FS COM

Data Center & Cloud Computing

WDM Optical Access MonitorOnline User Manual

OTN Solutions for Metro, Regional & Long-haul

REV.1.1

2018

Content

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Chapter I MonitorOnline Installation Prerequisites

The data management of MonitorOnline software is based on SQL_SERVER database. Therefore, SQL_SERVER database needs to be installed in advance to achieve the monitoring and record of the entire system data .

Microsoft .NET Framework 4.5 and database (SQL server 2000 or SQL server 2005 or SQL server 2008 or SQL server 2008R2 or SQL server 2012 or SQL server 2016 or SQL server 2017) must be set up before installing MonitorOnline software. The current mainstream databases are SQL server 2008 and SQL server 2008R2.

SQL_SERVER Installation Environment

Operating System Requirements: according to the following table.
Computer Configuration Requirements: 4-core CPU, 4G RAM or more, 500G disk space.

Operating System Name	64Bit	32Bit	16Bit
WIN10	√	√	\
WIN8	√	√	
WIN7	√	√	
WINXP	√	√	
WIN2003	√	√	
WIN2000	√	√	
WIN98	\	\	×
WIN95	\	\	×

Note: √ stands for supporting this system;
\ represents there is no such system;
× indicates this system does not apply.

Once Microsoft .NET Framework 4.5 and SQL_SERVER are installed, you can be ready to set up MonitorOnline Management Software, and please notice the selection of language during installation.

1.1 Login SSMS

Step One : Open SQL Server Management Studio and login database by using windows authentication. Then right click "SQL Server", choose "Properties" (see Fig. 1. 1).

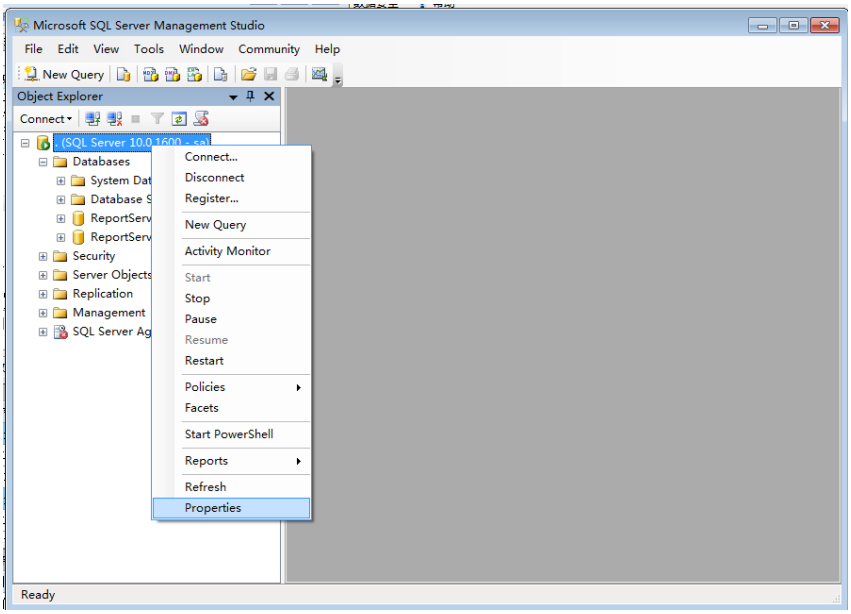


Fig.1.1 Microsoft SSMS

Step Two: After clicking "Properties", choose "Security" on the left, then choose "SQL Server and Windows Authentication mode" in Server authentication, choose "Failed logins only" in login auditing (see Fig. 1. 2).

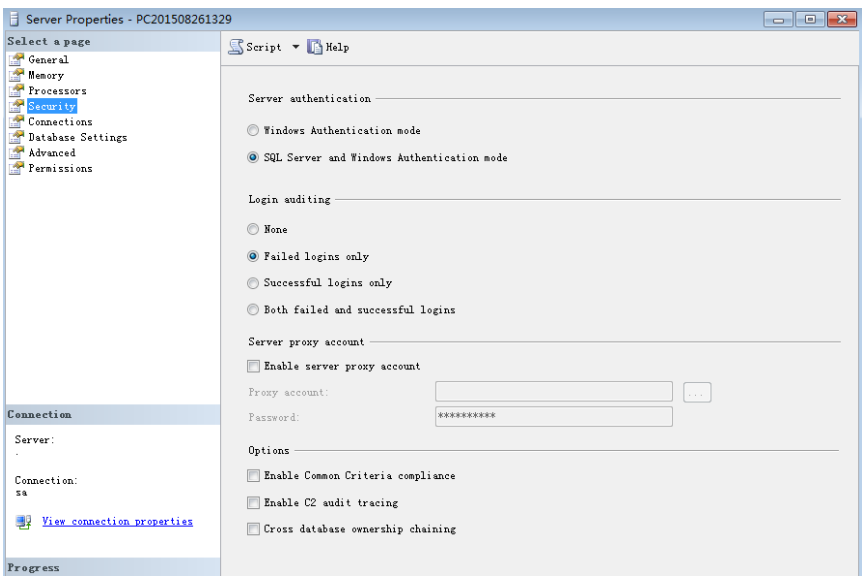


Fig.1.2 Server Properties

Step Three : MonitorOnline software functions through remote connection to database, so it is necessary to realize remote connection with database before running MonitorOnline software. The concrete steps are as follows: choose "Connections" on the left, check "Allow remote connections to this server", click "OK" button (see Fig. 1.3).

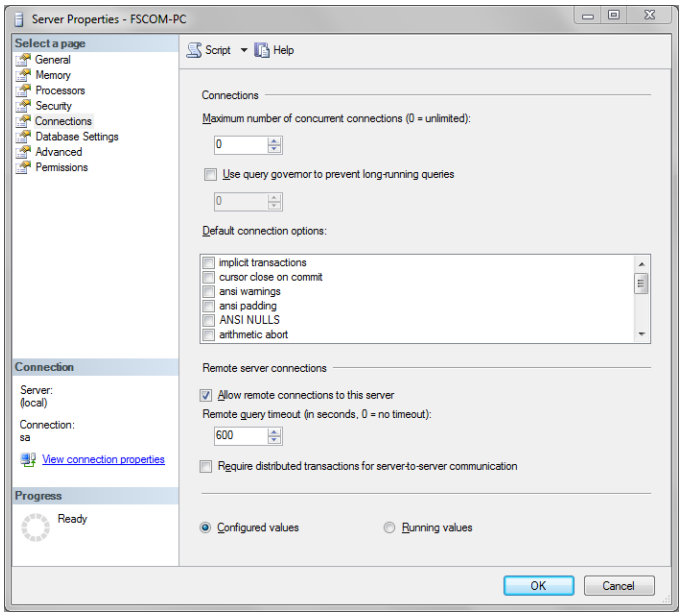


Fig.1.3 Server Properties

Step Four : Spread "Security" -> "Logins" -> "sa", then right click "sa" and choose "Properties" (see Fig. 1.4).

Note: The user name here can only be "sa", and can not be modified.

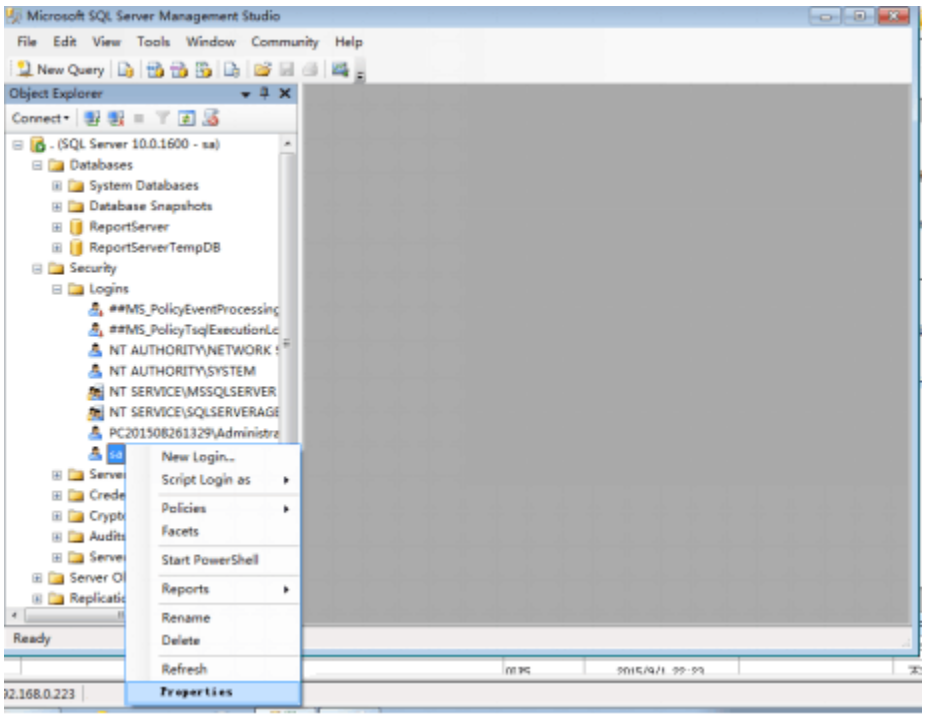


Fig.1.4 Microsoft SSMS

Step Five : Choose "General " on the left ; choose "SQL Server authentication" on the right and set password, click "OK" button (see Fig. 1. 5).

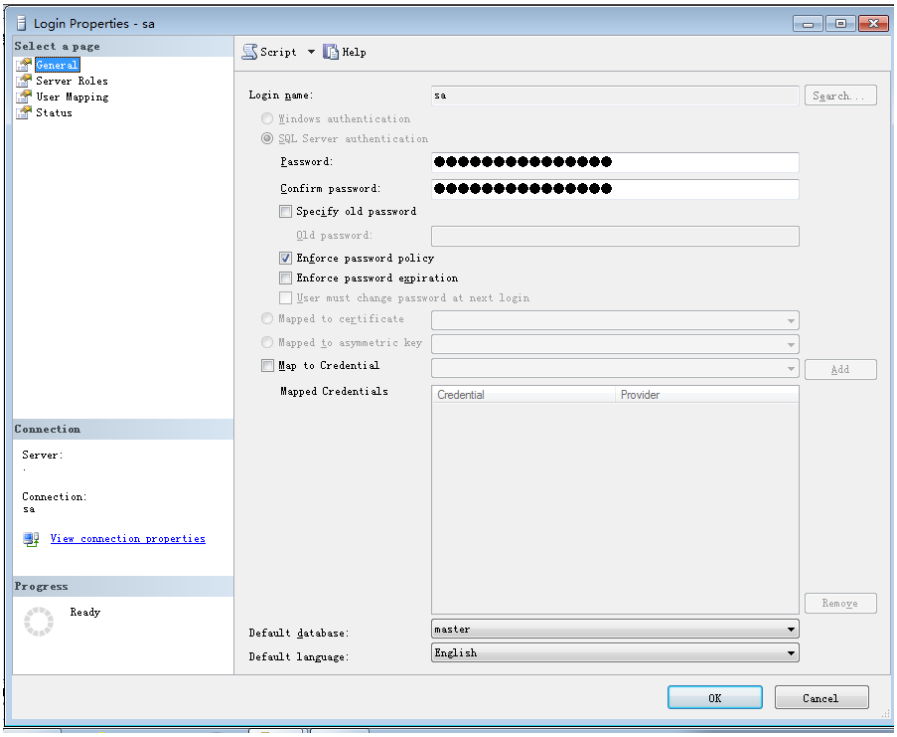


Fig.1.5 Login Properties

Step Six : Choose "Status" on the left, choose "Grant" and "Enabled" on the right and click "OK" button (see Fig. 1. 6).

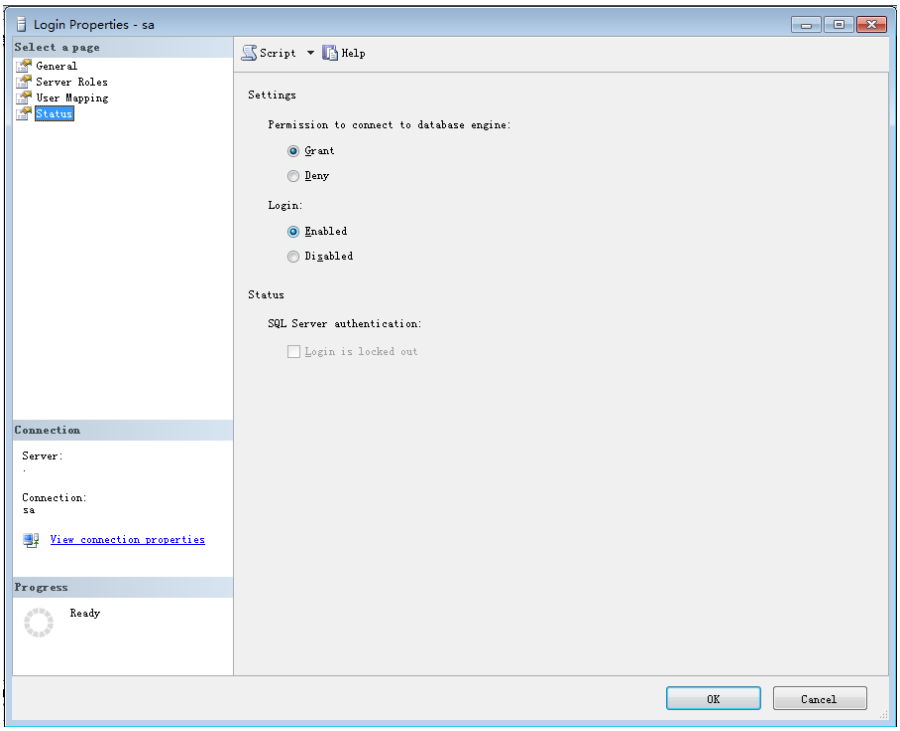


Fig.1.6 Login Properties

Step Seven : Back to SQL Server Management Studio login interface, right click SQL Server, choose "Facets" (see Fig. 1.7).

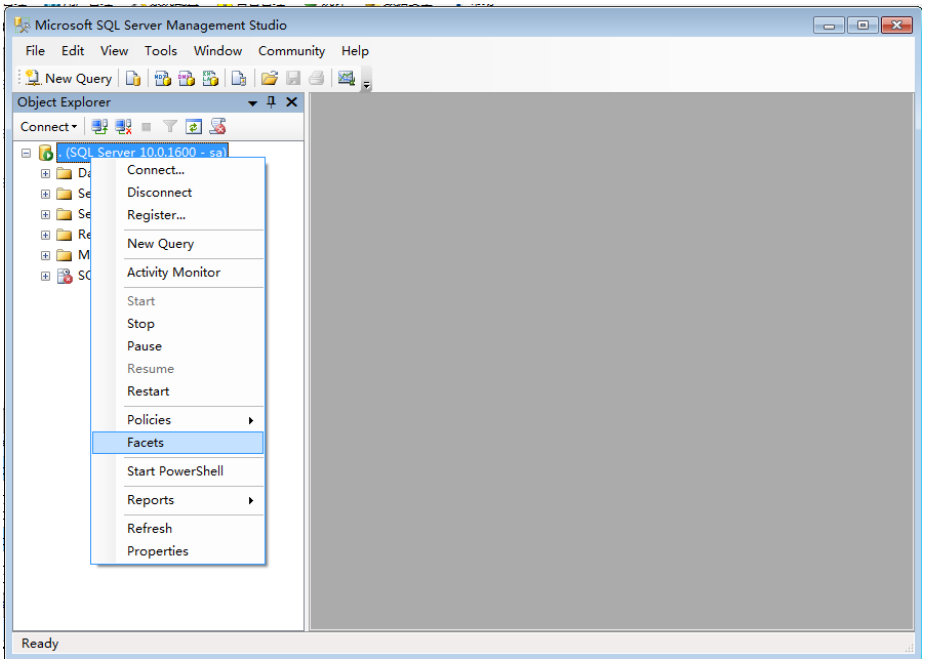


Fig.1.7 Microsoft SSMS

Step Eight : Choose "Server Configuration" from the drop-down box of facet and set the properties of "RemoteDacEnabled" as "true", then click "OK" button (see Fig. 1.8).

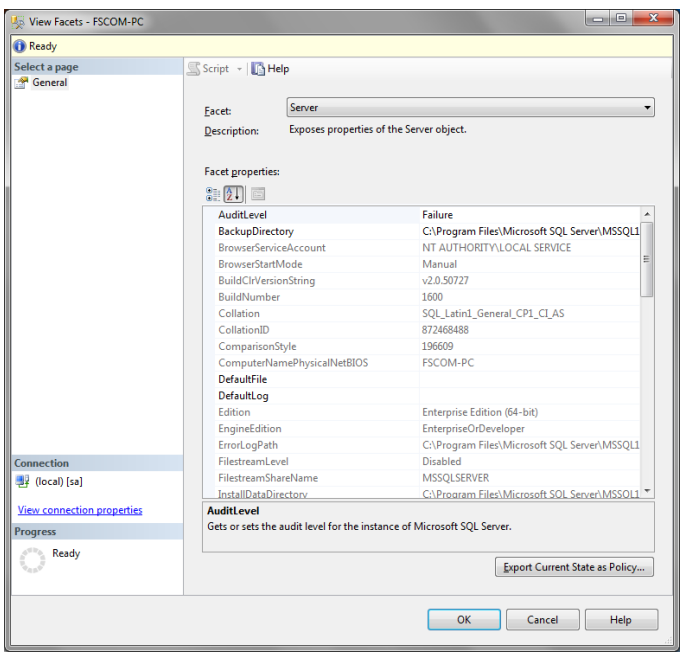


Fig.1.8 View Facets

Note: Up to this step, SSMS has been set up. Firstly exit, and then use sa to login. If successful, sa account is enabled. If unsuccessful, please check whether the network connection can be pinged. If it is confirmed that the network connection is normal, please confirm whether to follow the steps indicated above.

1.2 Deploy SSMS

Step Nine : Open SQL Server Configuration Manager (see Fig. 1. 9).

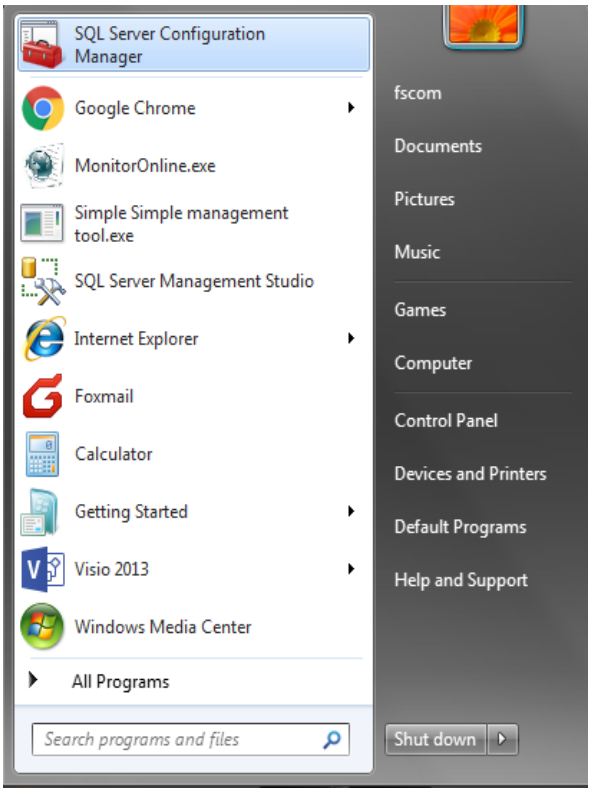


Fig.1.9 SQL Server Configuration Manager

Step Ten : Choose "SQL Server Services" on the left, please make sure the state of "SQL Server" and "SQL Server Browser" is running on the right (see Fig. 1. 10).

