



ProphetStor DiskProphet

Installation Guide v4.0

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ProphetStor DiskProphet™ is an AIOps platform for data center performance and disk analytics, correlation and prediction solution by acquiring machine data from cross-layer systems.

There are two types of DiskProphet deployment.

- On-premise deployment installs an ISO image file for DiskProphet Server on a local server and the DiskProphet Agent setup file is deployed on hosts that will be monitored. DiskProphet Agent sends collected data to DiskProphet Server.
- When DiskProphet cloud service is used, DiskProphet Agent is deployed on hosts that will be monitored. DiskProphet Agent sends collected data directly to the cloud service. DiskProphet Server is not involved in this type of deployment.

This guide describes the requirements and procedures for installing DiskProphet Server and DiskProphet Agent.

This chapter describes the hardware requirements and network configurations for DiskProphet Server and DiskProphet Agent installations.

DiskProphet Software Components

The table below shows the software components required for on-premise and cloud-service deployments.

Components	Description	DPaaS (Cloud)	On-Premise
DiskProphet Server	A management server with Graphical User Interface is used for storing data, analyzing data and generating performance utilization charts and disk failure prediction.	N/A	Required
DiskProphet Agent	Used for data collection. Required on every physical host for the disk prediction service is needed.	Required	Required

Table 1.1. DiskProphet Software Component Requirements

On-Premise DiskProphet Server

Hardware Requirements

For on-premise deployment of DiskProphet server, hardware requirements depend upon the number of storage nodes that need to be monitored by DiskProphet. The table below shows the deployment scale and the corresponding number of storage nodes.

Deployment Scale	Number of Nodes *	Number of Disks	Using VM
Demo **	Up to 10	Up to 30	Yes
Small	Up to 20	Up to 80	No
Medium	Up to 50	Up to 200	No
Large	Up to 100	Up to 500	No
Extra Large	100 ~ 250	Up to 1000	No
Custom ***	Over 250	Over 1000	No

* The number of nodes is not the same as the number of DiskProphet Agent installations. Every physical host (node) needs one DiskProphet Agent. For example, DiskProphet Agents are deployed on 10 physical hosts and on one vCenter that includes 10 hosts. This constitutes 20 nodes.

** Demo is mainly used for product demonstration by sales or a trial version for customers. ProphetStor doesn't recommend using VMs for other deployment scales except for Demo purpose.

*** Contact ProphetStor Support for custom deployment.

Table 1.2. On-Premise DiskProphet Server Deployment Scale

The following table shows the minimal hardware requirements of each deployment scale.

Deployment Scale	Cores of CPU	RAM	Disk	Max Data Retention
Demo	8 cores	24 GB	150 GB	6 months
Small	12 cores	32 GB	500 GB	6 months
Medium	16 cores	48 GB	500 GB	6 months
Large	32 cores	64 GB	1024 GB	6 months
Extra Large	32 cores	64 GB	2 TB	6 months

Table 1.3. On-Premise DiskProphet Server Hardware Requirements

Network Ports

DiskProphet Server needs to open the following ports.

Port	Data Flow	Description
22	Inbound	Server backend management.
31380	Inbound	http service for Dashboard and REST API.
31390	Inbound	https service for Dashboard and REST API.
80	Inbound	Internally pass through to 31380
443	Inbound	Internally pass through to 31390
31400	Inbound	Receive data collection from DiskProphet Agent via gRPC protocol.

Table 1.4. Ports for On-Premise DiskProphet Server

DiskProphet Cloud Server

For DiskProphet cloud-service deployment, ProphetStor provides a server in the cloud. The customer uses its IP address to configure DiskProphet Agents and access the DiskProphet dashboard. The server resources allocation is adjustable to the essential requirements of the customer environments.

Browser Requirements

The DiskProphet dashboard has the same browser requirements for on-premise and cloud-service deployments.

Browser	Support Version
Google Chrome	> 63.0.3239.132 (64-bit)
Firefox	> 58.0.1 (64-bit)
Microsoft IE	> 11.103.14393.0
Microsoft Edge	> 38.14393.0.0
Apple Safari	> 11.0.3
Opera	> 50.0.2762.67

Table 1.5. Browser Requirements for DiskProphet Dashboard

DiskProphet Agent

Physical Host Hardware Requirements

DiskProphet Agent requires the following minimum hardware requirements in physical servers.

Hardware	Requirement
Disk	100 MB
RAM	50 MB

Table 1.6. Physical Host Hardware Requirements

Network Ports

A DiskProphet Agent host needs to open the following port to send collected disk data to DiskProphet Server.

Port	Data Flow	Description
31400	Outbound	Send disk metrics and SMART data to DiskProphet Server.
8090	Outbound	Agent gets data from AppDynamics server via this port.
8186	Outbound	Server health check
31899	Inbound	Ceph mon node receives data from osd node via this port.

Table 1.7. Port for DiskProphet Agent

RAID Controller Support

DiskProphet Agent supports several types of RAID controllers on different platforms. Please refer to the RAID support matrix in the administration guide for complete lists.

Part 2 On-Premise DiskProphet Server Installation

Prerequisites

ProphetStor DiskProphet Server for on-premise deployment is distributed as an ISO image. It can be installed on a virtual machine or a physical server. Prior to installation, mount DiskProphet Server ISO onto the server machine's bootable drive, and then boot up the system.

Note: DiskProphet Server needs to be synchronized with **accurate local time**.

