MAIPU

MAIPU BD-LAN Controller

Installation Manual

V2.1.0

迈普通信技术股份有限公司
www.maipu.com

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Security Statement

Important! Before powering on and starting the product, please read the security and compatibility information of the product.

Environmental protection

This product has been designed to comply with the environmental protection requirements. The storage, use, and disposal of this product must meet the applicable national laws and regulations.

Preface

Manual Introduction

This manual mainly describes how to newly install MAIPU BD-LAN Controller. Please prepare the environment according to Chapter 1; When you have installed the required operating system, please install it according to the new installation method.

Hope this manual to be helpful to your work.

Product Versions

The corresponding product versions of the manual are as follows:

Product Name	Product Model
MAIPU BD-LAN Controller	MAIPU V2.1.0

Audience

This documentation is intended for:

- Commissioning engineers
- Field maintenance engineers
- System maintenance engineers

Conventions

Conventions of screen output format:

Format	Description
Screen print	Represents the output information of the screen
Keywords of Screen print	The red part represents the key information in the screen output

Conventions:

Format	Description
	An alert that contains additional or supplementary

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Format	Description
	information.
Caution	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
Warning	An alert that calls attention to important information that if not understood or followed can result in personal injury or device damage.

Command conventions:

Convention	Description
Boldface	Bold text represents commands and keywords that you enter literally as shown.
Italic	Italic text represents arguments that you replace with actual values.
[ ]	Square brackets enclose syntax choices (keywords or arguments) that are optional.
{ x | y | ... }	Braces enclose a set of required syntax choices separated by vertical bars, from which you select one.
[x | y | ...]	Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none.
{ x | y | ... } *	Asterisk marked braces enclose a set of required syntax choices separated by vertical bars, from which you select at least one.
&<1-n>	The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times.
#	A line that starts with a pound (#) sign is comments.

The icons used in the manual and the meanings:

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Icon	Description
	Represents a generic switch
	Represents a generic router

Revision Records

The revision records describe all manual update information. The latest manual version contains all the previous manual update content.

Version No.	Product Version	Revision Date	Revised Content
V1.0	MAIPU V2.1.0	2022-04-25	MAIPU V2.1.0 released version, user installation guide

Obtaining Documentation

You can access the most up-to-date Maipu product documentation on the World Wide Web at www.maipu.com.

Technical Support

- Fax: (+8628)85148948

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1. Environment Requirements

MAIPU BD-LAN Service Components environment requirements

When installing the server resources of MAIPU BD-LAN Controller, it is necessary to meet the following configuration requirements:

Linux system requirements (install CentOS 7.9 64bit operation system)				
Managed devices	Managed terminals	CPU (recommended configuration)	Memory (recommended configuration)	Disk performance parameters (lowest configuration)
<=440	<=5000	Intel XEON Silver 4110 *1 8-core 16 thread 2.1GHz	32G DDR4	1.2T*2 2.5-inch SAS 10K RAID1

Caution

- The basic distributed components etcd and tidb that MAIPU BD-LAN controller relies on have high requirements for the IOPS of the disk. The disk with low IOPS will result in the failure of the above basic distributed components and cause service failure.

Bdsec component environment requirements

Linux system requirements (install CentOS 7.9 64bit operation system)				
Managed devices	Managed terminals	CPU (recommended configuration)	Memory (recommended configuration)	Disk performance parameters (lowest configuration)
<=440	<=5000	Intel XEON Silver 4110*2 8-core 16 thread 2.1GHz *2	96G DDR4	960G 2.5-inch SSD hard disk*2 (RAIDO) 600G 15K 2.5-inch SAS hard disk *2 (RAID1) 1.2TB 10K 2.5-inch SAS hard disk *3 (RAID5)

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2. Installation Preparations

Before installing MAIPU BD-LAN controller, prepare the server, install the operating system, plan the network topology and address, configure the firewall and server time, and prepare the MAIPU software package.

Prepare software package

Software package name	Remarks
MAIPU-KuBoard-V006R002C00BXXX-XXXXXXXXXXX.sh	MAIPU cluster platform Kuboard software package
MAIPU-2.1.1.0-XXXXXXXXXXX.tar.gz	MAIPU service component software package
MAIPU-6.2.1-XXXXXXXXXXX.tar.gz	MAIPU SEC service component software package

Prepare Server

Scenario	Servers/set	Component distribution	Remarks
Standalone mode	One	Deployed on one server	For the information such as operating system, hard disk and network card, refer to the chapter of environmental requirements.
Cluster mode	Three sets, five sets	Three sets (three sets of master), five sets (three sets of master, two sets of load nodes)	
Cluster + sec component	Four sets	Four sets (3 sets of master+ one worker)	Three masters are used for installing MAIPU, and one worker is used for installing the bdsec component.

Network planning

1. Standalone mode

IP address	Quantity	Remarks
IP address	1	One service IP address

2. Cluster mode

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Mode	IP address	Quantity	Remarks
MAIPU cluster	IP address	Two IP addresses, one address pool	1 management IP address; 1 service IP address pool (default configuration can be used); 1 pod IP address pool (default configuration can be used);
MAIPU+BDSEC component mode	IP address	One IP address, two address pools	1 management IP address; 1 service IP address pool (default configuration can be used); 1 pod IP address pool (default configuration can be used);

Firewall configuration

Source device	**Dest. Device**	**Open ports**	**Internal ports**	**Protocol**	**Usage**
Controller	Access device	22	NA	TCP (SSH)	Software upgrade, configuration backup and other services
Controller	Access device	23 (optional)	NA	TCP (TELNET)	Software upgrade, configuration backup and other services
Controller	Email server	25	NA	TCP (SMTP)	Alarm mail notification
Controller	Access device	68	NA	UDP (DHCP)	Zero-configuration opening and other services
Controller	Access device	161	NA	UDP (SNMP)	Network device discovery and information collection
Controller	Access device	830	NA	TCP (NETCONF)	Terminal type identification, terminal vulnerability scanning and other services
Controller	Third-party RADIUS	1812, 1645	NA	UDP (RADIUS)	Terminal access authentication

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Controller	Third-party RADIUS	1813, 1646	NA	UDP (RADIUS)	Terminal accounting
Controller	Access device	3799	NA	UDP (RADIUS)	DM message (active offline terminal)
Access device	Controller	21	30121	TCP (FTP)	Used for zero-configuration opening, upgrade/ configuration management (the device is the passive mode)
Access device	Controller	22	30122	TCP (SFTP)	Used for zero-configuration opening, upgrade/ configuration management
Access device	Controller	67	30115	UDP(DHCP)	Zero-configuration opening and other services
Access device	Controller	162	30111	UDP(TRAP)	Alarm reporting
Manager	Controller	8443	8443	TCP(HTTPS)	Cluster management
Manager	Controller	443	11202	TCP (HTTPS)	Service management
Access device	Controller	514	30110	UDP(SYSLOG)	Log reporting
Access device	Controller	1812, 1645	31812, 31645	UDP (RADIUS)	Terminal access authentication
Access device	Controller	1813, 1646	31813, 31646	UDP (RADIUS)	Terminal accounting
Access device	Controller	30401		IPFIX	IPFIX traffic reporting
Access device	Controller	30402		Sflow	sflow traffic reporting

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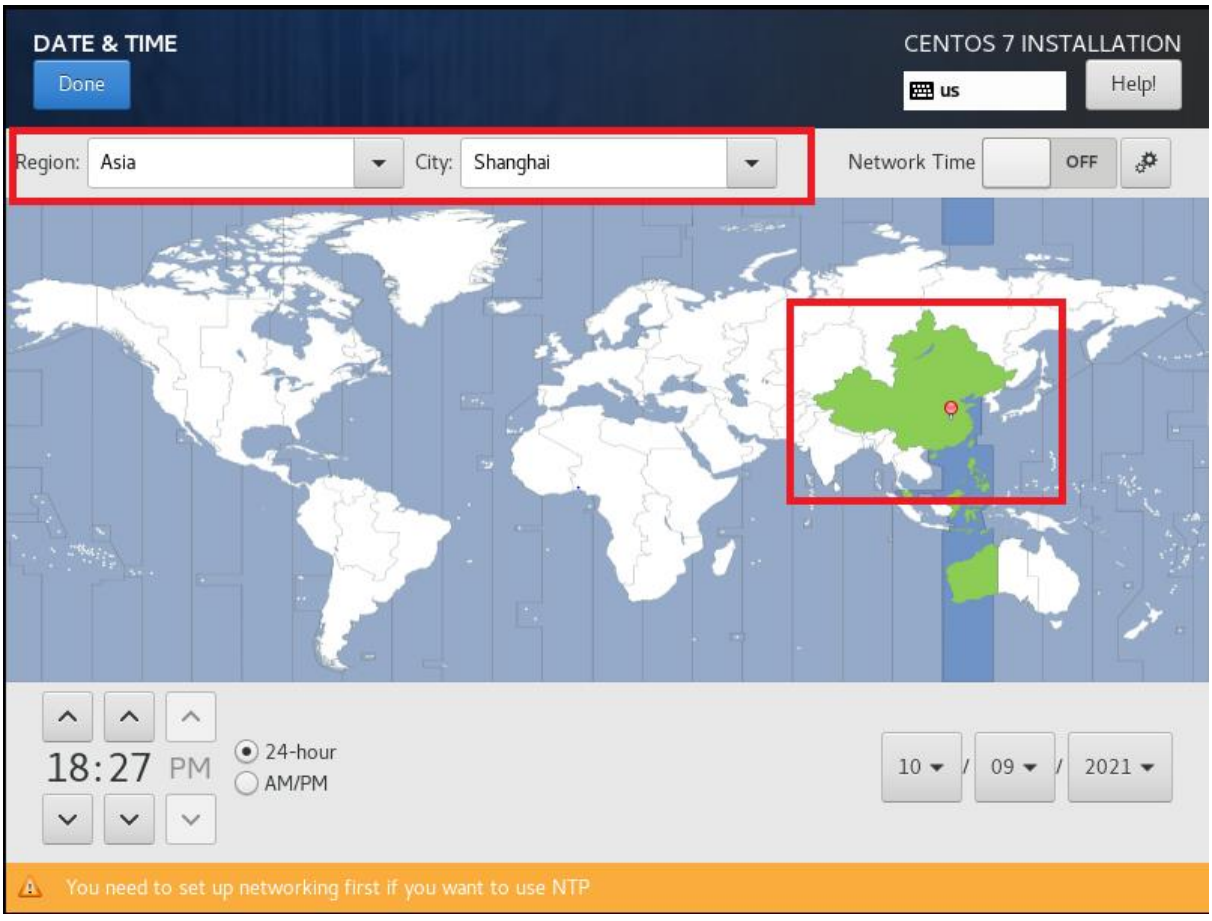
Caution

- It is suggested to open a telnet or SSH protocol on the device side. The configuration management and other modules of the MAIPU BD-LAN controller will call the telnet/SSH protocol; If MAIPU series switches or routers are used together, please enable the NETCONF protocol. If the MAIPU BD-LAN controller is docked with the third-party e-mail/SMS platform, the open port on the MAIPU server shall be subject to the port started by the actual e-mail/SMS platform.

Time zone configuration

The time zone must be configured as Asia/Shanghai when installing the MAIPU BD-LAN controller. One of the two options is to configure the time zone during the installation of the operating system and after the installation.

Set the time zone during the installation of the operating system as follows:



Set the time zone after installation as follows:

[root@stm-cluster-dev-1 ~]# **timedatectl set-timezone Asia/Shanghai**

[root@stm-cluster-dev-1 ~]#

Install dependent package:

The installation and deployment of MAIPU BD-LAN controller depends on some basic packages in CentOS. The relevant dependent packages must be installed before the installation and deployment

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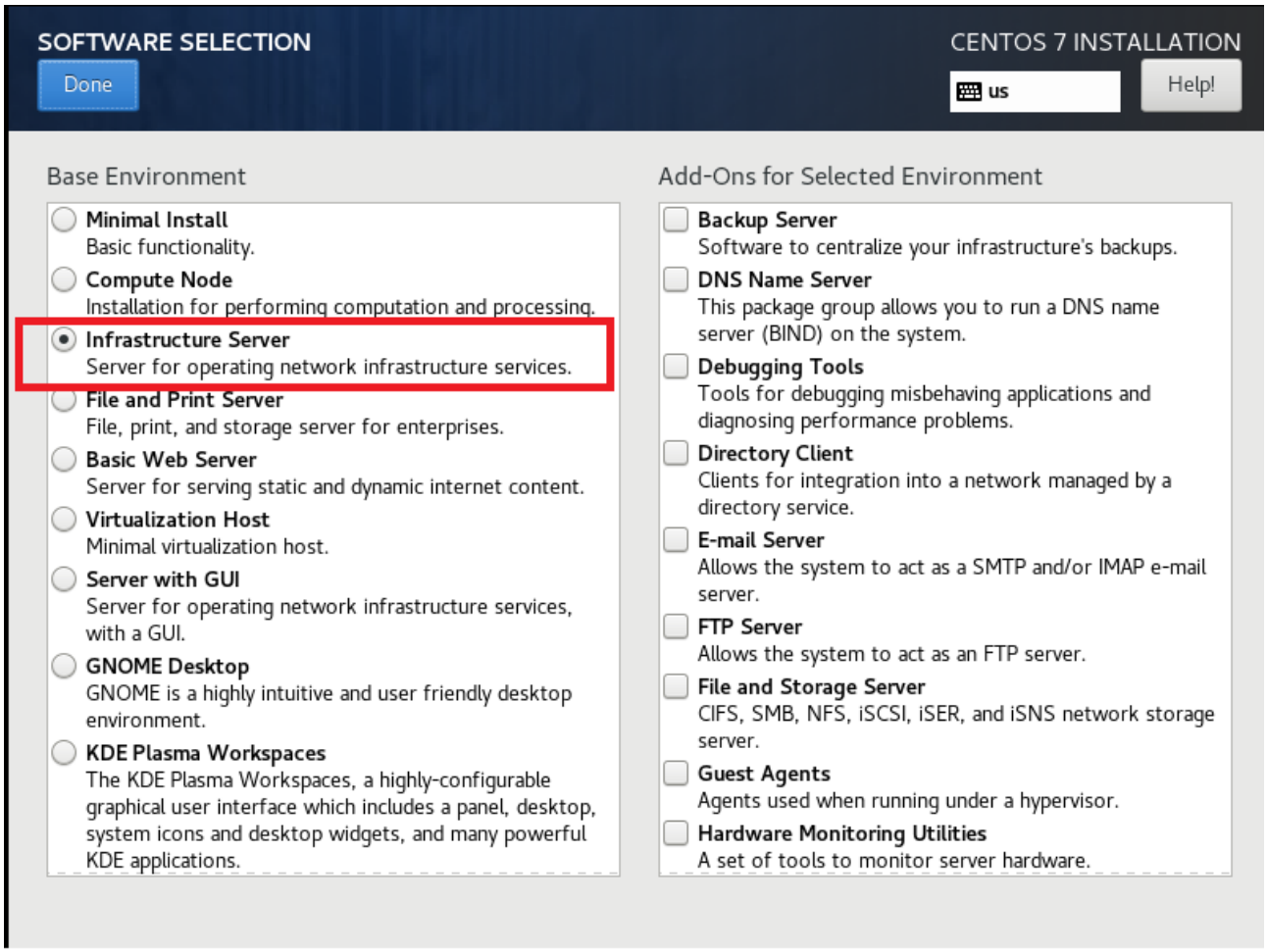
of MAIPU BD-LAN controller. Otherwise, the installation of MAIPU BD-LAN controller will fail. There are two ways to install dependent packages: select the dependent package when installing the operating system, and install the dependent package after installing the operating system.

Install dependent packages when installing the operating system (recommended method):



Install the dependent package after installing the operating system:

1. Mount the operating system CD image to the machine: mkdir-p /medir/CentOS;mount /dev/cdrom /media/CentOS
2. Execute the following command set to configure yum local source:

   mkdir -p /etc/yum.repos.d/backup

   mv /etc/yum.repos.d/*.repo /etc/yum.repos.d/backup

   mv /etc/yum.repos.d/backup/CentOS-Media.repo /etc/yum.repos.d/

   sed -i 's/enabled=0/enabled=1/g' /etc/yum.repos.d/CentOS-Media.repo
3. Execute the installation package command: **yum group install "Infrastructure Server"**

Network configuration

Before installing the MAIPU BD-LAN controller, it is necessary to complete the network configuration of all hosts. The network configuration can be configured at the stage of installing the operating system and after installing the operating system.

