Redfone FoneBridge2 Elastix 2.2.0

Posted by Cary H. on Jan 8th, 2012 | 0 comments

HOWTO: Configure the Redfone TDMoE Bridge

Elastix 2.2.0 as well as previous versions of Elastix came with some base Redfone configuration software built into the distribution. This is very handy, but considering all of the configuration files that must be touched, this module they include falls somewhat short of the overall need. **Let me add here that the folks at Redfone Communications are a dream to work with. They know their product and the support I have received from them has been impecable.**

> This HOWTO will deal with the configuration of a Redfone TDMoE for Asterisk 1.8.7, the common distribution of Asterisk with Elastix 2.2.0. While the same basic configuration of the systems are available for other Asterisk distributions and other versions of Elastix, we do not guarantee functionality by following these steps.

Much of the configuration guidelines I found on the net involved how to configure a Redfone to work with E1 PRI circuits and while that is fabulous for our non-USA friends, there is very little published on dealing with T1 PRIs in the USA. Typically speaking there really isn't much difference except in number of channels and framing and encoding of the circuit. Nearly all PRIs delivered over T1 interfaces in the USA will be provisioned for a framing of ESF (extended super-frame) and encoding of B8ZS (bipolar 8-zero substitution, also called binary 8-zero substitution, clear channel, and clear 64), which means a T1 circuit using B8ZS can use the full 64 Kbps for each channel for data.

I. Install Redfone Software on the PBX

Elastix 2.2.0 makes this process very easy. Log into the Elastix web interface on your PBX system and go to the tab called *ADDONS*. Under this tab you will see the software package titled *Redfone v2.0.0-3*. Select to install that package and the system will do all that for you. Once installed you should be able to go to the command prompt on your Elastix server and type:
[root@elastix ~]#`fonulator -V`
The system should respond with something similar to the following:

```
fonulator 2.0.1
Copyright (C) 2007 Redfone Communications, LLC
Build #37
```

Using a text editor modify the redfone.conf file located in the /etc directory as needed. Here is our redfone.conf configuration with descriptions. We have a dual-interface Redfone appliance contained within a 1U chasis.

```
[globals]
# IP-address of the IP Configuration port
# Factory defaults are; FB1=192.168.1.254 FB2=192.168.1.253
fb=192.168.1.253
# Which port to use for TDMoE Traffic (1 or 2)
port=1
# Which Asterisk server destination MAC address for TDMoE Traffic?
server=00:1a:64:06:de:6e
# For 2.0 version firmware/hardware and above, specify priorities as
# priorities=0,1,2,3
# or for all internal timing
# priorities=0,0,0,0
priorities=0,1,2,3
#
#SPAN 1 T1
[span1]
framing=esf
encoding=b8zs
#
#SPAN 2 T1
[span2]
framing=esf
encoding=b8zs
# EOF
```

II. Configure DAHDI Tools

Using a text editor create or modify the system.conf file located in the /etc/dahdi directory. Here is our system.conf file with descriptions.

```
# DAHDI system.conf
# 2-Port T1/E1 Redfone Bridge
# Used or not, both ports MUST be configured
# First port: dynamic and uses ethmf on eth1 mac 00:50:c2:65:df:09 then 0,24,0
dynamic=ethmf,eth1/00:50:c2:65:df:09/0,24,0
```

Second port: dynamic uses ethmf on eth1 mac 00:50:c2:65:df:09 then 1,24,1 <- last span
```
dynamic=ethmf,eth1/00:50:c2:65:df:09/1,24,1
```
Channel definitions
```
bchan=1-23
dchan=24
```
Zone definitions
```
loadzone=us
defaultzone=us
```
What echo cancellation should be used on what channels
```
echocanceller=oslec,1-23
```
EOF

III. Configure DAHDI for Asterisk

Using a text editor create or modify the dahdi.conf file located in the /etc/asterisk directory. Here is our dahdi.conf file with descriptions.

Define as Group 0
```
group=0,11
```
We want the context to come from the PSTN network
```
context=from-pstn
```
In the USA the PRI switch-type should always be National ISDN
```
switchtype = national
```
Signaling, we are receiving clock from the network so the termination is CPE (Customer Premise)
```
signaling = pri_cpe
```
Channels definition. T1 PRI is 23 B-channels with 1 D-channel. D-channel is always on slot 24.
```
channel => 1-23
```
EOF

IV. Restart Asterisk PBX

Once you restart your PBX you should, from the command line, be able to run *dahdi-tool* and see the two dynamic spans created. If you have a PRI connected to either of the spans you should see the Alarms set to *OK* or *YEL* if no PRI is connected. Further examination of the Elastix configuration should be done in the web interface under the *System* -> *Hardware* menu selection.

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