RoseReplicatorPlus Failover Solution

HikCentral V2.4

Contents

1 Preface

1.1 Background

In order to improve the high availability of HCPs, it is necessary to perform mirror hot standby for HCPs. The HCP + Rose dual machine hot standby solution is to install HCP and Rose software on two servers respectively. The two machines are divided into a host and a standby machine. Under normal conditions, only one HCP on the machine is running. Once the host fails, such as server downtime or HCP service abnormal stop, Rose software will start the standby HCP service to take over the business, ensure the continuous availability of services. By default, there is no need for manual intervention in the handover process. The process of switching between the active and standby machines requires a certain amount of time, and the service may be interrupted for a short time.

In the original 1.X version of Rose hot standby solution, multiple services need to be monitored by Rose. The watchdog cannot be used in Rose mode, resulting in complex configuration and many usage costs for users. As the number of HCP service functions increases, the complexity of the original solution gradually highlights. In HCP 2.4, there is an urgent need for a new solution with simple configuration and good user experience, which has been greatly optimized in previous HCP 2.2 and 2.3. The specific configuration and usage scheme are as follows:

1.2 Terms and abbreviations

Abbreviation	Describe
RoseReplicatorPlus	It is a solution software to realize fault tolerance and high availability of two hosts. Its principle is to synchronize the data between two hosts in real time through real-time mirroring technology, and provide a virtual host for customers to access. When one of the hosts goes down, the service is automatically switched to the other host, and the external

	service address remains unchanged.
Rose	Rose mentioned in this article is RoseReplicatorPlus
BeeAgent	A service in HCP is divided into a background service and a client with GUI.Manage the start and stop of other services, and actively pull up services when other services are abnormal.
SAC	StorageAccessComponent, a storage service access component developed by Hikvision, comprehensively manages multiple storage servers and provides a unified interface to the outside world.

2 HikCentral Pro 2.4 & RoseReplicatorPlus software installation configuration

2.1 Preliminary preparations

2.1.1 Software and license

- ✓ **Platform software: HikCentral Professional V 2.4 installation package**
- ✓ **HCP license: Although Rose needs to be deployed on two computers, only one license is required here.**
- ✓ **Rose software: RoseReplicatorPlus_for_oversea-5.8.0-1783.221123-Windows-x64**

  (Rose software can be obtained from the CD attached with the order, or can be found in the following link: https://drive.ticklink.com/hcs/controller/hik-manage/fileDownload?link=8L11k7yE& Extraction code: 6666
- ✓ **Rose Dongle:** Rose software needs to be deployed on the active and standby machines, so two authorizations are required. Rose Dongle is a hardware dongle, which will be delivered when placing an order for Rose, and can be inserted above the corresponding host and standby servers.

[Note]: A formal project must have a hardware dongle for Rose softwa re to run normally.

For the instructions on changing the hardware dongle to a software license and shipping after the order is placed, please refer to the Hiknow document "Operating Instructions on Changing the Hardware dongle of Rose Hot Backup Software to a Software License &Instructions on the Shipping and Delivery Process after the Order of rose Software License Materials". The link is as follows:

https://hiknow.hikvision.com.cn/kms/kms/multidoc/kms_multidoc_knowledge/kmsMultidocKnowledge.do?method=view&fdId=17e3449f7545adae136928543f58bd2f

2.1.2 Server requirements

- ✓ **Network card requirements:** You need to prepare two servers/virtual machines as the active and standby machines on site, each of which must be installed with at least two network cards.

  Examples are as follows:

  Server A (host) and server B (standby), server A is equipped with network card A1 and network card B1, and server B is equipped with network card A2 and network card B2

  A1 ---------- A2 (A1 and A2 network cards are used for service communication between HCPs)

  B1 ---------- B2 (B1 and B2 are used for heartbeat communication, data synchronization and transmission between PCs)
- ✓ **USB interface:** If you purchase a hardware dongle, the two servers must have an open and usable USB interface, which is not required if you use an ordinary license code.
- ✓ **Hardware performance requirements:** please refer to "HikCentral Professional V2.4 Software Requirements &Hardware Performance"
- ✓ System requirements: RoseReplicatorPlus supports Windows 7, Windows server2008 R2 64bit or above. It is recommended to install Windows server2008

R2 64bit or above operating system in the project.

[Note]: Each server needs to install the same version of the operating system, and this hot standby solution only supports hot standby between physical machines or virtual machines, and does not support hot standby between virtual machines and physical machines.

2.1.3 Network related configuration

2.1.3.1 Firewall configuration

If the firewall is enabled in the project, the following ports and network communication permissions need to be opened on the firewall:

- TCP: 7320, 7330 (port required for copying Rose image), 5432 (database listening port)
- UDP: 3000 (private network heartbeat port)
- ICMP (ping): Allow ICMP protocol messages to be transmitted in the network

2.1.3.2 Server IP address configuration

- The IP addresses of the two network cards on the host and the standby must be manually configured, and DHCP automatic addressing cannot be enabled.
- The service IP and heartbeat IP of the host must be set in different network segments, and the service IP and heartbeat IP of the standby must be set in different network segments.

[Note]: The number of heartbeat network cards and service network cards can be appropriately increased in the project to achieve network redundancy.

Examples are as follows:

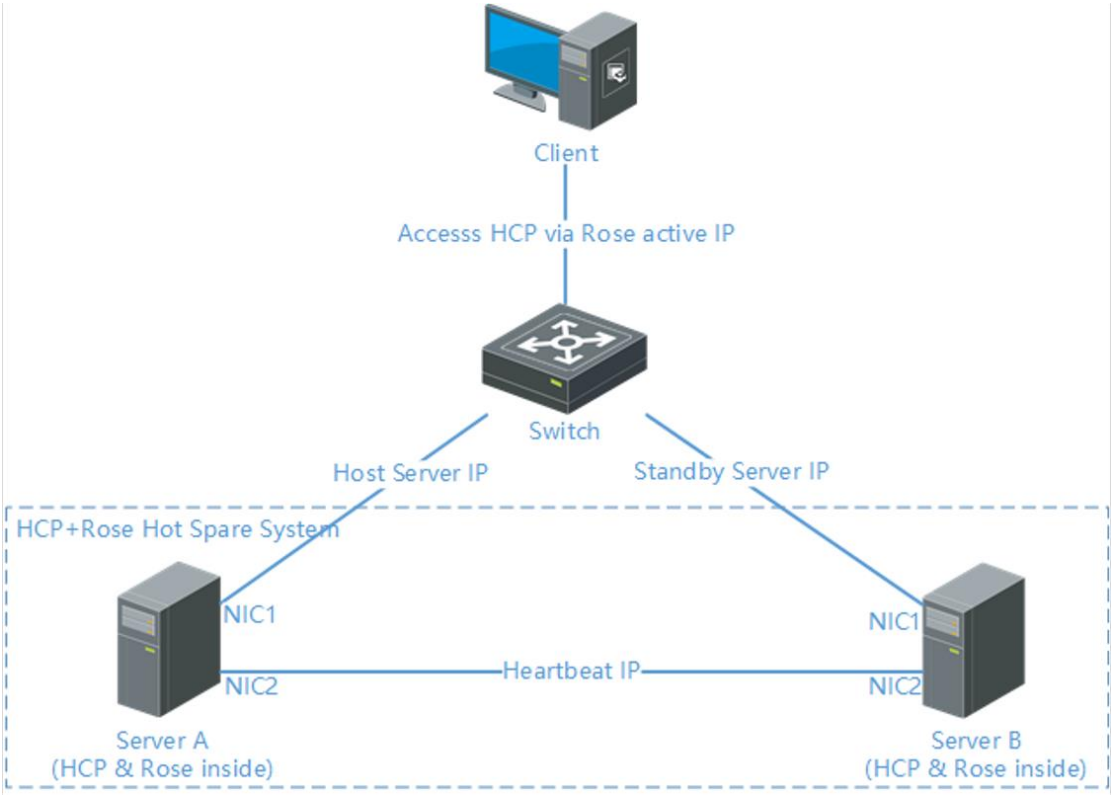
- ✓ The service IP of the active and standby machines (that is, two IP addresses of the 10 network segments) are used for the communication of related services of the HCP platform, and their corresponding physical network cards should be connected to the user's network.
- ✓ The heartbeat IP addresses of the active and standby computers (that is, the two IP addresses of the 192 network segment) are used for heartbeat and data synchronous transmission between the active and standby computers. The corresponding two

network cards are recommended to be connected directly through the network cable.(or connected through a switch)

✓ The virtual IP set by Rose (must be in the same network segment as the service IP) is the virtual IP created by Rose for external clients to access the HCP platform

Server Properties	Network card 1 (Service IP)	Network card 2 (Heartbeat IP)	Rose Active IP (Virtual IP)
Host Active Server	**10.8.96.17**	**192.168.1.2**	**10.8.96.X**
Standby Server	**10.8.96.156**	**192.168.1.3**	

2.1.3.3 Network topology of Rose hot standby system



2.2 Product form supporting hot standby

Product form	Remarks
Non heterogeneous deployment of HCP database	Most common scenarios
HCP database heterogeneous	Both database and HCP can be

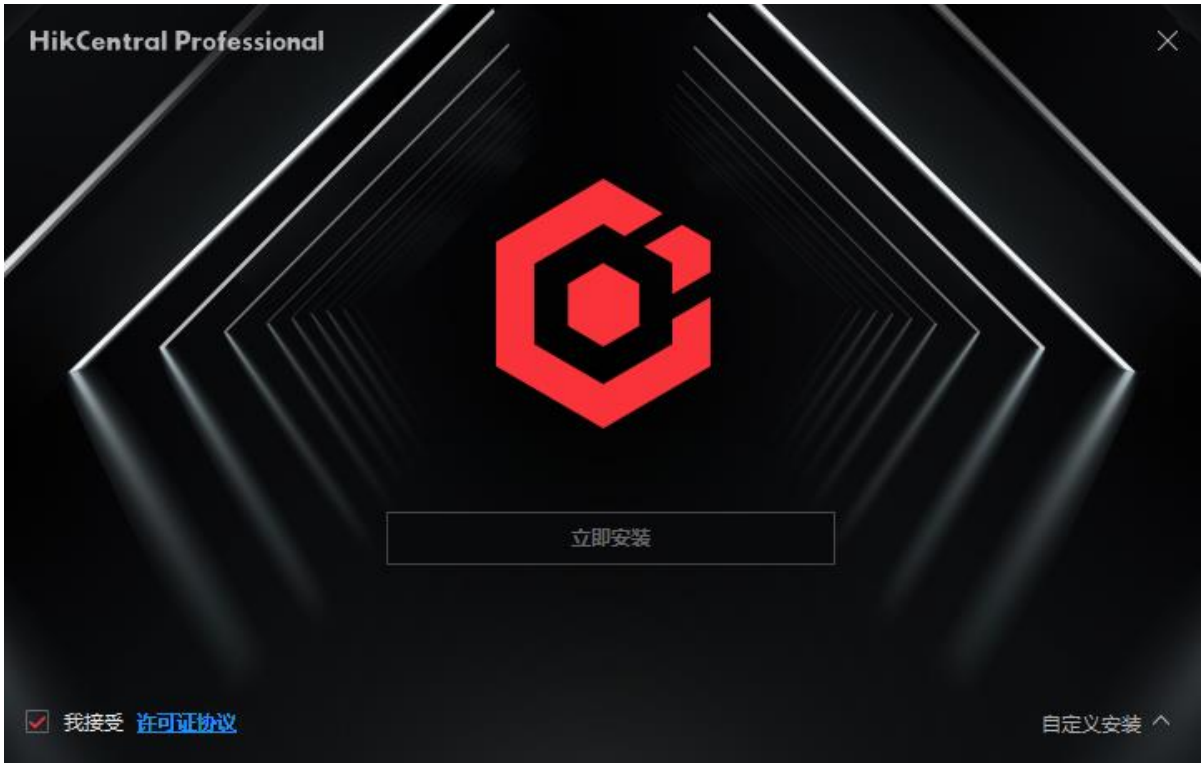
deployment	configured with hot standby
OpenAPI+HCP deployed together	Data transmission is required for the API. When OpenAPI is independently deployed outside the HCP server, Rose hot standby is not required
SAC+HCP	Hot standby is required
SMS	Separate hot standby for streaming media

2.3 HCP Installation Guide (here only for Windows system)

[Note]: The active and standby machines must ensure that the system disks are under the same drive letter. If the system disks of the active and standby machines are under different drive letters, the paths of the fnood of the active and standby machines will be different, which will cause the data backup of fnood to fail.The data stored in fnood is about license activation. If the data is not synchronized correctly, the platform may become unavailable.

2.3.1 Centralized deployment

Run HCP installation package



Select the custom installation, check the services to be installed, and select the image hot standby installation mode

[Note]:

1. HikCentral Server is required

2. HikCentral Control Client can be selected according to individual needs (HikCentral Streaming Service cannot be installed together with HikCentral Server)

3. Select the image hot spare mode for installation

If the hardware performance of the current server does not meet the requirements of HikCentral, the following prompt will appear:

3) Installation path of database

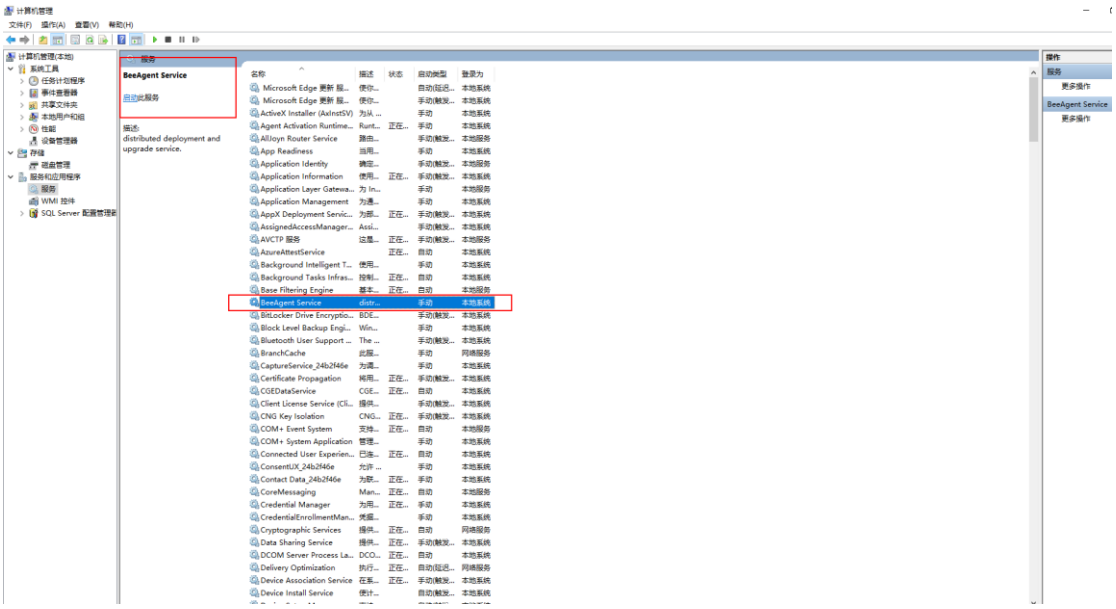
The default database installation path is shown in the figure. If you change the installation location of the database, you need to synchronize it in Rose's configuration later.

4) Installation complete

[Note]: The path of the fnood folder will be used when configuring Rose.However,

the fnood folder will not be generated automatically after the platform is installed. You need to open the watchdog to pull up the service and generate the fnood folder.

- Open the Windows system service interface, set the BeeAgent service to automatic or manual as required, and start the service.



- Turn on the watchdog and wait for all services to start normally.

At this time, other HikCentral services are running normally, and the active and standby platforms can log in normally.

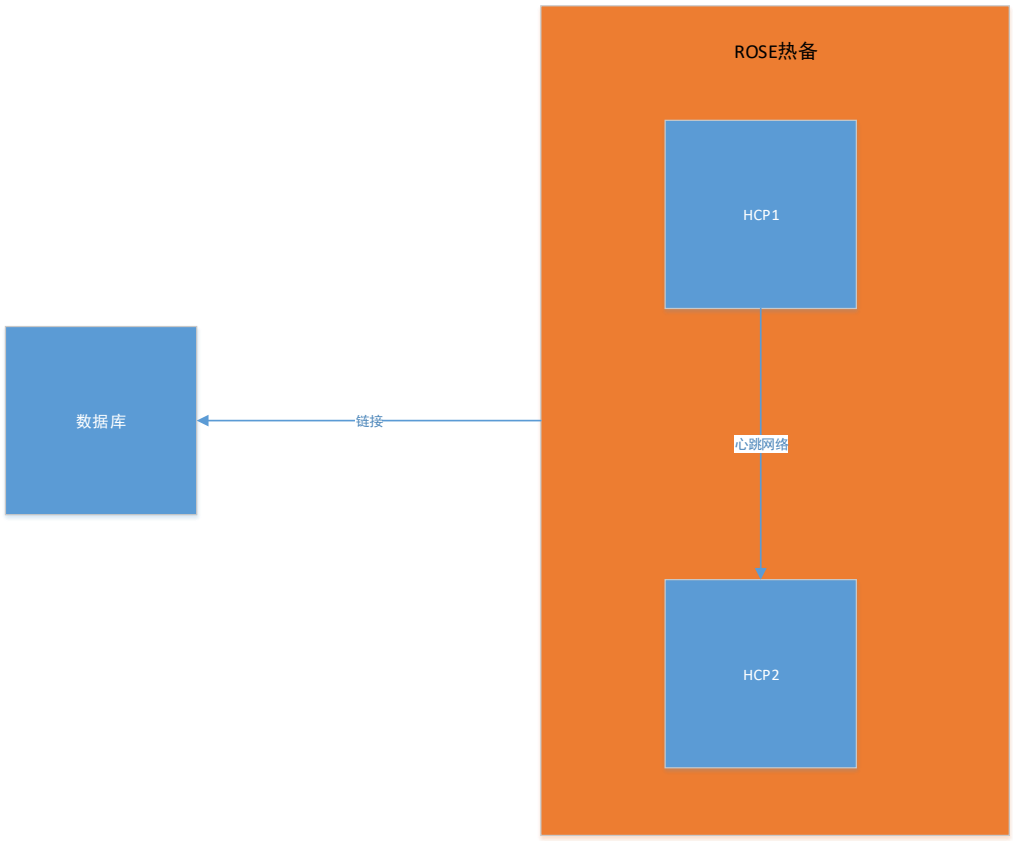
2.3.2 Deployment of different machines

HCP 2.4 supports the deployment of databases on different computers. If the deployment is centralized, this section can be skipped

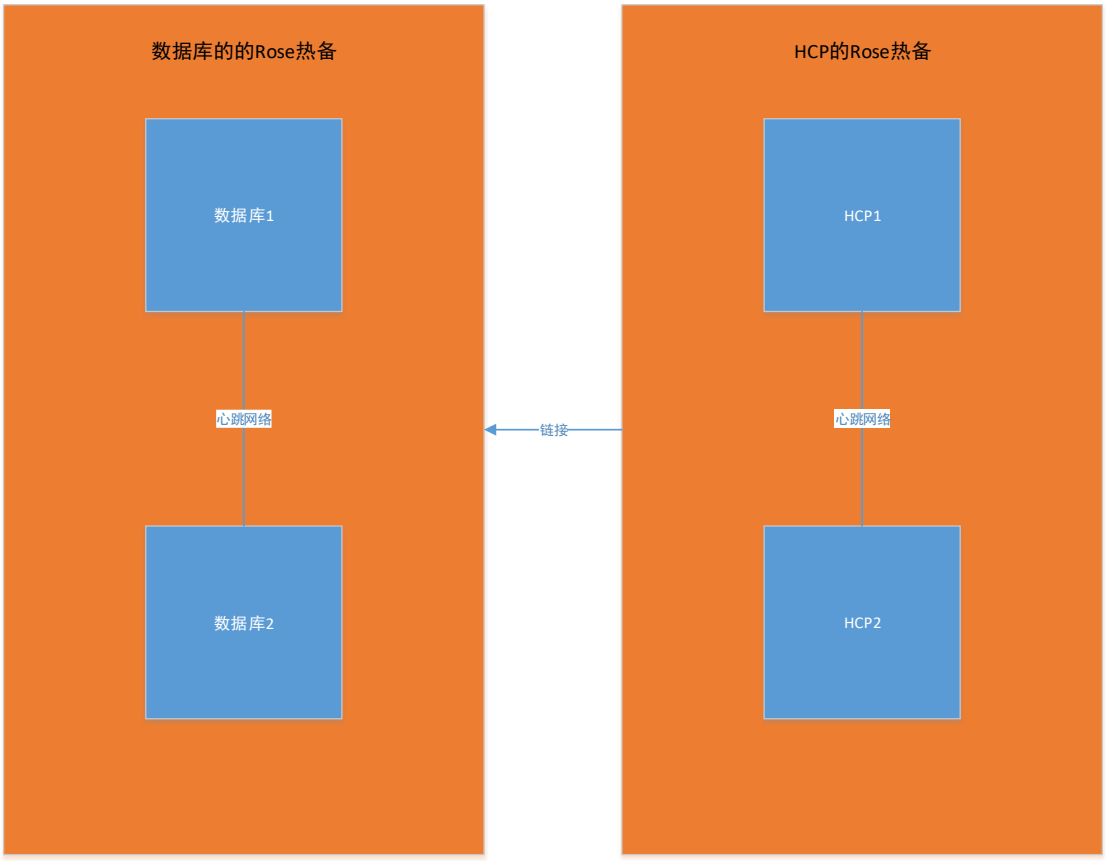
[Note]: Different machine deployment means that the database and HCP

programs are installed on different servers, and the database server and HCP are connected through the network. Other configurations are the same as centralized deployment. The two scenarios of different machine deployment with Rose are as follows:

- **When the database is not hot standby, it is shown as follows:**



- **The hot standby deployment of the database is also shown in the following figure:**



2.3.2.1 Platform installation and deployment

- **When the database is not hot standby:**
  - ✓ At least three servers are required, two of which are used as active and standby machines to install HCP, and the image hot standby is selected, as shown above **Centralized deployment**, and execute the installation configuration of Rose and HCP image synchronization configuration.
  - ✓ The other server acts as the database service manager. When installing HCP, select the following:

- **When the database is also hot standby:**

  Then execute the installation configuration of RoseReplcator Plus and HCP image synchronization configuration.Note that when setting binding data, you only need to check BeeAgent and PGData.

2.3.2.2 Switch to different machine deployment

- Bring Rose
- Refer to the document HCP Database Distributed Deployment

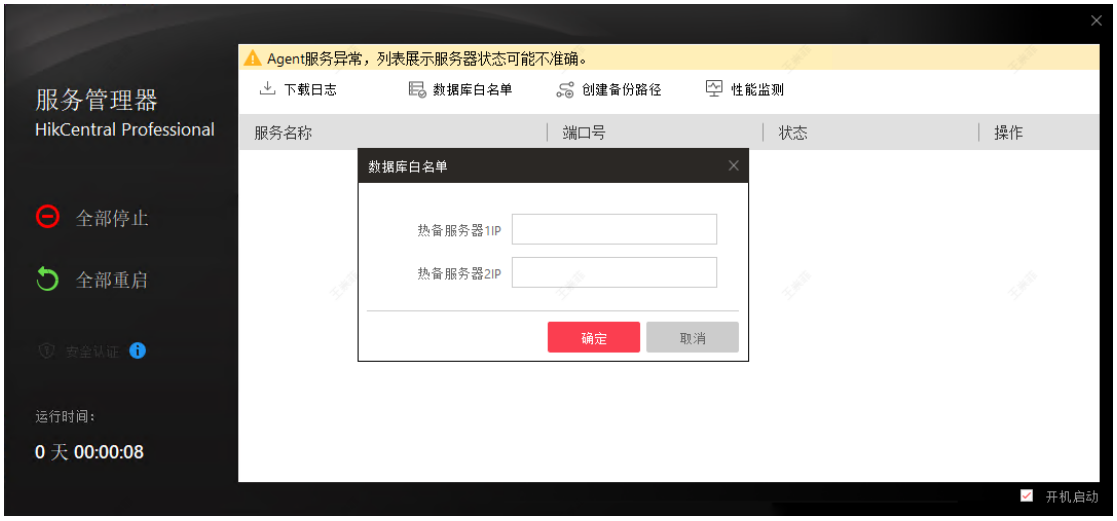
  The link is as follows:

  https://hiknow.hikvision.com.cn/kms/kms/multidoc/kms_multidoc_knowledge/kmsMultidocKnowledge.do?method=view&fdId=17e0fd7668bb70e348de2ba43e499e2e

  [Note]:

  【1】When filling in the database whitelist, you need to fill in two IP addresses of the active and standby HCPs.

  【2】 If the database is also hot standby, HCP should fill in the virtual IP of the database hot standby when filling in the database IP.



2.4 SAC Installation Guide

This step can be adjusted if SAC is not required.

Install the SAC service on the two servers respectively. Note that the hot standby mode should be selected for installation. If rose is hot standby before installation, it must be taken out before installation. After installation, you can try to visit XX.XX.XX.XX.XX: 9012 in the local browser to see whether you can enter the sac web page. If you can enter, the installation is successful. The first login password is HIK88075998.

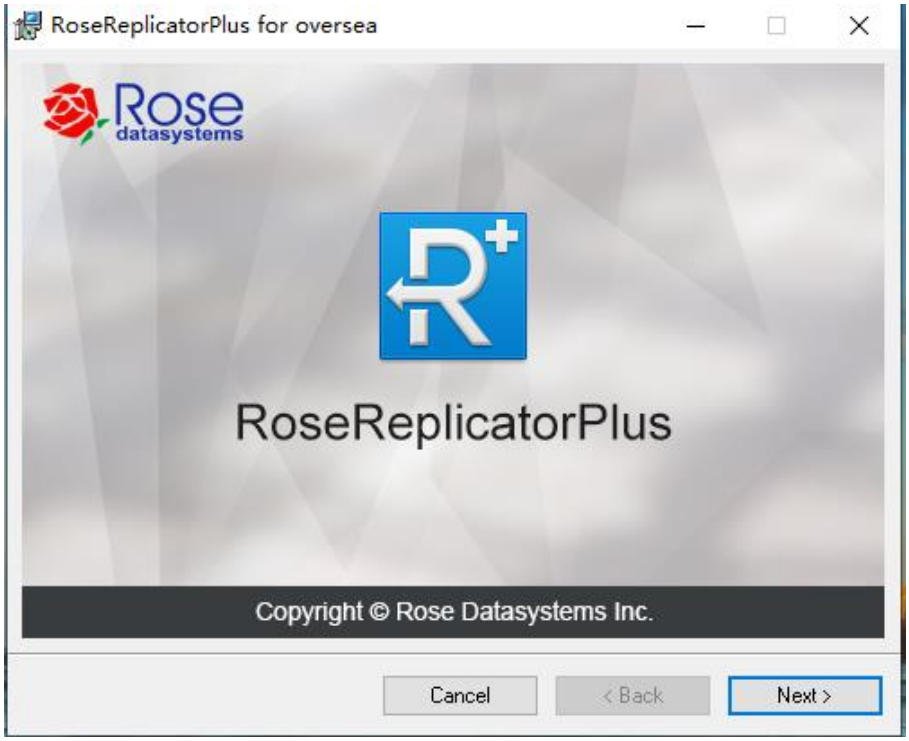
[Note]: In the case of hot standby, HCP needs to use virtual IP when adding SAC.

2.5 Installation and configuration of RoseReplcator Plus

2.5.1 Installation of Rose software

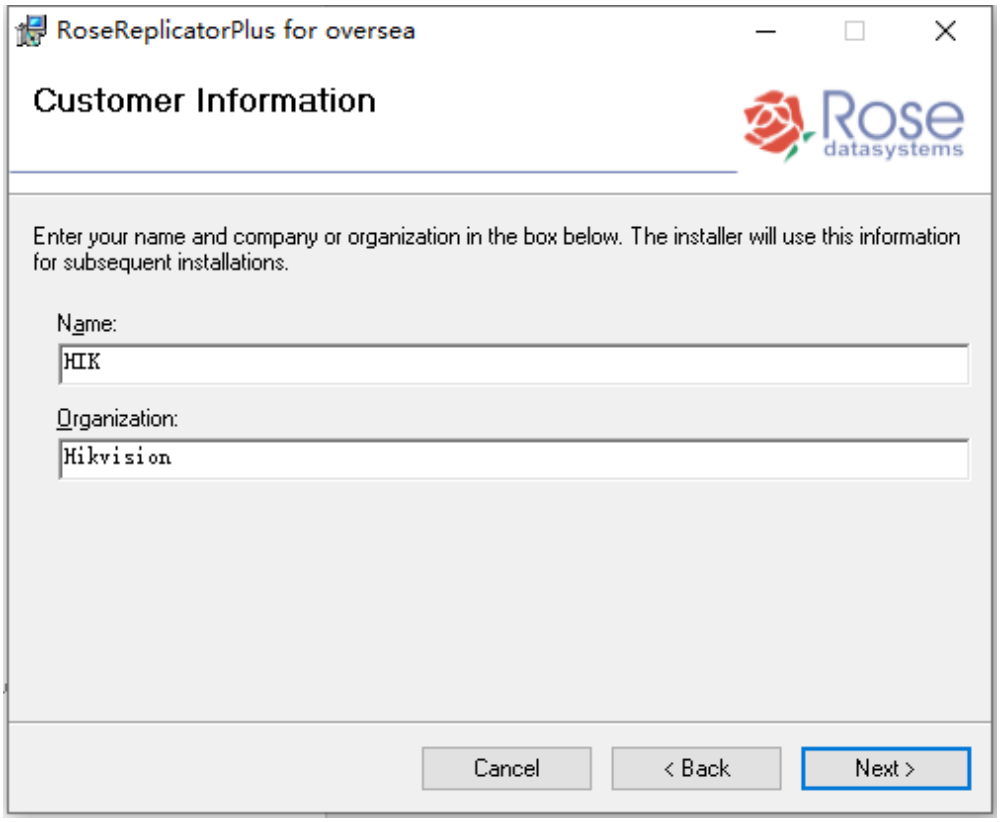
Install Rose in the same way on the main engine and the standby engine, and the specific steps are as follows:

Run the installation package with administrator privileges, click Next



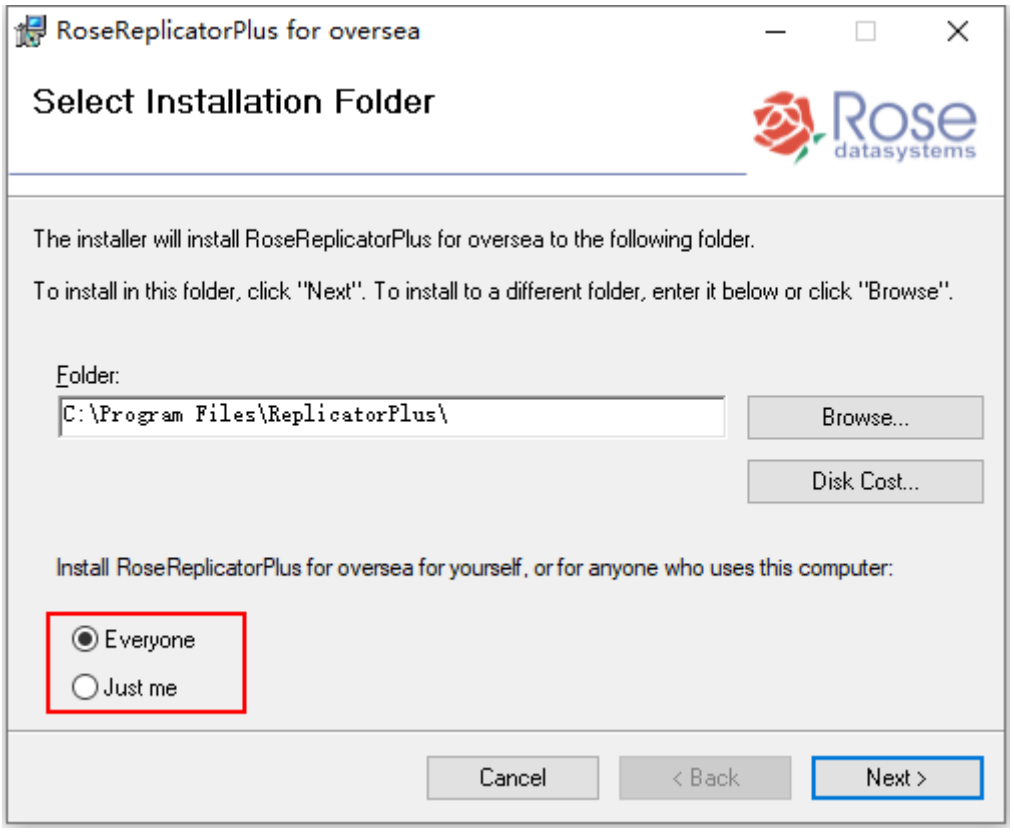
After entering this interface, continue to click next

Enter the installation wizard and fill in the user name and company name



You can customize the path for selection, but it is recommended to keep the default.