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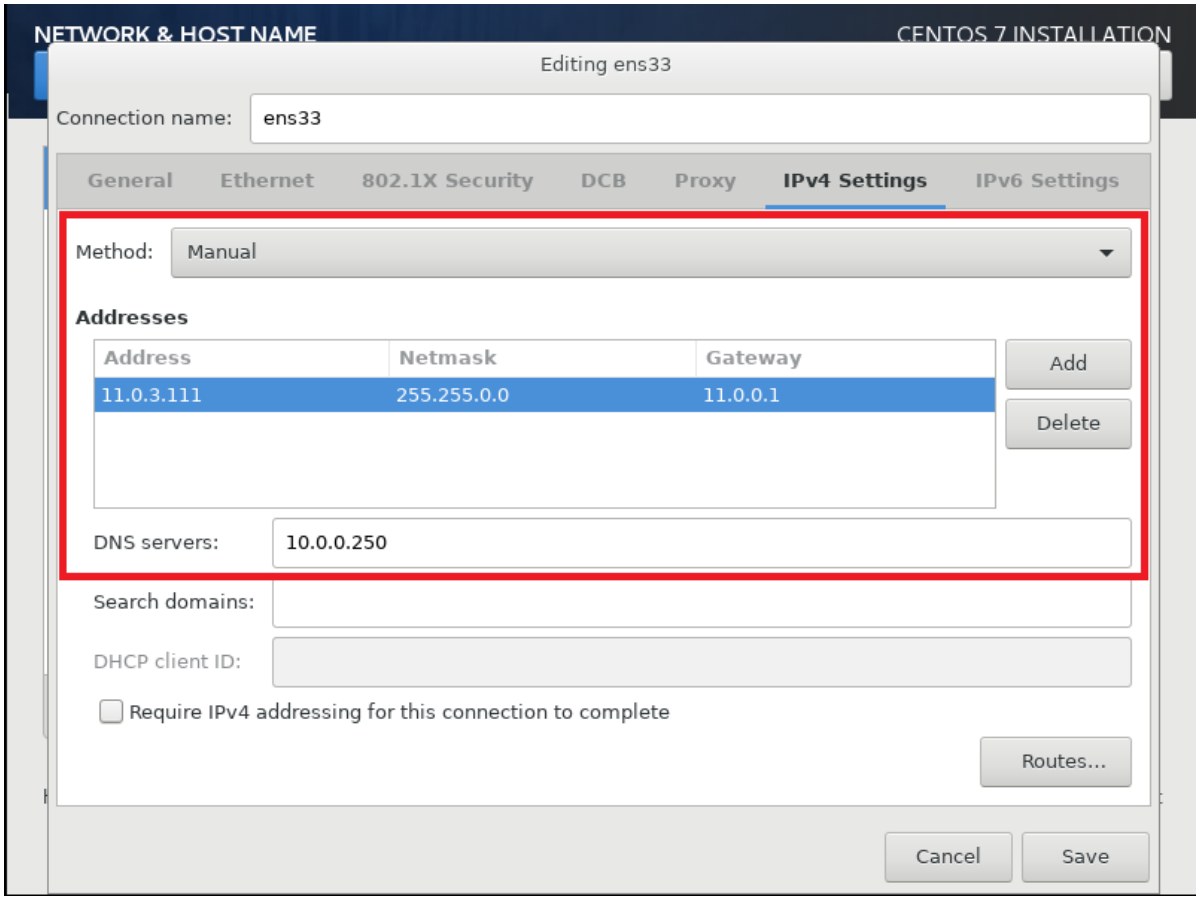
Configure IP address during the installation of operating system:



Configure the IP address after installing the operating system:

1. Execute the command to enter the interface of configuring the IP address: nmtui

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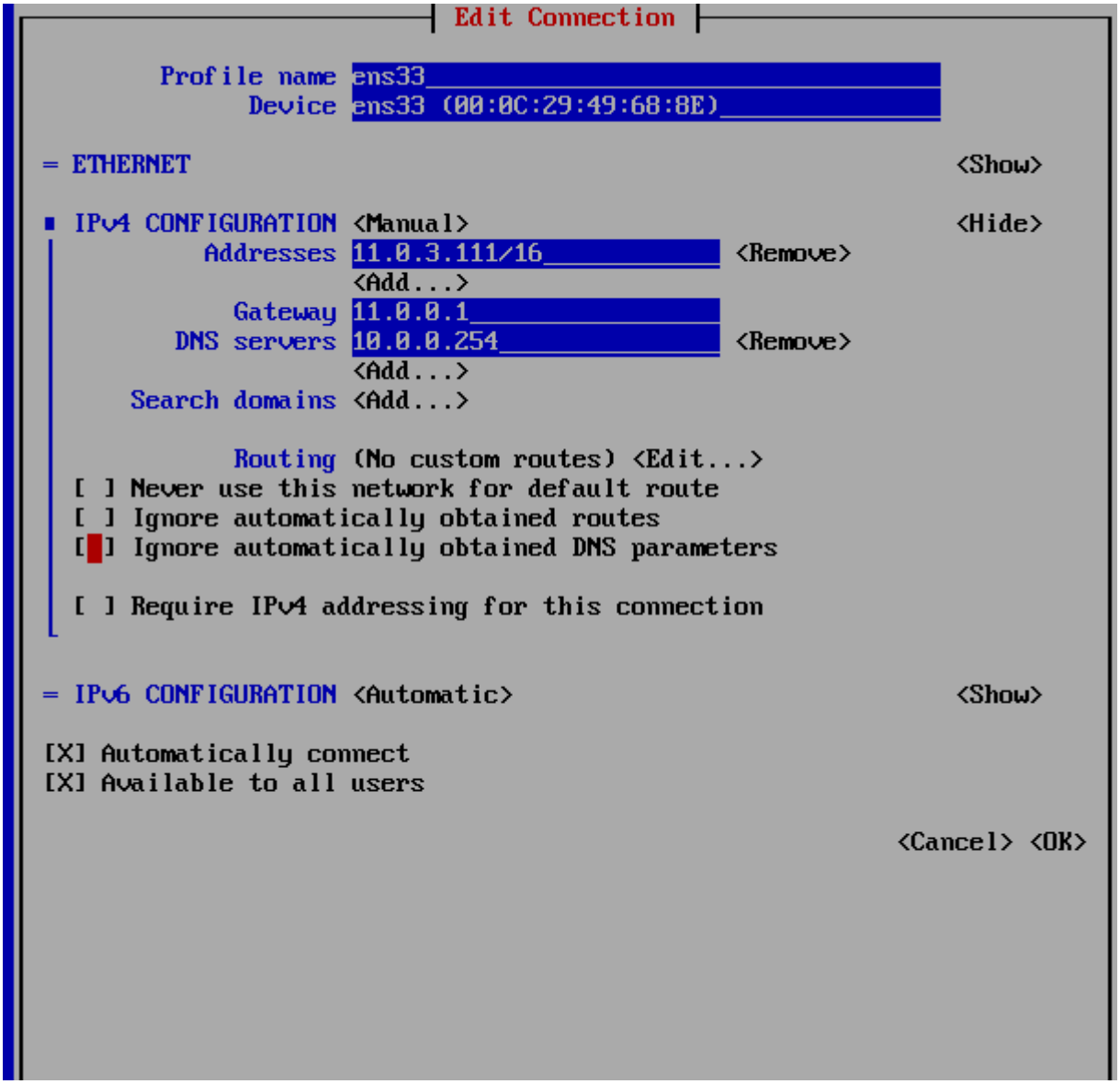

2. Make the configuration take effect: **nmcli connection up ens33**

Caution

- The specific network card interface name shall be subject to the interface name on the actual host, and the ens33 in the example is only for reference;
- There must be a default gateway configuration in the network configuration. Otherwise, the MAIPU service cluster will not be available;
- The DNS server configuration is optional. If the configuration is selected, the DNS service must be available. Otherwise, the availability of MAIPU service cluster will be affected;
- Please plan the IP address of the server reasonably. After installing and deploying the service cluster, the IP address cannot be modified. If it needs to be modified, the service cluster needs to be deleted after backing up the service data. After deleting the host, modify

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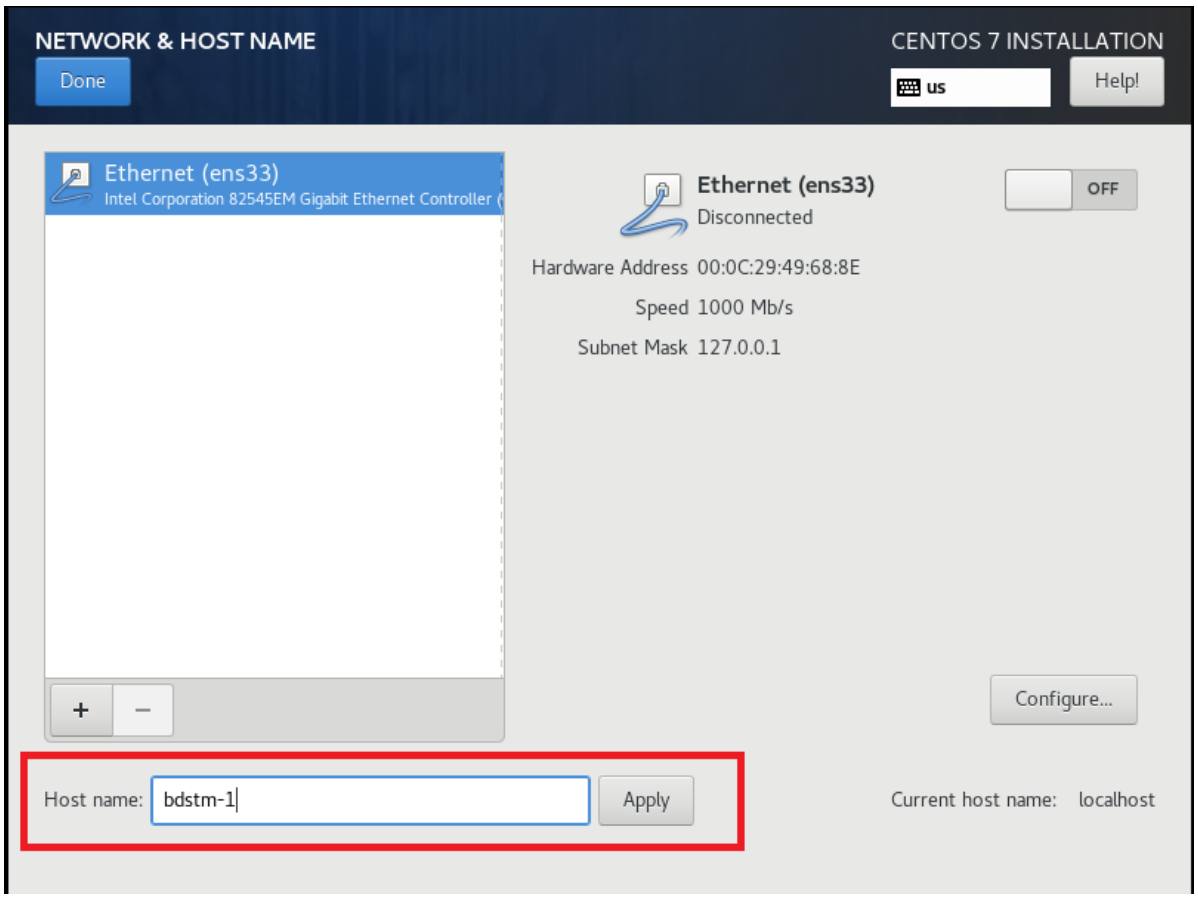
the IP address, add the host again and create the service cluster.

Configure host name

Each host on which the BD-LAN controller is installed must be configured with a host name. The host name of each host is not allowed to be repeated, and it is not allowed to use the default domain name localhost. The host name can be configured during the installation of the operating system or after the installation is completed.

Set host name during system installation:



Set the host name after installing the system:

[root@stm-cluster-dev-1 ~]#

[root@stm-cluster-dev-1 ~]# **hostnamectl set-hostname MAIPU-1**

Caution

- The host name cannot contain any uppercase letters. Otherwise, the installation and deployment will fail.

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3. Software Package Cluster (Single-Node) Mode Installation

This chapter introduces the deployment and installation of the cluster platform and service components of MAIPU BD-LAN controller using software packages on the existing operating system. The installation and deployment in this document is for reference only. Please configure according to the actual deployment.

3.1 Install MAIPU Cluster Management System

Copy the kuboard installation package to the server to be installed, and then use the command to execute the installation:

[root@MAIPU home]# **chmod +x /home/MAIPU-KuBoard-V006R002C00BXXX-XXXXXXXXXXX.sh** (Set the software installation package as executable program)

[root@MAIPU home]# **/home/MAIPU-KuBoard-V006R002C00BXXX-XXXXXXXXXXX.sh install** (Execute the installation)

[MAIPU-KuBoard] Verifying archive integrity...

All good.

[MAIPU-KuBoard] Uncompressing MAIPU-KuBoard V006R002C00B0XXX installer

\ Done

Input setup dest path:**[/home/mpup/mpup]** (Set the installation directory. After inputting the installation path, click Enter. By default, it is installed in the path: /home/mpup/mpup)

[MAIPU-KuBoard] DO CBK preinstal

[MAIPU-KuBoard] [INFO] Copy cbkscript ...

[MAIPU-KuBoard] [INFO] Call ./_callbackscript/mpup_cbks_basic.sh (preinstall)

MAIPU-KuBoard installer

The setup program will install files, strongly recommend that you backup data!!!

Confirm install [y/n]? :**[y]** (Confirm the installation of the system and click Enter)

[MAIPU-KuBoard] DO CBK install

[MAIPU-KuBoard] [INFO] Log: /tmp/logs/install/MAIPU-KuBoard-V006R002C00BXXX-XXXXXXXX_install_XXXXXXXXXXXXXX.log

[MAIPU-KuBoard] [INFO] INSTALL PATH: /home/mpup/mpup

[MAIPU-KuBoard] [INFO] [INSTALL] Begin install ...

[MAIPU-KuBoard] [INFO] [INSTALL] Install rpm ...

[MAIPU-KuBoard] [INFO] [INSTALL] Run installscript '_syssetuppatch.sh' ...

[MAIPU-KuBoard] [INFO] Call ./_callbackscript/mpup_cbks_basic.sh (install)

……

[MAIPU-KuBoard] [INFO] [INSTALL] Backup setup files ...

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[MAIPU-KuBoard] [INFO] [INSTALL] Finished

[MAIPU-KuBoard] INFO install success MAIPU-KuBoard V006R002C00BXXX

removed '/tmp/PKG___GLOBAL__.lock'

3.2 Initialize MAIPU Cluster Management System Service

Execute the command **mpshell srvmgt init** to initialize the service:

[root@MAIPU home]# **mpshell srvmgt init** (Execute the command of initializing the system)

[MPUP] Stop srvmgt service...[MPUP] done

[MPUP] ########################## Network config ######################

[MPUP] Found Multi-Ethernet Interfaces:

Index	IfName	MAC	IPv4	Linked	IPv6
[0]	ens192	00:0C:29:93:BF:6C	129.255.164.171	yes	
[1]	ens224	00:0C:29:93:BF:76	193.168.20.20	yes	

Please input the index of the eth interface for service (0 - 1): **[0]** (Select the service network card, enter the service network card number and click Enter; If the default network card is used, click Enter directly)

Please choose https port(443|8443) **[8443]:** (the port configuration for web access, only supporting 443 or 8443. By default, 8443 is used, and click Enter)

[MPUP] * Stop system firewall ...

[MPUP] * Set enforce permissive ...

setenforce: SELinux is disabled

Redirecting to /bin/systemctl restart rsyslog.service

[MPUP] Config srvmgt enable ...

Please select the current system language environment: (zh_CN/en) : **[en]** (select the language environment. By default, use English, and click Enter)

Configure application servers? (y/n) **[y]**: (Confirm the installation of the component. By default, select y, and click Enter. If not configuring, input "n", and then, click Enter)

* execute init script '30-init-cluster.conf' ...

* execute init script '40-init-db.sh' ...

* execute init script '50-init-plugins.sh' ...

* Init sshd

* MySQL does not exist in the service list, skipping SQL initialization.

Init sshd begin ...

Init sshd finish.

……

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[mpup-kuboard] Init nginx-ingress kuboard ip 129.255.164.171 ...

* Init mpup-web

* MySQL does not exist in the service list, skipping SQL initialization.

Create mpup mpup ...

* chown files for mpup(mpup) ...

3.3 Start MAIPU Cluster Management System Service

Step 1: Start the MAIPU service

[root@MAIPU home]# **mpshell srvmgt start** (Execute the command to start the service)

* Start 'sshd' service...

Start watchdog for 'sshd'...done

* Start 'nginx' service...

Start watchdog for 'nginx'...done

* Start 'mpup-kuboard' service...

Start watchdog for 'mpup-kuboard'...done

* Start 'mpup-web' service...

Start watchdog for 'mpup-web'...done

Step 2: Check the service status

Execute the command **mpshell srvmgt status** to view the service status:

[root@MAIPU home]# **mpshell srvmgt status** (View the service status)

service mpup-kuboard is running

service mpup-web is running

service nginx is running

service sshd is running

Step 3: Check the service health status

[root@MAIPU home]# **mpshell srvmgt health** (Execute the command to check the service health status)

```
+---------------------+-----------------+--------------+----------------------+
| ServiceName         | MonitorStatus   | ServiceStatus | HealthStatus        |
+---------------------+-----------------+--------------+----------------------+
| sshd                | running(8937)   | up            | HealthOK            |
| nginx               | running(9450)   | up            | HealthOK            |
| mpup-kuboard        | running(9751)   | up            | HealthOK            |
| mpup-web            | running(10138)  | up            | HealthOK            |
+-------------------------------------------------------------------------------+
```

The health status of all components is healthok, which indicates that the MAIPU cluster management system service is

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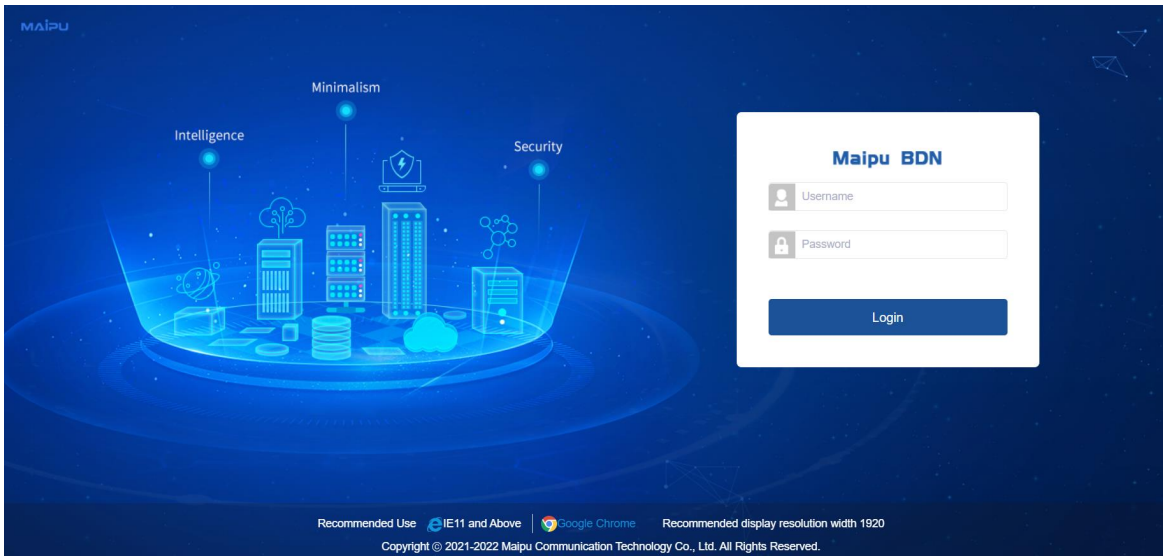
started successfully and you can perform the next step of web access deployment and installation.