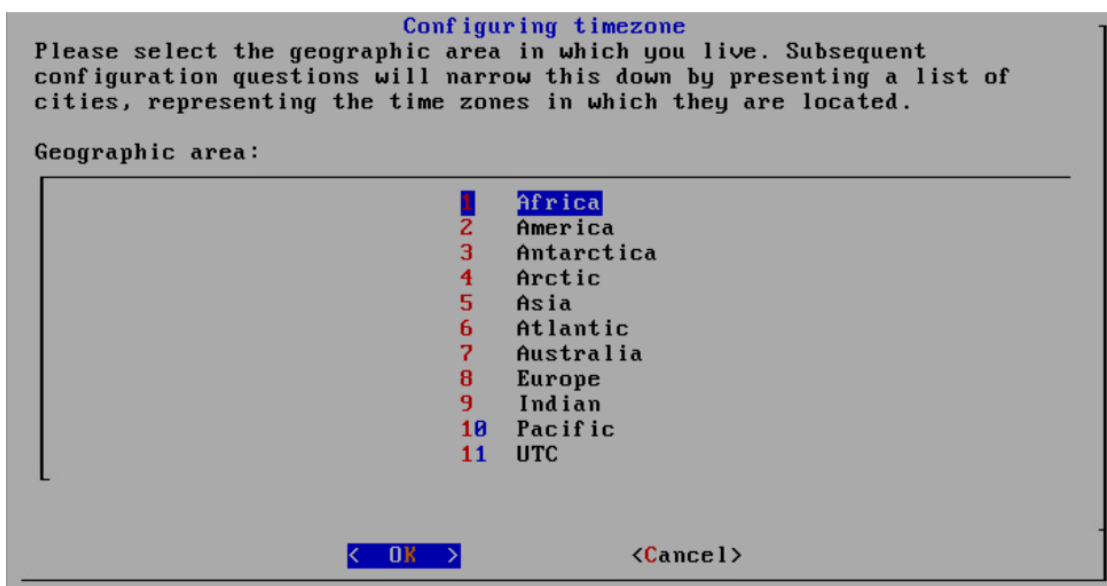
Installing On-premise DiskProphet Server

Complete the following steps to install on-premise DiskProphet Server.

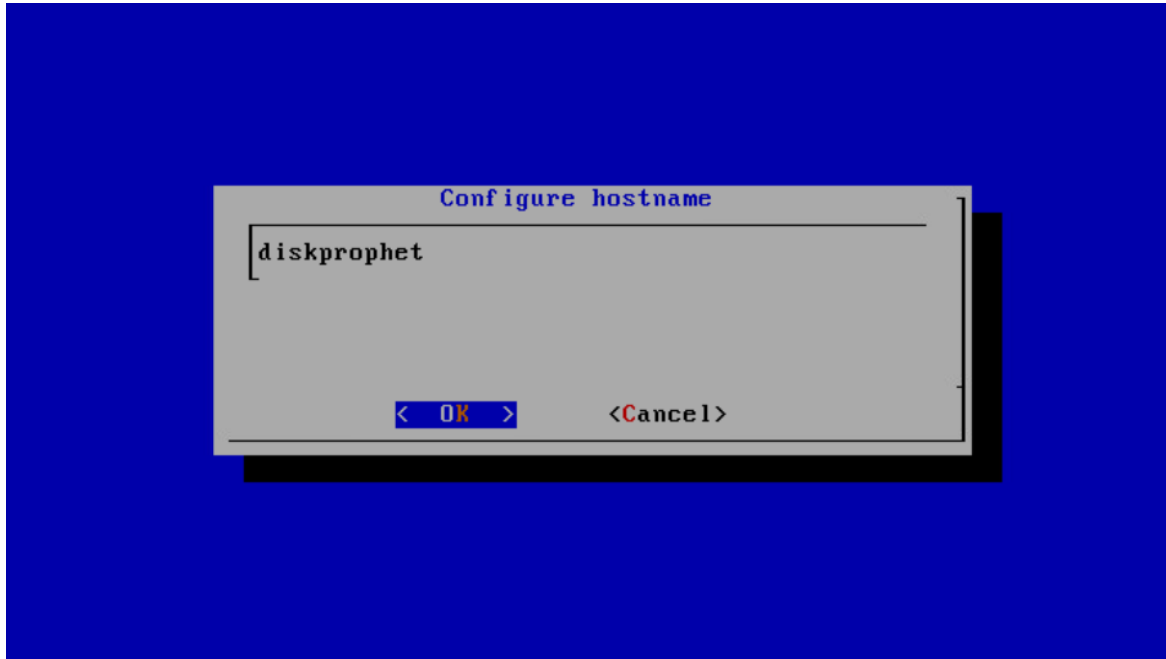
1. For the boot option, select **DiskProphet installation** and then press **Enter**. The server starts post installation tasks and interactive configurations.



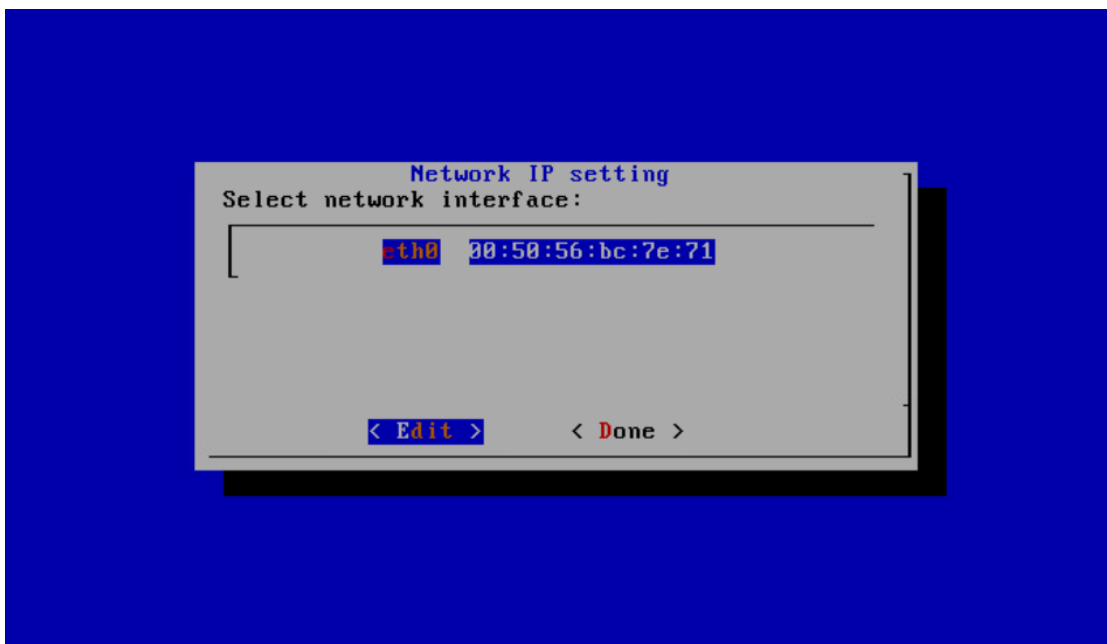
2. Select the time zone of the server, and then select **OK**. Select the region corresponding to your time zone, and then select **OK**. Set the date and time, and then select **OK**.

