

Ademco ContactID support added in Switchfin

Written by Administrator

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Hi Guys,

In a typical alarm system scenario there are numerous **alarm panels** spread in a different armed premises.

Those premises are often spread in a very different geographical locations within a town or even country.

The best practice is to collect all the 'alarm events' from all **alarm panels** in a single **central station**

So the question is what is the best communication media and protocol used for this.

Thinking into account the old infrastructure heritage it is not a surprise that the POTS analog telephone lines

have been widely used in the past and even now. And the protocol is **Contact ID** invented by a company called

Ademco which become de-facto a standard for this kind of **alarm panel <-> central station** communication.

It uses based on a sequence of **DTMF** tones with handshake and a control sum incorporated.

Here we go we have **AlarmSender()** Asterisk application implemented in **Switchfin**. (Note that **AlarmReceiver()**

supporting **Contact ID** protocol is available in Asterisk mainstream since Asterisk 1.2)

To test please build **Switchfin** with **AlarmSender** enabled in the **Switchfin** menuconfig. Then in Asterisk **CLI** you can do

```
switchfini1*CLI> originate DAHDI/g1/phone_number application AlarmSender 11118162601000
```

```
-- Executing AlarmSender("DAHDI/phone_number", "11118162601000") in new stack  
> AlarmSender: Setting read and write formats to u-law  
> AlarmSender: Sending ademco contact ID  
> AlarmSender: Determining protocol ademco contact ID...  
> AlarmSender: Protocol ademco contact ID determined !  
> AlarmSender: Trying to send for 1 time (max 4)  
> AlarmSender : digits_to_send : 111181626010006 with checksum : 6  
> AlarmSender: Verifying 1400Hz 100ms burst (ACK)  
> AlarmSender : Launching receiving loop  
> AlarmSender: Verifying 2300Hz 100ms burst (ACK)  
> AlarmSender : Launching receiving loop  
AlarmSender: Sending DTMF digits successful !!  
> AlarmSender : Launching receiving loop  
> AlarmSender : Not a Voice frame, trying with next frame  
> AlarmSender: Ademco Contact ID sent successfully !  
-- Executing [DAHDI@alarm:3] Hangup("DAHDI/phone_number", "") in new stack
```

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You should have **AlarmReceiver** (either commercial **alarm central** station or Asterisk box with **AlarmReceiver** application)

listening on the phone_number side. The message is actually the last 15 digits.

For more information about the protocol itself please check [Contact ID recommendation](#)

The **Asterisk AlarmReceiver** application from the remote side responds:

switchfini2*CLI>

-- Executing [6000@alarm:4] AlarmReceiver("DAHDI/Channel 1", "") in new stack

> AlarmReceiver: Answering channel

> AlarmReceiver: Waiting for connection to stabilize

> AlarmReceiver: Waiting for first event from panel...

> AlarmReceiver: Sending 1400Hz 100ms burst (ACK)

> AlarmReceiver: Waiting for first event from panel...

> AlarmReceiver: Sending 1400Hz 100ms burst (ACK)

> AlarmReceiver: Sending 2300Hz 100ms burst (ACK)

> AlarmMonitoring: Detected format ADEMCO_CONTACT_ID.

== AlarmReceiver: Received Event 1111181626010006

This open the door for a few interesting applications based on IP0x as a component in the smart alarm systems.