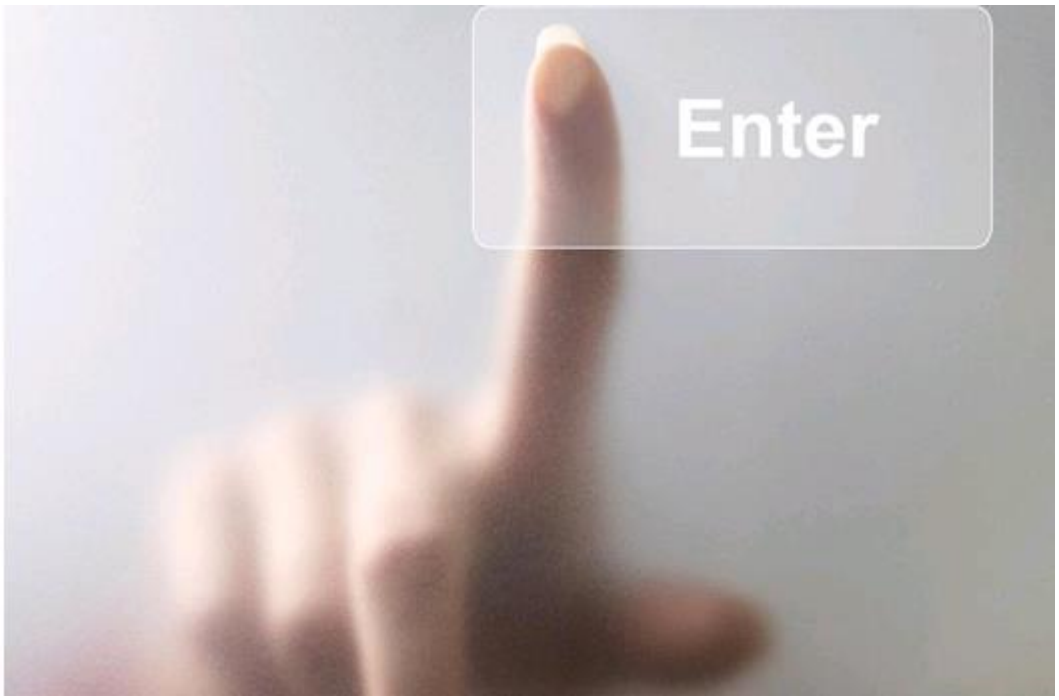
1. Scan all Thin Clients.



2. Configure the Thin Clients in batches to set a correct RCD Server address for each Thin Client (for details, see one-click deployment mode), and then perform automatic numbering.

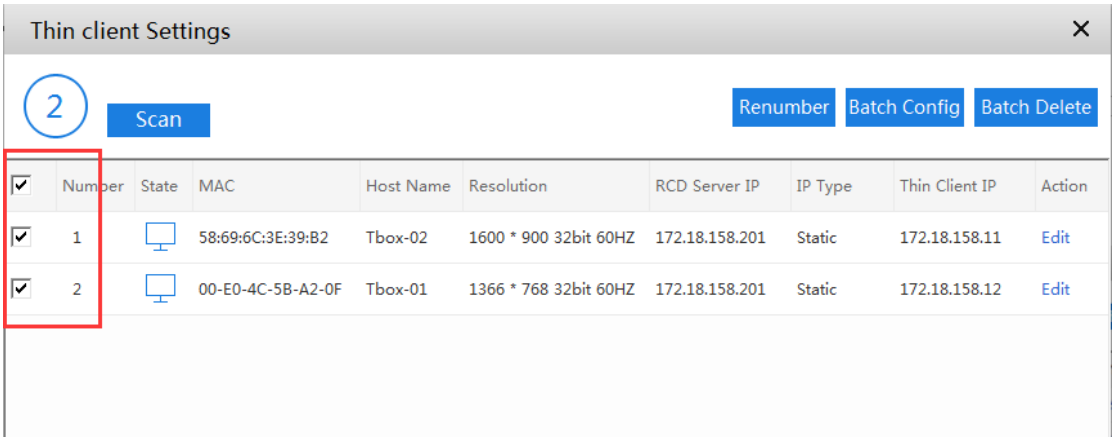


3. Number Rain Thin Clients one by one based on the fixed numbers (press **Enter**).

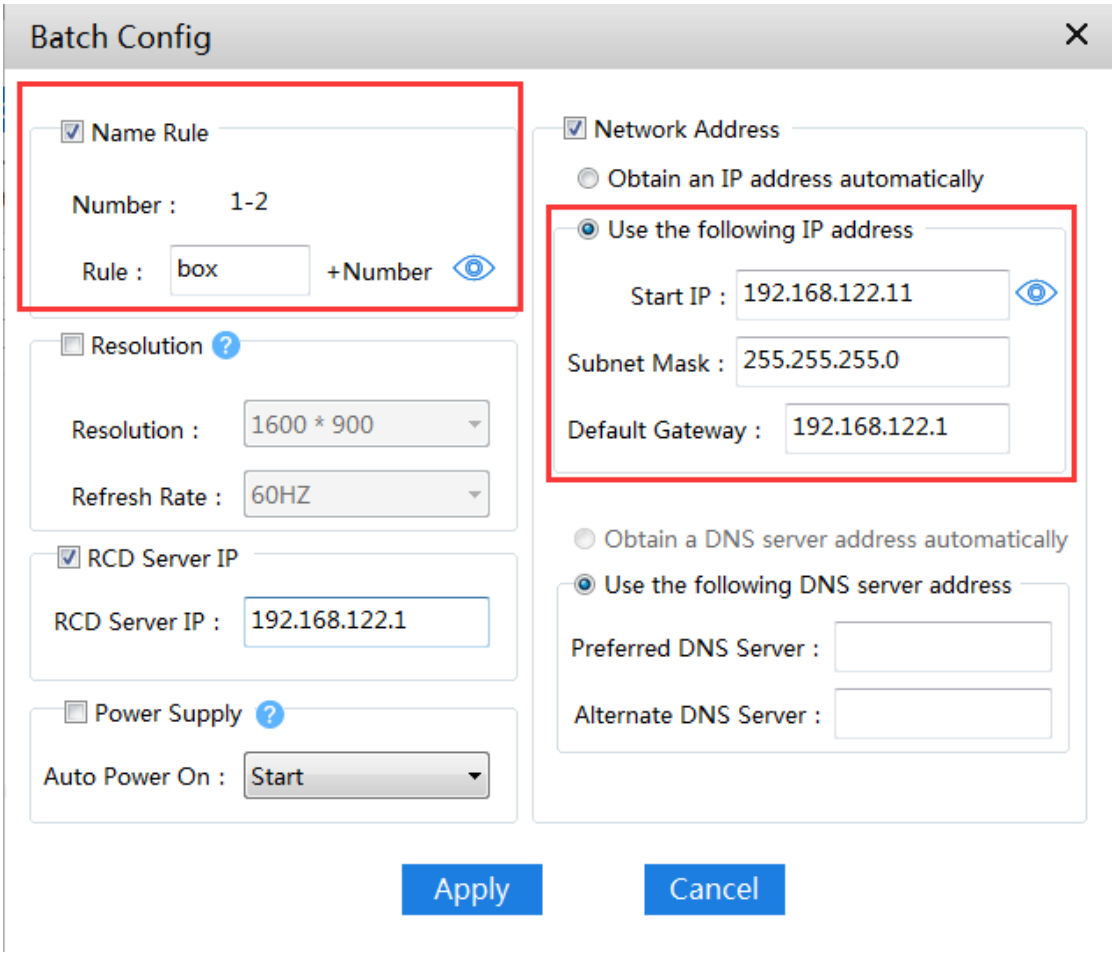


Obtain the numbers.

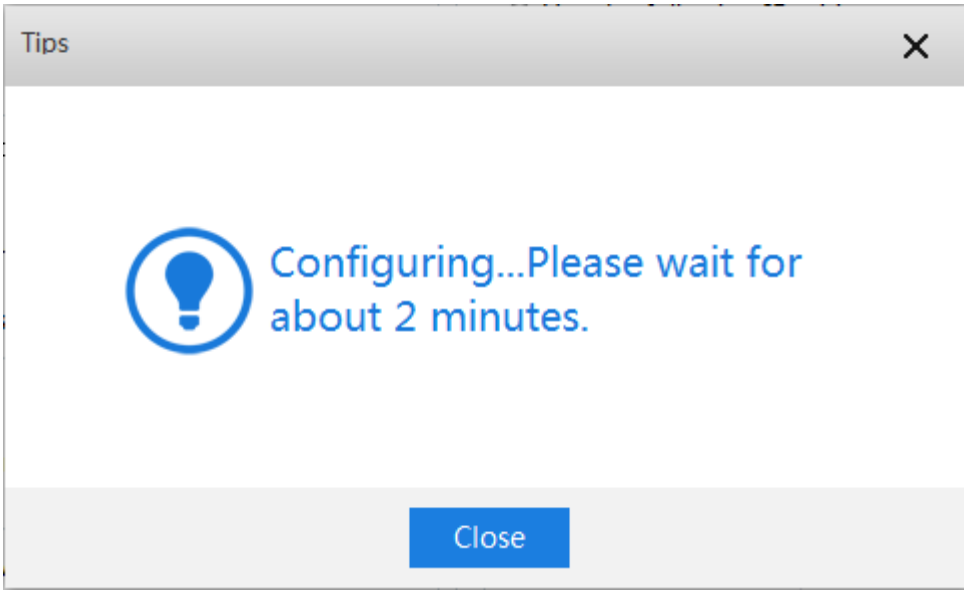
4. After the automatic numbering is completed, the Thin Clients obtain the corresponding numbers.



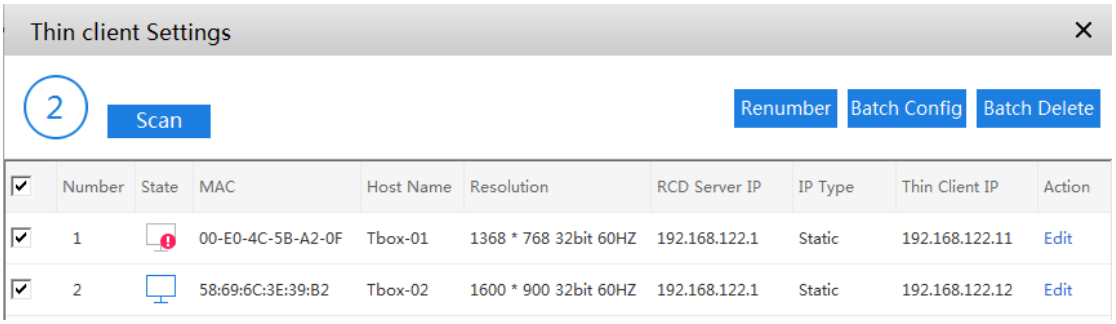
5. Click **Batch Config**, and configure the RCD Server name and static IP address for each Thin Client. (The batch configuration takes a period of time.)



Wait until the configuration is completed.

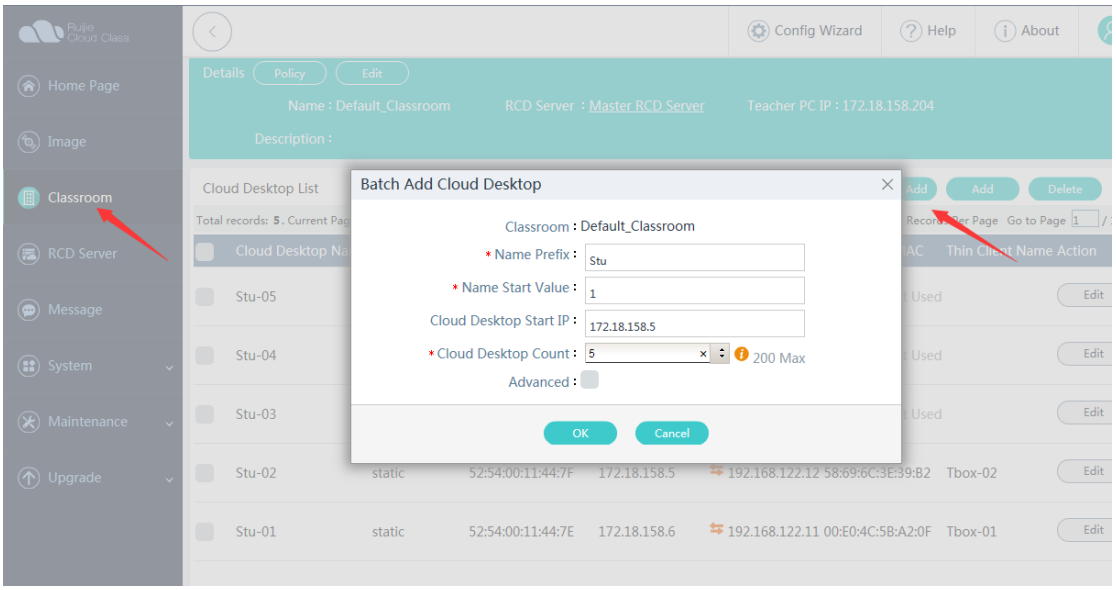


6. Check whether the number, RCD Server name, and IP address are correct.



7. Access the RCD configuration page to create a Cloud Desktop.

Note: Static IP addresses must be configured for the Cloud Desktops.



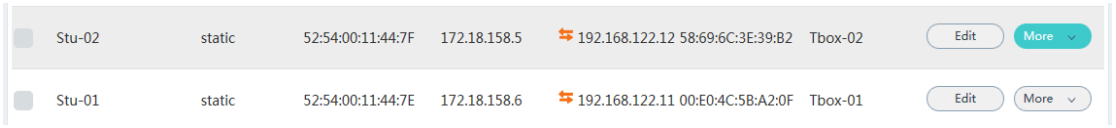
8. If the mapping of several Thin Clients is incorrect, power off these Thin Clients and remove them from the Cloud Desktop. Then, power on these Thin Clients in the correct sequence.

You can use the following methods to address the incorrect mapping issue:

(1) Power off all Rain Thin Clients.

(2) Remove the Rain Thin Clients from the Cloud Desktop to release the mapping.

(3) Based on the numbering sequence, power on the Rain Thin Clients one by one (power on the next Thin Client after the current Thin Client is started). At this time, the Thin Client addresses of the Cloud Desktops are mapped.



Convergent Computing

I. Scenario Description

The convergent computing software is used to satisfy the high graphics card performance requirements of certain software (especially the light 3D software such as iRobotQ) in RCC. The software is installed in the underlying system of the Thin Client. With the performance support of the Thin Client hardware, course requirements of certain 3D software are met to a certain extent.

Note:

1. The convergent computing software is only applicable to Rain Thin Clients using the Windows system as the underlying system.
2. After the convergent computing function is enabled on a single Thin Client, you can create an image file on the RCD Server and upgrade all Thin Clients in PXE mode. For details, see "FAQ: Deployment – Configuring Batch Convergent Computing for Rain100/Rain200."

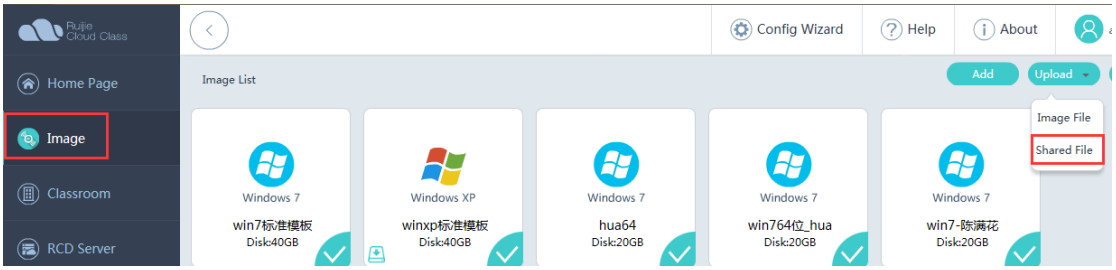
3. Because the underlying system of Thin Clients is the Windows system, you do not need to perform the PXE or iPXE upgrade for the Thin Clients if the entire version is upgraded.

II. Key Configuration Points

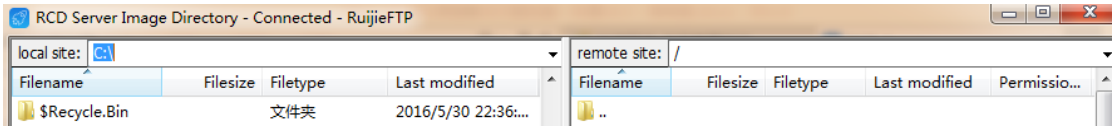
1. Because the hardware configuration of Rain Thin Clients is generally low (1–2 GB memory and 8 GB flash memory). Therefore, do not install too many applications or applications with a large capacity. Only certain small 3D software can be used.
2. You must install the convergent computing software in the underlying system of the Rain100 in advance, so that you can call the underlying executable program on the convergent computing page (program entrance).

III. Operation Steps

Step 1: Upload the required convergent computing software. You can use the FTP service of the RCD Server to transfer the files.



Upload the required software, tool, and compatible package to the shared directory of the RCD Server.



Step 2: Call the underlying system window to install the software.

1. On the RG-Rain Cloud Desktop list window, press **Shift**+**S**+**F8** (the shortcut key is subject to changes. You can contact hotline 4008111000 to learn the shortcut key) to access the underlying OS.
2. In **Task Manager**, create a task and enter **ftp://share:share@192.168.1.100** (the address shall be set to the master IP address of the RCD Server). Obtain the software uploaded to the shared directory, for example, **Numerical control vehicle2008-r1.1.rar**.
3. After the file is copied, in the new task manager, enter C:\ to display the following information corresponding to Rain100 (flash drive: 8 GB; Drive C: 5.85 GB; Drive E: 1.58 GB).

Step 3: Copy the file to Drive C or Drive E, and install the software.

After the installation is completed, close the underlying OS window. The detailed software installation process is not described here.

Step 4: Call the convergent computing software.

1. Access the Cloud Desktop system, click **Convergent Computing** on the floating bar, and enter **Shift**+**R**+**F8**. The extension management page is displayed.

Step 5: If multiple software needs to be installed, repeat the preceding installation steps.

Click **Add** and locate the installed executable program. Save the settings and exit the software.

Step 6: Click **Convergent Computing** to call the responding external program.

6.6 Examination Scenario

I. Scenario Description

Due to the particularity of various examinations, some examination software has special requirements for systems, for example:

1. The examination systems require that static IP addresses be configured for the OSs and students need to log in to the system using different user names.
2. After an examination ends, the system content must be retained for a period of time for later review.

With respect to the preceding requirements, Ruijie has optimized the configuration for the Cloud Desktop systems.

II. Key Configuration Points

1. Generally, the same set of devices are used for both examinations and teaching. Therefore, special configurations are required for the switching from the teaching scenario to the examination scenario and even examination images need to be added.
2. Generally, the persistent data storage policy is set for examination images. Therefore, examination images are not recommended for the teaching scenario since it easily causes disk space insufficiency and cloud class system instability.

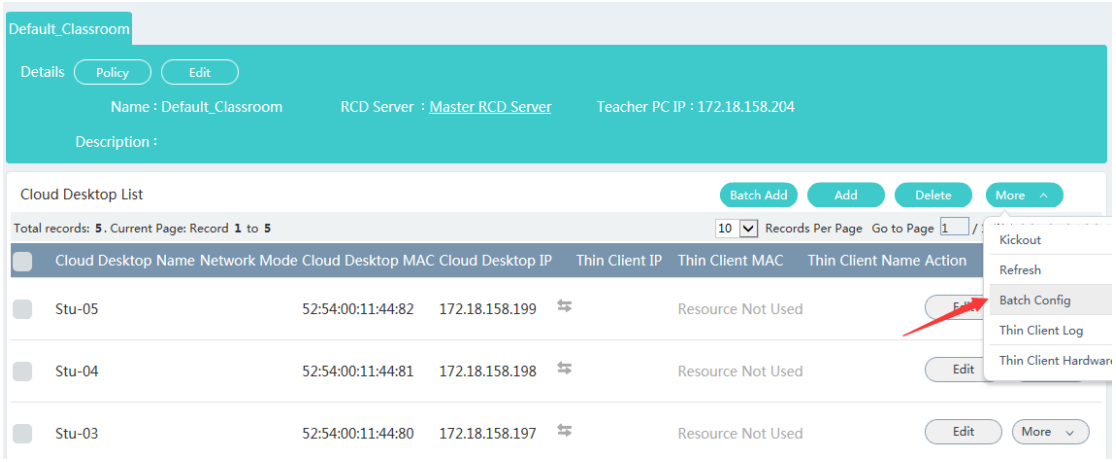
Note: There is no special examination image. The examination image mentioned here refers to an image created for examinations or an image configured with special storage strategies.

3. After an examination ends, you need to switch the system back to the teaching scenario. Otherwise, the examination scenario may cause inconvenience to the teaching scenario. For example, you need to log off from the customized user name, re-log in to the system, and manually enter the password after each startup, which is tedious.

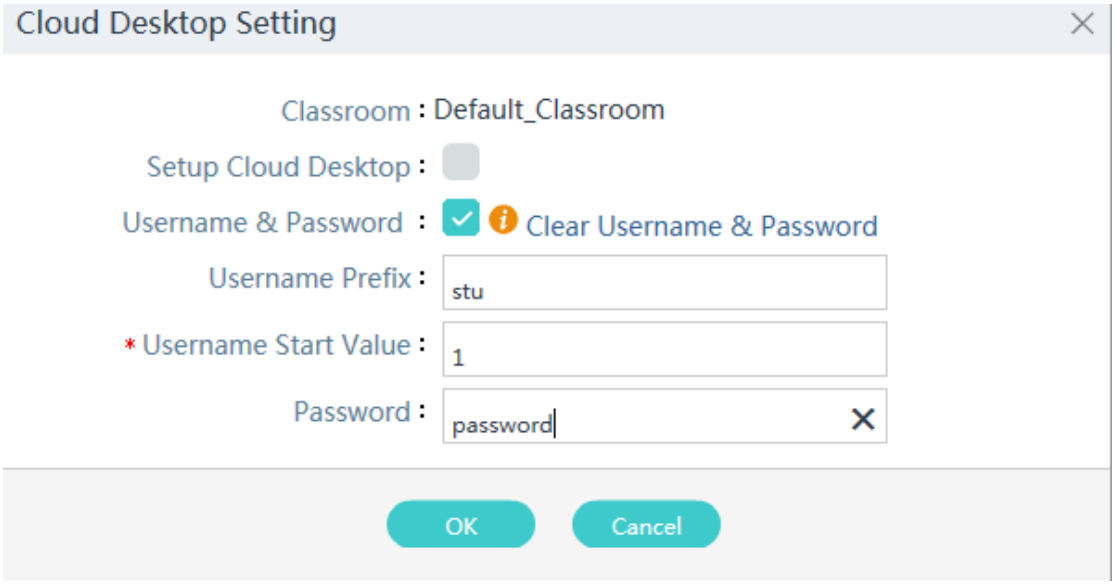
4. In V1.0.9, the persistent data storage of examination images is triggered by the operations of starting a class and ending a class. That is, after the operations of starting a class and ending a class for an examination image are performed on the ClassManager_Teacher, data is backed up. The persistent data storage policy does not take effect when it is set on Thin Clients.

III. Operation Steps

1. To satisfy requirement 1, access the **Classroom** page and click **More** and select **Batch Config** in the upper right corner.



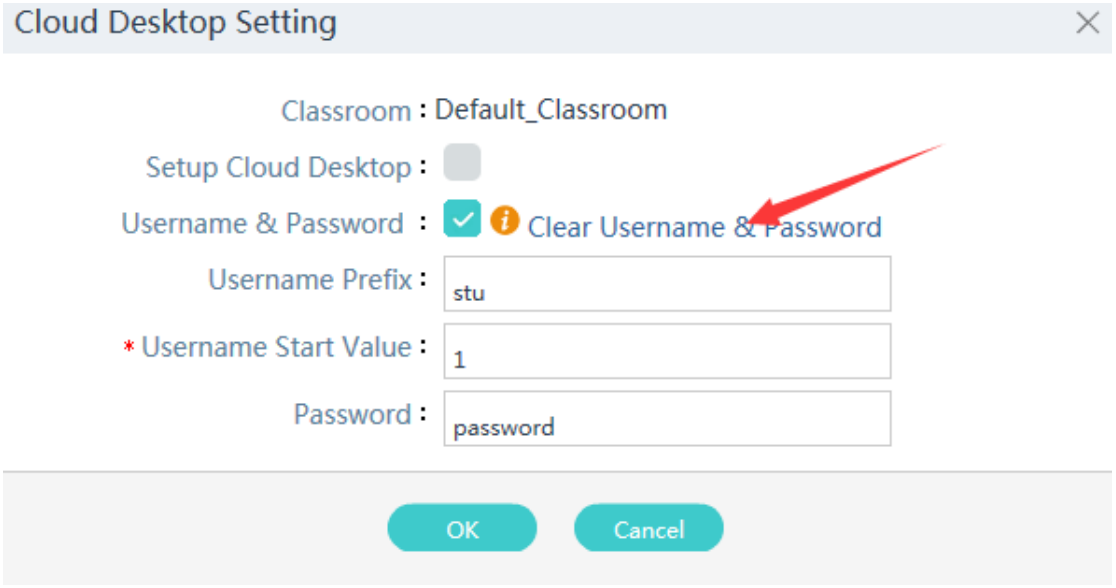
2. Click Username & Password. In the displayed dialog box, set Username Prefix and Username Start Value.



Note: If the start IP address of the Cloud Desktops is not set, the IP addresses of all Cloud Desktops will be cleared by default.

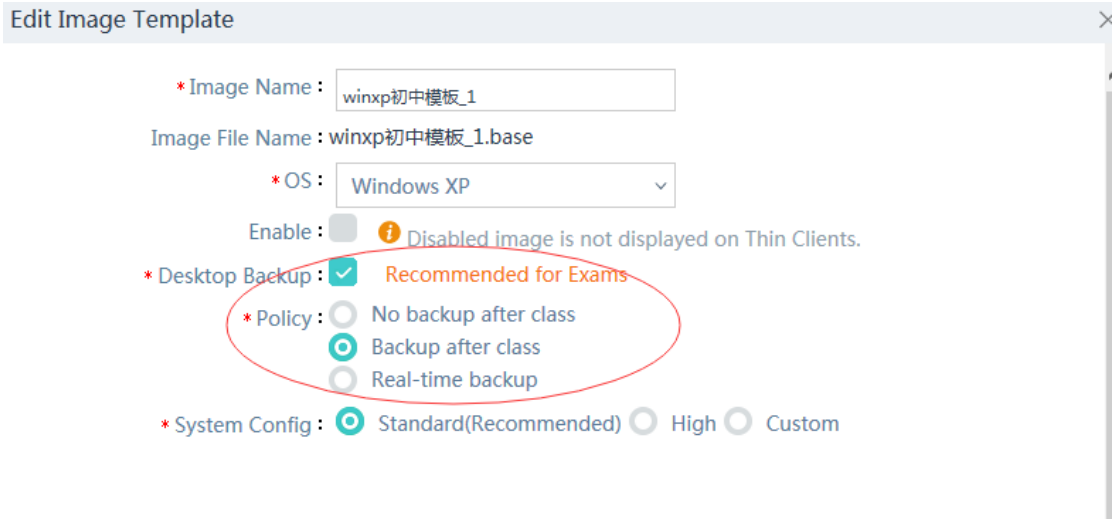
3. After the Cloud Desktop is started, the OS automatically creates a user name and a password (based on the rules defined for the Cloud Desktop) at the first startup, and automatically logs off. A student needs to manually enter the user name and password to log in to the Thin Client. If the Cloud Desktop uses the Windows XP system, the logoff takes a long period of time (about 10–20s). The logoff is faster (about 1–5s) in the Windows 7 system.

Note: This configuration is valid to all images. It is recommended that the password be set only for the examination scenario. In non-examination scenarios, it is recommended that the password be cleared.



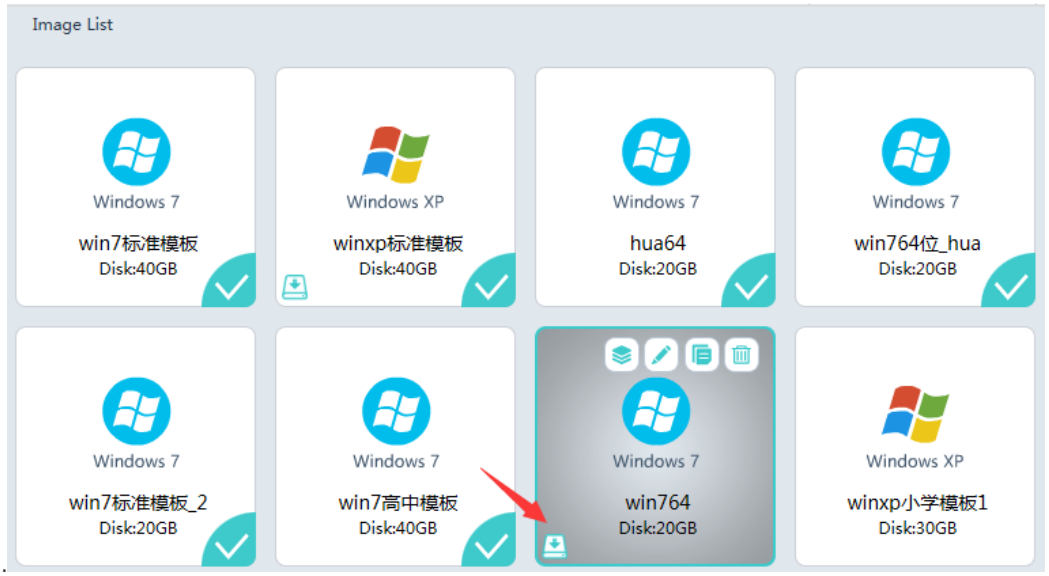
4. To satisfy requirement 2, you can modify the image settings to enable the system to back up each Cloud Desktop. Access the **Image** page, select the course to be modified and click **Edit**.

