



Ruijie
Cloud Class

RG-RCC_ V3.1_R1P6.65
RCDOS User Manual

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Format Conventions

The symbols that may be found in this document are defined as follows:

	Caution, warning, and reminding for items to be minded during the operations.
	Notes, prompt, and necessary supplement to the operation description.

1 Overview

The Ruijie Cloud Class (RCC) perfectly combines desktop virtualization and computer classrooms to improve the usage and management experience of computer classrooms by using the cloud computing technology. This solution is a cloud computing solution tailored for computer teaching. The solution provides customized teaching management software and virtual platform to simplify the function design. The solution optimizes common teaching functions and makes an in-depth design based on the conventional teaching process. The solution adopts the high-performance Ruijie Cloud Desktop Server (RCD server) and the unique Enhanced Stream Transmission (EST) technology as well as multi-layer cache technology, which makes it possible to play high-definition (HD) videos smoothly on the cloud desktop, and accelerate cloud desktop startup and application running.

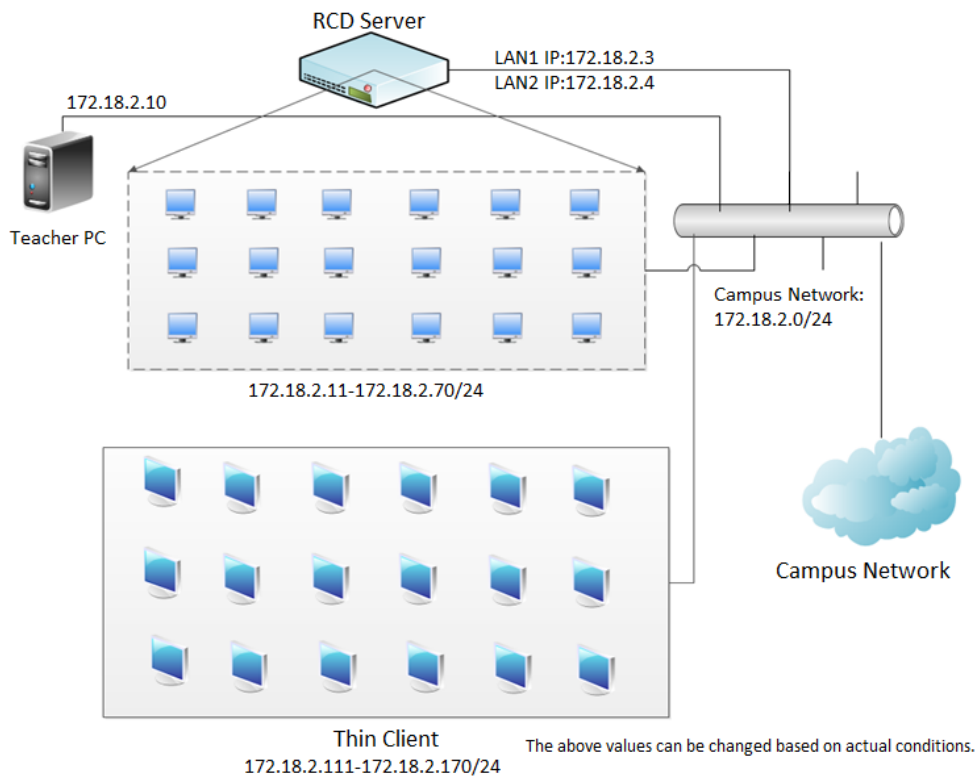
The integrated design of hardware and software facilitates deployment and improves the management experience. The unified management mode greatly streamlines management processes, such as the exam system switchover, software environment update, and routine maintenance.

1.1 Local Deployment Solution

In the local deployment solution, a RCD server and thin clients are deployed in a classroom or in the same network segment on the network topology (the RCD server is deployed in the equipment room, but is in the same VLAN as the thin clients). The local deployment solution provides four combination modes based on IP addresses of the RCD server and thin clients. This document describes three recommended combination modes only.

1.1.1 Cloud Desktop Accesses Campus Network - Thin Client Accesses Campus Network (Recommended)

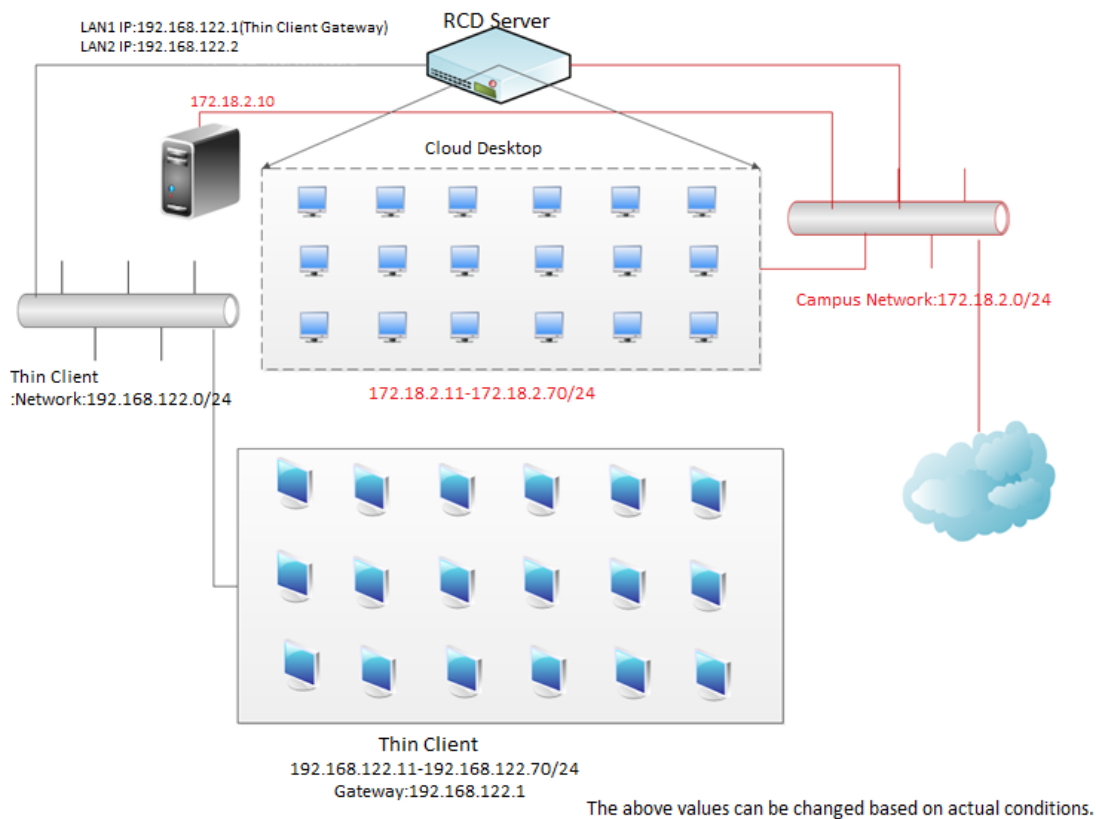
This deployment mode is widely applied thanks to its simple deployment and topology. However, the number of IP addresses required by this deployment is twice the number of seats in the classroom. This deployment is applicable to a scenario in which IP resources are sufficient. The following figure shows the topology of this deployment mode.



As shown in the preceding figure, one seat uses one cloud desktop and one thin client, which both use IP addresses of campus network. Therefore, one seat requires two IP addresses.

1.1.2 Cloud Desktop Accesses Campus Network - Thin Client Accesses Private Network

This deployment mode is applicable to a scenario in which the IP resources are insufficient. In this mode, the cloud desktop uses the IP address of the campus network while the thin client is logically located in the private network. The private network is connected to the campus network or Internet through the RCD server, which is actually a NAT method. This deployment mode hides the number of IP addresses occupied by thin clients. Actually, the number of IP addresses employed is the same as that employed in the traditional PC equipment room scenario. The following figure shows the topology of this deployment mode.



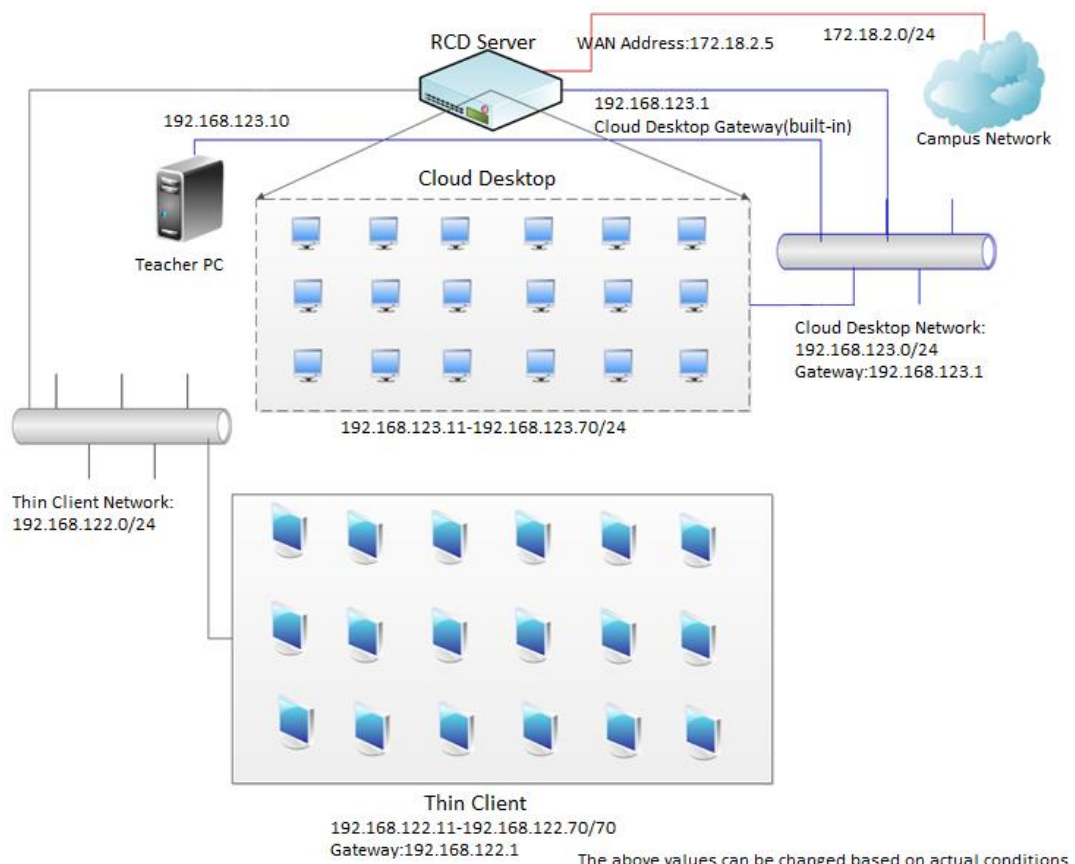
As shown in the preceding figure, a RCD server is configured with two network interface addresses (if the network interfaces are in aggregation mode, only one IP address is required), used to interwork with thin clients. The RCD server is configured with a campus network address used to access the Internet. The first network interface address is set to the address of the gateway configured for the thin client network. Thin clients access the network using the first network interface address of the RCD server.

Teacher PCs and cloud desktops are configured with campus network addresses.

Note that physical connections of three local deployment modes are the same, and only the logical topologies and software implementation are different.

1.1.3 Cloud Desktop Accesses Private Network - Thin Client Accesses Private Network

This deployment mode is applicable to a scenario in which network addresses are extremely insufficient. In this mode, the entire classroom occupies only one IP address of the campus network. Cloud desktops and thin clients are in different private networks and they access the campus network or Internet (two NAT networks) through the RCD server. The following figure shows the topology of this deployment mode.



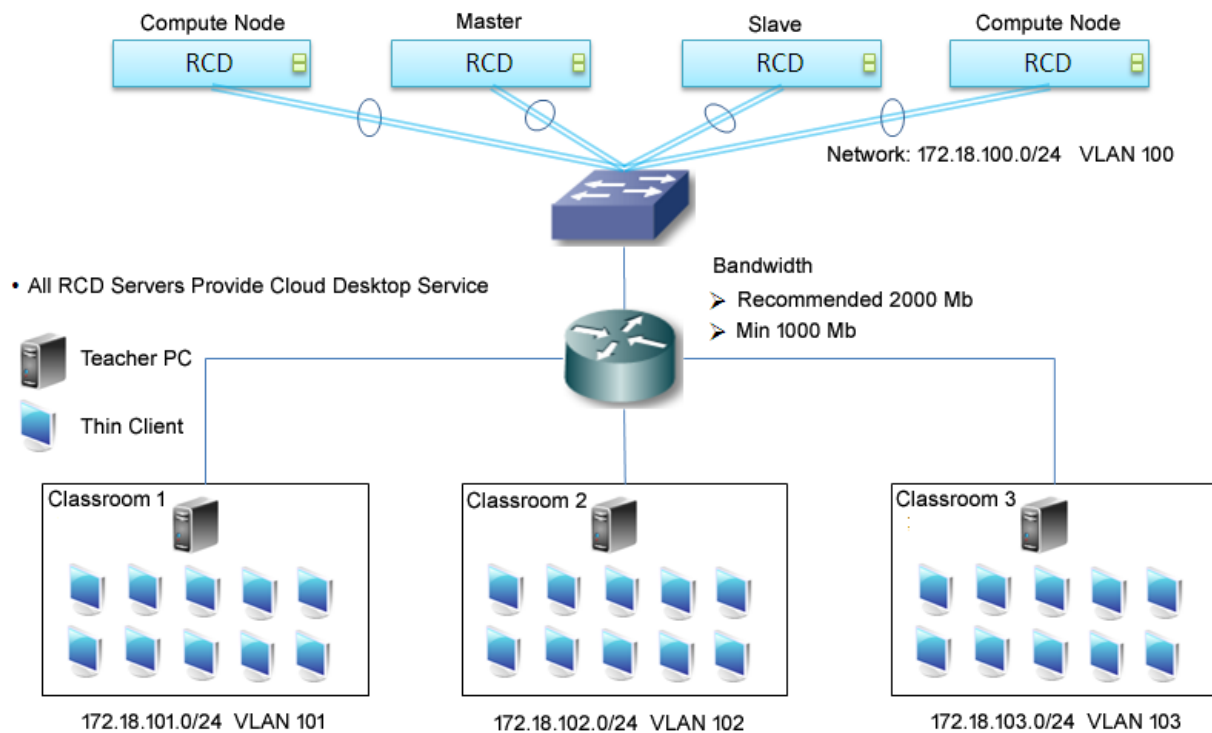
As shown in the preceding figure, the RCD server is configured with two network interface addresses (if the network interfaces are in aggregation mode, only one IP address is required), one network address, and one embedded IP address (192.168.123.1). Two network interface addresses are in the same private network as the thin clients. The first network interface address is set to the gateway address of the thin clients. Embedded IP 192.168.123.1 is in the same private network as the cloud desktop. The cloud desktop can use only addresses in the 192.168.123.0/24 network segment. 192.168.123.1 is the gateway address of the cloud desktop. The RCD server is also configured with a network address of the campus network. The RCD server uses this network address to route network access traffic and provides the network access function for thin clients and cloud desktops.

The IP addresses of teacher PCs and cloud desktops must be in the same network segment (192.168.123.0/24).

In this deployment mode, the Internet access traffic of all cloud desktops is transmitted out of the RCD server. Therefore, this deployment mode is not applicable to the scenario in which Internet access behaviors of students need to be monitored.

1.2 Cluster Deployment Solution

In the cluster deployment solution, RCD servers are deployed in the equipment room of the data center, resources are allocated in a unified way, and the high-availability (HA) scheme is implemented, providing a more stable and reliable cloud desktop service for multiple classrooms. The following figure shows the topology of the whole solution.

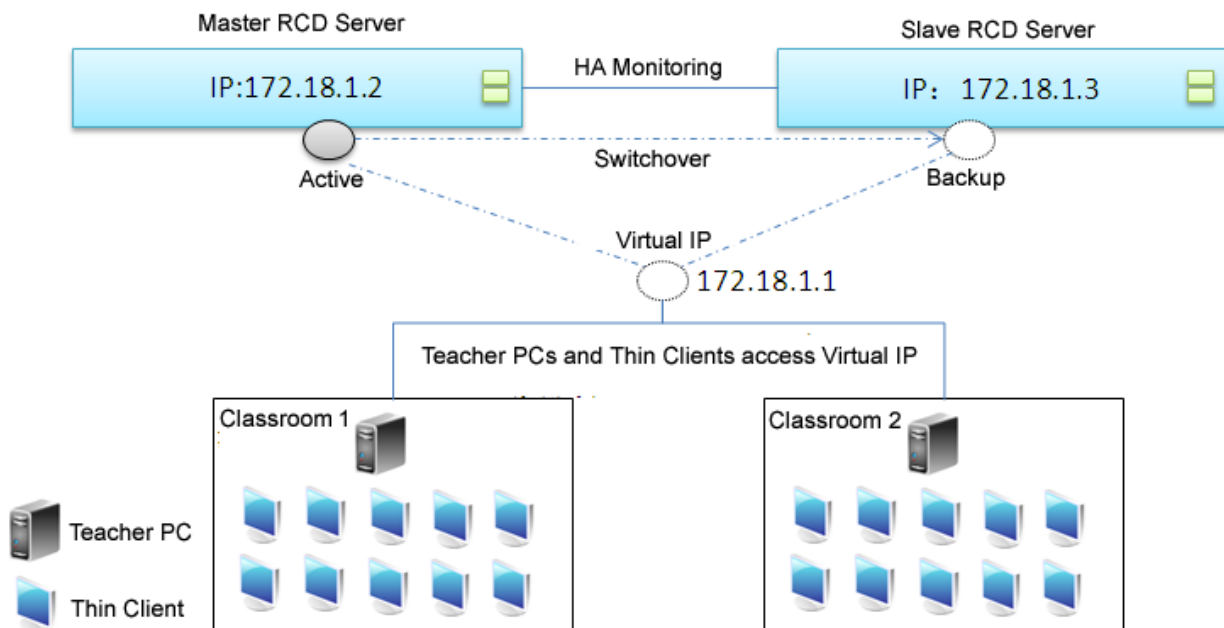


All RCD servers are deployed in the equipment room of the data center. RCD servers are divided into the following types:

- Master RCD server: manages all RCD servers and schedules cloud desktop resources in a unified way. All thin clients are connected to the master RCD server to apply for the cloud desktop. The master RCD server also provides the cloud desktop service and functions as the master role to start the HA service.
- Slave RCD server: monitors the status of the master RCD server and takes over cluster management when the master RCD server is faulty. The slave RCD server also provides the cloud desktop service and functions as the slave role to start the HA service.
- Compute node RCD server: functions as the controlled role and can provide only the cloud desktop service.

The recommended bandwidth for the connection between each classroom to the data center is 2000 MB or above, and the minimum value is 1000 MB. A network segment is required for the thin clients in each classroom, and a VLAN is allocated to the cloud desktop of each classroom. In this way, the cloud desktop network of each classroom is separated. For details, see section 2.3 Classroom Management.

The following figure shows the principle of the HA scheme of the master and slave RCD servers.

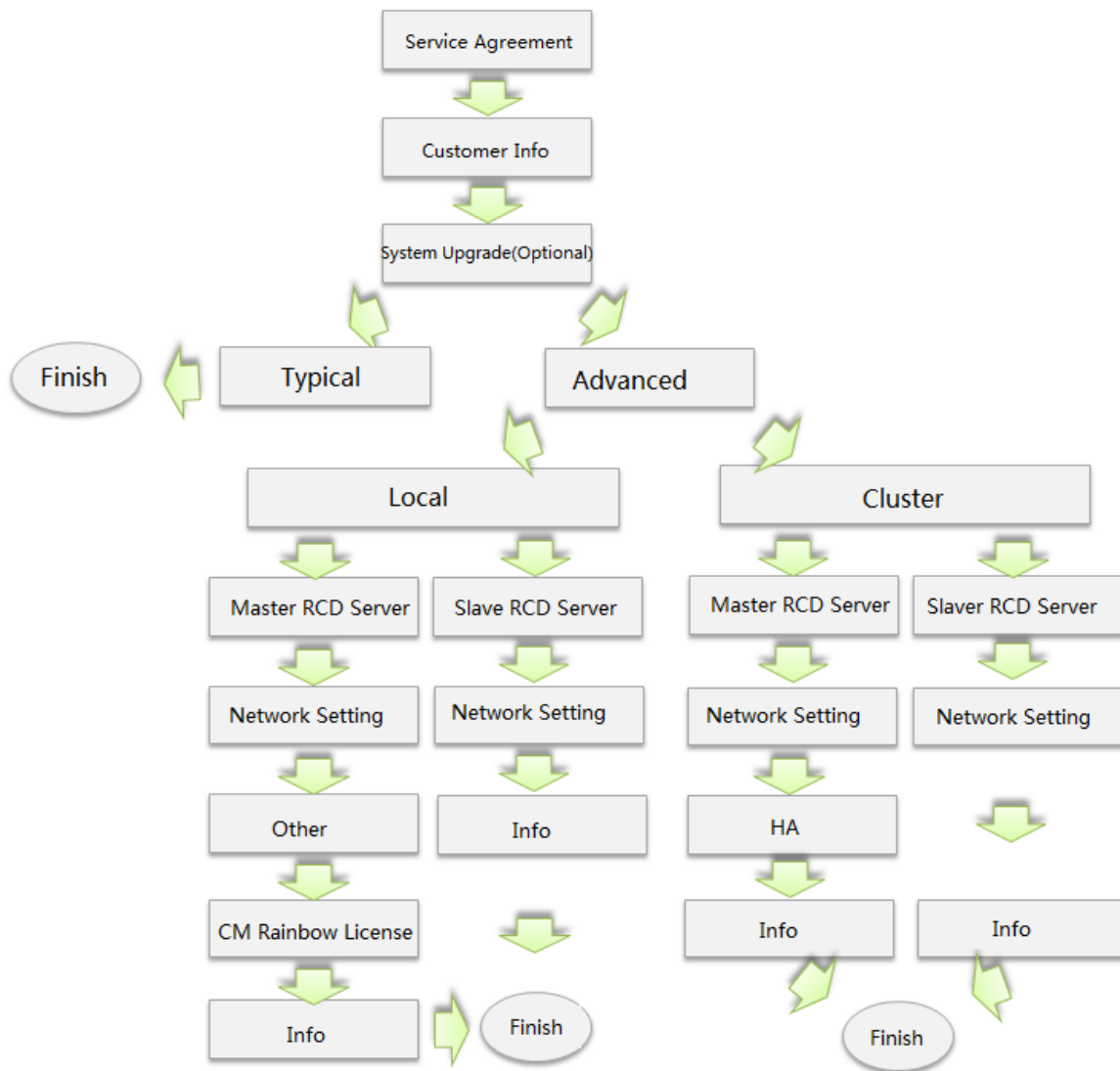


All thin clients are connected to the virtual IP, which is managed by the master RCD server. The master RCD server provides the management service, while the slave RCD server synchronizes configuration data on the master RCD server in real time. When detecting that the master RCD server is faulty, the slave RCD server changes its role to master, takes over the virtual IP, and enables the management service.

2 RCD Server Web Management

2.1 Configuration Wizard

When you initially log in to the web UI of the RCD server, the RCD server is automatically activated and the configuration wizard is displayed. The following figure shows the wizard process.



The typical configuration is applicable to most scenarios. For details about the typical configuration, see the local deployment mode in section 1.1.1. In this scenario, only one RCD server is deployed for one classroom in local deployment mode. The network mode is "Cloud desktop accesses campus network - Thin client accesses campus network". The workspace service is directly deployed on the RCD server.

To configure the controlled, cluster, or other local deployment modes, you need to use the advanced configuration wizard.

2.1.1 Initial Deployment and Activation Wizard

The activation wizard navigates to the **Typical Configuration/Advanced Configuration** page from the **Welcome Page**, to help you confirm the service agreement, register user information, and perform upgrade.

The following figure shows the service agreement. You must accept the service agreement before using the RCC products.

The screenshot shows a web browser window titled "Welcome to RCD". The main content area is titled "RCC Products and Services Agreement". The text of the agreement is as follows:

The Agreement is made and entered into by and between Ruijie Networks Co., Ltd. (including its affiliated company, hereinafter referred to as "Ruijie Networks") as the Seller of Ruijie Cloud Class (RCC) products and services, and all the served entities (hereinafter referred to as the "User", including, but not limited to natural persons, legal persons, unincorporated entities, and other groups, teams, or organizations).

Any use of any RCC products and/or services (including the updates and upgrades as provided) by the User is considered as the acceptance of all the terms and conditions of the Agreement.

I. Products and Services

RCC products and services are provided, dedicated to offering online services such as updates, upgrades, management, and resource sharing by the RCC online upgrade and resource sharing platform for free.

II. Restrictions

In the use of RCC products and services, the operating equipment are self-supplied with the fees generated at User's own expenses, including, but not limited to the purchase, networking, and communications of PCs, mobile phones, other devices for accessing the Internet or mobile networks. Meanwhile, the User shall comply with the treaties, laws, and regulations on intellectual property rights, and respect others' intellectual property rights of the People's Republic of China (PRC). Any legal liability incurred in violation of such obligations shall be borne by the User.

The User shall neither abuse RCC products and services, nor use RCC products and services to conduct any behaviors or activities in violation of the rules and regulations.

Regardless of public or private transmission, the User either as transmitters or receptors shall be liable for the upload, post, and dissemination of any instant messages, E-mails or other data from other sources (hereinafter referred to as the "Content") such as messages, files, texts, software, music, audios, photos, figures, videos, and user registration information on the RCC platform.

RCC products and services neither upload or provide any Content spontaneously, nor change or edit the Content of any form transmitted by the User.

The User shall be fully noted that RCC products and services neither control the User's upload and use, nor revise the Content transmitted; therefore, Ruijie Networks is not liable to the legibility, authenticity, accuracy, and completeness of the Content. The User agree to judge and bear the potential commercial, economic, and legal risks posed by the use of RCC products and services.

At the bottom of the window, there are two buttons: "Back" and "Next". To the right of these buttons, there are two checkboxes: "I have read and accepted" (checked) and "Join User Experience Improvement Program" (checked).

You can select the **Join User Experience Improvement Program** checkbox, so that the system can collect the information about the cloud class used by students or teachers, including fault information collection, so as to improve the product service quality.

On the user information registration page, fill in the user information to obtain better after-sales services.

Welcome to RCD

Welcome to RCD Server.

Enter the following information to activate the RCD Server.

* Customer Name :

惠州测试112.185.

* Customer Type :

Primary School

* Classroom :

V2.1.13.

It is recommended to enter the information for better and faster troubleshooting.

Channel :

1

Channel Contact :

Maintainer :

Maintainer Contact :

Back

OK

On the **System Upgrade** page, you can select, if available, the software upgrade package uploaded by engineers to upgrade the RCD server.

Welcome to RCD

System Upgrade

Current Version: RCC V3.1_R1.10. Please check for upgrade.

Upload

Refresh

 New users download [Admin-Tool](#)

Version	Status	Type	Action
RG-RCDOS_Server_V4.0_R0.1	Ready	ISO	Upgrade
RG-RCDOS_Server_V3.1_R1.51	Upgrade stopped	Upgrade Package	Upgrade
RG-RCDOS_Server_V3.1_R1.50	Upgrade stopped	Upgrade Package	Upgrade
RG-RCDOS_Server_V3.1_R1.11	Ready	ISO	Upgrade
RG-RCDOS_Server_V3.1_R1.10	Upgrade complete	Upgrade Package	
RG-RCDOS_Server_V3.1_R1.9	Upgrade complete	Upgrade Package	
RG-RCDOS_Server_V2.1_R1.13	Unavailable	ISO	

Back

Skip

2.1.2 Configuration for Local Deployment Mode

The typical configuration is widely used for local deployment mode. For details, see section 1.1.1 "Cloud Desktop Accesses Campus Network - Thin Client Accesses Campus Network (Recommended)". The following figure shows the typical configuration information.