Anyone who uses a computer can use Rose

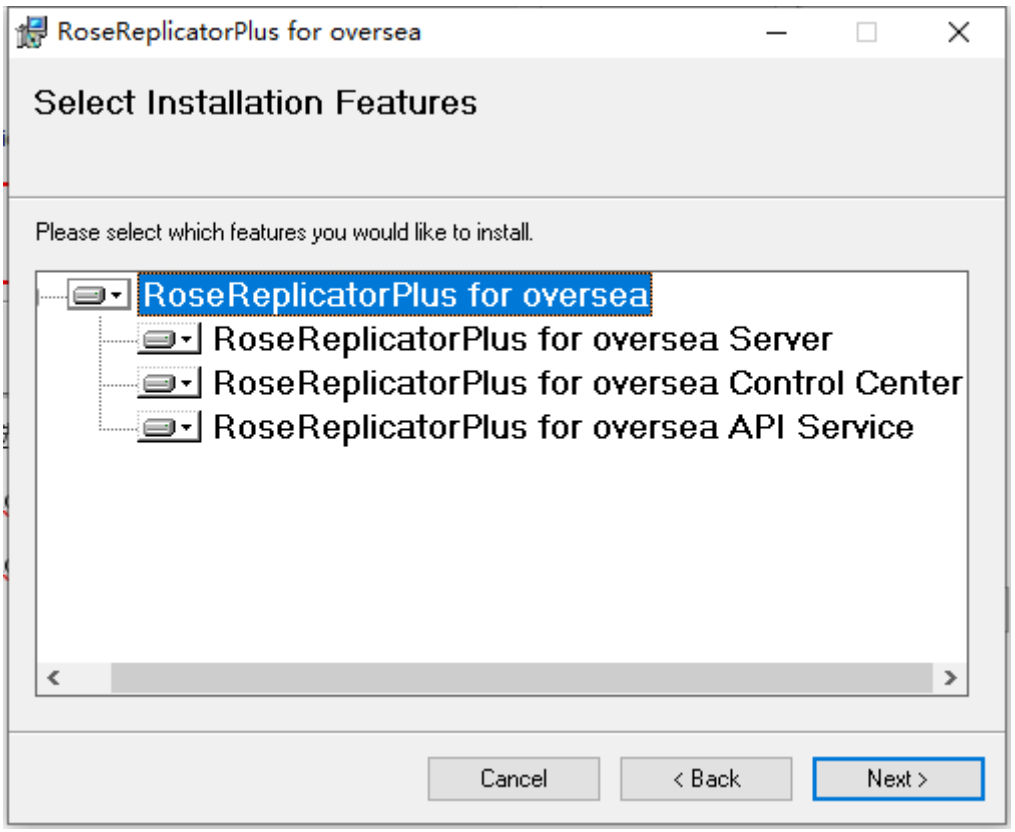


Select the software modules to install according to the actual needs: (It is recommended to install them)

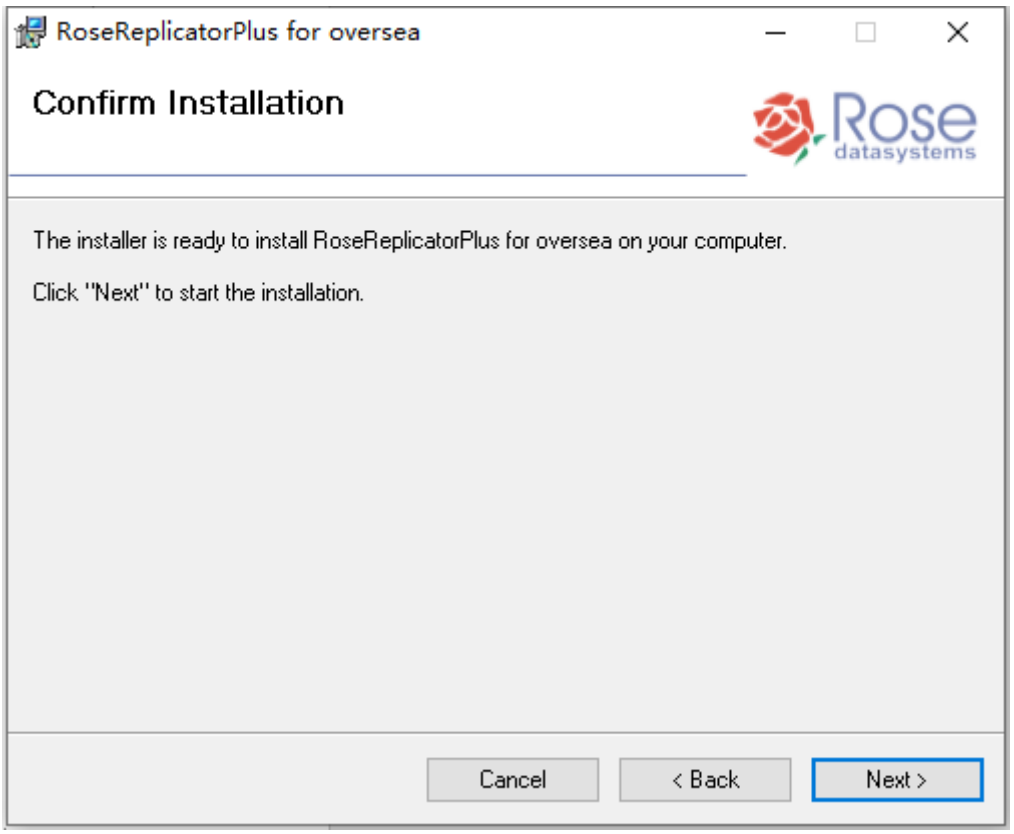
a) **The RoseReplicatorPlus for over sea Server module provides Rose services and needs to be installed on the host and standby machines.**

b) **The RoseReplicatorPlus for overseas Control Center module is a configuration client. It is recommended that both the active and standby computers install the client.**

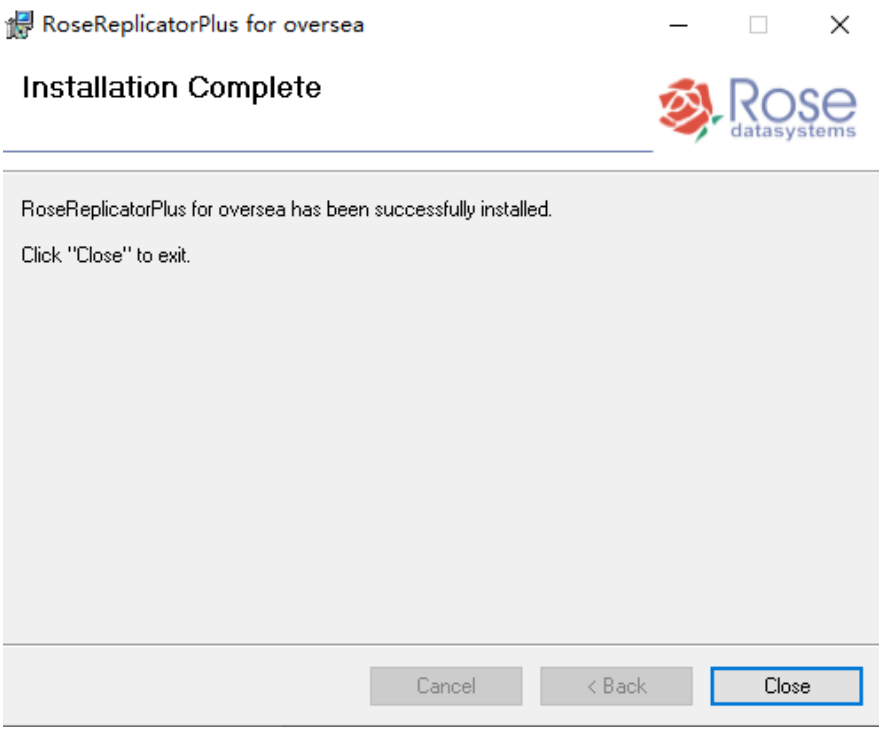
c) The RoseReplicatorPlus for over sea API service module serves as an API interface. It is recommended that both the active and standby machines be installed



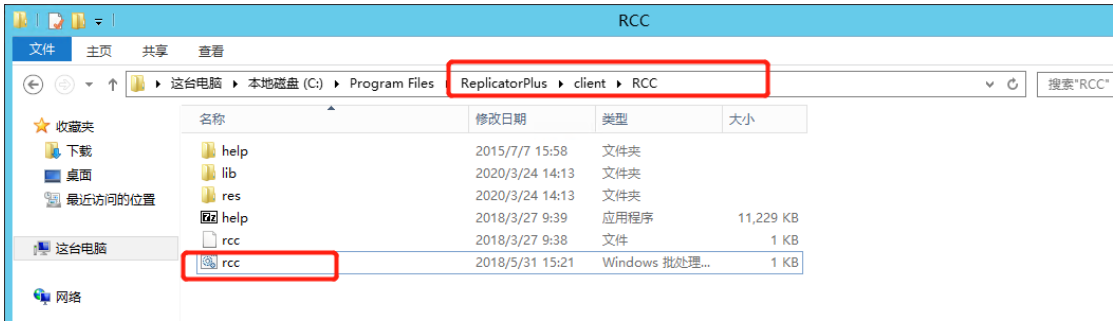
Click Next to confirm the installation

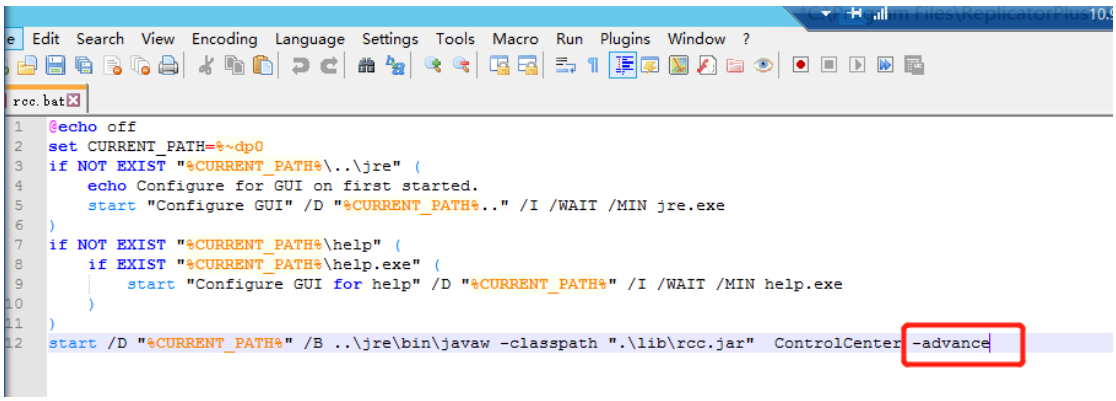


After reading the progress bar, click Close to complete the software installation



[Note]: Try to use RoseReplicatorPlus_for_Oversea-5.8.0-1783.22123-Windows-x64 and above. If you are using an old version of Rose, you need to find the X: client RCC folder in the installation path of the Rose software after the installation is completed, right click to open rcc.bat, and add "- advance" at the end of the last line (the content to be added is a character in double quotation marks, with a space at the front). This is to open unconditional takeover, in this way, when the files of the two machines are inconsistent, an exception occurs, and the standby machine can be successfully switched. You need to modify the files in the rose installation directory of the active and standby machines respectively.

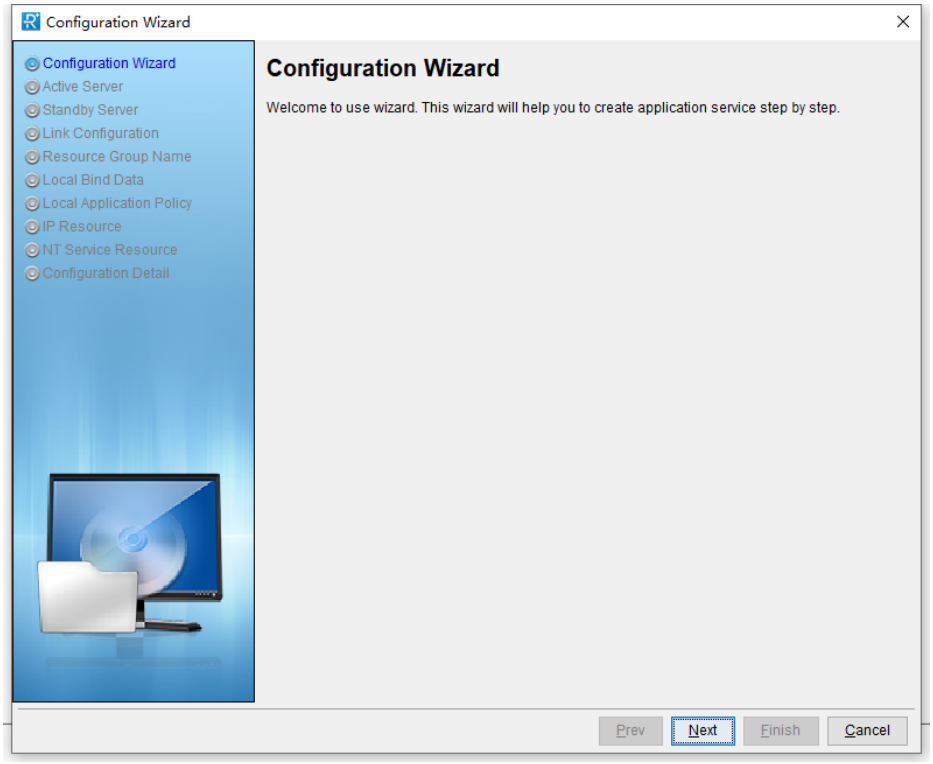




2.5.2 Configuring RoseReplicatorPlus

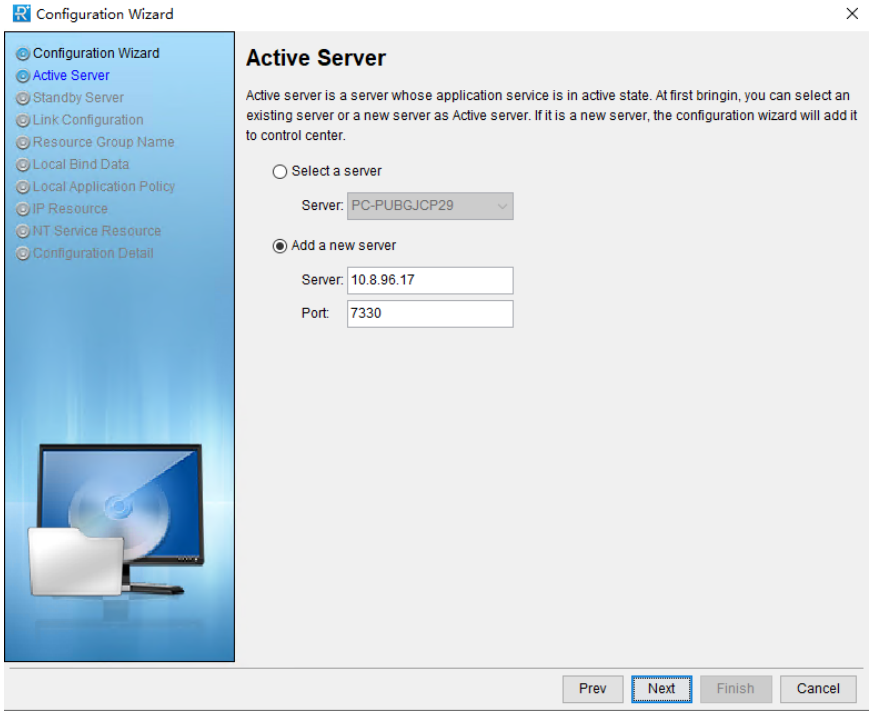
2.5.2.1 Network Configuration of RoseReplicatorPlus

Run the Rose client, as shown in the figure, and the configuration wizard will pop up automatically. Follow the prompts to start configuring Rose



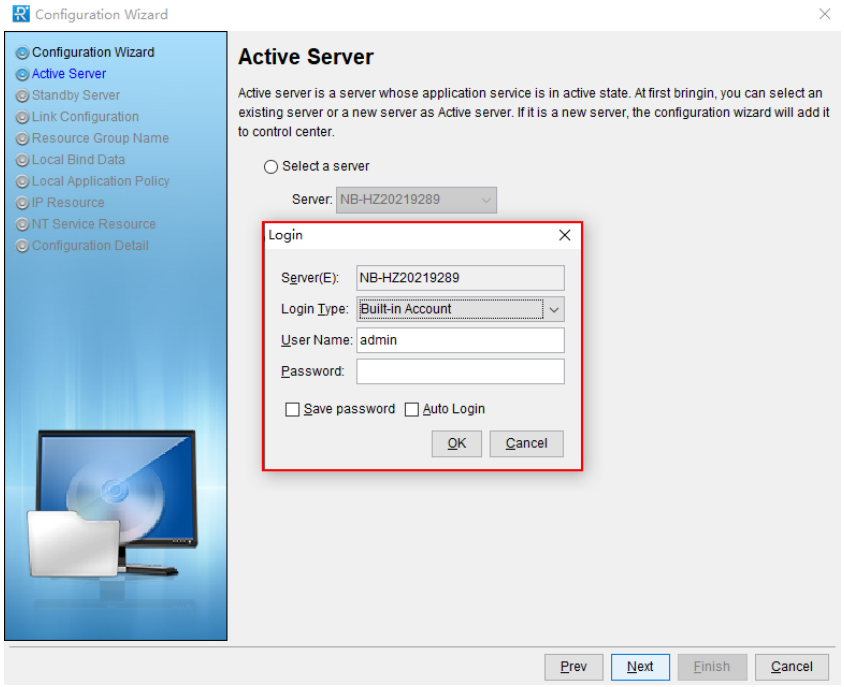
Select Add a new Server in the Active Server interface,

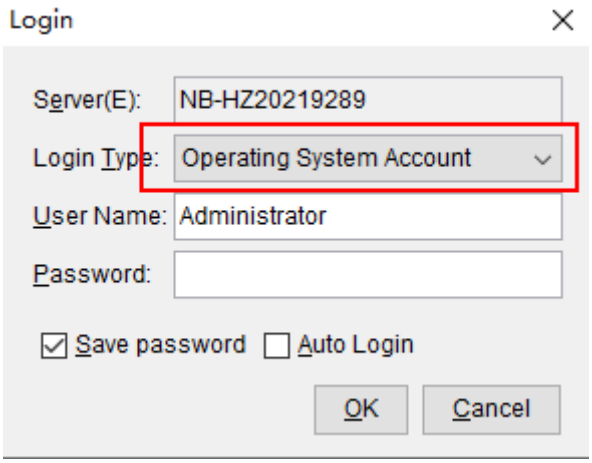
Then fill in the host IP (e.g. 10.8.96.17) and Rose's default communication port (i.e. 7330) and click Next to enter the next step



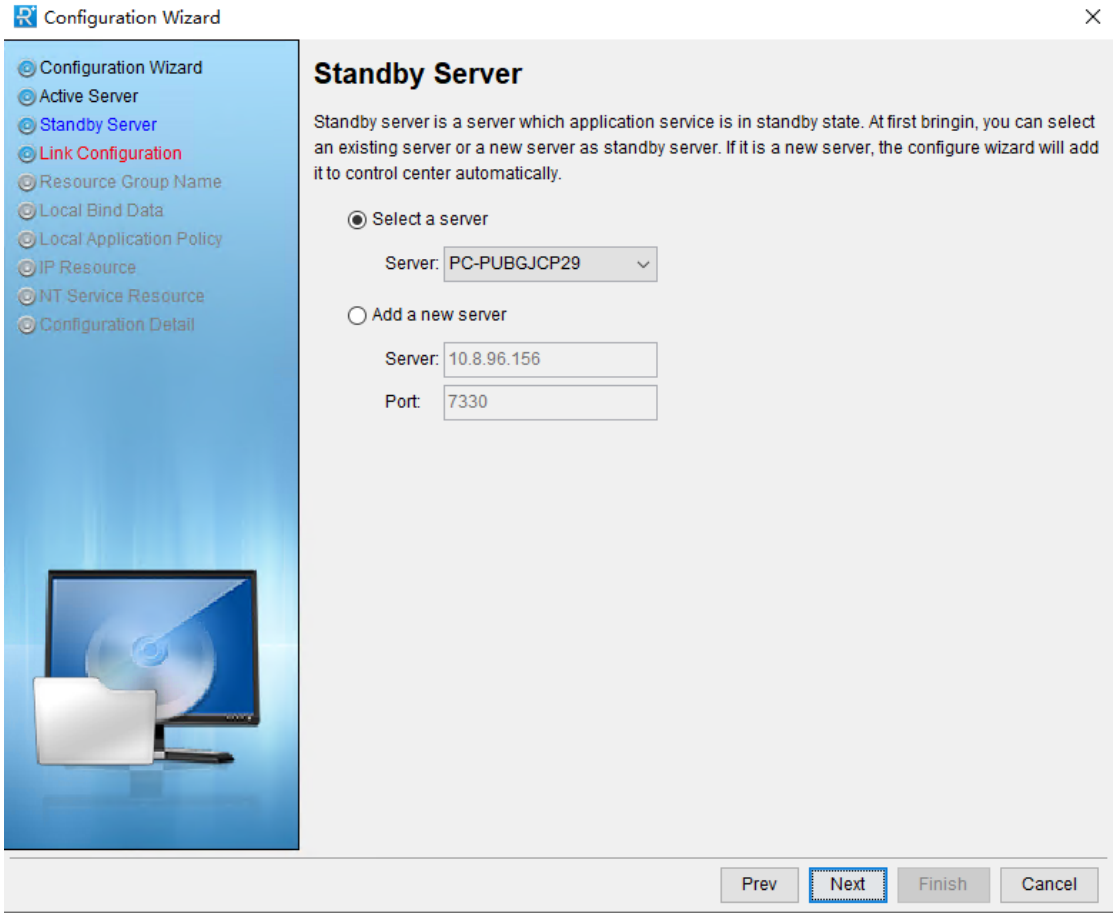
Select the login account in the login window, and select Rose's built-in account: Build in Account by default (user name: admin initial password: admin if you need to modify, please refer to Rose Build in Account Password Modification)

If you select Operating System Account, that is, the operating system user, the user name and password are the server account password. Click OK to complete the login.(You can customize whether to save password and log in automatically)





After successfully logging in, go to the Standby Server page (the same as the host configuration interface), select Add a new Server, fill in the standby IP (for example, 10.8.96.156) and Rose's default communication port (that is, 7330), and click Next to enter the next step:



The login interface here is the same as that of the host. You can select the default account or the account of the operating system:

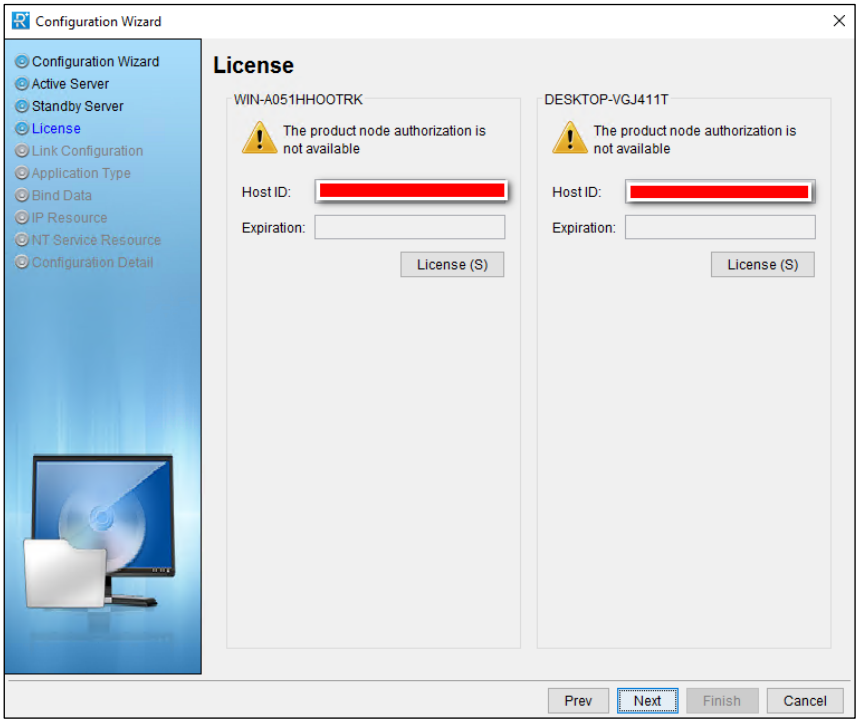
If you select the default account (**username: admin initial password; admin**)

If you select an operating system account (**the user name and password are the system account password of the server**)

Click OK to complete the standby login

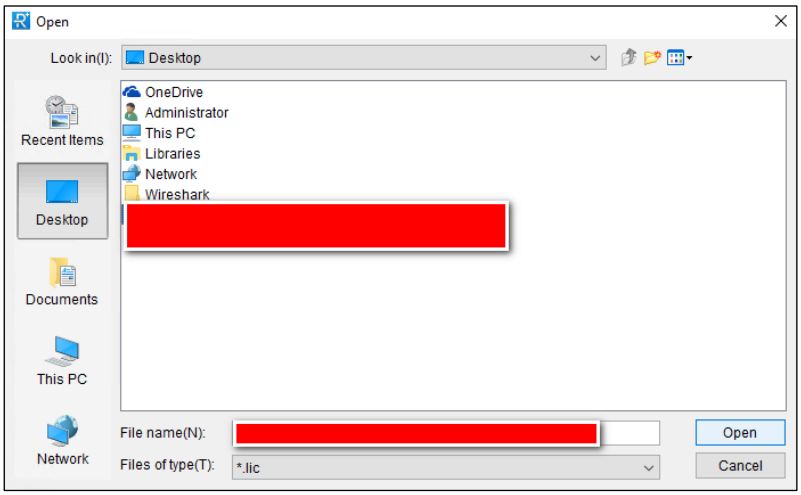
2.5.2.2 Rose software authorization activation

In the project, the hardware dongle is usually used to activate the server, and the dongle is inserted into the USB interface of the active and standby computers. If the indicator lights up normally, the step of setting the license will not appear during software configuration, for the test project or if the hardware dongle has not been obtained, you can obtain the host ID of the two hosts and send an email to the rose manufacturer's contact person（wei.ye@rosedata.com）Obtain temporary authorization (valid for 1 month)

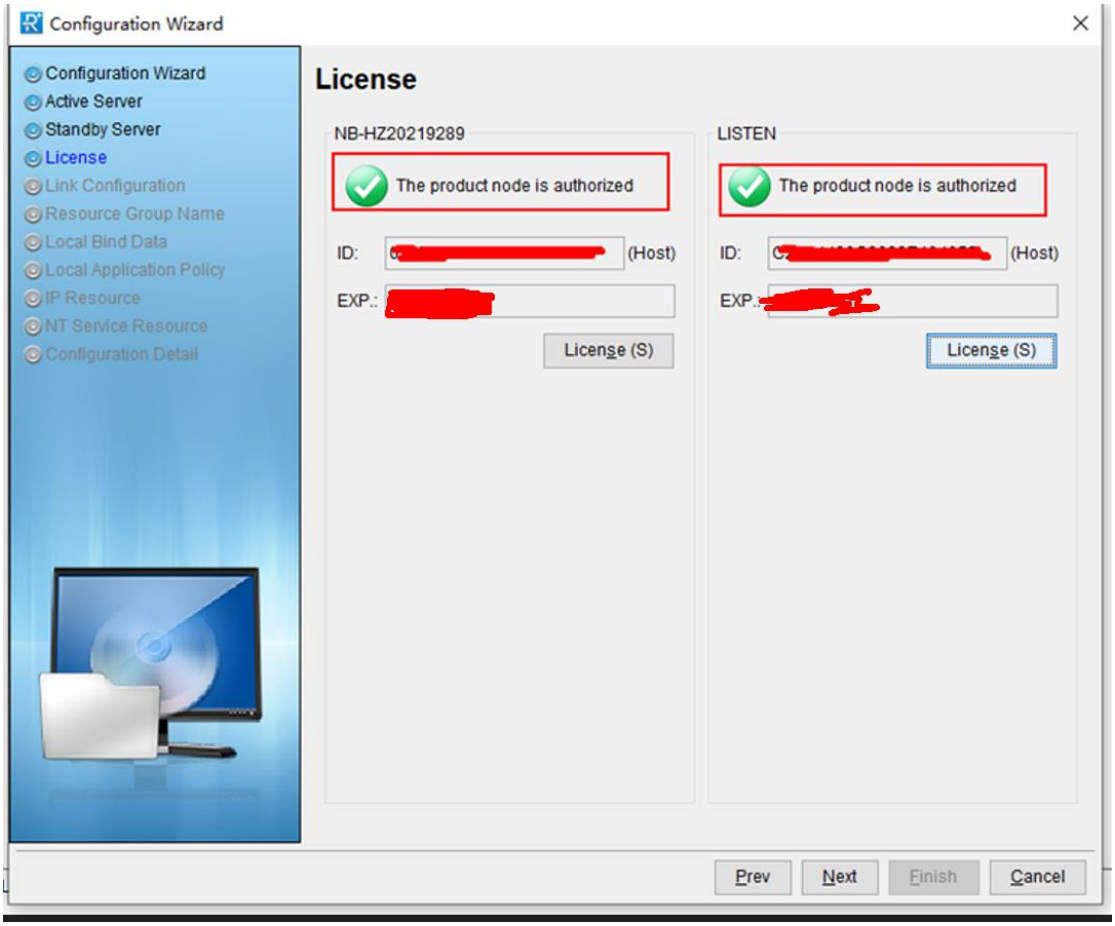


After obtaining two licenses, please activate the HOST IDs of the active and standby machines respectively according to the activation method shown below.

