Synway AST Series

SynAST Application Platform-FreeSwitch Installation Manual

Synway Information Engineering Co., Ltd

www.synway.net

Contents

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Preface

When you use the Synway AST series boards to set up a FreeSwitch application system, this file provides the help for software installation, configuration and test. It aims at those people who use the Synway AST series boards in FreeSwitch for the first time, and takes the use of TEJ-401E and FXM-16A/PCIe in FreeSwitch-1.0.4pre7 for example.

Chapter 1 introduces how to install and automatically configure the driver of Synway AST series boards in FreeSwitch.

Chapter 2 tells how to manually configure the system.

Chapter 3 shows how to test the Synway AST series boards in FreeSwitch.

Appendix A provides answers to some problems that may occur when using the Synway AST series boards.

Appendix B gives the contact way of technical support and sales department in Synway.

Although Synway has scrupulously checked through this manual, but cannot guarantee the absence of errors and omissions. We sincerely apologize for any consequent inconvenience brought to you and will be very grateful if you kindly give your advice regarding amendments to this book.

Chapter 1 Installation & Automatic Configuration

1.1 FreeSwitch

For detailed information about FreeSwitch, visit the official website of FreeSwitch: http://www.freeswitch.org.

1.1.1 Preparation

Obtain the resource package you need for FreeSwitch installation. See Table 1-1 below for details.

Resource Package	Version Recommendation	Address	Description
dahdi-linux-complete-x.x.x+x.x.x.tar.gz	dahdi-linux-complete-2.3.0.1+2.3.0	http://downloads.asterisk.org/pub/telephony/dahdi-linux-complete/releases/	Check the installed version: #cat /sys/module/dahdi/version
freeswitch	1.0.6	http://files.freeswitch.org/freeswitch-1.0.6.tar.gz	None
SynAST-x.x.x.x.tar.gz	1.7.0.0 or above	http://www.synway.net	None

Table 1-1 Resource Packages for FreeSwitch Installation

1.1.2 Driver Installation

Step 1: Install the zaptel driver and the SynAST driver.

Refer to Chapter 3 Driver Installation & Configuration in the file *SynAST_UserManual.pdf*.

1.1.3 FreeSwitch Installation

Step 1: Install FreeSwitch.

tar -zxvf freeswitch-1.0.6.tar.gz

#cd freeswitch-1.0.6

../rebootstrap.sh

＃vim modules.conf

Find the line '../../libs/openzap/mod_openzap' and remove # in front.

./configure

#make

#make install

#make samples

1.1.4 Configuration

Note: You may choose either the method listed here or the manual configuration (See Chapter 2 Manual Installation) by individual requirement.

#astcfg_dahdi freeswitch

1.1.5 FreeSwitch Startup

Step 1: Modify the module configuration file.

Modify the file modules.conf.xml so as to load the module openzap at the start of FreeSwitch.

#cd /usr/local/freeswitch/conf/autoload_configs

＃vim modules.conf.xml

Find the line '<!-- <load module="mod_openzap"/> -->' and change it to be <load module="mod_openzap"/>.

Step 2: Start FreeSwitch.

#cd /usr/local/freeswitch/bin

#./freeswitch

Chapter 2 Manual Configuration

This chapter takes the FXM-16A/PCIe board and the TEJ-401E board for example to show you how to configure a system.

2.1 Zaptel/Dahdi Configuration

Refer to Section 3.2.2 Manual Configuration in the document *SynAST_UserManual.pdf*.

2.2 FreeSwitch Configuration

Modify the configuration file according to Table 2-1 below.

Board / Config Model / File	TEJ-401E		FXM-16A/PCIe (top 4 slots: trunk; bottom 4 slots: station)
	E1 Mode	T1/J1 Mode	
	ISDN	ISDN	
/usr/local/freeswitch/conf/openzap.conf	[span zt] name =>OpenZAP1 number=>1 trunk_type=>e1 b-channel=>1->15 d-channel=>16 b-channel=>17->31 [span zt] name =>OpenZAP2 number=>2 trunk_type=>e1 b-channel=>32->46 d-channel=>47 b-channel=>48->62 [span zt] name =>OpenZAP3 number=>3 trunk_type=>e1 b-channel=>63->77 d-channel=>78 b-channel=>79->93 [span zt] name =>OpenZAP4 number=>4 trunk_type=>e1 b-channel=>94->108	[span zt] name =>OpenZAP1 number=>1 trunk_type=>t1 b-channel=>1->23 d-channel=>24 [span zt] name =>OpenZAP2 number=>2 trunk_type=>t1 b-channel=>25->47 d-channel=>48 [span zt] name =>OpenZAP3 number=>3 trunk_type=>t1 b-channel=>49->71 d-channel=>72 [span zt] name =>OpenZAP4 number=>4 trunk_type=>t1 b-channel=>73->95 d-channel=>96	#fxo Interface [span zt] name => OpenZAP-FX01 number => 1 fxo-channel => 1 [span zt] name => OpenZAP-FX02 number => 2 fxo-channel => 2 [span zt] name => OpenZAP-FX03 number => 3 fxo-channel => 3 [span zt] name => OpenZAP-FX04 number => 5 fxo-channel => 4 [span zt] name => OpenZAP-FX05 number => 5 fxo-channel => 5 [span zt] name => OpenZAP-FX06 number => 6 fxo-channel => 6 [span zt] name => OpenZAP-FX07 number => 7 fxo-channel => 7

