MonitorCable User Manual

OTN Solutions for Metro/Regional and Long Haul

Content

Chapter I MonitorCable Installation Prerequisites

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

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 MonitorCable 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 1.0.
Computer Configuration Requirements: 4-core CPU, 4G RAM or more, 500G disk space.

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

Table.1.0 Operating System

Note: √ : Supporting this system;
\ : No such system.

Once Microsoft.NET Framework 4.5 and SQL_SERVER are installed, you can start to install MonitorCable Management Software, and please note to select the language during installation.

1.1 Login SSMS

The network management software needs to connect the database remotely to implement the operation, so it is necessary to make the pre-connected database and open the remote function before running MonitorCable software. The specific steps as following:

Step One: Open SQL Server Management Studio and login as windows, then right click “SQL Server”, choose ”Properties” (see Fig.1.1).

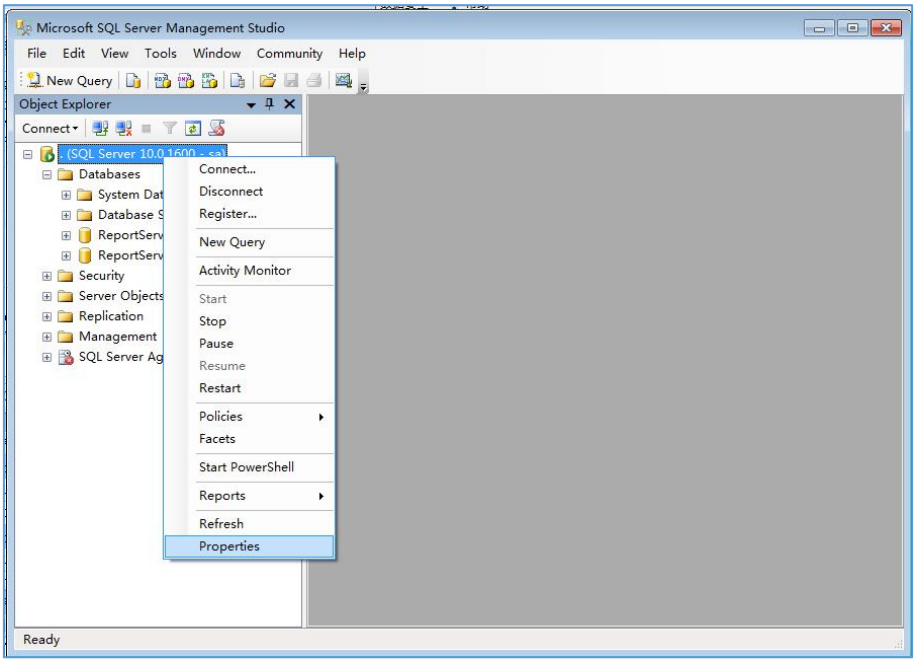

Fig.1.1 Microsoft SSMS

Step Two: After clicking “Properties”, choose “Security” on the left, then choose “SQL Server and Windows Authentication mode” in Server authentication to enable hybrid login mode(see Fig.1.2).

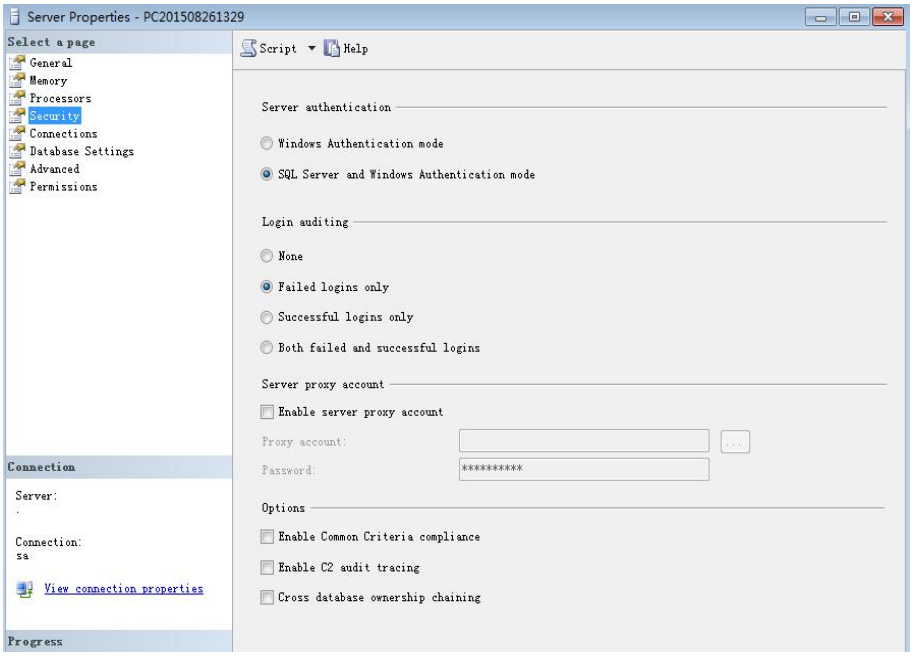

Fig.1.2 Server Properties

Step Three: Choose "Connections" on the left, check "Allow remote connections to this server", then click "OK" button (see Fig.1.3).

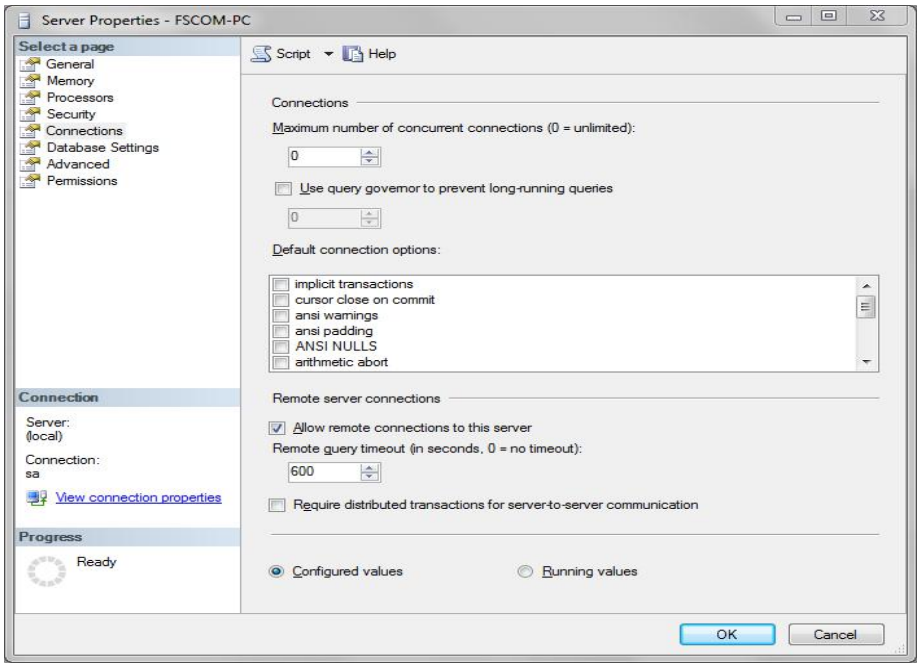

Fig.1.3 Server Properties

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

The user name "sa" is default, and cannot be modified.

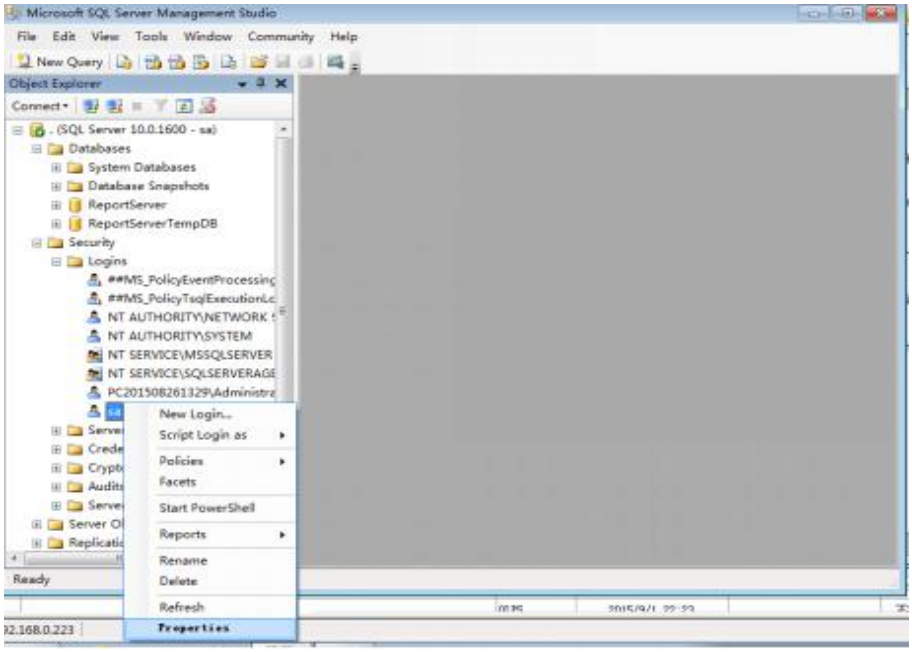

Fig.1.4 Microsoft SSMS

Step Five: Choose "General" on the left, then choose "SQL Server authentication" on the right and set password, click "OK" button (see Fig.1.5).

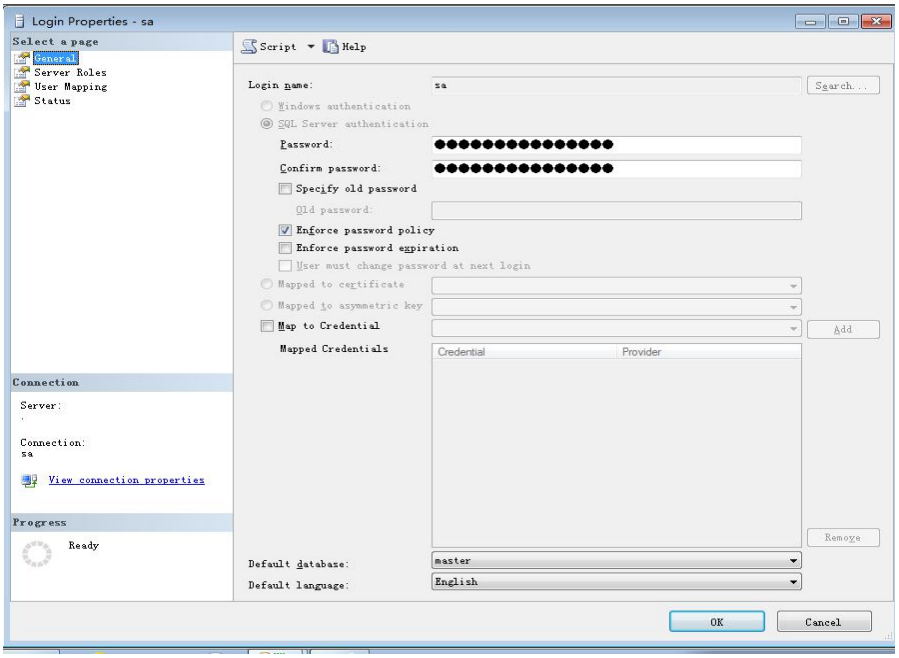

Fig.1.5 Login Properties

Step Six: Choose "Status" on the left, choose "Grant" and "Enabled" on the right and click "OK" button (see Fig.1.6).

