

Third Generation Network Monitoring System

(Firebird Edition)

Installation Guide

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I. System Overview

1.1. Third Generation Network Monitoring System

Midea intelligent network air-conditioning management system is upgraded and improved based on the original Midea network management system. It integrates the previous network monitoring systems and the network power distribution system. The previous Midea network monitoring system can be replaced by the third generation network system. During power distribution, the refrigerating system uses V3 and D3 outdoor units.

1.2. Application

This network monitoring system is extremely suitable for monitoring the air conditioning systems in small and medium buildings in a centralized manner. It can manage up to 1,024 indoor units and up to 512 outdoor units.

1.3. Features

- 1) The system introduces the concept of building. By assigning some properties to an air conditioner, the system enables the air conditioner to contact outdoor unit groups and allows for some expense features.
- 2) The system introduces the concept of user hierarchy to ensure that the operations performed by users will not affect the correctness of the system data.
- 3) The system keeps track of the operating data of indoor units and outdoor units to facilitate maintenance of the air conditioning system.
- 4) The system provides Midea LonWorks gateway interface to enable the external LonWorks to control the air conditioning system.
- 5) The system can select whether to conduct power distribution by changing the properties of an indoor unit.
- 6) The system can quickly prompt the fault information about the air conditioning system and provide elimination method.
- 7) The system enables online diagnosis via Internet to ensure safe use of your air conditioning system.

II. System Architecture

2.1 Architecture

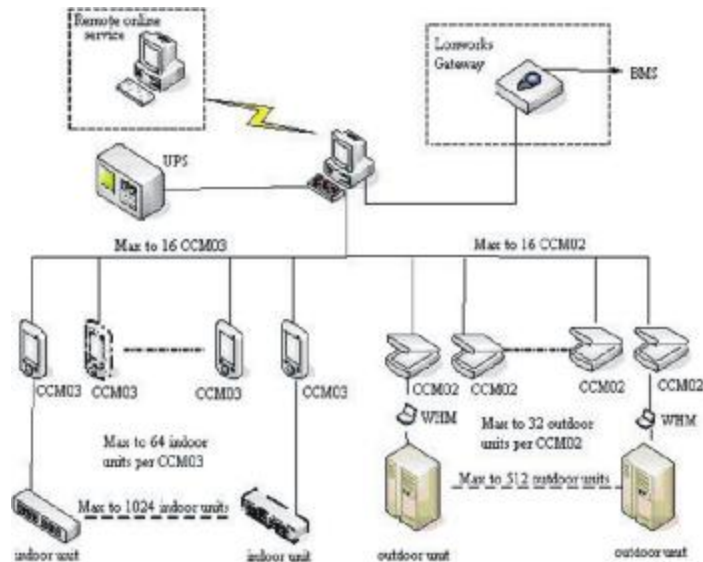


Figure 2-1

- 1) The system can connect with 16 indoor central controllers and 16 outdoor central controllers simultaneously. Each indoor central controller can connect with 64 indoor units, and each outdoor central controller can connect with 32 outdoor units.
- 2) The communication lines of indoor central controller, outdoor central controller and computer are converged and then led into the computer through a serial port or USB port on the computer.
- 3) Midea LonWorks gateway is connected via another serial port. The computer should have two serial ports; otherwise, one USB-RS232 converter is required.
- 4) Midea remote online service system transfers data from the monitoring computer to the remote units via Internet.

III. System Structure

3.1. Devices Required and Their Specifications

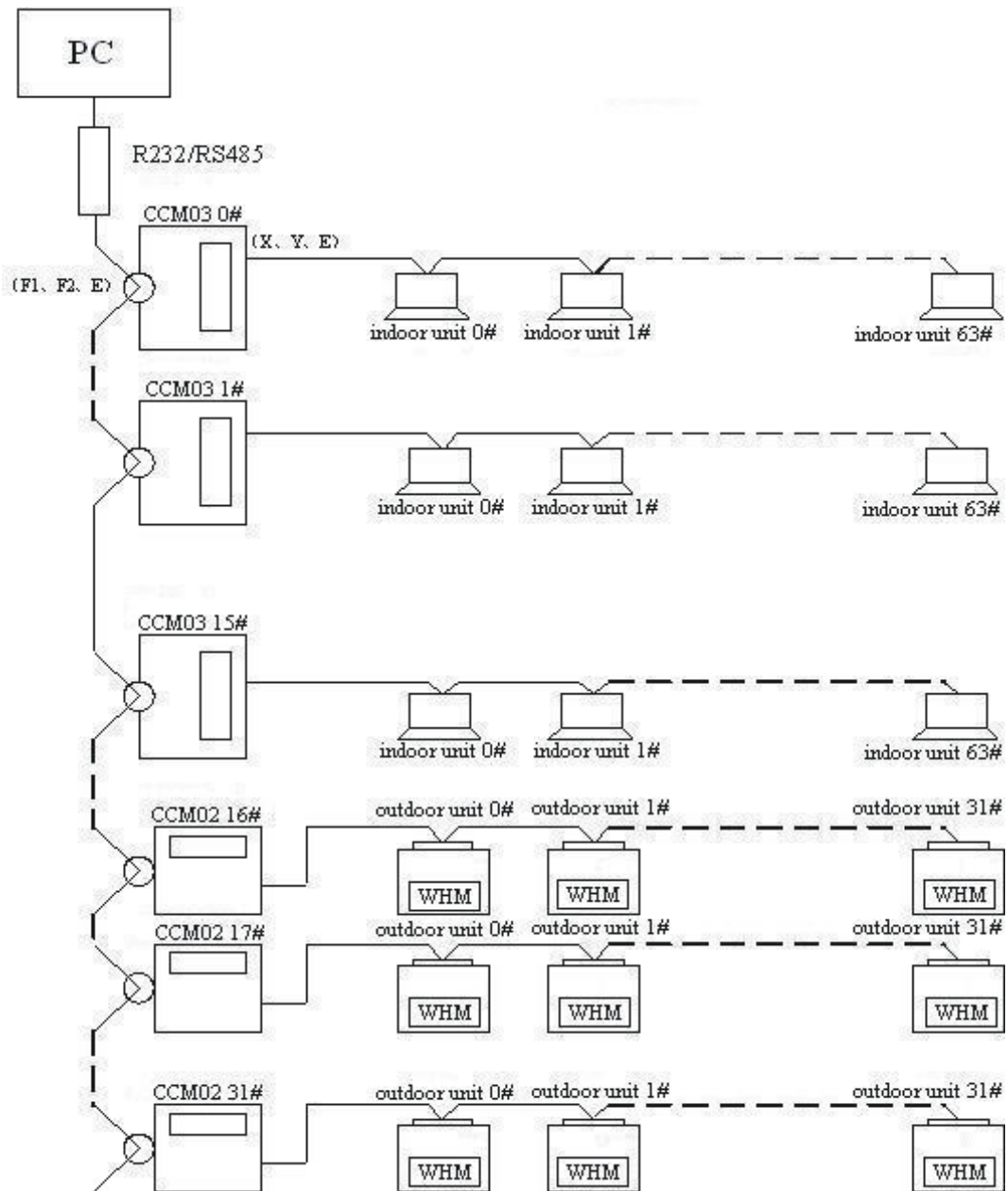


Figure 3-1

Device	Specifications	Recommendation	Remarks
PC	CPU: 3.0GHz or faster Hard disk: 40GB or larger Memory: 2GB or larger Communication ports: At least two R-232 ports and at least three USB ports. Operating system (OS): Windows 2000/Windows XP Printer: An ordinary laser or inkjet printer that supports A4 paper	Lenovo, Dell	
UPS	Capacity: 200~250W/20min Voltage: As required on site Control signal: Power failure signal	APC SU700 series	It is optional but recommended.
Watt-Hour Meter (WHM)	Functions: Be able to dynamically change the WHM address according to the specifications, and be able to read the WHM according to the dynamic address inputted by the main board.	CHINT DTS634/ Zhi Tong DTS636	Refer to Midea's operating instructions.
Third generation network kit	Including Operating Instructions, Softdog, installation CD, and RS485-RS232 converter		It shall be purchased from Midea Commercial Air Conditioning Equipment Co., Ltd.
Others	Shielded 3-core twisted pair		Follow the installation guide for Midea Internet-based air conditioning system.

Table 3-1

Note:

- I. Please keep your Softdog well. If the Softdog is lost, Midea Commercial Air Conditioning Equipment will not provide another one.
- II. The client needs to purchase the software environment (OS) required for the running of the network monitoring system. Midea Commercial Air Conditioning Equipment Co., Ltd. only installs the network monitoring system and provides related technical support.

3.1.1. Indoor/Outdoor Central Controller

A. Indoor Central Controller

- 1) The indoor central controller is used to query and control indoor units, transfer the status information of the indoor units to the computer, and transfer the control and query commands from the computer to the indoor units.
- 2) Overview of the indoor central controller
 - (1) Overview
 - a. Each indoor central controller can connect with 64 Midea indoor units to form an air conditioning LAN, so as to control all the air conditioners within the LAN in a centralized manner. The indoor central controller sends control commands and status setting commands to the indoor units to provide control functions. The control signal of an indoor central controller can be transferred up to 1,200m.
 - b. The indoor central controller can connect with the computer to perform operations such as centralized management and control, parameter setting, and status query on all the air conditioners within the network. It can also connect with a WAN via a computer or gateway to control the air conditioners remotely.
 - (2) Wiring

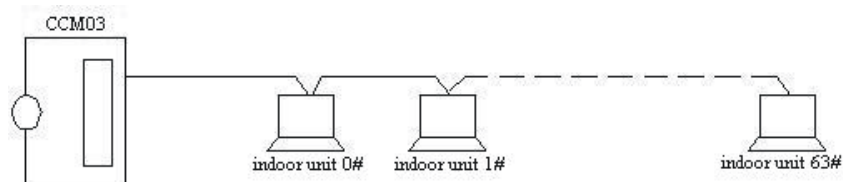


Figure 3-2

Note: A matching resistance of 100Ω or 120Ω must be added to the nearest end and farthest end of the bus (X, Y).

B. Outdoor central controller

- 1) Overview
 - (1) The indoor central controller performs centralized control and data query on outdoor units. Each indoor central controller can connect with 32 outdoor units via the network interface module to form a monitoring network. It monitors outdoor units in a centralized manner through wired connections.
 - (2) The indoor central controller can communicate with the computer through an RS485–RS232 converter. Each computer can connect with 16 indoor central controllers and 16 outdoor central controllers. The computer can perform operations such as centralized control, management and status query on the indoor central controllers,

outdoor central controllers, indoor units and outdoor units within the monitoring network.

- (3) For the communication between outdoor central controller and outdoor unit and that between computer and outdoor central controller, the master raises questions and the slave answers them. In the monitoring network consisting of outdoor central controllers and outdoor units, the outdoor central controllers act as masters and the outdoor units act as slaves.

2) Wiring

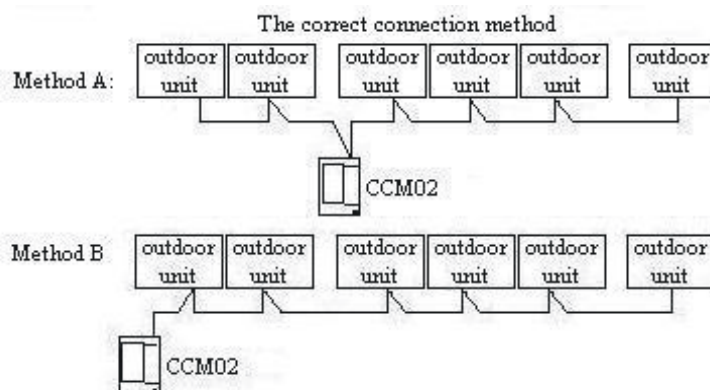


Figure 3-3

Note: A matching resistance of 100Ω or 120Ω must be added to the nearest end and farthest end of the bus (K1, K2).

3.1.2. WHM

1) Functions

WHM is used to measure the electricity consumption of each outdoor unit in the system and transfer the read data to the main control board of the outdoor unit.

2) Requirements

- (1) The WHM shall be able to be read via an RS485 port. The communication of the WHM shall comply with *DL-T645-1997 Multi-function Watt-hour Meter Communication Protocol*.
- (2) The WHM shall comply with the relevant national technical standards and be verified by the competent power supply administrative department.
- (3) The WHM shall comply with the technical requirements for Grade 1 WHMs specified in *GB/T1725-2002 Grade 1 and Grade 2 Static AC Watt-hour Meters*.
- (4) Installation environment:
 Specified operating temperature: -25℃~+55℃
 Limiting operating temperature: -40℃~+70℃
 Relative humidity: <85%

- (5) Wiring method of WHM: Refer to the wiring nameplate delivered with the WHM.

3.1.3. Softdog

Softdog is required during the installation and running of the system. Insert the Softdog into any USB port. Softdog is delivered with the network kit.



Figure 3-4

IV. System Installation

4.1. Installation and Setting

1. Install and run Firebird (see 4.2.1. Installing Firebird).
2. Install Firebird ODBC (see 4.2.2. Installing Firebird ODBC).
3. Install Midea network monitoring system (see 4.2.3. Installing the Network Monitoring System).
4. Set Firebird ODBC (see 4.2.4. Setting Firebird ODBC).
5. Install Softdog driver (see 4.2.5. Installing Softdog Driver).
6. Set the computer according to the OS used (see 4.2.6. Setting the OS).

4.2. Installation

4.2.1. Installing Firebird

1. Run Firebird-2.0-Win32.exe in the installation CD. On the interface as shown below, select **English**, and then click **OK**.



Figure 4-1

2. On the interface as shown below, click **Next**.



Figure 4-2

3. On the interface as shown below, click **I accept the agreement**, and then click **Next**.

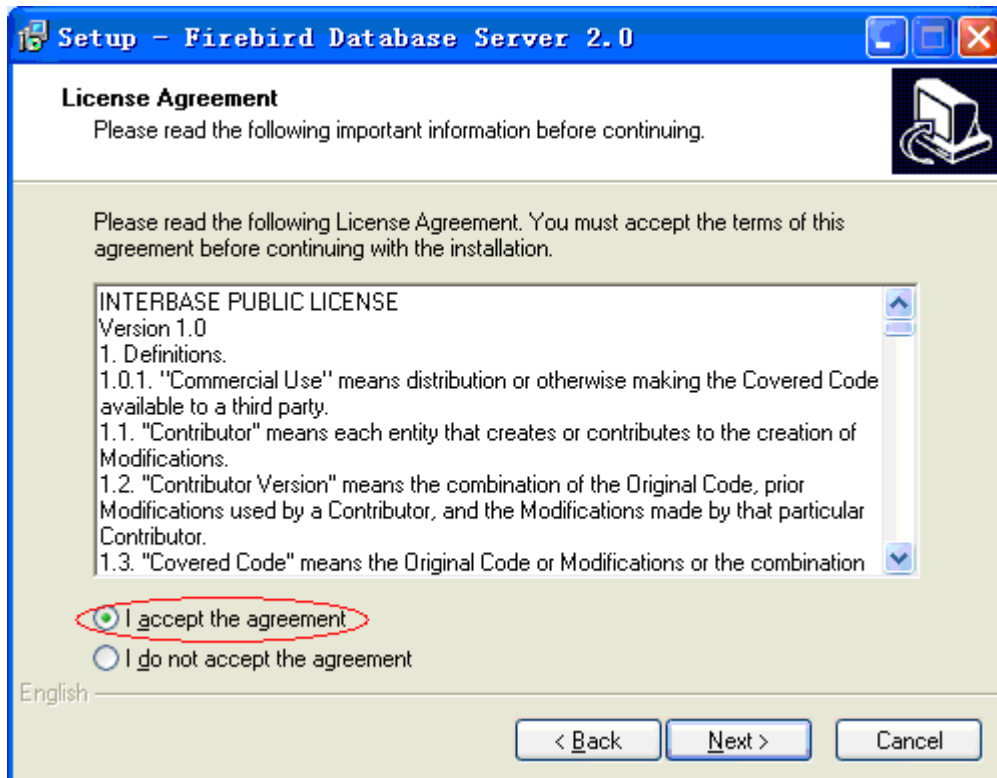


Figure 4-3

4. On the interface as shown below, click **Next**.

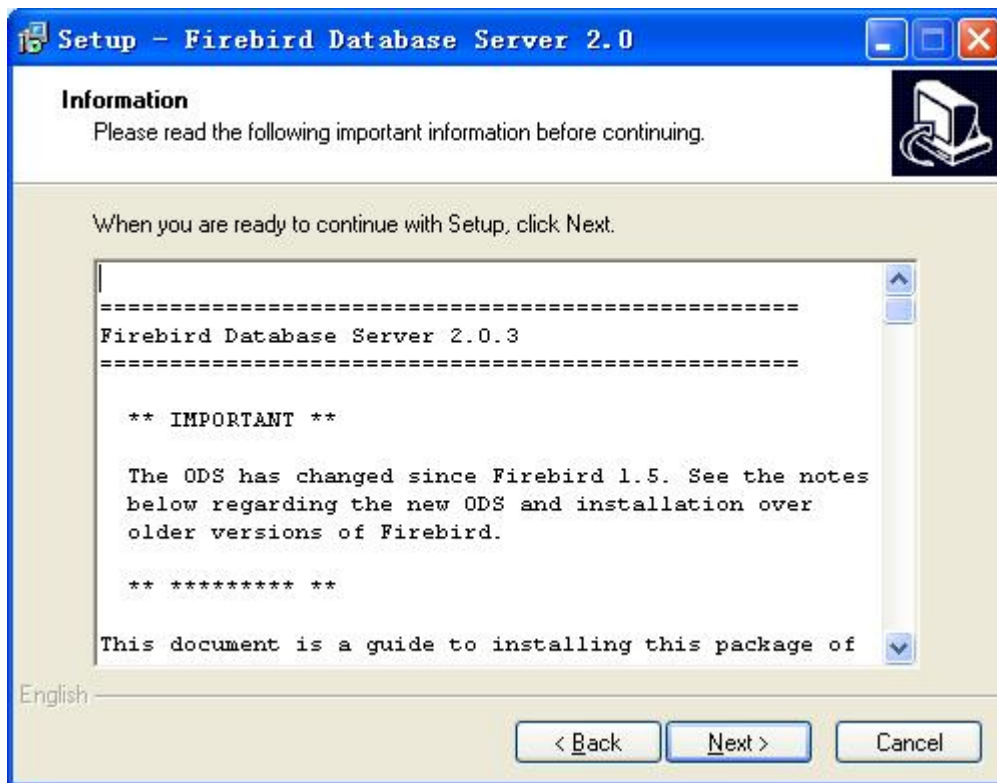


Figure 4-4

5. On the interface as shown below, click **Browse**, select the destination folder, and then click **Next**.

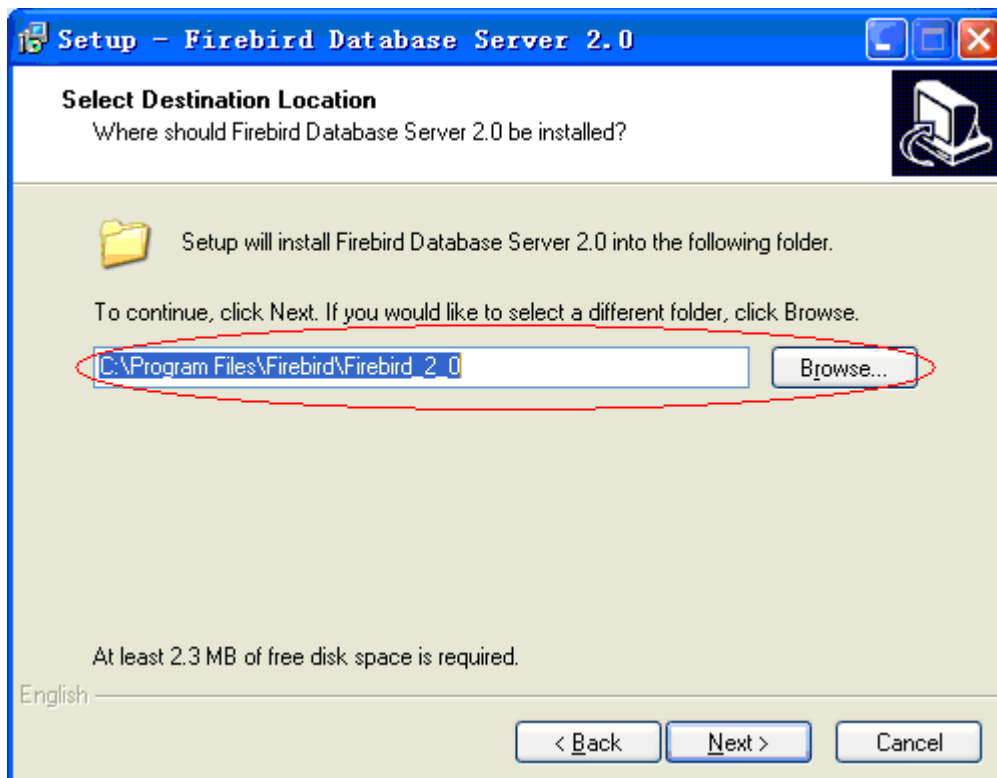
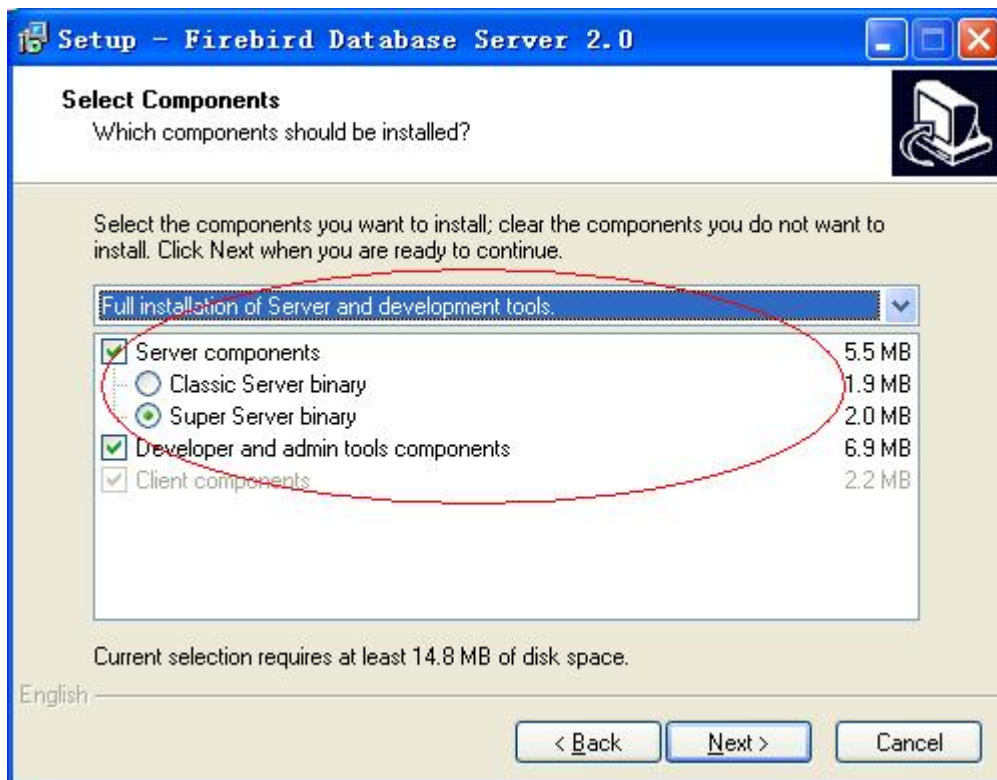


