ZXMS80

Multimedia Service Management System

Operation Guide for Net Manage System

Version 2.03.800

ZTE CORPORATION
NO. 55, Hi-tech Road South, ShenZhen, P.R.China
Postcode: 518057
Tel: (86) 755 26771900
Fax: (86) 755 26770801
URL: http://ensupport.zte.com.cn
E-mail: support@zte.com.cn

LEGAL INFORMATION

Copyright © 2010 ZTE CORPORATION.

The contents of this document are protected by copyright laws and international treaties. Any reproduction or distribution of this document or any portion of this document, in any form by any means, without the prior written consent of ZTE CORPORATION is prohibited. Additionally, the contents of this document are protected by contractual confidentiality obligations.

All company, brand and product names are trade or service marks, or registered trade or service marks, of ZTE CORPORATION or of their respective owners.

This document is provided “as is”, and all express, implied, or statutory warranties, representations or conditions are disclaimed, including without limitation any implied warranty of merchantability, fitness for a particular purpose, title or non-infringement. ZTE CORPORATION and its licensors shall not be liable for damages resulting from the use of or reliance on the information contained herein.

ZTE CORPORATION or its licensors may have current or pending intellectual property rights or applications covering the subject matter of this document. Except as expressly provided in any written license between ZTE CORPORATION and its licensee, the user of this document shall not acquire any license to the subject matter herein.

ZTE CORPORATION reserves the right to upgrade or make technical change to this product without further notice. Users may visit ZTE technical support website http://ensupport.zte.com.cn to inquire related information.

The ultimate right to interpret this product resides in ZTE CORPORATION.

Revision History

Revision No.	Revision Date	Revision Reason
R1.0	November 9, 2010	First Edition

Serial Number: SJ-20101108201306-001

Publishing Date: 2010-11-09(R1.0)

Contents

Chapter 1 Overview 1-1
1.1 System Overview 1-1
1.1.1 Introduction of Network Management System 1-1
1.1.2 Function Flowchart of Network Management System 1-3
1.1.3 Features 1-4
1.2 Design Specifications of Network Management System 1-4
Chapter 2 Knowledge Preparation 2-1
2.1 ZXMVC 8900 2-1
2.2 Name and Number 2-1
2.3 Number Prefix 2-1
2.4 Slot Number 2-2
2.5 HD Terminal 2-2
2.6 Backup Setting and Active Setting 2-2
Chapter 3 Fast Application Configuration 3-1
Chapter 4 Operation Description 4-1
4.1 Logging In to Server 4-1
4.2 Version Information 4-2
4.3 MCU Management 4-3
4.3.1 Configuring an MCU 4-3
4.3.2 Configuring a Board 4-9
4.3.3 Configuring a Terminal 4-15
4.3.4 Controlling an MCU 4-17
4.3.5 Diagnosing MCU 4-18
4.4 User Management 4-31
4.5 Version Management 4-33
4.5.1 Uploading Software 4-34
4.5.2 Downloading Software 4-35
4.5.3 Registration Software 4-36
4.5.4 Activating the Software 4-37
4.5.5 Viewing Software Version 4-38
4.5.6 Upgrading EMC - Under the Normal Mode 4-39
4.5.7 EMC Upgrading - Under the Security Mode 4-40
4.5.8 Uploading the board 4-42

4.6 Log Management 4-44
4.6.1 Fault Log 4-44
4.6.2 System Log..... 4-45
4.6.3 User Log..... 4-46
4.7 System Help 4-47
4.8 Exiting the System..... 4-47
Appendix A Common Problems of Web Server A-1
A.1 Failed Login to Web Page A-1
A.2 Failed Login After Web Page Displayed..... A-2
A.3 Web Page Error..... A-2
A.4 Failed Software Uploading..... A-2
A.5 Failed Software Downloading A-3
A.6 Disconnection from MC A-3
A.7 Failed Flash Display..... A-3
A.8 Inconsistent MCU States A-4
A.9 NMS Server Error A-5
Figures..... I
Tables III
Glossary V

Chapter 1
Overview

Table of Contents

System Overview 1-1
Design Specifications of Network Management System 1-4

1.1 System Overview

The ZXMS80 is a conferencing product of new generation put forward by ZTE. The network management system is one of the components of the ZXMS80 and located at the operation support layer.

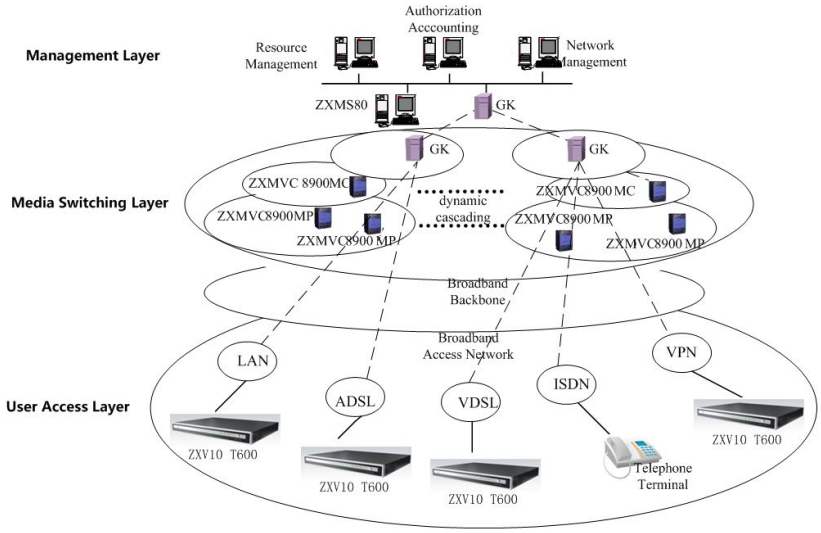
The network management system is used to configure the boards of the ZXMVC 8900 (video conferencing multipoint control unit). After boards are inserted to the ZXMVC 8900, you need to connect the boards to the database in the network management system. Then, you can configure, control, and diagnose MCUs in the network management system.

1.1.1 Introduction of Network Management System

1.1.1.1 Overview of MS80 Architecture

The ZXMS80 has a clear architecture with three layers, namely operation support layer, media switching layer, and user access layer. The details are shown in the following figure.

Figure 1-1 Layers and Structures of ZXMS80



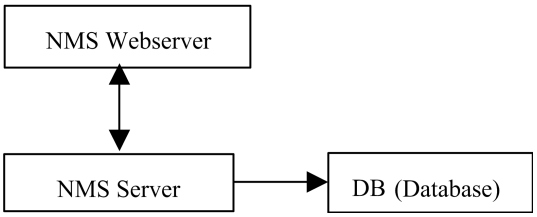
The network management system is located at the operation support layer. It provides a unified management system and implements management for all MCUs, which facilitates the device administrator in operation and management. However, in traditional conferencing TV systems, the management for MCUs is implemented by the administrator of each MCU independently.

The ZXMS80 network management system implements topology management, configuration management, fault management, and log management of MCUs.

1.1.1.2 Components

The ZXMS80 network management system consists of three components, namely NMS Webserver, NMS Server, and database (DB), as shown in the following figure.

Figure 1-2 Components of ZXMS80 Network Management System



NMS Webserver

It provides GUI for users to configure, control and diagnose MCUs, and implement version management and log management.

NMS Server

ZXMS80 NMS server. It sends a request from the Web page to the MCU and DB. In this way, the functions available on the Web page are implemented. The NMS Webserver and NMS Server use the standard CORBA interface for communication.

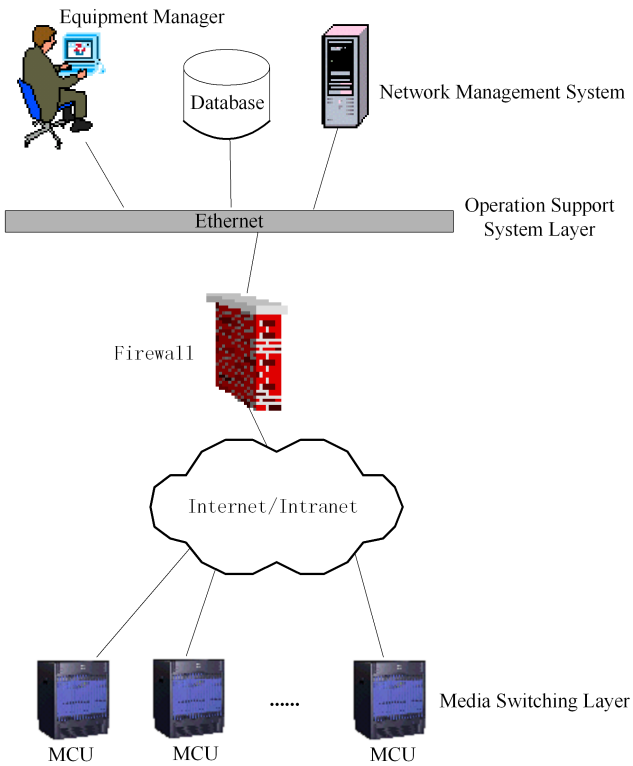
DB

Database server. It stores the data of the whole system, including the configuration of MCUs, boards, terminals, and logs. The SQL Server 2005 is used.

1.1.1.3 Networking

The networking with the network management system is shown in the following figure.

Figure 1-3 Networking of Network Management System



1.1.2 Function Flowchart of Network Management System

The ZXMS80 network management system provides six main functions, namely MCU management, version management, user management, log management, system help, and system exit. The functional bar on the page is shown in the following figure.

Figure 1-4 Functional Bar of Network Management System

1.1.3 Features

The features of the network management system are as follows:

High Security

When accessing the network management system, uses must enter the required password for authentication, which avoids login of illegal users. In addition, the network management system implements authority- and domain- based management for the device administrator. To be specific, the administrator can assign the management rights to MCU devices according to different areas.

Easy Operation

All the software of the network management system runs on the server and no software needs to be installed on the client. The network management system provides the device administrator with device management at the unified network wide media switching layer. The administrator can implement remote network management at any place only by opening the Web browser and logging in to the Web page of the ZXMS80 network management system.

Convenient Maintenance and Extendibility

No software runs on the client and thus only the software on the server needs to be updated. This solves the problems of controlling and updating the versions of client applications.

1.2 Design Specifications of Network Management System

During the development of the ZXMS80 network management system, the involved technologies and standards that comply with are as follows:

- RFC 1155: Structure and Identification of Management Information for TCP/IP-based Internets
- CORBA programming specifications
- J2SE programming specifications
- J2EE programming specifications

Chapter 2
Knowledge Preparation

Table of Contents

ZXMVC 8900 2-1
Name and Number 2-1
Number Prefix 2-1
Slot Number 2-2
HD Terminal 2-2
Backup Setting and Active Setting 2-2

2.1 ZXMVC 8900

The ZXMVC 8900 is developed by ZTE and is an MCU device using the SIP protocol. Its full name is video conferencing system multipoint control unit. It provides high efficient communication with video and audio data for users with different bandwidths.

The management object of the ZXMS80 network management system is ZXMVC 8900.

2.2 Name and Number

The ZXMS80 numbers all types of terminals. Just like making a call, users can locate a terminal and initiate a call only after getting the terminal number.

For the numbering rule of IP terminals, refer to the national standard. To fully meet the requirements on future multi-service development and multi-carrier development, the numbering rule is defined as "service ID + service provider code + user number". Wherein, the user number complies with the E.164 numbering specifications and uses the format of "area ID + local number".

The above numbering rules can be customized by users according to requirements.

2.3 Number Prefix

IP terminals are not connected to MCUs. Therefore, all the IP terminals in the network management system need not be numbered. In this case, only the terminals with the same number are configured with common prefixes to distinguish the terminals located in different areas and managed by different MCUs. These common prefixes are called number prefixes.

2.4 Slot Number

A slot number refers to the location where a board is inserted to the ZXMVC 8900 shelf. A slot number starts with 0.

The ZXMVC 8900 supports a maximum number of 17 slots, ranging from 0 to 16.

2.5 HD Terminal

HD terminals refer to T600 video conferencing terminals with 720P/1080i/1080P pixels. The terminals use a built-in dynamic accelerating engine with multi-frame and bi-directional prediction and the technology of concurrent multi-frame encoding, which provides delicate and beautiful pictures.

2.6 Backup Setting and Active Setting

Backup setting refers to the configurations in the database and the data is configured by users on the page.

Active setting refers to the configurations obtained from MCUs after the network management system is successfully connected to MCUs. The active settings are stored on MCUs. After users download the backup settings to MCUs, the backup settings take effect.

Chapter 3
Fast Application Configuration

From the perspective of a beginner or a new deployment user, this chapter describes how to quickly implement simple configurations in the ZXMS80 network management system, including the configurations of MCU, boards, and terminals. For other complex configurations and operations, refer to the following chapters.

1. Enter the Web browser, enter `http://Server IP address:90` (For example, `http://10.129.129.200:90`) in the address bar, and then press **Enter**. The login page is displayed.
2. Click **English**, enter the administrator name (admin) and password (111111), and then click **Login** to display the homepage.
3. Choose **MCU > Configure** from the main menu. The **New MCU** page is displayed.
4. Enter the MCU number (for example, 89001), IP address, and IP address of the proxy server. Then, set the proxy server port to **5060**. Unless otherwise specified, use the default values for other parameters. After the setting is complete, click **Save**.
5. Choose **MCU > Control** from the main menu. On the **Control MCU** page, select the new MCU (89001) in the left-hand pane, and click **Connect MCU** to connect the MCU to the network management system.
6. Choose **MCU > Board** from the main menu. On the page that is displayed, select **Backup Setting** under 89001 in the left-hand pane to display the **MCU Slot Configuration** page.
7. According to the configuration of the boards inserted in the slots on the MCU, click ... next to the required slot number. Then, select the required board type from the drop-down list, and click **Save**.

   Note

   For the NILAN and ENIL boards, the IP address, subnet mask, and gateway are required.

8. After the setting is complete, click **Download backup setting** to download the configuration as the current board configuration. If the board is connected successfully, the MCU plays a prompt sound.

9. Choose **MCU > Terminal** from the main menu. On the page that is displayed, select **Terminal Conf** under 89001 in the left-hand pane to display the **Terminal Configuration** page.
10. Click **Add**. The **New Terminal** page is displayed. Set **Name** (any terminal name) and **Number** (allocated by the carrier). Then, set **Type** to **IP number prefix**. After the setting is complete, click **Save** and exit.

Chapter 4
Operation Description

Table of Contents

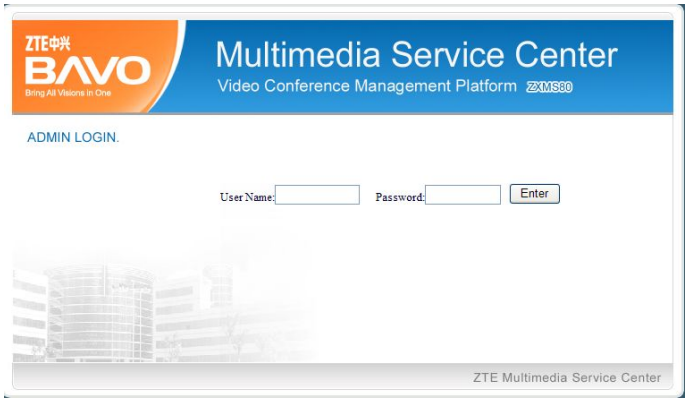
Logging In to Server 4-1
Version Information 4-2
MCU Management 4-3
User Management 4-31
Version Management 4-33
Log Management 4-44
System Help 4-47
Exiting the System 4-47

4.1 Logging In to Server

Steps

1. On the client computer, open the IE browser and enter `http://Server IP address:90` (Web address of the network management system). The homepage of ZXMS80 network management system is displayed, as shown in the following figure.

Figure 4-1 Initial Page



2. Enter the user account (admin) and password (111111) of the administrator. Click **Enter** to display the main page of the ZXMS80 network management system, as shown in the following figure.

Note

To ensure the system security, you need to change the password in time after login.