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 :

Topology (Cloud Desktop & Thin Client Access Campus Network)

The diagram illustrates a network topology where an RCD Server acts as a central hub. It has two LAN interfaces: LAN1 (172.16.2.1) and LAN2 (172.16.2.2). A Teacher PC (172.16.2.10) is connected to LAN1. Thin Clients are connected to LAN2, with IP ranges 172.16.2.11-172.16.2.1024 and 172.16.2.1025-172.16.2.17920. These thin clients access a Campus Network (172.16.2.1024).

Cloud Desktop and Teacher PC IP

* Cloud Desktop Count :

* Cloud Desktop Start IP :

* Teacher PC IP :

CM Rainbow License

Display SN Export SN

+ Import License

Please enter [Ruijie Product License System](#) to apply for a license

☐ **Advanced**

Back

OK

Cancel

By default, the typical configuration adopts the local deployment mode. The local server is the RCD server, the NIC works in common mode, and the workspace is on the local server.

You can register the license on this page. For details about the license application process, see section 2.7.3 License Management.

For advanced configuration, access the **System** page first.

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

- **Deployment Mode:** Select **Local**.
- **Role:** If multiple RCD servers are deployed in an environment, only one RCD server can work as the master RCD server, and other RCD servers work as slave RCD servers.
- **NIC Mode:** When **NIC Mode** is set to **Normal**, two network interface IP addresses are configured. Two network interfaces can be aggregated as one logical interface by link aggregation to improve network reliability. However, the configuration must also be made on the switch. When **NIC Mode** is set to **Link Aggregation**, after-sales personnel can configure switches based on the configuration described using Ruijie switch as an example.

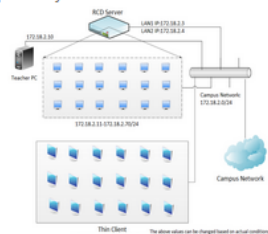
After the system configuration is completed, access the **Network Setting** page.

Welcome to RCD

Network Setting

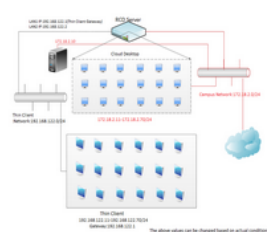
- ☒ Cloud Desktop accesses campus network. Thin Client accesses campus network.

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



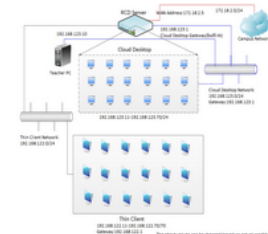
- ☐ Cloud Desktop accesses campus network. Thin Client accesses private network.

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 :

* LAN2 IP :

* Subnet Mask :

* Gateway :

* DNS : 114.114.114.114

Back

Next

For details about three network modes and configuration precautions, see section 1.1 "Local Deployment Solution."

For the RCD server, access the **Other** page.

Welcome to RCD

Other

Cloud Desktop IP

- ☒ Static IP(Recommended)

* Cloud Desktop Count :

* Cloud Desktop Start IP :

- ☐ 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 :

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

- **Cloud Desktop IP:** It is set to the IP address of the cloud desktop. The value options are **Static IP** (recommended) and **DHCP**.
- **Thin Client IP:** It is used to set the IP address of the thin client. If it is set to **CMR Batch Config (Recommended)**, no configuration item is generated on the RCD server. If it is set to **DHCP**, a DHCP service is created on the RCD server to allocate IP addresses to the thin client.
- **Teacher PC IP:** It is used to set the IP address of the CMR teacher PC.
- **Workspace:** It is used to set the IP address of the RCD server where the workspace is located. When multiple RCD servers are configured, **Workspace** must be set to the IP address of the slave RCD server.

After the preceding parameters are configured, you can access the **CM Rainbow License** page. For details about the license generation process, see section 2.7.3 "License Management."

Welcome to RCD

CM Rainbow License

System Time: : 2016-08-23 10:06:13

Display SN Export SN

- **Make sure that the system time is standard time.**
- **Incorrect time may affect the license validity period.**

+ Import License

Please enter [Ruijie Product License System](#) to apply for a license

Back

Next

 You need to load the license to the master RCD server only.

Click **Next** to access the **Info** page. If the license is not loaded, the system prompts for license loading.

Welcome to RCD

Info**System Setting**

Deploy Mode : Local

Role : Master RCD Server

NIC Mode : Normal

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

Network Setting

LAN1 IP : 172.21.112.185

LAN2 IP : 172.21.112.186

Subnet Mask : 255.255.255.0

Gateway : 172.21.112.1

DNS : 114.114.114.114

Other

Cloud Desktop IP : Static IP

Cloud Desktop Count : 60

Cloud Desktop Start IP : 172.21.112.11

Thin Client IP : CMR Batch Config

CM Rainbow License

The license is not imported. The Teacher PC may not run properly.

Back

OK

If the license is not loaded temporarily, the use of the CMR is not affected. By default, the system provides a 45-day trial period. After the trial period expires, CMR functions are limited. Therefore, you must load the license in a timely manner to avoid impacts on system functions.

After verifying the information, click **OK**. The system delivers the configuration and restarts.

2.1.3 Configuration for Cluster Deployment Mode

For details about the cluster principles, see section 1.2 "Cluster Deployment Solution."

To configure the cluster deployment mode, select **Cluster** in **Deploy** on the **System** page. In cluster deployment mode, **NIC Mode** can only be set to **Link Aggregation**.