Note: It is usually necessary to reboot SQL Server after shutdown and restart, but SQL Server is still running after closing the Sql Server Configuration Manager program box.

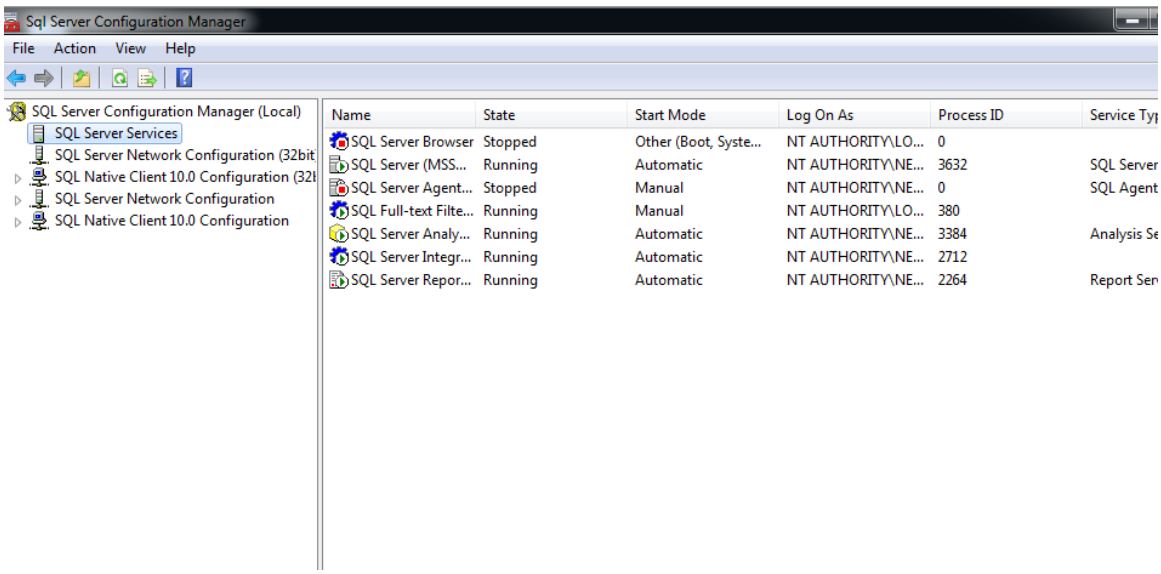


Fig.1.10 Sql Server Configuration Manager

Step Eleven : Choose "Protocols for MSSQLSERVER" under the node of SQL Server Network Configuration on the left. The default status of TCP/IP is Disabled (see Fig.1.11). Please set status of TCP/IP as "Enable" by right click(see Fig1.12) or opening TCP/IP Properties interface by double click, then modify "active" to " yes" , click "OK" button (see Fig.1.13).

Note: TCP/IP protocol is generally enabled, and can be tested by ping.

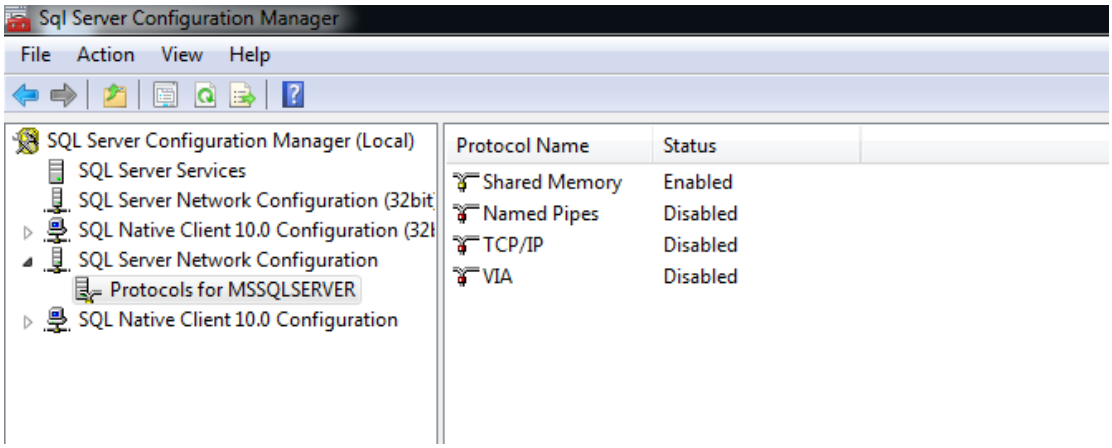


Fig.1.11 Sql Server Configuration Manager

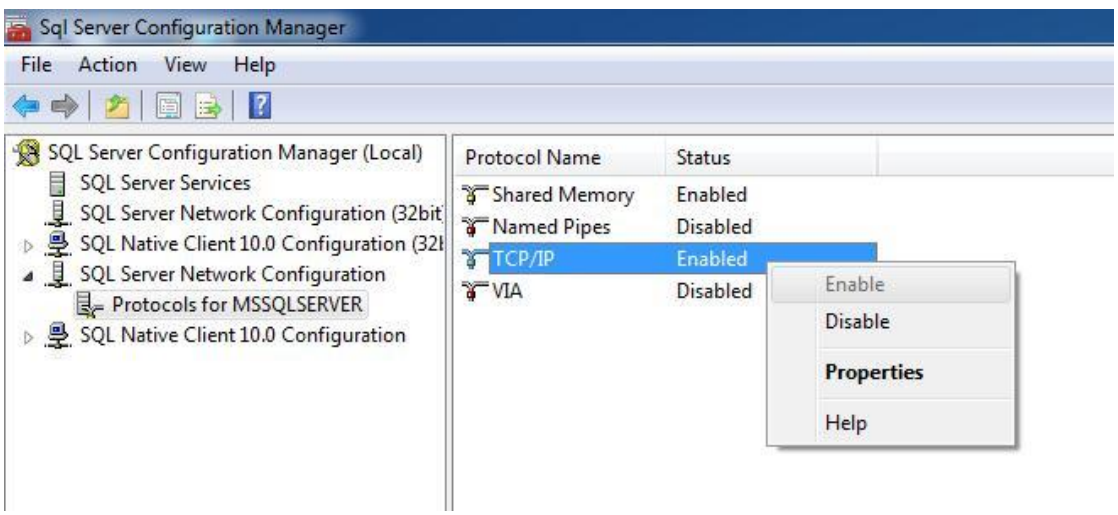


Fig.1.12 Sql Server Configuration Manager

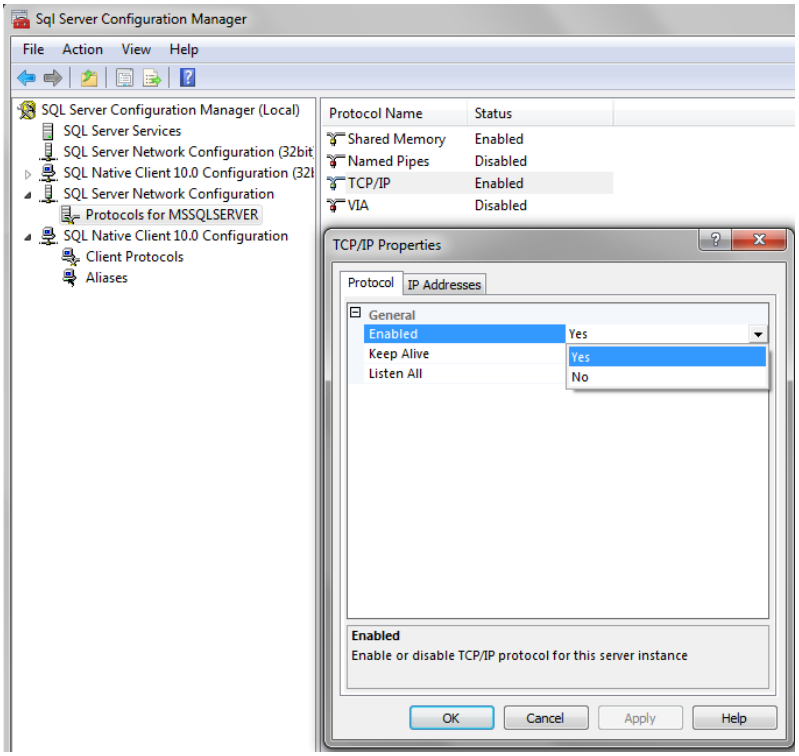


Fig.1.13 Sql Server Configuration Manager

Step Twelve : Right click “ TCP / IP ”, select “ IP Address ” under "Properties" or double click to open the settings panel and select the "IP Address" tab,then set port of TCP as “1433”, and click “OK” button. (see Fig.1.14).

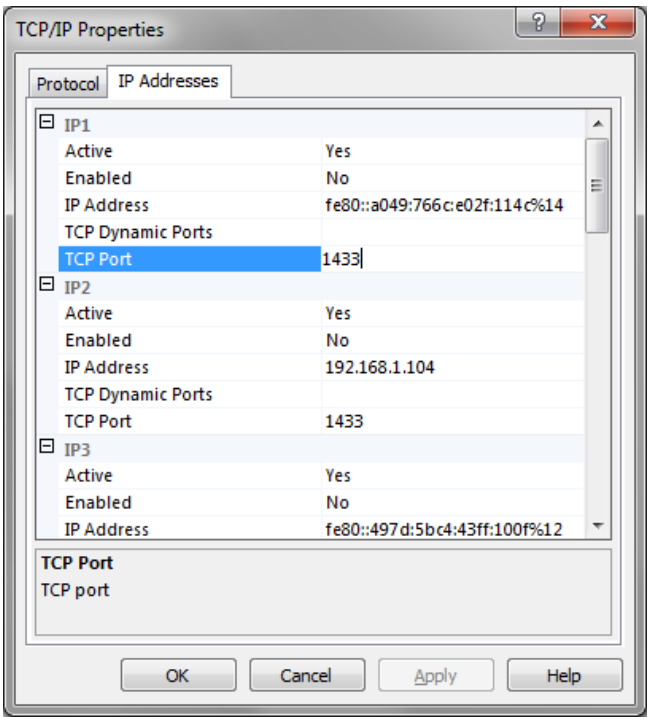


Fig.1.14 TCP/IP Properties

Step Thirteen : Set TCP/IP of Client Protocols as "Enable".

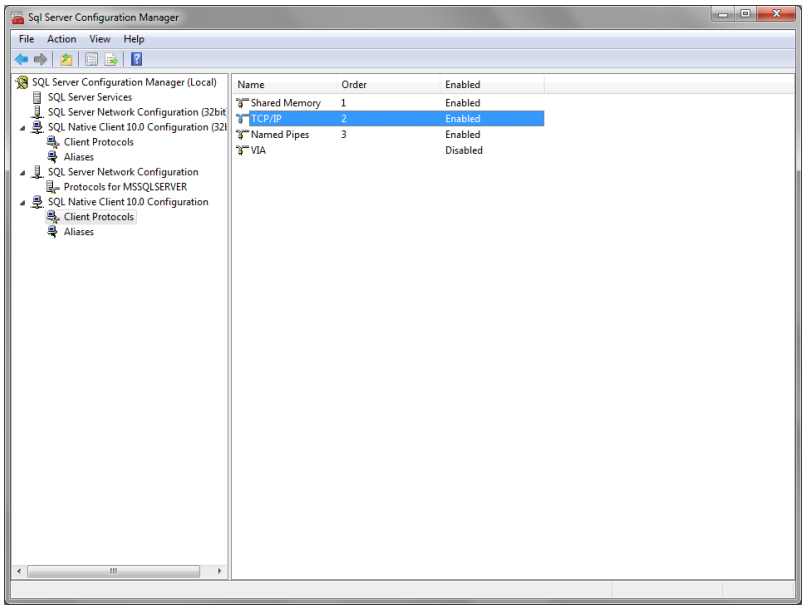


Fig.1.15 Sql Server Configuration Manager

Step Fourteen: Turn off the firewall or add SQL Serve.exe to the program list that allows the firewall to run. If you choose the latter, the concrete steps are as follows:

(1)Open control panel (see Fig.1.16)

(2)Click "View network status and tasks" (see Fig.1.17).

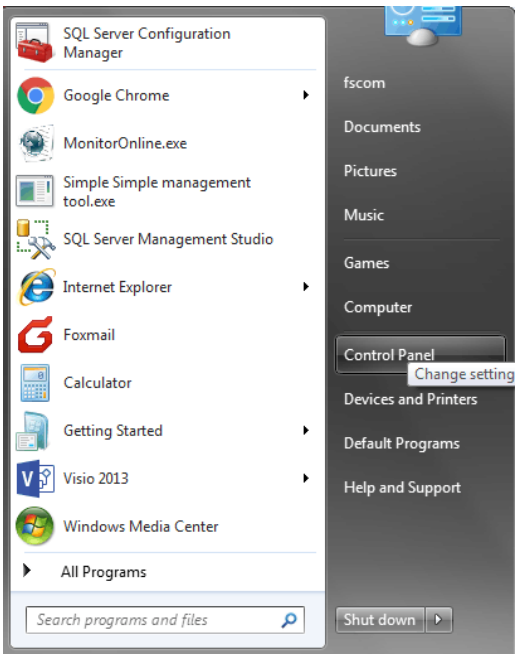


Fig.1.16 SQL Server Configuration Manager

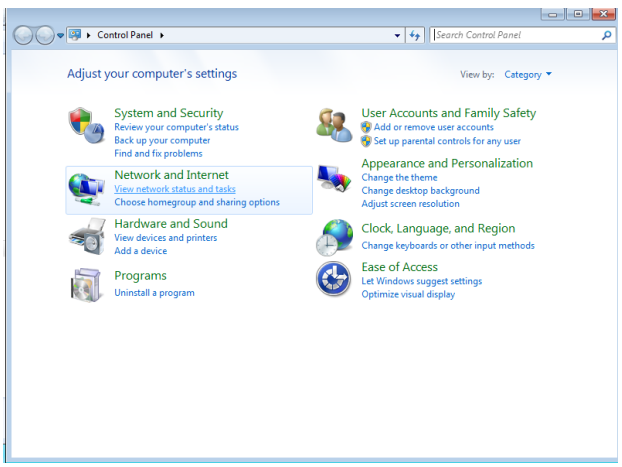


Fig.1.17 Control Panel

(3)Click "Windows Firewall" (see Fig.1.18).

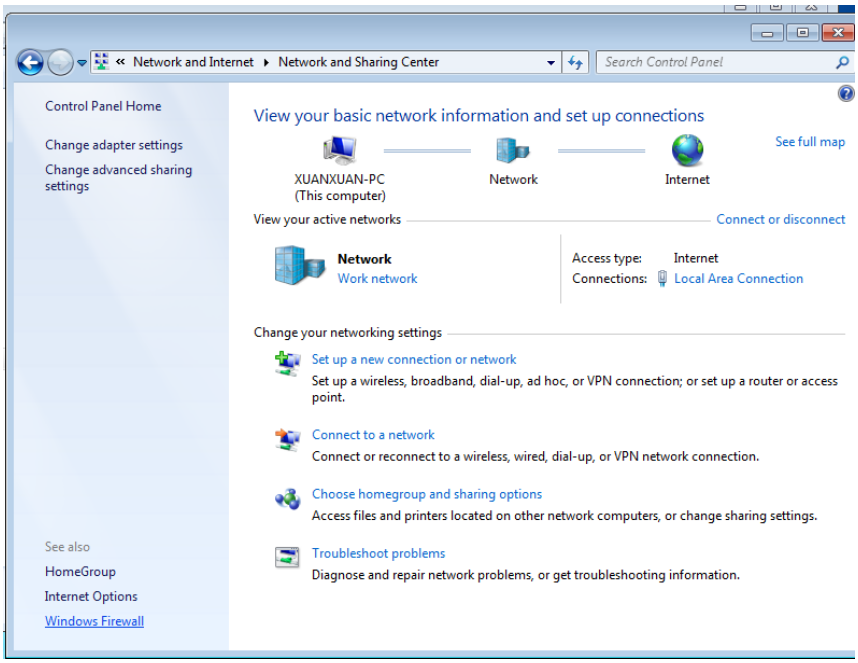


Fig.1.18 Network and Sharing Center

(4)Click "Allow a program of feature through Windows Firewall" (see Fig.1.19).

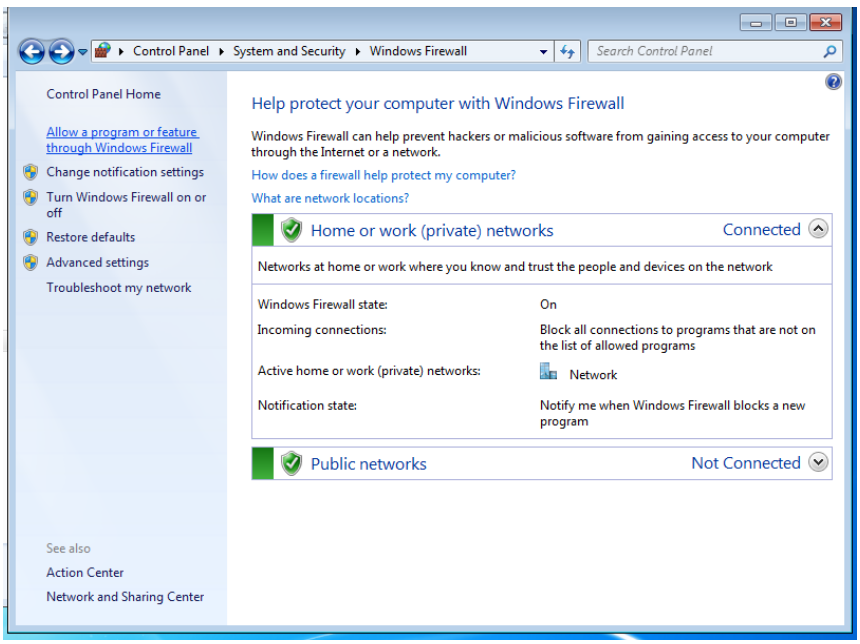


Fig.1.19 Windows Firewall

(5)Click "Changes settings" button and "Allow another program" button (see Fig.1.20).

