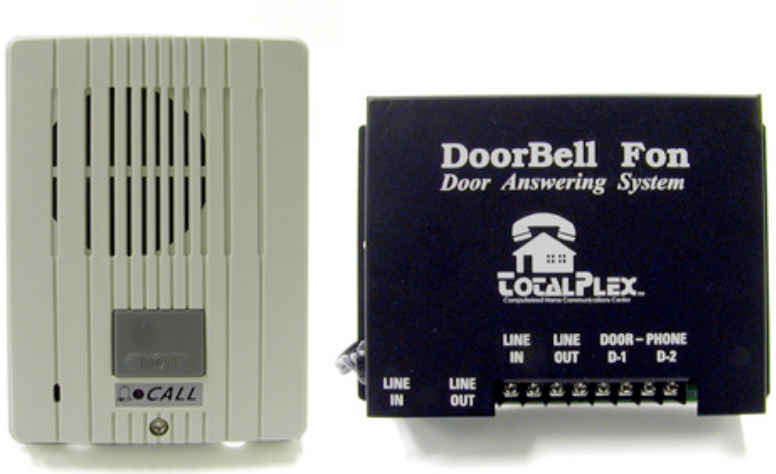
Answer your front door with Asterisk

Contributed by KevinFlanagan

You might think that Asterisk is doing everything in your house for communications, but is it answering your front door yet? Integrating an intercom system for your front door is not hard, and the cost can be as little as $200.

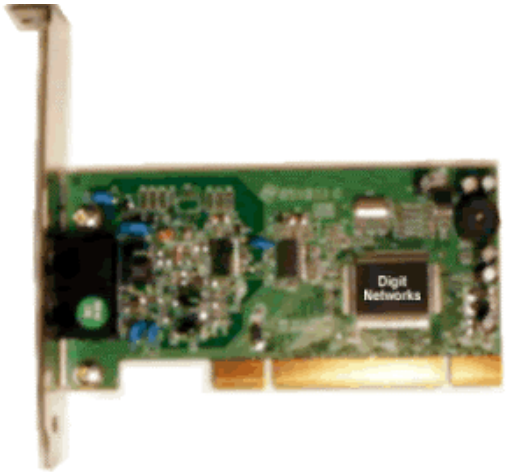
The Hardware Components

I have selected the Doorbell Fon™ for of its affordability and reliability. The System is comprised of two pieces of hardware: the **door box** and the **controller**. The door box is installed at your front door and is available with either a white or ivory plastic panel cover or more rugged brass or aluminum panel covers. The box has a speaker and a call button so you can speak with your visitor.



The second component, the controller is the brain of this intercom system. The unit is powered with standard AC electric current and connects to the door box via a pair of wires that can either come from your existing doorbell or a single pair of telephone wire.

The controller is designed to connect between the public telephone system and telephones within your home. To accommodate this purpose, it has two RJ14 jacks, one that connects to the telephone line coming into your home and the other that connects to a handset, or even multiple handsets, within your home. In addition to the two jacks, there is a wire connection panel that can accommodate two different doorbells. Each doorbell is connected via a negative and a positive lead to the controller.



Rather than using the Doorbell Fon with telephones that connect to a Plain Old Telephone System (POTS), I have set mine up to work with my Asterisk PBX. In order for the Asterisk computer to accommodate the controller, it needs to have an FXO port available. A simple Digium X100P (wildcard) clone card is sufficient since the voice quality

for the intercom is not as crucial as it might be for a telephone conversation. These cards can be bought for as little as $15 on eBay.

Connecting the Hardware

Connecting the Door Box and the Controller

You will want to mount the door box at your front door, of course. If you already have a front doorbell, you can simply disconnect the power to it at your house's breaker panel (carefully), and use this pair of wires to connect it to the controller. If you do not have an existing doorbell or want to use a new wire, standard telephone wiring can be used instead. Connect the negative and positive leads from the door box.

You will want to mount the controller near an AC electric outlet. Once mounted onto a flat surface, connect the two wires coming from the door box to the Door-Phone D1 negative and positive leads. Run a telephone wire with 2 RJ14 clips at either end from the Digium WildCard to the Controller's "LINE OUT" jack. Once this connected, plug in the controller to an AC Power source.

That is all of the settings and hardware that need to be in place to start using your new intercom doorbell. When the doorbell is rung, your visitor will hear 2 rings out of the intercom and then hold music, if it is enabled. Your phone extensions will continue to ring for up to 2 minutes or until you answer the phone. Because of the design of the Doorbell Fon, you will not be able to call it since it is not capable of receiving a call.

Installing the Digium Wildcard

The Digium X100P card plugs into an open IDE slot inside of your Asterisk PC. Once inserted, Asterisk@Home 2.7 is able to automatically configure the card with the **genzaptelconf** utility.

Go to the Linux prompt and type **genzaptelconf**. After you have run this then you should see something similar to the following:

```
Chan      Extension  Context         Language   MusicOnHold
pseudo               from-internal    en
          1          from-pstn        en
```

In the configuration above, Chan (channel) 1 has a context of **'from-pstn', which** is generated automatically from the **genzaptelconf** utility. Since you are not going to use this FXO port for standard phone calls (from-pstn) but rather for your doorbell a new context needs to be created for it. I have created a context called **from-doorbell-custom** in the **extentions_custom.conf** file. This context needs to be used by the WildCard that is in channel 1.

Edit the **Zapata-auto.conf** file. This file was created by the **genzaptelconf** utility that you ran earlier. You will find a section for each channel that is available in your Asterisk PC. You can identify the wildcard entry by its name next to Span 1 as WCFXO/0 or, WildCard FXO. Change the context from **from-pstn** to **from-doorbell-custom**, And save the file.

```
; Span 1: WCFXO/0 "Generic Clone Board 1" RED
signalling=fxs_ks
; Note: this is a trunk. Create a ZAP trunk in AMP for Channel 1
context=from-doorbell-custom
group=0
channel => 1
```

Now create the context in the **extentions_custom.conf** file. Remember, Asterisk@home reserves this file for defining your custom contexts. Add the following for text for defining your new context.

```
[from-doorbell-custom]
exten => s,1,Answer()
exten => s,2,Wait(1)
exten => s,3,SetCIDName(Doorbell)
exten => s,4,Queue(859|t|||60)        ; Doorbell
```

The context does the following: First, it answers the doorbell. Then it sets the caller ID to 'Doorbell'. And finally, it puts the call into a queue that you will define in a moment.

This last step is crucial. The controller for the Doorbell Fon is designed to only ring twice. If you do not answer the doorbell Fon within these 2 rings then it will hang up. By allowing Asterisk to answer the call immediately and place it into call queue number 859, you can take your time to get to the phone while playing hold music or a message to whoever is at the front door.

Setting up the queue

I have got 4 phone extensions around the house, so I like to have all 5 of them ring when someone is at the door. Go into the Asterisk Management Portal and Select **Queues**:

Setup–Queues-Add queue

Fill in the queue number and name, and list the extensions that should ring in the static agents field. Under 'Queue Options', select 2 minutes for the 'max wait time' so that in the event that nobody is home, the doorbell will be hung up on after 2 minutes. Under 'Agent timeout' select 1 minute and then select '0 seconds' for the 'retry'. Finally, select 'ring-all' for the 'ring strategy'. This will make all of the extensions ring simultaneously until one of them is picked up. Save the settings for the new queue by selecting 'Submit' at the bottom of the form.

About the Author

Kevin Flanagan owns and operates Cranmore Mt. Lodge, a ski lodge in the New Hampshire's White Mountains that has been totally outfitted with Asterisk@Home.