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
 switch trunk native vlan 100
```

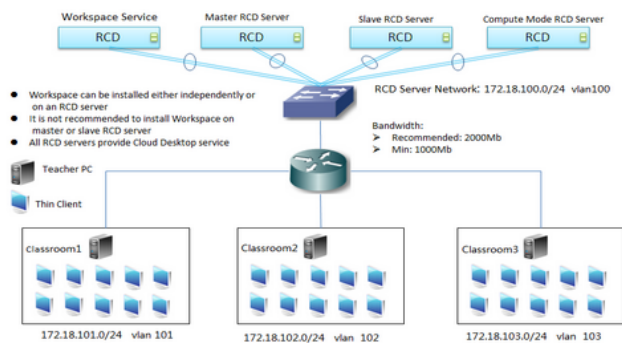
Back

Next

Click **Next** to access the **Network Setting** page.

Welcome to RCD

Network Setting



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

Besides the IP address, you can also set the workspace (it can also be configured in RCD server configuration). The workspace service is recommended to be configured on the slave RCD server and workspace server IP address should be set to the IP address of the RCD server.

Click **Next** to access the **HA** page.

Welcome to RCD

HA

* Enable HA : ☒

Virtual IP :

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

Subnet Mask :

Reference IP : i Gateway address is recommended.

Virtual Router ID : i 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

- **Enable HA:** When two or more RCD servers are deployed in a cluster environment, you are suggested to select **Enable HA**.
- **Virtual IP:** It is set to the IP address to which the thin client program is connected, as shown in the topology.
- **Slave Server IP:** It is set to the IP address of the slave RCD server on which the HA service is enabled. This parameter can be set only when the slave RCD server is configured and is in the running state.
- **Subnet Mask:** It is consistent with the subnet mask of the server IP address.
- **Reference IP:** It is set to an address with which the RCD server can stably interwork. Generally, it is set to the gateway address.
- **Virtual Router ID:** It is used to distinguish different clusters on the same network.
- Click **Next** to access the **CM Rainbow License** page.

Welcome to RCD

CM Rainbow License

System Time: : 2016-08-23 10:09:28

Display SN Export SN

- **Make sure that the system time is standard time.**
- **Incorrect time may affect the license validity period.**

 Import License

Please enter [Ruijie Product License System](#) to apply for a license

Back

Next

For details about the license import mode, see section 2.7.3 "License Management."

Click **Next** to access the **Info** page.

Welcome to RCD

Info**System**

Cluster : Cluster
Role : Master RCD Server
NIC Mode : Link Aggregation
LACP : Disable

Network Config

IP : 172.21.112.185
Subnet Mask : 255.255.255.0
Gateway : 172.21.112.1
DNS : 114.114.114.114

HA

Virtual Server IP : 172.21.112.12
Slave RCD Server IP :
Subnet Mask : 255.255.255.0
Reference IP : 172.21.112.1
Virtual Router ID : 10

CM Rainbow License

The license is not imported. The Teacher PC may not run properly.

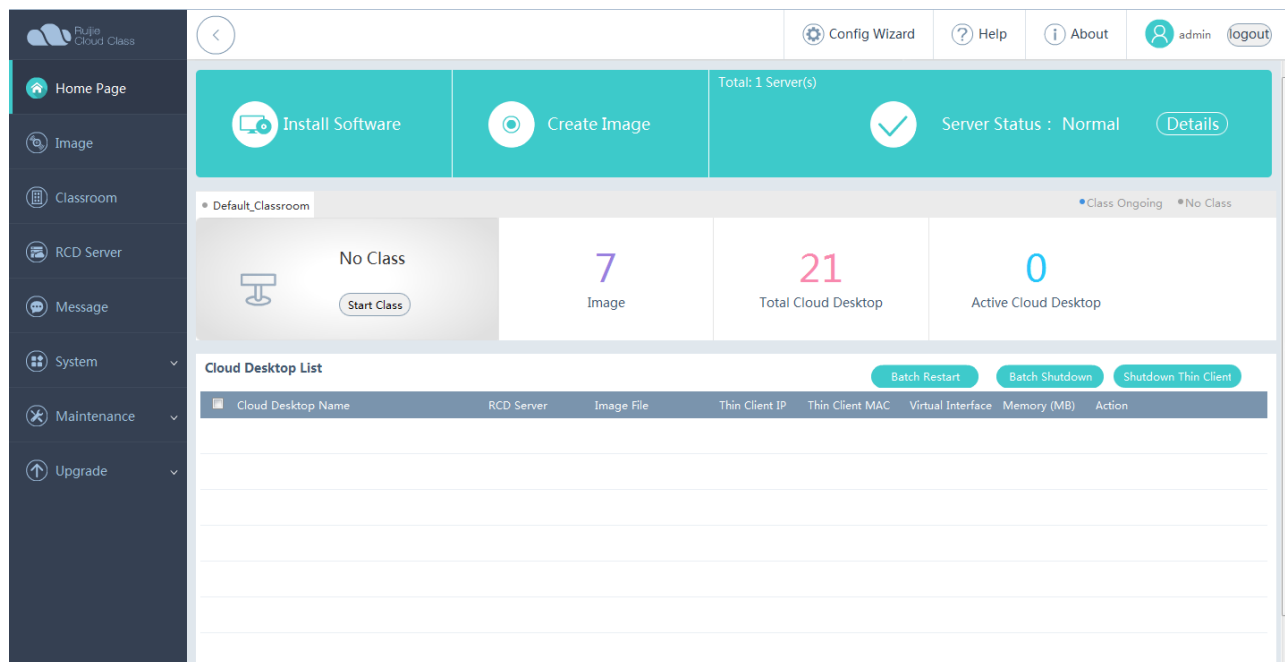
Back

OK

After verifying the information, click **OK**. The system delivers the configuration and restarts.

2.2 Home Page

After logging in to the RCD server system, you can see the home page. The navigation tree is displayed on the left of the home page, basic functions on the upper right, and the content in the middle.



Functions on the upper right are described as follows:

Config Wizard: It is used to re-configure the whole system and start the new configuration wizard. The wizard page starts from the configuration mode.

Help: It redirects to the online service page. If you meet any problems when using RCD, please click this link to contact Ruijie support staff for consultation.

Welcome admin: It provides information about the login user.

Logout: It is used to log out and return to the login page.

About: It displays basic information about the system, such as the version, and service agreement.

On the upper of the content area, the server status is displayed. You can click **Details** to view detailed load information or faulty information of the server, and click the **Restart** or **Reboot** button to restart the RCD server.

On the upper left, there are two buttons: **Install Software** and **Create Image**. You can click the **Install Software** button to edit the image or click **Create Image** to create a new course image.

On the middle left of the content area, there is a **Start Class** or **No Class** button. On the middle right, statistics are displayed, including the number of images, total cloud desktops, and active cloud desktops.

On the lower part of the content area, information about the RCD server in the classroom is displayed and the following functions are provided:

1. **Shutdown** and **Batch Shutdown:** It is used to forcibly shut down the cloud desktop when it crashes.
2. **Restart** and **Batch Restart:** It is used to forcibly shut down and then restart the cloud desktop when it crashes.
3. **Login:** If the cloud desktop is shut down, you can click this link to start the cloud desktop.

4. **Switch:** If the ISO is used to create images, you can click this link to switch and change the ISO.



Note: The administrator does not have the permission to use the login function to preempt thin clients' cloud desktops.

2.3 Classroom

2.3.1 Adding/Editing a Classroom

The system provides a default classroom. In the local deployment solution, you do not need to add any classroom and only need to edit the default classroom. In the cluster environment, you can add multiple classrooms. The following information is required:

- **Name:** Enter the name of a classroom to distinguish different RCC classrooms.
- **Teacher PC IP:** Enter the IP address of the teacher PC installed with RG-ClassManager_Teacher.
- **Cloud Desktop VLAN:** This parameter is mandatory in cluster deployment. Classes must be planned in different VLANs to prevent mutual interference.
- **Thin Client Start/End IP:** Enter the IP address segment of thin clients that are permitted to log in. This parameter is mandatory in cluster deployment.
- **Description:** Enter detailed information about the classroom.

Edit Classroom [X]

* Name :

* Teacher PC IP :

* Preferred RCD Server : [v]

Thin Client Start IP :

Thin Client End IP :

Description :

OK Cancel

2.3.2 Policy Management

It is allowed to configure an image management policy for each classroom. The system administrator can configure a policy based on the actual scenario, as shown in the following figure.

Edit Policy
✕

Classroom : Default_Classroom

Auto Start Class : ☐

Auto Mount Disk : ☐

Restore After Cloud Desktop Shutdown : ☐

Offline Mode : ☐

i Cloud Desktops can access Thin Client resources (only Windows Thin Clients).

Correlated Shutdown : ☐

i Thin Clients will power off automatically after Cloud Desktop shutdown.

Fusion Calculation : ☐

i Cloud Desktops add programs to Thin Clients for performance optimization (only Windows Thin Clients).

Startup Policy : ☒ All Cloud Desktops
☐ Thin Client-accessed Cloud Desktops

Edit Cancel

- **Auto Start Class:** If this option is selected, the image to be selected will be displayed. When the RCD server starts, the system starts the class session based on the selected image. This option is generally applicable to the environment where there is only one image or where the image is fixed.
- **Auto Mount Disk:** If this option is selected, the cloud desktop will automatically mount the **Homework Submission Area** and **Teacher Sharing Data** network disks when the class session starts. Students can submit homework to the **Homework Submission Area** disk and obtain shared files from the **Teacher Sharing Data** disk.
- **Restore After Cloud Desktop Shutdown:** This option determines whether to restore the cloud desktop after students actively shut down the cloud desktop. This option is irrelevant to teachers' operations. If a teacher performs the start and end class operation, all cloud desktops will be restored. If this option is selected, the memory will be cleaned up after students shut down the cloud desktops.
- **Correlated Shutdown:** If this option is selected, the thin client used by the students is powered off when the cloud desktop is shutdown.
- **Startup Policy:**
 - ✧ **All Cloud Desktops:** The system starts the all the cloud desktops.
 - ✧ **Thin Client-accessed Cloud Desktop:** The system starts the cloud desktops of the thin clients that connect to the RCD Server. The cloud desktops of the thin clients that connect to the RCD Server later can be started only after the thin clients send requests.

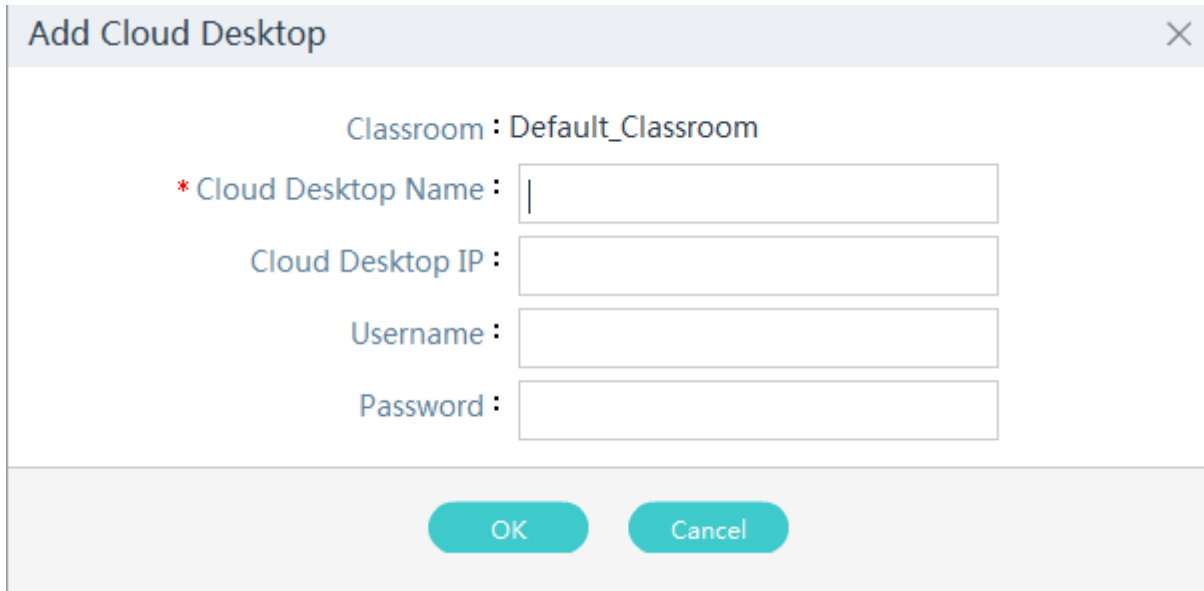
2.3.3 Cloud Desktop Management

The cloud desktop list of a classroom is displayed under the classroom area. You can manage the cloud desktops of the classroom through buttons or menus.

2.3.3.1 Adding/Deleting/Editing the Cloud Desktop

You can click **Add** to add a single cloud desktop or click **Batch Add** to add multiple cloud desktops. Click the button on the upper left of the list. A dialog box is displayed for operations.

Add Cloud Desktop dialog box:



The dialog box titled "Add Cloud Desktop" contains the following fields and controls:

- Classroom :** Default_Classroom
- * Cloud Desktop Name :** [Text input field]
- Cloud Desktop IP :** [Text input field]
- Username :** [Text input field]
- Password :** [Text input field]
- Buttons:** OK, Cancel

- **Cloud Desktop Name:** It is used to identify a cloud desktop. The name will be displayed on the cloud desktop operating system, as well as the home page and the RG-ClassManager_Teacher page.
- **Cloud Desktop IP:** Enter the IP address of the cloud desktop.
- **Cloud Desktop Subnet Mask:** Enter the subnet mask of the cloud desktop IP address. (This parameter is required only in cluster mode. It does not need to be set in local mode because the subnet mask, gateway and DNS of the RCD server will be directly used.)
- **Cloud Desktop Gateway:** Enter the gateway of the cloud desktop. (This parameter is required only in cluster mode. It does not need to be set in local mode because the subnet mask, gateway and DNS of the RCD server will be directly used.)
- **Username:** Enter the username of the cloud desktop. This parameter is not required.
- **Password:** Enter the password of the cloud desktop. This parameter is not required.

Batch Add Cloud Desktop dialog box:

Batch Add Cloud Desktop
✕

Classroom : Default_Classroom

*** Name Prefix :**

*** Name Start Value :**

Cloud Desktop Start IP :

*** Cloud Desktop Count :** ⬆ ⬇ ⬆ i 200 Max

Advanced : ☐

OK
Cancel

- **Name Prefix:** This parameter, together with the RCD server number, constitutes the cloud desktop name.
- **Name Start Value:** Enter the starting number.
- **Cloud Desktop Start IP:** Enter the IP address of the first cloud desktop.
- **Cloud Desktop Subnet Mask:** Enter the subnet mask of the cloud desktop IP address. This parameter is required only in the cluster mode. It does not need to be set in the local mode because the subnet mask, gateway and DNS of the RCD server will be directly used.
- **Cloud Desktop Gateway:** Enter the gateway information. This parameter is required only in the cluster mode. It does not need to be set in the local mode because the subnet mask, gateway and DNS of the RCD server will be directly used.
- **Cloud Desktop Count:** Enter the number of cloud desktops to be added in batches.
- **Advanced — Username Start Value:** Enter the starting username of the cloud desktop.
- **Advanced — Password:** Enter the password of the cloud desktop.

Select a cloud desktop and click **Delete** on the upper left to delete it.

Click **Edit** on the right of a cloud desktop to modify cloud desktop information in the dialog box that is displayed.

Parameters in the dialog box are the same as those in the **Add Cloud Desktop** dialog box.

You can also choose **More>Batch Config** to configure the IP addresses, user names and passwords of cloud desktops in batches, as shown in the following figure.

Cloud Desktop Setting
✕

Classroom : Default_Classroom

Setup Cloud Desktop : ☒

Cloud Desktop Start IP :

Username & Password : ☒ i [Clear Username & Password](#)

Username Prefix :

*** Username Start Value :**

Password :

OK
Cancel

Parameters in the dialog box are the same as those in the **Batch Add Cloud Desktop** dialog box.

2.3.3.2 Kicking out the Cloud Desktop

A cloud desktop is bound to a thin client through the MAC address of the thin client. To unbind the thin client, you need to use the kickout function. Single kickout and batch kickout are both supported.

Choose **More > Kickout** in the dropdown list to kick out the thin client.

Cloud Desktop List

Batch AddAddDeleteMore

Total records: 21. Current Page: Record 1 to 10

10Records Per PageGo to Page1 / 3Go

☐	Cloud Desktop Name	Network Mode	Cloud Desktop MAC	Cloud Desktop IP	Thin Client IP	Thin Client MAC	Thin Client Name	Action
☐	stu020		52:54:00:15:FF:C9				Resource Not Used	Edit KickoutRefreshBatch ConfigThin Client LogThin Client Hardware
☐	stu019		52:54:00:15:FF:C8				Resource Not Used	Edit

Choose **More > KickoutThinClient** on the right of a cloud desktop to kick out the thin client.

Cloud Desktop List

Batch AddAddDeleteMore

Total records: 16. Current Page: Record 1 to 10

10Records Per PageGo to Page1 / 2Go

☐	Cloud Desktop Name	Network Mode	Cloud Desktop MAC	Cloud Desktop IP	Thin Client IP	Thin Client MAC	Thin Client Name	Action
☐	stu015		52:54:00:15:FF:C4		172.21.134.21	58:69:6C:7F:D3:4E		EditMore
☐	stu014		52:54:00:15:FF:C3		172.21.134.20	58:69:6C:7F:D2:DD		Edit RefreshDetails
☐	stu013		52:54:00:15:FF:C2		172.21.134.23	58:69:6C:80:00:03		Edit Kickout Thin ClientFetch Thin Client Lc

2.3.3.3 Collecting Thin Client Logs

If an error occurs on the thin client when a class session starts or ends, choose **More>Fetch Thin Client Log** on the right of the thin client. You can send the logs to the technical support for troubleshooting, as shown in the following figure.

Cloud Desktop List

Total records: 16. Current Page: Record 1 to 10

10 Records Per Page Go to Page 1 / 2 Go

	Cloud Desktop Name	Network Mode	Cloud Desktop MAC	Cloud Desktop IP	Thin Client IP	Thin Client MAC	Thin Client Name	Action
☐	stu015		52:54:00:15:FF:C4		172.21.134.21	58:69:6C:7F:D3:4E		Edit More ^
☐	stu014		52:54:00:15:FF:C3		172.21.134.20	58:69:6C:7F:D2:DD		Edit Refresh Details
☐	stu013		52:54:00:15:FF:C2		172.21.134.23	58:69:6C:80:00:03		Edit Kickout Thin Client Fetch Thin Client Log

The **Thin Client Log List** dialog box is displayed:

Log File	Time
localhos 172.21.151.12.zip	2016-08-24 12:45:37

2.3.3.4 Thin Client Hardware Info

After the thin client is connected to the RCD server, the hardware info of the thin client will be reported, which can be viewed by clicking **More > Thin Client Hardware Info**, as shown in the following figure.

Thin Client Hardware Info

Refresh Back

Thin Client IP	MAC	OS Type	OS Version	System Version	CPU	Memory	BIOS	Mainboard	Storage Capacity	Total Capacity	Model	SN	Software Version
	00:12:34:56:78:9B	Android (32)	4.4.2	1.01.11	ARMv7 Processor CPU RK3188 @ 1.6GHz	1024MB		rk30sdk	2252MB	4.00GB	Rain200S	FFDDEE778899	3.2.0.3
	58:69:6C:2E:C7:99	Android (32)	4.4.2	2.0.68	ARMv7 Processor CPU RK3188 @ 1.6GHz	1024MB		rk30sdk	2204MB	4.00GB	RG-Rain100S V2	G1JD3XH001205	2.0.0.11
	00:E0:4C:68:00:05	Linux (64)	3.1.11	3.1.11	Intel(R) Atom(TM) x5-Z8300 CPU @ 1.44GHz	1910M	BIOS Date: 09/27/2016		5632MB	8.00GB	Default string	Defaultstring	3.1.0.11
	58:69:6C:2E:C7:3A	Android (32)	4.4.2	2.01.11	ARMv7 Processor CPU RK3188 @ 1.6GHz	1024MB		rk30sdk	2204MB	4.00GB	RG-Rain100S V2	G1JD3XH000103	3.2.0.3
	58:69:6C:3E:44:7B	Android (32)	4.4.2	1.0.3805	rk3188			rk30sdk	2252MB	4.00GB	Rain200C	0000000000052	1.2.0.12
	00:24:67:38:2C:E0	Android (32)	4.4.2	1.0.3805	rk3188			rk30sdk	2252MB	4.00GB	Rain200S	G1JD5X700153	1.2.0.12
	00:24:67:38:2C:82	Android (32)	4.4.2	1.0.3805	rk3188			rk30sdk	2252MB	4.00GB	Rain200S	G1JD5X700121	1.2.0.12
	00:24:67:38:2C:F8	Android (32)	4.4.2	1.0.3805	rk3188			rk30sdk	2252MB	4.00GB	Rain200S	G1JD5X700013	1.2.0.12
	12:03:40:56:00:AB	Android (32)	4.4.2	1.0.3805	rk3188			rk30sdk	2252MB	4.00GB	Rain200S	Snab2384022013-29234u	1.2.0.12

2.3.3.5 Others

- **Details:** It displays detailed information about the cloud desktop and the bound thin client, as shown in the following figure.

The 'Details' dialog box displays configuration information for a cloud desktop and a thin client, organized into two columns. The left column lists cloud desktop details, and the right column lists thin client details. An 'OK' button is located at the bottom center.

Cloud Desktop Information	Thin Client Information
Cloud Desktop Name : test001	Thin Client ID : 22
Cloud Desktop IP :	Thin Client Name :
Cloud Desktop MAC : 52:54:00:15:FF:C5	Network Mode :
Cloud Desktop Subnet Mask : 255.255.255.0	Thin Client IP : 172.21.137.110
Cloud Desktop Gateway : 172.21.112.1	Thin Client MAC : 58:69:6C:7F:FF:FC
Cloud Desktop DNS : 114.114.114.114	Subnet Mask :
Username :	Gateway :
Password :	DNS :
Image File :	Resolution :

OK

- **Refresh:** Update the binding relationships between thin clients and cloud desktops. Make sure the batch configuration software is enabled.

2.4 Image

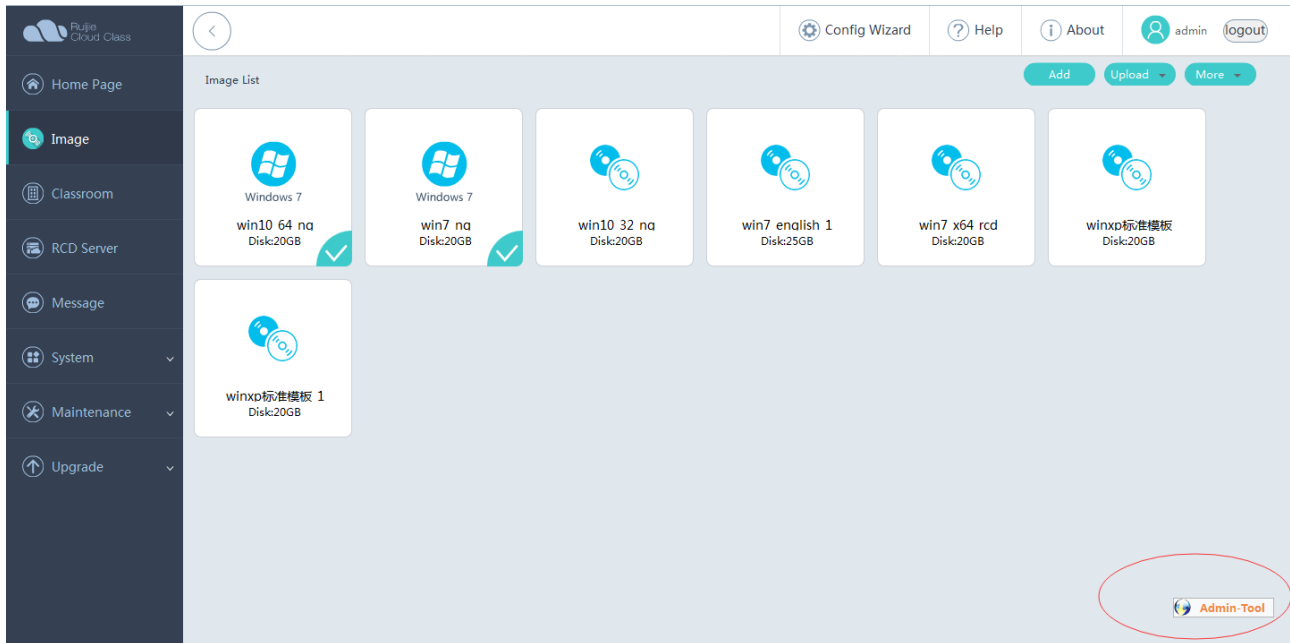
This function enables you to manage images, including image viewing, creating, copy, snapshot, and ISO list. The applicable image systems include Windows XP, Windows 2003, Windows 2008, Windows 7, Windows 8, Windows 10, Ubuntu, Centos, and Fedora, which are introduced in the following sections.

2.4.1 Creating an Image (and Installing the Software)

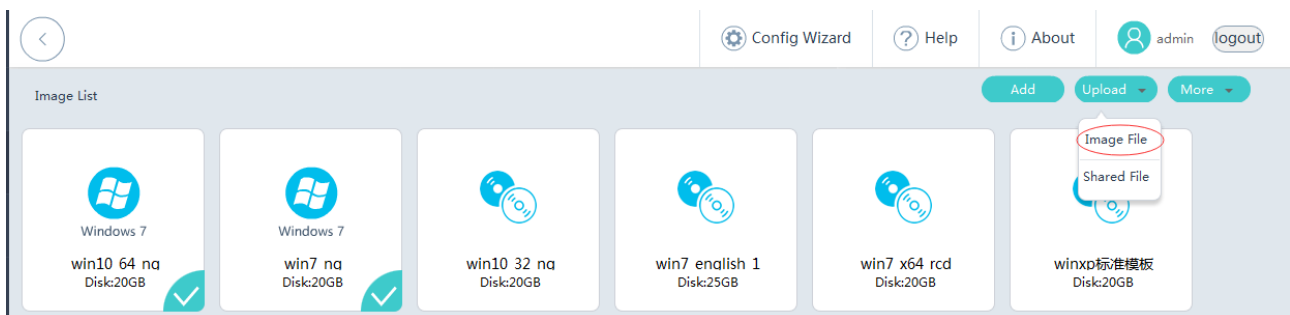
You can create an image by either using the ISO file of the operating system or installing software based on an existing course image.

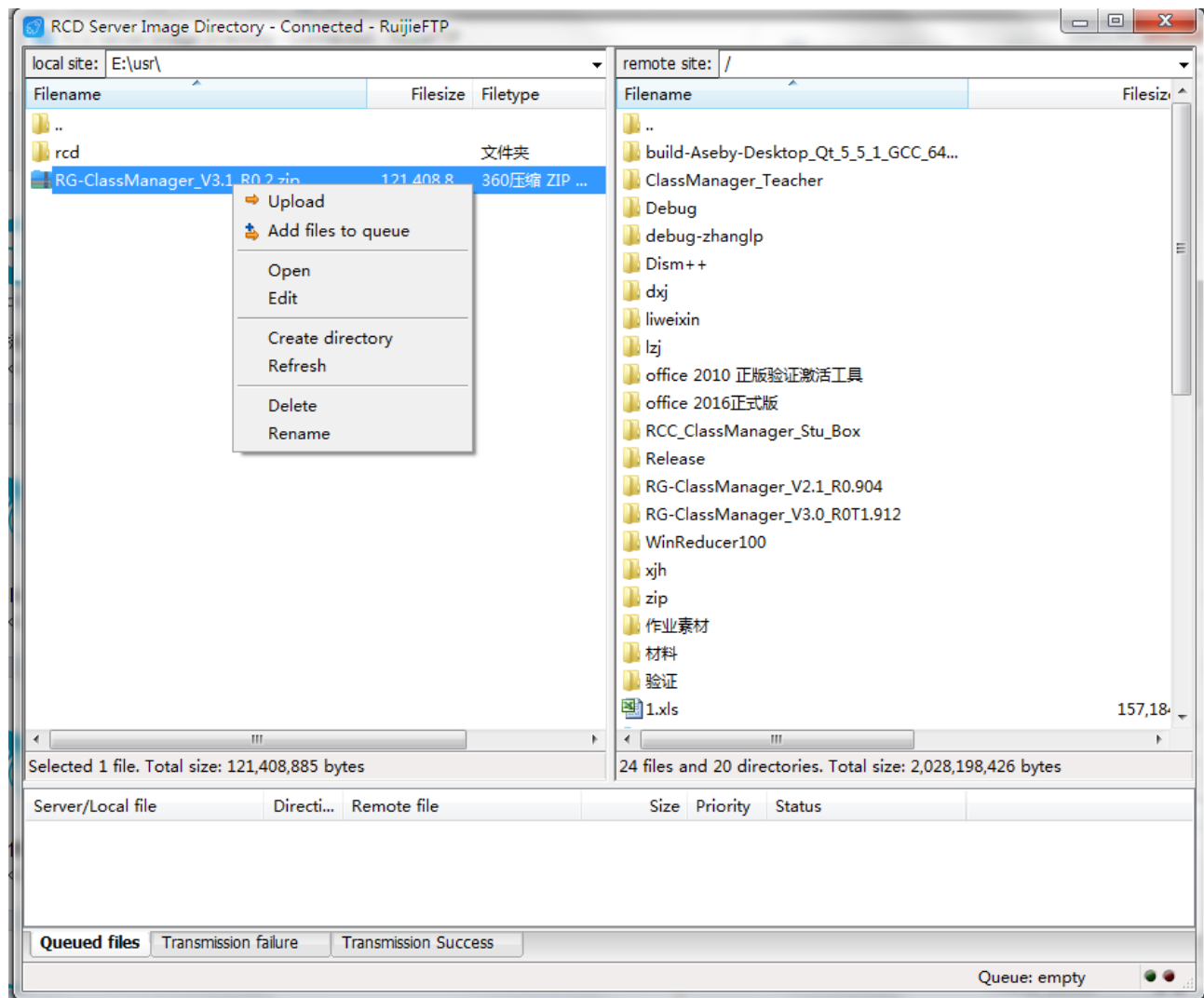
The following part describes how to create a new course image.

1. Install the Admin-Tool: Log in to the RCD server and click **Admin-Tool** on the lower right corner of **Image List** to download and install the RCC-Admin-Tool.



2. Upload the ISO image file: On the **Image List** page, choose **Upload>Image Directory** and upload the ISO/base file from the local site to the remote site.





3. Install the image system: Choose **Image List>Add**. Input the image name and image file name, select the ISO file, operating system type, whether to enable this image, and the system configuration (standard configuration is recommended upon the first image creation) and then click **OK** to start installing the image system. (Note: Some specified RCDOS versions only support specified Guest operating systems.)

Add Image Template
✕

Image Name :

* Image File Name : i .base

* ISO : ▼

* OS : ▼

Enable : ☐ i Disabled image is not displayed on Thin Clients.

* Desktop Backup : ☐ Recommended for Exams

* System Config : ☒ Standard(Recommended) ☐ High ☐ Custom

⚠ **Tips :**

Standard: For Internet surfing, work and study.
High: For VM running, graphics rendering and code compiling.

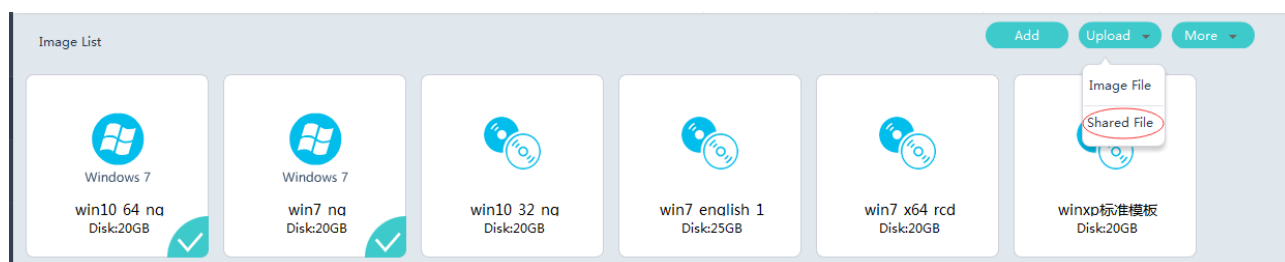
The number of supported Cloud Desktops varies with different RCD Servers as follows:

RCD6000: 60 Cloud Desktops recommended and 65 maximum for standard mode; 30 Cloud Desktops recommended for high mode.
RCD6000 V2 : 60 Cloud Desktops recommended for standard mode; 30 Cloud Desktops recommended for high mode.
RCD3000&RCD3000 V2: 30 Cloud Desktops recommended and 35 maximum for standard mode; 15 Cloud Desktops recommended for high mode.
RCD4500: 45 Cloud Desktops recommended and 48 maximum for standard mode; 22 Cloud Desktops recommended for high mode.
RCD4500 V2: 45 Cloud Desktops recommended and 50 maximum for standard mode; 22 Cloud Desktops recommended for high mode.

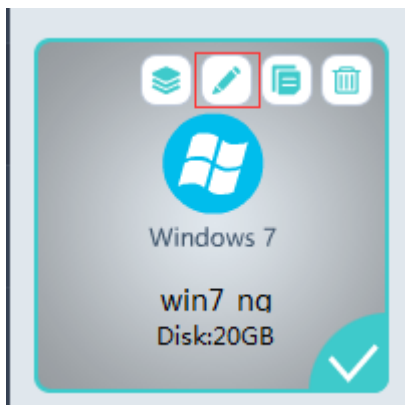
Before adding or editing images, install [Admin-Tool](#)

OK
Cancel

4. Install the RCC-Guest-Tool: Open the installed image system and install the RCC-Guest-Tool. Click **Shutdown** of the image system to shut it down.
5. To install the software, choose **Upload>Shared File** and upload the software to be used by using Admin-Tool.



6. Click **Save and Run** to power on the image system



×

* Image Name :

win7_ng

Image File Name :

win7_ng.base

* OS :

Windows 7

Enable :

☒

ⓘ

Disabled image is not displayed on Thin Clients.

* Desktop Backup :

☐

Recommended for Exams

* System Config :

☒ Standard(Recommended)

☐ High

☐ Custom

⚠ Tips :

Standard: For Internet surfing, work and study.
High: For VM running, graphics rendering and code compiling.

The number of supported Cloud Desktops varies with different RCD Servers as follows:
RCD6000: 60 Cloud Desktops recommended and 65 maximum for standard mode; 30 Cloud Desktops recommended for high mode.
RCD6000 V2 : 60 Cloud Desktops recommended for standard mode; 30 Cloud Desktops recommended for high mode.
RCD3000&RCD3000 V2: 30 Cloud Desktops recommended and 35 maximum for standard mode; 15 Cloud Desktops recommended for high mode.
RCD4500: 45 Cloud Desktops recommended and 48 maximum for standard mode; 22 Cloud Desktops recommended for high mode.
RCD4500 V2: 45 Cloud Desktops recommended and 50 maximum for standard mode; 22 Cloud Desktops recommended for high mode.

Before adding or editing images, install [Admin-Tool](#)

Edit

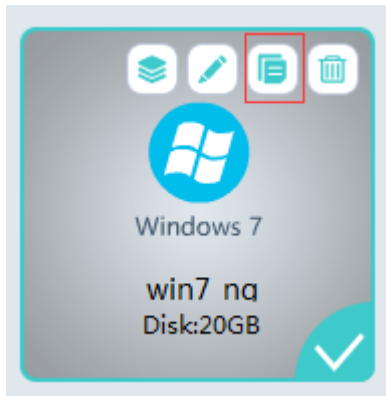
Save and Enable

Cancel

- On the shared disk of the operating system, find the uploaded software and install the software based on the installation guide. On Windows, the shared disk is disk D; for the other operating systems, see the corresponding description. After installation, make sure to shut down the system.