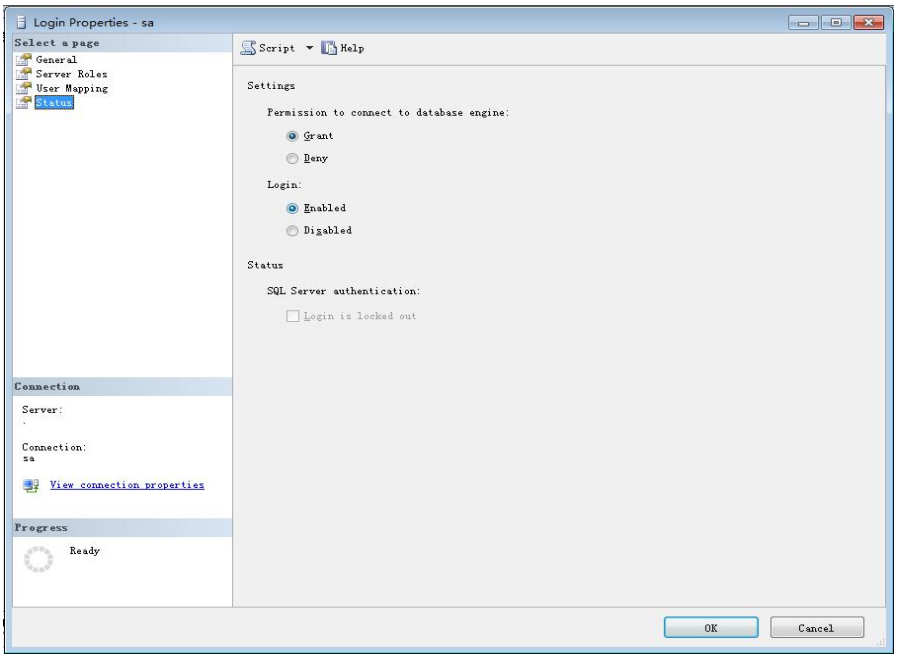

Fig.1.6 Login Properties

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

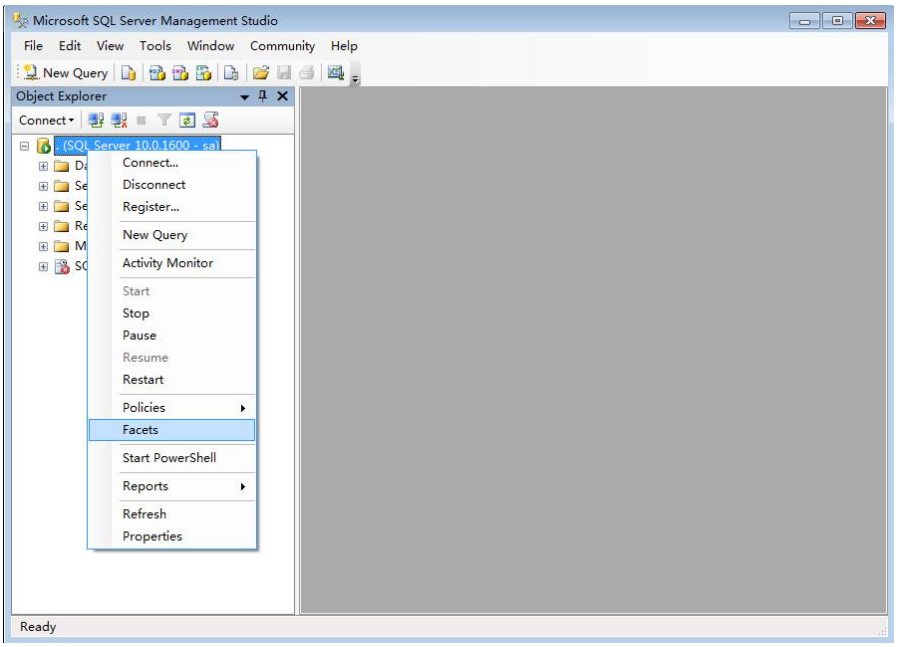

Fig.1.7 Microsoft SSMS

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

Note:

So far SSMS has been set up. Exit first, then log in with "sa". If it is successful, it means the "sa" account is enabled. Otherwise, please check whether the network connection can be pinged. If the network connection is normal, please further confirm whether you followed the above steps.

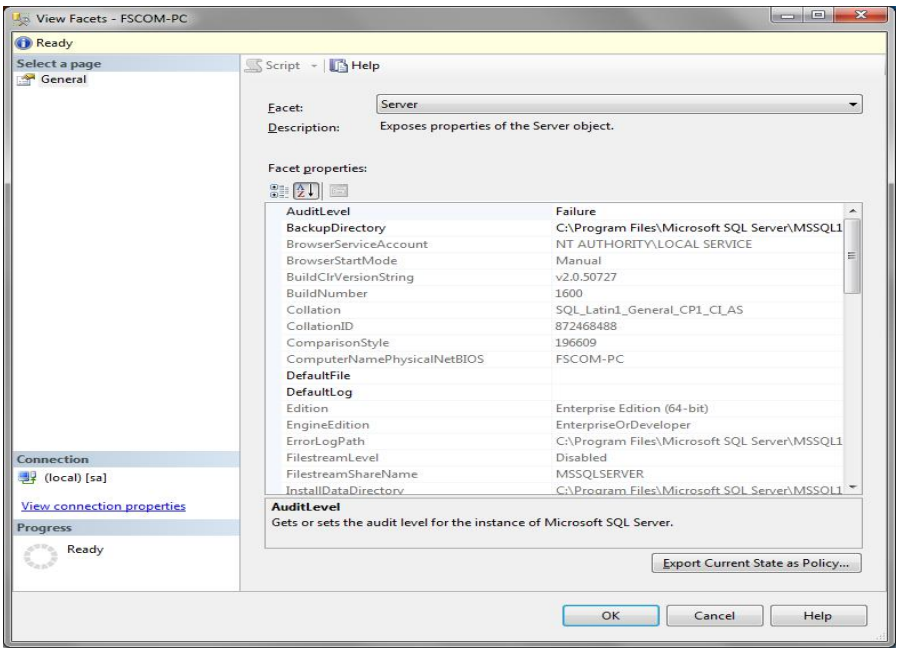

Fig.1.8 View Facets

1.2 Deploy SSMS

Step Nine: Open SQL Server Configuration Manager to start configuring SSCM , choose “SQL Server Services” on the left, please make sure the status of “SQL Server” and “SQL Server Browser” is running on the right (see Fig.1.9).

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.

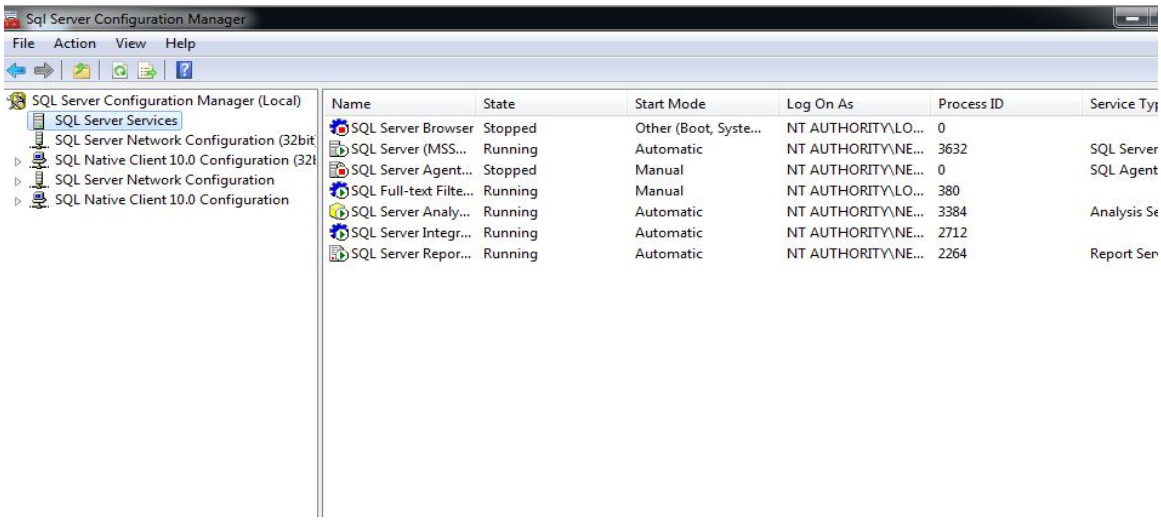

Fig.1.9 SQL Server Configuration Manager

Step Ten: 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.1.10). Please set status of TCP/IP as “Enable” by right click or opening TCP/IP Properties interface by double click (see Fig1.11), then modify “active” to ”yes”, click “OK” button.

Note:

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

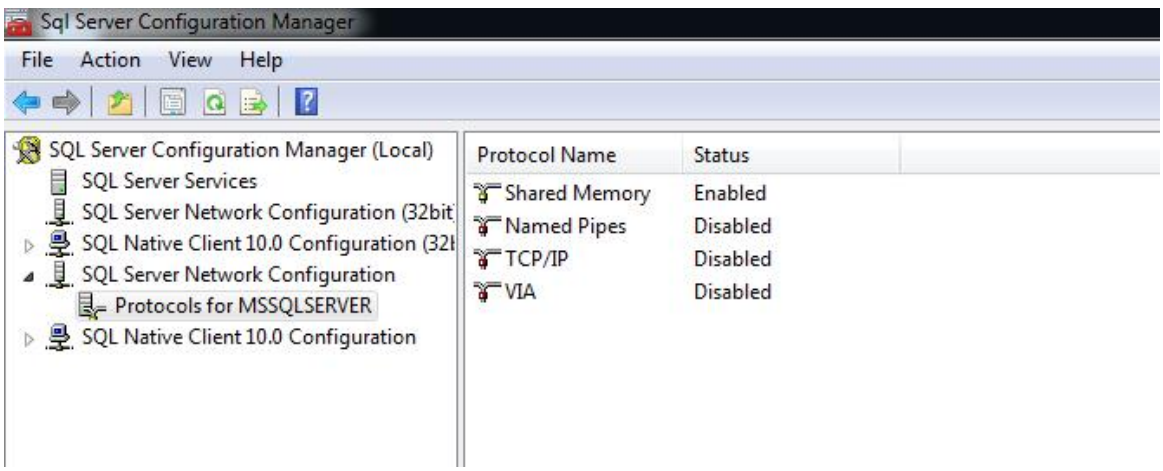

Fig.1.10 SQL Server Configuration Manager

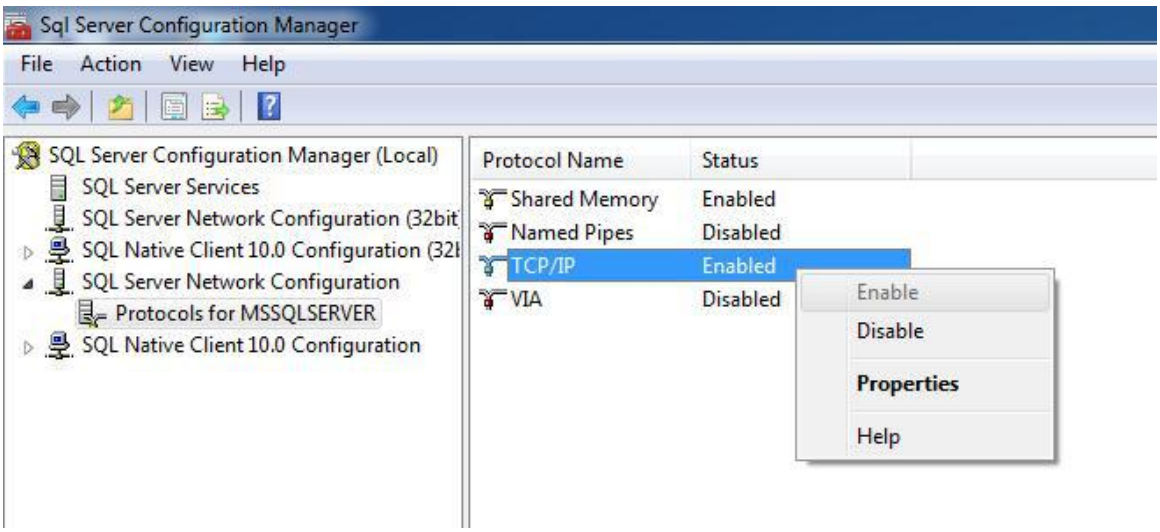

Fig.1.11 SQL Server Configuration Manager

Step Eleven: 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 the port of TCP as "1433", and click "OK" button (see Fig.1.12).