5. In the displayed dialog box, select **Desktop Backup** and **Backup after class**, and click **Edit** to save the settings.

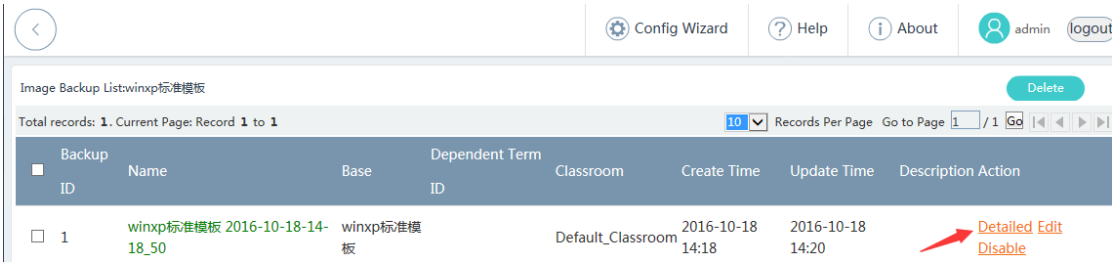


To check the backup data, do as follows:

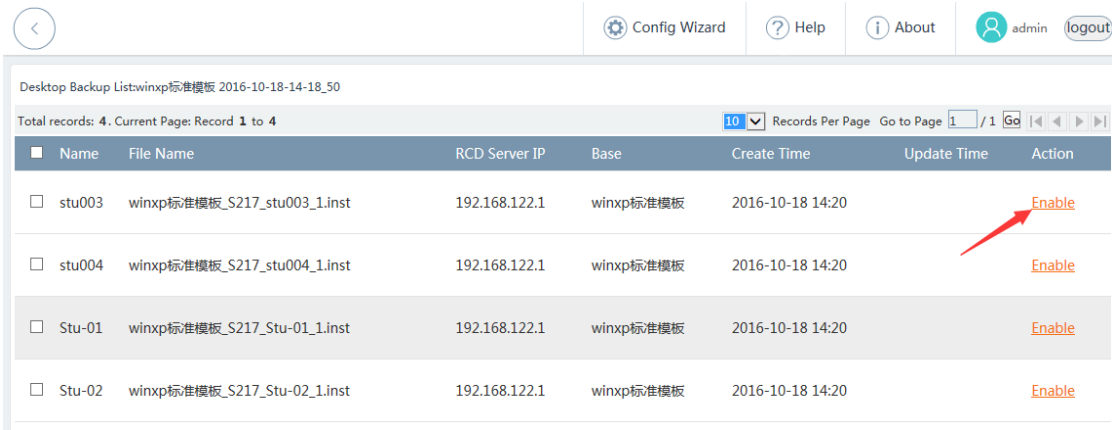
After the operation of ending a class is performed, the system automatically saves the Cloud Desktops and generates backup information. As shown in the figure below, click an image and click the link in the lower left corner to access the backup list



6. Click **Detailed** to display backup details about all cloud desktops.



7. Click **Enable** to run a specified cloud desktop backup.



Note: After the examination images are backed up, the examination images cannot be edited.

7 Appendix

7.1 Interpretation of Product Version Numbers

RCC product versions cover the hardware versions, software versions, and system versions. The version naming conventions are as follows:

1. Hardware versions:

Naming convention: Product name_Vx.yz. For example, the hardware versions of Thin Client include Rain100_1.0 and Rain200_1.1.

Rule description:

x: an integer ranging from 1 to 99. The initial value is 1. When major changes such as hardware change and upgrade are involved, the value of x is increased by 1. The change of this version number always comes with software version upgrade.

y: an integer ranging from 0 to 9. The initial value is 0. When major auxiliary component changes such as the change of the power supply or PCB design are involved, the value of y is increased by 1. Generally, the change of this version number does not trigger the software version upgrade. (Additional instructions will be provided for special circumstances. For example, if the hardware specifications of the main body of the Rain100_1.0 or Rain100_1.1 are changed, the corresponding software version is also changed. If the hardware specifications of the main body of the Rain100_1.0 or Rain100_1.1 keep unchanged, the corresponding software version remains unchanged.)

z: an integer ranging from 0 to 9. The initial value is 0. If non-functional hardware is changed, for example, the hardware PCB process is improved, the value of y is increased by 1. Generally, the change of this version number does not trigger the software version upgrade.

2. Software versions:

Naming conventions: Product name_Vx.y_Rx[PyTz].n [_Language ID_Customized product ID]. For example, the software versions of the RCD Server include RCC_1.0.9_R0.10 and RCC_1.0.9_R1.24.

Rule description:

1) x.y: software version number.

x indicates generation x and is an integer ranging from 1 to 99. When functions are significantly changed or the architecture is changed, the value of x is increased by 1.

y indicates the function version. When functions are added or changed, the value of y is increased by 1.

For example, in version 1.0.9, x is 1 and y is 0.9. The later versions are 1.1, 1.2, and increase in sequence.

2) Rx[PyTz].n: version feature code.

Rx indicates the trial or formal version, and the options include R0 and R1.

PyTz indicates the patch or temporary version. P indicates a patch version, and T indicates a temporary version. y and z are integers ranging from 1 to 99. When the version is changed, the value of y or z is increased by 1.

n indicates the internal compilation ID of the version. It starts from 1 and increase by 1.

Note: For Thin Clients, the name of a complete installation package contains the hardware and software version information. Taking RG-Rain100V1.10_V1.1_R1.14_L.iso as an example, 1.1 indicates the hardware version, and V1.1_R1.14 indicates the software version.

3. System versions:

Naming conventions: Product OS name_Software version_Feature code. For example, the software versions of the RCD Server include RG-Rain100V1.10_V1.1_R1.14_L and RCDOS_V1.0.9_R1.24.

Rule description:

1) The product OS name is mainly determined based on the system trademarks (Linux, Windows XP, and Android systems are all supported since RCC1.1).

2) The software version naming rules are the same as the general software version naming rules.

3) The feature code is mainly used to distinguish features of the OS and is generally applicable to Thin Clients. Taking the Thin Client RAIN OS as an example, L indicates Linux, A indicates Android, and X indicates Windows XP.

Note: For Thin Clients such as RG-Rain100V1.10_V1.1_R1.14_X, 1.10 indicates the hardware version, V1.1_R1.14 indicates the software version, and X/L/A indicates the platform or system type. **For RCD Servers such as RG-RCDOS_Server_V1.1_R1.14, feature recognition is not required.**

7.2 ClassManager Software License

The RCC supports the ClassManager Rainbow software (CM2 for short) since RCC_1.1_R1. The CM2 license authorization mode is changed from the dongle mode in ClassManager1.x to file license mode. You need to apply for the license file from Ruijie Product Authorization System and import the license file to the RCD Server.

Ruijie Product Authorization (RG-PA) system

The RG-PA provides a variety of functions such as file license authorization, production, application, hardware change, expansion, and service query.

PA login address: https://www.ruijienetworks.com/support/licensing

Public account used for applying for the ClassManager license is as follows:

User name: classmanager/classmanager1/classmanager2

Password: ruijie

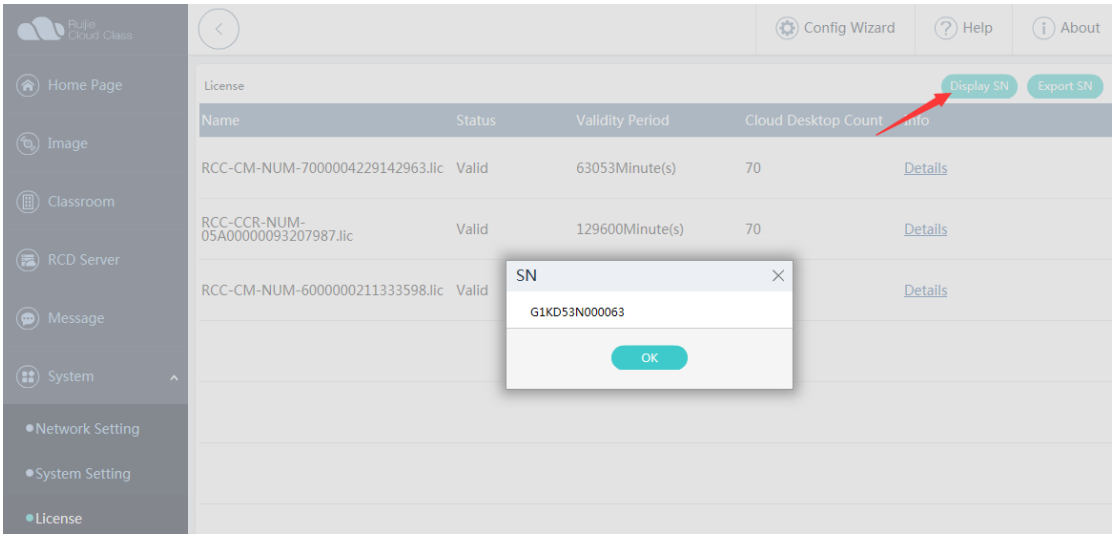
Terms

Device identification number (SN)

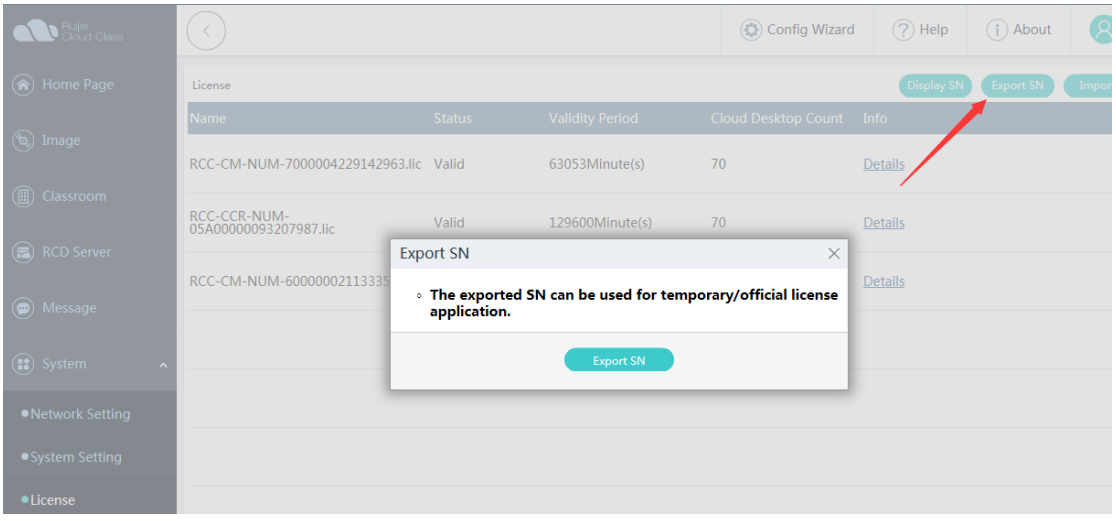
The SN is a MD5 value calculated based on hardware information of Ruijie products, which refers to the RCD Server here.

You can obtain the SN in the following ways:

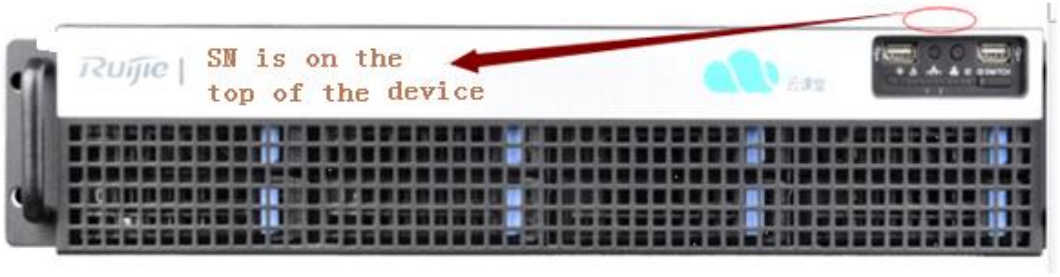
Method 1: Log in to the web management UI of the RCD Server. Choose **System** > **License**. Click **Display SN**. (Recommended)



You can also directly export the hardware SN (to avoid incorrect input during license application).



Method 2: Check the SN on upper cover of the RCD Server.



Product authorization code

The ClassManager Rainbow is delivered with a certificate of authorization that provides a unique product authorization code. The following figure shows an example of the certificate of authorization. You can obtain the authorization code from **Authorization Code Info**.

S/N : G1 0041

Ruijie Networks

北京星网锐捷网络技术有限公司

软件使用授权书

尊敬的用户：

非常感谢您购买和使用由北京星网锐捷网络技术有限公司销售的正版软件产品。贵公司/单位被授权使用本授权书授权的软件功能，同时享有产品售后服务保证。请妥善保管产品的包装盒、内附授权书。本授权将作为主要文件，证明您合法的正版软件功能使用权。

您所购买的软件授权产品，一份授权产品仅限定给一台设备使用。

产品信息/Product Info

RG

产品说明/Product Info

授权码信息/Authorization Code Info

V-10 -0000000069 84

北京星网锐捷网络技术有限公司

Note: For details about common authorization questions, see "FAQ: Usage – Common Questions About the ClassManager Rainbow license."

7.2.1 Generating the License File Using an Authorization Code

I. Scheme for generating the license file using an authorization code

Application scenario:

You can apply for a license file by using the authorization code on the certificate of authorization after you purchase the ClassManager Rainbow.

Prerequisites:

1. You have upgraded the RCD Server to RCC_3.1_R1.11 or a later version.
2. The ClassMananger 3.0 has been installed on the teacher PC.
3. The ClassMananger Rainbow certificate of authorization has been obtained.

PA login address: http://pa.ruijie.com.cn

Public account used for applying for the ClassManager license is as follows:

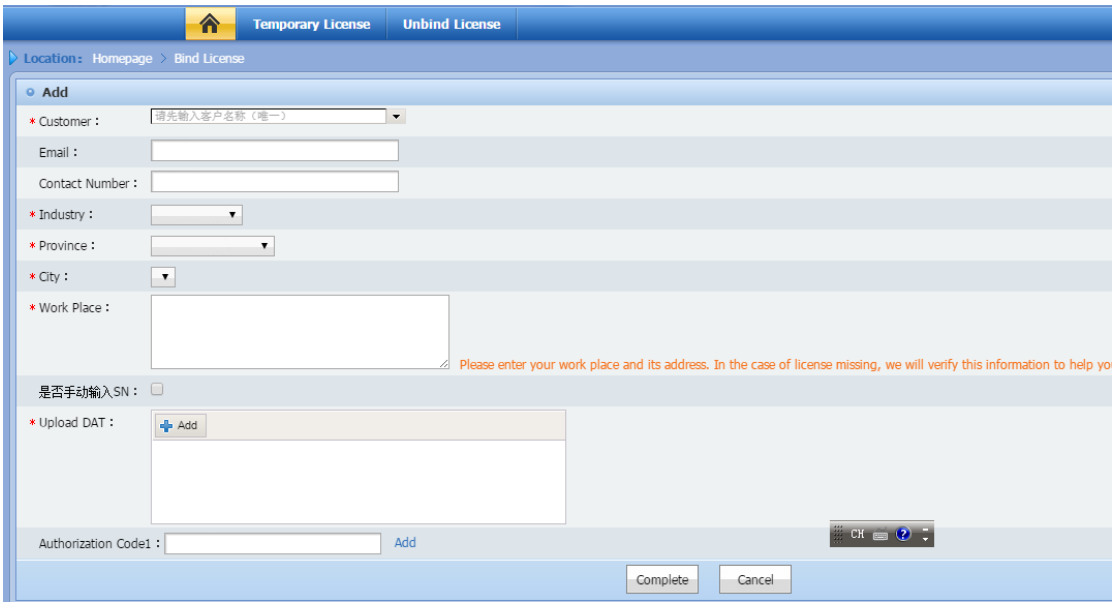
User name: classmanager/classmanager1/classmanager2

Password: ruijie

The operation steps are as follows:

1. Obtain the device SN.
2. Obtain the authorization code from the certificate of authorization.
3. Log in to the RG-PA system by using the public account.

4. Click **Apply**. Enter the customer name, SN code, authorization code, and other customer information.

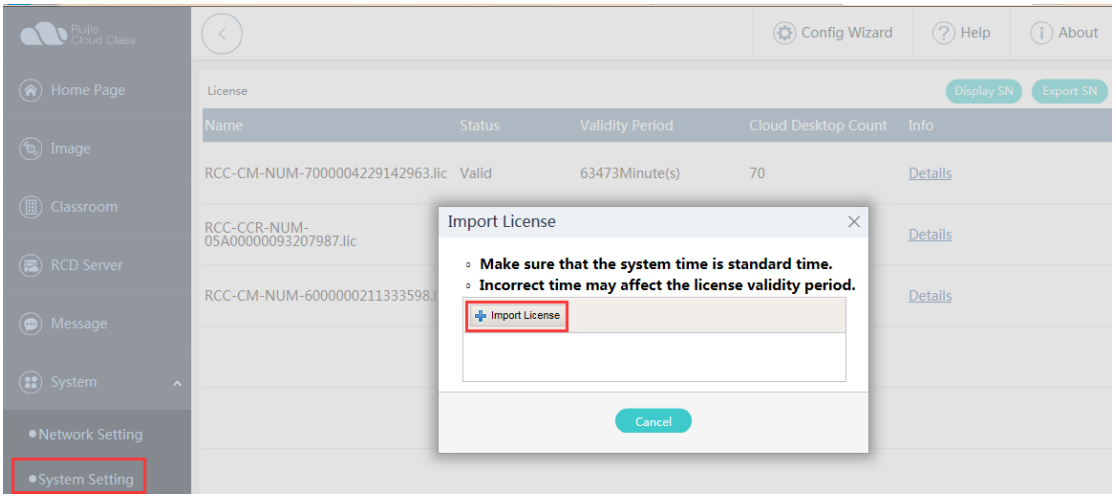


Note: RCC2.0 and earlier versions do not support hardware information export. You can manually input the hardware SN.

5. After the license is generated, download the .lic file.

Note: If you forget to download the license file or lost the license file, you can download it from the home page of the RG-PA system.

6. Log in to the RCD Server, and click **Import License** to import the .lic file.



Ensure that the license file is successfully imported.

7.2.2 Granting Temporary Authorization

I. Temporary authorization

Application scenario:

Temporary authorization is applicable to customers who do not purchase the ClassManager (there is no formal authorization code). Temporary authorization is commonly used for pre-sales testing or demo projects.

Note: This operation requires the after-sales personnel to submit an application and obtain the approval from product managers.

7.2.3 Unbinding the Authorization

I. Unbinding the authorization

Application scenario:

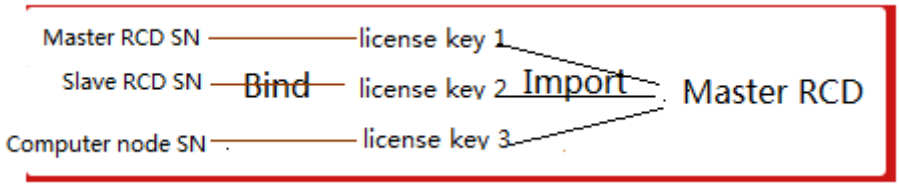
In certain situations (for example, replacing a faulty RCD Server), you need to unbind the authorization code from the faulty RCD Server and bind it with another RCD Server.

Note: This operation requires the after-sales personnel to submit an application and obtain the approval from product managers.

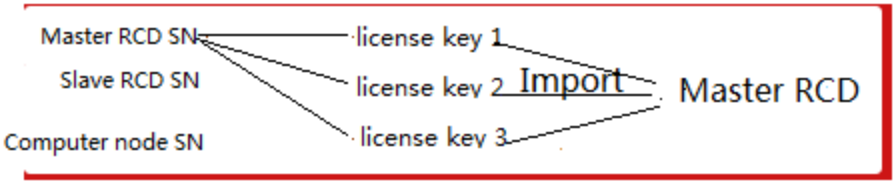
7.2.4 Granting Authorization in Cluster or Stack Scenario

Authorization for RCD Servers in stack or cluster mode:

In stack mode, you can bind each RCD Server with one authorization code and then import the authorization codes to the master RCD Server.



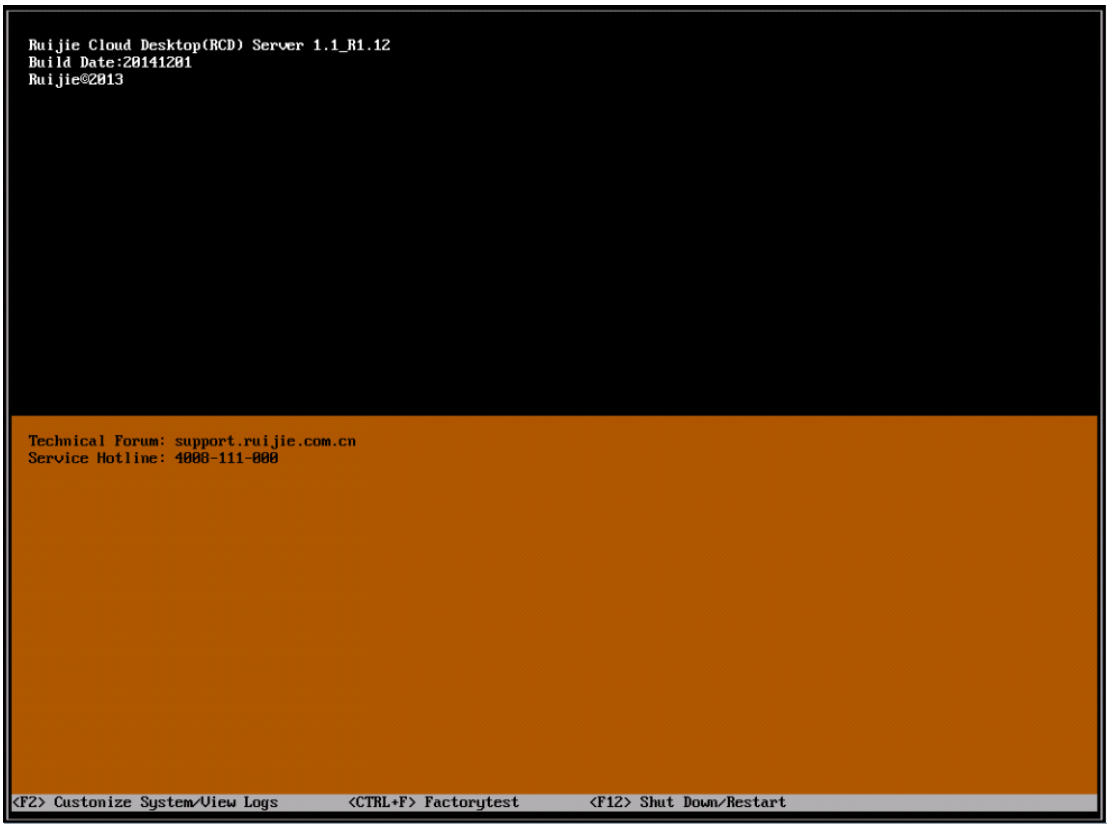
In cluster mode, you can bind the master RCD Server with each authorization code and then import the authorization codes to the master RCD Server.



Note: For details about common authorization questions, see "FAQ: Usage – Common Questions About the ClassManager Rainbow license.

7.3 RCD Server Commissioning

The following figure shows the startup screen of the RCD Server of RCC_1.1 and later versions (the command mode is available only under the SSH connection).



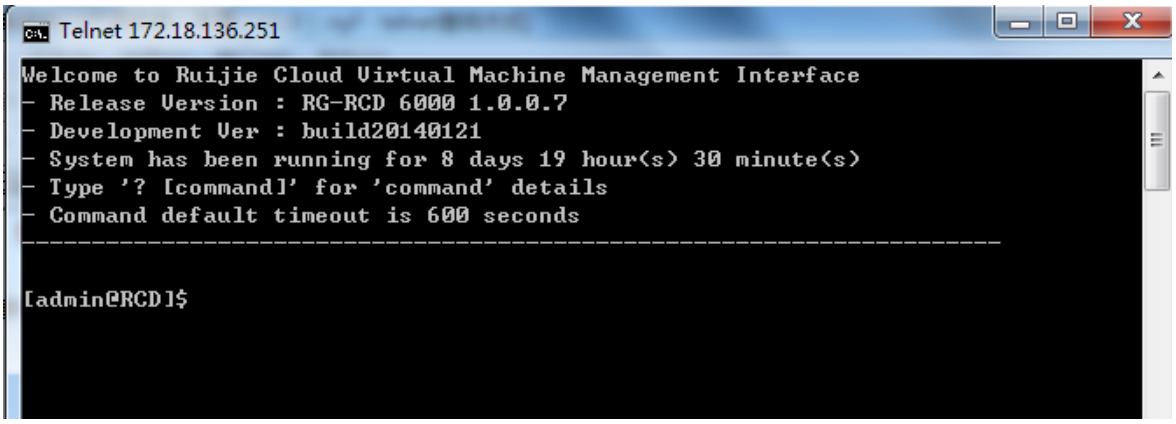
The upper part displays the server version information, and the lower part displays the technical support forum and service hotline. The bottom prompt bar displays the functional shortcut keys. **F2** is used to display the system configuration and logs. **Ctrl**+**F** is used to display the factory test program. **F12** is used to shut down or restart the system. For details about the login page and function description, see relevant manuals.

Note: It is highly risky to log in to the RCD Server from the CLI. Customers are not recommended to log in from the CLI independently, but under the guidance of customer service engineers or service hotline (4008).

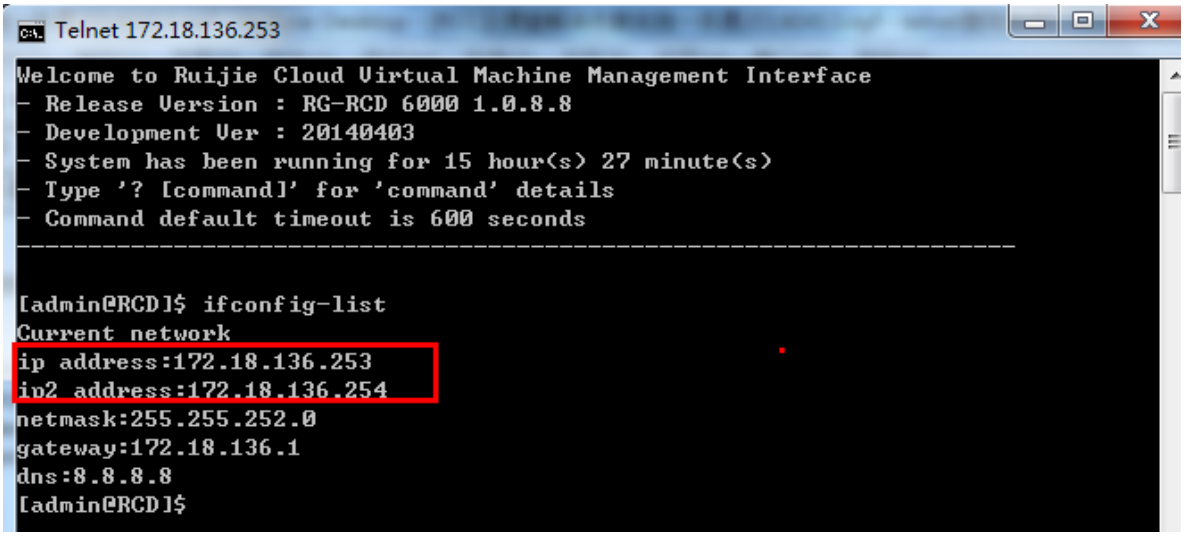
In special scenarios, for example, when the IP address of the RCD Server is forgotten, you can view the IP address of the RCD Server in CLI mode.

I. Logging in to the RCD Server in Telnet mode (applicable to V1.0.8 and earlier versions)

You can log in to the RCD 6000 in Telnet mode. The default user name and password are **admin**.



The default IP address is 192.168.1.100/101. If you forget the IP address, you can access the RCD Server via the serial port or display/mouse and keyboard run **ifconfig-list** to check the IP address.