Figure 4-5



Figure 4-6

6. On the interface as shown below, select the options as shown below, and then click **Next**



. Figure 4-7

7. On the interface as shown below, click **Next**.

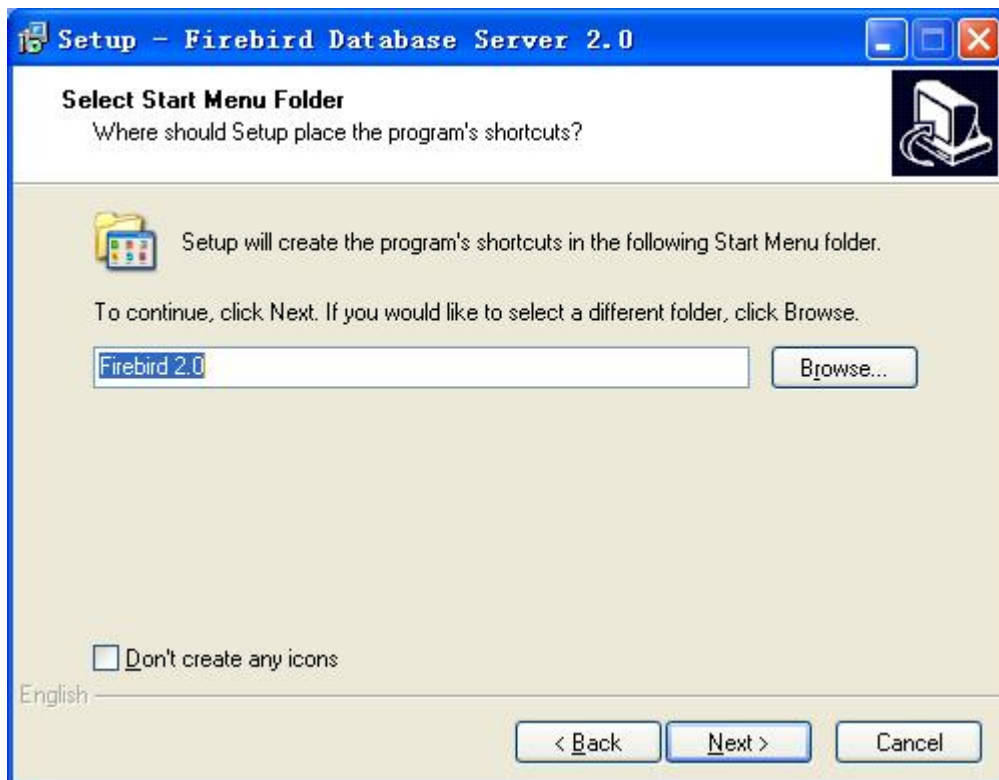


Figure 4-8

8. On the interface as shown below, select the options as shown below, and then click **Next**.

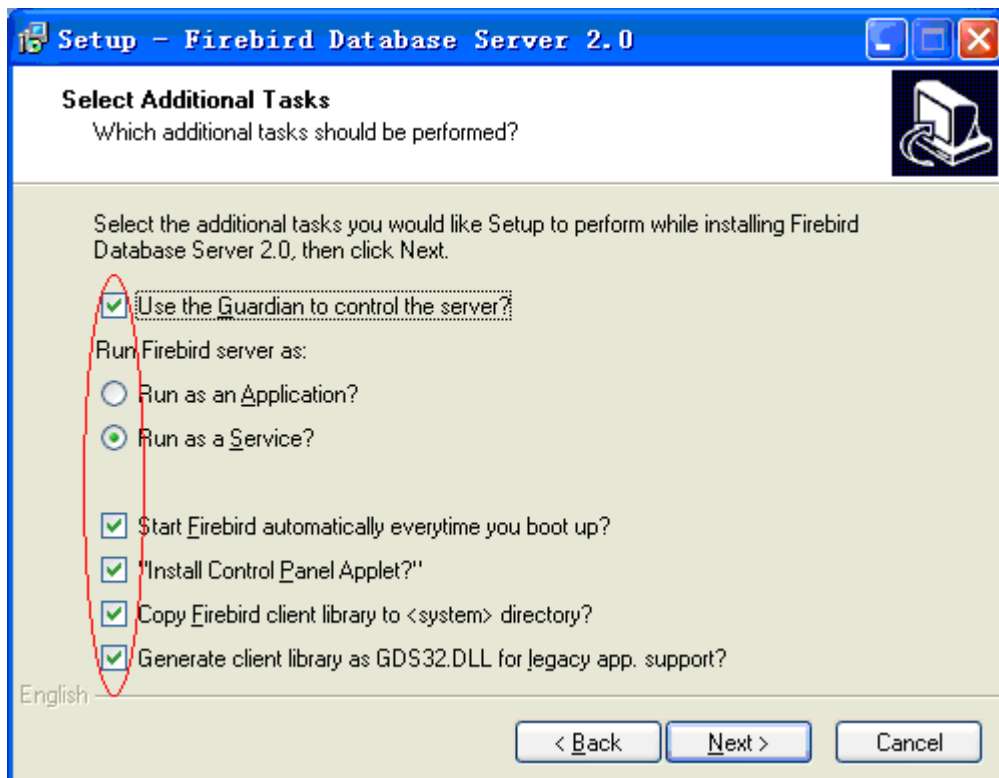


Figure 4-9

9. On the interface as shown below, click **Install**.

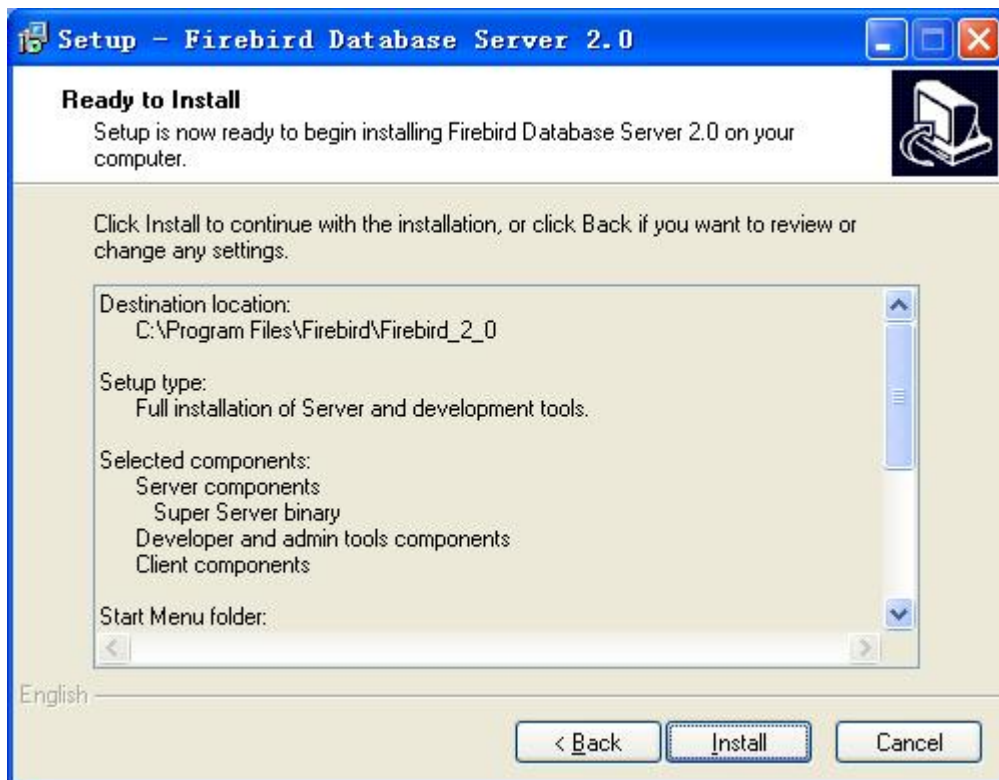


Figure 4-10

10. The progress indicator appears, as shown below.

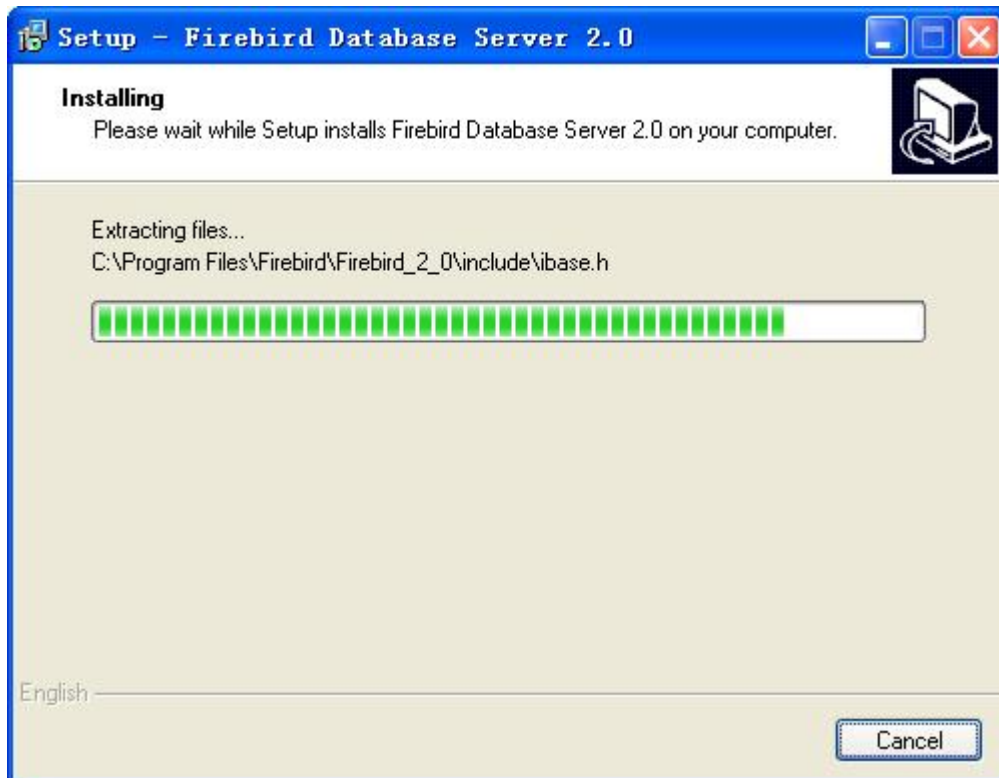


Figure 4-11

11. When the interface as shown below appears, click **Next**.

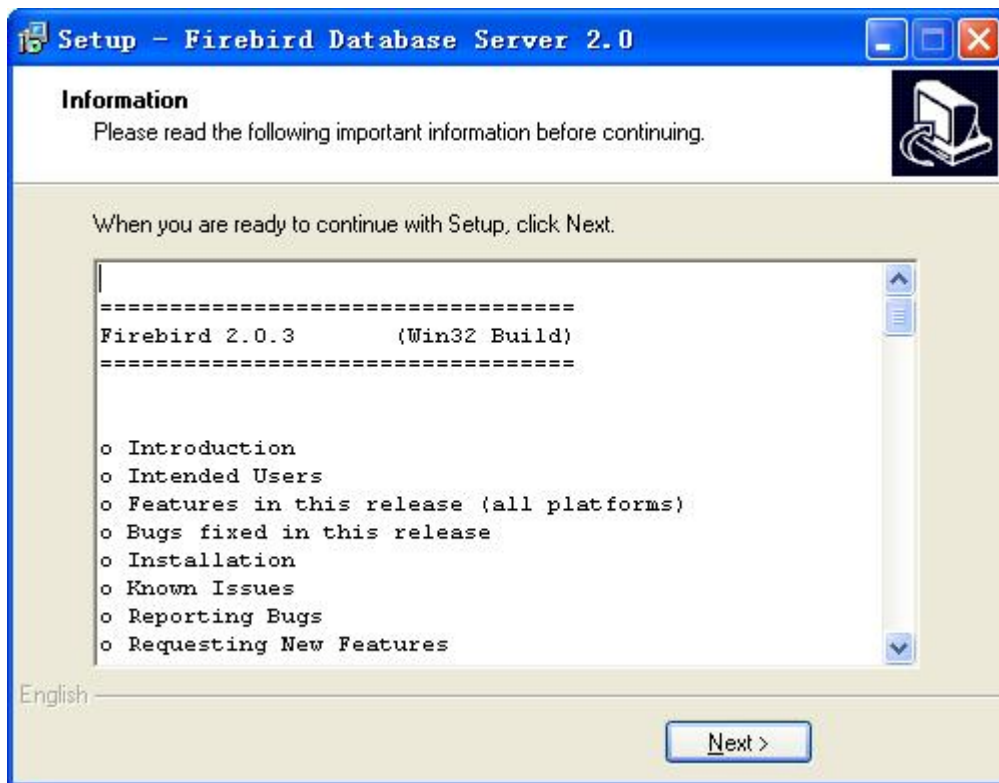


Figure 4-12

12. On the interface as shown below, click **Finish**.

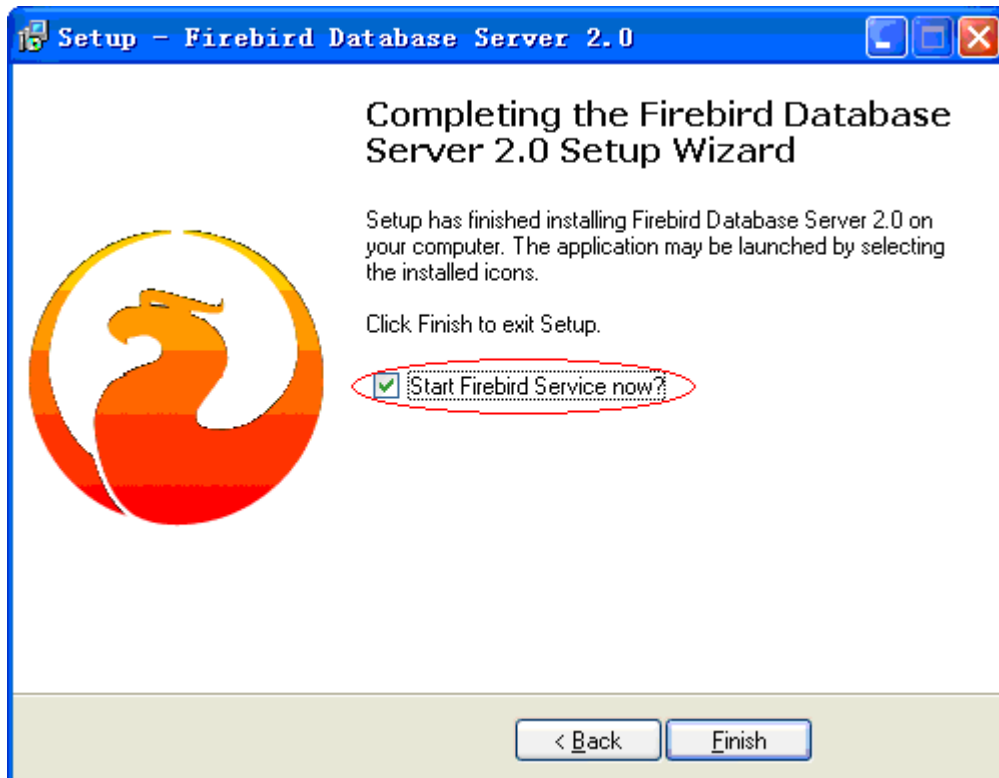


Figure 4-13

13. Open the Control Panel, and then double-click **Firebird 2.0 Server Manger**.

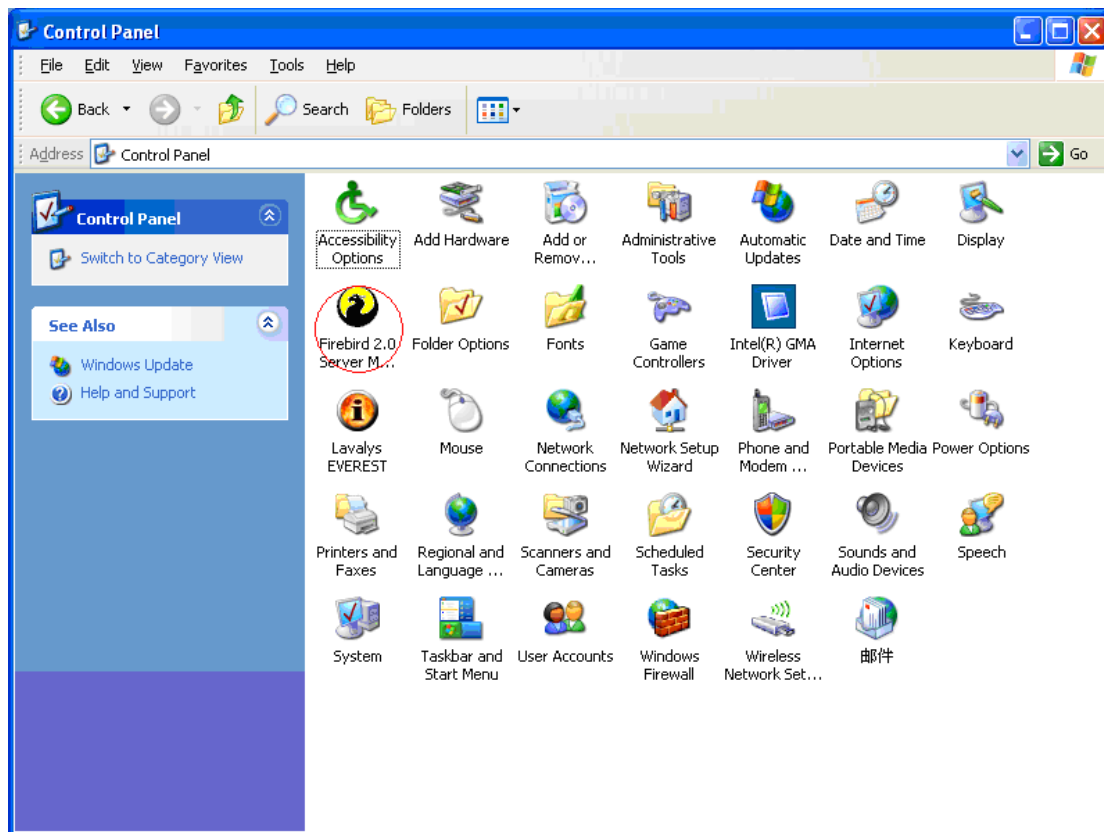


Figure 4-14

14. On the interface as shown below, click **Start**.



Figure 4-15

15. If the interface as shown below appears, it indicates that the Firebird database is running.



Figure 4-16

4.2.2. Installing Firebird ODBC

1. Run Firebird_ODBC_2.0-Win32.exe in the installation CD. On the interface as shown below, click **Next**.



Figure 4-17

2. On the interface as shown below, click **I accept the agreement**, and then click **Next**.

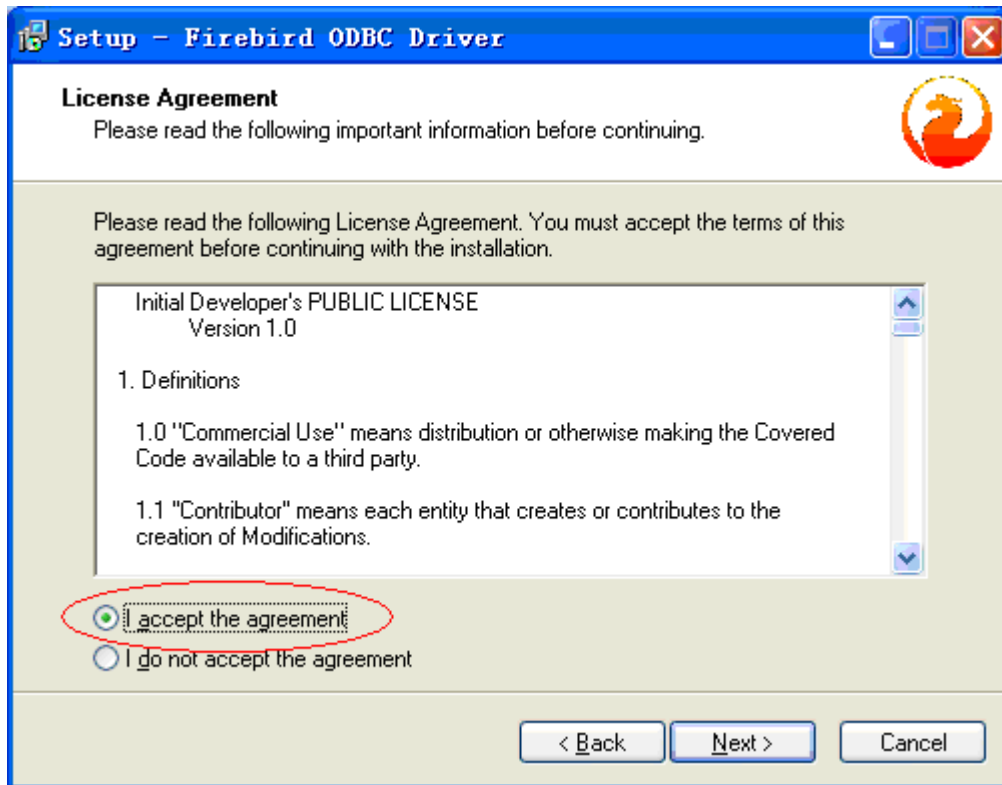


Figure 4-18

3. On the interface as shown below, click **Next**.

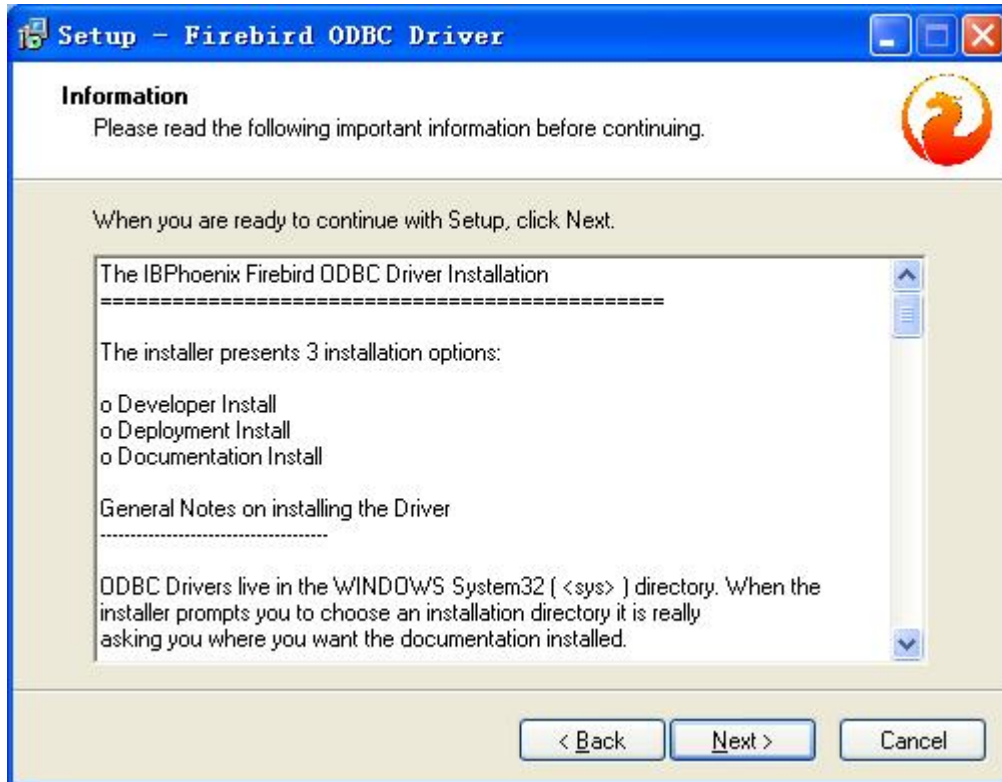


Figure 4-19

4. On the interface as shown below, click **Browse**, select the destination folder, and then click **Next**.

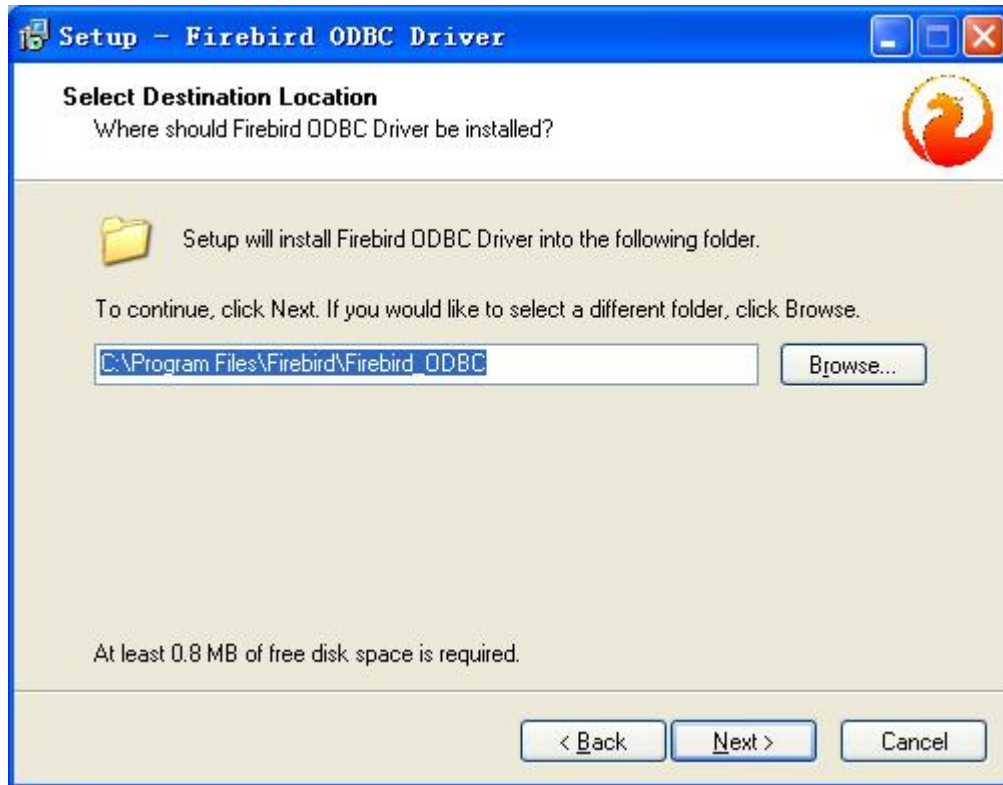


Figure 4-20

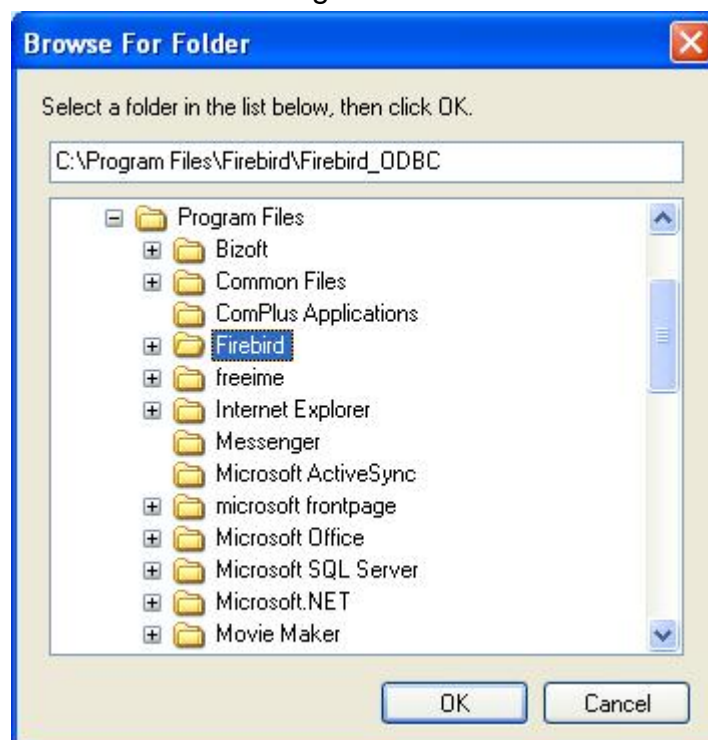


Figure 4-21

5. On the interface as shown below, select the options as shown below, and then click **Next**.

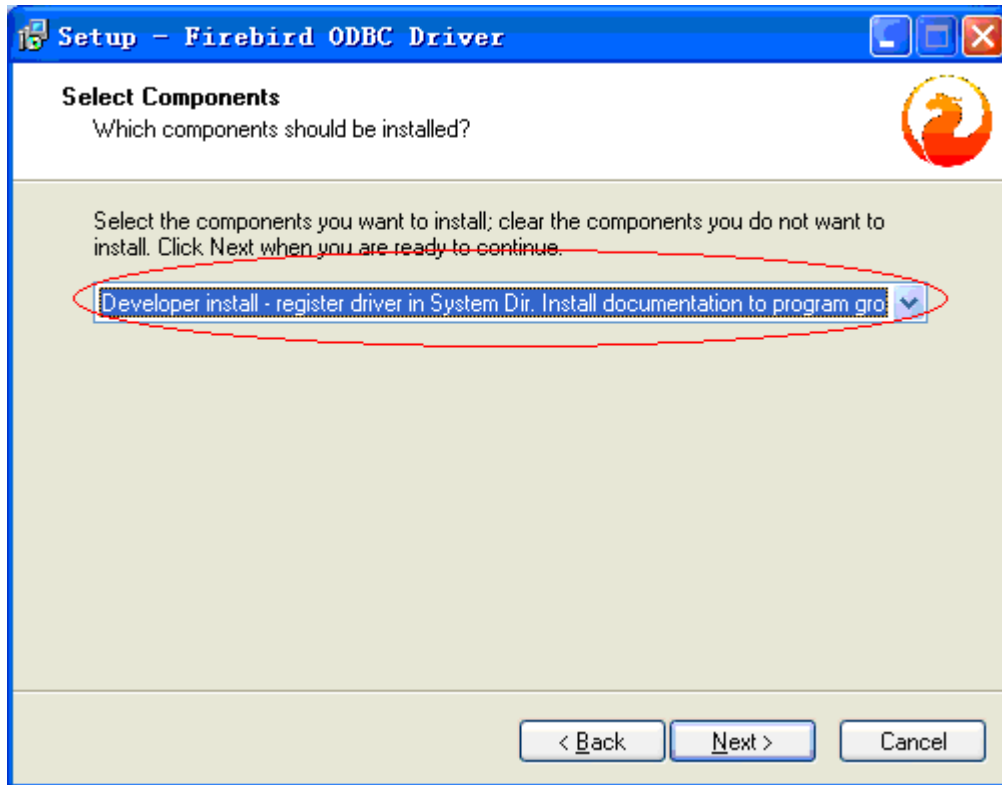


Figure 4-22

6. On the interface as shown below, select the start menu folder, and then click **Next**.

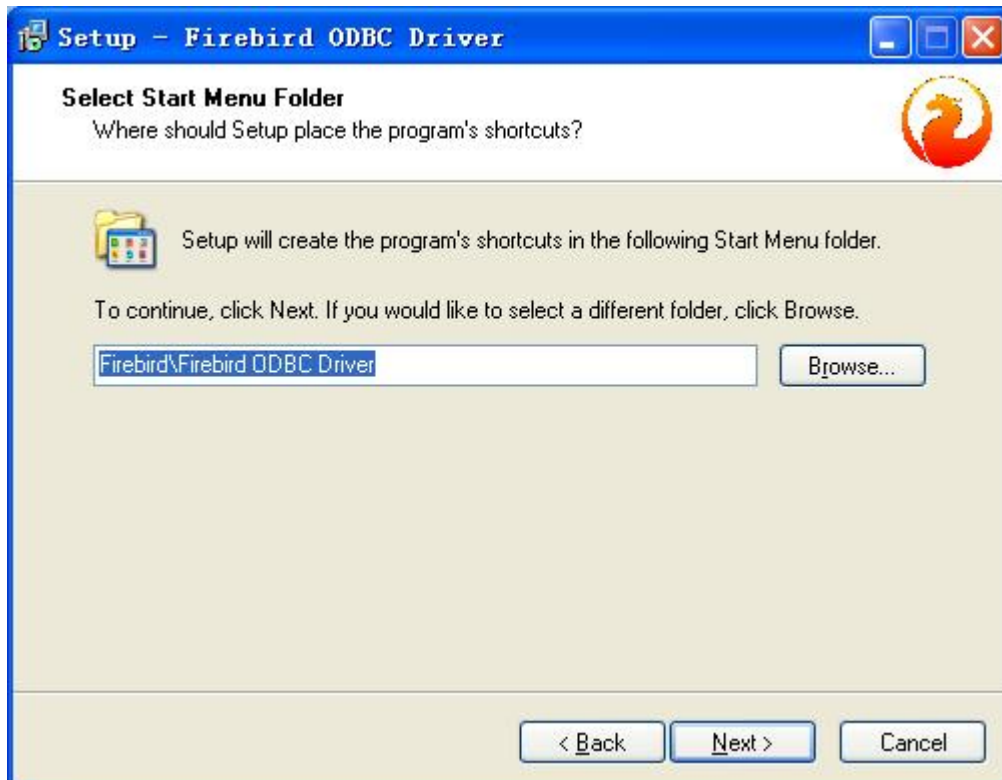


Figure 4-23

7. On the interface as shown below, click **Install**.

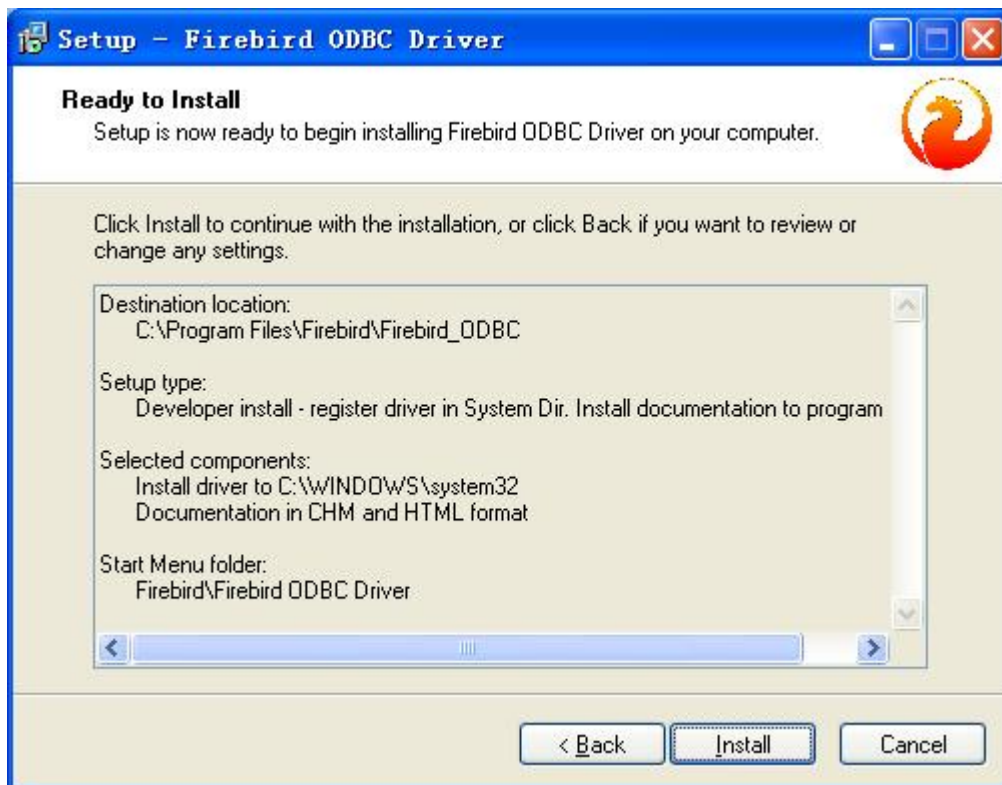


Figure 4-24

8. The progress indicator appears, as shown below.

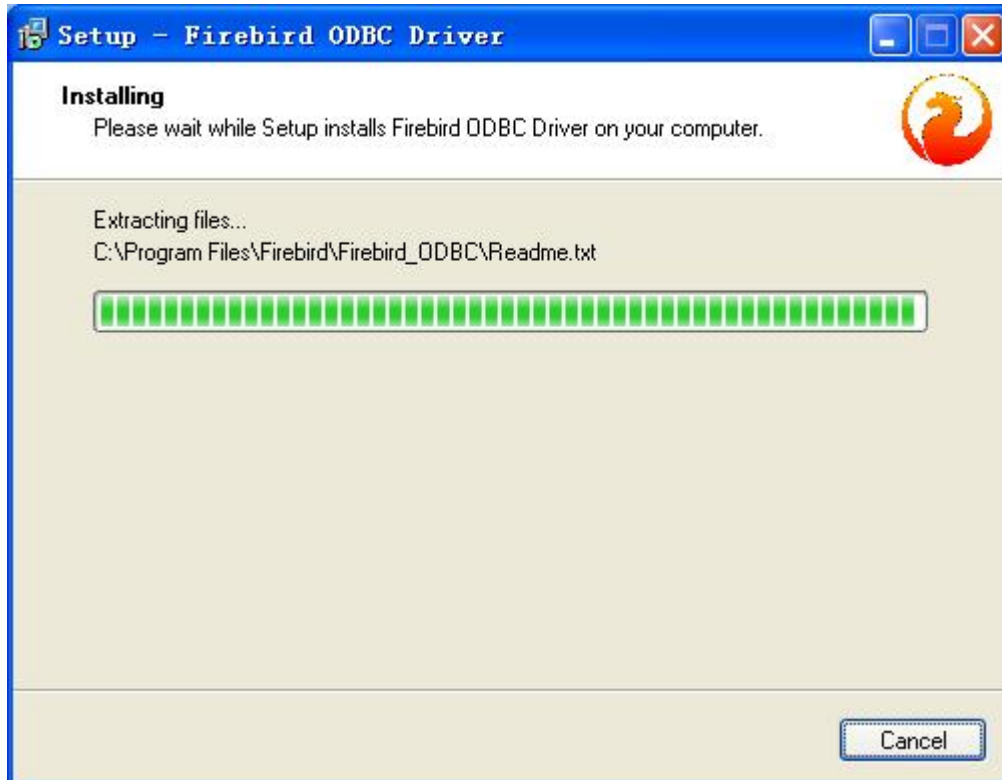


Figure 4-25

9. When the interface as shown below appears, click **Next**.

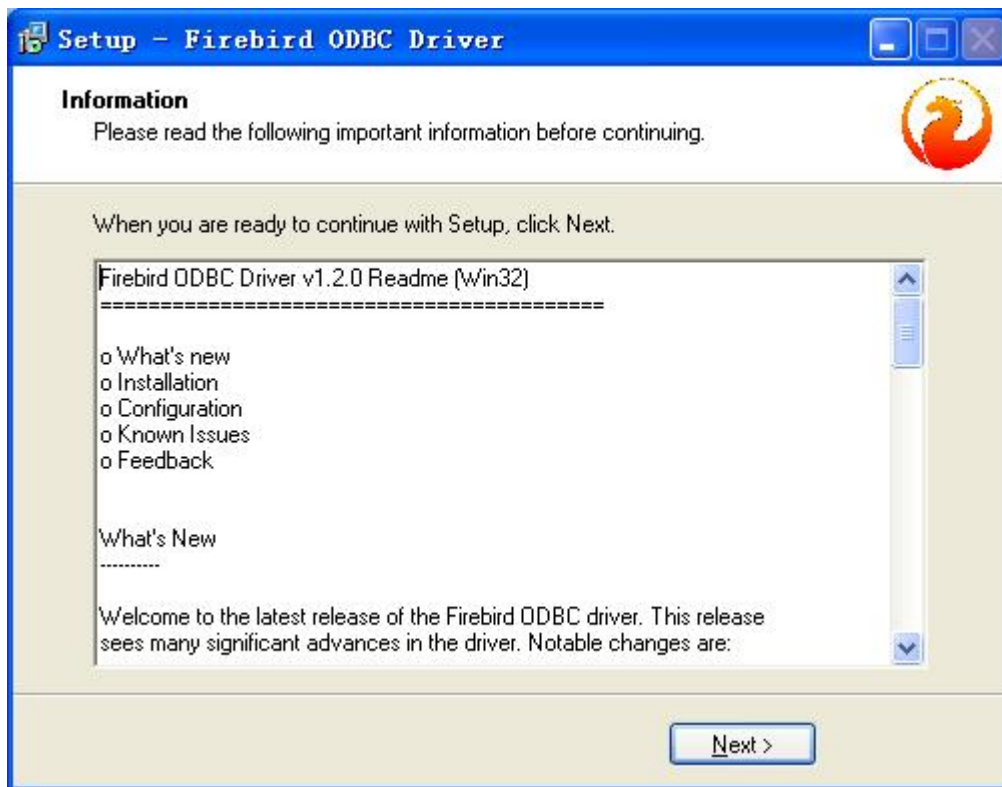