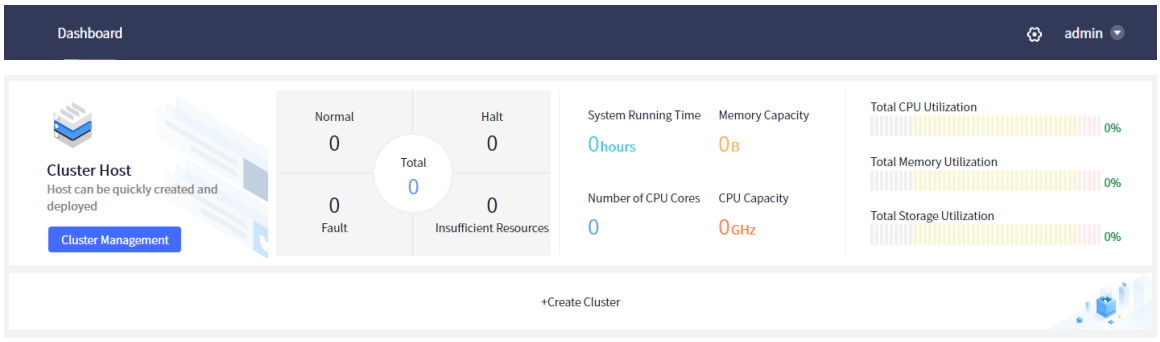
3.4 WEB Access for Cluster Host Deployment

WEB access link of MAIPU cluster management system is **https://IP:8443**

When accessing the WEB page of MAIPU cluster management system, the latest stable version of Google Chrome, Internet Explorer (IE11 and above) is recommended for the client PC browser. Here, take Chrome browser access as an example: "go to 129.255.164.171":



Input the default user name (admin) and password (admin) to log in:



Cluster host item, click **Cluster Management** to open the configuration window of cluster management:

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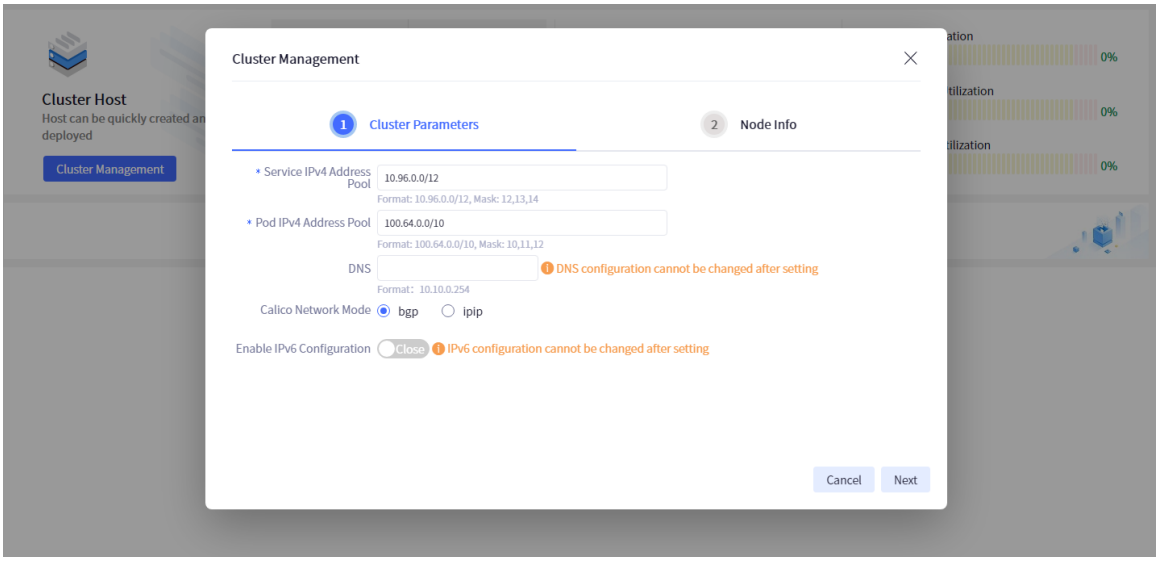
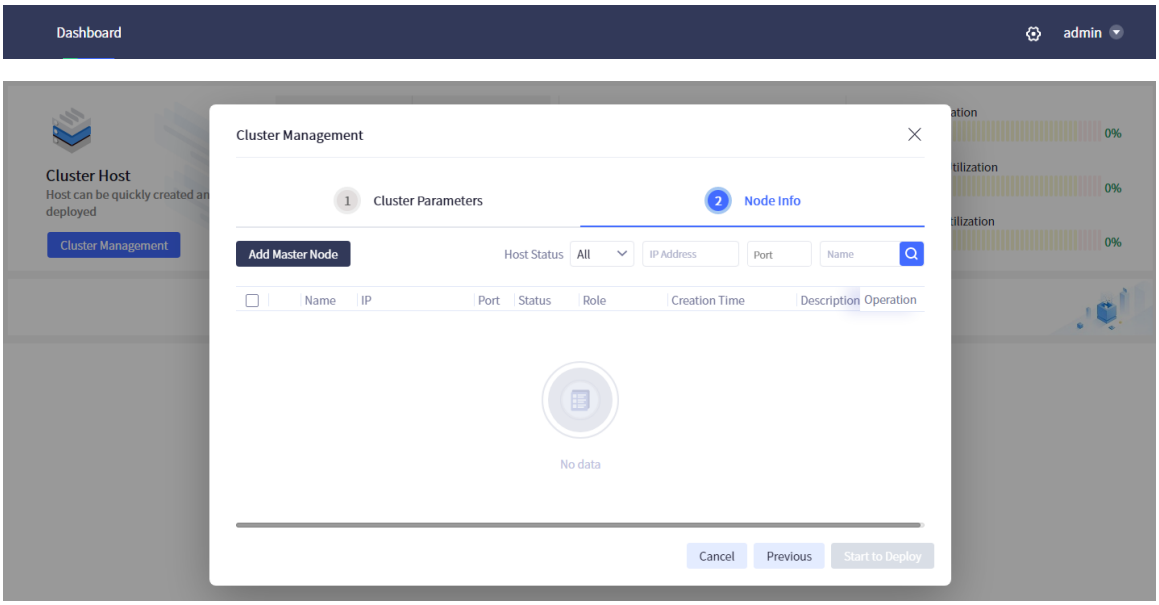


You can adopt the default cluster parameters, and click **Next** to enter the configuration window of the node information.



Click the "Add Master Node" button to set the master node information, where the IPv4 address is the IP address of the server where the MAIPU cluster management system is installed; After the configuration is completed correctly, click **OK**.

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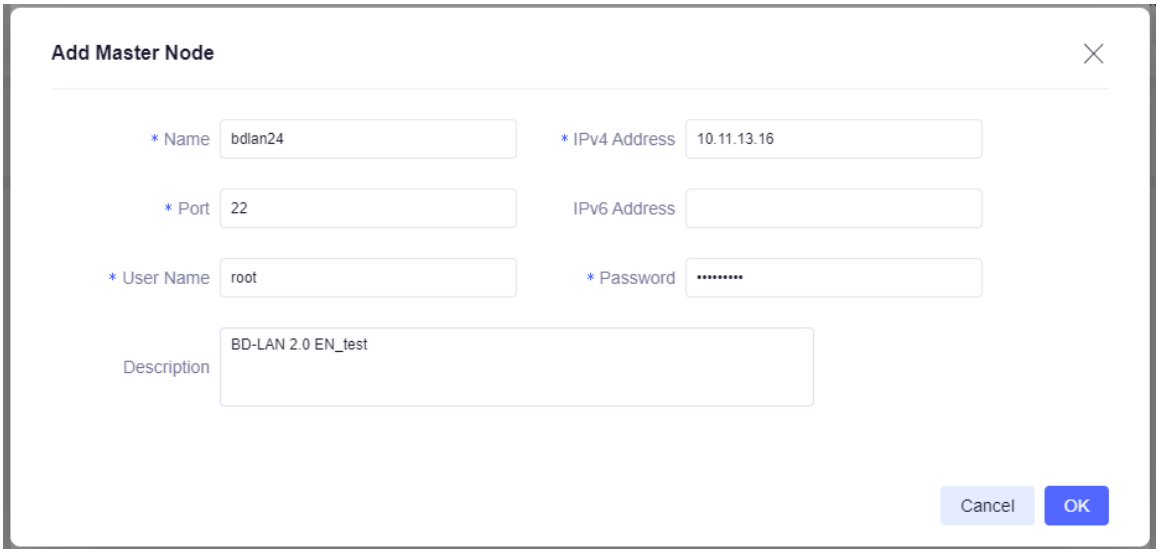
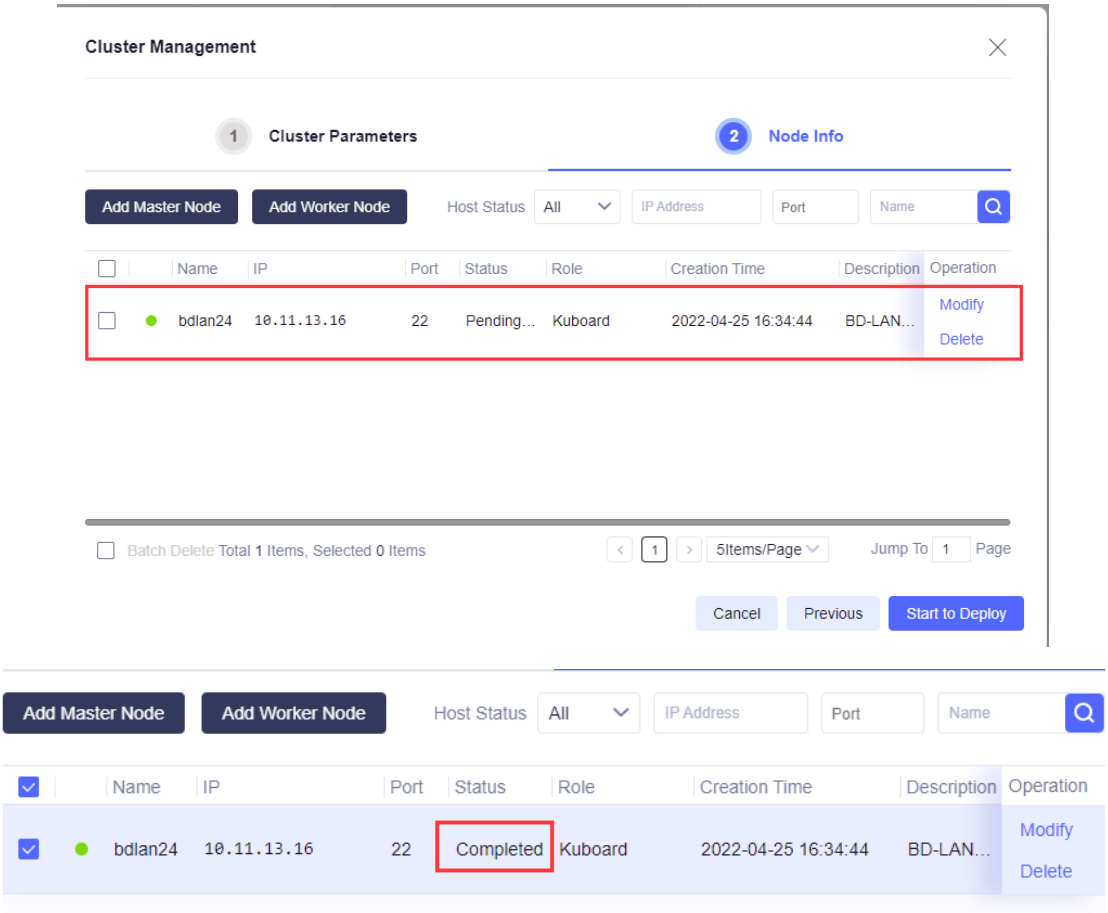


After the master node is added, click the "Start to Deploy" button to automatically execute the installation, and wait for the installation to complete:



Caution

- It is not supported to add a host and deploy again after deployment. To switch from stand-alone mode to cluster mode, you need to back up the service data,

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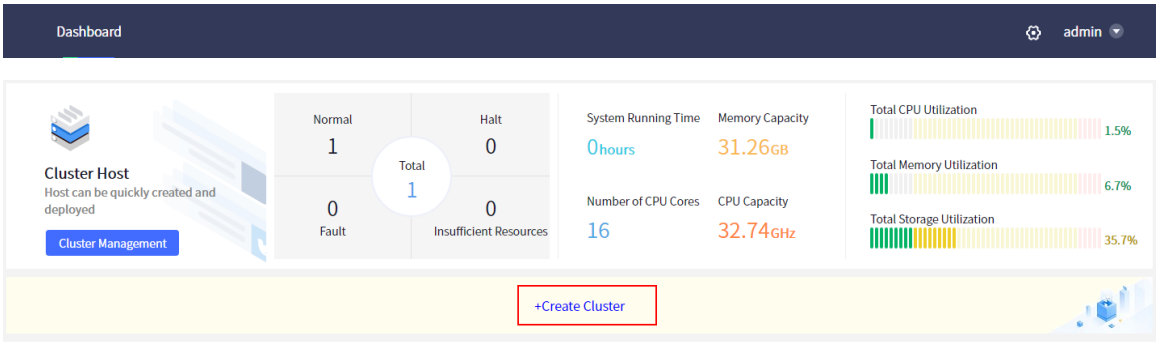
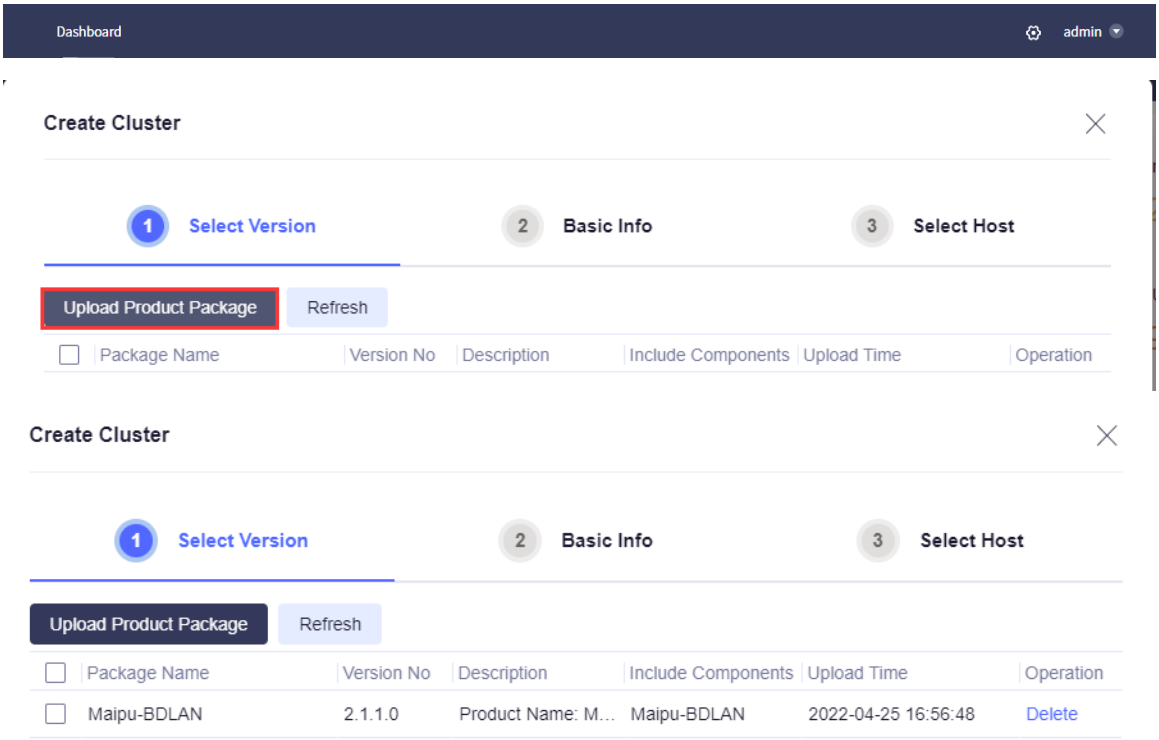
delete the service cluster, delete the host, and add it again for deployment.