II. Serial port login mode (applicable to all versions)

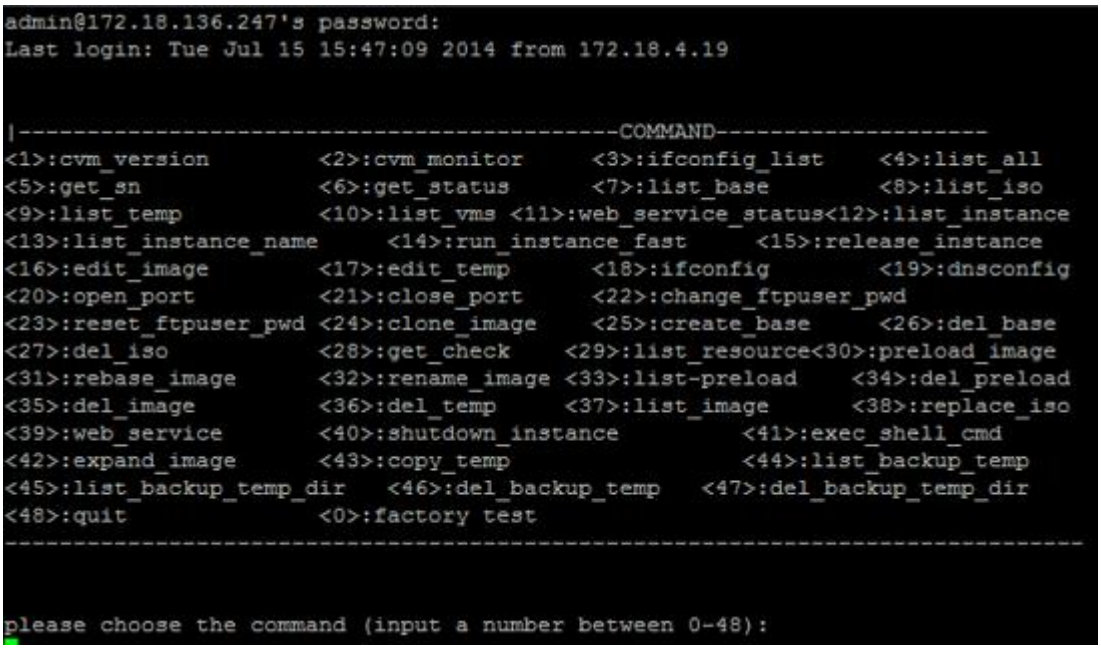
Log in to RCD Server by connecting to the serial port on the rear panel and setting the baud rate to 115200. Then, check the corresponding command. (The default user name and passwords are **admin**. For details about the commands, see relevant documents.)

serial-com1-115200 ×

```
RCC RCD Server OS release 1.0.9_R1.10
Kernel 3.10.23 on an x86_64

RCD login: admin
Password:
Last login: Tue Sep  9 16:49:03 on ttyS0


|-------------------------COMMAND----------------------------------------
<1>:cvm_version        <2>:cvm_monitor      <3>:ifconfig_list     <4>:list_all
<5>:get_sn             <6>:get_status       <7>:list_base         <8>:list_iso
<9>:list_temp          <10>:list_vms <11>:web_service_status<12>:list_instance
<13>:list_instance_name     <14>:run_instance_fast     <15>:release_instance
<16>:edit_image        <17>:edit_temp       <18>:ifconfig         <19>:dnsconfig
<20>:open_port         <21>:close_port      <22>:change_ftpuser_pwd
<23>:reset_ftpuser_pwd <24>:clone_image     <25>:create_base      <26>:del_base
<27>:del_iso           <28>:get_check     <29>:list_resource<30>:preload_image
<31>:rebase_image      <32>:rename_image <33>:list-preload     <34>:del_preload
<35>:del_image         <36>:del_temp      <37>:list_image       <38>:replace_iso
<39>:web_service       <40>:shutdown_instance          <41>:exec_shell_cmd
<42>:expand_image      <43>:copy_temp                  <44>:list_backup_temp
<45>:list_backup_temp_dir    <46>:del_backup_temp    <47>:del_backup_temp_dir
<48>:poweroff          <49>:reboot          <50>:quit       <0>:factory test
-------------------------------------------------------------------------------


please choose the command (input a number between 0-48):
3

ifconfig_list result:
<?xml version="1.0" encoding="UTF-8"?>
<return>
  <command>ifconfig_list</command>
  <dns>8.8.8.8</dns>
  <gateway>192.168.34.1</gateway>
  <ip>192.168.34.100</ip>
  <ip2>192.168.34.101</ip2>
  <netmask>255.255.255.0</netmask>
</return>
```

III. Log mode using an external VGA display (visualized UIs are provided since RCC_1.1)

You can log in to the RCD Server by connecting to the VGA display interface on the rear panel and connecting the keyboard and mouse (used for entering commands). Then, check the corresponding command. The default user name and password are admin.



Note: Due to limited windows of the display, certain information cannot be completely displayed. you can scroll up or down by pressing Shift+Page up or Shift+Page down to view the complete information.

7.4 Shortcut Keys for Rain Thin Client Commissioning

I. Back-end commissioning shortcut keys for Rain Thin Clients

Entering the Windows back end: **Shift**+**S**+**F8**

Entering the Linux back end: **Ctrl**+**Alt**+**T**

Entering the Android back end: **Alt**+**Shift**+**F7**

Note: It is greatly risky to log in to the back end and perform operations on the Thin Client. Improper operations may damage the system and result in the Thin Client running failure. Exercise caution when you perform this operation.

II. Functional Shortcut Keys for Rain Thin Clients

Running the convergent computing program: **Shift**+**R**+**F8**

III. UI Switching Shortcut Keys for Rain Thin Clients

Switching between the server UI and the CLI:

Switching to the login page: **Ctrl**+**Shift**+**Q**

Switching to the TUI: **Ctrl**+**Alt**+**F1**

IV. Other Shortcut Keys

Switching between the window and the full screen of Admin-Tool: **Shift**+**S**+**F11**

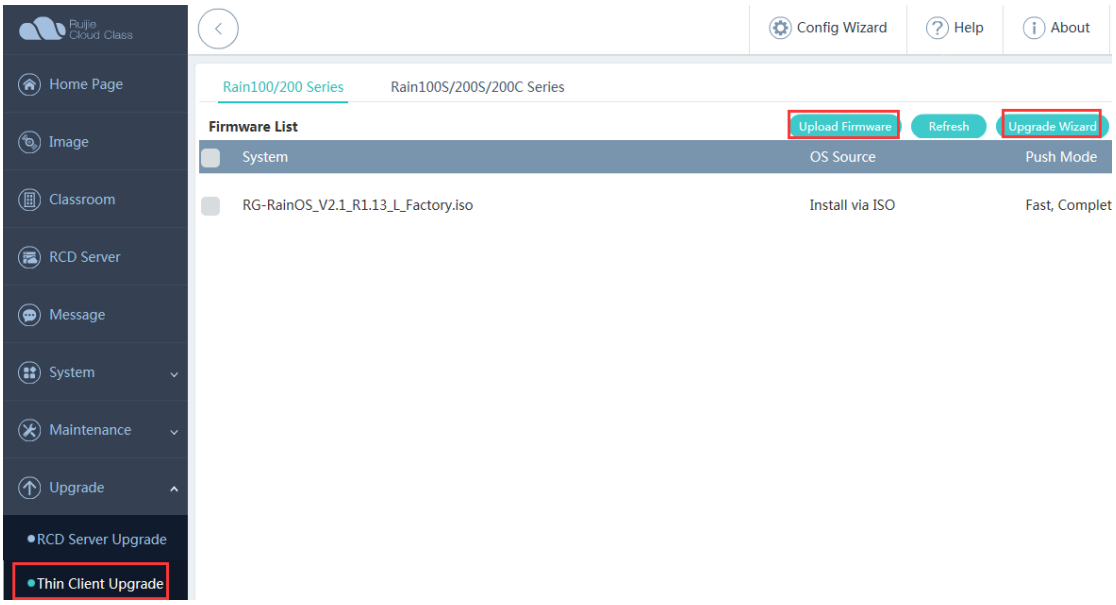
Skipping the Thin Client selection during iPXE/PXE upgrade: **Shift**+**F**

7.5 PXE Upgrade Mode

The PXE an distribute created images to all Thin Clients. Different from the iPXE, the PXE function requires hardware support.

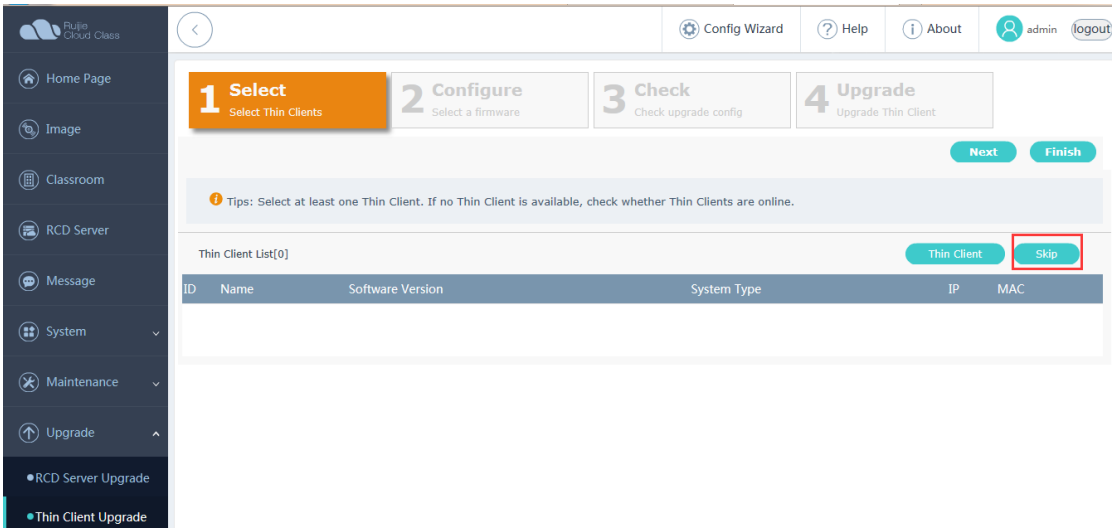
Note: Currently, the PXE function is configured through BIOS for all Rain Thin Clients, including the Rain100 V1.0–1.3 and Rain200 V1.0. For Rain200 V1.1, after the Thin Client is started, you can directly press F11 to enable the PXE function. After the Thin Client is restarted, the PXE function is automatically disabled and no extra configuration is required.

Image files of the Thin Client need to be uploaded using the Web-based upload system.



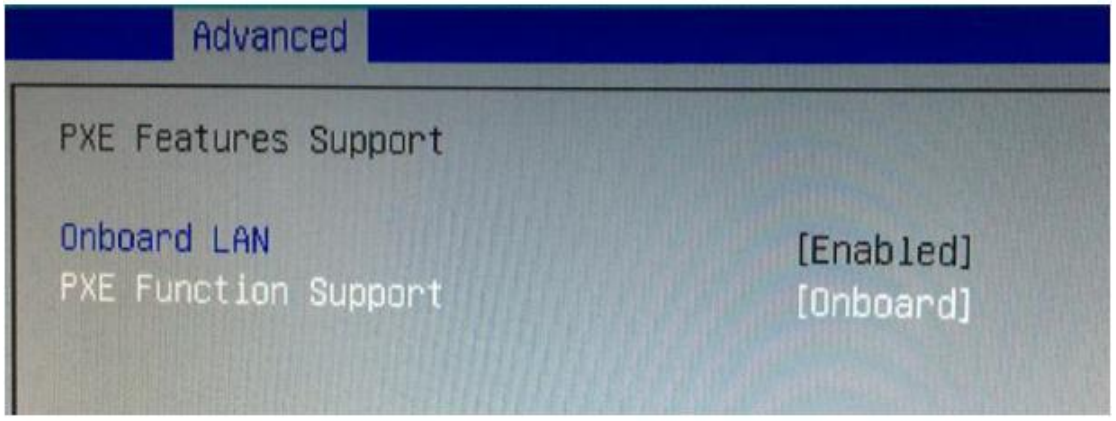
The upgrade operation steps are as follows:

1. Ensure that DHCP is configured and the IP segment has sufficient IP addresses. If the system remains at the DHCP page during startup, you can clear the lease and expand the DHCP address segment. Then, perform the operation again.
2. Click **Upgrade Wizard** and press **Shift**+**F** to skip the Thin Client selection. Select an image to be distributed, and click **Next**. Wait Thin Clients to connect to the RCD Server.

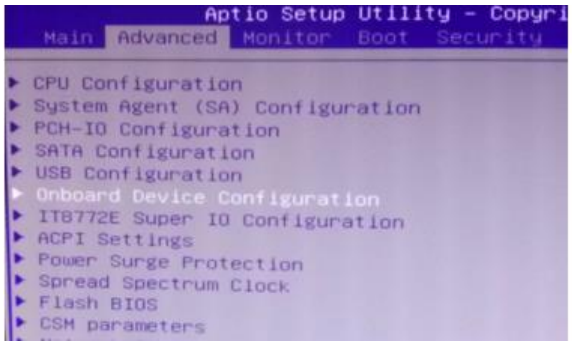


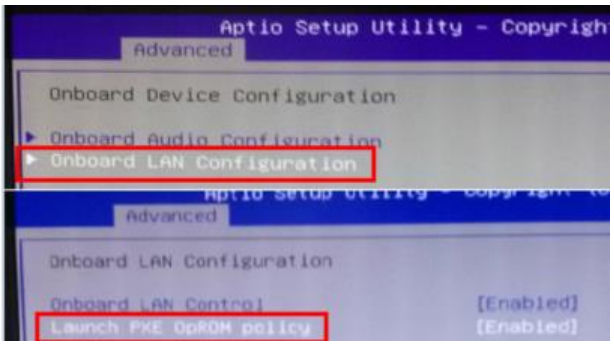
3. Enable the PXE function and set it to the **Onboard** mode.

Motherboard setting mode of Rain100 V1.0:

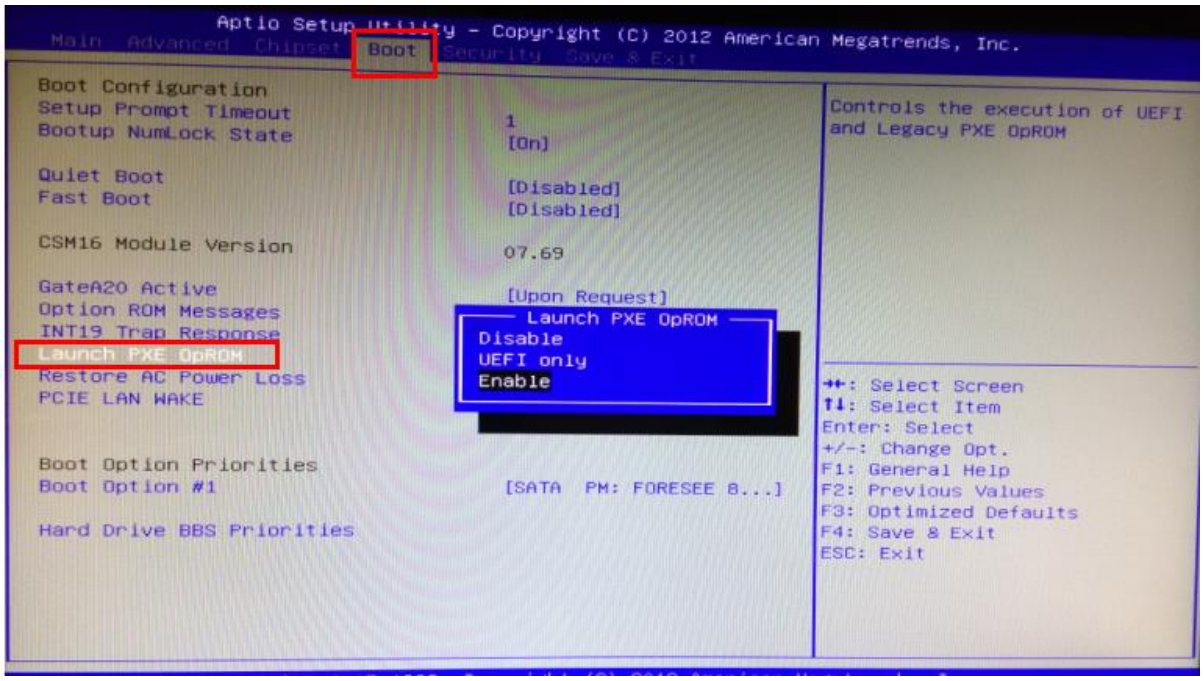


Motherboard BIOS setting mode of Rain100 V1.1 and later versions:





Motherboard BIOS setting mode of Rain200 V1.0:



4. Press **F10** or **F4**. Select **Yes** to save the settings and exit. Select **Launch PXE OpROM** on the **Boot** page and select **Enable** to restart the Thin Client. The waiting page in a blue background is displayed.

After the Thin Client is restarted, it automatically enters a page as shown in the following figure, waiting for the distribution of images.

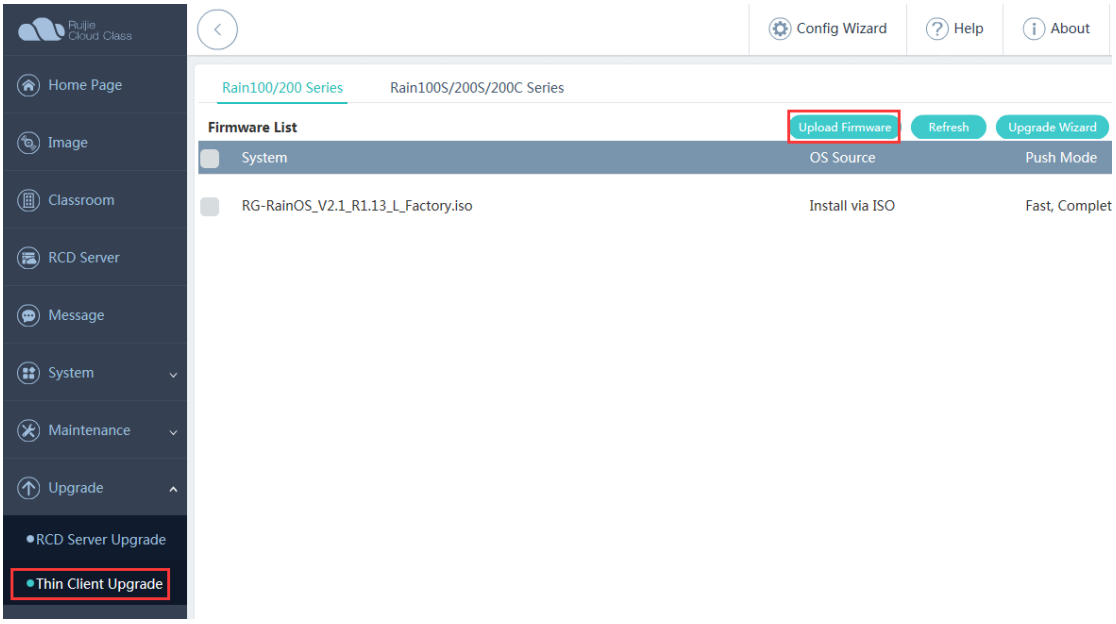
5. After IP addresses of all Thin Clients are displayed, indicating that all Thin Clients are waiting for the image distribution, start the distribution.
6. The Thin Clients start copying the images. After the images are copied, the system automatically disables the related services.

7.6 Fast Upgrade Mode

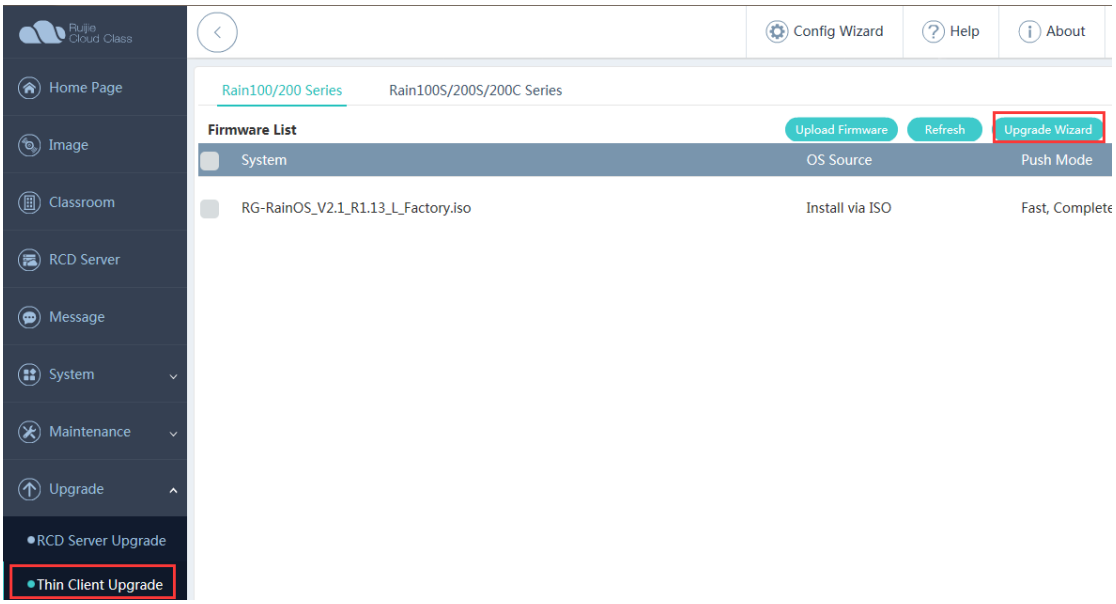
The premise for fast upgrade mode is that Thin Clients and RCD Servers are later than V2.0 r1p 2.25, and the target versions must be later than V2.0 r1p 2.25.

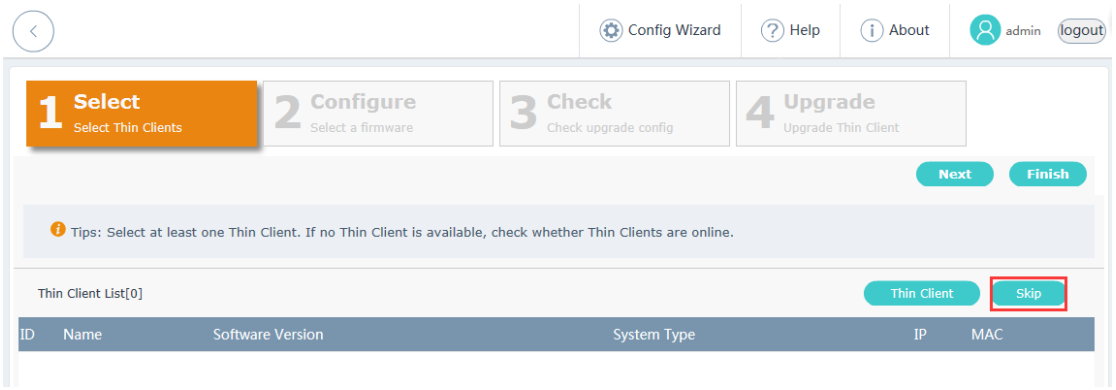
The fast upgrade mode does not rely on the DHCP function of the RCD Server. Thin Clients are allowed to use static addresses. The fast upgrade can be implemented as long as the Thin Client and the RCD Server can successfully interwork with each other.

1. Upload the Thin Client system version (only the ISO file suffixed with _X or _L supports the Rain100 and Rain200) through the Web system.

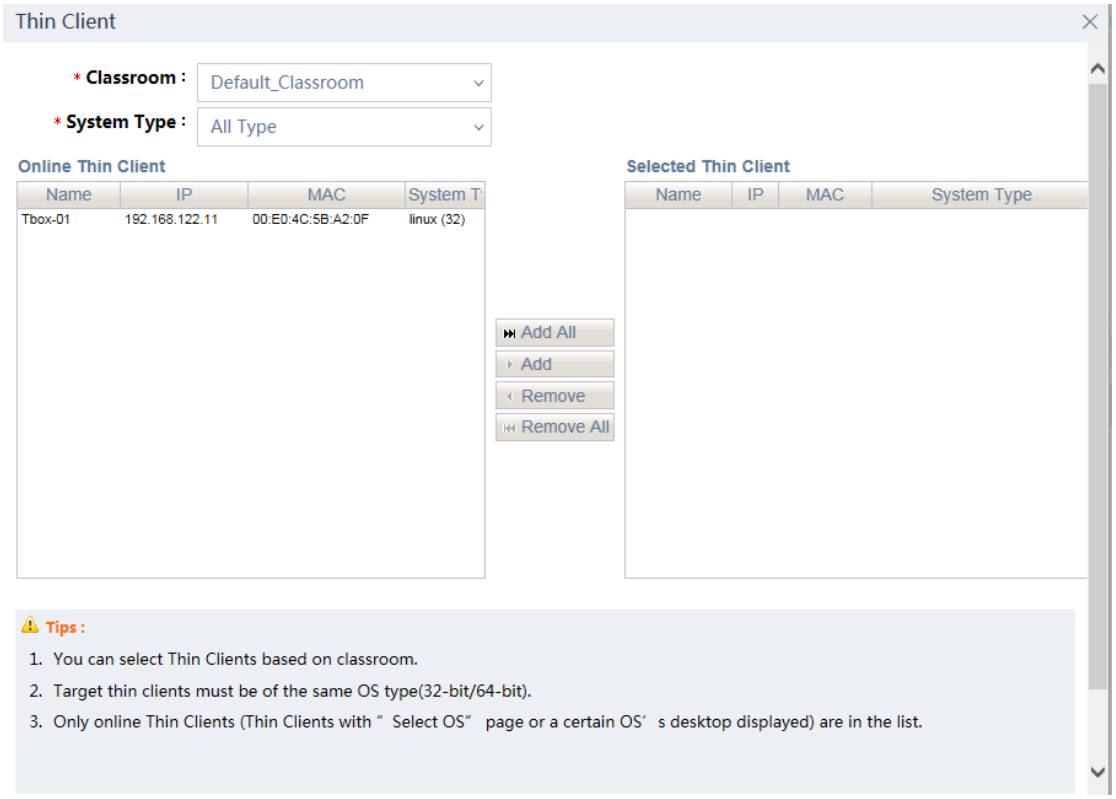


2. Click Upgrade Wizard.

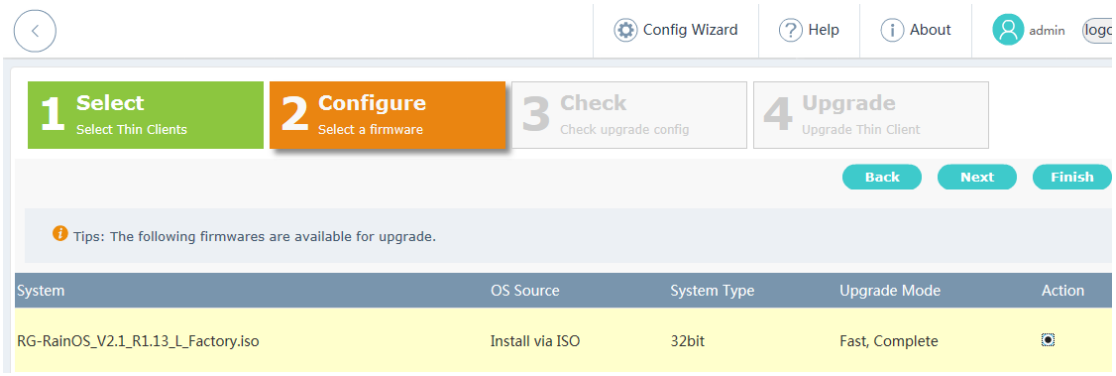




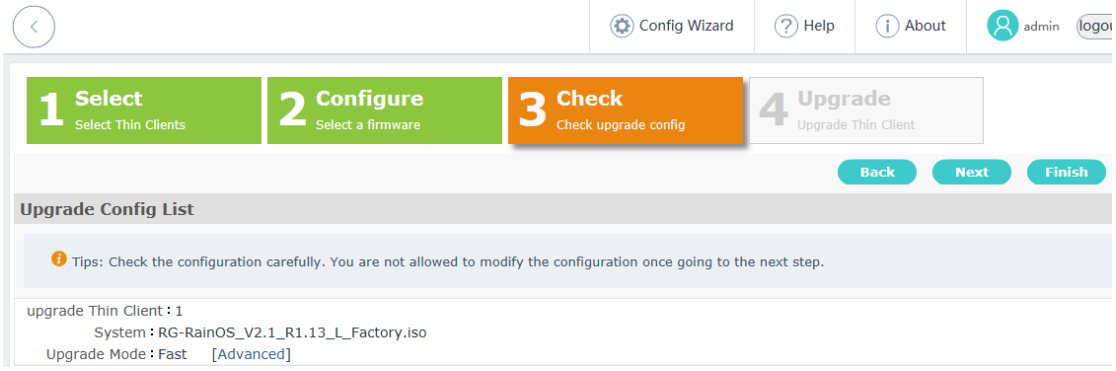
Select the Thin Client to be upgraded.



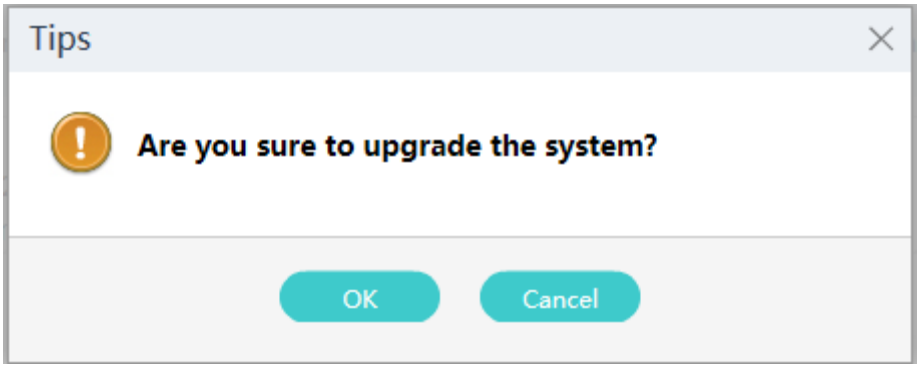
Select a target Thin Client version and click **Next**.