Figure 4-26

10. On the interface as shown below, click **Finish**.

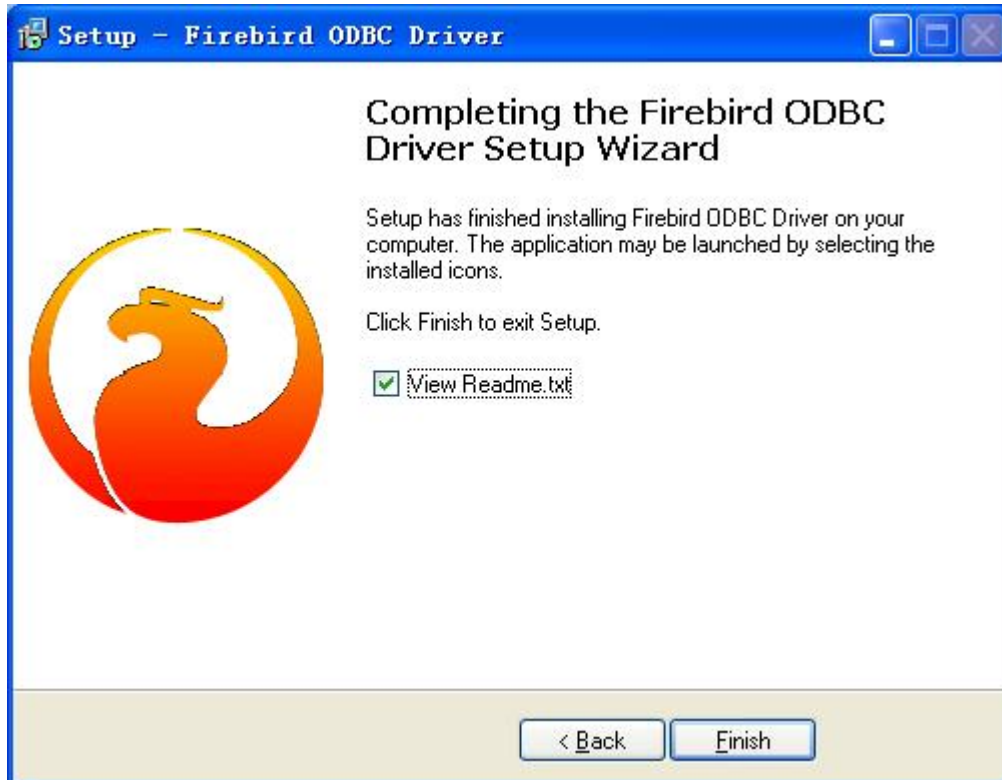


Figure 4-27

4.2.3. Installing the Network Monitoring System

- 1) Run SetupEx.exe in the installation CD to display the interface as shown below, and then click **Next**.

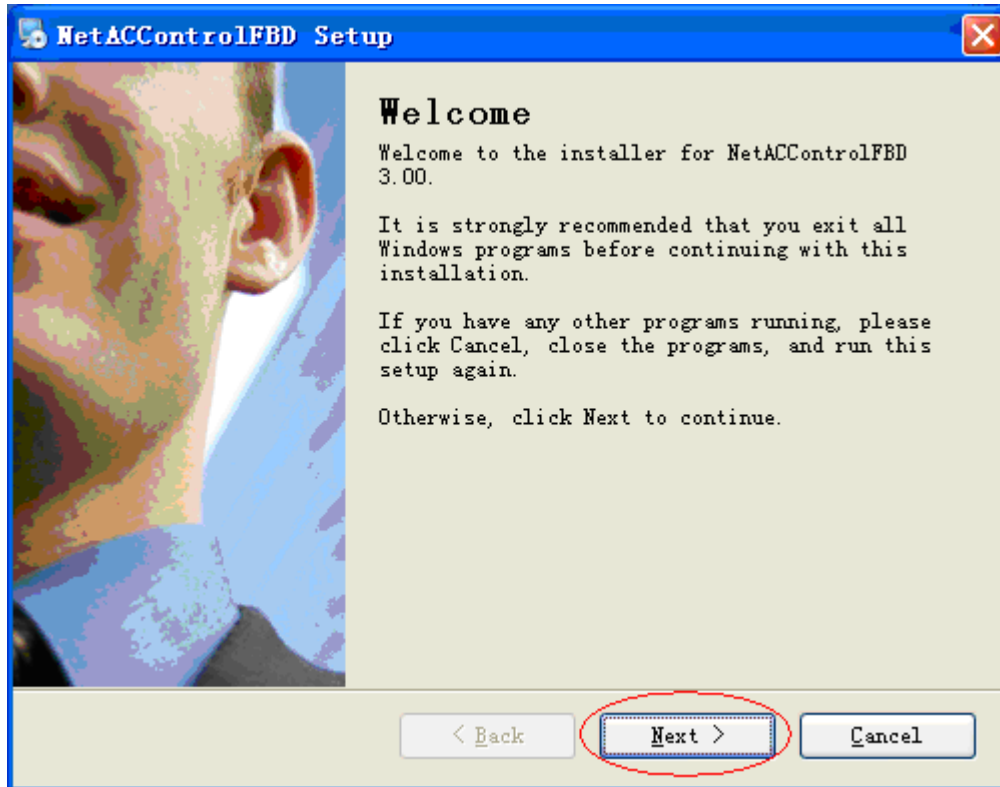


Figure 4-28

- 2) On the interface as shown below, click **I accept the agreement**, and then click **Next**.

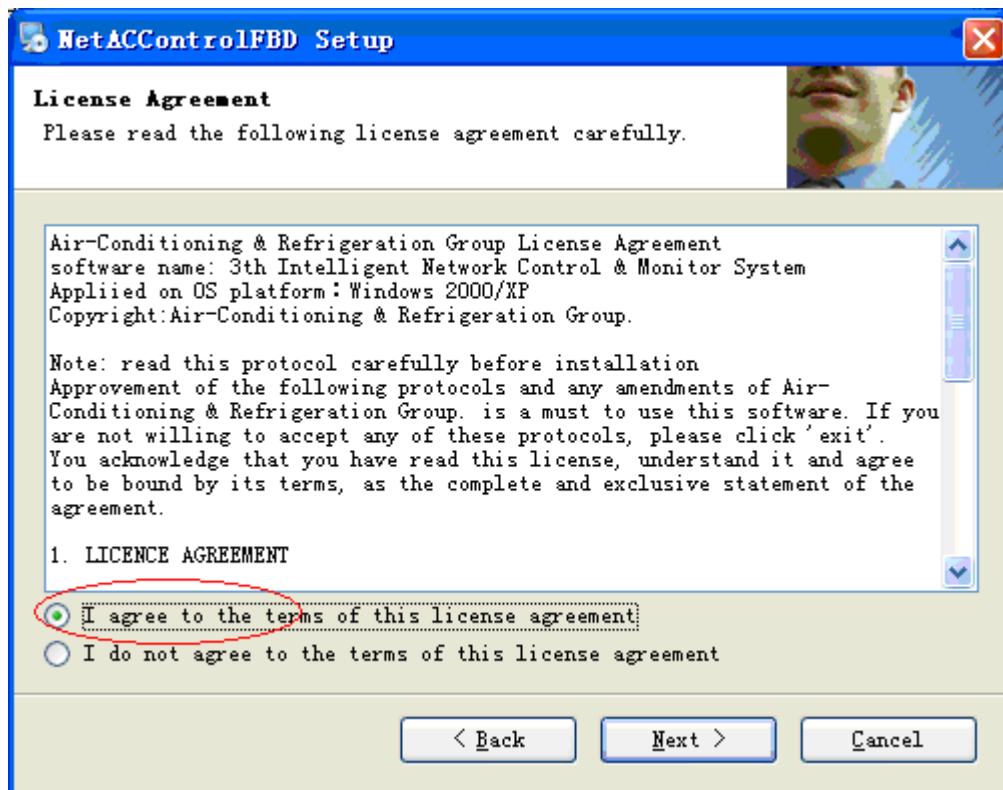


Figure 4-29

- 3) On the interface as shown below, enter the name and organization, and then click **Next**.

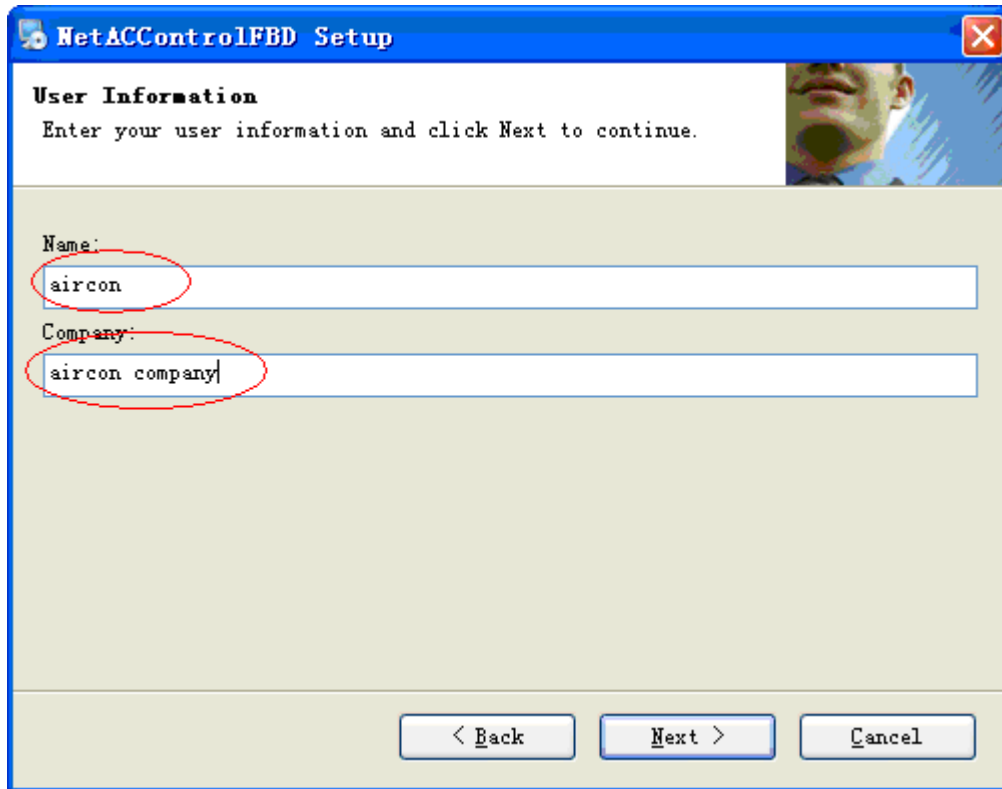


Figure 4-30

- 4) On the interface as shown below, accept the default destination folder or click **Change** to select a different folder.

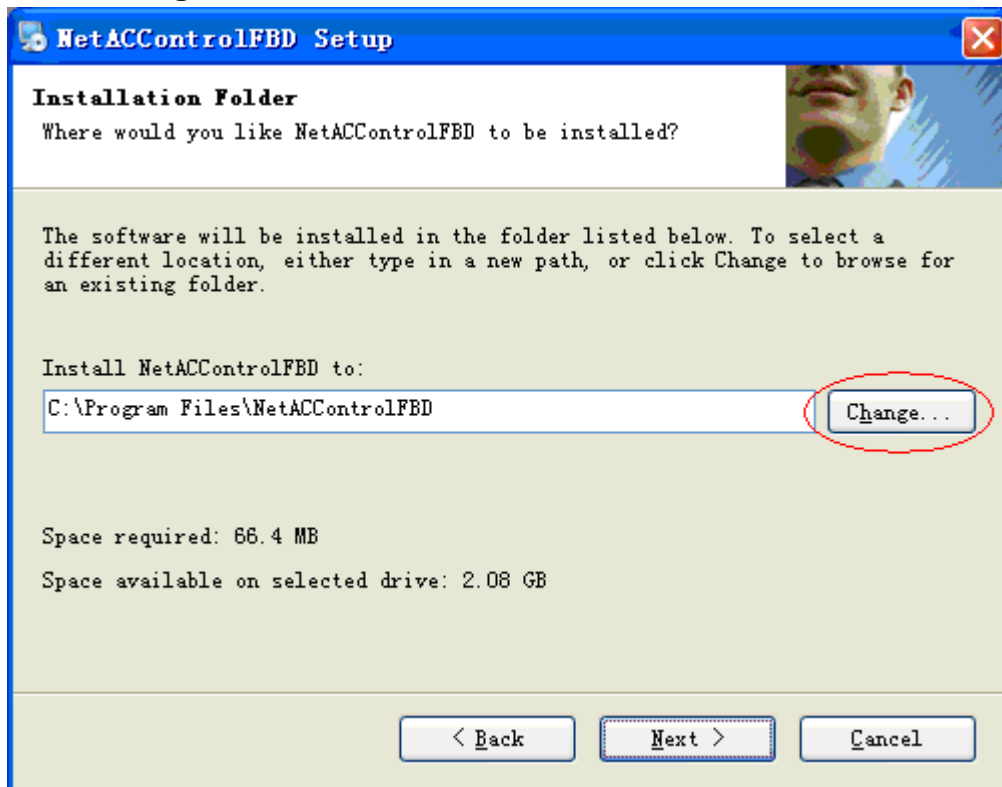


Figure 4-31



Figure 4-32

- 5) Click **Next** to display the interface as shown below. Select the start menu folder, and then click **Making shortcut available to all users**, and then click **Next**.

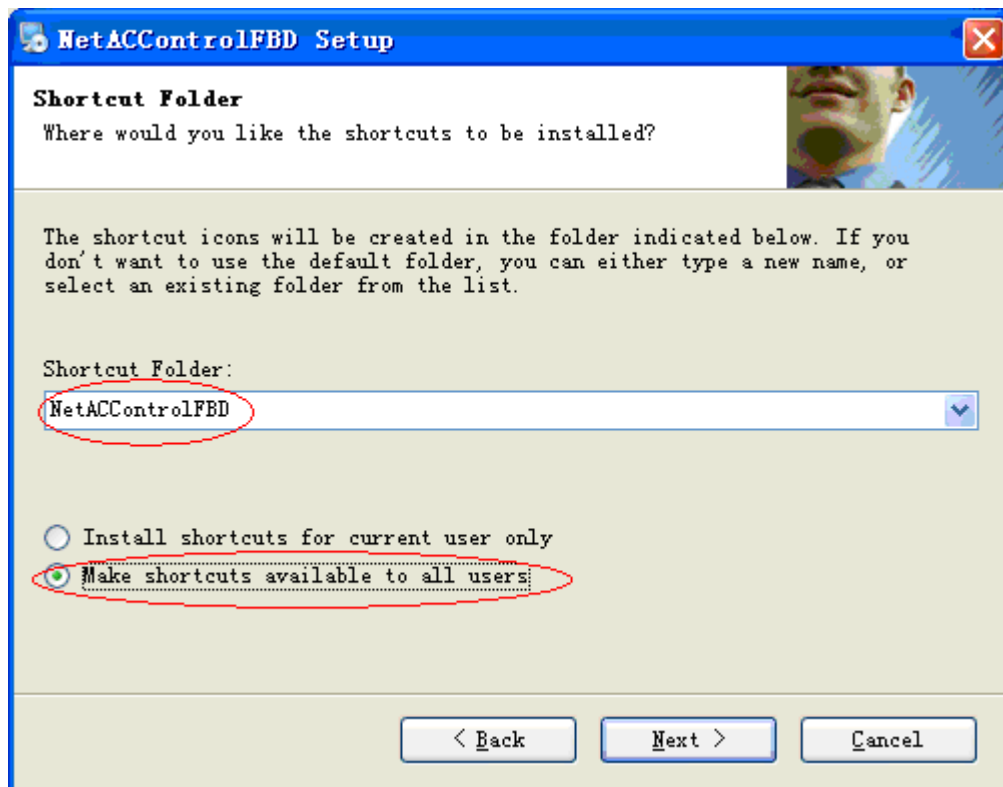


Figure 4-33

- 6) Click **Next** to display the interface as shown in Figure 4-42. Verify that the displayed information is correct, and then click **Next** to start the installation. The installation interface is as shown in Figure 4-43.

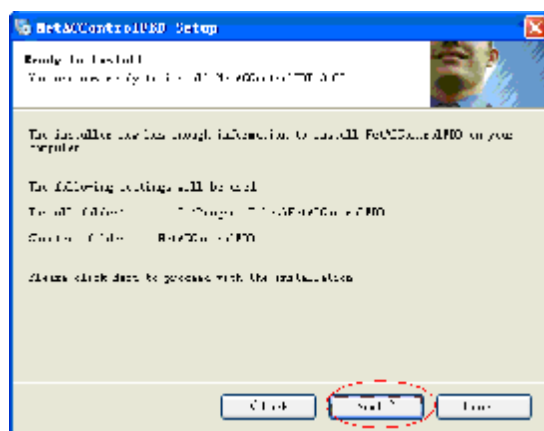


Figure 4-34

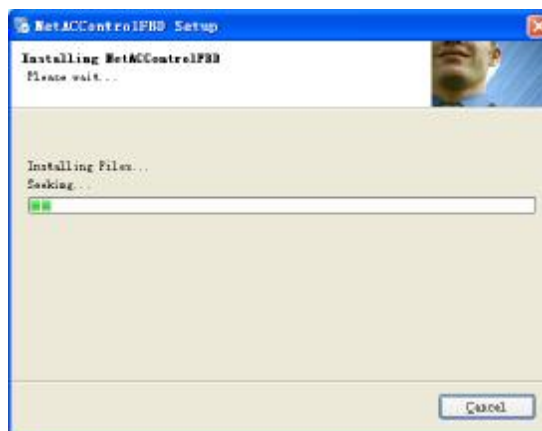


Figure 4-35

- 7) When the installation is completed, click **Finish**.

4.2.4. Setting Firebird ODBC

1. Open the Control Panel, and the double-click **Administrative Tools**.

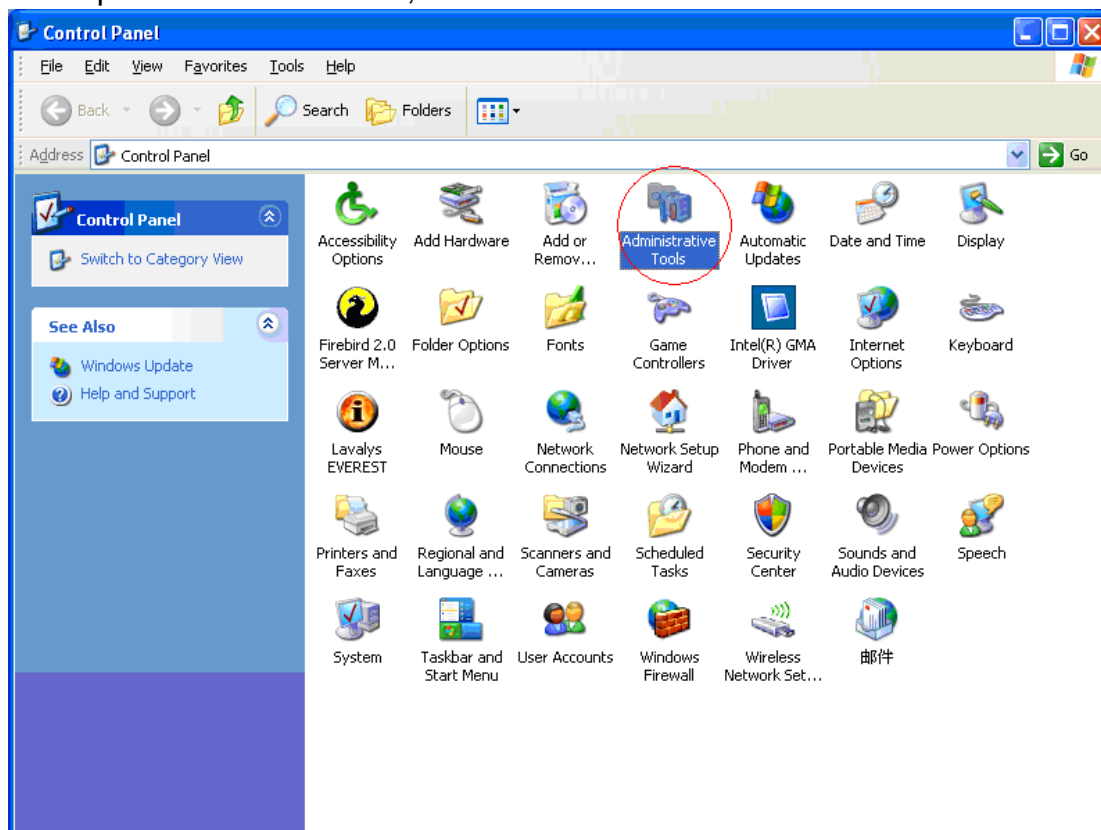


Figure 4-36

2. Double-click **Data Sources (ODBC)** to display the **ODBC Data Source Administrative interface**, as shown below.

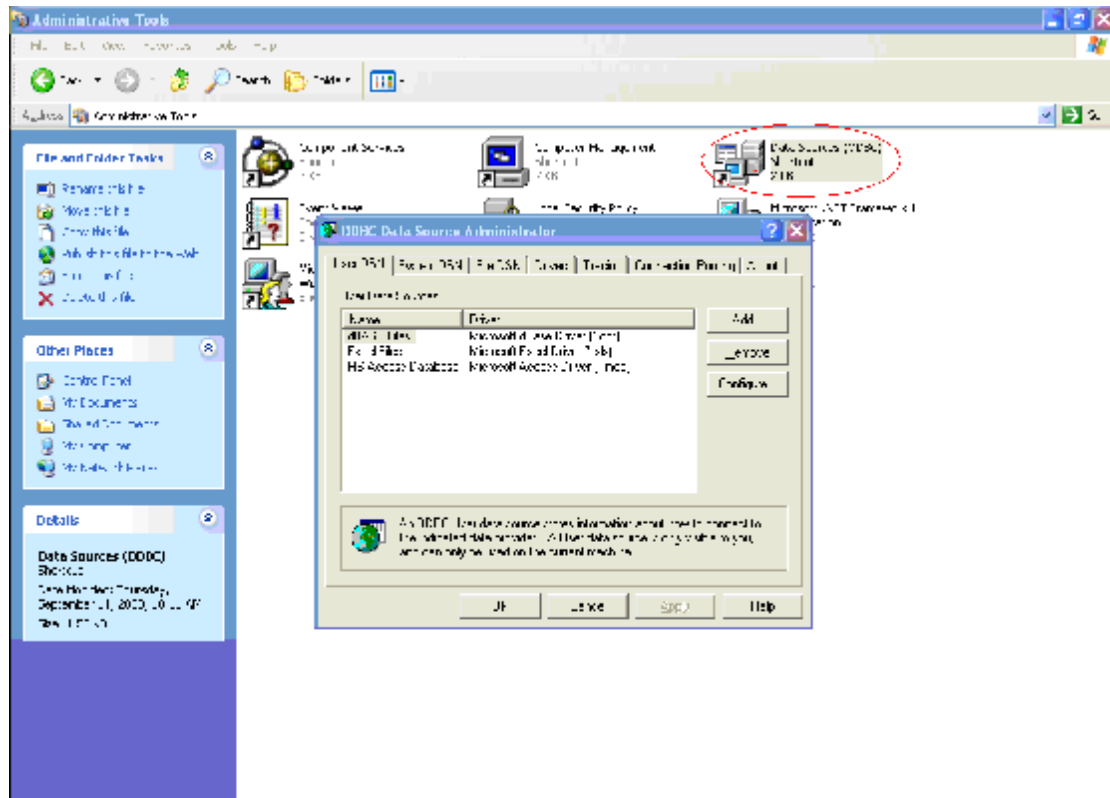


Figure 4-37

3. Click the **System DSN** tab, and then click **Add**. On the interface that appears, select **Firdbird/Interbase(r) driver**, and then click **OK**.

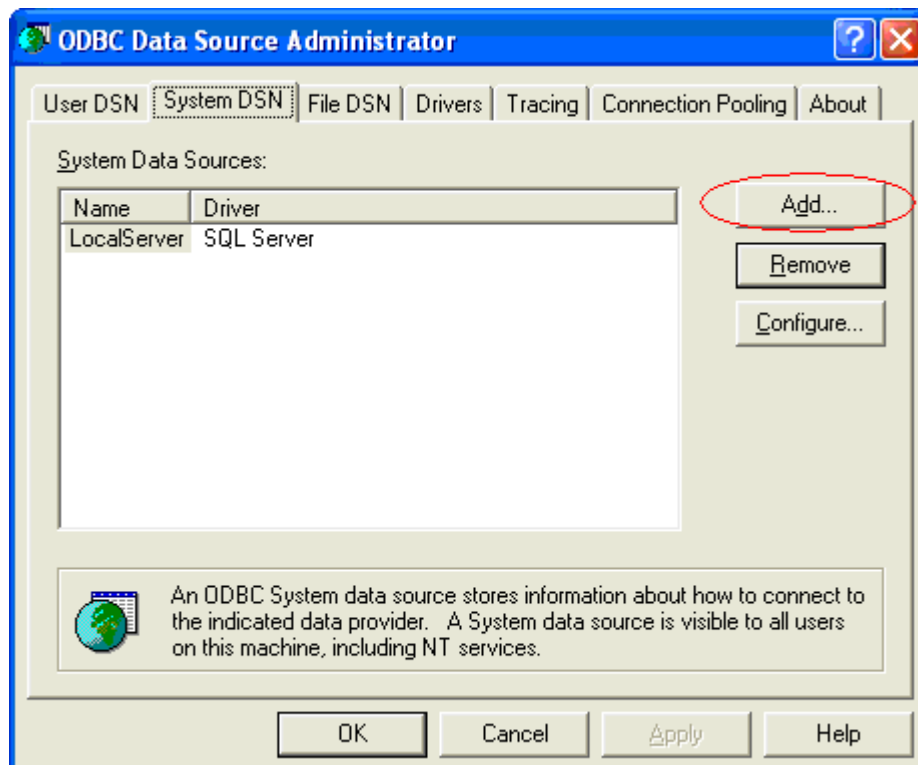


Figure 4-38

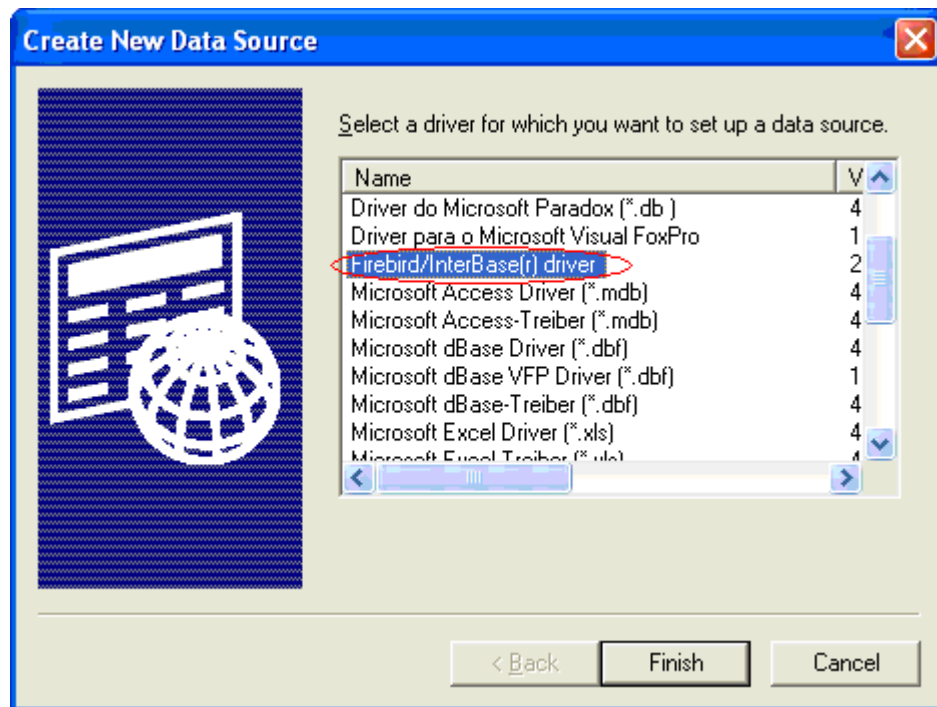


Figure 4-39

4. On the interface that appears, enter the parameters as shown below, and then click **OK**.
 - a: It indicates the folder where the system database file NETAC.GDB is located. By default, it is as shown below. If the user needs to move NETAC.GDB to a different folder, this folder also needs to be changed accordingly.
 - b: The password is “masterkey”.