3.5 Create Cluster

After the MAIPU cluster administrator system is installed, you need to add cluster nodes, and click "Create Cluster":



In the “Create Cluster” window, upload the product package correctly:



Check the product package and click "Next" to configure the basic information of the cluster node according to the actual use environment:

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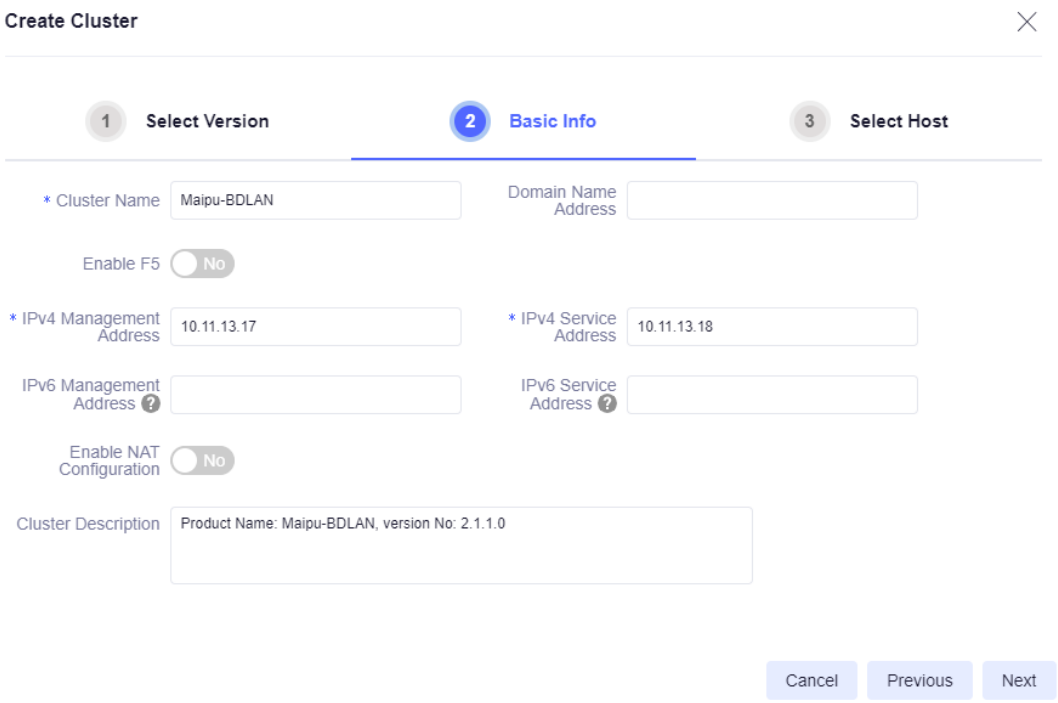
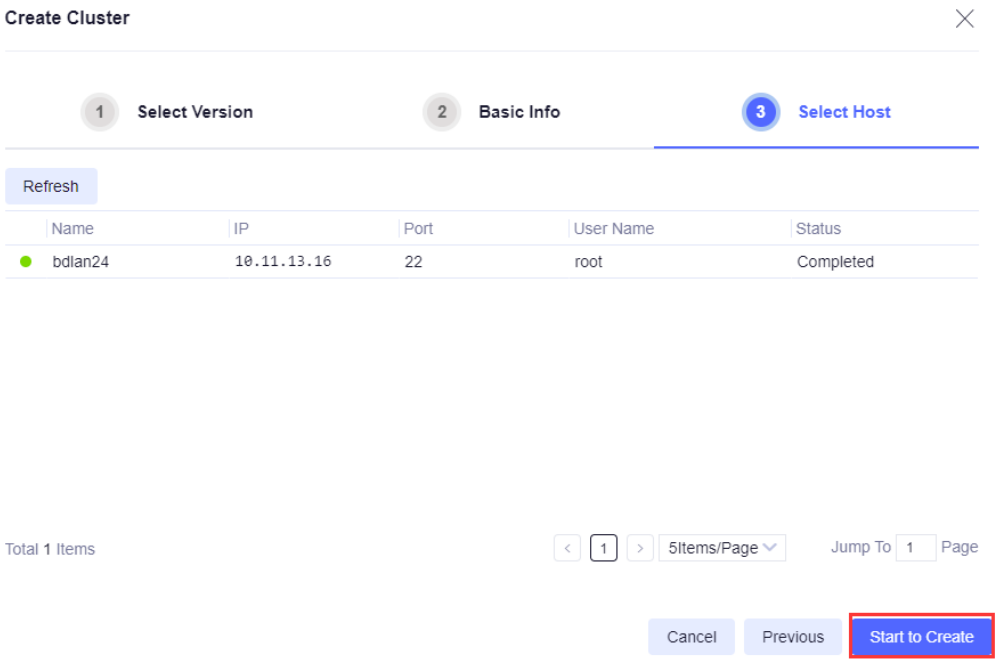


Select the cluster node host. It is not necessary to select the host during stand-alone installation, adopt the default, and click "Start to Create":



The system automatically installs cluster nodes, and the status in the basic information of the node is "Installing Product", waiting for the auto installation to complete:

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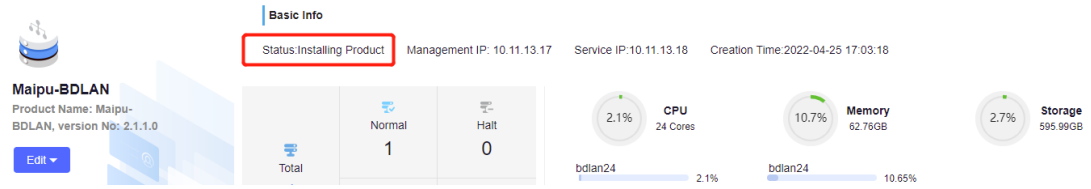
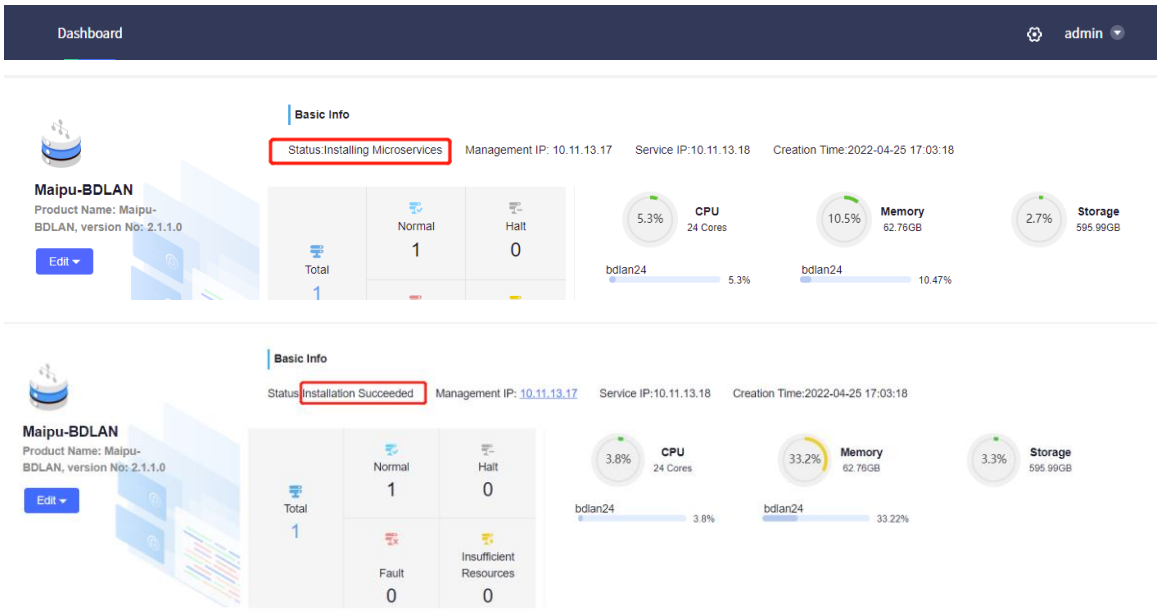


Wait until the status in the cluster node is displayed as "Installation Succeeded", which means that the installation process is completed:



3.6 Access MAIPU BD-LAN Controller via WEB

After the cluster deployment is completed, you can access the MAIPU BD-LAN controller through https://management IP:

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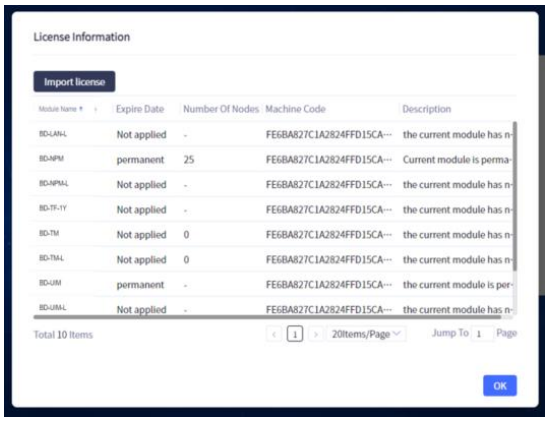
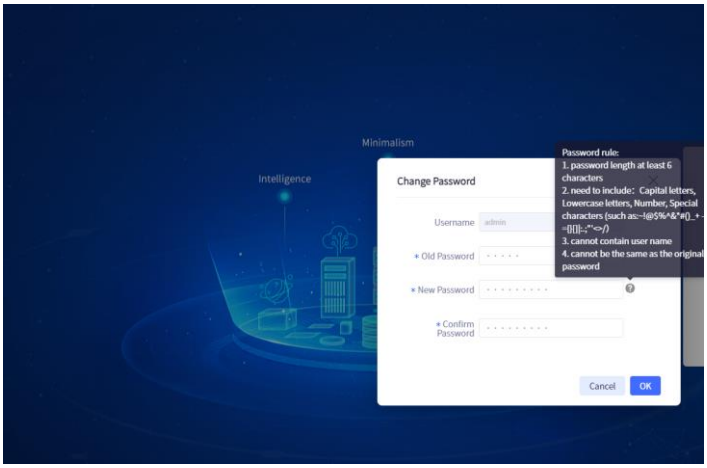
Enter the default user name (admin), password (admin) and verification code to log in. For the first login, you need to import the license of MAIPU BD-LAN controller:



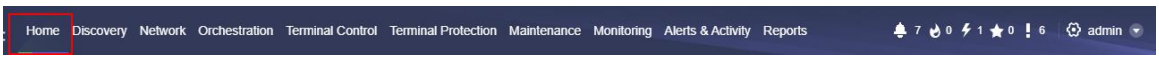
Click the "Import License" button, import the license correctly, and click OK.

After that, display the interface of modifying the initial password, and the administrator resets the login password. The password must meet the password policy (the password must be at least 6 characters, including uppercase letters, lowercase letters, numbers and special characters, and cannot contain the user name and cannot be the same as the original password; such as Admin@123). The modification interface is as follows:



After modifying the password successfully, return to the login interface and use the new password to log in:

Log in successfully and enter the home page.



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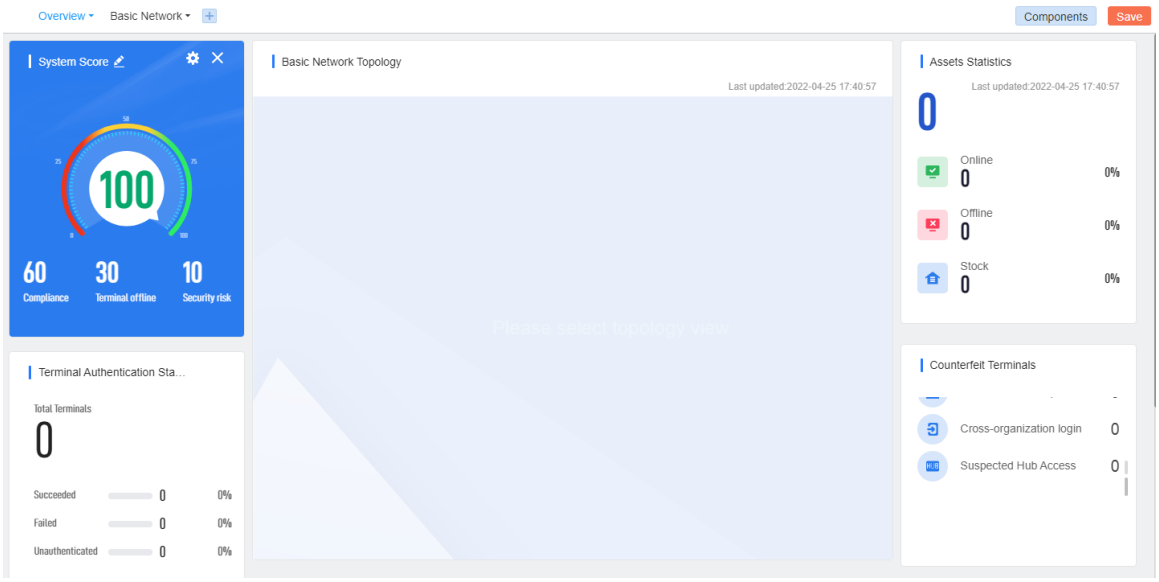

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4. Software Package Cluster (Multi-Node) Mode Installation

This chapter introduces the deployment and installation of the cluster platform and service components of MAIPU BD-LAN controller using software packages on the existing operating system. The installation and deployment in this document is for reference only. Please configure according to the actual deployment.

4.1 Install MAIPU Cluster Management System

Copy the KuBoard installation package to the server to be installed, such as: in the directory /home/, and then use the command to execute the installation:

[root@MAIPU home]# **chmod +x /home/MAIPU-KuBoard-V006R002C00BXXX-XXXXXXXXXXX.sh** (Set the software installation package as executable program)

[root@MAIPU home]# **/home/ MAIPU-KuBoard-V006R002C00BXXX-XXXXXXXXXXX.sh install** (Execute the installation)

[MAIPU-KuBoard] Verifying archive integrity...

All good.

[MAIPU-KuBoard] Uncompressing MAIPU-KuBoard V006R002C00B044 installer

\ Done

Input setup dest path:**[/home/mpup/mpup]** (Set the installation directory. After inputting the installation path, click Enter. By default, it is installed in the path: /home/mpup/mpup)

[MAIPU-KuBoard] DO CBK preinstal

[MAIPU-KuBoard] [INFO] Copy cbkscript ...

[MAIPU-KuBoard] [INFO] Call ./_callbackscript/mpup_cbks_basic.sh (preinstall)

MAIPU-KuBoard installer

The setup program will install files, strongly recommend that you backup data!!!

Confirm install [y/n]? :**[y]** (Confirm the installation of the system and click Enter)

[MAIPU-KuBoard] DO CBK install

[MAIPU-KuBoard] [INFO] Log: /tmp/logs/install/MAIPU-KuBoard-V006R002C00B044-220419204037_install_20220420100315.log

[MAIPU-KuBoard] [INFO] INSTALL PATH: /home/mpup/mpup

[MAIPU-KuBoard] [INFO] [INSTALL] Begin install ...

[MAIPU-KuBoard] [INFO] [INSTALL] Install rpm ...

[MAIPU-KuBoard] [INFO] [INSTALL] Run installscript '_syssetuppatch.sh' ...

[MAIPU-KuBoard] [INFO] Call ./_callbackscript/mpup_cbks_basic.sh (install)

……

[MAIPU-KuBoard] [INFO] [INSTALL] Backup setup files ...

[MAIPU-KuBoard] [INFO] [INSTALL] Finished

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[MAIPU-KuBoard] INFO install success MAIPU-KuBoard V006R002C00B044

removed '/tmp/PKG___GLOBAL__.lock'

4.2 Initialize MAIPU Cluster Management System Service

Execute the command **mpshell srvmgt init** to initialize the service:

[root@MAIPU home]# **mpshell srvmgt init** (Execute the command of initializing the system)

[MPUP] Stop srvmgt service...[MPUP] done

[MPUP] ########################## Network config ######################

[MPUP] Found Multi-Ethernet Interfaces:

Index	IfName	MAC	IPv4	Linked IPv6
[0]	ens192	00:0C:29:93:BF:6C	129.255.214.92	yes
[1]	ens224	00:0C:29:93:BF:76	193.168.20.30	yes

Please input the index of the eth interface for service (0 - 1): **[0]** (Select the service network card, enter the service network card number and click Enter; If the default network card is used, click Enter directly)

Please choose https port(443|8443) **[8443]:** (the port configuration for web access, only supporting 443 or 8443. By default, 8443 is used, and click Enter)

[MPUP] * Stop system firewall ...

[MPUP] * Set enforce permissive ...

setenforce: SELinux is disabled

Redirecting to /bin/systemctl restart rsyslog.service

[MPUP] Config srvmgt enable ...

Please select the current system language environment: (zh_CN/en) : **[en]** (select the language environment. By default, use English, and click Enter)

Configure application servers? (y/n) **[y]**: (Confirm the installation of the component. By default, select y, and click Enter. If not configuring, input "n", and then, click Enter)

* execute init script '30-init-cluster.conf' ...

* execute init script '40-init-db.sh' ...

* execute init script '50-init-plugins.sh' ...

* Init sshd

* MySQL does not exist in the service list, skipping SQL initialization.

Init sshd begin ...

Init sshd finish.

……

[mpup-kuboard] Init nginx-ingress kuboard ip 129.255.214.92 ...

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* Init mpup-web

* MySQL does not exist in the service list, skipping SQL initialization.

Create mpup mpup ...

* chown files for mpup(mpup) ...

4.3 Start MAIPU Cluster Management System Service

Step 1: Start the MAIPU service

[root@MAIPU home]# **mpshell srvmgt start** (Execute the command to start the service)

* Start 'sshd' service...

Start watchdog for 'sshd'...done

* Start 'nginx' service...

Start watchdog for 'nginx'...done

* Start 'mpup-kuboard' service...

Start watchdog for 'mpup-kuboard'...done

* Start 'mpup-web' service...

Start watchdog for 'mpup-web'...done

Step 2: Check the service status

Execute the command **mpshell srvmgt status** to view the service status:

[root@MAIPU home]# **mpshell srvmgt status** (View the service status)

service mpup-kuboard is running

service mpup-web is running

service nginx is running

service sshd is running

Step 3: Check the service health status

[root@MAIPU home]# **mpshell srvmgt health**(Execute the command to check the service health status)

```
+--------------------+-----------------+--------------+-----------------------+
| ServiceName        | MonitorStatus   | ServiceStatus | HealthStatus         |
+--------------------+-----------------+--------------+-----------------------+
| sshd               | running(8937)   | up           | HealthOK             |
| nginx              | running(9450)   | up           | HealthOK             |
| mpup-kuboard       | running(9751)   | up           | HealthOK             |
| mpup-web           | running(10138)  | up           | HealthOK             |
+-------------------------------------------------------------------------------+
```

The health status of all components is healthok, which indicates that the MAIPU cluster management system service is started successfully and you can perform the next step of web access deployment and installation.

