Data Manager 3.0
Quick Guide

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Notice

The information in this manual is subject to change without notice. Every effort has been made in the preparation of this manual to ensure accuracy of the contents, but all statements, information, and recommendations in this manual do not constitute the warranty of any kind, express or implied.

Preface

Audience

This manual is intended for:

- Surveillance system planners
- Field technical support and servicing engineers
- Software installation, configuration, and servicing administrators
- Product users

Organization

The Data Manager 3.0 Quick Start describes the features, software specifications and software configuration, upgrade, and uninstallation of the Data Manager 3.0 (hereinafter referred to as DM3.0). Read this document carefully to help smoothly install DM3.0.

This manual is organized as follows:

1. **Overview.** Describes the functional characteristics and software specifications of DM3.0.
2. **DM3.0 Installation, Upgrade and Uninstallation.** Describes the software installation, upgrade and uninstallation of DM3.0.
3. **System Configuration.** Describes the basic configuration for DM3.0

Contents

1 Overview

Data Manager 3.0 (DM3.0) is data management service software developed for an IP video surveillance system. It manages storage devices and audio/video data. This software will be installed on hardware servers with the Linux operating system (OS).

Functions and Features

Centralized Management on Storage Devices

A large number of cameras are deployed in video surveillance systems where the storage capacity requires PetaBytes (PBs). It is very complicated and easy to make mistakes to statically allocate storage resources to each camera from each storage device. DM3.0 provides integration and centralized management on storage resources of IP Storage Area Network (SAN) and supports dynamic storage resources allocation to cameras, increasing the resources utilization rate.

Controllable Data Storage

DM3.0 can make a storage plan for each channel of camera based on actual requirements, so that the audio and video data collected by the camera is stored during the period specified by the plan. Abundant storage resources are saved consequently.

Audio/Video Data Backup

DM3.0 can back up the existing videos in the storage resource to prevent video overlap caused by insufficient storage resources.

Speedy and Precise Audio/Video Data Retrieval

Before accessing audio/video data, make sure that the camera has stored the data during the specified period. This process is referred to as audio/video data retrieval. It must be done as quickly as possible. The traditional video surveillance systems cost must time on data retrieval. To solve this problem, DM3.0 provides speedy and precise audio/video data retrieval function.

Historical Audio/Video Data Broadcast by VOD

DM3.0 provides the Video-On-Demand (VOD) service, which can read historical audio/video data from IP SAN and send the data as Transport Streams (TS) to decoder clients to decode and play. DM3.0 and VOD clients control the play process via the standard Real-time Streaming Protocol (RTSP). Operations such as play, pause, and fast forward are supported.

Ease of Management

DM3.0 provides a web management page to facilitate daily management and maintenance of the system.

Software Specification

Table 1-1 Software Specification

Item	Description
Manageable devices	IP SAN storage devices and third-party backup resources
Maximum number of manageable IP SAN storage devices	128
Maximum number of camera channels that can be stored	4096
Maximum number of channels that support broadcast playback and the bandwidth	64. The total bandwidth cannot be greater than 128 Mbps.
Maximum number of manageable backup resources	16
Maximum number of camera channels that support backup service configuration	1024

2 Installation, Upgrade and Uninstallation

WARNING!

Only professionals can install, upgrade and uninstall DM3.0; otherwise, server system faults or data loss may be caused. Contact authorized personnel of Uniview before you install, upgrade, or uninstall VM3.0.

System Requirements

Before installing DM3.0 on a server, ensure that Linux OS has been installed on the server. Table 2-1 lists the system requirements of DM3.0 for the server.

Table 2-1 System requirements for the server

Item	Requirements
OS	CentOS5.3 is recommended. For details, consult authorized personnel of Uniview.
CPU and operating frequency	Intel Xeon 5410 4-core, 2.33 GHz dominant frequency
Memory	2 * 2 GB, DDR2
Network adapter	GE adapter card. One or multiple network adapters can be configured depending on actual requirements.
Hard disk	2 * 500 GB SATA or SAS hard disks Hard disk partitions of the OS: • Boot partition: at least 200 MB • Swap partition: at least the memory size • Dual-node hot standby partition: at least 40 GB • Root partition: remaining space
CD-ROM	DVD
Others	• A monitor and a keyboard are equipped to facilitate local maintenance. • There are various status LEDs, such as a power LED, an alarm LED, and a network adapter LED.

NOTE !

If the versions map to one another, DM3.0 can be installed together with VM3.0, MS3.0 and BM on a server. For details about version mapping, see the version mapping table released along with the version.