Click "License (S)", select the Rose License file and import it to complete the activation of the active and standby machines, and click next

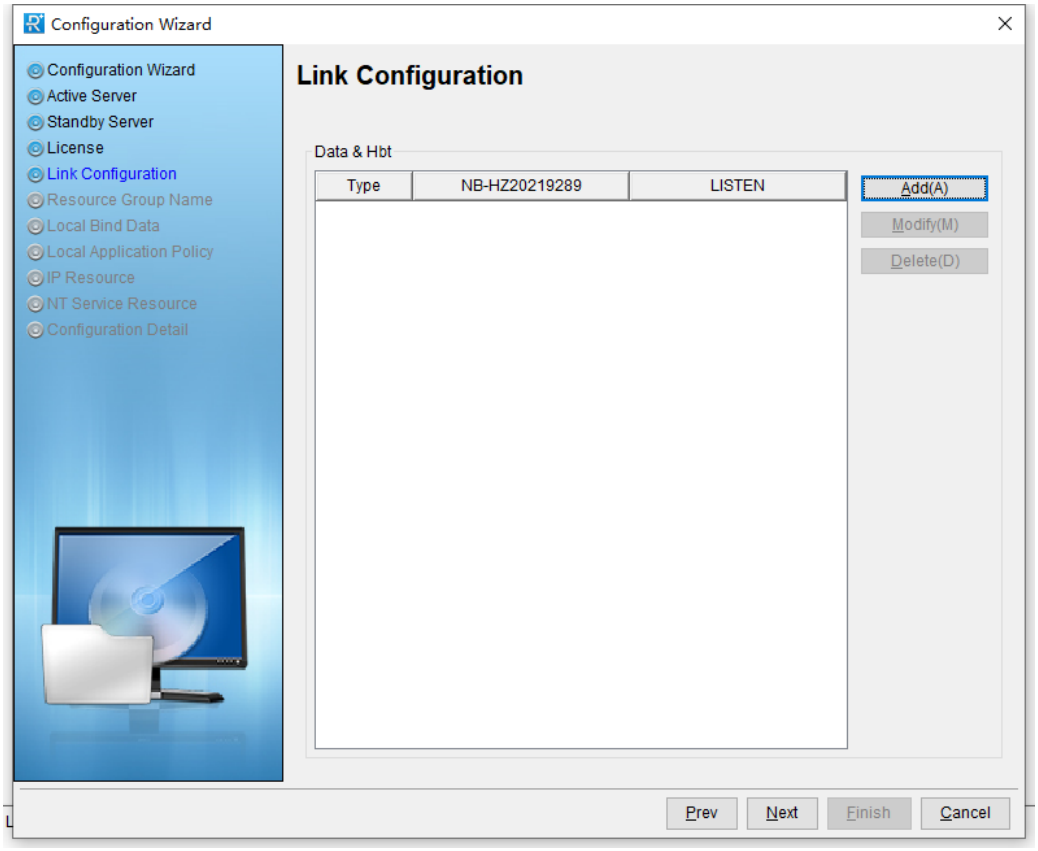


The expiration time will be displayed after the activation is successful, as shown in the figure

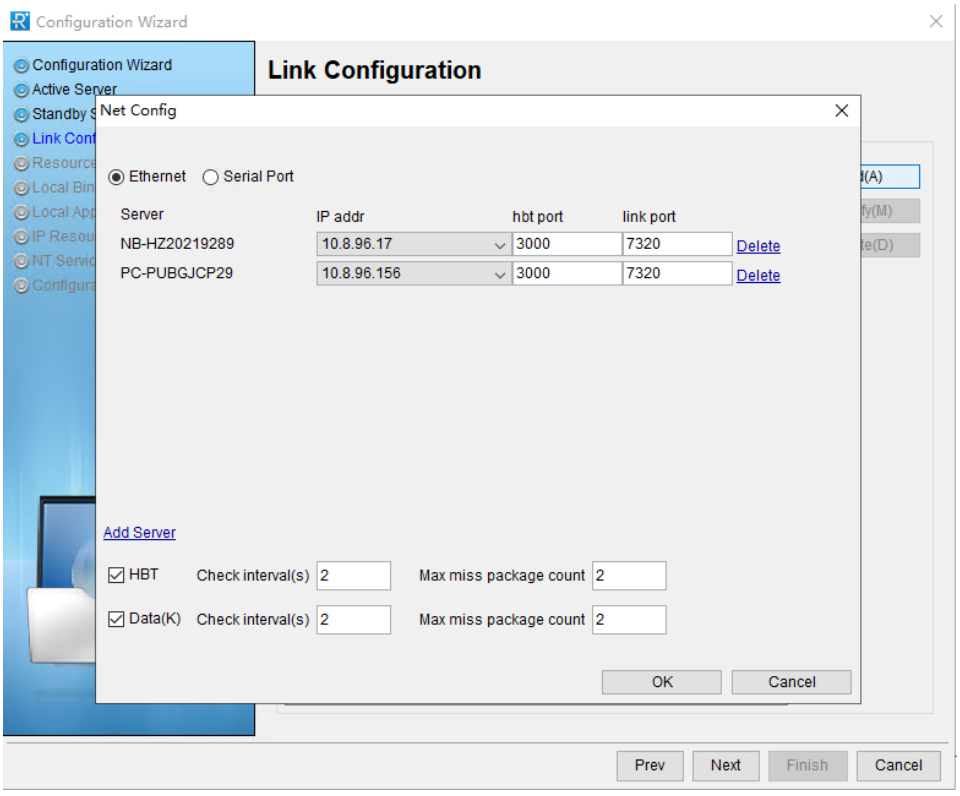


2.5.2.3 Configuring Links

Click Next to enter the configuration link interface



Click Add to add a link



[Note]:

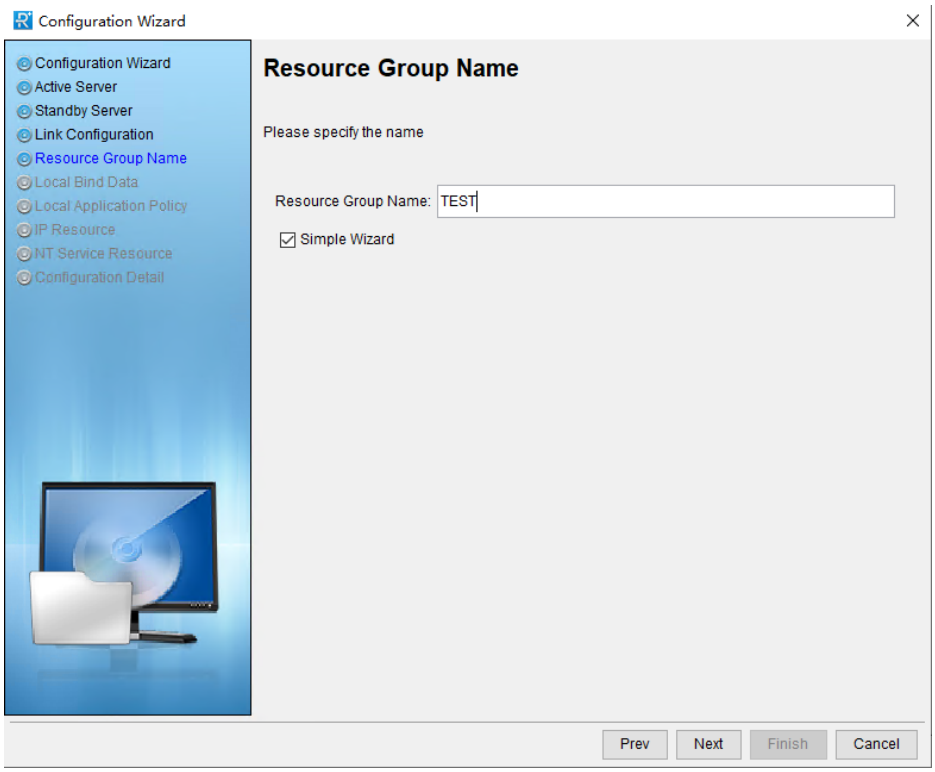
- ✓ HBT: network as heartbeat communication
- ✓ Data: network as data replication link
- ✓ If there are multiple pairs of heartbeat &data network cards, please add them all
- ✓ Configure two types: local data; local - Heartbeat
- ✓ Link configuration suggestions: separate direct network; The IP address is a private network segment; Priority is given to direct network configuration

2.5.2.4 Configure Resource Group Name

Resource Group Name: specifies the name of the created application service resource. The name can be specified arbitrarily, but two application services with the same name cannot exist in the same cluster.

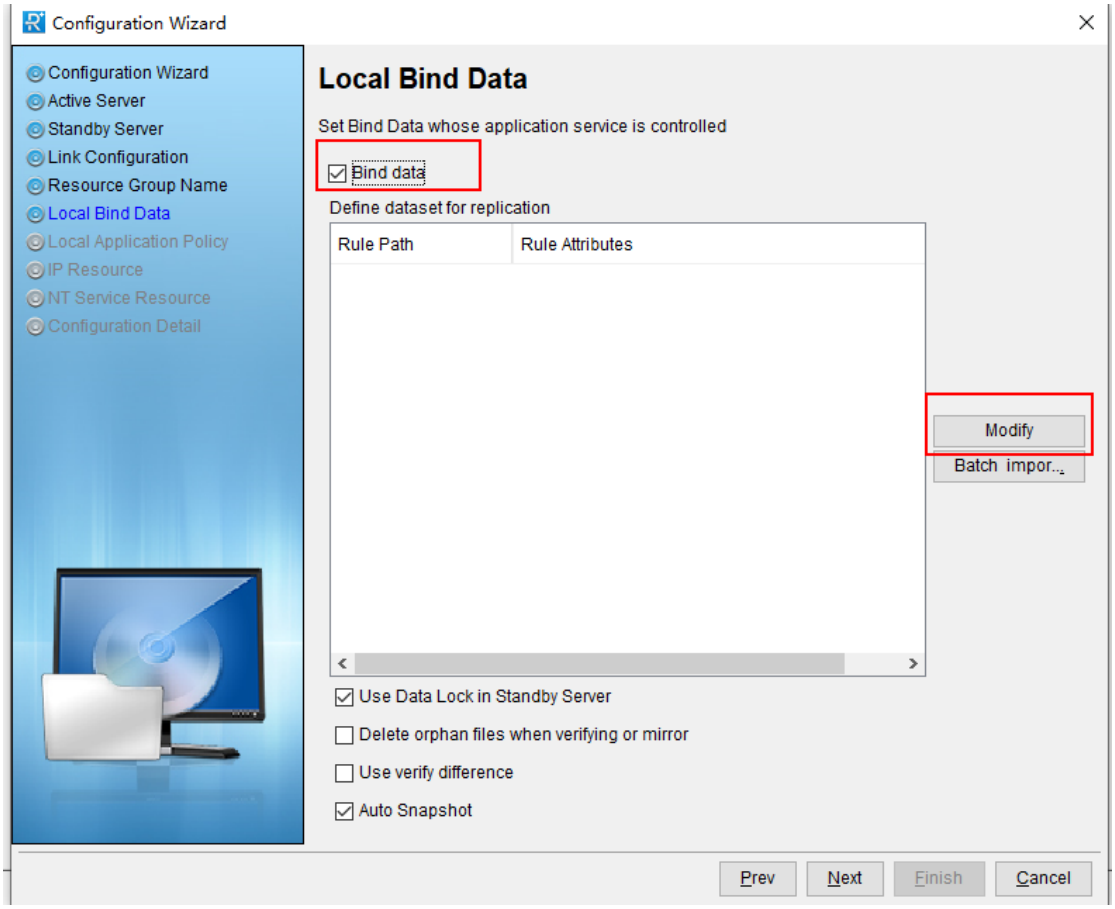
User defined resource group name, others remain default

Simple Wizard: Simplify the wizard. Check this option to hide arbitration disk, shared disk, file share, process, script and other resources in the wizard configuration



2.5.2.5 Setting Binding Data

Keep Bind data checked and click Modify

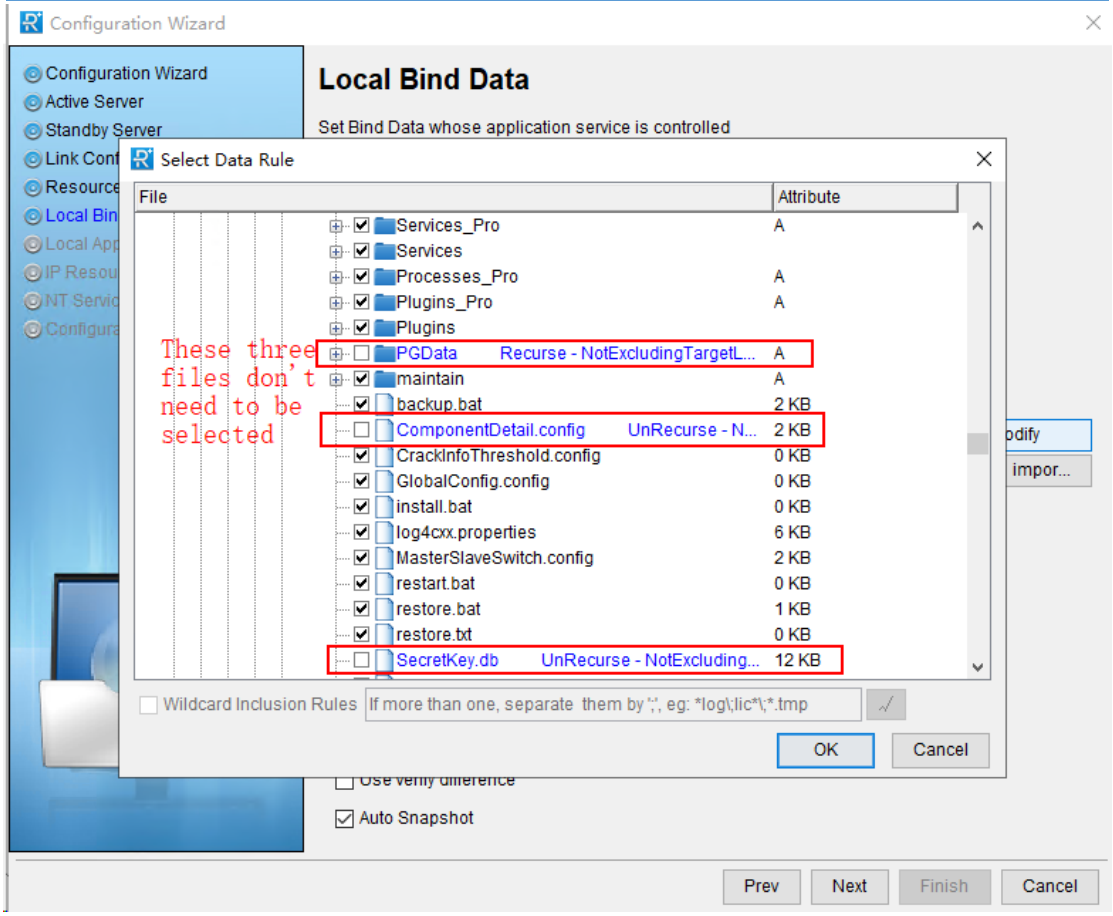


Configure the dataset to be synchronized for HCP 2.4

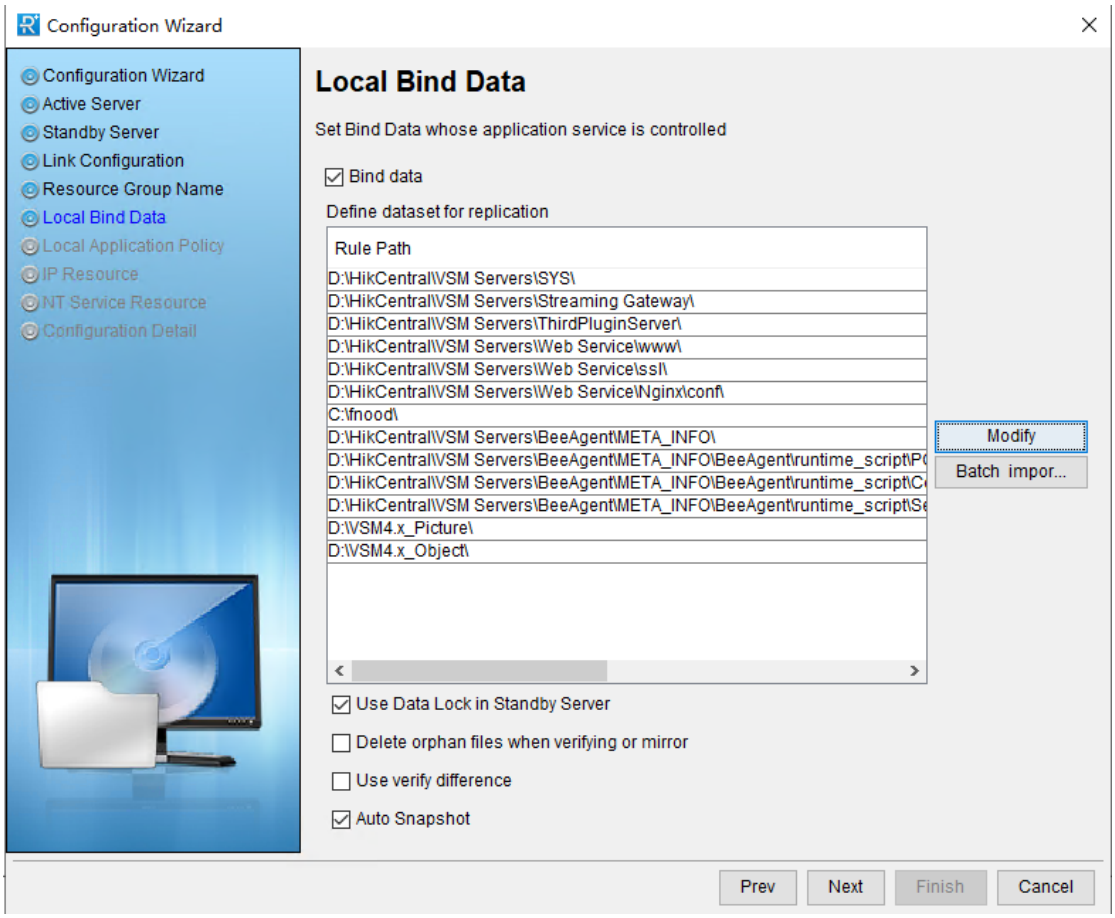
The specific synchronization dataset path is:

Folder Name	Database or Configuration Path
SYS	…\HikCentral\VSM Servers\SYS
Streaming Gateway	…\HikCentral\VSM Servers\Streaming Gateway
ThirdPluginServer	…\HikCentral\VSM Servers\ThirdPluginServer
www	…\HikCentral\VSM Servers\Web Service\www
ssl	…\HikCentral\VSM Servers\Web Service\ssl
BeeAgent	…\HikCentral\VSM Servers\BeeAgent\META_INFO check Note: The following directories and files are not checked: …\HikCentral\VSM Servers\BeeAgent\META_INFO\BeeAgent\runtime_script \PGData …\HikCentral\VSM Servers\BeeAgent\META_INFO\ BeeAge

	nt\ runtime_script \ComponentDetail.config …\HikCentral\VSM Servers\BeeAgent\META_INFO\ BeeAgent\ runtime_script \Secertkey.db
Nginx	HikCentral\VSM Servers\Web Service\Nginx\conf
fnood	C:\fnood
Local storage (picture storage, object storage)	According to the configuration in the system configuration, for example, in disk D: D: VSM4. x_Object;D:\VSM4.x_Picture (If you have configured other drive letters, you should also configure them if you want to see the records)



Select the above datasets to be synchronized, as shown in the figure

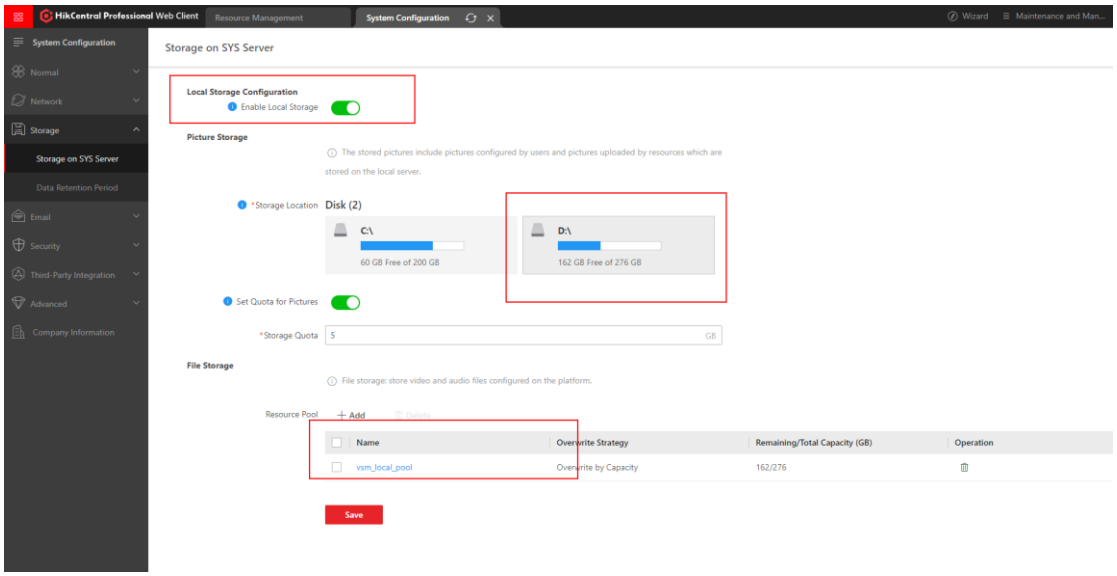


[Note]:

1) Please select the above folders separately. Do not check the entire "VSM Servers" folder at one time.
2) After the platform is installed and started, a local storage folder will be generated on the disk with the largest free space except the system disk. At this time, you need to set the VSM4. x_Picture and VSM4. x_The object folder is also added to the synchronization dataset

   If the drive letters of the image storage folders in the active and standby computers are different, go to the local login platform and modify them to the same drive letters in the System Storage Storage on SYS Server.

   If you add a customized storage resource pool to another disk, you also need to add the VSM4. x_The object folder is added to the synchronization dataset.



3) Starting from HCP 2.3, Rose does not need to check PGData when deploying data synchronization sets

4) If SAC component service is installed, select the folder that needs to be fully synchronized on the two servers. Generally, you can select two component directories: StorageAccessComponent sac bin sam conf and StorageAccessComponent mdb data.

5) If OpenAPI service is installed and HCP and OpenAPI are on the same server (to be installed as administrator), the following data sets need to be synchronized during hot standby

Folder Name	Database or Configuration Path
artemis	…\HikCentral\VSM Servers\OpenAPI\artemis\bin\artemis
redis	…\HikCentral\VSM Servers\OpenAPI\redis
minio	. HikCentral VSM Servers OpenAPI minio All folders except logs and bin minio logs
OpenDataServer	…\HikCentral\VSM Servers\OpenAPI\OpenDataServer

6) When OpenAPI and HCP are not deployed on the same server, hot standby is usually not required. If hot standby is required, you need to install rose to hot standby OpenAPI; If you modify the SK information, you need to modify the SK on the watchdog interface on the active and standby computers, or you may not be

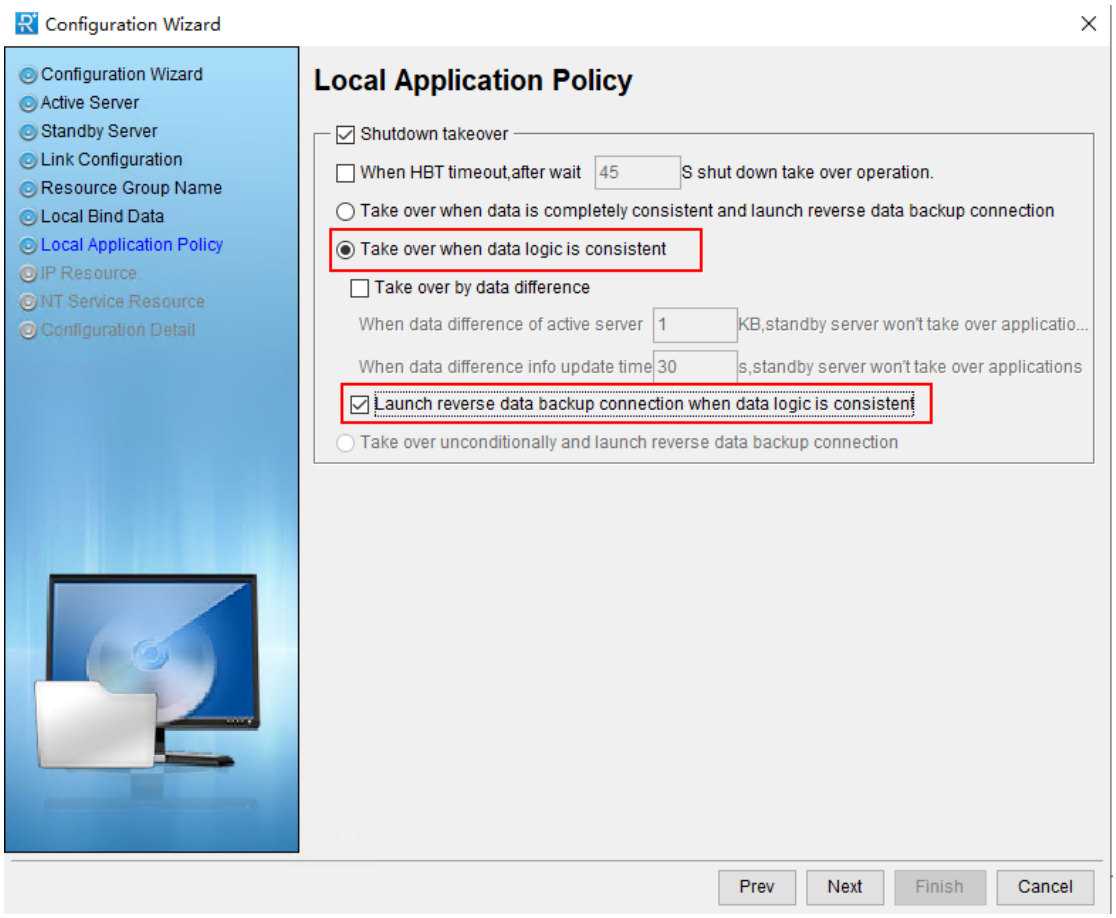
able to add OpenAPI

Folder Name	Database or Configuration Path
artemis	. HikCentral VSM Servers OpenAPI artemis bin artemis (remove artemis portal and artemis web from the bin folder of the artemis subdirectory)
redis	…\HikCentral\VSM Servers\OpenAPI\redis
minio	All folders except logs under. HikCentral VSM Servers OpenAPI minio
OpenDataServer	…\HikCentral\VSM Servers\OpenAPI\OpenDataServer

7) In HCP 2.3 and later versions, the watchdog service and the watchdog interface are started at the same time in the active and standby servers. If the synchronization of relevant binary and other data under the service path is checked when configuring data synchronization, Rose will force kill the standby watchdog program to ensure normal data synchronization. Therefore, BeeAgent data synchronization must be configured in strict accordance with the policies in data synchronization, otherwise the watchdog program will be closed abnormally.

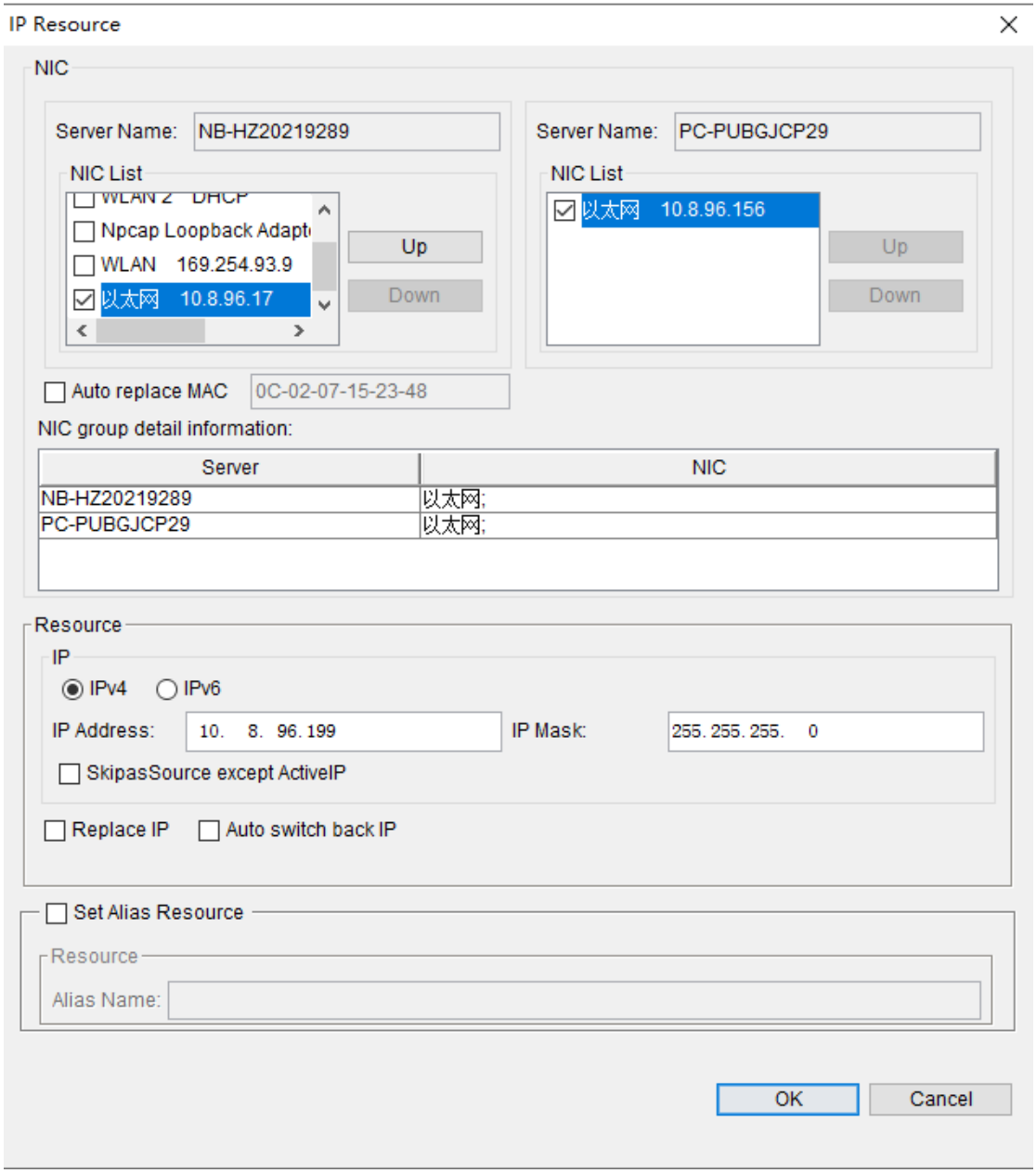
2.5.2.6 Setting Local Application Strategy

In the Policy interface, select the 'Take over' when data logic is consistent option, and enable the Launch reverse data backup connection when data logic is consistent option. Make sure that after the host goes down, the standby machine takes over the host's services, and new data is generated during the service operation. After the host returns to normal operation, the standby machine can synchronize the new data to the host. If not checked, the data cannot be synchronized back.