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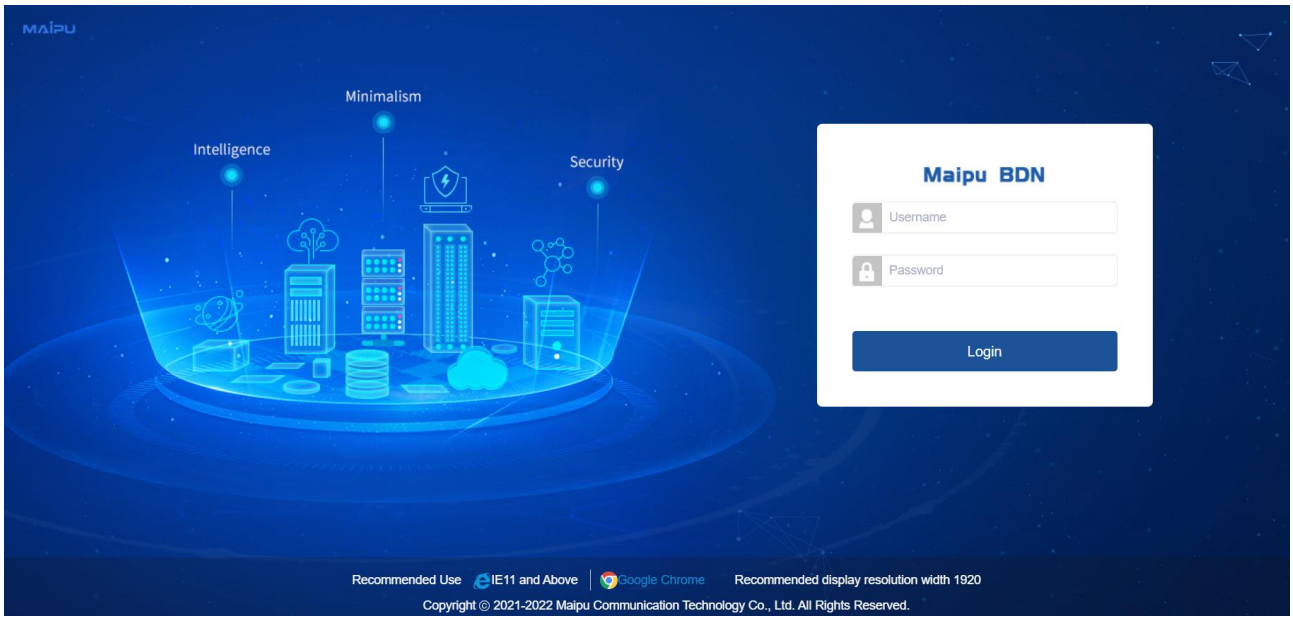
4.4 WEB Access for MAIPU Host Deployment

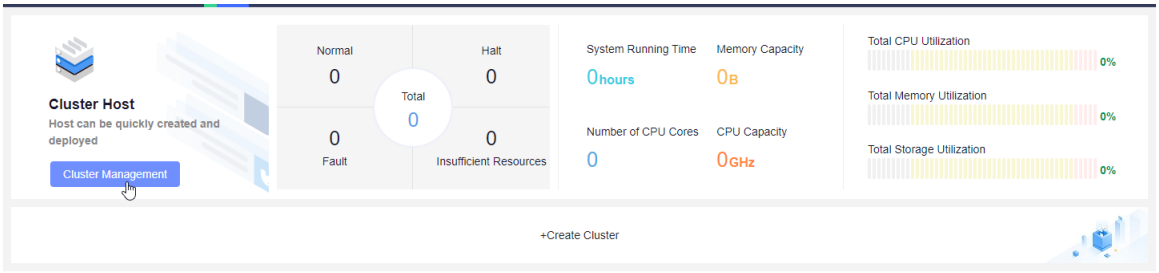
WEB access link of MAIPU cluster management system is **https://IP:8443**

When accessing the WEB page of MAIPU cluster management system, the latest stable version of Google Chrome, Internet Explorer (IE11 and above) is recommended for the client PC browser. Here, take Chrome browser access as an example:

Enter "**https://IP:8443**" login interface:



Input the default user name (admin) and password (admin) to log in:



Cluster host item, click **Cluster Management** to open the configuration window of cluster management, and input the correct DNS:

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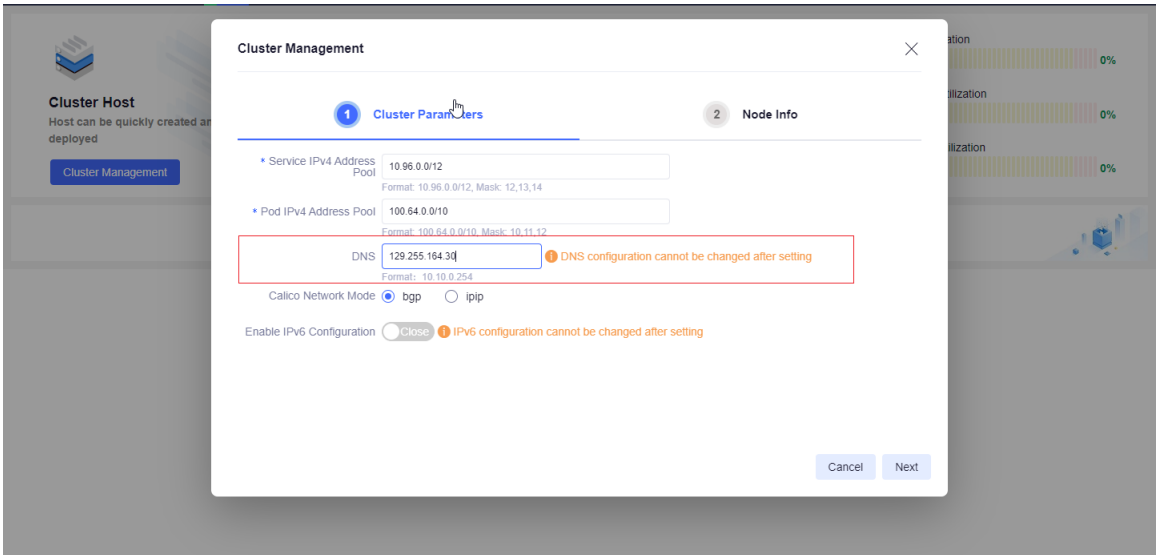
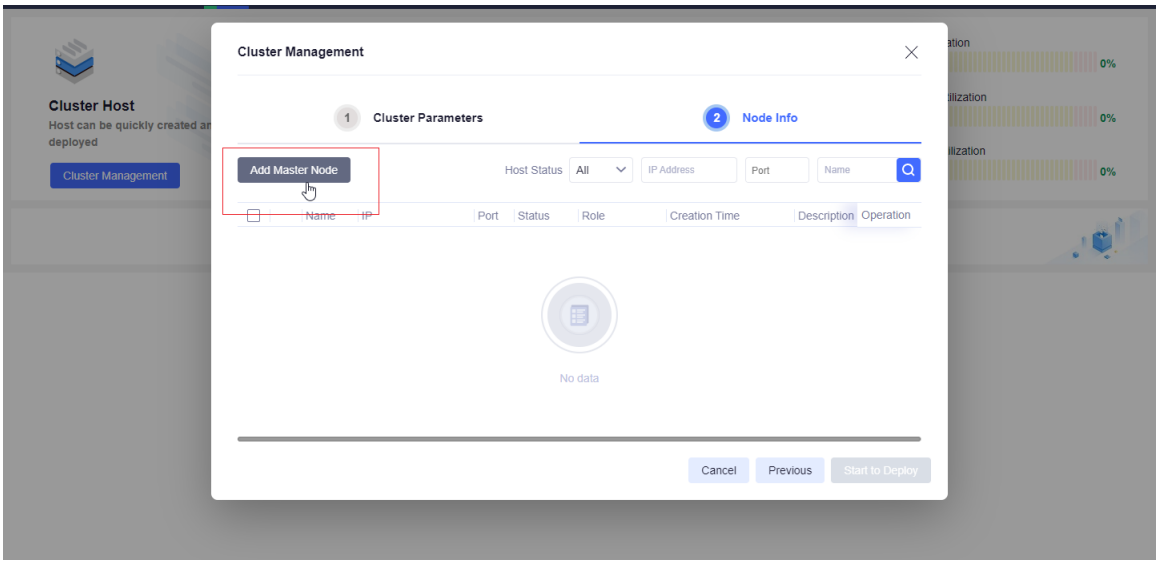


Adopt the default values for the remaining cluster parameters, and click “Next” to configure the node information:



Click the "Add Master Node" button to set the master node information, where the IPv4 address is the IP address of the server where the MAIPU cluster management system is installed; After the configuration is completed correctly, click **OK**.

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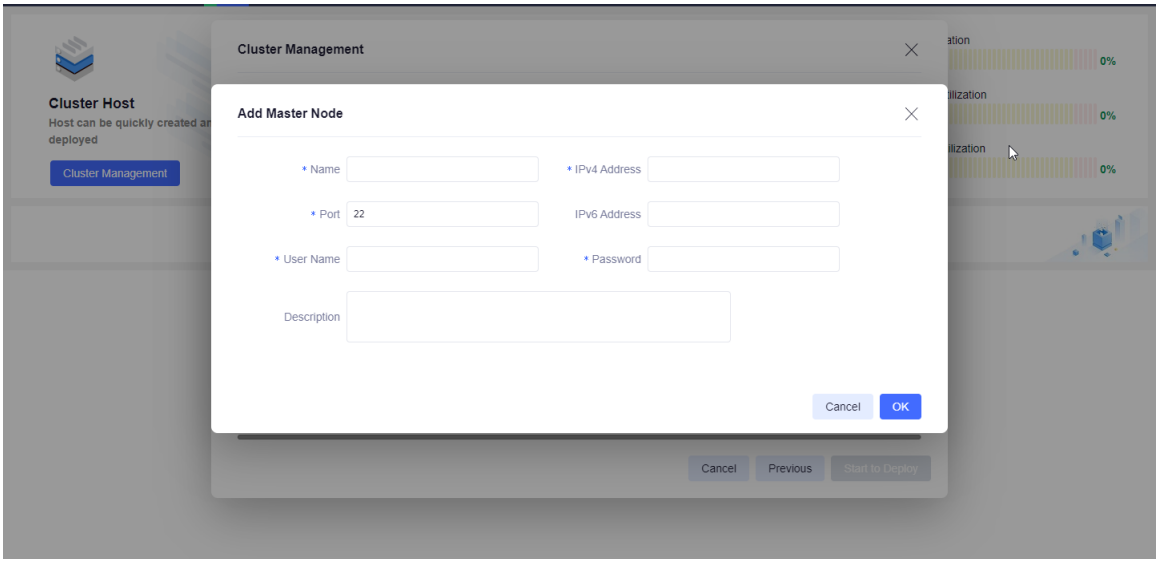
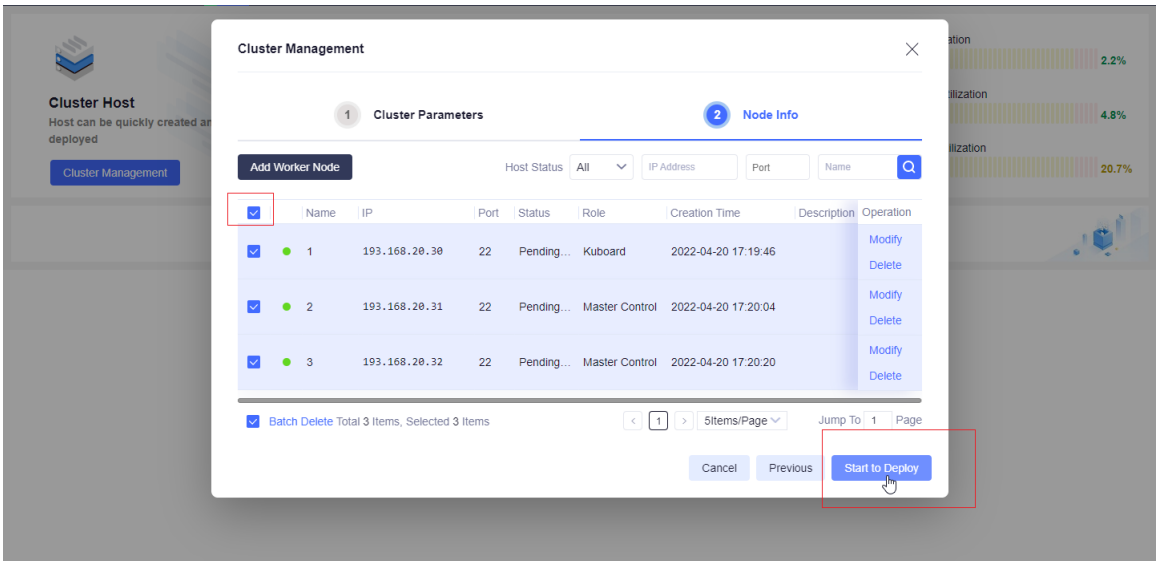
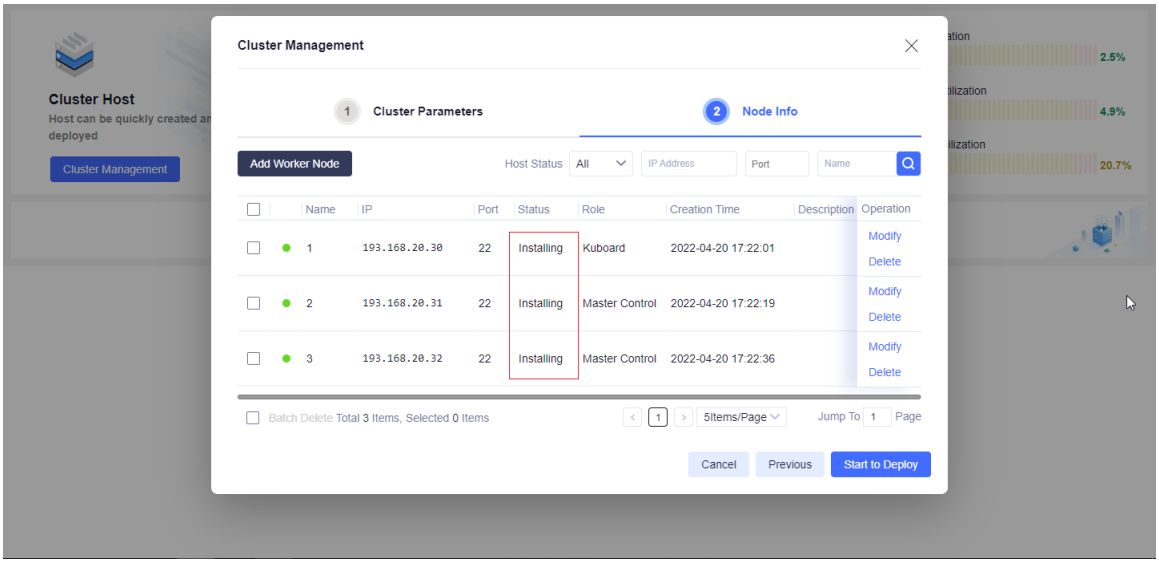


Continue to add the nodes according to the environmental plan (Master or worker nodes, please add according to the actual plan). After adding nodes, click the "Start to Deploy" button to automatically execute the installation, and wait for the installation to be completed:





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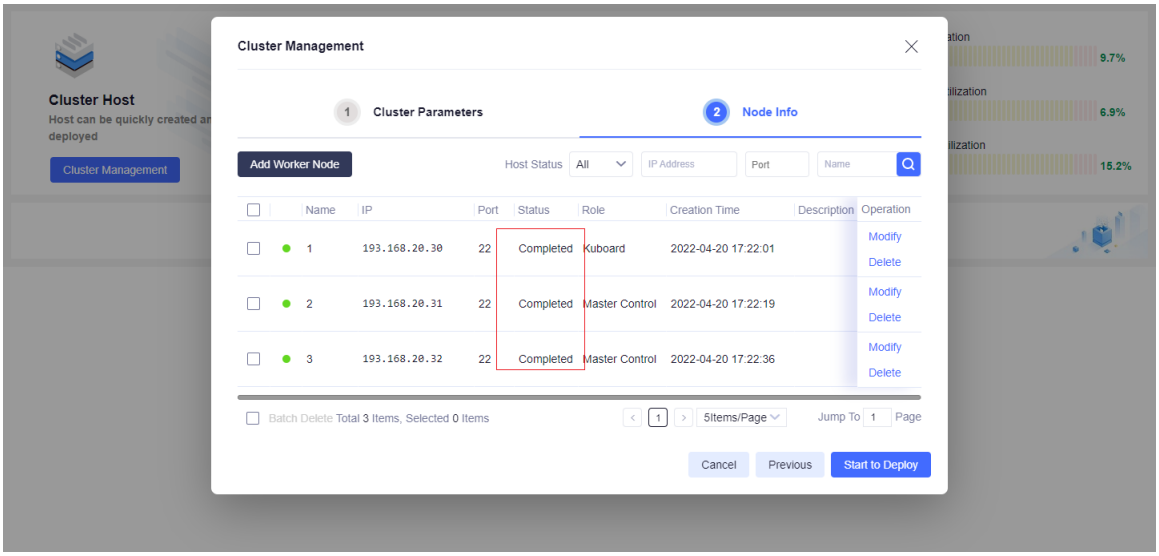
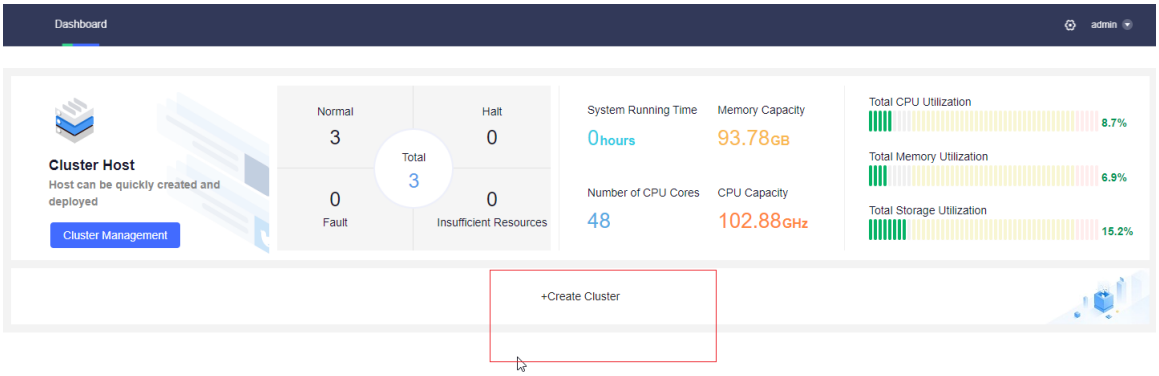


Caution

- It is not supported to add a host and deploy again after deployment. To expand or shrink the capacity, you need to back up the service data, delete the service cluster, delete the host, and then add it again for deployment.