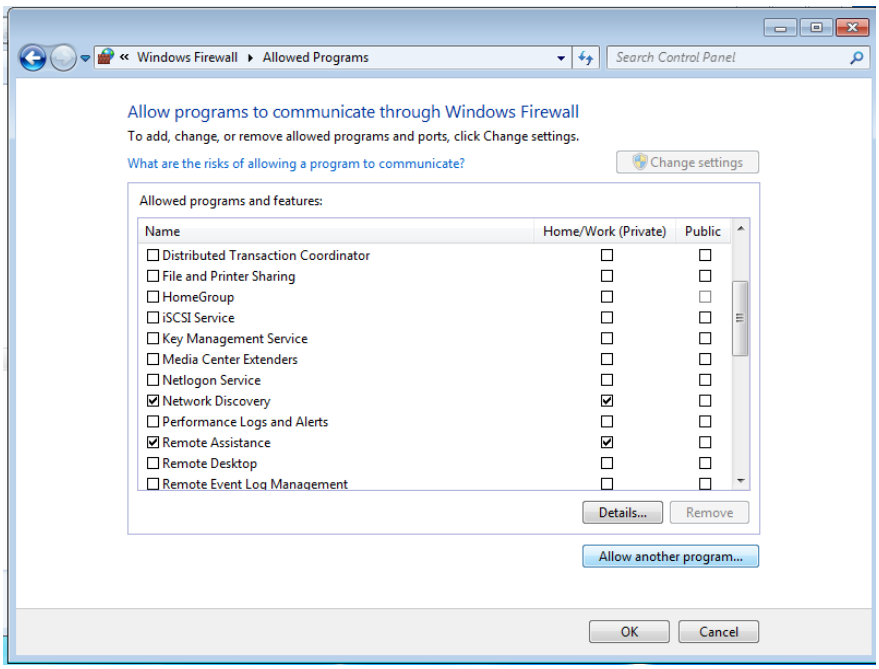


Fig.1.20 Allowed Programs

(6)Click "Browse" and open Program Files folder in C (see Fig.1.21).

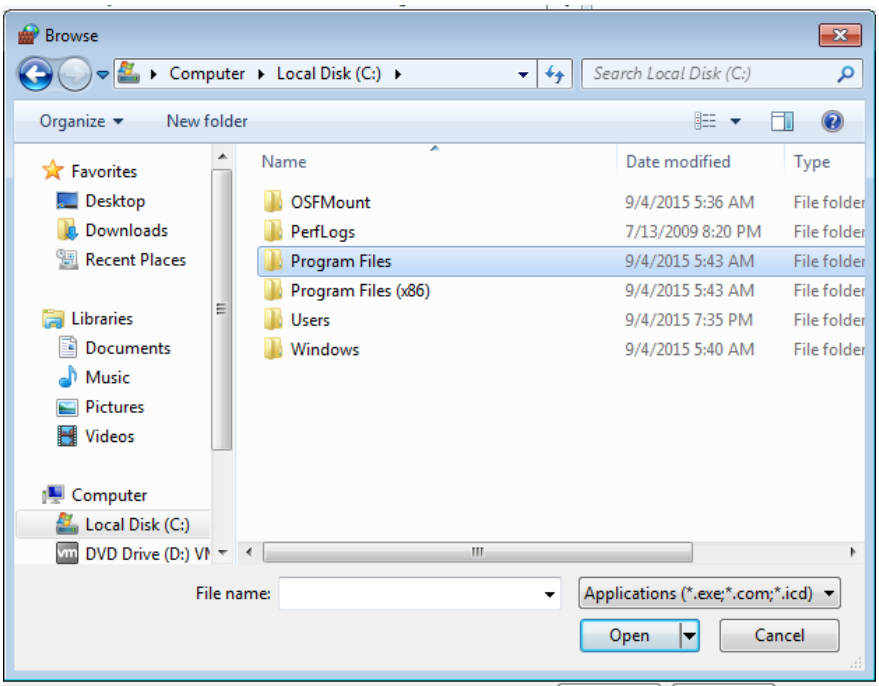


Fig.1.21 Local Dlisk C

(7)Open Microsoft SQL Server folder (see Fig.1.22).

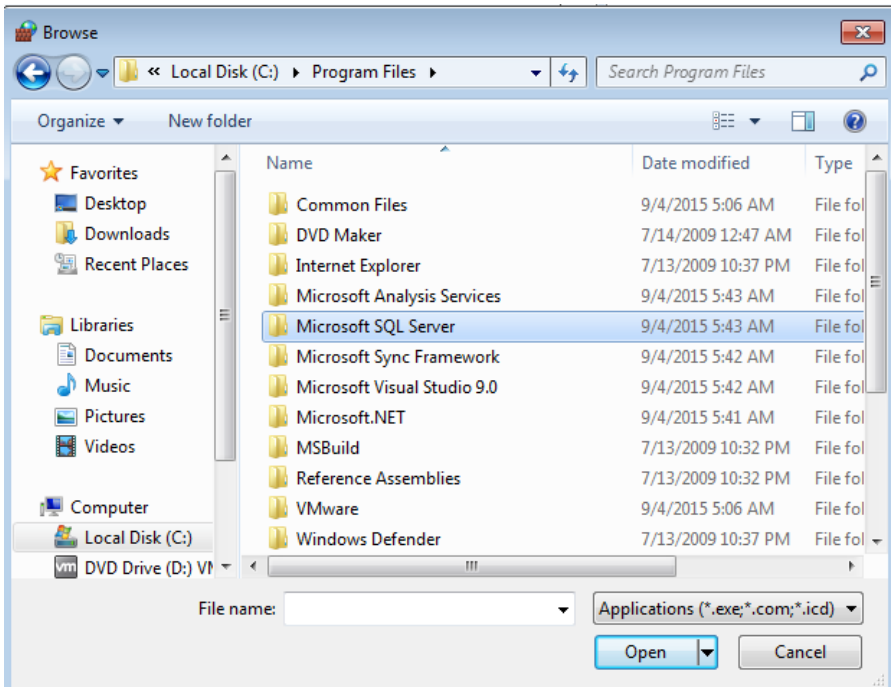


Fig.1.22 Program Files

(8)Open MSSQL10.MSSQLSERVER folder (see Fig.1.23).

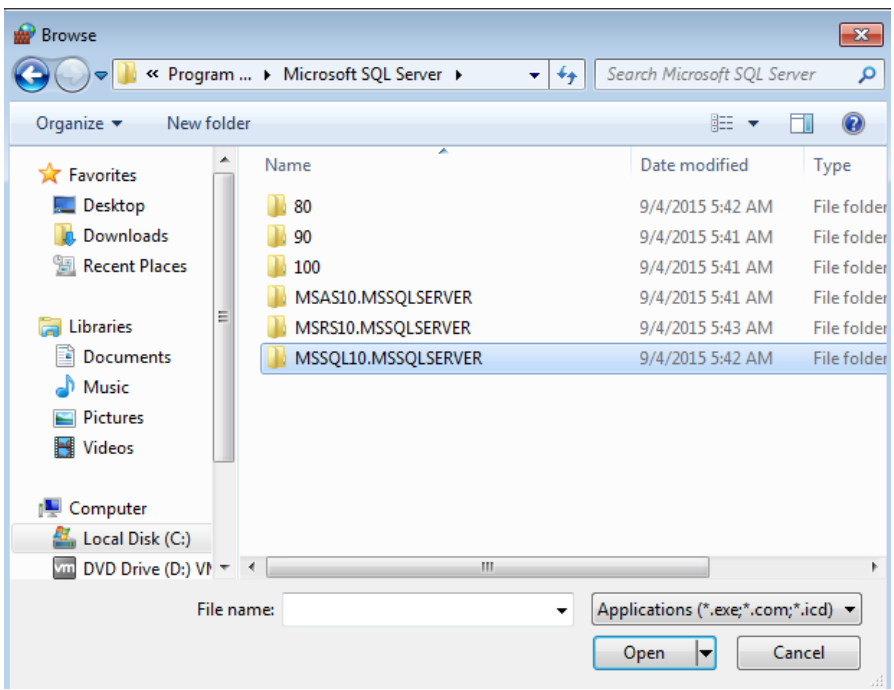


Fig.1.23 Microsoft SQL Server

(9) Open MSSQL folder (see Fig.1.24).

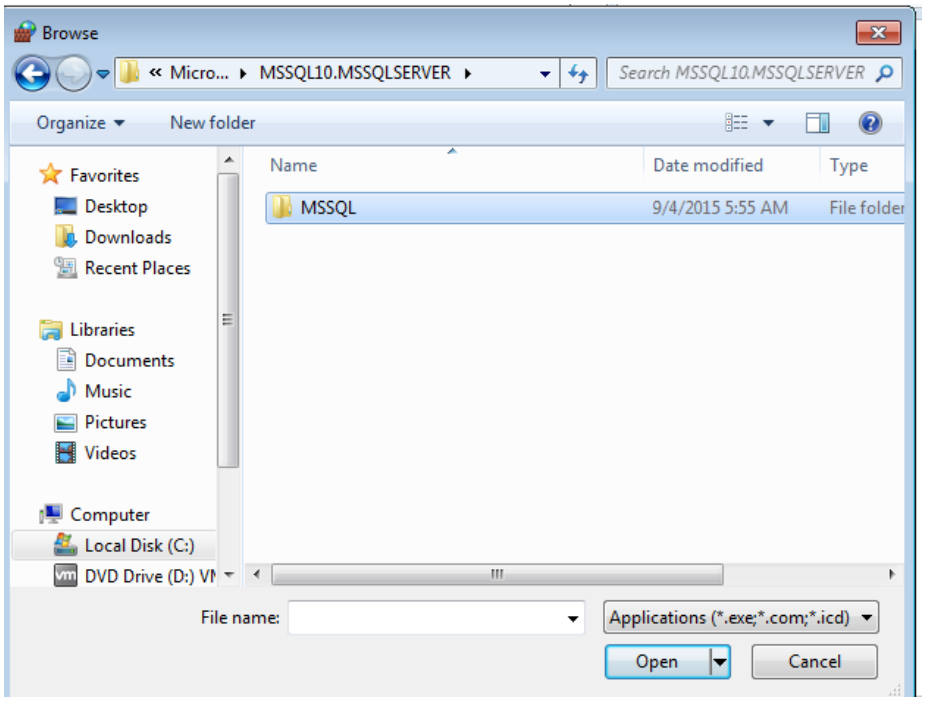


Fig.1.24 Browse

（10） Open Binn folder (see Fig.1.25).

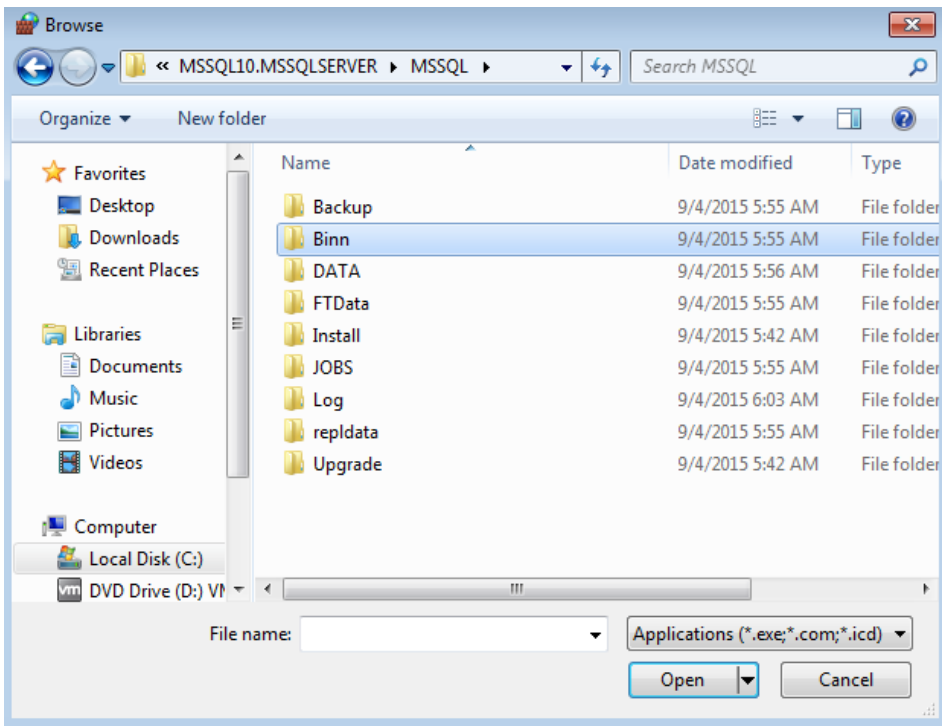


Fig.1.25 Browse

(11) Double-click “sqlservr” (see Fig.1.26).

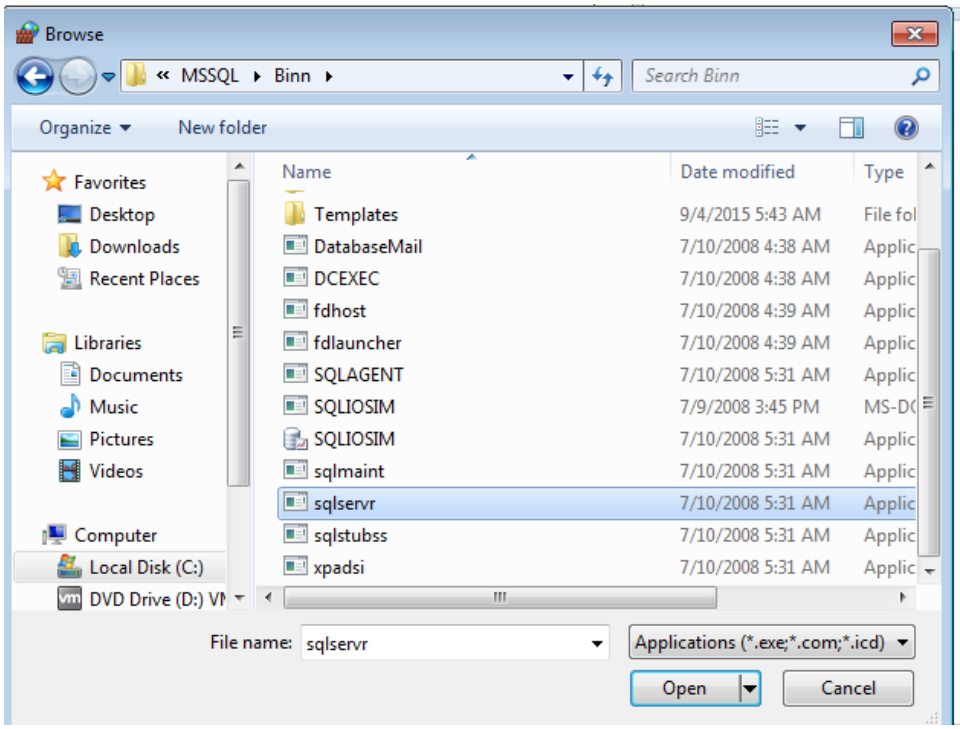


Fig.1.26 Browse

(12)Click “Add” button to add sqlservr to Allow Programs (see Fig.1.27).

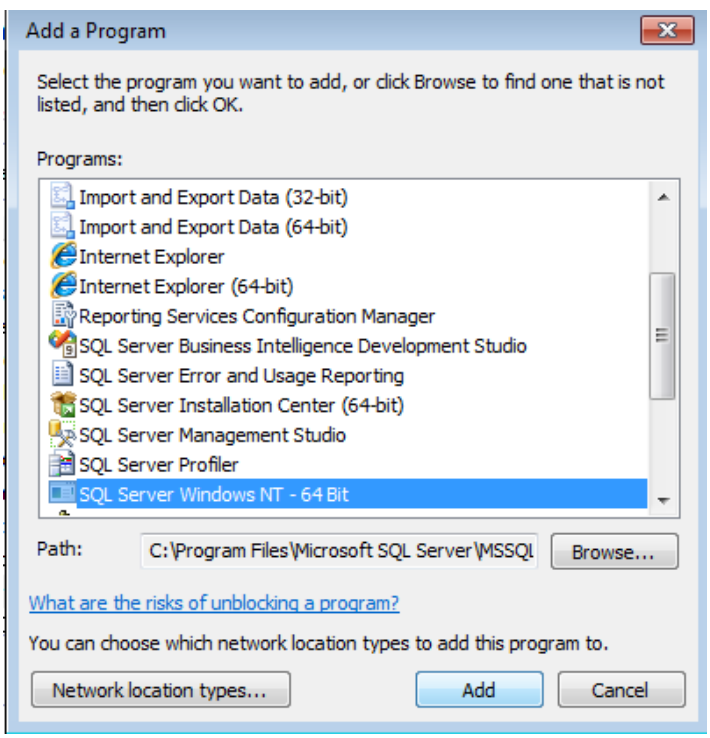


Fig.1.27 Browse

(13)The configuration is now complete. Start SQL Server Management Studio and log in.

Note: If you open SQL Server Management Studio before starting SQL Server and SQL Server Browser, you need to shut it down and then restart it.

Chapter Ⅱ MonitorOnline Installation Procedures

2.1 MonitorOnline Installation

Double-click MonitorOnline.exe or MonitorOnline.msi of MonitorOnline.exe folder to install MonitorOnline. Please proceed to the next step until the installation is successful (see Fig.2.1)

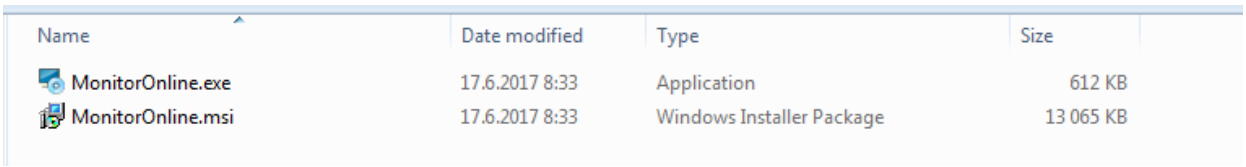


Fig.2.1

Note: the Package Installer is subject to software in CD-ROMS.

The Shortcut is created after installing MonitorOnline, as shown in Fig.2.2.

Fig.2.2 MonitorOnline

2.2 Connect Database

Step 1: Double click Fig.2.2, Fig.2.3 will pop up, and click "OK" button, the interface of database connection will pop up, as shown in Fig.2.4.