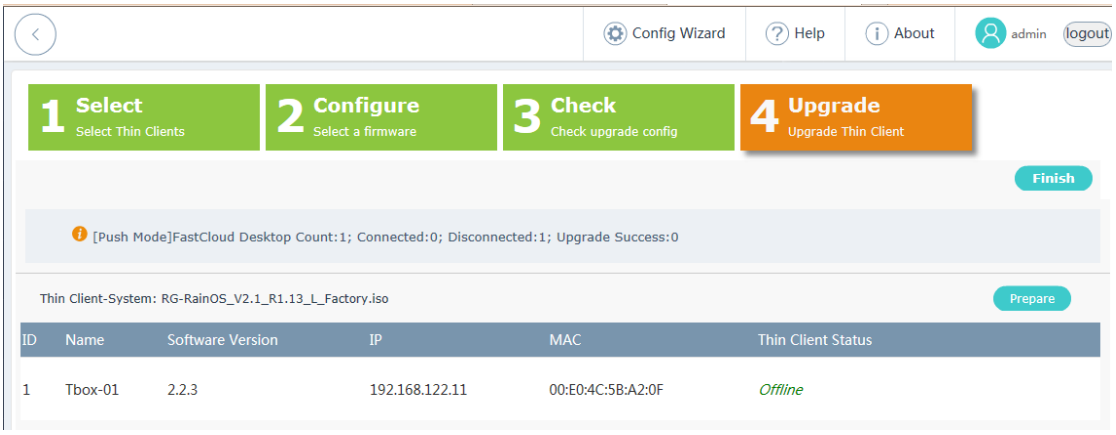
Click **Next**.



Click **Next** to upgrade the Thin Client.



Click **Prepare** and **OK**. The Thin Client automatically implements the upgrade flow. Wait until the system is successfully upgraded.



7.7 iPXE Upgrade Mode

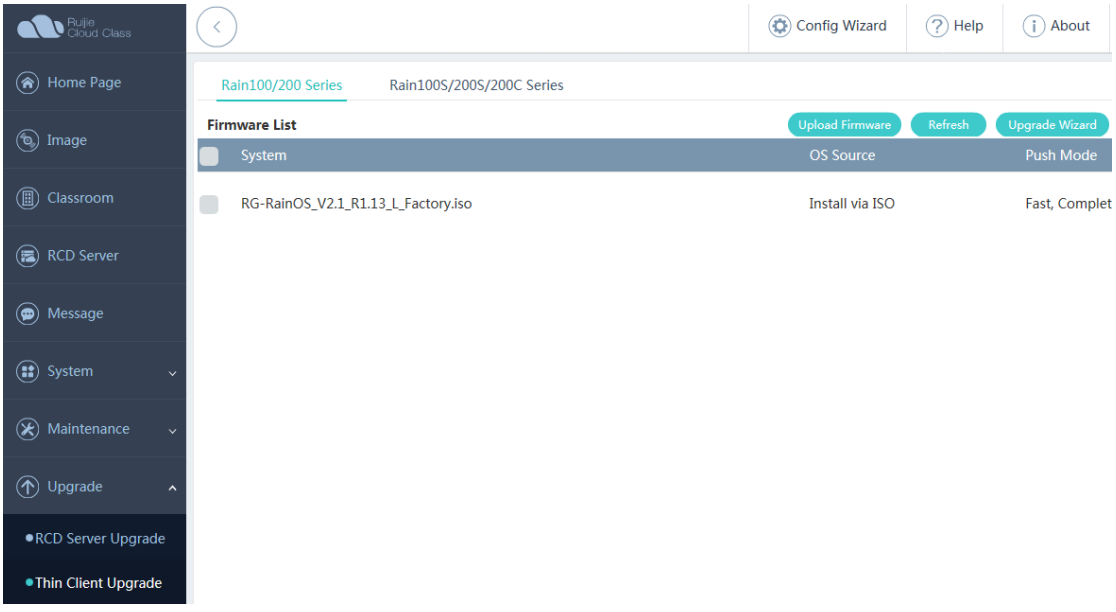
1. Configure the DHCP address pool.

Ensure that the DHCP address pool is large enough. Clear the lease. It is recommended that new address segments be used for upgrade.

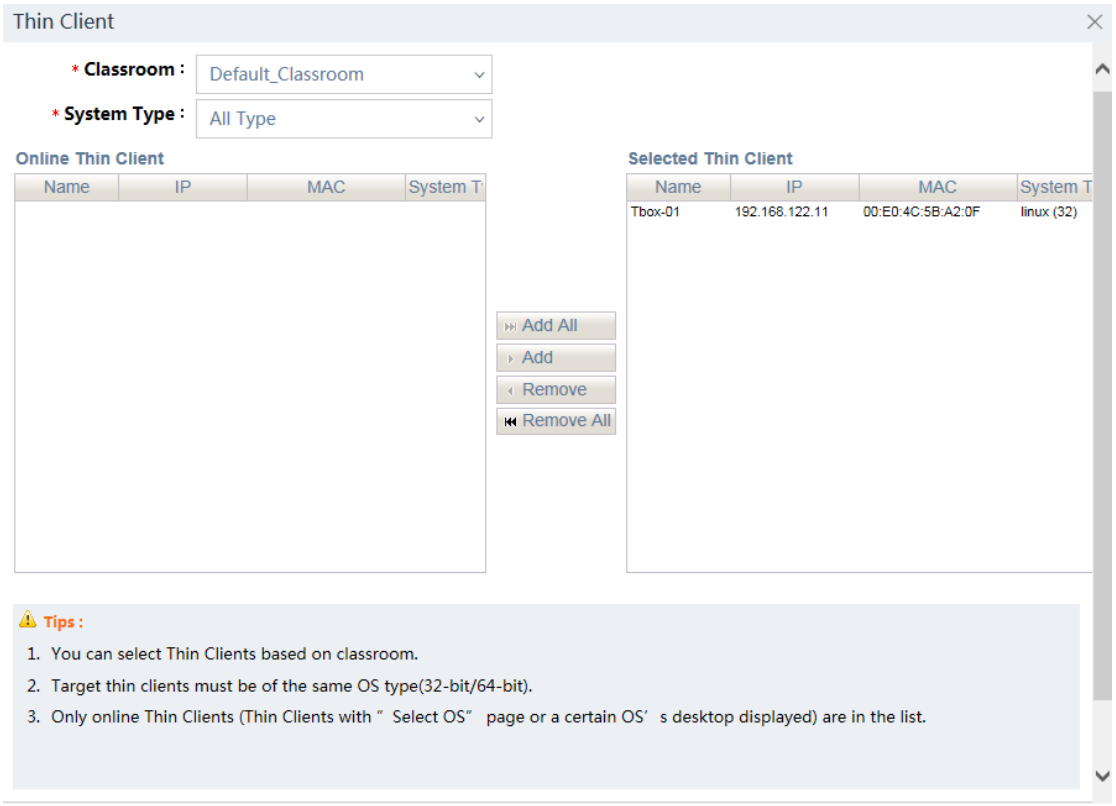
Ensure that no other DHCP service has been configured in the LAN and the IP address of the RCD Server is not contained in the DHCP address pool.

Ensure that two network ports of the RCD Servers function properly. Ensure that the to-be-upgraded Thin Client can connect to the RCD Server successfully. The preferred startup item of the Thin Client cannot be the PXE function.

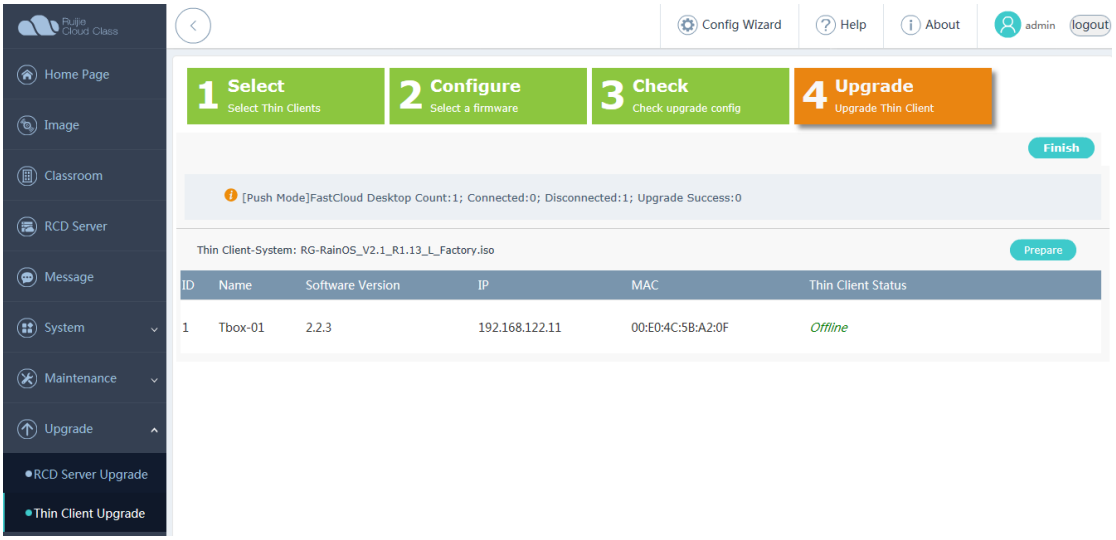
2. Choose Upgrade > Thin Client Upgrade. Upload the standard Thin Client image to the RCD Server. For the Thin Client ISO file downloaded from the net disk, check the MD5 value before uploading to ensure the image correctness.



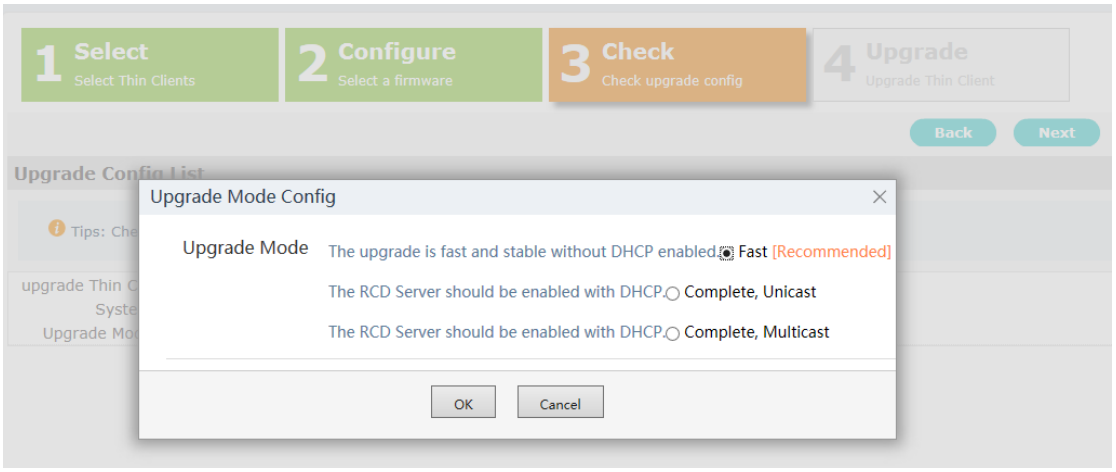
3. Click **Config Wizard** and add a Thin Client to **Selected Thin Client**.



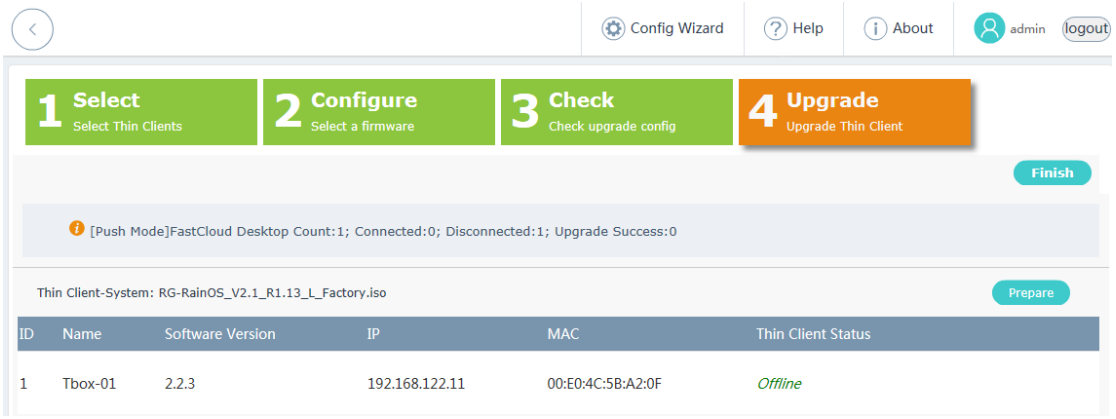
4. Click **Next** to configure the Thin Client system. Select an appropriate Thin Client and click **Next** to confirm the configuration.



5. In the Upgrade Mode Config dialog box, select Complete, Unicast or Complete, Multicast.



6. Click **Next** to start the upgrade.



7. Wait till the Thin Client is displayed on the upgrade page. If **unicast mode** is selected, the Thin Client automatically performs the upgrade operation. If **multicast mode** is selected, the system displays a button for starting the upgrade. Wait until all Thin Clients are added to the Thin Client upgrade list and then click the start button.

7.8 OTA Upgrade Mode

1. Configure the DHCP address pool.

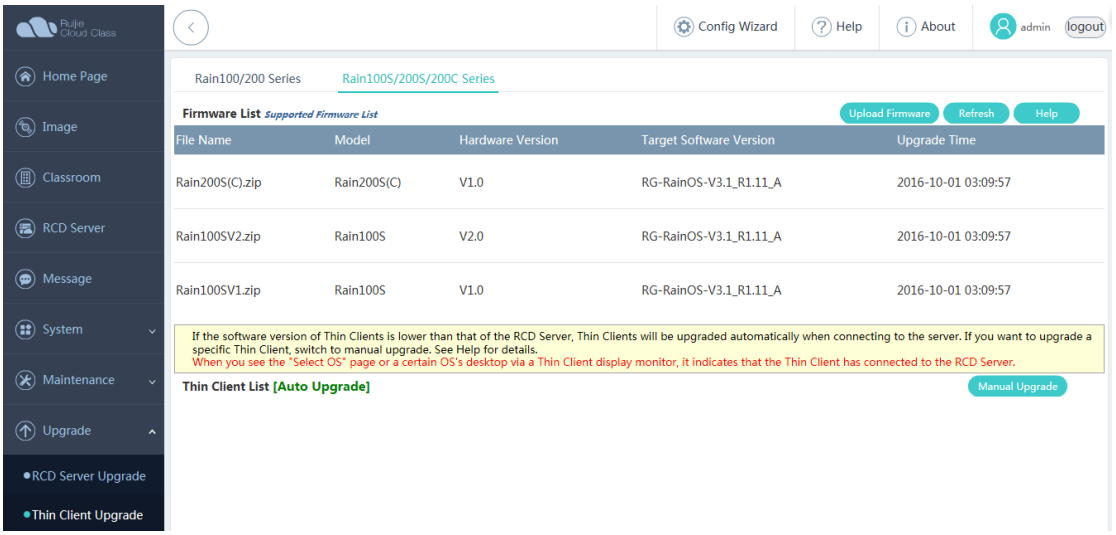
Ensure that the DHCP address pool is large enough. Clear the lease. It is recommended that new address segments be used for upgrade.

Ensure that no other DHCP service has been configured in the LAN and the IP address of the RCD Server is not contained in the DHCP address pool.

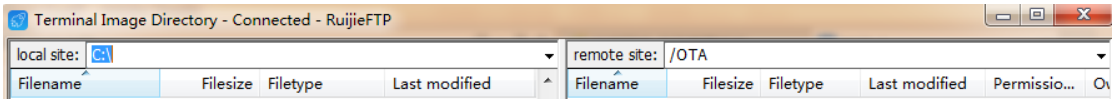
Ensure that two network ports of the RCD Servers function properly. Ensure that the to-be-upgraded Thin Client can connect to the RCD Server.

2. Upload the Thin Client system upgrade package.

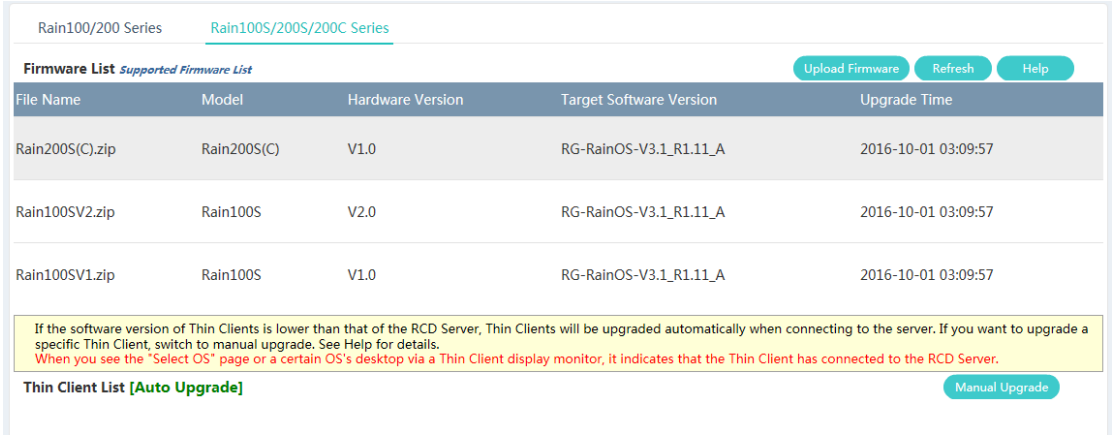
Choose **Upgrade** > **Thin Client Upgrade** from the navigation tree, select **Rain100S/200S/200C Series**, and click **Upload Firmware** to upload a proper Thin Client system upgrade package (suffixed with _A.zip) to the RCD Server.



Click the upgrade package to be uploaded and upload it to the RCD Server.

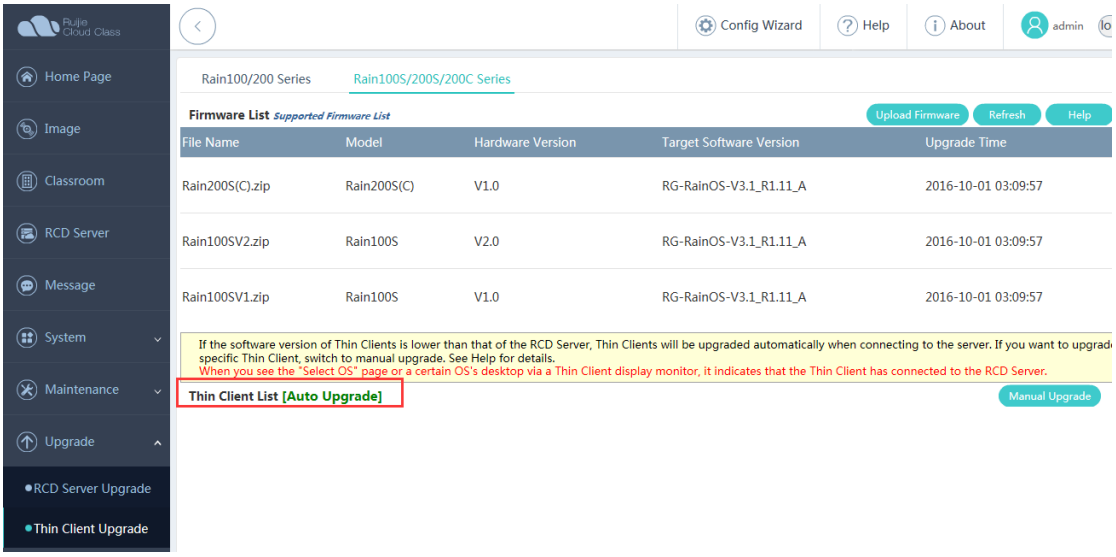


After the upload is complete, click **Refresh**. If information similar to the figure below, the upload is successful.



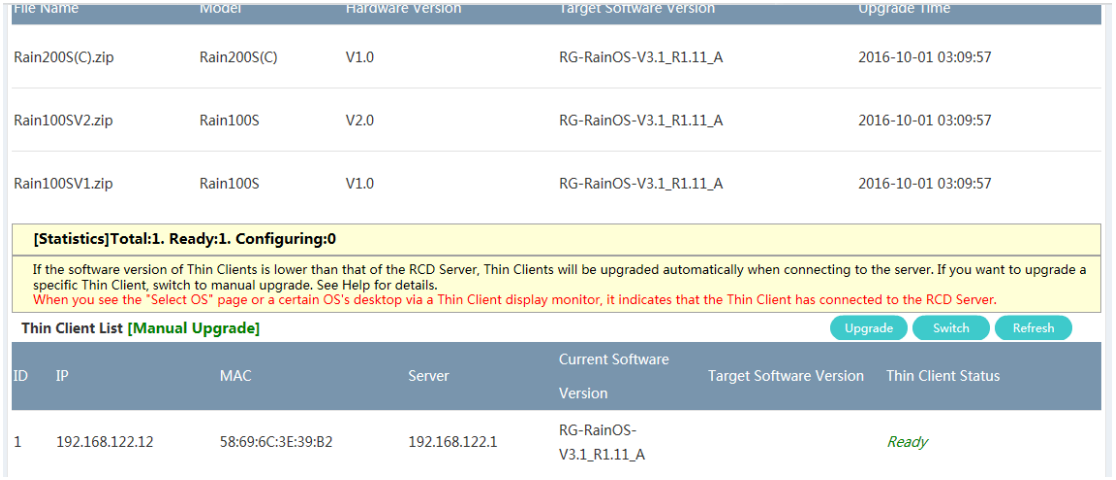
3. Set the automatic or manual upgrade mode.

   1) By default, the RCD Server uses automatic upgrade mode, as shown in the figure below.

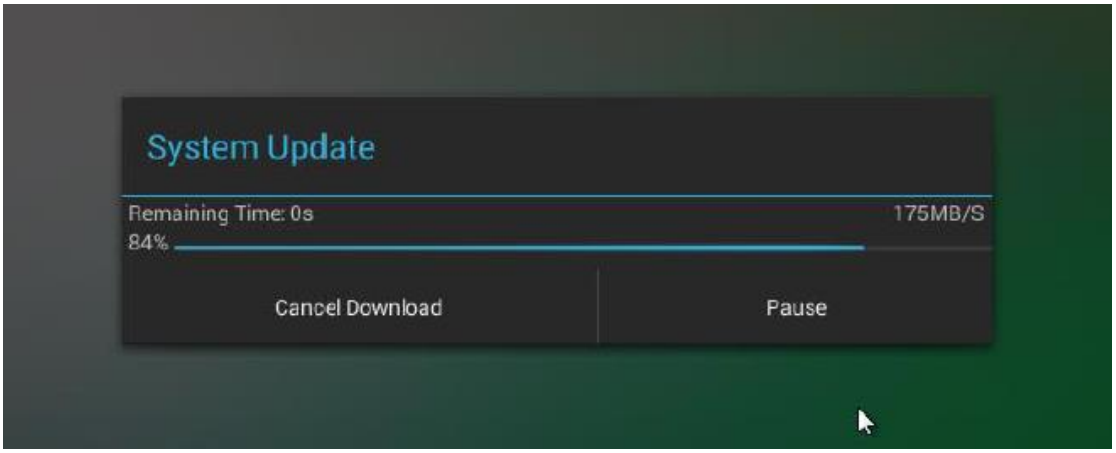


The system automatically upgrades the Thin Client after the Thin Client is powered on and connected to the RCD Server.

Switch the upgrade mode to the manual mode.



Wait for all Thin Clients to be upgraded to connect to the RCD Server, and then click **Upgrade**.



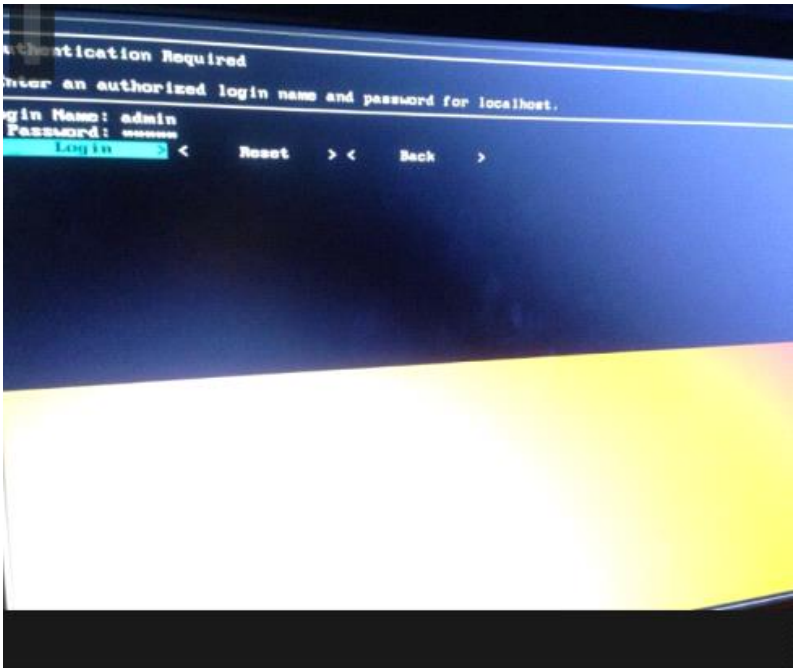
If a Thin Client is not connected to the RCD Server, click **Refresh** for the Thin Client to connect to the RCD Server.

8 FAQs

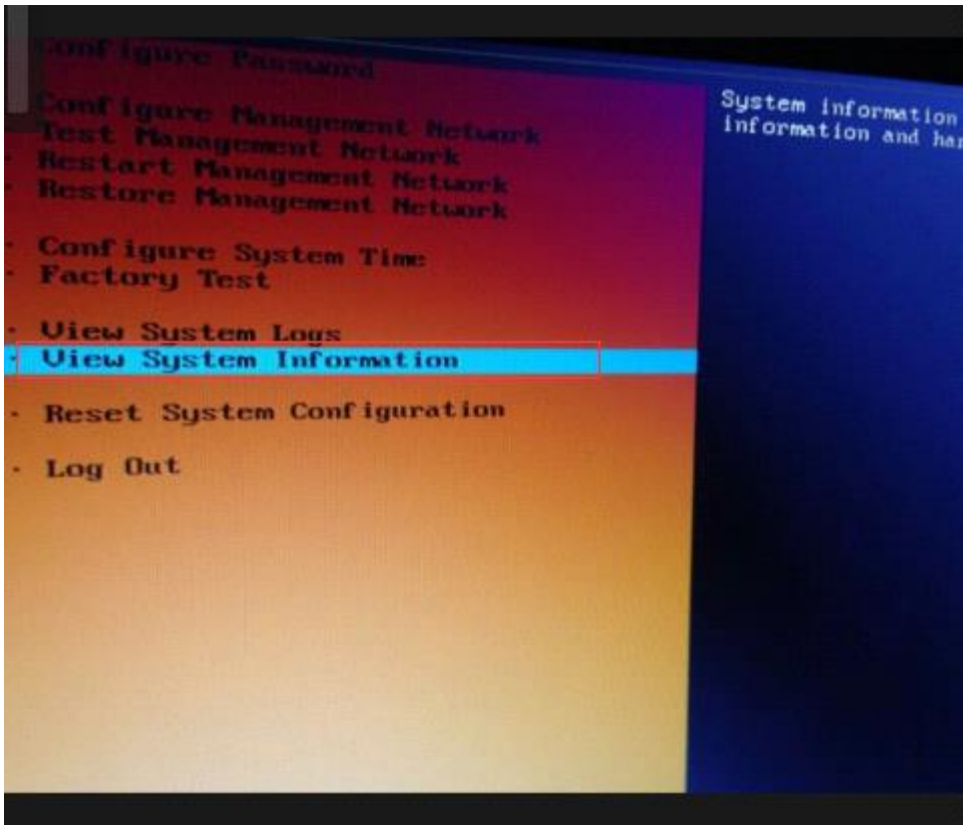
8.1 Products

Q1: How to view the hardware information of the RCD Server?