Figure 4-2 ZXMS80 Network Management System

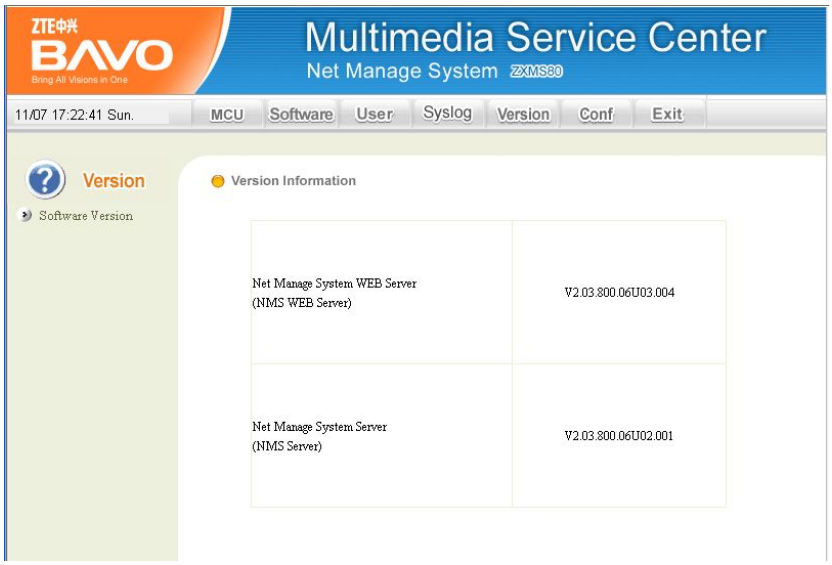


Table 4-1 Main Page Description

Area	Description
Main Menu	Displays six functional menus of the ZXMS80 network management system, namely MCU, Version, User, Log, Help, and Exit.
Operation	Displays the currently available operations. The available operations vary with the main menu and submenu, and are used for various man-machine interaction.
Submenu	Displays the currently available submenus. The available submenus vary with the main menu.

– End of Steps –

4.2 Version Information

Version Information shows the current version of the system. It is recommenced that new users check the current version of the system before using the system. The network management system display this page by default after login.

Click **Version** in the main page to display the version information page.

4.3 MCU Management

Choose **MCU** from the main menu. The system displays the available options Control, Diagnose, Configure, Board, Terminal, Cascading Line (not used temporarily), as shown in the following figure.

Figure 4-3 MCU Management Menus

To manage MCUs, the following sequence is usually used. For detailed flow description, refer to the function flowchart of the network management system.

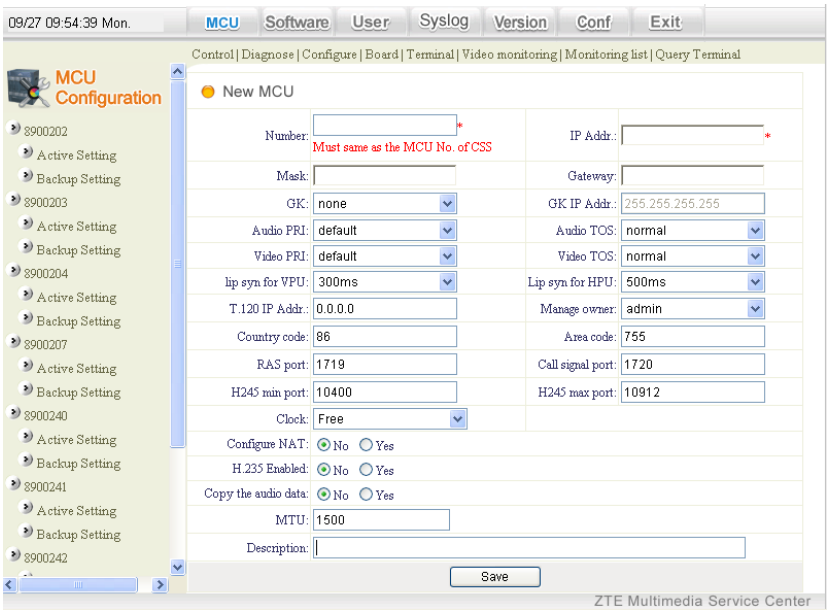
1. Configure MCU
2. Control MCU
3. Configure Board
4. Configure Terminal
5. Diagnose MCU

4.3.1 Configuring an MCU

Configuring MCU is the first step for MCU management. Configuring MCU involves the configuration for three parts, namely basic information, board information, and terminal information.

Choose **MCU > Configure** from the main menu. The **New MCU** page is displayed, as shown in the following figure.

Figure 4-4 Configuration Page of MCU



In the above figure, the submenu in the left-hand pane displays the configured MCUs in a list and the operation area displays the page for operating the new MCU.

Usually, the sequence for configuring an MCU is **Add MCU > Save settings > Download backup settings**. The following provides detailed descriptions.

4.3.1.1 Adding an MCU

Select **MCU > Configure** from the main menu. The **New** page is displayed, as shown in the following figure.

Figure 4-5 Adding an MCU

The following table describes the parameters in the above figure.

Table 4-2 Adding an MCU

Parameter	Description
Number	Indicates the MCU number used for distinguishing different MCUs.
IP Addr.	Indicates the IP address of the MC module in the MCU.

Parameter	Description
Mask	None
Gateway	None
GK	Gatekeepernone, autodiscover, assigned
GK IP Addr	IP Address of Gatekeeper
Audio PRI	Indicates the priority of audio data packets transmitted in the network. The available options are **default** and **1**to **7**. Wherein, **7** represents the highest priority.
Audio TOS	Indicates the service option of audio data packets. By default, it is **normal**.
Video PRI	Indicates the priority of video data packets transmitted in the network. The available options are **default** and **1**to **7**. Wherein, **7** represents the highest priority.
Video TOS	Indicates the service option of video data packets. By default, it is **normal**.
Lip syn for VPU	Indicates the common gateway delay. The time for the APU to process audio data is different from that for the VPU to process image data. To solve the problem of lip synchronization, a coding delay is required for APU. This parameter refers to the coding delay. By default, it is **300ms**.
Lip syn for HPU	To solve the problem of lip synchronization, a delay is required. By default, it is **500ms**.
T.120 IP Addr	By default, it is **0.0.0.0**
Manage owner	admin
Country code	Code of the country. By default, it is **86**.
Area code	By default, it is **755**
Description	Indicates the description of the MCU for easy memory, including MCU location and card configuration.
Others are referred in this manual.	

After all the parameters are set, click **Save**. Then, the left-hand menu area will list the latest configuration of the MCU.

4.3.1.2 Deleting and Modifying the Backup Settings of an MCU

Prerequisites

- When an MCU is connected to the network management system, the name and IP address of the MCU cannot be modified. To modify them, you need to disconnect the MCU from the network management system.

- When an MCU is connected to the network management system, the MCU cannot be deleted. In this case, the **Delete** button grays out. To delete the MCU, you need to disconnect it from the network management system.

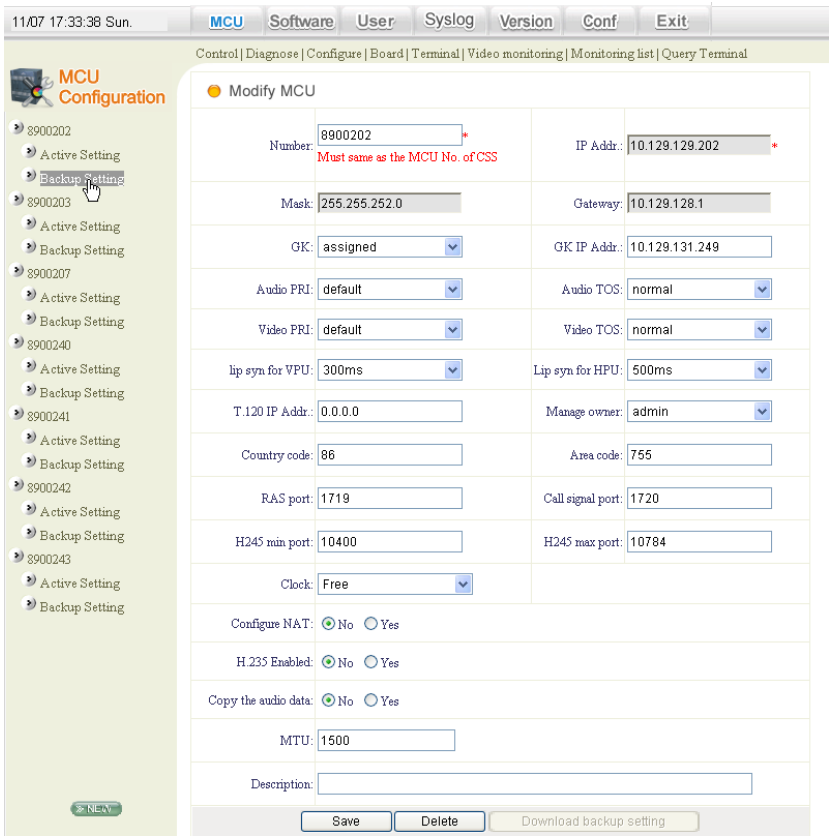
Context

After an MCU is deleted, its board configuration and terminal configuration are all deleted.

Steps

1. Choose **MCU > Config** from the main menu.
2. Select **Backup Setting** under the required MCU in the left-hand pane. A page is displayed, as shown in the following figure.

Figure 4-6 Deleting and Modifying MCU-Backup Setting



3. Delete or modify the backup settings of the MCU.
   - Click **Delete** to delete the MCU.
   - After the settings are modified, click **Save** to save the settings.

– End of Steps –

4.3.1.3 Downloading the Backup Settings of an MCU

Prerequisites

This operation can be performed only after the MCU is connected.

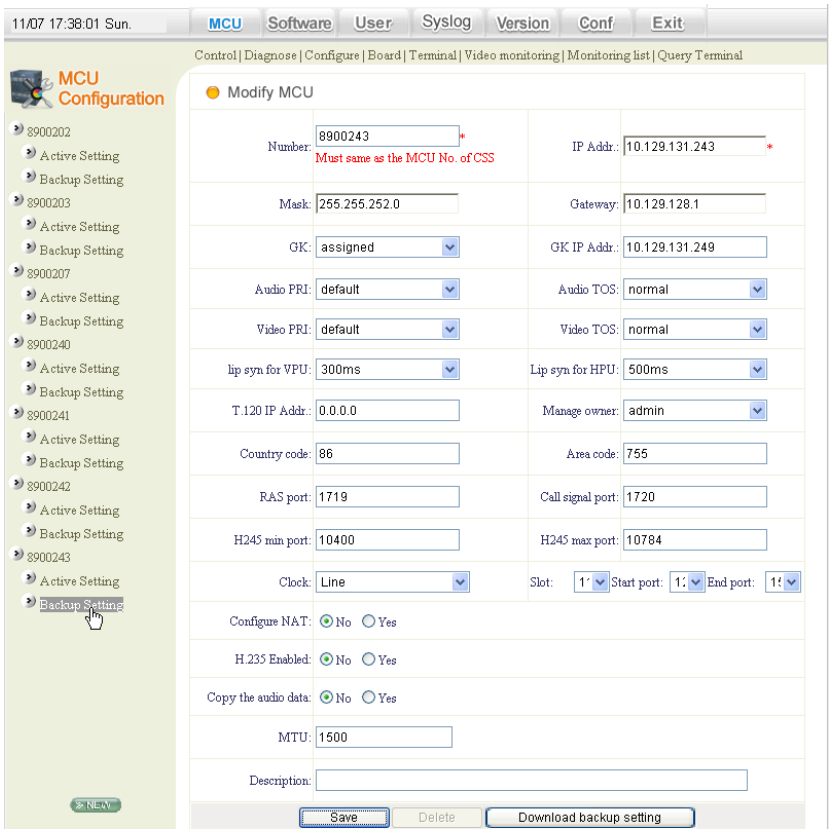
Context

To replace **Active Setting** with **Backup Setting**, the administrator can download the backup settings of the required MCU.

Steps

1. Choose **MCU > Configure** from the main menu.
2. Select **Backup Setting** under the required MCU in the left-hand pane. A page is displayed, as shown in the following figure.

Figure 4-7 Basic MCU Configuration Operation-Downloading Backup Setting



3. Click **Download backup setting** to download the backup settings of the MCU to the current MCU and make the backup settings as the active settings of the MCU.
   In this case, **Active Setting** is the same as **Backup Setting**. **Active Setting** before the downloading operation is overwritten and cannot be restored.

– End of Steps –

4.3.1.4 Viewing the Active Settings of an MCU

Prerequisites

This operation can be performed only after the MCU is connected.

Steps

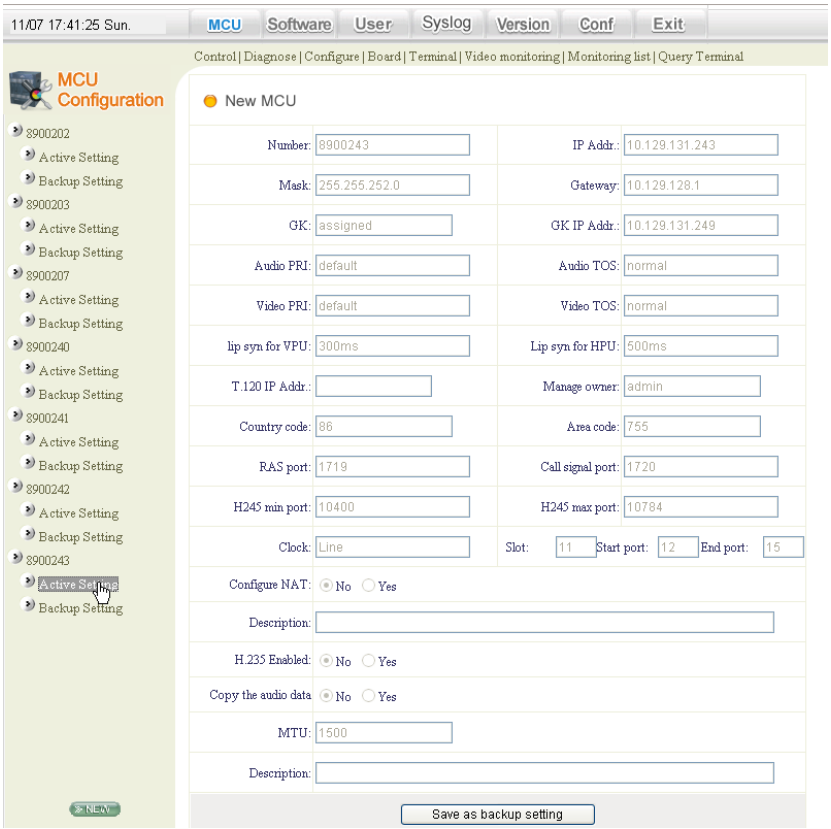
1. Choose **MCU > Configure** from the main menu.
2. Select **Active Setting** under the required MCU in the left-hand pane. A page is displayed, as shown in the following figure. On the page, view the active settings of the MCU.

   – End of Steps –

Example

Take MCU 89001 as an example. After the above operations are performed, the active settings of the MCU are shown in the following figure.

Figure 4-8 Example of Viewing the Active Settings of an MCU



4.3.1.5 Saving the Active Settings of an MCU as the Backup Settings

Steps

- View the active settings of the MCU. Then, on the current configuration page, click **Save as backup setting** to save the active settings as the backup settings.

NOTE

Note

If the network management system is not connected to the MCU, the active settings are null and the **Save as backup setting** button grays out.

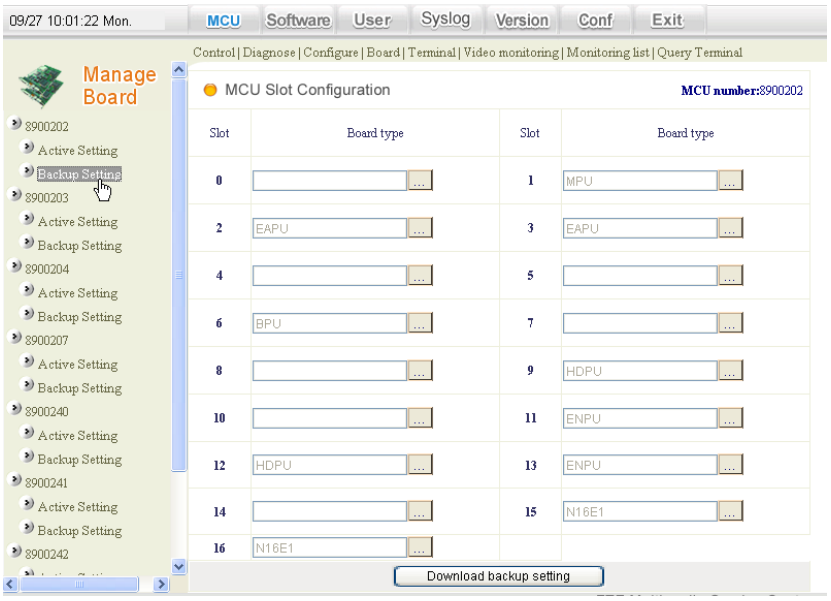
4.3.2 Configuring a Board

After an MCU is configured, you need to configure the boards on the MCU. After a board is inserted in the MCU, you need to configure the board in the network management system. After that, the board takes effect. During configuration in the network management system, refer to the cards inserted in the slots of the MCU.