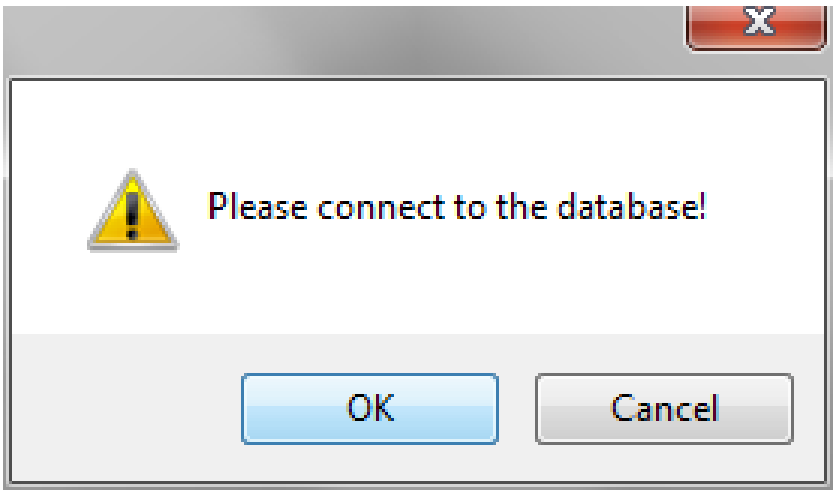


Fig.2.3 Connect Database

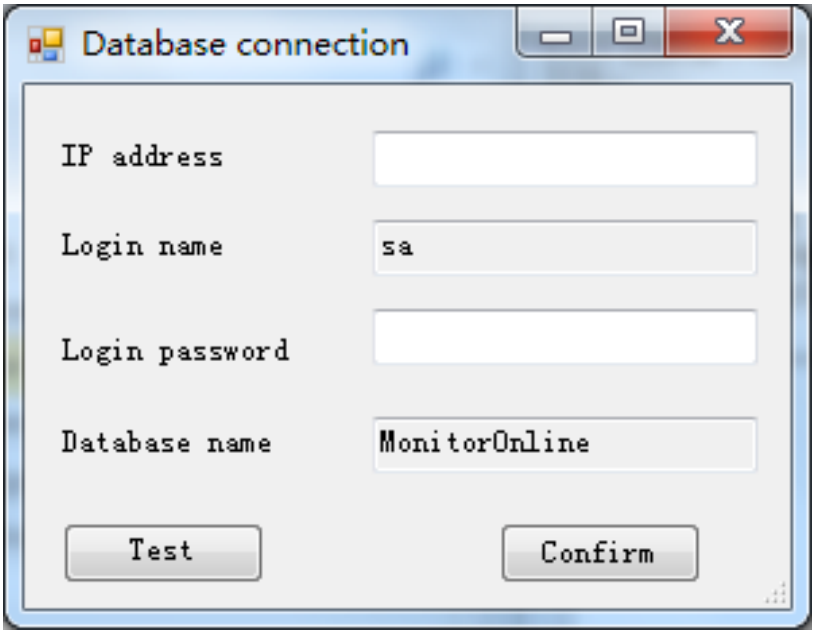


Fig.2.4 Database Connection

Step 2 : Input IP address (Computer IP of installing database), Login name ("sa" is only available) and Login password (password set when installing the database) of database, and click "Test" button In Fig.2.4, if the database is existent and the connection is successful, then the box of database connection success will pop up, as shown in Fig.2.5. Please transfer step 3. But if the database is non-existent and the connection is failed, then an interface of establishing a database will pop up (see Fig.2.8). Please transfer Step 5.

Step 3: Click "OK" button as shown in Fig.2.5, and back to Fig.2.4, click "Confirm" button. Then MAC address verification interface will pop up, as shown in Fig.2.6.

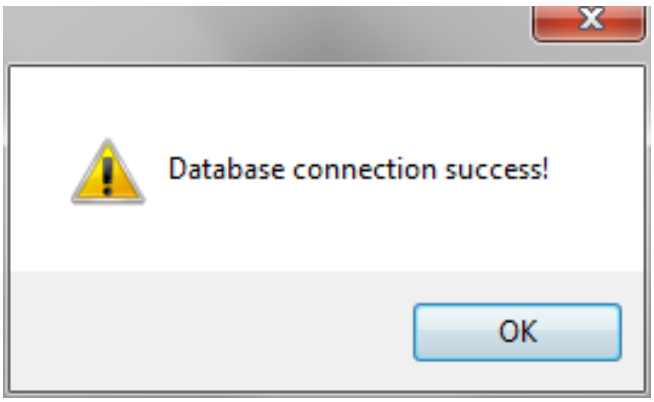


Fig.2.5

Step 4 : Click "Confirm" button in Fig.2.6, if the device IP is online, then Login interface will pop up (see Fig.2.7). Input correct login account and password and click "Login" button, then "Submit success" interface will pop up (see Fig.2.10).

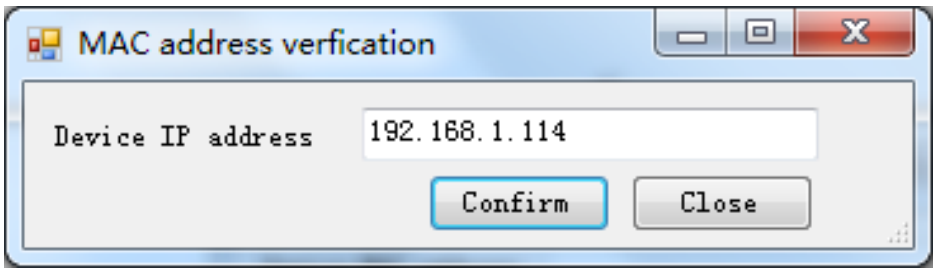


Fig.2.6 MAC address verification

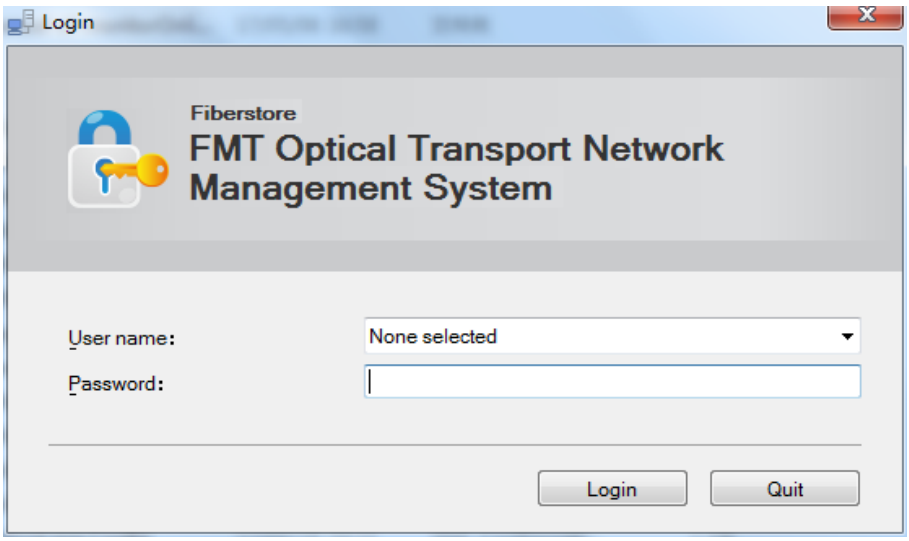


Fig.2.7 login

Step 5 : Please click "OK" button in Fig.2.8, then the interface of database configuration will pop up as shown in Fig.2.9.

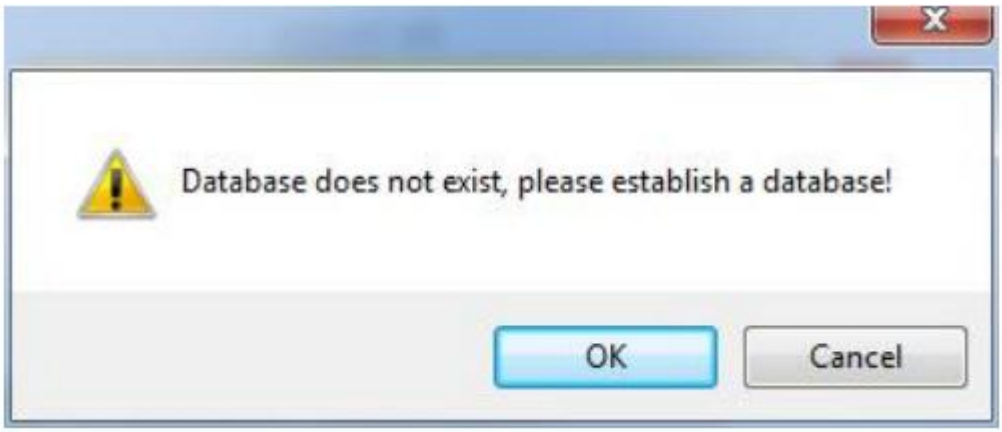


Fig.2.8

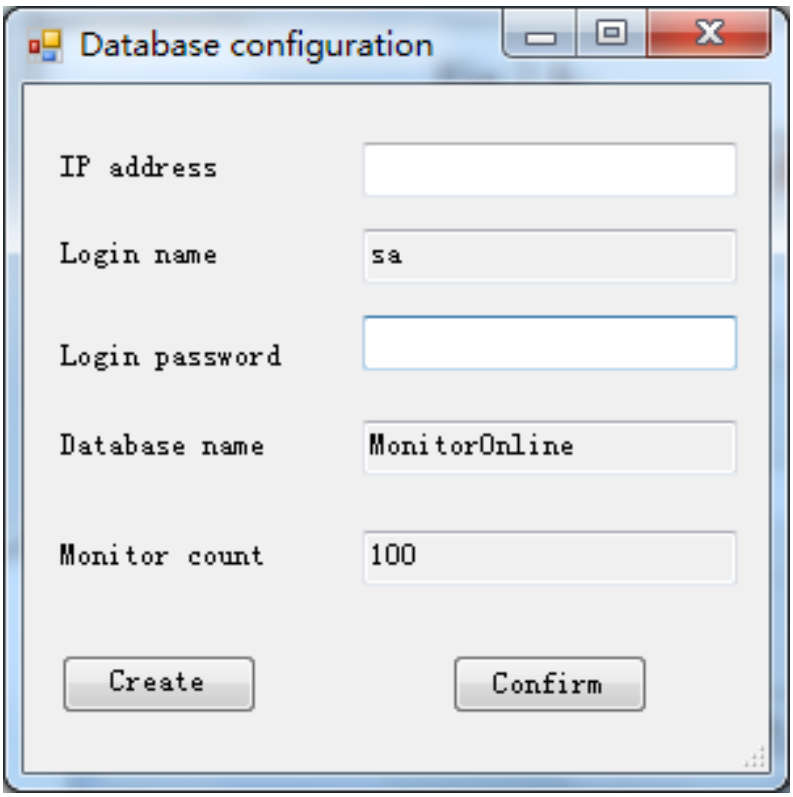


Fig.2.9 Database configuration

Step 6 : Input IP address (Computer IP of installing database), Login name (The default is sa) and Login password (password set when installing the database)of database, and click "Create" button In Fig.2.9 to create a database, After creating database, the interface of "Submit success" will pop up, as shown in Fig.2.10.

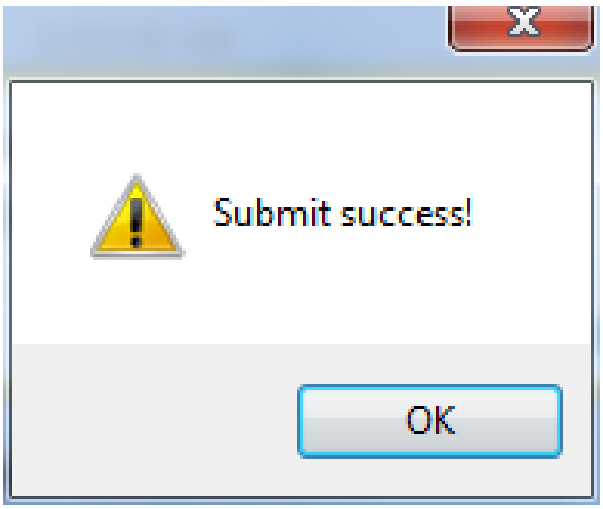


Fig.2.10

Click “OK” button in Fig. 2. 10, Then the interface of database connection will pop up, as shown in Fig. 2. 4. The other steps are the same as Step2.

Note: Both the initial login account and initial password of network management software are admin.

2.3 MonitorOnline Interface Instruction

MonitorOnline interface is as shown in Fig.2.11.

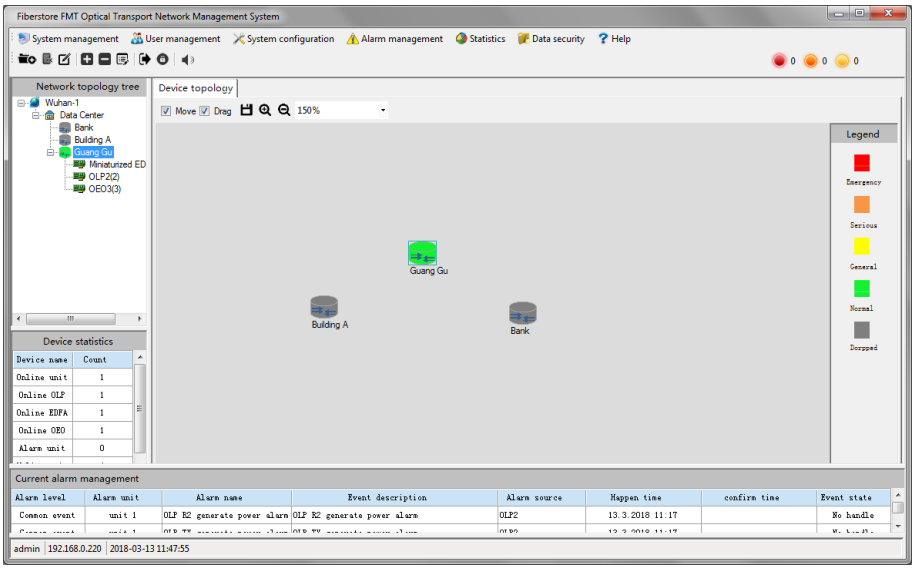


Fig.2.11 Fiberstore FMT Optical Transport Network Management System

①Menu Bar:

②Toolbar:

: Add unit, by clicking the icon, we can add unit (see 3.1.4 Add Unit).

: Delete unit, by clicking the icon, we can delete selected unit.

 : Edit unit, by clicking the icon, we can edit some information of unit.

 : Add line card, by clicking the icon, we can add a line card to a unit.

 : Delete line card, by clicking the icon, we can delete a line card from a unit.

 : Edit line card, by clicking the icon, we can edit some information of a unit.

 :Exit system, by clicking the icon, we can close network management system.

 :Lock system, by clicking the icon, we can lock the current user.

 : close/open alarm sound, by click the icon, we can close or open alarm sound.

:The number of emergency alarm.

:The number of serious alarm.

:The number of general alarm.

Note: To add unit or delete unit, please select the service room where the unit is.

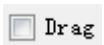
③Net Topology Tree:
See 5.1.

④Device Statistics
The numbers of online units, alarm units, Offline units and line cards are presented in real time.

⑤View Display Area
Current alarm management interface, historical alarm management interface, history interface, operation records interface and graphic topology opened from menu bar are all presented in view display area.

⑥ Topological map

: After selecting the check box, we can drag a selected unit icon.



: After selecting the check box, we can drag all unit icons of the topological map.

: Save topological map, by clicking the icon, we can save the topological map.

: Enlarge icon, by clicking the icon, we can enlarge all the icons of topological map.

: Shrink icon, by click the icon, we can shrink all the icons of topological map.

⑦ Current alarm interface
We can confirm, delete, no need hand and view device for current alarm information.
Explain: Current alarm interface only presents the top five. The levels of alarm information are urgent, serious and general.

⑧ Status Bar:
(1)Presenting login account of current system.
(2)Presenting local IP.
(3)Presenting local time.

Chapter III System Configuration

Click "System Configuration" of menu bar (see Fig. 3.1), then the system configuration interface will pop up. There are several operations in system configuration, such as: add city, add room, add unit, edit and delete in Fig 3.2.

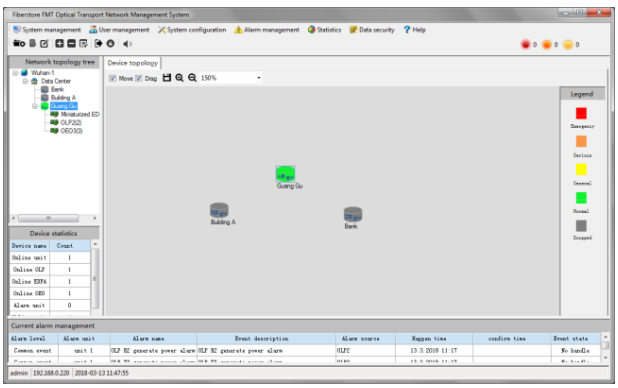


Fig.3.1 Fiberstore FMT Optical Transport Network Management System

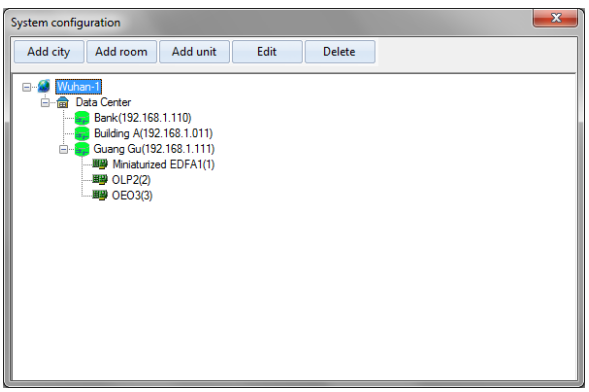


Fig.3.2 System configuration

Explain: ① represent city; ② represent serviceroom; ③ represent device name; ④ represent line card

3.1 Add City

Click "Add City" button in Fig.3.3 and "Edit City" interface will pop up(see Fig.3.4). You can add city by inputting city code and city description in Fig.3.4.

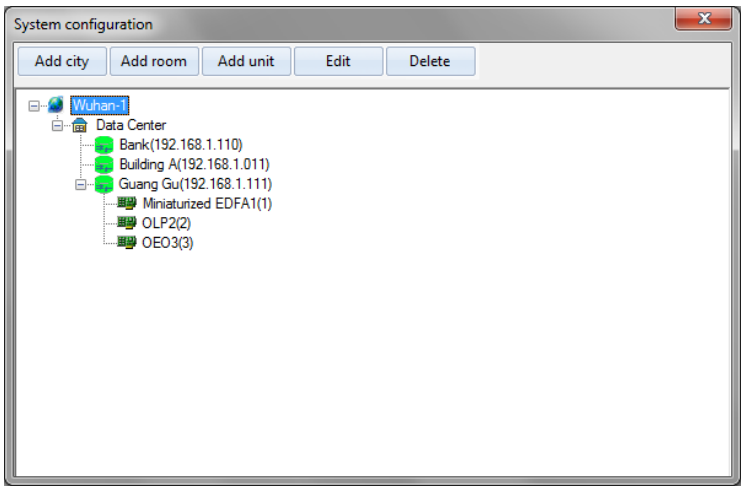


Fig.3.3 System configuration

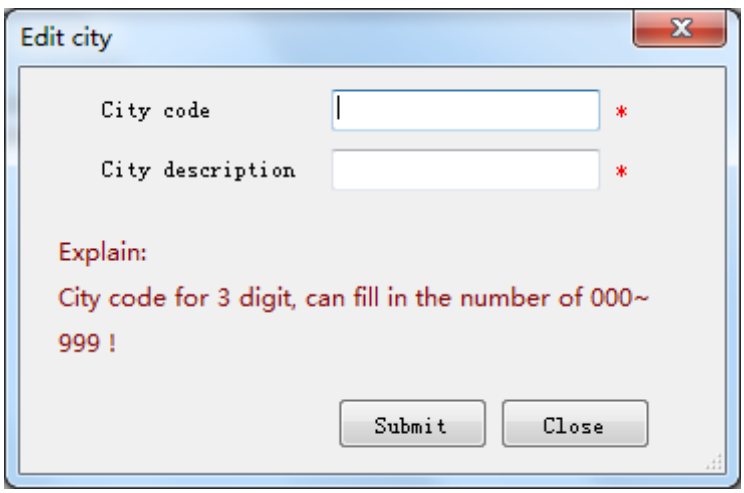


Fig.3.4 Edit city

3.2 Add Room

Click “Add Room” button in Fig.3.5, then “Edit Room” interface will pop up (see Fig.3.6). You can add room by inputting room code and room description in Fig.3.6.