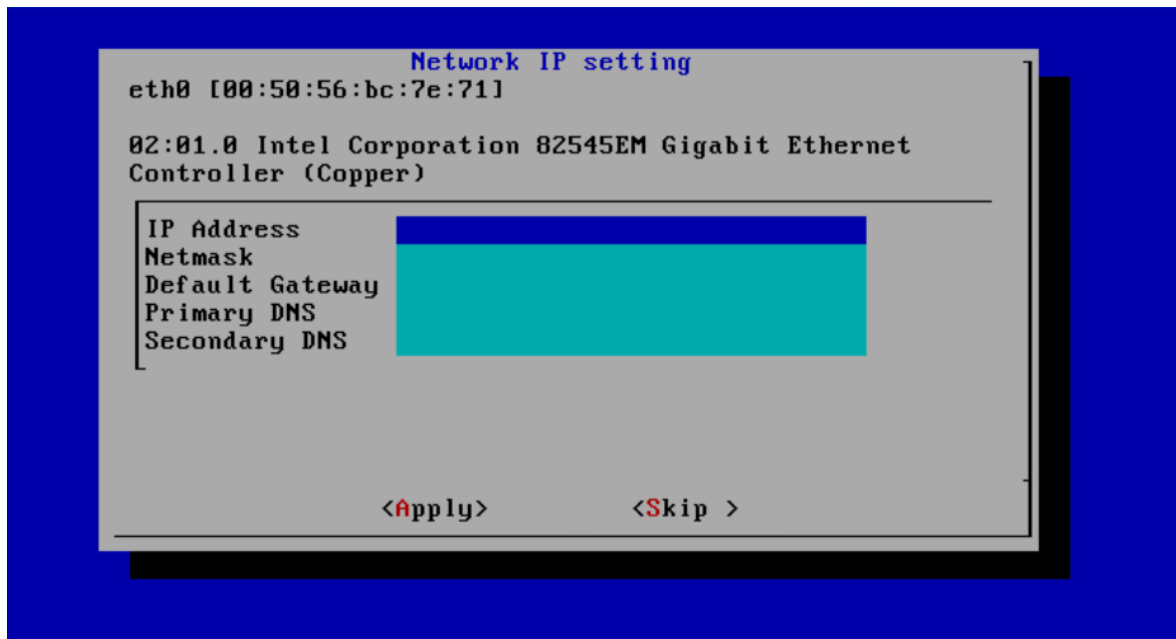


3. Type a new hostname for DiskProphet Server.

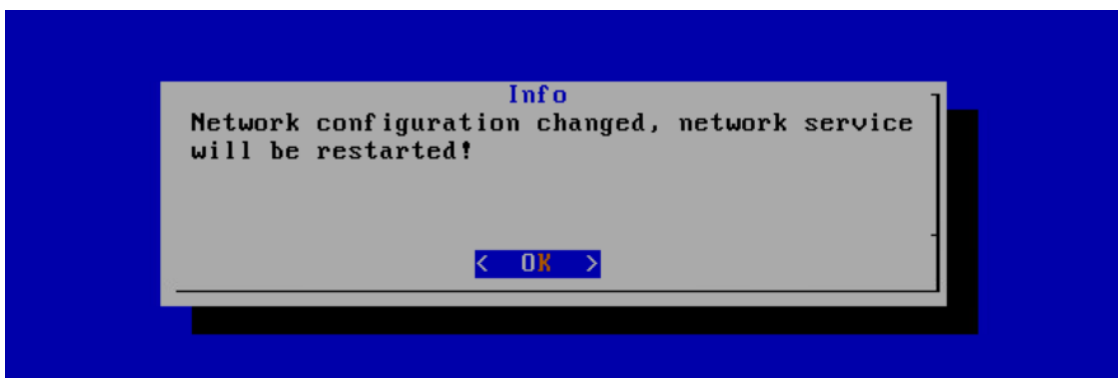
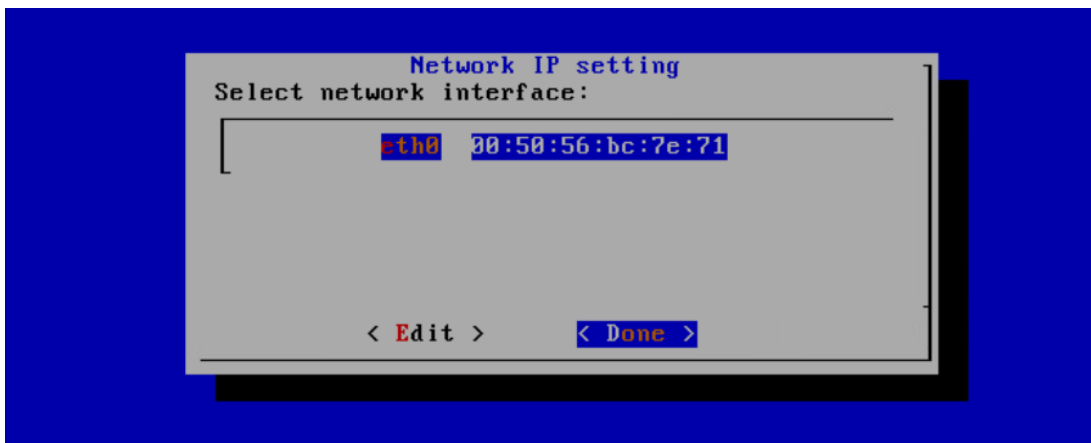
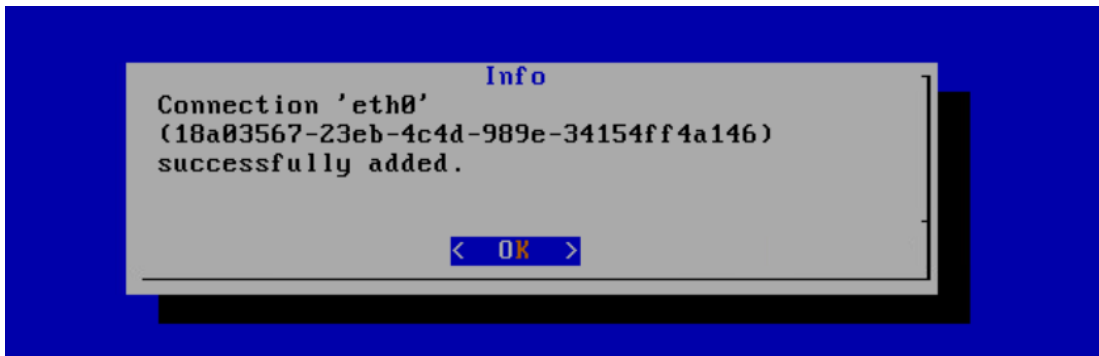


4. For network configuration, select network interface then click **Edit**. Enter the IP setting and then click **Apply**.

