Auto Provisioning

For VoIP Devices

Administrator's Guide

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ZyXEL

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Customer Support

Please have the following information ready when you contact customer support.

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

METHOD	SUPPORT E-MAIL	TELEPHONE[A]	WEB SITE	REGULAR MAIL
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a. "+" is the (prefix) number you enter to make an international telephone call.

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C HAPTER 1
Auto Provisioning

1.1 Auto Provisioning Overview

This document is for administrators who need to configure a large number of ZyXEL's VoIP ATAs and IADs. Auto provisioning has the VoIP devices periodically download a configuration text file from a server that you set up and maintain. The VoIP device changes its configuration to match the configuration file (if they are different). At the time of writing, you can use TFTP, HTTP or HTTPS[1] protocol for auto provisioning.

The following sections introduce two scenarios for using auto provisioning with ZyXEL's VoIP ATAs and IADs. The first uses a provisioning utility and the second uses an auto provisioning server.

1.2   Provisioning Utility Scenario

For smaller-scale deployments, you can manually use the ZyXEL configuration generator provisioning utility to generate and encrypt a batch of configuration files. Then store the configuration files on a server for the ZyXEL Customer Premises Equipment (CPE) VoIP devices to automatically download and use.

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1.   HTTPS support is optional and is not supported in the standard release.

Figure 1 Provisioning Utility Scenario
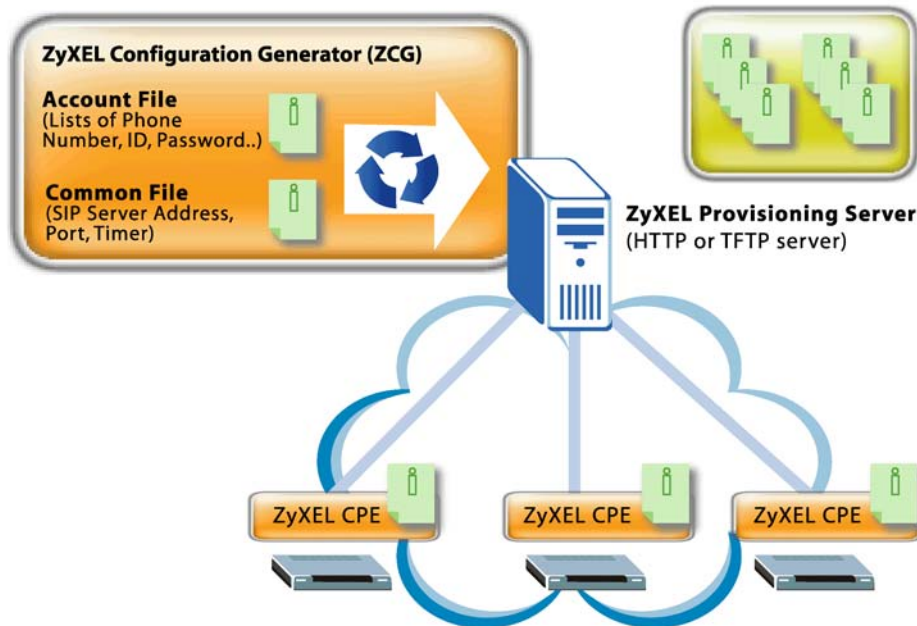
1.2.1 Provisioning Utility System Usage

Use the following steps to set up auto provisioning using the provisioning utility.

Note: You must use the Command Line Interface (CLI) `autopro` command to pre-configure the ZyXEL VoIP devices to get the configuration files from the server (see Chapter 2 on page 21).

Figure 2 Provisioning Utility Set Up
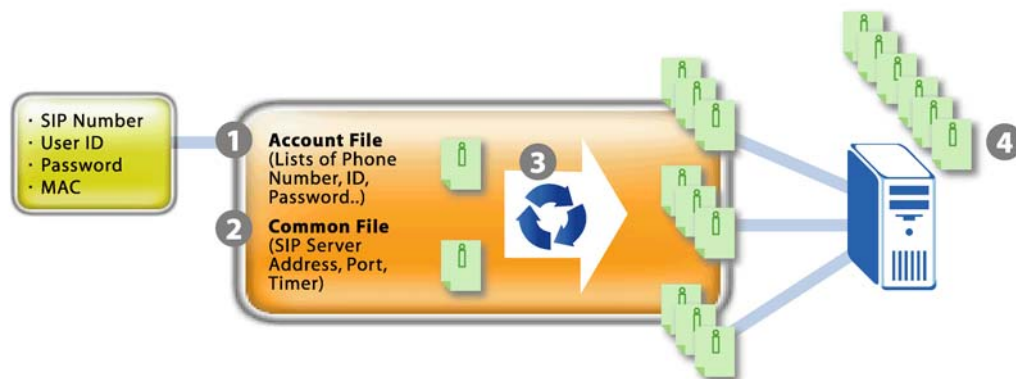
1 Create an account file containing settings such as the username, password and SIP number (see Section 3.2 on page 23 for details). You can export data from your Customer Relationship Management (CRM) database to use in the account file.

2 Create a common file with general SIP settings such as the SIP server's IP address, port number, codec and timeout (see Section 3.4 on page 24).

3 Use the provisioning utility to generate and encrypt a batch of configuration files (see Chapter 3 on page 23). Each includes subscriber specific SIP settings (username, password and SIP number).

4 Store the configuration files on a TFTP or HTTP server. Subscribers do not need to configure any SIP settings. After the VoIP device starts and connects to the Internet, it automatically downloads its unique configuration text file from the provisioning server.

1.3 Auto Provisioning Server Scenario

For large-scale deployments, you can use ZyXEL's auto provisioning server software for a automated, end-to-end solution. The auto provisioning server provides the following key benefits and features.

- Efficient management. The database-centric approach automatically generates and manages VoIP subscriber device profiles. The auto provisioning server's database uses MySQL.
- It is easy to update settings for individual VoIP subscriber devices when you change SIP parameters.
- PIN code based authentication for enhanced security. The auto provisioning server uses Hypertext Preprocessor (PHP) to communicate with the VoIP subscriber devices.
- The web-based management interface is easy-to-use.
- ZyXEL's auto provisioning server software supports the XML and Simple Object Access Protocol (SOAP) to ease integration with your existing CRM database.

Figure 3   Auto Provisioning Server Scenario
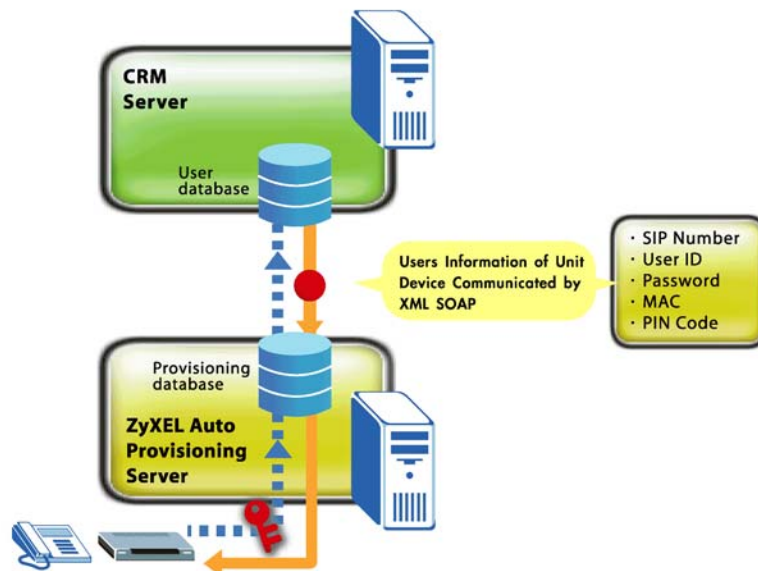
1.3.1 Requirements for Using the Auto Provisioning Server

You need to do the following.

- Provide and maintain a CRM system (database) that:

  Stores a record of VoIP subscriber device MAC addresses.

  Generates a unique PIN code to map to each VoIP subscriber device MAC address.

  Stores each subscriber's SIP number, user ID, password PIN code and MAC address.

Note: The auto provisioning server software package includes sample CRM server software called the VoIP Subscribing System (VSS). See Appendix D on page 87 for its database structure.

- Install the auto provisioning server software on a server (see Chapter 4 on page 43).
- Integrate the auto provisioning server with the CRM system. See Appendix E on page 89 for how the auto provisioning server uses SOAP to communicate with the CRM system.
- Provide SIP numbers and PIN codes to the subscribers either through a card, information sheet or other method.
- Use the `autopro` command in the Command Line Interface (CLI) to pre-configure the ZyXEL VoIP devices to get the configuration files from the server (see Chapter 2 on page 21).

1.3.2 Auto Provisioning Server System Usage

The following figure and steps describe how auto provisioning works with the auto provisioning server.

Figure 4 Auto Provisioning Server Operation
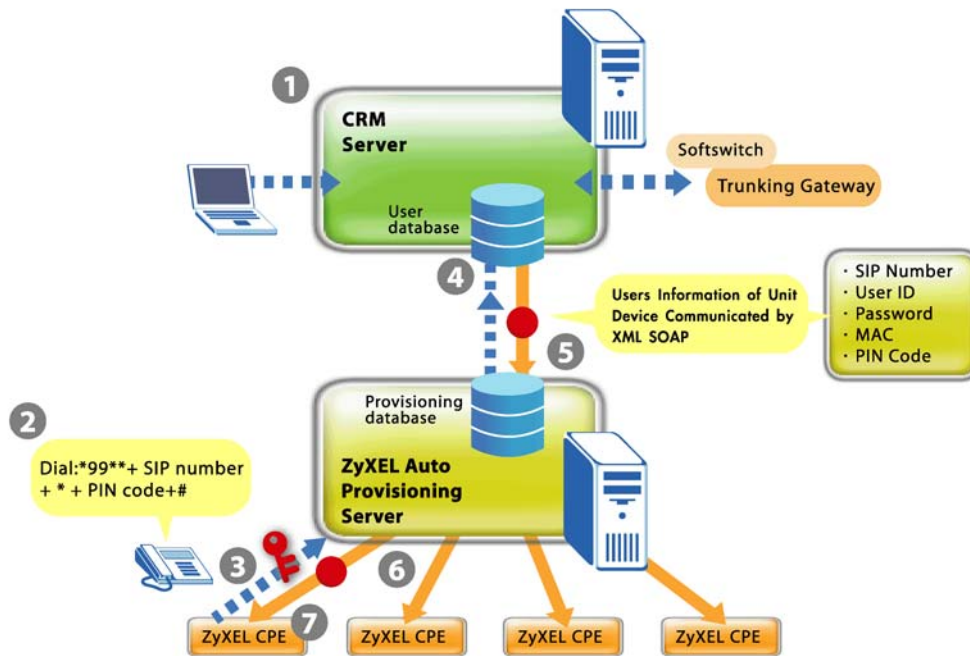
1 Register a VoIP subscriber device and create a subscriber profile in the CRM database. The device's type and MAC address have to be stored in the CRM database. You could set it up so that a subscriber uses a credit card on-line to register for VoIP service and the CRM database creates the subscriber profile and maps it to a device MAC address.

2 The subscriber connects the VoIP device to the Internet and uses the telephone keypad to enter the assigned SIP number and PIN code. The subscriber must press *99** SIP number * PIN code #. For example, *99** 10000002 * 1234 #. After the subscriber enters this information once, the device uses it to get the latest configuration file every time the device starts and connects to the Internet.

3 The VoIP device uses the SIP number, PIN code and its MAC address and model name to authenticate with the auto provisioning server.

4 For a new subscriber, the auto provisioning server requests subscriber specific settings from the CRM database.

5 The CRM server sends the subscriber specific settings to the auto provisioning server.

6 The provisioning server combines the subscriber specific settings with general SIP setting to make a configuration file.

7 The subscriber's VoIP device downloads and uses the configuration file.

1.3.3 Auto Provisioning Server System - Important Notes

The default address for accessing the sample CRM server is http://192.168.1.200/ZyXEL/.

Sample VoIP SIP Express Router (SER) software is also included on the auto provisioning CD. You can use http://192.168.1.200 to access it. See iptel.org for more information on SER servers.

By default the sample SER server does not enforce any security so a SIP device does not have to be registered to use it. When you implement the auto provisioning server system, you will want to have the CRM server and SIP server interact to make sure that only registered SIP devices can use the SIP server.

C HAPTER 2
Auto Provisioning Commands

Before you deploy the VoIP devices, you need to configure them with your provisioning server's IP address and enable the auto provisioning feature.

Use the Command Line Interface (CLI) to configure the VoIP device's auto provisioning settings. The VoIP device's auto provisioning settings are not configurable via the web configurator. This prevents end users from accidentally changing them.

Do the following to enter the CLI.

1 Log into the device by telnet or the console port.

2 Enter SMT Menu 24.8, the CLI mode.

2.1 Auto Provisioning Commands

Use the following commands to configure the VoIP device's auto provisioning settings.

Table 1 Auto Provisioning Commands

COMMAND					DESCRIPTION
voice	config	autopro	index	`<index>`	Starts an auto provisioning configuration session.
			active	`<index>` `<0:off|1:on>`	Turns auto provisioning on or off.
			servaddr	`<index> <ip address>`	Sets the IP address of the server.
			timeout	`<index> <second>`	Sets how long the VoIP device waits after successfully downloading the configuration file from the server before downloading it again.
			retry	`<index> <second>`	Sets how long the VoIP device waits after a failed attempt to download the configuration file from the server before making another download attempt. This period is usually shorter than the timeout period.
			method	`<index> <0:common|2: http_pincode >`	Use 0 if you are using the provisioning utility. Use 2 if you are using the auto provisioning server.
			protocol	`<index> <0:TFTP|1:HT TP|2:HTTPS>`	Sets which protocol to use for auto provisioning.
			save	`<index>`	Saves the auto provisioning configuration.

Table 1 Auto Provisioning Commands (continued)

COMMAND					DESCRIPTION
			display	\<index\>	Displays the auto provisioning configuration settings.
			dumpCfg	\<index\>	Displays the auto provisioning settings in the temporary buffer.

CHAPTER 3
Provisioning Utility

3.1 Provisioning Utility Overview

Use the provisioning utility to create encrypted configuration text files. The utility uses triple DES encryption for strong security.

Use the correct utility for your operating system (ZyConfigGen_Win32 for Windows or ZyConfigGen_Linux for Linux).

3.2 Account File

You must create an account file before you use the utility. The account file lists subscriber specific account information according to the following format. The MAC address must be listed first.

Syntax

```
<MAC Address>,<SIP1 Phonenumber>,<SIP1 User ID>,<SIP1 Password>,[SIP2
Phonenumber],[SIP2 User ID],[SIP2 Password]
```

The account file may be generated from a database. The following example is named "Account.txt".

Figure 5 Account File Example

```
00A0C5891805,52711,user1,111,
00A0C5999897,52293,user3,1234,52294,user4,1234,
00A0C5522903,52295,user5,5555,,,
00A0C5EBEC95,12345,test1234,111111,98765,test0000,222222,
```

3.3 Account Field File

You must also create an account field file that identifies the fields in the account file. The fields must be in the same order in the account file and the account field file. The MAC address is not included in the account field file.

The following example is named "Field.txt".

Figure 6   Account Field File Example

```
980101014 = SIP #1 Phone Number
980101012 = SIP #1 UserId
980101013 = SIP #1 Password
980102014 = SIP #2 Phone Number
980102012 = SIP #2 UserId
980102013 = SIP #2 Password
```

3.4 Common File

You can also include a common file of general settings if you want to change them from the defaults. A common file is optional.

Use the `voice autopro itemdisplay` command with a device to see which fields can be configured through auto provisioning. It is recommended that you use communications software (such as a terminal emulation program) that allows you to capture the results.

3.4.1 The Common File Format

This is the format of the configuration text files.

```
<field identification number = field name = parameter values allowed =
input>,
```

where `<input>` is your input conforming to `<parameter values allowed>`.

It is also the same format that Internal SPTGEN configuration files use. See for how to get a device's SPTGEN file.

Note: Make sure you use the `voice autopro itemdisplay` command to get the fields that are configurable via auto provisioning. Even if you use a full Internal SPTGEN file, auto provisioning only changes the settings that are configurable via auto provisioning.

3.4.2   File Modification - Important Points to Remember

Each parameter must be preceded by one "="sign and one space.

Some parameters are dependent on others.

3.5 Getting an SPTGEN File

You can use an internal SPTGEN file to create a common file. Use the following procedure to get a SPTGEN file from a VoIP device via FTP.

1 Launch the FTP client on your computer.

2 Enter "open", followed by a space and the IP address of your VoIP device.

3 Press [ENTER] when prompted for a username.

4 Enter your password as requested (the default is "1234").

5 Enter "bin" to set transfer mode to binary.

6 Use "get" to transfer files from the device to the computer, for example, "get rom-t SPTGEN.txt" transfers the internal SPTGEN file on the device to your computer and renames it "SPTGEN.txt".

7 Enter "quit" to exit the ftp prompt.

The following figure shows an example.

