

Synway AST Series

SynAST Application Platform-FreeSwitch Installation Manual

Synway Information Engineering Co., Ltd

www.synway.net

Contents

Contents i
Copyright Declaration ii
Software License Agreementiii
Prefaceiv
Chapter 1 Installation & Automatic Configuration1
1.1 FreeSwitch 1 1.1.1 Preparation 1 1.1.2 Driver Installation 1 1.1.3 FreeSwitch Installation 1 1.1.4 Configuration 2 1.1.5 FreeSwitch Startup 2
Chapter 2 Manual Configuration 3
2.1 Zaptel/Dahdi Configuration
Chapter 3 Test 8
3.1 Preparation83.2 Test Example83.2.1 FreeSwitch Environment8
Appendix A FAQs 10
Appendix B Technical/Sales Support11

Copyright Declaration

This manual is provided by Synway Information Engineering Co., Ltd (hereinafter referred to as 'Synway') as the support file for 'Synway AST Series board driver software'. Both the software and this manual are copyrighted and protected by the laws of the People's Republic of China.

All rights reserved; no part of this manual may be extracted, modified, copied, reproduced or transmitted in any form or by any means, electronic or mechanical, without prior written permission from Synway. By using this manual, you agree to the following *Software License Agreement*.

Synway reserves the right to revise this manual without prior note. Please contact Synway for the latest version of this manual before placing an order.

Synway has made every effort to ensure the accuracy of this manual but does not guarantee the absence of errors. Moreover, Synway assumes no responsibility in obtaining permission and authorization of any third party patent, copyright or product involved in relation to the use of this manual.

Note: FreeSwitch mentioned in this book is the registered trademark of FreeSwitch.org.



Software License Agreement

Synway Information Engineering Co., Ltd (hereinafter referred to as 'Synway') owns the copyright of 'this software and its accessories, relative files and archives' (hereinafter referred to as 'this product'). Any company or person can download the corresponding driver software and other useful documents for free directly from our website after purchasing a board of Synway.

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.x.tar.gz	dahdi-linux-complete-2.3.0.1 +2.3.0	http://downloads.asterisk. org/pub/telephony/dahdi-l inux-complete/releases/	Check the installed version: #cat /sys/module/dahdi/versi on
freeswitch	1.0.6	http://files.freeswitch.org/f reeswitch-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 <u>Chapter 2 Manual Installation</u>) 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

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

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



	d-channel=>109	[span zt]
	b-channel=>110->124	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 -> Open7AP-FXS11
		number \rightarrow 11
		fixe $channel \rightarrow 11$
		hame => OpenZAP-FXS12
		humber => 12
		txs-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
	Add the following content behind in the	e Add the following content behind in
	file.	the file.
	<pri_spans></pri_spans>	<analog_spans></analog_spans>
		
	<param name="tonegroup" value="us"/>	<param name="tonegroup" value="us"/>
	<param name="digit-timeout" value="2000"/>	<pre><param <="" name="digit-timeout" pre=""/></pre>
	<param name="max-digits" value="11"/>	value="2000"/>
/usr/	<param name="dialplan" value="XML"/>	<pre><param name="max-digits" value="11"/></pre>
local/	<param name="context" value="default"/>	<param name="dialplan" value="XML"/>
freeswitch/	<param name="enable-callerid" value="true"/>	<pre></pre>
conf/		value="default"/>
autoload configs/		<pre><param name="enable-callerid" value="true"/></pre>
openzan conf xml	<param name="tonegroup" value="us"/>	
openzap.com.xm	<param name="digit-timeout" value="2000"/>	
	<param name="max-digits" value="11"/>	<pre><param name="tonegroup" value="us"/></pre>
	<param name="dialplan" value="XML"/>	<pre>>param name="digit-timeout"</pre>
	<param name="context" value="default"/>	value="2000"/>
	<param name="enable-callerid" value="true"/>	<pre><param name="max-digits" value="11"/></pre>
		<param name="dialplan" value="XML"/>
		<pre>>param name="context"</pre>
	<param name="tonegroup" value="us"/>	value="default"/>





	<param name="dialplan" value="XML"/>
	<pre><param <="" name="context" pre=""/></pre>
	value="default"/>
	<pre><param name="enable-callerid" value="true"/></pre>
	
	<pre><param name="tonegroup" value="us"/></pre>
	<pre><param <="" name="digit-timeout" pre=""/></pre>
	value="2000"/>
	<param name="max-digits" value="11"/>
	<pre><param name="dialplan" value="XML"/></pre>
	<pre></pre>
	Value="detault"/>
	<pre><pre>callend value= true /></pre></pre>
	<pre><spailing 10=""> </spailing></pre>
	<pre>cparam name= tonegroup value= us // <pre>cparam name="digit-timeout"</pre></pre>
	value="2000"/>
	<pre>cparam name="max-digits" value="11"/></pre>
	<pre>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>></pre>
	<pre>>param name="context"</pre>
	value="default"/>
	<param name="enable-callerid" value="true"/>
	
	<pre><param name="tonegroup" value="us"/></pre>
	<pre><param <="" name="digit-timeout" pre=""/></pre>
	value="2000"/>
	<param name="max-digits" value="11"/>
	<param name="dialplan" value="XML"/>
	<pre></pre>
	value="default"/>
	<pre><param name="enable-callerid" value="true"/> </pre>
	<pre><spainid= 12=""> </spainid=></pre>
	<pre>cparam name="digit-timeout"</pre>
	value="2000"/>
	<pre><param name="max-digits" value="11"/></pre>
	<pre>cparam name="dialplan" value="XML"/></pre>
	<pre> name="context"</pre>
	value="default"/>
	<pre><param name="enable-callerid" value="true"/></pre>
	
	<pre><param name="tonegroup" value="us"/></pre>
	<pre><param <="" name="digit-timeout" pre=""/></pre>
	value="2000"/>
	<pre><param name="max-digits" value="11"/></pre>
	<param name="dialplan" value="XML"/>
	<pre></pre>
	value="default"/>
	<pre><param name="enable-callerid" value="true"/> /></pre>
	
	<pre><pre>cparam name="tonegroup" value="us"/> <pre>uname="tonegroup" value="tonegroup" value="tonegro</pre></pre></pre>
	<pre><param <="" name="digit-timeout" pre=""/></pre>



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



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.

Headquarters

Synway Information Engineering Co., Ltd

http://www.synway.net/

9F, Synway D&R Center, No.3756, Nanhuan Road, Binjiang District, Hangzhou, P.R.China, 310053

Tel: +86-571-88860561

Fax: +86-571-88850923

Technical Support

Tel: +86-571-88864579 Mobile: +86-18905817070 Email: techsupport@sanhuid.com Email: techsupport@synway.net MSN: synway.support@hotmail.com

Sales Department

Tel: +86-571-88860561 Tel: +86-571-88864579 Fax: +86-571-88850923 Email: sales@synway.net