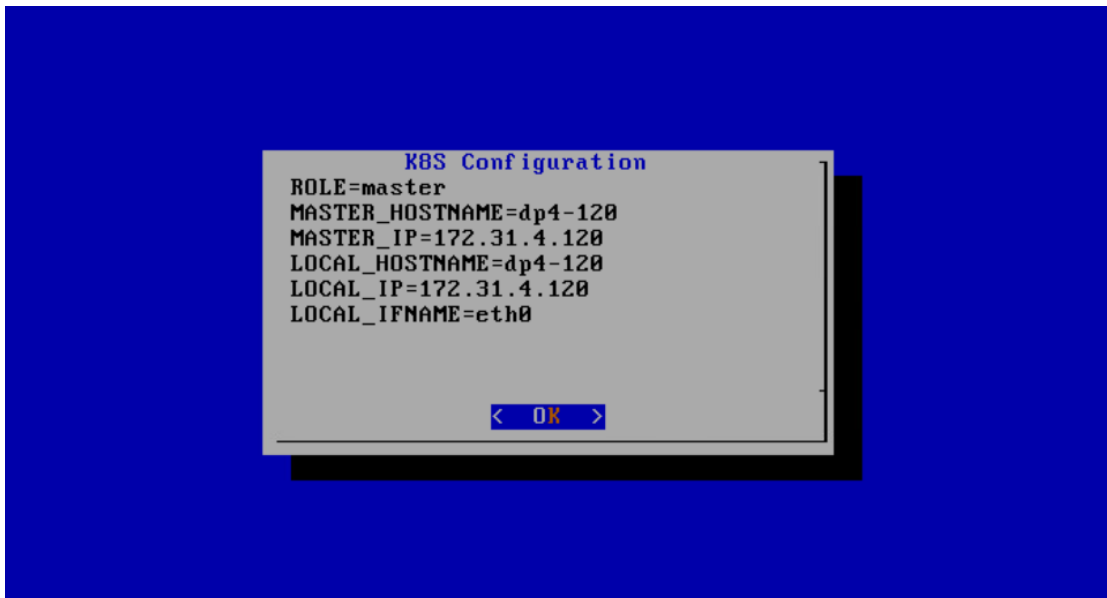
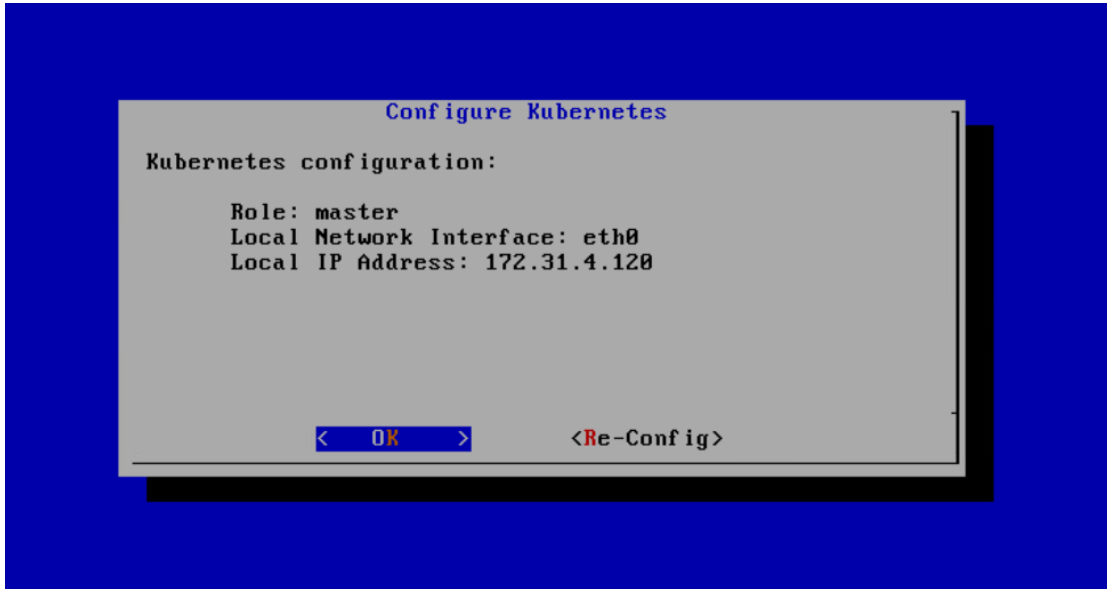