The following part describes how to create an image by copying an existing image.

- Select an image and click the copy icon. In the **Copy Image Template** dialog box, create a new image based on the selected one.



Copy Image Template

Image Name :

win7_ng_1

* Image File Name :

win7_ng_1

i

.base

OS :

Windows 7

* CPU Count :

1

* Memory(MB) :

1024

Enable :

☐

Hard Disk Space(GB) :

20

OK

Cancel

After you click **OK**, it takes a period to complete the copy operation. The period is determined by the disk size of the image.

2. Choose **Upload>Shared File** and upload the software to be used by using Admin-Tool.
3. Select the copied image and click the editing icon. In the dialog box that is displayed, click **Save and Enable** to enable the image operating system.

✕

Edit Image Template

* Image Name :

win7_ng

Image File Name :

win7_ng.base

* OS :

Windows 7

Enable :

☒

Disabled image is not displayed on Thin Clients.

* Desktop Backup :

☐

Recommended for Exams

* System Config :

☒ Standard(Recommended)
 ☐ High
 ☐ Custom

⚠ Tips :

Standard: For Internet surfing, work and study.
High: For VM running, graphics rendering and code compiling.

The number of supported Cloud Desktops varies with different RCD Servers as follows:
 RCD6000: 60 Cloud Desktops recommended and 65 maximum for standard mode; 30 Cloud Desktops recommended for high mode.
 RCD6000 V2 : 60 Cloud Desktops recommended for standard mode; 30 Cloud Desktops recommended for high mode.
 RCD3000&RCD3000 V2: 30 Cloud Desktops recommended and 35 maximum for standard mode; 15 Cloud Desktops recommended for high mode.
 RCD4500: 45 Cloud Desktops recommended and 48 maximum for standard mode; 22 Cloud Desktops recommended for high mode.
 RCD4500 V2: 45 Cloud Desktops recommended and 50 maximum for standard mode; 22 Cloud Desktops recommended for high mode.

Before adding or editing images, install [Admin-Tool](#)

Edit

Save and Enable

Cancel

- Find the uploaded software on the shared disk and install the software based on the installation guide. On Windows, the shared disk is disk D; for the other operating systems, see the corresponding description. After installation, choose **Start>Shutdown** to shut down the system.

2.4.2 Image Synchronization

If multiple servers are used to form a cluster or a stack system, you must synchronize the images and shared files when a new image task is created or the shared directory is changed. Otherwise, files on different cloud desktops are inconsistent.

Click the **Synchronize** link in the upper right corner of the image list to access the synchronization page. The synchronization page contains two views: **Sync Image to Slave Server** and **Sync Task**. The **Sync Image to Slave Server** tab page displays the list of image tasks of each slave RCD server.

172.21.112.213		Sync Image to Slave Server [172.21.112.213]					Task View	Back
Image Name/Directory	File	Destination IP	Start Time	End Time	Progress/Result	Operate		
Shared File					Ready	Start		
hoo4	hoo4.base	172.21.112.213	2016-08-28 06:36:08	2016-08-28 06:36:09	Success	Start		
hoo5	hoo5.base				Ready	Start		
test	test.base				Ready	Start		

- **Start:** The synchronization of the image or shared directory is enabled only on the current RCD server when it is clicked.
- **Combine to Start:** The synchronization of images or shared directories is enabled on all current RCD servers.

The **Sync Task** tab page displays the ongoing synchronization tasks.

Sync Task							Add Task	Stop Task	Slave View	Back
Image Name/Directory	File	Destination IP	Start Time	End Time	Progress/Result	Operate				
win7_advance	win7_advance.base	172.21.112.213	2016-08-28 06:38:00		2% (113.19MB/s)	Stop				

When you click **Add Task**, the **Sync Task** page is displayed, and you can add a new synchronization task.

Sync Task

All Task

Image Name	Image File Name
< Shared Directory >	All Files
win7_x64_rcd	win7_x64_rcd.base
win7_x64_rcd_1	win7_x64_rcd_1.base
win7_x86_rcd	win7_x86_rcd.base

Selected Task

Image Name	Image File Name
win7_advance	win7_advance.base

» Add All

» Add

« Remove

« Remove All

Tip :

1. Go to Image > Sync to see progress.

OK

Cancel

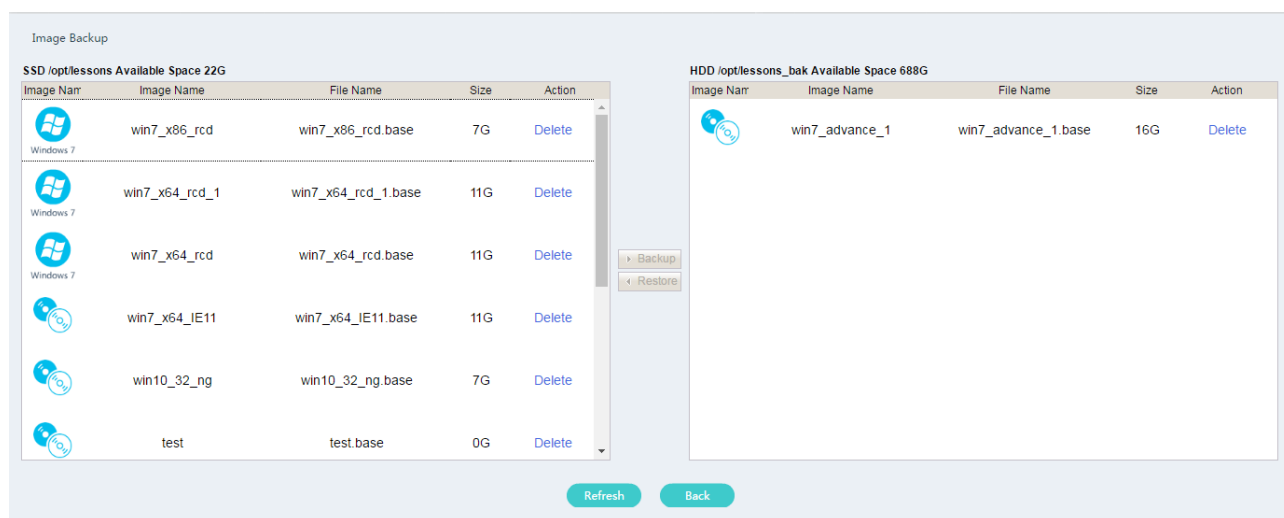
Click **OK**. The system synchronizes the selected image to all RCD servers.

2.4.3 ISO File

You can go to the page of uploaded ISO files through the ISO menu to delete or query the ISO file.

2.4.4 Backup

If multiple images need to be uploaded but the disk space is insufficient, you can back up the uploaded images not to be used in other disks. You can also restore images on the backup disk to the system disk for normal use.

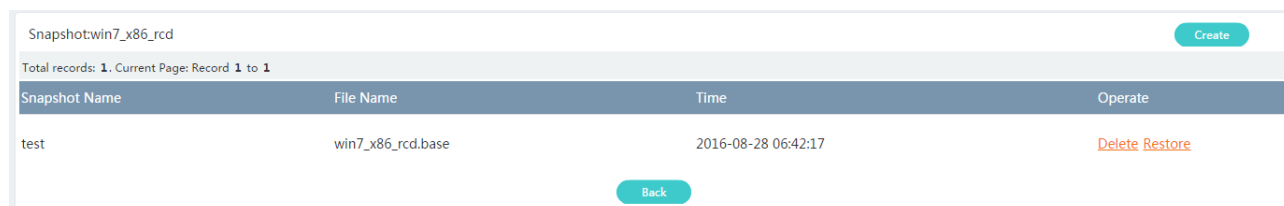
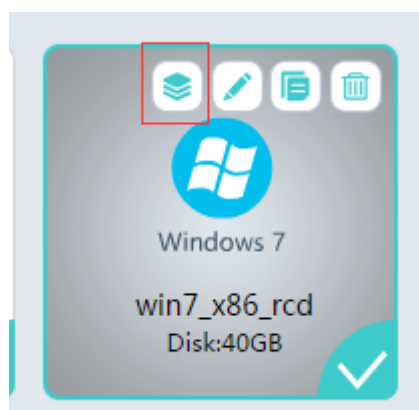


In the preceding figure, images in the system disk are displayed on the left and those in the backup disk are displayed on the right. Double-click an image in the left box, or select an image in the left box and click **Backup** to back up the image, and double-click an image in the right box, or select an image and click **Restore** to restore the image to the system disk.

2.4.5 Snapshot

The snapshot function, similar to the backup function, is used to store the state of images. Before or after software installation, create snapshots so that you can restore the system to the state of the snapshot in case of image damage.

Select an image and click the snapshot icon to go to the snapshot management page.



The **Create** button, and **Delete** and **Restore** links are displayed on the page.



Note: Disk space cannot be extended for images where snapshots are created.

2.4.6 Storage Mode (Supported in the Examination Scenario)

Examinations may have special requirements. Therefore, you need to change the system configurations. The examinations mainly have the following requirements:

1. Users log in to different cloud desktops using different user names.
2. After the examination ends, the OS data must be backed up for a period of time for review.

To meet requirement 1, you can access the **Cloud Desktop** page and click the **Fill** button in the upper right corner. In the **Cloud Desktop Setting** dialog box, set **Username Prefix** and **Username Start Value**.

Cloud Desktop Setting

Classroom : Default_Classroom

Setup Cloud Desktop : ☐

Username & Password : ☒  Clear Username & Password

Username Prefix :

* Username Start Value :

Password :

OK

Cancel

After cloud desktops are started, the system sets different user names for different cloud desktops.

To meet requirement 2, you can modify the image settings to enable the system to back up each cloud desktop. In the menu, select **Image** and select the image to be edited. Click **Edit**. In the **Edit Image Template** dialog box, select **Desktop Backup** and **Backup after class**. Click **Edit** and save the settings.

✕

Edit Image Template

* Image Name :

Image File Name : win7_x64_rcd.base

* OS :

Enable : ☒

ⓘ

Disabled image is not displayed on Thin Clients.

* Desktop Backup : ☒

Recommended for Exams

* Policy : ☒ No backup after class

☐ Backup after class

☐ Real-time backup

* System Config : ☒ Standard(Recommended)

☐ High

☐ Custom

⚠ Tip :

Standard: For Internet surfing, work and study.
High: For VM running, graphics rendering and code compiling.

The number of supported Cloud Desktops varies with different RCD Servers as follows:
RCD6000: 60 Cloud Desktops recommended and 65 maximum for standard mode; 30 Cloud Desktops recommended for high mode.
RCD6000 V2 : 60 Cloud Desktops recommended for standard mode; 30 Cloud Desktops recommended for high mode.
RCD3000&RCD3000 V2: 30 Cloud Desktops recommended and 35 maximum for standard mode; 15 Cloud Desktops recommended for high mode.
RCD4500: 45 Cloud Desktops recommended and 48 maximum for standard mode; 22 Cloud Desktops recommended for high mode.
RCD4500 V2: 45 Cloud Desktops recommended and 50 maximum for standard mode; 22 Cloud Desktops recommended for high mode.

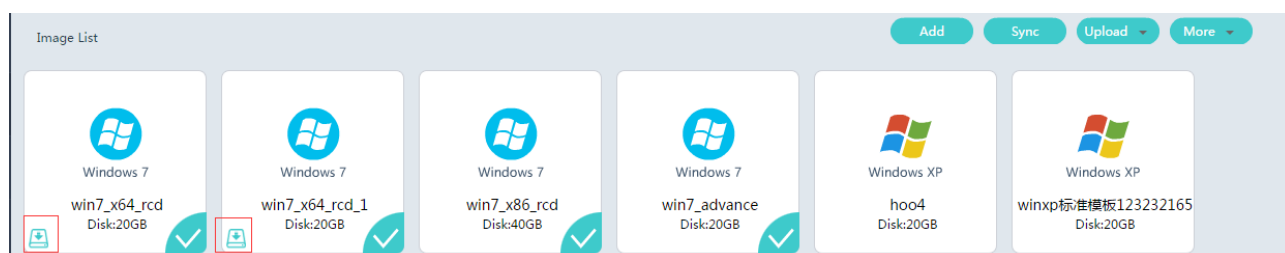
Before adding or editing images, install [Admin-Tool](#)

Edit

Save and Enable

Cancel

After the modification, the system automatically backs up the cloud desktops when class is over and generates backup information. When you click an image and click the link in the lower left corner, you can access the list of backup cloud desktops.



You can click **More** to view the backup details of all cloud desktops. When you click **Enable** for a backup item, the corresponding cloud desktop starts running.

Image Backup Listwin7_x64_rcd_1

10

Records Per Page

Go to Page

1

/ 1

Go

⏪

⏩

⏴

⏵

⏶

⏷

⏸

⏹

Total records: 8. Current Page: Record 1 to 8

Backup ID	Name	Base	Dependent Term ID	Classroom	Create Time	Update Time	Description	Action
1	win7_x64_rcd_1	2016-08-21-11-16_47	win7_x64_rcd_1	Default_Classroom	2016-08-21 11:16	2016-08-21 11:23		Detailed Edit Enable

Desktop Backup List: win7_x64_rcd_1 2016-08-21-11-16_47

Total records: 60. Current Page: Record 1 to 10

10 Records Per Page Go to Page 1 / 6

Name	File Name	RCD Server IP	Base	Create Time	Update Time	Action
☐ Stu-01	win7_x64_rcd_1_S105_Stu-01_1.inst	172.21.112.238	win7_x64_rcd_1	2016-08-21 11:19	2016-08-21 11:23	Enable
☐ Stu-02	win7_x64_rcd_1_S105_Stu-02_2.inst	172.21.112.238	win7_x64_rcd_1	2016-08-21 11:19	2016-08-21 11:23	Enable
☐ Stu-03	win7_x64_rcd_1_S105_Stu-03_3.inst	172.21.112.238	win7_x64_rcd_1	2016-08-21 11:19	2016-08-21 11:23	Enable
☐ Stu-04	win7_x64_rcd_1_S105_Stu-04_4.inst	172.21.112.238	win7_x64_rcd_1	2016-08-21 11:19	2016-08-21 11:23	Enable
☐ Stu-05	win7_x64_rcd_1_S105_Stu-05_5.inst	172.21.112.238	win7_x64_rcd_1	2016-08-21 11:19	2016-08-21 11:23	Enable

2.5 RCD Server

In RCD server management, FTP usernames and passwords of shared partitions and images can be reset or changed, BMC event logs can be collected and the BMC can be configured. When configuring the BMC, you can select **Static** or **Dynamic** as the IP policy, as shown in the following figure.

【Host:172.21.112.185】 - Configure BMC Network

BMC Dedicated Port IP

* IP Policy :

Static

* IP :

172.21.113.201

* Subnet Mask :

255.255.252.0

* Gateway :

172.21.112.1

OK

Cancel

You can add a slave RCD server so that multiple RCD servers form a whole to provide more cloud desktops. You can also edit or delete the added RCD server.

The management page is shown below.

RCD Server List

Add

Name	Model	IP	FTP Username/Password for Shared-partition	FTP Username/Password for Image	Status	Desktop List	Action
Master RCD Server	RG-RCD6000	172.21.112.185	share / ***** Reset Edit	lessons / ***** Reset Edit	Normal	Details	Collect Log Config Net

2.6 System

2.6.1 Network Configuration

The network configuration function is used to configure network parameters of RCD servers and change roles (master/slave)

2.6.1.1 Network Parameters and Working Role

It is used to configure network parameters and working role of the RCD server. Network parameters include IP address, subnet mask, gateway, and DNS and the working role can be master or slave.

Network Mode	LAN Address
Deploy Mode : Cluster	IP : 172.21.112.213
Role : Master RCD Server	Subnet Mask : 255.255.255.0
NIC Mode : Link Aggregation	Gateway : 172.21.112.1
	DNS : 114.114.114.114

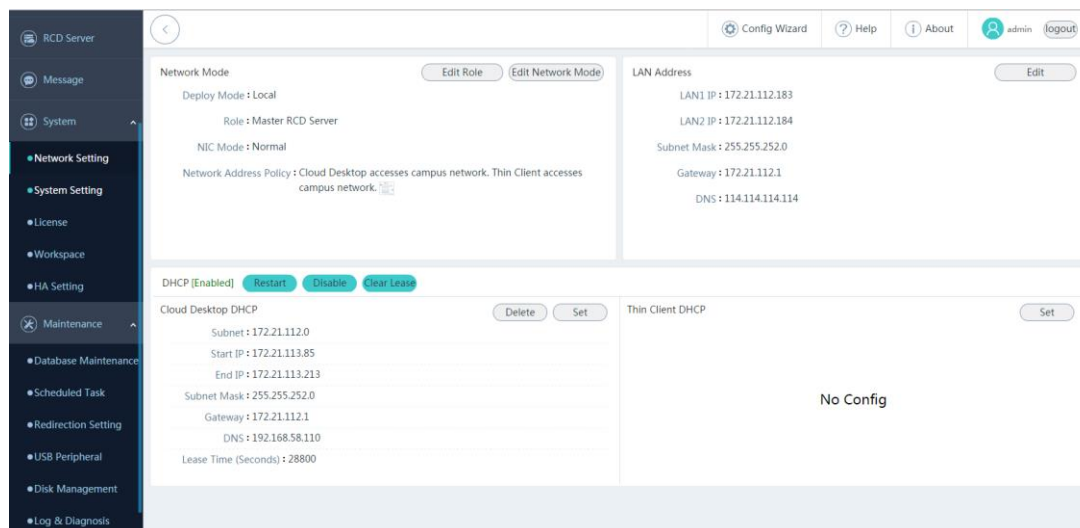
- **Deploy Mode-Cluster:** It indicates the unified scheduling and control solution in cluster deployment mode for multiple equipment rooms.
- **NIC Mode-Link Aggregation:** Two network interfaces are virtualized into one logical interface with only one IP address, which is more reliable. In this mode, link aggregation needs to be configured on the ports of switches that connect to the RCD server.

2.6.1.2 DHCP Management

In **local deployment mode**, if the Bridge network mode is adopted by the cloud desktop started by the RCD server, or the DHCP is required by the thin client to obtain an IP address, each cloud desktop or thin client should be assigned an IP address. If there is no DHCP service available on the Internet, the DHCP service provided by the RCD server should be started. For configuring DHCP, you should communicate with the network administrator to obtain necessary network information, including the network address, subnet mask, DNS, gateway, and applicable network IP address segment.

The system allows you to configure multiple IP address segments with the same network address. When the system is applied, you can click the **Start** and **Disable** buttons if necessary. The new DHCP service enables you to modify all configured network information.

The DHCP management function enables you to restart services, disable services, add configurations, delete, and clear leases, as shown in the following figure.



If an IP address is input to the cloud desktop, the corresponding IP address segment should be filtered out from the DHCP address pool, to avoid address conflicts.



If a fixed IP address is set in the thin client, the corresponding IP address segment should be filtered out from the DHCP address pool, to avoid address conflicts.



In cluster deployment mode, the DHCP service is not available.



If the DHCP service is properly configured but disabled manually, the DHCP service will be automatically started after the RCD server is restarted.

2.6.2 System Configuration

2.6.2.1 System Time

The system provides the function of modifying the RCD server time when the system time is different from the local time, which often occurs the first time the RCD server is configured.

The screenshot shows the 'System Time' configuration page in the RCD Server Web Management interface. The page has a navigation bar with tabs: 'System Time' (active), 'Time Zone', 'Change Password', 'Customer Info', 'Cloud Class Center', and 'Language Config'. The main content area displays the 'Server System Time' as '2016-08-24 13:16:59' with a 'Refresh' button. Below this, the 'Time Config Mode' is set to 'NTP Sync' (selected), with options for 'Manual Config' and 'Local Time Sync'. The 'NTP Server IP/URL' is set to 'cn.pool.ntp.org'. A large teal 'OK' button is centered at the bottom. A 'Tips' section at the bottom provides instructions on time synchronization and manual configuration.

System Time Time Zone Change Password Customer Info Cloud Class Center Language Config

Server System Time : 2016-08-24 13:16:59 [Refresh](#)

Time Config Mode : ☒ NTP Sync ☐ Manual Config ☐ Local Time Sync

NTP Server IP/URL :

OK

Tips:

- If change the system time, the RCD Server will automatically reboot.
- If NTP synchronization fails, select another NTP server IP or URL, e.g., 1.cn.pool.ntp.org and 2.cn.pool.ntp.org. If synchronization still fails, configure the time manually.

You can modify the system time in the following three ways:

- NTP Synchronization: Search for available NTP synchronization service from the network, which is the most precise.
- Manual Configuration: Manually configure the time, which is accurate to minutes.
- Local Time Synchronization: Synchronize from the machine time of the PC where the browser locates. The preciseness depends on the PC.

Note: The RCD server must be restarted after the time is changed.

2.6.2.2 Time Zone Setting

You can set time zones for RCD servers.

The screenshot shows the 'Time Zone' configuration page in the RCD Server Web Management interface. The page has a navigation bar with tabs: 'System Time', 'Time Zone' (active), 'Change Password', 'Customer Info', 'Cloud Class Center', and 'Language Config'. The main content area displays the 'Time Zone' as 'UTC+08:00' in a dropdown menu. A large teal 'OK' button is centered at the bottom.

System Time Time Zone Change Password Customer Info Cloud Class Center Language Config

* Time Zone :

OK

2.6.2.3 Password Change

This function is used to change the password of the current user, as shown in the following figure.

System Time

Time Zone

Change Password

Customer Info

Cloud Class Center

Language Config

* Old Password :

* New Password :

* Confirm Password :

OK

If you forget the password, contact the technical support.

2.6.2.4 Customer Information

This function is used to display and edit customer information.

System Time

Time Zone

Change Password

Customer Info

Cloud Class Center

Language Config

Verification Status : Pending

Customer Name : 2222331

Classroom : 222333

Customer Type : Primary School

Channel :

Channel Contact :

Maintainer :

Maintainer Contact :

Edit

2.6.2.5 Center Configuration

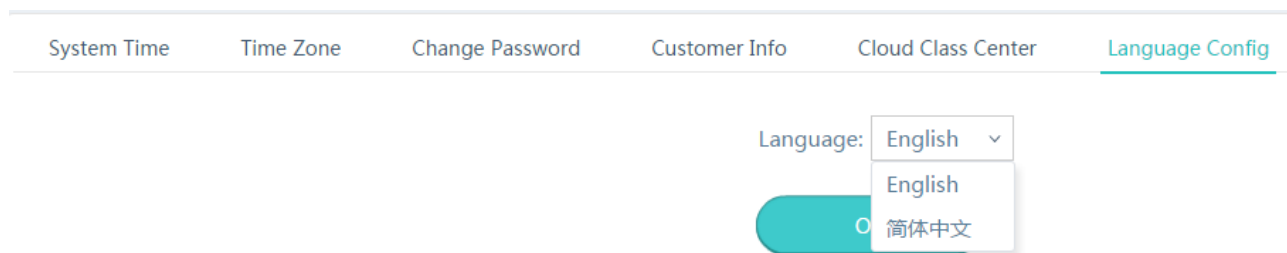
This function is used to configure the connection to the RCC center. After an RCD server is connected to the RCC center, its information is periodically reported to the RCC center. The RCC center periodically obtains related information from the RCD server. Only after you configure center information on the RCD server and add the RCD server to the RCC center, the connection can be established.

i

Note: Version 2.1 does not provide the RCC Center installation or upgrade programs any more. You can use the cluster deployment mode to replace the RCC Center. This function is applicable to environments where the RCC Center is deployed.

2.6.2.6 Language Setting

You can manually switch the language between Chinese and English.

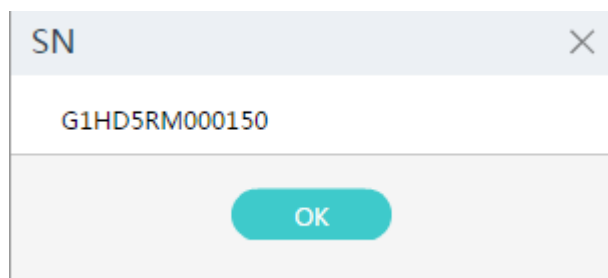


2.6.3 License Management

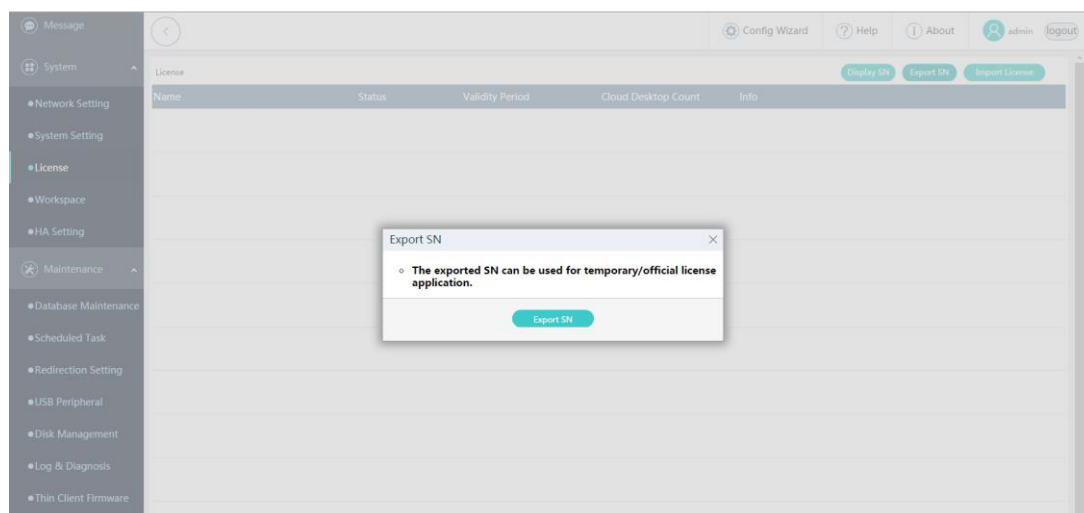
This function is used to limit the availability of system software. Unauthorized thin clients cannot be connected to the server.

2.6.3.1 Displaying SN

Click **Display SN** to display the serial number of the current server, as shown in the following figure.



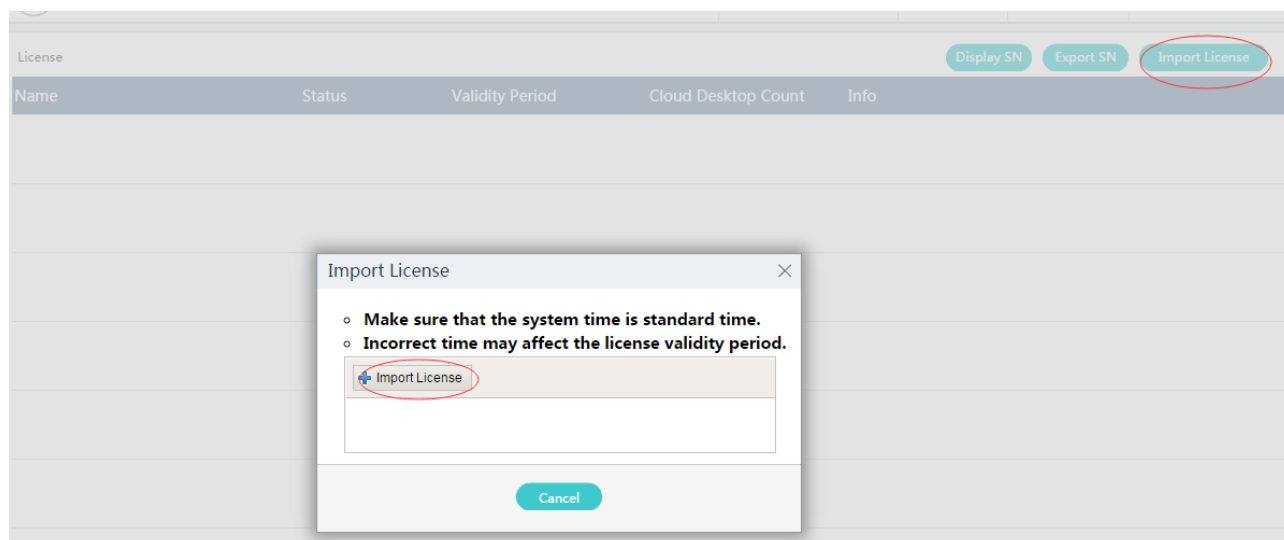
In addition, click **Export SN** to export the serial number into a file:



Note: When you import a license, the system checks whether the serial number of the license is the same as that on the server. If they are not the same, the license is invalid.

2.6.3.2 Importing a License

If you want to add hardware, send the hardware code to the Ruijie contact and obtain the license. Click **Import License**. In the dialog box that is displayed, click **Import License**. A file selection dialog box is displayed for you to import the file to the system, as shown in the following figure.



After the license is imported, the SNs are displayed in the list.

2.6.4 Workspace Management

You can configure the workspace on the RCD server. To configure the workspace server, access the **Parameter** page.

Parameter

Workspace Server IP :

Workspace Server Port :

After the configuration is complete, the master RCD server automatically starts the workspace service of the corresponding RCD server. You can click Login to **Background** to access the background management page.

2.6.5 HA Configuration

HA configuration is required only in cluster environment.

Preferred Master RCD Server : ☐

* Virtual Server IP :

* Subnet Mask :

* Reference IP : Gateway address is recommended.

* Virtual Router ID : Configure different VRIDs for different cluster environments.

- **Preferred Master RCD Server:** If this option is selected, the RCD server automatically becomes the master RCD server when HA is enabled on both servers. Only one preferred master RCD server is allowed in an environment.

- **Virtual Server IP:** Enter the IP address that all thin clients are connected to. This IP address is managed by the master RCD server. In case that the master RCD server crashes, the slave RCD server becomes the new master and takes over the IP address.
- **Reference IP:** This parameter is often set to the gateway IP address for the purpose of test.
- **Virtual Router ID:** The VR ID must be consistent in an environment so that the communication between the master and slave RCD servers can be established.

2.7 Maintenance

2.7.1 Database Maintenance

This function is used to back up database information on Web. The system performs backup once a week. A maximum of 30 database files can be backed up. If the number exceeds the maximum, the system automatically overrides the earlier file.

If you do not want some files to be overridden, you can reserve the files. Reserved files will not be deleted by the system and a maximum of five backup files can be reserved.

Click a database file name to directly download the file. Click **Upload** and upload the downloaded file in the displayed dialog box.

Click **Restore** to restore the database.

Database Backup & Restore			Backup	Upload	Delete
☐	File Name	Backup Time	Operate		
☐	16-08-01-130000.dump	2016-08-01 13:00:00	Persist	Restore	
☐	16-06-24-113814.dump	2016-06-24 11:38:15	Persist	Restore	
☐	16-06-20-151847.dump	2016-06-20 15:17:36	Persist	Restore	
☐	16-06-20-130000.dump	2016-06-20 13:00:00	Persist	Restore	

Notes:

- After the database is restored, the web system will restart.
- Backup data of different versions cannot be mixed. Otherwise, the system cannot work.

2.7.2 Scheduled Task

This function can be used to shut down and reboot RCD servers and shut down thin clients at a scheduled time. Tasks can be executed periodically at a fixed time every day or every week, or at a specified time. You can also edit or delete a scheduled task, as shown in the following figure.

Add Scheduled Task
✕

* Task : Shutdown RCD Server