Usually, the sequence for configuring a board is **Configure board > Save settings > Download backup settings**.

Choose **MCU > Configure** from the main menu. On the page that is displayed, select **Backup Setting** under required MCU to display the **MCU Slot Configuration** page, as shown in the following figure.

Figure 4-9 MCU Slot Configuration



The following table lists the board types supported by the slots of the ZXMVC 8900.

Table 4-3 Boards Supported by Slots of ZXMVC 8900

Slot Number	Supported Board Type		
0	MPU	-	-
1	MPU	-	-
2	APUMIX	EAPU	-

Slot Number	Supported Board Type		
3	APU	EAPU	-
4	APU	EAPU	HDPU
5	APU	EAPU	HDPU
6	VPU/EVPU	VPU/EVPU	HDPU
7	VPU/EVPU	VPU/EVPU	HDPU
8	VPU/EVPU	VPU/EVPU	HDPU
9-16	VPU/EVPU	VPU/EVPU	HDPU

4.3.2.1 Configuring an APU or EAPU Board

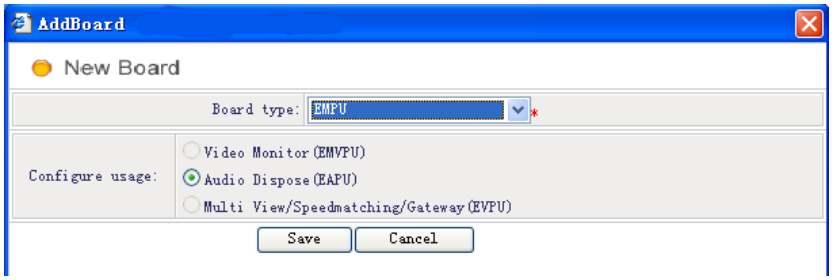
Context

APU or EAPU boards can be inserted to any or multiple slots among 2 to 5.

Steps

1. Choose **MCU > Board** from the main menu. On the page that is displayed, select **Backup Setting** under an MCU in the left-hand pane to display the **MCU Slot Configuration** page.
2. To view the slot number of the current APU or EAPU board on ZXMVC 8900 (for example, the APU board is inserted in slot 3), click ... next to slot 3. A configuration page is displayed.

Figure 4-10 Configuration Page of APU Board



3. Select **APU/EAPU** from the **Board type** drop-down list.
4. Click **Save** to save the settings and exit.

– End of Steps –

4.3.2.2 Configuring an APUMIX Board

Context

Usually, MIX boards are used together with APU boards.

Steps

1. Choose **MCU > Board** from the main menu. On the page that is displayed, select **Backup Setting** under an MCU in the left-hand pane to display the **MCU Slot Configuration** page.
2. To view the slot number of the current APUMIX board on ZXMVC 8900 (for example, the APUMIX board is inserted in slot 3), click ... next to slot 3. A configuration page is displayed.
3. Select **APUMIX** from the **Board type** drop-down list.
4. Click **Save** to save the settings and exit.

– End of Steps –

4.3.2.3 Configuring the NILAN, ENIL, or ENPU Board

Context

The NILAN or ENIL board can be configured in any or several slots among slots 9 to 16. The ENPU board can be configured in any or several slots in among slots 10 to 16.

Steps

1. Choose **MCU > Board** from the main menu. On the page that is displayed, select **Backup Setting** under an MCU in the left-hand pane to display the **MCU Slot Configuration** page.
2. To view the slot number of the current NILAN or ENIL board on ZXMVC 8900 (for example, the NILAN, ENIL, or ENPU board is inserted in slot 11), click ... next to slot 11. A configuration page is displayed.
3. Select **NILAN**, **ENIL**, or **ENPU** from the **Board type** drop-down list. A page is displayed, as shown in the following figure.

Figure 4-11 Configuration Page of NILAN/ENIL Board

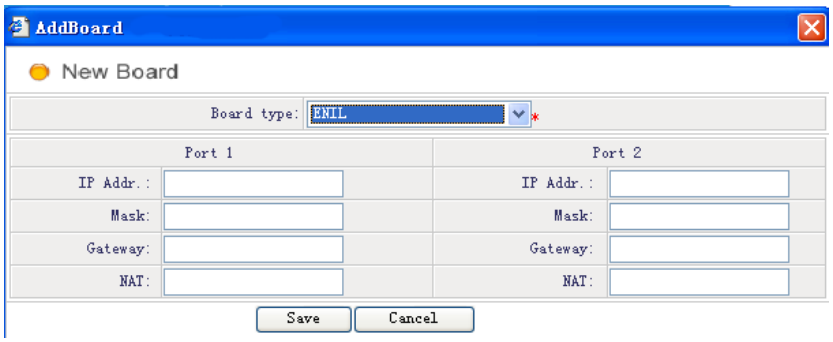
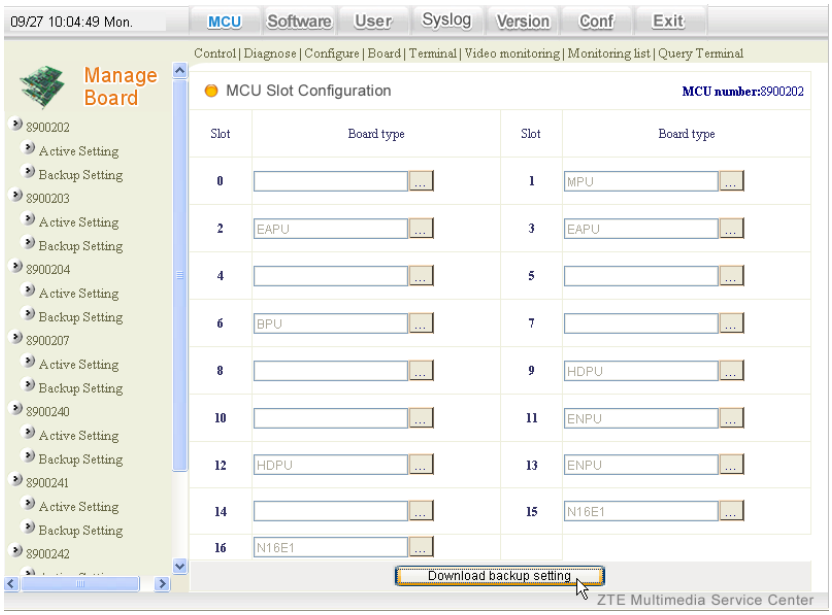


Figure 4-12 Configuration Page of ENPU Board



Each NILAN or ENIL board has two network ports and each ENPU board has four network ports. The following table describes the parameters in the above figure.

IP Addr	Indicates the IP address of the network port.
Mask	Indicates the subnet mask corresponding to the IP address of the network port.
Gateway	Indicates the gateway address of the network port.
NAT	If the NILAN, ENIL, or ENPU board is located behind static NAT, a public address after NAT is required. Usually, this parameter takes effect after **Configure NAT** in **Configure** of the MCU is set to **Yes**.

Caution

If the ENIL or NILAN board is already configured in the system, the ENPU board cannot be configured, and vice versa.

4. After the setting is complete, click **Save** to save the settings and exit.

– End of Steps –

4.3.2.4 Configuring an EVPU Board

Context

EAPU boards can be inserted to any or multiple slots among 4 to 16.

Steps

1. Choose **MCU > Board** from the main menu. On the page that is displayed, select **Backup Setting** under an MCU in the left-hand pane to display the **MCU Slot Configuration** page.
2. To view the slot number of the current EVPU board on ZXMVC 8900 (for example, the EVPU board is inserted in slot 9), click ... next to slot 9. A configuration page is displayed.
3. Select **EVPU** from the **Board type** drop-down list.
4. Click **Save** to save the settings and exit.

– End of Steps –

4.3.2.5 Configuring an HDPU Board

Context

HDPU boards can be inserted to any or multiple slots among 4 to 16.

Steps

1. Choose **MCU > Board** from the main menu. On the page that is displayed, select **Backup Setting** under an MCU in the left-hand pane to display the **MCU Slot Configuration** page.
2. To view the slot number of the current HDPU board on ZXMVC 8900 (for example, the HDPU board is inserted in slot 10), click ... next to slot 10. A configuration page is displayed.
3. Select **HDPU** from the **Board type** drop-down list.
4. Click **Save** to save the settings and exit.

– End of Steps –

4.3.2.6 Downloading Board Settings

Prerequisites

To download board settings of an MCU, you need to connect the MCU first.

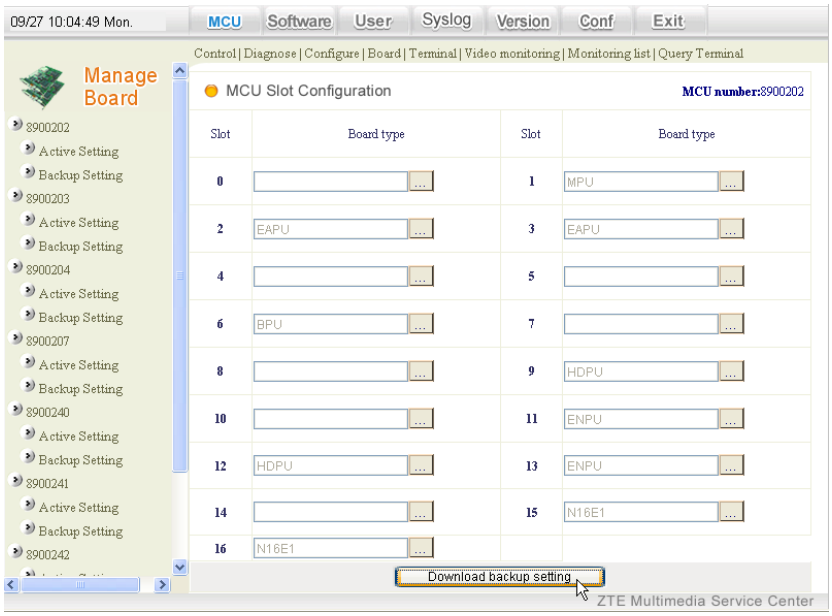
Context

For new MCUs, after configuring boards for an MCU, you need to make the settings take effect by download board settings. For existing MCUs, to replace the active settings of the current card with the backup settings, you need to download board settings.

Steps

1. Choose **MCU > Configure** from the main menu. On the page that is displayed, select **Backup Setting** under the required MCU to display the **MCU Slot Configuration** page, as shown in the following figure.

Figure 4-13 MCU Board Configuration-Downloading Backup Setting



2. Click **Download backup setting** to download the backup settings of the MCU to the current MCU.

– End of Steps –

4.3.2.7 Viewing the Active Settings of an MCU Board

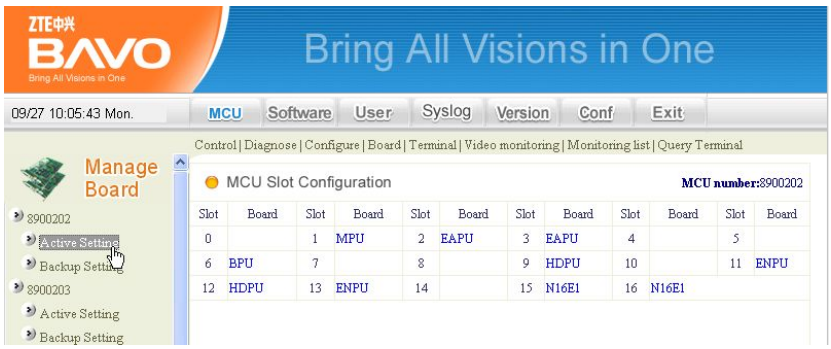
Prerequisites

This operation can be performed only after the MCU is connected.

Steps

1. Choose **MCU > Board** from the main menu. The page for selecting an MCU is displayed.
2. Select **Active Setting** under the required MCU in the left-hand pane. A page is displayed, as shown in the following figure. On the page, view the active settings of the MCU.

Figure 4-14 Configuration Page of MCU Board



– End of Steps –

4.3.2.8 Saving the Active Settings of a Board as the Backup Settings

Steps

- View the active settings of the MCU board. Then, on the current configuration page, click **Save as backup setting** to save the active settings as the backup settings.

NOTE **Note**

If the network management system is not connected to the MCU, the active settings are null and the **Save as backup setting** button grays out.

4.3.3 Configuring a Terminal

Context

After the required MCU and board are configured, you need to configure a terminal. A terminal cannot be controlled by the network management system after it is physically connected to the MCU. Therefore, the administrator needs to configure the required terminal in the network management system. During configuration in the network management system, refer to the terminals configured for the cards in the MCU.

Steps

1. Choose **MCU > Terminal** from the main menu. On the page that is displayed, select the required MCU in the left-hand pane to display the default terminal list.
2. Delete the required terminal in the list or modify the information of a terminal. Alternatively, add a terminal for the MCU.

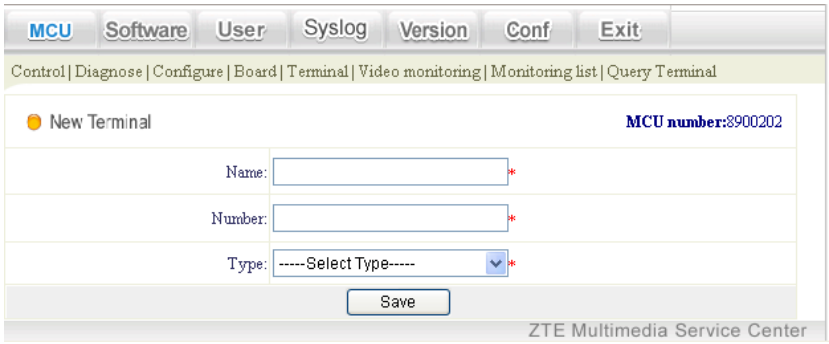
– End of Steps –

4.3.3.1 Adding a Terminal

Steps

1. Choose **MCU > Terminal** from the main menu. On the page that is displayed, select the required MCU in the left-hand pane.
2. Click **Add**. The **New Terminal** page is displayed, as shown in the following figure.

Figure 4-15 Adding a Terminal



The following table describes the parameters involved in adding a terminal.

Name	Indicates a terminal name. It can be customized by users and is used for distinguishing different terminals. A good terminal name contains various terminal information and complies with a unified naming rule.
Number	Indicates a terminal number. It is used for distinguishing different terminals. Each terminal has a unique number in the entire network. This number is allocated by the network carrier.
Type	The terminals involved in the system are huge. To quickly locate the MCU to which a certain terminal belongs, a prefix is added for terminals in the same MCU. In this way, the prefix is used to locate the MCU to which a terminal belongs.

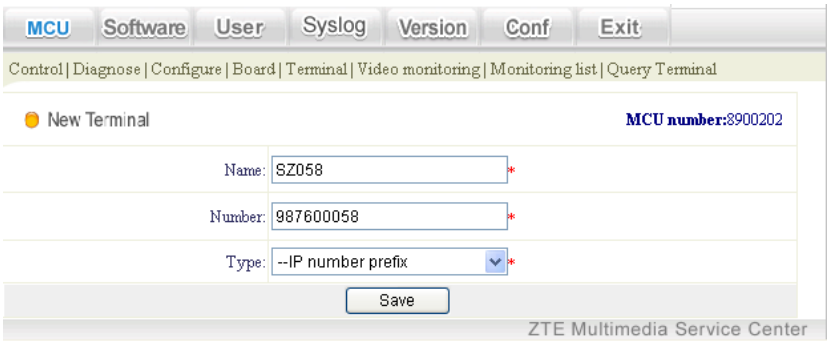
3. Set the parameters according to the descriptions in the above table. After the setting is complete, click **Save**. Then, the new terminal is displayed in the MCU terminal list.