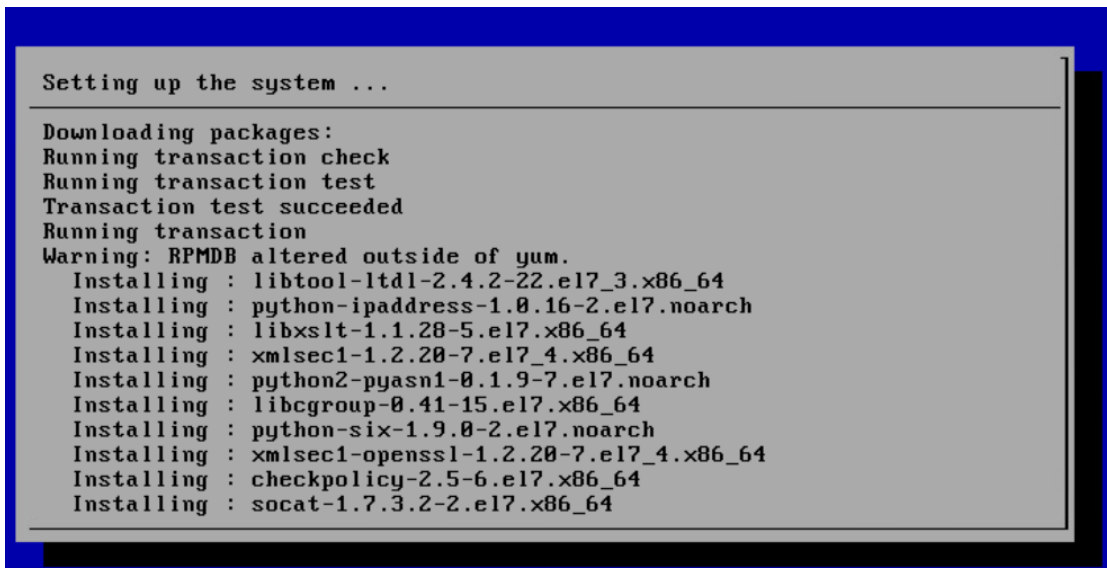
5. After the Info shows then click **OK**. Select **Done** to complete the network setting.



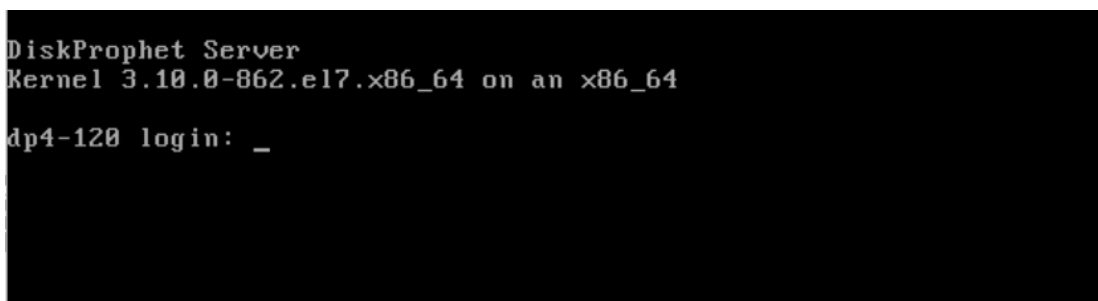
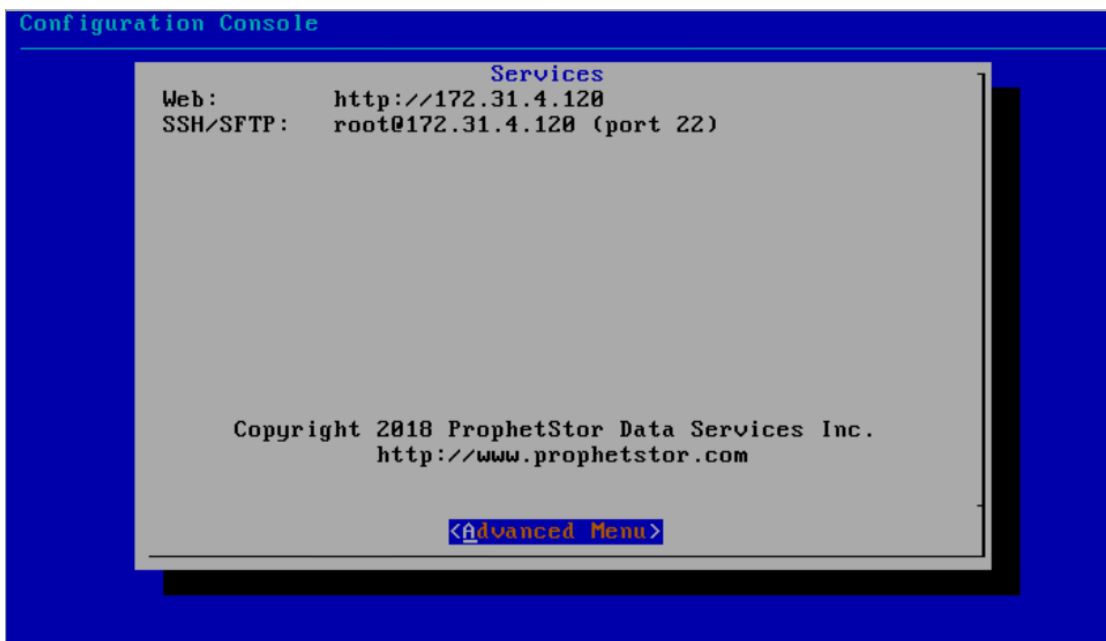
6. For the Kubernetes Configuration, click **OK** to complete.



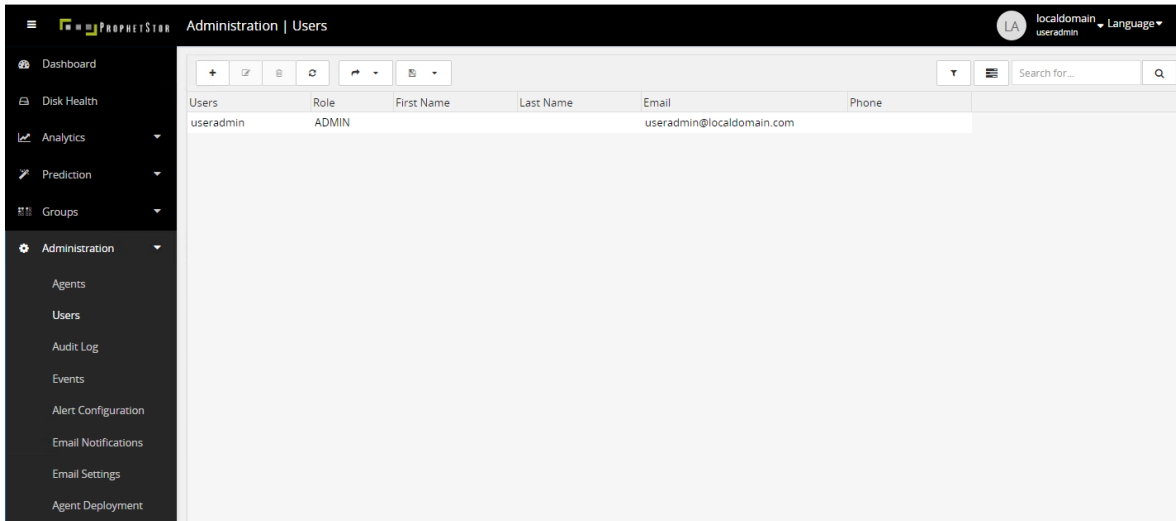
7. The system starts to configure the settings until it is complete.