* Schedule Type : Periodical

* Period : Every Day

* Time(HH:mm:ss) : 12 : 0 : 0

Description :

OK

Cancel

Add Scheduled Task
✕

* Task : Shutdown RCD Server

* Schedule Type : One-Time

* Time : << < August, 2016 > >>

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10
Today						

* Time(HH:mm:ss) : 12 : 0 : 0

Description :

OK

Cancel

2.7.3 Redirection Setting

This function is used to configure video or flash redirection on the cloud desktop. It contains blacklist and whitelist. For example, when redirection cannot be performed on some online flash videos due to technical reasons, you need to

delete the websites from the whitelist. For another example, a school has its own online flash video resources but the resources cannot be smoothly played. After technical verification proves that redirection is available, you can add the resources to the whitelist.

2.7.3.1 Advanced Settings

This page is used to configure video and flash parameters, including **Player & Browser** and **URL & Video Type**. The system has default settings and you can add or delete the data based on the actual requirements.

Flash Redirection	Video Redirection	Advanced
Player&Browser Delete Selected Add Browser URL&Video Type Delete Selected Add URL Add Video Type		
Player : QQPlayer.exe StormPlayer.exe Browser : ☐ chrome ☐ Select All ☐ ie8 ☐ ie9 ☐ ie10 ☐ ie11 URL : ☐ youku.com ☐ Select All ☐ iqiyi.com ☐ tudou.com ☐ tv.sohu.com ☐ kankan.com ☐ v.ifeng.com ☐ v.qq.com ☐ 56.com ☐ ku6.com ☐ letv.com ☐ fun.tv ☐ v.baidu.com ☐ video.sina.com.cn ☐ www.baofeng.com ☐ www.mgtv.com ☐ le.com Video Type : ☐ rm ☐ Select All ☐ swf ☐ wma ☐ mp3 ☐ wav ☐ ape ☐ flac ☐ flv ☐ mkv ☐ rmvb		

2.7.3.2 Configuring the Flash Redirection Whitelist

On this page, you can configure whitelist flash redirection URLs, that is, website URLs in the whitelist support flash redirection. Configurations vary with different browsers and thin client models. To add or remove supported websites for a browser on a thin client, find the item in the table and click the **Add/Remove** button.

Flash Redirection URL ✕

URL

v.ifeng.com
v.qq.com
fun.tv
v.baidu.com
www.mgtv.com

Add All
Add
Remove
Remove All

Whitelist(Redirection URL)

URL
kankan.com
iqiyi.com
youku.com
tudou.com
video.sina.com.cn
tv.sohu.com
56.com
www.baofeng.com
letv.com
ku6.com
le.com

OK Cancel

2.7.3.3 Configuring the Video Redirection Blacklist

On this page, you can configure video types that do not support redirection, that is, video types in the blacklist do not support video redirection. You can configure video types on the **Advanced Setting** page. Different players on different thin client models support different video types. You can click **Edit** to modify the configuration.

Video Redirection Blacklist ✕

Video Type

Video Type
rm
swf
wma
mp3
wav
ape
flac
flv
mkv
rmvb
wmv

Add All
Add
Remove
Remove All

Blacklist(Non-redirection Video Type)

Video Type

OK Cancel

2.7.4 USB Peripheral

This function is used to enable the USB and load known and unknown USB devices. Known USB devices include input devices, storage devices, UKey, office facilities, card readers, mobile phones and others. This function must be used under the guidance of technical support after debugged according to the actual USB peripheral devices, as shown in the following figure.

You can check details about devices on the **Unknown USB** and **Known USB** tab pages.

2.7.5 Disk Management

This function is used to check disk information, as shown in the following figure.

Disk Management				Scan
Name	Size	Description	Action	
/dev/sdb	1000.2GB	Purpose:Data Space	Details	More ▾
/dev/sda	128.0GB	Purpose:RCD OS System Partition/Image Space/RCD OS Reserved Partition	Details	

You can click **Scan** to view the partition of the current disk. New disks can be mounted for independent use. A large-capacity disk can be used to mount teacher sharing area and homework submission area. The mounting path for the teacher sharing area is **/opt/teacher** and that for the homework submission area is **/opt/student**.

2.7.6 Log & Diagnosis

2.7.6.1 Data Collection

This function is used to collect system configurations or logs, including the system network, hard disk, and memory information, system logs, Web logs, database logs, and BMC event logs.

2.7.6.2 Session Information

This function is used to collect information about the connection between the thin client and server, facilitating troubleshooting for engineers.

Collect

Session

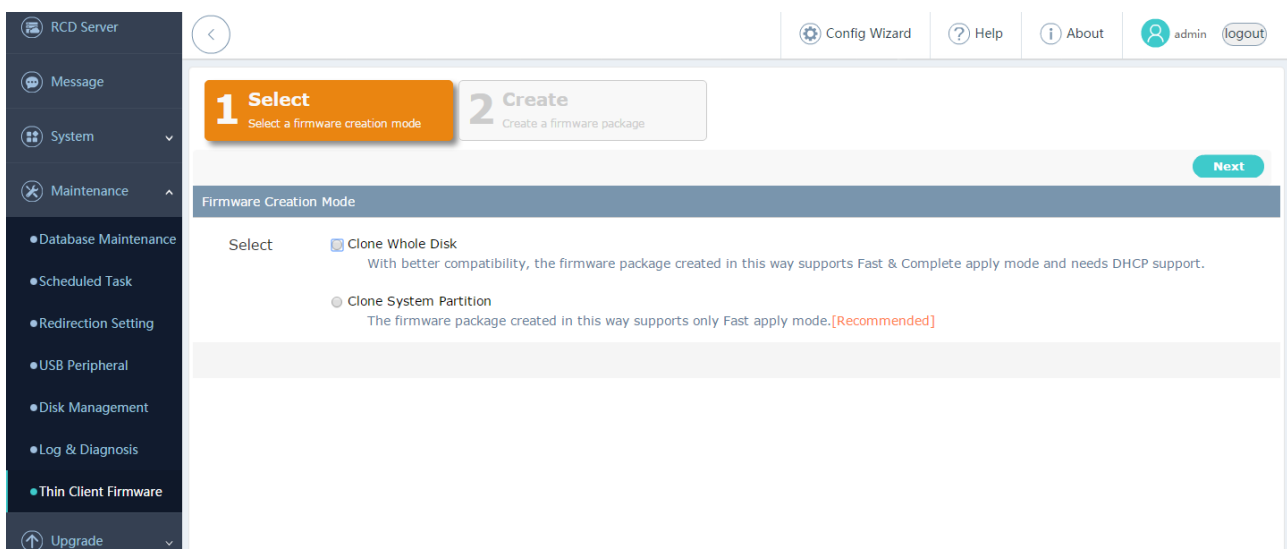
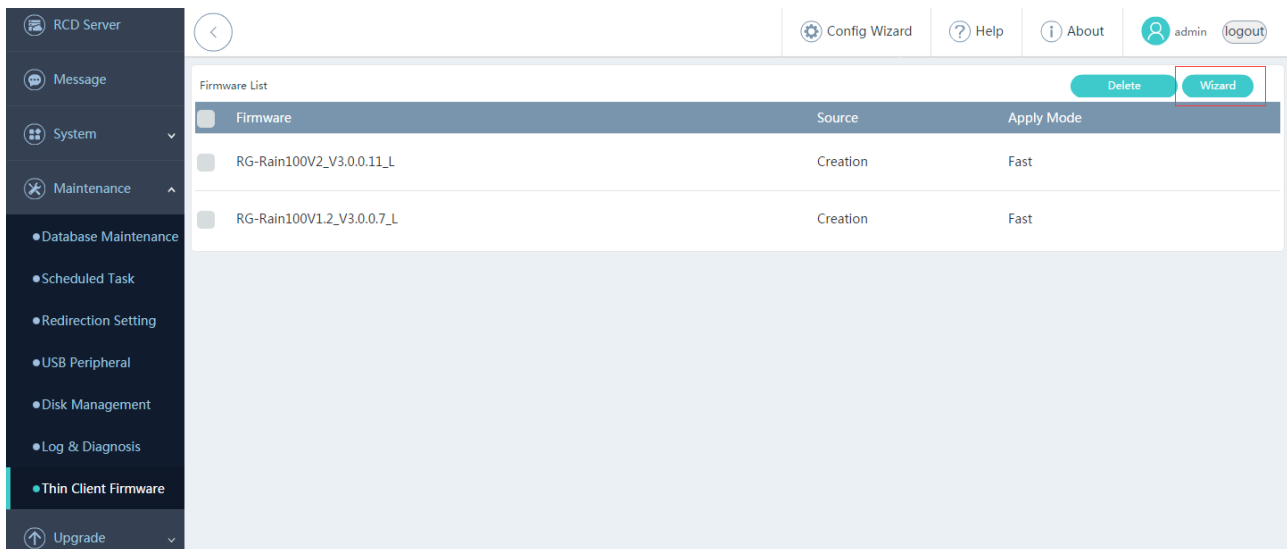
Name	Action
Student	Details
Teacher	Details
ClassManager	Details

Type	Username	IP	MAC	Description	Operate
Student	Stu-04	172.21.136.60	58:69:6C:7F:D3:E2	(0x0000016F: nio socket, server, /172.21.136.60:59876 => /172.21.112.213:9109)	Close
				(0x0000011A: nio socket, server, /127.0.0.1:32944 => /127.0.0.1:9109)	Close
				(0x00000170: nio socket, server, /172.21.136.60:59878 => /172.21.112.213:9109)	Close
Student	Stu-13	172.21.151.12	58:69:6C:3E:44:5B	(0x0000011E: nio socket, server, /172.21.151.12:47007 => /172.21.112.213:9109)	Close

2.7.7 Firmware Creation

This function is used to create the firmware. It is applicable only to the Rain100/Rain200 series. Generally, technical support engineers use this function to create the firmware to be delivered to the clients. The operation procedure is as follows:

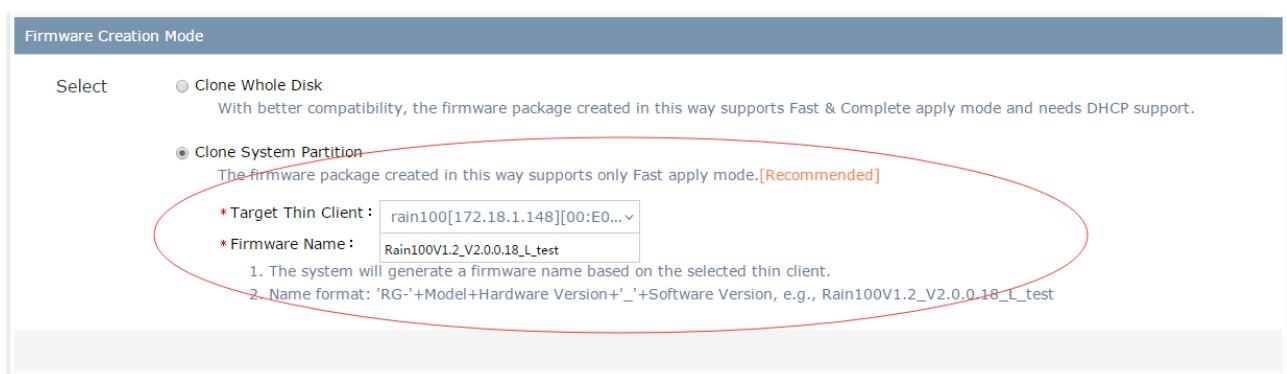
1. Click **Thin Client Firmware** and click **Wizard** to access the wizard.



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.

Firmware Creation Mode

Select

Clone Whole Disk

With better compatibility, the firmware package created in this way supports Fast & Complete apply mode and needs DHCP support.

Clone System Partition

The firmware package created in this way supports only Fast apply mode.[Recommended]

* Target Thin Client :

rain100[172.18.1.148][00:E0... ▾

* Firmware Name :

Rain100V1.2_V2.0.0.18_L_test

1. The system will generate a firmware name based on the selected thin client.

2. Name format: 'RG-' + Model + Hardware Version + '_' + Software Version, e.g., Rain100V1.2_V2.0.0.18_L_test

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 **Firmware List**.

Home Page

Image

Classroom

RCD Server

Message

System ▾

Maintenance ▴

Database Maintenance

Scheduled Task

Redirection Setting

USB Peripheral

Disk Management

Log & Diagnosis

Thin Client Firmware

Upgrade ▾

<

Config Wizard

Help

About

admin

logout

Firmware List

Delete

Wizard

Firmware	Source	Apply Mode
RG-Rain100V2_V3.0.0.11_L	Creation	Fast
RG-Rain100V1.2_V3.0.0.7_L	Creation	Fast

b) Clone Whole Disk

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

Edit DHCP

×

DHCP User : Thin Client

* Subnet :

* Start IP :

* End IP :

* Subnet Mask :

255.255.255.0

* Gateway :

* DNS :

* Lease Time(600s Min) :

28800

OK

Cancel

The system starts to clone the whole disk.

1 Select

Select a firmware creation mode

2 Create

Create a firmware package

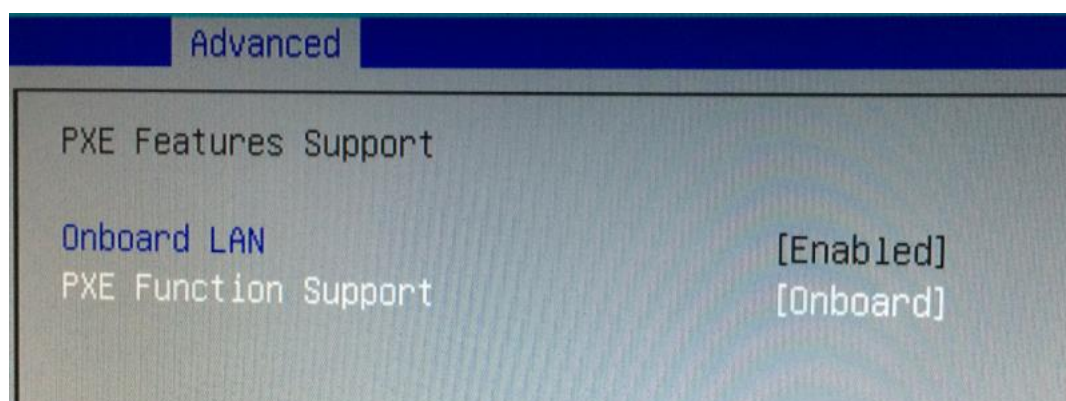
Tips: Please PXE-boot the target thin client in BIOS settings and configure firmware creation.

State : Creating...

Complete : Clone Whole Disk

End

Set the client to start in PXE mode. Restart the client. The page in red background is displayed.



- The client uses the default configuration items. If the configuration items are confirmed, enter **y**. Enter the name of the image to be saved as prompted.
- The image clone starts.

After the clone is completed, the system prompts whether to shut down or restart. Select the **restart** option and access the BIOS. Disable the PXE startup item.

2.8 Upgrade

2.8.1 RCD Server Upgrade

This function is used to upgrade the system. Click **Upload** to upload files through FTP and the system will automatically extract the upgrade package to the background directory of the system. The RCC Cloud Service Center also publishes online upgrade versions. When a new version is available, the system automatically downloads the upgrade package, displays it in the list, and notifies the user of the upgrade operation. The upgrade version list is shown in the following figure.

RCD Server Upgrade				Upload	Check for Update	Refresh
Version	Status	Type	Action			
 RG-RCDOS_Server_V4.0_R0.1	Ready	ISO	Upgrade Delete			
 RG-RCDOS_Server_V3.1_R1.80	Ready	Upgrade Package	Details Upgrade Delete			

If you upload the upgrade package manually, click **Upgrade** to start the upgrade wizard; if the system downloads the upgrade package automatically, a prompt will be displayed on the Web or RG-ClassManager_Teacher. Upgrade can be performed through the system ISO file or upgrade package. For upgrade through the system ISO file, refer to the release note. The following describes how to upgrade the system using the upgrade package.

Click **Upgrade**. Modules and features of the new version are displayed.

Upgrade RCC

New Version:V3.1_R1.80

Current Version:V3.1_R1.80

Module

☒RCD Server

☒Teacher PC

☒CM_Linux Thin Client

☒Windows Thin Client

☒CM Teacher

☒Image Driver

☒Linux Thin Client

☒CM_Windows Thin Client

☒Admin Tool

☒Android Thin Client

☒CM_Student

☒Workspace Server

Notes

Name : RG-RCDOS_Server_V3.1_R1.80

Release Time : 2016-07-08 09:11:09

Supported Version : ["3.1.3"]

Feature : 1.II

2.II

3.II

4.II

5.II

6.II

7.II

8.II

9.II

10.II

Upgrade

The system automatically prepares for the upgrade.

Upgrade RCC

×

1. Prepare

→

2. Upgrade Software

→

3. Upgrade Image

→

4. Finish

Operation is complete.

✓

✓

✓

Checking RCD Server

Checking Thin Client

Checking ClassManager_Teacher

Check Result:

1

Checking RCD Server

● [RCD Server 172.21.112.213] OK

✓

2

Checking Thin Client

● [RCD Server 172.21.112.213] 0 Thin Client(s) online.

✓

3

Checking ClassManager_Teacher

● [RCD Server 172.21.112.213] 1 Teacher PC(s) check failed. Check whether ClassManager_Teacher is online.

✓

Back

Next

When an alarm is generated, remove the fault first and then continue the upgrade. After the check, click **Next** to start the upgrade.

Upgrade RCC ×

1. Prepare → 2. Upgrade Software → 3. Upgrade Image → 4. Finish

Upgrading RCC: Upgrade Thin Client
Remaining Time:15Minute(s)

Result

1 Upgrade RCD Server

- [RCD Server 172.21.112.213]RCD Server upgrade succeeded.



Upgrade the RCD server. This step is time-consuming, which is determined by the size of the modules in the upgrade package. Then, the system will restart and jump to the login page. Log in to the system and the upgrade page is displayed. Go to the next step for upgrading thin clients.

Upgrade RCC

1. Prepare

→

2. Upgrade Software

→

3. Upgrade Image

→

4. Finish

Upgrading RCC: Upgrade Teacher PC

Remaining Time:5Minute(s)

Upgrade RCD Server

Upgrade Thin Client

Upgrade Teacher PC

Result

1 Upgrade RCD Server

● [RCD Server 172.21.112.213]RCD Server upgrade succeeded.

✓

2 Upgrade Thin Client

● [RCD Server 172.21.112.213] 0 Thin Client(s) upgrade succeeded.

✓

Thin clients complete the upgrade automatically and report the upgrade operation. After the upgrade is completed, the system automatically upgrades RG-ClassManager_Teacher.

Upgrade RCC

1. Prepare

→

2. Upgrade Software

→

3. Upgrade Image

→

4. Finish

Operation is complete.

1 Teacher PC(s) upgrade failed. It is recommended to perform troubleshooting manually.

Upgrade RCD Server

Upgrade Thin Client

Upgrade Teacher PC

Result

1 Upgrade RCD Server

● [RCD Server 172.21.112.213]RCD Server upgrade succeeded.

2 Upgrade Thin Client

● [RCD Server 172.21.112.213] 0 Thin Client(s) upgrade succeeded.

3 Upgrade Teacher PC

● [RCD Server 172.21.112.213] 1 Teacher PC(s) upgrade failed. Check whether ClassManager_Teacher is online.

Back

Next

After RG-ClassManager_Teacher upgrade, the system automatically starts to upgrade images if needed.

Upgrade RCC
✕

1. Prepare
→
2. Upgrade Software
→
3. Upgrade Image
→
4. Finish

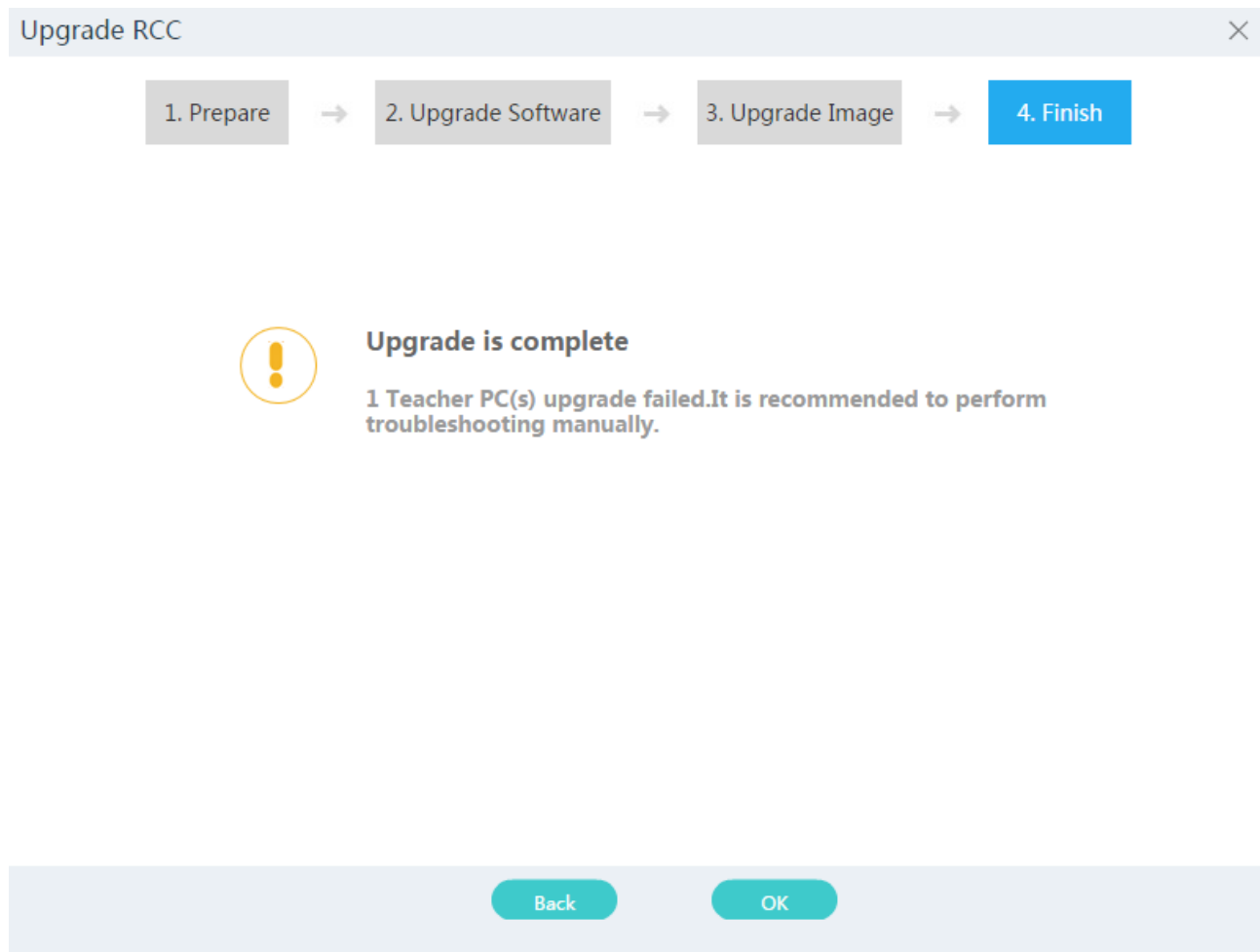
All images are upgraded by default. If the upgrading status lasts for over 15 minutes, click Login to shut down images manually.

If you are prompted to update Guest-Tool after login to image, download and install it again. [Admin-Tool](#)

	Image File Name	OS	Enable	Status	Action
win7_ng	win7_ng.base	Other	No	Starting...	
win7_x64_rcd	win7_x64_rcd.base	Other	No	Starting...	
win10_64_ng	win10_64_ng.base	Other	No	Starting...	
win7_english_1	win7_english_1.base	Other	No	Starting...	
winxp标准模板	winxp标准模板.base	Other	No	Starting...	
Win7_New	Win7_New.base	Other	No	Starting...	
win7_base	win7_base.base	Other	No	Starting...	
win7_english_test	win7_english_test.base	Other	No	Starting...	

Back
Next

You can log in to the system to check the automatic upgrade process. After the image upgrade, the system automatically shuts down and the status is changed to "Upgrade succeeded". If the upgrade lasts for a long time, click **Login** and check whether the Guest-Tool and RG-ClassManager_Student are correctly installed. If not, manually install them. Click **Ignore** to complete the upgrade if you are not sure. Check problems manually for images that are not successfully upgraded. The upgrade result is displayed on the page.



If the patch supports rollback, you can click **Back** to restore the system. Only RCD servers are restored. If you want to roll back the Guest-Tool and RG-ClassManager_Student, re-install them. Rollback of thin clients and RG-ClassManager_Teacher can be automatically performed after you start the thin client or software.

2.8.2 Thin Client Upgrade

This function provides upgrade for X86- and ARM-based thin clients.

2.8.2.1 Rain100/Rain200 (X86 Series)

2.8.2.1.1 Fast Firmware Upgrade

Fast firmware upgrade is supported on thin clients of V2.0 or later versions.

After all thin clients are connected to the RCD server, the image selection page will be displayed. Perform the following steps:

1. Upload the firmware of the thin client system.

Rain100/200 Series

Rain100S/200S/200C Series

Firmware List

Upload Firmware

Refresh

System	OS Source
☐ clonezilla-live-RG-RainV100V2.0_V100.0_R1.6_L.iso	Install via ISO
☐ RG-RainOS_V2.1_R1.13_L_Factory.iso	Install via ISO
☐ RG-Rain100V2.0_V2.20_R1.10_L_Factory_x64.iso	Install via ISO

2. Enter the upgrade wizard.

Rain100/200 Series

Rain100S/200S/200C Series

Firmware List

Upload Firmware

Refresh

Upgrade Wizard

Delete Firmware

System	OS Source	Push Mode
☐ clonezilla-live-RG-RainV100V2.0_V100.0_R1.6_L.iso	Install via ISO	Fast, Complete
☐ RG-RainOS_V2.1_R1.13_L_Factory.iso	Install via ISO	Fast, Complete
☐ RG-Rain100V2.0_V2.20_R1.10_L_Factory_x64.iso	Install via ISO	Fast, Complete

1 Select

Select Thin Clients

2 Configure

Select a firmware

3 Check

Check upgrade config

4 Upgrade

Upgrade Thin Client

Next

Finish

i

Tips: Select at least one Thin Client. If no Thin Client is available, check whether Thin Clients are online.

Thin Client List[0]

Thin Client

ID	Name	Software Version	System Type	IP	MAC
----	------	------------------	-------------	----	-----

Select the thin clients to be upgraded.

Thin Client

* Classroom :

class1

* System Type :

All Type

Online Thin Client

Name	IP	MAC	System Ty
	172.21.136.72	00:E0:4C:68:00:3E	linux (64)

Add All

Add

Remove

Remove All

Selected Thin Client

Name	IP	MAC	System Type
------	----	-----	-------------

Tips :

- You can select Thin Clients based on classroom.
- Target thin clients must be of the same OS type(32-bit/64-bit).
- Only online Thin Clients (Thin Clients with " Select OS" page or a certain OS' s desktop displayed) are in the list.

OK

Cancel

1 Select

Select Thin Clients

2 Configure

Select a firmware

3 Check

Check upgrade config

4 Upgrade

Upgrade Thin Client

Next

Finish

Tips: Select at least one Thin Client. If no Thin Client is available, check whether Thin Clients are online.

Thin Client List[1]

Thin Client

ID	Name	Software Version	System Type	IP	MAC
1		3.0.14	linux (64)	172.21.136.72	00:E0:4C:68:00:3E

Click **Next** and select a proper thin client system.

1 Select

Select Thin Clients

2 Configure

Select a firmware

3 Check

Check upgrade config

4 Upgrade

Upgrade Thin Client

Back

Next

Finish

Tips: The following firmwares are available for upgrade.

System	OS Source	System Type	Upgrade Mode	Action
RG-Rain100V2.0_V2.20_R1.10_L_Factory_x64.iso	Install via ISO	64bit	Fast, Complete	

Click **Next**. The fast mode is used for upgrade here.

1 Select
Select Thin Clients

2 Configure
Select a firmware

3 Check
Check upgrade config

4 Upgrade
Upgrade Thin Client

PreviousNextFinish

Upgrade Config List

i Tips: Check the configuration carefully. You are not allowed to modify the configuration once going to the next step.

upgrade Thin Client : 0
System : RG-Rain100V2_V3.0.0.11_L
Upgrade Mode : **Fast** [Advanced]

Click **Next**. Go to the preparation page.

1 Select
Select Thin Clients

2 Configure
Select a firmware

3 Check
Check upgrade config

4 Upgrade
Upgrade Thin Client

Finish

i [Push Mode]FastCloud Desktop Count:0; Connected:0; Disconnected:0; Upgrade Success:0

Thin Client-System: RG-Rain100V2_V3.0.0.11_L

Prepare

ID	Name	Software Version	IP	MAC	Thin Client Status
----	------	------------------	----	-----	--------------------

Tips



Are you sure to prepare Thin Clients for upgrade?

OK

Cancel

Click **OK**. The thin client automatically enters the upgrade process. Wait until the upgrade succeeds.

2.8.2.1.2 Complete Firmware Upgrade

2.8.2.1.2.1 IPXE Firmware Upgrade

1. Configure the DHCP address pool.

Ensure that the DHCP address pool is big enough and the lease is cleared. A new address segment is preferred.

Ensure that there is no other DHCP in the LAN. The IP address of the server cannot be included in the DHCP address pool.

Ensure that the two LAN ports on the server properly work, target thin clients are connected to the server, and the preferred startup item is not PXE.

2. Choose **Upgrade > Thin Client Upgrade** and upload the image to the server. For ISO files downloaded from net disks, verify the MD5 value before upload to ensure the validity of the image.

 云课堂主机

Home Page

Image

Classroom

RCD Server

Message

System

Maintenance

Upgrade

- RCD Server Upgrade
- Thin Client Upgrade

<

Rain100/200 SeriesRain100S/200S/200C Series

Config Wizard

Firmware List

System

☐

clonezilla-live-RG-RainV100V2.0_V100.0_R1.6_L.iso

☐

RG-RainOS_V2.1_R1.13_L_Factory.iso

☐

RG-Rain100V2.0_V2.20_R1.10_L_Factory_x64.iso

☐

RG-Rain100V2_V3.0.0.11_L

☐

RG-Rain100V1.2_V3.0.0.7_L

☐

RG-Rain100V1.0_V3.0.0.11_L

3. Click **Upgrade Wizard** and select thin clients.

Rain100/200 SeriesRain100S/200S/200C Series

Firmware List

Upload Firmware

Refresh

Upgrade Wizard

Delete Firmware

System

OS Source

Push Mode

☐

clonezilla-live-RG-RainV100V2.0_V100.0_R1.6_L.iso

Install via ISO

Fast, Complete

☐

RG-RainOS_V2.1_R1.13_L_Factory.iso

Install via ISO

Fast, Complete

☐

RG-Rain100V2.0_V2.20_R1.10_L_Factory_x64.iso

Install via ISO

Fast, Complete

1 Select

Select Thin Clients

2 Configure

Select a firmware

3 Check

Check upgrade config

4 Upgrade

Upgrade Thin Client

Next

Finish

Tips: Select at least one Thin Client. If no Thin Client is available, check whether Thin Clients are online.

Thin Client List[0]

Thin Client

ID

Name

Software Version

System Type

IP

MAC

Thin Client

* Classroom : class1

* System Type : All Type

Online Thin Client

Name	IP	MAC	System Ty
	172.21.136.72	00:E0:4C:68:00:3E	linux (64)

Add All

Add

Remove

Remove All

Selected Thin Client

Name	IP	MAC	System Type
------	----	-----	-------------

Tips :

1. You can select Thin Clients based on classroom.

2. Target thin clients must be of the same OS type(32-bit/64-bit).

3. Only online Thin Clients (Thin Clients with " Select OS" page or a certain OS' s desktop displayed) are in the list.

OK

Cancel

4. Select a thin client system and click **Next**.

1 Select
Select Thin Clients

2 Configure
Select a firmware

3 Check
Check upgrade config

4 Upgrade
Upgrade Thin Client

Back

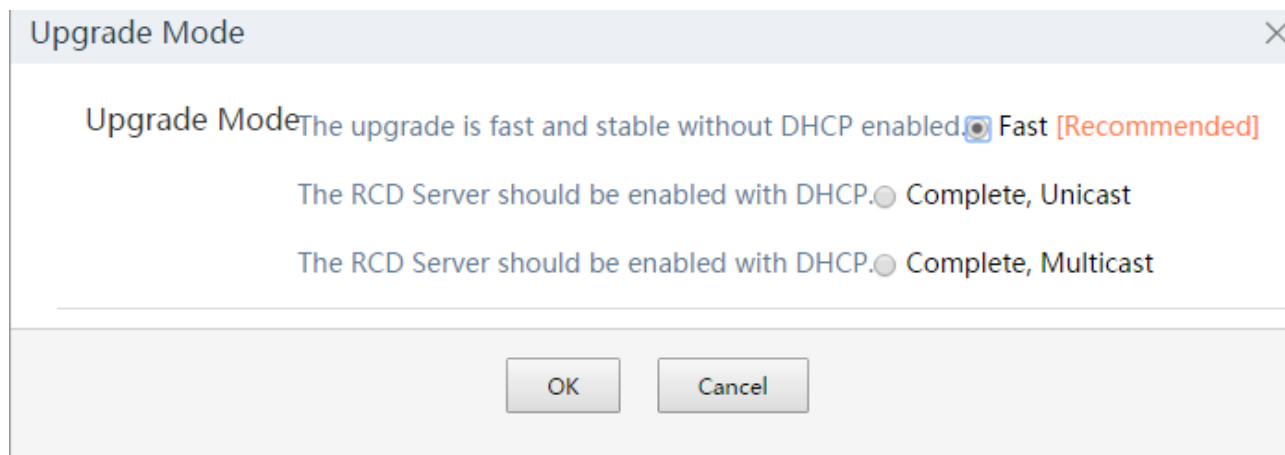
Next

Finish

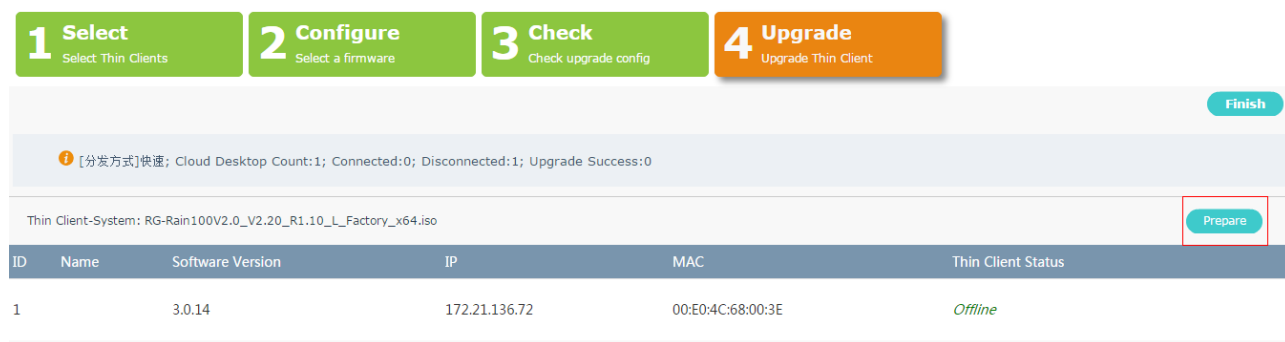
Tips: The following firmwares are available for upgrade.

System	OS Source	System Type	Upgrade Mode	Action
RG-Rain100V2.0_V2.20_R1.10_L_Factory_x64.iso	Install via ISO	64bit	Fast, Complete	

5. In the advanced setting, select **Complete, Unicast** or **Complete, Multicast**.



6. Click **OK** and go to the upgrade page.



7. Wait for the upgrade page to be displayed on thin clients. In unicast mode, the thin client automatically performs the upgrade operation. In multicast mode, you can click **Upgrade** after all thin clients are displayed in the upgrade list.

2.8.2.1.2.2 IPXE---FAQ

1. Click **Prepare** on the page. The image selection page is displayed after the thin client restarts. Ensure that the DHCP address pool is big enough, the lease is cleared, and there is no other DHCP server or restarting servers.

For thin clients that display the waiting page after IPXE firmware upgrade, you can click **Prepare** on the page to prepare the thin clients again.



2. If the error shown in the following figure is displayed, manually restart the thin client. After restart, the thin client automatically starts the IPXE function.

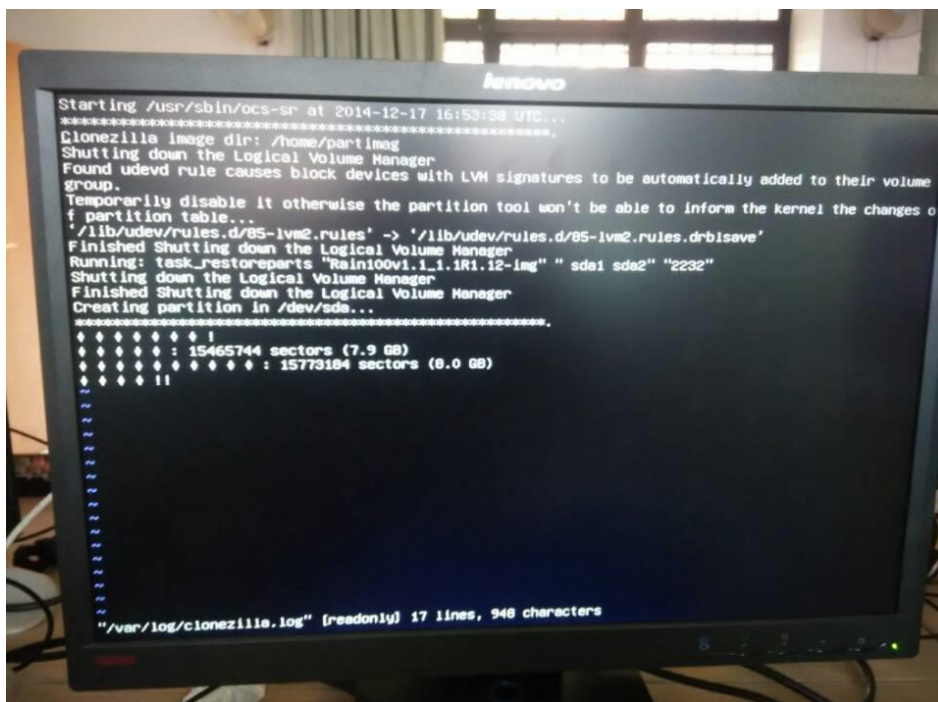
```