Step Twelve: Set TCP/IP of Client Protocols as "Enable" (see Fig.1.13).

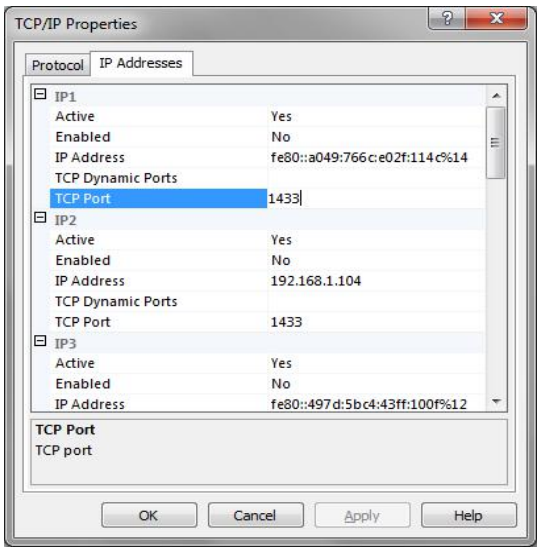

Fig.1.12 TCP/IP Properties

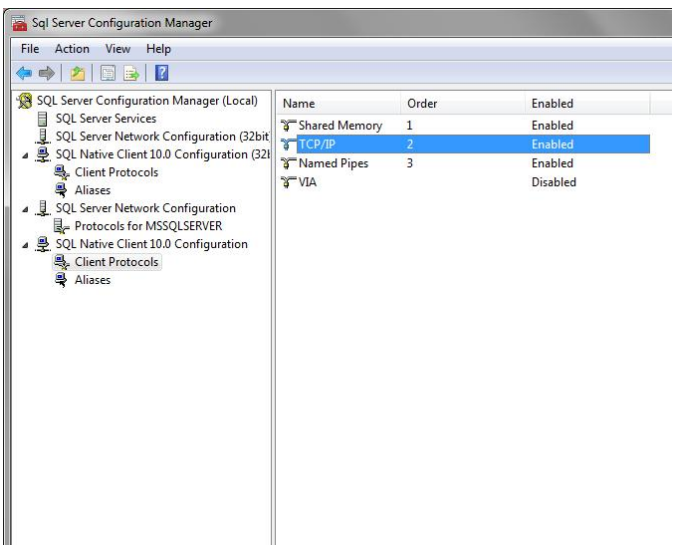

Fig.1.13 SQL Server Configuration Manager

Step Thirteen: Turn off the firewall or add SQL Serve.exe(C:\Program Files\Microsoft SQL Server \ MSSQL10.SQLEXPRESS \ MSSQL \ Binn \ sqlservr.exe) to the program list that allows the firewall to run. If you choose the latter, the concrete steps are as follows:

(1) Click the "start" to open control panel (see Fig.1.14).

(2) Click "View network status and tasks" (see Fig.1.15).

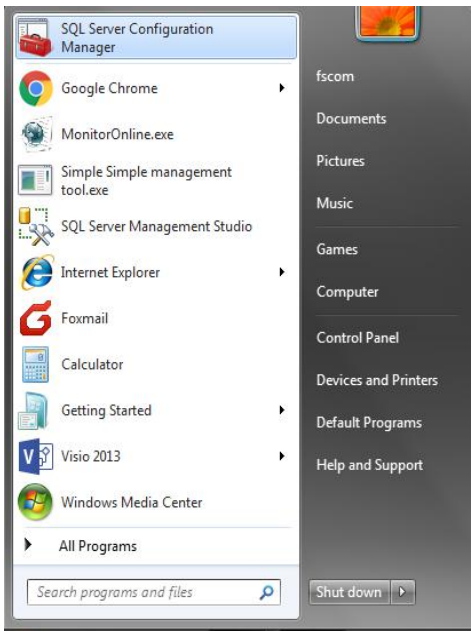

Fig.1.14 SQL Server Configuration Manager

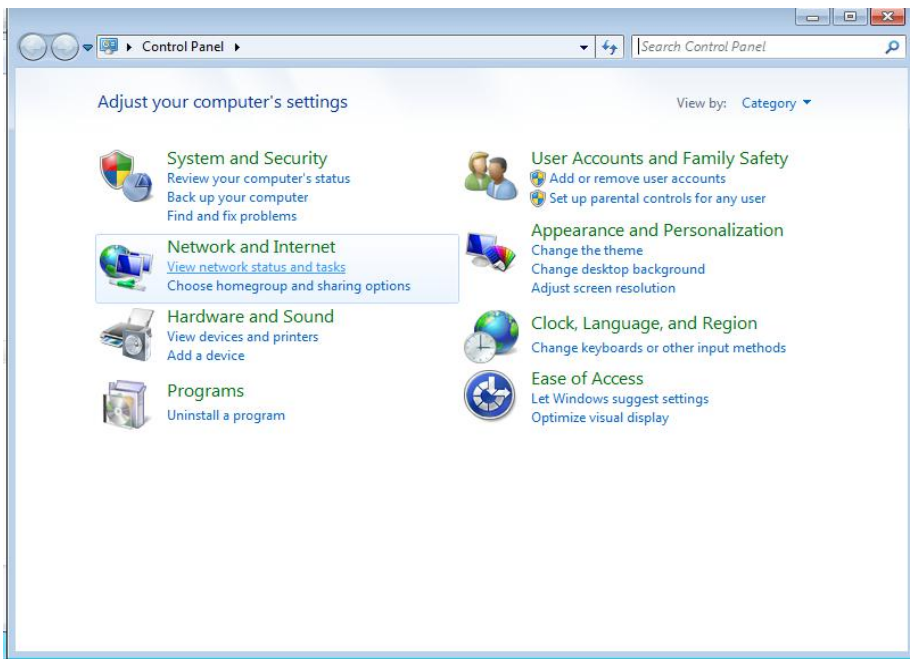

Fig.1.15 control panel

(3) Click “Windows Firewall” (see Fig.1.16).

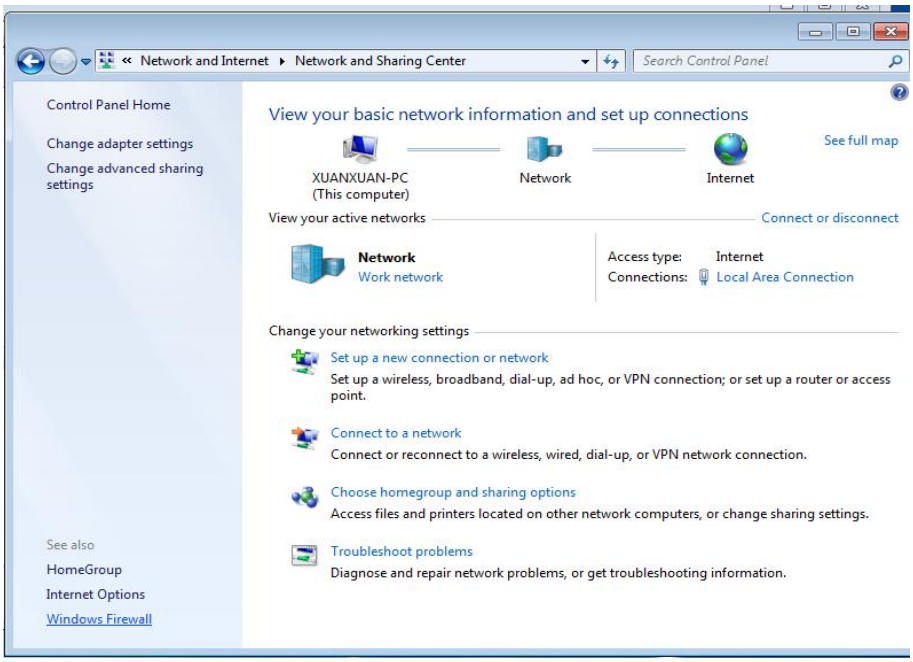

Fig.1.16 Network and Sharing Center

(4) Click “Allow a program of feature through Windows Firewall” (see Fig.1.17).

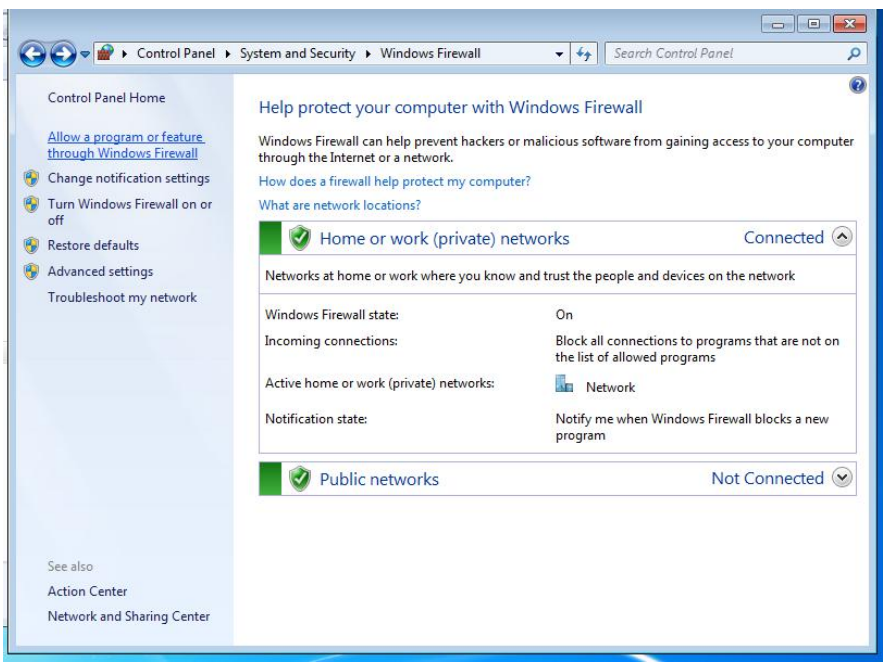

Fig.1.17 Windows Firewall

(5) Click “Changes settings” button and “Allow another program” button (see Fig.1.18).