4.5 Create Cluster

After the MAIPU cluster administrator system is installed, you need to add cluster nodes, and click "Create Cluster":



In the window of adding the cluster, upload the product package correctly:

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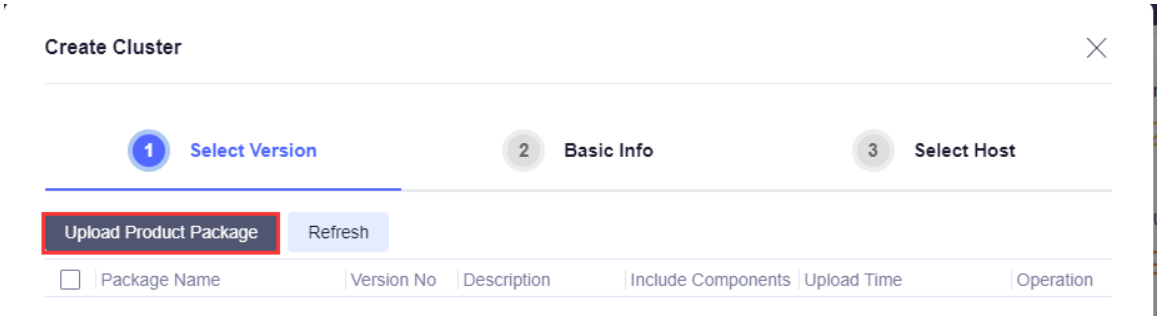
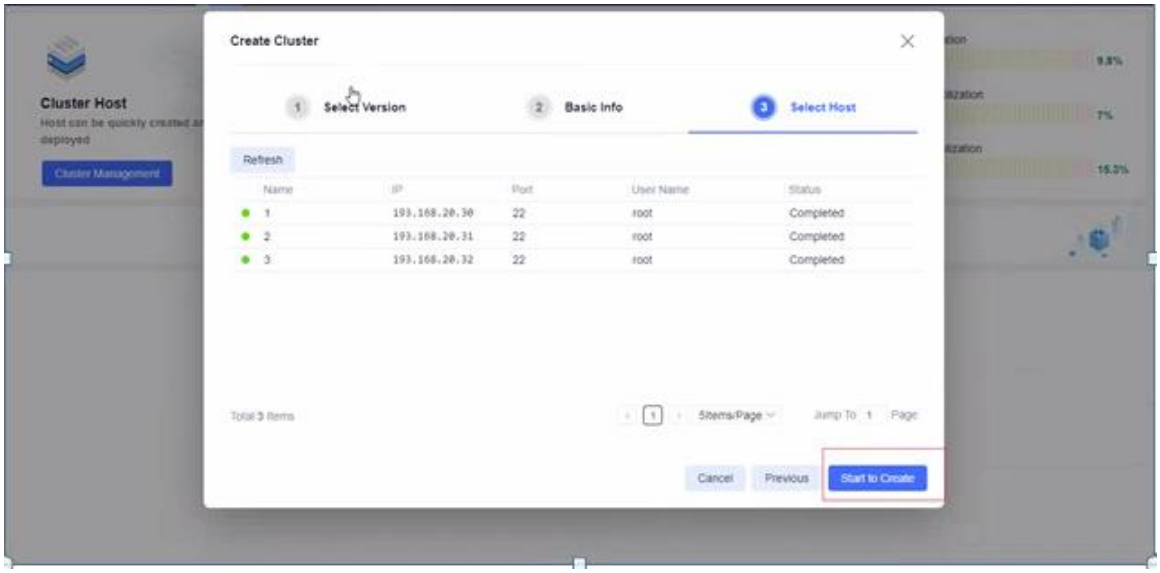


After uploading the product package, check the product package and click "Next" to configure the basic information of the cluster node:

After the above configuration, directly enter the next step, and click “Start to Create”.



Wait until the status in the cluster node is displayed as "Installation Succeeded", which means that the installation process is completed:

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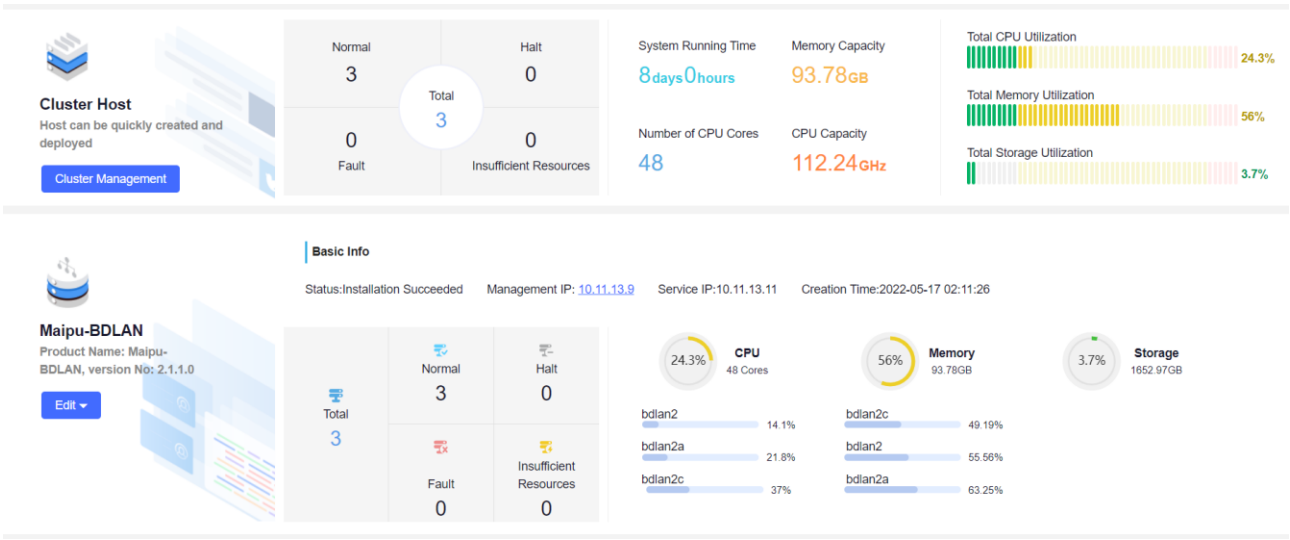
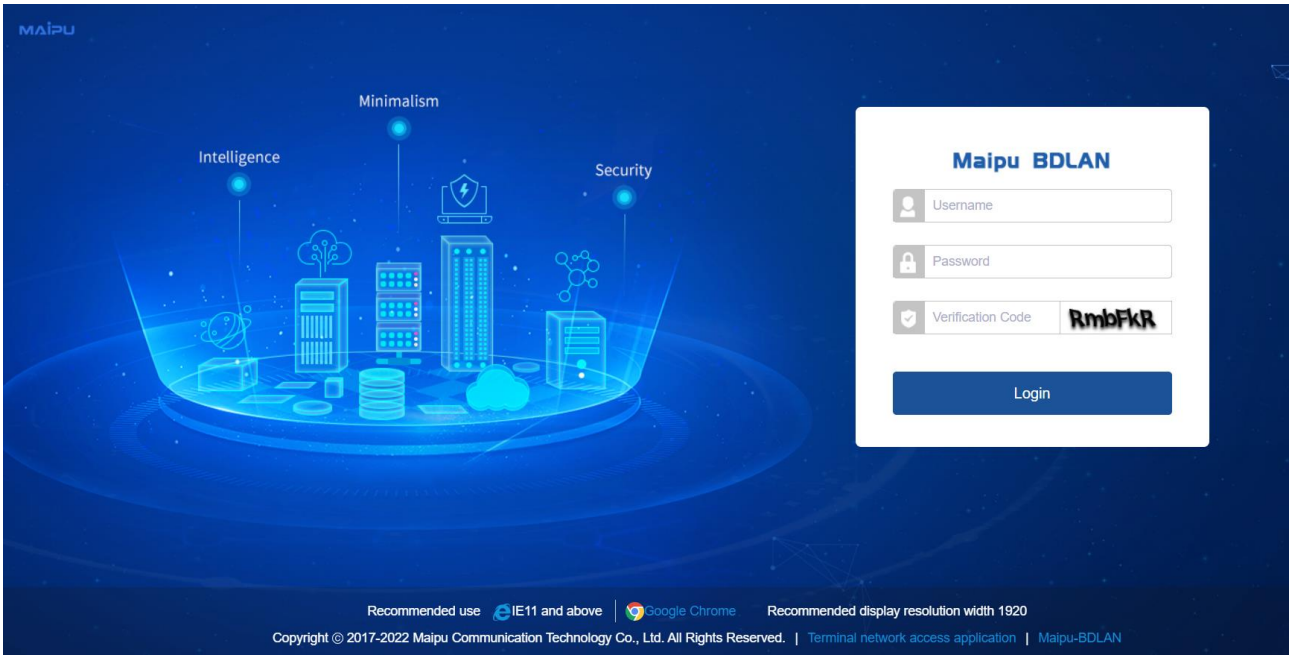


Note: If you need to install bdsec components, please refer to Chapter 5 for extended installation of bdsec components; If it is not needed, you can directly access the web access control platform.

4.6 Access MAIPU BD-LAN Controller via WEB

After the cluster deployment is completed, you can access the MAIPU BD-LAN controller through https://management IP:

Enter the home page of MAIPU BD-LAN controller:



Enter the default user name (admin), password (admin) and verification code to log in. For the first login, you need to import the license of MAIPU BD-LAN controller:

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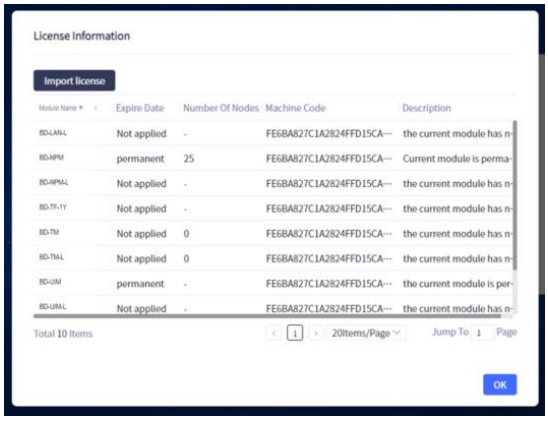
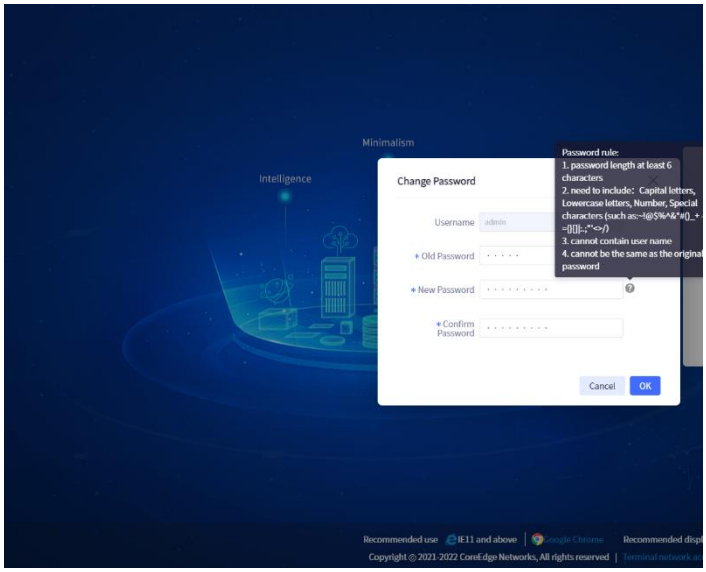


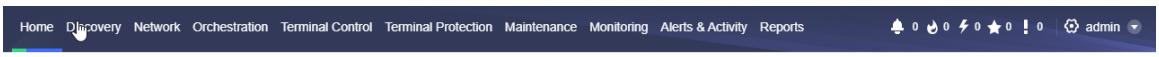
Click the "Import License" button, import the license correctly, and click OK.

After that, display the interface of modifying the initial password, and the administrator resets the login password. The password must meet the password policy (the password must be at least 6 characters, including uppercase letters, lowercase letters, numbers and special characters, and cannot contain the user name and cannot be the same as the original password; such as Admin@123). The modification interface is as follows:



After modifying the password successfully, return to the login interface and use the new password to log in:

Log in successfully and enter the home page.



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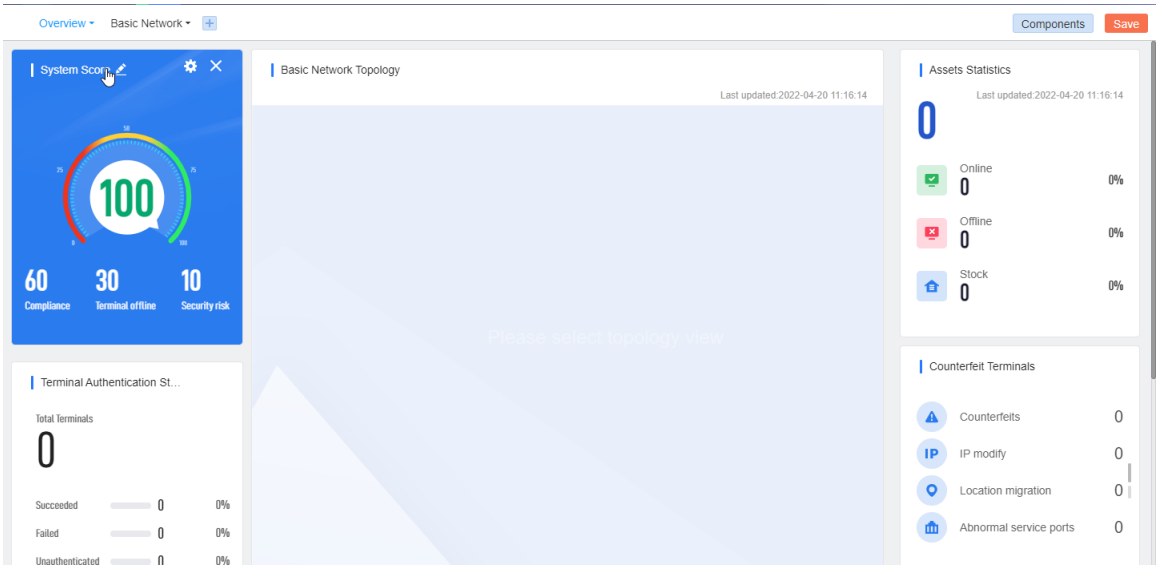

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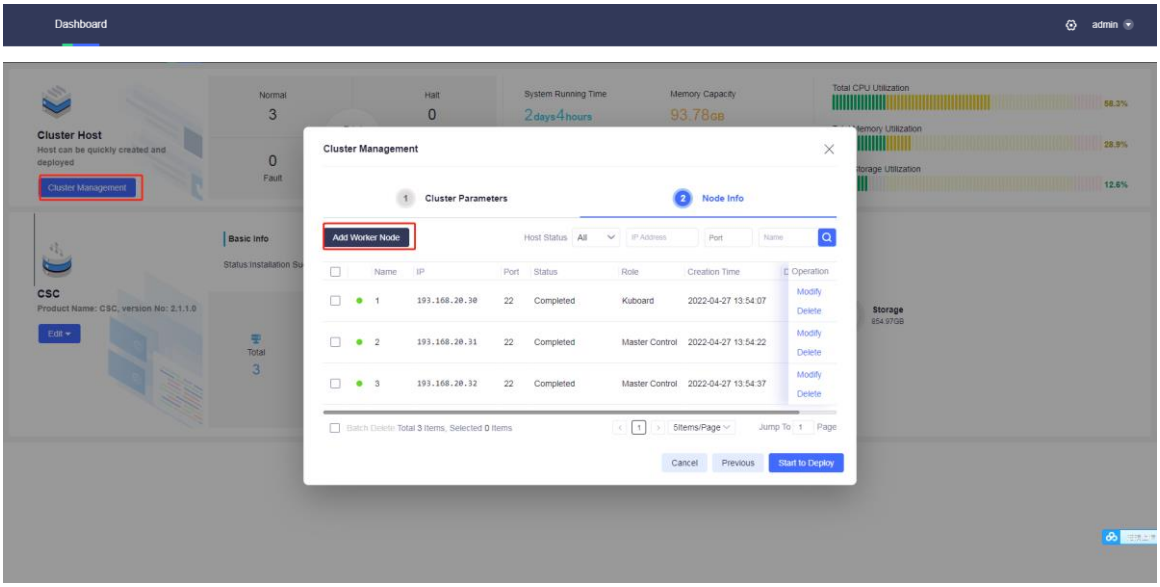
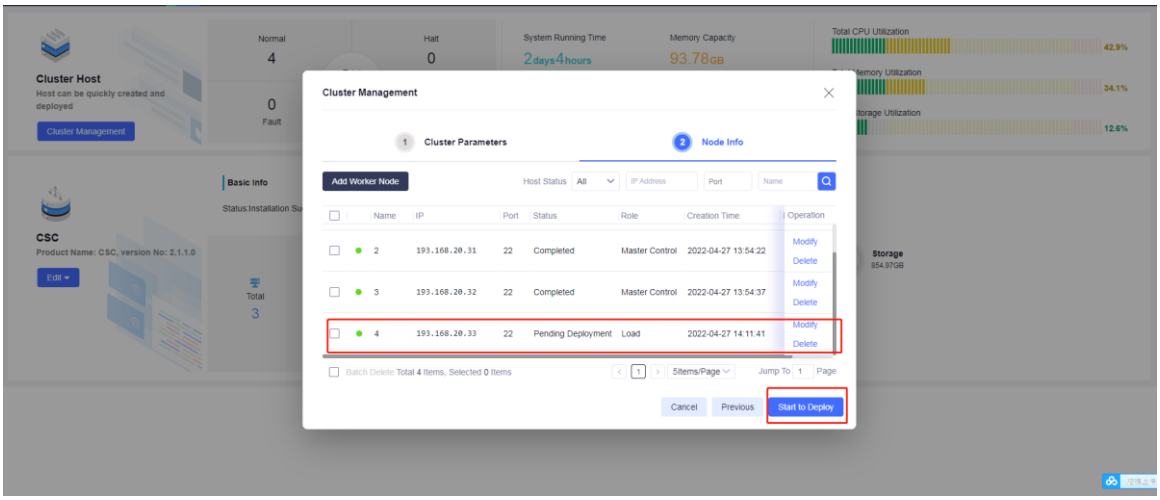
5. Install bdsec Component

This chapter describes how to install the bdsec component on the basis of "Multi-node Cluster Installation" (The installation of Chapter 4 has been completed).