BusyBox v1.17.1 (Ubuntu 1:1.17.1-8ubuntu3) built-in shell (ash)
Enter 'help' for a list of built-in commands.

/bin/sh: can't access tty; job control turned off
(initramps) _

```

3. If a selection page with a red background containing five options is displayed, select **CMD**, press **Enter** and input **vi /var/log/clonezilla.log**. Collect the logs for troubleshooting. Check whether the image is correct.



4. The PXE function still works on the thin client. If the IPXE fails to obtain IP addresses, use the PXE firmware upgrade mode.

2.8.2.1.2.3 PXE Firmware Upgrade

The thin client system is upgraded via PXE when an error occurs in case of firmware upgrade failure or system damage.

An image created on the thin client can be assigned to other thin clients using this function. Image files of thin clients need to be uploaded on the web page.

1. Ensure that you have configured DHCP and that IP addresses are sufficient. If the DHCP page remains during the thin client startup, clear the lease and extend the DHCP address segment.
2. Enter the upgrade wizard. Press and hold **Shift** and **F**, and a **Skip** button will be displayed.

3. Click **Skip** to skip thin client selection and directly select the image to be assigned, and click **Next**.

4. Click **Advanced** to select the upgrade mode. Select **Complete, Unicast** or **Complete, Multicast**, and click **OK**.

1 Select
Select Thin Clients

2 Configure
Select a firmware

3 Check
Check upgrade config

4 Upgrade
Upgrade Thin Client

Previous Next Finish

Upgrade Config List

Tips: Check the configuration carefully. You are not allowed to modify the configuration once going to the next step.

upgrade Thin Client : 0
System : RG-Rain100V2.0_V2.20_R1.10_L_Factory_x64.iso
Upgrade Mode : Complete, Unicast [\[Advanced\]](#)

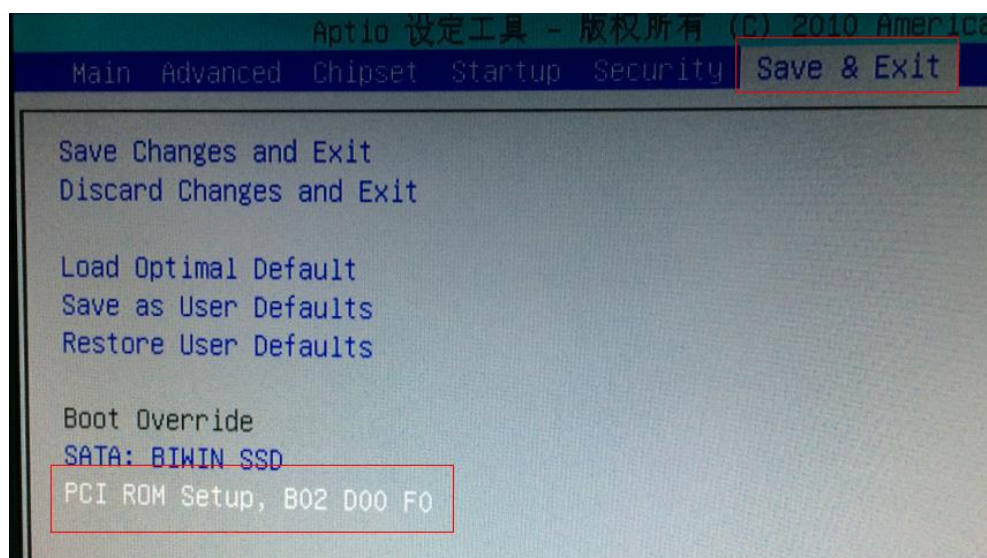
Upgrade Mode

Upgrade Mode The RCD Server should be enabled with DHCP. ☒ Complete, Unicast

The RCD Server should be enabled with DHCP. ☐ Complete, Multicast

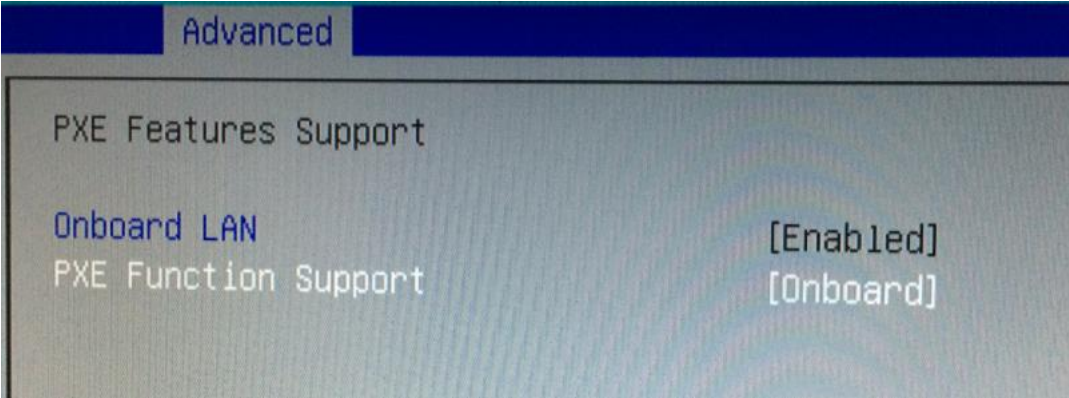
OK Cancel

- Configure the thin client to start in PXE mode. After startup, press **Del** to access the BIOS page and select to start in PXE mode, as shown in the following figure.



After initialization, the system displays the waiting page with the blue background.

Note: If this option does not exist, go to the **Advanced-No Disk (PXE)** menu in BIOS and set the parameter to the values shown in the following figure. Save the settings and restart to access BIOS again.



6. IP addresses of the thin clients that access the waiting page are displayed in the thin client list.
7. Wait until the IP addresses of all thin clients are displayed. In unicast mode, the thin client automatically performs the operation after entering the PXE. In multicast mode, you need to click **Upgrade**.

1 Select
Select Thin Clients

2 Configure
Select a firmware

3 Check
Check upgrade config

4 Upgrade
Upgrade Thin Client

Finish

[分发方式]快速; Cloud Desktop Count:1; Connected:0; Disconnected:1; Upgrade Success:0

Thin Client-System: RG-Rain100V2.0_V2.20_R1.10_L_Factory_x64.iso

Prepare

ID	Name	Software Version	IP	MAC	Thin Client Status
1		3.0.14	172.21.136.72	00:E0:4C:68:00:3E	Offline

8. The thin client starts copying system. Click **Finish**. The system automatically closes related services.

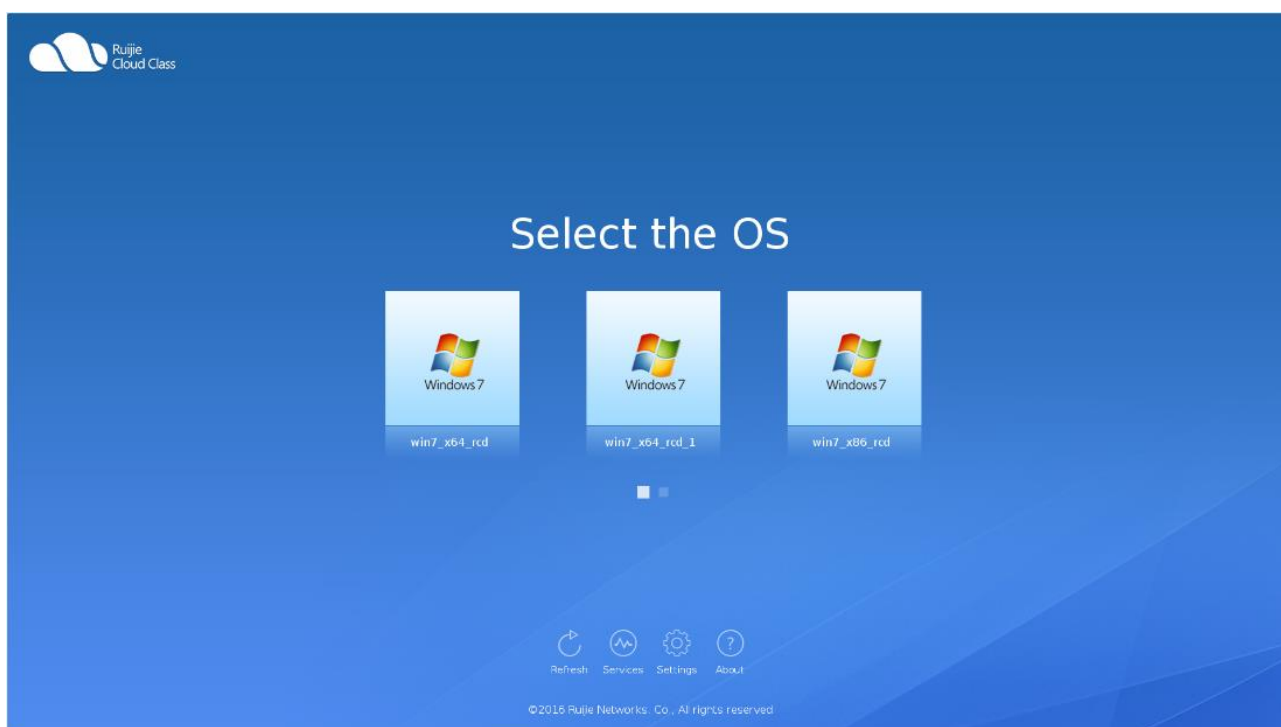
3 Thin Client Software

3.1 Basic Functions

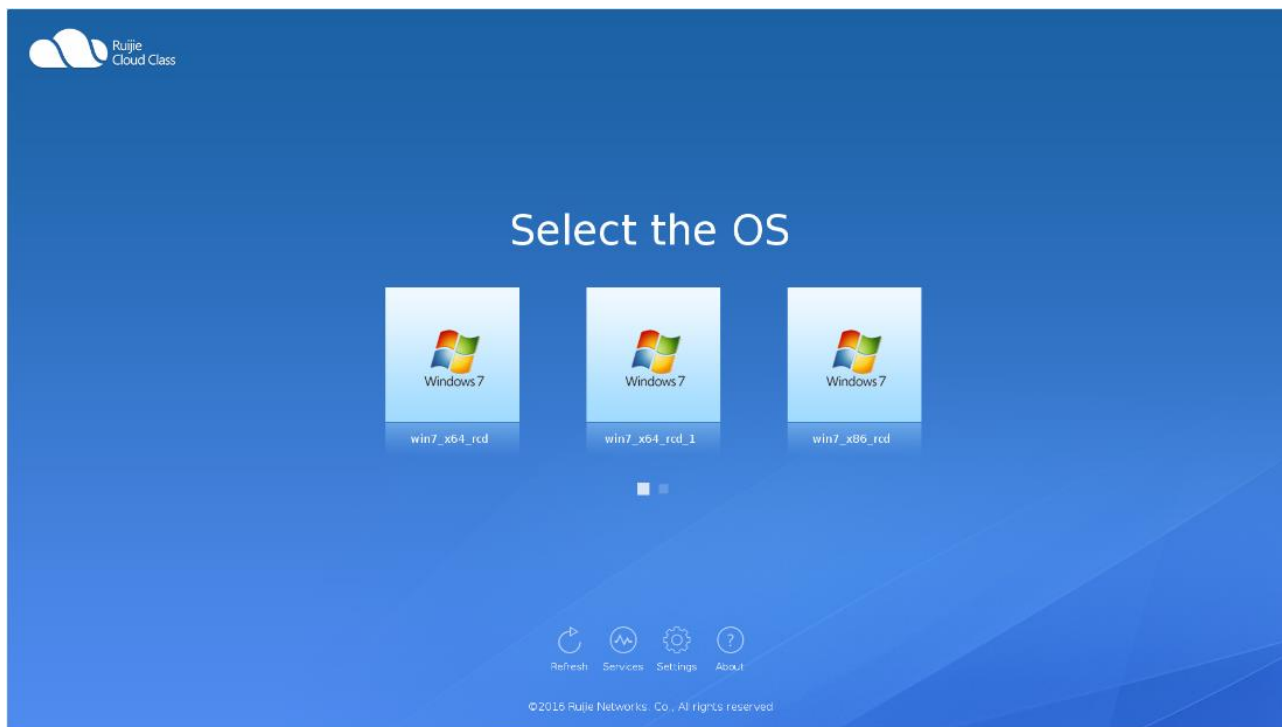
As one of the important components of the RCC, a thin client is mainly used to implement communication with RCD servers.

A thin client sends a connection request to an RCD server. After permitted by the RCD server, the communication channel is established. The RCD server sends a list of available images to the thin clients and the list is displayed on the screen of thin clients.

The thin client sends students' operations to the RCD server as requests. After processing the requests, the RCD server sends the result to the thin client.



The following part describes basic functions.



- **OS:** Select the OS by clicking the OS image icon to access the cloud desktop.
- **Scroll bar:** When there are more than three available images, a scroll bar is displayed. You can drag the scroll bar to view more images.
- **Refresh:** Click **Refresh** to request the latest image list from the RCD server.
- **About:** Click **About** to view the system version and thin client version.

The following section describes the **Settings** configuration.

3.1.1 Settings

The settings include the thin client host name, RCD server IP address, network, resolution, and volume.

After you click the **Settings** button, a dialog box is displayed, requesting you to input the admin password. The default password is **ruijie.com**, as shown in the following figure.

Then, the **Basics** tab page is displayed, on which you can configure the thin client host name, RCD server IP address, and cloud desktop network, as shown in the following figure.

Basics

Resolution

More

×

Basic Info:

Thin Client Name:

RCD Server IP:

Network Config:

☒ Obtain an IP address automatically

☐ Use the following IP address:

IP Address:

Subnet Mask:

Default Gateway:

☒ Obtain a DNS server address automatically

☐ Use the following DNS server address:

DNS:

Alternate DNS:

Save

On the **Resolution** tab page, you can configure the resolution based on the requirement, as shown in the following figure.

Basics

Resolution

More

✕

Screen Resolution:

1440x900

Save

Restore

On the **More** tab page, modify the volume of the local system and microphone based on the requirement, as shown in the following figure.

Basics

Resolution

More

✕

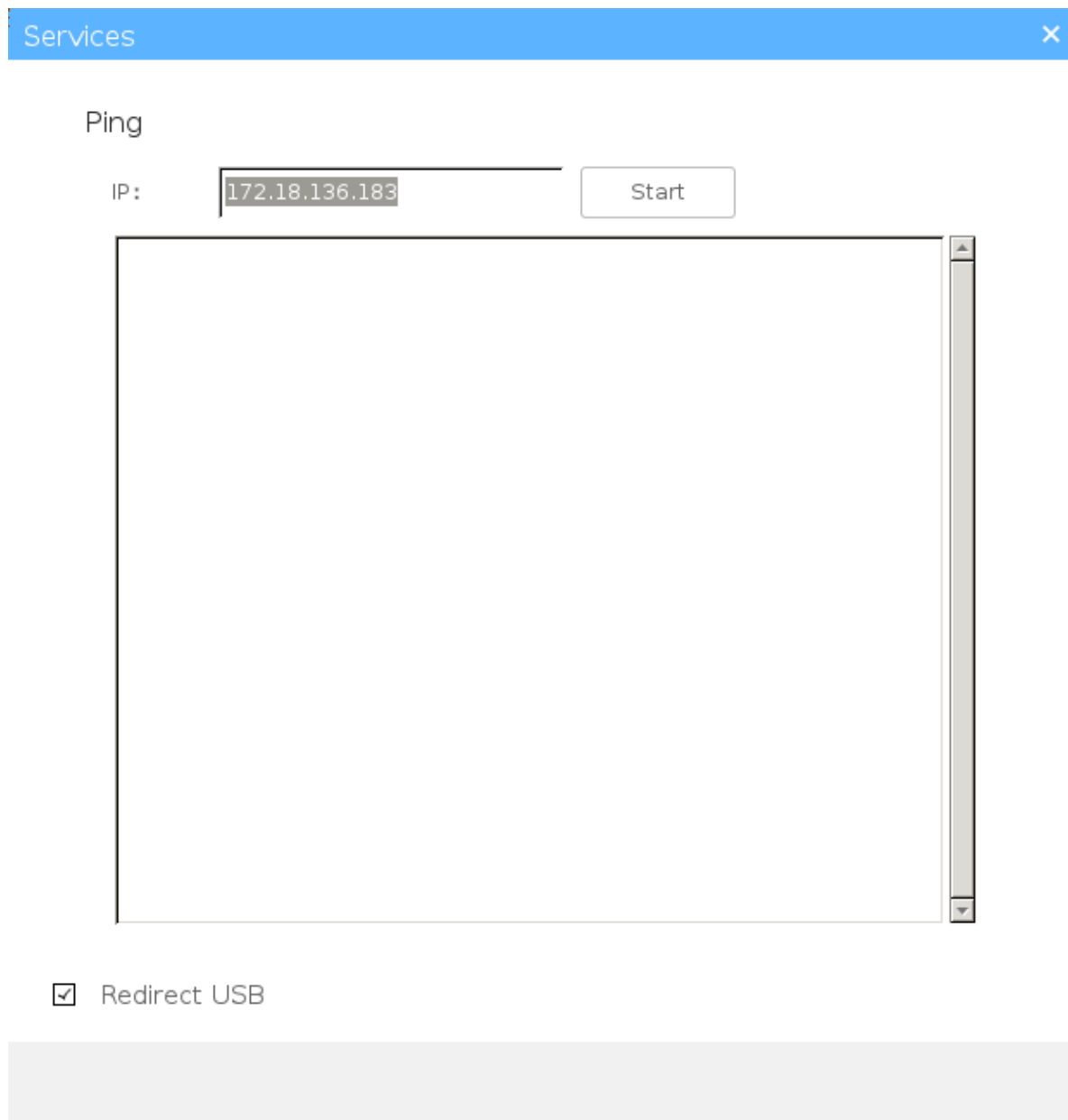
Volume:

00100

Automatic Power-On☒

The **Services** page provides the network diagnosis and thin client information collection functions.

You can use the ping service to check the network connectivity of the thin client. Input the IP address of the RCD server, for example, 192.168.122.1 and click **Start**. The result is displayed in the text box below. You can also ping a domain name, such as www.google.com. In addition, the hardware information collection service is provided. Input the default password **admin** and click **Start**. The client will start to perform hardware information collection and display the result in the text box below.



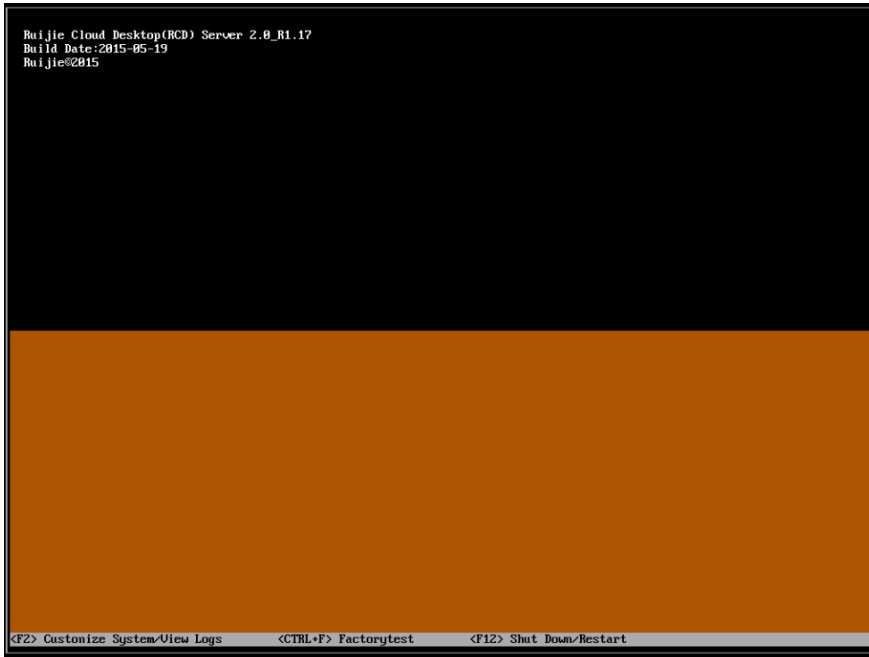
3.2 Floating Bar

The floating bar is used only when the cloud desktop is in a special state. It provides functions including cloud desktop restoration, shutdown, restart and USB device identification. The floating bar is hidden in the middle top of the cloud desktop. Click the down arrow to expand the floating bar, as shown in the following figure.

4 Background Maintenance-RCD_TUI

4.1 Startup Page