Figure 7 FTP Session Example

```
C:\>ftp 192.168.1.1
Connected to 192.168.1.1.
220 P2302R FTP version 1.0 ready at Sat Jan 01
00:01:52 2000
User (192.168.1.1:(none)):
331 Enter PASS command
Password:
230 Logged in
ftp> bin
200 Type I OK
ftp> get rom-t P-2302R.txt
200 Port command okay
150 Opening data connection for RETR rom-t
226 File sent OK
ftp: 36107 bytes received in 3.75Seconds
9.63Kbytes/sec.
ftp> quit
221 Goodbye!
```

3.6 Auto Provisioning Text Files

Auto provisioning uses configuration text files that include subscriber specific SIP settings (username, password and SIP number). Subscribers do not need to configure any SIP settings. They only need to connect the VoIP device to the Internet.

Your server must include a database with a different configuration file for each subscriber. The filename of each configuration file must include the VoIP device's MAC address, for example: sip<MAC ADDRESS>.txt. This allows each VoIP device to download its unique configuration file.

3.6.1 Auto Provisioning Text File Menus Example

The following table explains the labels that have been added to the example auto provisioning menu tables for identification purposes. These labels do not appear in an actual auto provisioning configuration file.

Table 2 Example Auto Provisioning Menus Abbreviations

ABBREVIATION	MEANING
FIN	Field Identification Number (not seen in SMT screens)
FN	Field Name
PVA	Parameter Values Allowed
INPUT	An example of what you may enter

Here are examples of configuration text file menus that auto provisioning uses. This is a general example, the exact fields vary by product.

Note: You can add comments in a configuration file by adding a a /* before them and a */ after them.

Note: DO NOT alter or delete any field except parameters in the **INPUT** column.

Table 3   Menu 4 Internet Access Setup

FIN	FN	PVA	INPUT
40000000	Configured	<0(No) | 1(Yes)>	1
40000001	ISP	<0(No) | 1(Yes)>	1
40000002	Active	<0(No) | 1(Yes)>	1
40000003	ISP's Name		1234
40000004	Encapsulation	<2(PPPOE) | 8(Ethernet)| 15(PPTP)>	8
40000008	Service Name		any
40000009	My Login		test
40000010	My Password		12345
40000011	Single User Account	<0(No) | 1(Yes)>	0
40000012	IP Address Assignment	<0(Static)|1(Dynamic)>	0
40000013	Wan IP Address		0.0.0.0
40000014	Remote Gateway		0.0.0.0
40000015	Remote IP subnet mask		0
40000024	ISP PPPoE idle timeout		100
40000025	Route IP	<0(No) | 1(Yes)>	1
40000033	Nailed-up Connection	<0(No) | 1(Yes)>	0
40000034	LAN IP Address		172.21.3.155
40000035	LAN IP subnet mask Bits		16
40000036	LAN Gateway		172.21.0.254

Table 4   Menu 24.10 Time and Date Setting

FIN	FN	PVA	INPUT
241000001	Time Protocol		3
241000002	Time Server Address		129.132.2.21
241000003	Time Zone		13
241000004	Daylight Saving	<0(No) | 1(Yes)>	1
241000005	Start Date (month)		1
241000006	Start Date (day)		0
241000007	End Date (month)		1
241000008	End Date (day)		0

Table 5   Menu 24.11 Remote Management Control

FIN	FN	PVA	INPUT
241100001	TELNET Server Port		23
241100002	TELNET Server Access	<0(all)|1(none)|2(Lan)|3 (Wan)>	1
241100003	TELNET Server Secured IP address		0.0.0.0
241100004	FTP Server Port		21
241100005	FTP Server Access	<0(all)|1(none)|2(Lan)|3 (Wan)>	1
241100006	FTP Server Secured IP address		0.0.0.0
241100007	WEB Server Port		180
241100008	WEB Server Access	<0(all)|1(none)|2(Lan)|3 (Wan)>	1
241100009	WEB Server Secured IP address		192.168.100.23 3
241100010	SNMP Service Port		161
241100011	SNMP Service Access	<0(all)|1(none)|2(Lan)|3 (Wan)>	0
241100012	SNMP Service Secured IP address		0.0.0.0
241100013	DNS Service Port		53
241100014	DNS Service Access	<0(all)|1(none)|2(Lan)|3 (Wan)>	0
241100015	DNS Service Secured IP address		0.0.0.0

Table 6   Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
/ Menu 98.1.1 VoIP SIP #1 Setup				
980101001	SIP #1 Active	<0(No)	1(Yes)>	1	Enables or disables the SIP account's settings.
980101002	SIP #1 Server Address		172.22.1.17	SIP server's address.
980101003	SIP #1 Server Port	<1~65535>	5060	SIP server's listening port.
980101004	SIP #1 Registration Server IP		172.22.1.17	SIP register server address.
980101005	SIP #1 Registration Server Port	<1~65535>	5060	SIP register server's listening port.

Table 6 Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
980101006	SIP #1 Registration Expiration Time	<2~65535>	7200	Registration timeout value.
980101007	SIP #1 Register ReSend Time	<1~65535>	180	Registration resend timeout value.
980101009	SIP #1 Local signaling Port	<1025~65535>	5060	Local SIP listening port.
980101010	SIP #1 RTP Port Range Start	<1025~65535>	50000	RTP start port.
980101011	SIP #1 RTP Port Range End	<1025~65535>	65535	RTP end port, should larger than RTP start port.
980101012	SIP #1 UserId		User1	SIP account user ID.
980101013	SIP #1 Password		111	SIP account password.
980101014	SIP #1 Phone Number		52711	SIP account phone number.
980101017	SIP #1 Domain Name		172.22.1.17	SIP service domain.
980101018	SIP #1 Mapping to POTS Phone1	<0(No) | 1(Yes)>	1	Map incoming calls to the first phone port.
980101019	SIP #1 Mapping to POTS Phone2	<0(No) | 1(Yes)>	1	Map incoming calls to the second phone port.
980101020	SIP #1 CODEC Type 1	<0(G711mu) |8(G711A) |18(G729)>	18	Primary voice compression type.
980101021	SIP #1 CODEC Type 2	<0(G711mu) |8(G711A) |18(G729)>	0	Secondary voice compression type.
980101022	SIP #1 DTMF Key Type	<0(RFC_2833) |1(PCM) |2(SIP_INFO) |3(RFC_2833_LIKE _SIP_INFO)>	0	Sets how DTMF tones are handled.
980101023	SIP #1 Transport Type	<0(UDP) |1(TCP)>	0	SIP transport type.
980101024	SIP #1 Hide Caller ID	<0(No) |1(Yes)>	0	Disables or enables the sending of caller ID.
980101025	SIP #1 Auto Redial	<0(No) |1(Yes)>	0	Disables or enables auto redial.
980101026	SIP #1 STUN Server Active	<0(No) | 1(Yes)>	0	Turns STUN off or on.
980101027	SIP #1 STUN Server Address			STUN server's IP address.
980101028	SIP #1 STUN Server Port	<1024~65535>		STUN server's listening port.
/ Menu 98.1.2 VoIP SIP #2 Setup				
980102001	SIP #2 Active	<0(No) | 1(Yes)>	0	Enables or disables the SIP account's settings.
980102002	SIP #2 Server Address		192.168.1.33	SIP server's address.

Table 6 Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
980102003	SIP #2 Server Port <1024~65535>	<1~65535>	5060	SIP server's listening port.
980102004	SIP #2 Registartion Server IP		192.168.1.33	SIP register server address.
980102005	SIP #2 Registartion Server Port	<1~65535>	5060	SIP register server's listening port.
980102006	SIP #2 Registartion Expiration Time	<2~65535>	3600	Registration timeout value.
980102007	SIP #2 Register ReSend Time	<1~65535>	180	Registration resend timeout value.
980102009	SIP #2 Local signaling Port	<1025~65535>	5060	Local SIP listening port.
980102010	SIP #2 RTP Port Range Start	<1025~65535>	50000	RTP start port.
980102011	SIP #2 RTP Port Range End	<1025~65535>	65535	RTP end port, should larger than RTP start port.
980102012	SIP #2 UserId		ChangeMe	SIP account user ID.
980102013	SIP #2 Password		1234567890	SIP account password.
980102014	SIP #2 Phone Number		ChangeMe	SIP account phone number.
980102017	SIP #2 Domain Name		192.168.1.33	SIP service domain.
980102018	SIP #2 Mapping to POTS Phone1	<0(No) | 1(Yes)>	1	Map incoming calls to the first phone port.
980102019	SIP #2 Mapping to POTS Phone2	<0(No) | 1(Yes)>	1	Map incoming calls to the second phone port.
980102020	SIP #2 CODEC Type 1	<0(G711mu) |8(G711A) |18(G729)>	0	Primary voice compression type.
980102021	SIP #2 CODEC Type 2	<0(G711mu) |8(G711A) |18(G729)>	18	Secondary voice compression type.
980102022	SIP #2 DTMF Key Type	<0(RFC_2833) |1(PCM) |2(SIP_INFO) |3(RFC_2833_LIKE _SIP_INFO)>	0	Sets how DTMF tones are handled.
980102023	SIP #2 Transport Type	<0(UDP) |1(TCP)>	0	SIP transport type.
980102024	SIP #2 Hide Caller ID	<0(No) |1(Yes)>	0	Disables or enables the sending of caller ID.
980102025	SIP #2 Auto Redial	<0(No) |1(Yes)>	0	Disables or enables auto redial.
980102026	SIP #2 STUN Server Active	<0(No) | 1(Yes)>	0	Turns STUN off or on.
980102027	SIP #2 STUN Server Address			STUN server's IP address.

Table 6 Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
980102028	SIP #2 STUN Server Port	<1024~65535>	0	STUN server's listening port.
/ Menu 98.2 VoIP QoS Setup				
980200001	SIP TOS Priority Setting	<0~255>	0	DiffServ setting for SIP.
980200002	RTP TOS Priority Setting	<0~255>	0	DiffServ setting for RTP.
980200003	VLAN Taging	<0(No) |1(Active)>	0	Enables or disables VLAN tagging of VoIP packets.
980200004	Voice VLAN ID	<0~4095>	0	VLAN Tag - VID.
/ Menu 98.3.1 Phone #1 Setup				
980301001	Phone #1 Speaking Volume	<-14~14>	0	Output volume gain.
980301002	Phone #1 Listening Volume	<-14~14>	0	Input volume gain.
980301003	Phone #1 Outgoing Call use SIP #1	<0(No) |1(Yes)>	1	Outgoing call mapping to first SIP account.
980301004	Phone #1 Outgoing Call use SIP #2	<0(No) |1(Yes)>	1	Outgoing call mapping to second SIP account.
980301005	Phone #1 G.168 Echo Cancellation	<0(No) |1(Yes)>	1	Disables or enables echo cancellation.
980301006	Phone #1 Voice Active Detection Support	<0(No) |1(Yes)>	1	Disables or enables VAD.
980301007	Phone #1 Dialing Short Interval		6	Short dialing interval.
980301008	Phone #1 Dialing Long Interval		20	Long dialing interval.
980301009	Phone #1 Flash Max Interval		160	Maximum flash key interval.
980301010	Phone #1 Flash Min Interval		50	Minimum flash key interval.
/ Menu 98.3.2 Phone #2 Setup				
980302001	Phone #2 Speaking Volume	<-14~14>	3	Output volume gain.
980302002	Phone #2 Listening Volume	<-14~14>	3	Input volume gain.
980302003	Phone #2 Outgoing Call use SIP #1	<0(No) |1(Yes)>	1	Outgoing call mapping to first SIP account.
980302004	Phone #2 Outgoing Call use SIP #2	<0(No) |1(Yes)>	1	Outgoing call mapping to second SIP account.

Table 6   Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
980302005	Phone #2 G.168 Echo Cancellation	<0(No) |1(Yes)>	1	Disables or enables echo cancellation.
980302006	Phone #2 Voice Active Detection Support	<0(No) |1(Yes)>	1	Disables or enables VAD.
980302007	Phone #2 Dialing Short Interval		6	Sets the short dialing interval.
980302008	Phone #2 Dialing Long Interval		20	Sets the long dialing interval.
980302009	Phone #2 Flash Max Interval		160	Maximum flash key interval.
980302010	Phone #2 Flash Min Interval		50	Minimum flash key interval.
/ Menu 98.4 VoIP lifeline (PSTN) Setup				
980400001	PSTN Prefix Number	Prefix Number	11**11	Prefix number for using PSTN.
980400002	Relay to PSTN #1	Phone Number	161	Always use PSTN to call this phone number.
980400003	Relay to PSTN #2	Phone Number		Always use PSTN to call this phone number.
980400004	Relay to PSTN #3	Phone Number		Always use PSTN to call this phone number.
980400005	Relay to PSTN #4	Phone Number		Always use PSTN to call this phone number.
980400006	Relay to PSTN #5	Phone Number		Always use PSTN to call this phone number.
980400007	Relay to PSTN #6	Phone Number		Always use PSTN to call this phone number.
980400008	Relay to PSTN #7	Phone Number		Always use PSTN to call this phone number.
980400009	Relay to PSTN #8	Phone Number		Always use PSTN to call this phone number.
980400010	Relay to PSTN #9	Phone Number		Always use PSTN to call this phone number.
/ Menu 98.5 VoIP RTP Setup				
980500001	Sort Buffer Size ms	<0(0ms)| 1(10ms) |2(20ms)>	1	Receive sorting buffer size.
980500002	RTCP Interval ms		30	RTCP transmission interval.
980500004	G711 voice Packet Length ms	<0(10ms)| 1(20ms) |2(30ms)>	1	Transmit packetized period for G.711.
980500005	G729 voice Packet Length ms	<0(10ms)| 1(20ms) |2(30ms) .. |7(80ms)>	1	Transmit packetized period for G.729.

Table 6 Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
/ Menu 98.6 Auto Provision Setup				
980600001	Auto Provision Active	<0(No) |1(Yes)>	1	Disables or enables auto-provision.
980600002	Auto Provision Server Address		172.21.3.144	Auto-provision server's address.
980600003	Auto Provision Expire Time (Second)	<1~2600000>	120	Retry time when the former provision is successful.
980600004	Auto Provision Retry Expire Time (Second)	<180~65535>	190	Retry time when the former provision fails.
980600005	Auto Provision Protocol	<0(TFTP)|1(HTTP)|2(HTTPS)>	2	Auto-provision protocol.
980600006	Auto Provision Method	<0(Common)|2(POST)>	1	Auto-provision method.
/ Menu 98.7.1 Phone Book (Speed Dial) #1 Setup				
980701001	Phone Book #1 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.
980701002	Phone Book #1 SIP Number		1234	Speed dial entry's SIP number.
980701003	Phone Book #1 SIP IP/URL		Testsip.com	Peer or SIP server's IP address or URL.
980701004	Phone Book #1 Name		test	Callee's name.
980701005	Phone Book #1 Type	<0(Proxy)|1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980701006	Phone Book #1 Speed Number		1111	Speed dial key combination.
/ Menu 98.7.2 Phone Book (Speed Dial) #2 Setup				
980702001	Phone Book #2 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.
980702002	Phone Book #2 SIP Number		1234	Speed dial entry's SIP number.
980702003	Phone Book #2 SIP IP/URL		Testsip.com	Peer or SIP server's IP address or URL.
980702004	Phone Book #2 Name		test	Callee's name.
980702005	Phone Book #2 Type	<0(Proxy)|1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980702006	Phone Book #2 Speed Number		1111	Speed dial key combination.

Table 6 Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
/ Menu 98.7.3 Phone Book (Speed Dial) #3 Setup				
980703001	Phone Book #3 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.
980703002	Phone Book #3 SIP Number		1234	Speed dial entry's SIP number.
980703003	Phone Book #3 SIP IP/URL		Testsip.com	Peer or SIP server's IP address or URL.
980703004	Phone Book #3 Name		test	Callee's name.
980703005	Phone Book #3 Type	<0(Proxy) |1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980703006	Phone Book #3 Speed Number		1111	Speed dial key combination.
/ Menu 98.7.4 Phone Book (Speed Dial) #4 Setup				
980704001	Phone Book #4 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.
980704002	Phone Book #4 SIP Number		1234	Speed dial entry's SIP number.
980704003	Phone Book #4 SIP IP/URL		Testsip.com	Peer or SIP server's IP address or URL.
980704004	Phone Book #4 Name		test	Callee's name.
980704005	Phone Book #4 Type	<0(Proxy) |1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980704006	Phone Book #4 Speed Number		1111	Speed dial key combination.
/ Menu 98.7.5 Phone Book (Speed Dial) #5 Setup				
980705001	Phone Book #5 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.
980705002	Phone Book #5 SIP Number		1234	Speed dial entry's SIP number.
980705003	Phone Book #5 SIP IP/URL		Testsip.com	Peer or SIP server's IP address or URL.
980705004	Phone Book #5 Name		test	Callee's name.
980705005	Phone Book #5 Type	<0(Proxy) |1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980705006	Phone Book #5 Speed Number		1111	Speed dial key combination.
/ Menu 98.7.6 Phone Book (Speed Dial) #6 Setup				

Table 6 Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
980706001	Phone Book #6 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.
980706002	Phone Book #6 SIP Number		1234	Speed dial entry's SIP number.
980706003	Phone Book #6 SIP IP/URL		Testsip.com	Peer or SIP server's IP address or URL.
980706004	Phone Book #6 Name		test	Callee's name.
980706005	Phone Book #6 Type	<0(Proxy) |1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980706006	Phone Book #6 Speed Number		1111	Speed dial key combination.
/ Menu 98.7.7 Phone Book (Speed Dial) #7 Setup				
980707001	Phone Book #7 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.
980707002	Phone Book #7 SIP Number		1234	Speed dial entry's SIP number.
980707003	Phone Book #7 SIP IP/URL		Testsip.com	Peer or SIP server's IP address or URL.
980707004	Phone Book #7 Name		test	Callee's name.
980707005	Phone Book #7 Type	<0(Proxy) |1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980707006	Phone Book #7 Speed Number		1111	Speed dial key combination.
/ Menu 98.7.8 Phone Book (Speed Dial) #8 Setup				
980708001	Phone Book #8 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.
980708002	Phone Book #8 SIP Number		1234	Speed dial entry's SIP number.
980708003	Phone Book #8 SIP IP/URL		Testsip.com	Peer or SIP server's IP address or URL.
980708004	Phone Book #8 Name		test	Callee's name.
980708005	Phone Book #8 Type	<0(Proxy) |1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980708006	Phone Book #8 Speed Number		1111	Speed dial key combination.
/ Menu 98.7.9 Phone Book (Speed Dial) #9 Setup				
980709001	Phone Book #9 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.