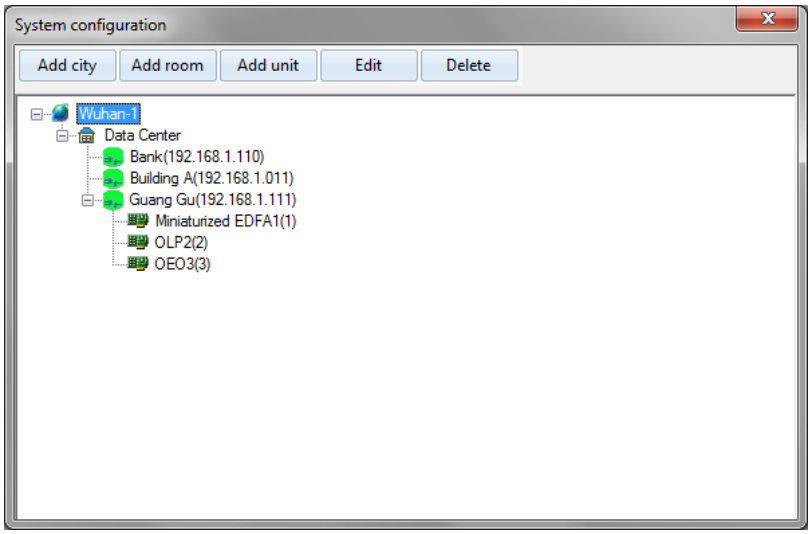


Fig.3.5 System configuration

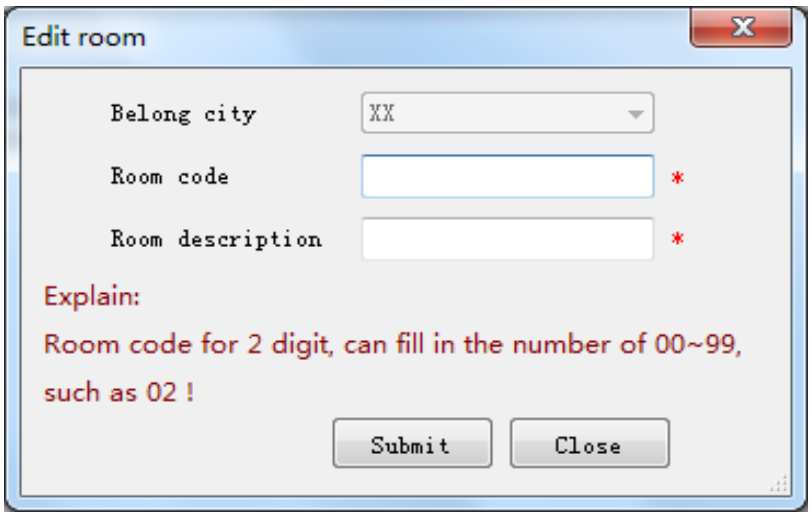


Fig.3.6 Edit room

3.3 Add Unit

Click “Add Unit‘ button in Fig.3.7. It can only be added manually, and differentiates between IP addresses. IP addresses can only be modified by keys； and then an interface of add unit will pop up (see Fig.3.8). You can add unit by inputting basic information of unit in Fig.3.8. At the same time, the software will refresh card number and card type of added unit.

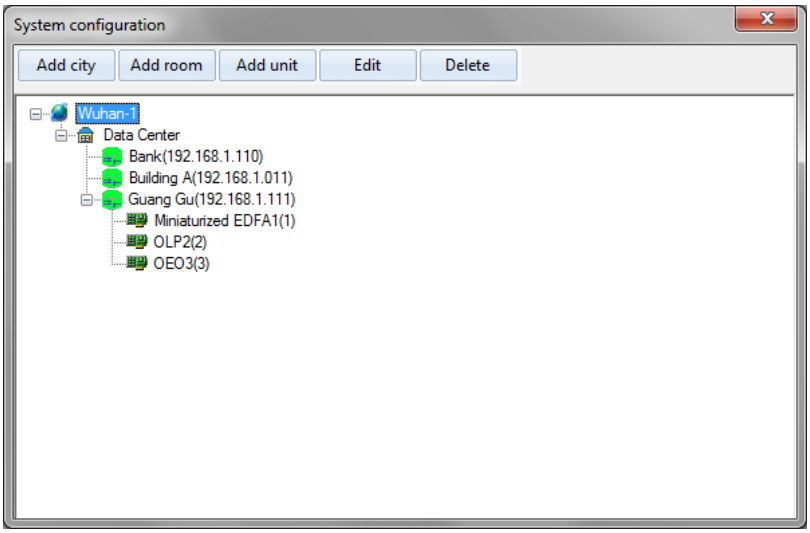


Fig.3.7 System configuration

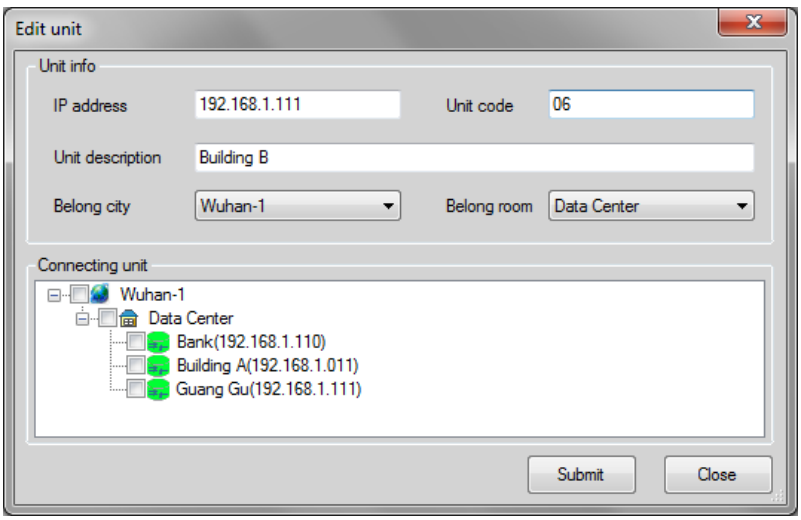


Fig.3.8 Edit unit

3.4 Edit

You can edit informtion about city, room, unit and board card in Fig.3.9(take board card for example).Click pre edited board and click “Edit “button as shown in Fig.3.10, Then “Edit Board” interface will pop up (see Fig.3.11).

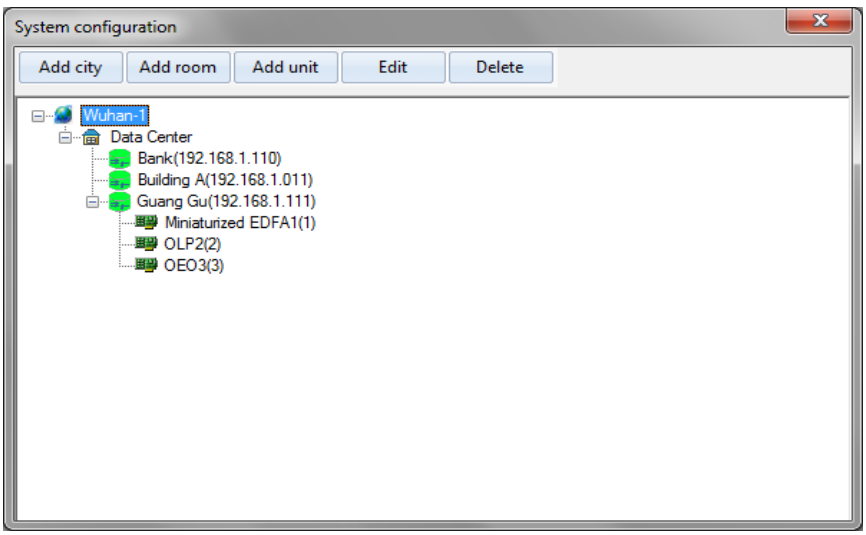


Fig.3.9 System configuration

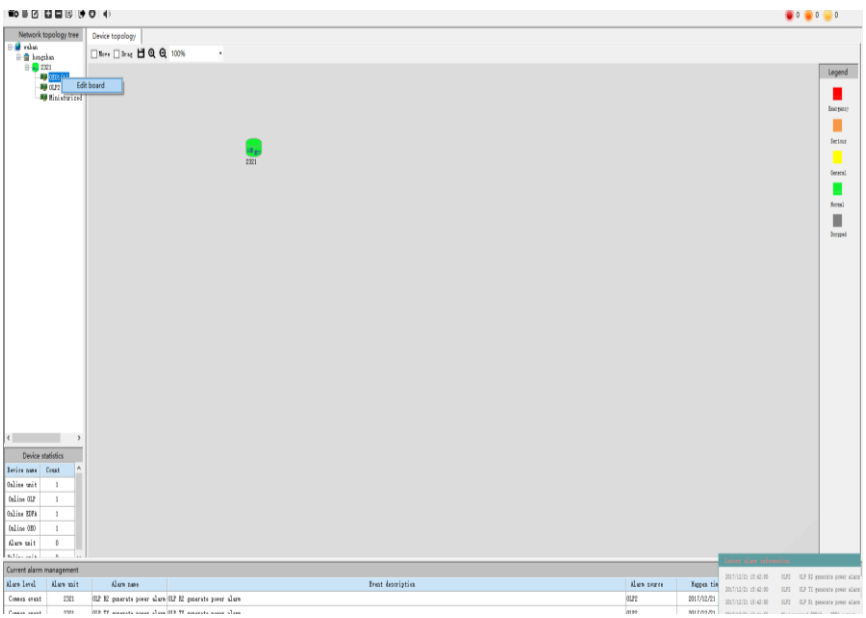


Fig.3.10 Fiberstore FMT Optical Transport Network Management System

The Fig.3.11 is the interface of OEO edit board, and here you can modify basic information, wavelength and rate of optical module.

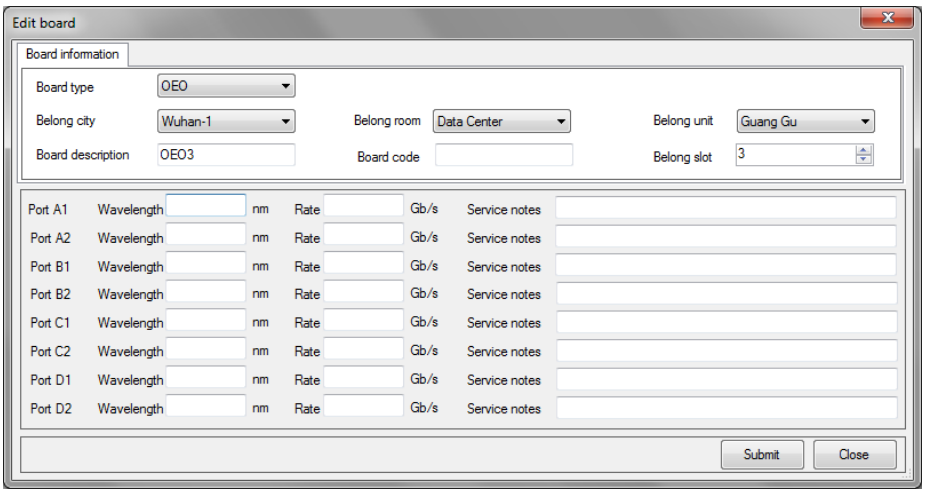


Fig.3.11 Edit board

The Fig.3.12 is the interface of EDFA edit board, and here you can edit basic information, Reference input value, Reference output value.

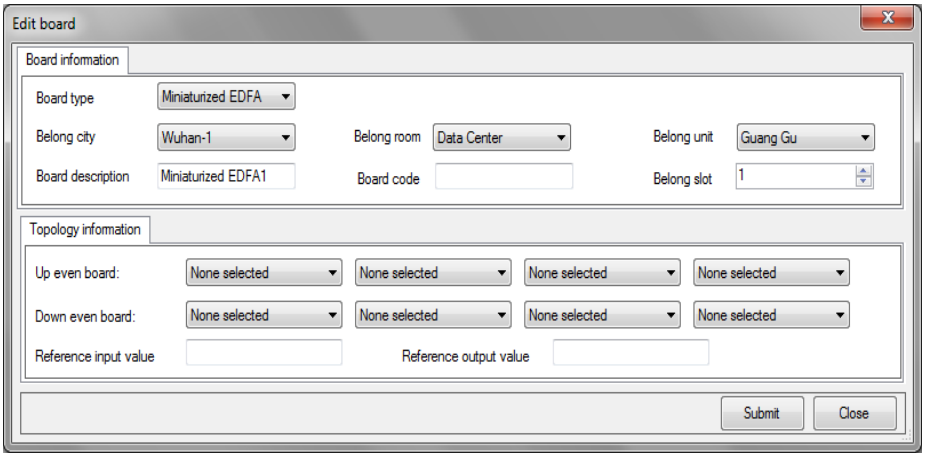


Fig.3.12 Edit board

Reference input value: The value is warning threshold of input for EDFA, when input value is low than reference input value, the monitorOnline software will have an early warning about input.

Reference output value: The value is warning threshold of output for EDFA, when output value is low than reference input value, the monitorOnline software will have an early warning about output.

The Fig.3.13 is the interface of OEO edit board, you can modify the board information and topology information of the OLP board in Fig.3.13

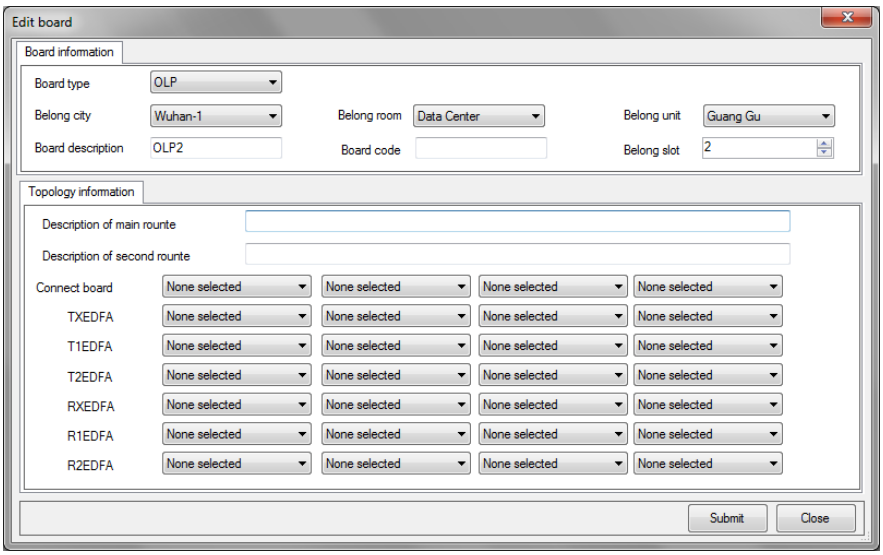


Fig.3.13 Edit board

3.5 Delete

You can delete city, room, unit and board card in Fig.3.14(take unit for example). Click pre deleted unit and pop up a dialog (see Fig.3.14). You can delete unit by clicking "OK" button in Fig.3.15 .

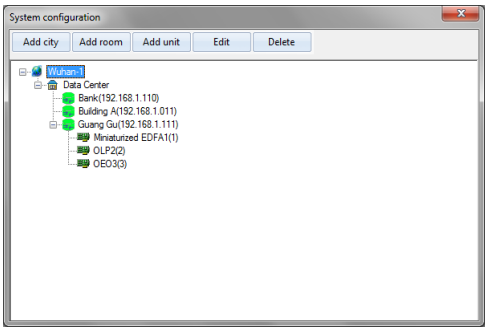


Fig.3.14 System configuration

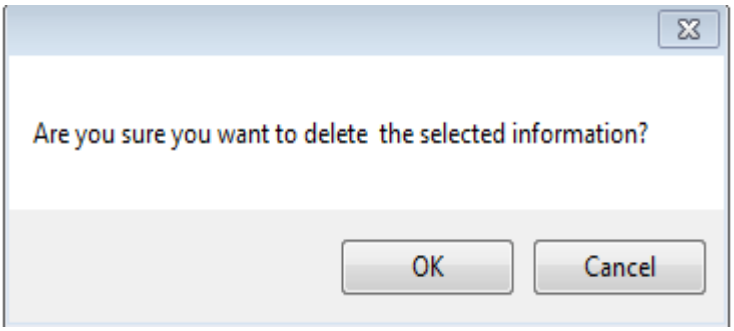


Fig.3.15

Chapter IV Software Security

4.1 User Management

Click "User Management" of menu bar in Fig.4.1 , then an interface of user management will pop up (see Fig.4.2). There are several operations in user configuration, such as: add user, edit user, delete user and query user as shown in Fig.4.2.

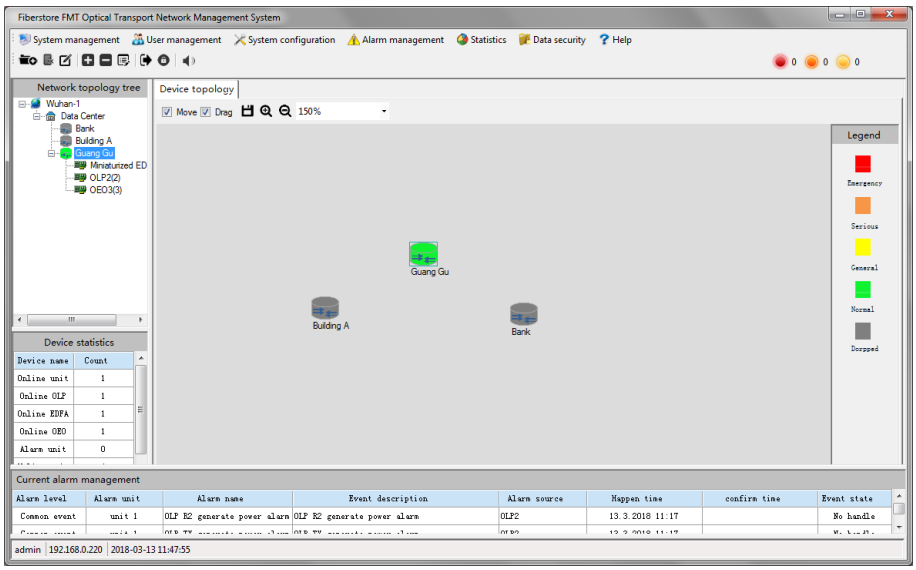


Fig.4.1 Fiberstore FMT Optical Transport Network Management System

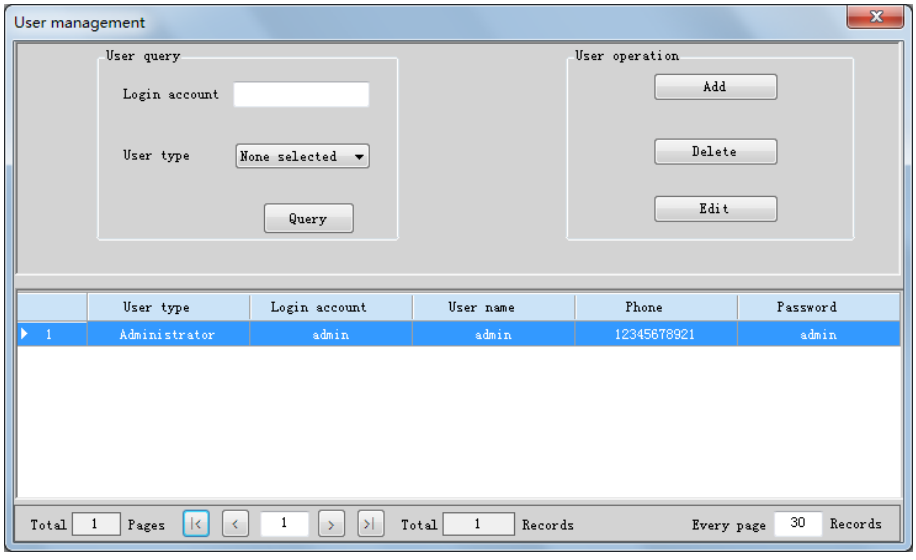


Fig.4.2 User Management

4.1.1 Add User

Click "Add" button in Fig.4.1, then the interface of user adding will pop up (see Fig.4.3). You can add user by choosing user type, login account, user name and phone number in Fig.4.4.