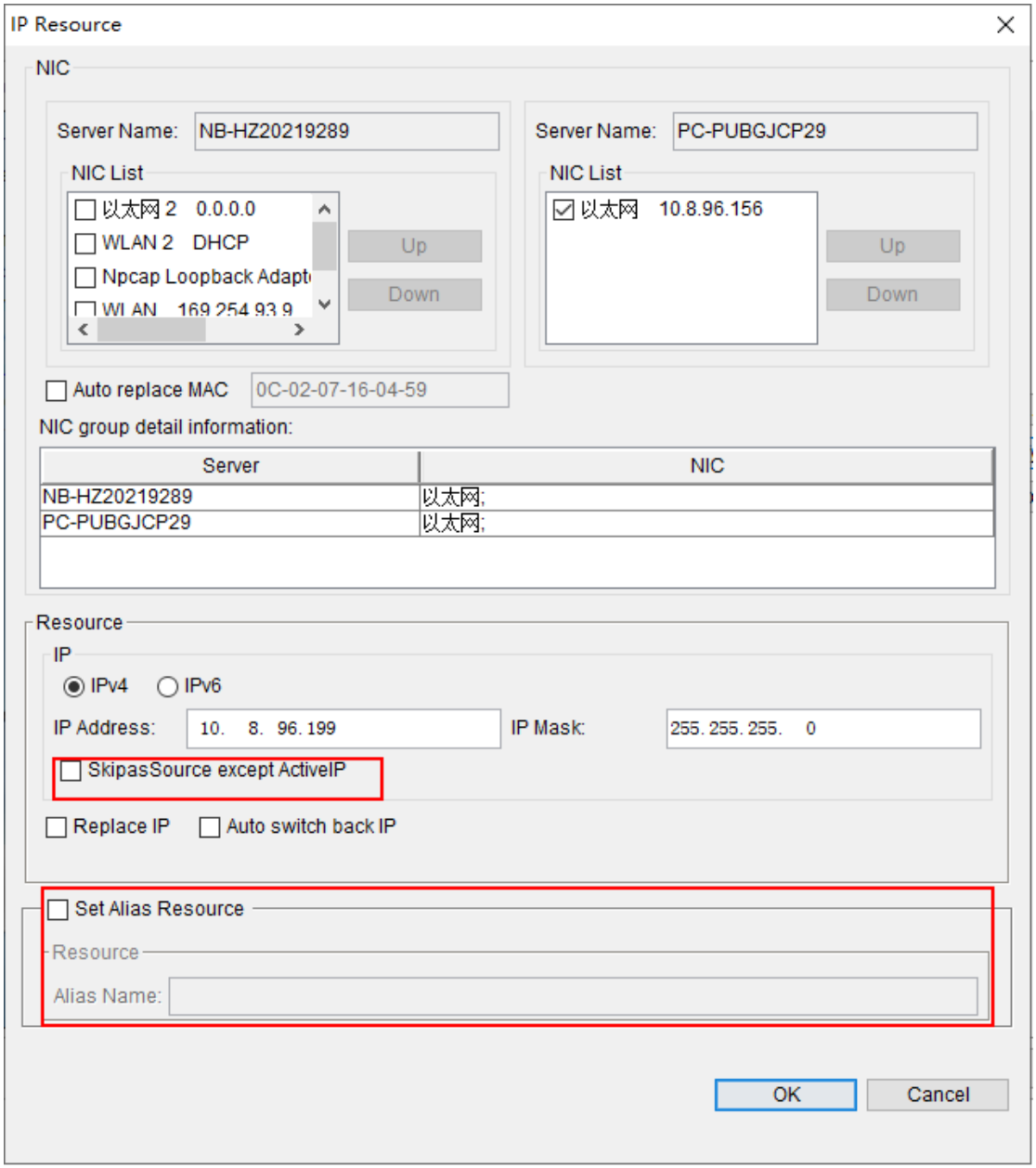
2.5.2.7 Setting IP resources

- Click Next to enter the interface for setting IP resources
- Select the service IP of the host and standby machine, namely 10.8.96.17 and 10.8.96.156, and then set the active IP in the Resource (please fill in the unused IP address to ensure that the IP address does not conflict), that is, the virtual IP (used for external clients to access HCPs)
- Click Add to add



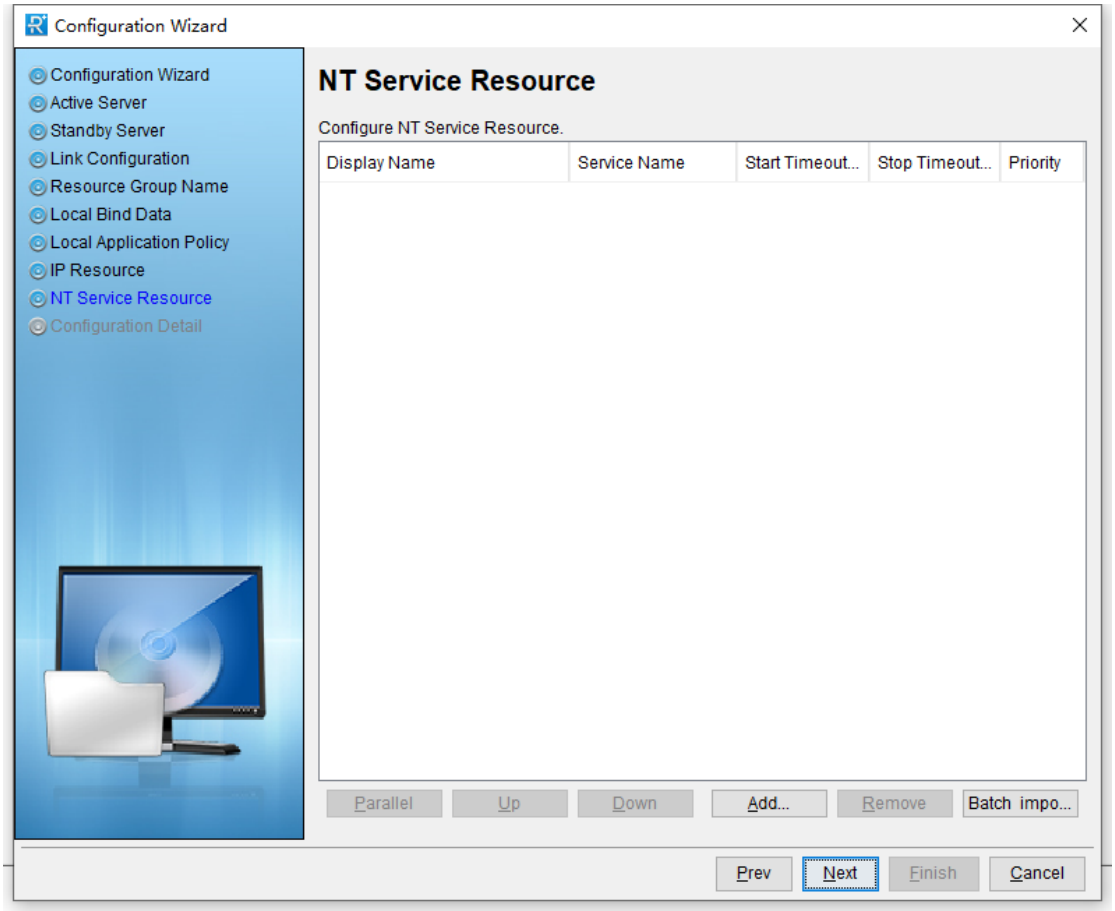
[Note]: The virtual IP and the service IP of the active and standby machines must be the same network segment. Before setting, make sure that the virtual IP is not used to avoid IP address conflicts

Only the option of "Only send packets using the active IP as the source address" is selected here, which is configured according to the actual environment requirements. The virtual Mac address, replacement IP address and alias are configured according to the actual situation.



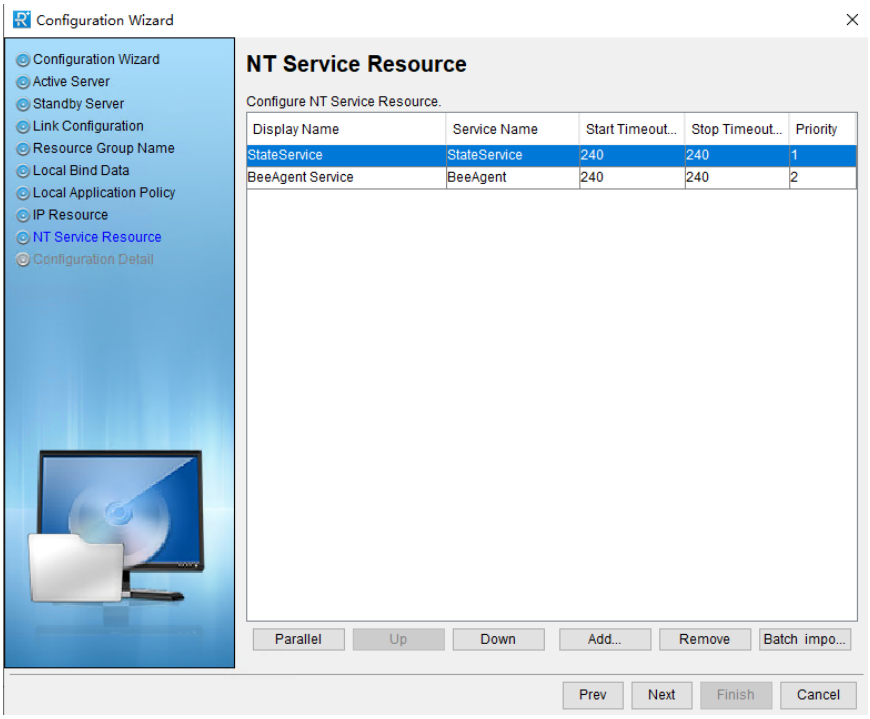
2.5.2.8 Setting NT Service

Continue to click ‘Next’ to enter the NT service setting interface



Click Add, add NT services according to the following list, and then click OK

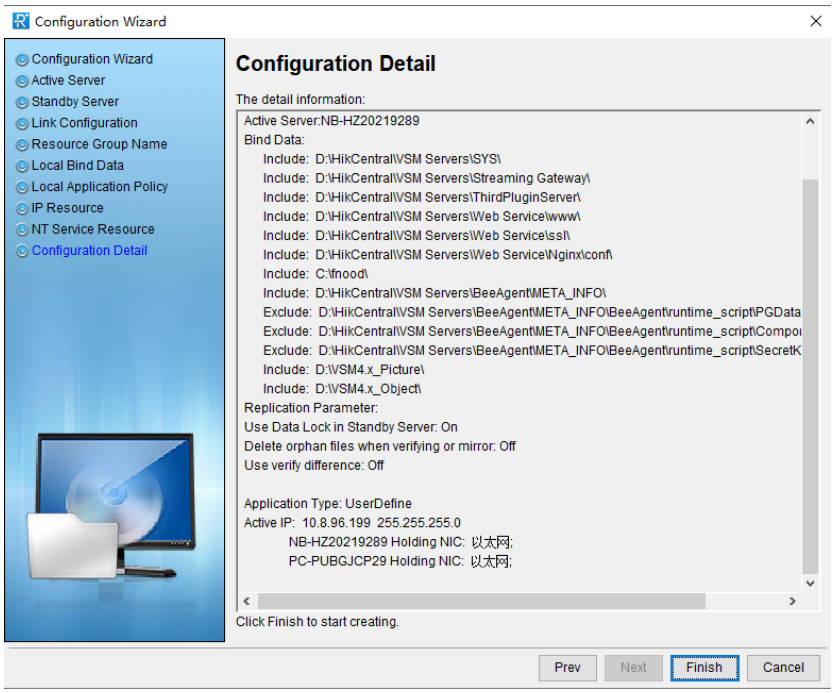
NT Service Name	Priority	remarks
StateService	1	
BeeAgent Service	2	Configure the active and standby machines to start at the same time, and stop at the same time when they are brought out



You can select it here and adjust the order according to the actual priority. Here, the priority of StateService is higher.

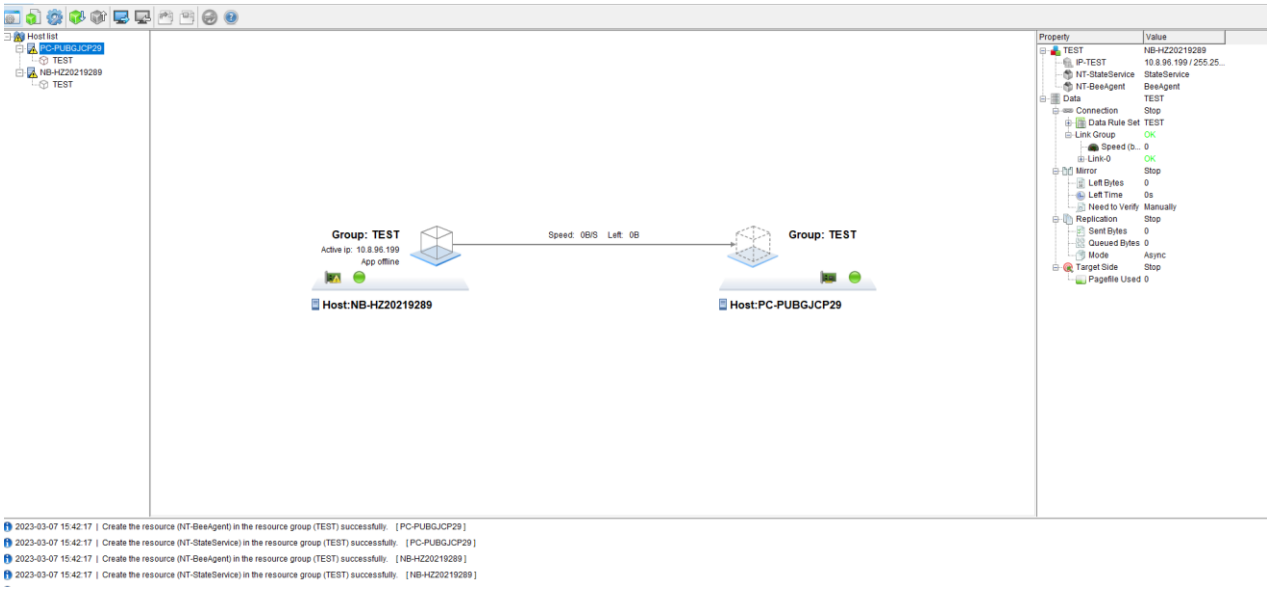
2.5.2.9 Configuration details

After configuring the NT service, click Next to go to the configuration details interface, where you can see the configured details. Please check whether they are correct, and then click Finish to complete the configuration.

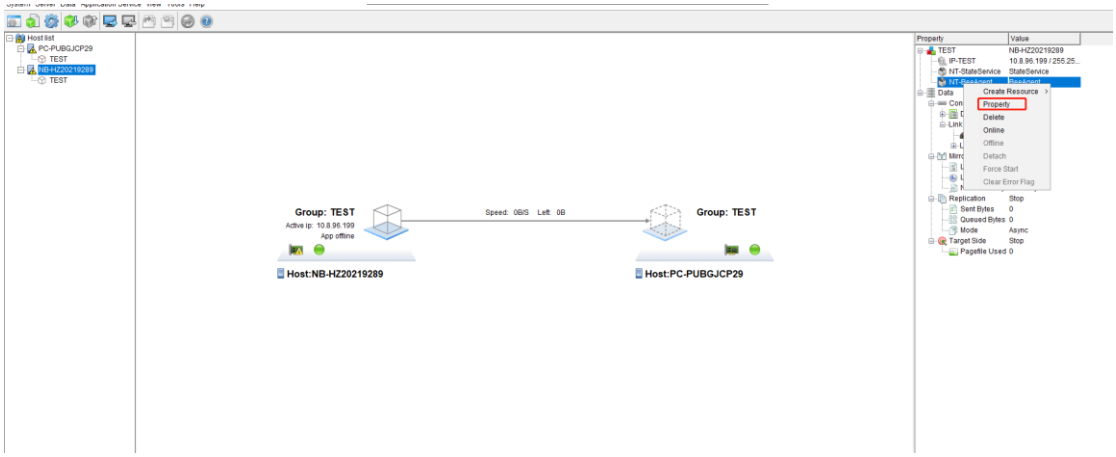


2.5.2.10 BeeAgentNT Service Attribute Configuration

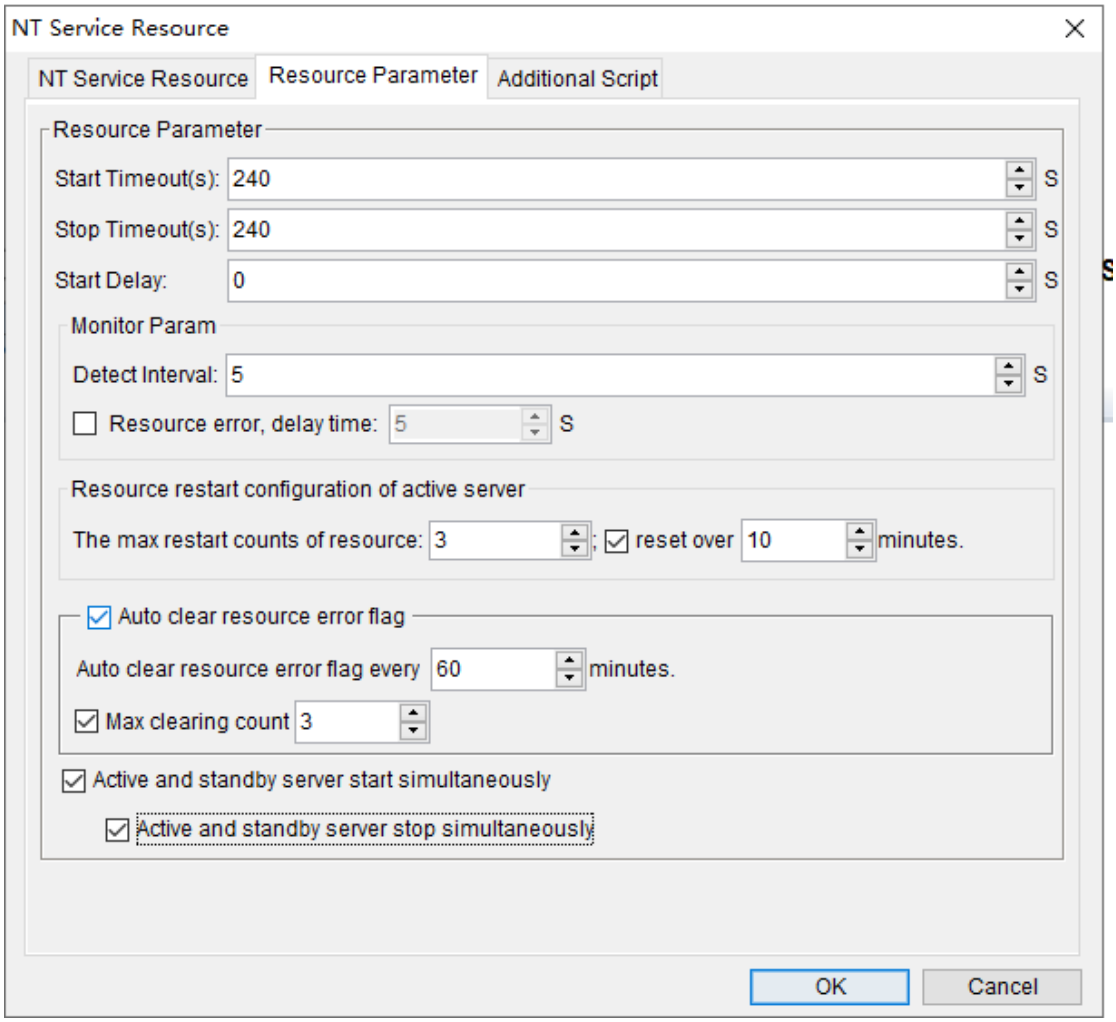
After clicking Finish in the wizard, the normal Rose client will display the following status



Find the NT service and BeeAgent service in the upper right corner. Right click, select Properties, and select Resource Parameters



Modify the NT service attribute to start the primary and standby machines at the same time, and stop them when they are brought out



3 HikCentral Platform Configuration

3.1 Establishment of database hot standby relationship

1) Enter Rose, enter the service IP of the standby machine in the watchdog interface of the host machine (or enter the service IP of the host machine in the watchdog interface of the standby machine), and enter the service IP of the host machine in the watchdog interface of the standby machine.(The standby machine will display the password by default, as shown in the figure below)

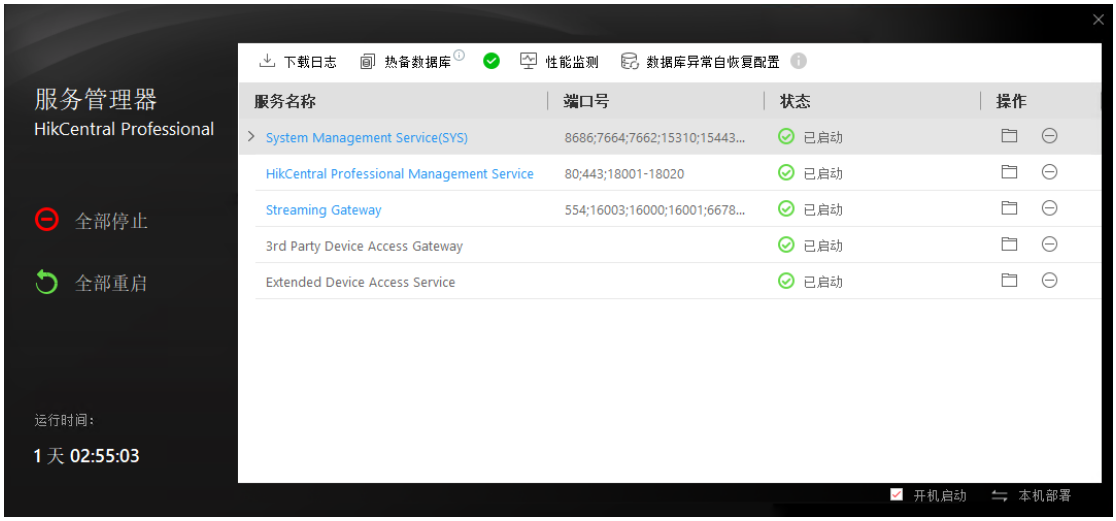
2) Configure the IP information and password of the standby machine on the host

3) Enter the IP address of the host in the watchdog interface of the standby machine

[Note]: The standby machine only needs to configure the IP address, and does not need to manually configure the password.After the password configuration is synchronized by Rose, it is automatically filled in the interface.After the standby machine is configured, confirm whether the hot standby relationship is established normally through the hot standby status on the interface.Hot standby status is as follows:

State	Describe	Occurrence location
Hot Spare Database	The database hot standby relationship is normal.That is, the host data is synchronizing with the standby machine	Main and standby units
Hot Spare Database	The database hot standby relationship is being established.The standby machine is acquiring data from the host	Standby machine
Hot Spare Database	The database hot standby relationship is abnormal.Namely, the query of hot standby status failed	Main and standby units

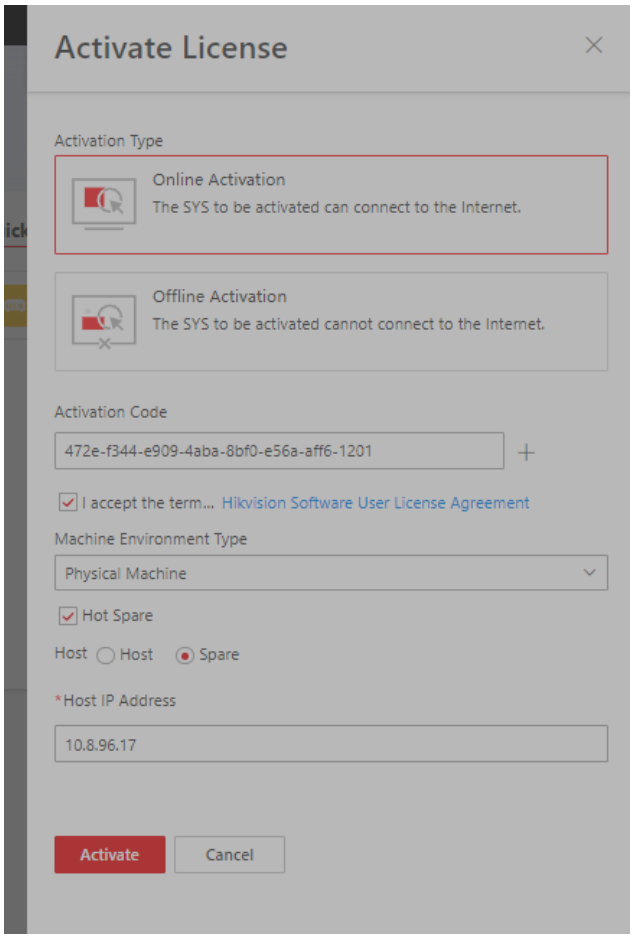
The status displayed by the host after configuration is completed is as follows:



3.2 License Activation

Ensure that the virtual IP login platform can be used after the service runs normally (the password needs to be reset first)

Activate the license, check Hot Spare, select the host and fill in the standby IP, or select the standby and fill in the host IP

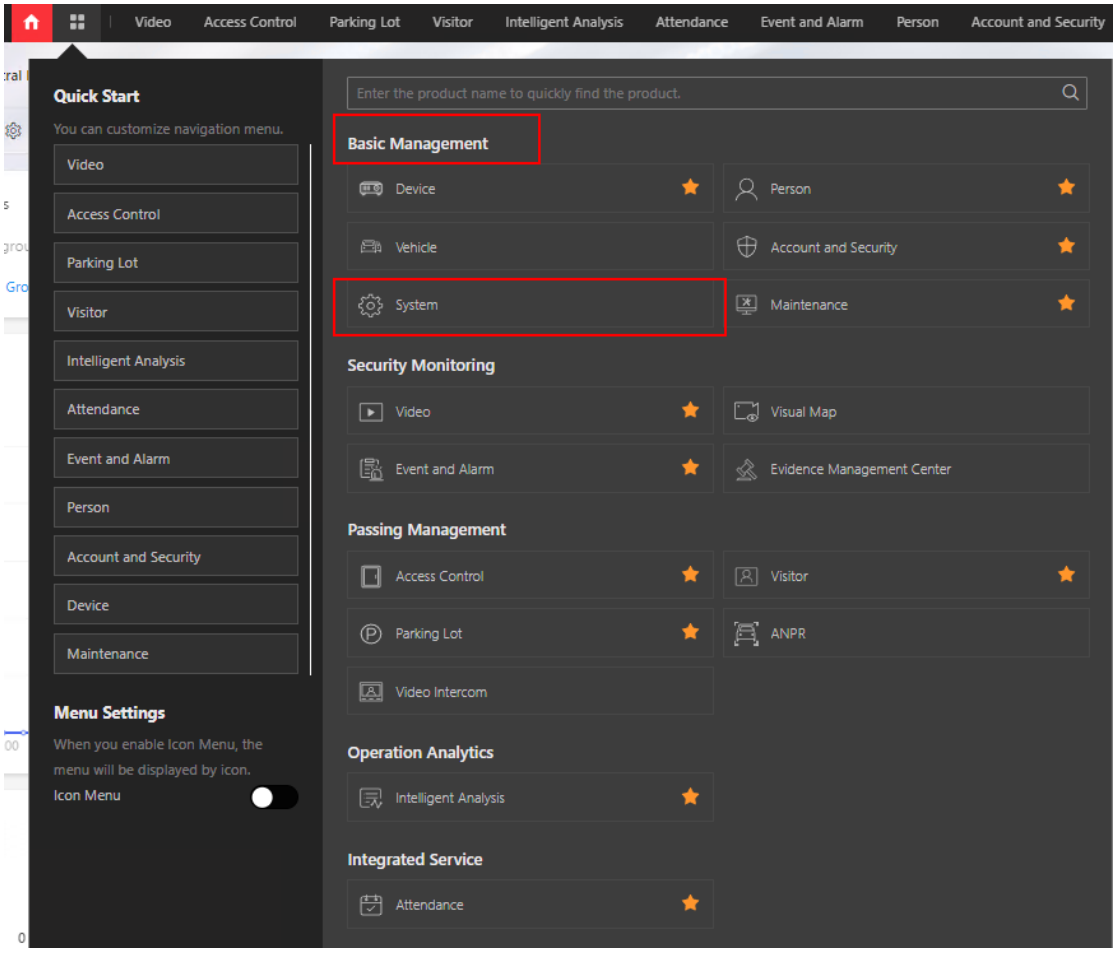


[Note]: HikCentral only needs to activate the host or standby machine. The active and standby machines share the license code. Multiple licenses only need to be activated on the host or standby machine.

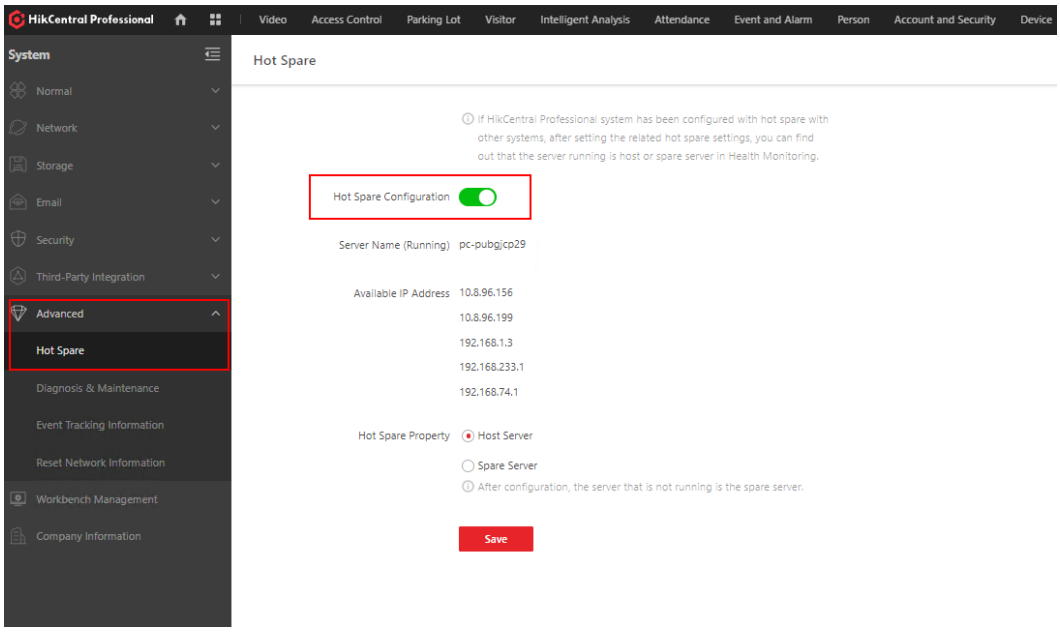
3.3 Active and standby server configuration

3.3.1 Hot standby configuration

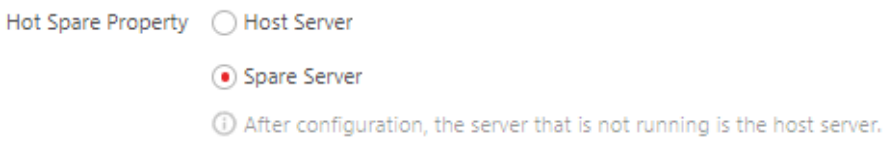
1) Open the HCP server, click Basic Configuration system configuration, and click System to enter the system configuration interface



2) Find Advanced on the left, select Hot Spare, and open the hot spare configuration

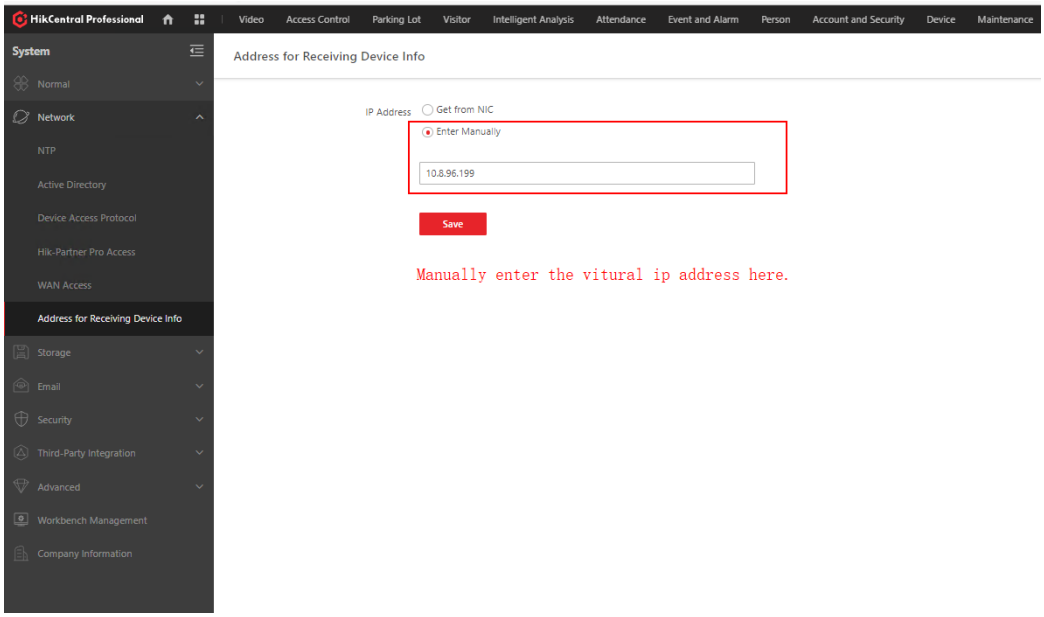


3) Click the hot standby attribute, and select the machine that does not run as the host/standby machine according to the actual situation



3.3.2 Configure server address

Click Network, select Address for Receiving Device Info, and then manually enter the virtual IP of Rose previously configured. Otherwise, the local file storage function will be abnormal



4 HikCentral deployment after installation

4.1 HCP 2.4 single machine is configured as Rose dual machine hot standby

This situation applies to HCPs that have been in normal use for a period of time and then want to deploy Rose

[Note]:

- The active and standby computers must ensure that the system disks are under the same drive letter. If the system disks of the active and standby computers are under different drive letters, the paths of the fnood of the active and standby computers will be different, which will cause the data backup of fnood to fail.(The default fnood folder is in the C directory of the system disk)
- Do a good job of the original data backup of the host to avoid the loss of the original platform data caused by the mis-operation of the backup machine's data to the host when Rose brings it in later.