Table 6 Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
980709002	Phone Book #9 SIP Number		1234	Speed dial entry's SIP number.
980709003	Phone Book #9 SIP IP/ URL		Testsip.com	Peer or SIP server's IP address or URL.
980709004	Phone Book #9 Name		test	Callee's name.
980709005	Phone Book #9 Type	<0(Proxy) |1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980709006	Phone Book #9 Speed Number		1111	Speed dial key combination.
/ Menu 98.7.10 Phone Book (Speed Dial) #10 Setup				
980710001	Phone Book #10 Active	<0(No) |1(Yes)>	0	Disables or enables the speed dial entry.
980710002	Phone Book #10 SIP Number		1234	Speed dial entry's SIP number.
980710003	Phone Book #10 SIP IP/ URL		Testsip.com	Peer or SIP server's IP address or URL.
980710004	Phone Book #10 Name		test	Callee's name.
980710005	Phone Book #10 Type	<0(Proxy) |1(Non-Proxy)>	0	0 to use your SIP account. 1 to use peer-to-peer or a different SIP server.
980710006	Phone Book #10 Speed Number		1111	Speed dial key combination.
/ Menu 98.8 VoIP Common Setup				
980800001	VoIP Country Code		21	Country where the device is located.
980800002	VoIP Immediate Dial Active	<0(No) |1(Yes)>	1	Turn on to dial when # is pressed, instead of waiting for the dialing interval.
980800003	PSTN FallBack	<0(No) |1(Force SIP if PSTN unplugged)>	1	Use SIP if PSTN is disconnected.
980800004	VoIP RTP send after receive ACK	<0(No) |1(Yes)>	0	Start RTP Session After ACK Received.
980800005	VoIP Follow RFC3265	<0(No) |1(Yes)>	0	Use RFC3265.
980800006	SIP FallBack	<0(No) |1(Force FXO LifeLine if SIP failed)>	0	Use PSTN if SIP fails.
/ Menu 98.9 Auto Upgrade Common Setup				
980900001	Target_Firmware_Versio n		360MN0b8	The latest available f/w version.

Table 6 Menu 98 VoIP, Phone and Auto Provision Setup

FIN	FN	PVA	INPUT	DESCRIPTION
980900002	Firmware_Download_Addr		ftp://172.21.3.144/p2002L/ras	The FTP site for f/w upgrade.
980900003	Fw_Notify_Voice_Type		it	IVR language for f/w notification.
980900004	Target_Firmware_Username		justin	Username for f/w upgrade.
980900005	Target_Firmware_Password		1234	Password for f/w upgrade.
/ Menu 98.10 VoIP FXO Setup				
981000001	FXO dial long Interval		3000	Time interval to dial first digit.
981000002	Mapping to Phone1	<0(No) | 1(Yes)>	0	Allow the first phone port to receive PSTN Calls.
981000003	Mapping to Phone2	<0(No) | 1(Yes)>	0	Allow the second phone port to receive PSTN Calls.
981000004	DTMF Pause Duration	(>65ms)	70	Silent time during dialing interval.
981000005	DTMF Digit Duration	(>65ms>)	70	DTMF digit duration.

3.7 Using the Auto Provision Encryption Utility

Do the following to generate encrypted SIP configuration text files:

1 Open the Windows DOS or Linux command prompt.

2 Go to the directory where the utility is saved.

3 Use the following command.

Syntax

```
ZyConfigGen_Win32 [-NoEnc] [-C <Common File>  | -O <Output Directory>  | -D]
<Account Field File> <Account File>
```

or

```
ZyConfigGen_Linux [-NoEnc] [-C <Common File>  | -O <Output Directory>  | -D]
<Account Field File> <Account File>
```

where:

Optional fields are enclosed in square brackets [ ].

Required fields are enclosed in angle brackets < >.

"|" means "or".

`-NoEnc`	=	Add this to the command to have the utility not encrypt the SIP configuration text files that it generates. It is recommended that you use encryption since the SIP configuration text files include the subscriber's username and password.
`-C <Common File>`	=	This specifies the file of common SIP settings.
`-O <Output Directory>`	=	Specify the folder on your computer where you want the utility to save the generated IP configuration text files. The utility places the generated files in the root directory (hard drive folder) if you do not specify an output directory.
`-D`	=	This has the utility display debug messages.
`<Account Field File>`	=	This specifies the account field file.
`<Account File>`	=	This specifies the account file.

The utility generates a separate file for each entry in the account file. The file names of the generated files include the MAC addresses in the account file.

3.8 Auto Provision Encryption Utility Usage Example 1

The following is an example of generating encrypted SIP configuration text files with some common settings updated. The files need to be encrypted.

Do the following:

1 Capture all of the available fields from device's CI command 'voice autopro dbdisplay'.

2 Save the captured fields as a text file (the common file).

3 Cut the subscriber specific fields and paste them into an account field text file.

4 Remove any fields from the common file that you don't want to change.

5 Configure the values for the fields in the common file that you do want to change.

6 Prepare the account file from your database.

7 Create an account field file that identifies the fields in the account file.

8 Run the utility. See the following figure for an example of the command.

• The first line takes you into the directory where the utility is saved.

• The "common" file is named "P2002L.txt".

• The encrypted SIP configuration text files are saved in a "Results" folder that is located inside of the folder that the utility is in.

• The debug messages are turned on.

• The account field file is named "Field.txt".

• The account file is named "Account.txt".

Figure 8   Utility Command Example 1

```
C:\>cd\Program Files\ZyXEL

C:\Program Files\ZyXEL>ZyConfGen_Win32 -C P2002L.txt -O Results -D
Field.txt Account.txt

 Auto Provision Encryption Utility
 Version: 1.2.0.0

 Field: 0 Name: 980101014 = SIP #1 Phone Number
 Field: 1 Name: 980101012 = SIP #1 UserId
 Field: 2 Name: 980101013 = SIP #1 Password
 Field: 3 Name: 980102014 = SIP #2 Phone Number
 Field: 4 Name: 980102012 = SIP #2 UserId
 Field: 5 Name: 980102013 = SIP #2 Password
 MACAddress: 00A0C5891805
 980101014 = SIP #1 Phone Number = 52711
 980101012 = SIP #1 UserId = user1
 980101013 = SIP #1 Password = 111
 Results\sip00A0C5891805.txt File Generated

 MACAddress: 00A0C5999897
 980101014 = SIP #1 Phone Number = 52293
 980101012 = SIP #1 UserId = user3
 980101013 = SIP #1 Password = 1234
 980102014 = SIP #2 Phone Number = 52294
 980102012 = SIP #2 UserId = user4
 980102013 = SIP #2 Password = 1234
 Results\sip00A0C5999897.txt File Generated

 MACAddress: 00A0C5522903
 980101014 = SIP #1 Phone Number = 52295
 980101012 = SIP #1 UserId = user5
 980101013 = SIP #1 Password = 5555
 Results\sip00A0C5522903.txt File Generated

 MACAddress: 00A0C5EBEC95
 980101014 = SIP #1 Phone Number = 12345
 980101012 = SIP #1 UserId = test1234
 980101013 = SIP #1 Password = 111111
 980102014 = SIP #2 Phone Number = 98765
 980102012 = SIP #2 UserId = test0000
 980102013 = SIP #2 Password = 222222
 Results\sip00A0C5EBEC95.txt File Generated


 Total 4 Files Created
```

3.9 Auto Provision Encryption Utility Usage Example 2

In this next example, the common settings remain the same, and are not included.

Do the following:

1 Modify the Account Field File for fields needed in Account File.

2 Prepare Account File from database.

3 Run the utility. See the following figure for an example of the command.

- The first line takes you into the directory where the utility is saved.
- The encrypted SIP configuration text files are saved in a "Results" folder that is located inside of the folder that the utility is in.
- The debug messages are turned on.
- The account field file is named "Field.txt".
- The account file is named "Account.txt".

Figure 9   Utility Command Example 2

```
C:\>cd\Program Files\ZyXEL


C:\Program Files\ZyXEL>ZyConfGen_Win32 -O Results -D Field.txt Account.txt

 Auto Provision Encryption Utility
 Version: 1.2.0.0

 Field: 0 Name: 980101014 = SIP #1 Phone Number
 Field: 1 Name: 980101012 = SIP #1 UserId
 Field: 2 Name: 980101013 = SIP #1 Password
 Field: 3 Name: 980102014 = SIP #2 Phone Number
 Field: 4 Name: 980102012 = SIP #2 UserId
 Field: 5 Name: 980102013 = SIP #2 Password
 MACAddress: 00A0C5891805
 980101014 = SIP #1 Phone Number = 52711
 980101012 = SIP #1 UserId = user1
 980101013 = SIP #1 Password = 111
 Results\sip00A0C5891805.txt File Generated

 MACAddress: 00A0C5999897
 980101014 = SIP #1 Phone Number = 52293
 980101012 = SIP #1 UserId = user3
 980101013 = SIP #1 Password = 1234
 980102014 = SIP #2 Phone Number = 52294
 980102012 = SIP #2 UserId = user4
 980102013 = SIP #2 Password = 1234
 Results\sip00A0C5999897.txt File Generated

 MACAddress: 00A0C5522903
 980101014 = SIP #1 Phone Number = 52295
 980101012 = SIP #1 UserId = user5
 980101013 = SIP #1 Password = 5555
 Results\sip00A0C5522903.txt File Generated

 MACAddress: 00A0C5EBEC95
 980101014 = SIP #1 Phone Number = 12345
 980101012 = SIP #1 UserId = test1234
 980101013 = SIP #1 Password = 111111
 980102014 = SIP #2 Phone Number = 98765
 980102012 = SIP #2 UserId = test0000
 980102013 = SIP #2 Password = 222222
 Results\sip00A0C5EBEC95.txt File Generated


 Total 4 Files Created
```

C HAPTER 4
Auto Provisioning Server Installation

This chapter covers how to install the auto provisioning server software.

4.1 System Requirements

You need a minimum of the following in order to use the auto provisioning server software.

- CPU: Intel Xeon processor 3.4G X 2
- Hard Disk: U320 80GB, SCSI H.D.D *3 (Raid 5)
- Memory: ECC 2GB DDR400
- Network: Intel 100/1000MB Ethernet NIC
- OS: RHEL 4

4.2 Requirements for Installation by Source Code

The following applications must be installed prior to the installation of the auto provisioning server software if you install it by source code:

- Apache Web Server
- PHP 4.3.1 + GD module + Mcrypt module
- MySQL 4.1

4.3 Installation Using the Installer CD

Note: Warning! The CD is auto-installing and will format and re-partition your computer's hard drive. This will delete any data stored on the hard drive.

1 Set up your CD-ROM as the primary boot device in BIOS.

2 Insert the installation CD into the CD-ROM drive and turn on the system.

3 Just press enter to begin the installation.

Figure 10   Auto Install Start
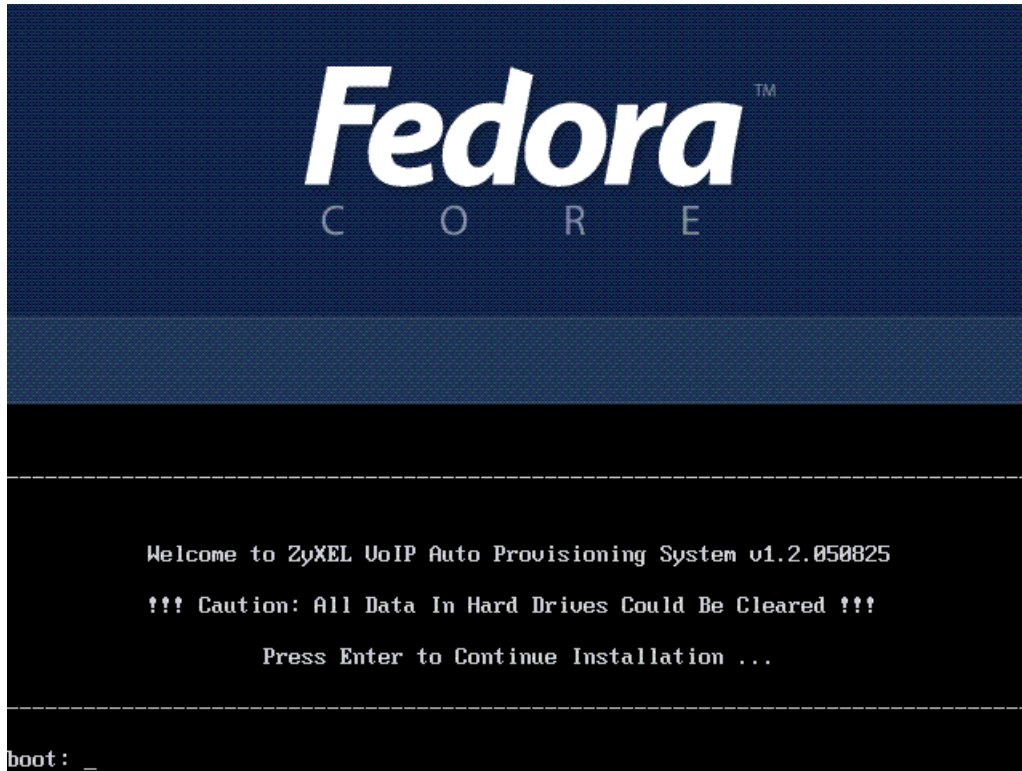
4 Select the disk partitioning setup type. The **Autopartition** option is recommended.