8. After success in configuring system, press **Alt+F2** and log in with default account **root/DiskProphet@2019**.



9. Access DiskProphet dashboard with https://DiskProphet_Server_IP, for example, <https://172.52.1.1>, and log in with default account **useradmin/password**.
10. To change the default account password, go to **Administration > Users** on the DiskProphet GUI, select the user, and then click the **Edit** icon.



For more information, refer to the **DiskProphet Administration Guide v4.0**.

Input License key code

1. Login DiskProphet server via ssh with account/password "root/DiskProphet@2019"
2. Launch command "lickeymgt" into license control program.

```
[root@dp7-201 ~]# lickeymgt
Use the arrow keys to navigate: ↓ ↑ → ←
? Select Function:
  ▶ Keycodes
    Licenses
    Login
    Exit
```

3. Use the "↓ ↑ → ←" to navigate the function
4. Select "Keycode">"Add" to add keycode.

```
Use the arrow keys to navigate: ↓ ↑ → ←
? Select Option:
  ▶ Add
    Read
    Delete
    Activate
  ↓ Generate Registration Data
```

5. Input keycode

```
✓ Keycodes
✓ Add
✓ Keycode: 4J _____
```

6. Keycode input successful

```
✓ Keycodes
✓ Add
Keycode4J _____
[Result]: 201 Created
✓ Press Enter to continue: █
```

DiskProphet Agent Deployment

DiskProphet Agent is released in a self-executing installer. To install DiskProphet Agent on physical servers or virtual machines, distribute the DiskProphet Agent package to the host servers and then run the installation package file. This approach enables you to deploy DiskProphet Agent on a large quantity of hosts with the least effort.

Note: All DiskProphet Agents need to be synchronized with accurate local time.

DiskProphet Agent Installation for Linux/Ceph Distributions

The installation package can be distributed to the following server systems and platform:

- Linux hosts
- Ceph hosts

Complete the following steps to install DiskProphet Agent.

1. Upload DiskProphet Agent installation file **prophetstor-agent-4.0.x.pkg** to your host server. it is recommended that you place the file under the root folder.
2. Go to the folder you place the installation file, and add execution permission to the installation file.

```
# chmod +x prophetstor-agent-4.0.x.pkg
```

3. Ensure that you use the root privilege to run installation package.
4. Run the command `./prophetstor-agent-4.0.x.pkg install <DiskProphet server name>:<DiskProphet server port > <OS type>` to install the DiskProphet agent on the physical server or virtual machine.

Refer to the following sample scenario:

- DiskProphet server name: 172.31.12.206

Note: DiskProphet server name can be an IP address or a DNS/CNAME. If agent connects to DiskProphet server via an IP address, and when the IP address changes, you can update it in agent's configuration file. Open the configuration file `/etc/telegraf/telegraf.conf` and search the `outputs.diskprophet` section in the configuration file, and then change the `url` value with a new IP address. Instead, **we recommend to use DNS/CNAME so that the agent's connection URL won't be affected by the change of DiskProphet server IP address.**

- DiskProphet Server Port: 31400

Agent Installation for Linux/Ceph Server

Manual Installation

Run the following command to install DiskProphet Agent on the Linux/Ceph servers. Wait until the installation completed.

```
# ./prophetstor-agent- 4.0.x.pkg install 172.31.12.206:31400 linux/ceph
```

The following interactive script displays when the installation started. Input the agent user account and password to install.

```
Input Agent Account: useradmin
Input Agent Password: password
```

Type *y* or *n* to allow telegraf service to run as root or not. DiskProphet strongly recommends you to type *y*.

```
Run telegraf service as root in order to collect more system metrics? [y/n]:y
```

The following result shows the installation completed.

```
-----Installation Summary-----
Agent installation is successful!
-----
```

Silent installation

Run the following command to install DiskProphet Agent on the Linux/Ceph servers. Wait until the installation completed.

```
# ./prophetstor-agent- 4.0.x.pkg install -s 172.31.12.206:31400 linux/ceph useradmin password
```

The following result shows the installation completed.

```
-----Installation Summary-----
Agent installation is successful!
-----
```

Installation Exception

If an exception occurs as the figure below when the agent installation starts (this exception only occurs on Red Hat/CentOS host), follow the instructions in the exception description to eliminate this issue.

```
setup_agent ...

It is a bug in Red Hat/CentOS. To have DiskProphet Agent work properly,
users need to manually disable "Defaults requiretty" in the /etc/sudoers
or upgrade the sudo package (later than sudo-1.8.6p7-18.el7) in this host

Please consult the link to the bug for more information:
https://bugzilla.redhat.com/show_bug.cgi?id=1196451

After fixing the issue, rerun the installation script
```

For more information for this issue, refer to https://bugzilla.redhat.com/show_bug.cgi?id=1196451

Solution 1:

Run `vi /etc/sudoers` to open the file and find “`Defaults requiretty`”. Disable this attribute with `#` mark.

Solution 2:

Run `yum update sudo` to upgrade your Red Hat/CentOS system to the latest version.