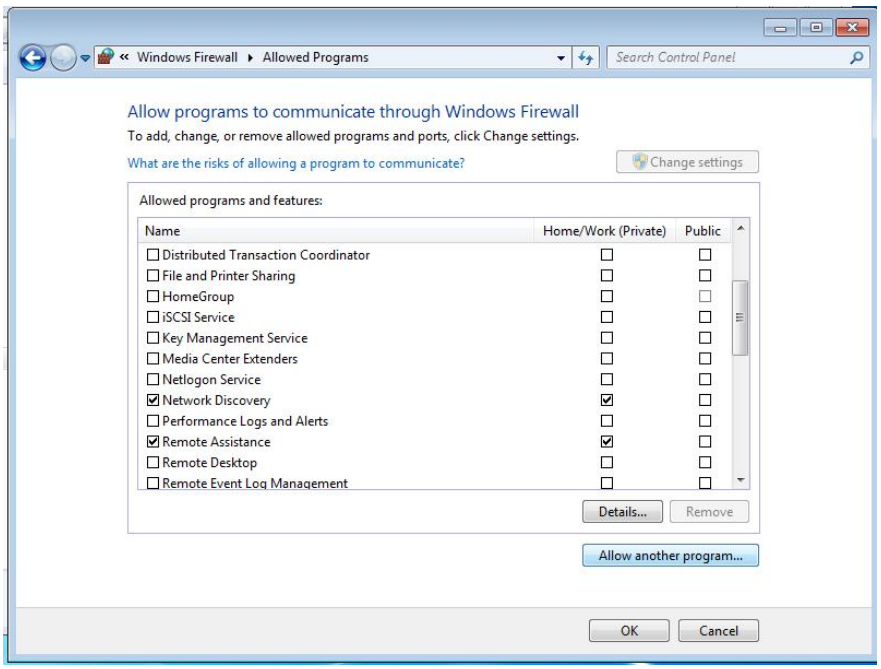

Fig.1.18 Allowed Programs

(6) Click “Browse” and open Program Files folder in C (see Fig.1.19).

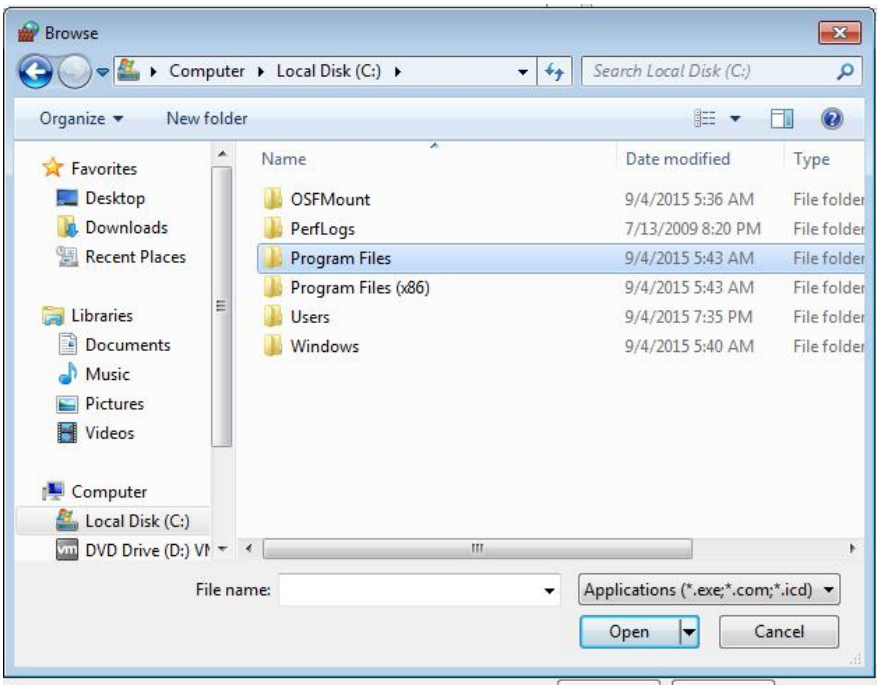

Fig.1.19 Local Dlisk C

(7) Open "Microsoft SQL Server" folder (see Fig.1.20).

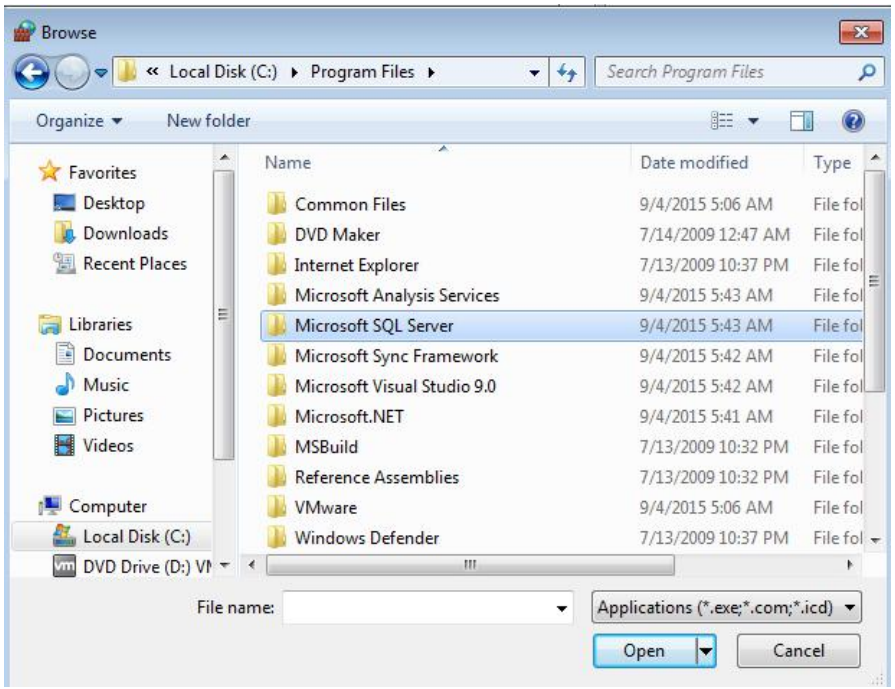

Fig.1.20 Program Files

(8) Open "MSSQL10.MSSQLSERVER" folder (see Fig.1.21).

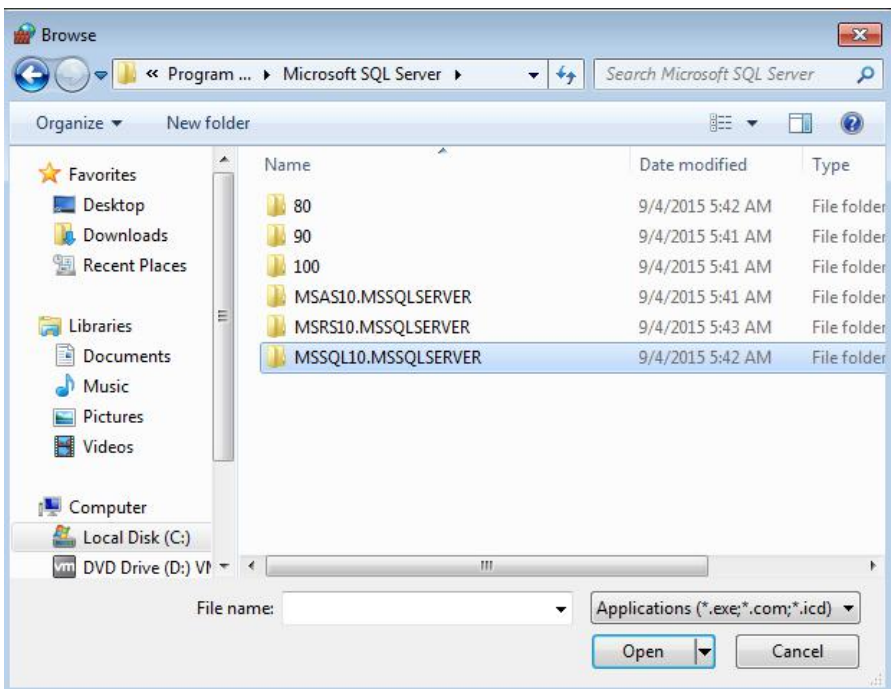

Fig.1.21Microsoft SQL Server

(9) Open “MSSQL” folder (see Fig.1.22).

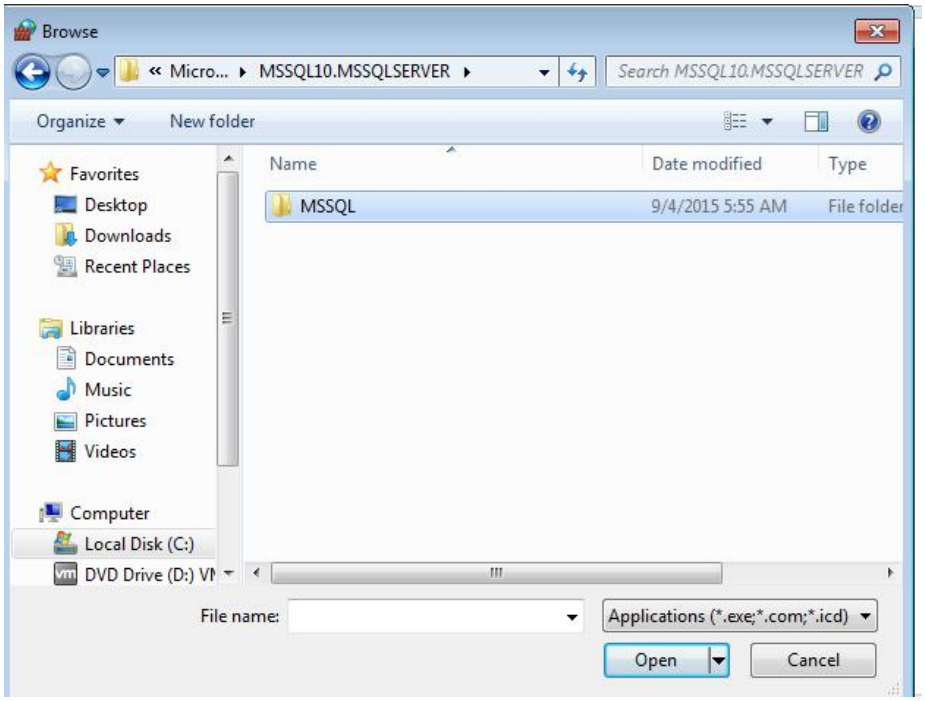

Fig.1.22 MSSQL10.MSSQLSERVER

(10) Open “Binn” folder (see Fig.1.23).

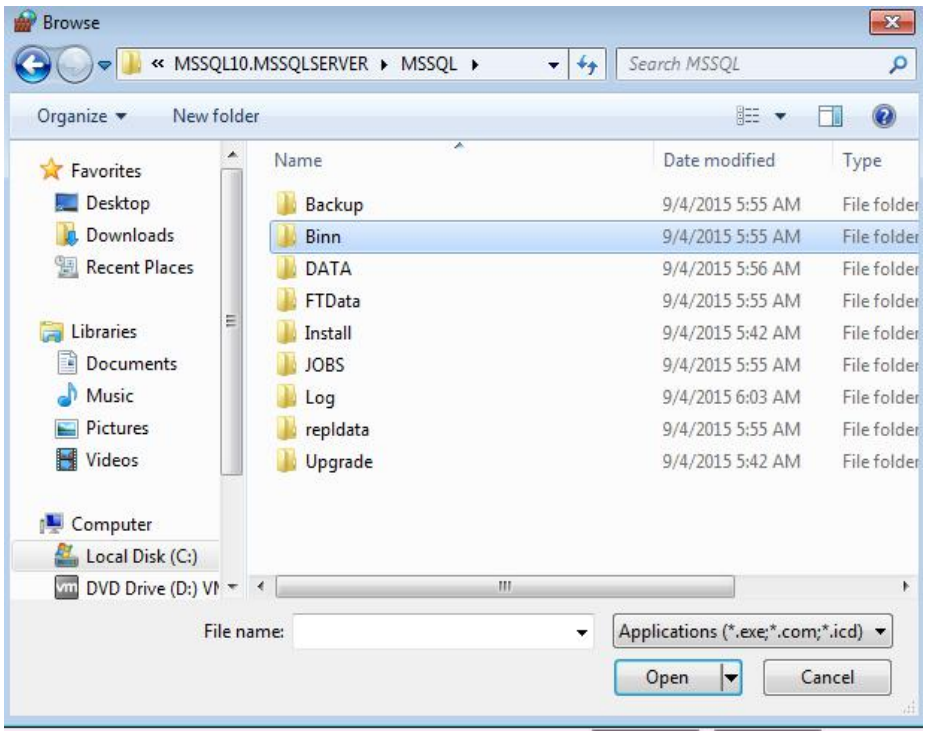

Fig.1.23 MSSQL

(11) Double-click “sqlservr” (see Fig.1.24).