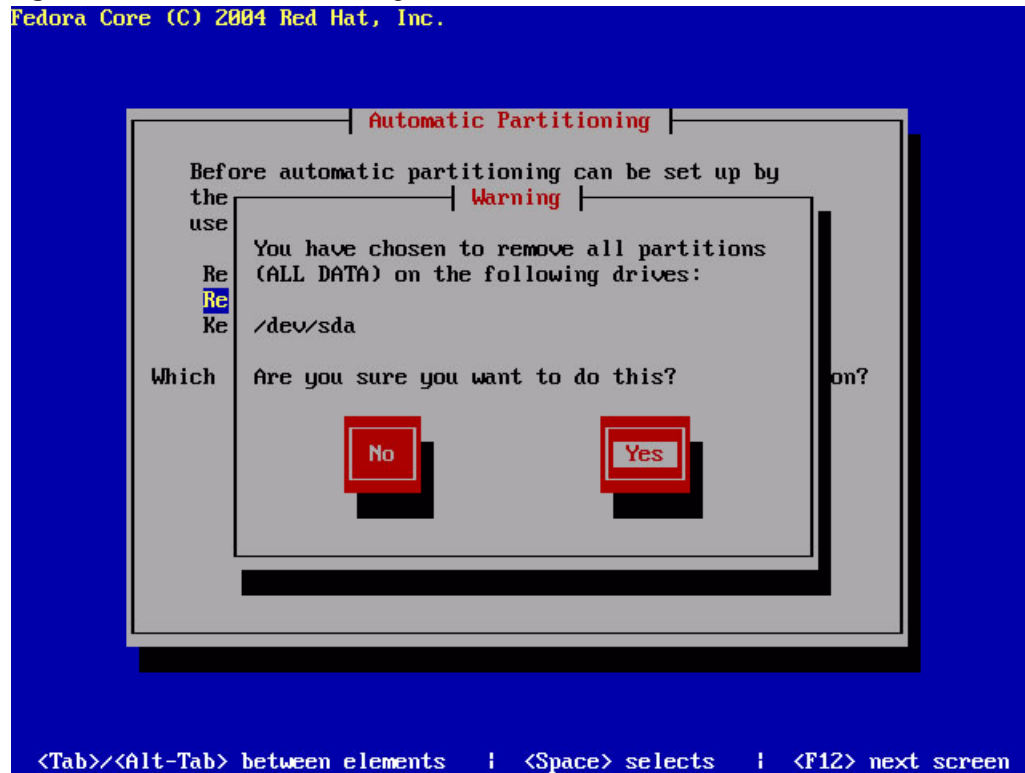**Figure 11**   Disk Partitioning Setup
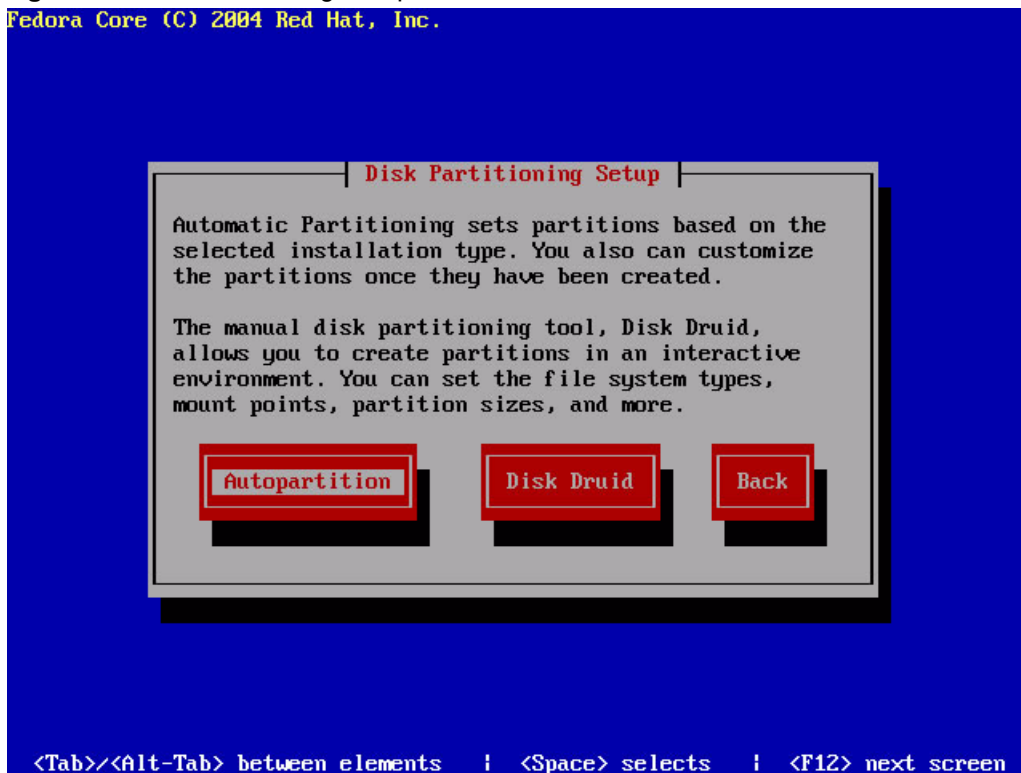
5 Remove all partitions on this system.

Note: Warning: This will delete all data on your system.

Figure 12 Automatic Partitioning: Remove All Partitions

6 Select **Yes**.

Figure 13 Automatic Partitioning Warning
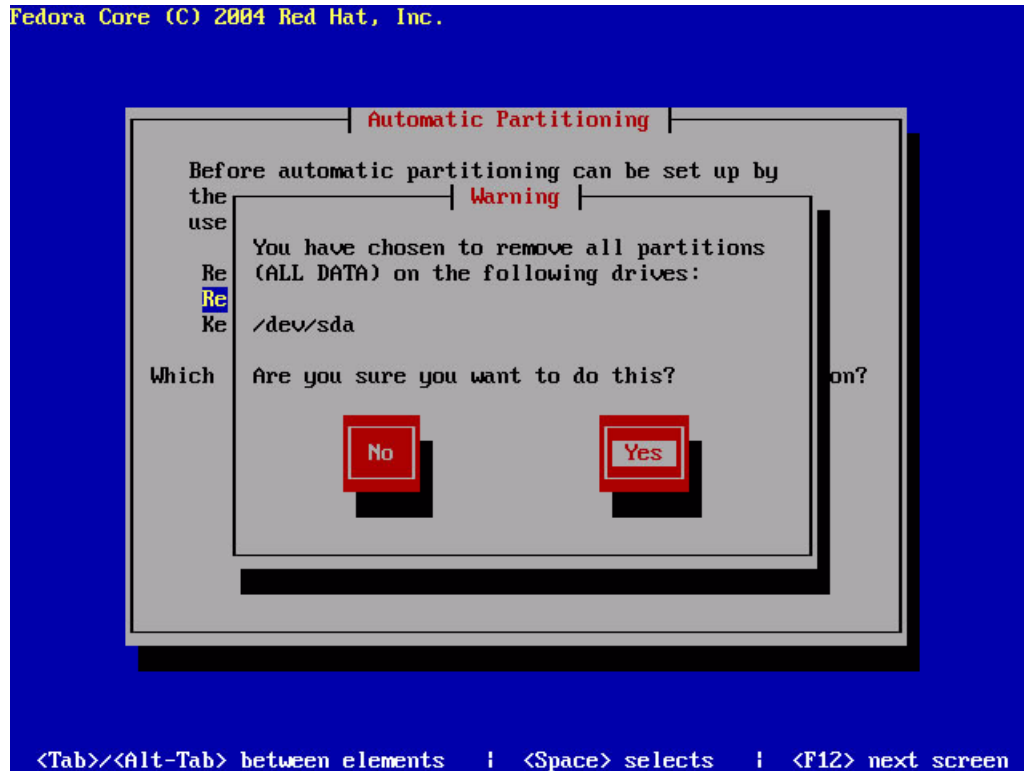
7 Check the partitioning status. Select **OK** to continue

Figure 14 Partitioning
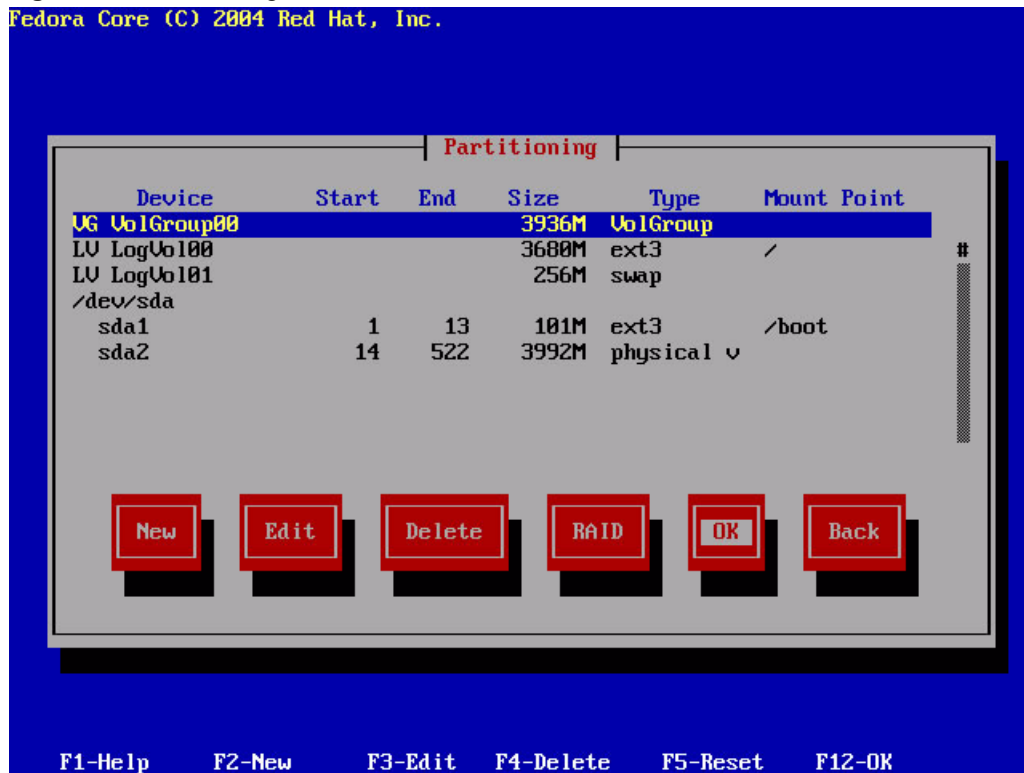
8 The server restarts after a few seconds.

9 After the server restarts, it should be up and running. The server is pre-configured. You can use it with the default settings. If you want to change these settings, see .

4.4 Manual Installation

Note: You do not need to use this section if you use the installation CD. You can continue to the next chapter.

Use the following steps to manually install the auto provisioning server software. VSS stands for VoIP Subscribing System, the sample CRM server software.

1 Open Public\Function\Config.php, modify the following values according to your operational environment

```
$mysql_server = 'localhost';        // MySQL hostname or IP address
$user_id = 'root';           // MySQL user
$user_password = '';        // MySQL password (only needed)
$database = 'provisioning';         // Provisioning Server database name
$database_connection_error_msg = 'database connect failure ';
$VSS_WebService = "http://localhost/VSS/WebService/SubscriberService.php";// VSS Web Service
$ps_web_path = "/var/www/html/PS";    // Provisioning Server Path
$sys_logfile = "/var/log/httpd.log";    // Apache start and stop log file
$zyxel_3des_key = "this is a secret key";// ZyXEL 3des key is the key with which the data will be
encrypted. If it's smaller that the required keysize, it is padded with '\0'. It is better not to use ASCII
strings for keys. It is recommended to use the mhash functions to create a key from a string. It must
be less than 13 characters.
```

2 Change files and directories recursively for fold PS/temp/ and PS/bkup/ with Read and Write rights

3 Set PS/SystemMaintenance/*.sh execute rights for apache user/group

4 Copy PS/SystemMaintenance/zpro.conf to /etc/zpro.conf, modify the following values according to your operating environment

```
##Provisioning MySQL hostname or IP address
mysql_server="localhost"
## Mysql User
user_id="zyxel"
## MySQL password
user_password="1234"
## Provisioning Server Database Name
database="provisioning"
## Mysql Path
mysql_run_path="/usr/bin"
## Provisioing Server Web Path
pathps_web_path="/var/www/html/PS"
## apache run user crontab
USER_CRON="/var/spool/cron/apache"
```

```
## apache run user
RUN_AS="apache"
```

5 Modify /etc/rc.d/init.d/httpd, add or edit like the following (CONF value must be same as $sys_logfile in step 1)

```
CONF=/var/log/httpd.log
DATE=`date +%Y.%m.%d-%X`
case "$1" in
  start)
      detect
      echo "$DATE ---> httpd is starting" >> $CONF
start
;;
  stop)
      detect
      echo "$DATE ---> httpd is stopping" >> $CONF
stop
;;

  restart)
      echo "$DATE ---> httpd is stopping" >> $CONF
      detect
      echo "$DATE ---> httpd is starting" >> $CONF
stop
      detect
start
;;
```

6 Modify /etc/crontab, add the following line:

```
* * * * * root /var/www/html/PS/SystemMaintenance/Scheduling.sh
```

7 Change files and directories recursively for fold /var/log/httpd.log with Read and Write rights

8 Modify apache conf file, add:

```
DirectoryIndex PS/GetSetting/GetSetting.php
```

CHAPTER 5
Using the Auto Provisioning Server

This chapter provides instructions for using the features of your auto-provisioning server

Explanations are provided for:

- Using "Product Type"
- Using "Unit Device management"
- Using "Account Management"
- Using "Information Center"
- Using "System Maintenance"
- Using "Utilities"

5.1 General Information and Guidelines

Read this section before you use the auto provisioning server.

- This system allows two types of user, Administrator and Viewer. Administrators (sometimes abbreviated to "Admin") have the greatest privileges, and can modify the server's settings. A Viewer user can only see server information.
- The auto provisioning server software allows you to backup and restore your database; It is recommended that you use MySQL to back up and restore the database.
- When backing up or restoring the database, it is suggested that you take the server off-line. This will stop outside transaction requests from coming in while you are backing up your database.
- The performance of the server depends on the hardware and bandwidth. Eliminate unnecessary functions and processes in order to maximize performance.

5.2 Web Manager Overview

The auto provisioning server has an HTML-based management interface that allows easy management via Internet browser. Use Internet Explorer 6.0 and later. The recommended screen resolution is 1024 by 768 pixels.
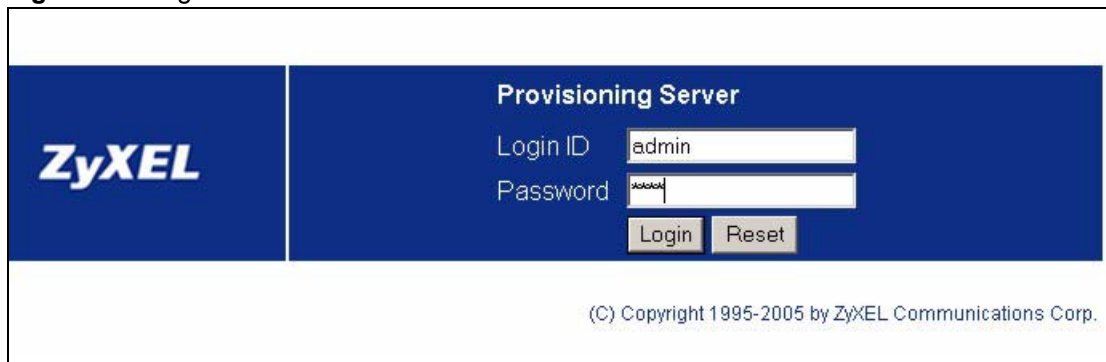
In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device. Web pop-up blocking is enabled by default in Windows XP SP (Service Pack) 2.
- JavaScripts (enabled by default).
- Java permissions (enabled by default).

5.3 Web Manager Login

1 Launch your web browser.

2 Type "192.168.1.200/PS" as the URL (make sure you use the same casing).

Figure 15 Login Screen

3 Type "admin" (default) as the login ID.

4 Type "1234" (default) as the password and click **Login**.

5.4 Navigation Panel

The following screen displays. Use the links in the navigation panel on the left to navigate the management screens.

Figure 16   Navigation Panel

The following table describes the categories of links.

Table 7   Navigation Panel Summary

CATEGORY	LINKS	FUNCTION
Product Type	View Import Export to SPTGEN	Use these screens to add, edit, view, and delete your list of VoIP subscriber product types and the parameters to use for each. You can also import and export SPTGEN files, which you can use to backup and move parameters to other machines.
Device Management	Unit Device Lock History	Use these screens to view and delete individual VoIP subscriber devices and edit their settings.
Account Management	Add a Viewer Edit a Viewer Change Password	Use these screens to add, edit, view, and delete users of this server.
Information Center	System Up Time Loading Statistics New User Info. Registered Device Info. Login History	Use these screens to display server statistics and other server information, such as system loading, users, and login history.
System Maintenance	Import Unit Device Database Backup Database Restore	Use these screens to import, backup, and restore your database.

Table 7   Navigation Panel Summary (continued)

CATEGORY	LINKS	FUNCTION
Utilities	Configuration Export DB as SPTGEN	Use these screens to change server settings and export device settings from the database.
Logout		Use this link to exit the

5.5 Help

Click ![HELP] to view on-line help descriptions.
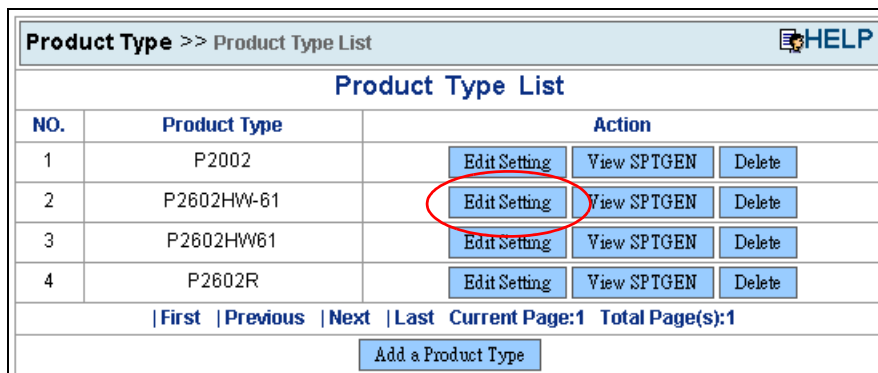
5.6 Product Type

The product type management tool allows you to add, edit, view, and delete your list of VoIP subscriber product types and the parameters to use for each. It also allows the importing and exporting of SPTGEN files, which you can use to backup and move the parameters to other machines.

5.6.1 Edit Setting

Product Type > View > Edit Setting

Administrators can edit SPTGEN parameters.

Figure 17   Product Type List: Edit Setting

When you click **Edit Setting**, the following screen displays.

Figure 18   Product Type Edit Setting

Click a parameter's **Edit** button to edit its setting. For example, the following displays if you click the **Parameter No** 100000008 **Edit** button:

Figure 19   Parameter Edit Field Example

Input the desired parameter and click the **Update** button to complete the editing process. Click the **Cancel** button to abort the action.

This page also provides a "grouping" function, to allow you to easily find parameters by groups.