The following figure shows the startup page of RCD_TUI.

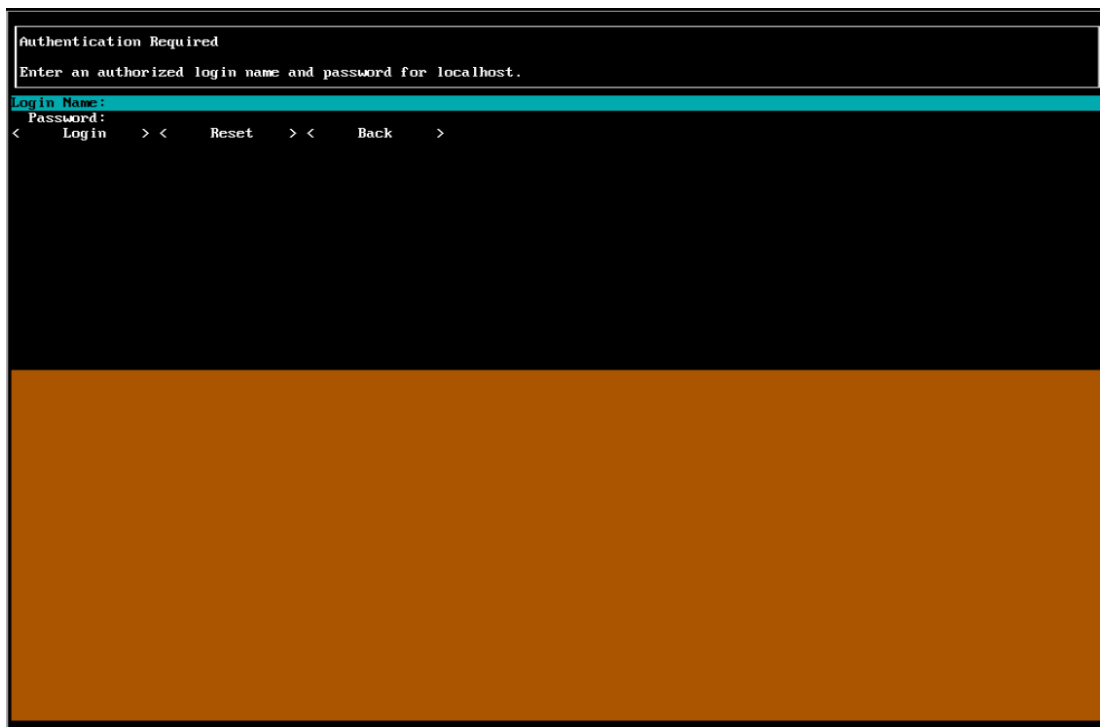


The upper part shows information such as the server version.

The bottom of the page displays the functional shortcut keys. Press **F2** to go to the system configuration and log view page, press **Ctrl+F** for the factory test program, and press **F12** to shut down or restart the system.

4.2 Login Page

On the startup page, press **F2** to go to the login page, as shown in the following figure. The default user name and passwords are both **admin**.

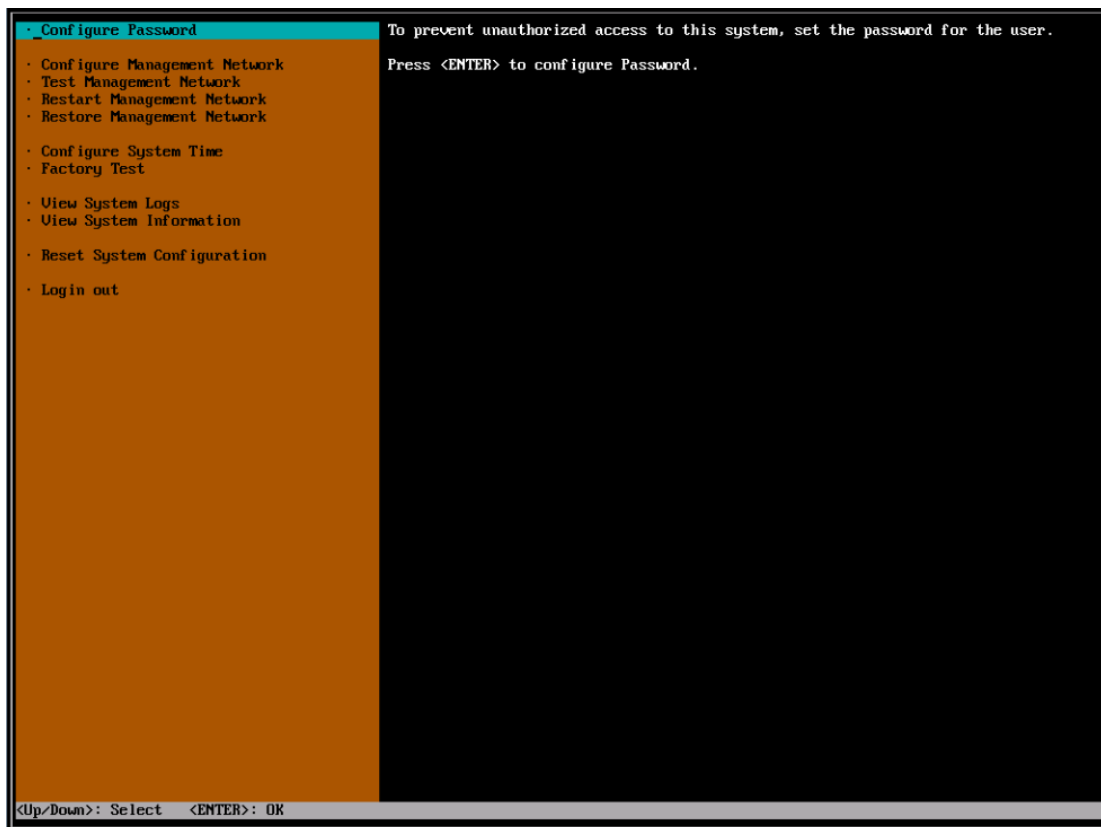


4.3 Main Page

The following figure shows the main page.

The page is divided into two parts: the function menu is displayed on the left and the corresponding function description and configuration page are displayed on the right. The bottom of the page is the tip bar.

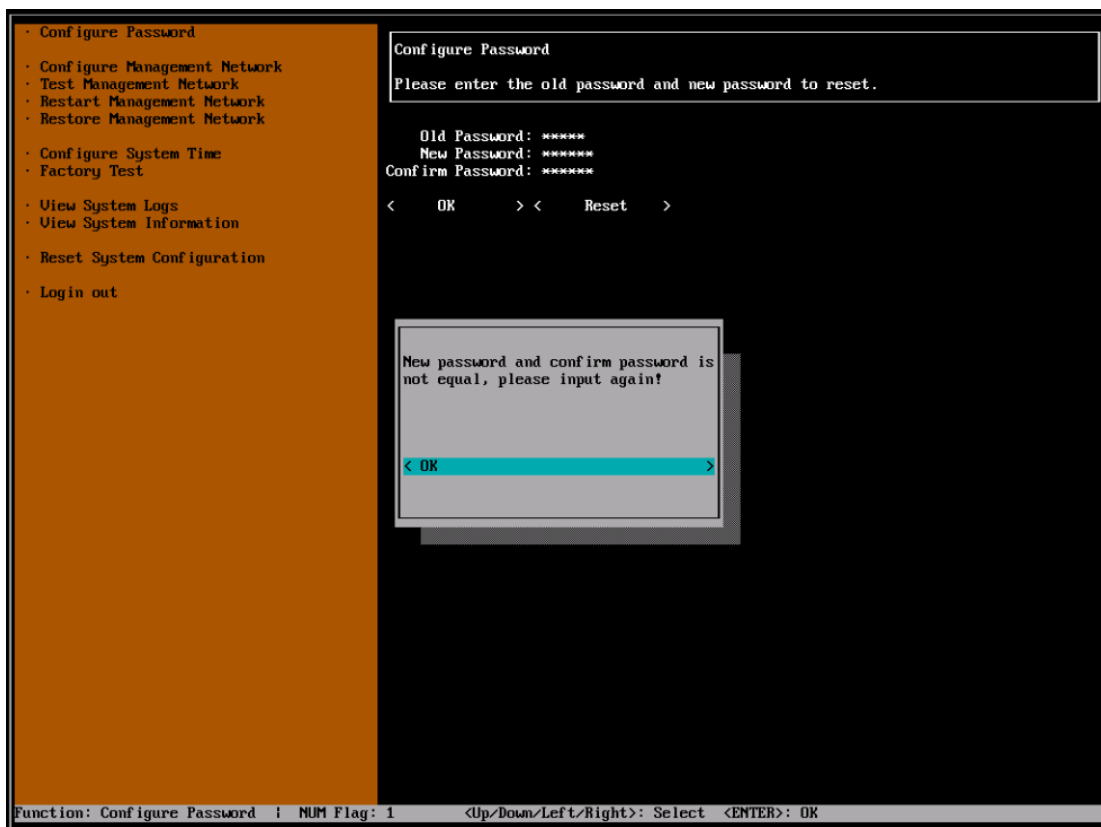
Press **Up** or **Down** to select a function, and press **Enter** to enter the configuration page.



4.3.1 Configuring Password

The following figure shows the password setting page.

Input the old password, new password, and confirm password to finish password setting.



4.3.2 Configuring Management Network

The **Configure Management Network** menu includes settings on the system network, server roles, and BMC network.

1. System network configuration

The system network configuration includes configurations of the server mode, network mode, netcard bonding, as shown in the following figure.

1) Server mode

Local mode: An RCD server is installed in the classroom, that is, on the same switch with the thin client.

Cluster mode: RCD servers of all classrooms are installed in the equipment room of the data center, that is, on different switches with the thin client.

2) Network mode

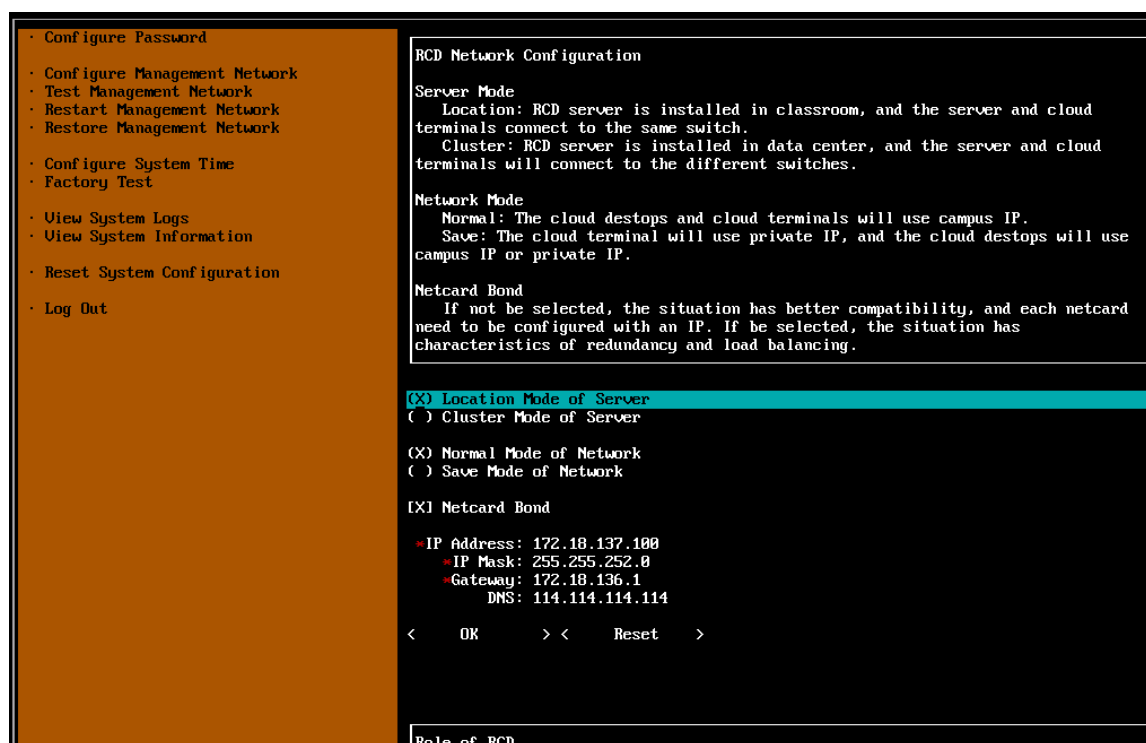
Normal: The cloud desktop and thin client will use the IP addresses of the campus network.

Save: The thin client will use a private IP address and the cloud desktop can use the campus or private IP address.

3) Netcard bond

Selected: provides better redundancy and load balancing features (recommended). This function must be supported and enabled on the interface. Most Gigabit Ethernet switches with the network management function support this function.

Not selected: provides better compatibility. It allows the network card of an RCD server to connect to the switch that does not support the network management function. In this mode, each LAN port on the RCD server must be configured with an IP address.



2. Role of an RCD Server

Master: The master RCD server provides an integrated web page, manages the configuration and resource scheduling of all servers (including the slave RCD servers), and offers the virtual cloud desktop service. Select this option when there is only one RCD server.

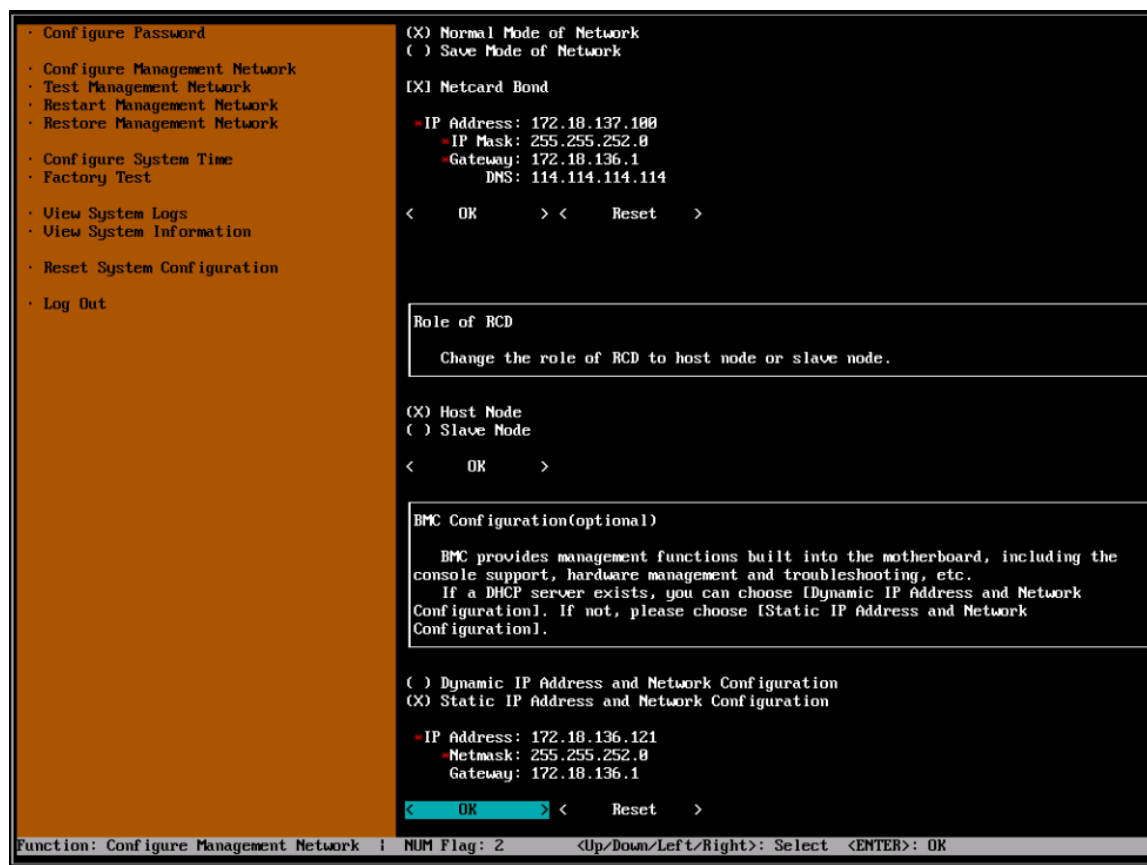
Slave RCD server: only provides the virtual cloud desktop service.

3. BMC Configuration

In BMC configuration, IP addresses can be dynamically or statically configured. The static IP address is recommended and the DHCP mode is used when customers do not allow static IP addresses.

DHCP mode: Select **DHCP**, then select **OK**, and press **Enter**. The obtained IP address is displayed after successful configuration.

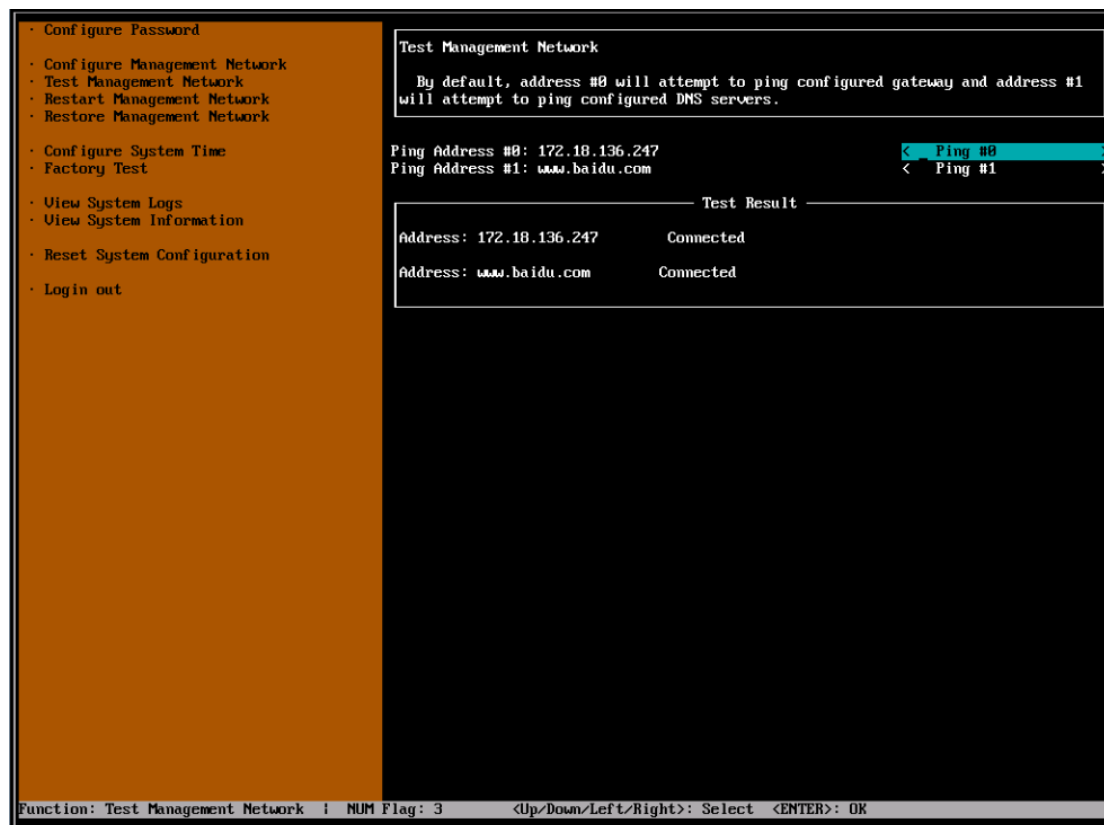
Static mode: Select **Static**, configure the IP address, select **OK**, and press **Enter**. The static IP address is displayed after successful configuration.



4.3.3 Testing Management Network

The following figure shows the **Test Management Network** page. You can input an **IP address** or **URL** to perform the network connectivity test. By default, **Ping #0** is to test the configured gateway and **Ping #1** is to test the configured DNS.

The message "Connected" indicates proper network connectivity, while "Fail" indicates disconnection or poor connectivity.

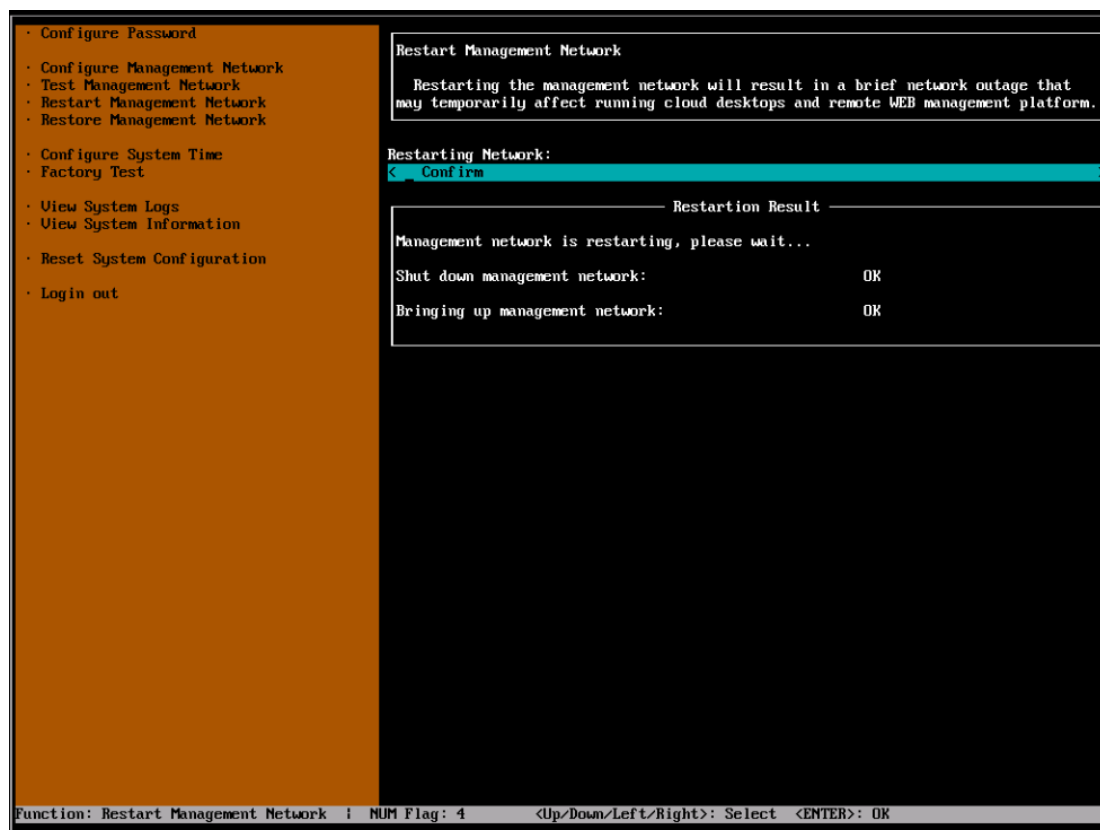


4.3.4 Restarting Management Network

The following figure shows the **Restart Management Network** page.

Select **Confirm** and press **Enter** to restart the management network.

After restart, the system will display the result. The message "OK" indicates restart success while "Failed" indicates restart failure.



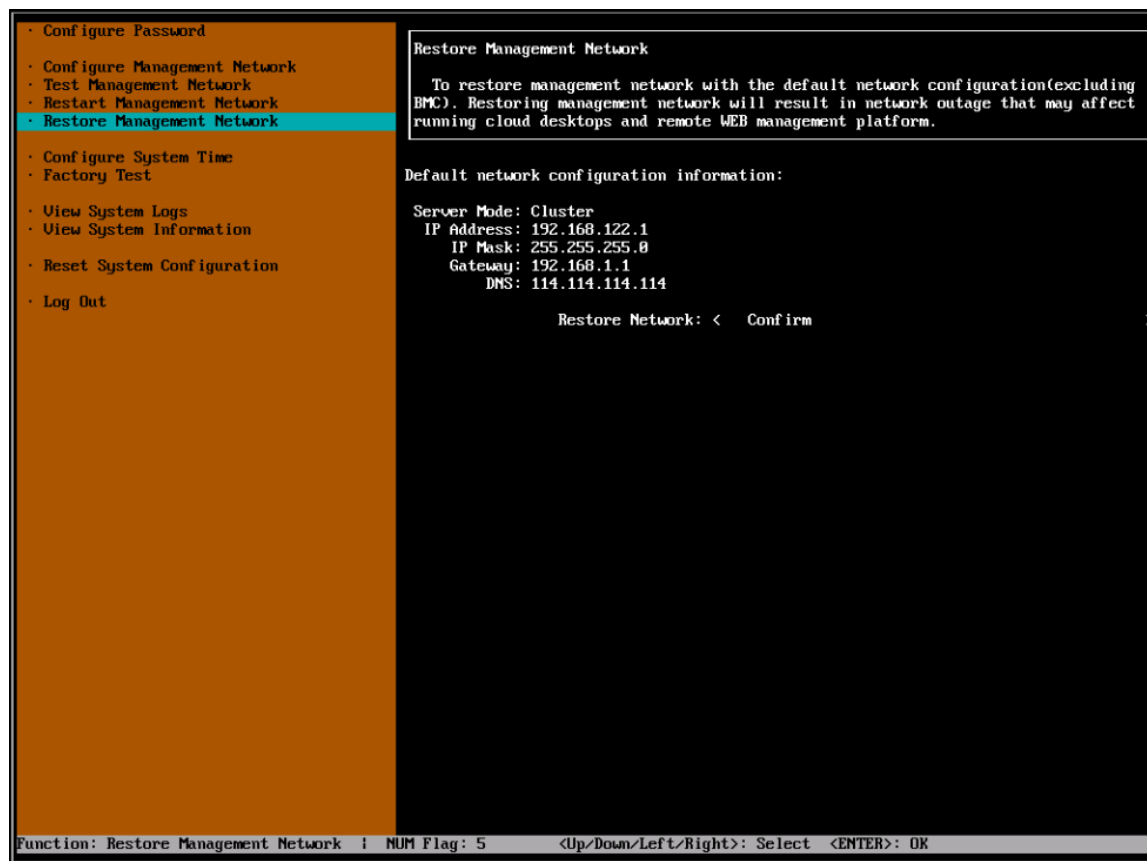
4.3.5 Restoring Network Configuration

The following figure shows the **Restore Network Configuration** page.

Factory configurations of an RCD server are as follows:

Server Mode	Cluster
IP Address	192.168.122.1
Netmask	255.255.255.0
Gateway	192.168.1.1
DNS	114.114.114.114

Select **Confirm** and press **Enter** to restore the management network to the factory configuration.

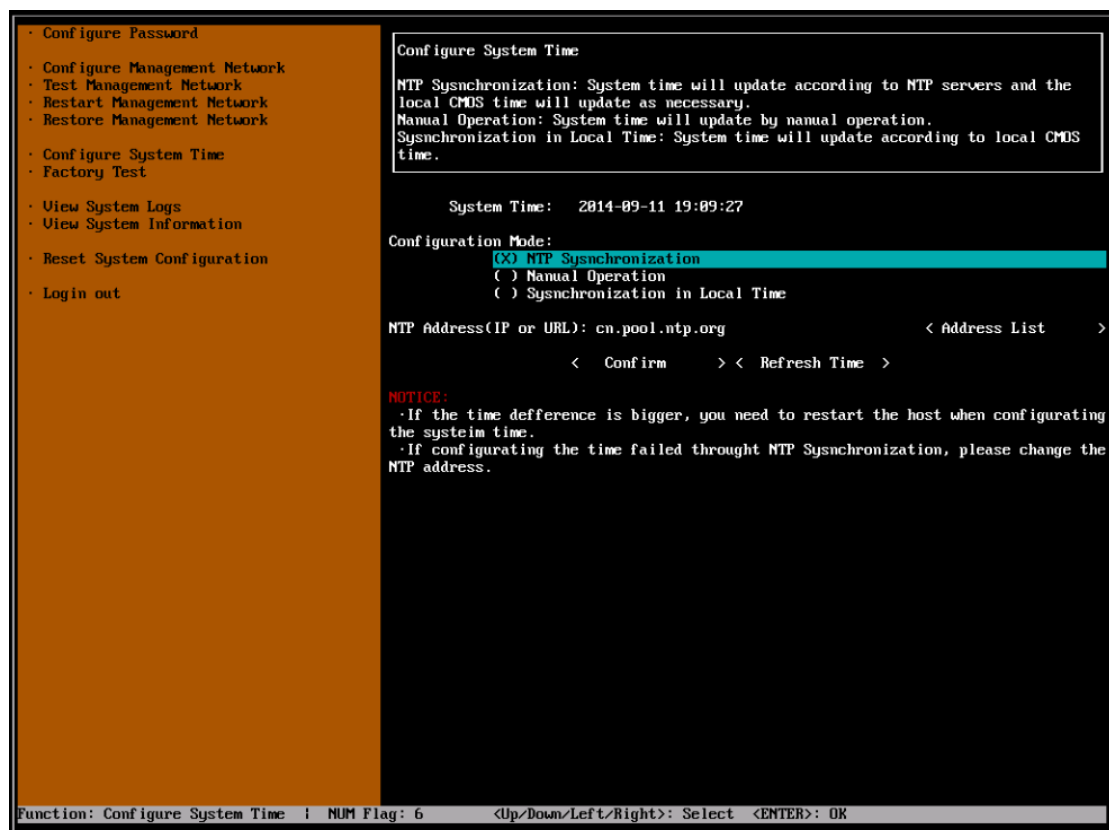


4.3.6 Configuring System Time

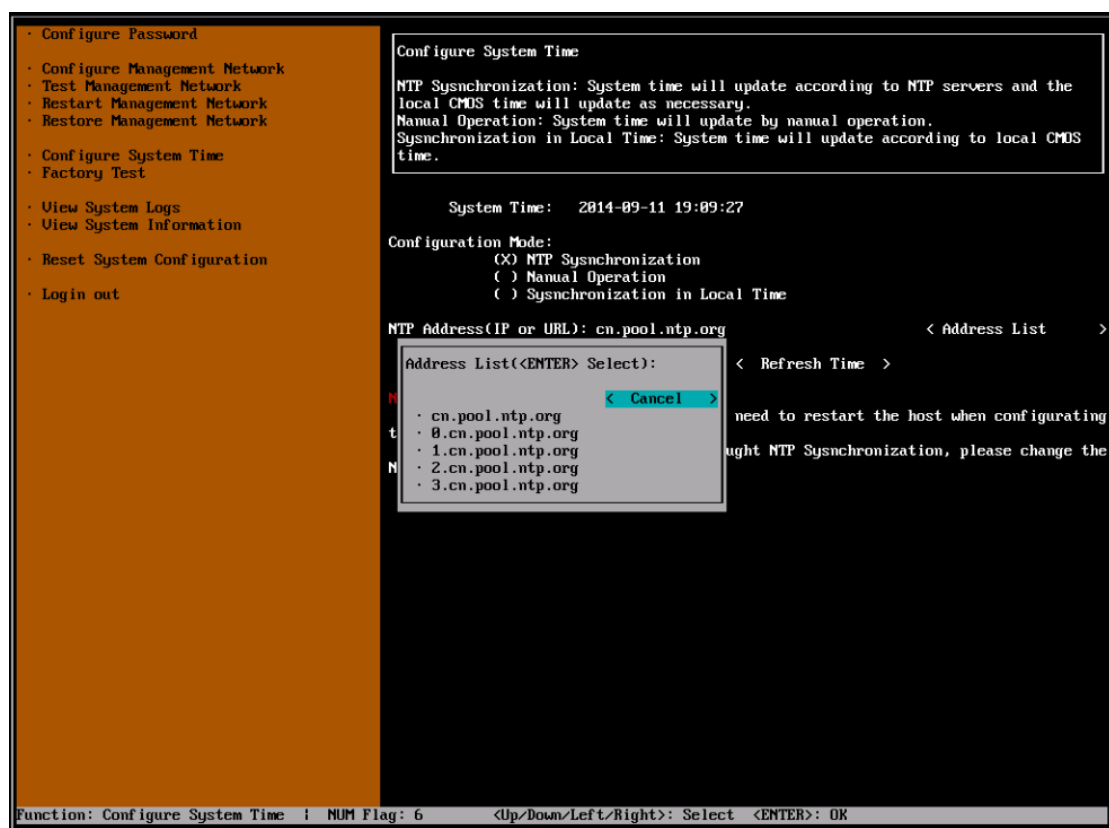
You can configure the system time in any of the following three modes: NTP synchronization, manual configuration, and synchronization to the local CMOS time. You can select the mode by selecting options on the **Configure System Time** page.

1. NTP synchronization

1) Select **NTP Synchronization** and press **Enter**. The following page is displayed:



2. Input the NTP server address or select an address from the address list. You can see the following address list when you select the address.

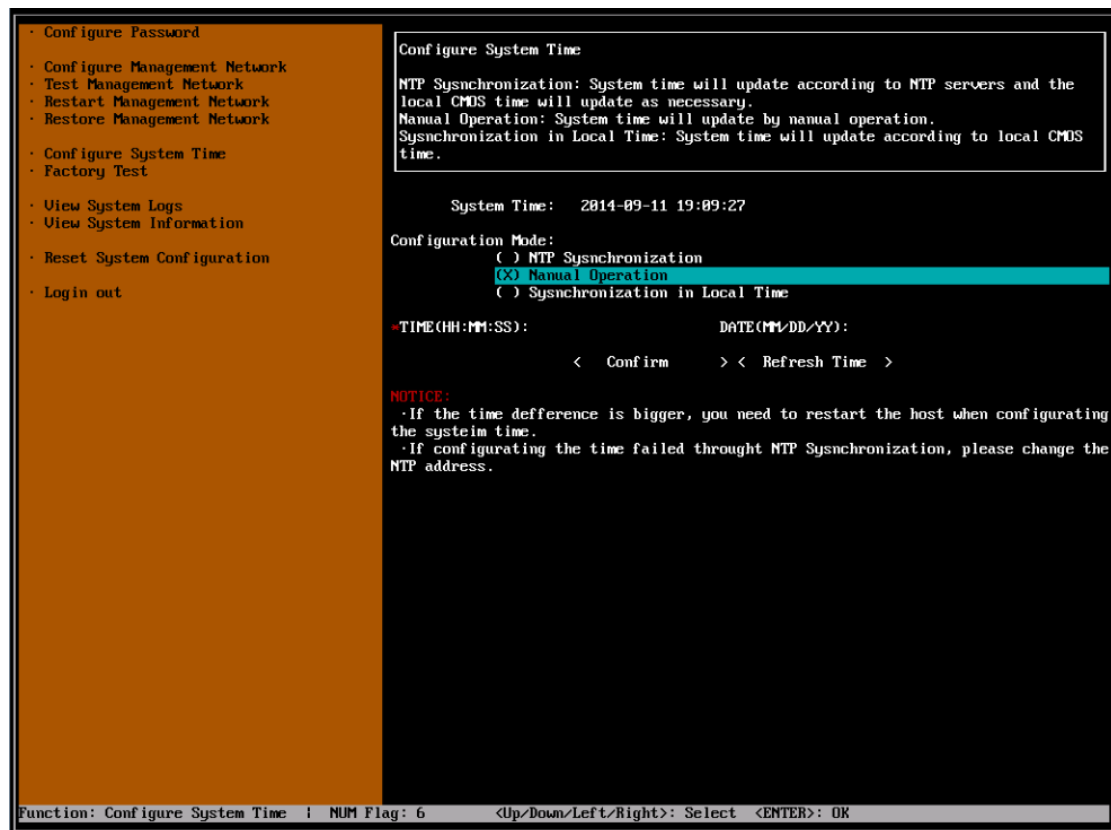


3) Select **Confirm** and press **Enter** to complete time configuration.

2. Manual configuration

Select **Manual Operation** and press **Enter**. The following page is displayed:

Input the time and date, select **Confirm**, and press **Enter** to complete time configuration.

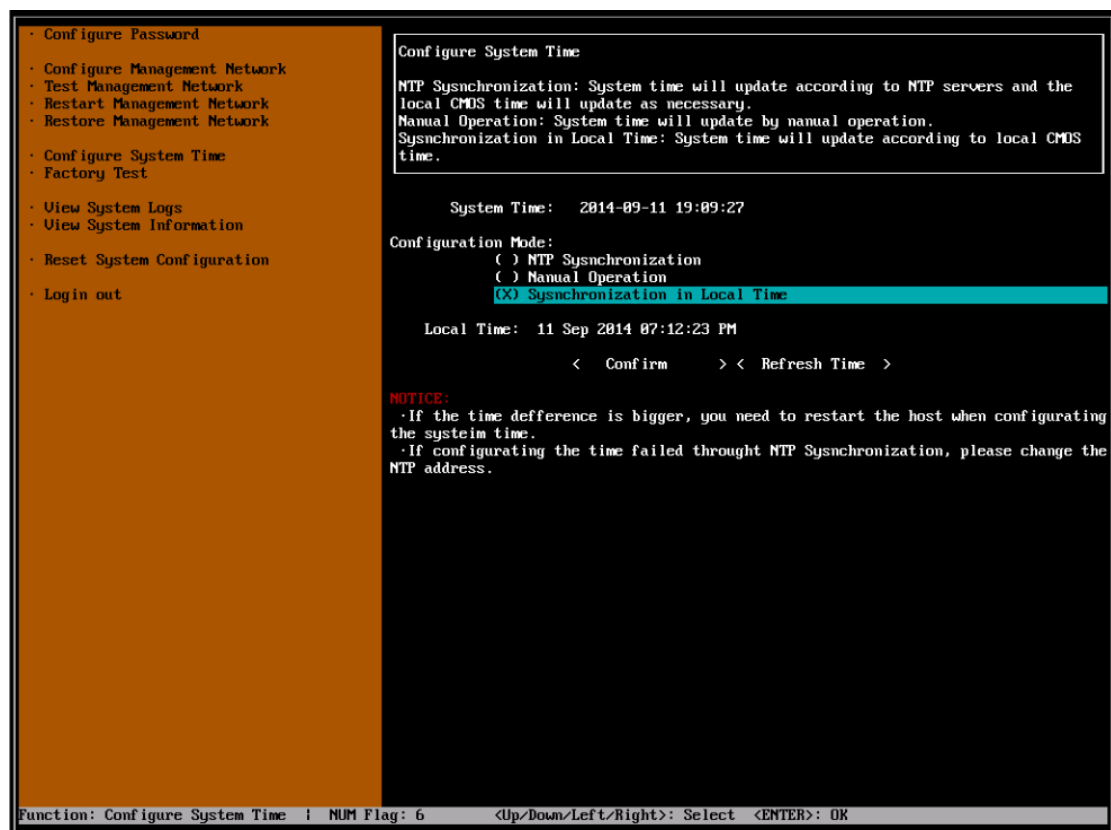


3. Synchronization with the local time

Select **Synchronization in Local Time** and press **Enter** to obtain the local CMOS time, as shown in the following figure.

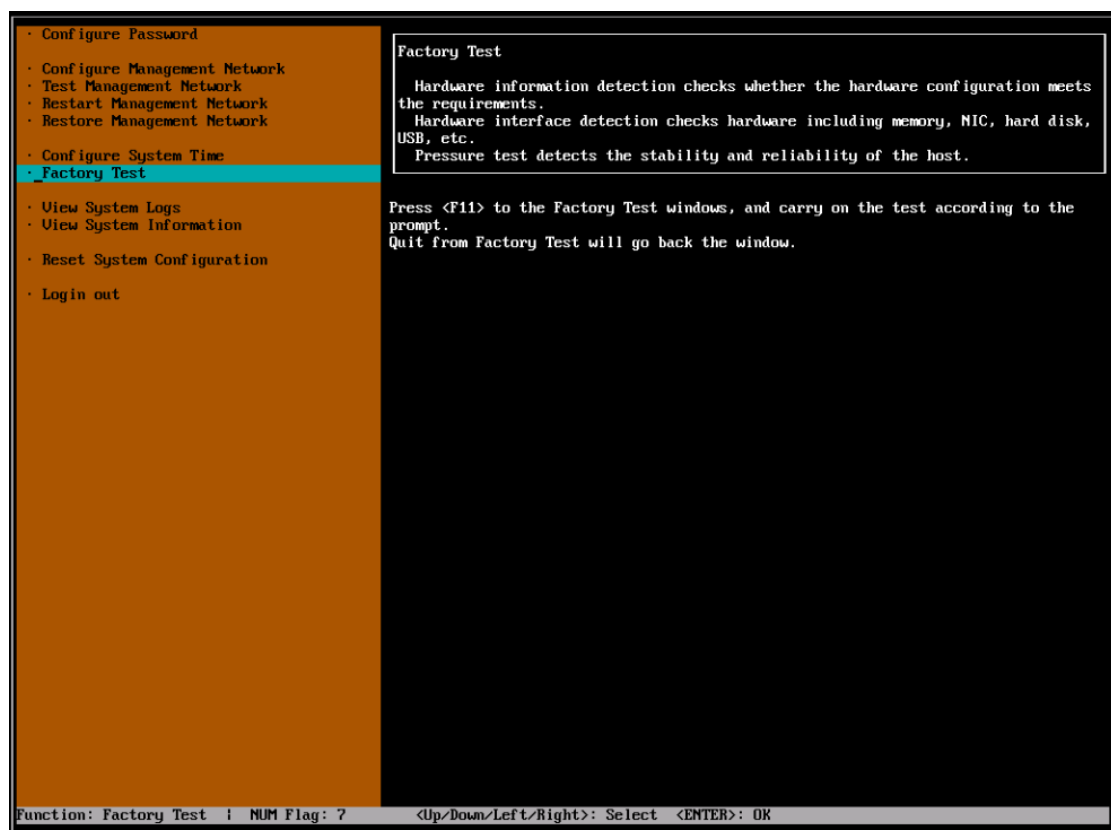
Select **Confirm** and press **Enter** to complete time configuration.

Note: Select **Refresh Time** to refresh the system time and local time on the UI.

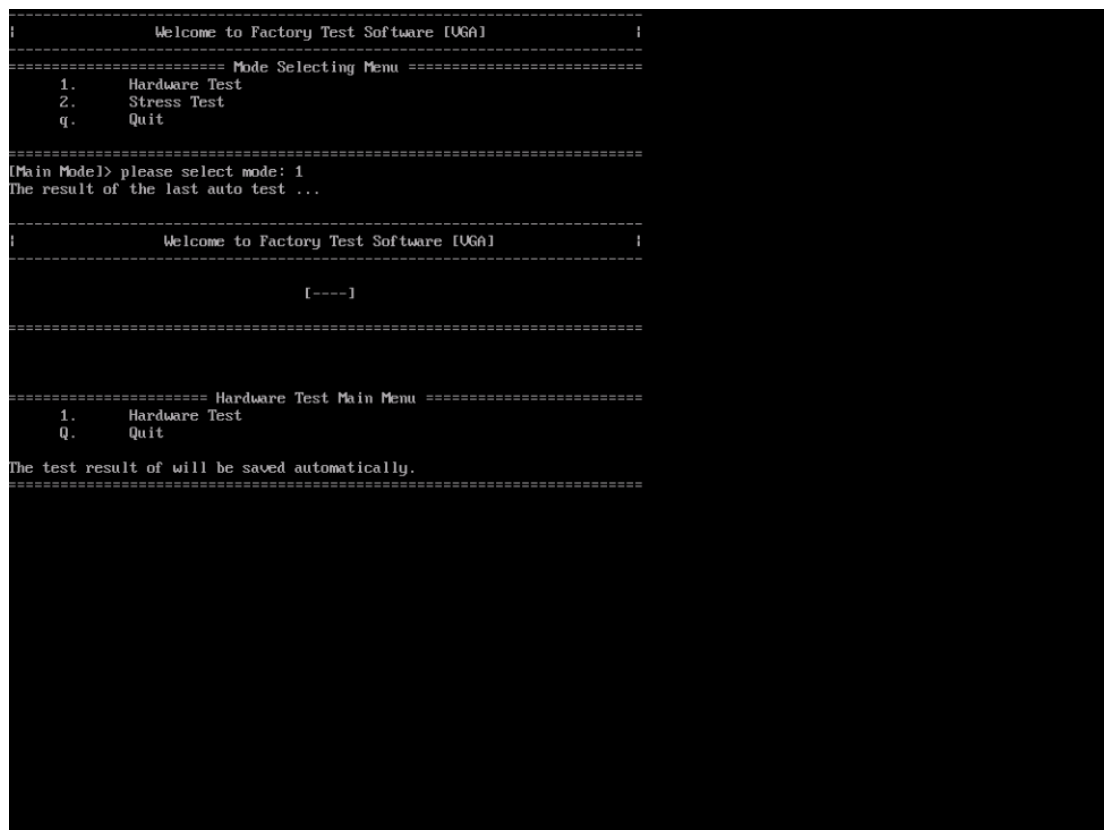


4.3.7 Factory Test

The Factory Test function is used for hardware verification after production in the factory, including CPU, memory, and disks, as shown in the following figure.

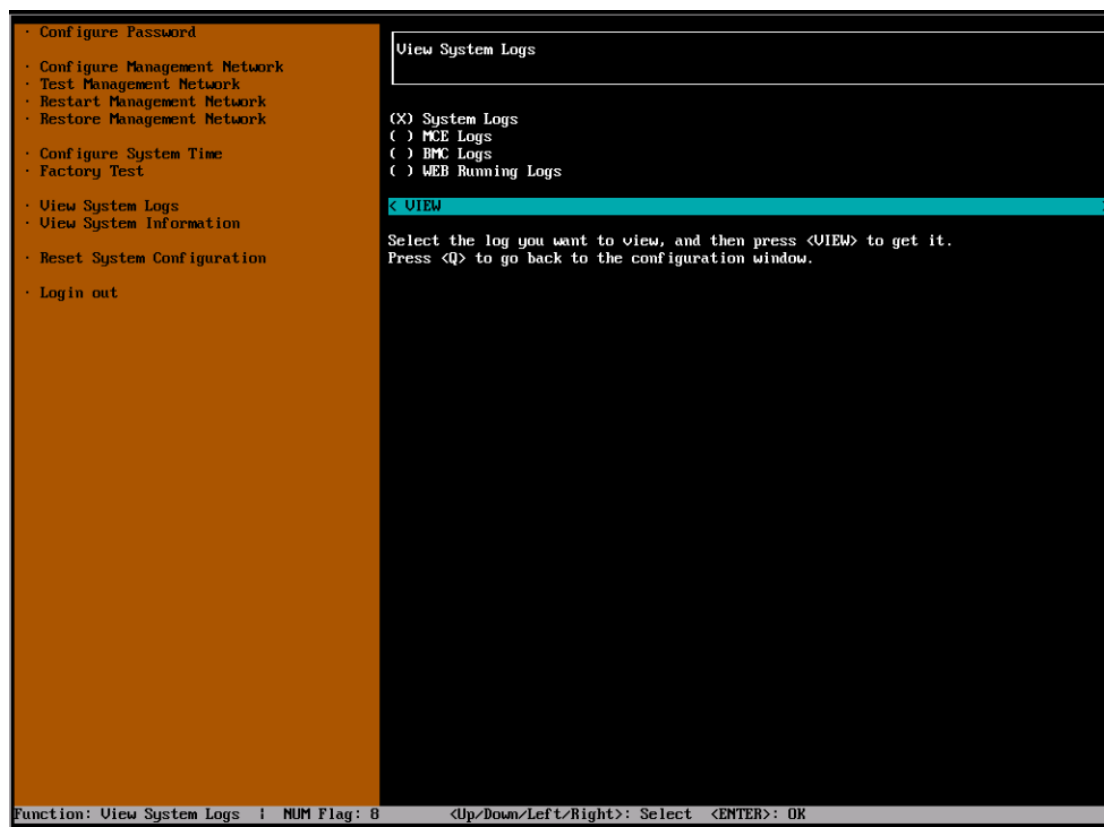


Press **F11** (**Ctrl + F** in the new version) to go to the factory test page. Press **Q** to quit and return to the UI page.



4.3.8 Viewing System Logs

The following figure shows the **View System Logs** page.



1. Select the log file to be viewed and press **Enter**. Log files that can be viewed include system logs, MCE logs, BMC logs, and Web logs.

2. Select **VIEW** and press **Enter**. The following log page is displayed, on which you can see the shortcut keys at the lower left. Press **Q** to quit, press **/** to search, and press **H** for help.