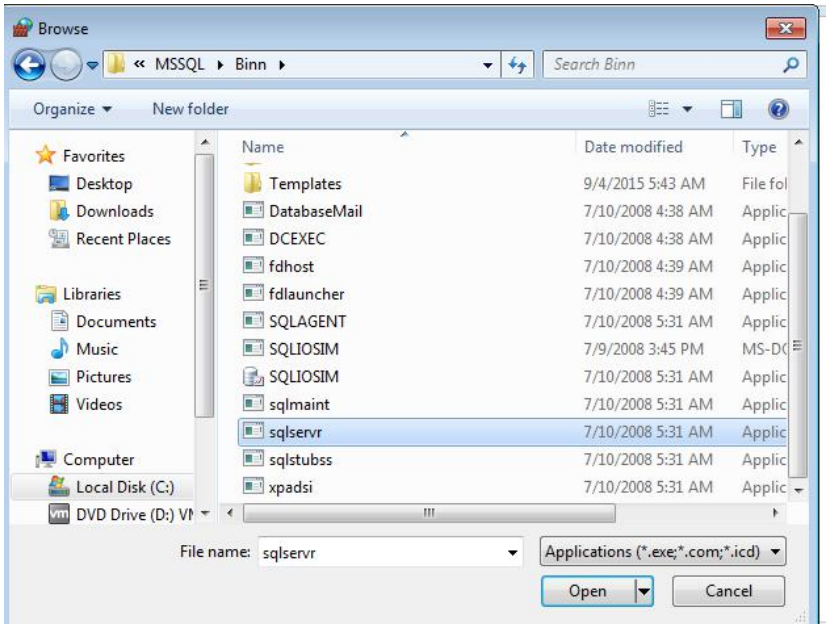

Fig.1.24 Binn

(12) Click “Add” button to add SQL Server Windows NT-64bit to “Allow Programs”(see Fig.1.25).

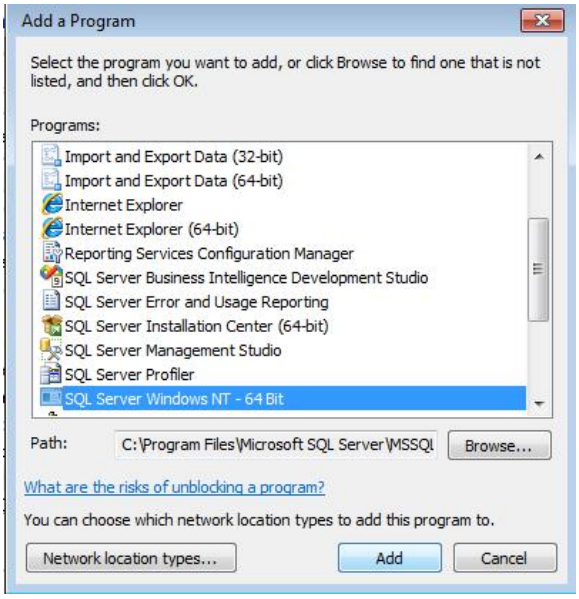

Fig.1.25 Add a Program

(13) The configuration is complete now. Please 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 MonitorCable Installation Procedures

2.1 MonitorCable Installation

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

Note:

Based on the software version in the CD.

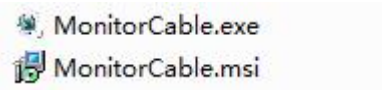

Fig.2.1 MonitorCable

The Shortcut will be created after installing MonitorCable, as shown in Fig.2.2.

Fig.2.2 MonitorCable

2.2 Connect Database

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

Step 2: Input IP address (Computer IP of installation database), Login name (Default as "sa") and Login password (password set when the database is installed) of database, and click "Test" button, if the database is existent and the connection is successful, then the box of database connection success will pop up. Please transfer to step 3. Otherwise, the an interface of establishing a database will pop up, please transfer to step 5.

Step 3: Click "OK" button, then click "Confirm" button. Then MAC address verification interface will pop up.

Step 4: Click "Confirm" button, if the device IP is online, then login interface will pop up. Input correct login account and password and click "Login" button, then "Submit success" interface will pop up.

Step 5: Please click "OK" button, then the interface of database configuration will pop up.

Step 6: Input IP address (Computer IP of installation database), Login name (Default as "sa") and Login password (password set when the database is installed) of database, and click "Create" button to create a database. After creating database, the interface of "Submit success" will pop up.

Step 7: Click "OK" button, then the interface of database connection will pop up. The other steps are same with Step2.

Note:

Both the initial login account and password of optical cable monitoring software are admin.

Chapter III Device Configuration

Click "Device 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 room and delete (see Fig.3.2).

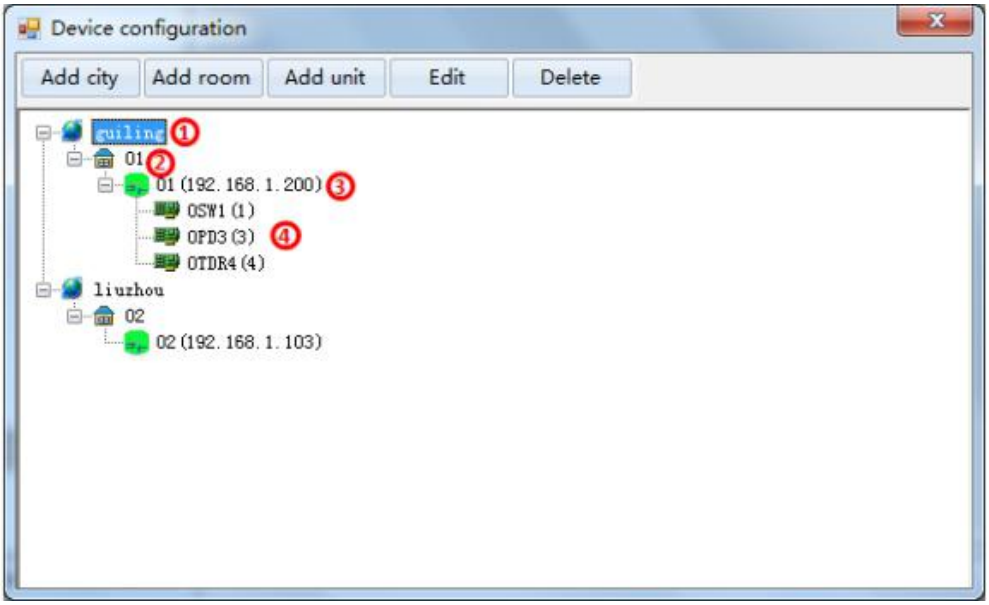

Fig.3.1 Device Configuration

Explain: ① City; ② Serviceroom; ③ Unit device name; ④ Business card

The serial number of the card is the slot where the card is located, for example: OTDR(4).

3.1 Add City

Click "Add City" button and the interface will pop up (see Fig.3.2). Input city code and city description, then click "Submit" button.

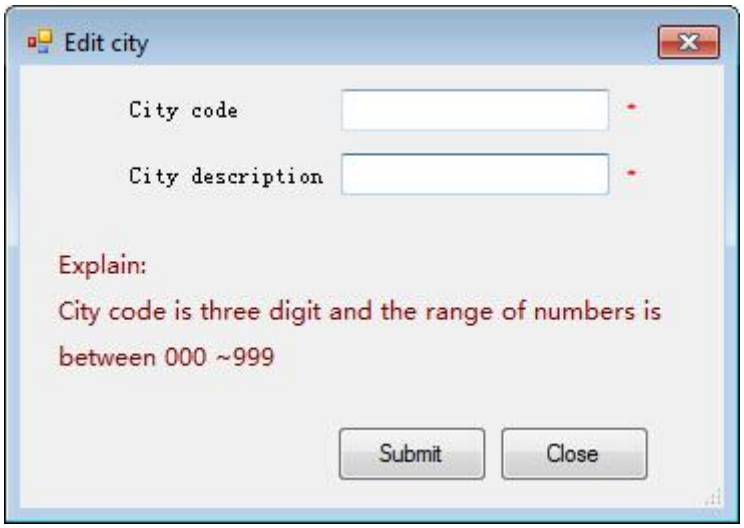

Fig.3.2 Edit City

3.2 Add Room

Click “Add Room” button and the interface will pop up (see Fig.3.3). Input room code and room description, then click “Submit” button.

Fig.3.3 Edit Unit

3.3 Add Unit

Click “Add Unit” button, and an interface of “edit unit” will pop up (see Fig.3.4). Inputting unit basic information, then Click “Submit” button. At the same time, the software will automatically refresh the number and type of cards in the “edit unit”.

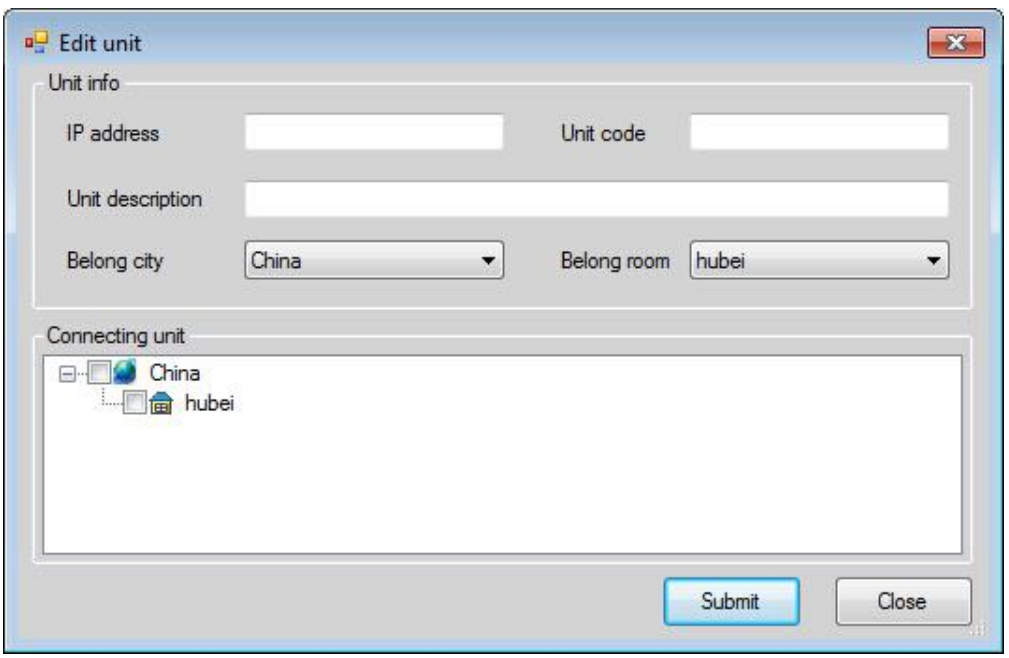

Fig.3.4 Edit City

3.4 Edit Room

You can edit information about city, room, unit and card in Fig.3.1(take edit room for example). When you click pre-edit room and "Edit" button, then the "Edit room" interface will pop up (see Fig.3.5), finally, you can modify the basic information of the device in this interface.