Figure 20 Parameter Groups
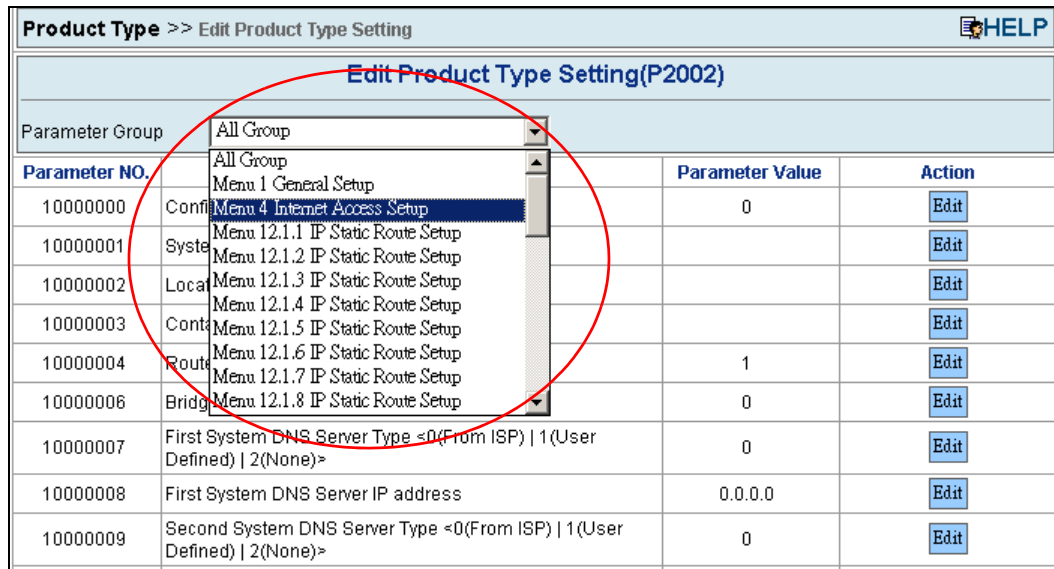
5.6.2 View SPTGEN

Product Type > View > View SPTGEN

Administrators and Viewers can display the SPTGEN details of the products.

Figure 21 Product Type List: View SPTGEN
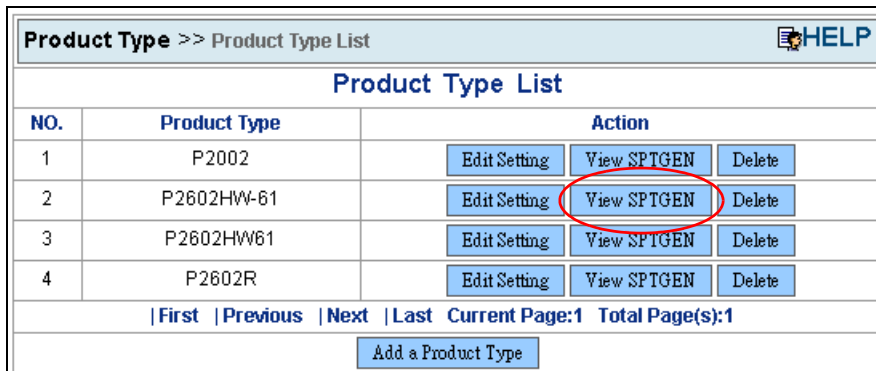
Click **View SPTGEN**, to display the following screen.

Figure 22   View SPTGEN
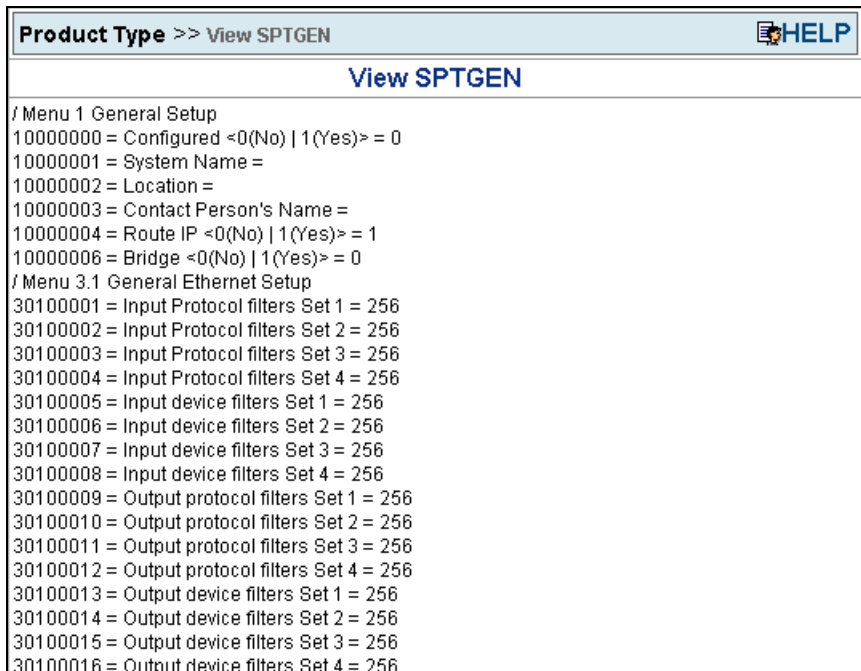
5.6.3 Delete a Product Type

Product Type > View > Delete

Administrators can delete a product and its settings from the server.

Figure 23   Product Type List: Delete
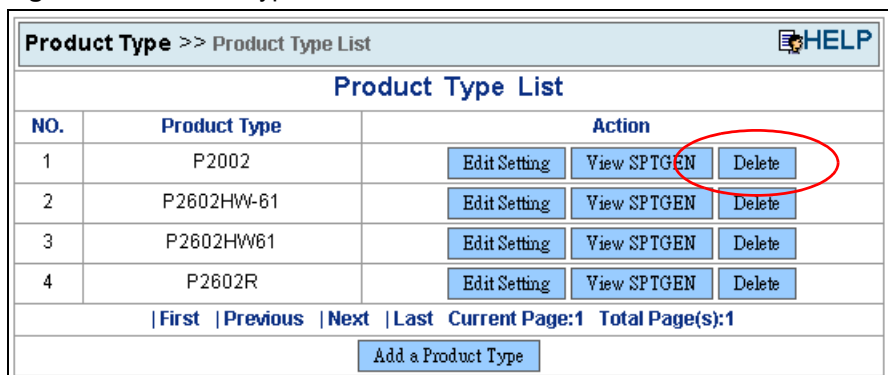
Click **Delete** to display the following screen.

Figure 24 Product Type Delete
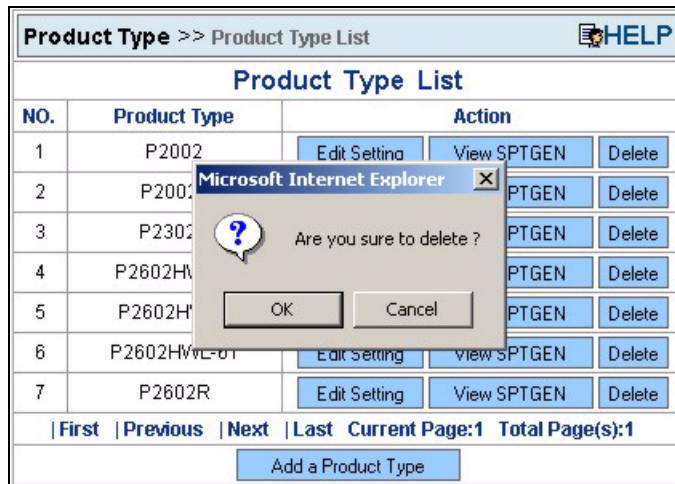
Click **OK** to remove the product from the server. Click **Cancel** to cancel the action.

5.6.4 Add a Product Type

Product Type > View > Add a Product Type

Administrators can add a new product type.

Figure 25 Product Type List: Add
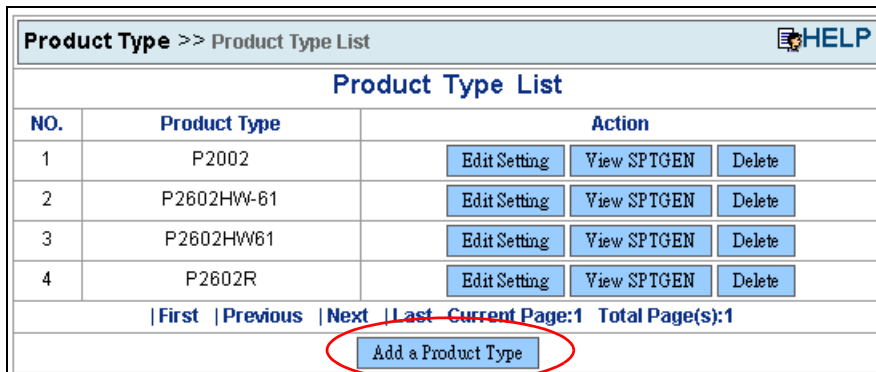
Click the **Add a Product Type** button to display the following screen.

Figure 26 Product Type Add

1 You must enter a product name of up to 15 characters.

2 The **Import SPTGEN from** field can be empty. You may import a SPTGEN file later using the import function.

3 Click the **Submit** button to add a new product type into the server.

5.6.5 Import

Product Type > Import

Administrators can import a SPTGEN file associated with the selected product type. See Section 3.5 on page 25 for how to get an SPTGEN file from a device.

Figure 27   Import Product Type

1 You must select a product type from the drop-down list box.

2 You must select a valid SPTGEN file, the server will check the syntax. If the product already exists, all of its parameters will be overwritten by this action.

5.6.6 Notes on SPTGEN Files

It is recommended that your SPTGEN file only include VoIP and auto provisioning settings. It is not recommended to you include things like Internet access settings. For example, you would not want to assign the same PPPoE username and password to all of the auto-provisioned devices of the same product type.

Your SPTGEN file should include "`/ Menu 1 General Setup`" at the beginning.

Note: Make sure you remove any blank lines or extra spaces from the file.

The following example lists some key SIP account one settings as a sample. You can actually include all of the VoIP and auto provisioning settings. The auto provisioning server uses the information in the unit device file to specify individual account VoIP information even if you include it in the SPTGEN file.

Figure 28   SPTGEN File Example

```
/ Menu 1 General Setup
/ Menu 98.1.1 VoIP SIP #1 Setup
    980101001 = SIP #1 Active <0(No) | 1(Yes)> = 1
    980101002 = SIP #1 Server Address = 127.0.0.1
    980101003 = SIP #1 Server Port <1024~65535> = 5060
    980101004 = SIP #1 Registartion Server IP = 127.0.0.1
    980101005 = SIP #1 Registartion Server Port <1024~65535> = 5060
    980101006 = SIP #1 Registartion Expiration Time <2~65535> = 3600
    980101007 = SIP #1 Register ReSend Time <1~65535> = 180
    980101008 = SIP #1 Session Expire Time <30~3600> = 180
    980101009 = SIP #1 Local signaling Port <1024~65535> = 5060
    980101010 = SIP #1 RTP Port Range Start <1024~65535> = 50000
    980101011 = SIP #1 RTP Port Range End <1024~65535> = 65535
    980101012 = SIP #1 UserId = changeme
    980101013 = SIP #1 Password = ********
    980101014 = SIP #1 Phone Number = changeme
    980101015 = SIP #1 Minimun Session Expire Time <20~1800> = 30
    980101017 = SIP #1 Domain Name = 127.0.0.1
    980101022 = SIP #1 CODEC Type 1 <0(G711mu) |8(G711A) |18(G729)> = 0
    980101023 = SIP #1 CODEC Type 2 <0(G711mu) |8(G711A) |18(G729)> = 18
    980101024 = SIP #1 DTMF Key Type <0(RFC_2833) |1(PCM) |2(SIP_INFO)
|3(RFC_2833_LIKE_SIP_INFO)> = 0
    980101025 = SIP #1 Transport Type <0(UDP) |1(TCP)> = 0
    980101026 = SIP #1 Hide Caller ID <0(No) |1(Yes)> = 0
    980101027 = SIP #1 Auto Redial <0(No) |1(Yes)> = 0
    980101028 = SIP #1 STUN Server Active <0(No) | 1(Yes)> = 0
    980101029 = SIP #1 STUN Server Address =
    980101030 = SIP #1 STUN Server Port <1024~65535> = 0
    980101031 = SIP #1 Call Forward Index <1~4> = 1
    980101032 = SIP #1 Outbound Proxy Active <0(No) | 1(Yes)> = 0
    980101033 = SIP #1 Outbound Proxy Address =
    980101034 = SIP #1 Outbound Proxy Port <1024~65535> = 0
    980101035 = SIP #1 Outbound Proxy KA Active <0(No) | 1(Yes)> = 0
    980101036 = SIP #1 Outbound Proxy KA Interval = 0
    980101037 = SIP #1 Session Timer Active <0(No) | 1(Yes)> = 0
    980101038 = SIP #1 Mapping to POTS Phone1 <0(No) | 1(Yes)> = 1
    980101039 = SIP #1 Mapping to POTS Phone2 <0(No) | 1(Yes)> = 1
```

5.6.7 Export to SPTGEN

Product Type > Export to SPTGEN

Administrators can export an existing product and its parameters into an SPTGEN file.

Figure 29   Export Product Type

Select at least one product and click **Export** to display the following screen.

Figure 30   Export Product Type Successful

All the exported files will be stored in the directory
home\apache2\hotdocs\PS\temp\ExporttoSPTGEN.

The file will be named as ProductName.txt. For example, P2002.txt

5.7 Device Management

The device management tool allows you to view and delete individual VoIP subscriber devices and edit their settings.

5.7.1 Device Search

Device Management > Unit Device

You can search for a subscriber's device by entering its **MAC Address**, **SIP No.**, **User ID**, or **Product Type**. You must also select an item from **Product Type** drop-down list box, and the **Unit Device List** page will be displayed.

Note: "Unit Device" refers to subscriber devices.

Figure 31   Device Search

After entering appropriate information, click **Search** to display the following screen.

Figure 32   Device List

Click **Edit** or **Delete** to modify or remove specified information for each device

5.7.2 Edit Device

Device Management > Unit Device > Unit Device List > Edit

Administrators can edit a subscriber's device settings by clicking **Edit** in the **Unit Device List**.

The following table lists details about the device fields.

Table 8   Device Editing Details

TEXT FIELD	LIMITATION
Product Type	Fixed, cannot be changed
User ID	Maximum 20 characters
Password	Maximum 12 characters
SIP NO.	Must be 8 characters
PIN Code	Maximum 15 characters
MAC Address	Fixed, cannot be changed

Click the **Edit** button in the **Device List** screen, to display the following screen.

Figure 33   Edit Device

Administrators can update the settings by clicking **Update**. Click **Back** to cancel this action.

5.7.3 Delete Device

Device Management > Unit Device > Unit Device List > Delete

Administrators can delete device entries.

When you click the **Delete** button in the **Device List** screen, the following screen displays.

Figure 34   Delete Device

Click **OK** to remove the specified device from the server. Click **Cancel** to abort this action.

5.7.4 Unlock Device

Device Management > Unit Device > Unit Device List > Unlock

If a device sends 3 incorrect PIN codes consecutively in 10 minutes, the server locks the device. This means that the server will not accept any authentication attempts from the device (regardless of whether or not the PIN is correct) for a specific period of time (see Section 5.11.1 on page 70 for setting the lock time period). This feature deters unauthorized access through "brute force" hacking (repeated trial and error).

Administrators can unlock a locked device.

You can click the **UnLock** button when it is enabled as in the **Device List** screen, as in the following figure.

Figure 35   Unlock Device

When you click the **Unlock** button, the specified device will be unlocked from the server.

5.7.5 Lock History

Device Management > Lock History

Administrators can view device lock history.

Click **Lock History** in the left menu to display the following screen.

Figure 36 Lock History

5.8 Account Management

The account management tool allows you to add, edit, view, and delete users of this server.

5.8.1 Add a Viewer

Account Management > Add a Viewer

Administrators can create a viewer account by entering the required text fields (**Viewer ID**, **Viewer Name**, **Password** and **Retype Password**). The other fields are optional (**Telephone**, **E-Mail**, **Mobile Phone** and **Title**).

Figure 37 Add a Viewer

5.8.2 Viewer Search

Account Management > Edit a Viewer

User can search the viewers by viewer ID, viewer name, and e-mail address (leaving all the text fields blank will display all the viewer accounts).

Figure 38   Viewer Search

When you click **Submit**, the system searches and displays the matching accounts.

Figure 39   Viewer List

Click **Edit** to go to the **Edit a Viewer** screen. Click **Delete** to go to the **Delete a Viewer** screen.

5.8.3 Edit a Viewer

Account Management > Edit a Viewer > Viewer List > Edit

Administrators can edit a viewer's settings.

Figure 40   Viewer Edit

Click **Update** to update the information. The browser will go back to the previous screen if you click the **Back** button.

5.8.4 Delete a Viewer

Account Management > Edit a Viewer > Viewer List > Delete

Administrators can delete viewer accounts.