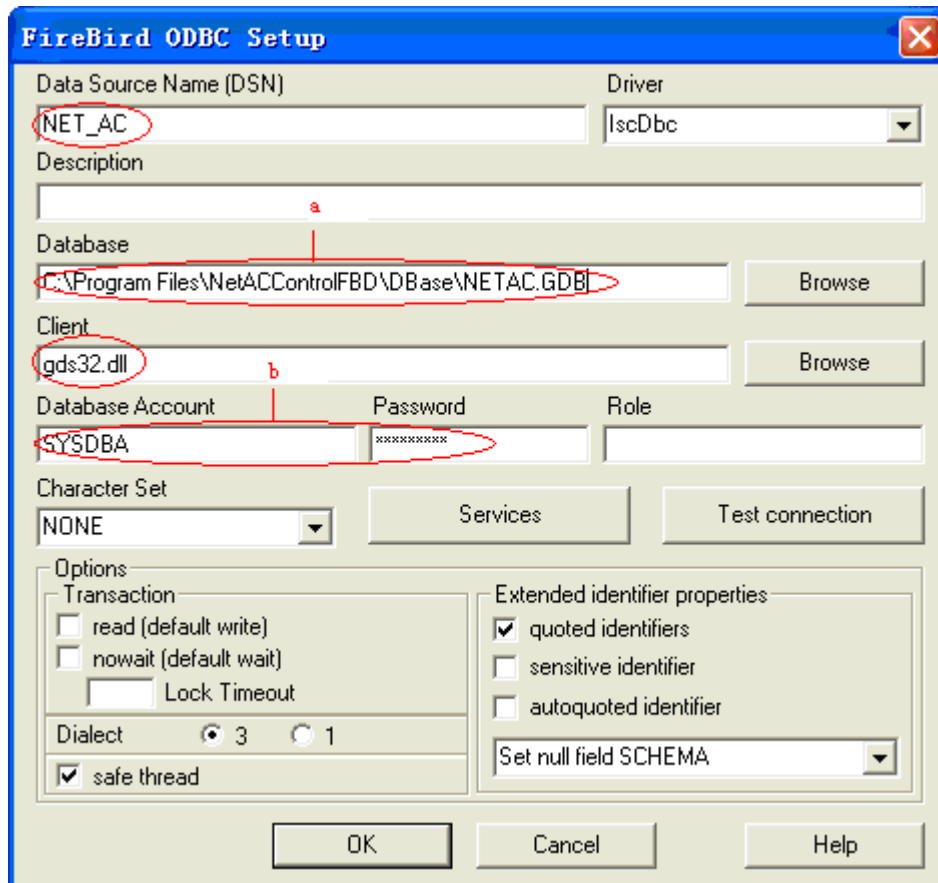


Figure 4-40

5. The interface as shown below appears, indicating that the ODBC setting is completed.

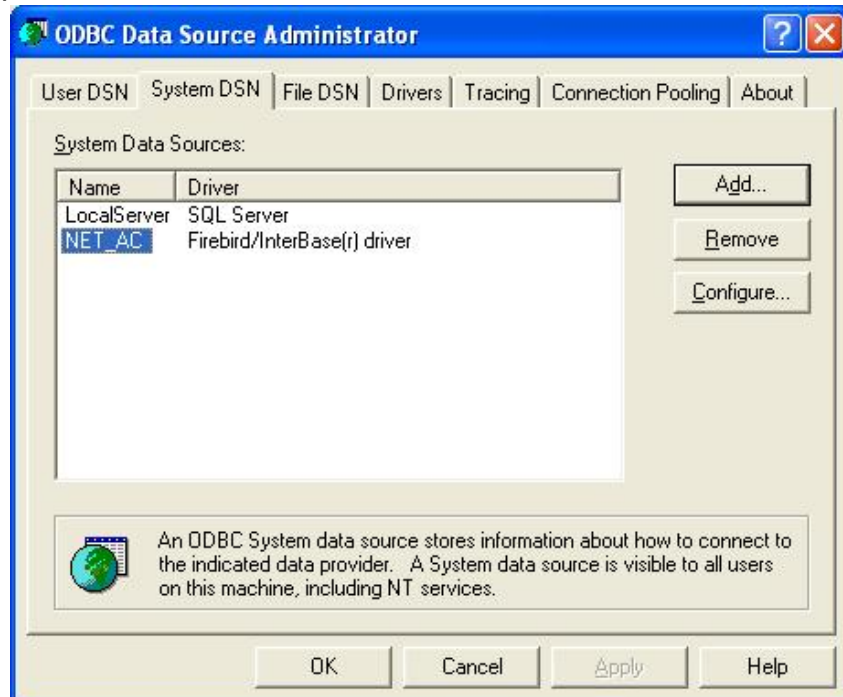


Figure 4-41

4.2.5. Installing Softdog Driver

- 1) Run SoftdogInstdrv.exe in the installation CD to display the interface as shown below. Insert the Softdog into a USB port , and then click **Install**.



Figure 4-42

- 2) On the interface as shown below, click **Install the Software Automatically (Recommended)**, and then click **Next**.

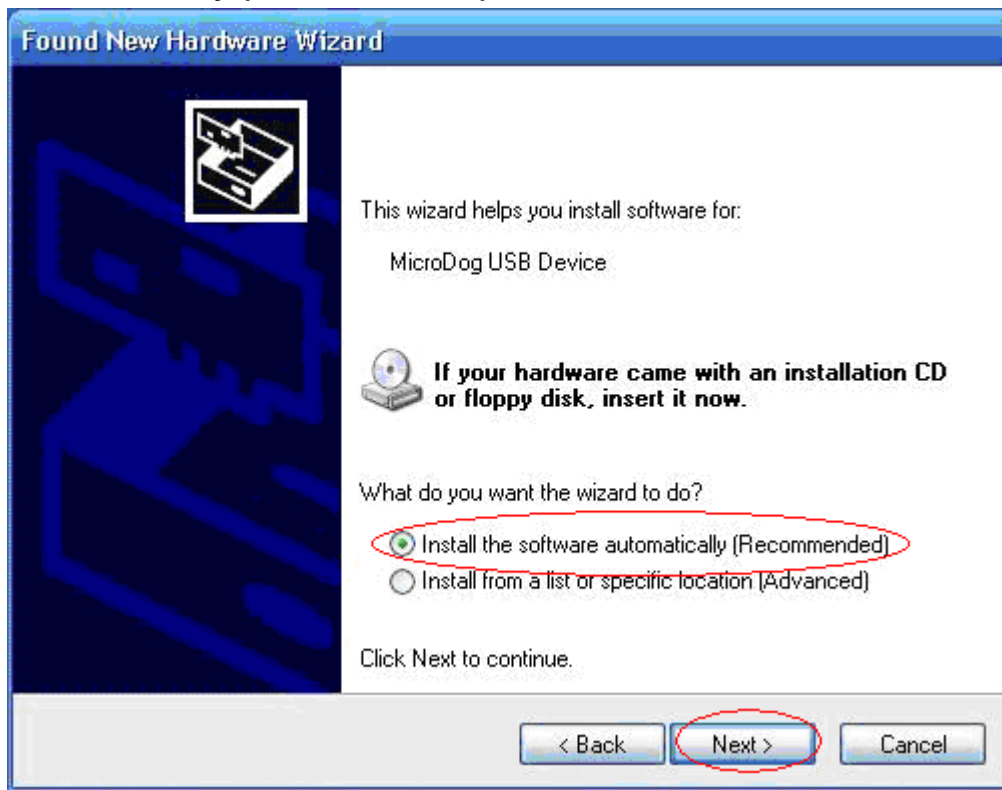


Figure 4-43

- 3) The system automatically searches for the driver, as shown below.



Figure 4-44

- 4) On the interface as shown below, click **Finish**.

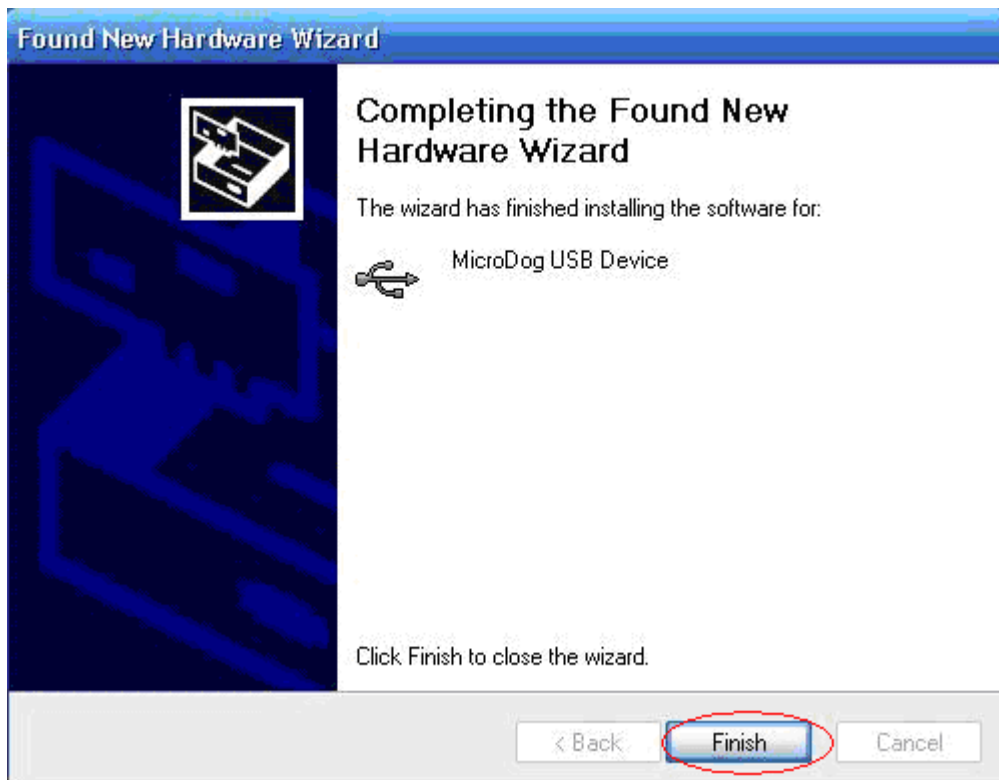


Figure 4-45

4.2.6. Setting the OS

I. Setting the auto restart function of Windows 2000

1. Enabling auto restart

After the auto restart function is enabled, the computer will automatically restart after being powered on in case of power failure.

- (1) Click **Start ->Setting/Control Panel**, and then double-click **System**.
- (2) Click the **Advanced** tab, and then select the auto restart options.

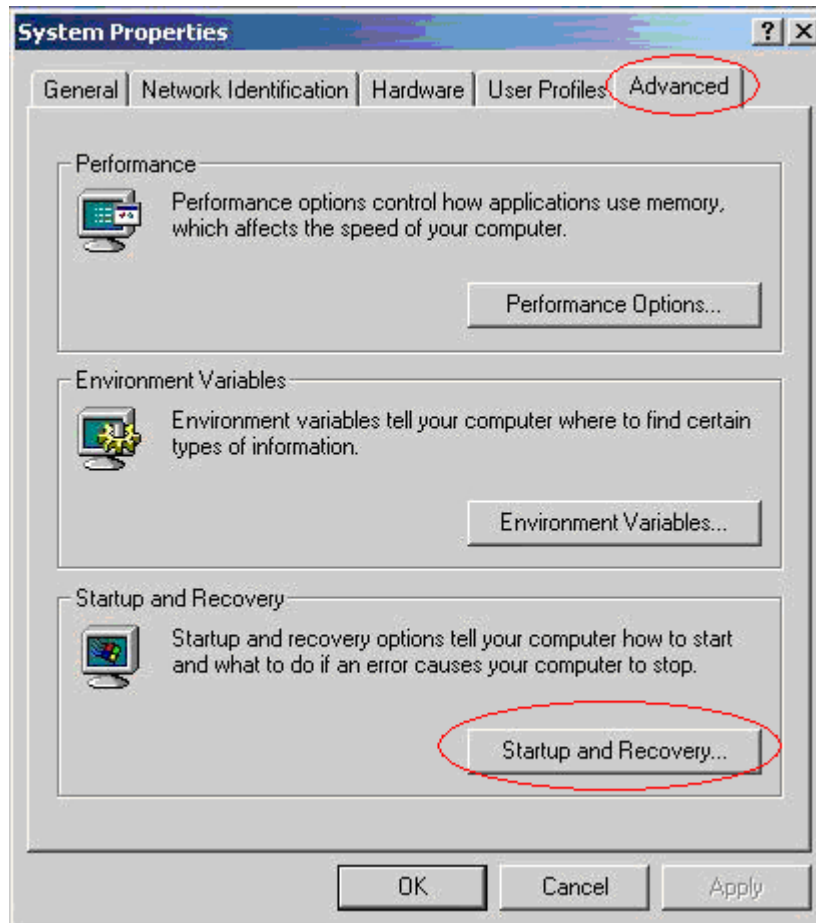


Figure 4-46

- (3) Select the **Send an administrative alert** check box.

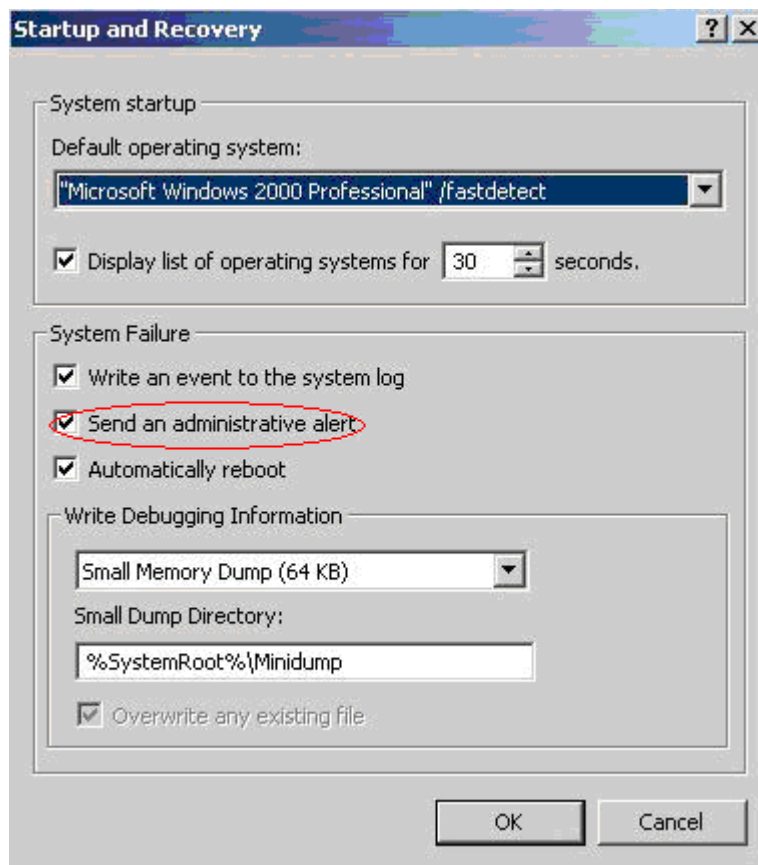


Figure 4-47

2. Auto login

After Windows 2000 starts, you need to press Ctrl-Alt-Del to log into it. Our intelligent management system needs to be started after all the programs (including the management system) are closed. Therefore, the auto restart function is required.

- (1) Open the Control Panel, and then double-click **Users and Passwords**.
- (2) Clear the **Users must enter a user name and password to use this computer** check box.

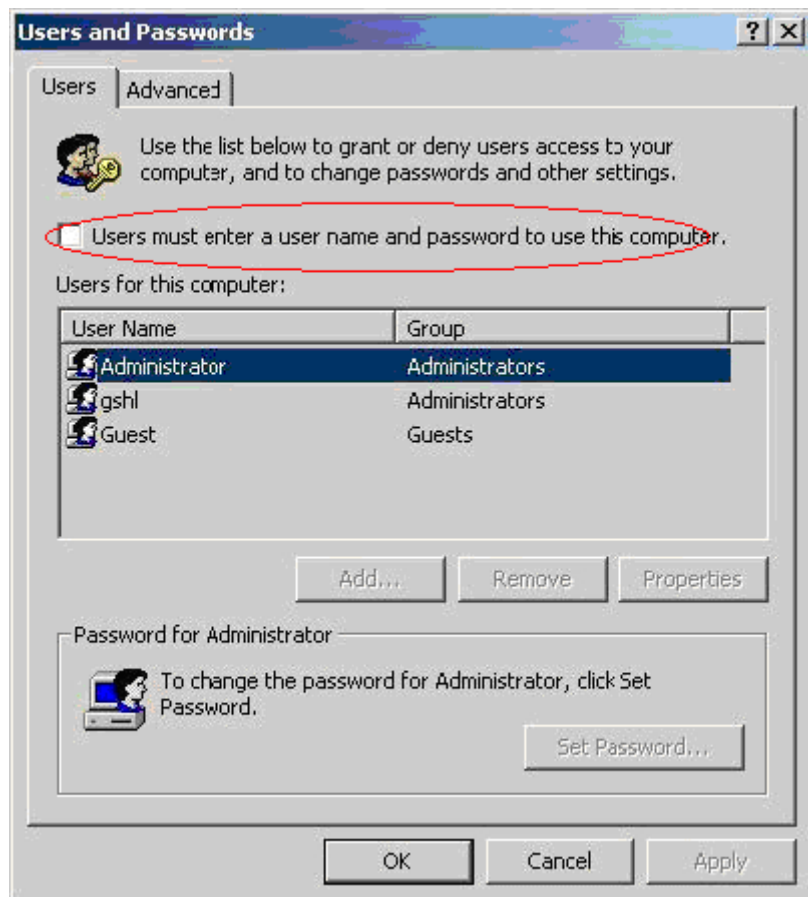


Figure 4-48

- (3) Click the **Advanced** tab.
- (4) Clear the **Press Ctrl-Alt-Delete to Log In** check box.

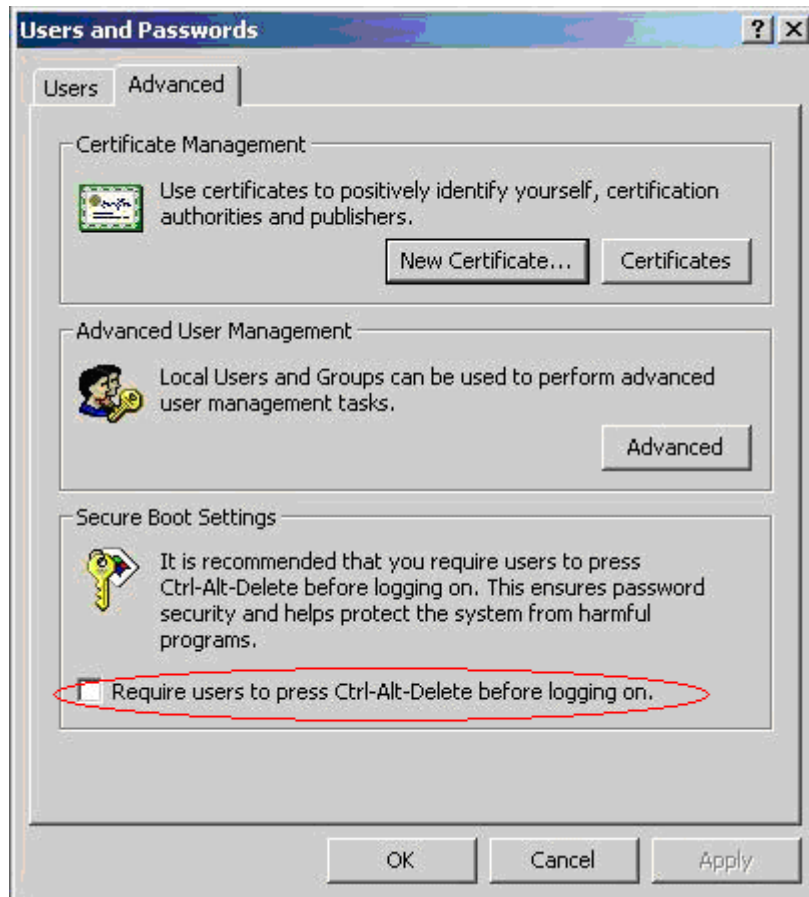


Figure 4-49

3. Auto restart

To enable our intelligent management system to automatically start after the startup of Windows 2000, do as follows:

- (1) Open the following folder:

C:\documents and settings\all users\start menu\programs\startup

- (2) Right-click, and then select **New->Shortcut**.

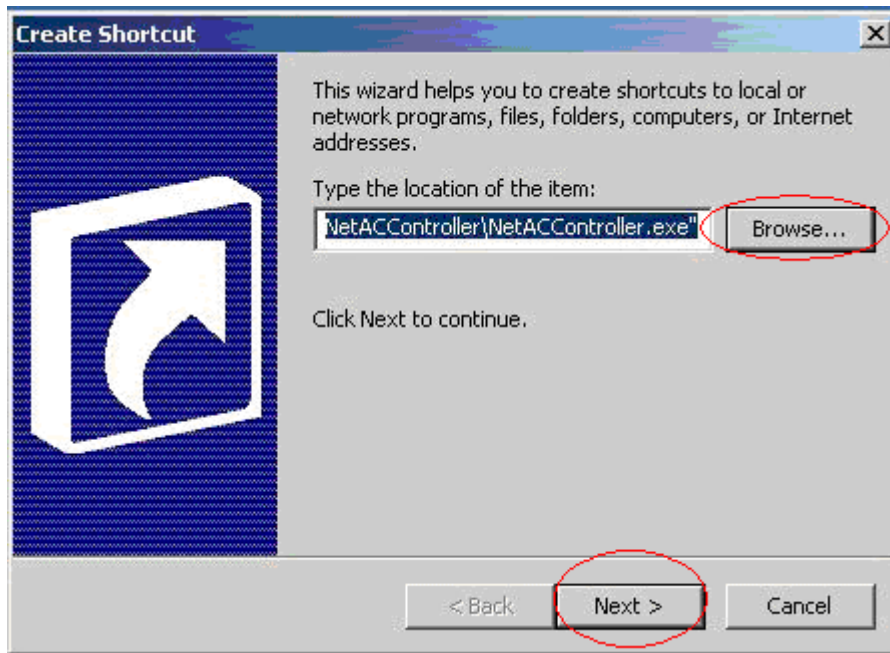


Figure 4-50

- (3) Click **Browse**, and then select the .exe file of our intelligent management system.
- (4) Give a mnemonic name for each auto startup item, and then click **Finish**.

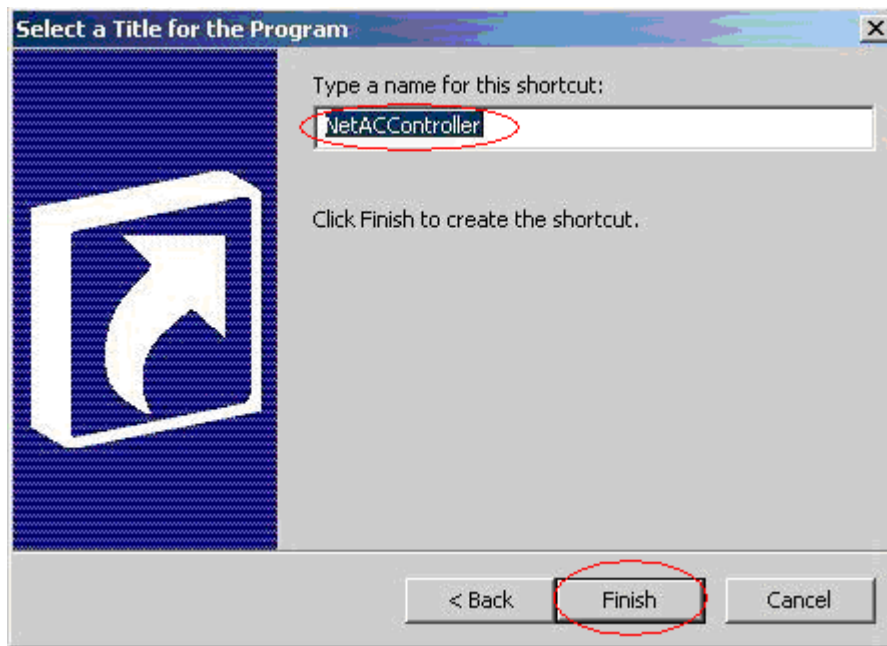


Figure 4-51

- (5) Restart the computer, and then check whether our intelligent management system automatically starts.

II. Setting the auto restart function of Windows XP

1. Enabling auto restart

After the auto restart function is enabled, the computer will automatically restart after being aborted.

- (1) Click **Start->Control Panel**, and then double-click **System**.
- (2) Click the **Advanced** tab, and then click **Settings** in the Startup and Recovery area.

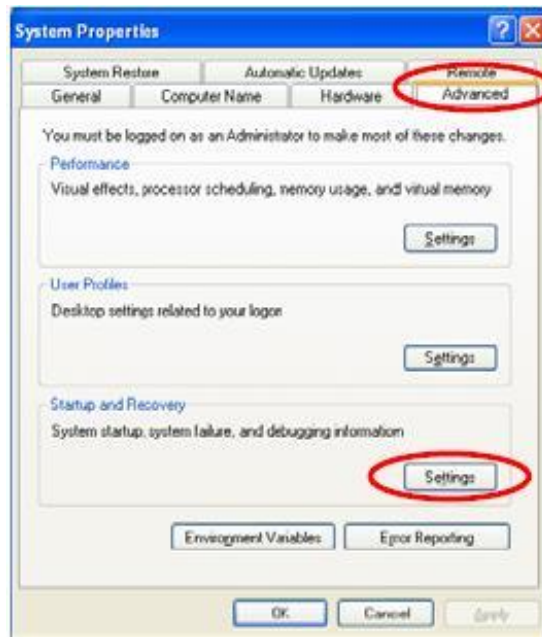


Figure 4-52

(3) Click **Automatic Restart**.

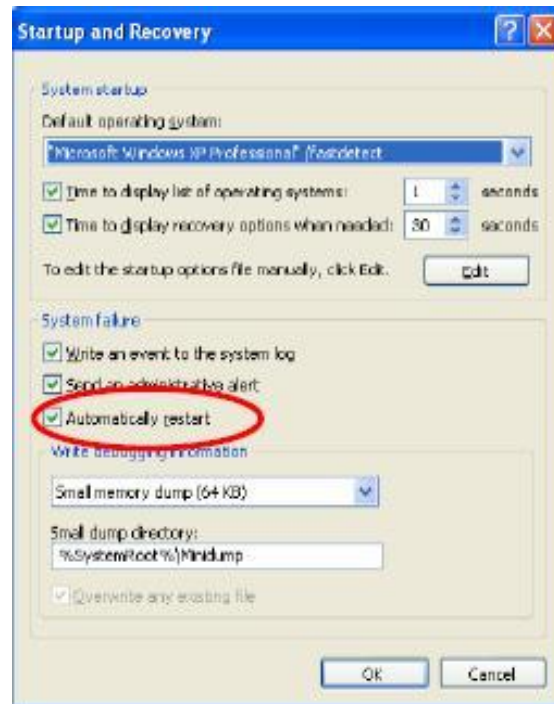


Figure 4-53

III. Auto Internet access

Auto Internet access is necessary to the computer that runs our intelligent management system.

Auto Internet access enables you to automatically access Internet without logging into Windows XP after the computer that runs the monitoring system is started.

After the auto Internet access function is enabled, you can do the following after Windows XP starts:

- Set the Welcome screen.
- Cancel the guest account.
- Set no more than two user accounts.
- Delete user passwords.

1. Setting the Welcome screen

- (1) Click **Start->Control Panel**, and then click **User Accounts**.
- (2) Click **Change the way users log on or off**.