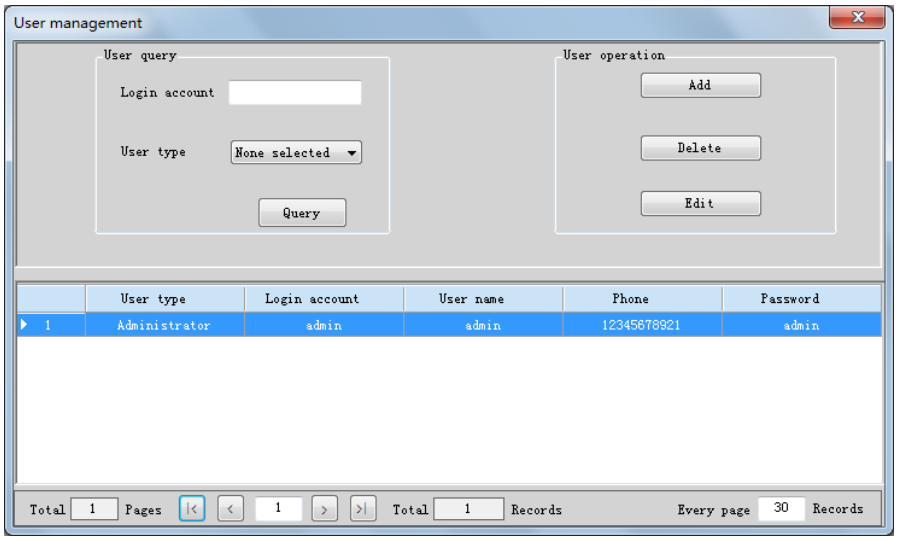


Fig.4.3 Usr management

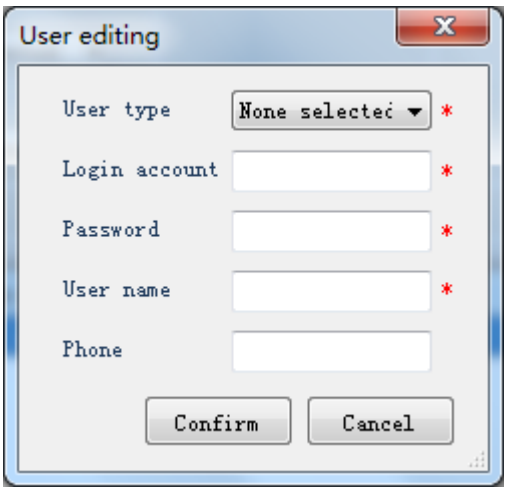


Fig.4.4 User editing

Note: User types include administrators, operators, browsers and these three user types have different permissions.
Administrators have all permissions; operators can not operate user management and other permissions are available; viewers can only view; customers can choose user type according to their needs

4.1.2 Edit User

Click "Edit" button in Fig.4.5, then the interface of user editing will pop up (see Fig.4.6).You can edit login account, user name and phone number in Fig.4.6.

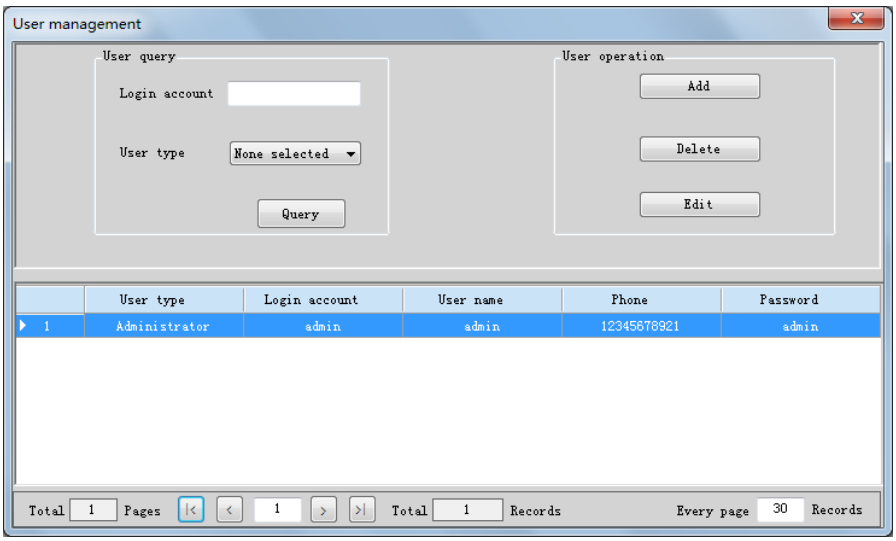


Fig.4.5 User management

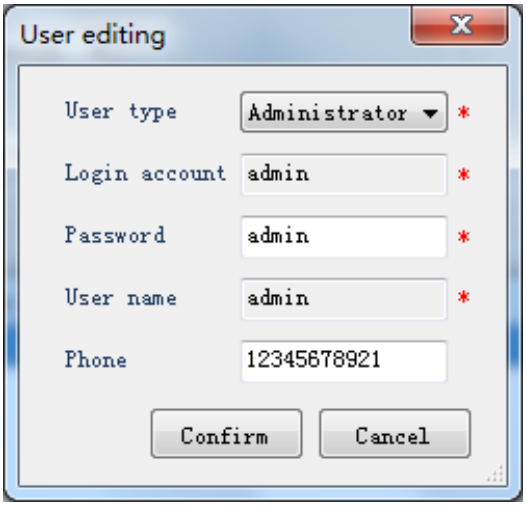


Fig.4.6 User editing

4.1.3 Delete User

Click "Delete" button in Fig.4.7, then a dialog will pop up (see Fig. 4.8) and click " Ok" button to delete user.

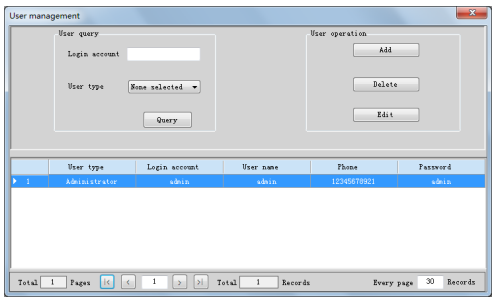


Fig.4.7 User management

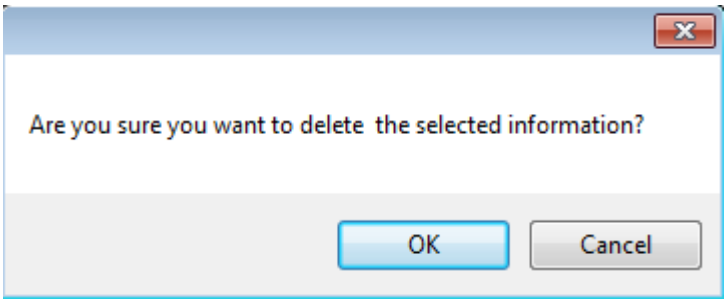


Fig.4.8

Explain: The user of login account is admin that cannot be deleted and modified.

4.1.4 Query User

You can query user in Fig4.9 and the query condition includes:
(1) User information: Input a login account and can see all information included by login account by clicking "Query" button.

(2) User type: Click "User type" (see Fig.4.9) to view user information by selecting administrator, operator, browser.

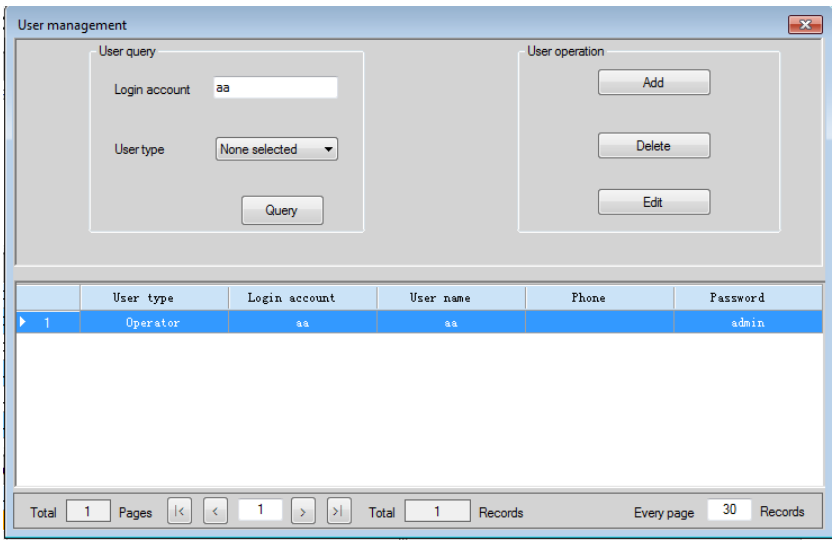


Fig.4.9 User management

4.2 System Management

System management menu items include modify password, switch user, locking system, setting interval time of record, exit(see Fig.4.10).

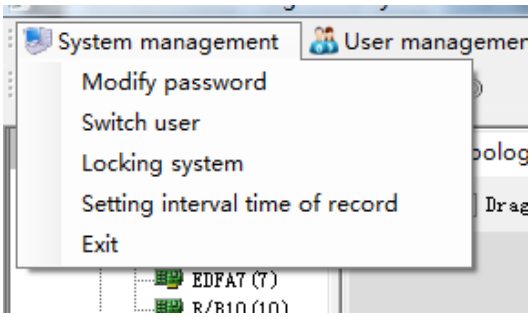


Fig.4.10 Fiberstore FMT Optical Transport Network Management System

4.2.1 Modify Password

Click "Modify password" in Fig.4.11, then a box of change password will pop up (see Fig.4.12). Type original password and new password to change current user password by clicking "submit" button.

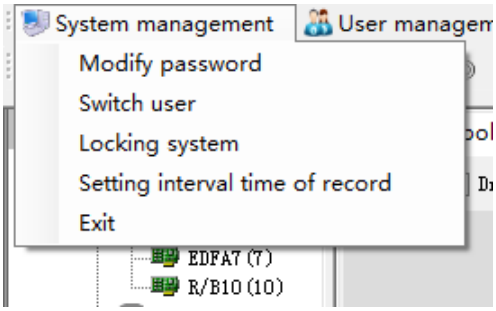


Fig.4.11 Fiberstore FMT Optical Transport Network Management System

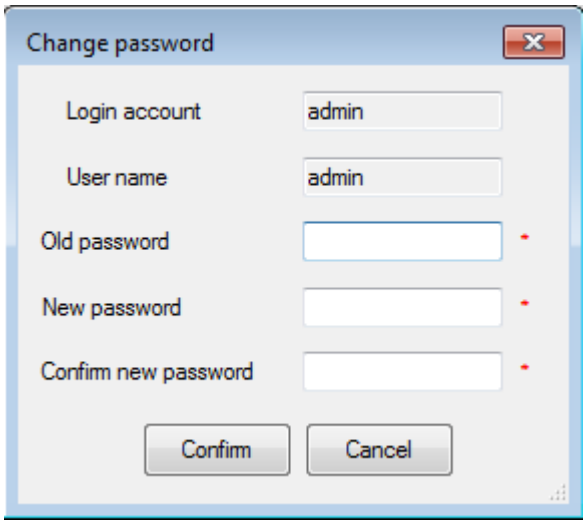


Fig.4.12 Change password

4.2.2 Switch User

Click "Switch user" in Fig.4.13, then an interface of switch user will pop up (see Fig.4.14). Type another login account and password to switch login account by clicking "Login" button.

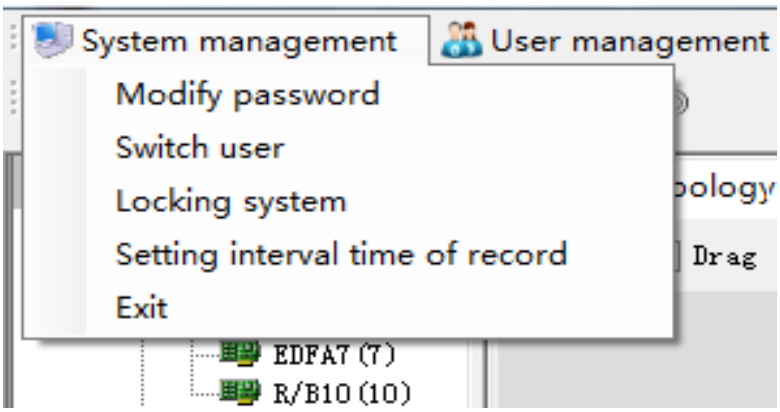


Fig.4.13 Fiberstore FMT Optical Transport Network Management System

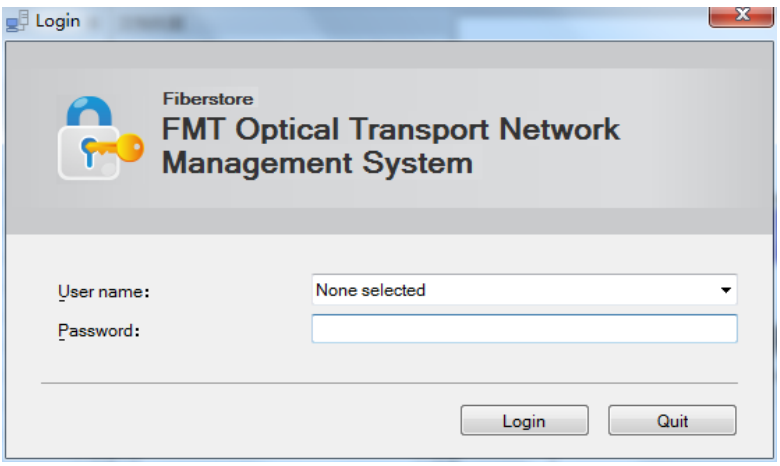


Fig.4.14 Login

4.2.3 Locking System

Click "Locking system" in Fig.4.15, then an interface of locking system will pop up(see Fig.4.16). Type used login account and password to unlock the system and login again.

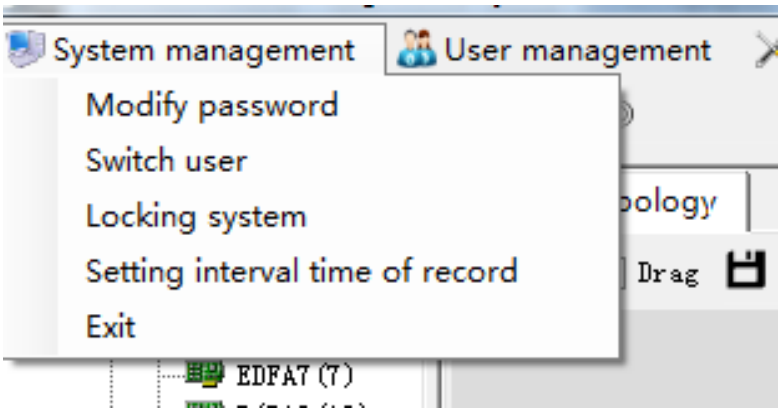


Fig.4.15 Fiberstore FMT Optical Transport Network Management System

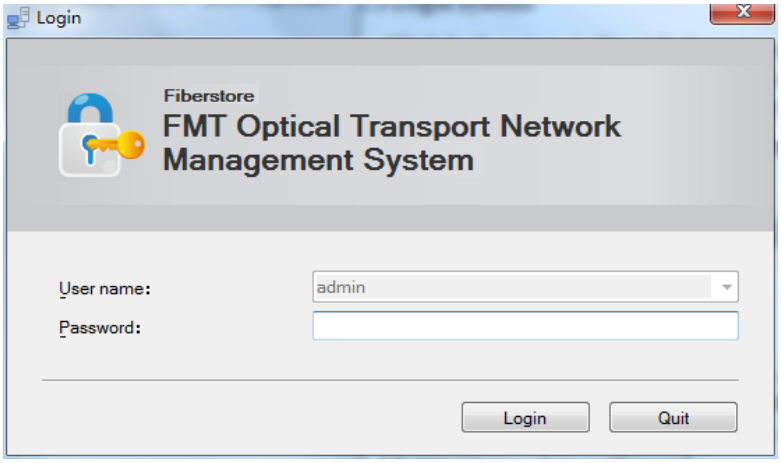


Fig.4.16 Login

4.2.4 Setting Interval Time of Record

Click "Setting interval time of record" in Fig.4.17, then an interface of Setting interval time of record will pop up (see Fig.4.18). You can set interval time of EDFA, OLP,OEO in Fig4.18.

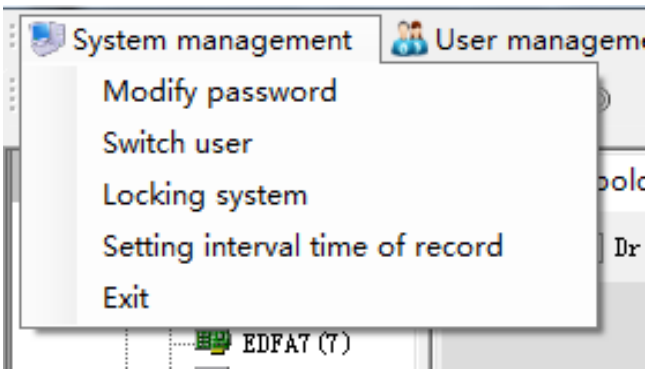


Fig.4.17 Fiberstore FMT Optical Transport Network Management System

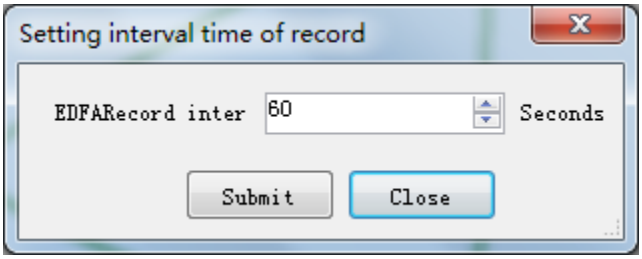


Fig.4.18 Setting interval time of record

4.2.5 Exit system

Click "Exit" in Fig.4.19, then you can exit current system.