DiskProphet Agent Installation for Windows Installer

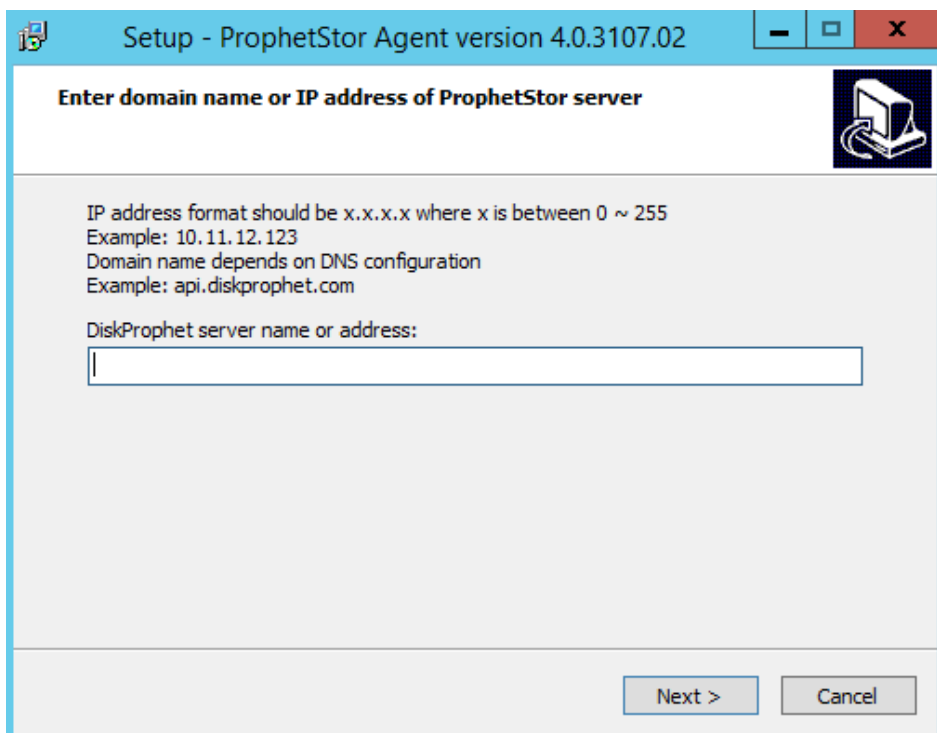
To install DiskProphet agent on Windows host, run an executable file **prophetstor-windows-agent-4.0.x.exe** and complete the following steps. prophetstor-windows-agent-4.0.3102.02

1. Enter the DiskProphet server name to which agent is connecting. The server name can be an IP address or DNS/CNAME. Click **Next**.

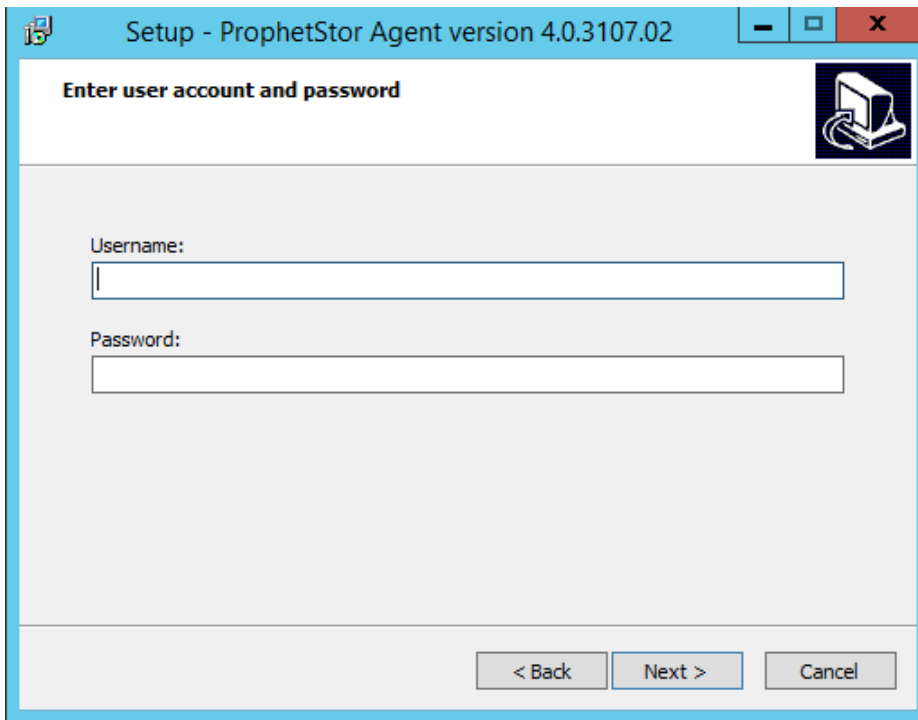
Note: If agent connects to DiskProphet server via an IP address, and when the IP address changes, you can update it in agent’s configuration file.

Go to “`C:\Program Files\ProphetStor\DiskProphet\Agent\`”, and open the “`telegraf.conf`” file. Search “`outputs.diskprophet`” section, and change the “`url`” value with a new IP address.

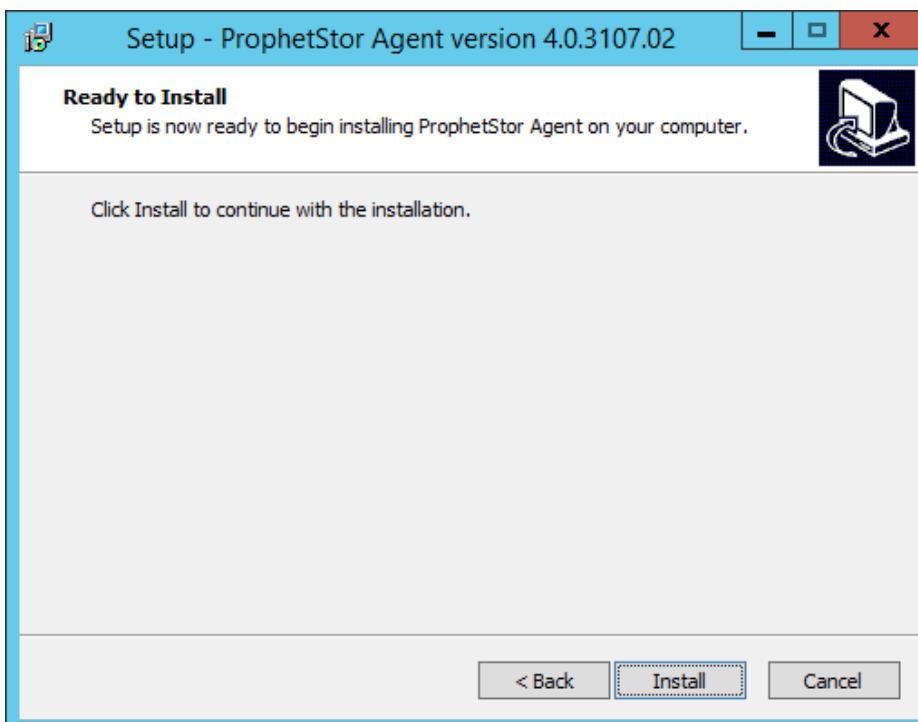
Instead, **we recommend to use DNS/CNAME so that the agent’s connection URL won’t be affected by the change of DiskProphet server IP address.**