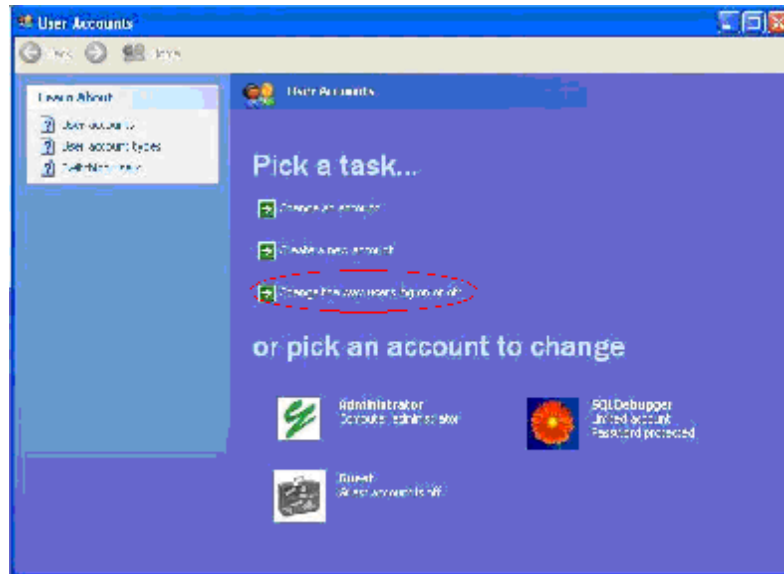


Figure 4-54

- (3) Select the **Use the Welcome screen** check box.

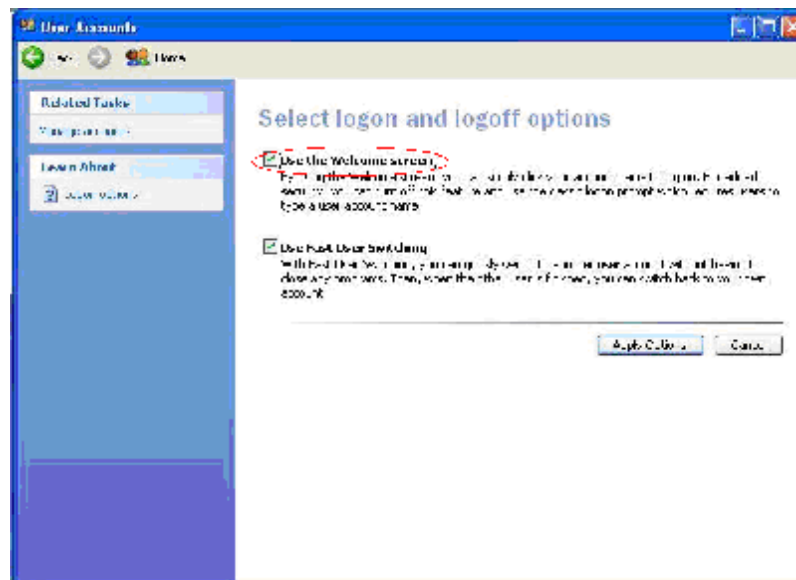


Figure 4-55

2. Canceling the guest account

- (1) Click **Start->Control Panel**, and then click **User Accounts**.
- (2) Click **Guest**.

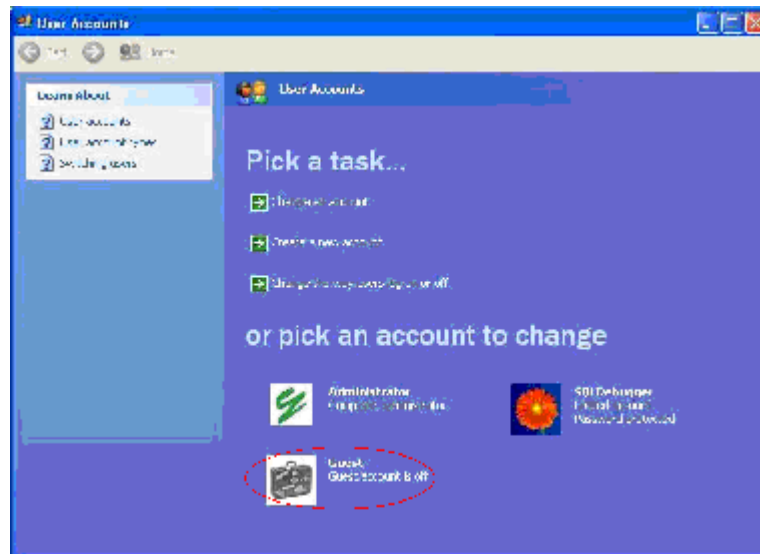


Figure 4-56

- (3) Click **Turn off the guest account**.

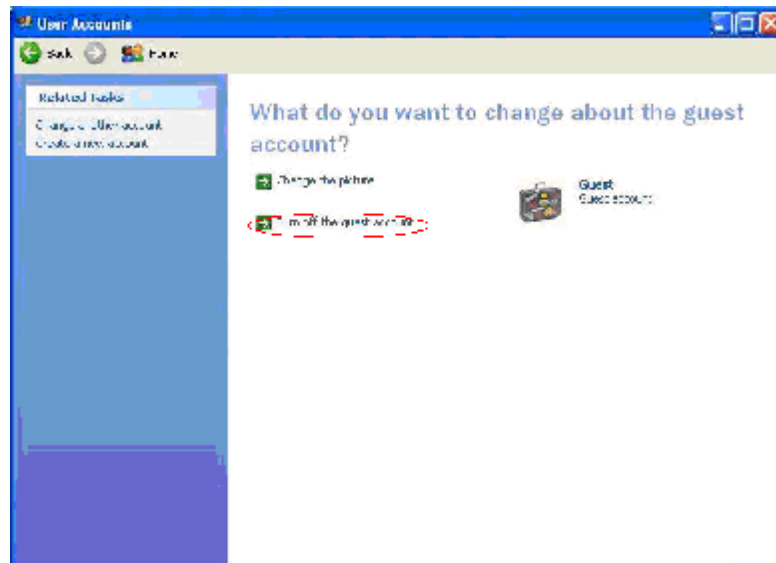


Figure 4-57

3. Deleting user accounts and passwords in Windows XP

- (1) Click **Start->Control Panel**, and then click **User Accounts**.
- (2) Select the desired user account.
- (3) Click **Remove my password**.

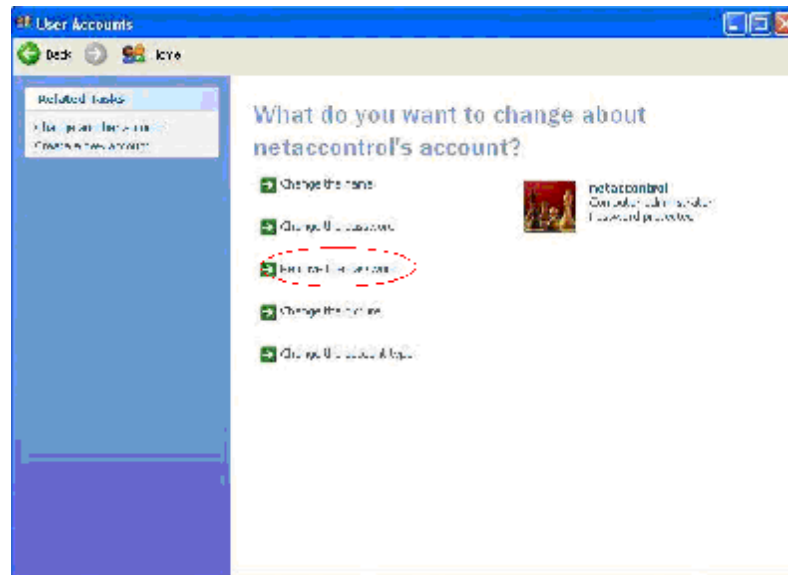


Figure 4-58

- (4) Enter the current password, and then click **Remove**.

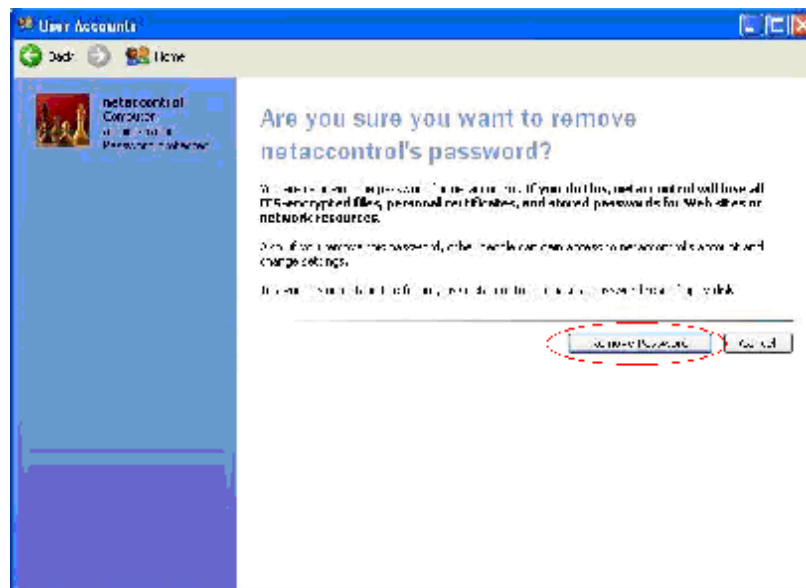


Figure 4-59

4. Enabling auto start of our intelligent management system

(1) Open the following folder:

C:\documents and settings\all users\start menu\programs\startup.

(2) Right-click, and then select **New->Shortcut**.

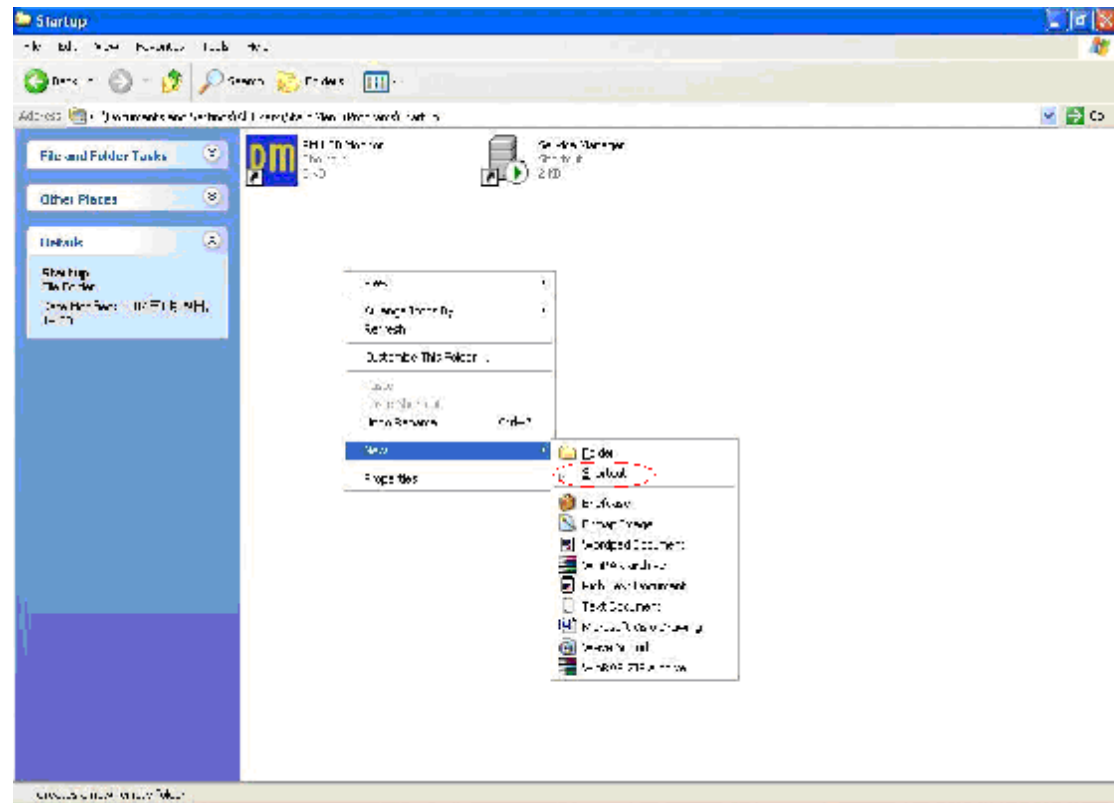


Figure 4-60

(3) Click **Browse**, and then select the .exe file of our intelligent management system.

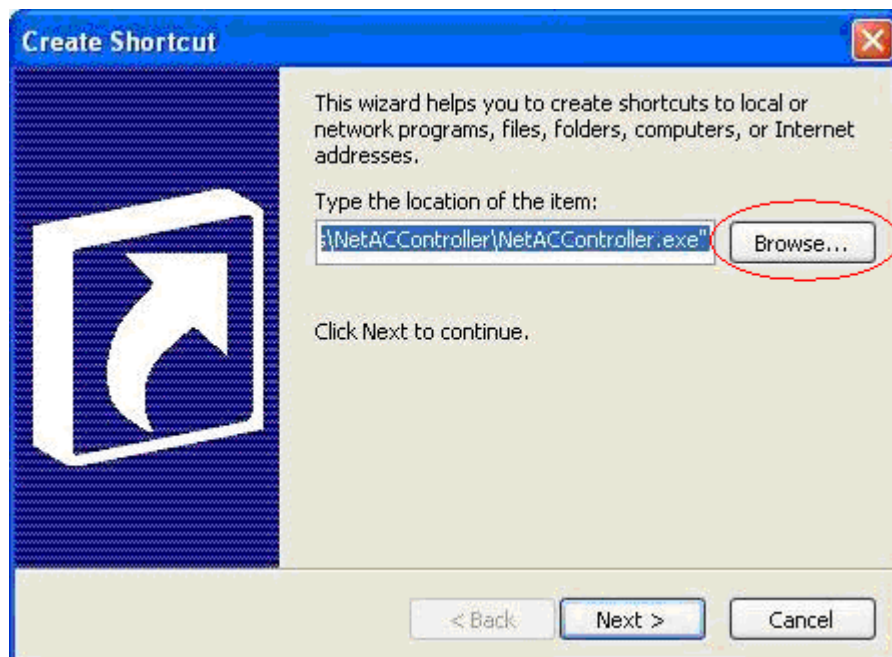


Figure 4-61

- (4) Click **Next**. On the interface that appears, click **Finish**.

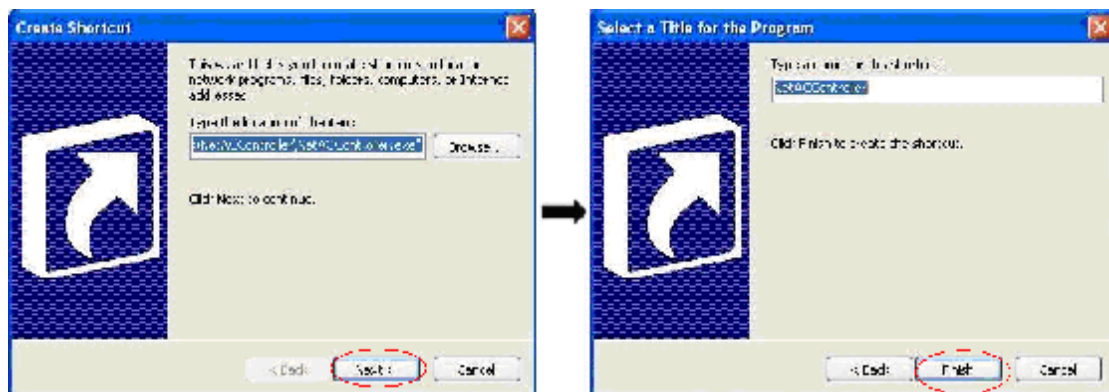


Figure 4-62

- (5) Restart the computer, and then check whether our intelligent management system automatically starts.

V. Design Points

5.1. System Composition

1) System Overview

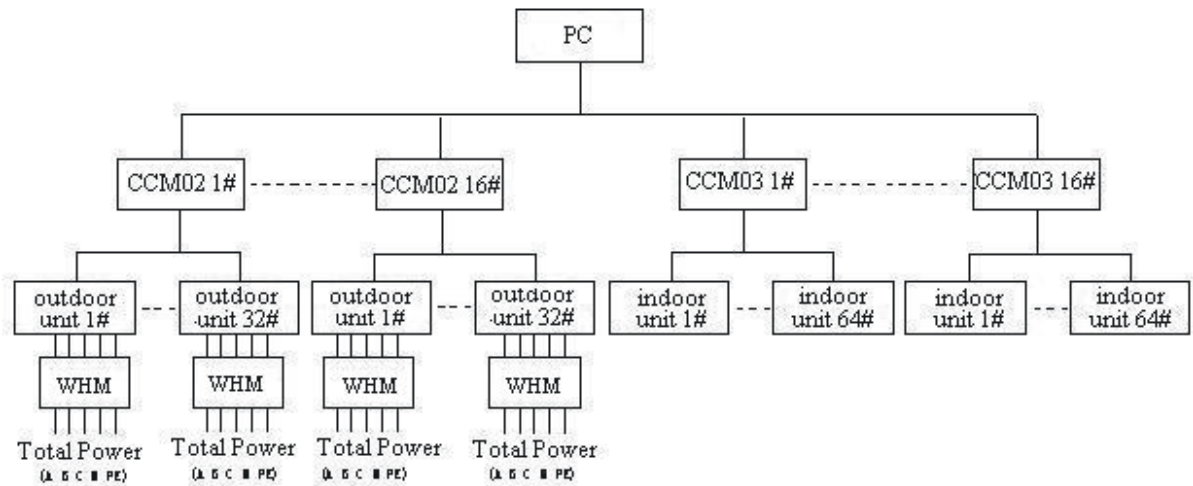


Figure 5-1

2) System Connection

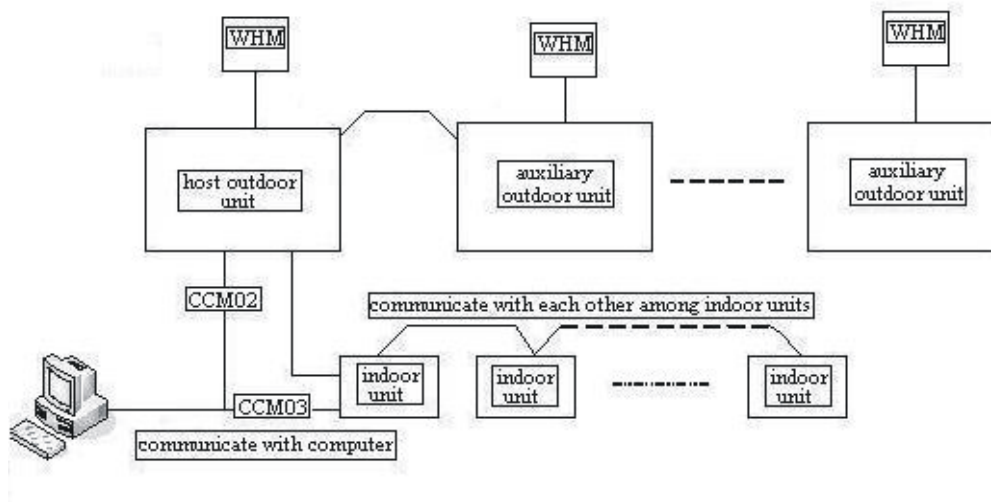


Figure 5-2

5.2. Group Control

- 1) Group can be used as a control unit in the system. The system can control all the indoor units in the group in a temporary manner or by the preset tasks. Meanwhile, group can also be used as a unit for settlement of electricity expense; that is to say, the electricity expenses of all the indoor units in the group can be calculated together.
- 2) When you set air conditioners in a group, it is not recommended to change the air conditioners in the group if unnecessary, because this involves the calculation of electricity expenses; that is to say, the system will calculate the electricity expense incurred during a very short period of time and includes it in the report, so doing this will make it difficult to understand the report.

VI. Installing UPS (Optional)

6.1. Specifications

APC SU700 series is recommended.

Requirement	Performance
Capacity	200~250W/20min
Voltage	220~240V
Control signal	Power failure signal (from UPS) and UPS shutdown signal (to UPS)

Table 7-1

6.2. Installation of UPS Power

- 1) According to the operating instructions delivered with APC SU700, connect the power cables and signal cables to the power supply and computer respectively.

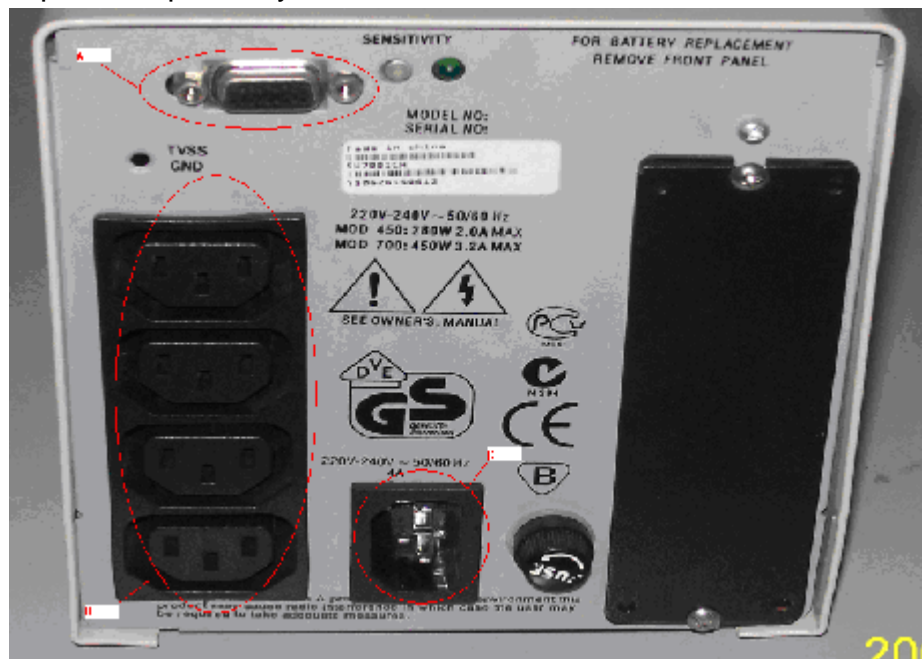


Figure 7-1

- A: Signal cable between the UPS and the computer. Connect it to any serial port on the computer.
 - B: Power output port of the UPS.
 - C: Power input port of the UPS.
- 2) Install the power management software of APC SU700.

Third Generation Billing System

(Firebird Edition)

Operation Guide

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I. System Overview

The system consists of foreground interface, background database and background communication components. Through the foreground interface, the user can operate the system and query data. The background communication components update air conditioner information and outdoor unit information, and sends the control and query signals from the user. The background database primarily stores air conditioner information and outdoor unit information; it also calculates the electricity expense of each indoor unit via some internal mechanisms.

The operating interface of the monitoring system is as shown below.

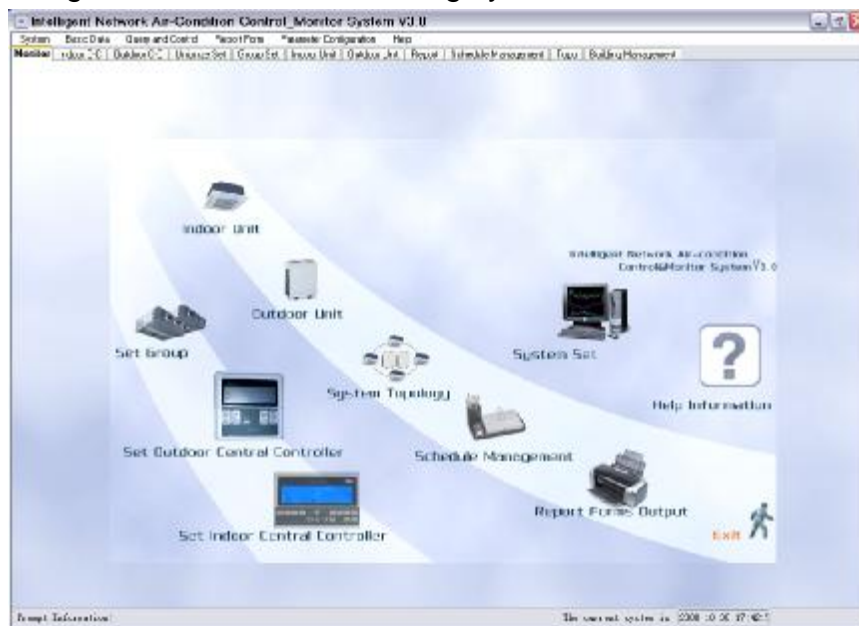



Figure 1-1

II. System Setting

2.1 Starting System and User Login

Click **Start->All Programs->NetACControlFBD->ACServer** to start the server. When  appears on the taskbar, it indicates that the server is

running. Double-click  on the desktop, or click **Start->All Programs->NetACControlFBD->NetACControl** to display the login interface, as shown below.

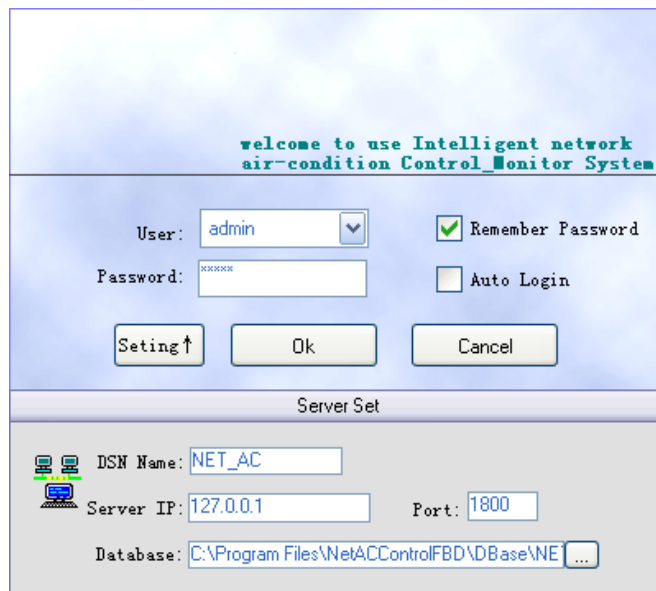


Figure 2-1

1. **Select a user account from the drop-down list.**
 - 1) If you select the **Save password** check box, you can log into the system by simply clicking **Login** each time.
 - 2) If you select the **Auto login** check box, you can log into the system by entering the user account and password each time.
2. Click **Setting** to show the server setting interface, and then set the parameters as shown above.

DNS Name: NET_AC

Server IP Address: 127.0.0.1

Port: 1800

Database: By default, the database file NETAC.FDB is located in the “Dbase” folder in the installation directory of the monitoring system.

3. Classification of user authorities

Users fall into three types: super administrator, common administrator and common user.

A super administrator is authorized to operate all the interfaces, including communication diagnosis, communication status browsing, system building, air conditioner, controller, group query and control, indoor unit query, group schedule management, and so on.

A common administrator is authorized to perform all the operations as a super administrator except communication diagnosis and communication status browsing, primarily involving system building and management.

A common user is authorized to operate main interfaces, interface for unified setting, interface of indoor central controller and interface of air conditioner, and perform group operations, schedule management and report query.

2.2 System Parameter Setting

1. **Section-based electricity charging setting:** Click **Parameter Setting->System Parameter Setting**.

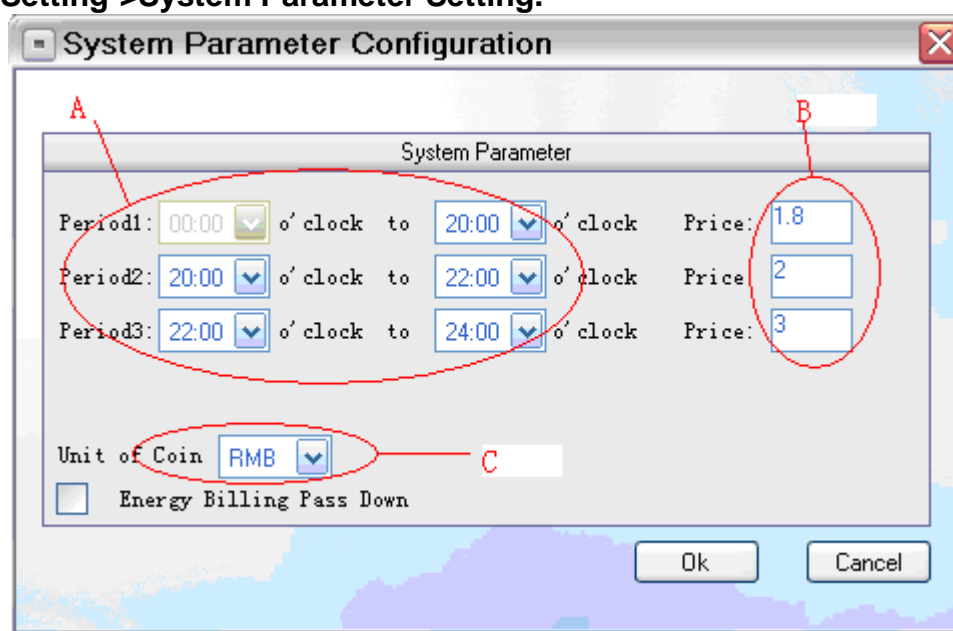


Figure 2-2

- A. One day can be divided into 1–4 sections. The start time of the first section is 00:00; the end time of the adjacent section is the start time of the next section; the end time of the last section is 24:00.
- B. The unit electricity price for this section;
- C. The monetary unit of the unit electricity price.

2. Database setting: Click Parameter Setting->Database Setting.

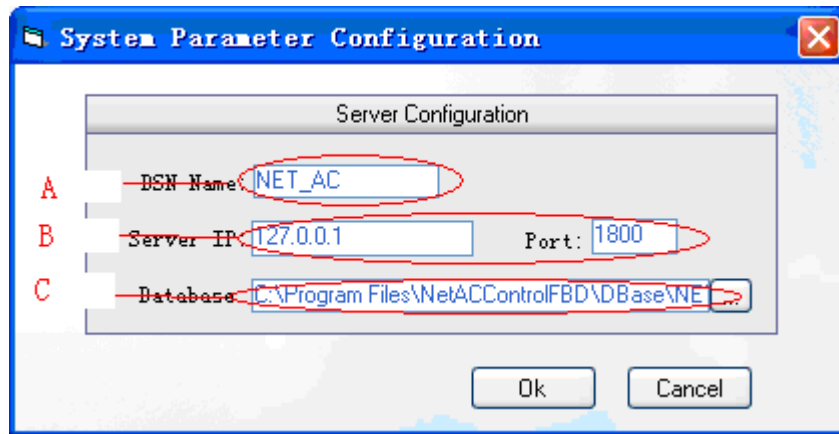


Figure 2-3

The settings here are the same as the server settings on the login interface. The specific settings are as follows:

- A. **DNS Name:** Set the interface used by the monitoring system to connect the database. Enter "NET_AC" here.
- B. **Server IP Address and Port:** Set the IP address and port of the background server. If the server runs on the local computer, enter 127.0.0.1 as the IP address and a value ranging 0-65525 as the port number. To avoid collision with other applications, a fairly large value is recommended. By default, the port number is 1800.
- C. **Database:** By default, the database file NETAC.FDB is located in the "Dbase" folder in the installation directory of the monitoring system.