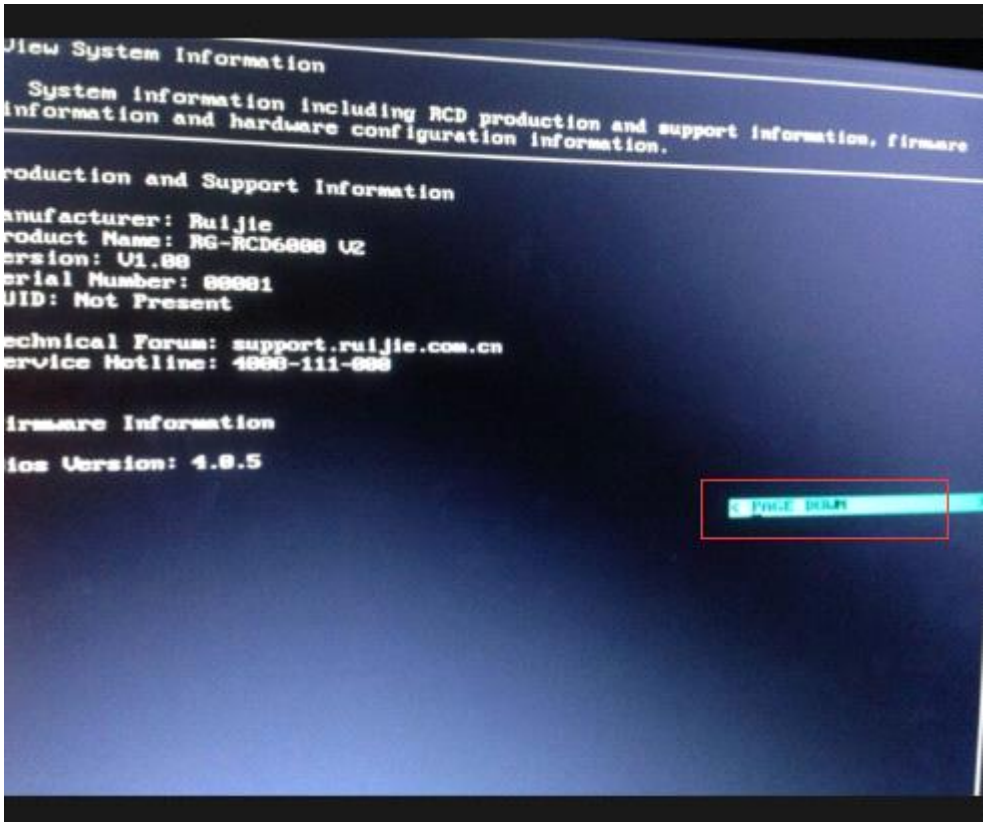
1. Upgrade the RCD Server to V1.1R1.18 or a later version and connect a display and a keyboard to the RCD Server.
2. On the login page of the RCD Server, press F2 and enter user name admin and password admin.

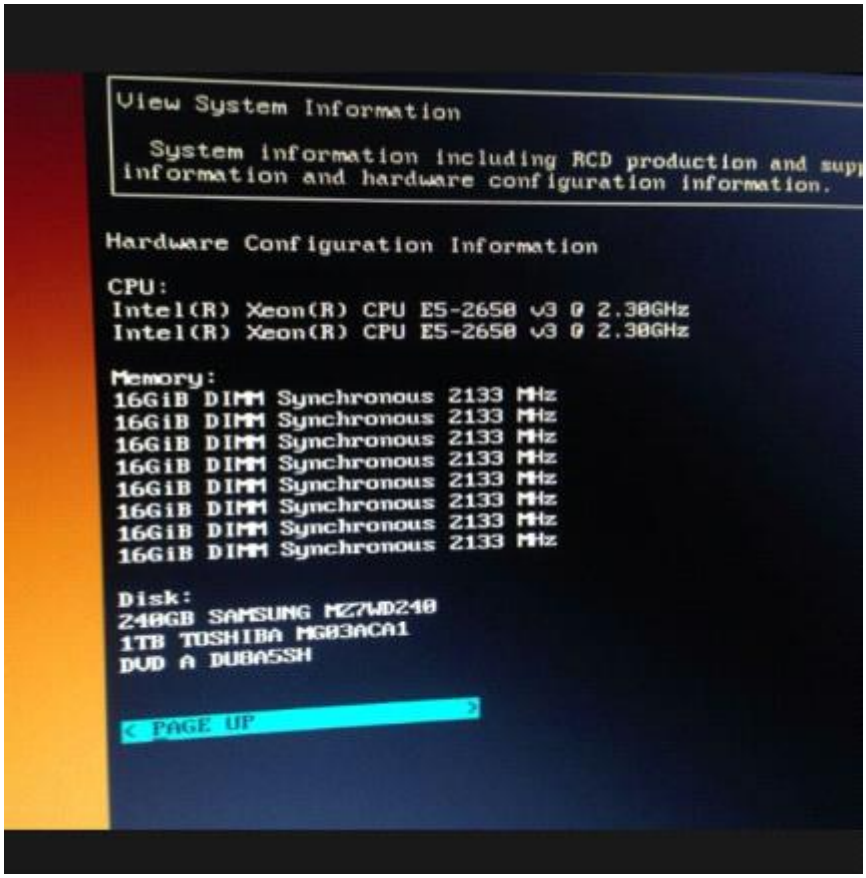


3. After you successfully log in to the system, switch to the View System Information page using the keyboard.



4. The configuration of the RCD Server is displayed. Select PAGE DOWN to display the hardware information.





Q2: What are differences between Thin Clients using the Linux system and Thin Clients using the Windows system?

The Rain Thin Clients are installed with the Linux system by default. The Linux system does support a few software. Therefore, the Linux system is not applicable to the convergent computing scenarios.

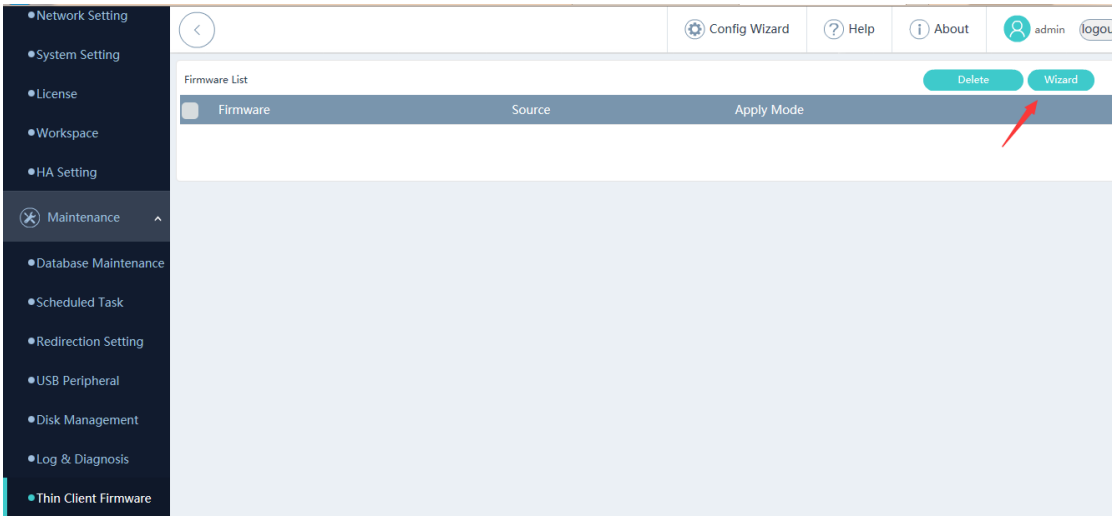
If the convergent computing function is required, you can load the Windows system to the Thin Client.

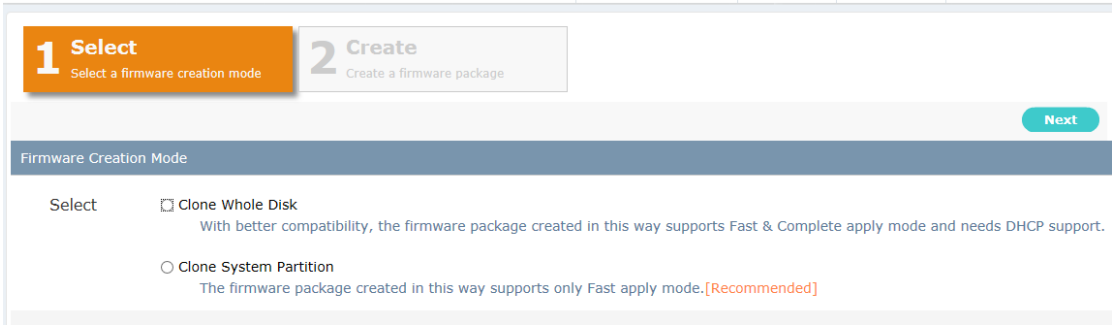
It is boring and tedious to re-install the OS for Thin Clients one by one. You can use the simple solution provided by the RCC solution. The steps are as follows:

1. Re-install the Windows system on a Thin Client.
2. Press **Shift**+**S**+**F8** to access the Windows XP system and install the required software. For details, see "Convergent Computing" in the Appendix.
3. On the management page of the RCD Server, select the Thin Client and create an image.

   The firmware creation function is only applicable to the Rain100/Rain200 series. The operation steps are as follows:

1) Select **Thin Client Firmware** from the navigation tree and click **Wizard**.

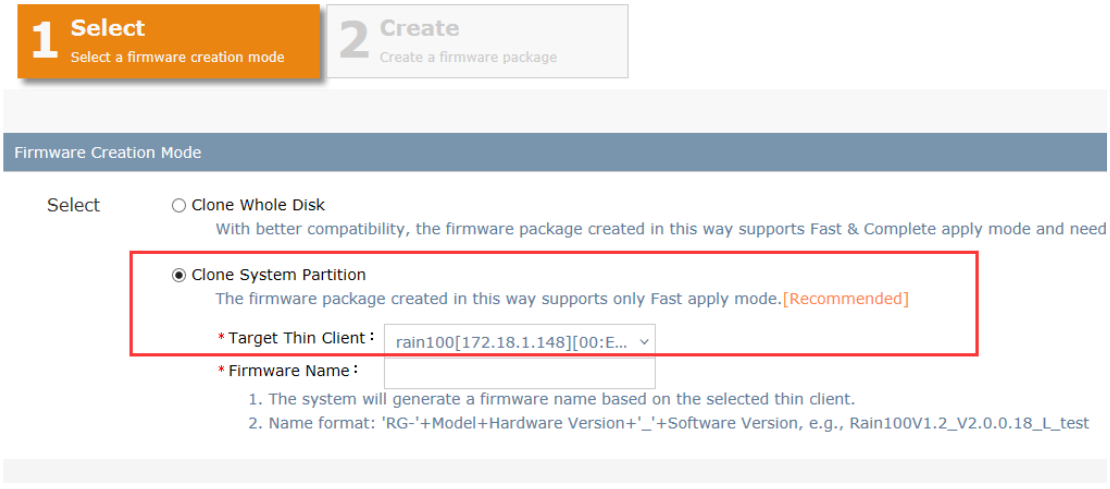




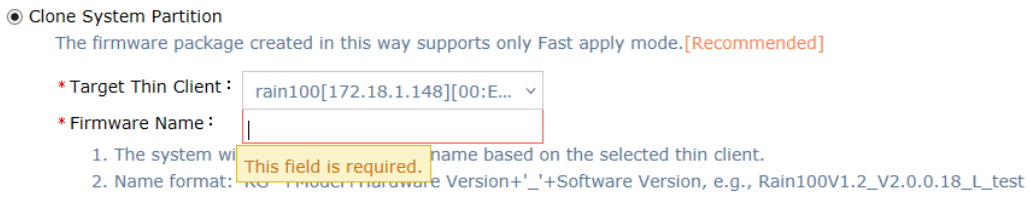
2) Select the firmware creation mode.

a) Clone System Partition

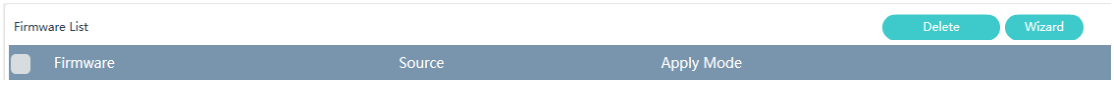
Set **Target Thin Client**, which is used as the base disk image.



The system automatically fills in the firmware name. You can also set the firmware name based on the naming convention described above.



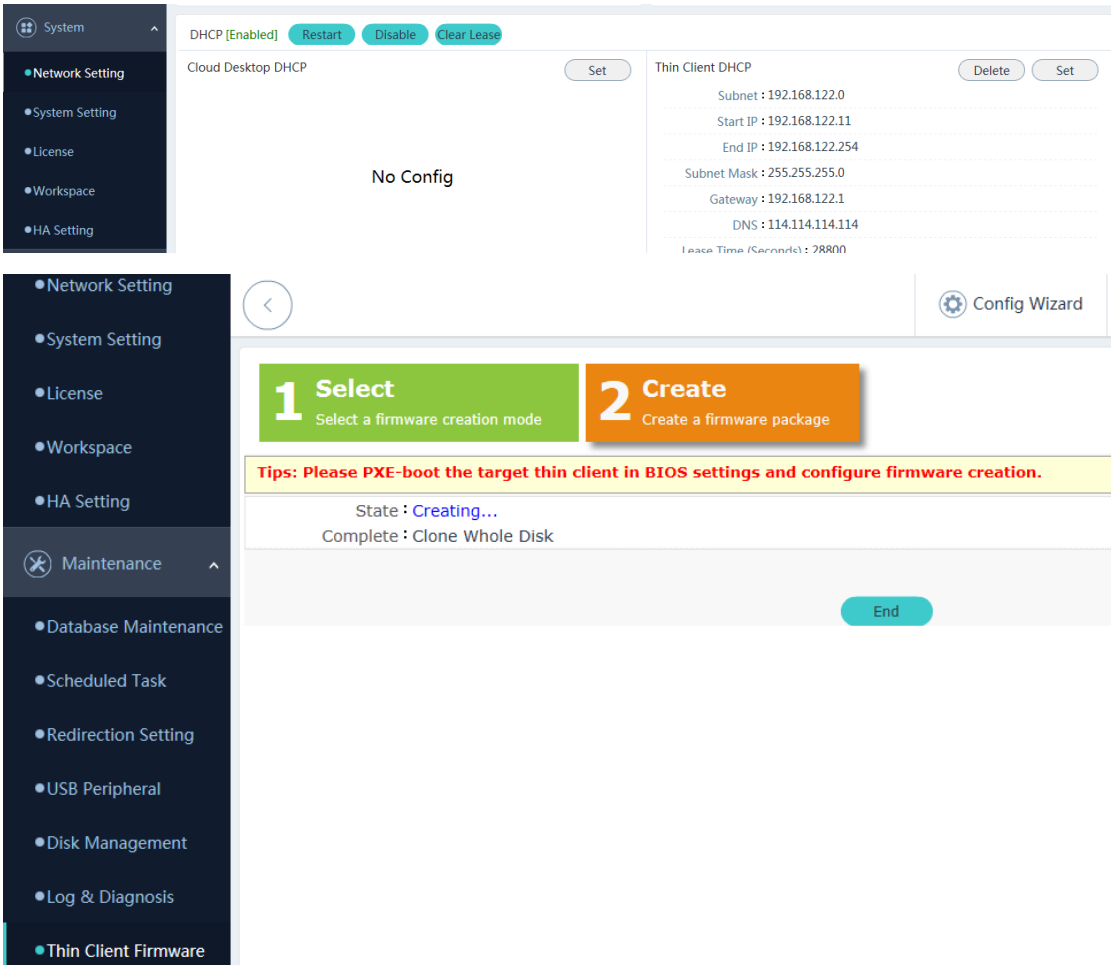
Click **Next**. The Thin Client is restarted and enters the firmware creation page. Wait until the creation is successful. You can view the firmware in the **Firmware** List.



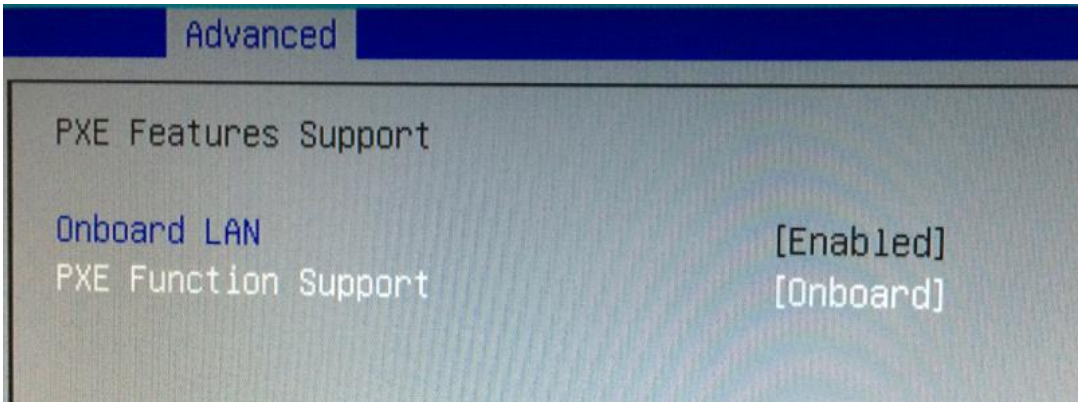
b) Clone Whole Disk

This creation mode depends on the DHCP service of the RCD Server. Therefore, you need to configure the DHCP first.

The system starts to clone the whole disk.



Set the Thin Client to start in PXE mode. Restart the Thin Client. A page in red background is displayed.



2) The Thin Client uses the default configuration. Enter **y**. Enter the name of the image to be saved as prompted.

3) The image clone starts. After the clone is completed, a prompt indicating whether to shut down or restart the system is displayed. Select the restart option and access the BIOS. Disable the PXE startup item.

4. Upgrade the Thin Clients in batches in iPXE mode by using the created image.

5. Re-configure the Thin Client. The Thin Client has switched to the Windows system at this time.

Q3: What software and hardware does the RCC support?

RCD V3.0 supports the following hardware:

- RCD Server V1.0 and RCD Server V2.0
- All Rain Thin Client versions

The following models of the ClassMananger Rainbow support remote wakeup after power failure:

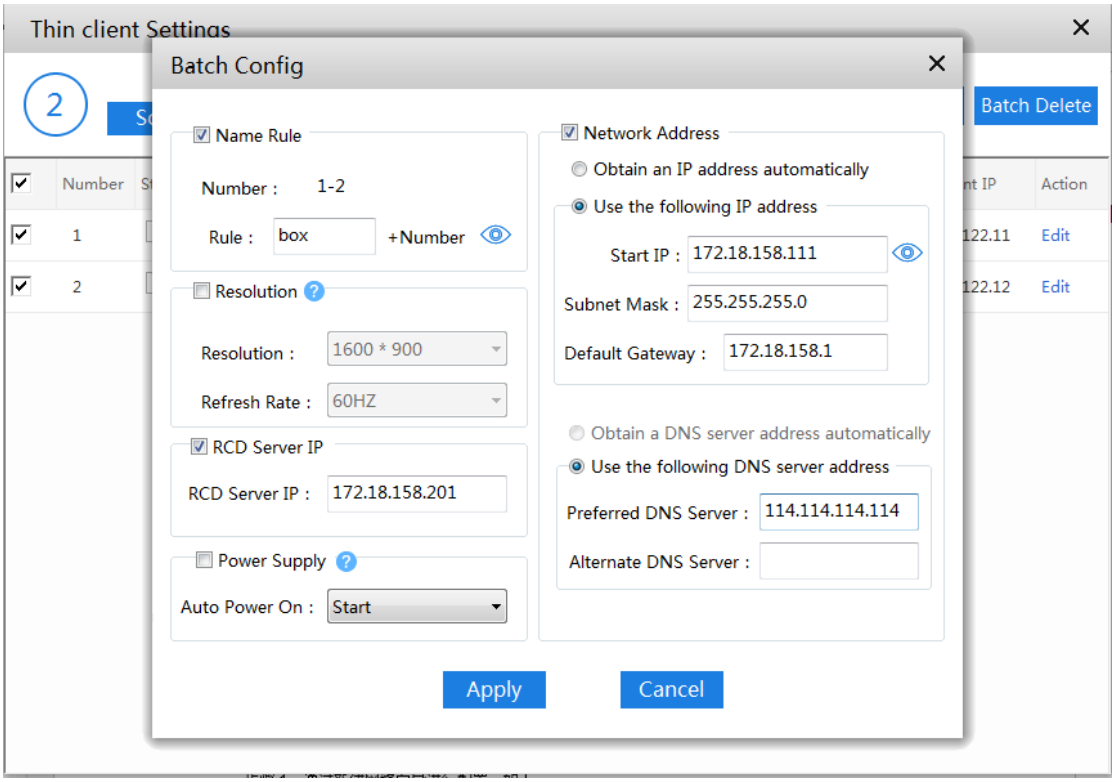
- Rain100 V1.21 and Rain100 V2
- Rain200 V1.1 and later versions

8.2 Deployment

Q1: How to correctly plan the IP addresses for a classroom using the cloud class to avoid address conflict?

You can use the easy deployment function to correctly plan IP address ranges of the Cloud Desktops and Thin Clients, to avoid Thin Client login failure due to address conflict. The configuration method is as follows:

1. Before configuration, plan the IP address segment. Ensure that IP addresses in this segment are not used. For example, set the address segment of 60 Thin Clients to 192.168.1.11–192.168.1.70, the address segment of Cloud Clients is 192.168.1.101–192.168.1.160, and the addresses of RCD Servers are 192.168.1.200/201.
2. On the web management UI of the RCD Server, click Cloud Desktop, click Batch Config, and set the start IP address of Cloud Clients to 192.168.1.101.
3. For a newly deployed classroom or a classroom with Thin Clients upgraded to V1.1, enable the DHCP service, and configure correct DHCP address pool (addresses in the DHCP address pool must be in the same network segment as the addresses of the RCD Servers), to ensure that all Thin Clients in this classroom can obtain IP addresses upon startup.
4. Install the CM2_Teacher of the latest version on the teacher PC, configure the correct RCD Server IP address, and connect the teacher PC to the RCD Servers (after the CM2_Teacher is successfully installed, you need to restart the teacher PC).
5. Select Batch Config. Click Scan to scan all Thin Clients in the classroom. If the number of scanned Thin Clients is inconsistent with the actual number, click Renumber. A unified numbering window is displayed on a scanned Thin Client. Then, you can find out the Thin Clients that do not obtain IP addresses or are not properly connected with network cables. Rectify the faults. After all Thin Clients are scanned, click Renumber and press Enter. Number the Thin Clients in the classroom in sequence.
6. After renumbering is completed, click Batch Config and configure the Thin Client name (optional. It cannot be the same as the Cloud Desktop name. Otherwise, a name conflict occurs), resolution (optional), RCD Server address (set to the IP address of the RCD Server deployed in the classroom), and Thin Client address (you are strongly recommended to manually configure a static IP address and set the start IP address, subnet mask, gateway address, and DNS address). You can click the eye icon to view the configured addresses.



7. After the configuration is confirmed, click Apply.
8. After the addresses of all Thin Clients are configured, adjust the range of the DHCP address pool to the address range that is not occupied by the Cloud Desktops and Thin Clients, or directly disable the DHCP service.

Q2: What are differences between the local deployment mode and cluster deployment mode?

The local deployment refers to the Cloud Class deployment scheme for a single classroom. The Cloud Class can use one RCD Server or multiple RCD Servers deployed in stack mode. All Cloud Desktop services are only used in the current classroom.

The cluster deployment refers to the Cloud Class deployment scheme for multiple classrooms. The cluster deployment supports load balancing of Cloud Desktops as well as failover of computing nodes.

Q3: Why doesn't a license take effect after it is imported?

1. Ensure that the RCD Server is upgraded to the latest version.
2. The license is valid but the license is not successfully uploaded to the RCD Server due to browser issues.

Solution: For the Internet Explorer, it is recommended to enable the compatible mode and then import the license file. Alternatively, you can import the license file using Google Chrome.

Q4: How to configure IP addresses for the ClassManager_Students if the IP addresses of two classrooms are in the same network segment?

To save IP address resources, a college may allocate IP addresses in the same network segment to two classrooms. When deploying CM3.0, you need to configure a static IP address for the CM3.0_Teacher for Thin clients and Cloud Desktops.

1. If the IP addresses of two classrooms are in the same network segment, ensure that the Thin Client addresses, Cloud Desktop addresses, and RCD Server names do not conflict.
2. During the deployment, disconnect the switches of two classrooms.
    a. Configure the ClassManager_Students in each classroom by using the CM3.0_Teacher. You need to manually specify the IP addresses of teacher PCs in the classrooms.
    b. Edit the images and manually specify the ClassManager_Teacher IP address for CM3.0_Student in the image. Save the settings.
3. After the configuration is completed, interconnect the two classrooms and test the interconnection.

Q5: How to configure convergent computing in batches for Rain100 or Rain200 Thin Clients?

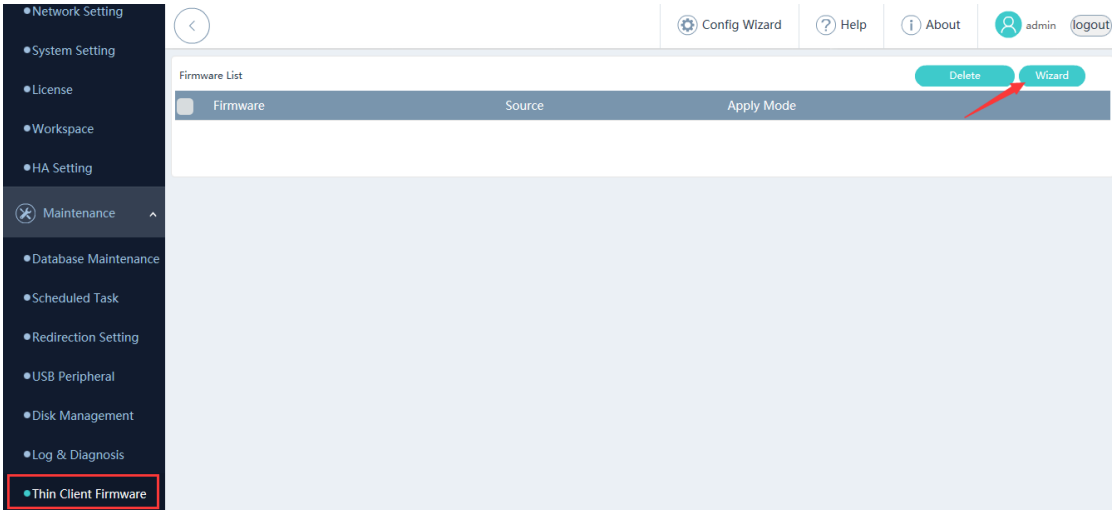
If the convergent computing function is required, you can upgrade the Windows system.

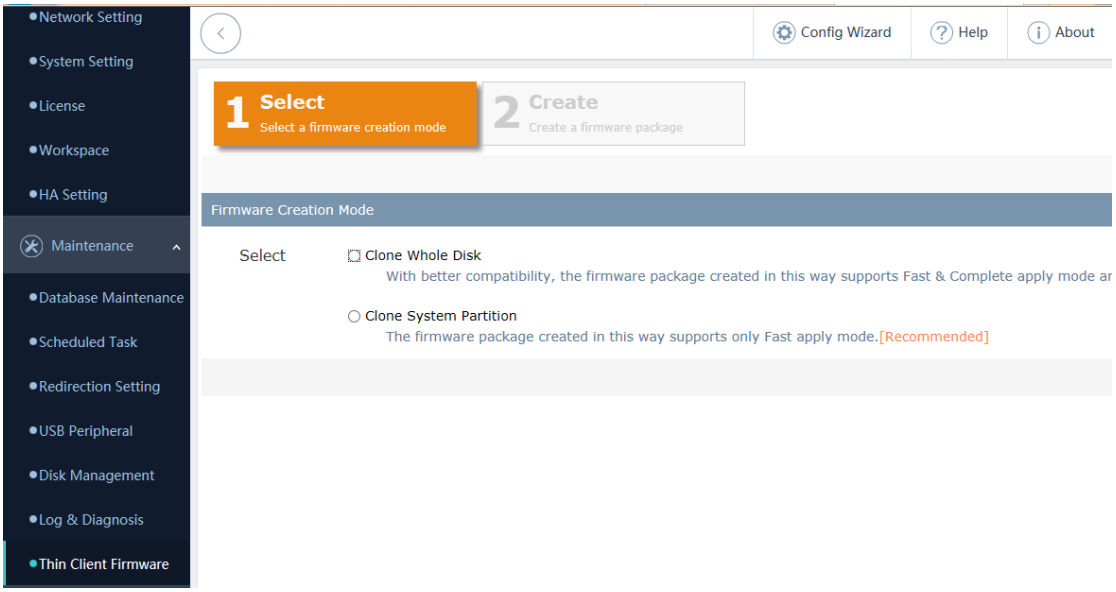
It is boring and tedious to re-install the OS for Thin Clients one by one. You can use the simple solution provided by the RCC solution. The steps are as follows:

1. Re-install the Windows system on a Thin Client.
2. Press **Shift**+**S**+**F8** to access the Windows XP system and install the required software. For details, see "Convergent Computing" in the Appendix.
3. On the management page of the RCD Server, select the Thin Client and create an image.

The firmware creation function is only applicable to the Rain100/Rain200 series. The operation steps are as follows:

1) Click **Thin Client Firmware** from the navigation tree and click **Wizard**.