Fig.3.5 Edit Room

3.5 Board Configuration

The network topology tree is on the left side of the main interface, and in the topology tree, you can see all the cities, machine rooms, unit, the type and number of boards of each network element. Right-click the board icon and click "Edit board" to enter the board configuration interface(see Fig 3.6).

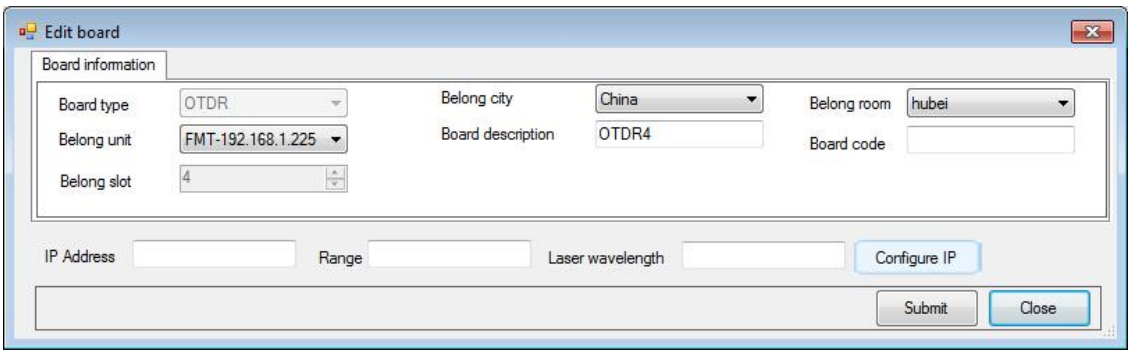

Fig.3.6 Edit Board

After the board code and IP address, range, and wavelength are inputting, then click "Submit" to complete the configuration of the board. You can also click Configure IP to remotely set the IP address, subnet mask, and gateway of the OTDR(see Fig 3.7).

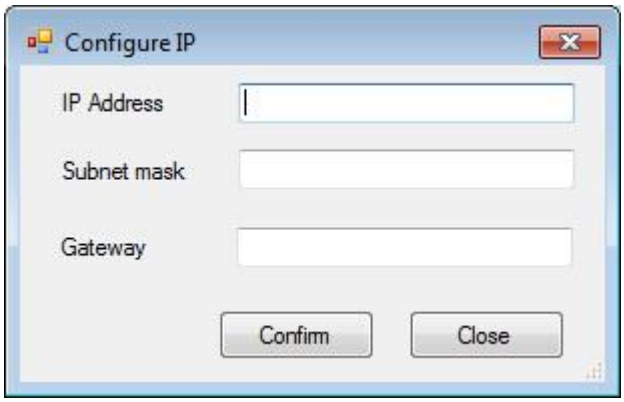

Fig.3.7 Configure IP

Chapter IV Configuration of Cables

Click "Configuration of cable resources" of menu bar, and the interface will pop up(see Fig.4.1). The function of adding cable, editing, and deleting could be achieved.

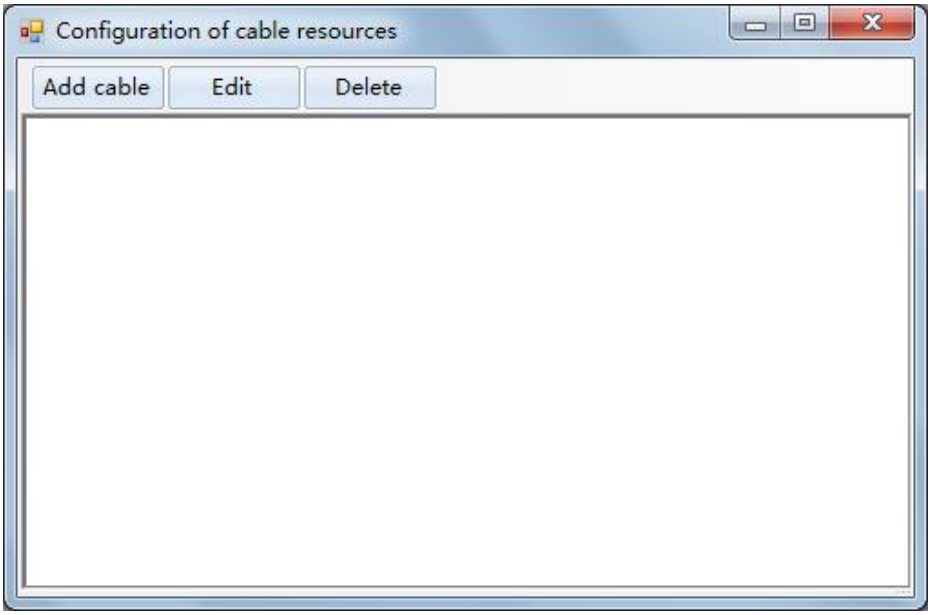

Fig.4.1 Configuration of Cable Resources

4.1 Add Cable

Click "Add cable" button in Fig.4.1 and the "Cable edit" interface will pop up (see Fig.4.2). Input the information of cable, related OSW and OTDR, automatic acquisition measured value and parameter set, then click "Confirm" button.

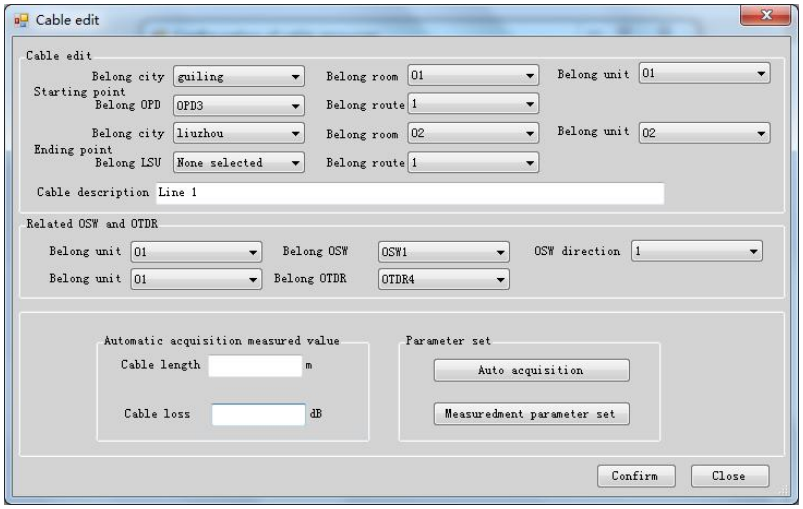

Fig.4.2 Cable Edit

A: Cable edit: Select city, room, unit, belong OPD and OPD route of starting point and city, room, unit, belong LSU and LSU route of ending point. If there is no OPD at the starting point of the cable or there is no LSU at the end of the cable, there is no need to select the information of OPD or LSU when configuring the cable information.

Cable Description: This item cannot be empty.

B: Related OSW and OTDR: if there is no OSW in the line, there is no need to configure OSW. But the OTDR must be configured with OSW.

C: Automatic acquisition measured value: The cable length and cable loss in the automatic acquisition measurement value are the two parameter basis of the parameter setting, which can be obtained by the automatic acquisition button.

D: Parameter Set: Click the "measurement parameter set" button, and the interface of parameter setting will pop up(see fig 4.3).

Note:

Because the cables have both ends(A End to B End), you should configure a virtual network element.

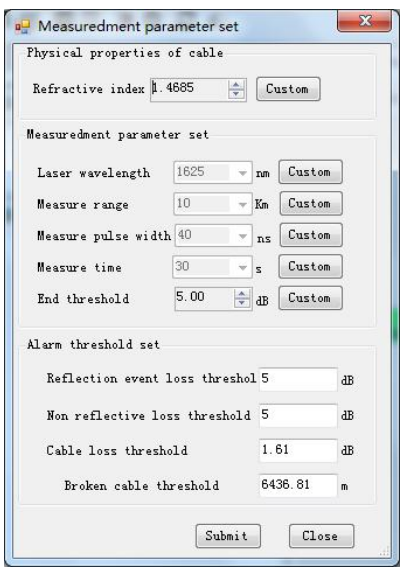

Fig.4.3 Measurement Parameter Set

4.2 Edit Cable

In the tree structure (see Fig.4.1), select a Pre-edit cable and click "Edit" button, and an interface of "Cable edit" will pop up (see Fig.4.4), you can edit the information of cable, related OSW and OTDR, automatic acquisition measured value and parameter set.

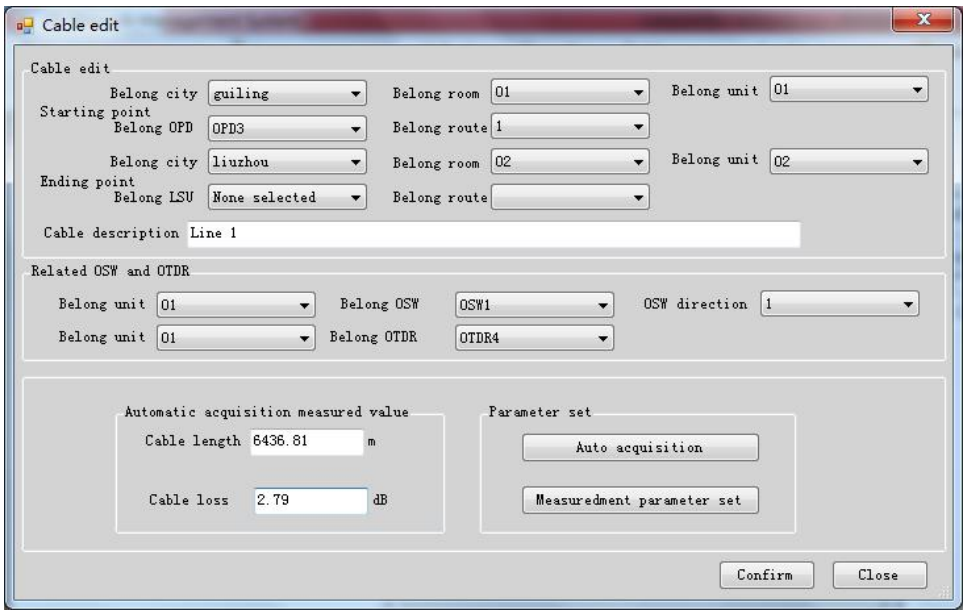

Fig.4.4 Cable Edit

4.3 Delete Cable

In the tree structure (see Fig.4.5), select one of the pre-delete cables and click "Delete" to delete the cable.