Preparations

Preconditions

Before installing or upgrading the software, configure network parameters, such as the IP address, subnet mask, and gateway address and host name. For details, see section "Checking or Modifying the Configuration File".

The server is well connected to the operating PC through the network.

The SSH client has been installed on the operating PC, and the operating PC has logged into the server through the SSH client. For details, see section "Logging In to the Server Using the SSH Client". Do not close the SSH client during installation, upgrade, or unistallation; otherwise, the installation, upgrade, or unistallation might fail.

Set the values of Security Level and SELinux to Disabled during firewall configuration. For details, see section "Configuring the Firewall".

Logging In to the Server Using the SSH Client

NOTE !

For the first login to the server using the SSH client, the username and password are those of the server OS. For details, contact server OS installation engineers. In this example, the username is root and the password is passwd.

After the SSH client is installed, shortcut icons 

and 

appear on the desktop.

To log in to the server through the SSH client, follow the steps below:

Double-click 

to execute the application, as shown in Figure 2-2.

Figure 2-1 SSH Secure Shell window

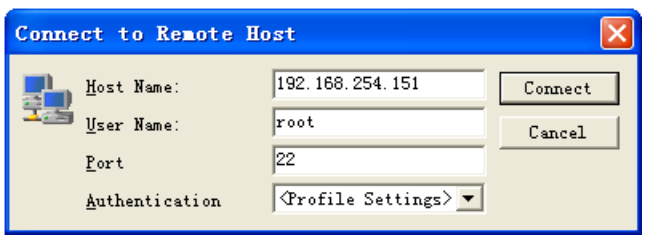
2. 

Click 

. Input the IP address of DM3.0, login user name and port number, as shown in Figure 2-2. Then click 

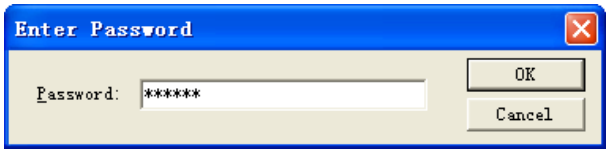
.

Figure 2-2 Connecting to the remote host



3. After connected, the server should require a password, as shown in Figure 2-3. Input the password passwd, and then click OK to log in to the server where the software will be installed and access a command line interface (CLI).