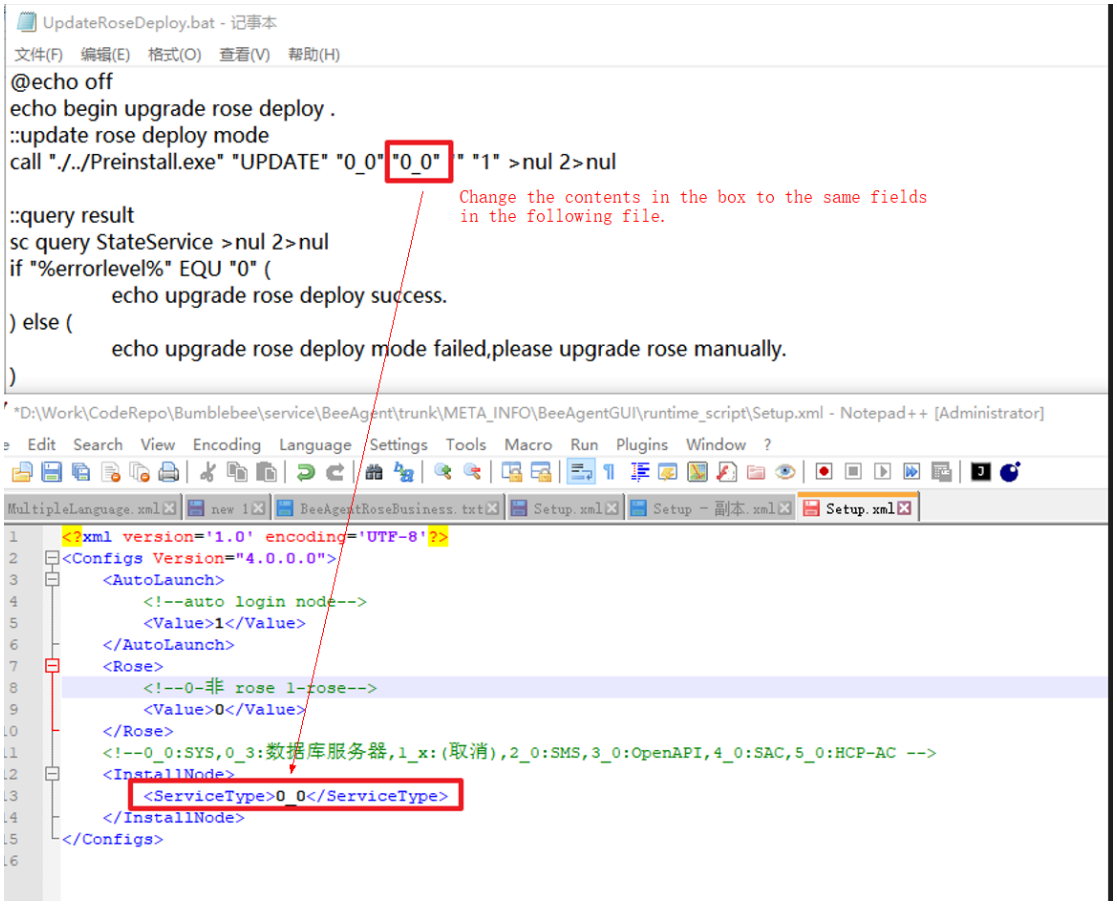
  Platform database storage path: X: HikCentral VSM Servers PGData

- Run the HikCentral installation package on the standby machine and select Custom mode for installation. Select the installation directory and ensure that it is the same as the installation path of the host. During installation, check the "Mirror Hot Spare" mode and click Install. After the installation is completed, run the BeeAgent Service for the first time to bring all the services of the platform together, and ensure that the fnood folder is generated in the root directory of disk C; Then enter the BeeAgent client to stop all services and exit the BeeAgent client; enter the service page, stop the BeeAgent Service and change the startup mode to manual

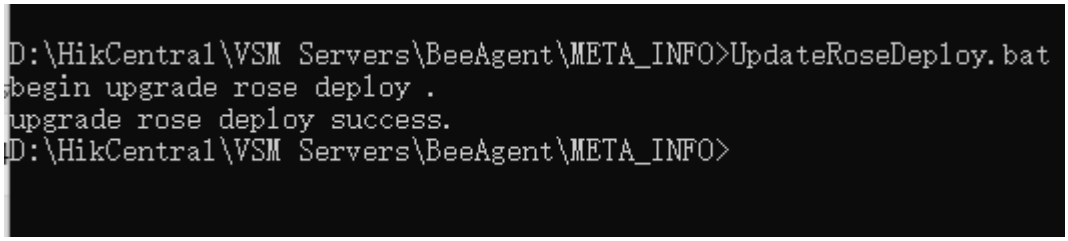
4.1.1 Host configuration

1) Open CMD with administrator permission, cd to the following path: X: Hik Central VSM Servers BeeAgent META_INFO (disk D is taken as an exam ple here, and the default HCP is installed on disk C), and then execute Up dateRoseDeploy.bat

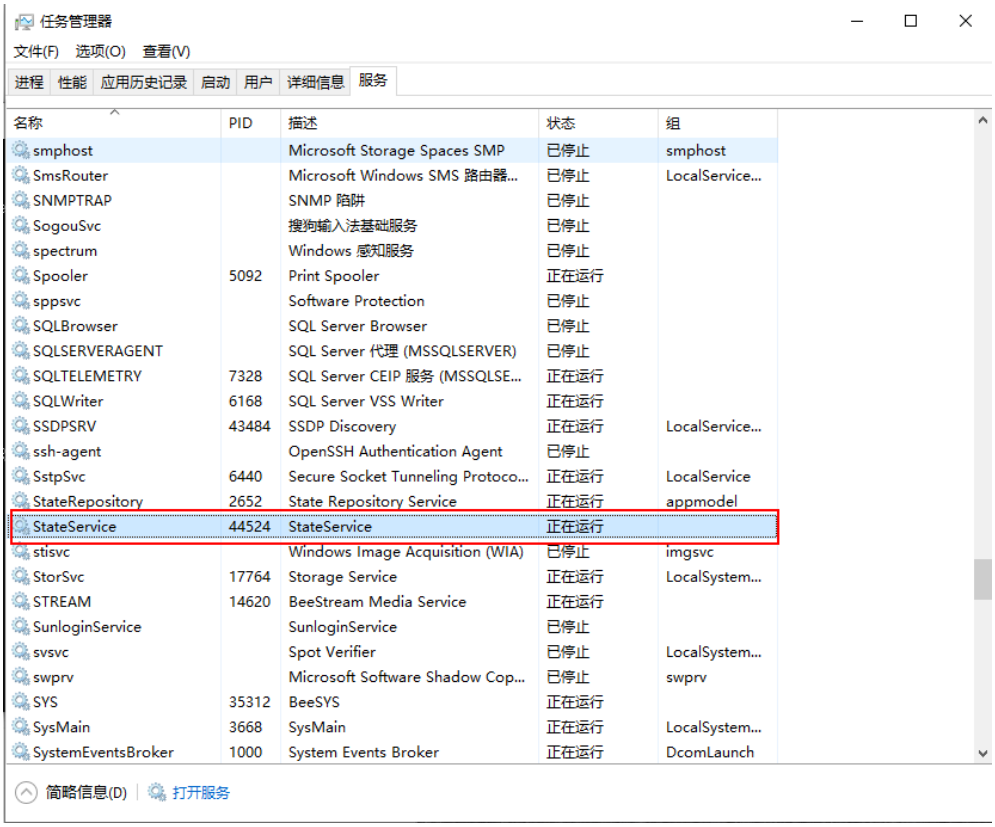
[Note]: If HCP and SAC are installed together or HCP and OpenAPI are instal led together, you need to manually modify the "UPDATE" "0_0" "0_0" "" 1 "> null 2>null in the UpdateRoseDeploybat script. There are three fields," 0_0 "" 0_0 "" "" 1 ", and the second word" 0 "_0 "is changed to HikCentral VSM S ervers BeeAgent META_INFO\BeeAgentGUI\runtime_<ServiceType>0 in Setup.x ml under script path_0</ServiceType>the same field, then restart the BeeAgent service and execute the script UpdateRoseDeploy.bat



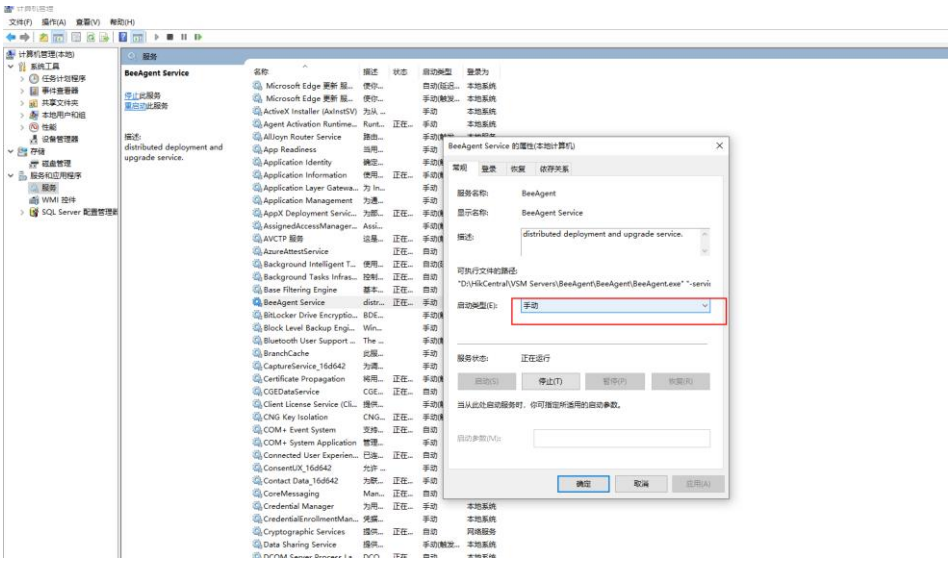
2) The following words indicate that the hot standby service has been successfully installed



3) View the service list. If you see StateService, it indicates that the hot standby service has been successfully installed



4) Open the service manager and change the HCP related services such as the BeeAgent service to manual (BeeSYS, BeeAgent, BeeStream Media Service, PostgreSQL, 3rd Party Device Access Gateway, Extended Device Access Service;). If it is OpenApi, you need to change the artemis and OpenDataServer services to manual. If it is SAC, you need to change the BeeSacCommonServer, BeeSacSamServer, and sac_Change the mdb service to manual

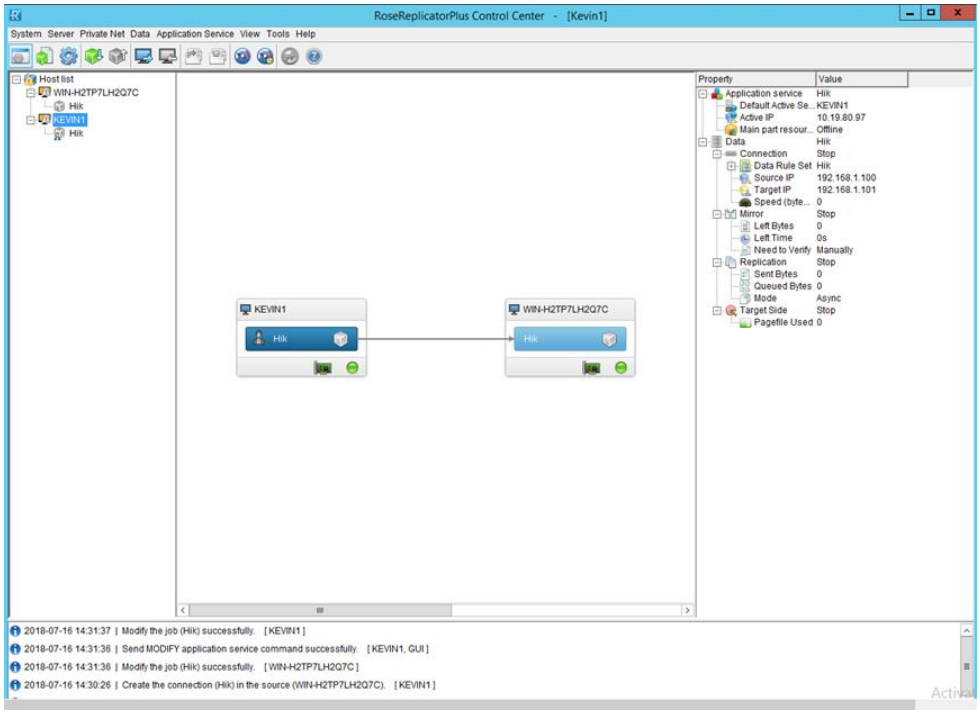


4.1.2 Rose installation and deployment

Deploy and install Rose on the standby machine of the host according to the above configuration. At this time, there is no difference between the steps of deploying Rose and installing HCP. Please refer to Sections 2.5.1 and 2.5.2.

[Note]: Just run the Rose configuration wizard on one of the hosts or standby machines, run Rose on the hosts or standby machines, and log in to the Build in Account of the active and standby machines.

The configuration is completed as shown in the figure below:



4.1.3 HCP Configuration

- ✓ Log in to HCP using the host IP, record and deactivate the license
- ✓ Reference Section 3.2 When the license is activated again, select the hot standby mode and specify the active and standby IP addresses as appropriate.
- ✓ Reference Section 3.3, complete the configuration on the HCP.(There is no difference between the configuration in step 2 and that in the newly installed platform)

4.2Upgrade the low version hot standby to HCP 2.4 hot standby

Open the Rose client, right click Bring out to bring out Rose, and upgrade the HCP on

the active and standby machines respectively. For specific upgrade steps, please refer to HCP Platform Upgrade and Data Migration Operation Guide

Hiknow link is as follows:

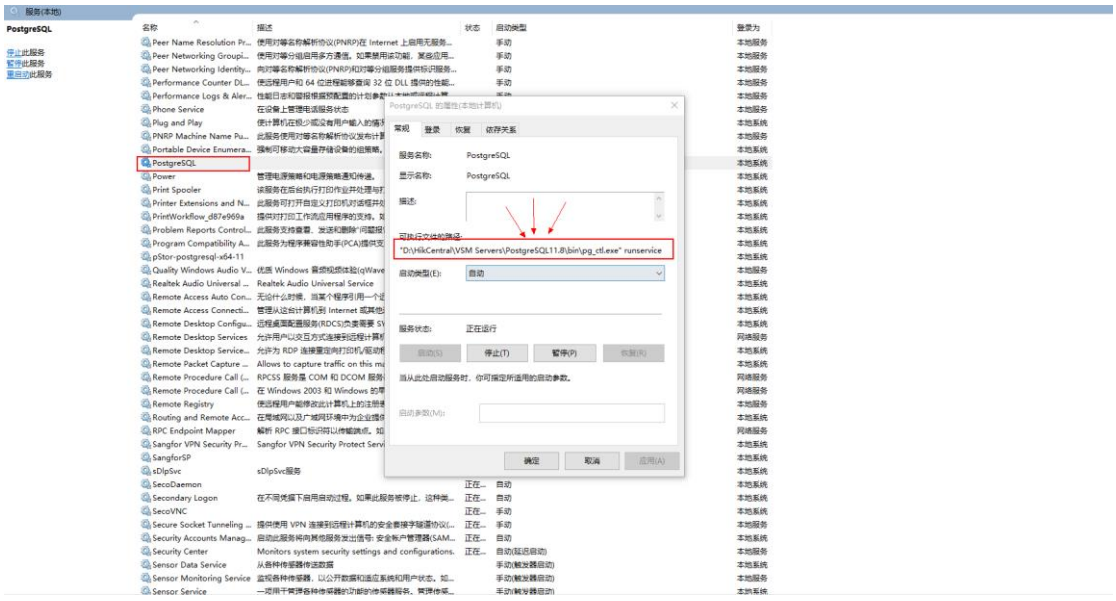
https://hiknow.hikvision.com.cn/kms/kms/multidoc/kms_multidoc_knowledge/kmsMultidocKnowledge.do?method=view&fdId=183440d426a7d4f3eba68ac44cb86fef

4.2.1 Upgrade HCP 1. X hot standby to HCP 2.4 hot standby

Because the overall architecture of HCP version 1. X is quite different from that of HCP version 2.4, you need to manually modify the Rose configuration item after upgrading to version 2.4. The 1. X database uses PostgreSQL version 9.6.13, while the 2.4 database uses PostgreSQL11.8. Therefore, if you are upgrading to version 1. X hot standby, please contact the delivery colleague of the corresponding research and development center.

- **To view the HCP PostgreSQL version:**

  Open the task manager, find the PostgreSQL process, right-click to open the system service manager, find PostgreSQL in the service list, right-click to open the properties, and view the executable path: if PostgreSQL9.6 is displayed, the old version of PG will be used; if 11.8 is displayed, the new version of the database will be used.



4.2.2 Upgrade HCP 2. X hot standby to HCP 2.4 hot standby

Since the data synchronization form of hot standby has changed from the previous full database hot standby to the more convenient way of establishing database hot standby through the watchdog since HCP version 2.3, there are two data synchronization sets in this case:

1. After the upgrade, the parameters of Rose's synchronized dataset are not modified, and the synchronized PGData is still used. In this case, Rose can be imported directly after upgrading to version 2.4.
2. Use the method of establishing database hot standby relationship, click Modify after upgrading, modify the dataset to be synchronized, andChapter aboveThe consistency mentioned in, and then brought into Rose

[Note]: After upgrading to HCP version 2.4, you need to re register PG services. Please contact the delivery colleagues of the R&D Center for specific steps.

4.3 Upgrading a low version stand-alone to HCP 2.4 hot standby

4.3.1 Upgrade HCP 1. X to HCP 2.4

Upgrade the lower version to HCP 2.4 first. As mentioned above, if the database version is 1. X, the PG version needs to be upgraded first. In this scenario, please contact the delivery colleagues of the corresponding R&D center. After the database upgrade is completed, refer to Section 4.1, complete the hot standby switch when the single machine is running.

4.3.2 Upgrade HCP 2. X to HCP 2.4

In this scenario, the only difference from HCP 2.4 single machine deployment of hot standby is that an upgrade operation has been added to ensure the smooth completion of the upgrade process. Section 4.1, complete the hot standby switch when the single machine is running.

[Note]: After upgrading to HCP version 2.4, you need to re-register PG services.

Please contact the delivery colleagues of the R&D Center for specific steps.

5 HCP 2.4 External Streaming Media Deployment Rose Hot Standby

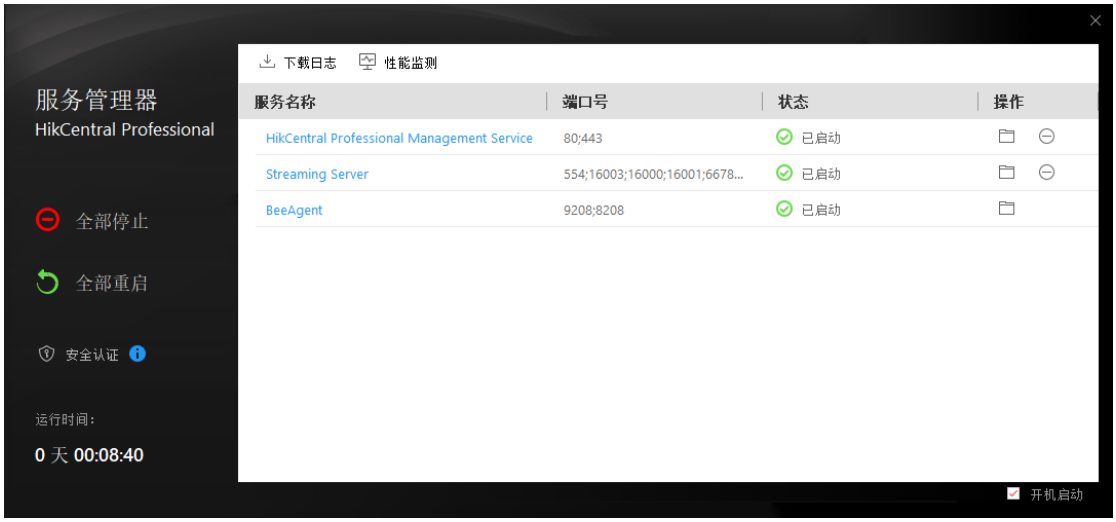
5.1 Preparation before installation

External streaming media requires two additional servers. The server hardware, system and network configuration should be the same as the above sections .Two additional Rose licenses are required to be used on the active and standby machines of the streaming media server.

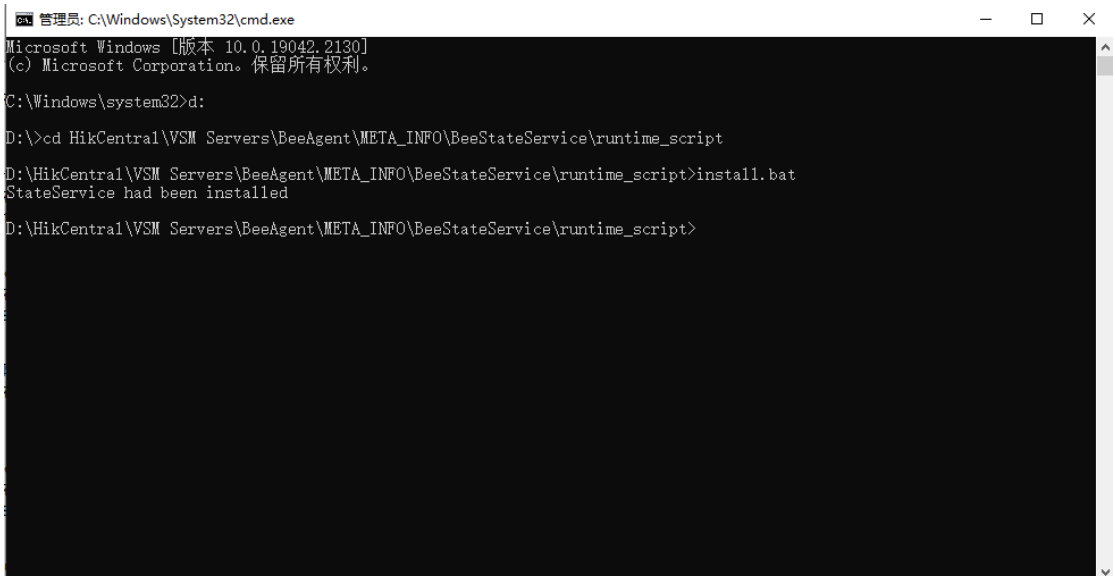
5.2 Installation and deployment of HCP external streaming media

- Run the HCP 2.4 installation package with administrator privileges on the active and standby machines of the streaming media server. Select the streaming media service during installation, and select the normal installation mode.(Streaming media does not need to be installed in hot standby mode)

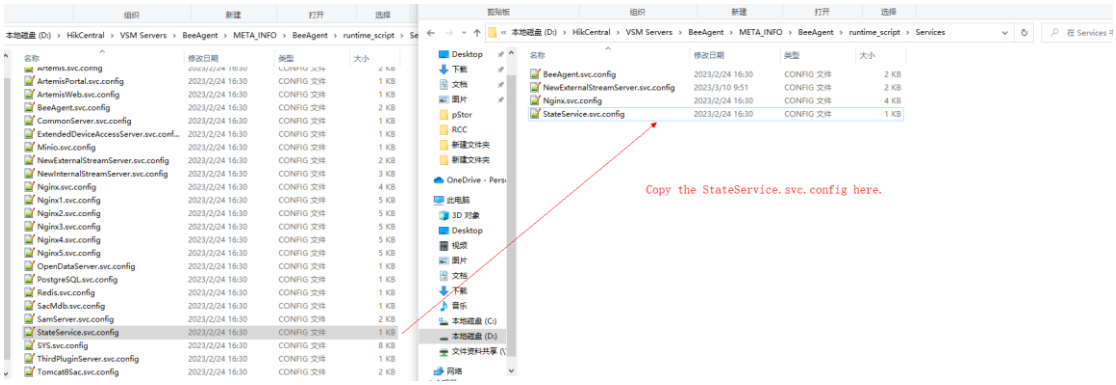
- After installation, open the watchdog interface, and the status diagram shall be shown as follows



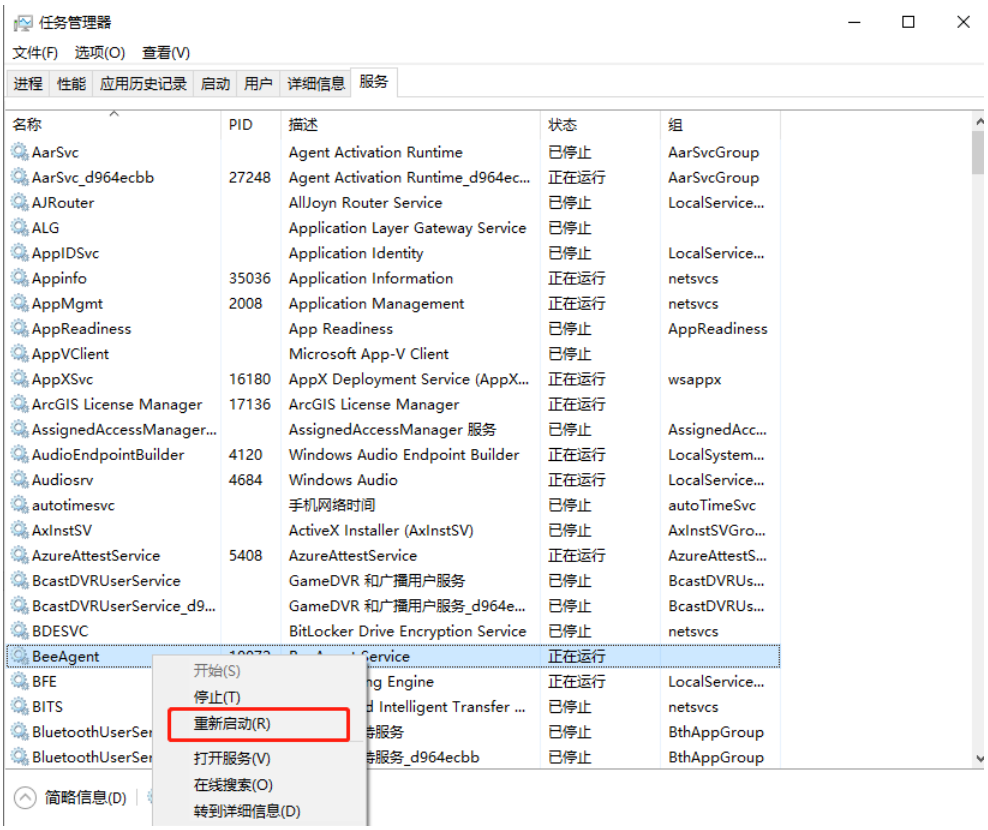
- Open cmd with administrator permission, cd to X:\HikCentral\VSM Servers\BeeAgent directory, run install.bat, as shown in the following figure



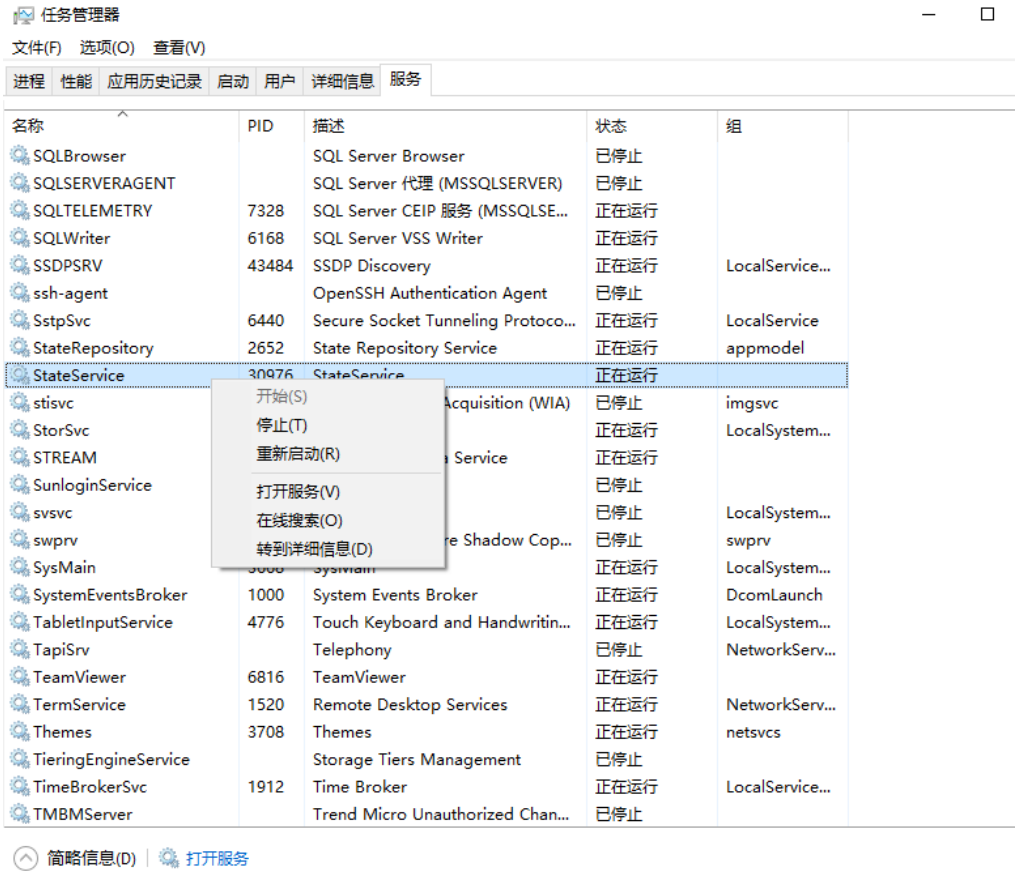
- Copy X: HikCentral VSM Servers BeeAgent META_INFO\BeeAgent\runtime_script\Services_StateService.svc.config file in Pro path to X: HikCentral VSM Servers BeeAgent META_INFO\BeeAgent\runtime_Script Services directory



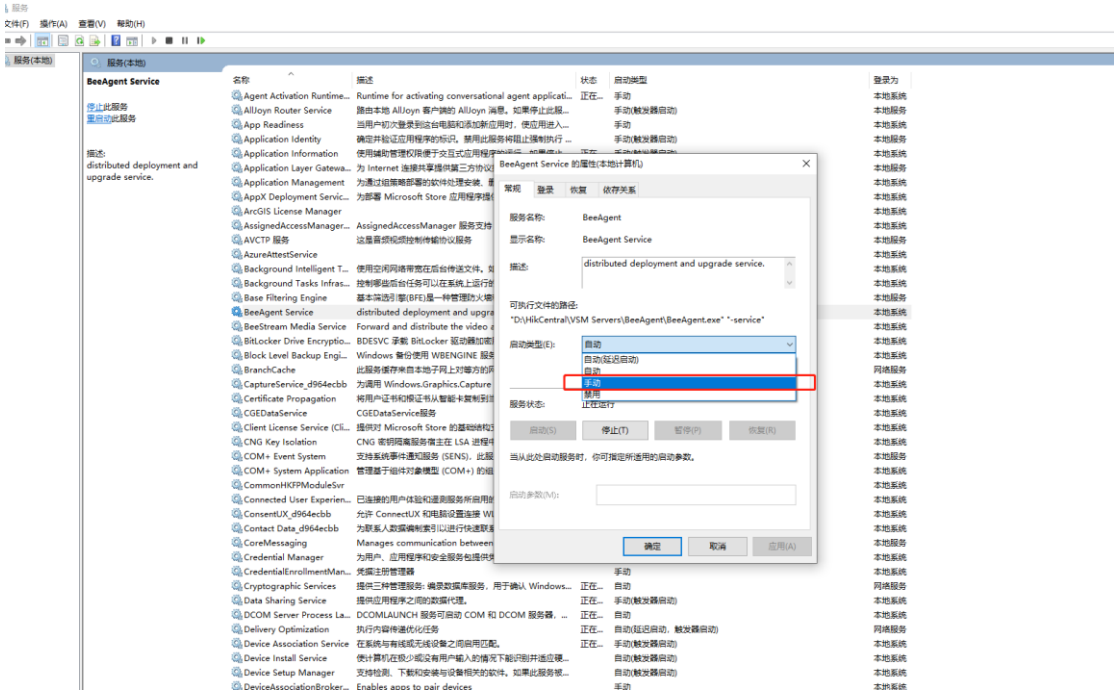
- Restart the BeeAgent service



- Manually start the StateService service



- Open the system service manager, and change the startup type of the BeeS tream Media Service and BeeAgent service to manual

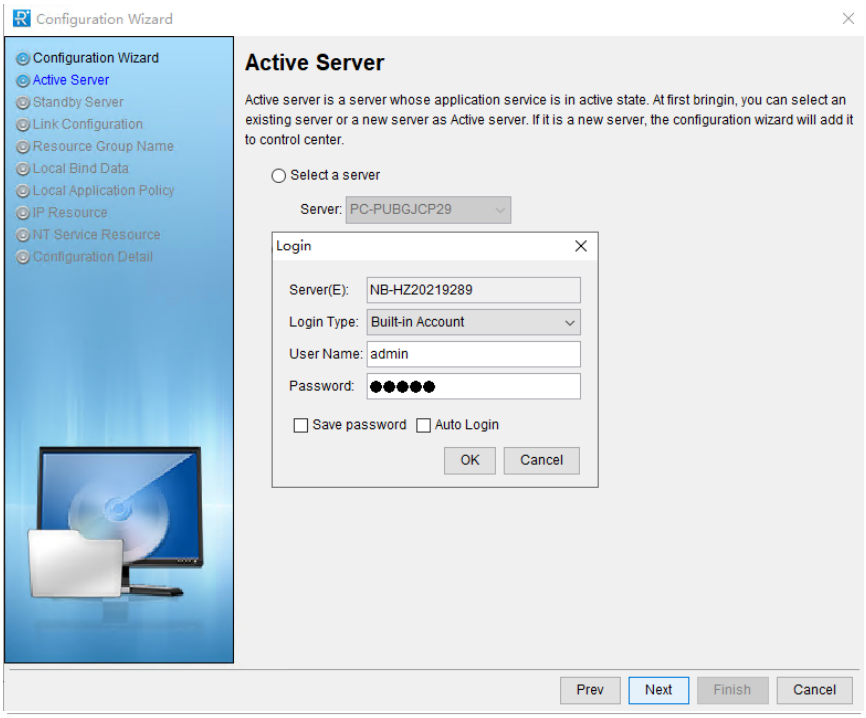


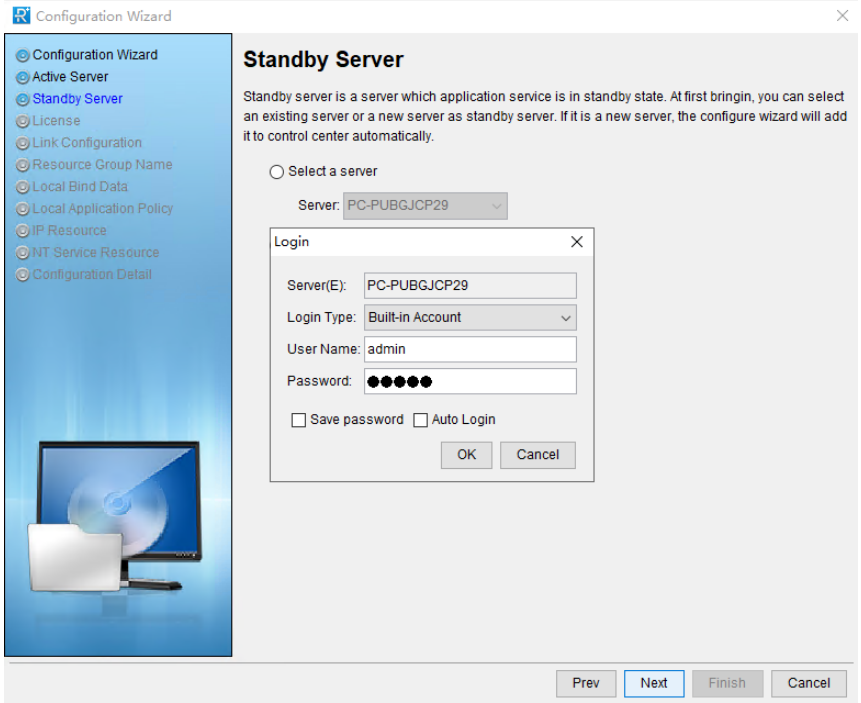
5.3 Rose Installation and Deployment

The installation of Rose is completely consistent with the HCP deployment hot standby in the above, please refer to Section 2.5.