```

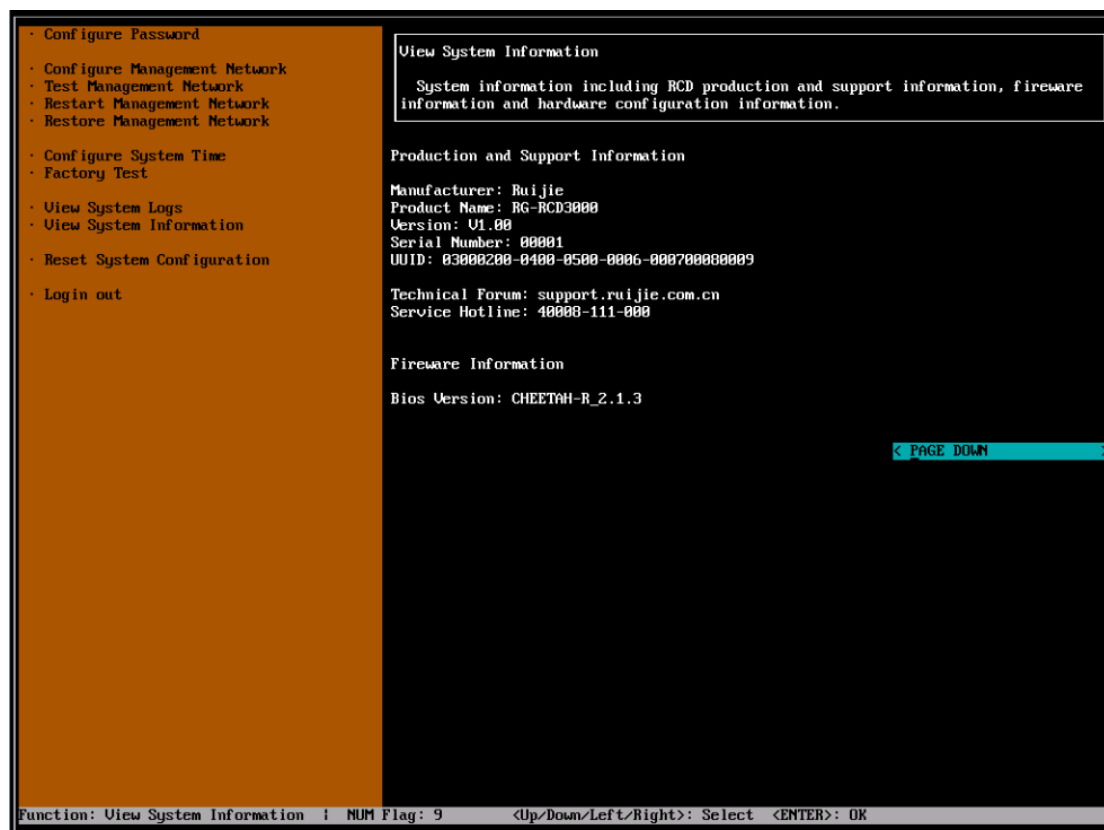
Sep 9 16:31:45 RCD autoss[1500]: starting ssh (count 27)
Sep 9 16:31:45 RCD autoss[1500]: ssh child pid is 14740
Sep 9 16:32:10 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 16:41:45 RCD autoss[1500]: starting ssh (count 28)
Sep 9 16:41:45 RCD autoss[1500]: ssh child pid is 15359
Sep 9 16:41:57 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 16:51:45 RCD autoss[1500]: starting ssh (count 29)
Sep 9 16:51:45 RCD autoss[1500]: ssh child pid is 15980
Sep 9 16:52:15 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 17:01:45 RCD autoss[1500]: starting ssh (count 30)
Sep 9 17:01:45 RCD autoss[1500]: ssh child pid is 16618
Sep 9 17:01:46 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 17:11:45 RCD autoss[1500]: starting ssh (count 31)
Sep 9 17:11:45 RCD autoss[1500]: ssh child pid is 17237
Sep 9 17:11:52 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 17:21:45 RCD autoss[1500]: starting ssh (count 32)
Sep 9 17:21:45 RCD autoss[1500]: ssh child pid is 17856
Sep 9 17:22:11 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 17:31:45 RCD autoss[1500]: starting ssh (count 33)
Sep 9 17:31:45 RCD autoss[1500]: ssh child pid is 18475
Sep 9 17:31:57 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 17:41:45 RCD autoss[1500]: starting ssh (count 34)
Sep 9 17:41:45 RCD autoss[1500]: ssh child pid is 19094
Sep 9 17:42:10 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 17:51:45 RCD autoss[1500]: starting ssh (count 35)
Sep 9 17:51:45 RCD autoss[1500]: ssh child pid is 19713
Sep 9 17:52:10 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 18:01:45 RCD autoss[1500]: starting ssh (count 36)
Sep 9 18:01:45 RCD autoss[1500]: ssh child pid is 20351
Sep 9 18:02:10 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 18:11:45 RCD autoss[1500]: starting ssh (count 37)
Sep 9 18:11:45 RCD autoss[1500]: ssh child pid is 20970
Sep 9 18:12:16 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 18:21:45 RCD autoss[1500]: starting ssh (count 38)
Sep 9 18:21:45 RCD autoss[1500]: ssh child pid is 21589
Sep 9 18:22:02 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 18:31:45 RCD autoss[1500]: starting ssh (count 39)
Sep 9 18:31:45 RCD autoss[1500]: ssh child pid is 22208
Sep 9 18:32:10 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 18:41:45 RCD autoss[1500]: starting ssh (count 40)
Sep 9 18:41:45 RCD autoss[1500]: ssh child pid is 22827
Sep 9 18:42:15 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 18:51:45 RCD autoss[1500]: starting ssh (count 41)
Sep 9 18:51:45 RCD autoss[1500]: ssh child pid is 23446
Sep 9 18:52:02 RCD autoss[1500]: ssh exited with error status 255; restarting ssh
Sep 9 19:01:45 RCD autoss[1500]: starting ssh (count 42)
Sep 9 19:01:45 RCD autoss[1500]: ssh child pid is 24084
Q> Quit <> RegExp Search <H> Help

```

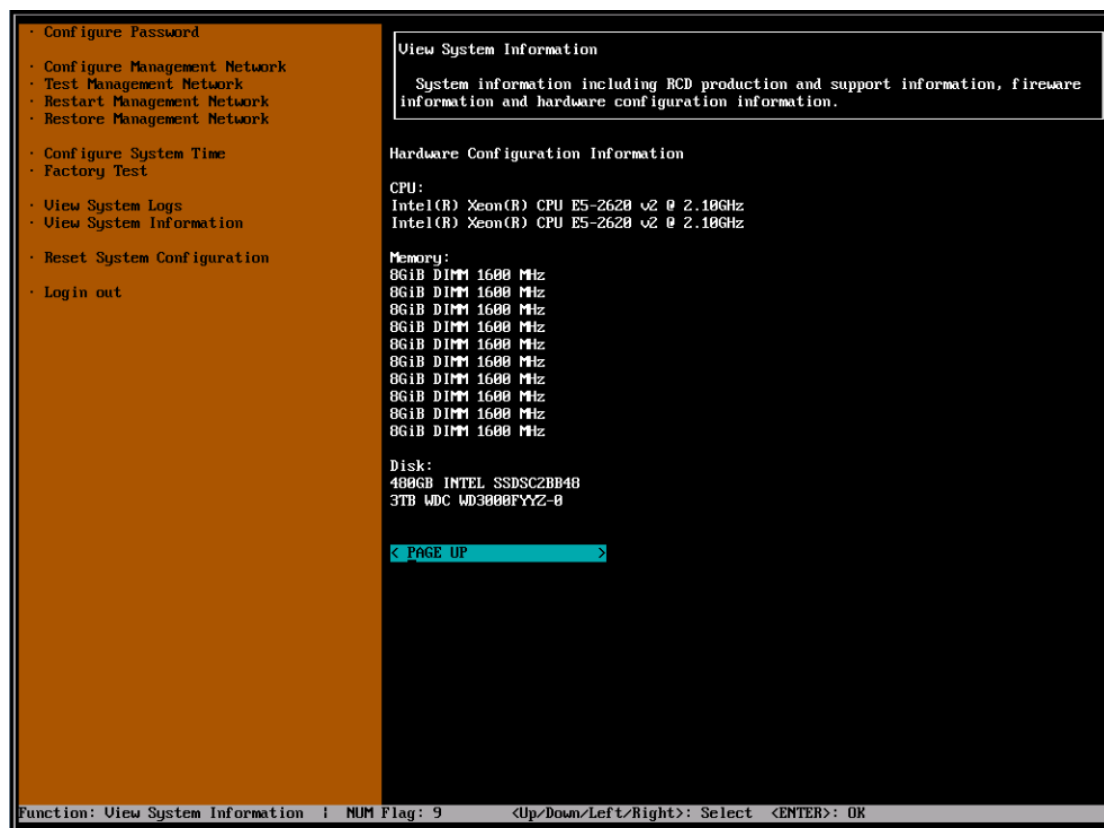
4.3.9 Viewing System Information

The following figure shows the **View System Information** page.

Product information, support information, and firmware information are displayed. For details, see the servers of each version.

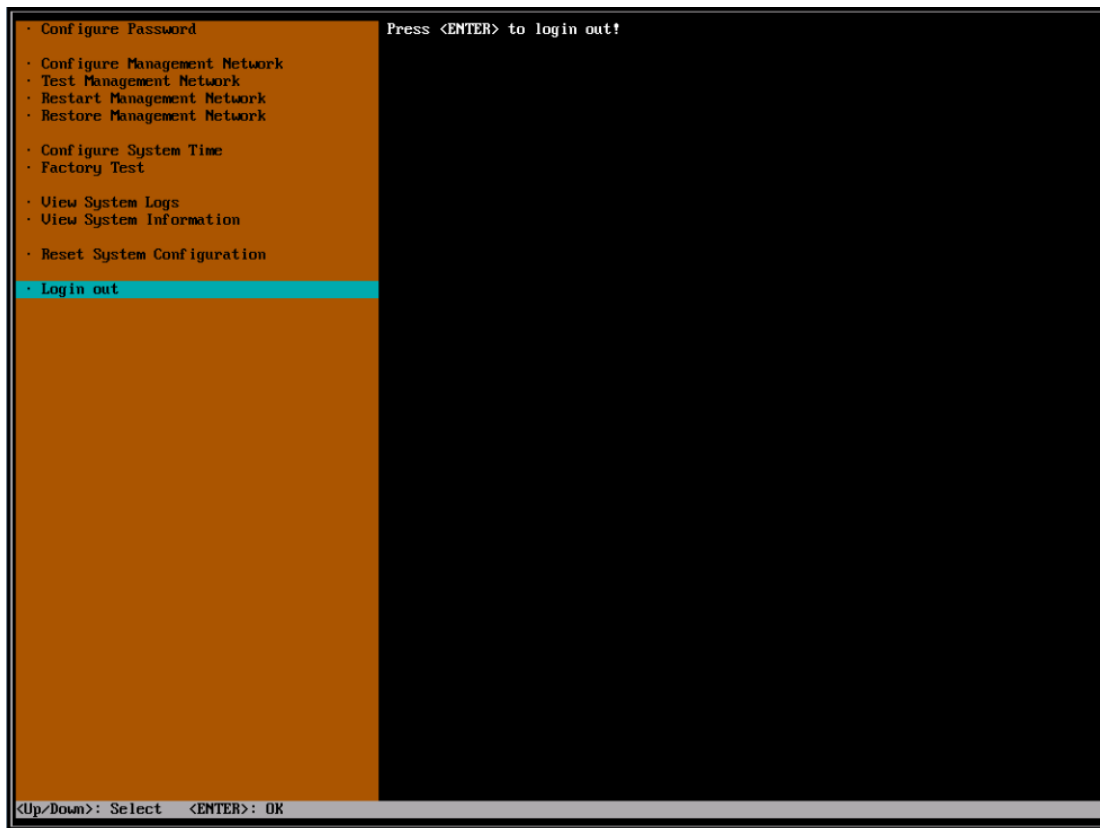


Select **Page Down** and press **Enter**. The hardware configurations are displayed, including the CPU, memory, and hard disks. For details, see the servers of each version.



4.3.10 Logging Out

The following figure shows the **Login out** page. Select **Login out** and press **Enter** to return to the startup page of the RCD_TUI.



5 FAQs

1.	Question	How can I troubleshoot power supply faults on an RCD server?
	Answer	You can check the PWD indicator on the front panel to check whether the power supply system is faulty. For the normal state of the indicator, see section 2.3 Classroom. If an error occurs, perform the following steps: 1. Check whether the power supply matches the RCD server. 2. Check whether the RCD server is turned on. 3. Check whether the power supply is turned on. 4. Check whether the cables are correctly connected.
2.	Question	How can I troubleshoot system faults?
	Answer	After an RCD server is powered on, RG-RCD is displayed on the thin client in normal situations. If an error occurs, nothing is displayed or garbled characters are displayed. If no information is displayed on the thin client, perform the following steps: 1. Check whether the power supply system works properly. 2. Check whether the hard disk indicator works properly.
3.	Question	Why cannot the RCD server be pinged?
	Answer	1. Check whether the RCD server is powered on. If not, power on the RCD server based on the requirements. 2. Check whether the network indicator of the console interface is normal. If not, check the connection. 3. Check whether the IP address of the management interface is correct. If not, contact the administrator for the latest IP address of the management interface. 4. Check whether the management interface can be pinged. If not, the network connection is faulty and you need to troubleshoot network faults. 5. Check whether IP address conflict occurs. If yes, reconfigure an IP address. 6. Check whether the hardware is faulty. If yes, send it back to the factory for repair.
4.	Question	The ISO image cannot be booted after startup when I create images.
	Answer	1. Check whether the ISO file is damaged and needs to be uploaded again. 2. Check whether the boot sector is normal. If not, re-create the ISO image.
5.	Question	The system abnormally exits when you creates or edits an image and displays a message about format error.
	Answer	The image file is damaged and needs to be re-created.
6.	Question	Thin clients fail to connect to the RCD server.
	Answer	1. Check whether IP address conflict occurs. If yes, reconfigure an IP address. 2. Check whether the network devices and cables are normal.
7.	Question	Images cannot be used and file format is invalid.
	Answer	1. The image file is not normally saved due to abnormal exit. You need to re-download or re-create the image. 2. Hard disk fault causes data reading errors.

8.	Question	The Web management platform cannot be accessed.
	Answer	The management interface is not well connected. Check whether the port number is correct and whether the network is faulty. The Web components are abnormal. Contact the service provider.
9.	Question	The image is properly running but the network access fails.
	Answer	1. Check whether the IP address, gateway, and DNS address are correctly configured. 2. Check whether the corresponding network interface is correctly connected.
10.	Question	The image is properly running but the USB disk cannot be identified.
	Answer	1. Check whether the USB disk is damaged. 2. Click Identify USB on the floating bar on the upper part of the cloud desktop. 3. Remove the USB disk and insert it again.