Note: The size of the database files will increase rapidly as the monitoring system runs continuously. If too much system drive space is occupied, the running of the OS will be affected. To avoid this, it is recommended to move database files to a different drive.

3. Eco-friendly temperature setting: Click Basic Data-> Eco-friendly Temperature Setting.

Select the minimum cooling temperature and the maximum heating temperature within 17°C–30°C.

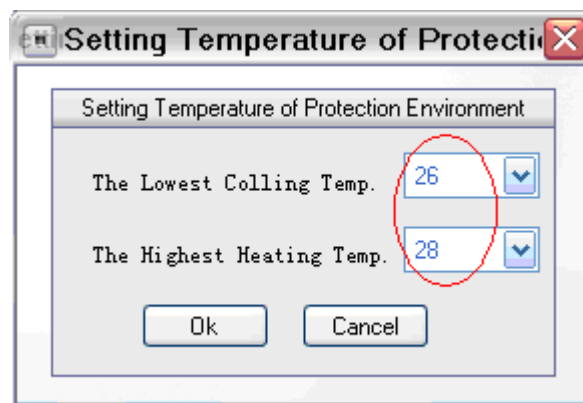


Figure 2-4

4 System icon setting: Click Basic Data->System Icon Setting.

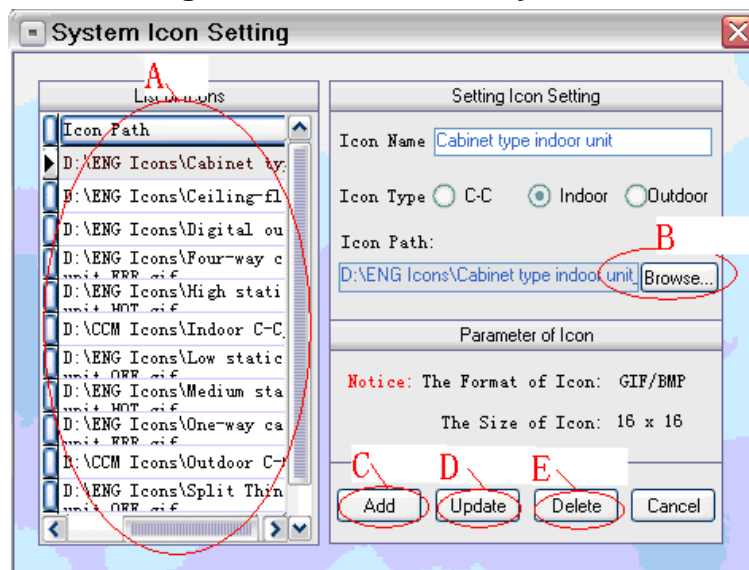


Figure 2-5

- A. List of icons of the controllers and air conditioners in the system;
 - B. **Browse:** Click **Browse** to set or change the path of the icons.
 - C. **Add:** Click **Add** to add one blank row in A, select the row, click **Browse** to set the path of the icon, and then click **Update** to complete the operation.
 - D. **Update:** Select a path in A, and click **Browse** to change the path of the icon, and then click **Update** to complete the operation.
 - E. **Delete:** Select a path in A, and then click **Delete** to delete it
- 5 **Fault description setting: Click Basic Data->Fault Description Setting.**

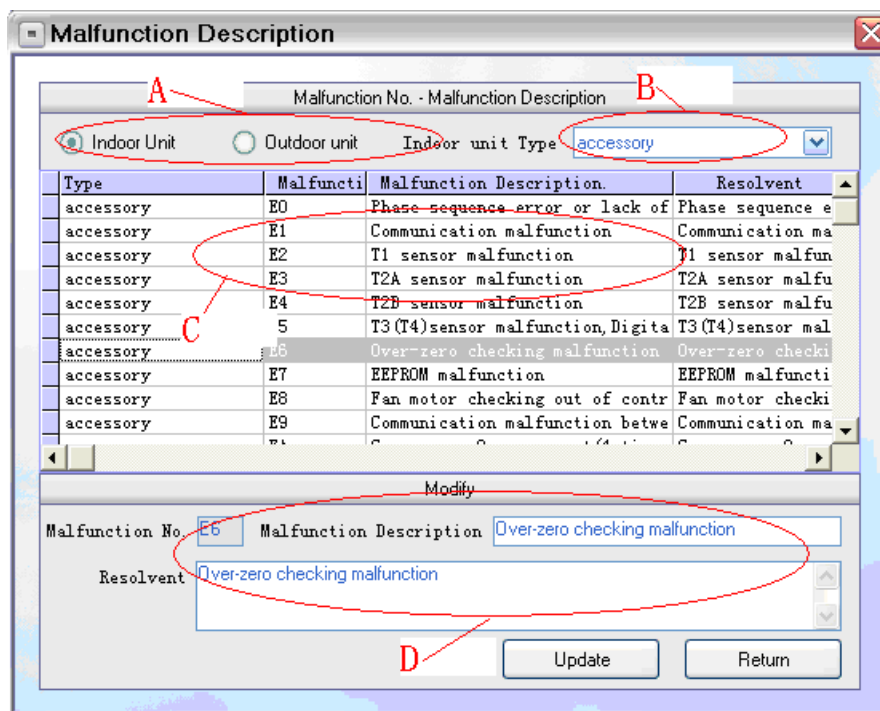


Figure 2-6

- A. Click **Indoor Unit** or **Outdoor Unit**.
 - B. Select the type of air conditioner.
 - C. List of the error codes. Click to select the desired fault code.
 - D. Enter the description of the fault code and the corresponding solution.
- 6 **User management: Click Basic Data->User Management.**

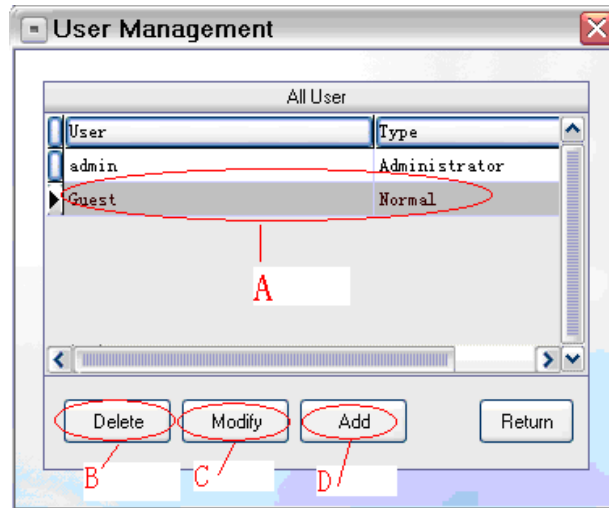


Figure 2-7

- A. User list.
- B. **Delete User:** Select a user in the user list, and then click **Delete User** to delete it.
- C. **Modify User:** Select a user in the user list, and then click **Modify User**. On the interface as shown below, enter the old password of the user, enter and confirm the new password, and then click **OK**.

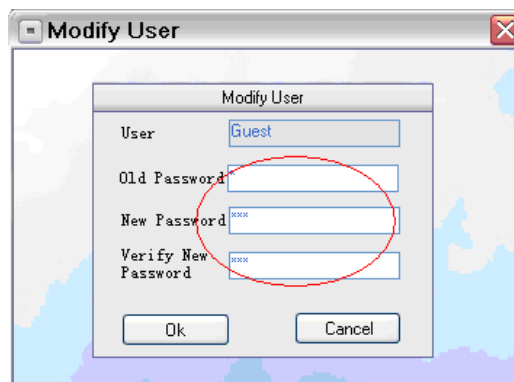


Figure 2-8

- D. **Add User:** Click **Add User**; on the interface as shown below, set user name and password, and then click **OK**.

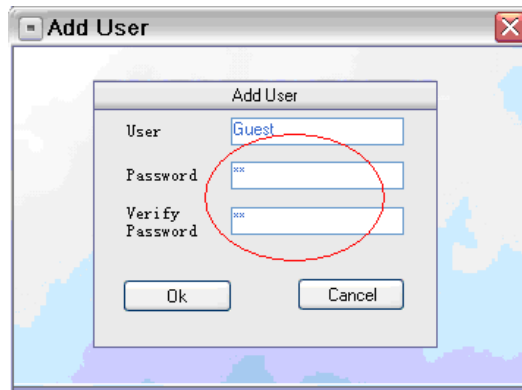


Figure 2-9

7. **History data clearing setting:** Click **Basic Data->History Data Clearing Setting**.

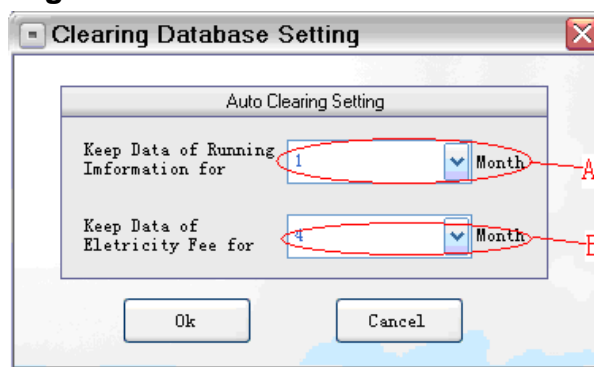



Figure 2-10

- A. Set the interval for saving operating data into the database. It ranges 1–3 months.
- B. Set the interval for saving electricity expense data into the database. It ranges 1–6 months.

2.3 Server Parameter Setting

1. Showing the server program



Double-click  on the taskbar to display the server interface, as shown below. The server communicates with air conditioning system, collects relevant parameters of the air conditioning system and saves them into the database, and returns the processing result to the user.

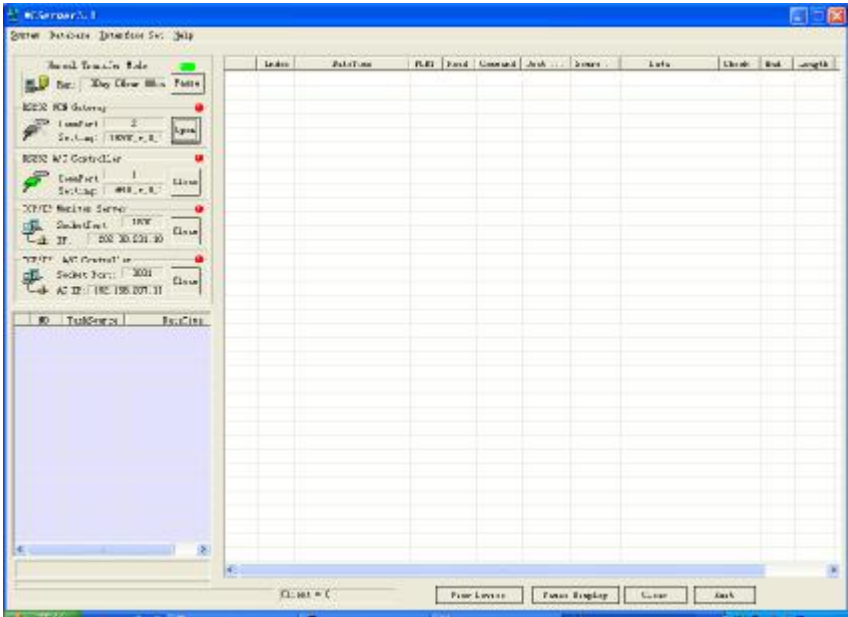


Figure 2-11

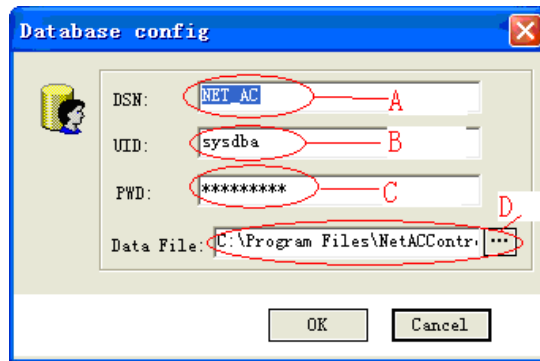


Figure 2-14

4. Database file backup: Click Database->Database Backup.

This function can be used for automatic backup of database files. Three backup modes are available: Program Start, Program Exit, and Everyday. The Everyday mode is recommended. In this mode, the user can select the maximum number of backup files to be kept, which is in the range of 1–4. If the maximum number is exceeded, the system will automatically delete the earliest backup file.

- Program Start:** Backs up database files when the program starts.
- Program Exit:** Backs up database files when the program exits.
- Everyday:** Backs up database files at the specified time every day.
- Select the maximum number of backup files to be kept, ranging 1–4.
- Select the destination folder of the backup files.

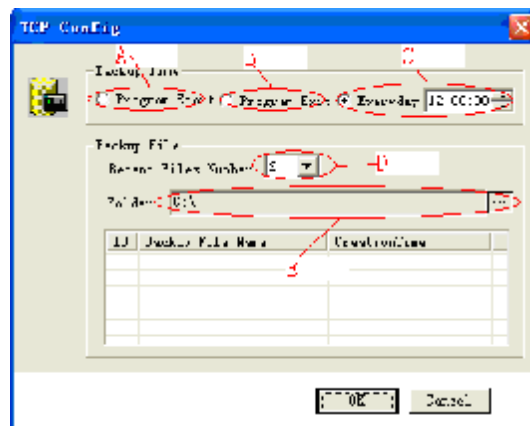


Figure 2-15

5. Controller RS485 port setting: Click Interface Set->AC RS232 Set.

Select the number of the serial port that is connected to the RS485 controller, and set BaudRate, DataBit, StopBit and Check as shown below.

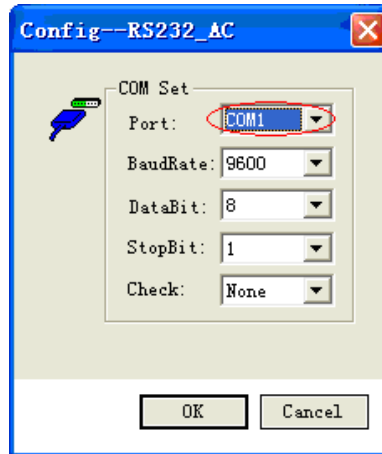


Figure 2-16

6. Floor gateway serial port setting: Click Interface Set->VCN RS232 Set.

Select the number of the serial port that is connected to our floor gateway CCM07, and set BaudRate, DataBit, StopBit and Check as shown below.

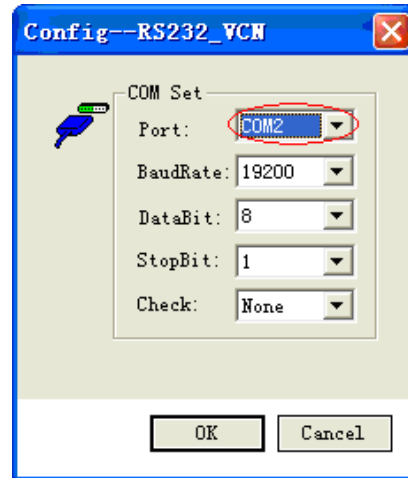


Figure 2-17

7. Client port setting: Click Interface Set->Client TCP/IP Set.

This port setting is used for the communication between the server and clients. The specific settings are as follows:

- Select the network card in the computer. In general, only one network card is installed in the computer. After the network card is selected, its IP address is displayed in the **Local Address** box.
- Enter "1800" as the port number.

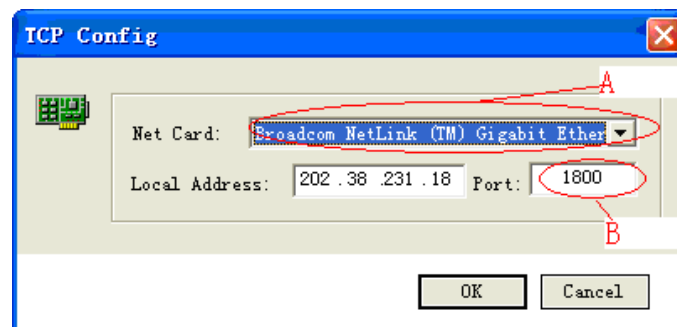


Figure 2-18

8 Ethernet controller port setting: Click Interface Set->AC TCP/IP Set.

This port setting is used for the communication between the software system and the Ethernet controllers. It involves IP port setting and auto-scan setting. The specific settings are as follows:

- Select the network card in the computer. In general, only one network card is installed in the computer. After the network card is selected, its IP address is displayed in the **Local Address** box.
- Enter "3001" as the port number.
- Set the auto-scan interval, measured in minutes. After **Auto Scan** is selected, the system will automatically scan the Ethernet controllers in the system at the set interval.

- d. Set the IP address range of the Ethernet controllers to be scanned, and enter "19780" as the port number.
- e. Click **Scan** to scan; on the interface as shown in Figure 2-41, click **Begin** to scan the Ethernet controllers. To stop the scan, click **Stop**. After the scan is completed, click **Close**.
- f. After the scan is completed, the online controllers are displayed in h. To modify a controller, select it, click **Modify**; on the interface as shown in Figure 2-42, modify its IP address, RS485 ID, etc. This function is used by professional technicians to commission the system, so the user is not recommended to use it.
- g. Click **Clear** to clear all the controllers in h.

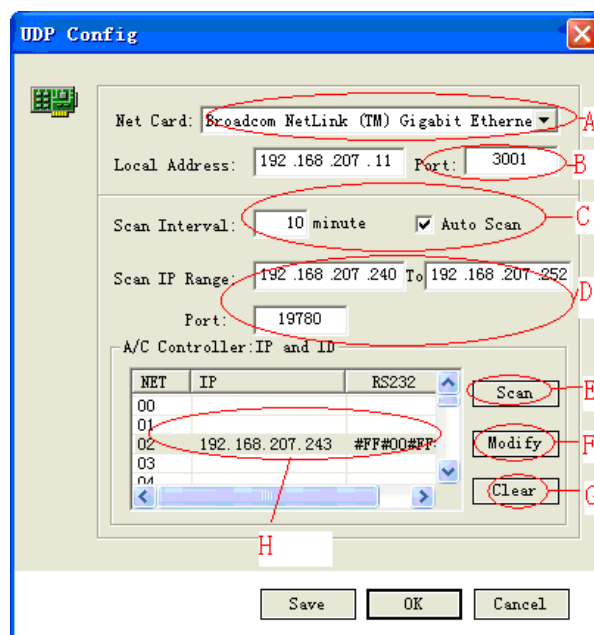


Figure 2-19

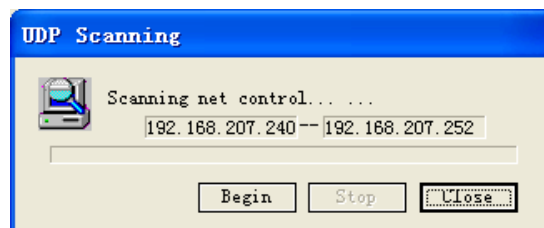


Figure 2-20

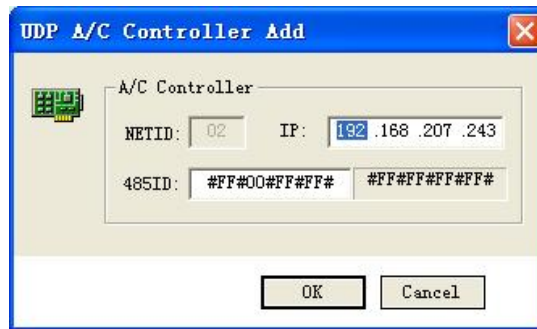


Figure 2-21

III. System Building

The procedure for building the system is as follows:

- I Setting indoor and outdoor central controllers.
- I Setting outdoor units. A unit refers to a collection of outdoor units under the outdoor central controller. Any outdoor unit is under a certain unit. The outdoor units under a unit are under the same controller, which is different from the concept of indoor unit group.
- I Setting indoor units. After the indoor and outdoor central controllers, units and outdoor units are set, the system is built. The later operations are all performed on these components, including system auto-scan.

Follow the procedure below to build the system:

3.1 Outdoor central controller Setting: Click Basic Data->Controller Setting.

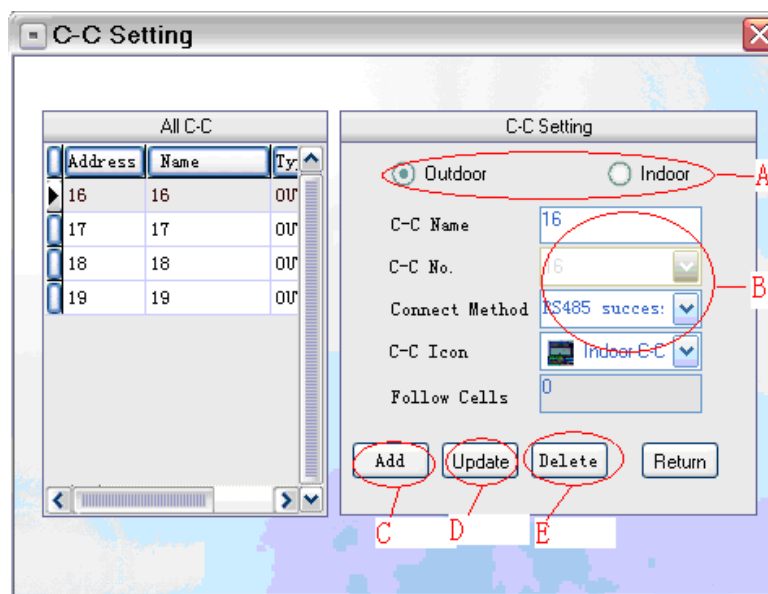


Figure 3-1

- A. Click **Outdoor** to set outdoor central controller.

- B. Set the parameters of the outdoor central controller: Set the address of the outdoor central controller in the range of 16–31, and select the connection mode as needed: RS485 port or Ethernet.
- C. **Add:** Click **Add** to add one blank row in A, select the row, set the name and icon of the controller, and then click **Update** to complete the operation.
- D. **Update:** Select a controller in A, modify it, and then click **Update** to complete the operation.
- E. **Delete:** Select a controller in A, and then click **Delete** to delete it. Before deleting a controller, ensure that no unit is available under it.

3.2 Indoor central controller Setting: Click Basic Data->Controller Setting.

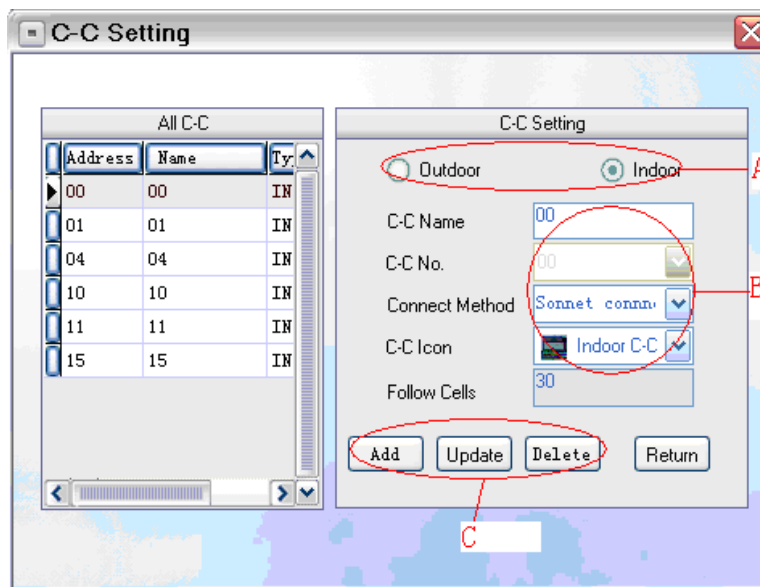


Figure 3-2

- A. Click **Indoor** to set indoor central controller.
- B. Set the parameters of the indoor central controller: Set the address of the indoor central controller in the range of 00–15, and select the connection mode as needed: RS485 port or Ethernet.
- C. For setting C, D and E, refer to Outdoor central controller Setting (see 3.1 Outdoor central controller Setting: Click Basic Data->Controller Setting).

3.3 Unit Group Setting: Click Basic Data->Unit Group Setting.

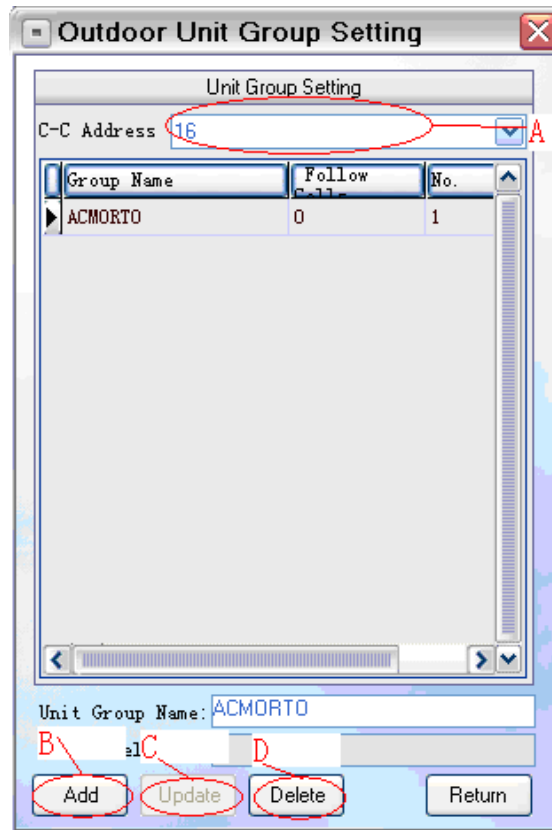


Figure 3-3

After setting the outdoor central controller, you can set unit groups under it.

- A. Select an outdoor central controller. All the units under the controller are listed.
- B. **Add Unit Group:** Click **Add Unit Group** to add one blank row in the list, select the row, enter the name of the unit group, and then click **Update Unit Group**.
- C. **Update Unit Group:** Select a unit group, enter the name of the unit group, and then click **Update Unit Group**.
- D. **Delete Unit Group:** To delete a unit group without outdoor unit, select it, and then click **Delete Unit**.

3.4 Outdoor Unit Setting: Click Basic Data->Outdoor Unit Setting.

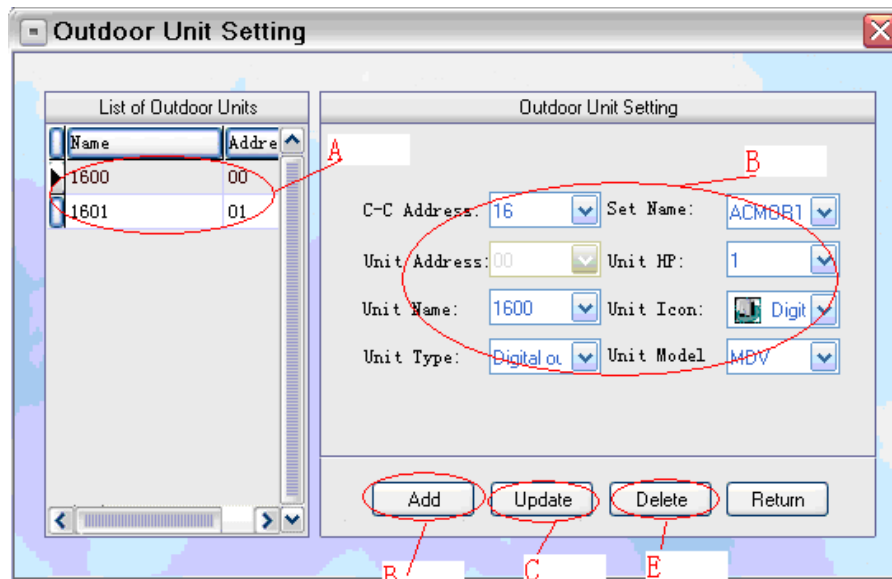


Figure 3-4

- A. List of outdoor units. After you select the address of an outdoor central controller, all the outdoor units under the controller are listed.
- B. Set the parameters of outdoor units: The address of an outdoor unit is in the range of 0-31. Each outdoor unit under a controller shall have a unique address. The name entered in the **Unit Group Name** box shall be that of an actual outdoor unit group under the controller. The outdoor units actually installed under the same unit group shall also be set into the same unit group here.
- C. Click **Add** to add one blank row in the list. Select the row, set parameters with reference to B and C, and then click **Update** to add an outdoor unit.
- D. After selecting the address of an outdoor central controller, select an outdoor unit in the list, modify its parameters with reference to B and C, and then click **Update**.
- E. To delete an outdoor unit that does not exist, select it, and then click **Delete**.

3.5 Indoor Unit Setting: Click Basic Data->Indoor Unit Setting.

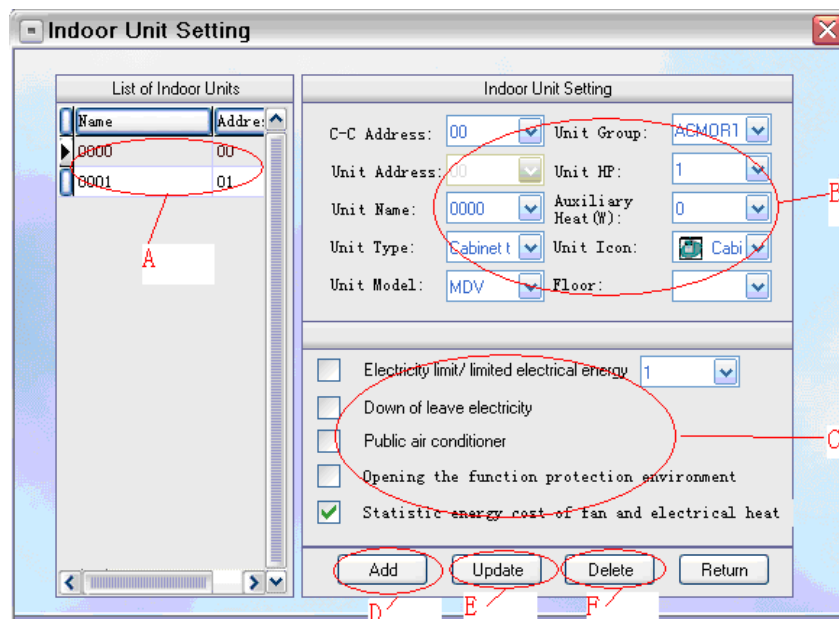


Figure 3-5

- A. To view indoor units under a controller, select the address of the controller. Then all the indoor units under the controller are listed.
- B. Set the parameters of indoor units: The address of an indoor unit is in the range of 0-63. Each indoor unit under a controller shall have a unique address. The unit name entered in the **Unit Group Name** box shall be that of an actual indoor unit group under the controller. Indoor unit horsepower is very important to the billing, and it shall be set to the horsepower of the actual indoor unit. The electric-heating power shall be set to that of the actual indoor unit. The selected floor shall be the actual floor where the indoor unit is installed.
- C. Additional parameters of indoor unit:

If the **Electricity consumption limit** check box is selected, the electricity consumption of the indoor unit is limited to the set value. When the limit is exceeded, the system will stop the indoor unit automatically.