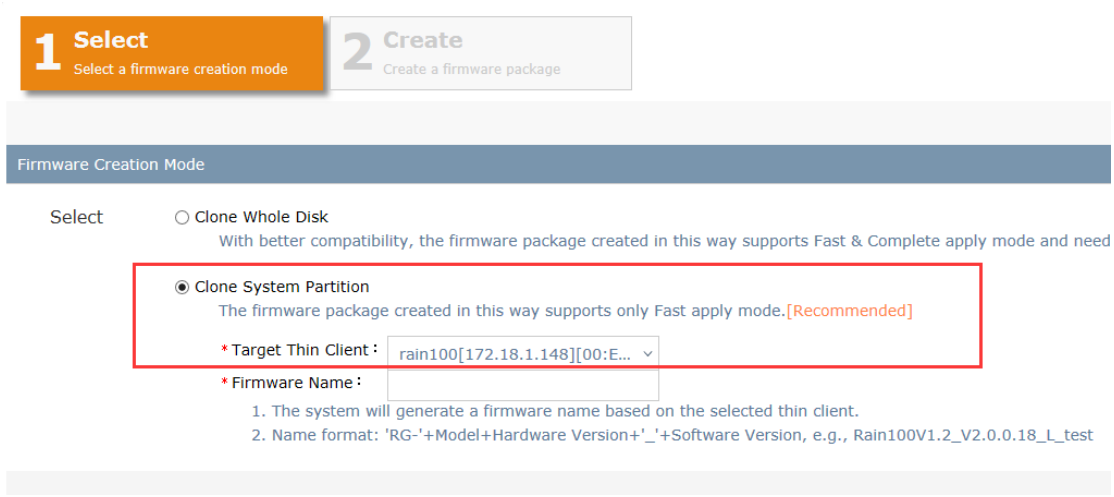




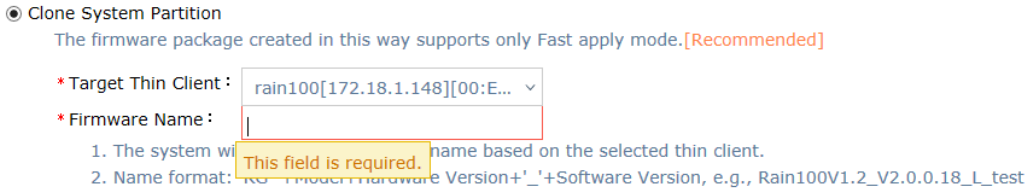
2) Select the firmware creation mode.

a) Clone System Partition

Set **Target Thin Client**, which is used as base disk image.



The system automatically fills in the firmware name. You can also set the firmware name based on the naming convention described above.

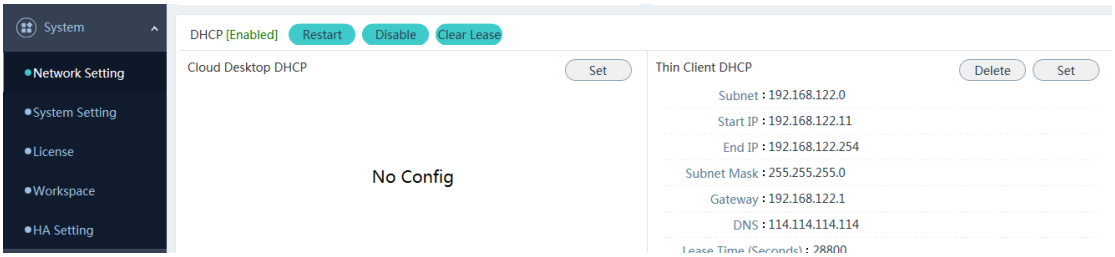


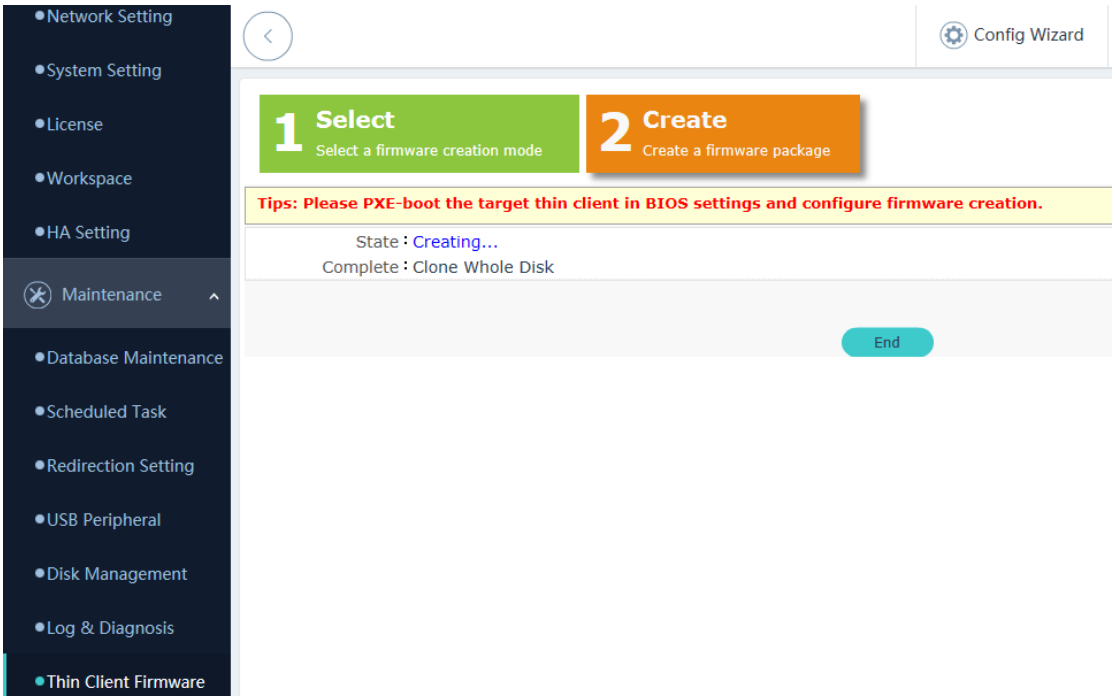
Click Next. The Thin Client is restarted and enters the firmware creation page. Wait until the creation is successful. You can view the firmware in the Firmware List.

b) Clone Whole Disk

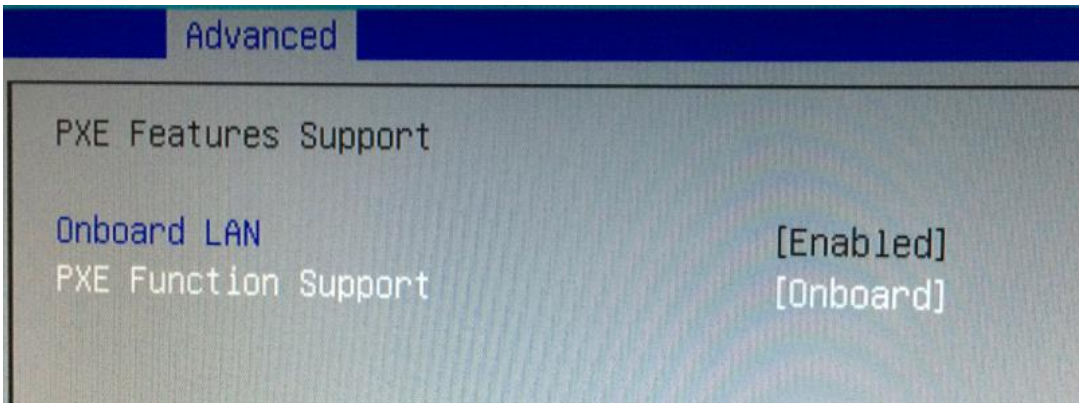
This creation mode depends on the DHCP service of the RCD Server. Therefore, you need to configure the DHCP first.

The system starts to clone the whole disk.





Set the Thin Client to start in PXE mode. Restart the Thin Client. A page in red background is displayed.



3) The Thin Client uses the default configuration. Enter **y**. Enter the name of the image to be saved as prompted.

4) The image clone starts. After the clone is completed, a prompt indicating whether to shut down or restart the system is displayed. Select the restart option and access the BIOS. Disable the PXE startup item.

4. Upgrade the Thin Clients in batches in iPXE mode by using the created image.

5. Re-configure the Thin Client. The Thin Client has switched to the Windows system at this time.

8.3 Upgrade

Q1: What is the RCC V3.0 upgrade route map?

RCD Server upgrade:

Currently, the latest version of RCC V3.0 is RG-RCC_V3.0_R1.14. To upgrade an RCD Server from V1.0.9.36 or V1.1 to V3.0, load the patch package in Web mode, and then load the system package. An RCD Server of V2.0 or a later version can be directly upgraded to V3.0 in Web mode.

If the version of an RCD Server is V1.0.8.8, you are suggested to adopt the ISO upgrade mode using the USB flash drive (directly upgrade the current version to V2.0_R1.18 and then load the V2.0_R1P1.19 patch package or a later patch package).

Note: After the RCD Server is upgraded to V3.0, you are recommended to perform deployment or configuration by using Google Chrome.

Thin Client upgrade:

The installation package for Android-based Thin Clients is already integrated into the installation package of RCD Server V3.0.

Rain100V2: Thin Client V1.1 and later versions adopt the installation package of Thin Client V3.0 for the upgrade.

Rain100(V1.0) inherits the system of Thin Client V2.0.

Rain200(V1.0) inherits the system of Thin Client V2.0.

Rain100(V1.1) and later versions inherit the system of Thin Client V2.1.

Rain200(V1.01) and later versions inherit the system of Thin Client V2.1.

Q2: How to upgrade the Thin Clients in iPXE mode without modifying the BIOS?

In V2.0_R1P1.19, you do not need to flash the BIOS of each Thin Client. You can rapidly upgrade the Thin Clients on the Web management UI.

1. After you successfully upgrade the RCD Server to V2.0_R1P1.19, power on all Thin Clients in the classroom. The RCD Server automatically upgrades the RCC Thin Clients to V2.0_R1P1.19. Ensure that all Thin Clients are successfully upgraded and display the image selection screen.
2. Upload images. On the Web management UI, choose **Thin Client** > **Image** > **Upload**. For classrooms that do not need to install software in the underlying system or use the convergent computing software, it is recommended that the underlying be upgraded to the Linux system.
3. Enable the DHCP address pool on the RCD Server, configure a sufficient address space (ensure that the address quantity is more than twice the number of Thin Clients in the classroom), clear the lease, and restart the DHCP service. (Assume that there are 60 Thin Clients in a classroom, and the RCD Server address is 192.168.1.200. Set the subnet address of the DHCP address pool to 192.168.1.0, the start IP address to 192.168.1.2, and the end IP address to 192.168.1.199.

Clear the lease and restart the DHCP service). It is recommended that you disconnect the classroom from the external network to prevent other DHCP servers from affecting the upgrade in iPXE mode.

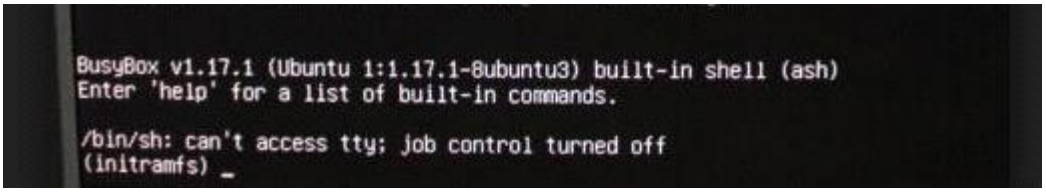
4. After the DHCP address is configured, choose **Thin Client Upgrade** > **Upgrade** . Click **Prepare** for the corresponding image. Set the distribution mode to the default multicast mode. Click **Config Wizard**. Add all online Thin Clients in the candidate list to the to-be-upgraded Thin Client list (ensure that all Thin Clients are successfully connected). Click **Prepare**. After all Thin Clients are ready, click **Upgrade** to install the Thin Client system installation.
5. After the ROMs of the Thin Clients are successfully upgraded, click **About**. The displayed system version is RainOS_V1.0_R1.8_X/L/A.

Q3: Common problems occurring in the upgrade of the Rain100 or Rain200 in iPXE mode

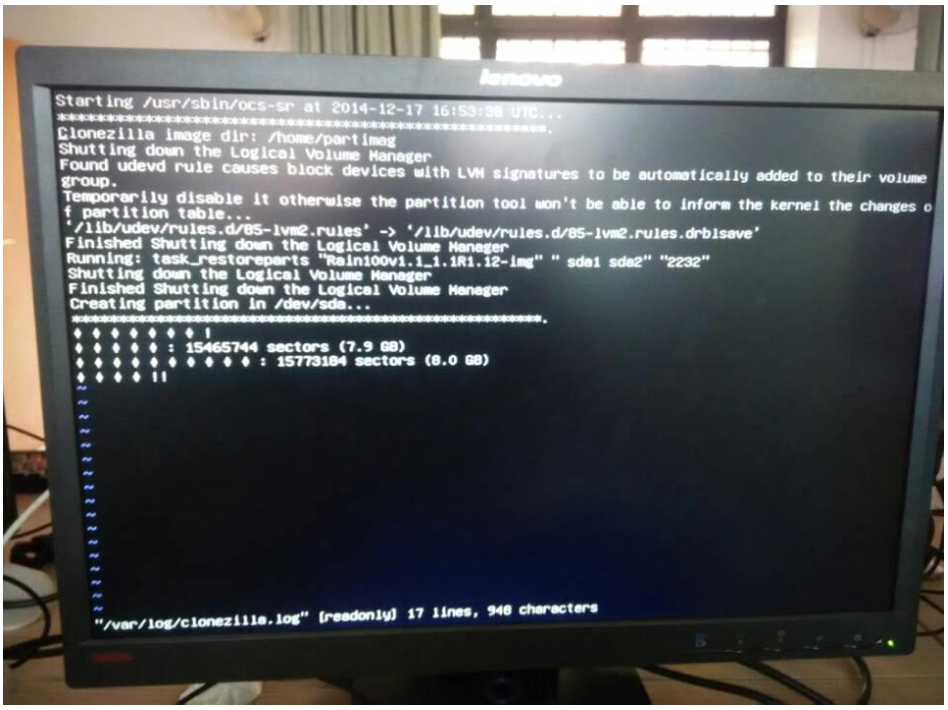
Phenomenon 1: After **Kickout** is clicked on the Web page and the Thin Client is restarted, the **Image** page is displayed again. Check the size of the DHCP address pool. Clear the lease and check whether there are other DHCP servers and whether the DHCP server is restarted.

After you click the upgrade in iPXE mode, the **Image** page is displayed again. Click **Thin Client Preparation** on the web UI to prepare the Thin Clients again.

Phenomenon 2: An error shown in the following figure occurs. You need to manually restart the Thin Client. After restart, the Thin Client automatically enables the iPXE function.



Phenomenon 3: If a page in red background is displayed, where **Restart**, **Shut Down**, **Enter CMD**, and **Back** are displayed, press **Enter** to select **Enter CMD** and enter **/var/log/clonezilla.log** to check whether the image is correct.



Phenomenon 4: The PXE function is available on the Thin Client, but the Thin Clients cannot obtain IP addresses in iPXE mode. In this situation, you can use the PXE upgrade mode.

Q4: Why don't some non-Ruijie switches support iPXE?

Phenomenon: A classroom uses non-Ruijie switches such as Huawei 57 series switches. The Thin Clients of the Cloud Class cannot be upgraded in iPXE mode.

Cause analysis: Generally, the UDP multicast package suppression function is enabled on these non-Ruijie switches by default. However, the iPXE uses the multicast mode to perform batch operations.

Solution: Log in to Huawei switch using a configuration cable and run **stp disable** for all ports of Huawei switch.

Q5: How to recover a Thin Client after upgrade failure?

After the upgrade for a Thin Client fails, you can use the following method for recovery:

1. Upgrade a Thin Client that is ready to be upgraded. After the upgrade is successful, power off the Thin Client.
2. Disable the image distribution function, clear the DHCP lease, restart the DHCP server, and enable the image distribution function again. If the upgrade of a Thin Client fails, replace the network cable with a new one, enable the Thin Client, and try the upgrade again in iPXE mode.

3. During the upgrade, if the power is interrupted or the image distribution is terminated accidentally, you can use only the PXE mode to upgrade.

Q6: Common causes for RCD Server upgrade failure in USB flash drive mode

1. Ensure that the MD5 value in the ISO file used for RCD Server upgrade is correct. After the upgrade file is downloaded, verify the MD5 value.
2. For the USB flash drive that has been used, write 0s. Open the UltraISO and do not select any file. Write 0s, and format the USB flash drive.
3. Replace the USB flash drive.

8.4 Use

Q1: Why is the screen broadcast function of the ClassManager Rainbow unavailable?

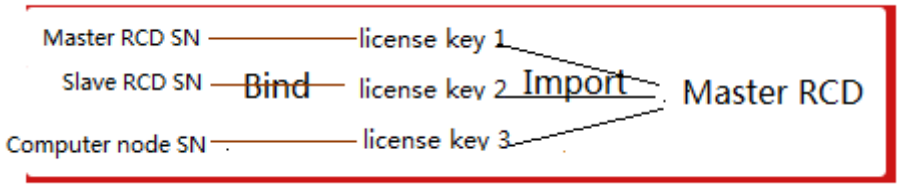
1. When installing the RG-ClassManager 3.0, it is recommended to disable or exit the security guard or antivirus software. After the RG-ClassManager 3.0 is successfully installed, restart the ClassManager_Teacher PC. After the ClassManager_Teacher PC is successfully restarted, add the installation directory of RG-ClassManager 3.0 to the whitelist of the security guard or antivirus software.
2. Check whether the 360 Wi-Fi or VPN is enabled on the ClassManager_Teacher PC. If yes, disable them because they will affect the obtaining of the ClassManager_Teacher PC IP address by the Thin Client.
3. Check whether the switch model is as224-gt or es224-gt. If yes, run the **no ip igmp-snopping** command.
4. Check whether the underlying system needs to be upgraded. On the **Image** page, check whether the system version number is consistent with that in the release notes.
5. Check whether the IP address of the Thin Client and gateway address are correct and are in the same network segment as the ClassManager_Teacher PC.
6. Scan the Thin Clients on the CM3.0_Teacher PC. Check whether the addresses of the RCD Server and ClassManager_Teacher PC are correctly configured on the ClassManager_Student.
7. To use the automatic scanning mode, you can uniformly set the IP address of the ClassManager_Teacher PC to 0.0.0.0 (automatic scanning) on the Thin Clients.

Q2: Common ClassManager Rainbow authorization problems

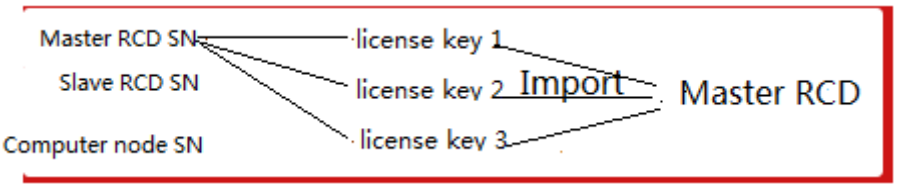
Q1: How to perform authorization when RCD Servers are deployed in stack or cluster mode?

There are two authorization modes for RCD Servers deployed in stack or cluster mode:

In stack mode, you can bind each RCD Server with one authorization code and then import the authorization codes to the Master RCD Server.



In cluster mode, you can bind the master RCD Server with each authorization code and then import the authorization codes to the master RCD Server.



Q2: How to unbind the authorization when the RCD Servers are deployed in stack or cluster mode? Can each RCD Server be deployed in standalone mode?

If the first authorization mode described in Q1 is used, you can directly release the cluster without unbinding the authorization. Then, each RCD Server is changed to work in standalone mode.
If the second authorization mode described in Q1 is used, you need to unbind N-1 authorization codes (assume that there are N RCD Servers) from the master RCD Server in the PA system. Then, independently authorize the original slave RCD Servers and computing nodes.

Q3: If authorization A imported into the RCD Server is incorrect and it is unbound, and new authorization B is generated, do I need to delete the previously imported authorization A and how can I delete it?

You do not need to delete authorization A. The authorization detection function of the RCD Server is associated with the PA system. The RCD Server works normally as long as a correct authorization code is configured regardless of how many incorrect authorization codes are imported to the RCD Server.

Q4: How long can the ClassManager_Teacher be available without a license by default?

A: 45 days

Q5: Is the ClassManager_Teacher completely unavailable after 45 days?

A: Only some functions are available, for example, start, screen broadcast, and remote shutdown

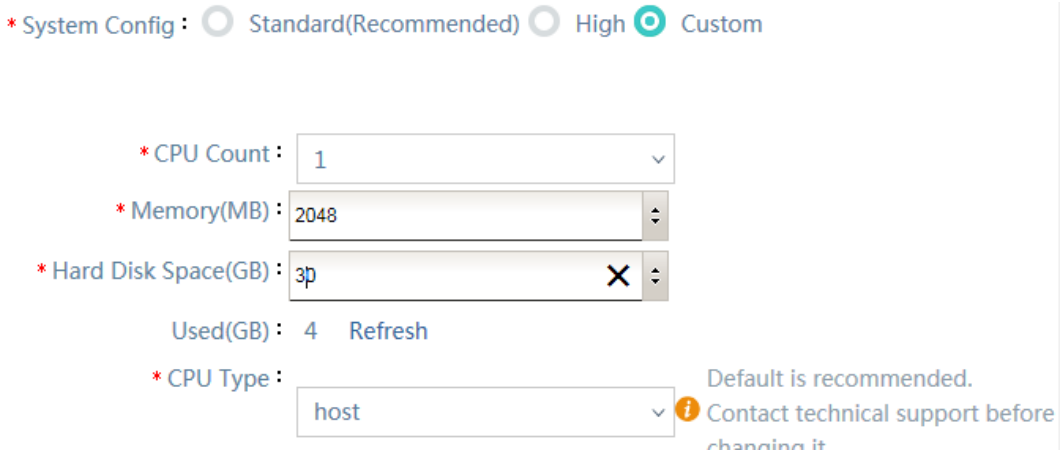
Q3: A static IP address is correctly configured for a Cloud Desktop. After the class starts using the CMR, the IP address is abnormal. How to rectify the fault?

Perform the following steps to locate and rectify the fault:

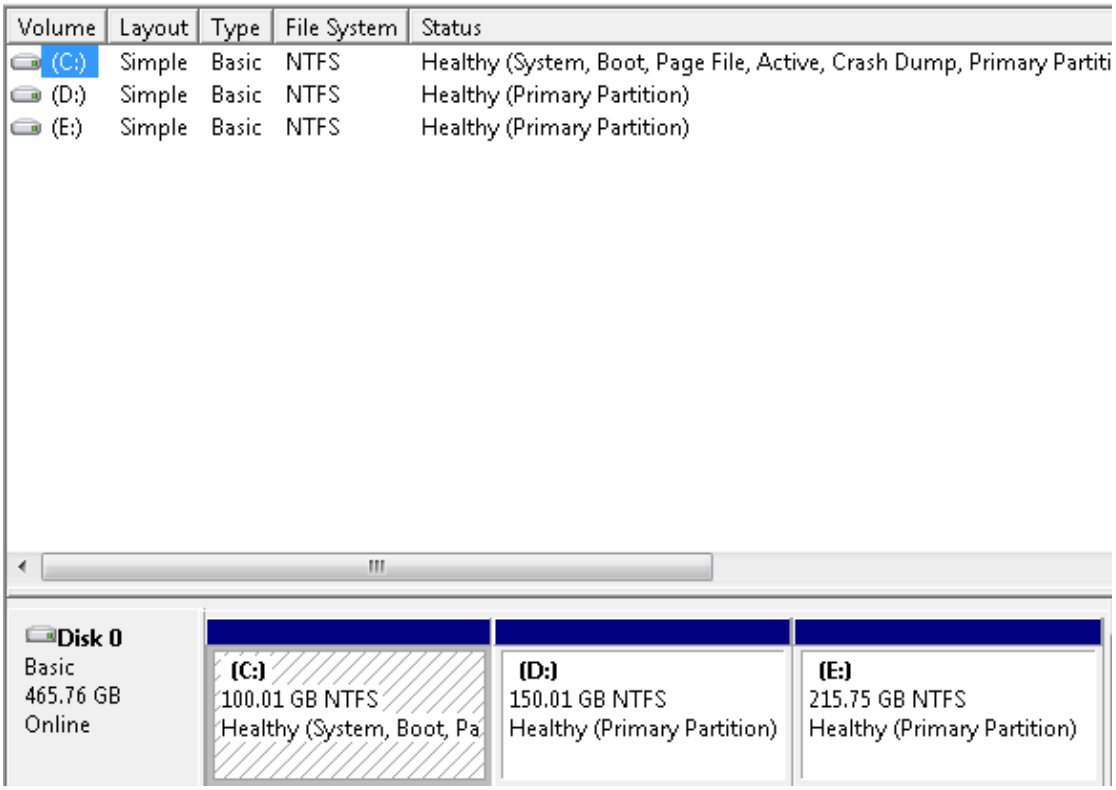
1. Check whether the IP address of the Cloud Desktop conflicts with that of the Thin Client and whether the range of the DHCP address pool covers the IP addresses in the Cloud Desktop list. If yes, adjust the range of the DHCP address pool.
2. Log in to the Thin Client and check whether its IP address conflicts with the IP address of another PC in the current network environment. On the Cloud Desktop, run **cmd**, and then run the **ipconfig** command. Record address 169.254.x.x and the RCD Server name of the Cloud Desktop. End the class using the CMR. Change the IP address of the Cloud Desktop. Start a class again. Check whether the Cloud Desktop can obtain a new IP address. (If an IP address cannot be successfully pinged, it does not indicate that the IP address is not used, but the ping function may be disabled on the device.)
3. Check whether the Guest-Tool in the image is upgraded to a version matching the RCD Server. Check whether processes **vdagent.exe** and **vdservice.exe** exist in the image and task manager. If not, the Guest-Tool may not be properly installed. It is recommended to edit the image and re-install the Guest-Tool.
4. Check whether any suspicious process (such as viruses or Trojan horse) exists in the image. Scan the software to be installed in the image to remove viruses and then upload it to the image. Check whether the image is normal. Use a clean image (a standard image without any software) to start a class. Check whether address conflict occurs.

Q4: How to expand the capacity of drive C for an image?

1. In the image, set **System Config** to **Custom**. Set **Hard Disk Space(GB)** to **30** or **40**, which is appropriate.



2. Enable the modified image and complete the memory capacity combination.
   a) In Windows 7, right-click **Computer** and select **Manage** > **Disk Management**. Right-click drive C and select **Extend Volume**. Click **Next** until the expansion is completed.



b) In Windows XP system, download the PartitionMagic8.0. In the image, run the PartitionMagic8.0 and adjust the capacity of drive C. After the adjustment is completed, uninstall the software.

Q5: Why does a Thin Client display only the teacher's shared directory but the student's shared directory is not displayed?

Phenomenon: Only the teacher's shared directory is displayed on the Thin Client.

Cause: The student's shared directory is cut on the ClassManager_Teacher.

Solution:

Solution 1: Shut down the CMR teacher PC. On the web UI of the RCD Server, choose **Classroom** > **Policy**. Disable and then enable the option for automatically mounting the network disk. Then, start the CMR teacher PC.

Solution 2: Inform the teacher to back up the student's shared directory in advance. If it is cut, copy the backup directory and paste it back.

Q6: Why can't the teacher's shared disk and the student's assignment disk be accessed on the ClassManager_Teacher PC?

Phenomenon: The teacher's shared disk and the student's assignment disk cannot be opened on the ClassManager_Teacher PC.

Cause: After the ClassManager_Teacher is upgraded, the function of automatically mounting network disks is not enabled.

Solution:

1. In the end class state, on the web UI of the RCD Server, choose **Classroom** > **Policy**, and select the option for automatically mounting network disks.
2. Check whether the security guard or antivirus software is installed on the ClassManager_Teacher PC. If yes, add the R**CC_ClassManager_Teach** directory to the trust zone or whitelist of the antivirus software. In Windows 7 system, excessive default system permissions will cause a mounting script running failure on the CMR. You can modify the system permissions, and restart the ClassManager_Teacher PC.

8.5 Maintenance

Q1: Why can't the RCD Server start up normally?

Phenomenon: After the RCD Server is powered on, it cannot normally start.

Check whether the fault is caused by a software or hardware failure as follows:

1. Connect a display to the RCD Server. Check whether the RCD Server is normally started up. Press the **Delete** button to check whether you can access the BIOS normally. If you can access the BIOS, check whether the SSD is correctly identified. If the SSD cannot be identified, the SSD is faulty, and you can call service hotline 4008. If the SSD can be identified, the RCD Server software is faulty. You can re-install the RCC system software on the RCD Server by using the USB flash drive.
2. If you cannot access the BIOS, perform the following steps:
    a) Check whether the memory module of the RCD Server is loose. Remove and then insert the memory module and button battery.
    b) If the RCD Server cannot be started yet, use an eraser to clean the edge connector (a protruding part of a memory module that is inserted into an expansion slot) and insert it to the memory slot because exposed edge connector may be oxidized and causes poor contact.
    c) If the RCD Server cannot be started yet, remove the memory modules until only one is left. If the RCD Server can be started, insert another memory module, and then boot the system again. If the system cannot be booted after you insert a certain memory module, this memory module is faulty.
3. If the fault persists, call service hotline 400 for DOA processing.

Q2: Why does the startup cost a long period of time after the RCD Server encounters a power failure?

Phenomenon: After the RCD Server encounters a power failure, it takes more than 20 minutes to start up.