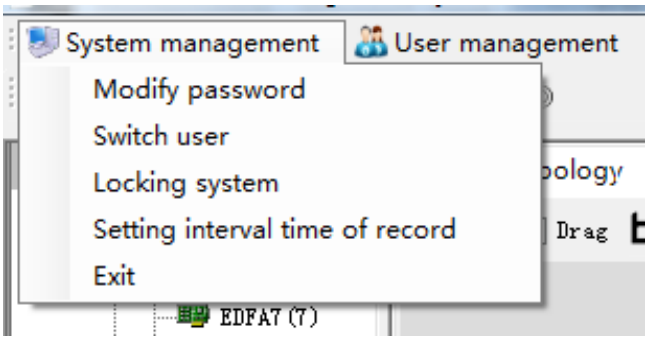


Fig.4.19 Fiberstore FMT Optical Transport Network Management System

4.3 Data Security

Data security: The database can be imported and exported (Note that the export path can not be in the C drive).

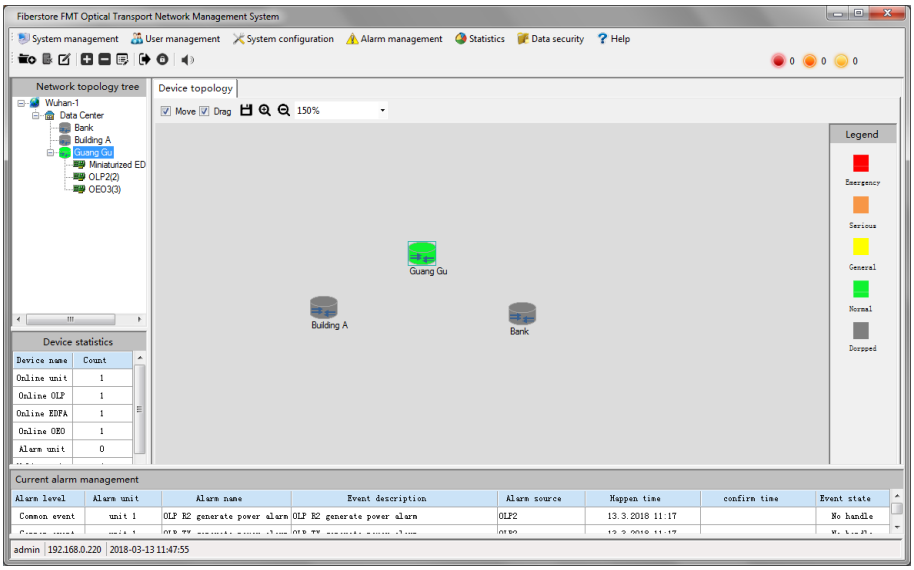


Fig.4.20 Fiberstore FMT Optical Transport Network Management System

Chapter V System Monitoring

5.1 Network Management Card

Fig.5.1

A: P1 and P2 are working indicators of the power ; RUN is a running indicator of the main control card ;

B: Liquid crystal display (LCD) : Some parameters of the main control card and the daughter card can be viewed on it;

C: Keys' control area;

Panel keys description

Table 4-1 Panel keys description

Definition	key	Description
▲	Scroll Up key	The key is used to change the menu or data up
▼	Scroll down Key	The key is used to change the menu or data down
▶	Scroll Right key	The key is used to move the cursor right when in modification state
◀	Scroll left key	The key is used to move the cursor left when in modification state
OK	OK	Confirm Key, the key is used to enter into the submenu or confirm the modification Enter this key to modify
ESC	Esc	Quit Key, the key is used to exit the current menu level or to exit the modification state

D:F1 & F2 indicators are status indicators of SFP connectors which are mainly used for chassis management in a long distance;

E: RJ45 connectors are mainly used for chassis management and the program upgrade of the main control card.

F: Programming port for internal use.

5. 2 Network Topology Tree

In each newly created database, the initial login management must establish the network topology tree to monitor the device at first. The database does not delete the network topology tree but keeps recording it. Network topology tree on the left of main interface (see Fig.5.2). You can see all cities, rooms, units and the type and amount of each network management. Double click the card icon to enter the chassis monitoring interface (see Fig.5.4).

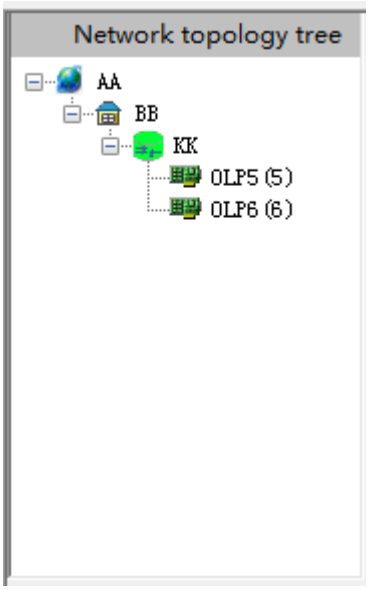


Fig.5.2

5.3 Equipment Topology

Equipment topology is in view display area of main interface(see Fig.5.3). You can see all state of equipment. Double click unit icon of equipment topology to open an interface of chassis monitoring interface(see OEO monitoring interface in Fig.5.4).

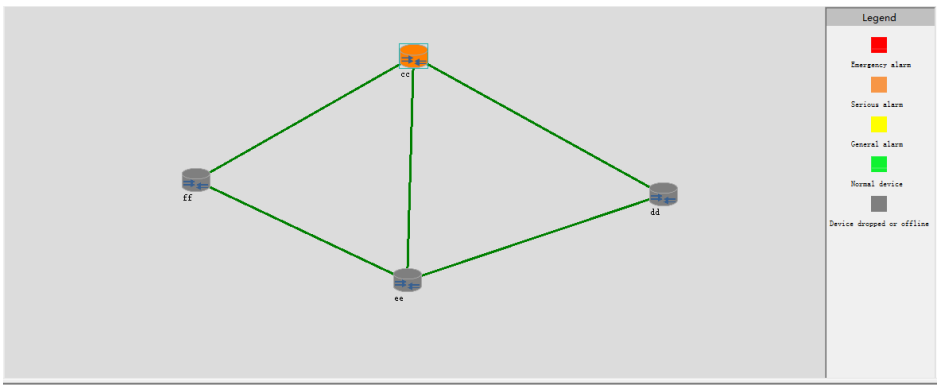


Fig.5.3 Equipment topology

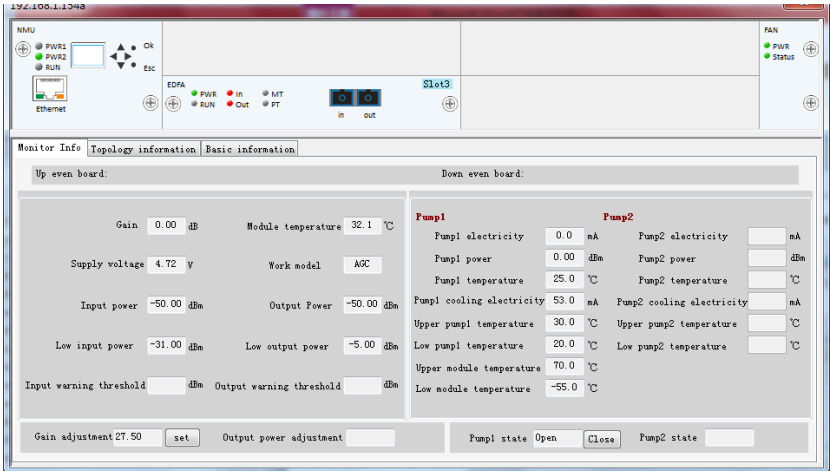


Fig.5.4

You can see monitor information, topology information, basic information of EDFA in Fig 5.4.
Description of EDFA's main parameters:
Input power&Output power: Real-time monitoring can be realized;
Gain adjustment: Adjustment range between ± 3db;
Output adjustment: AGC mode is default;
Lower limit value of input and upper limit value of output: Adjust according to the demand.
Pump: Pump2 of the mid-stage EDFA also has monitoring parameters.

OEO card:
Double-click OEO board, then pop up an interface of board monitoring (see Fig.5.5). You can see monitor information, topology information, basic information of OEO in Fig 5.5.
Note: When set up the light control mode of OEO will be a certain delay, this is caused by a large amount of data of OEO.

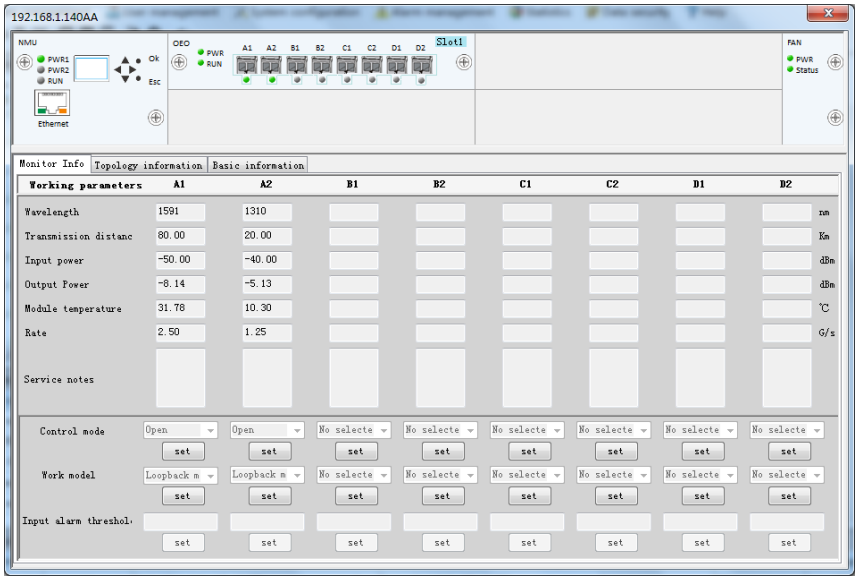


Fig.5.5

Chapter VI Alarm Management

Alarm management: Device alarm query and alarm type configuration.

6.1 Current Alarm Management

The alarm management of menu bar includes current alarm management, historical alarm management, alarm configuration. The interface of current alarm management is as shown in Fig.6.1.

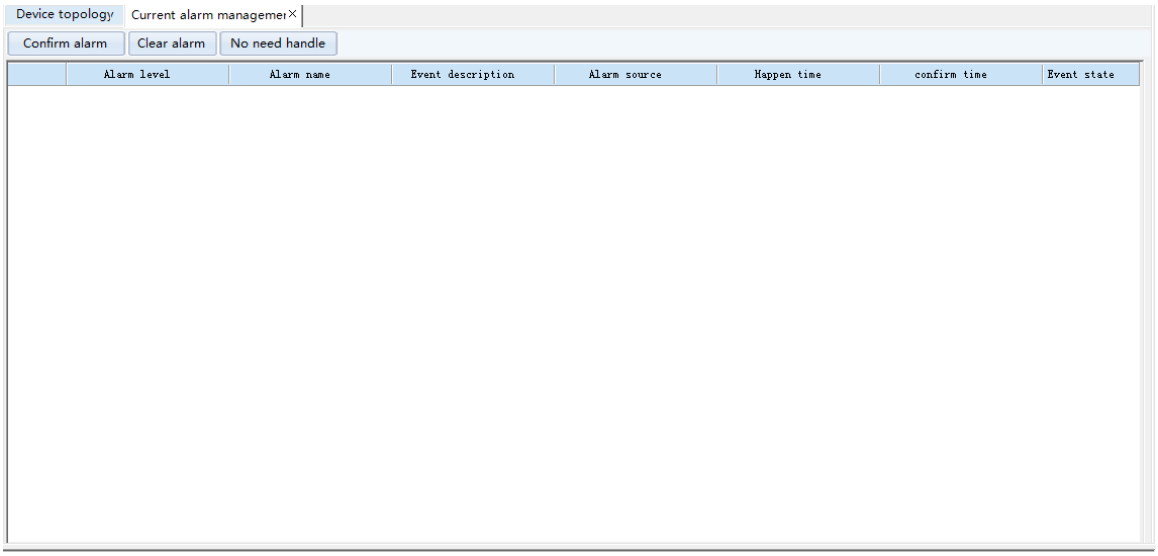


Fig.6.1 Device topology

Explain: Current alarm information must be confirmed before be cleared. Current alarm information that have been cleared will be moved to historical alarm management.

The current alarm management interface contains a confirm alarm, clear alarm , no need handle, and right-clicking the selected current alarm, also can realize confirm alarm, clear alarm , no need handle as well as view device.

Confirm alarm: Confirm the selected current alarm information
Clear alarm: Clear the selected current alarm information and transfer it to the historical alarm.
no need handle: Send unprocessed alarm information to historical alarm.
view device: jump directly to the alarm device.

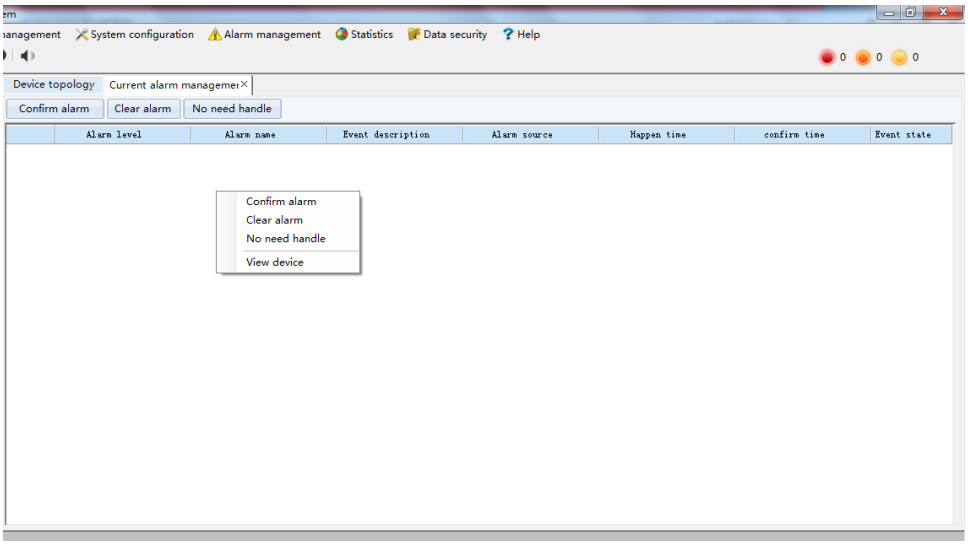


Fig.6.2 Device topology

6.2 Historical Alarm Management

The interface of historical alarm management is as shown in Fig.6.3.

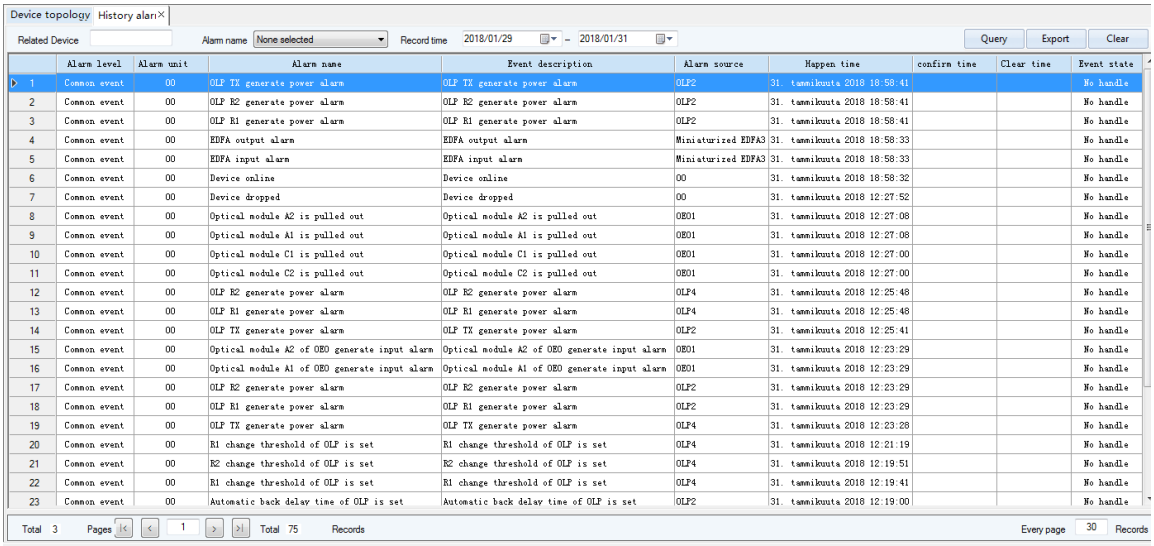


Fig.6.3 History alarm

You can query, clear and export historical alarm information. The explanation of query condition includes:
(1)Related equipment： Enter the name of the associated device and click query button, then you can see all the alarm information related to query (see Fig.6.4).

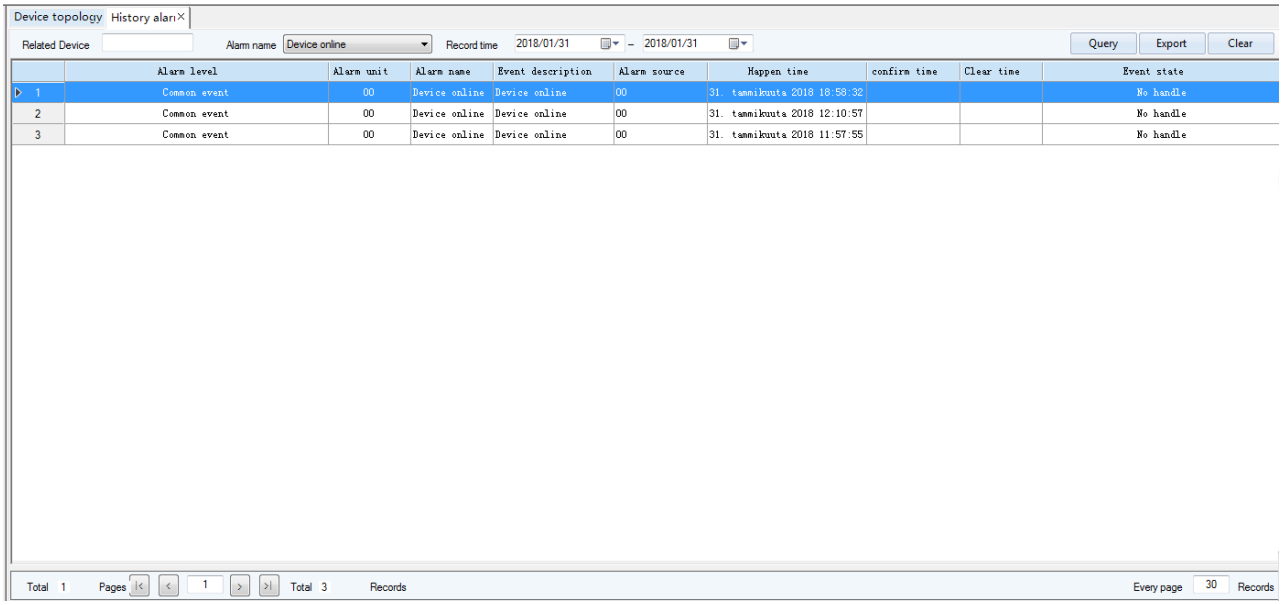


Fig.6.4 History alarm

（2）Alarm name：Click the name of the alarm, select an alarm type (as shown in Figure 6.5), and click the Query button to display all the alarm information of the selected alarm name.