	d-channel=>109 b-channel=>110->124		[span zt] name => OpenZAP-FX08 number => 8 fxo-channel => 8 #fxs Interface [span zt] name => OpenZAP-FXS9 number => 9 fxs-channel => 9 [span zt] name => OpenZAP-FXS10 number => 10 fxs-channel => 10 [span zt] name => OpenZAP-FXS11 number => 11 fxs-channel =>11 [span zt] name => OpenZAP-FXS12 number => 12 fxs-channel =>12 [span zt] name => OpenZAP-FXS13 number => 13 fxs-channel =>13 [span zt] name => OpenZAP-FXS14 number => 14 fxs-channel =>14 [span zt] name => OpenZAP-FXS15 number => 15 fxs-channel =>15 [span zt] name => OpenZAP-FXS16 number => 16 fxs-channel =>16
/usr/ local/ freeswitch/ conf/ autoload_configs/ openzap.conf.xml	***Add the following content behind </settings> in the file.*** <pri_spans> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/>		***Add the following content behind </settings> in the file.*** <analog_spans> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/>

	<param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> </pri_spans>	<param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/>

```
<param name="dialplan" value="XML"/>
<param name="context" value="default"/>
<param name="enable-callerid" value="true"/>
</span>
<span id="9">
<param name="tonegroup" value="us"/>
<param name="digit-timeout" value="2000"/>
<param name="max-digits" value="11"/>
<param name="dialplan" value="XML"/>
<param name="context" value="default"/>
<param name="enable-callerid" value="true"/>
</span>
<span id="10">
<param name="tonegroup" value="us"/>
<param name="digit-timeout" value="2000"/>
<param name="max-digits" value="11"/>
<param name="dialplan" value="XML"/>
<param name="context" value="default"/>
<param name="enable-callerid" value="true"/>
</span>
<span id="11">
<param name="tonegroup" value="us"/>
<param name="digit-timeout" value="2000"/>
<param name="max-digits" value="11"/>
<param name="dialplan" value="XML"/>
<param name="context" value="default"/>
<param name="enable-callerid" value="true"/>
</span>
<span id="12">
<param name="tonegroup" value="us"/>
<param name="digit-timeout" value="2000"/>
<param name="max-digits" value="11"/>
<param name="dialplan" value="XML"/>
<param name="context" value="default"/>
<param name="enable-callerid" value="true"/>
</span>
<span id="13">
<param name="tonegroup" value="us"/>
<param name="digit-timeout" value="2000"/>
<param name="max-digits" value="11"/>
<param name="dialplan" value="XML"/>
<param name="context" value="default"/>
<param name="enable-callerid" value="true"/>
</span>
<span id="14">
<param name="tonegroup" value="us"/>
<param name="digit-timeout"
```

		value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> <param name="tonegroup" value="us"/> <param name="digit-timeout" value="2000"/> <param name="max-digits" value="11"/> <param name="dialplan" value="XML"/> <param name="context" value="default"/> <param name="enable-callerid" value="true"/> </analog_spans>

Table 2-1 FreeSwitch Configuration

Chapter 3 Test

3.1 Preparation

Use an FXM-16A/PCIe board and a TEJ-401E board for example. The former 4 modules on the FXM-16A/PCIe board are FXO and the latter 4 are FXS. Meanwhile, configure the TEJ-401E board with E1+ISDN mode.

Examine the configuration of dahdi:

```
#dahdi_cfg –vv
```

3.2 Test Example

3.2.1 FreeSwitch Environment

Step 1: Examine the configuration of FreeSwitch.

```
#cd /usr/local/freeswitch/bin
#./freeswitch
freeswitch@> oz list
```

Step 2: Modify the dialing rules.

1) #vim /usr/local/freeswitch/conf/dialplan/default.xml

2) Modify the head of the file to be:

```
<?xml version="1.0" encoding="utf-8"?>
    <!-- http://wiki.freeswitch.org/wiki/Dialplan_XML -->
     <include>
       <context name="default">
         <extension name="text">
             <condition field="destination_number" expression="^(.*)$">
                  <action application="set" data="dialed_number=$1"/>
                  <action application="bridge" data="openzap/1/1/${dialed_number}"/>
             </condition>
          </extension>
         </context>
    </include>
```

Step 3: Perform a dialing test

1) Restart FreeSwitch (use the command ‘shutdown’ or ‘…’ under the command line of freeswitch to stop) or enter the command ‘reloadxml’ under the command of FreeSwitch

to reload the dialing rule.

2) Use the board FXM-16A/PCIe to test outbound calls from station.

3) Use the board TEJ-401E to test outboard calls.

Appendix A FAQs

Q1: How to deal with errors in the module switch_odbc that sometimes occur while compiling FreeSwitch?

It may be due to the lack of the development package unixodbc. Please download unixodbc and then reinstall FreeSwitch.

Q2: Why can FreeSwitch not start up?

If FreeSwitch has ever started, there are probably clerical errors in the configuration file which makes it not start up this time. For example, in the configuration file /usr/local/freeswitch/conf/dialplan/default.xml, if the tags ‘<context>’ do not appear in pairs, FreeSwitch can not start. The correct way should be ‘<context>’ and ‘</context>’ appear in pairs, and so do ‘<extension>’ and ‘</extension>’.

Appendix B Technical/Sales Support

Thank you for choosing Synway. Please contact us should you have any inquiry regarding our products. We shall do our best to help you. However, our technicians and salesmen are mainly responsible for maintaining our boards and providing relative technical support. If there are problems about Asterisk, please keep touch with Digium Inc. for help.

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