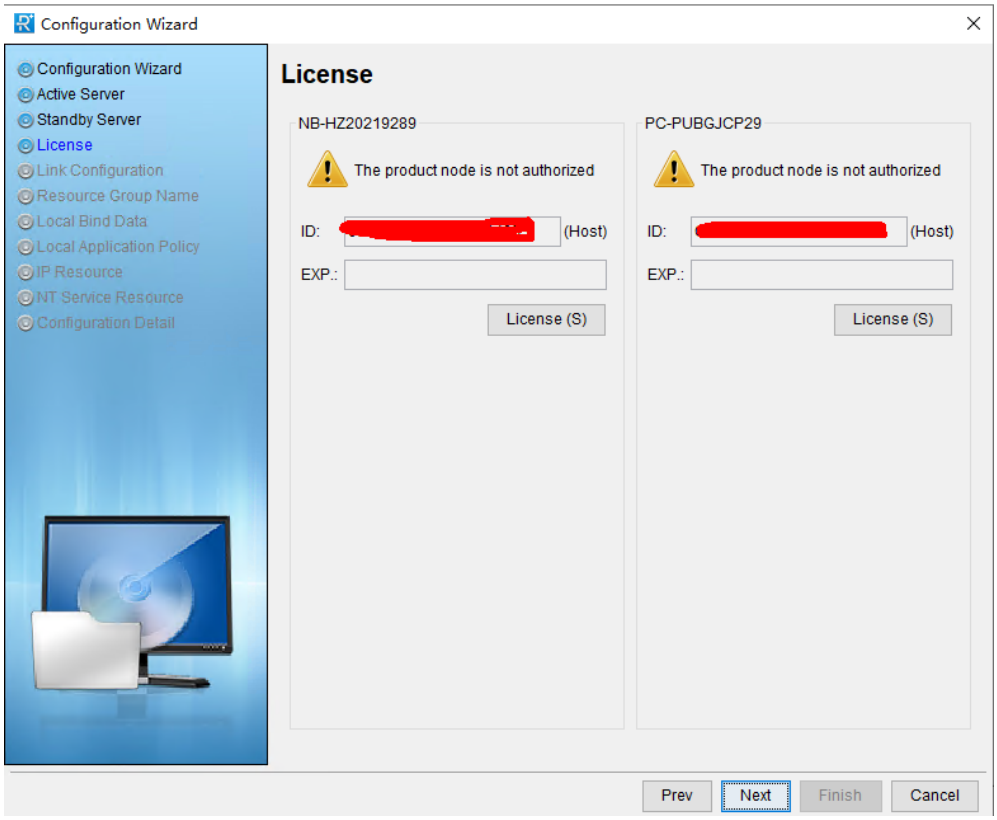
5.3.1 Rose deployment

- Specify the IP addresses of the active and standby streaming media servers respectively, and enter the account password. The default is admin

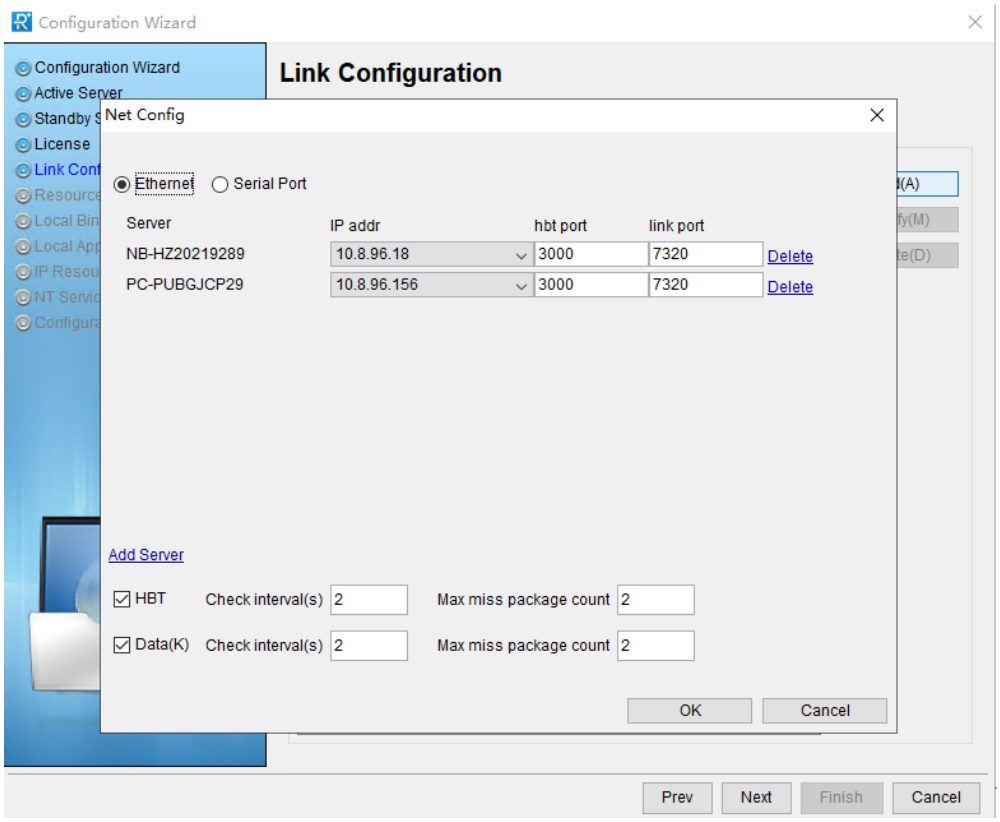




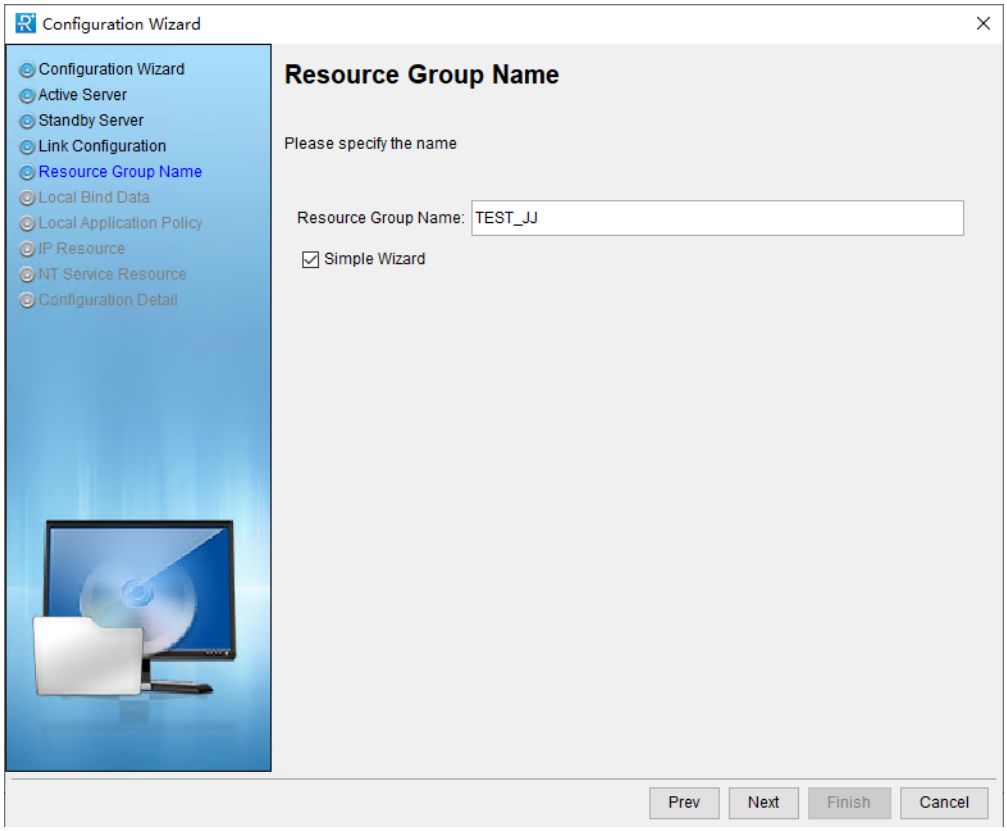
- Manually activate the license and import the soft license file



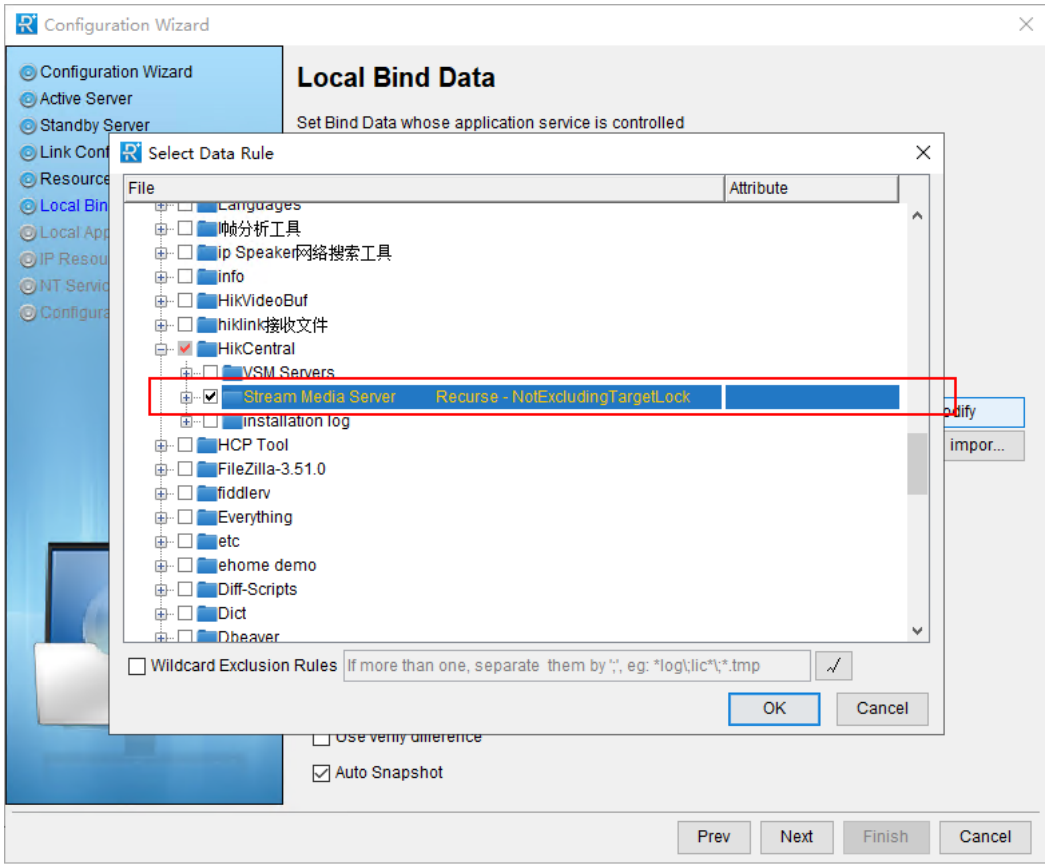
➢ Link configuration, consistent with the above



➢ Custom resource group name

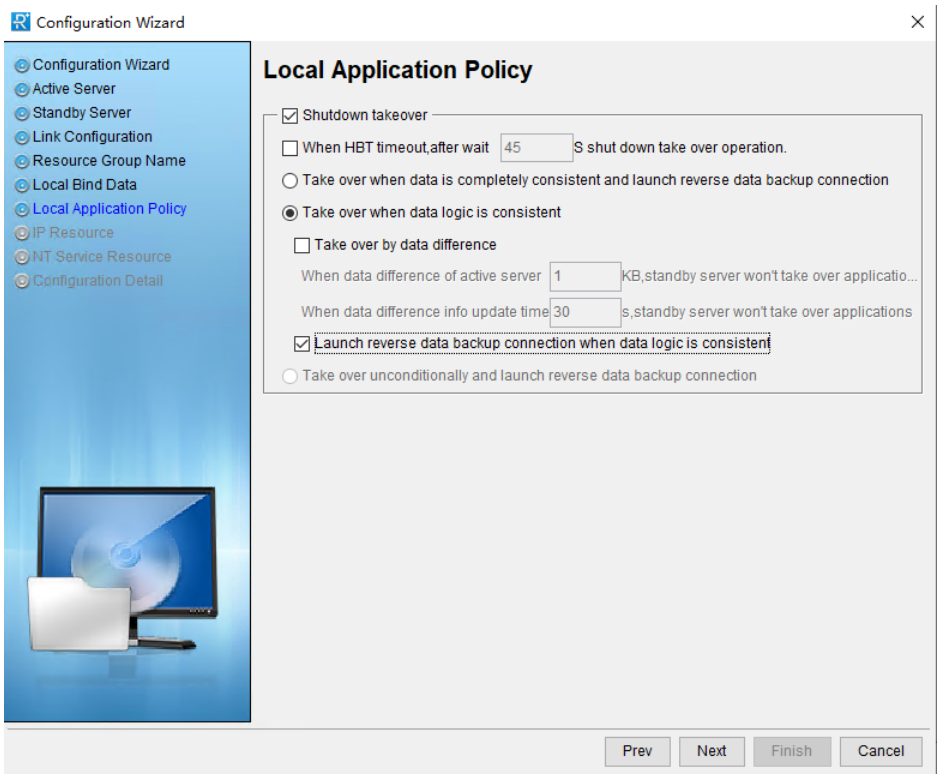


➢ To set the data synchronization set, just select Stream Mdeia Server



➢ Set the local application policy, and choose to take over when the data is

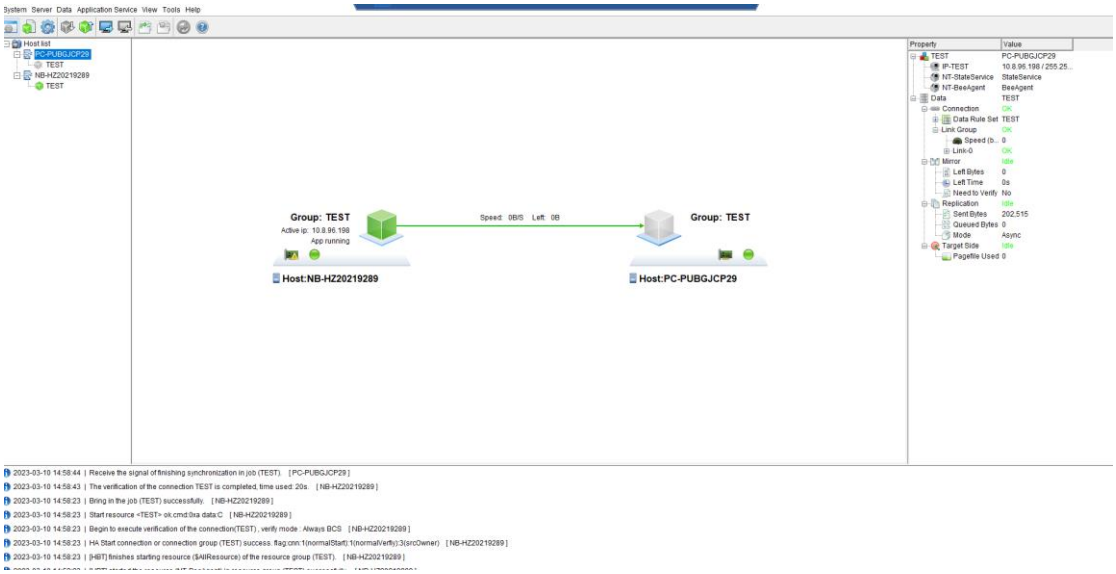
inconsistent



- Set the NT service. Note that the priority of BeeAgent service is 2, and the priority of StateService is 1

➢ Click finish to complete hot standby

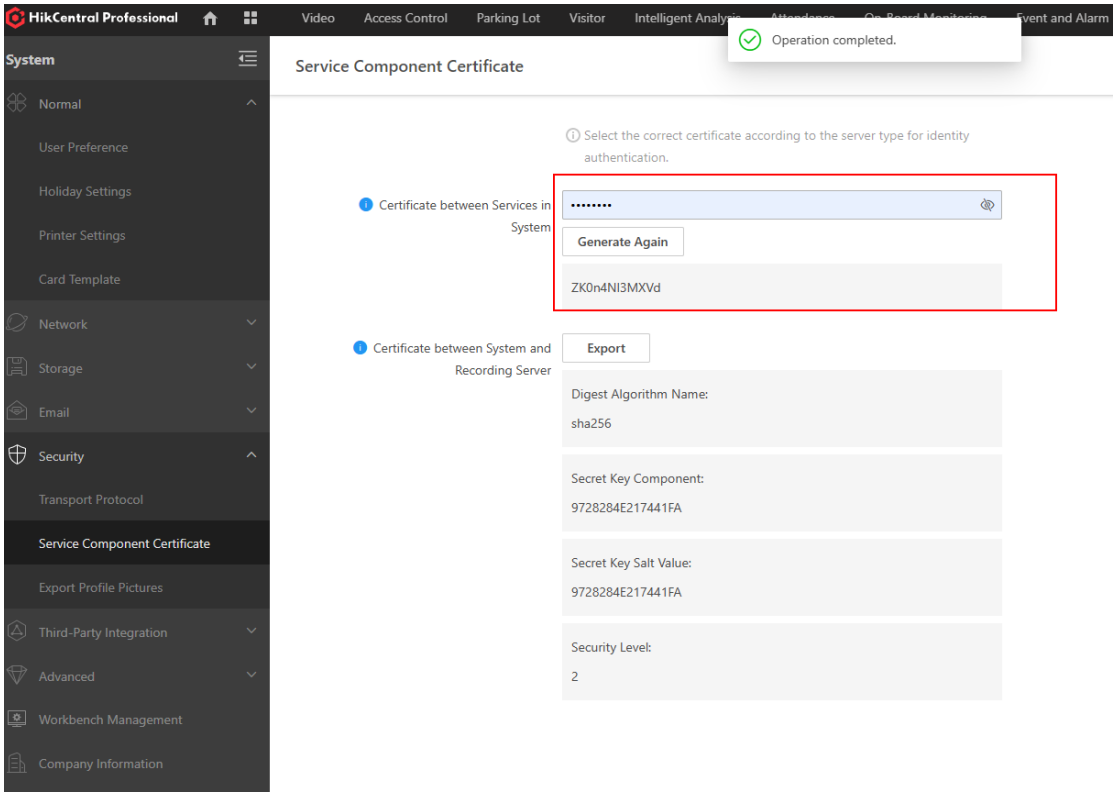
➢ After configuration, Rose interface is shown as follows



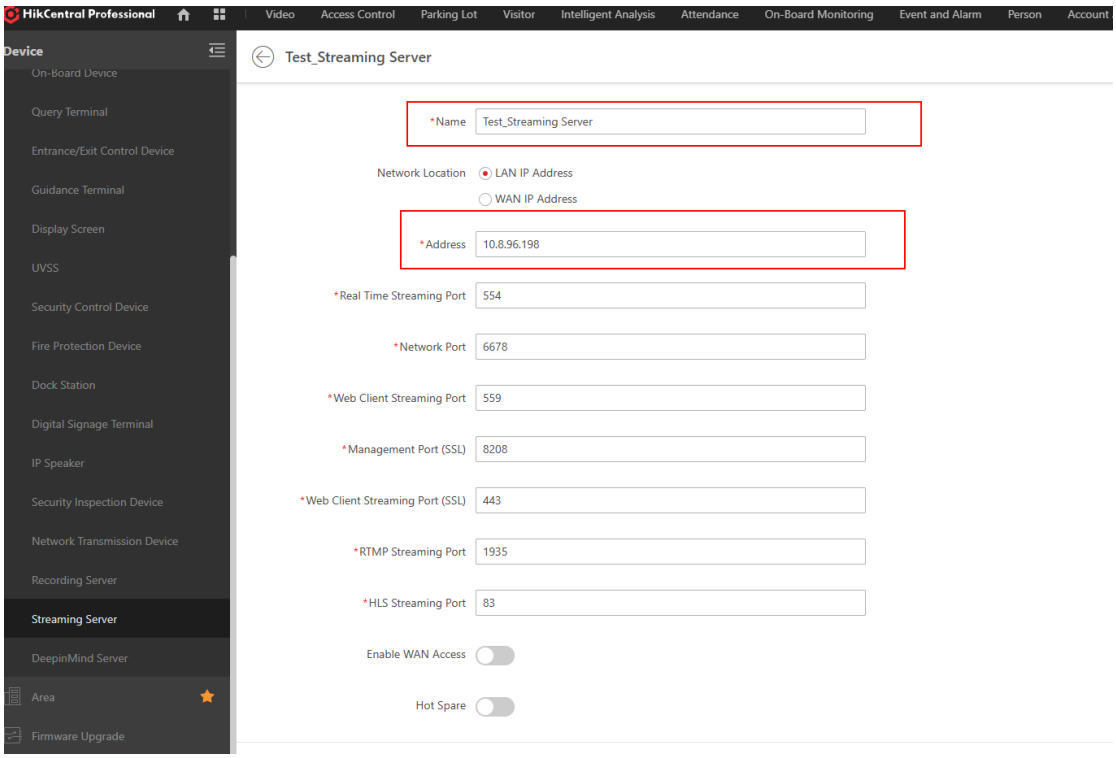
5.4 Configure hot standby streaming media server on HCP

➢ Open HCP 2.4, click System Configuration, Security, Service Component Certificate, and fill the generated key into the watchdog service of the active and

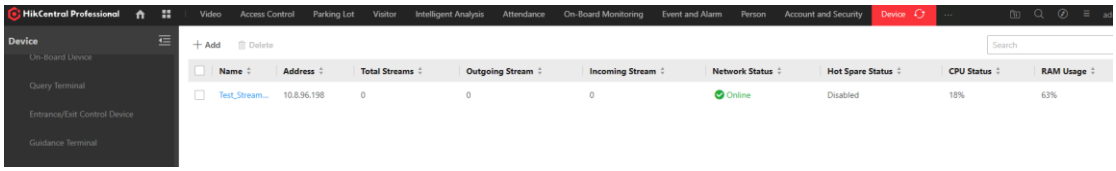
standby streaming media servers for verification.



➢ Open HCP 2.4, select Device, Streaming Server, and ADD, where the IP of the streaming media server should be filled in with the virtual IP generated by Rose



➢ As shown in the figure after adding



[Note]: After hot standby is configured, the performance of streaming media service will remain unchanged, which is still the scenario marked in the official website spec. Please refer to HikCentral Professional System Requirements&Performance

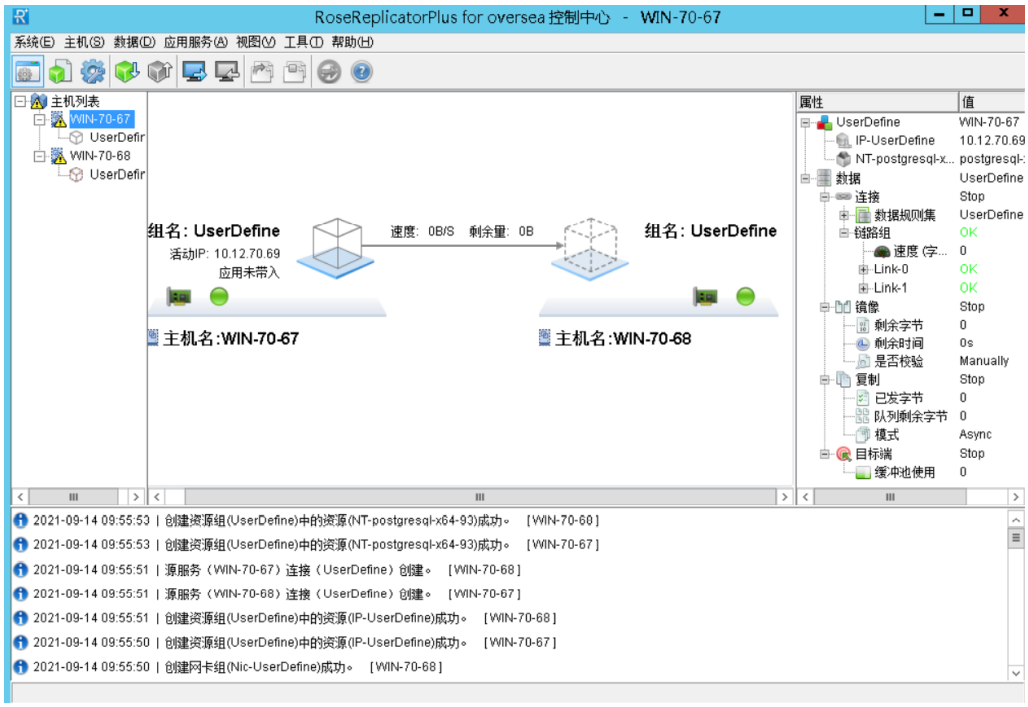
2.3 Streaming Server

Configurations		
Feature	**Low-End**	**High-End**
CPU	Intel® Core™ i5-4590 @ 3.30 GHz	Intel Xeon® E-2124 @ 3.30 GHz
RAM	8 GB	16 GB

NIC	GbE Network Interface Card	GbE Network Interface Card
HDD Type	SATA-II 7200 RPM Enterprise Class Hard Drives	SATA-II 7200 RPM Enterprise Class Hard Drives
HDD Capacity	10 GB for Streaming Server Log Files	10 GB for Streaming Server Log Files
Maximum Performance		
Input and Output	200 streams × 2 Mbps input and 200 streams × 2 Mbps output	300 streams × 2 Mbps input and 300 streams × 2 Mbps output

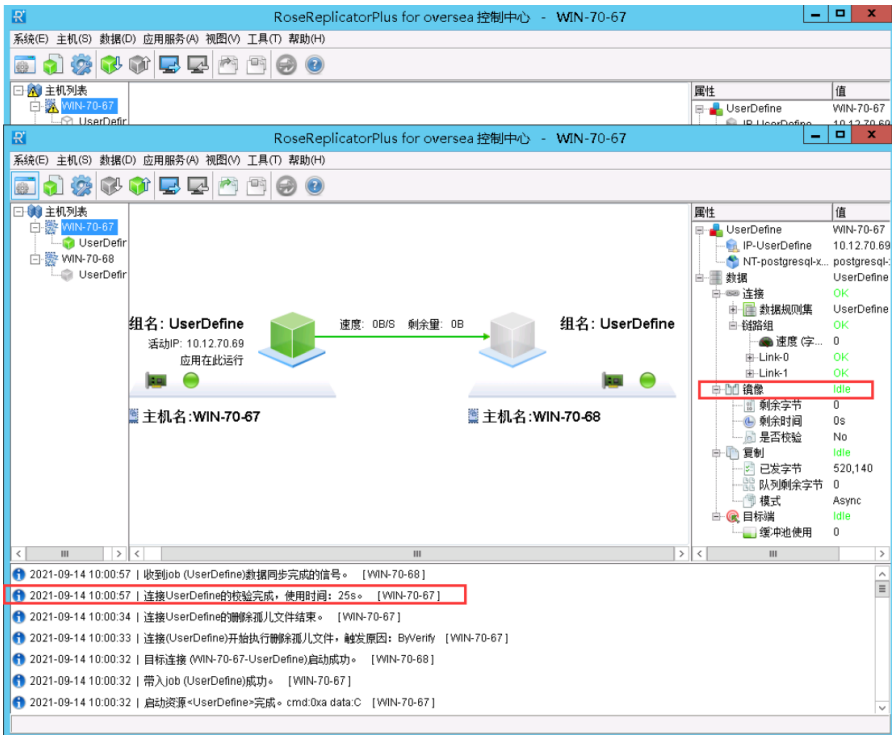
6 Operation after Rose deployment

6.1 Application Service Resources (JOB) - Status Display



6.2 Application service resources (JOB) - brought in

Carry out the import operation: mount the virtual IP → start the NT service → start the data synchronization connection



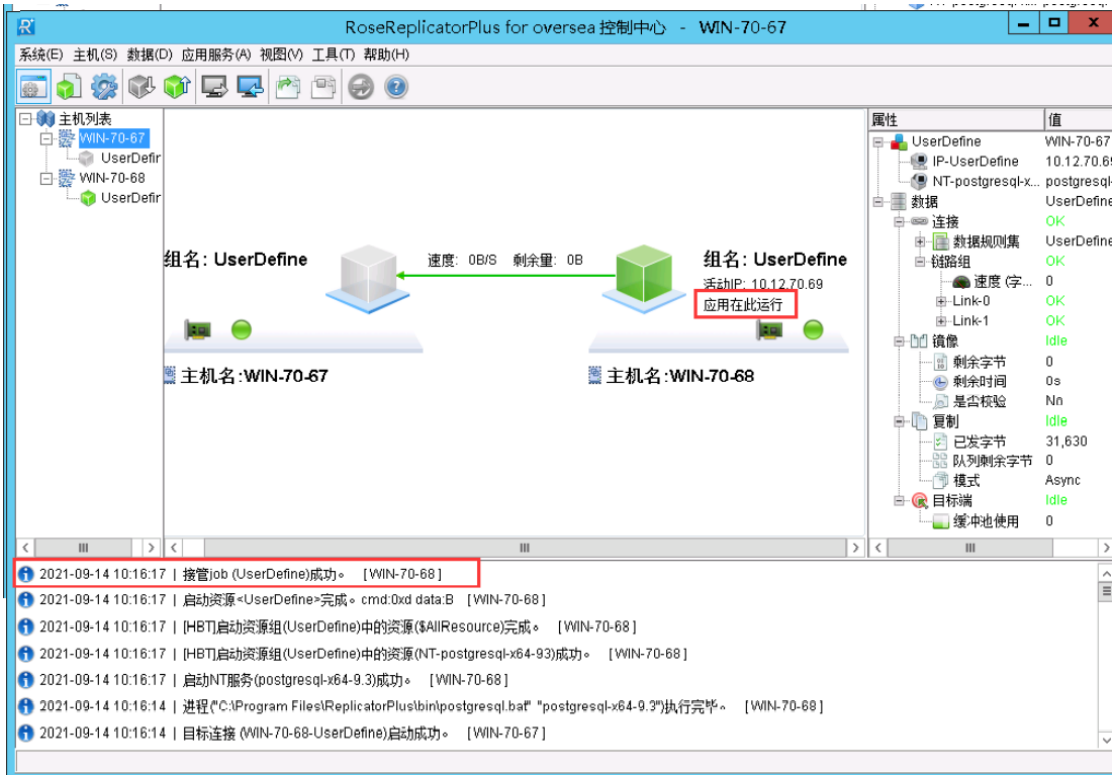
6.3 Application service resources (JOB) - transfer/takeover

To perform a transfer/takeover operation:

Host: Stop NT service, uninstall virtual IP, and stop data synchronization connection

Standby machine: attach the virtual IP, start the NT service, and start the data synchronization connection

[Note]: The roles of the host and the standby machine are opposite. The machine running the application is the host



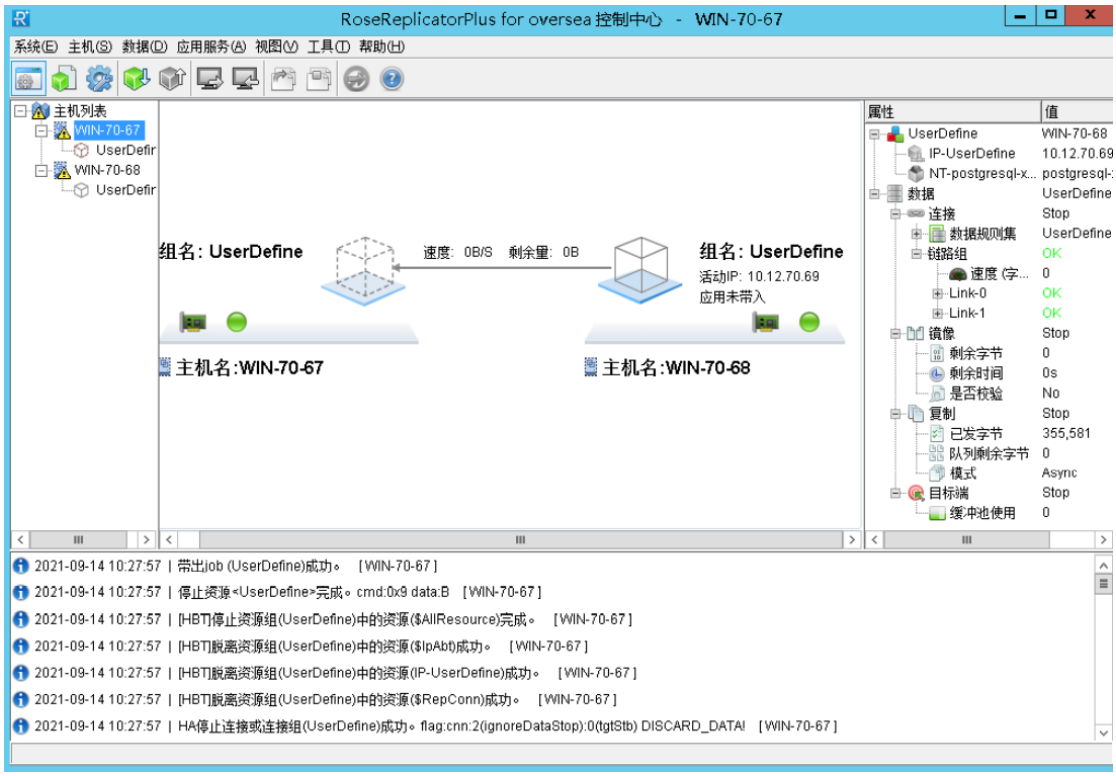
6.4 Application service resource (JOB) - offline

To perform an offline operation:

The virtual IP and service resources remain in the current running state, and Rose will not continue to monitor the operation of resources.