– End of Steps –

Example

For example, add a terminal for MCU89001 with the terminal name of sz058 (58th terminal in Shenzhen) and terminal number of 987600058, as shown in the following figure.

Figure 4-16 Example of Adding a Terminal



4.3.3.2 Viewing Settings of the Current Terminal

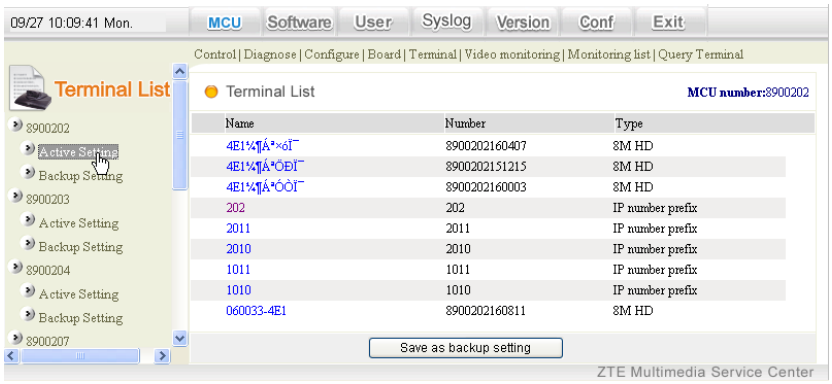
Prerequisites

This operation can be performed only after the MCU is connected.

Steps

1. Choose **MCU > Terminal** from the main menu.
2. Select the required MCU in the left-hand pane. Then, the system displays the settings of the current MCU, as shown in the following figure.

Figure 4-17 Viewing Settings of the Current Terminal

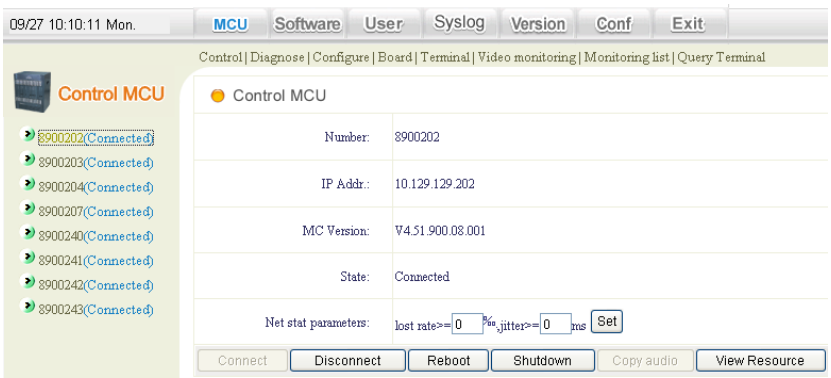


– End of Steps –

4.3.4 Controlling an MCU

Choose **MCU > Control** from the main menu. On the page that is displayed, select the required MCU to display the **Control MCU** page, as shown in the following figure.

Figure 4-18 Controlling an MCU



The small icon before the MCU represents the MCU status. If the icon is red, it indicates the MCU is not connected to the ZXMS80 NMS server. If the icon is green, it indicates that the MCU is connected to the ZXMS80 NMS server.

The buttons at the lower part of the page are used to control MCUs. The buttons are described as follows:

Connect and Disconnect

The **Connect** and **Disconnect** buttons are exclusive. They are used to connect/disconnect the current MCU to/from the ZXMS80 NMS server. After an MCU is connected successfully, the page displays the version of the current MCU.

Reboot and Shutdown

These two buttons are used to restart/shut down the MC module in the MCU.

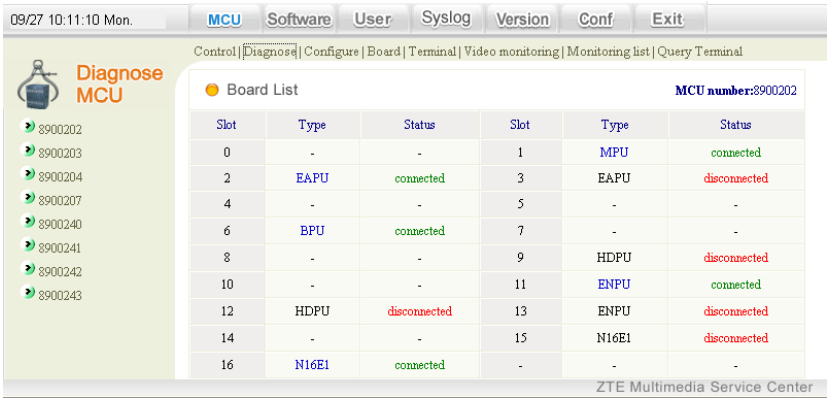
Copy audio

This function is not supported currently.

4.3.5 Diagnosing MCU

Choose **MCU > Diagnose** from the main menu. By default, the system displays the board list of the first MCU. Select the required MCU to display the **Diagnose MCU** page, as shown in the following figure.

Figure 4-19 Diagnosing MCU



Slot	Type	Status	Slot	Type	Status
0	-	-	1	MPU	connected
2	EAPU	connected	3	EAPU	disconnected
4	-	-	5	-	-
6	BPU	connected	7	-	-
8	-	-	9	HDPU	disconnected
10	-	-	11	ENPU	connected
12	HDPU	disconnected	13	ENPU	disconnected
14	-	-	15	N16E1	disconnected
16	N16E1	connected	-	-	-

Caution

The available functions in the above figure are for advanced users only or performed with the guidance of technical support engineers of ZTE. In addition, the page shown in the above figure provides the loopback function for commissioning during deployment. Therefore, common users do not use this function.

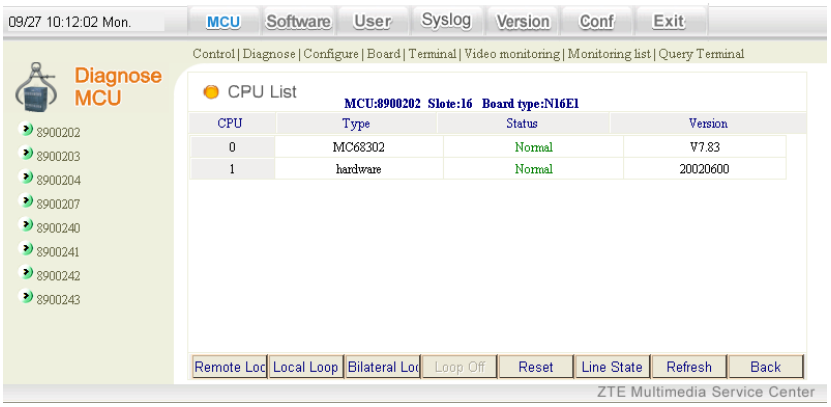
Board Diagnosis

The above figure shows the board diagnosis information of MCU 89001. The diagnosis information includes the status of various boards configured in MCU 89001. If a board works properly, its status is displayed as **connected**. Otherwise, its status is displayed as **disconnected**.

CPU Diagnosis

When the status of a board is **connected**, the boards listed in the **Type** column are displayed in blue. In this case, you can click a certain board in this column such as MPU to view the board details, as shown in the following figure.

Figure 4-20 CPU Diagnosis Example



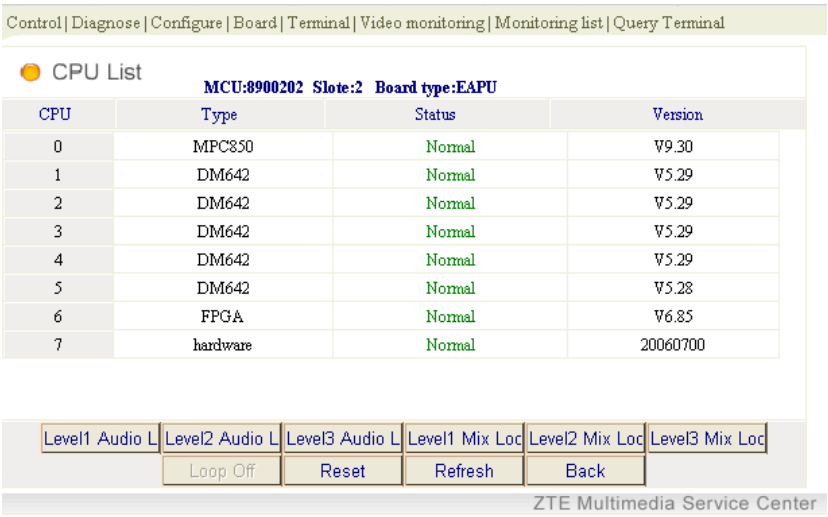
CPU	Type	Status	Version
0	MC68302	Normal	V7.83
1	hardware	Normal	20020600

In the above figure, the CPU column lists the type, working status, and software version of the CPU. In addition, the system supports remotely resetting all the boards and various loopback tests.

4.3.5.1 EAPU Diagnosis Loopback

The EAPU board provides five loopback diagnosis methods: level-1 audio loopback, level-2 audio loopback, level-3 audio loopback, level-1 mix audio loopback, and level-2 mix audio loopback. The details are shown in the following figure.

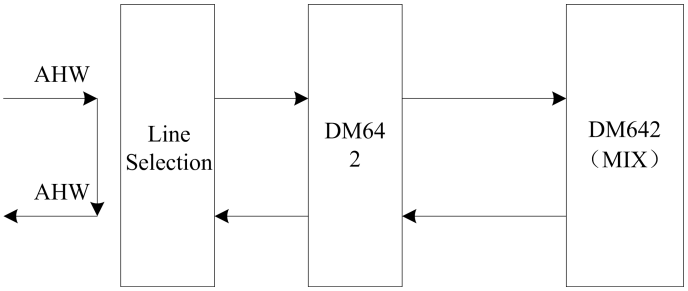
Figure 4-21 EAPU Diagnosis Loopback



Level-1 Audio Loopback

The following figure shows the principle of level-1 audio loopback on the EAPU board.

Figure 4-22 Principle of Level-1 Audio Loopback on EAPU Board



Principle: This loopback indicates that the audio signals of all the terminals connected to the EAPU board are directly looped back through the HW to terminals without line selection.

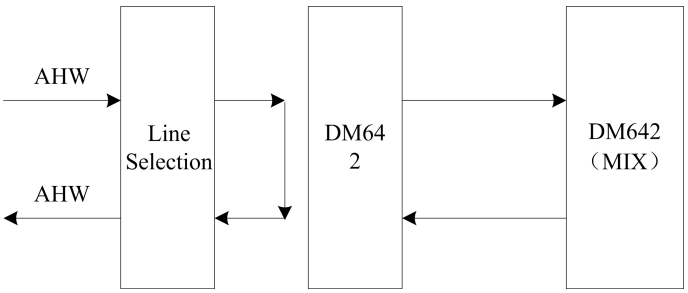
Application: Click **Level1 Audio Loop**.

Diagnosis: This operation is used to check whether the data in the HW line is normal.

Level-2 Audio Loopback

The following figure shows the principle of level-2 audio loopback on the EAPU board.

Figure 4-23 Principle of Level-2 Audio Loopback on EAPU Board



Principle: This loopback indicates that the audio signals of all the terminals connected to the EAPU board are looped back to terminals after line selection.

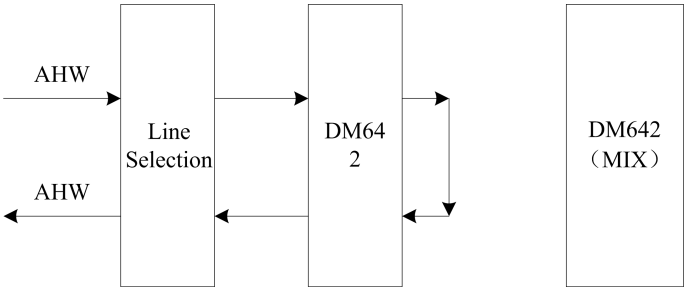
Application: Click **Level2 Audio Loop**.

Diagnosis: This operation is used to check whether the data received by DM642 after line selection is normal.

Level-3 Audio Loopback

The following figure shows the principle of level-3 audio loopback on the EAPU board.

Figure 4-24 Principle of Level-3 Audio Loopback on EAPU Board



Principle: This loopback indicates that the audio signals of all the terminals connected to the EAPU board are looped back to terminals after line selection and encoding/decoding.

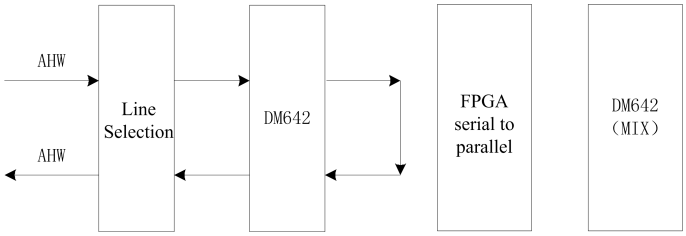
Application: Click **Level3 Audio Loop**.

Diagnosis: This operation is used to check whether the data encoded or decoded by DM642 is normal.

Level-1 Mix Audio Loopback

The following figure shows the principle of level-1 mix audio loopback on the EAPU board.

Figure 4-25 Principle of Level-1 Audio Mix Loopback on EAPU Board



Principle: This loopback indicates that the mixed audio data is looped back from the receive end to the transmit end.

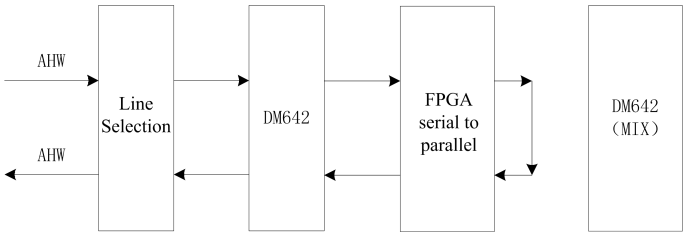
Application: Click **Level1 Mix Audio Loop**.

Diagnosis: This operation is used to check whether the data received by MIX is normal.

Level-2 Mix Audio Loopback

The following figure shows the principle of level-2 mix audio loopback on the EAPU board.

Figure 4-26 Principle of Level-2 Audio Mix Loopback on EAPU Board



Principle: This loopback indicates that the mixed audio data is looped back from the storage end to the transmit end according to timeslot.

Application: Click **Level2 Mix Audio Loop**.

Diagnosis: This operation is used to check whether the parameters for the mixed audio module are correct.

4.3.5.2 APUMIX Diagnosis Loopback

The APUMIX board provides the function of audio loopback. The following describes the level-1 loopback, level-2 loopback, and audio loopback.

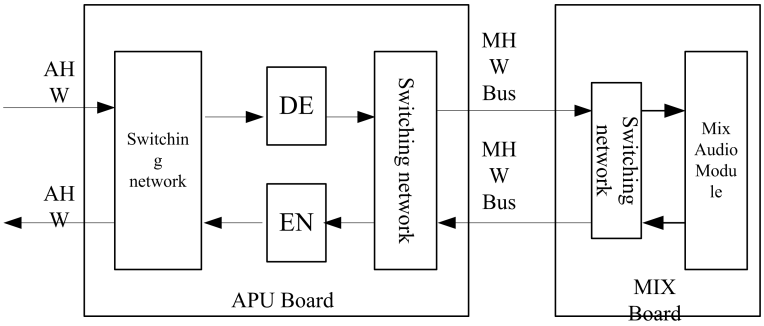
Figure 4-27 APUMIX Diagnosis Loopback

CPU	Type	Status	Version
0	MC68302	Normal	V7.80
1	ADSP2189	Normal	V1.34
2	ADSP2189	Normal	V1.34
3	ADSP2189	Normal	V1.34
4	ADSP2189	Normal	V1.34
5	ADSP2189	Normal	V1.34
6	ADSP2189	Normal	V1.34
7	ADSP2189	Normal	V1.34
8	ADSP2189	Normal	V1.34
9	ADSP2189	Normal	V1.33
10	ADSP2189	Normal	V1.33
11	ADSP2189	Normal	V1.33
12	ADSP2189	Normal	V1.33
13	ADSP2189	Normal	V1.33

Level-1 Loopback

This loopback is usually called level-1 audio loopback. The following figure shows the principle of level-1 loopback on the APUMIX board.

Figure 4-28 Principle of Level-1 Loopback on APUMIX Board



Principle: This loopback indicates that the audio signals of all the terminals connected to the APUMIX board are directly looped back through the switch network to terminals without encoding/decoding.