5.1 Add worker Node

Add a server used for installing bdsec component. Add one worker node on the cluster host, and deploy the worker node, as follows:





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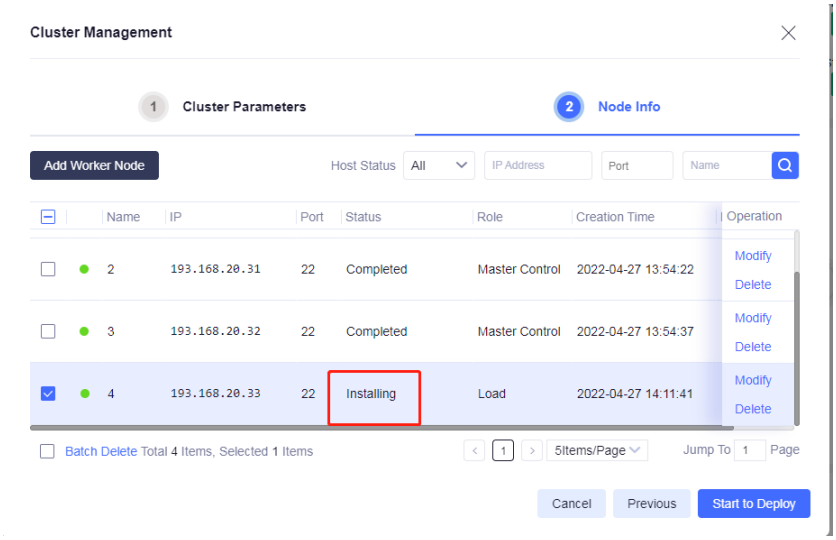
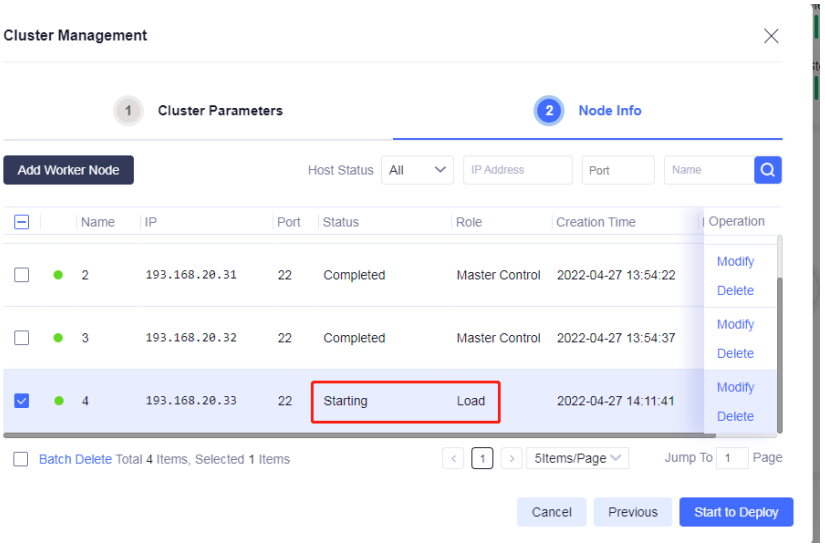
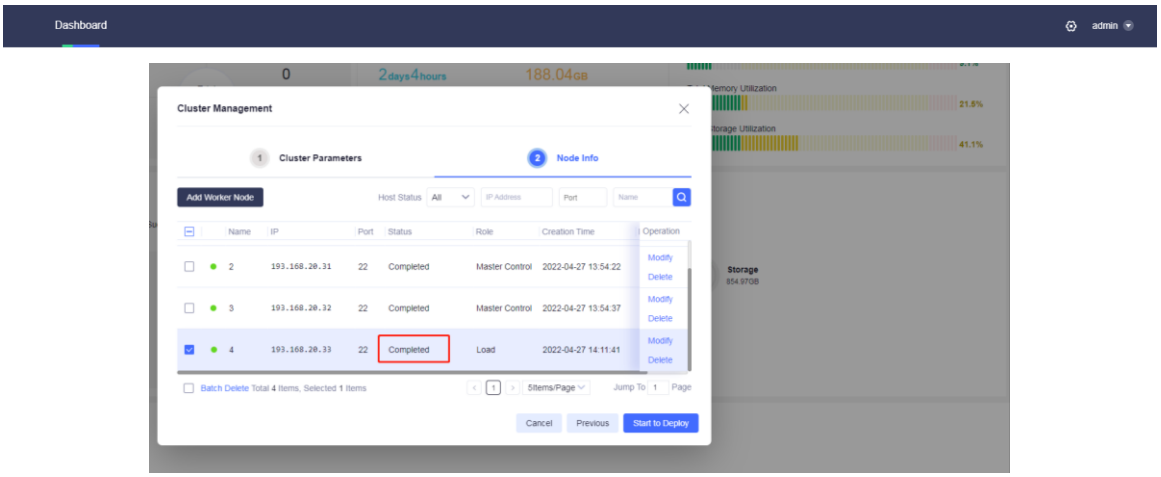




Wait until the worker installation is completed (the installation time of the worker node may be long), as shown in the following figure:



5.2 In MAIPU Cluster, Expand bdsec Component

Edit the MAIPU cluster to expand the component; upload the bdsec component package, and install the bdsec component to the worker node.

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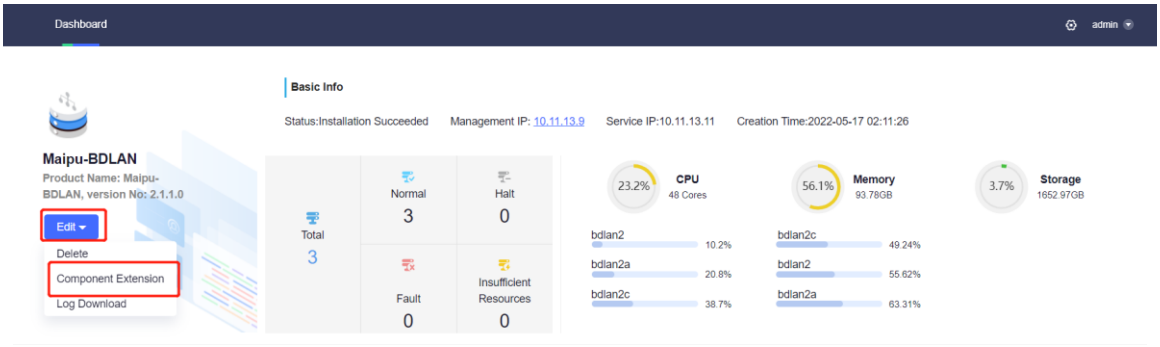
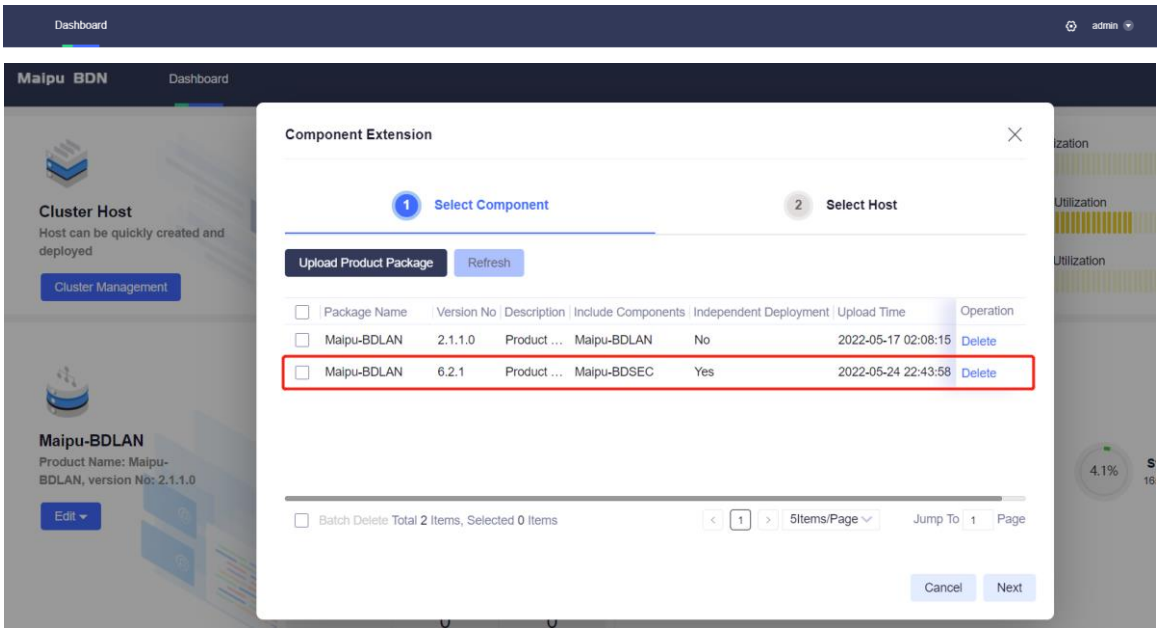
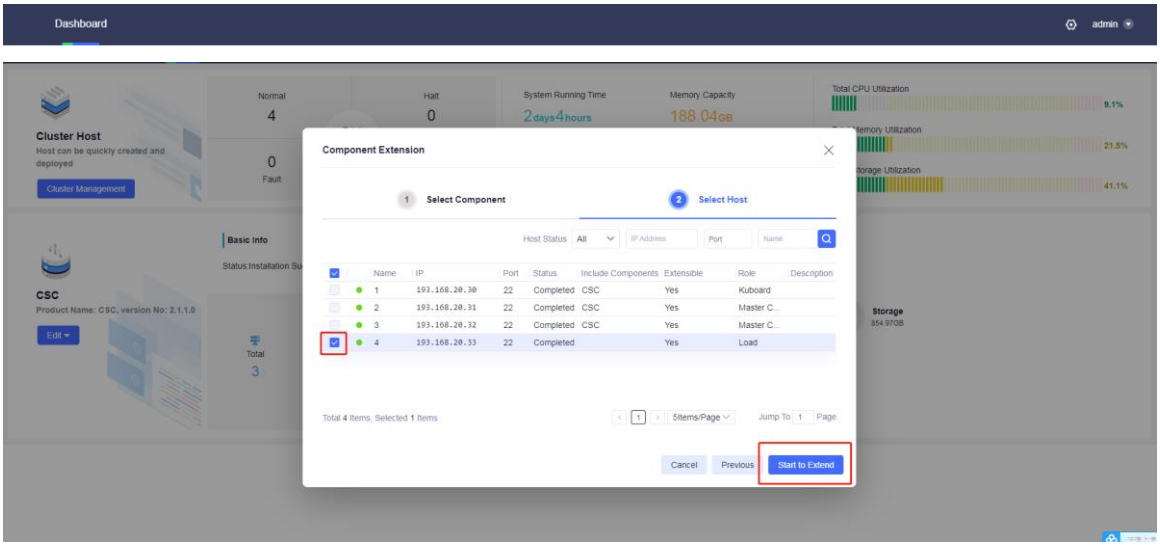


Upload the bdsec component product package, as shown in the following figure:



Select the worker node added in Chapter 5.1, and install the bdsec component, as shown in the following figure:



Wait for expanding the bdsec component to be completed:

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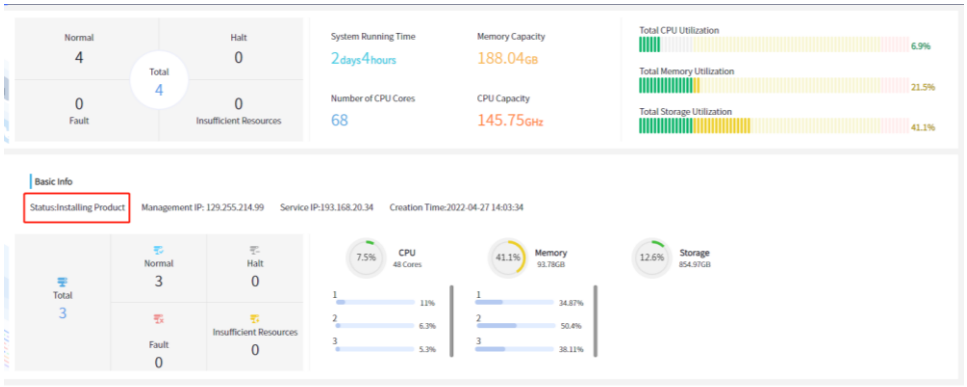

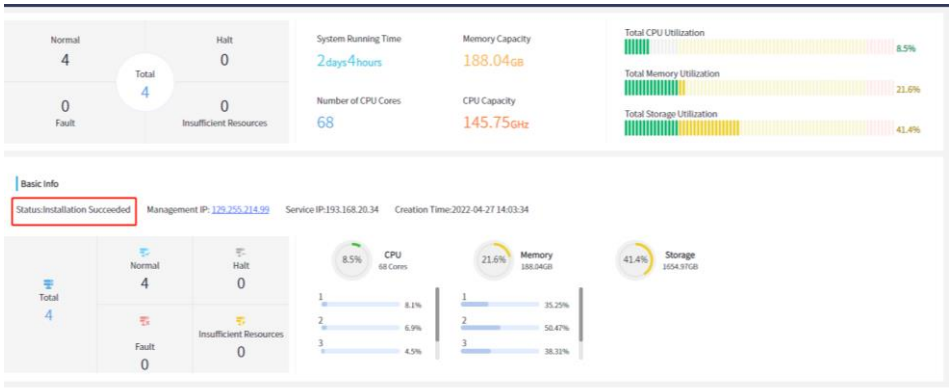

5.3 Access MAIPU BD-LAN Controller via WEB

After cluster deployment + bdsec component expanding is completed, you can access the MAIPU BD-LAN controller via https://management IP:

Enter the default user name (admin), password (admin) and verification code to log in. For the first login, you need to import the license of MAIPU BD-LAN controller:

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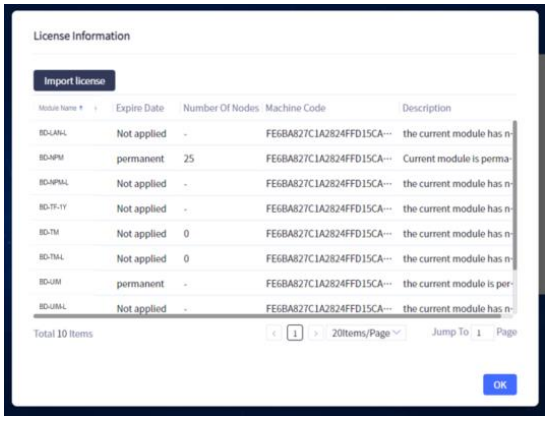
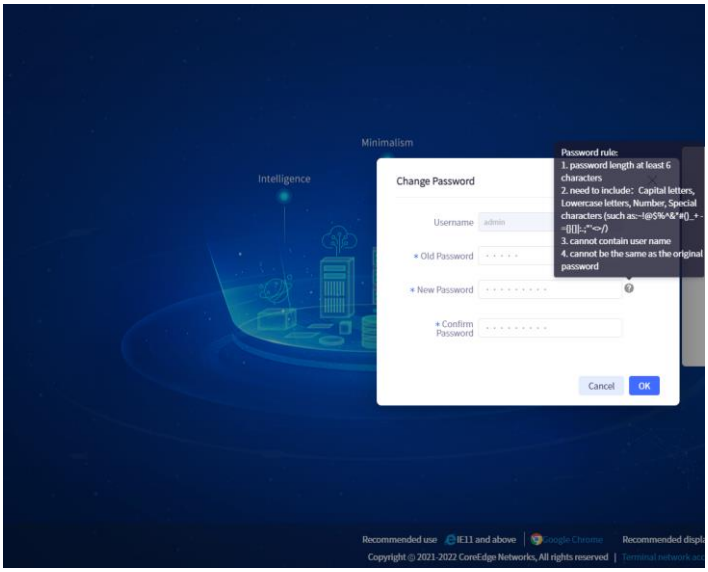


Click the "Import License" button, import the license correctly and click **OK**.

After that, the interface of modifying the initial password is displayed, and the administrator resets the login password. The password must meet the password policy (the password must be at least 6 characters, including uppercase letters, lowercase letters, numbers and special characters, and cannot contain the user name and cannot be the same as the original password; for example Admin@123). The modification interface is as follows:



After successfully modifying the password, return to the login interface and log in with the new password:

Log in successfully and enter the bdsec component module page:

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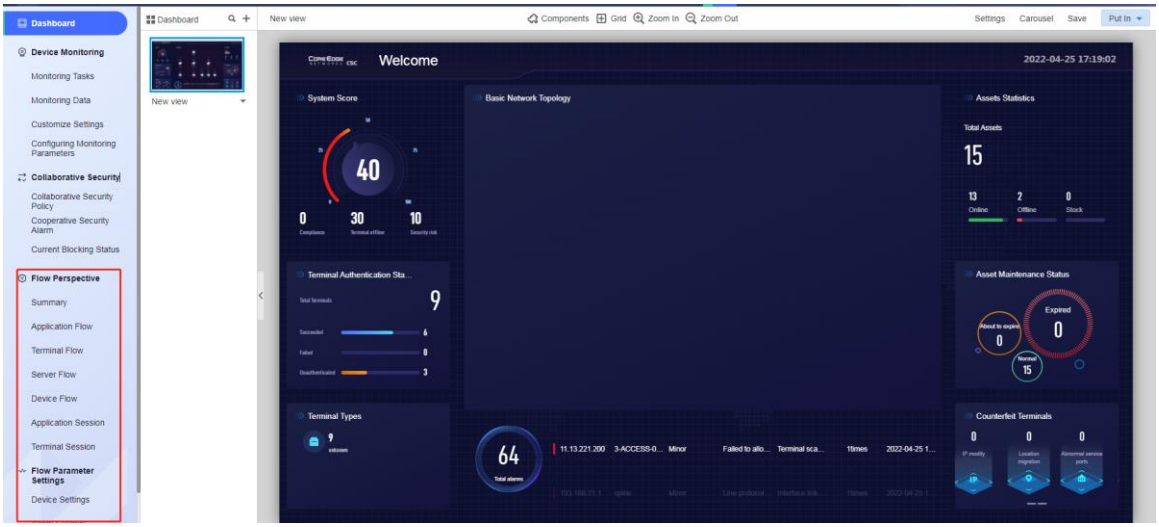

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6. License Application and Importing

1.1 Apply for License

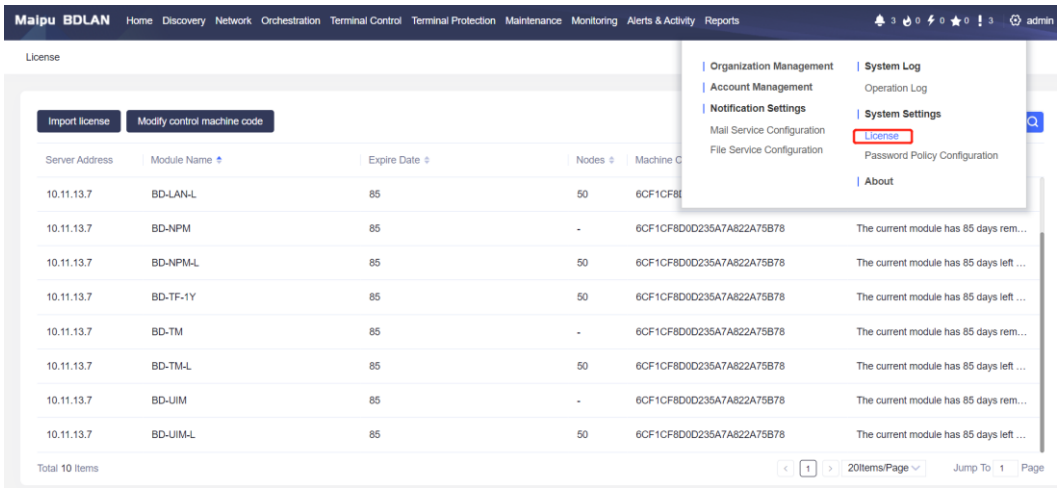
Before applying for license, please ensure that the time of Linux operating system is correct, and feed back the machine code of the server where MAIPU is located to the corresponding contact person of the manufacturer to apply for license.