Figure 41 Viewer Delete
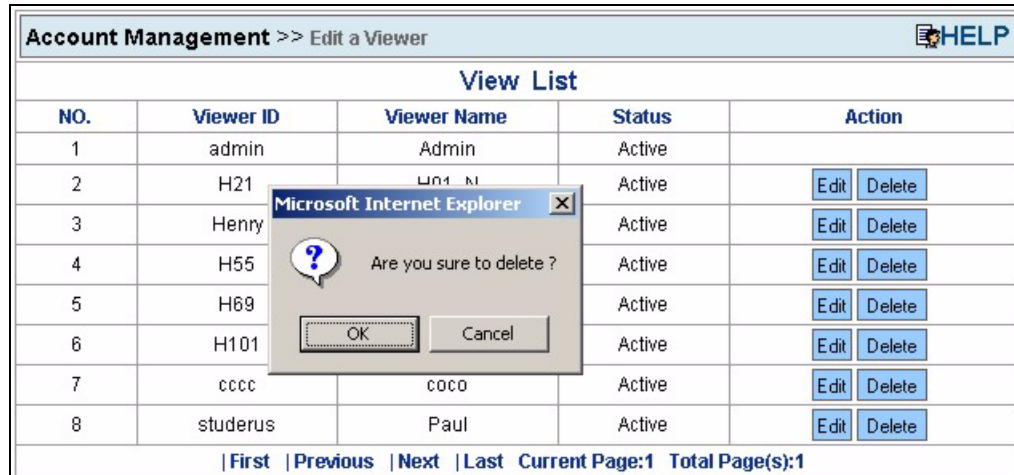
Click **OK** to delete this viewer. The action will be cancelled, if you click **Cancel**.

5.8.5 Change Password

Account Management > Change Password

Use this function to change your password.

Figure 42 Change Password

After you enter the appropriate information, click **Update** to change your password. Click **Back** to return to the previous screen.

5.9 Information Center

The information center tool displays server statistics and other server information, such as system loading, users, and login history.

5.9.1 System Up Time

Information Center > System Up Time

This function shows the current system up time, the time since the first start up and a record of start and stop times.

Figure 43   System Up Time

5.9.2 Loading Statistics

Information Center > Loading Statistics

Use this screen to display how many sessions (provisioning process only) have been requested from this server in a single day or a time period. Data is shown as the average number of sessions per hour of the day.

You can specify a time period (including dates and times).

Figure 44 Loading Statistics
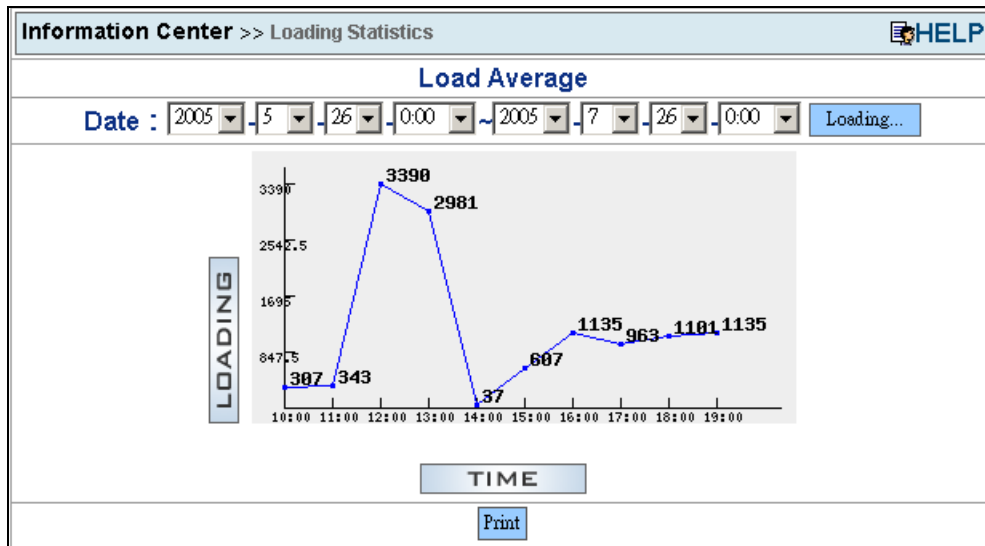
5.9.3 New User Info

Information Center > New User Info

This screen displays the number of newly registered users per day.

You can specify a time period (including dates and times) for details.

Figure 45 New User Info

5.9.4 Registered Device Info

Information Center > Registered Device Info

This screen displays registered and unregistered device statistics in a pie chart diagram. Registered devices have already authenticated themselves with the auto provisioning server. Unregistered devices exist in the CRM server and have a subscriber profile in the CRM user database, but have not yet authenticated themselves with the auto provisioning server. The auto provisioning server gets the number of unregistered devices from the CRM server.

You can also display statistics for a specific product type.

Figure 46   Registered Device Info
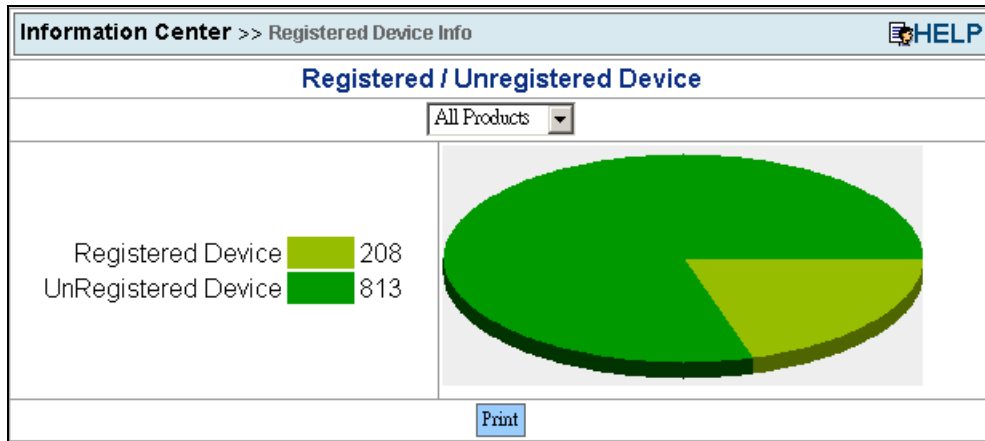
5.9.5 Login History

Information Center > Login History

This screen displays a record of who has logged into the server. You can also specify the login ID of a particular Admin or Viewer to display.

Figure 47   Login History

5.10 System Maintenance

The system maintenance management tool allows you to import, backup, and restore your database.

5.10.1 Import Unit Device

System Maintenance > Import Unit Device

Administrators can import information for multiple devices from a text file.

The file information must use the following format:

MAC address,user ID,password,phone number,pin code,sip#

Note: Make sure you remove any blank lines from the file.

Figure 48   Unit Device File Example

```
#PRODUCT = P2602R
#DATA_START
00A0C5001132,Jim,1111,093612345,1234,1
00A0C5001132,Henry,1SDF3ASD,093600001,1234,1
00A0C5001134,Larry,RSDFASDC,093311111,1334,1
00A0C5001135,John Doe,141234D4,093311112,5234,1
00A0C5001136,Jessica Alba,ZXEF2334,093500001,6264,1
00A0C5001137,Jennifer Garner,xe1fvd,093500044,8089,1
#DATA_END
```

Figure 49   Import Device Info

Choose a valid file and click **Submit** to import the device information stored in the file.

5.10.2 Database Backup

System Maintenance > Database Backup

Administrators can use this screen to backup the database. There are two backup modes:

1 **Complete Backup** – Use this to backup the database immediately. The backup file will be stored in the directory **home\apache2\hotdocs\PS\bkup\mysql**.

2 **Schedule Backup** – Administrators can set the backup process to be triggered periodically or turn it off. The filenames will use the following format: YYYYMMDD-HH:MM:SS.sql

Figure 50 Database Backup

5.10.3 Database Restore

System Maintenance > Database Restore

Administrators can use this screen to restore the database from a backup file.

Figure 51 Database Restore

5.11 Utilities

Utilities provides powerful tools to change server settings and export device settings from the database.

5.11.1 Configurations

Utilities > Configuration

Administrators can change the server's security settings.

1 Transfer Mode: Select **With 3DES** to apply triple DES encryption to the configuration files sent during the provisioning process. The default value is **Without 3DES**.

2 User locked Time: If a device sends 3 incorrect PIN codes consecutively in 10 minutes, the server locks the device. This means that the server will not accept any authentication attempts from the device (regardless of whether or not the PIN is correct). This parameter sets for how long it will be locked. Default value is 30 minutes. This feature deters unauthorized access through "brute force" hacking (repeated trial and error).

Figure 52   Configuration

5.11.2 Export Database as SPTGEN

Utilities > Export DB as SPTGEN

Administrators can export the SPTGEN files of products and devices from the database. They will be stored in directory **home\apache2\hotdocs\PS\temp\ExportDBasSPTGEN\.**

There are two options:

1 **With 3DES**: Select this to encrypt all of the device SPTGEN files by 3DES. The product type SPTGEN files will not be encrypted.

2 **Without 3DES**: Select this to export all of the SPTGEN files are plain text (not encrypted).

Figure 53   Export Database as SPTGEN

Chapter 5 Using the Auto Provisioning Server

CHAPTER 6
Using the Auto Provisioning Server

After you have installed the auto provisioning server and integrated it with the CRM system, do the following to prepare the auto provisioning server to configure VoIP devices.

1 Upload a file of SIP accounts (**System Maintenance > Import Unit Device**). See for the file format and an example file.

2 Upload an internal SPTGEN file for the type of VoIP device that you want to configure (**Product Type > Import**).

3 Configure the SPTGEN file with the desired VoIP and auto provisioning settings if you have not already done so (**Product Type > View > Edit Setting**).

Chapter 6 Using the Auto Provisioning Server

CHAPTER 7
Troubleshooting

1 When I use **Export DB as SPTGEN** with 3DES, the system freezes up.

3DES is a very powerful encryption algorithm and requires a lot of CPU power. It is suggested that you perform the function during an off-peak period or offline. It will be safer and won't affect usage performance.

2 The hard disk storage is almost full.

Backup files will stay in the directory "**home\apache2\hotdocs\PS\bkup\mysql**" unless deleted or moved. The system Administrator should be responsible for managing these files. When the hard disk storage approaches its limit, the system Administrator should archive (move) the files to another location.

If there is still not enough space, you should expand your storage space by adding new hardware.

3 Why is it suggested to disable the Linux firewall on this server?

It is better to have a dedicated firewall device. This allows the server to dedicate more resources to the provisioning service.

4 Is there any solution to provide redundant databases?

MySQL supports one-way replication. One server acts as the master, while one or more other servers act as slaves (refer to). The master server writes updates to its binary log files and maintains an index of the files to keep track of log rotation. These logs serve as a record of updates to be sent to slave servers. When a slave server connects to the master server, it informs the master of its last position within the logs since the last successfully propagated update. The slave gets any updates that have occurred since then, and then blocks and waits for the master to notify it of new updates.

A slave server can also serve as a master if you want to set up chained replication servers.

Note that when you are using replication, all updates to the tables that are replicated should be performed on the master server. Otherwise, you must always be careful to avoid conflicts between updates that users make to tables on the master and updates that they make to tables on the slave.

One-way replication has benefits for robustness, speed, and system administration:

• Robustness is increased with a master/slave setup. In the event of problems with the master, you can switch to the slave as a backup.

- Better response time for clients can be achieved by splitting the load for processing client queries between the master and slave servers. SELECT queries may be sent to the slave to reduce the query processing load of the master. Statements that modify data should still be sent to the master so that the master and slave do not get out of sync. This load-balancing strategy is effective if non-updating queries dominate, which is the normal case.
- Another benefit of using replication is that you can perform backups using a slave server without disturbing the master. The master continues to process updates while the backup is being made.

Figure 54   Database Replication
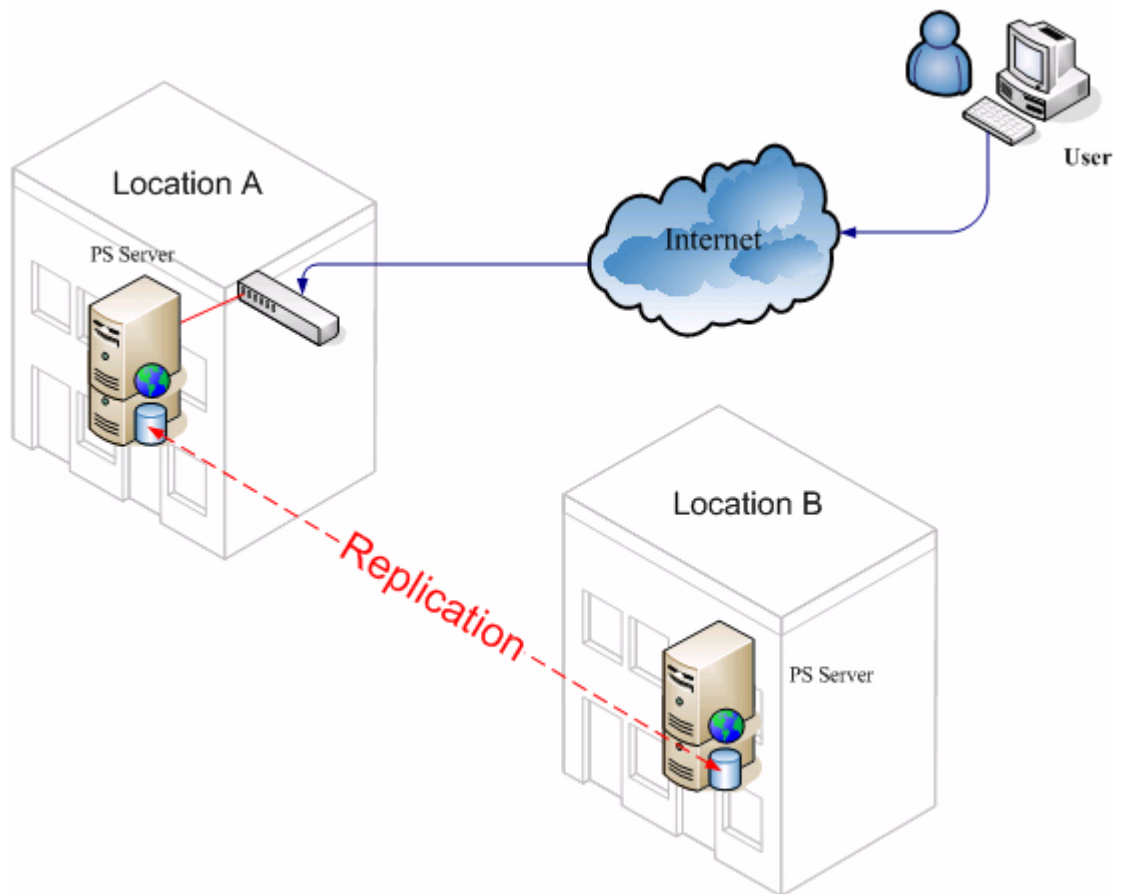
APPENDIX A

Auto Provisioning Service Flowchart

This flow chart illustrates how the auto provisioning service (PS) handles a request from a device.

Figure 55 Auto Provisioning Flowchart

Appendix A Auto Provisioning Service Flowchart
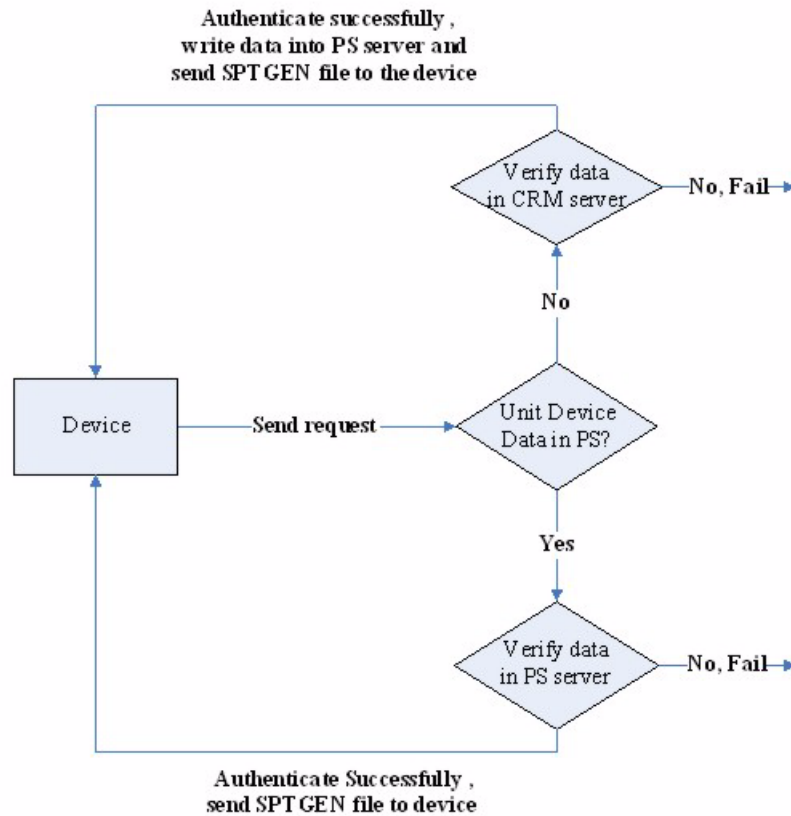
APPENDIX B
Auto Provisioning Server System Configuration

The server is pre-configured. You can use it with the default settings. If you want to change these settings, you must log into the server's Linux command line as "root". The default password is "password". Modify settings in /var/www/html/PS/Public/Function/ Config.php.inc. This table lists and describes the variable names in the auto provisioning server system configuration.