If the **Residual electricity roll-down** check box is selected, the residual electricity of the current month, if any, will be added to the electricity consumption limit of the next month. If this check box needs to be selected, first select the **Electricity consumption limit** check box and set the limit.

If the **Public unit** check box is selected, the electricity consumption of this indoor unit will be allocated to other indoor units in the system.

If the **Enable environmental protection** check box is selected, the lowest refrigerating temperature and highest heating temperature of the indoor unit are respectively set to the minimum refrigerating temperature and

maximum heating temperature set in the **eco-friendly temperature setting** (see Eco-friendly temperature setting).

If the **Measure electricity consumption of fan and electric heater** check box is selected, the system will add the electricity consumption of the fan and electric heater of the indoor unit to the total electricity consumption. By default, this check box is selected.

- D. Click **Add** to add one blank row in the list. Select the row, set parameters with reference to B and C, and then click **Update** to add an indoor unit.
- E. After selecting the address of an indoor central controller, select an indoor unit in the list, modify its parameters with reference to B and C, and then click **Update**.
- F. To delete an indoor unit that does not exist, select it, and then click **Delete**.

3.6 Group Parameter Setting: Click Basic Data->Group Parameter Setting.

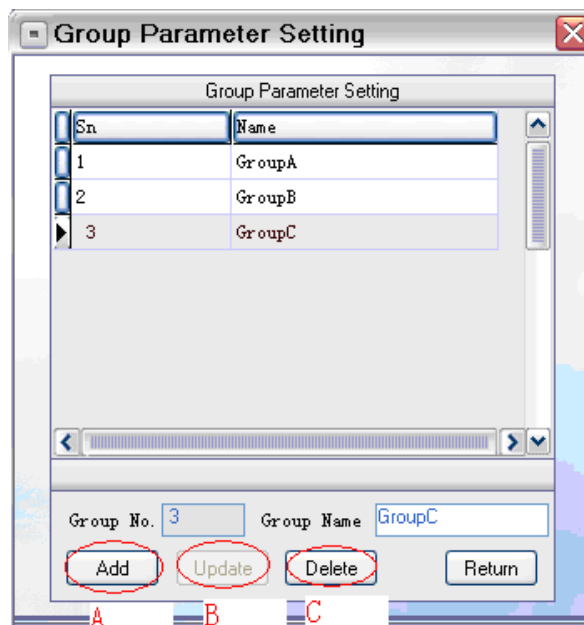


Figure 3-6

- A. On the group parameter setting interface, all the groups in the system are listed. To add a group, click **Add Group** to add one blank row, select it, enter a name for the group, and then click **Update Group**.
- B. To rename a group, click the group, enter a new name for it, and then click **Update Group**.
- C. To delete a group without units, select it, and then click **Delete Group**.

3.7 Air Conditioner Group Setting: Click Basic Data->Air Conditioner Group Setting.

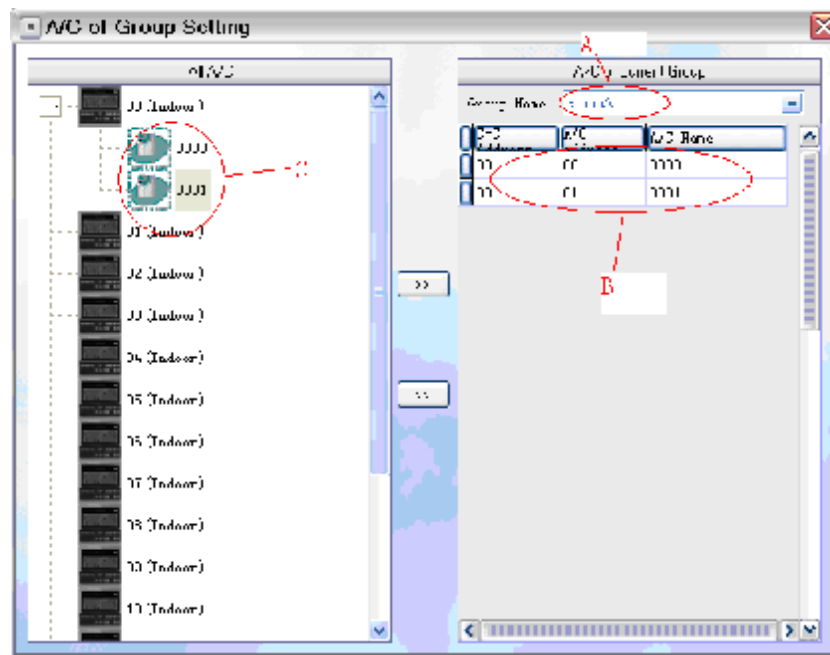



Figure 3-7

- A. List of all the groups. After a group is selected in A, all the indoor units under the group are displayed in B.
- B. List of all the indoor units under the selected group.
- C. Tree-like list of all the indoor units.

To add an indoor unit to the group, select it in C, and then click . If the indoor unit is already added to the current group, a dialog box prompts accordingly. If the indoor unit is already added to a different group, a dialog box prompts accordingly and asks whether you want to move it to the current group. If you select **Yes**, the indoor unit is added to the current group; if you select **No**, the indoor unit is not moved. If the indoor unit is not ever added to any group, it is directly added to the current group.

To delete an indoor unit from the group, select it in B, and then click .

3.8 New Floor Setting: Click Basic Data->New Floor.

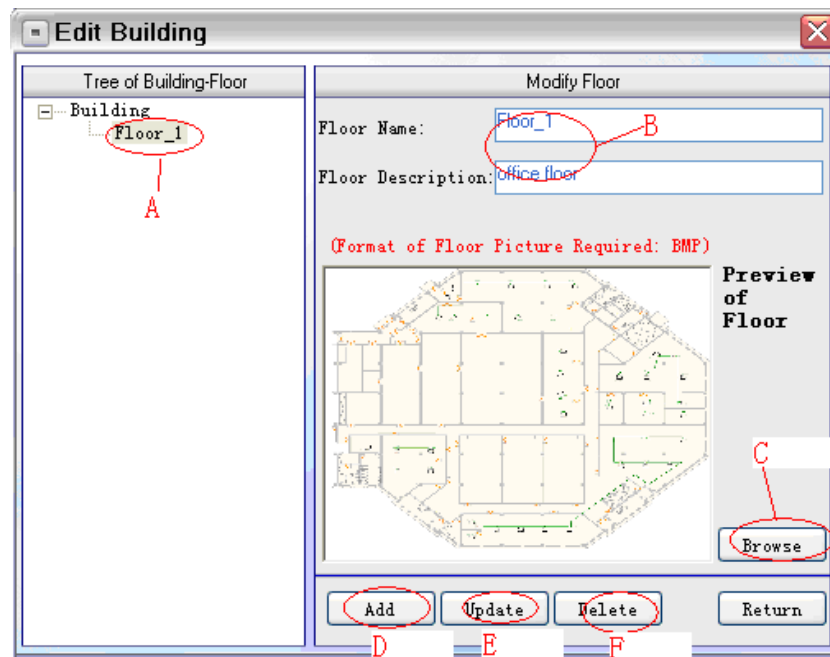


Figure 3-8

- A. Tree-like list of the floors.
- B. Parameters of the selected floor, including its name and description.
- C. Click **Browse** to set the folder for saving the floor plan images.
- D. To add a floor, click **Add** to add a new floor node in A, click the node, set its parameters in B and C, and then click **Update**.
- E. To modify a floor, click the floor node in A, and then modify its parameters in B and C, and then click **Update**.
- F. To delete a floor, click the floor node in A, and then click **Delete**.

3.9 Floor Air Conditioner Editing: Click Basic Data->Floor Air Conditioner Editing.

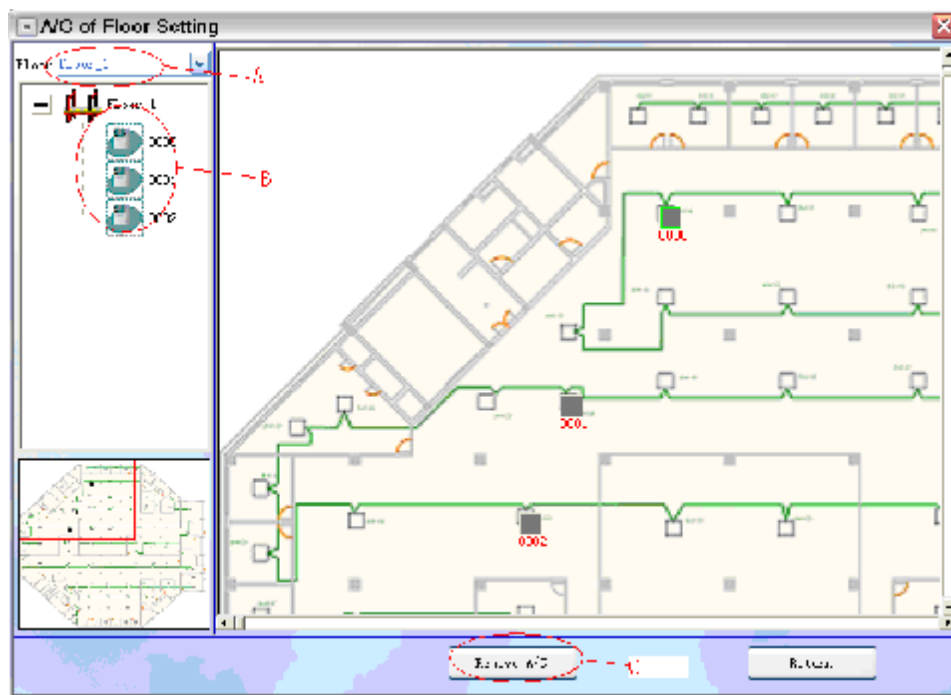


Figure 3-9

- A. List of all the floors. After a floor is selected, all the indoor units installed on the floor are displayed in B, and the plan image of the floor is displayed in the right pane.
- B. Tree-like list of all the indoor units installed on the floor. Click to select an indoor unit, move it to the appropriate position on the plan image in the right pane. Then the indoor unit is moved to the selected position.
- C. To remove an indoor unit, click it on the plan image in the right pane, and then click **Remove Unit**.

IV. System Operations

4.1 Main Interface

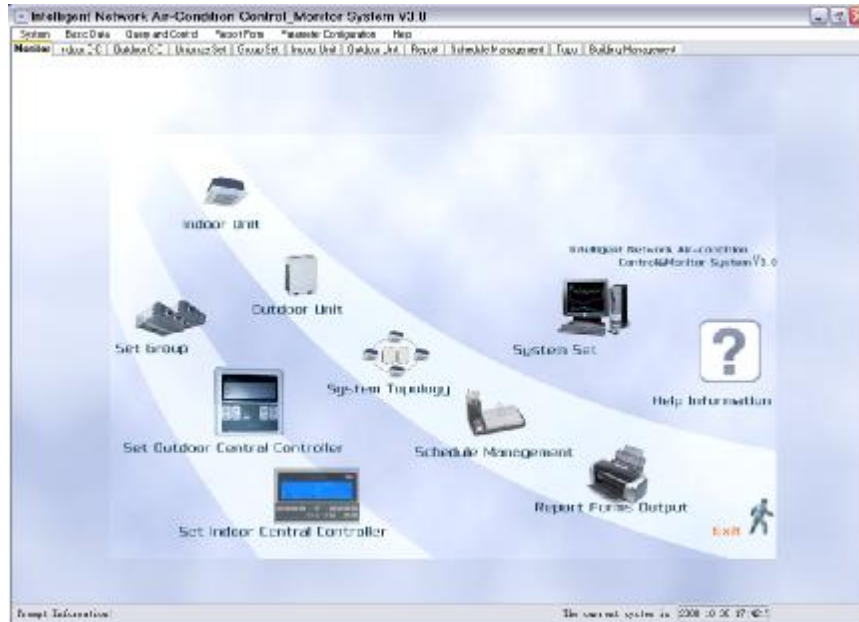


Figure 4-1

1. Each icon on the main interface represents one operation interface in the system.
2. To change Midea logo, simply replace LargeLogo.BMP and SmallLogo.BMP in C:\program files\NetACControlFBD\image.
3. Click any icon on the main interface to enter the specific operation interface.

4.2 Interface of Indoor Central Controller

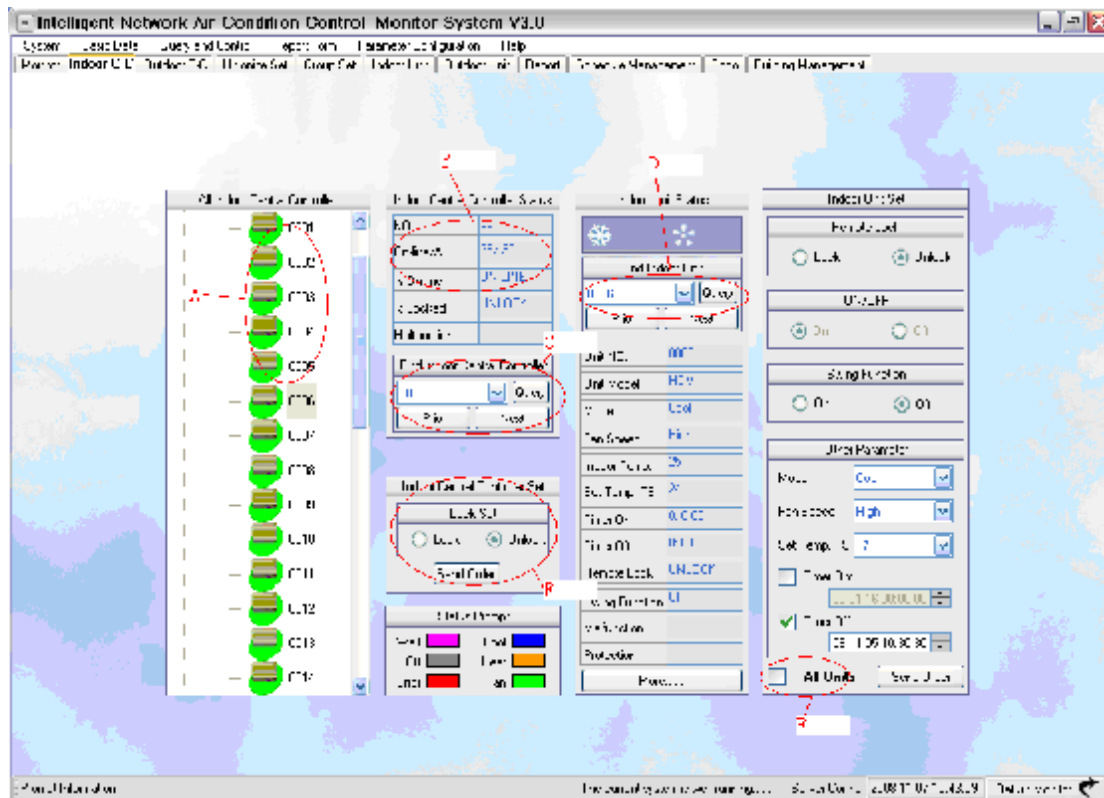


Figure 4-2

On the above interface, the system displays the relationship between indoor units and controllers in the form of a tree (as shown in a). Click a controller icon to display all the indoor units under it. Light green indicates that the indoor unit is online and running normally; grey indicates that the indoor unit is offline; sandy beige indicates that the indoor unit is online but faulty.

The controller status area (as shown in b) displays the number of the controller and the number of the indoor units under the controller.

c is used to select a controller; it works with d. The indoor unit names in d are the names of the indoor units under the controller selected in c.

d is used to select an indoor unit. It works with c.

e is used to set the selected controller. Specifically, it can be used to lock or unlock the controller. After the locking command is set, the controller is locked, the locking icon is displayed, and the indoor units under the controller cannot be operated. After the unlocking command is sent to the locked controller, the locking icon disappears, and the indoor units under the controller can be operated.

Indoor unit setting area is used to set items such as remote control, on/off and swing, mode, fan speed, temperature, and timer.

If the **All indoor units** check box is not selected in f, the settings apply to the indoor unit selected in d.

If this check box is selected, the settings apply to all the indoor units selected under the controller selected in c.

Remote control setting: It is used to lock or unlock the remote control. By default, the remote control is unlocked. If the locking command is sent, the selected indoor unit will not receive signal from the remote control, but the settings made through the upper computer still apply. If the unlocking command is sent to the locked command, the indoor unit can receive signal from the remote control.

On/off setting: It is used to start or shut down the indoor unit. If On Timer or Off Timer is selected, this option is unavailable.

Mode setting: It is used to set the operating mode of the indoor unit. The operating mode options are: Cooling, Heating, Auto, Dehumidification, and Air supply. The fan speed options are: High air flow, Low air flow, and Auto.

Temperature setting: The temperature ranges 17~30.

On Timer/Off Timer: If the **On Timer** or **Off Timer** check box is not selected, the specific time for automatic startup or shutdown is unavailable. If either timer is selected, after you click **Send Command**, all the settings will not be immediately sent to the indoor unit; they will be saved into the database according to On Timer or Off Timer. If only On Timer is selected, all the settings in the indoor unit setting area except the on/off setting will be saved, including the specific time for automatic startup of the indoor unit. When the specific time for automatic startup of the indoor unit arrives, all the settings including the startup information will be sent to the indoor unit. If Off Timer is selected, the specific time for automatic shutdown of the indoor unit is saved; when the time arrives, the shutdown command is sent to the sent to indoor unit.

4.3 Interface of Outdoor Central Controller

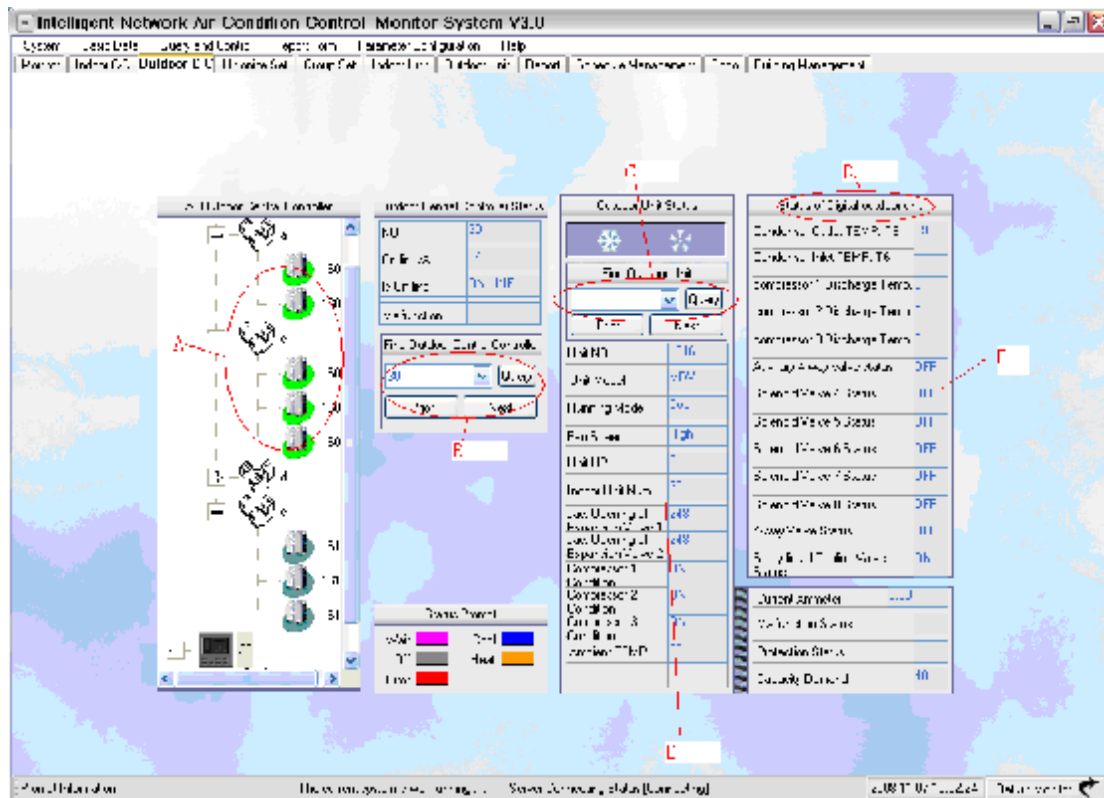


Figure 4-3

1. a displays the relationship between outdoor central controllers, unit groups and outdoor units in the form of a tree. A unit group includes the outdoor units in the same refrigerating system.
2. b is used to select an outdoor central controller. After an outdoor central controller is selected, the outdoor units displayed in C changes accordingly. Click **Query** to view information about the outdoor central controller. Click **Previous** or **Next** to view information about the previous or next outdoor central controller.
3. c is used to select an outdoor unit under the selected outdoor central controller.
4. d is used to display the type of an outdoor unit: digital unit, inverter, and water unit. If information about the selected outdoor unit is displayed, inverter is displayed by default.
5. e is used to display information about all the indoor unit types.
6. Outdoor central controller and outdoor units can be queried but cannot be controlled here.

4.4 Unified Setting

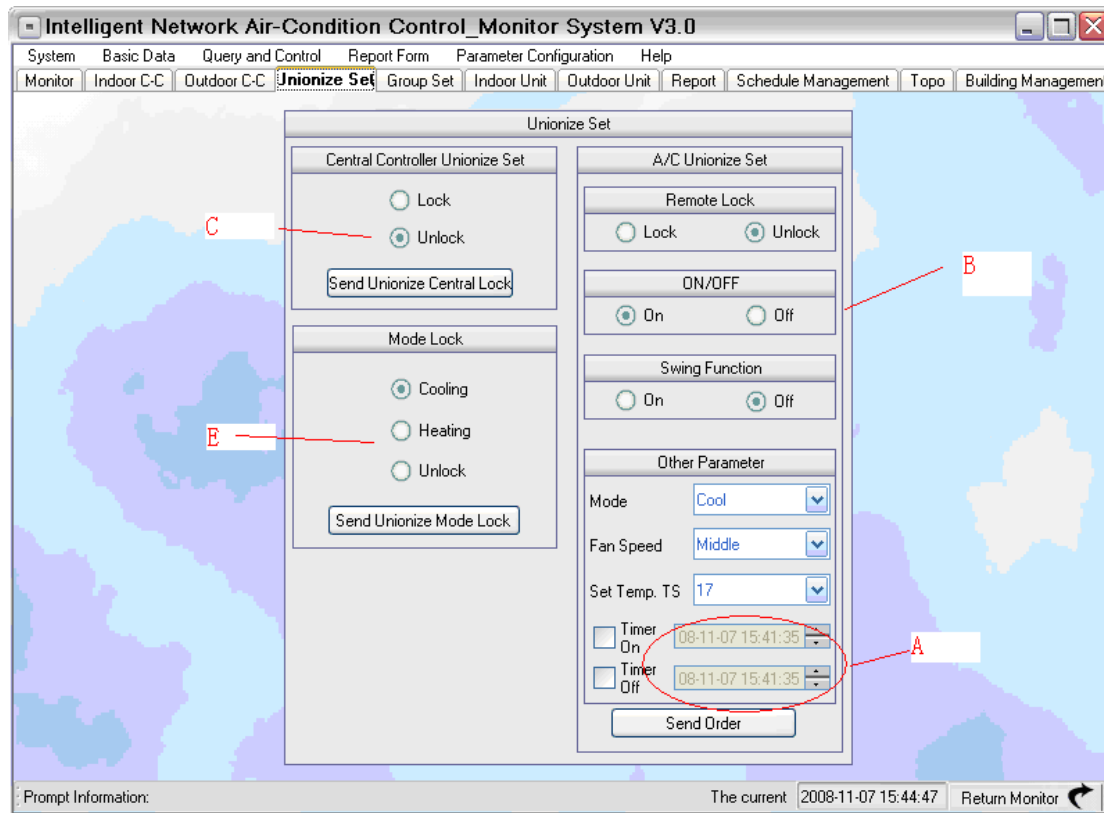


Figure 4-4

1. Unified setting: It is used to set all the indoor units in the system, including mode setting, locking/locking, and mode locking/unlocking.
2. a is used to set the indoor units.
 The remote control setting area is used to send locking command to all the indoor units so that they cannot receive signal from the remote control; by default, the remote control is unlocked.
 The on/off setting is used to send startup or shutdown command. When the shutdown command is sent, the settings of swing function, mode, fan speed and temperature are unavailable; when the startup command is sent, these settings are available.
 The swing options are: on and off. Off is selected.
 The operating mode options are: Cooling, Heating, Auto, Dehumidification, and Air supply.
 The fan speed options are: High air flow, Low air flow, and Auto.
 Temperature setting: The temperature ranges 17~30.
 After you click **Send Command**, the setting command is sent to all the indoor units in the system.
3. b is used to set On Timer and Off Timer. If On Timer or Off Timer is selected, the on/off setting is unavailable. If On Timer is selected, after you click **Send Command**, all the settings and startup information are saved into the database. If Off Timer is selected, after you click **Send**

Command, the shutdown information is saved into the database. Before the set time arrives, the timer information will be displayed in the information area when you query any indoor unit in the system. When the set time arrives, the settings will be sent to all the indoor units, and the timer information is displayed as deleted when you query any indoor unit in the system.

4. c is used to lock or unlock the indoor central controllers. If **Lock** is selected, all the indoor central controllers will be locked and cannot be operated through mouse. To unlock the indoor central controllers, click **Unlock**, and then click **Send Unified Controller Lock Command**. After the command is sent successfully, all the indoor central controllers are unlocked.
5. e is used to lock a mode. When the whole system needs to run in a specific mode, select cooling or heating mode, click **Lock**, and then click **Send Unified Mode Lock Command**. After the command is sent successfully, the operating mode of the indoor units cannot be changed by a remote controller or a controller, but you can still lock the indoor units or change their operating mode through the upper computer. To unlock the mode of all the indoor units, click **Unlock**, and then click **Send Unified Mode Lock Command**. If the command is sent successfully, the mode of all the indoor units can be changed.

4.5 Group Setting

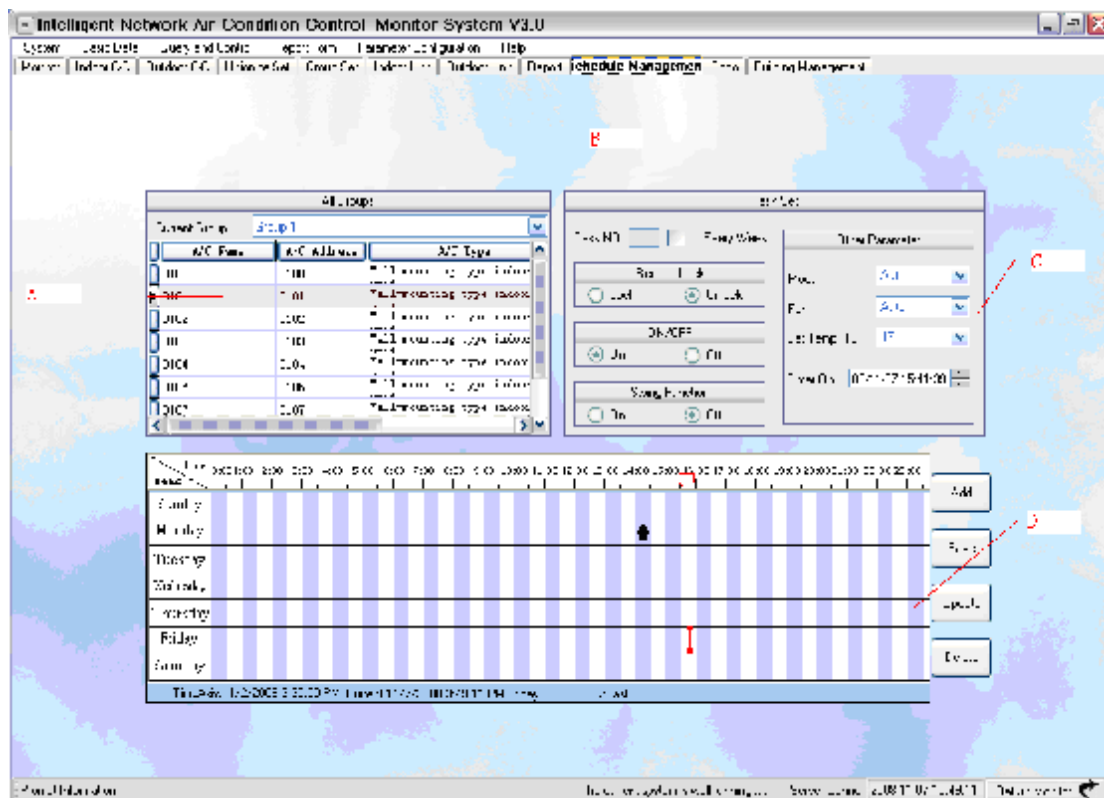


Figure 4-5

1. a displays the relationship between indoor units and outdoor central controllers in the form of a tree. To add an indoor unit to the group selected in b, find the indoor unit on the tree, and then click double-click it. If the indoor unit is already added to the current group, a dialog box prompts accordingly. If the indoor unit is already added to a different group, a dialog box prompts accordingly and asks whether you want to move it to the current group. If you select **Yes**, the indoor unit is added to the current group.
2. b includes the group name drop-down list, the group number drop-down list, and the indoor units under the selected group. If a group is selected, all the indoor units under the group are listed. To delete an indoor unit from the group, select the indoor unit and then double-click it.
3. c is used to set the group, including items such as remote control, on/off and swing, mode, fan speed, temperature, and timer. Refer to such settings for the indoor units. After the settings are completed, click **Send Command** to send the settings to all the indoor units in the group.
4. After a group is selected in b, the schedule management information related to the group is also displayed in the schedule management area. The schedule management information includes multiple tasks. Each task is startup task; that is to say, the unit starts at the beginning of the task and shuts down at the end of the task. Each task is indicated by an arrow. To view details about a task, select the arrow of the task (the arrow becomes red after being selected), and then double-click it. Then the schedule management setting interface appears, showing the detailed settings of the task.