Figure 2-3 Inputting your password

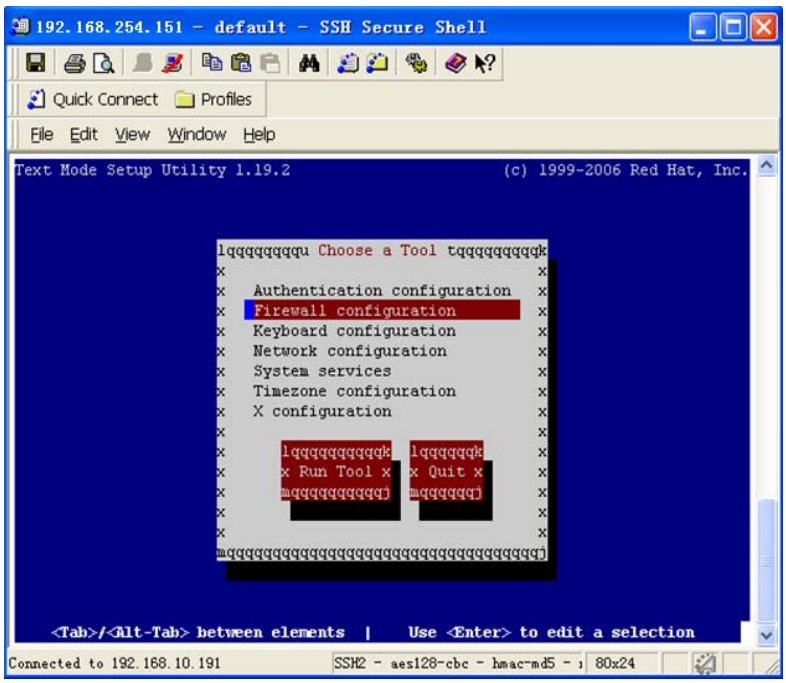


Configuring the Firewall

1. Log in to the server using the SSH client, and then input the setup command. A configuration widow is displayed.

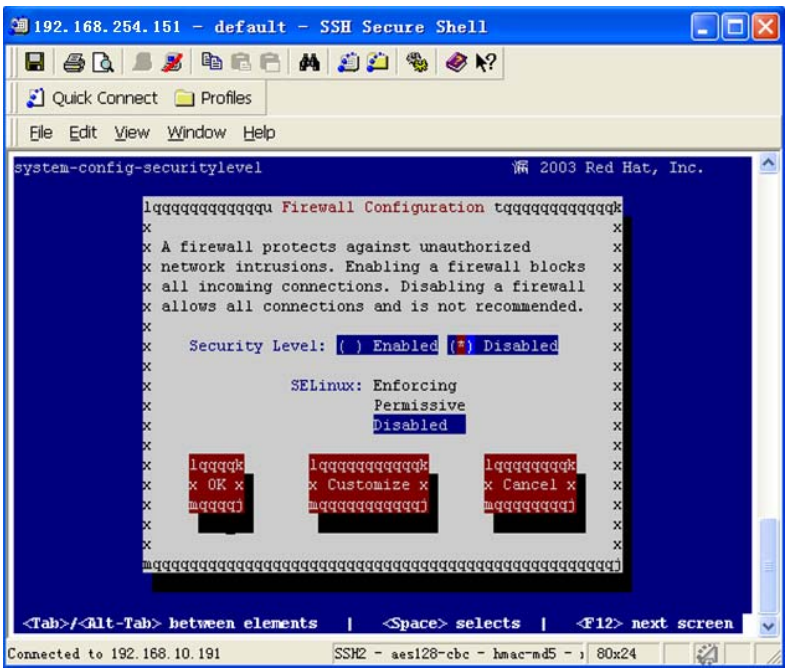
```
[root@dm ~]# setup
```

Figure 2-4 Configuration window



2. Select Firewall configuration, press Enter, and then set the values of Security Level and SELinux to Disabled.

Figure 2-5 Setting the values of Security Level and SELinux to Disabled



3. Select OK, press Enter, and then select Quit to quit the configuration window.

Software Installation

To guarantee successful software installation, follow the steps below strictly:

1. Copying and Decompressing the Software Installation Package
2. Running the DM3.0 Installation Script
3. Running the BM Installation Script

Copying and Decompressing the Software Installation Package

Copy an installation package to a directory such as /root in the current server OS using the SSH client, and decompress the package. In this example, the IP address of the server is 192.168.254.151, and the host name is ms.

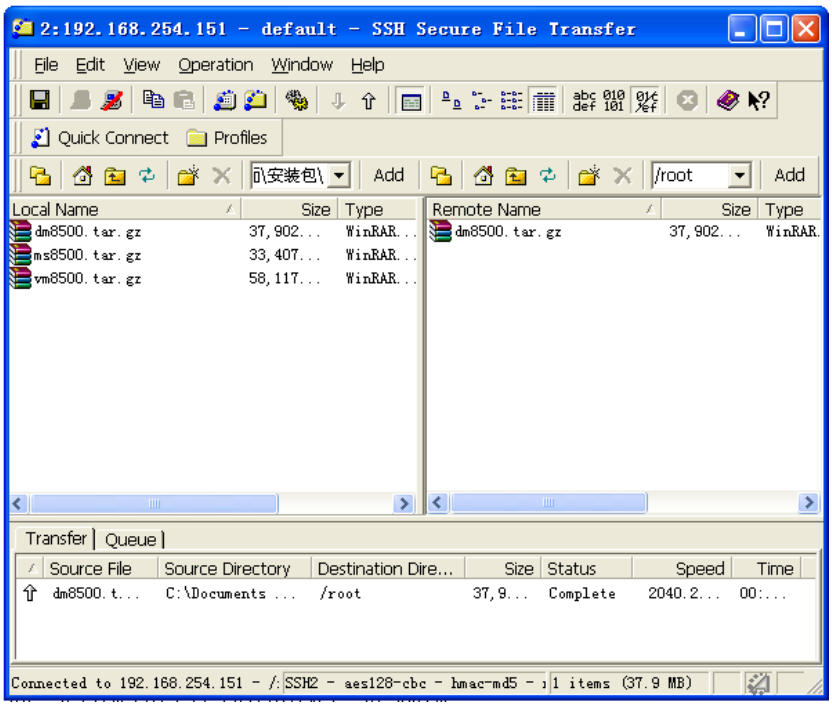
The procedure is as follows:

1. Log in to the server using the SSH client, and then click . A window is displayed.
2. Select the directory where the installation package resides on the left pane, and then drag the package to the /root directory on the right pane. The system copies the package to the server. Figure 2-6 shows the window after the package is successfully copied.