Table 9   Auto Provisioning Server System Configuration

NO.	VARIABLE NAME	DESCRIPTION	DEFAULT VALUE
1	$mysql_server	MySQL hostname or IP address	localhost
2	$user_id	MySQL user name	root
3	$user_password	MySQL password (only needed)	
4	$database	Provisioning Server database name	provisioning
5	$database_connection_error_msg	database connection error message	database connect failure
6	$VSS_Server	http://localhost/VSS/ /WebService/ SubscriberService.php	http://localhost/VSS/
7	$ps_web_path	Provisioning Server Path	/var/www/html/PS
8	$sys_logfile	Apache start and stop log file	/var/log/httpd.log
9	$ zyxel_3des_key	Provisioning 3DES Key	this is a secret key

APPENDIX C

Auto Provisioning Server Database Description

In some advanced scenarios, you might want to move the provisioning server's database to another server. The auto provisioning server uses a MySQL-based database.

The following tables describe the auto provisioning server's database structure.

Table 10   LockedDevice

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	RowID	int (11)		PRI		Auto_increment
2	macAddress	varchar(100)				Subscriber device mac address
3	phoneNumber	varchar(50)	Yes			Phone number
4	LockTime	timestamp	Yes		CURRENT_TIMESTAMP	When the device was locked
5	LockMinutes	int(11)			0	How long the device will be locked

Table 11   LoginLog

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	RowID	Int(11)		PRI		Auto_increment
2	SessionID	Varchar(100)				Account's session ID
3	LoginID	Varchar(100)				Account ID
4	LoginName	Varchar(100)				Account name
5	LoginTime	Datetime			0000-00-00 00:00:00	Login time
6	LogoutTime	Datetime	Yes		0000-00-00 00:00:00	Logout time

Table 12   LoginLog

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	RowID	Int(11)		PRI		Auto_increment
2	SessionID	Varchar(100)				Account's session ID
3	LoginID	Varchar(100)				Account ID

Table 12   LoginLog (continued)

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
4	LoginName	Varchar(100)				Account name
5	LoginTime	Datetime			0000-00-00 00:00:00	Login time
6	LogoutTime	Datetime	Yes		0000-00-00 00:00:00	Logout time

Table 13   PinFailLog

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	RowID	int (11)		PRI		Auto_increment
2	macAddress	varchar(100)				Subscriber device MAC address
3	phoneNumber	varchar(50)	Yes			Phone number
4	PinFailTime	timestamp	Yes		CUPPENT_TIMESTAMP	Pin fail time
5	PinErrMsg	varchar(200)	Yes			Pin fail error message

Table 14   ProductType

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	ProductType	varchar(100)		PRI		Subscriber device product type
2	Memo	varchar(100)	Yes			Product type memo (reserved)

Table 15   RequestLog

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	RowID	int (11)		PRI		auto_increment
2	RequestDate	timestamp	Yes		CUPPENT_TIMESTAMP	Request date
3	RequestPage	varchar(100)				The page which is requested(reserved)
4	MACAddress	varchar(100)	Yes			Mac address of subscriber device (reserved)

Table 16 ServerConfiguration

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	Protocal	varchar(100)				Provisioning protocol
2	PIN	varchar(100)				Encrypted pin? (reserved)
3	MaximumBackup	Int(11)			0	Maximum backup file (reserved)
4	Userlockedtime	varchar(100)				How long the subscriber device will be locked
5	IsDefault	varchar(100)			0	This setting is default or not.

Table 17 SpecifySetting

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	RowID	int (11)		PRI		auto_increment
2	UserID	varchar(50)				Subscriber ID
3	ProductType	varchar(100)				Subscriber device product type
4	PhoneNumber	varchar(50)		U		Phone number
5	Password	varchar(50)				Password
6	PINCode	varchar(50)				PIN code
7	MACAddress	varchar(100)				MAC address
8	Flag	Char(1)			0	Provisioned or not (reserved) 0: un-provisioned 1: provisioned
9	SIPOrder	Int(11)			1	SIP order (CPE Port#)

Table 18 Sptgen

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	AttributeNO	varchar(100)	Yes			Attribute number
2	Attribute	varchar(250)	Yes			Attribute
3	AttributeValue	varchar(250)	Yes			Attribute value
4	ProductType	varchar(100)	Yes		P2002	Subscriber device product type
5	GroupID	int (11)	Yes			Product type group ID. Refer to **GroupID** in Table 19 on page 84.
6	RowID	int (11)		PRI		auto_increment

Table 19 Sptgengroup

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	RowID	int (11)		PRI		auto_increment
2	ProductType	varchar(100)				Product type of subscriber device
3	SPTGenGroupName	varchar(100)				Group name of product type
4	GroupID	int(11)	Yes			Group ID of product type

Table 20 UnLockedDevice

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	RowID	int (11)		PRI		Auto_increment
2	macAddress	varchar(100)				Subscriber device mac address
3	phoneNumber	varchar(50)	Yes			Phone number
4	LockTime	datetime			CURRENT_TIMESTAMP	When the device was locked
5	LockMinutes	int(11)			0	How long the device will be locked
6	UnLockTime	timestamp				
7	UnLockUser	varchar(20)	Yes			Refer to **UserID** in Table 21 on page 84**.**

Table 21 User

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
1	UserID	varchar(20)		Pri		Account name
2	Password	varchar(20)				Password
3	UserName	varchar(20)				User name
4	EMail	varchar(50)				Email
5	Phone	varchar(50)	Yes			Phone
6	Mobile	varchar(50)	Yes			Mobile
7	Title	varchar(50)	Yes			Title
8	UserType	Char(1)			2	Account's type 1: Admin 2: Viewer

Table 21 User (continued)

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	DESCRIPTION
9	Status	Char(1)			A	Account's status A: Active S: Suspend
10	CreateDate	timestamp	Yes		CURRENT_TIMESTAMP	Account's creation date

Appendix C Auto Provisioning Server Database Description

APPENDIX D

Sample CRM Server Database Description

These tables describe the database structure of the VoIP Subscribing System (VSS) sample CRM server software.

Table 22 Creditcard

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	COMMENT
1	UserID	varchar(50)	No	PRI		
2	CardType	varchar(50)	No			Credit card type
3	CardNumber	varchar(50)	No			Credit card number
4	ExpirationDate	varchar(20)	No			Credit card expiration date
5	HolderName	varchar(50)	No			Credit card holder's name
6	SecurityID	varchar(50)	No			Security code of credit card

Table 23 Itspphone

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	COMMENT
1	PhoneNumber	Varchar(50)	No	PRI		SIP phone number
2	Price	Decimal(19,4)	Yes		Null	Price
3	State	char(1)	No			Status 1: unused 2: used
4	Comment	Varchar(50)	Yes		Null	Comment

Table 24 Subscriber

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	COMMENT
1	SubscriberID	Int(11)	No	PRI		Subscriber index
2	UserID	Varchar(100)	No			User's account name
3	MACAddress	Varchar(50)	No			MAC address
4	PhoneNumber	Varchar(50)	No	U		Phone number
5	SIPOrder	Int(11)	NO		1	SIP order (CPE Port#)
6	Password	Varchar(50)	Yes		NULL	Password

Table 24   Subscriber

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	COMMENT
7	EMail	Varchar(50)	Yes		NULL	E-mail
8	FirstName	Varchar(50)	Yes		NULL	First name
9	LastName	Varchar(50)	Yes		NULL	Last name
10	CurrentPhone	Varchar(50)	Yes		NULL	Current phone
11	Occupation	Varchar(50)	Yes		NULL	Occupation
12	StreetAddress	longtext	Yes		NULL	Street address
13	City	Varchar(50)	Yes		NULL	City
14	Province	Varchar(50)	Yes		NULL	Province
15	Country	Varchar(50)	Yes		NULL	Country
16	ZipCode	Varchar(50)	Yes		NULL	Zip code
17	PaymentMethod	Varchar(50)	Yes		NULL	Payment method
18	ResidentialPlan	Varchar(50)	Yes		NULL	Residential plan
19	PINCode	Varchar(50)	Yes		NULL	PIN code
20	CreateType	Varchar(50)	Yes		NULL	Account create type 1: User-registered 2: Created by administrator (for reserve)
21	CreateDate	timestamp	Yes		CURRENT_TIMESTAMP	Account create date (for reserve)
22	CreatePerson	Varchar(50)	Yes		NULL	Account create person (for reserve)
23	ModifyDate	Datetime	Yes		0000-00-00 00:00:00	Last modified date (for reserve)
24	ModifPerson	Varchar(50)	Yes		NULL	Last modified person (for reserve)
25	State	char(1)	Yes		0	Status 1: Provisioned 2: Unprovisioned
26	BusinessPlan	Varchar(100)	Yes		NULL	Business plan

Table 25   Unitdevice

ID	COLUMN NAME	DATATYPE	NULL	KEY	DEFAULT VALUE	COMMENT
1	RowID	Int(6)		PRI		Subscriber device index
2	MACAddress	Varchar(50)				MAC address
3	ProductType	Varchar(100)				Product type
4	State	char(1)			1	Status 1: Unregistered 2: Registered

APPENDIX E
VoIP Provisioning Server SOAP Description

This appendix describes how the ZyXEL auto provisioning server uses SOAP to communicate with the CRM system. Use this information when you integrate the ZyXEL auto provisioning server with the CRM system.

setSubScriberRegistered Method

This is how the auto provisioning server synchronizes with the CRM server to provision a subscriber device for the first time.

Table 26 setSubScriberRegistered Method Input

ID	PARAMETER NAME	DATA TYPE	COMMENT
1	deviceModel	string	Device model (product type)
2	phoneNumber	string	Phone number
3	macAddress	string	MAC address

Table 27 setSubScriberRegistered Method Output

ID	PARAMETER NAME	DATA TYPE	NULL	KEY	DEFAULT VALUE	COMMENT
						none

SOAP Request & Response Sample

Request

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
  <SOAP-ENV:Body>
    <ns3751:setSubScriberRegistered xmlns:ns3751="http://tempuri.org">
      <deviceModel xsi:type="xsd:string">P2002</deviceModel>
      <phoneNumber xsi:type="xsd:string">10000002</phoneNumber>
      <macAddress xsi:type="xsd:string">00A0C0000016</macAddress>
    </ns3751:setSubScriberRegistered>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Response

```
<?xml version="1.0" encoding="ISO-8859-1"?>
    <SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/
soap/encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
      <SOAP-ENV:Body>
        <ns1:setSubScriberRegisteredResponse xmlns:ns1="http://
tempuri.org"></ns1:setSubScriberRegisteredResponse>
      </SOAP-ENV:Body>
    </SOAP-ENV:Envelope>
```

getTotalUnregistered Method

This is how the auto provisioning server gets the number of unregistered subscriber devices from the CRM server.

Table 28 getTotalUnregistered Method Input

ID	PARAMETER NAME	DATA TYPE	COMMENT
1	ProductType	string	Product type
2	SIPNO	string	SIP phone number
3	UserID	string	User ID
4	macAddress	string	MAC Address

Table 29   getTotalUnregistered Method Output

ID	PARAMETER NAME	DATA TYPE	COMMENT
1	nums	string	The amount of the unregistered unit devices.

SOAP Request & Response Sample

Request

```
<?xml version="1.0" encoding="ISO-8859-1"?>
    <SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/
soap/encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
      <SOAP-ENV:Body>
        <ns6358:getTotalUnregisteredUnitDevice xmlns:ns6358="http://
tempuri.org">
          <ProductType xsi:type="xsd:string">
            P2002
          </ProductType>
          <SIPNO xsi:type="xsd:string"></SIPNO>
          <UserID xsi:type="xsd:string"></UserID>
          <macAddress xsi:type="xsd:string"></macAddress>
        </ns6358:getTotalUnregisteredUnitDevice>
      </SOAP-ENV:Body>
    </SOAP-ENV:Envelope>
```

Response

```
<?xml version="1.0" encoding="ISO-8859-1"?>
    <SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/
soap/encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
      <SOAP-ENV:Body>
        <ns1:getTotalUnregisteredUnitDeviceResponse xmlns:ns1="http://
tempuri.org">
          <return xsi:type="SOAP-ENC:Array" SOAP-
ENC:arrayType="unnamed_struct_use_soapval[1]">
            <item>
              <soapVal xsi:type="xsd:string">
                16
              </soapVal>
              <nums xsi:type="xsd:string">
                16
              </nums>
            </item>
          </return>
        </ns1:getTotalUnregisteredUnitDeviceResponse>
      </SOAP-ENV:Body>
    </SOAP-ENV:Envelope>
```

getTotalSubScriber Method

This is how the auto provisioning server gets the number of subscribers with a specified product type (from the CRM server).

Table 30   getTotalSubScriber Method Input

ID	PARAMETER NAME	DATA TYPE	COMMENT
1	ProductType	string	Product type

Table 31   getTotalSubScriber Method Output

ID	PARAMETER NAME	DATA TYPE	COMMENT
1	totalnums	string	The amount of the specified product type subscribers

SOAP Request & Response Sample

Request

```
<?xml version="1.0" encoding="ISO-8859-1"?>
    <SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/
soap/encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
      <SOAP-ENV:Body>
        <ns9250:getTotalSubScriber xmlns:ns9250="http://tempuri.org">
          <ProductType xsi:type="xsd:string"></ProductType>
        </ns9250:getTotalSubScriber>
      </SOAP-ENV:Body>
    </SOAP-ENV:Envelope>
```

Response

```
<?xml version="1.0" encoding="ISO-8859-1"?>
    <SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/
soap/encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
      <SOAP-ENV:Body>
        <ns1:getTotalSubScriberResponse xmlns:ns1="http://tempuri.org">
          <return xsi:type="SOAP-ENC:Array" SOAP-
ENC:arrayType="unnamed_struct_use_soapval[1]">
            <item>
              <soapVal xsi:type="xsd:string">
                18
              </soapVal>
              <totalnums xsi:type="xsd:string">
                18
              </totalnums>
            </item>
          </return>
        </ns1:getTotalSubScriberResponse>
      </SOAP-ENV:Body>
    </SOAP-ENV:Envelope>
```

getPageUnregisteredUnitDevice Method

This is how the auto provisioning server gets a list of the unregistered subscriber devices (by search keyword and current page number) from the CRM server.

Table 32   getPageUnregisteredUnitDevice Method Input

ID	PARAMETER NAME	DATA TYPE	COMMENT
1	ProductType	string	Product type
2	SIPNO	string	SIP phone number
3	UserID	string	User ID
4	macAddress	string	MAC address
5	intCurPage	string	Current page number
6	pageSize	string	Number of the devices per page

Table 33   getPageUnregisteredUnitDevice Method Output

ID	PARAMETER NAME	DATA TYPE	COMMENT
1	rowid	string	Row ID
2	userid	string	User ID
3	producttype	string	Product type
4	phonenumber	string	Phone number

Table 33   getPageUnregisteredUnitDevice Method Output

ID	PARAMETER NAME	DATA TYPE	COMMENT
5	password	string	Password
6	pincode	string	PIN code
7	macaddress	string	Mac address

SOAP Request & Response Sample

Request

```
<?xml version="1.0" encoding="ISO-8859-1"?>
    <SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/
soap/encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
      <SOAP-ENV:Body>
        <ns7639:getPageUnregisteredUnitDevice xmlns:ns7639="http://
tempuri.org">
          <ProductType xsi:type="xsd:string">
            P2002
          </ProductType>
          <SIPNO xsi:type="xsd:string"></SIPNO>
          <UserID xsi:type="xsd:string"></UserID>
          <macAddress xsi:type="xsd:string"></macAddress>
          <intCurPage xsi:type="xsd:int">
            1
          </intCurPage>
          <pageSize xsi:type="xsd:int">
            20
          </pageSize>
        </ns7639:getPageUnregisteredUnitDevice>
      </SOAP-ENV:Body>
    </SOAP-ENV:Envelope>
```