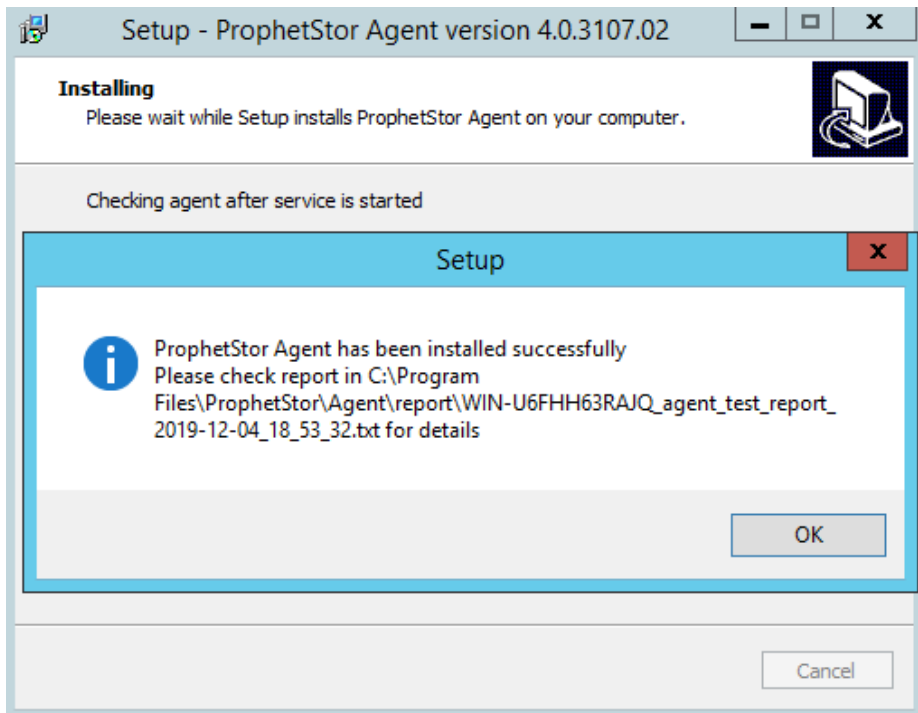
2. Input the agent user account and password to install.



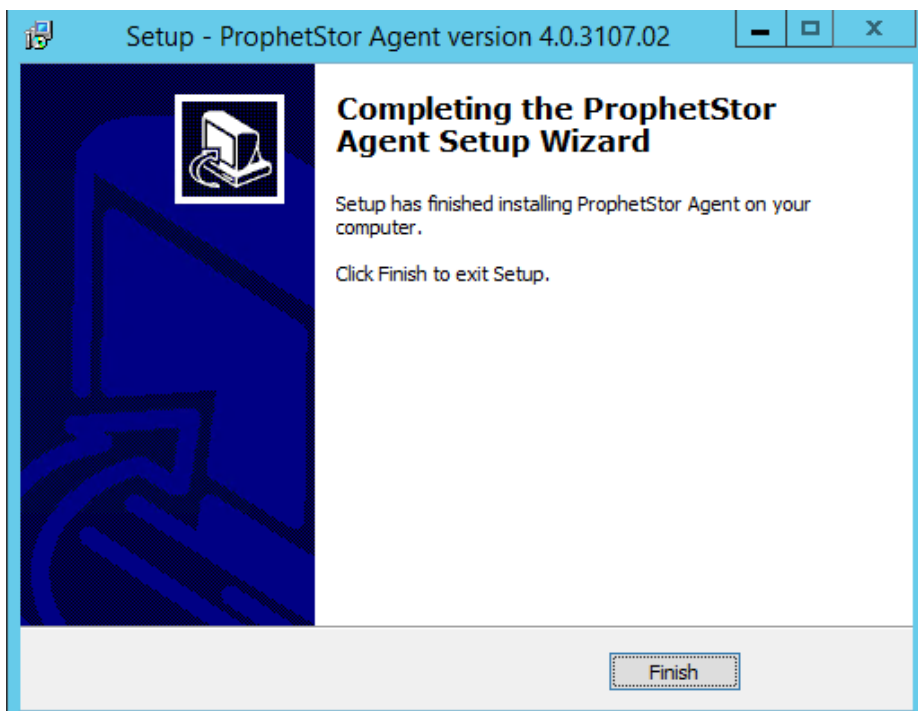
3. Click **Install** to start installing Windows agent. After agent is installed, the installer will automatically check and start the agent service. Wait until it finishes.



4. After the agent check, a prompt message shows if the service is started correctly. All installation information will be recorded in a report text file in the "C:\Program Files\ProphetStor\DiskProphet\Agent\report\" folder. If agent check failed, you can open the report for more information. Click **OK** to close the message.



5. Click **Finish** to complete installation.



Starting/Stopping Agent Service

Start DiskProphet Agent service, run the following command.

```
service prophetstor_agent start
```

Stop DiskProphet Agent service

```
service prophetstor_agent stop
```

Upgrading DiskProphet Agent

The procedure to upgrade DiskProphet Agent is the same as the steps to install DiskProphet Agent. The installation will automatically remove the old DiskProphet Agent version and install the new one.

- Upgrading DiskProphet Agent on Linux hosts.

```
# ./<diskprophet.agent.upgrade.file.pkg> install <DiskProphet_Server_IP>:<Port> linux
```

- Upgrading DiskProphet Agent on Ceph hosts.

```
# ./<diskprophet.agent.upgrade.file.pkg> install <DiskProphet_Server_IP>:<Port> ceph
```

Uninstall DiskProphet Agent

Remove DiskProphet Agent from your Linux/Ceph host, run the following command.

```
# ./<diskprophet.agent.upgrade.file.pkg> uninstall
```

For Windows Server, open **Control Panel**, go to **Programs and Features**, select “DiskProphet Agent version 4.0.x”, and then click **Uninstall**.