NOTE !

The work directory name must be in English.

Figure 2-6 Copying the software installation package to the server



3. Access the directory where the software installation package resides, and run the tar command to decompress the package.

```
[root@dm ~]# tar zxvf dm8500.tar.gz
```

Two directories dm8500 and bm8500 are generated after compression and include installation, upgrade and uninstallation scripts of DM3.0 and BM respectively.

Running the DM3.0 Installation Script

NOTE !

- The standalone installation of DM3.0 is different from the HA installation of DM3.0. This section uses the standalone installation of DM3.0 as an example. For details about the HA installation of DM3.0, contact technical support engineers of Uniview.
- VM3.0 can be installed along with DM3.0, BM, and MS3.0 on a server. In that case, DM3.0, BM, and MS3.0 must register on the local VM3.0.
- If you want to install VM3.0 along with DM3.0, BM, and MS3.0 on a server, you must install VM3.0 first and then DM3.0, BM, and MS3.0. In this case, some parameters of DM3.0, BM, and MS3.0 will be automatically associated with the parameters of the installed VM3.0. If DM3.0, BM, and MS3.0 is already installed on the server, you must uninstall DM3.0, BM, and MS3.0 before installing VM3.0

Access the directory dm8500 where the decompressed files are saved, and run the source dminstall.sh command to install the software. Below are related commands. The displayed information is an example only. The bold parts indicate parameter explanation.

```
[root@dm ~]# cd dm8500
[root@dm dm8500]# source dminstall.sh
```

2011-04-30 15:49:30 : Do not close the terminal during the installation; otherwise, unknown error might occur.

dm8500 installation begins...

Please choose the language of dm8500 (default 0.Chinese): --- **Select the language mode**.

0.Chinese

1.English

Please input you choice:1

What version of dm8500 do you want to install[default:1. stand-alone]:---**Select the standalone installation mode.**

1. stand-alone

2. high ability (HA)

Please input your choice:1

Please input dm8500 device ID[default:msserver]:---**Set the DM3.0 server ID. Make sure that the ID is unique in the whole network. Press Enter on the key board to select the default port.**

Use default DeviceID:dmserver

Please input Video Manager server port[default:5060]:---**Set the VM3.0 port. Press Enter on the key board to select the default port.**

Use default Server Port:5060

Please input RTSP port[default:554]:---**Set the RTSP port. Press Enter on the key board to select the default port.**

Use default Rtsp Port:554

Please input Video Manager server IP address[such as 192.168.0.11]:---**Set the IP address of the VM3.0 .**

192.168.254.152

Route initialization succeeded

Route initialization succeeded!

Begin to install dm8500 server ...

Begin to install rpm pdt_imos ...

Install rpm pdt_imos finished...

Install rpm pdt_imos succeeded

Begin to install rpm dm8500 ...

Install rpm dm8500 finished...

Install rpm dm8500 succeeded

Install succeeded

Begin to start dm8500 server ...

Starting DMSERVER services: starting dmserver

start ok 0

CImfLogTask: logNumber = IMFMaxLogNumber 2

CImfLogTask: logSize = IMFMaxLogSize 1048576

CImfLogTask: logPath = IMFLogPath /var/log

port value = 554

Streaming Server done starting up

Start dmserver succeeded

Start dmdaemon succeeded

Start servers succeeded

```
Install dm8500 succeeded
```

After the installation is complete, DM3.0 services automatically start. Run the dmserver.sh status command to check the service status. For details, see section "Operating DM3.0/BM Services".

Running the BM Installation Script

Access the directory bm8500 where the decompressed files are saved, and run the installation script to install the software. Below are related commands. The displayed information is an example only. The bold parts indicate parameter explanation.

```
[root@dm~]#cd bm8500
[root@dmbm8500]#./bminstall.sh
2011-04-1215:45:06:Do not close the terminal during the installation; otherwise, unknown error might occur.
bm8500 installation begins...
Whatversionofbm8500doyouwanttoinstall[default:1.stand-alone]:---Select the standalone installation mode.
1.stand-alone
2.highability(HA)
Pleaseinputyourchoice:---Press Enter on the key board to select the default mode 1.
UsedefaultMODE:1.stand-alone
Please input dm8500 device ID[default:msserver]:---Set the BM server ID. Make sure that the ID is unique in the whole network. Press Enter on the key board to select the default port.
UsedefaultDeviceID:bmserver
PleaseinputVideoManagerserverport[default:5060]
UsedefaultServerPort:5060
PleaseinputRTSPport[default:30554]:
UsedefaultRtspPort:30554
PleaseinputSNMPport[default:162]:
UsedefaultSnmpPort:162
PleaseinputVideoManagerserverIPaddress[suchas192.168.0.11]:192.168.254.152
......
Installrpmbm8500finished...
Installrpmbm8500succeeded
Installsucceeded
Begintostartbm8500server...
......
```

After the installation is complete, BM services automatically start. Run the bmserver.sh status command to check the service status. For details, see section "Operating DM3.0/BM Services".

