Down-sampling and converting sounds to use them in Asterisk

Applies to VoipNow 3.5!

Starting with VoipNow 3.5, it is possible to use sounds at higher quality. Before this latest version, all the sounds from Asterisk were encoded at 8KHz. From now on, all sounds files are updated to higher quality 16 KHz. Such sounds are already available for download here.

Step-by-step guide

Getting the sounds

Let's say we want to install a 16KHz French sounds pack recorded by June Wallack, on VoipNow 3.5. For that we need to download the proper archive.

```
mkdir /root/french
```

```
cd french
```

```
wget http://downloads.asterisk.org/pub/telephony/sounds/asterisk-core-sounds-fr-sln16-current.tar.gz
```

```
wget http://downloads.asterisk.org/pub/telephony/sounds/asterisk-extra-sounds-fr-sln16-current.tar.gz
```

Extract sounds from both archives and arrange those sounds in the correct format for a sound pack. Basically, all the sounds that are not part of a folder must go to a `fr` folder that you need to create.

```
mkdir fr
```

```
mv *.sln16 fr
```

In all the folders, except the newly created `fr`, there must be a fr sub-folder where all the sounds must go. For instance, all the sounds from the `dictate` folder must go in the `fr` sub-folder that must be created under `dictate`. At the end, the directory structure must have the following structure:

```
dictate
   fr
digits
   fr
followme
   fr
fr
ha
   fr
letters
   fr
phonetic
   fr
silence
   fr
wx
    fr
```

Converting to the required format

In order to convert from the `slin16` format to `wave`, we can use `sox`. The following command converts a sound to the proper format used by Asterisk:

```
sox -t raw -r 16k -e signed-integer -b 16 -c 1 <input>.sln16 output.wav
```

There are a lot of sounds in those folders. Using the following script, all sounds will be converted to the desired format:

```
#!/bin/bash
for i in `find /root/french -name '*sln16'`
    do
        final=${i:0:${#i} -6}.wav
        echo sox -t raw -r 16k -e signed-integer -b 16 -c 1 $i $final
        sox -t raw -r 16k -e signed-integer -b 16 -c 1 $i $final
        rm -rf $i
done
```

Once the sounds are converted, you need to move them to the folder used by Asterisk to store sounds and set the correct owner for those files:

```
cp -Rap * /var/lib/asterisk/sounds/
```

```
chown -R asterisk: /var/lib/asterisk/sounds/
```

At this point, you need to select **French** as **Phone language** in the **Edit User** section.

Down-sampling files the required format

If sounds are recorded in a professional way or with a professional recorder that is not able to record uncompressed wave at 16KHz**,** you may use the following command to down-sample those files:

```
sox sound.wav -e signed-integer -c 1 -b 16 -r 16k sound-down.wav
```

For an automated process, the following script will down-sample all the wave files from the `/root/sounds` folder (assuming they are stored there) to the required format used by Asterisk:

```
#!/bin/bash
for i in `find /root/sounds -name '*wav'`
    do
      final=${i:0:${#i} -4}-16k.wav
      echo sox $i -e signed-integer -c 1 -r 16k -b 16 $final
      sox $i -e signed-integer -c 1 -r 16k -b 16 $final
          rm -rf $i
      mv $final $i
done
```

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