The query method of the server machine code:

Log in to the web page of MAIPU BD-LAN controller, and send the module name and machine code information of the page list to the contact person of the technical support through the menu navigation bar "Setting > System Setting > License".

1.2 Import License File

Log into the web page, enter "Settings > System Settings > License", and import the applied license file into the MAIPU BD-LAN controller.



7. Uninstallation

Caution

- Before uninstalling, please delete the service network policy, service network, and campus planning network to avoid that the device configuration is not cleared due to direct unloading;
- Before uninstalling, please cancel the terminal blocking and enter the **Network Resources** > **Device Management** page to delete all devices to avoid leaving the distributed terminal blocking configuration on the device.

7.1 Delete Cluster Node

The unloading methods of cluster single-node mode, cluster multi-node mode, and cluster multi-node

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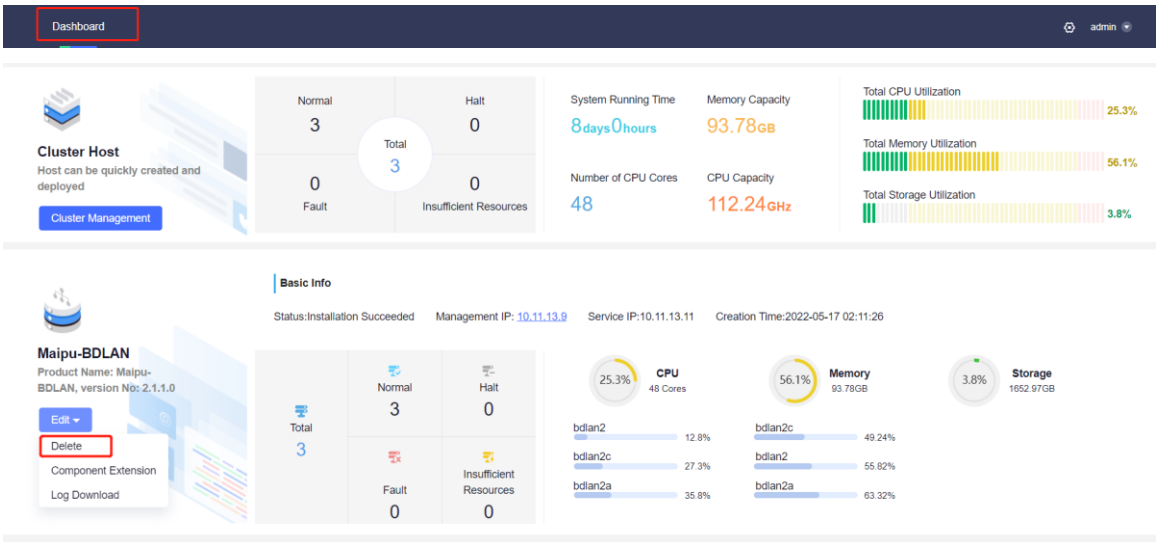
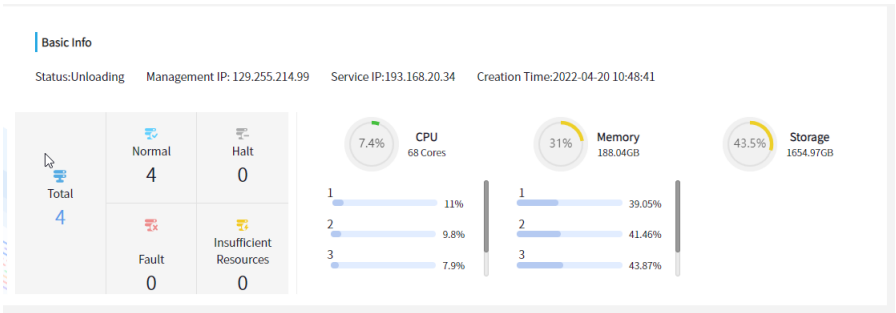
+ bdsec mode are the same, which can be operated according to the following methods:

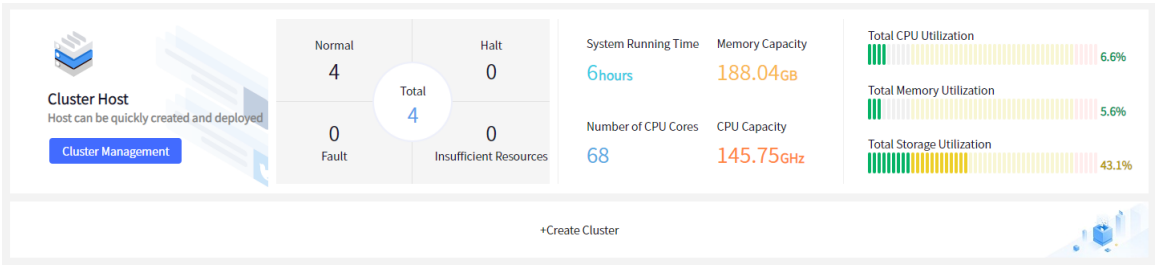
Log in to the cluster management system and select the cluster node to delete:



When the cluster status is displayed as Unloading, wait for the cluster to unload automatically:



Wait for auto unloading of the cluster to be completed:



7.2 Delete Cluster Host

In the cluster host, click the Cluster Management button:

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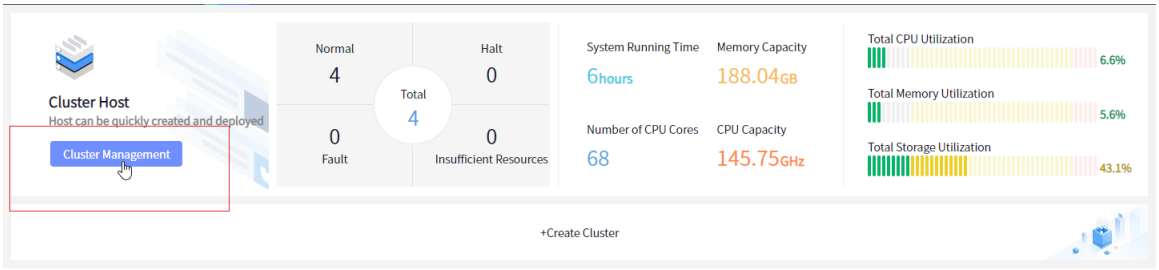
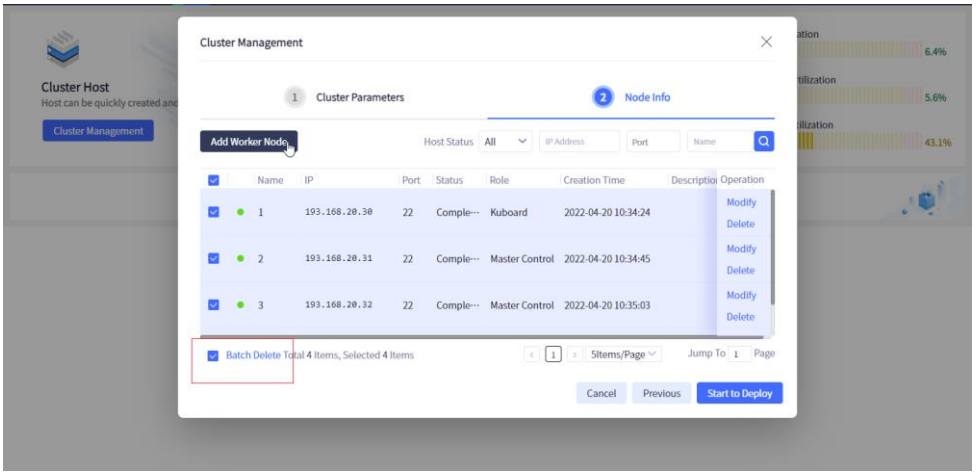
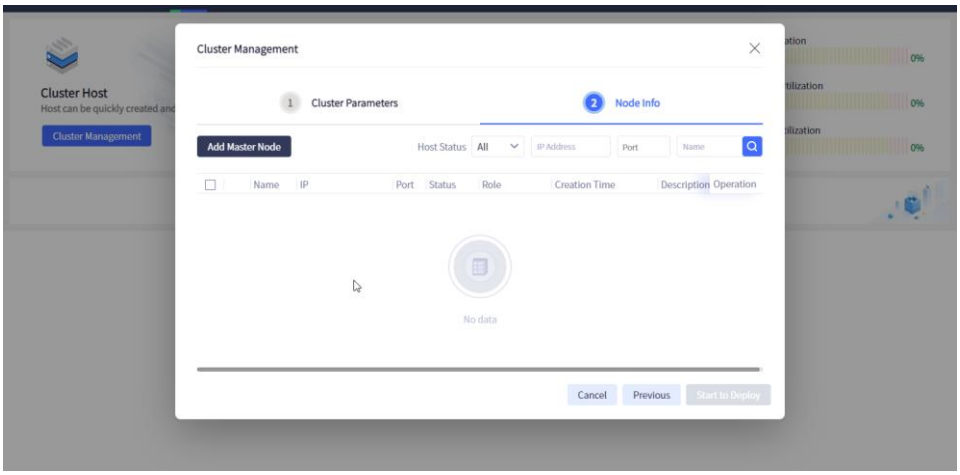


In the **Cluster Management** window, the cluster parameters do not need to be configured, but directly click **Next** to enter the node information page. Tick all nodes, and click **Batch Delete**.



Wait for the cluster node information to be deleted completely:



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7.3 Uninstall All Components

Step 1: Execute the uninstall command

Execute the uninstall command to perform the uninstalling operation:

[root@MAIPU home]# **mpsetup uninstall** (Execute uninstalling)

Warning: setup will uninstall all the follow packages

* 7d07a6aa56a9 MAIPU-KuBoard V006R002C00B038-220413013018

Confirm uninstall these packages (y/n)?[n] **y** (Confirm the uninstalling operation, and Click Enter, indicating confirming the uninstalling operation; click n, indicating exiting the uninstalling operation.

* Stop 'mpup-web' service...

Stop watchdog for 'mpup-web'...done

* Stop 'mpup-kuboard' service...

Stop watchdog for 'mpup-kuboard'...done

* Stop 'nginx' service...

……

[MAIPU-KuBoard] INFO uninstall success MAIPU-KuBoard V006R002C00B038

/opt/mpclsworker does not exist

Warnning!!!

Confirm clear the installation directory, include all program and datas (y/n)?**[y]** Confirm the deletion operation, and click Enter, indicating confirming deleting the directory; click n, indicating exiting the deletion operation)

* Remove install directory /home/mpup/mpup

* Clean tmp ...

Step 2: After confirming uninstalling the system, clear the installation directory:

[root@MAIPU home]# **cd /home/mpup/** (Enter the directory above the installation directory)

[root@MAIPU mpup]# **ll** (Check the files in the directory and the lower directory)

total 0 (The display of total 0 indicates that the installation directory is cleaned, and other versions or scenarios can be installed again; If the configuration is leaved, please contact technical support or execute rm manually to delete all files before installing)

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8. FAQ

8.1 Wrong DNS Resulting in Adding Host

Step 1: Check the DNS configuration

Execute the command **cat /etc/resolv.conf** to check whether the corresponding DNS server of nameserver can access the network, and whether the domain name resolution is normal.

MAIPU:~ # **cat /etc/resolv.conf**

Step 2: Modify nameserver to the correct DNS server or configure the DNS server as null

Modify the nameserver value to the correct and reachable DNS server via vi /etc/resolv.conf

Remark the line of nameserver via vi /etc/resolv.conf, and remark the line of search

Step 3: Add host again

Add the host on the kuboard interface again

8.2 Not Support Adding Host again for Deployment after Standalone Deployment

You can only choose one of the stand-alone mode and cluster mode. After being deployed as stand-alone mode, you cannot add a host anymore and change it to cluster mode. If the operation fails, you can directly delete the host without deploying the service cluster, and then click "Start to Deploy" after adding all hosts.

8.3 Host Not Configured with Default Router Resulting in Unavailable Service after Deploying Service Cluster

In the multi-node scenario of MAIPU BD-LAN controller, all hosts must be configured with default routes. Otherwise, the applications in each node cannot communicate directly and the services are unavailable. The recovery steps are as follows:

Step 1: Configure the default route

Execute nmtui to enter the network configuration interface and configure the correct gateway address:

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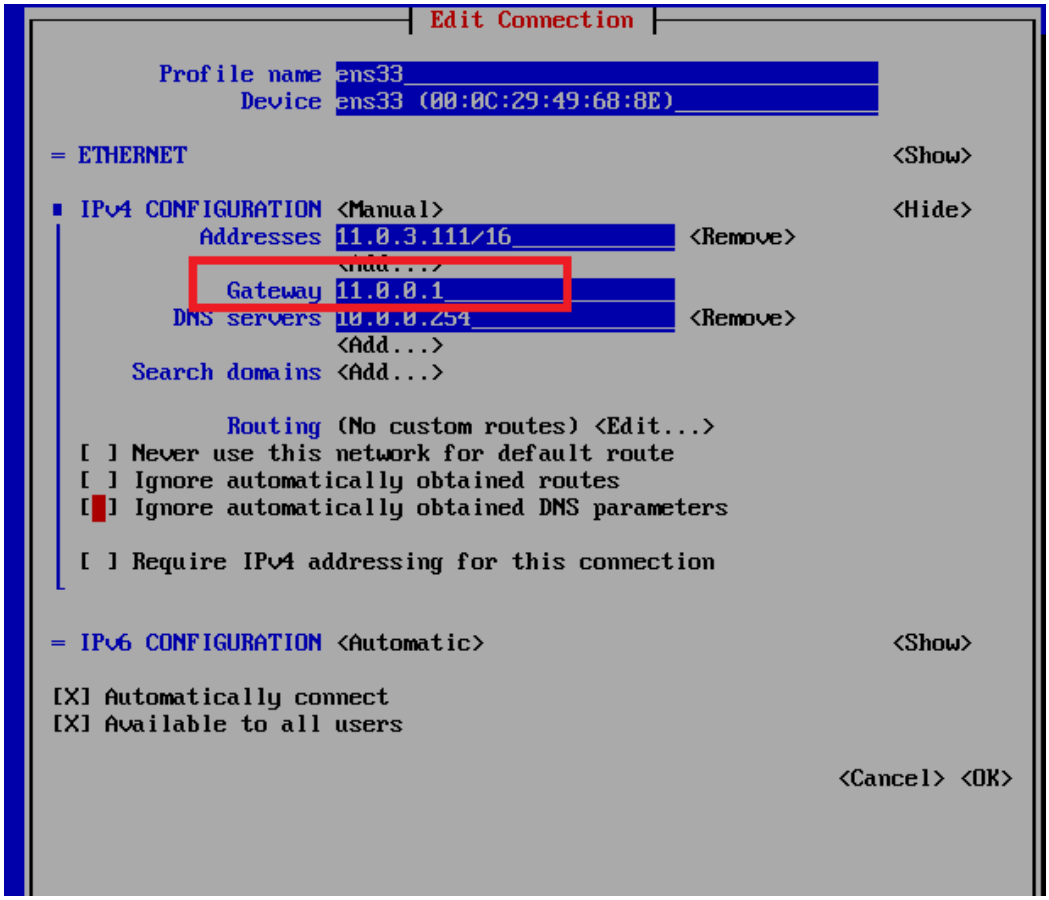

Execute **nmcli connection up ens33** (ens33 is specified according to the actuality)

Step 2: Delete the service cluster

Delete the service cluster on the cluster management system kuboard interface

Step 3: Delete hosts

Delete all hosts on the cluster management system kuboard interface

Step 4: Add hosts and deploy

Add all hosts for deployment on the cluster management system kuboard interface

Step 5: Deploy the service cluster

Add the service cluster on the cluster management system kuboard interface

8.4 Adding AD Server Failed

Step 1: Check whether the system is added to the domain

Step 2: The AD domain is the domain name. It is necessary to add the domain name resolution server at the first step of adding the cluster

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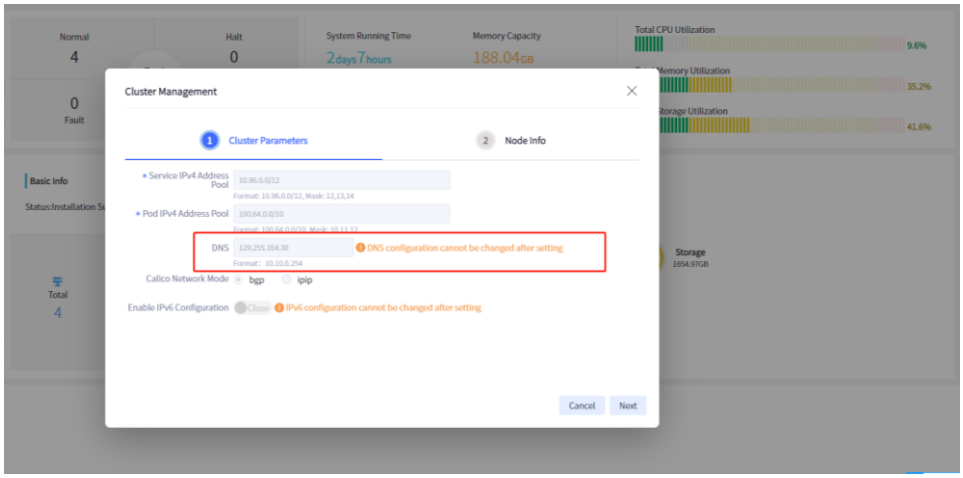

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