Software Upgrade

NOTE !

If VM3.0 is installed along with DM3.0, BM, and MS3.0 on the same server, you must stop the services of DM3.0, BM, and MS3.0, and then upgrade VM3.0 and DM3.0, BM, and MS3.0 in sequence.

To upgrade DM3.0, follow the steps below:

1. Copy the upgrade package to a work directory in the current server OS. For details, see section " Copying and Decompressing the Software Installation Package ".
2. Access the directory bm8500 where decompressed files are saved, and then run the sh bmupdate.sh command. Finish the software upgrade according to system prompts. Below are related operation commands:

```
[root@dm ~]# cd bm8500
[root@dm bm8500]# sh bmupdate.sh
```

3. Access the directory dm8500 where decompressed files are saved, and then run the sh dmupdate.sh command. Finish the software upgrade according to system prompts. Below are related operation commands:

```
[root@dm ~]# cd dm8500
[root@dm dm8500]# sh dmupdate.sh
```

Software Uninstallation

WARNING!

All data related to the software will be deleted after you uninstall the software. Therefore, back up data in advance. Contact authorized personnel of Uniview before uninstalling the software.

1. Log in to DM3.0 server using the SSH client.
2. Access the directory bm8500 where decompressed files are saved, and then run the sh bmuninstall.sh command. Finish the software uninstallation according to system prompts.

```
[root@dm ~]# cd bm8500
[root@dm bm8500]# sh bmuninstall.sh
```

3. Access the directory dm8500 where decompressed files are saved, and then run the sh dmuninstall.sh command. Finish the software uninstallation according to system prompts.

```
[root@dm ~]# cd dm8500
[root@dm dm8500]# sh dmuninstall.sh
```

3 System Configuration

WARNING!

Only professionals can configure DM3.0; otherwise, severe system faults or data loss may be caused. Contact authorized personnel of Uniview before you configure DM3.0.

Configuration Task

Table 3-1 Configuration tasks

Configuration Task		Description
Command line configuration	Checking or Modifying the Configuration File	Check or modify the DM3.0/BM device ID or the IP address of VM3.0.
	Operating DM3.0/BM Services	Check the service status, and start, stop or restart DM3.0/BM services.
	Checking System Logs	Check system logs.
	Checking the System Version	Check system version information.
Web configuration	Logging In to the Software Through Web	Log in and log out through web.

Checking or Modifying the Configuration File

Checking the configuration file

Run the following command to check parameter settings in the system:

The BM configuration file is as follows:

```
[root@dm ~]# bmcfgtool.sh -q
DeviceID=bmserver
RtspPort=30554
SnmpPort=162
ServerPort=5060
ServerIP=192.168.254.152
ServerID=iccsid
NatAddr=
NatPort=
DBType=PostgreSQL
DBServerName=192.168.254.152:5432:imos
DBUserName=postgres
DBPassword=******
```

The DM3.0 configuration file is as follows:

```
[root@dm ~]# dmcfgtool.sh -q
DeviceID=dmserver
RtspPort=554
ServerPort=5060
ServerIP=192.168.254.152
NatAddr=10.10.10.10
```

```
NatPort=1212
ServerID=iccsid
DBType=PostgreSQL
DBServerName=192.168.254.152:5432:imos
DBUserName=postgres
DBPassword=******
```

Modifying the configuration file

When the network has changed or certain parameters need to be modified, run the corresponding script to modify parameter information. Below is a command for modifying the configuration file. The bold part indicates parameter explanation.

- Run the following command to modify the ID of DM3.0:

```
[root@ms ~]# dmcfgtool.sh deviceid DM8500---DM8500 is the new ID of DM3.0.
```

- Run the following command to modify the ID of BM:

```
[root@ms ~]# bmcfgtool.sh deviceid BM8500---BM8500 is the new ID of BM.
```

- Run the following command to modify the IP address of the VM3.0 server:

Run the following command to modify the configuration files of BM and DM concurrently.

```
[root@ms ~]# dmcfgtool.sh serverip 192.168.254.155---192.168.254.155 is the new IP address of VM3.0.
[root@dm ~]# bmcfgtool.sh serverip 192.168.254.155
```

NOTE !