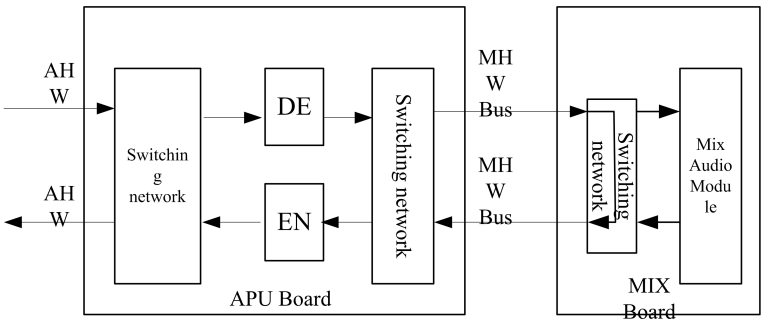
Application: Click **Level1 Loop**. Normally, a terminal can hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network/transmission, interface board, AHW bus, and processing of APUMIX switch network are normal.

Level-2 Loopback

The following figure shows the principle of level-2 loopback on the APUMIX board.

Figure 4-29 Principle of Level-2 Loopback on APUMIX Board



Principle: This loopback indicates that the audio signals of all the terminals connected to the APUMIX board are looped back through the switch network and interruption processing module in the C6202 mixed audio module, and finally to terminals after encoding/decoding.

Application: Click **Level2 Loop**. Normally, a terminal can hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network/transmission, interface board, AHW bus, processing of APUMIX switch network, and encoding/decoding of the APUMIX board are normal.

NOTE

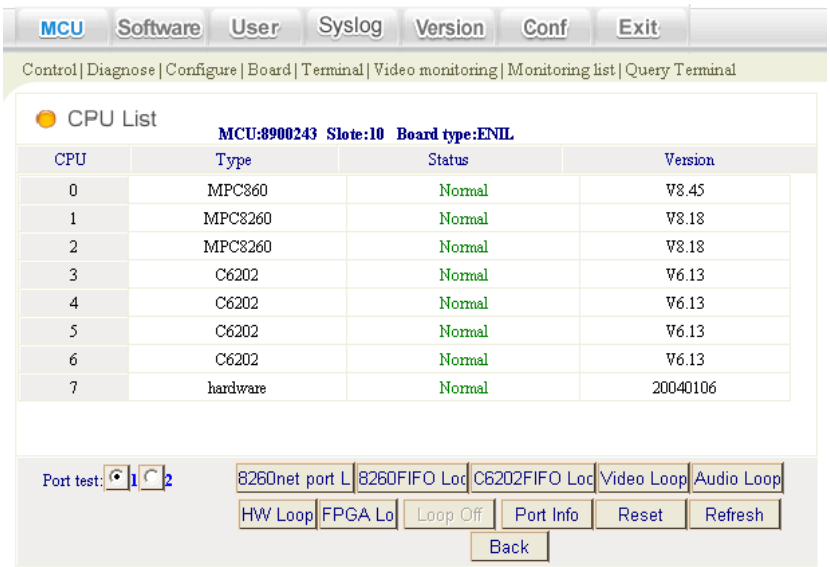
Note

- These operations take effect only in a conference. In addition, during the conference, all the terminals connected to the APUMIX board will be looped back.
- The above loopback operations will not make a terminal go offline or affect other media resources except the audio module.

4.3.5.3 NILAN Diagnosis Loopback

The NILAN board provides two 10M/100M network ports: upstream network port and downstream network port. The NILAN board provides four loopback diagnosis methods: UDP loopback, RTP loopback, video loopback, and audio loopback. The details are shown in the following figure.

Figure 4-30 NILAN Diagnosis Loopback

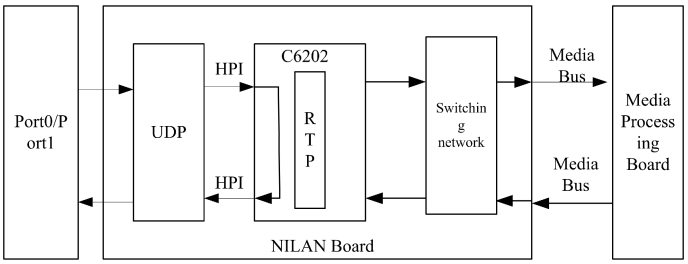


CPU	Type	Status	Version
0	MPC860	Normal	V8.45
1	MPC8260	Normal	V8.18
2	MPC8260	Normal	V8.18
3	C6202	Normal	V6.13
4	C6202	Normal	V6.13
5	C6202	Normal	V6.13
6	C6202	Normal	V6.13
7	hardware	Normal	20040106

UDP Loopback

The following figure shows the principle of RTP_HPI (UDP) loopback on the NILAN board.

Figure 4-31 Principle of RTP_HPI (UDP) Loopback on NILAN Board



Principle: This loopback indicates that the media signals of all the terminals connected to the upstream or downstream network port of the NILAN board are used for loopback before being processed by UDP.

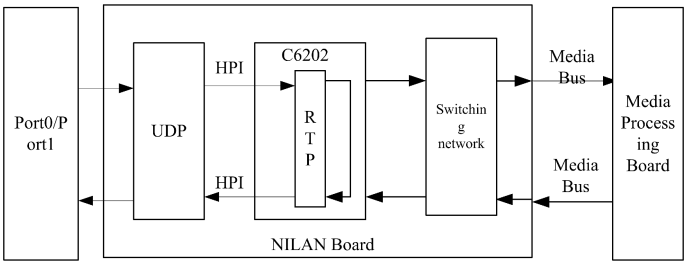
Application: Click **UDP Loop**. Normally, a terminal can view its own image and hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network, network port of the NILAN board, and UDP module are normal.

RTP Loopback

The following figure shows the principle of RTP loopback on the NILAN board.

Figure 4-32 Principle of RTP_NOHW (RTP) Loopback on NILAN Board



Principle: This loopback indicates that the media signals of all the terminals connected to the upstream or downstream network port of the NILAN board are used for loopback after being processed by RTP.

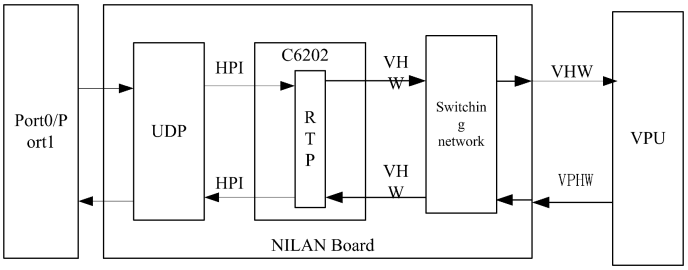
Application: Click **RTP Loop**. Normally, a terminal can view its own image and hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network, network port of the NILAN board, UDP module, and RTP module are normal.

Video Loopback

The following figure shows the principle of RTP_VHW (video) loopback on the NILAN board.

Figure 4-33 Principle of RTP_VHW (Video) Loopback on NILAN Board



Principle: This loopback indicates that the video signals of all the terminals connected to the upstream or downstream network port of the NILAN board are looped back through the switch network to terminals.

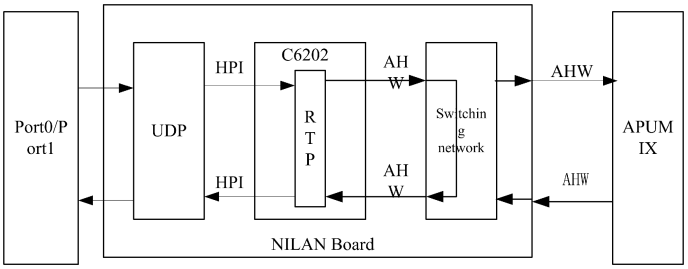
Application: Click **Video Loop**.

Diagnosis: This operation is used to check whether the terminal, network, network port of the NILAN board, UDP module, RTP module, and switch network processing are normal. Normally, a terminal can view its own image.

Audio Loopback

The following figure shows the principle of RTP_VHW (audio) loopback on the NILAN board.

Figure 4-34 Principle of RTP_AHW (Audio) Loopback on NILAN Board



Principle: This loopback indicates that the audio signals of all the terminals connected to the upstream network port of the NILAN board are looped back through the switch network to terminals.

Application: Click **Audio Loop**. Normally, a terminal can hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network, network port of the NILAN board, UDP module, RTP module, and switch network processing are normal.

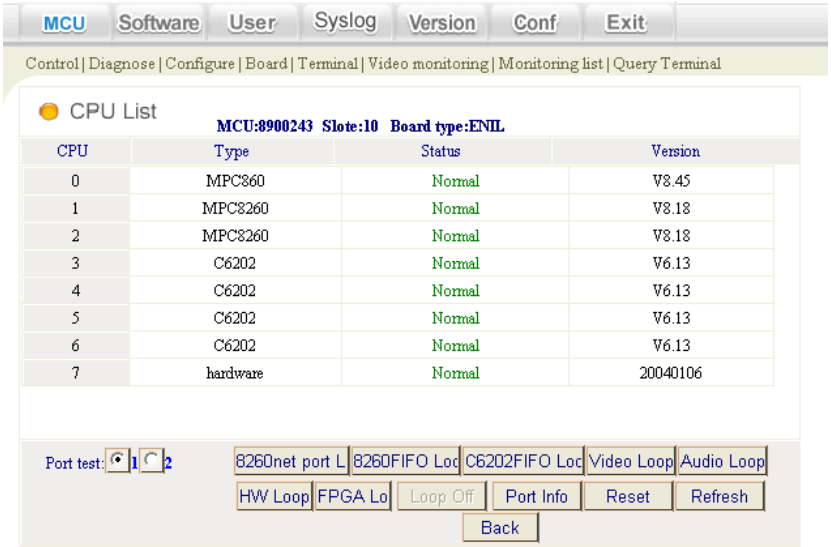
NOTE **Note**

The above four loopback methods take effect only in a conference. In addition, during the conference, all the terminals connected to the upstream or downstream network port will be looped back and no terminal will go offline.

4.3.5.4 ENIL Diagnosis Loopback

The ENIL board provides two 10M/100M network ports: upstream network port and downstream network port. The ENIL board provides seven types of loopback diagnosis methods: 8260 network port loopback, 8260FIFO loopback, C6202FIFO loopback, video loopback, audio loopback, HW loopback, and FPGA loopback. The details are shown in the following figure.

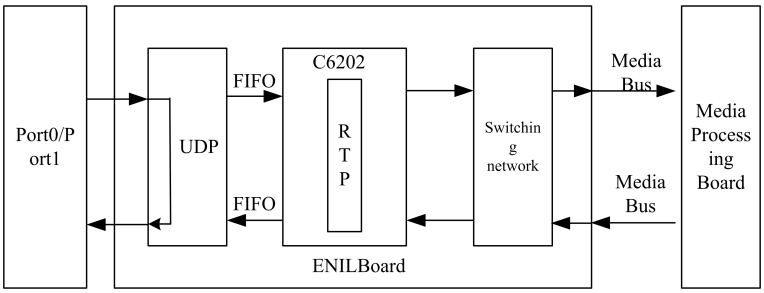
Figure 4-35 ENIL Diagnosis Loopback



8260 Network Port Loopback

The following figure shows the principle of 8260 network port loopback on the ENIL board.

Figure 4-36 Principle of 8260 Network Port Loopback on ENIL Board



Principle: This loopback indicates that the media signals of all the terminals connected to the upstream or downstream network port of the ENIL board are packed directly for loopback after being unpacked.

Application: Click **8260net port Loop**. Normally, a terminal can view its own image and hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network, and network port of the ENIL board are normal.

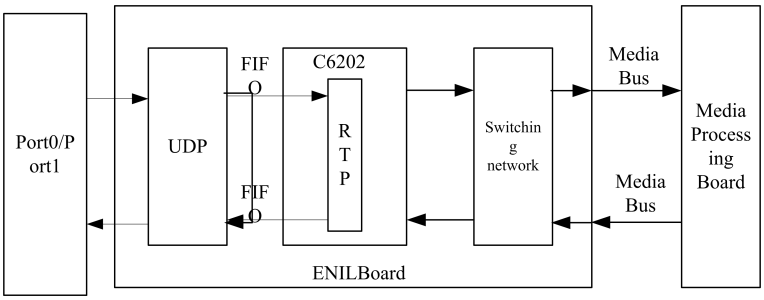
NOTE **Note**

This operation takes effect only in a conference. In addition, during the conference, all the terminals connected to the upstream or downstream network port will be looped back and no terminal will go offline.

8260FIFO Loopback

The following figure shows the principle of 8260FIFO loopback on the ENIL board.

Figure 4-37 Principle of 8260FIFO Loopback on ENIL Board



Principle: This loopback indicates that the media signals of all the terminals connected to the upstream or downstream network port of the ENIL board are used for loopback after being processed by UDP.

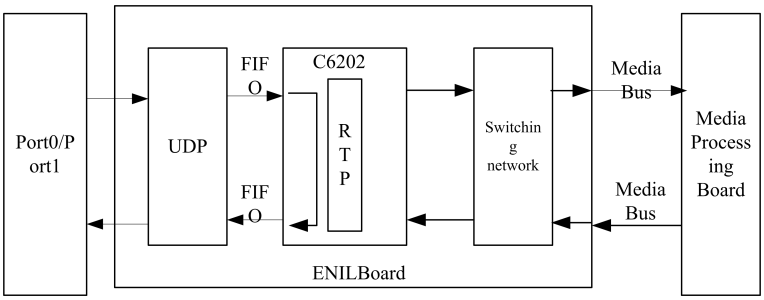
Application: Click **8260FIF0 Loop**. Normally, a terminal can view its own image and hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network, network port of the ENIL board, and UDP module are normal.

C6202FIFO Loopback

The following figure shows the principle of C6202FIFO loopback on the ENIL board.

Figure 4-38 Principle of C6202FIFO Loopback on ENIL Board



Principle: This loopback indicates that the media signals of the all the terminals connected to the upstream or downstream network port of the ENIL board are not processed but transparently transmitted through the C6202 to the FIFO for loopback.

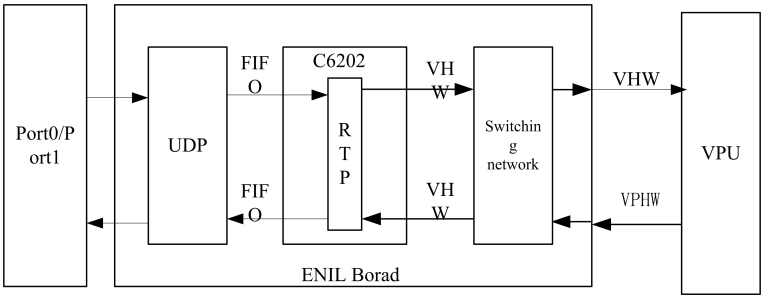
Application: Click **C6202FIF0 Loop**. Normally, a terminal can view its own image and hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network, network port of the ENIL board, UDP module, and FIFO processing are normal.

Video Loopback

The following figure shows the principle of video loopback on the ENIL board.

Figure 4-39 Principle of Video Loopback on ENIL Board



Principle: This loopback indicates that the video signals of all the terminals connected to the upstream or downstream network port of the ENIL board are looped back through the switch network to terminals.

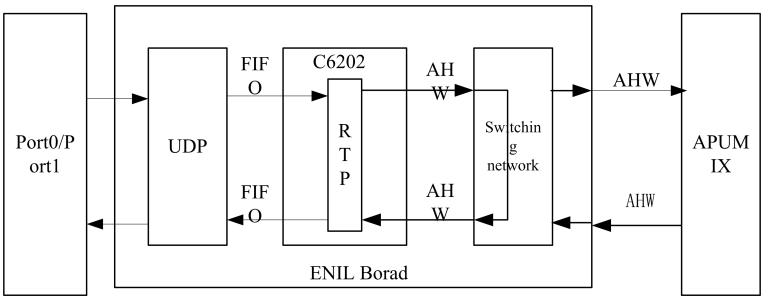
Application: Click **Video Loop**. Normally, a terminal can view its own image.

Diagnosis: This operation is used to check whether the terminal, network, network port of the ENIL board, UDP module, RTP module, and switch network processing are normal.

Audio Loopback

The following figure shows the principle of audio loopback on the ENIL board.