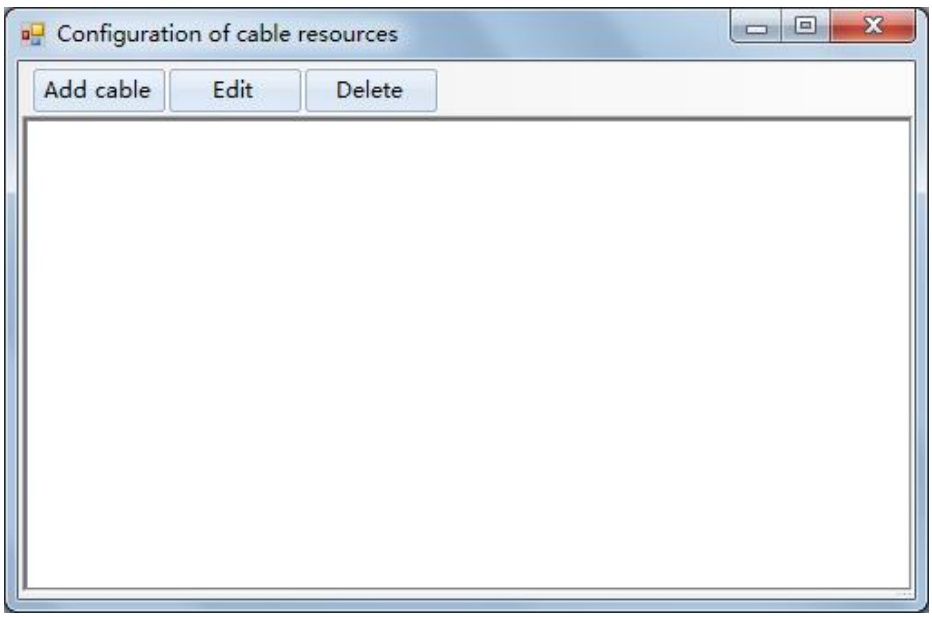

Fig.4.5 Configuration of Cable Resources

Chapter V Monitoring of Equipment

5.1 Network Topology Tree

The network topology tree is located on the left side of the main interface (see Fig.5.1). You can see all the cities, machine rooms, unit, the type and number of cards of each network element. Double-click the card icon to enter the chassis monitoring interface.

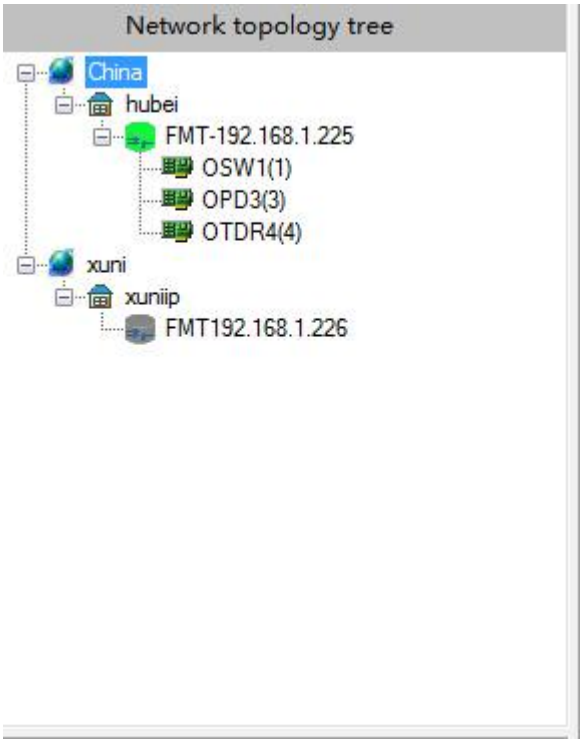

Fig.5.1 Network Topology Tree

5.2 Device Topology

Device topology is in view display area of main interface (see Fig 5.2), and you can see all states of device. means normal, means offline, means emergency alarm, means serious alarm, means general alarm). Double click unit icon of equipment topology to open an interface of chassis monitoring interface(see OPD monitoring interface in Fig.5.3).

Fig.5.2 Cable Monitoring

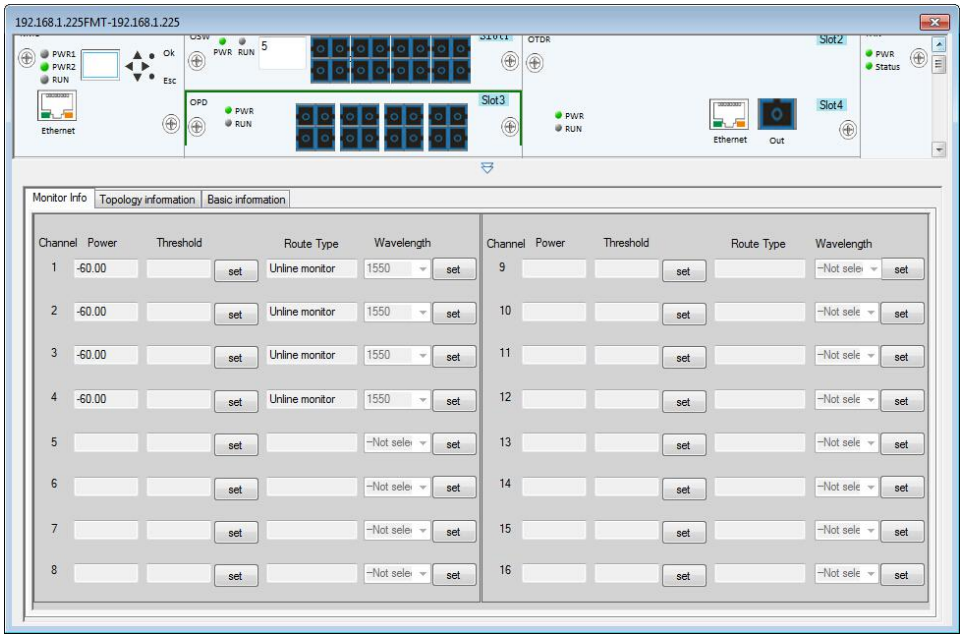

Fig.5.3 Cable Monitoring

Chapter VI Cable Monitoring

6.1 Cable Topology

The cable topology tree is on the left side of the main interface (see Fig. 6.1).

In the topology tree, you can see the city where the cable is located and the cable that is monitored under each city.

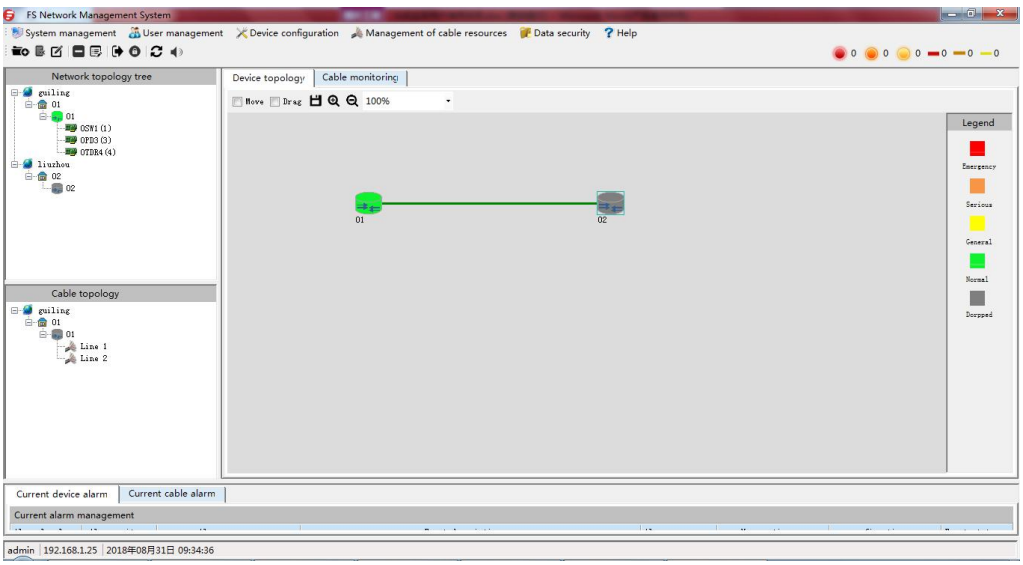

Fig.6.1 Cable Monitoring

MonitorCable Interface Instruction

System	Description
①Menu Bar	
②Shortcut bar	 : Search unit, by clicking the icon, you can search all the units in the LAN.
	 : Add unit, by clicking the icon, you can add unit.
	 : Delete unit, by clicking the icon, you can delete the selected unit.
	 : Edit unit, by clicking the icon, you can edit some information of unit.
	 : Add line card, by clicking the icon, you can add a line card for the unit.
	 : Delete line card, by clicking the icon, you can delete a line card of the unit.
	 : Edit line card, by clicking the icon, you can edit some information of the unit.
	 : Exit system, by clicking the icon, you can close the current system.
	 : Lock system, by clicking the icon, you can lock the current user.
	 : Close/open alarm sound, by clicking the icon, you can close or open network management software alarm sound.
	 : The number of emergency alarm.
	 : The number of serious alarm.
	 : The number of general alarm.
	 : The number of cable emergency alarm.
	 : The number of cable serious alarm.
	 : The number of cable general alarm.

6.2 Cable Measurement

Click the city, room, machine or cable in cable topology can realize single cable measurement, single polling measurement and periodic polling measurement. Then take single cable measurement for example.

Choose a cable then right click start button to realize single cable measurement(see Fig.6.2). If OTDR associated with the cable has not configured IP address, the interface will pop up as shown in figure 6.3. You should edit the IP address of the OTDR in "Edit board" interface, if the cable has configured successfully, the "monitor cable single cable measurement" interface will pop up(see Fig.6.3).

When the test is completing, this interface will pop up(see Fig.6.4).

Fig.6.2 Single Cable Measurement

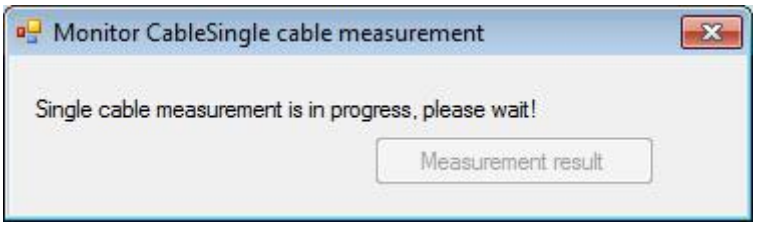

Fig.6.3 Monitor CableSingle Cable Measurement

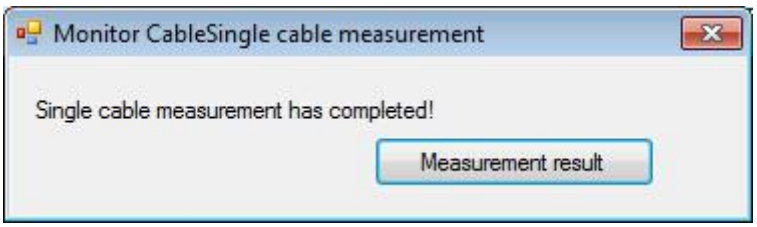

Fig.6.4 Monitor CableSingle Cable Measurement

Click “measurement result” button, you can view the results of the measurement(see Fig.6.5).

In figure 6.5, you can click on an event in the event list to locate the location directly on the graph and quickly query the event location.

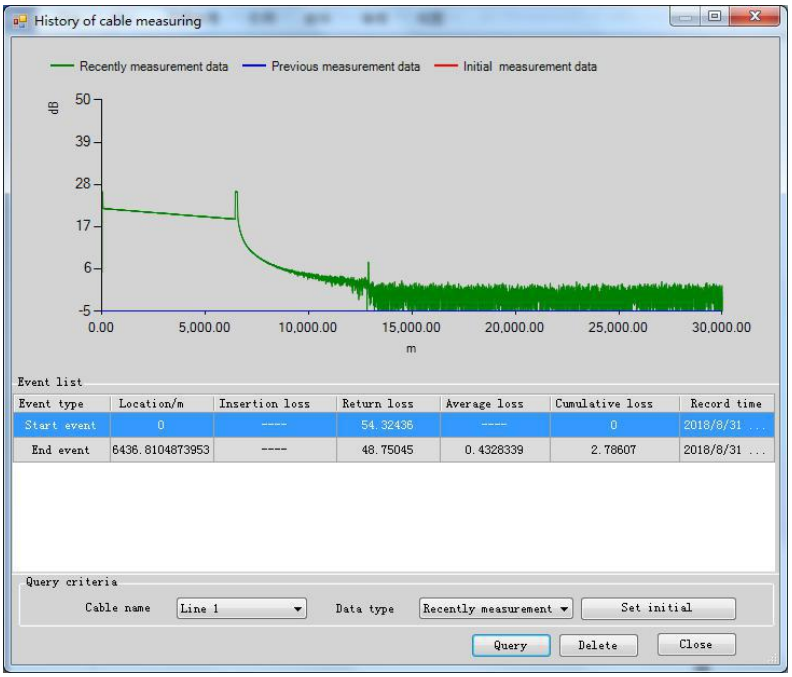

Fig.6.5 History of Cable Measuring

6.3 Automatic Alarm Test

Cable edit

Take the configuration of two optical cables as an example.