You can modify the ID of DM3.0/BM and the IP address of VM3.0 on the webpage of DM3.0/BM on a client. For details, see the corresponding Online Help.

- Modify Apache port numbers:

NOTE !

You need to modify the port number only when the default port number is already being used.

Run the following command to modify the Apache port number of DM3.0:

```
[root@dm ~]# dmcfgtool.sh namehost 891--- 891 is the new port number of DM3.0.
```

Run the following command to modify the Apache port number of BM:

```
[root@dm ~]# bmcfgtool.sh namehost 892---892 is the new port number of BM.
```

You can also run the dmcfgtool.sh -help or the bmcfgtool.sh -help command to obtain more commands for modifying parameters. After modifying configuration, you need to run the dmserver.sh restart or the bmserver.sh restart command to restart the services for configuration changes to take effect.

Operating DM3.0/BM Services

Checking the Service Status

BM Service Status

```
[root@dm ~]# bmserver.sh status
Bwserver is running
Bmserver is running
Bmdaemon is running
```

DM Service Status

```
[root@dm ~]# dmserver.sh status
Dmserver is running
serversnmpd is running
DiskReadOnlyCheck is running
Dmdaemon is running
```

The service status is either running (indicating that the respective service is running) or stopped (indicating that the respective service has been stopped).

If the status of a process as shown above is stopped, you need to manually restart the service. For details, see section "Restarting the Services".

If an executable file on the server is deleted or its executable permission is modified, a message "does not exist" will be displayed, indicating that this service does not exist. In that case, you need to reinstall the software or contact authorized personnel of Uniview for a solution, so that services can be normally running.

Starting the Services

After the installation, DM3.0/BM services automatically start with the system startup. You can also manually start the services.

To start the services, run the following command:

```
[root@dm ~]# bmserver.sh start
[root@dm ~]# dmserver.sh start
```

Stopping the Services

You can manually stop the services as required.

To stop the services, run the following command:

```
[root@dm ~]# bmserver.sh stop
[root@dm ~]# dmserver.sh stop
```

Restarting the Services

You can manually restart the services as required.

NOTE !

Restarting the database service may cause system exceptions. If you want to restart the database service, contact authorized personnel of Uniview.

To restart the services, run the following command:

```
[root@dm ~]# bmserver.sh restart
[root@dm ~]# dmserver.sh restart
```

Checking System Logs

System logs are saved in the /var/log directory. To view logs in a log file, run the ls command to find the log file and then run the tail command. Below are related commands. The displayed information is an example only.

```
[root@dm ~]# cd /var/log
[root@dm log]# ls
Abc    imf_msserver_0.log   piranha
abc.cap    imf_msserver_1.log   pm
acpid  imf_ns_0.log p.pcap
adapter_product00.log  imf_ns_1.log ppp
adapter_product01.log  imf_SDK_0.log    prelink
...
[root@ dm ~]# tail adapter_product00.log
```

Checking the System Version

Run the following command to check system version information:

BM version information

```
[root@dm ~]# bmcfgtool.sh –v
Interior version : BM8500V300R001B02D001SP25
Exterior version : BM8500-IMOS110-B3111P25
BUILDTIME  : 2011-04-25 05:51
```

DM3.0 version information

```
[root@dm ~]# dmcfgtool.sh -v
Interior version : DM8500V300R001B02D001SP25
Exterior version : DM8500-IMOS110-B3111P25
BUILDTIME  : 2011-04-25 05:50
The actual system version information may differ.
```

Logging In to the Software Through Web

Login

NOTE !

For the first login to the webpage, use the default administrator password admin.

After successfully logging in to the webpage, you can configure the system, maintain the device and manage users. For details, see DM3.0/BM Online Help.

To log in to DM3.0 through web, follow the steps below:

1. Open the web browser on the operating PC, and input the IP address and port number of DM3.0, for example, http://192.168.254.151:8080, and press Enter.
2. Input the administrator password in the login dialog box, and then click OK. A webpage is displayed.

To log in to BM through web, follow the steps below:

3. Open the web browser on the operating PC, and input the IP address and port number of BM, for example, http://192.168.254.151:8082, and press Enter.
4. Input the administrator password in the login dialog box, and then click OK. A webpage is displayed.

Exit

Click Exit at the upper right corner of the page, and then click Yes to exit the webpage.