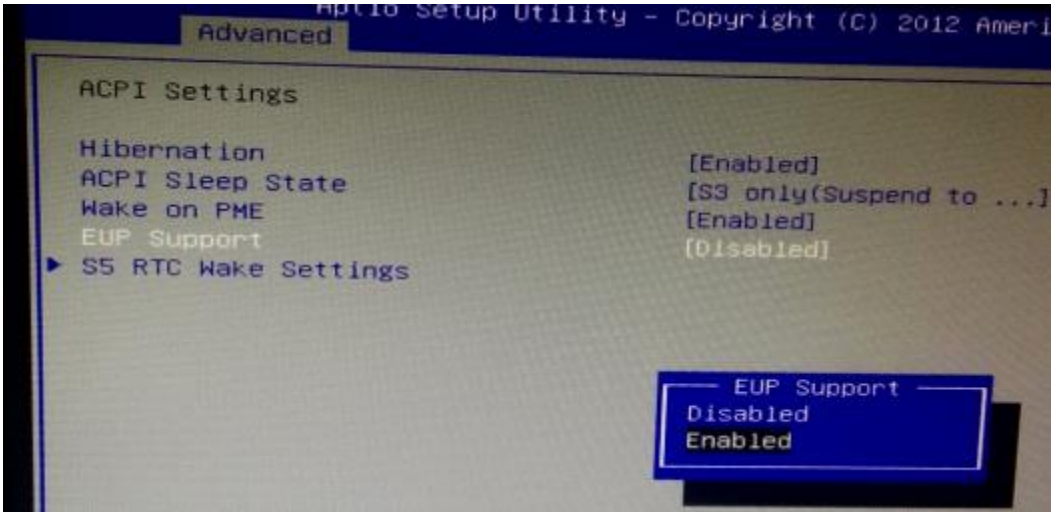
Fault cause: The RCD Server V1.1.x has a software bug. In certain power failure scenarios, this bug is triggered, resulting in long startup duration. Upgrade the RCD Server V1.1.x to RCD V3.0 to fix the bug.

In extremely few cases, after the RCD Server encounters a power failure and is started up again, there is no output on the connected display. In such cases, remove and insert the memory modules and button batteries.

Q3: Why are certain Rain Thin Clients stuck at the shutdown screen for about five minutes when they are remotely shut down using the CM2 teacher software?

Phenomenon: When Thin Clients are remotely shut down using the CM2 teacher software, certain Thin Clients are stuck at the shutdown screen.

Solution: Access the BIOS. In **Advanced**/**ACPI Settings**, set **EUP Support** to **ENABLE**. Save the settings and restart the system. Access the BIOS again, set **EUP Support** to **DISABLE**. The fault is rectified.



Q4: How to correct the DNS configuration of a Cloud Desktop?

1. The DNS configuration of the Cloud Desktop is synchronized from the DNS configuration of the RCD Server. Therefore, you need to only modify the DNS configuration on the RCD Server. To modify the DNS configuration, log in to the web management UI of the RCD Server, and choose **System** > **Network Settings** > **Edit**. Modify the DNS configuration.
2. On the Cloud Desktop, choose **Classroom**, add one Cloud Desktop to the Cloud Desktop list, delete the Cloud Desktop (trigger the Cloud Desktop synchronization), and then start a class to check whether the DNS configuration is correct.

Q5: What are the operation precautions after the motherboard of the RCD Server is replaced?

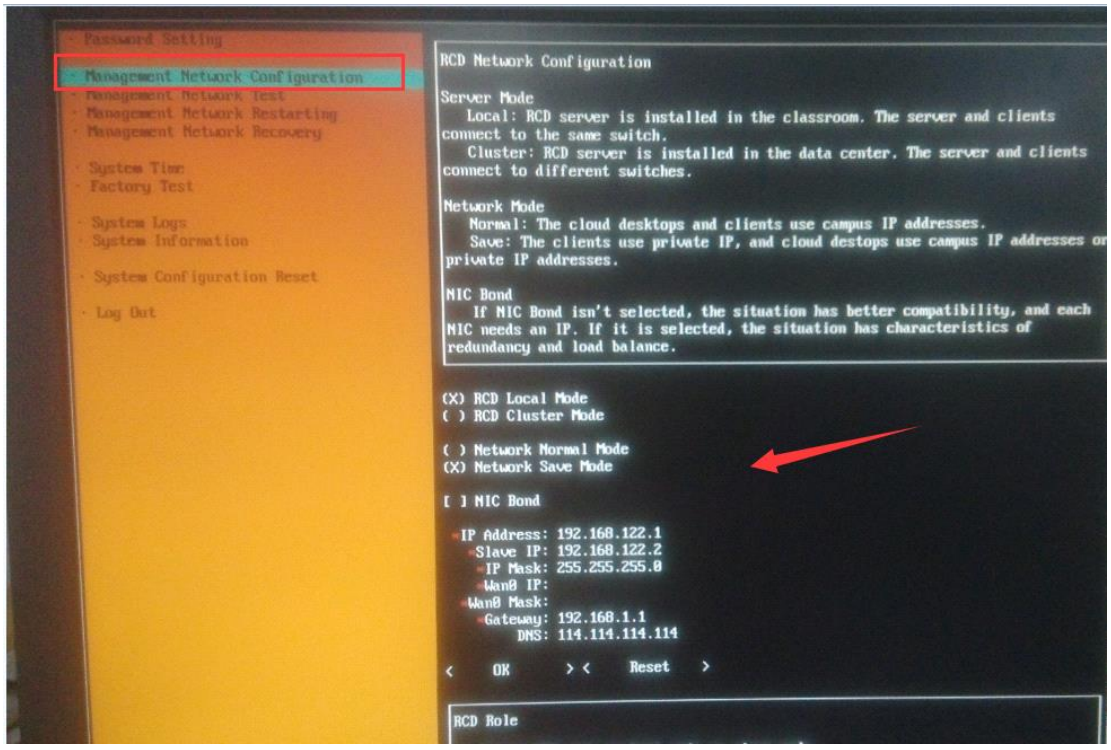
Context:

Because the system of the RCD Server is stored in the storage disk, the system data is retained after the motherboard is replaced. You do not need to upgrade the system. Pay attention to following points:

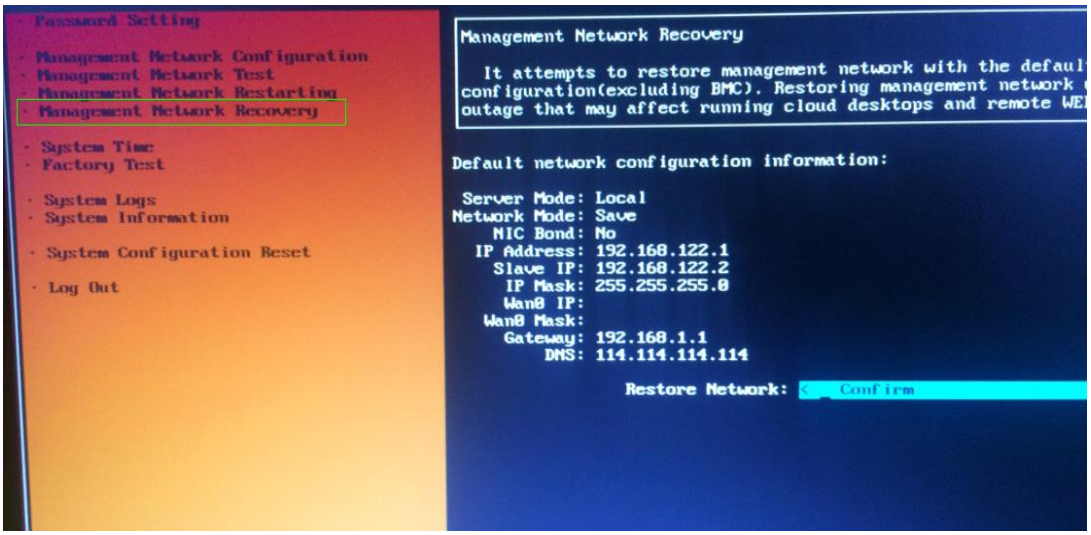
1. After the motherboard is replaced, the NIC hardware is changed. The OS can identify the new NIC, but the information about the old NIC still remains in the system, resulting in the network interruption. Therefore, you need to reset the network.
2. After the motherboard is replaced, the SN is null or is not a correct Ruijie SN. You need to re-program the SN. Otherwise, authorization problems may occur.

Key operation points:

1. Manually record the IP address of the RCD Server, and record the original SN (or record device exterior information) so that you can re-upgrade the original SN after the motherboard is upgraded.



2. After the motherboard is replaced and the system is started up, the configuration screen is displayed (if not, check the hardware).



3. Access **Management Network Recovery**. Select **Restore Network**. In the displayed dialog box, click **OK** to reset the network.
4. Restart the system and access the preceding screen again.
5. Access **Management Network Recovery**. Configure the backup IP address.
6. After the system is restarted, the system is restored to the state before motherboard replacement.
7. Request professional personnel to re-program the original SN. Otherwise, other SNs may encounter errors such as 00001. If a new SN is programmed, ensure that the SN has been recorded in Ruijie PA system.

Q6: What's the LAN1/LAN2 used for? Load balance? If the lan1 down, can all switchover to lan2?

A: two NICs each one support half thin client service, if the lan1 down, only half thin client will switch over to lan2.

Q7: In real deployment, is it need to use both two ports?

A: Yes, we need to use both two ports of RCD server.

Q8: sounds likes there is no different if we use LACP for LAN1/2 or separate it?

A：Summarized like this: for separate's port, if one is down, half thin client will be gone, if aggregate port, still remain all thin client, but a little bit slow. In other words, only one lan port for all thin clients, which may affect the performance.

Q9: What is the bandwidth required for each thin client?

A: About 3-4Mbps

Q10: If server down, all client will go down also? How if hard disk on RCD broken? Can use external storage to store user/OS Data?

A: Yes, if server down, all client will go down also, we cannot support external storage for now.

Q11: If work on the mode 3, is it private mode completely?

A: Yes, except there is a virtual wan IP address of RCD server.

Q12: Can RCD server and thin client be in difference subnet?

A: No, cannot.

Q13: How to connect the port 1 and port 2?

A: Connect both Lan 1 and Lan 2 of RCD server to switch.

Q14: Can RCD run Raid?

A: We cannot support the Raid now.

Q15. What is the period we recommended for backup the RCD storage? Monthly?

A: Monthly.

Q16. Any gigabit switches managed or unmanaged also can work right?

A: Yes. Any gigabit switches can work.

Q17: From what is understand the server can have share folder for student....what if the folder attack by virus

A: Recommend to disable the internet access and USB devices, so there will be less chance for student upload virus to shared folder.

Q18: supports auto backup right? Or needs manual backup?

A: Needs manual backup

Q19: Just saw RCM's poster, it said support RAID and so on....is it the next version of RCD?

A: Not support RAIN in current RCD version.

Q20: Normally, we just need to upgrade all from RCD, right?

A: Yes.

Q21: If the teach PC corrupted, the class manager need to reinstall?

A: Reconfiguring the teacher IP address on RCD server is ok.

Q22: How do we calculate the maximum resource for each thin client can get from the RCD server?

A: Check this info on image page.

Q23: Heard that RCD need to weekly reboot for clearing the cache?

A: Yes.

Q24: Disable Internet is disable layer 3 routing, including intranet network, right?

A: it will disable the internet access not including intranet network.

Q25: How many OS Linux and windows already tested so far?

A: XP, Windows 2003, Windows 2008, Window 7, Windows 8, Windows 10, Ubuntu, Centos, Fedora

Q26: Does the quiz can be random? Like in the examination each student should get difference sequence.

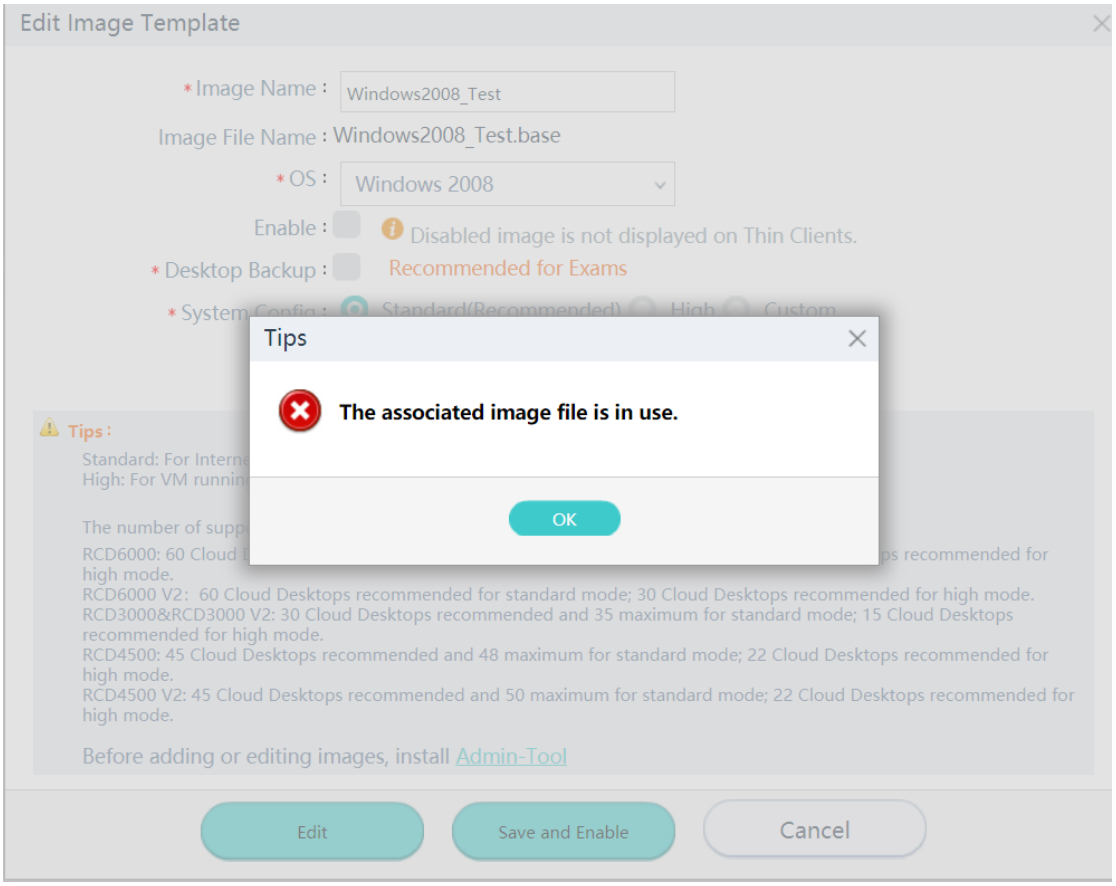
A: Not. The quiz can be random

Q27: The works only with office 2010 right? If we use new office version this workspace cannot support? When will have the fix?

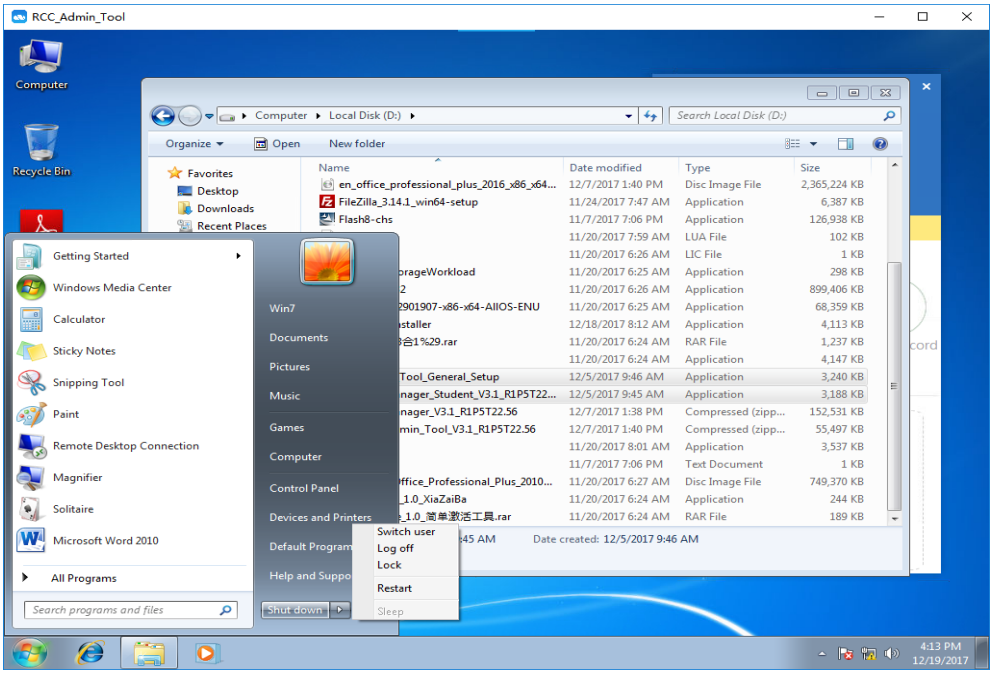
A: Only Office 2003, Office 2007, Office 2010 are supported.

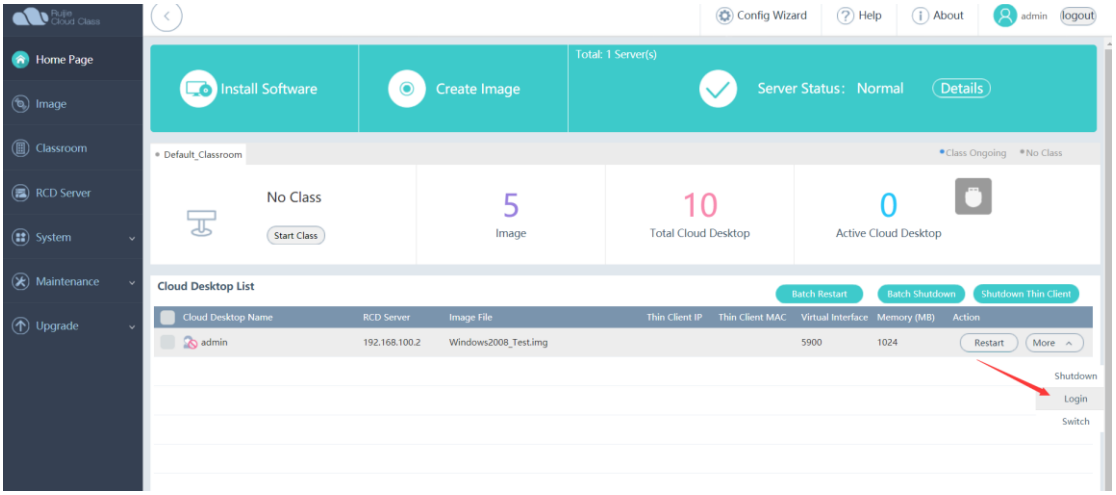
Q28: the prompt shows the associated image files is in use, not response after click “save and enable”, how can we solve this issue?

A: Solution: login to RCD server → Home Page → More → login or shutdown



Note: when you edit the image again, remember to use the Windows OS’s shutdown function to end the Image Creation, the AdminTool window will disappear automatically once the Image is shutdown



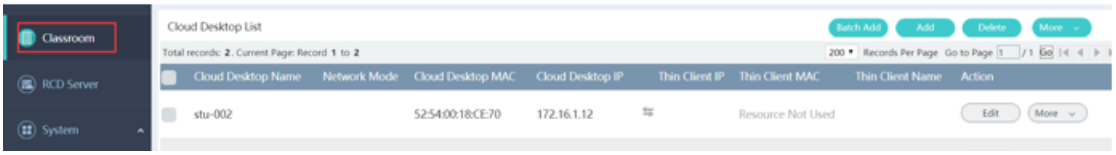


Q29: Why Thin Client shows connecting fail?

A: The possible cause is no cloud desktop created yet. We need to create cloud desktop on Config Wizard or create it on classroom page.

Q30: Do we need to renumber the cloud desktop after re add the cloud desktop on classroom page.

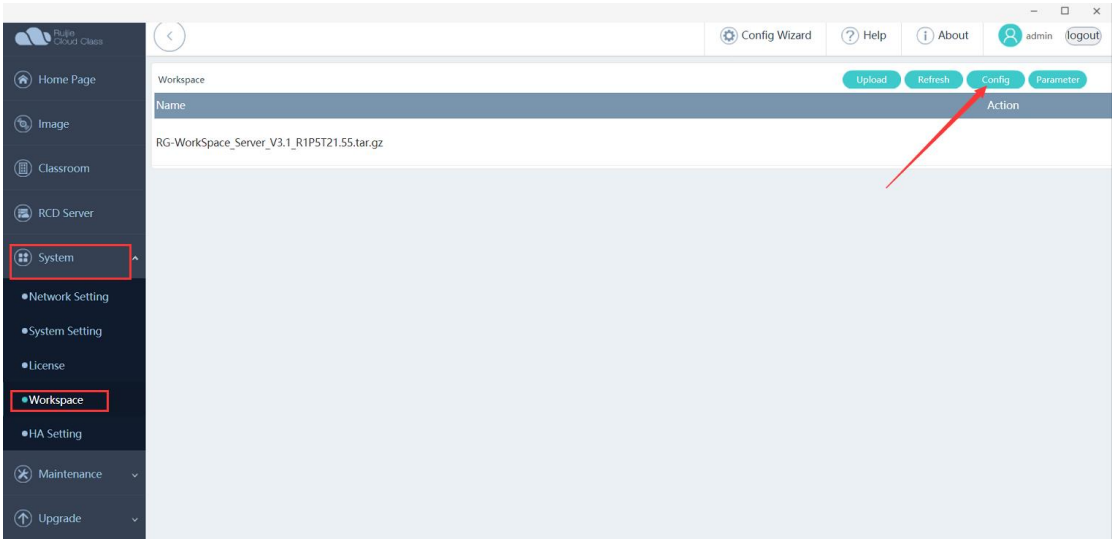
A: Yes It is.

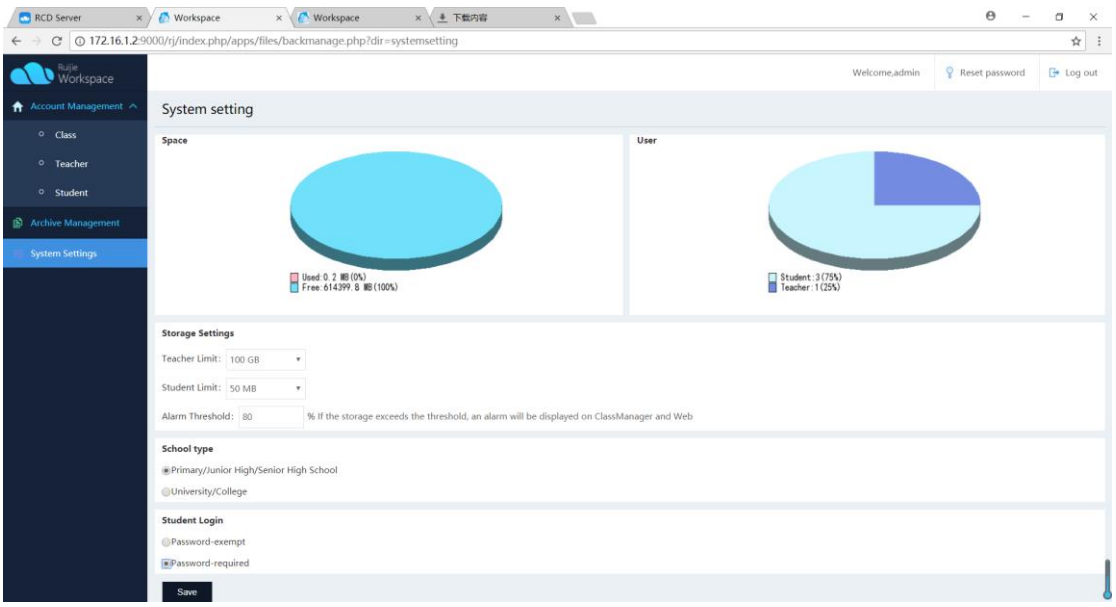


Q31. How to add the student account?

A: Recommend to import the student account via workspace of RCD server, the password of the account is optional.

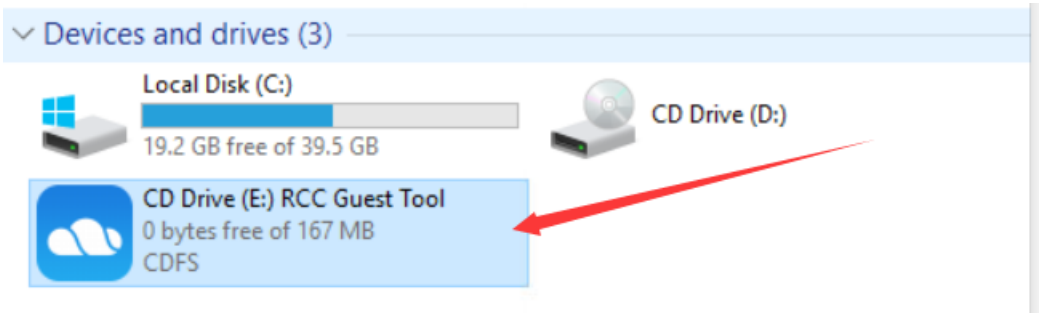
Log in to the RCD Server as an administrator, go to System → Workspace, and click “Confg” on the upper right corner





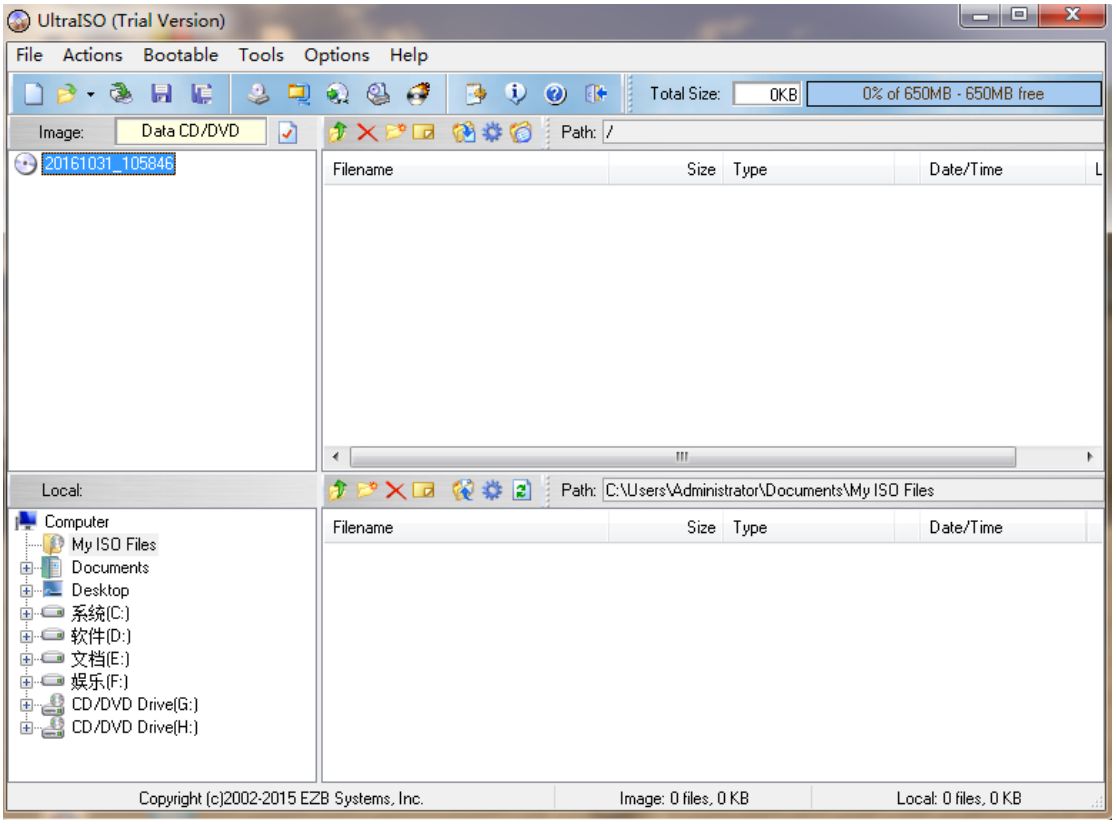
Q32. Why cannot enter the operation after installing the image.

A: Solution: Request to install the guest tool first, the guest tool is equivalent to the driver of the operating system



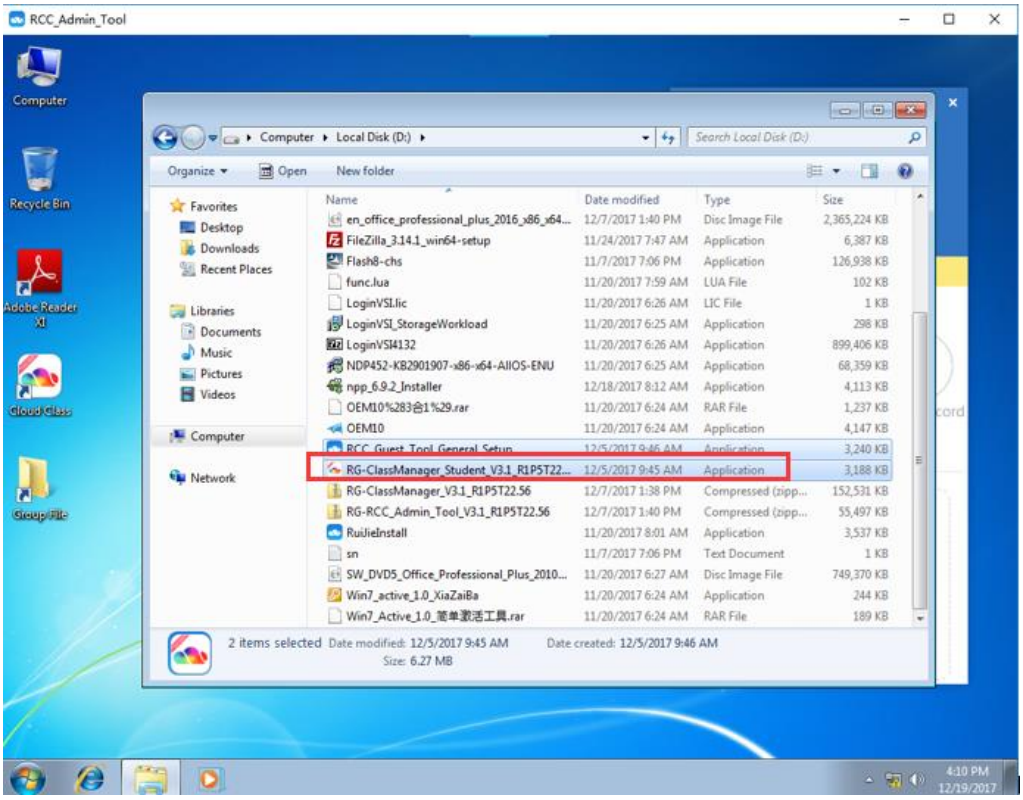
Q33. What is the possible reason for upgrading fail via USB?