Response

```
<?xml version="1.0" encoding="ISO-8859-1"?>
    <SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/
soap/encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
      <SOAP-ENV:Body>
        <ns1:getPageUnregisteredUnitDeviceResponse xmlns:ns1="http://
tempuri.org">
          <return xsi:type="SOAP-ENC:Array" SOAP-
ENC:arrayType="unnamed_struct_use_soapval[16]">
            <item>
              <soapVal xsi:type="xsd:string">
                4
              </soapVal>
              <rowid xsi:type="xsd:string">
                4
              </rowid>
              <soapVal xsi:type="xsd:string">
                H01
              </soapVal>
              <userid xsi:type="xsd:string">
                H01
              </userid>
              <soapVal xsi:type="xsd:string">
                P2002
              </soapVal>
              <producttype xsi:type="xsd:string">
                P2002
              </producttype>
              <soapVal xsi:type="xsd:string">
                87920770
              </soapVal>
              <phonenumber xsi:type="xsd:string">
                87920770
              </phonenumber>
              <soapVal xsi:type="xsd:string">
                1234
              </soapVal>
              <password xsi:type="xsd:string">
                1234
              </password>
              <soapVal xsi:type="xsd:string">
                1234
              </soapVal>
              <pincode xsi:type="xsd:string">
                1234
              </pincode>
              <soapVal xsi:type="xsd:string">
                00A0C0000001
              </soapVal>
              <macaddress xsi:type="xsd:string">
                00A0C0000001
              </macaddress>
            </item>
            <item>
```

```
                              <soapVal xsi:type="xsd:string">
                                6
                              </soapVal>
                              <rowid xsi:type="xsd:string">
                                6
                              </rowid>
                              <soapVal xsi:type="xsd:string">
                                H102
                              </soapVal>
                              <userid xsi:type="xsd:string">
                                H102
                              </userid>
                              <soapVal xsi:type="xsd:string">
                                P2002
                              </soapVal>
                              <producttype xsi:type="xsd:string">
                                P2002
                              </producttype>
                              <soapVal xsi:type="xsd:string">
                                87920773
                              </soapVal>
                              <phonenumber xsi:type="xsd:string">
                                87920773
                              </phonenumber>
                              <soapVal xsi:type="xsd:string">
                                1234
                              </soapVal>
                              <password xsi:type="xsd:string">
                                1234
                              </password>
                              <soapVal xsi:type="xsd:string">
                                1234
                              </soapVal>
                              <pincode xsi:type="xsd:string">
                                1234
                              </pincode>
                              <soapVal xsi:type="xsd:string">
                                00A0C0000003
                              </soapVal>
                              <macaddress xsi:type="xsd:string">
                                00A0C0000003
                              </macaddress>
                           </item>
                           <item>
                              <soapVal xsi:type="xsd:string">
                                7
                              </soapVal>
                              <rowid xsi:type="xsd:string">
                                7
                              </rowid>
                              <soapVal xsi:type="xsd:string">
                                H104
                              </soapVal>
                              <userid xsi:type="xsd:string">
                                H104
                              </userid>
                              <soapVal xsi:type="xsd:string">
                                P2002
                              </soapVal>
```

```
                    <producttype xsi:type="xsd:string">
                      P2002
                    </producttype>
                    <soapVal xsi:type="xsd:string">
                      87920774
                    </soapVal>
                    <phonenumber xsi:type="xsd:string">
                      87920774
                    </phonenumber>
                    <soapVal xsi:type="xsd:string">
                      1234
                    </soapVal>
                    <password xsi:type="xsd:string">
                      1234
                    </password>
                    <soapVal xsi:type="xsd:string">
                      1234
                    </soapVal>
                    <pincode xsi:type="xsd:string">
                      1234
                    </pincode>
                    <soapVal xsi:type="xsd:string">
                      00A0C0000004
                    </soapVal>
                    <macaddress xsi:type="xsd:string">
                      00A0C0000004
                    </macaddress>
                  </item>
                  <item>
                    <soapVal xsi:type="xsd:string">
                      8
                    </soapVal>
                    <rowid xsi:type="xsd:string">
                      8
                    </rowid>
                    <soapVal xsi:type="xsd:string">
                      H105
                    </soapVal>
                    <userid xsi:type="xsd:string">
                      H105
                    </userid>
                    <soapVal xsi:type="xsd:string">
                      P2002
                    </soapVal>
                    <producttype xsi:type="xsd:string">
                      P2002
                    </producttype>
                    <soapVal xsi:type="xsd:string">
                      87920775
                    </soapVal>
                    <phonenumber xsi:type="xsd:string">
                      87920775
                    </phonenumber>
                    <soapVal xsi:type="xsd:string">
                      1234
                    </soapVal>
                    <password xsi:type="xsd:string">
                      1234
                    </password>
```

```
          <soapVal xsi:type="xsd:string">
            1234
          </soapVal>
          <pincode xsi:type="xsd:string">
            1234
          </pincode>
          <soapVal xsi:type="xsd:string">
            00A0C0000005
          </soapVal>
          <macaddress xsi:type="xsd:string">
            00A0C0000005
          </macaddress>
        </item>
        <item>
          <soapVal xsi:type="xsd:string">
            9
          </soapVal>
          <rowid xsi:type="xsd:string">
            9
          </rowid>
          <soapVal xsi:type="xsd:string">
            H106
          </soapVal>
          <userid xsi:type="xsd:string">
            H106
          </userid>
          <soapVal xsi:type="xsd:string">
            P2002
          </soapVal>
          <producttype xsi:type="xsd:string">
            P2002
          </producttype>
          <soapVal xsi:type="xsd:string">
            87920776
          </soapVal>
          <phonenumber xsi:type="xsd:string">
            87920776
          </phonenumber>
          <soapVal xsi:type="xsd:string">
            1234
          </soapVal>
          <password xsi:type="xsd:string">
            1234
          </password>
          <soapVal xsi:type="xsd:string">
            1234
          </soapVal>
          <pincode xsi:type="xsd:string">
            1234
          </pincode>
          <soapVal xsi:type="xsd:string">
            00A0C0000006
          </soapVal>
          <macaddress xsi:type="xsd:string">
            00A0C0000006
          </macaddress>
        </item>
        <item>
          <soapVal xsi:type="xsd:string">
```

```
      10
    </soapVal>
    <rowid xsi:type="xsd:string">
      10
    </rowid>
    <soapVal xsi:type="xsd:string">
      H107
    </soapVal>
    <userid xsi:type="xsd:string">
      H107
    </userid>
    <soapVal xsi:type="xsd:string">
      P2002
    </soapVal>
    <producttype xsi:type="xsd:string">
      P2002
    </producttype>
    <soapVal xsi:type="xsd:string">
      87920777
    </soapVal>
    <phonenumber xsi:type="xsd:string">
      87920777
    </phonenumber>
    <soapVal xsi:type="xsd:string">
      1234
    </soapVal>
    <password xsi:type="xsd:string">
      1234
    </password>
    <soapVal xsi:type="xsd:string">
      1234
    </soapVal>
    <pincode xsi:type="xsd:string">
      1234
    </pincode>
    <soapVal xsi:type="xsd:string">
      00A0C0000007
    </soapVal>
    <macaddress xsi:type="xsd:string">
      00A0C0000007
    </macaddress>
  </item>
  <item>
    <soapVal xsi:type="xsd:string">
      11
    </soapVal>
    <rowid xsi:type="xsd:string">
      11
    </rowid>
    <soapVal xsi:type="xsd:string">
      H108
    </soapVal>
    <userid xsi:type="xsd:string">
      H108
    </userid>
    <soapVal xsi:type="xsd:string">
      P2002
    </soapVal>
    <producttype xsi:type="xsd:string">
```

```
      P2002
   </producttype>
   <soapVal xsi:type="xsd:string">
      87920778
   </soapVal>
   <phonenumber xsi:type="xsd:string">
      87920778
   </phonenumber>
   <soapVal xsi:type="xsd:string">
      1234
   </soapVal>
   <password xsi:type="xsd:string">
      1234
   </password>
   <soapVal xsi:type="xsd:string">
      1234
   </soapVal>
   <pincode xsi:type="xsd:string">
      1234
   </pincode>
   <soapVal xsi:type="xsd:string">
      00A0C0000008
   </soapVal>
   <macaddress xsi:type="xsd:string">
      00A0C0000008
   </macaddress>
</item>
<item>
   <soapVal xsi:type="xsd:string">
      12
   </soapVal>
   <rowid xsi:type="xsd:string">
      12
   </rowid>
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   </soapVal>
   <userid xsi:type="xsd:string">
      H109
   </userid>
   <soapVal xsi:type="xsd:string">
      P2002
   </soapVal>
   <producttype xsi:type="xsd:string">
      P2002
   </producttype>
   <soapVal xsi:type="xsd:string">
      87920779
   </soapVal>
   <phonenumber xsi:type="xsd:string">
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   </phonenumber>
   <soapVal xsi:type="xsd:string">
      1234
   </soapVal>
   <password xsi:type="xsd:string">
      1234
   </password>
   <soapVal xsi:type="xsd:string">
```

```
        1234
      </soapVal>
      <pincode xsi:type="xsd:string">
        1234
      </pincode>
      <soapVal xsi:type="xsd:string">
        00A0C0000009
      </soapVal>
      <macaddress xsi:type="xsd:string">
        00A0C0000009
      </macaddress>
    </item>
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      </soapVal>
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        1234
      </password>
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        1234
      </soapVal>
      <pincode xsi:type="xsd:string">
        1234
      </pincode>
      <soapVal xsi:type="xsd:string">
        00A0C0000010
      </soapVal>
      <macaddress xsi:type="xsd:string">
        00A0C0000010
      </macaddress>
    </item>
    <item>
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```

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                            </userid>
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                            </soapVal>
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                            </producttype>
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                            </soapVal>
                            <phonenumber xsi:type="xsd:string">
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                            </phonenumber>
                            <soapVal xsi:type="xsd:string">
                              1234
                            </soapVal>
                            <password xsi:type="xsd:string">
                              1234
                            </password>
                            <soapVal xsi:type="xsd:string">
                              1234
                            </soapVal>
                            <pincode xsi:type="xsd:string">
                              1234
                            </pincode>
                            <soapVal xsi:type="xsd:string">
                              00A0C0000011
                            </soapVal>
                            <macaddress xsi:type="xsd:string">
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                            </macaddress>
                          </item>
                          <item>
                            <soapVal xsi:type="xsd:string">
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                            </soapVal>
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                            </rowid>
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                              H112
                            </soapVal>
                            <userid xsi:type="xsd:string">
                              H112
                            </userid>
                            <soapVal xsi:type="xsd:string">
                              P2002
                            </soapVal>
                            <producttype xsi:type="xsd:string">
                              P2002
```

```
                       </producttype>
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                       </soapVal>
                       <phonenumber xsi:type="xsd:string">
                         87920781
                       </phonenumber>
                       <soapVal xsi:type="xsd:string">
                         1234
                       </soapVal>
                       <password xsi:type="xsd:string">
                         1234
                       </password>
                       <soapVal xsi:type="xsd:string">
                         1234
                       </soapVal>
                       <pincode xsi:type="xsd:string">
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                       <soapVal xsi:type="xsd:string">
                         00A0C0000012
                       </soapVal>
                       <macaddress xsi:type="xsd:string">
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                       </macaddress>
                    </item>
                    <item>
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                         17
                       </soapVal>
                       <rowid xsi:type="xsd:string">
                         17
                       </rowid>
                       <soapVal xsi:type="xsd:string">
                         10000000
                       </soapVal>
                       <userid xsi:type="xsd:string">
                         10000000
                       </userid>
                       <soapVal xsi:type="xsd:string">
                         P2002
                       </soapVal>
                       <producttype xsi:type="xsd:string">
                         P2002
                       </producttype>
                       <soapVal xsi:type="xsd:string">
                         10000000
                       </soapVal>
                       <phonenumber xsi:type="xsd:string">
                         10000000
                       </phonenumber>
                       <soapVal xsi:type="xsd:string">
                         12345
                       </soapVal>
                       <password xsi:type="xsd:string">
                         12345
                       </password>
                       <soapVal xsi:type="xsd:string">
                         10875
```

```
            </soapVal>
            <pincode xsi:type="xsd:string">
              10875
            </pincode>
            <soapVal xsi:type="xsd:string">
              00A0C0000014
            </soapVal>
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            </macaddress>
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            </soapVal>
            <rowid xsi:type="xsd:string">
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              1234
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            <password xsi:type="xsd:string">
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              2308
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            <pincode xsi:type="xsd:string">
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            </pincode>
            <soapVal xsi:type="xsd:string">
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            <macaddress xsi:type="xsd:string">
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          </item>
          <item>
            <soapVal xsi:type="xsd:string">
              20
            </soapVal>
```

```
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                20
              </rowid>
              <soapVal xsi:type="xsd:string">
                10001992
              </soapVal>
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              <soapVal xsi:type="xsd:string">
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              </soapVal>
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              </producttype>
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                789
              </soapVal>
              <password xsi:type="xsd:string">
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              </password>
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                6325
              </pincode>
              <soapVal xsi:type="xsd:string">
                00A0C0000017
              </soapVal>
              <macaddress xsi:type="xsd:string">
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            </item>
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                21
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                21
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              <soapVal xsi:type="xsd:string"></soapVal>
              <userid xsi:type="xsd:string"></userid>
              <soapVal xsi:type="xsd:string">
                P2002
              </soapVal>
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                P2002
              </producttype>
              <soapVal xsi:type="xsd:string"></soapVal>
              <phonenumber xsi:type="xsd:string"></phonenumber>
              <soapVal xsi:type="xsd:string">
                789456
```

```
                    </soapVal>
                    <password xsi:type="xsd:string">
                      789456
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                    <soapVal xsi:type="xsd:string">
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                      10000004
                    </phonenumber>
                    <soapVal xsi:type="xsd:string">
                      111111
                    </soapVal>
                    <password xsi:type="xsd:string">
                      111111
                    </password>
                    <soapVal xsi:type="xsd:string">
                      30222
                    </soapVal>
                    <pincode xsi:type="xsd:string">
                      30222
                    </pincode>
                    <soapVal xsi:type="xsd:string">
                      00A0C0000019
                    </soapVal>
                    <macaddress xsi:type="xsd:string">
                      00A0C0000019
```

```
            </macaddress>
          </item>
        </return>
      </ns1:getPageUnregisteredUnitDeviceResponse>
    </SOAP-ENV:Body>
  </SOAP-ENV:Envelope>
```

getNewSubScriberByDate Method

This is how the auto provisioning server gets the number of new subscribers for a specified time period from the CRM server.

Table 34   getNewSubScriberByDate Method Input

ID	PARAMETER NAME	DATA TYPE	COMMENT
1	startDate	string	Start date, YYYY/MM/DD format
2	endDate	string	End date, YYYY/MM/DD format

Table 35   getNewSubScriberByDate Method Output

ID	PARAMETER NAME	DATA TYPE	COMMENT
1	createdate	string	Date
2	nums	string	The amount of the registered subscribers for each date

SOAP Request & Response Sample

Request

```
<?xml version="1.0" encoding="ISO-8859-1"?>
    <SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/
soap/encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
    <SOAP-ENV:Body>
      <ns3783:getNewSubScriberByDate xmlns:ns3783="http://tempuri.org">
        <startDate xsi:type="xsd:string">
          2005/5/24
        </startDate>
        <endDate xsi:type="xsd:string">
          2005/5/24
        </endDate>
      </ns3783:getNewSubScriberByDate>
    </SOAP-ENV:Body>
  </SOAP-ENV:Envelope>
```

Response

```
<?xml version="1.0" encoding="ISO-8859-1"?>
    <SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/
soap/encoding/" xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/
2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/
encoding/" xmlns:si="http://soapinterop.org/xsd">
      <SOAP-ENV:Body>
        <ns1:getNewSubScriberByDateResponse xmlns:ns1="http://tempuri.org">
          <return xsi:type="SOAP-ENC:Array" SOAP-
ENC:arrayType="unnamed_struct_use_soapval[1]">
            <item>
              <soapVal xsi:type="xsd:string">
                05/05/24
              </soapVal>
              <createdate xsi:type="xsd:string">
                05/05/24
              </createdate>
              <soapVal xsi:type="xsd:string">
                4
              </soapVal>
              <nums xsi:type="xsd:string">
                4
              </nums>
            </item>
          </return>
        </ns1:getNewSubScriberByDateResponse>
      </SOAP-ENV:Body>
    </SOAP-ENV:Envelope>
```

APPENDIX F
Configuration File Example

This is a sample auto provisioning server configuration file.
File Name: Config.php

```php
//MySQL server setup
//== Start ==
$mysql_server = '192.168.11.224';
$user_id = 'admin';
$user_password = '1234';
$database = 'provisioning';
// Error message of database connection
$database_connection_error_msg = 'database connect failure';
//== Stop ==
//MySQL server setup

// VSS Web Service setup
$VSS_Server = "http://192.168.11.224/VSS/";

// Database backup setup (better not to be modified)
// == Start ==
$mysql_backup_path = "../bkup/mysql/";
$mysql_backup_ScheduleTime_file = "../bkup/ScheduleTime.conf";
// Path of provisioning database location
$mysql_ps_path = "/home/mysql/var/provisioning/";
$mysql_run_path = "/home/mysql/bin";
// == End ==
// Database backup setup

// Location of the apache log file.
$sys_logfile = "/var/log/httpd.log";

// == No need to be modified ==
// == Start ==
// SPTGEN separate token
$SeparateSymbo = " = ";
// Export unit device's file prefix name
$ExportDeviceFilePrefixName  = "sip";

// Export file's extended name
$ExportFileExtendedName = ".txt";
// Linux/Windows CR LF
$strReturnSymbo = "\n";

// Server Configuration
$ServerConfiguration_file = "../bkup/ServerConfiguration.conf";
// == End ==

// Export location setup
// == Start ==
$ExporttoSPTGEN_Path = "../temp/ExporttoSPTGEN/";
$ExportDBasSPTGEN_Path = "../temp/ExportDBasSPTGEN/";
```

```
// == End ==
// Export location setup
// == No need to be modified ==

// 3DES in PHP only supports 24bits encryption, zyxel_3des_key shouldn't be
longer than 13bits
// (Difference of total length and Mac Address)
$zyxel_3des_key = "this is a secret key";
// iv key size
$zyxel_iv_key_size = 8;
// == End ==
```

Appendix F Configuration File Example

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