The data replication connection can be stopped or not.

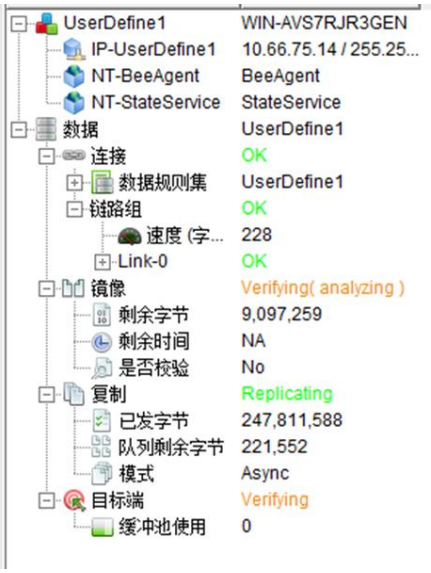
Execute the bring in operation to restore the hot standby state



6.5 Configuration check and modification during Rose operation

The following information can be directly observed on the right side of Rose interface

- Virtual IP address
- Bind NT service
- Binding data



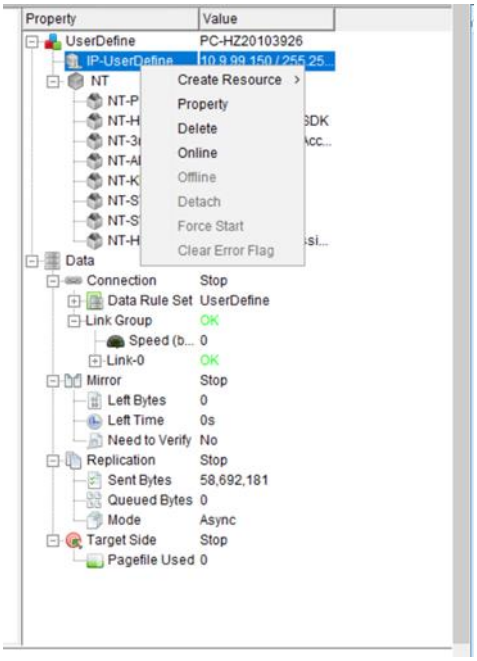
Modify configuration:

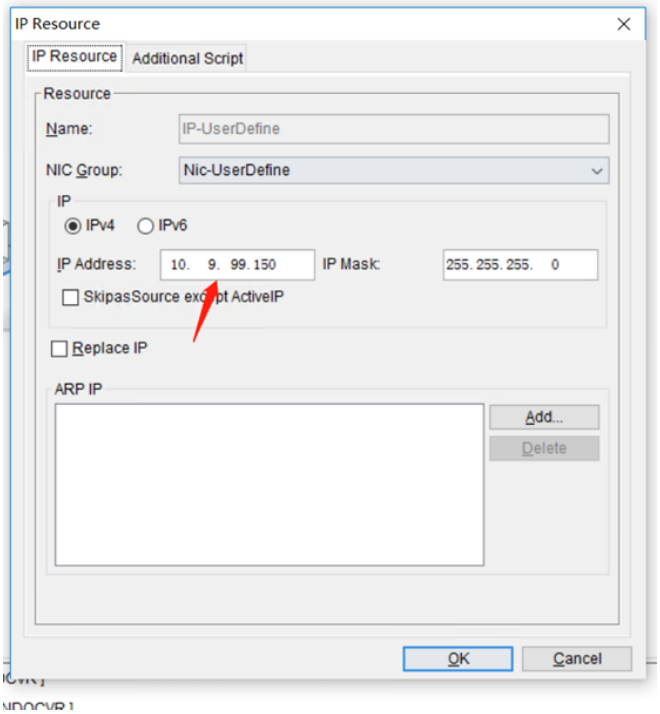
[Note]: The configuration must be modified when the host or standby machine is

brought out

✓ Modify Virtual IP

The active virtual IP address can be detected on the main interface.To modify, right-click and click Properties to modify the virtual IP address.

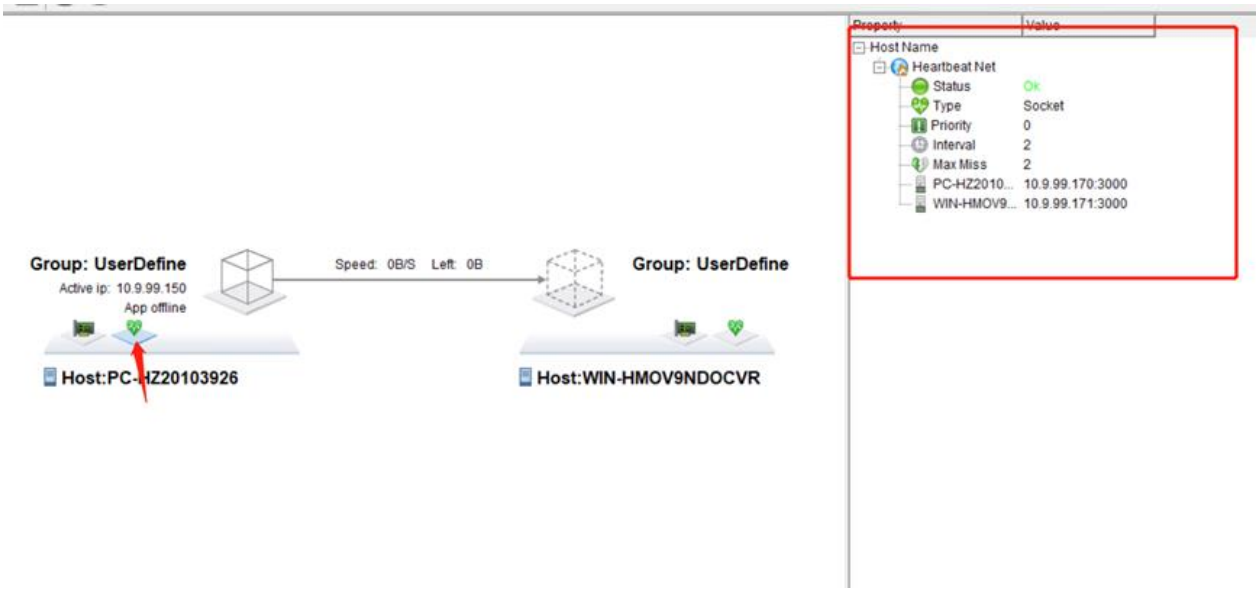




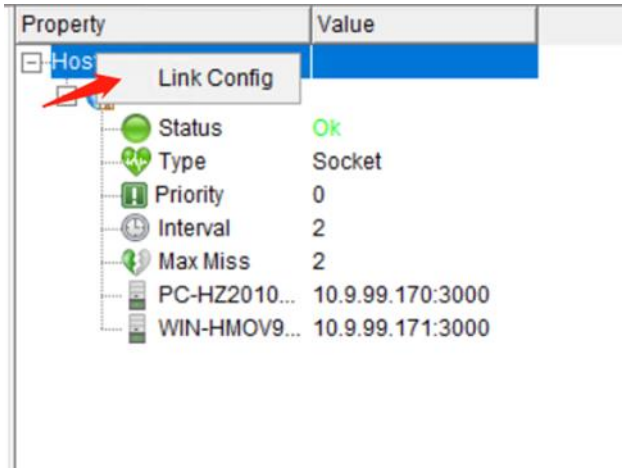
✓ Modify heartbeat IP

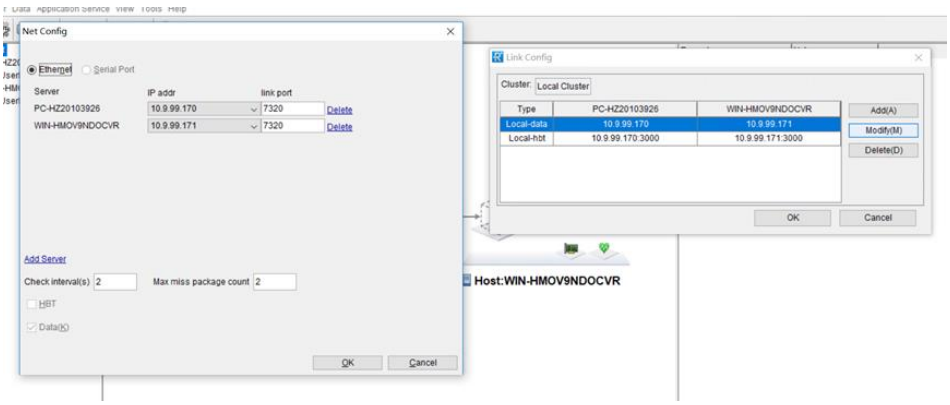
Click Heartbeat Information on the main interface to view the currently used

heartbeat IP on the right.



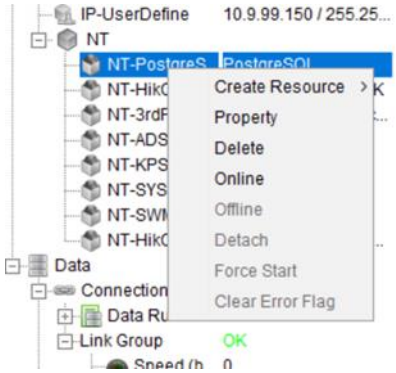
If you need to modify, right click the host name and select Link Configuration to add or delete or modify the existing configuration.



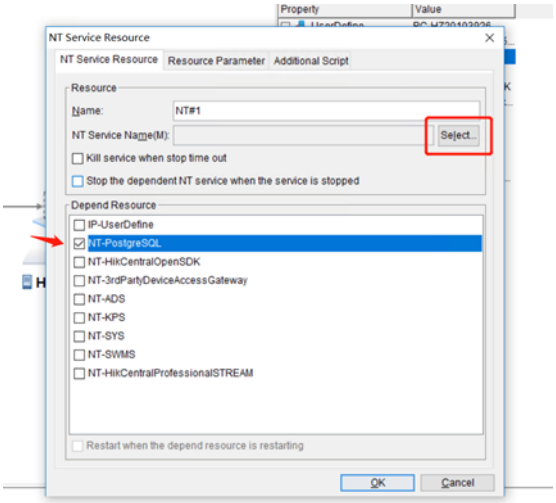


✓ Modify NT Service

Click specific NT service to delete

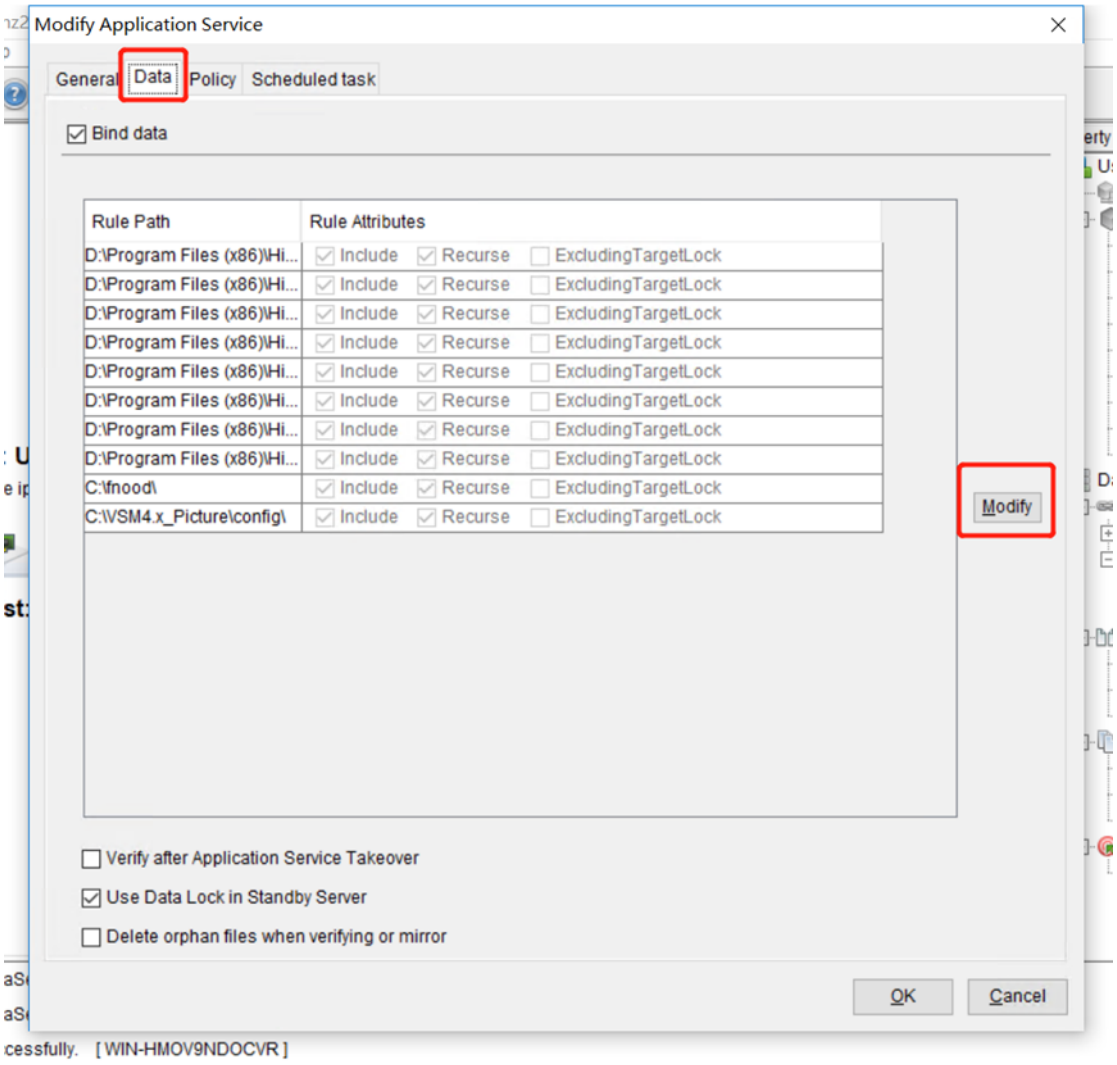


Right click NT and select New to create a new NT service. Select a specific service name and click OK to add an NT service.It is usually unnecessary to add other NT services.



✓ Modify Binding Data

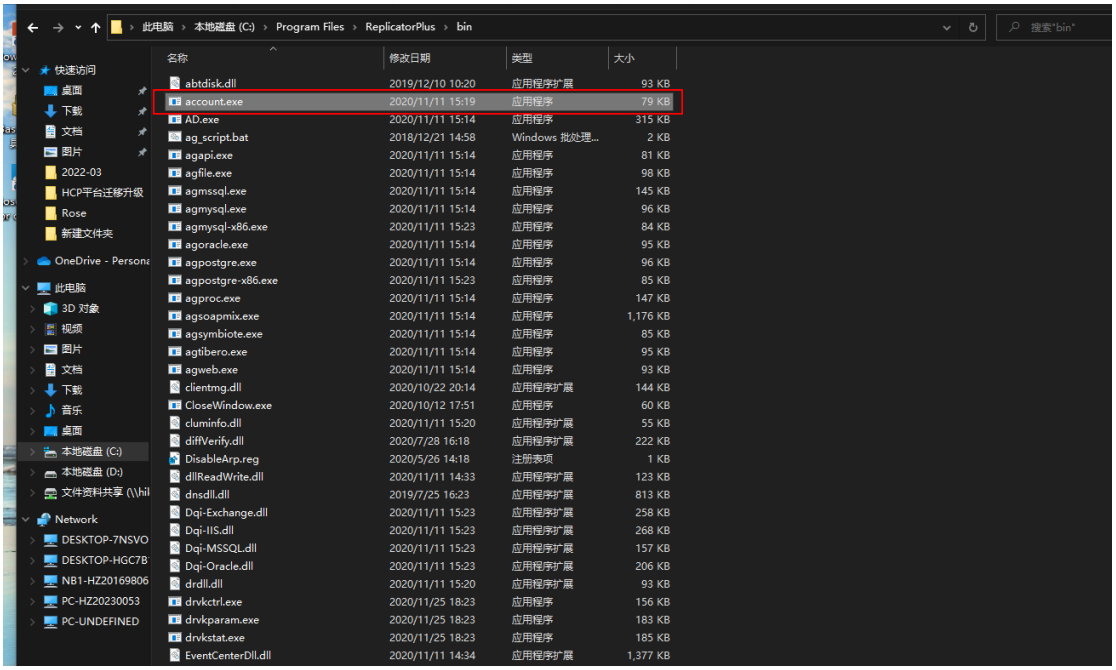
Right click the connection and select Modify View. Select data and modify to modify the binding data.



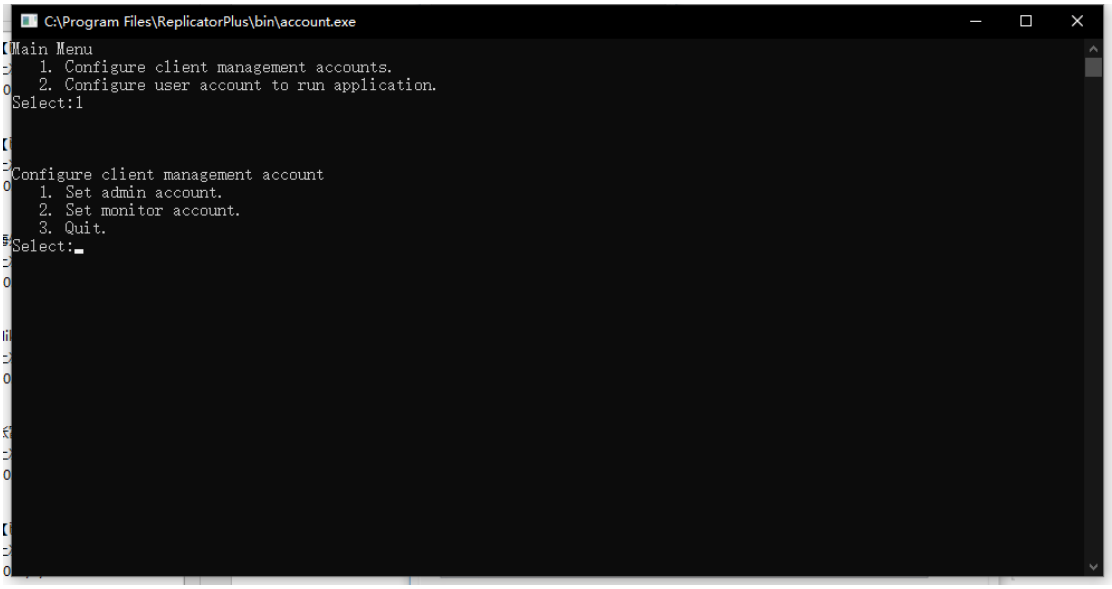
6.6 Rose Build in Account Password Modification

When Build in Account is selected but no operating system account is selected, the default password is admin. If you need to modify it, the operation steps are as follows:

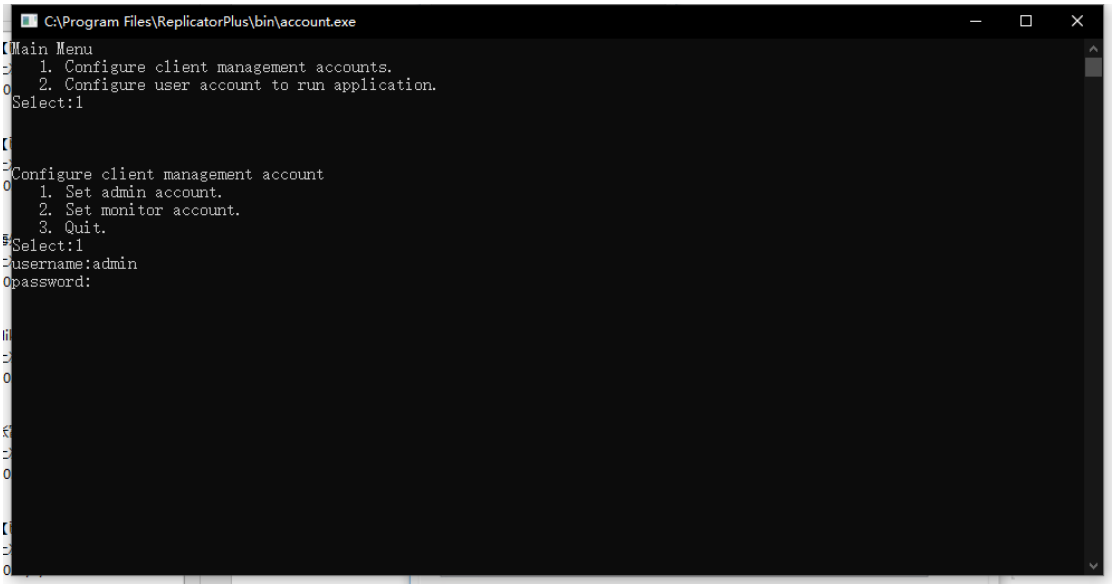
✓ Open the account.exe file under the path X: ReplicatorPlus bin and run it as an administrator.



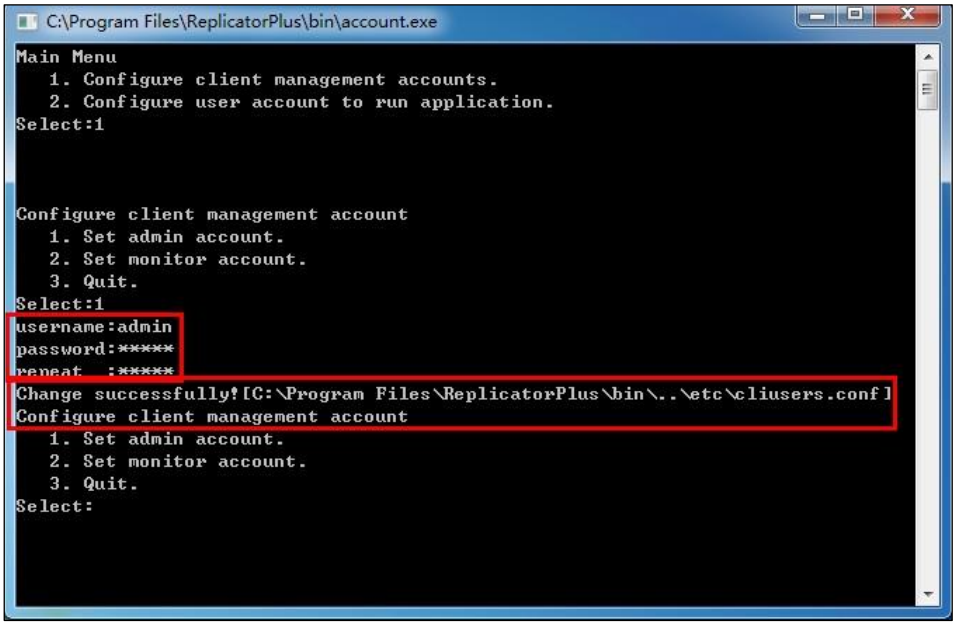
✓ Select 1 from the main menu in the pop-up command prompt, configure the client management account, and then press Enter



✓ Continue to select 1, set the admin account, enter the user name as admin, and press Enter

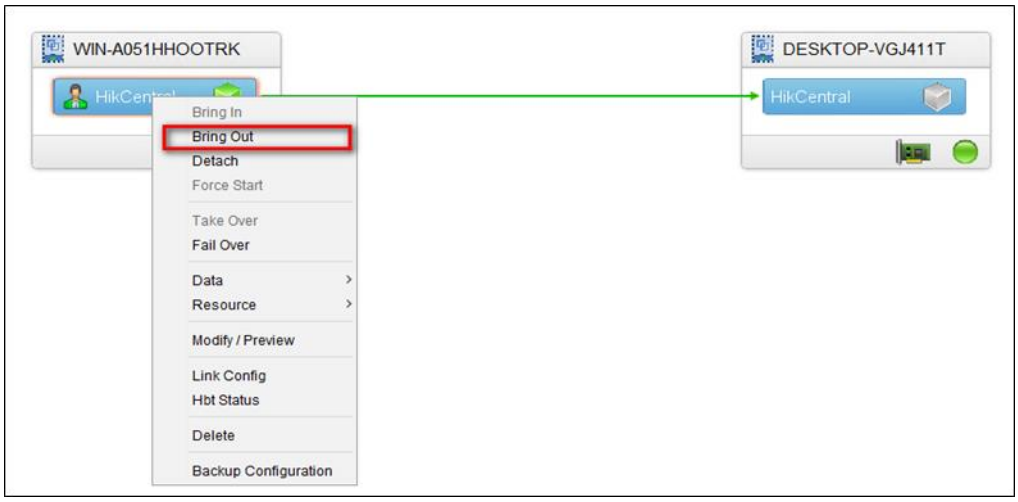


✓ Enter the new password to be set and confirm. After the prompt of successful modification appears, the password has been successfully modified

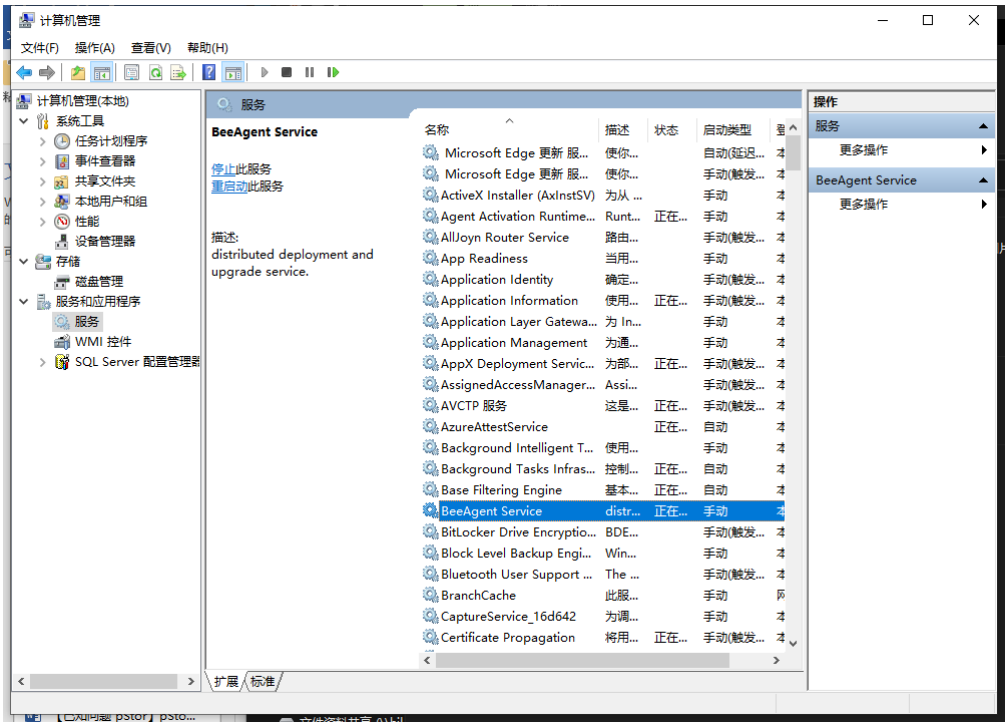


6.7 Modification of SYS image storage path and system backup file storage path

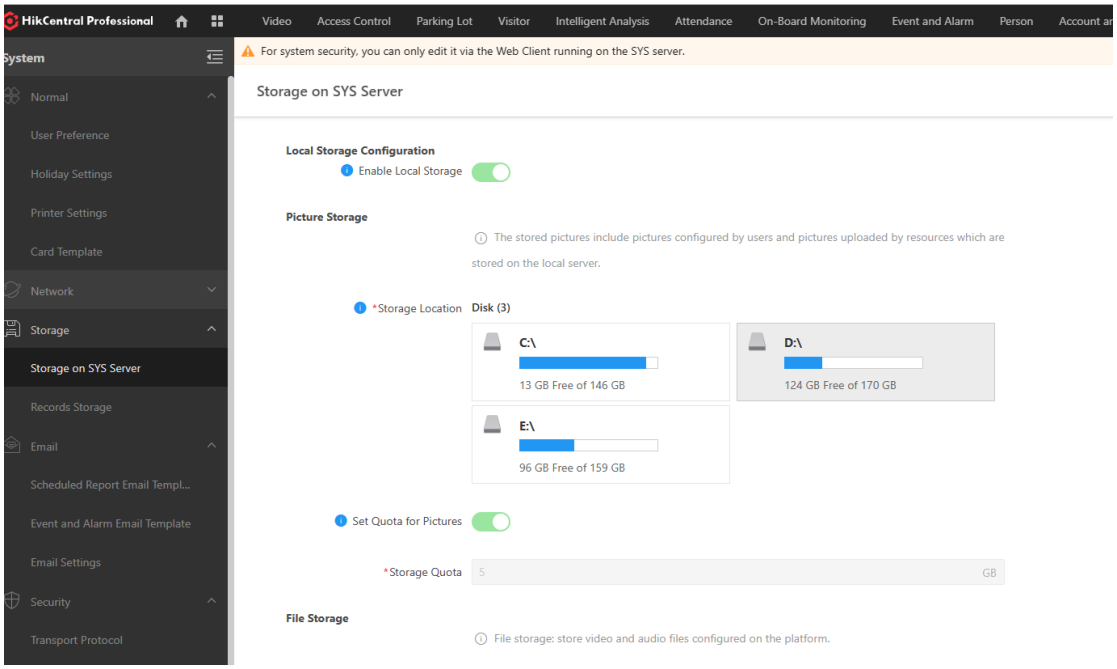
✓ Take the active and standby machines out of the hot standby