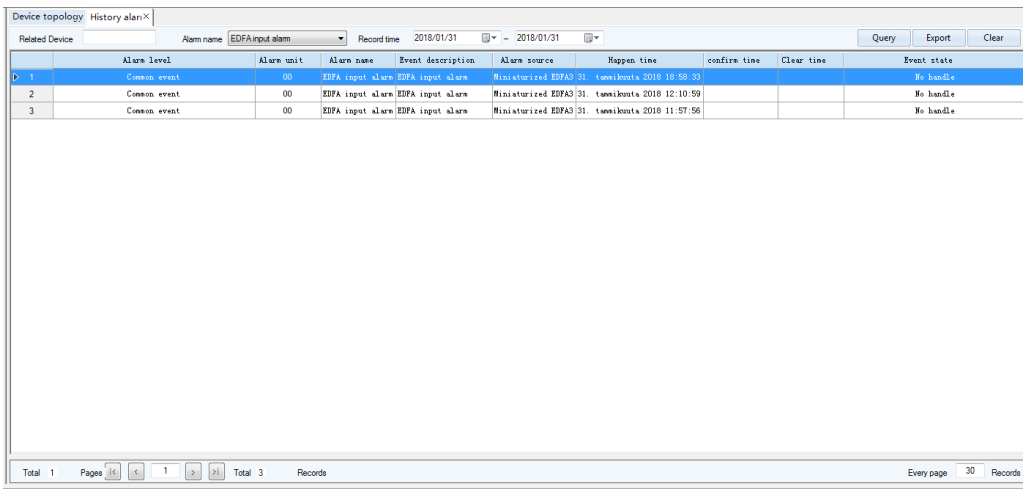


Fig.6.5 History alarm

(3)Record time: Choose start date and end date and click query button, then you can see all alarm information of selected period (see Fig.6.6).

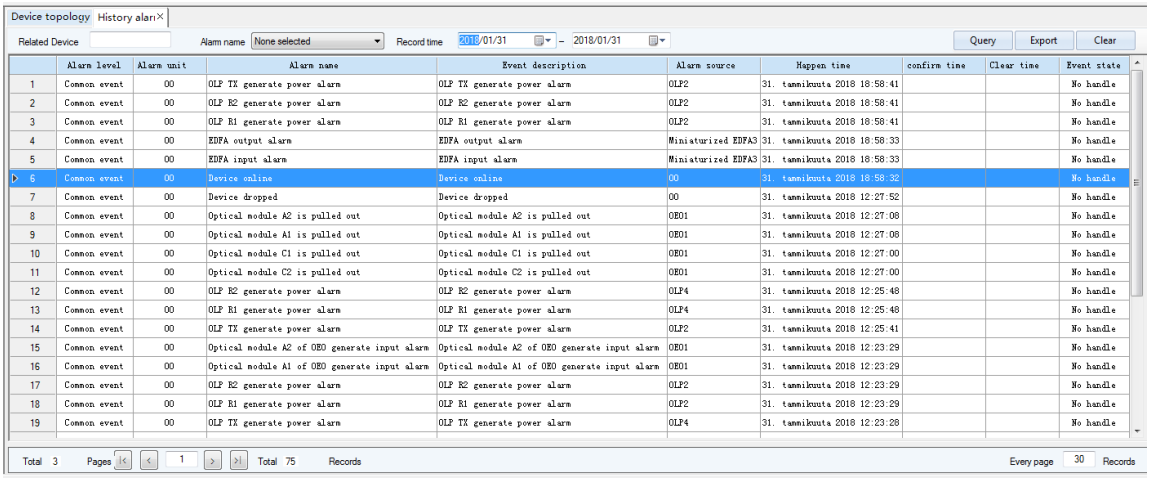


Fig.6.6 History alarm

6.3 Alarm Configuration

Choose event level of every event type and click submit button in Fig6.7, then you can configure event level of every event type and choose event level of email pushing.

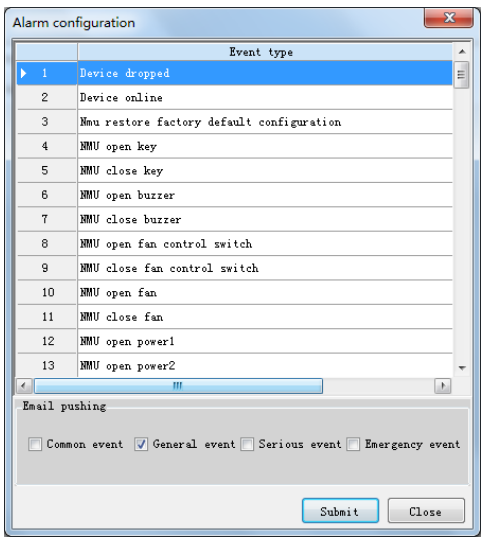


Fig.6.7 Alarm configuration

Chapter VII Statistics

Statistics: Record the historical data of the equipment card. When the line encounters problems, you can check statistics to figure out the failure time and cause of failure quickly. Statistics in the sub-menu only contain four types of products : OEO, EDFA, mid-stage EDFA, OLP.

7.1 History

The statistics menu includes history sub-menu and operation record sub-menu. The history interface of EDFA is as shown in Fig.7.1.

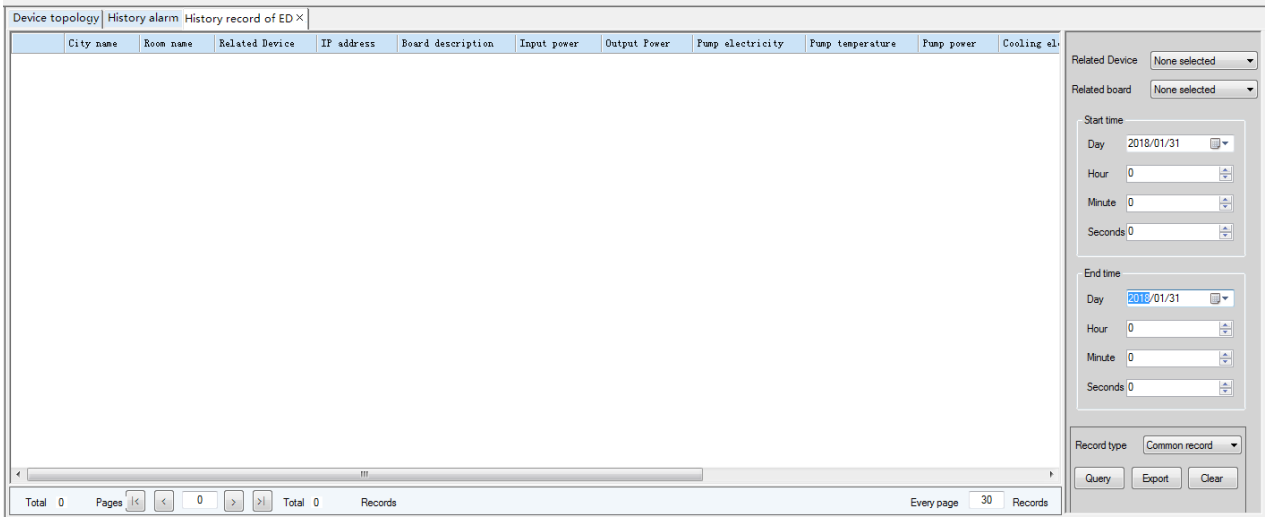


Fig.7.1 History Record

You can query, export and clear history in Fig.7.1. The query condition includes:

(1) Enter the name of the relevant device, and then clicking the query button will check out the related history.

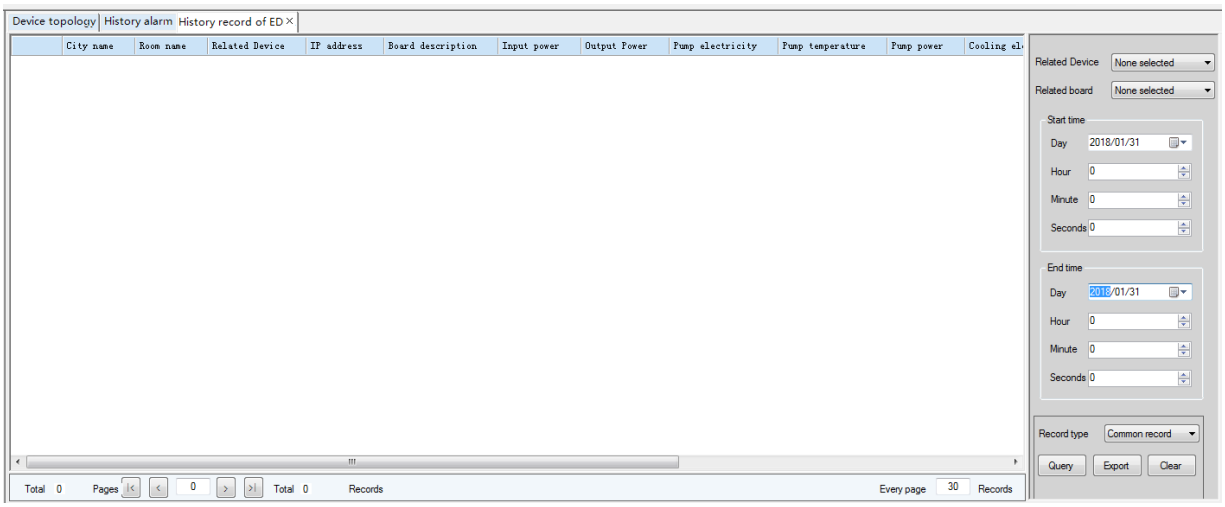


Fig.7.2 History Record

(2)Record time: Choose start date and end date and click query button, then you can see all history of selected period (see Fig.7.3).

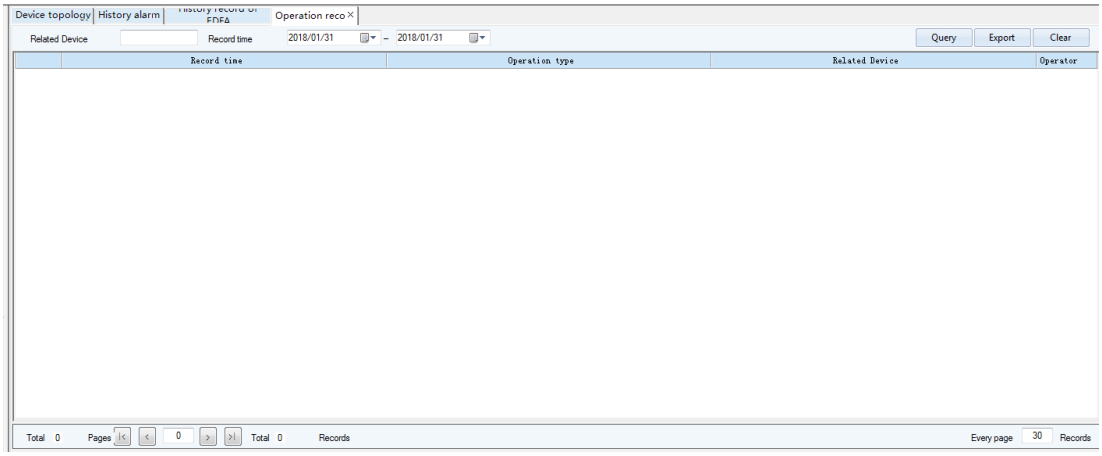


Fig.7.3 Operation record

7.2 Operation Record

The operation record interface of EDFA is as shown in Fig.7.4. You can query operation record according to associated equipment and record time. At the same time, you can export, query and clear operation record.

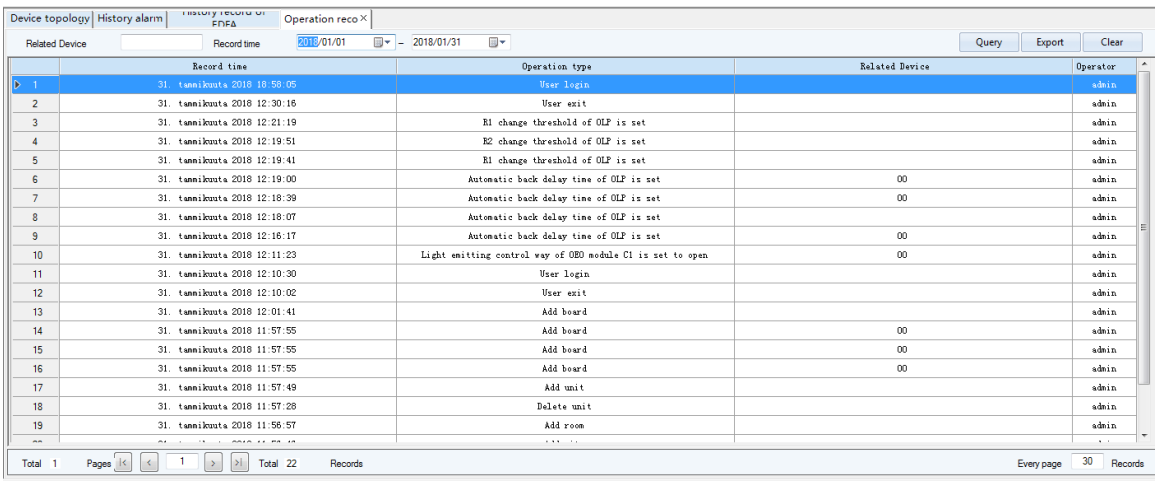


Fig.7.4 Operation record

Chapter VIII SNMPv1

8.1 About SNMPv1

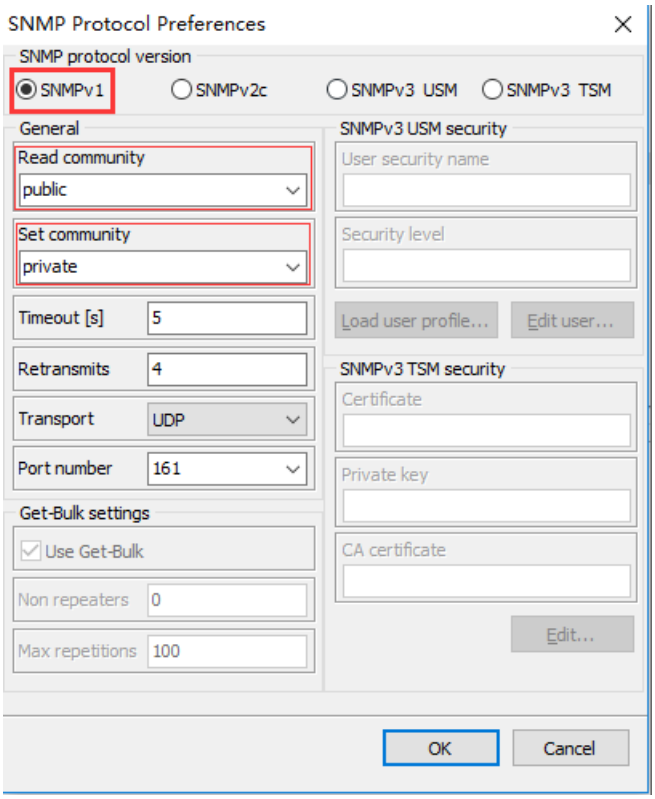
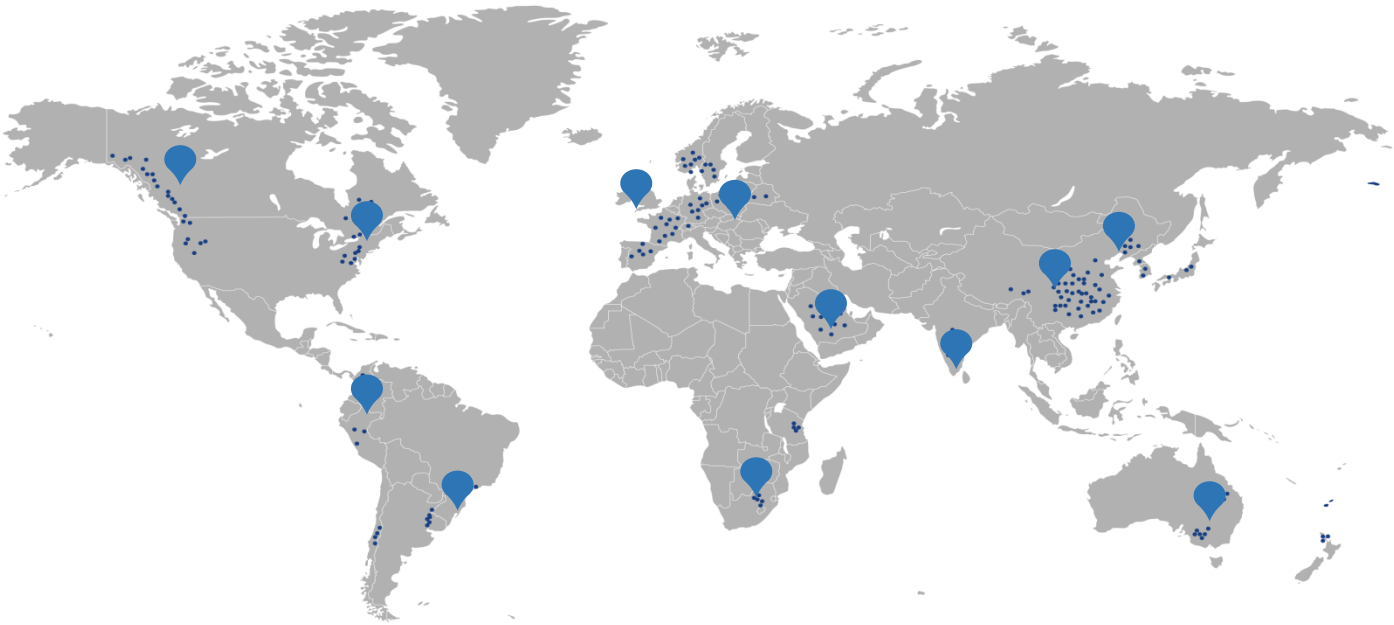


Fig.8.1 SNMP Protocol Preferences

Note: The default version is SNMPv1. The others can be customized to meet different demands.

Read community and Set community are both read through Simple Management Tool. Before using the SNMP, we need to check whether these two values are set by default.

For reading data, the value of Read community must be correct; for modifying data, the value of Set community must be correct. And if you want to modify this default value, it can only be modified through Simple Management Tool.



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