The configuration of Line 1: the channel of the optical switch needs to correspond, the optical cable is 1, the corresponding optical switch channel is 1;

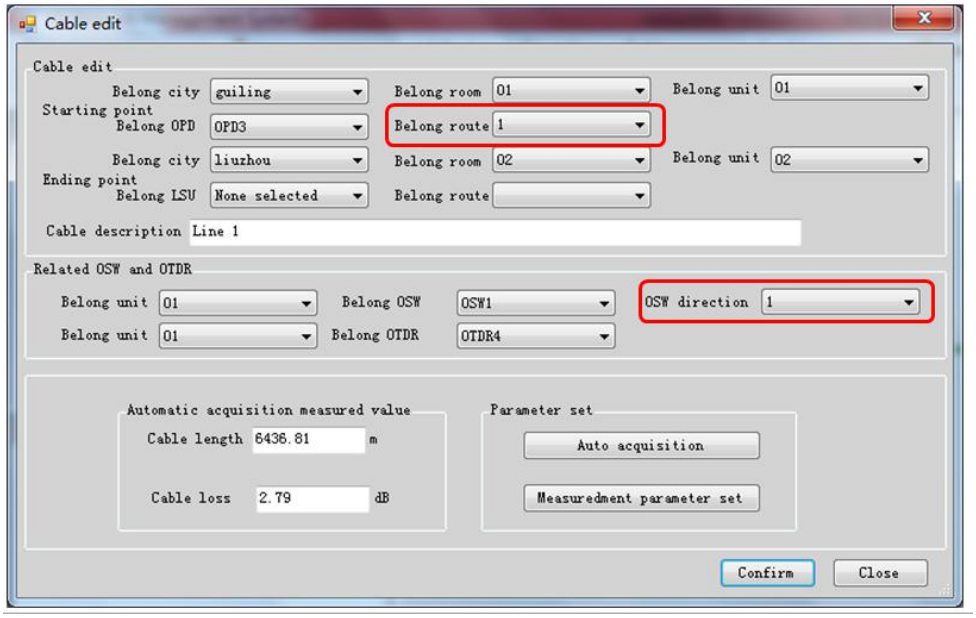

Fig.6.6 Cable Edit

The configuration of Line 2: the channel of the optical switch needs to correspond, the optical cable is 2, the corresponding optical switch channel is 2.

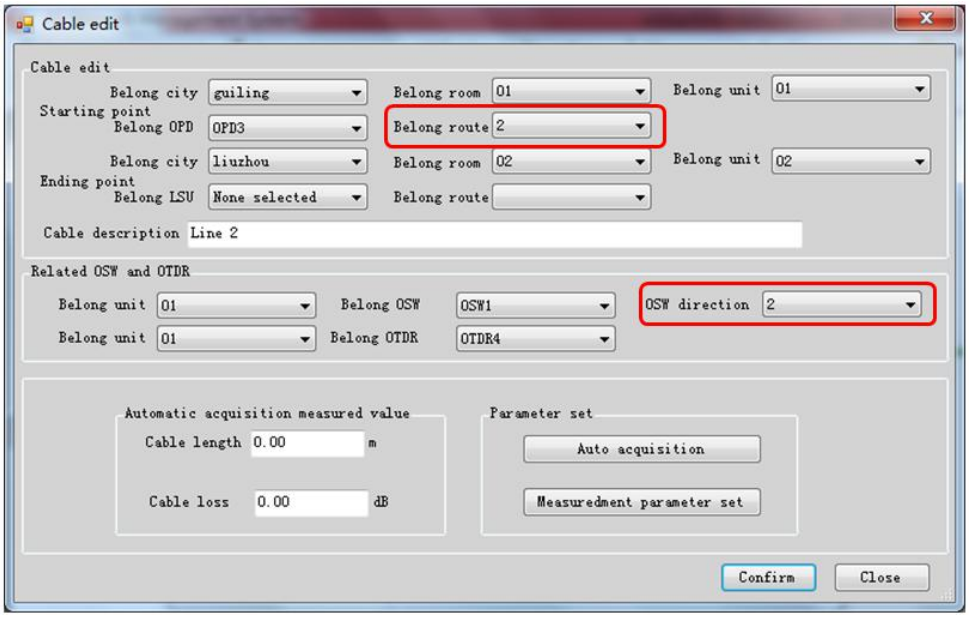

Fig.6.7 Cable Edit

OPD card configuration

Configure the alarm threshold of the OPD board. When the power value of a channel in the OPD is lower than the set alarm threshold, an alarm will be triggered. The optical switch will automatically switch to the alarm channel and start the OTDR test.

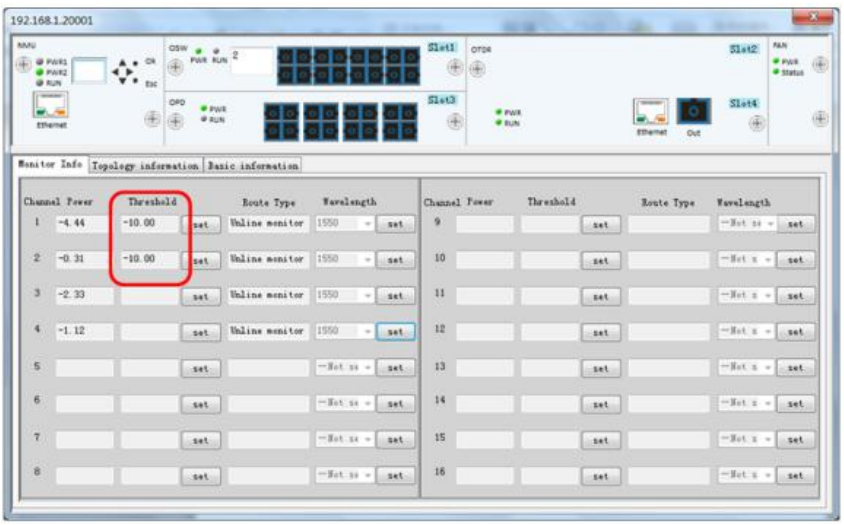

Fig.6.8

Fig.6.9 Alarm Measurement

6.4 Polling Test

The cable configuration is unchanged. Right click the “unit” in the cable topology, you can choose “Single polling” or “Periodic polling” (see Fig.6.10). “Single polling” means starting the test from the first cable until the last cable test is completed; “Periodic polling” means polling continuously at specified intervals until the user clicks to stop.

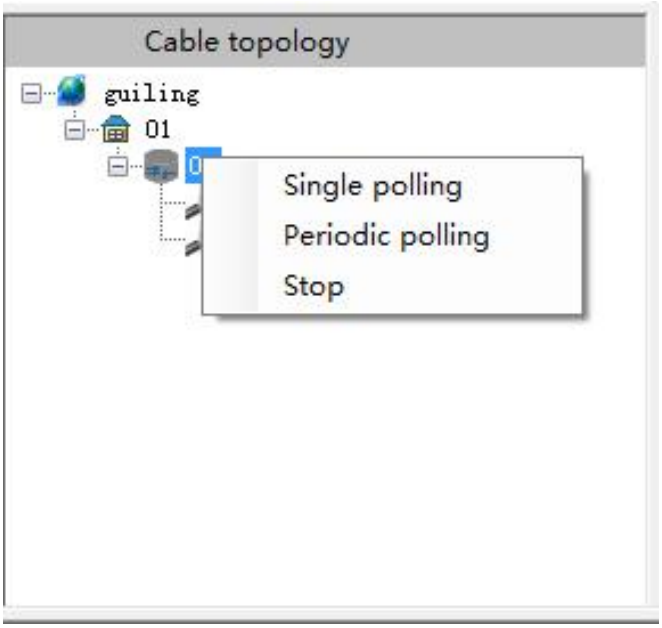

Fig.6.10 Cable Topology

The periodic polling interval is set in the time interval of the period measurement of the cable resource management (see Fig.6.11).

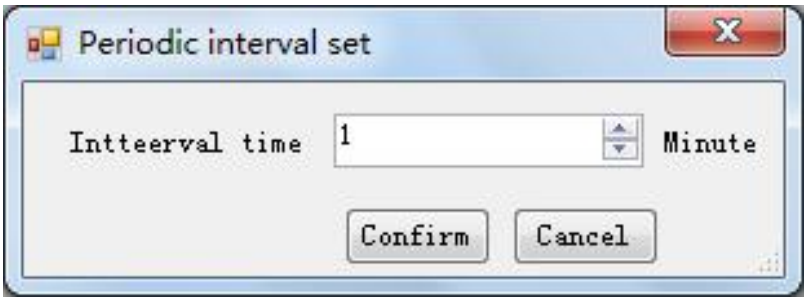

Fig.6.11 Periodic Interval Set

6.5 Test Record Query

The test record is in the optical cable measurement history of the optical cable resource management(see Fig 6.12).

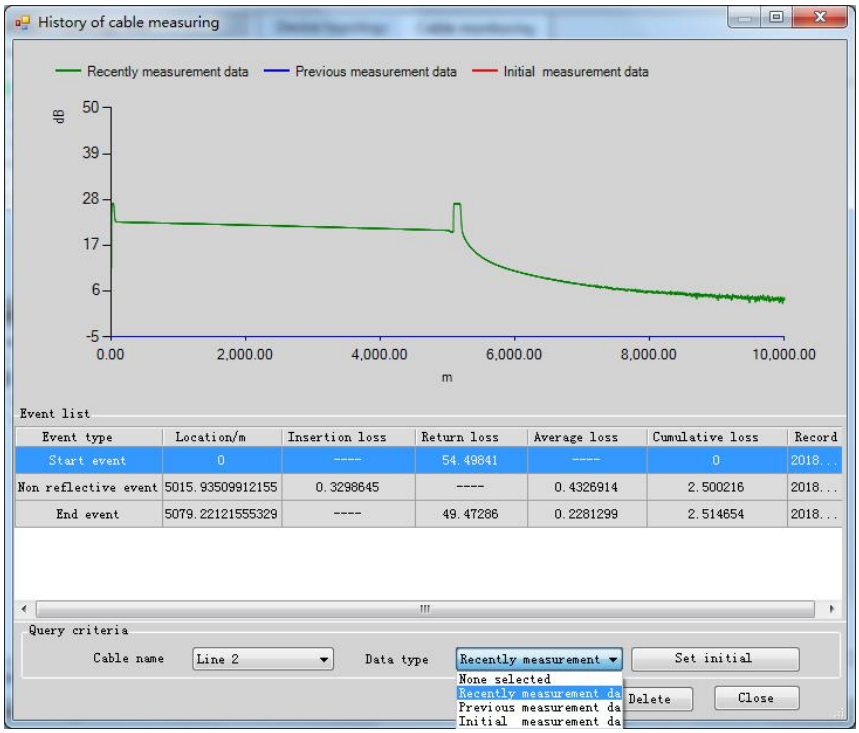

Fig.6.12 History of Cable Measuring

Here you can check the three test records of each cable, including the first measurement record and the two recent measurement records. And the first measurement record will not be covered.

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