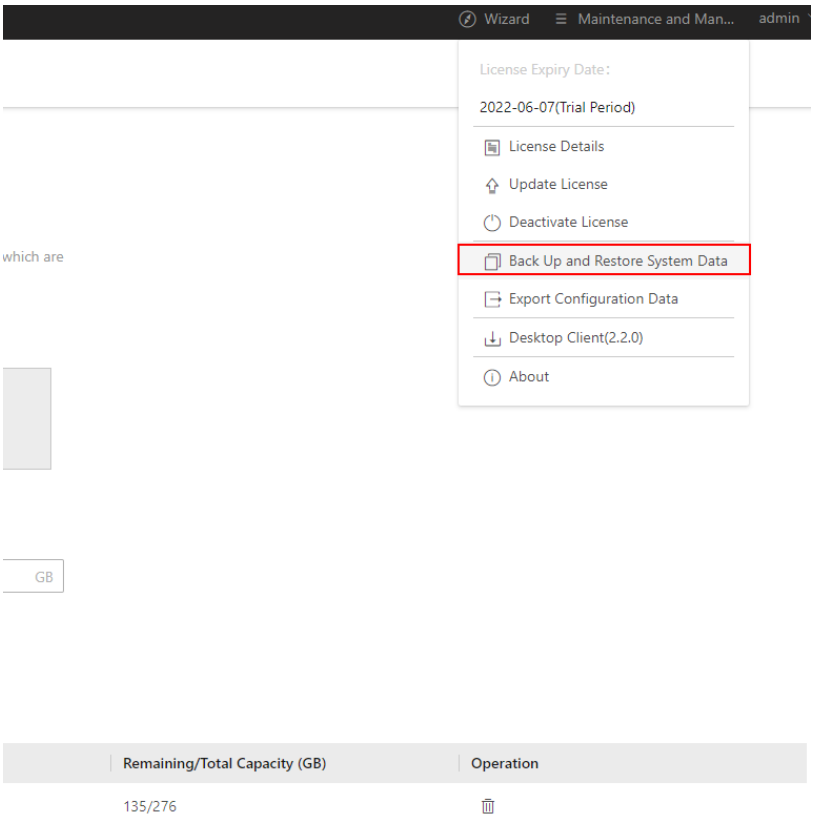
✓ Open the system service on the host, find the BeeAgent service and start it



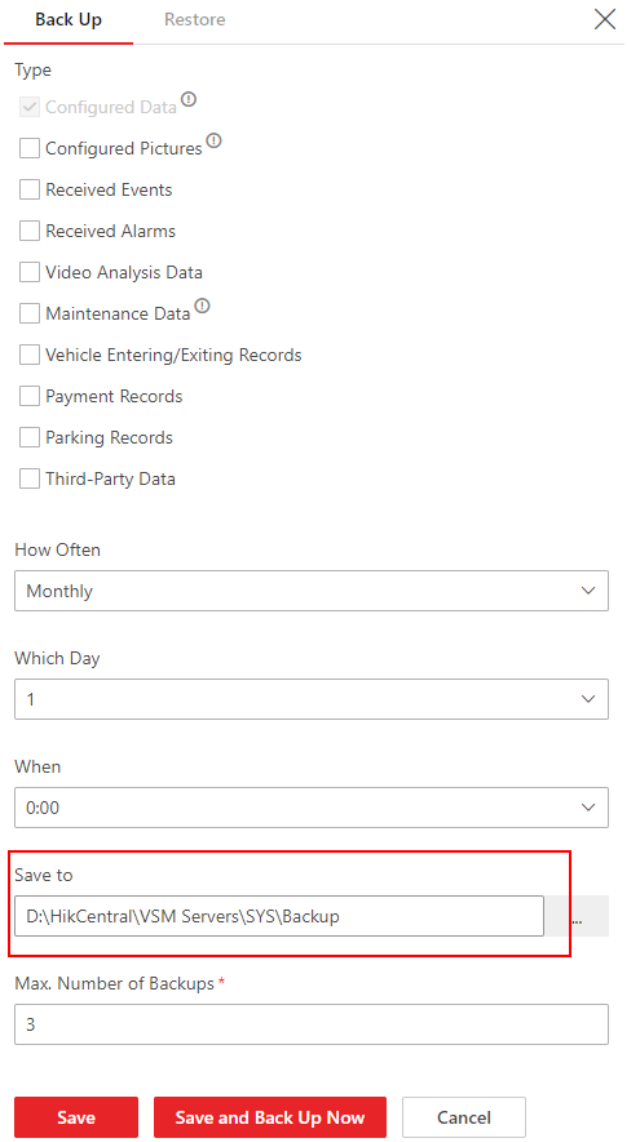
✓ After all the watchdog services are running normally, open the HCP server, click Storage, store on the SYS server, customize and modify the drive letter to be changed



✓ Click Maintenance and Management on the upper right side of the home page to modify the storage path of the backup file to the path of the asynchronous dataset



Custom backup schedule



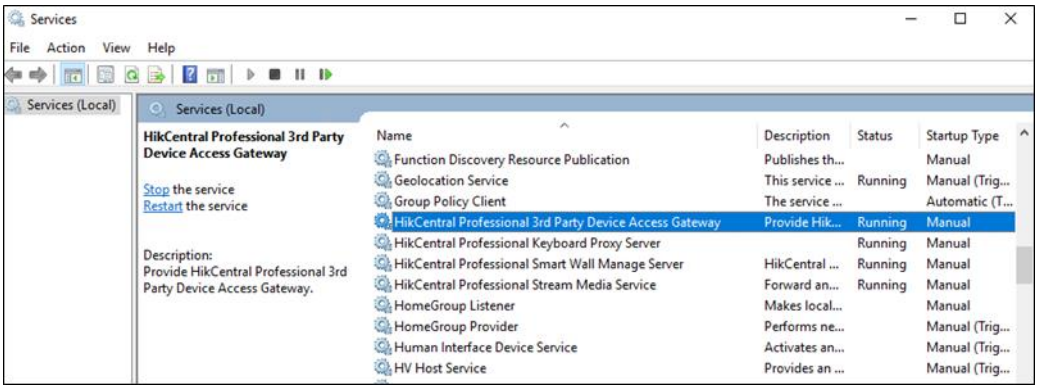
7 HCP function verification

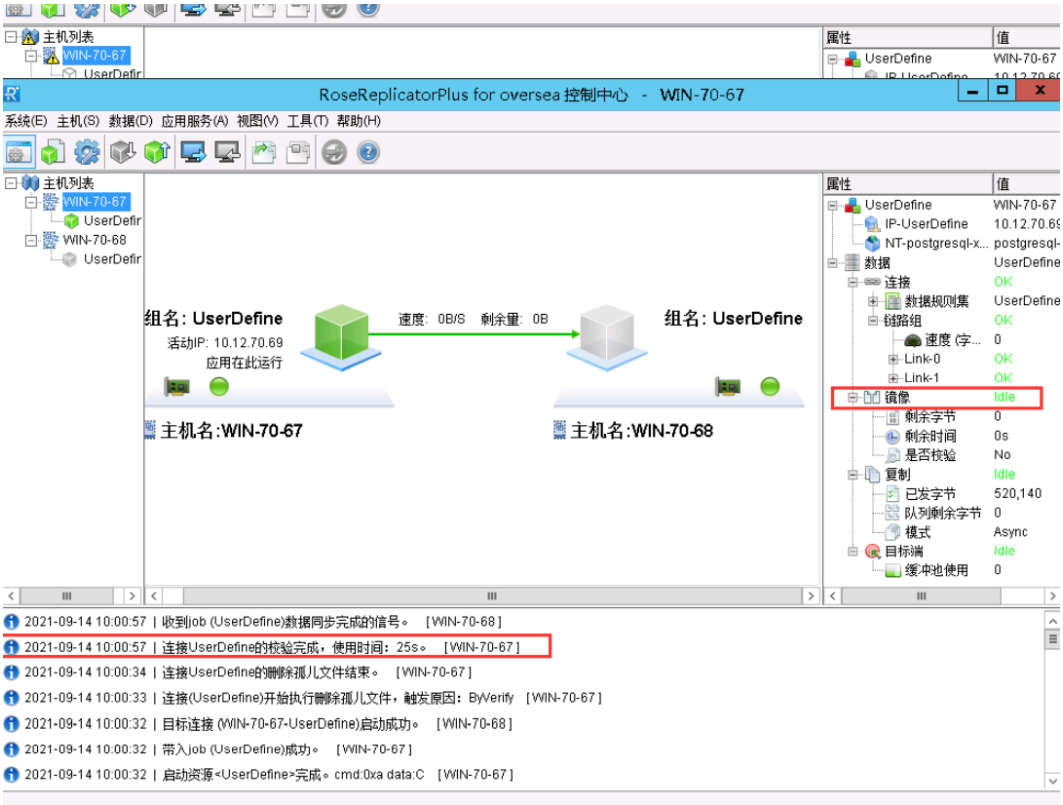
✓ **Rose, pick up the host**

In the Rose client, right click the host interface and select Bring in to view the service status of Services. HikCentral's services are brought by Rose and the platform is running normally

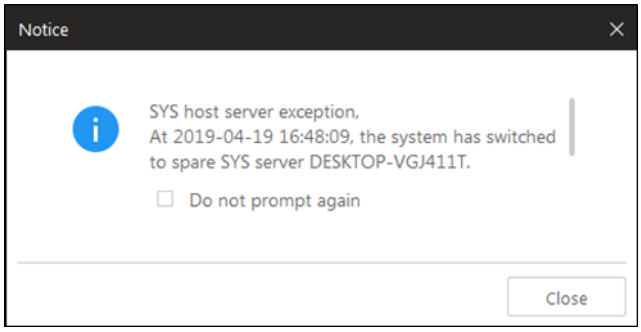
At this time, you can use the virtual IP to log in (under Rose hot standby, you will use the virtual IP to log in to the client. The virtual IP is equivalent to the IP of the active and standby machines. You can log in as long as any server on the active

and standby machines is running normally)



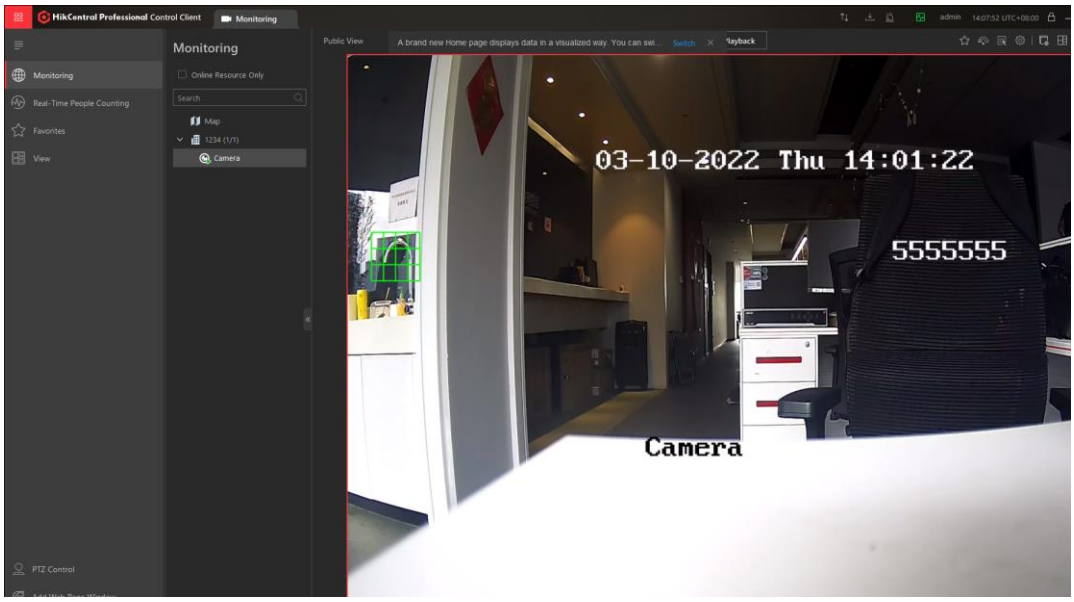


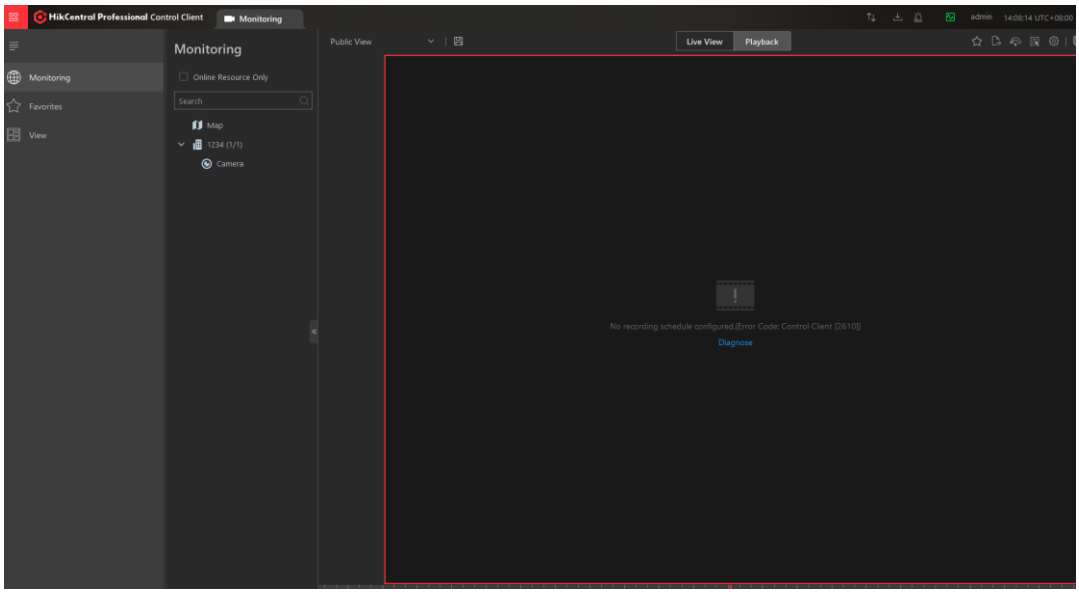
✓ After the host is shut down (shut down or disconnected), Rose takes the initiative to bring up the standby service

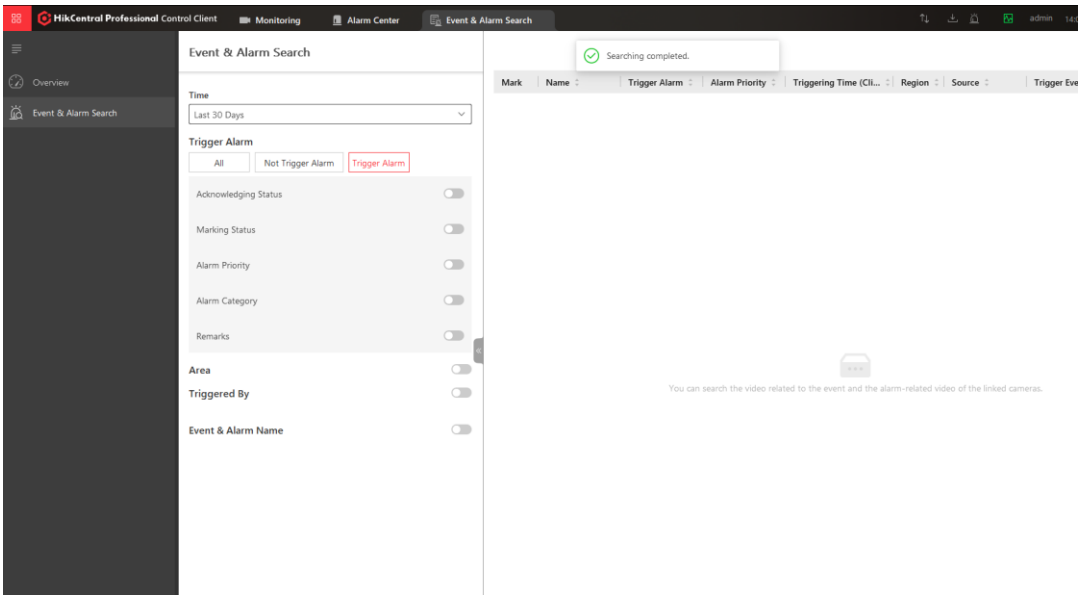


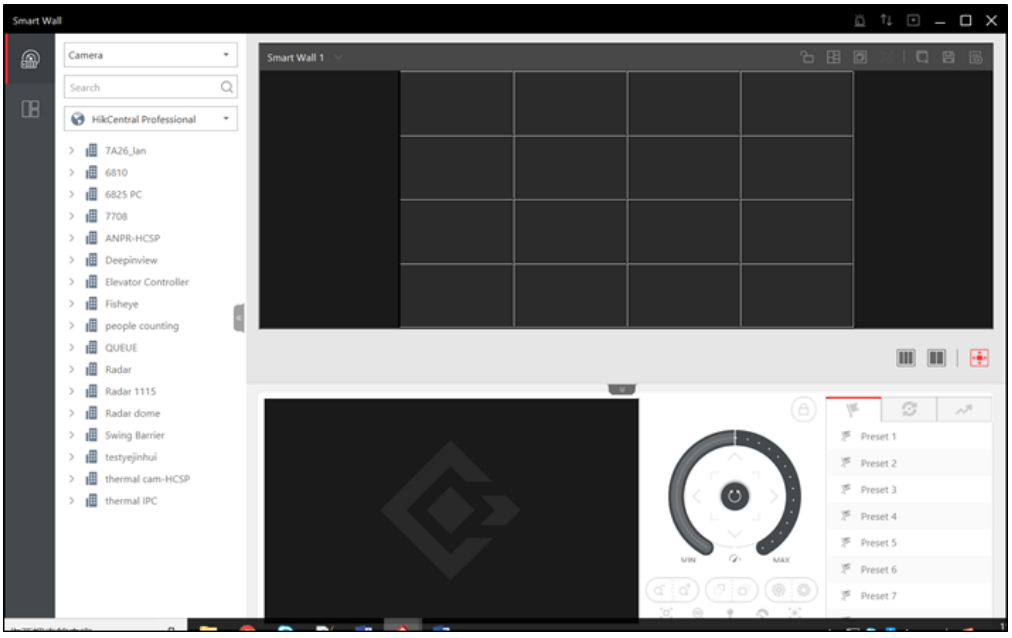
At this time, you can verify whether the following functions are normal: (Preview alarm

playback TV wall)









8 Description of automatic switching scenarios

Rose will automatically switch businesses in the following scenarios:

- Host downtime
- Host service network disconnection
- The NT service of the host fails to start for three consecutive times

[Note]: When the heartbeat connection is interrupted, as long as the service networks of the active and standby machines can ping each other, the switch will not occur.The switching time is about 1min. The switching time is different under different

abnormal conditions. When the host goes down, the standby does not need to wait for the host service to stop, so the time will be slightly less.When the switch is executed, the platform cannot log in, and all business data such as alarms reported by the device will be lost.In the project, the normal operation of the server should be ensured as far as possible, and the server with higher configuration should be used to reduce the switching time.

1、 If the heartbeat network cable is disconnected, it will not be switched because it is used to save heartbeat and data synchronization. If the network cable is disconnected, it will not affect service access. Even if it is switched, data synchronization will not be performed, so it will not be switched

2、 The re-establishment of the database hot standby needs a certain amount of time. The larger the data volume, the poor disk performance, and the poor network will lengthen the establishment time of the database hot standby (the time when the hot standby status on the watchdog interface turns green)

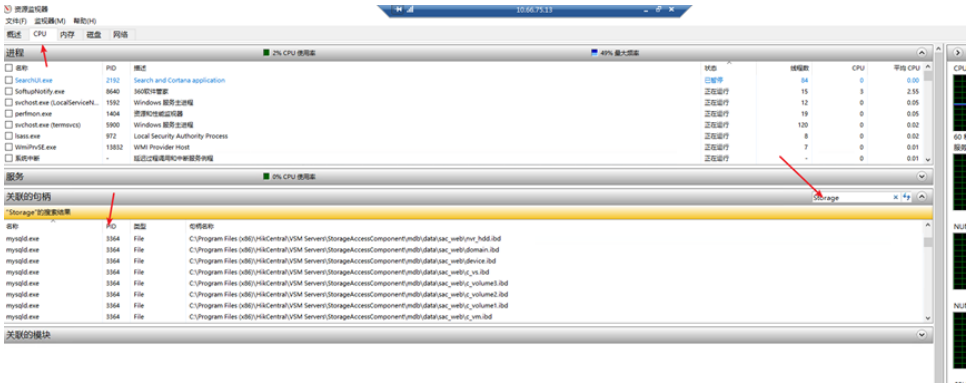
9 Common exception handling

9.1 The image is always in the verification state

As shown in the figure, sometimes this exception occurs. The image verification is always in the "writing" state, which means that a process occupies a file to be synchronized, and Rose cannot access the file, so it cannot be verified all the time.

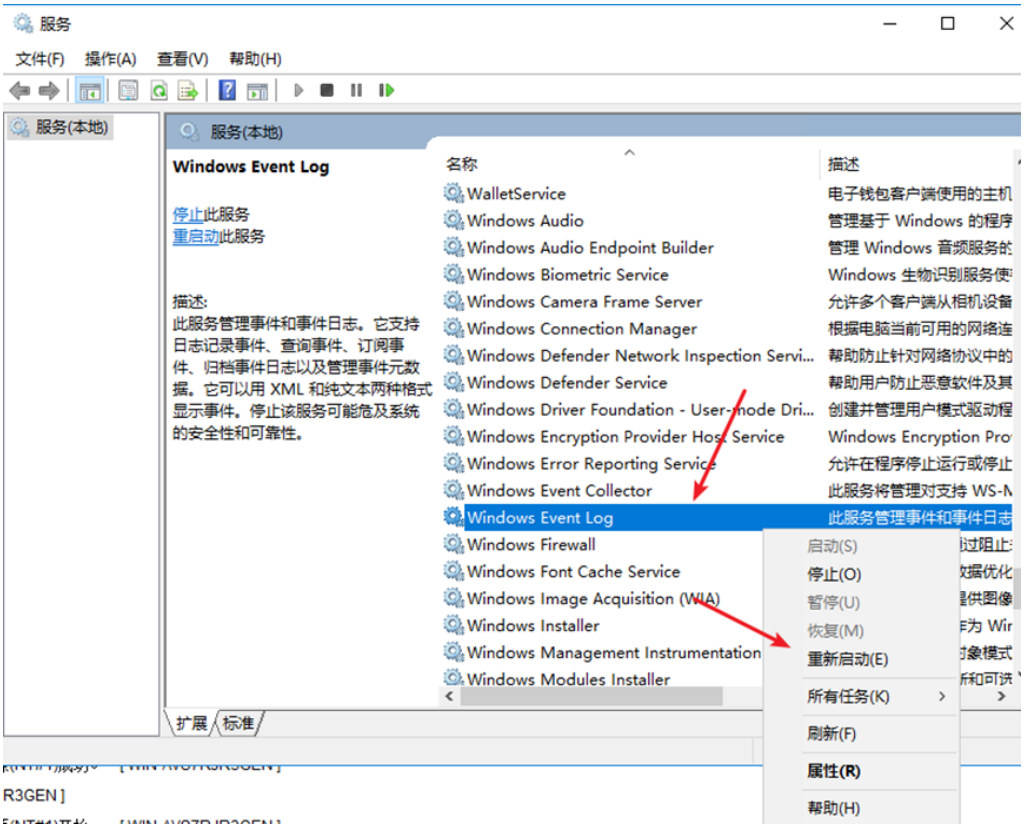
Solution:

1) If it is a normal file



Find the corresponding process in the performance monitor of the standby machine and kill it temporarily. In this way, the file is released and rose can synchronize. After synchronization, ensure that the service just killed is started.

2) If it is an. exe file, restart the Windows event log service of the standby machine.



9.2 Server migration

Recommended steps for server relocation:

- Start the host "RoseReplicatorPro Control Center", log in to the cluster host, select the application service,

Open the right-click menu and execute the "Bring Out" command

- Shut down the operating systems of the host and standby. Move the physical hardware of the primary and standby machines to the new machine room.
- First, check whether the network and other physical links are fully connected, start the active and standby operating systems, and confirm that the active

The network communication between the standby computers is normal, and whether the business applications work normally.

- After confirming that the previous steps are normal, start the "RoseReplicatorPro Control Center" and log in to the cluster host,

Select the application service, click the right-click menu, and execute the "Bring in" command

9.3 Reasons for Failed Resource Switching

Manually execute the resource switching operation. The main reasons for the resource switching failure are as follows

- The automatic synchronization of data has not been completed yet. The switch can be successfully executed only after the automatic synchronization of data is completed

Resource operation.

- Data synchronization is automatically started. For example, data synchronization is automatically started when resources are brought in;
- Data synchronization will be automatically started when some read/write failures occur.
- The resource startup of the standby host failed, causing the resource to fail back to the original host.By viewing the standby machine log,

Analyze and check what resources failed to start on the standby host side.

- The data replication connection of dual computers is stopped (the data replication connection is "gray")

9.4 How to configure the system's own firewall

- In the actual application environment, if the server is in the intranet, it is not

required that the server must be set with anti

Firewall and other network security software can be turned off and set to never start.

- To start the firewall of the operating system, please open the following ports and network communication permissions:

TCP：7320、7330

UDP: 7340, 7350 and heartbeat network heartbeat port

ICMP: Open ICMP (ping) packets of all network interfaces.

Windows system: Start ->Management Tools ->Windows Firewall with Advanced Security ->Inbound Rules

-Public ICMP, just start it.

Linux system: edit/etc/sysctl.conf to adjust net.ipv4.icmp_echo_ignore_all=1

(1 means that 0 is prohibited. It means that you are allowed to save and exit the execution of sysctl after modification. - p enables the configuration to generate Effective)

9.5 Heartbeat icon status is error

Check the following possible factors:

1) Check whether the heartbeat IP communication of the two hosts is normal.

2) Check whether network security software such as firewall is installed on the two hosts, and close it if any

3) Firewall or modify the network security configuration to allow heartbeat port communication.

4) When setting some necessary network communication ports for RoseReplicatorPro, the set ports are

Occupied by other services of the system, port conflicts and inability to bind ports cause heartbeat

No way.

5) Check whether the License is expired or invalid

9.6 Cannot obtain heartbeat network

Cause of the problem: Install Rose first and then configure the network.

Solution: resource group ->link configuration ->create interface, execute refresh operation to identify the new network configuration.

9.7 When HCP and pStor are deployed on the same server, the establishment of database hot standby relationship is affected

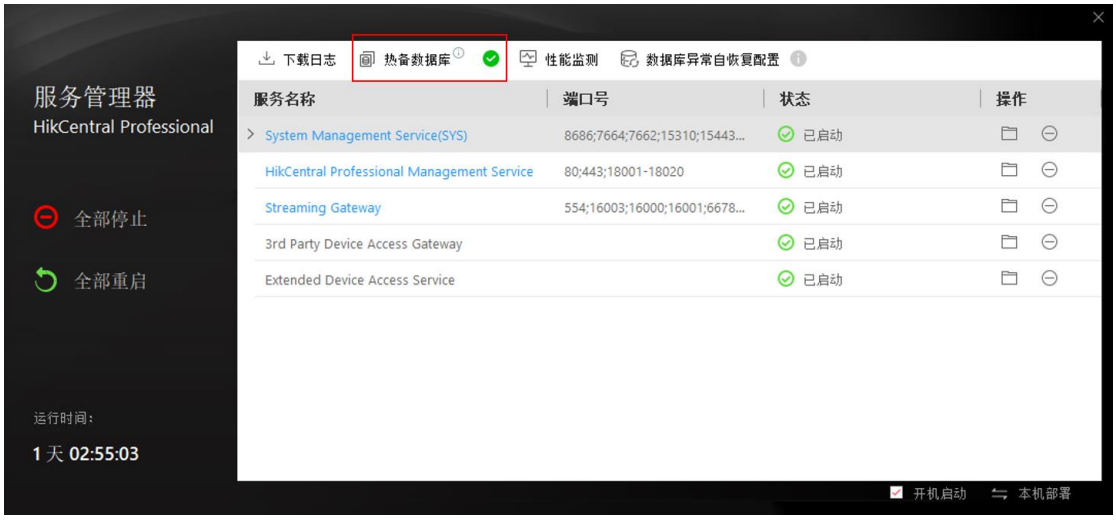
Cause of the problem: The HCP watchdog failed to establish the database hot standby relationship when it was disturbed by the pStor database.

Solution: HCP 2.4.0 executes database script solution, HCP baseline version 2.4.1 is repaired

10 Precautions

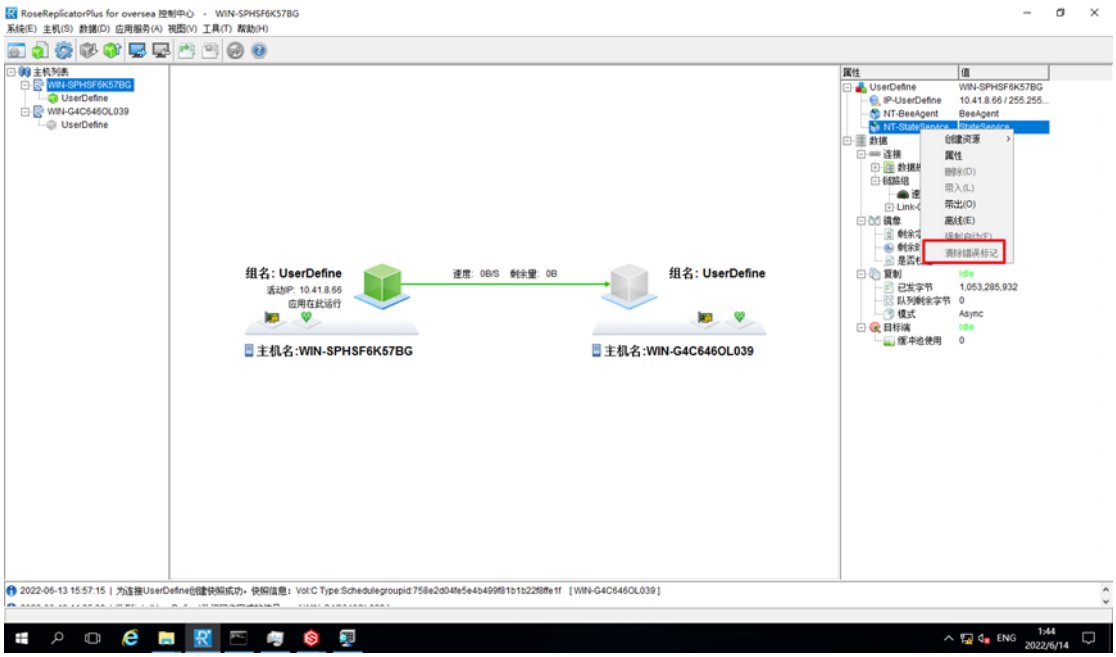
10.1 Precautions for manual switching

User must wait until the status of the watchdog interface is marked as green (streaming) before you can manually switch. If it is red, you cannot manually switch.As shown below:



10.2 Error mark clearing

When a service exception occurs, an exception mark is displayed in the service column on the right of the Rose interface, which is cleared within one hour by default; If the environment has been restored manually, you can right-click the service on the interface and clear the error mark in the right-click menu.



After clearing the error mark, you need to manually restart the BeeAgent service