Figure 4-40 Principle of Audio Loopback on ENIL Board



Principle: This loopback indicates that the audio signals of all the terminals connected to the upstream or downstream network port of the ENIL board are looped back through the switch network to terminals.

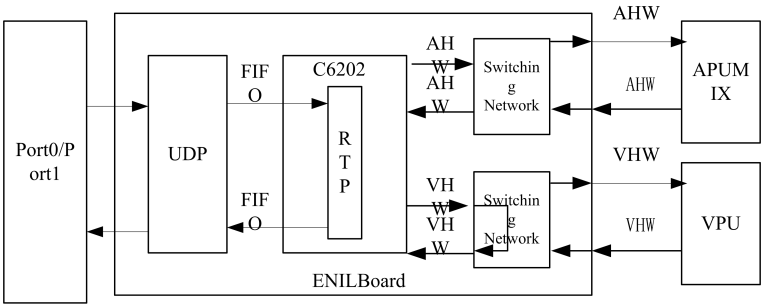
Application: Click **Audio Loop**. Normally, a terminal can hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network, network port of the ENIL board, UDP module, RTP module, and switch network processing are normal.

HW Loopback

The following figure shows the principle of HW loopback on the ENIL board.

Figure 4-41 Principle of HW Loopback on ENIL Board



Principle: This loopback indicates that the audio and video signals of all the terminals connected to the upstream and downstream network ports of the ENIL board are looped back through the switch network to terminals.

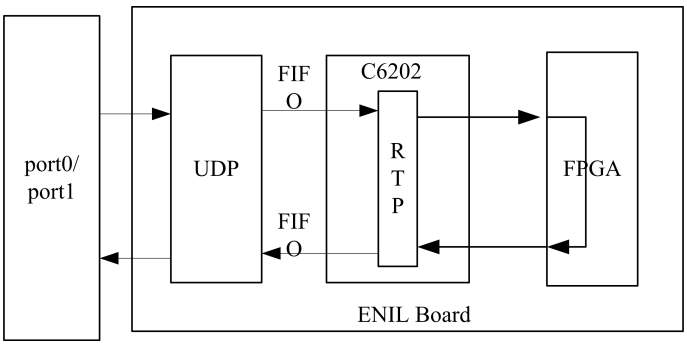
Application: Click **HW Loop**. Normally, a terminal can view its own image and hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network, network port of the ENIL board, UDP module, RTP module, and switch network processing are normal.

FPGA Loopback

The following figure shows the principle of FPGA loopback on the ENIL board.

Figure 4-42 Principle of FPGA Loopback on ENIL Board



Principle: This loopback indicates that the audio and video signals of all the terminals connected to the upstream and downstream network ports of the ENIL board are looped back through the hardware to terminals.

Application: Click **FPGA Loop**. Normally, a terminal can view its own image and hear its own voice.

Diagnosis: This operation is used to check whether the terminal, network, network port of the ENIL board, UDP module, and RTP module are normal.

4.4 User Management

Users need to log in to the ZXMS80 network management system for device management and add user information on the **New User** page.

The ZXMS80 network management system supports two types of users: system administrator and device administrator. The differences between them are as follows:

- The system administrator can manage all the devices but the device administrator can manage specified devices.
- Only the system administrator can add, modify, and delete a user. The device administrator cannot add or delete a user but can modify its own information.

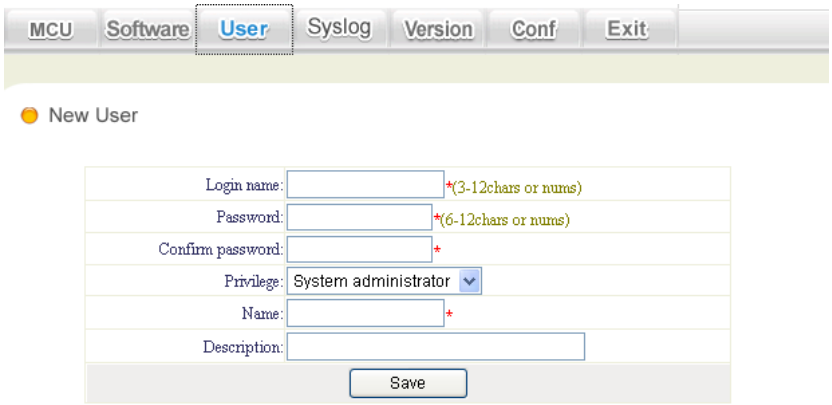
All the rights of the system administrator equal to the range of devices managed. After the system is installed, it creates a default system administrator (user name: admin; password: 111111). Do not delete this system administrator.

Adding a User

The following section describes how to add a user.

1. Choose **User** from the main menu or click **New**. The **New User** page is displayed, as shown in the following figure.

Figure 4-43 Adding a User



The following table describes the parameters.

Table 4-4 Adding a User

Parameter	Description
Login name	Indicates the user name used for logging in to the ZXMS80 network management system. The user name consists of 3 to 12 digits or letters.
Password	Indicates the password used for logging in to the ZXMS80 network management system. The password consists of 6~12 digits or letters.
Confirm password	This parameter must be the same as the value of the **Password** parameter.
Privilege	The available options are **System administrator** and **Device administrator**.
Name	Indicates the name of the new user.

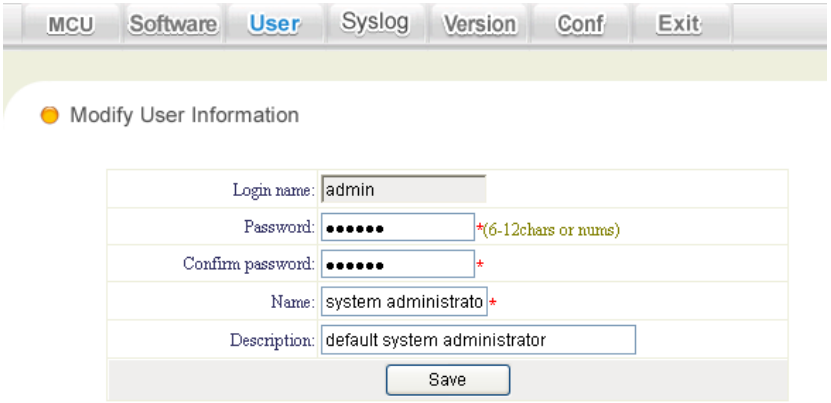
Parameter	Description
Description	Indicates the additional information.

2. After the setting is complete, click **Save**. If the user is added successfully, the system will display the new user in the left-hand user list.
3. Repeat the above operations to add multiple users.

Modifying a User

Select the required user in the user list. Then, the **Modify User Information** page is displayed, as shown in the following figure. On the page, modify the information of the selected user.

Figure 4-44 Modifying User Information



After the modification is complete, click **Save**.

Note

admin is the system administrator. Hence, do not delete it.

4.5 Version Management

Context

This operation is used to upgrade the EMC software and bottom-layer board software of the MCU online. The steps for version upgrade are as follows. At present, you are only required to manually upload the upgrading software and download it for renewal. Refer to related descriptions in *Uploading Software* and *Downloading Software*; the board does not need manual operation because the system will automatically upgrade it. Refer to related descriptions in *Registering Software* and *Activating Software*.

Caution

The available functions are for advanced users only or performed with the guidance of technical support engineers of ZTE.

Steps

1. Upload to the required software to the NMS Webserver.
2. In the NMS Webserver, download the software to the specified location.

Caution

- During software downloading, the MCU must be in the connected state.
- During software downloading, do not perform any operation.
- For detailed precautions, refer to the software downloading descriptions of each board.

3. During software download, the system displays a progress bar. If the progress bar disappears, it indicates that the software is successfully downloaded.

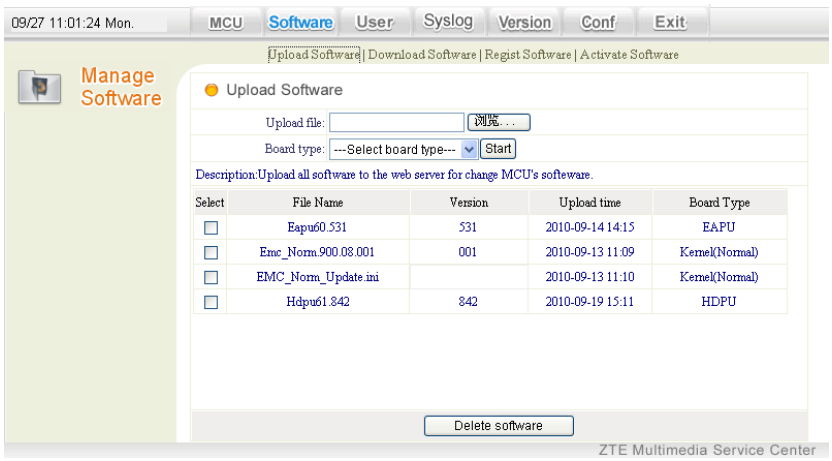
– End of Steps –

4.5.1 Uploading Software

Steps

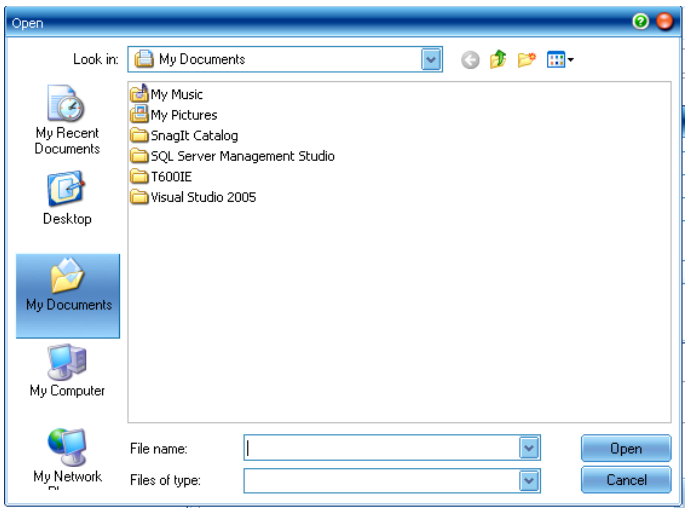
1. On the main page, choose **Software > Upload Software** from the main menu. The **Upload Software** page is displayed, as shown in the following figure.

Figure 4-45 Uploading Software



2. Click **Browse**. The **Open** dialog box is displayed, as shown in the following figure.

Figure 4-46 File Selection Dialog Box



3. Select the software to be uploaded and set the required board type for the software on the page as shown in the above figure.
4. After the setting is complete, click **Start** to upload the software to the NMS Webserver.
5. If the software is not in use, select the software and click **Delete software** to delete the software from the NMS Webserver.

– End of Steps –

Follow-Up Action

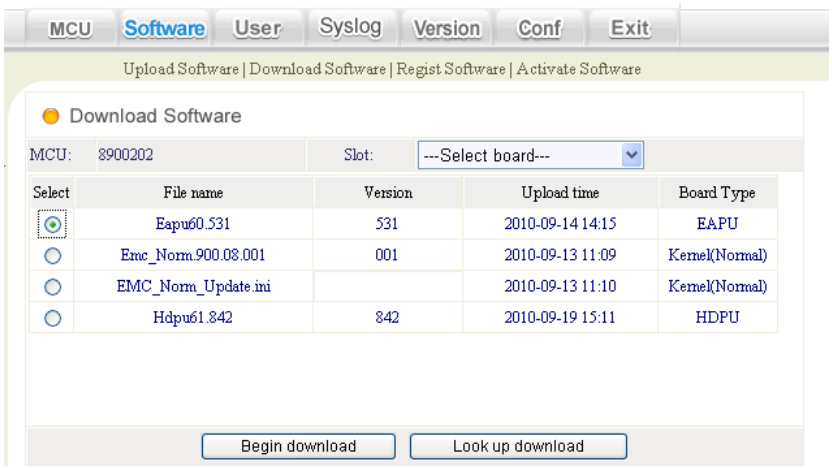
For the software already uploaded, the system displays them in a list.

4.5.2 Downloading Software

Steps

1. On the main page, choose **Software > Download Software** from the main menu. The page for selecting an MCU is displayed.
2. Select an MCU whose status is **connected**. The **Download Software** of the MCU is displayed, as shown in the following figure.

Figure 4-47 Downloading Software



3. Select the required slot from the **Slot** drop-down list, select the required file in the file list, and then click **Begin download** to start downloading software.

Caution

- During software downloading, the system displays a progress bar. The downloading progress window supports multiple download progress bars. After closing the download progress window, you can view the current progress by clicking **Look up download** in the above figure.
- For a same board, if two files of the same type (same cputype and softtype) are downloaded, the file downloaded later will overwrite the previous file.
- After a file is downloaded successfully, the progress bar displays a prompt accordingly. To activate the downloaded software, you need to reset the board.

– End of Steps –

4.5.3 Registration Software

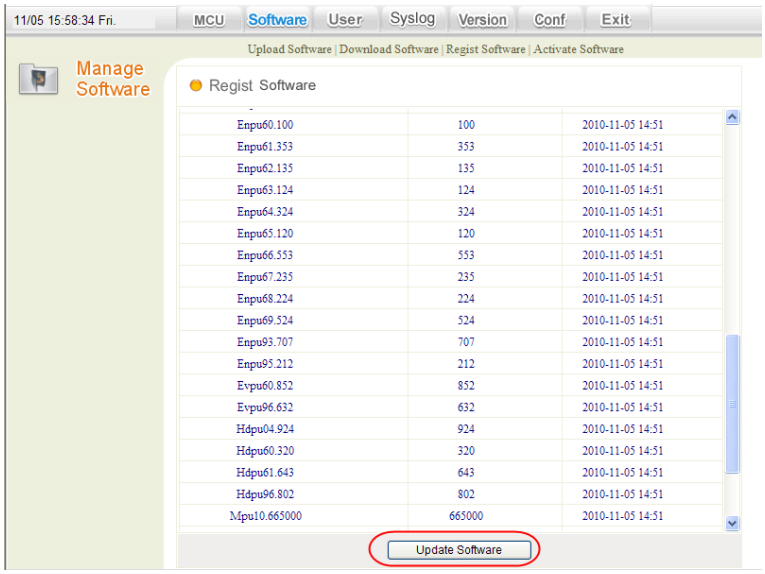
Context

- As usual, the board software is uploaded and downloaded manually (for the upload way, refer to the descriptions in "*Upload Software*", and for the download way, refer to "*Download Software*). However, sometimes, there is too much software required to be downloaded. To avoid the download errors, you can use the Automatic Upgrade function.
- The Automatic Upgrade function has the mechanism of judging the version. When the board is inserted to the slot, the board is reset, or the board is refreshed on the page, it will trigger the board to report the version information. The network management system will contrast the version reported by the board with the version registered in the database. If they are inconsistent, the system will deliver the board upgrading information.

Steps

1. Select **Version Management > Registration Software** to enter the page, shown in the following figure.

Figure 4-48 Registration Software



2. Click the **Renewing the Registration Software Library** button, and confirm it, then the system will clear the old registration software record in the database, and add the file information in the htdocs\nms\upload\autoupdate\ directory to the database table.
3. After the renewal has been successful, the system will automatically refresh the page. In the page, the new file information will be displayed.

– End of Steps –

4.5.4 Activating the Software

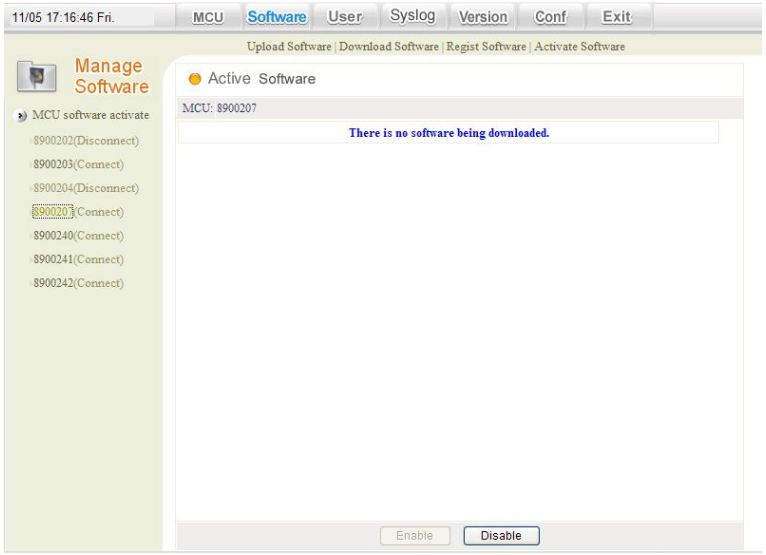
Context

Activate the file information that has been renewed in the database and make it valid.