4.6 Interface of Indoor Unit

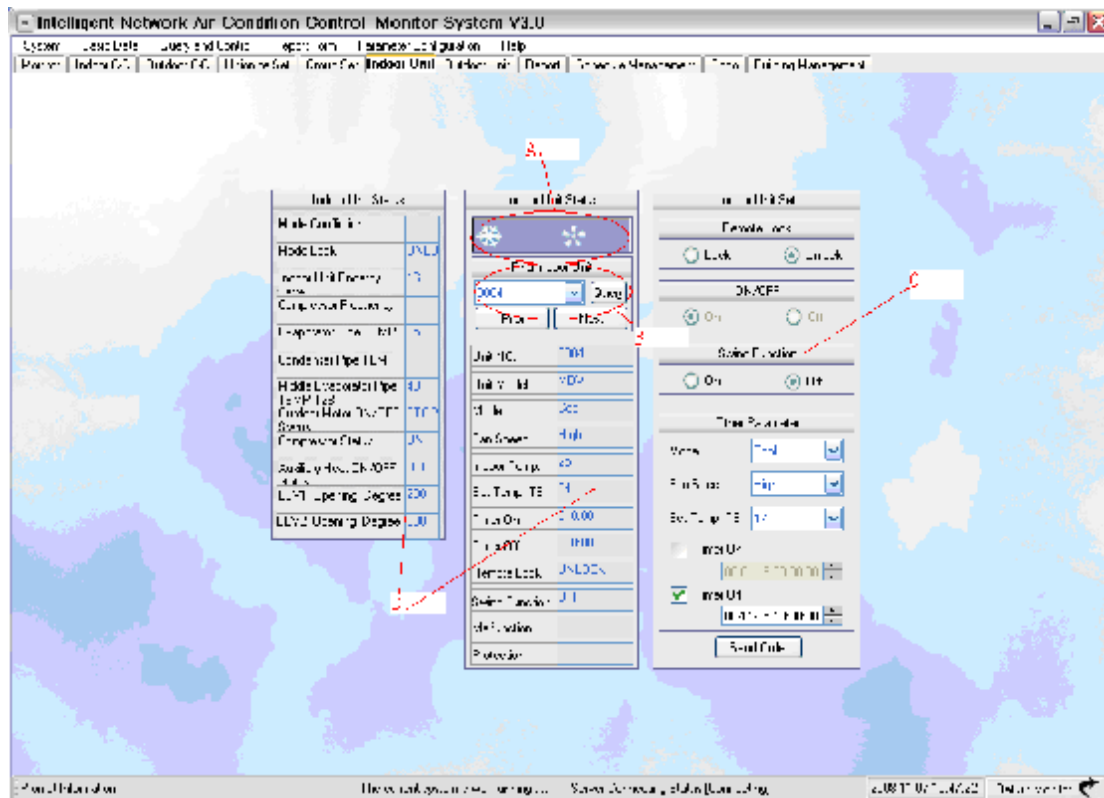









Figure 4-6

1. a displays the status of the selected indoor unit. After you click **Query**, the status of the current indoor unit is displayed in a. In this display area, operating mode icon, timer icon, fan speed icon and lock icon are available. Among the operating mode icons,  indicates cooling, and  indicates heating.  indicates that a timer is set.  indicates that high air flow of the fan, and  indicates the low air flow.  indicates that the remote control or mode is locked.
2. b is used to select an indoor unit. Click  beside the indoor unit drop-down list to view the tree consisting of indoor units and controller, as shown in Figure 4-7. Select an indoor unit, and then click **OK**. Then the name of the indoor unit appears in the drop-down list. Click **Query** to display information about the indoor unit in d.

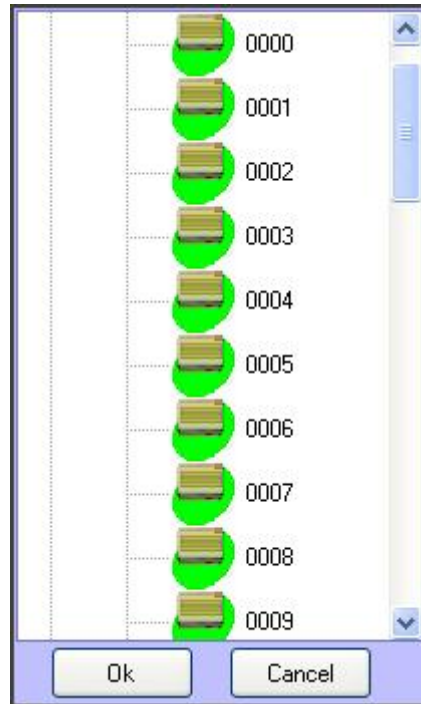


Figure 4-7

3. c is used to set the indoor unit. The setting is similar to the indoor unit setting on the indoor central controller interface, except that the setting is for the indoor unit selected in b, and no check box is available for selecting all the indoor units.
4. d displays the operating status of the indoor unit. If an item is not available to the indoor unit, the corresponding box is blank. If no timing information is available, "0: 0: 00" is displayed; if timing information is available, it is displayed in a format like "2006-06-20 14". When the timed task is completed, the non-timing state is restored. In case of mode collision, the word "collision" will be appended to the displayed mode and displayed in the field with mode collision. The information displayed is updated and synchronized with the information in the database.

4.7 Interface of Outdoor Unit

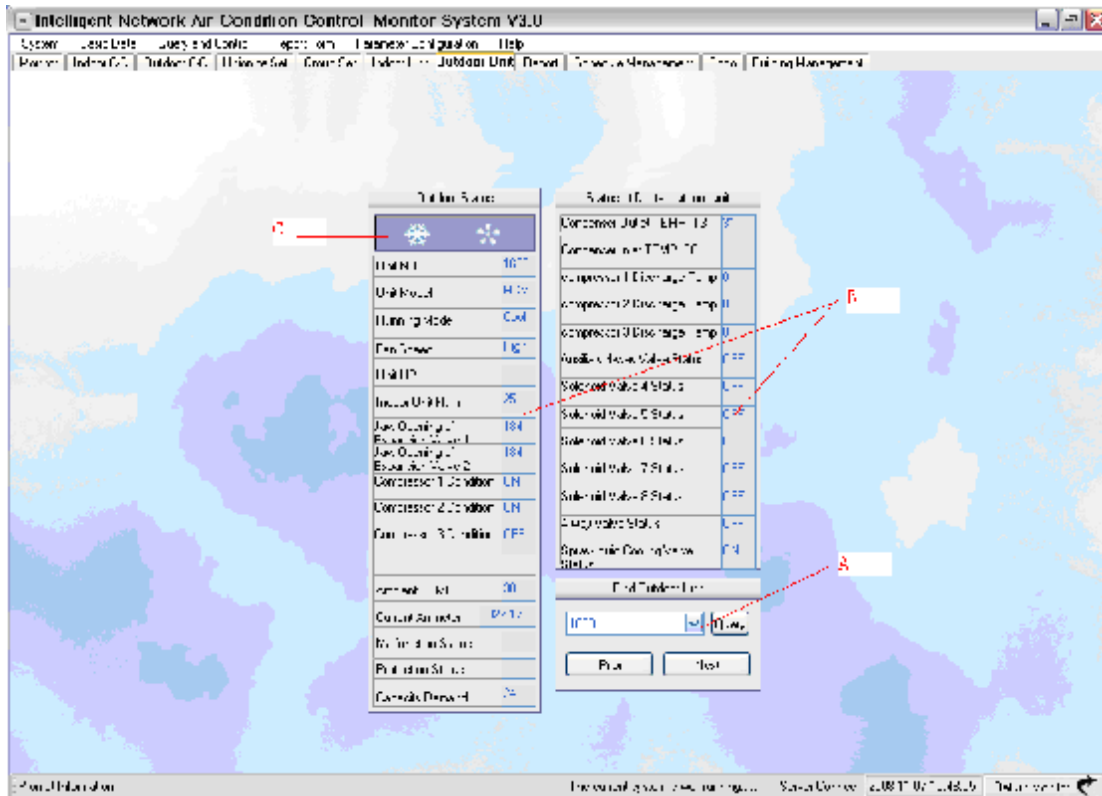



Figure 4-8

1. Only query function is available to the outdoor unit, so the interface of outdoor unit only consists of an outdoor unit selection area, outdoor unit status display area, and indoor unit status identifier. The information displayed in the outdoor unit status display area is updated and synchronized with the information in the database. When you click **Query**, the latest status will be displayed.
2. a is used to select an outdoor unit. Click  beside the outdoor unit drop-down list to view the tree consisting of outdoor central controllers, outdoor unit groups and outdoor units, as shown in Figure 2-9. Select an outdoor unit, and then click **OK**. Then the name of the outdoor unit appears in the drop-down list.

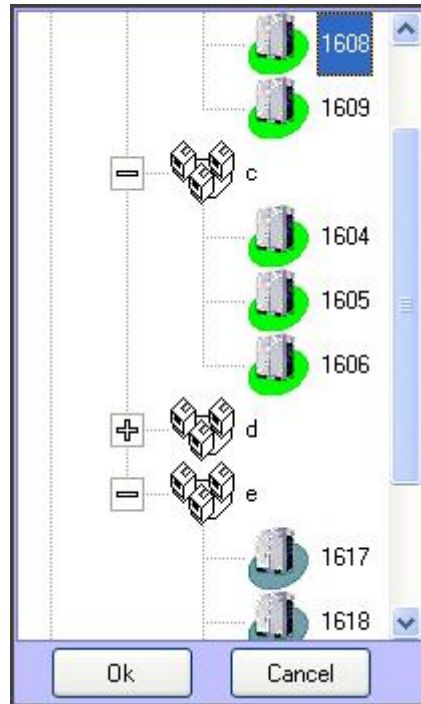






Figure 4-9

3. b displays the status of the outdoor unit. If an item is not available to the outdoor unit, the corresponding box is blank. The information displayed is updated and synchronized with the information in the database.
4. c displays the status identifier of the outdoor unit. It identifies the operating mode and fan status of the outdoor unit. Among the operating mode icons,  indicates cooling, and  indicates heating.  indicates the high air flow of the outdoor fan, and  indicates the low air flow.

4.9 Topology of Refrigerating Systems

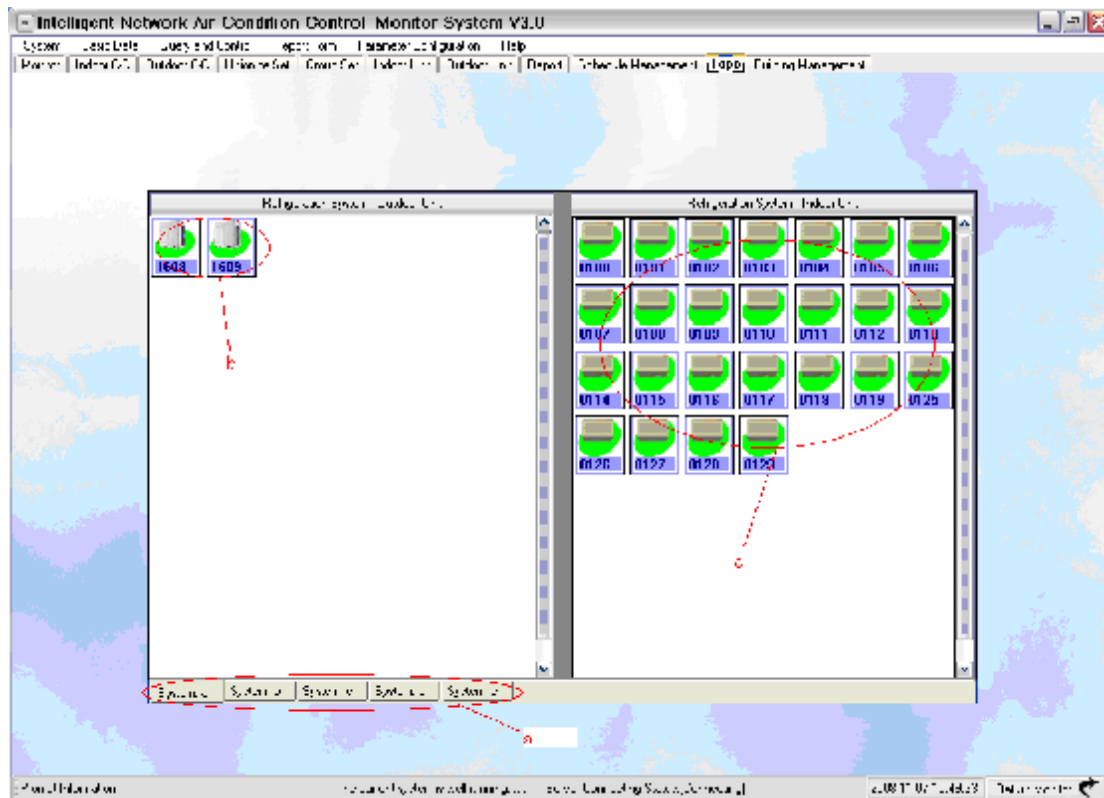


Figure 4-11

1. The topology of the refrigerating systems links the indoor units and outdoor units in the same refrigerating system in order to visually display the layout of the systems.
2. a lists all the refrigerating systems, which are named as outdoor unit groups.
3. Click any refrigerating system in a. Then b and c respectively display all the indoor units and outdoor units in the refrigerating system through icons.

4.10 Floor Management

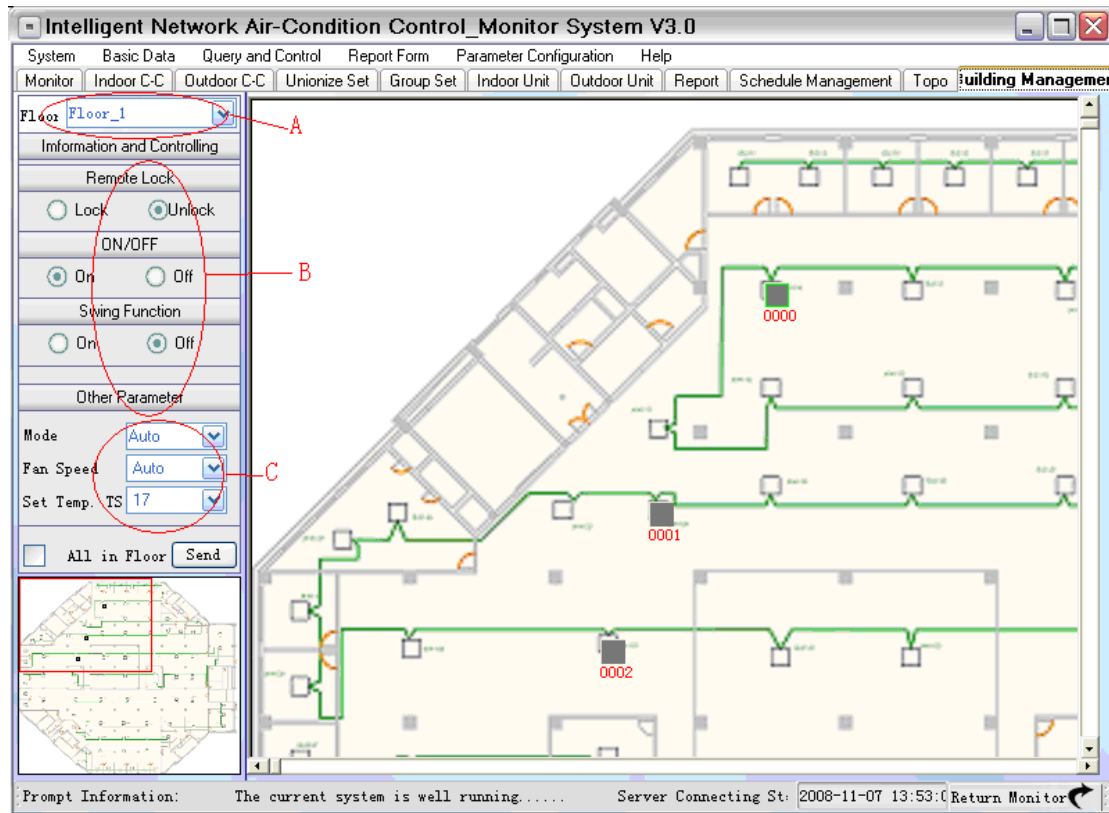


Figure 4-12

- A. List of all the floors. The drop-down list includes all the set floors. After you select a floor from the drop-down list, the plan of the floor is displayed in the right part.
- B. It is used to set an indoor unit. Select an indoor unit in the plan in the right part, and then set parameters such as remote control lock and operating mode in B.
- C. After setting the parameters in B, click **Send** to complete the setting. To apply the settings to all the indoor units, select the **All indoor units on the floor** check box.

4.11 Command Sending Prompt Box

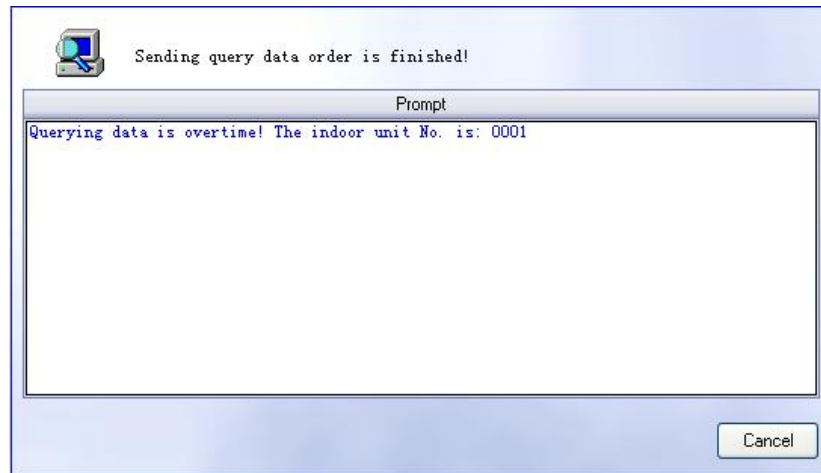


Figure 4-13

1. In the system, commands can be sent manually or according to the timer setting or defined group tasks. If all the manual commands are sent successfully, the sending box will close automatically; if any of manual commands fails to be sent, you need to close the sending box manually. If the automatic commands triggered by the system are sent successfully, the sending box will close automatically.
2. The type of the sent command will be displayed in the sending box, whether the sending succeeds or not.

V. Electricity Expense Distribution and Reports

5.1 Principles of Electricity Expense Distribution

1. The system amortizes the expense of electricity consumption, including the electricity consumption of outdoor units, indoor unit fans, and electric heaters.
2. All the indoor units in the refrigerating system participate in the amortization of the electricity consumption of the outdoor units in the refrigerating system. The outdoor units in a different system do not participate in such amortization.
3. The electricity consumed by an indoor unit within a certain period includes two portions: basic electricity consumption and amortized electricity consumption.
 - a. The basic electricity consumption includes the electricity consumed by the indoor unit for cooling, heating or air supply.
 - b. The amortized electricity consumption includes the electricity consumed by the outdoor units when the system is in standby state and the electricity consumed by the outdoor units when the refrigerating system is running normally but the billing system is faulty (the administrator can log into the system to select whether to count this portion).
 - c. Calculation of basic electricity consumption:

$$F_a = F_A \cdot e$$

Where F_A indicates the total electricity consumed by the refrigerating system during a certain period, and e indicates the factor of proportionality based on the size of indoor units.

- d. Calculation of amortized electricity consumption

$$F_a = F_A \cdot e$$

Where F_A indicates the total electricity amortized by the refrigerating system during a certain period, and e indicates the factor of proportionality based on the size of indoor units.

4. Electricity expense distribution methods of a refrigerating system in different scenarios:
 - a. When all the indoor units in the system are in standby state (cooling, heating and air supply functions are not used), each indoor unit amortizes the electricity consumed by outdoor units according to its proportion of size. Such electricity consumption is amortized consumption.
 - b. When the system is running in cooling mode (basic electricity consumption)

Cooling indoor unit: Its electricity consumption includes the amortized electricity consumption of outdoor units and the electricity consumed by the indoor unit fan and the electric heater.

Air supply indoor unit: Its electricity consumption includes the electricity consumed by the indoor unit fan only.

Standby indoor unit: No electricity consumption is calculated.

- c. When the system is running in heating mode and no indoor unit is in collision (basic electricity consumption):

Heating indoor unit: Its electricity consumption includes the amortized electricity consumption of outdoor units and the electricity consumed by the indoor unit fan and the electric heater.

Standby indoor unit: No electricity consumption is calculated.

- d. When the system is running and an indoor unit is in collision (basic electricity consumption):

Heating indoor unit: Its electricity consumption includes the amortized electricity consumption of outdoor units and the electricity consumed by the indoor unit fan and the electric heater.

Cooling indoor unit (collision): Its electricity consumption includes the electricity consumed by the indoor unit fan only.

Air supply indoor unit (collision): Its electricity consumption includes the electricity consumed by the indoor unit fan only.

Standby indoor unit: No electricity consumption is calculated.

5.2 Reports

5.2.1 Air-conditioning Electricity Expense Statistics

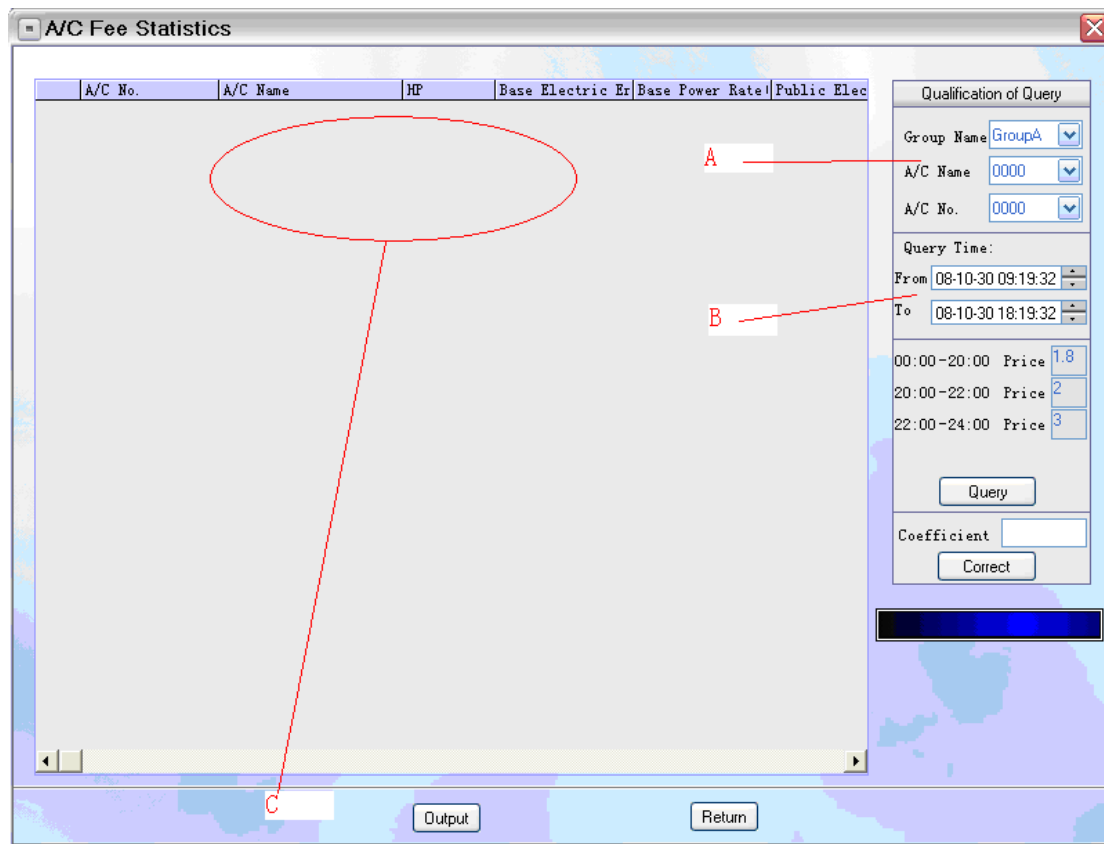


Figure 5-1

- The statistics of electricity expense is conducted by group. You can print the electricity expense of one or all indoor units in the group.
- You can query and print the electricity expense incurred during any period.
- The electricity expense includes basic electricity expense and amortized electricity expense. The electricity expense incurred by each indoor unit during the specified period is indicated by the total electricity expense in the report.

5.2.2 Air-conditioning Electricity Expense Details

A/C electric-charge List

A/C No.	A/C Name	On/Off	Run Mode	Fan Speed	Auxiliary Power
---------	----------	--------	----------	-----------	-----------------

Qualification of Query

Group Name: GroupA

A/C Name: ALL

A/C No.: ALL

Query Time:

From: 08-10-30 10:20:37

To: 08-10-30 18:20:37

00:00-20:00 Price 1.8

20:00-22:00 Price 2

22:00-24:00 Price 3

Query

Coefficient

Correct

Output Return

Figure 5-2

1. Similar to a phone bill, the electricity expense details list shows the electricity expense of indoor units in detail. As with the electricity expense statistics, you can also print the electricity expense details of one or all indoor units in the group.
2. You can output the details about the electricity expense incurred during any period.
3. Only the basic expense is outputted, and no amortized expense is counted.

5.2.3 Operating Data of Indoor Unit

The screenshot shows a software window titled "Indoor Unit Running Data". It contains a table with the following headers: "running mode", "air speed", "Jaw opening of el", "Jaw opening of el", "T1", "T2A", and "T2B". The table is currently empty. To the right of the table is a "Qualification of Query" section with the following fields: "C-C Name" (00), "C-C No." (00), "A/C Name" (0000), and "A/C No." (0000). Below these are "Query Time" fields for "From" and "To", both set to "08-10-30 18:21:33". A "Query" button is located below the "To" field. At the bottom of the window are "Output" and "Return" buttons.

Figure 5-3

1. The operating data report of indoor unit shows the operating data of an indoor unit generated during a certain period.
2. The report only outputs the operating data generated by one indoor unit during a maximum of 7 days.
3. This report is used for data analysis in order to identify the cause of a fault.

5.2.4 Operating Data of Outdoor Unit

Outdoor Unit Running Data

Unit NO.	Outdoor Unit Name	running mode	running state of ou	current
----------	-------------------	--------------	---------------------	---------

Qualification of Query

C-C Name: 16
C-C No.: 16
A/C Name: 1600
A/C No.: 1600

Query Time:
From: 08-10-30 18:22:22
To: 08-10-30 18:22:22

Query

Output Return

Figure 5-4

1. As with the operating data report of indoor unit, the operating data report of outdoor unit shows the operating data of an outdoor unit generated during a certain period.
2. The report only outputs the operating data generated by one outdoor unit during a maximum of 7 days.
3. This report is used for data analysis in order to identify the cause of a fault.

5.2.5 Fault Report of Indoor Units

The screenshot shows a software window titled "Indoor Malfunction". It contains a table with the following headers: "outdoor unit", "outdoor unit name", "unit name", "running m", "air speed", "Jaw opening of el", and "Jaw o". The table is currently empty. To the right of the table is a "Qualification of Query" section with the following fields:

- C-C Name: 00
- C-C No.: 00
- A/C Name: 0001
- A/C No.: 0001
- Query Time: From 08-10-30 18:22:46 To 08-10-30 18:22:46

Below the "Query Time" fields is a "Query" button. At the bottom of the window are "Output" and "Return" buttons.

Figure 5-5

1. The fault report of indoor units shows the fault and protection information generated by all the indoor units during a certain period.
2. The report only outputs the fault and protection information generated by all the indoor units during a maximum of 7 days.
3. This report is used to query the fault and protection information generated by all the indoor units in the system during a certain period.

5.2.6 Fault Report of Outdoor Units

The screenshot shows a software window titled "Outdoor Malfunction". It contains a table with the following headers: "Outdoor Unit", "Outdoor Unit Name", "running #", "running state of ou", "current", "condense", and "condense". The table is currently empty. To the right of the table is a "Qualification of Query" section with the following fields:

- C-C Name: 16
- C-C No.: 16
- A/C Name: 1600
- A/C No.: 1600
- Query Time:
 - From: 08-10-30 07:23:29
 - To: 08-10-30 18:23:29

Below the "Query Time" fields is a "Query" button. At the bottom of the window are "Output" and "Return" buttons.

Figure 5-6

1. As with the fault report of indoor units, the fault report of outdoor units shows the fault and protection information generated by all the outdoor units during a certain period.
2. The report only outputs the fault and protection information generated by all the outdoor units during a maximum of 7 days.
3. This report is used to query the fault and protection information generated by all the outdoor units in the system during a certain period.








5.2.7 Printing/Outputting a Report as an Excel or Word File

Print Page

A/C Fee Statistics [From: 2008-11-01 11:24:11 To: 2008-11-04 11:24:11]

	A/C No.	A/C Name	HP	Base Electric Energy (degree)	Base Power Rate (RMB)	Public Electric Energy (degree)	Pub Re
1	0100	0100	5	20.280	36.505	0.000	
2	0102	0102	5	22.020	39.636	0.000	
3	0103	0103	5	22.020	39.636	0.000	
4	0104	0104	5	22.020	39.636	0.000	
5	0106	0106	5	22.020	39.636	0.000	
6	0107	0107	5	22.020	39.636	0.000	
7	0108	0108	5	22.020	39.636	0.000	
8	0109	0109	5	22.020	39.636	0.000	
9	0110	0110	5	20.218	36.392	0.000	
10	0111	0111	5	22.020	39.636	0.000	
11	0112	0112	5	22.020	39.636	0.000	
12	0113	0113	5	22.020	39.636	0.000	
13	0114	0114	5	22.020	39.636	0.000	
14	0115	0115	5	22.020	39.636	0.000	
15	0116	0116	5	22.020	39.636	0.000	
16	0117	0117	5	22.020	39.636	0.000	
17	0118	0118	5	22.020	39.636	0.000	

Figure 5-7

1. To print the report, directly click  to output it to the default printer.
2. To save the report as an Excel file, take turns to click  (**Select All**),  (**Paste**) and , and then save the file.
3. To save the report as a Word file, take turns to click  (**Select All**),  (**Paste**) and , and then save the file.