A: It is necessary to burn the system file with UltraISO, otherwise it may cause unknown exception.



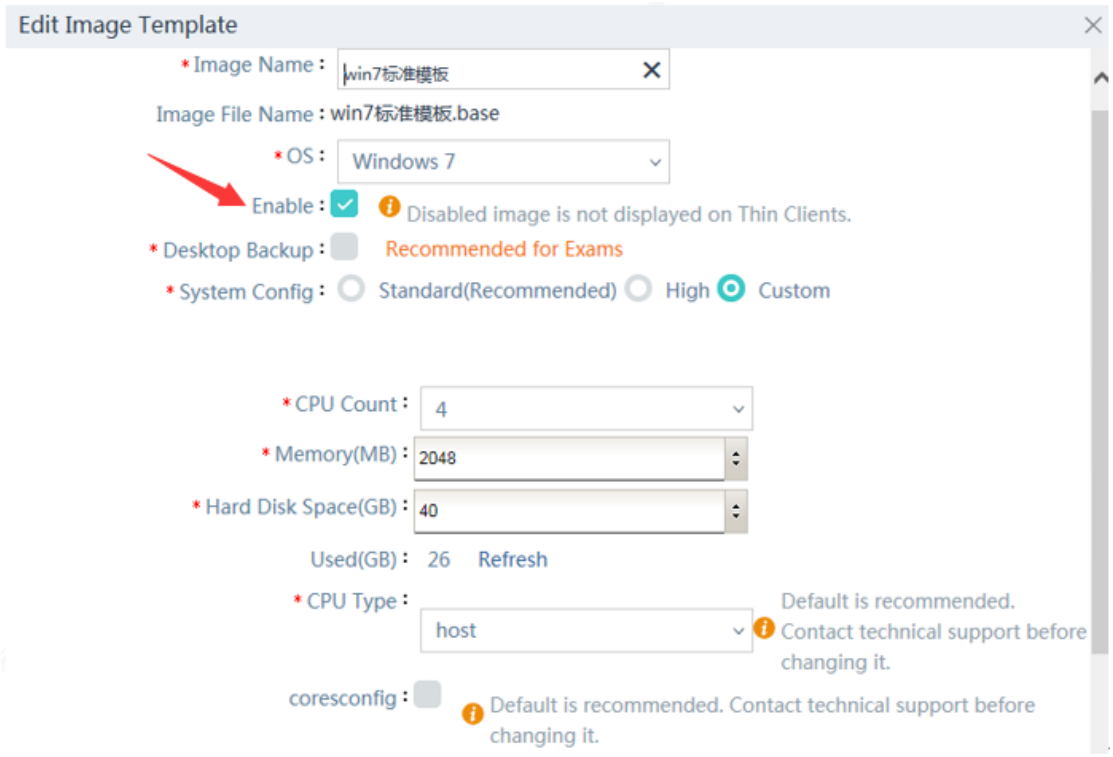
Q34: Why some features of the CMR-teacher cannot work?

A: Request to install the CMR-Student component on cloud desktop first. Once OS installation done, go to “My Computer” -> D:\ drive to install CMR-Student component



Q35: Why there is no OS for selection after completing the image installation?

A: only when the image is enable can it be displayed on the thin client.



Q36: How to check current IP address of the RCD server if we forget the configuration?

A: Connect the server to the display, press **F2** to display the system configuration.

Q37: How to apply for temporary license for RCD server?

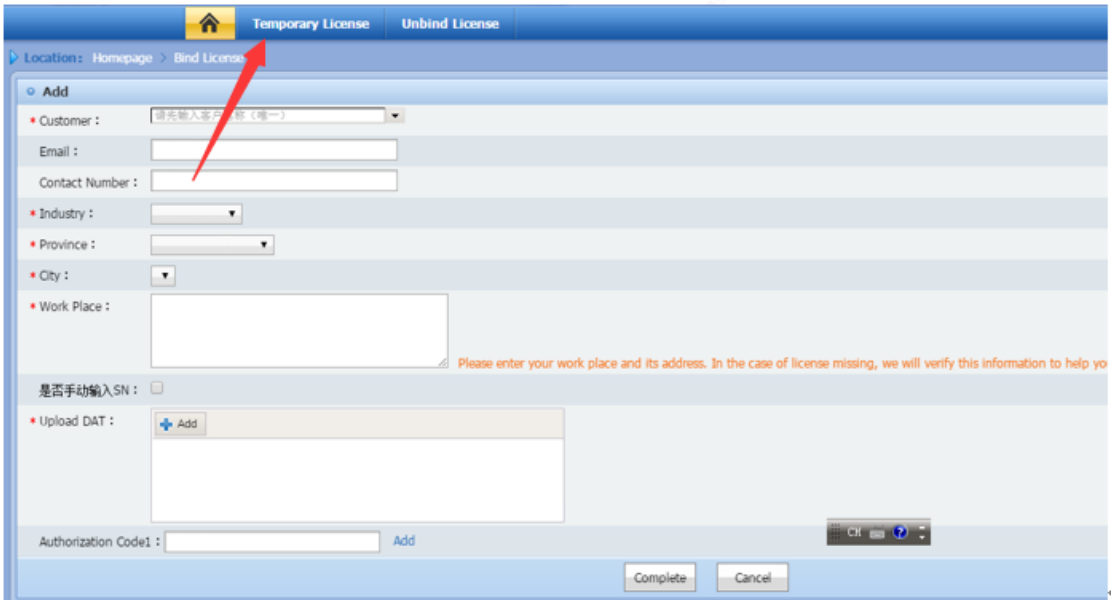
A: login to the PA system to apply for the temporary license

PA login address: http://pa.ruijie.com.cn

Public account used for applying for the ClassManager license is as follows:

User name: classmanager or classmanager1 or classmanager2

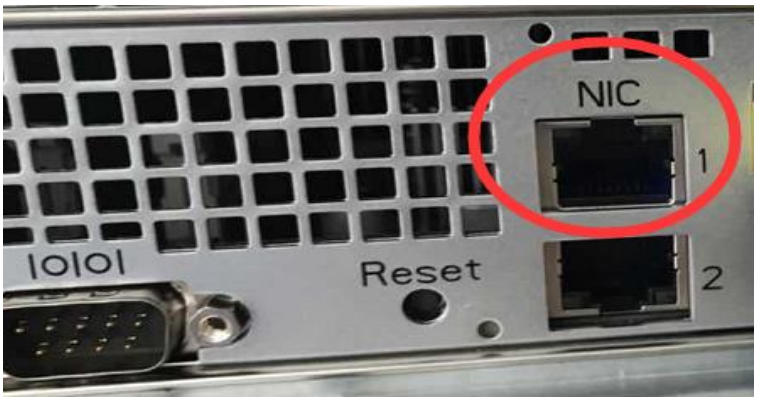
Password: ruijie



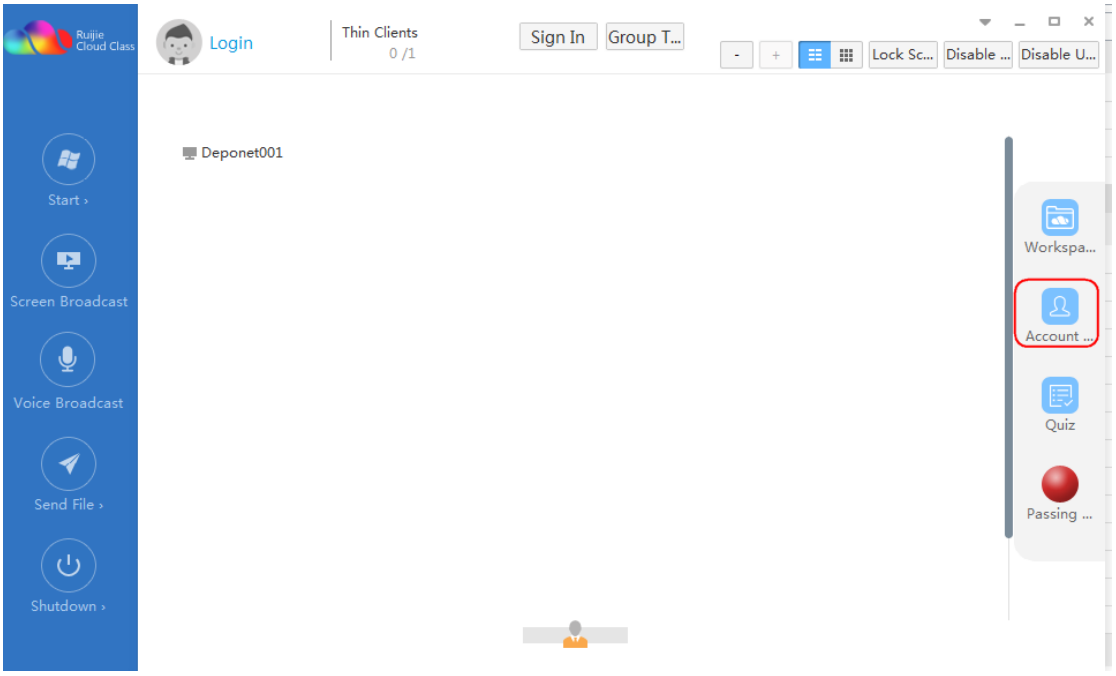
Q38: How to login to the RCD server when it is used initially?

A: You could login to the web UI of RCD server. The default IP address of the RCD server is 192.168.122.1/24 and

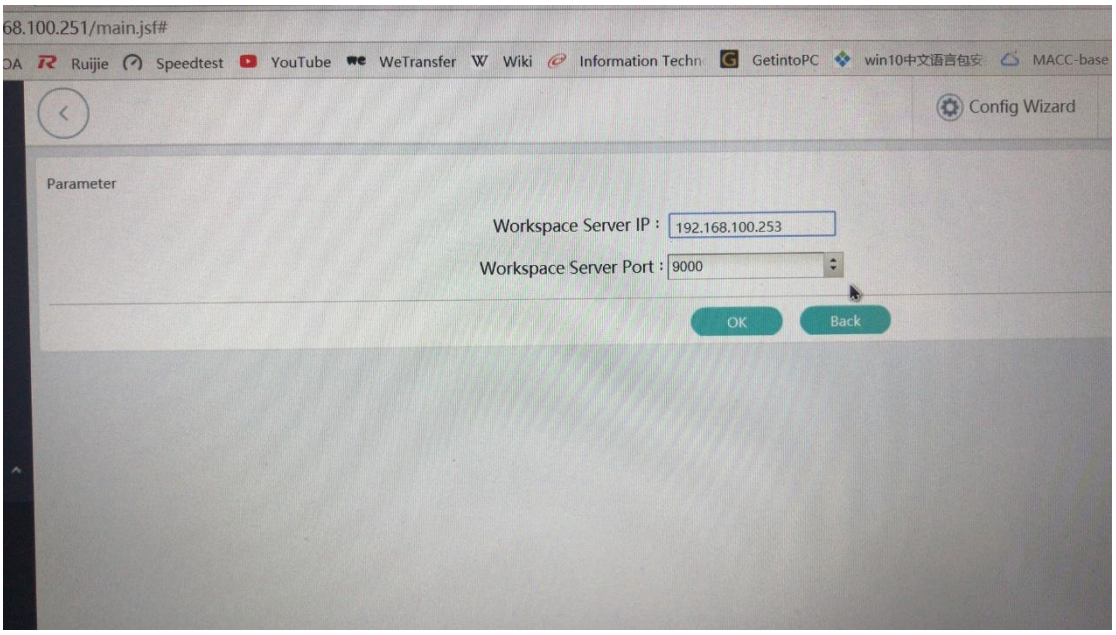
192.168.122.2/24. Both username and password are admin. Remember to connect the NIC port.



Q39: Why no response when clicking the account function on CMR-teacher?



A: The IP address of the workspace is wrongly configured, it should be RCD server IP address. Log in to the RCD Server as an administrator, go to **System → Workspace**, and click "**Parameter**" on the upper right corner and change the workspace server IP address.

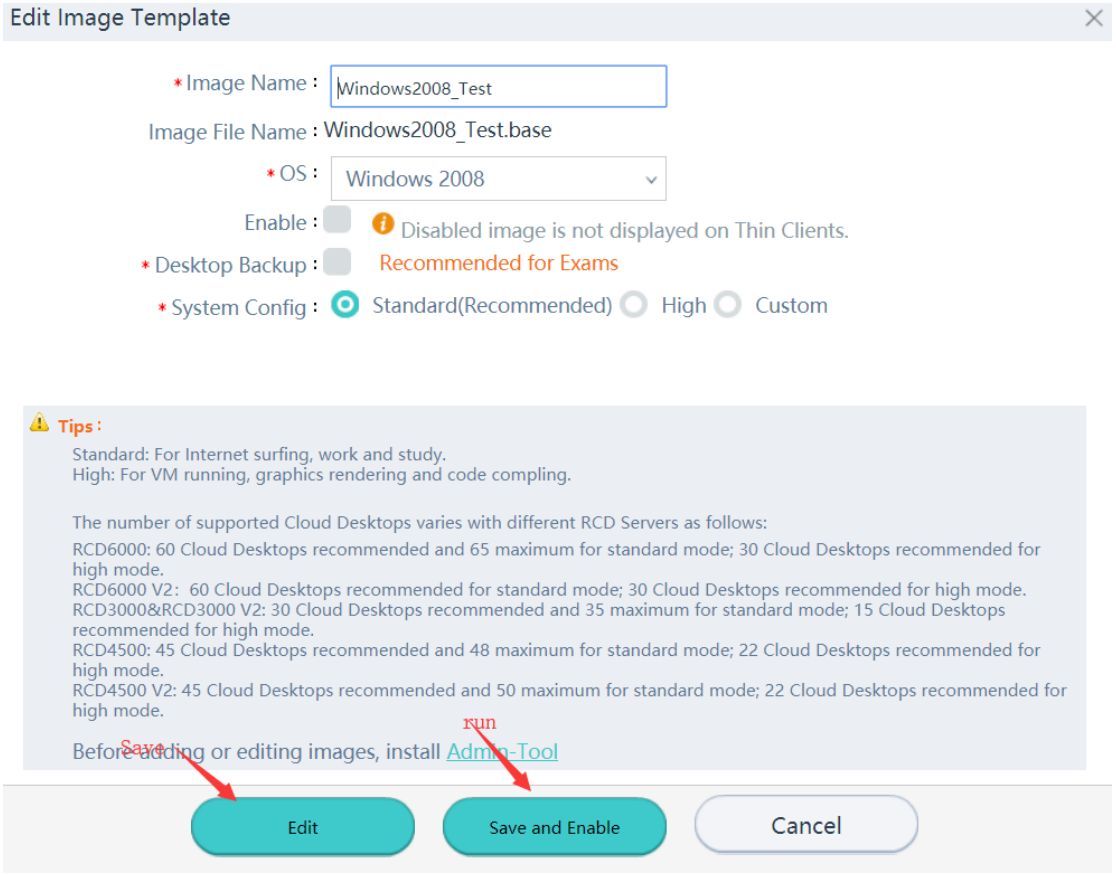


9 Product Limitation

9.1 Translation problems

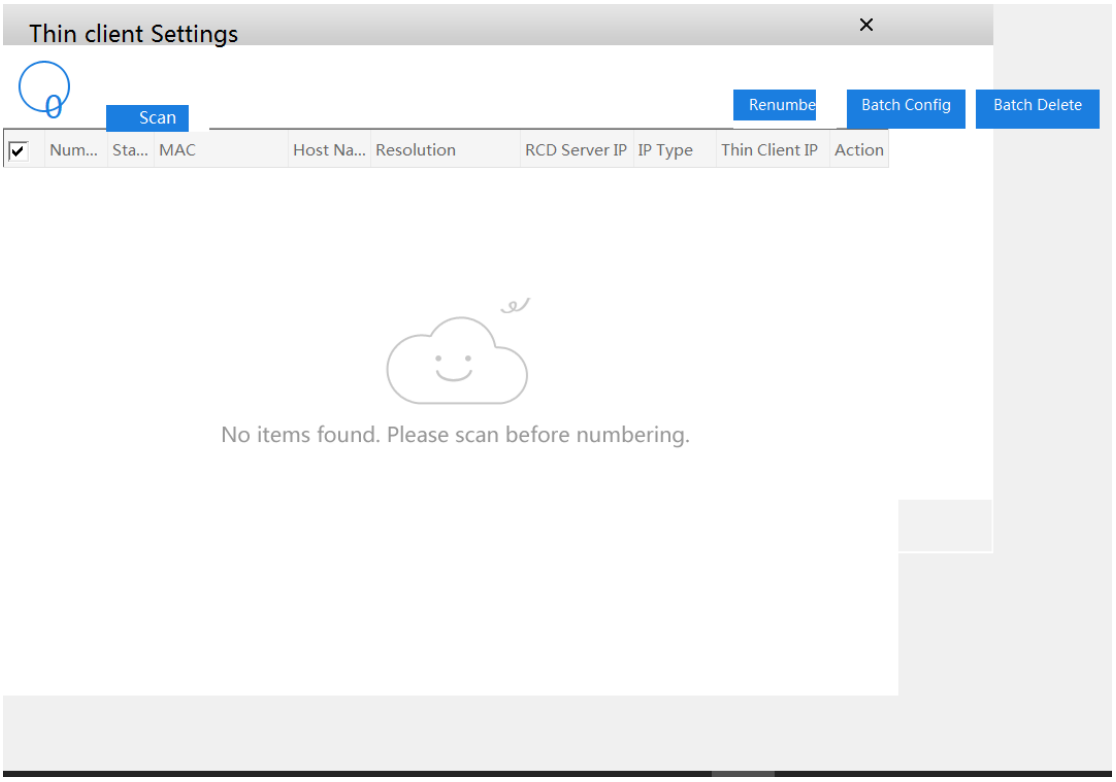
“Edit” means modify the operating system parameters and won’t enter the system after clicking it.

“Save and Enable” means modify and start, you can enter the landing system to complete the configuration.



9.2 Resolution problem

Due to the resolution problem, the scan interface is abnormal. According to the feedback from the R & D team, there is no version plan to optimize.



9.3 Upgrade Time Limitation

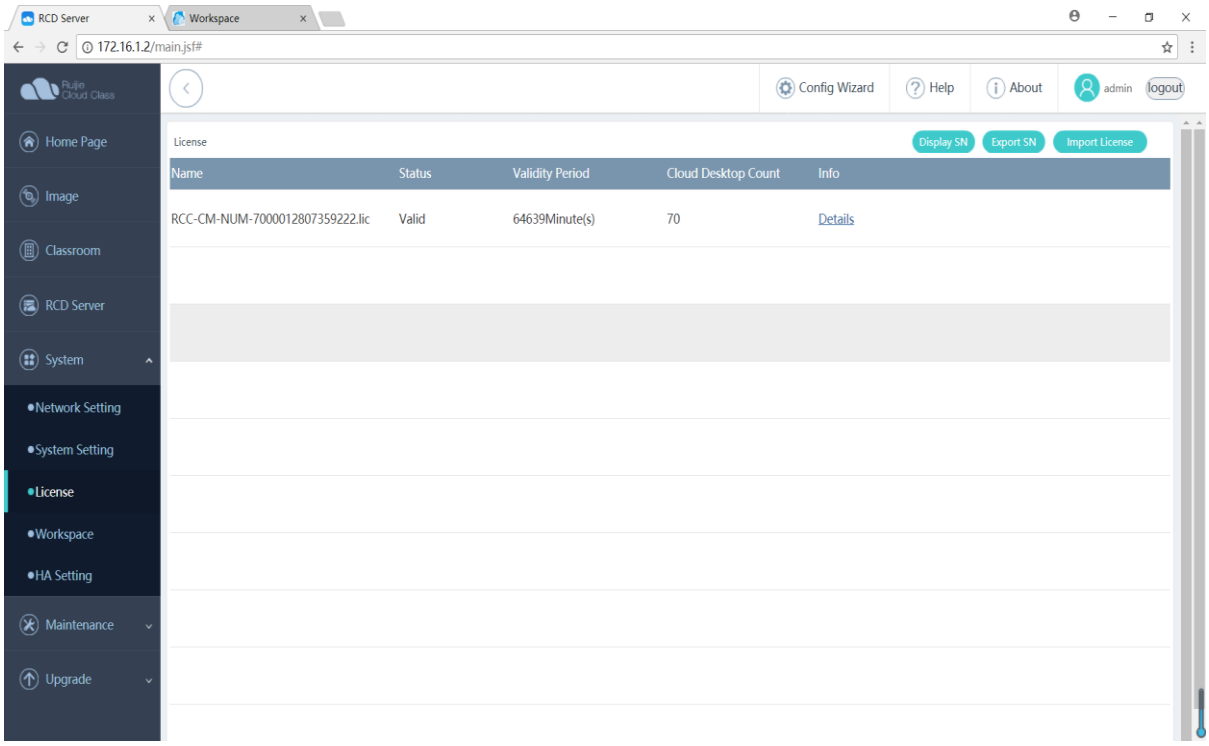
There is no progress bar when upgrading, the system prompts upgrade for only 5 minutes, but it takes at least 15 minutes.

Solution: connect the RCD Server to the display, check the current upgrading status.

9.4 License Limitation

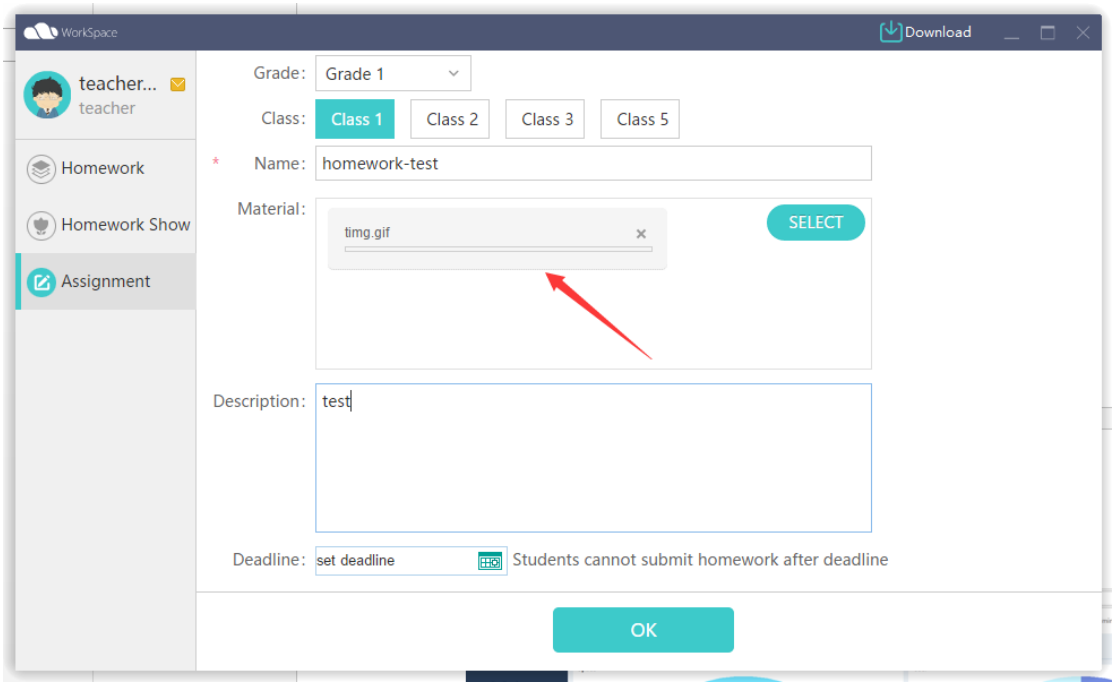
Validity Period of license is showing only minutes, but no showing specific expiry date.

Solution: there is no version plan to optimize it.



9.5 Progress Bar Limitation

No progress bar shows file uploading when select the homework material on Assignment page.



Solution: The progress bar will pop up when clicking on OK.

9.6 Quiz Function Limitation

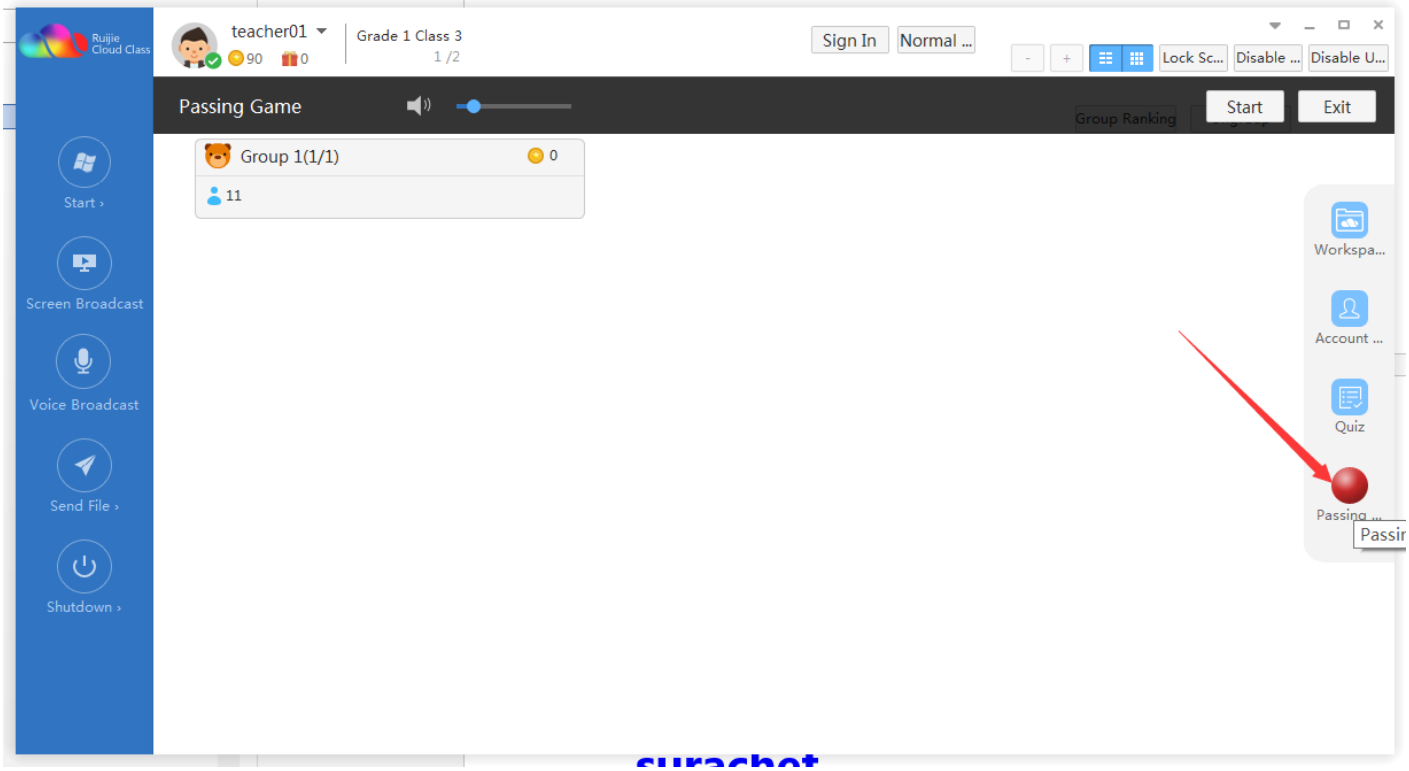
The Quiz function cannot work

Solution: Request to install the office on the cloud desktop first, only office 2003, office 2007, office 2010 are supported.

9.7 Passing Function Limitation

Issue: the Passing function cannot work.

Solution: Request to install the flash on cloud desktop first.



9.8 Display Limitation

Issue: Some rain terminals are not responding to the display screen.

Solution: Some Rain terminal needs to connect the display screen first and then power up the rain terminal.

9.9 Image File limitation

Issue: Fail to upload the image

Solution: The image file format should be .iso or .base.

9.1 Login Limitation

When the administrator logs out the RCD server, the password could be seen in a moment.

9.2 BMC Address Limitation

The server fails to configure the BMC address in the TUI interface, it is recommended to use Web for the configuration of the BMC address.