Steps

1. Select **Version Management > Activating the Software**, in the left MCU directory, select one MCU that is being connected to enter the page shown in the following figure.

Figure 4-49 Activating the Software



2. Click the **Start** button, then the system automatically download and renew the files in the database table, and meanwhile automatically refresh the right pages and obtain the status again.

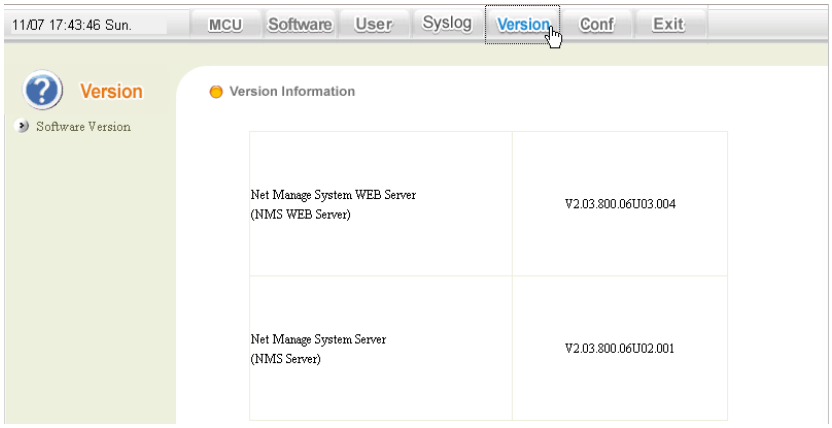
– End of Steps –

4.5.5 Viewing Software Version

Steps

- Choose **Version** from the main menu. Then, the system displays the versions of the current NMS Webserver and NMS Server, as shown in the following figure.

Figure 4-50 Viewing Version Information

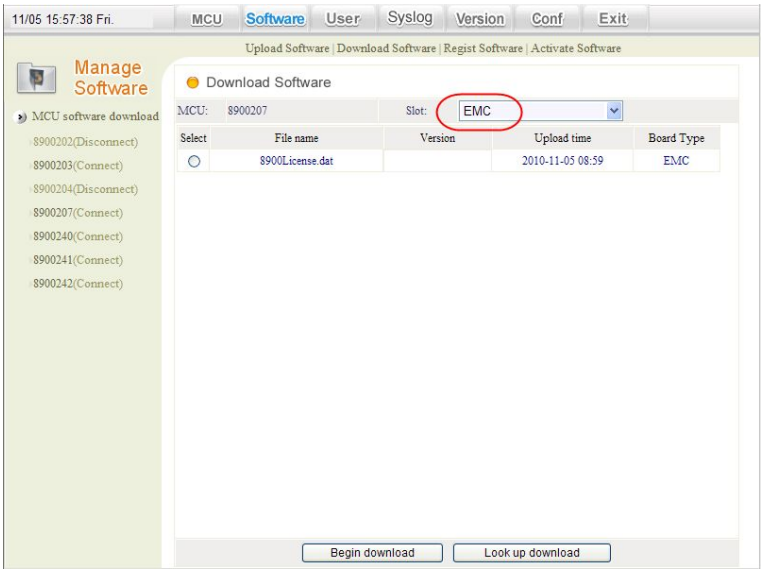


4.5.6 Upgrading EMC - Under the Normal Mode

Steps

1. Upload the license file.
   a. Click the **Browse** button, from the local machine, find the **8900license.dat** file.
   b. In the **Board type** pull-down menu, select **EMC**.
   c. Click the **Start** button to upload the file. It is shown in the following figure.

Figure 4-51 Upload the License File



2. Upload the version of the normal mode.
   You are required to upload two files: Emc_Norm.xxx version and EMC_Norm_Update.ini configuration file.

Caution

Ensure the version name in the EMC_Norm_Update.ini file should be consistent with the names of other two uploaded files (Emc_Norm.xxx).

---

   a. Click the **Browse** button, from the local machine, find the **Emc_Norm.xxx** file.
   b. In the **Board type** pull-down menu, select **Kernel (Normal)**.
   c. Click the **Start** button to upload thei file.
   d. Repeat steps a to c to upload the **EMC_Norm_Update.ini** file.
3. After all the two files are uploaded, you will view these two files in the download interface. Let's set the **Emc_Norm.xxx** as example to describe the download process. The process of downloading other software is similar.

4. Click the **Download the Software** button, and select one MCU in the navigation menu on the right side.
5. In the **Slot** pulldown menu, select **Kernel (Normal)**, and click one upgrading program on the page, then click the **Start the Download** button to start downloading the program.
6. During the download the progress bar pops up, then you can also click the **Look up download** button to view the current download status.

Figure 4-52 Progress Bar Display

7. During the upgrade be patient. Upon the end of upgrade, the EMC upgrading takes effect.

– End of Steps –

4.5.7 EMC Upgrading - Under the Security Mode

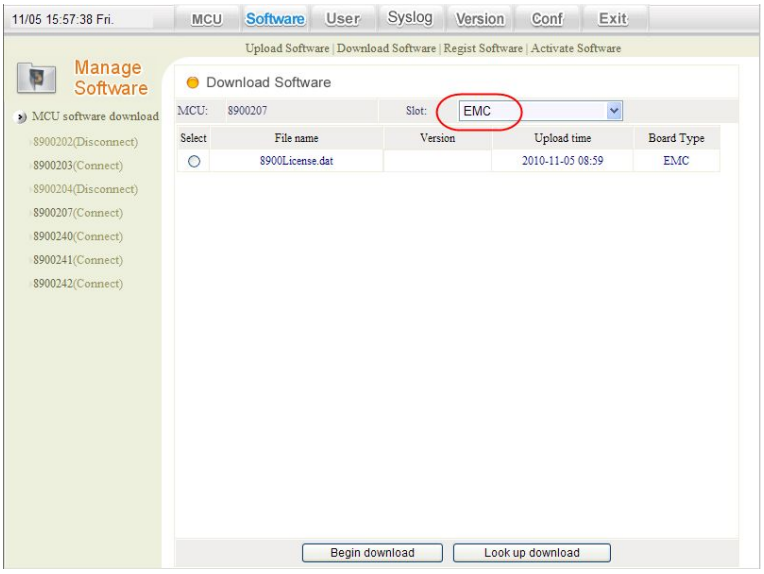
Context

Please in advance select the normal mode to upgrade. If the upgrade in normal mode failed, refer to related chapters to select the security mode for upgrade.

Steps

1. Upload the license file.
   a. Click the **Browse** button, from the local machine, find the **8900license.dat** file.
   b. In the **Board type** pull-down menu, select **EMC**.
   c. Click the **Start** button to upload the file. It is shown in the following figure.

Figure 4-53 Upload the license file



2. Upload the version of the security mode.
   You are required to upload three files: Emc_Ramdisk.xxx and Emc_UImage_Safe.xxx files, and EMC_Safe_Update.ini configuration file.

Caution

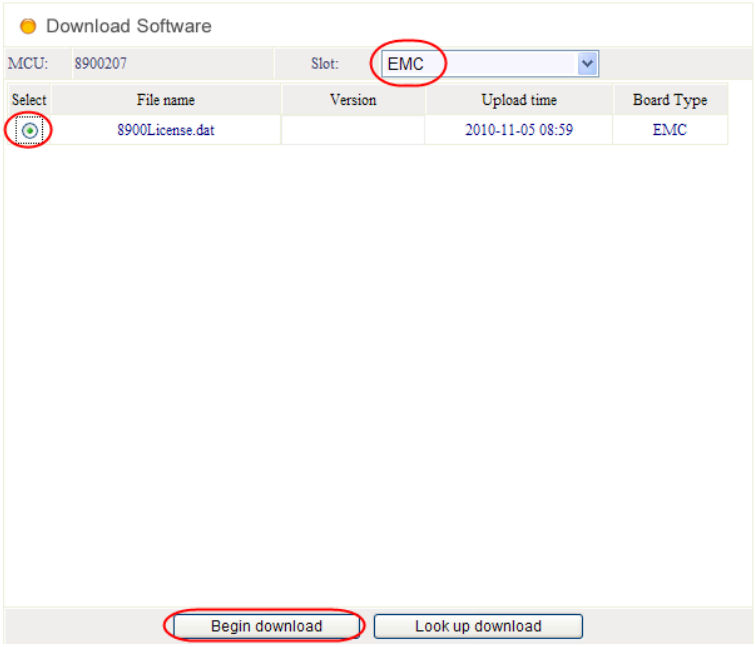
Ensure the version name in the EMC_Safe_Update.ini file should be consistent with the names of other two uploaded files (Emc_Ramdisk.xxx and Emc_UImage_Safe.xxx files).

---

   a. Click the **Browse** button, from the local machine, find the **Emc_Ramdisk.xxx** file.
   b. In the **Board type** pull-down menu, select **Kernel (Safe)**.
   c. Click the **Start** button to upload this file.
   d. Repeat steps a~c, in turn upload the Emc_UImage_Safe.xxx file and the EMC_Safe_Update.ini configuration file.

3. After all the three files are uploaded, you will view these three files in the download interface. Let's set the EMC software download as example to describe the download process. The process of downloading other software is similar.
4. Click the **Download the Software** button, and select one MCU in the navigation menu on the right side.
5. In the **Slot** pull-down menu, select **EMC**, and click one upgrading program on the page, then click the **Start the Download** button to start downloading the program, shown in the following figure.

Figure 4-54 Download the software



6. During the download the progress bar pops up, then you can also click the **Look up download** button to view the current download status.
7. During the upgrade, be patient. Upon the end of upgrade, the EMC upgrading takes effect.

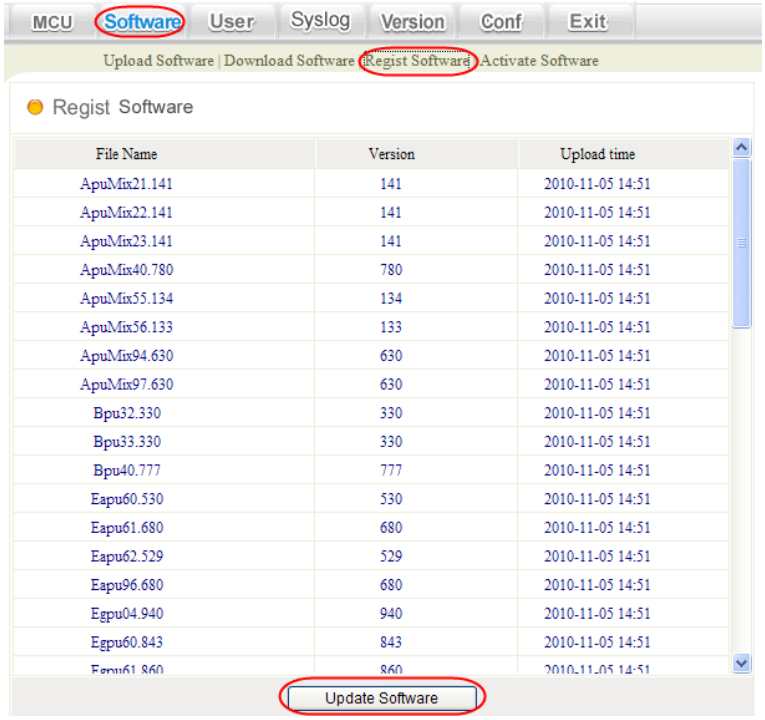
– End of Steps –

4.5.8 Uploading the board

Steps

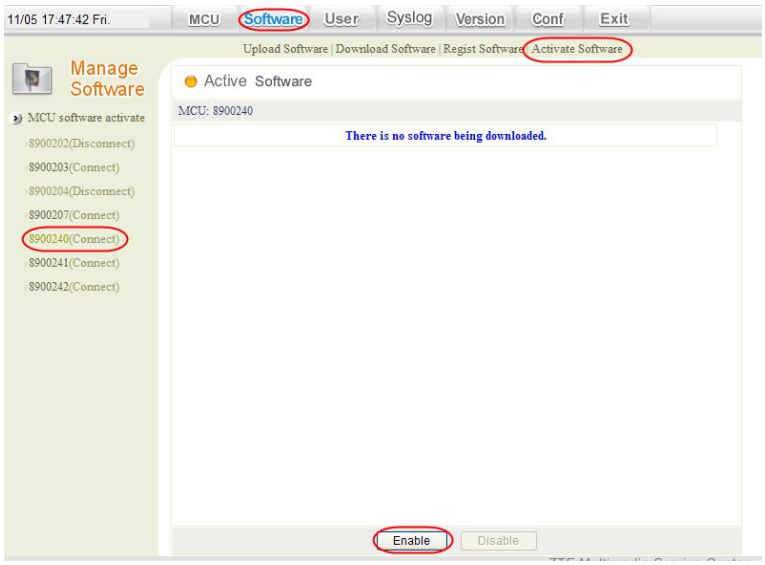
1. Click **Regist Software**, then the page shown in the following figure pops up.

Figure 4-55 Example of registering the software



2. Click the **Upload Software** button, and synchronize the versions of the software and the database.
3. Click the **Activate Software** button, and select one MCU in the navigation column on the left side, shown in the following figure.

Figure 4-56 Example of activating the software



4. Click the **Start** button to immediately upgrade the board.

– End of Steps –

4.6 Log Management

Context

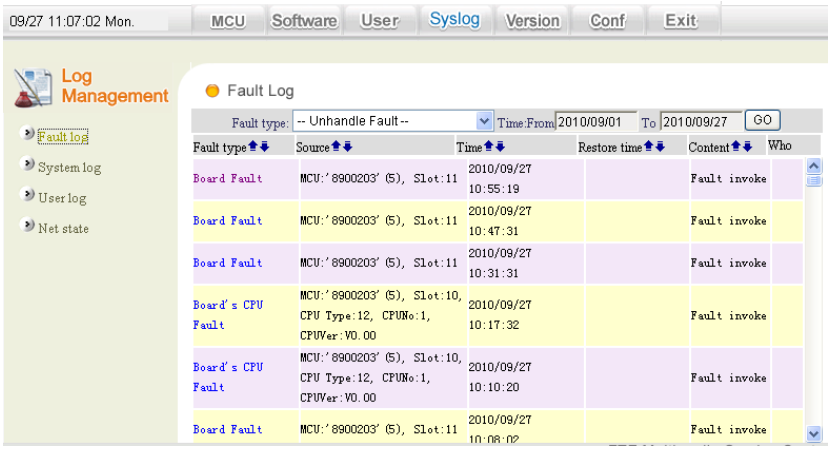
A log records the user activities, results, and device running status. Logs are classified into system logs, fault logs, and user logs.

4.6.1 Fault Log

A fault log records the details of various system faults. On the page, click the up or down button of a column to sort the query result in ascending or descending order.

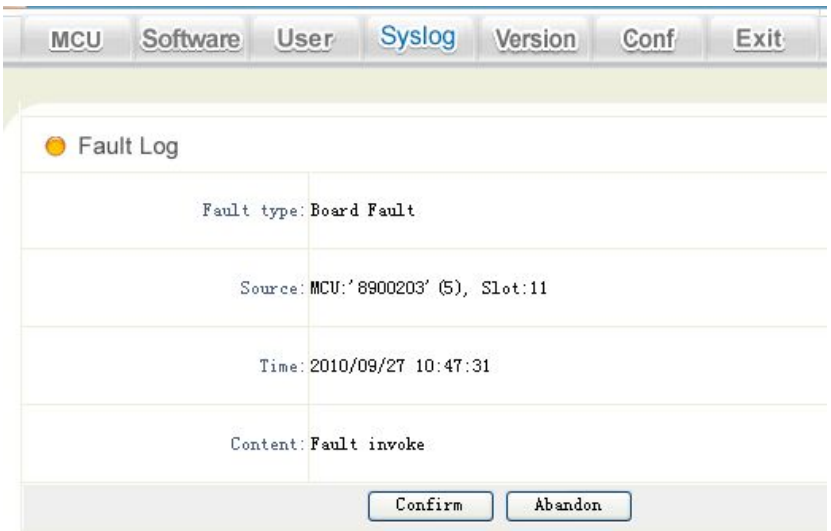
The available query conditions are **Fault type** and **Time**. For example, set **Fault type** to **MCU Disconnected** and **Time** to 2010/07/01. Click **GO**. Then, the system displays the query result, as shown in the following figure.

Figure 4-57 Unhandled Fault Log List



In the above figure, the faults to be handled are displayed with colored frames. The administrator can select a fault to be handled to view its type, source, and occurrence time, as shown in the following figure.

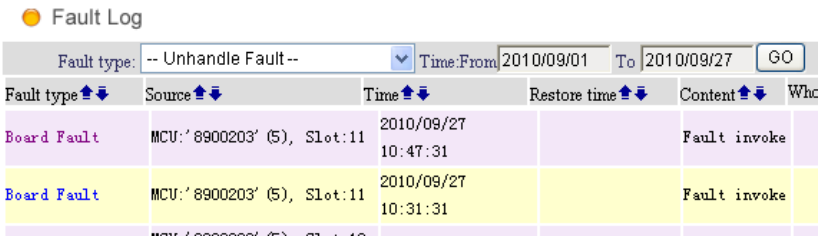
Figure 4-58 Fault Handling



In the above figure, click **Confirm** to handle the required fault. If the fault is displayed with a black and while frame, it indicates that the fault is handled. Click **Abandon** to ignore the fault. In this case, the fault is still displayed with a colored frame.

The faults that are already handled are displayed with black and white frames, as shown in the following figure. For these faults, only the occurrence time and handling time are displayed and the administrator cannot view their details.

Figure 4-59 Handled Fault Log List



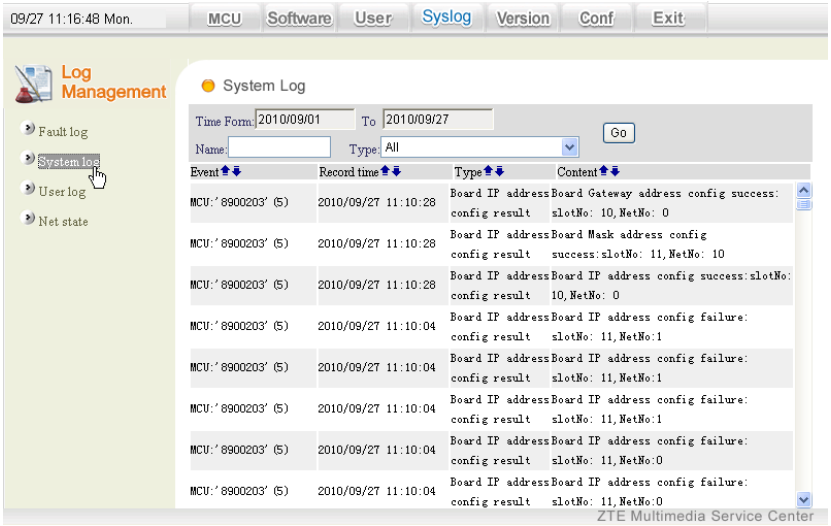
4.6.2 System Log

A system log records the login information of the administrator, information of MCUs, boards, CPUs, and ports reported by MCUs, and key operations of the administrator. You can query logs by **Name** or **Type**.

To query the system logs generated some time before, click **Time**. In the dialog box that is displayed, select the required time segment and click **Go**. The system queries the logs by the set query conditions.

The system displays the query result in the lower right corner of the page. You can click the up or down button of a column to sort the query result in ascending or descending order, as shown in the following figure.

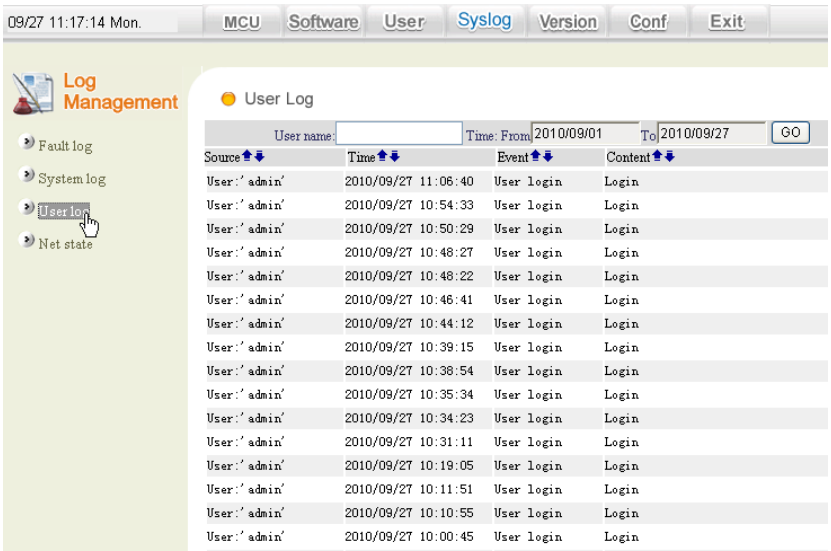
Figure 4-60 System Log



4.6.3 User Log

A user log records login and exit operations of a user. Choose **Syslog > User log** from the main menu. The **User Log** page is displayed, as shown in the following figure.

Figure 4-61 User Log



To query the user logs generated some time before, click **Time**. In the dialog box that is displayed, select the required time segment and click **Go**. The system queries the logs by the set query conditions. The system displays the query result in the lower right corner of the page. You can click the up or down button of a column to sort the query result in ascending or descending order.

4.7 System Help

If you meet some problem or are unfamiliar with the steps during operations, you can get touch with ZTE corporation.

4.8 Exiting the System

Context

After the required operations are performed or you need to leave, exit the system.

Steps

1. Choose **Exit** from the main menu. A dialog box is displayed, as shown in the following figure.

Figure 4-62 System Exit Confirmation Dialog Box

2. Click **OK** to exit.

– End of Steps –

Appendix A
Common Problems of Web Server

Table of Contents

- Failed Login to Web Page A-1
- Failed Login After Web Page Displayed A-2
- Web Page Error A-2
- Failed Software Uploading A-2
- Failed Software Downloading A-3
- Disconnection from MC A-3
- Failed Flash Display A-3
- Inconsistent MCU States A-4
- NMS Server Error A-5

A.1 Failed Login to Web Page

Fault Symptom

After the ZXMS80 NMS Webserver is installed, the Web page fails to be accessed.

Fault Analysis

The service is not started or the Web page is conflicted.

Fault Handling

- Check whether the ZXMS80 NMS Webserver is started.
- Check whether the Name Server is started.
- If the above servers are all started, restart them and try again.
- If this problem still persists after restart, the port used by the NMS Webserver conflicts with a program. In this case, you need to re-configure the port.

A.2 Failed Login After Web Page Displayed

Fault Symptom

The Web page is displayed but login to the system fails.

Fault Analysis

The NMS Server is not started.

Fault Handling

- Check whether the NMS Server is started.
- If yes, restart the NMS Server and try again.
- If this problem persists, restart the ZXMS80 Web service.

A.3 Web Page Error

Fault Symptom

An error occurs during the operation of Web pages.

Fault Analysis

The Web page is not refreshed and the NMS Server is stopped abnormally.

Fault Handling

- Refresh the Web page.
- If this problem persists, restart the ZXMS80 NMS Webserver service.
- If this problem still persists, the ZXMS80 NMS Server works abnormally. In this case, restore its working status or restart the NMS Server.

A.4 Failed Software Uploading

Fault Symptom

Software uploading fails.

Fault Analysis

The link is disconnected or the connection between the NMS Webserver and the database is abnormal.

Fault Handling

Check whether the uploaded file exists in the …`/upload` directory. If not, it indicates that the link is disconnected during software uploading. In this case, upload the file again. If the

file exists but the Web page still prompts the error, the connection between the Webserver and the database may be abnormal. In this case, restart the database and upload the file again.

A.5 Failed Software Downloading

Fault Symptom

Software downloading fails.

Fault Analysis

Find the cause by viewing the NMS Server log file.

- 201 indicates that FTP login fails.
- 202 indicates that the required file is not found.

Fault Handling

- Check whether the FTP service is started.
- Check whether the FTP path is set according to requirements.
- Check the `NMSConfig.ini` in the NMS Server and check whether the IP address of the SoftwareAddr is correct.

After that, try again.

A.6 Disconnection from MC

Fault Symptom

An error occurs during the operation of Web pages, which indicates that the connection to the MC is disconnected.

Fault Analysis

The communication between the MC and ZXMS80 NMS Server is abnormal.

Fault Handling

Check whether the network connection between the ZXMS80 NMS Server and MC is disconnected. In addition, check whether the MC works normally.

A.7 Failed Flash Display

Fault Symptom

During login, the system displays a security alarm.

Fault Handling

On the page, click **Yes**.

A.8 Inconsistent MCU States

Fault Symptom

During operations on the NMS Web page, the MCU state is inconsistent with the actual state. Moreover, the MCU states in **Control MCU**, **Diagnose MCU**, and **Version** are different from each other.

Fault Analysis

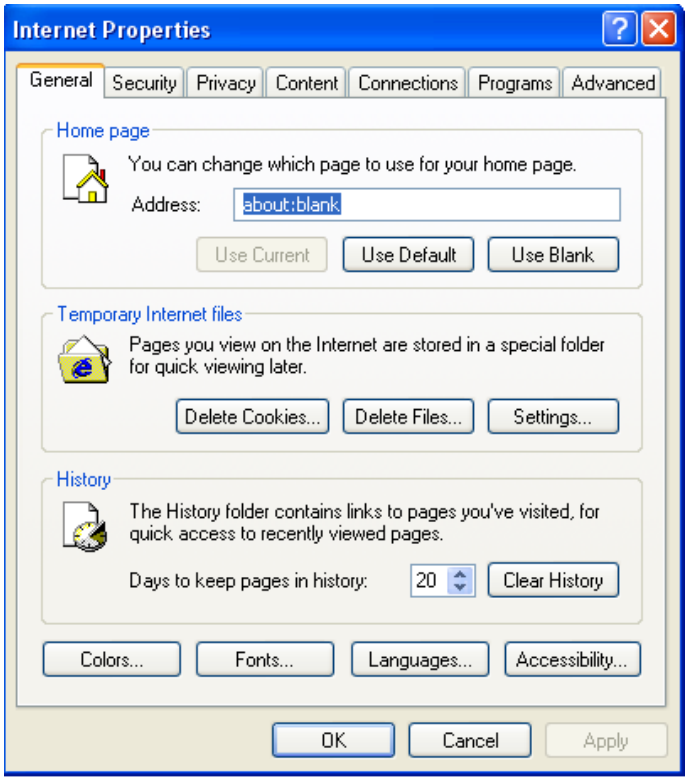
The IE browser saves temporary files and history records, and does not query data from the NMS Webserver sometimes.

Fault Handling

Clear the temporary files and history records of the IE browser.

1. Open the IE browser and choose **Tools > Internet Properties** from the main menu. The **Internet Properties** dialog box is displayed, as shown in the following figure.

Figure A-1 Internet Properties Dialog Box



2. Click **Delete Files** and **Clear History**, and then click **OK**.

A.9 NMS Server Error

Fault Symptom

After the NMS Server is disconnected from the MC normally, the board status of the MCU is **disconnected**.

Fault Analysis

The communication between the MC and MP is abnormal.

Fault Handling

1. Check whether the connection between the MC and MP is normal.
2. Check whether the slot configuration in the MCU template is the same as that of the actual MCU.
3. If not, make the slot configurations consistent. The boards that are not configured in the MCU template can exist in the slots but the boards that are configured in the MCU template must exist in the slots. Ensure that the board type corresponds to the slot.

Figures

Figure 1-1 Layers and Structures of ZXMS80 1-2
Figure 1-2 Components of ZXMS80 Network Management System 1-2
Figure 1-3 Networking of Network Management System 1-3
Figure 1-4 Functional Bar of Network Management System 1-3
Figure 4-1 Initial Page 4-1
Figure 4-2 ZXMS80 Network Management System 4-2
Figure 4-3 MCU Management Menus 4-3
Figure 4-4 Configuration Page of MCU 4-3
Figure 4-5 Adding an MCU 4-4
Figure 4-6 Deleting and Modifying MCU-Backup Setting 4-6
Figure 4-7 Basic MCU Configuration Operation-Downloading Backup Setting 4-7
Figure 4-8 Example of Viewing the Active Settings of an MCU 4-8
Figure 4-9 MCU Slot Configuration 4-9
Figure 4-10 Configuration Page of APU Board 4-10
Figure 4-11 Configuration Page of NILAN/ENIL Board 4-11
Figure 4-12 Configuration Page of ENPU Board 4-12
Figure 4-13 MCU Board Configuration-Downloading Backup Setting 4-14
Figure 4-14 Configuration Page of MCU Board 4-15
Figure 4-15 Adding a Terminal 4-16
Figure 4-16 Example of Adding a Terminal 4-17
Figure 4-17 Viewing Settings of the Current Terminal 4-17
Figure 4-18 Controlling an MCU 4-18
Figure 4-19 Diagnosing MCU 4-19
Figure 4-20 CPU Diagnosis Example 4-19
Figure 4-21 EAPU Diagnosis Loopback 4-20
Figure 4-22 Principle of Level-1 Audio Loopback on EAPU Board 4-20
Figure 4-23 Principle of Level-2 Audio Loopback on EAPU Board 4-21
Figure 4-24 Principle of Level-3 Audio Loopback on EAPU Board 4-21
Figure 4-25 Principle of Level-1 Audio Mix Loopback on EAPU Board 4-22
Figure 4-26 Principle of Level-2 Audio Mix Loopback on EAPU Board 4-22
Figure 4-27 APUMIX Diagnosis Loopback 4-23
Figure 4-28 Principle of Level-1 Loopback on APUMIX Board 4-23

Figure 4-29 Principle of Level-2 Loopback on APUMIX Board 4-24
Figure 4-30 NILAN Diagnosis Loopback 4-25
Figure 4-31 Principle of RTP_HPI (UDP) Loopback on NILAN Board 4-25
Figure 4-32 Principle of RTP_NOHW (RTP) Loopback on NILAN Board 4-26
Figure 4-33 Principle of RTP_VHW (Video) Loopback on NILAN Board 4-26
Figure 4-34 Principle of RTP_AHW (Audio) Loopback on NILAN Board 4-27
Figure 4-35 ENIL Diagnosis Loopback 4-28
Figure 4-36 Principle of 8260 Network Port Loopback on ENIL Board 4-28
Figure 4-37 Principle of 8260FIFO Loopback on ENIL Board 4-29
Figure 4-38 Principle of C6202FIFO Loopback on ENIL Board 4-29
Figure 4-39 Principle of Video Loopback on ENIL Board 4-30
Figure 4-40 Principle of Audio Loopback on ENIL Board 4-30
Figure 4-41 Principle of HW Loopback on ENIL Board 4-31
Figure 4-42 Principle of FPGA Loopback on ENIL Board 4-31
Figure 4-43 Adding a User 4-32
Figure 4-44 Modifying User Information 4-33
Figure 4-45 Uploading Software 4-34
Figure 4-46 File Selection Dialog Box 4-35
Figure 4-47 Downloading Software 4-36
Figure 4-48 Registration Software 4-37
Figure 4-49 Activating the Software 4-38
Figure 4-50 Viewing Version Information 4-38
Figure 4-51 Upload the License File 4-39
Figure 4-52 Progress Bar Display 4-40
Figure 4-53 Upload the license file 4-41
Figure 4-54 Download the software 4-42
Figure 4-55 Example of registering the software 4-43
Figure 4-56 Example of activating the software 4-43
Figure 4-57 Unhandled Fault Log List 4-44
Figure 4-58 Fault Handling 4-45
Figure 4-59 Handled Fault Log List 4-45
Figure 4-60 System Log 4-46
Figure 4-61 User Log 4-46
Figure 4-62 System Exit Confirmation Dialog Box 4-47
Figure A-1 Internet Properties Dialog Box A-4

Tables

Table 4-1 Main Page Description 4-2
Table 4-2 Adding an MCU 4-4
Table 4-3 Boards Supported by Slots of ZXMVC 8900 4-9
Table 4-4 Adding a User 4-32

Glossary

CORBA

- Common Object Request Broker Architecture

DB

- DataBase

MCU

- Multipoint Control Unit

NMS

- Network Management System

SQL

- Structured Query Language

ZXMS

- ZhongXing Multimedia Service management system