

? FreePBX ??? RAMDisk ??????????????

?? <http://shyju.wordpress.com/2011/07/2...g-and-ramdisk/>

Asterisk call recording is resource intensive especially when the number of calls in the PBX is high. If you record all the calls directly to the HDD in asterisk pbx and you got a large call volume (number of calls) then it will damage your PBX's HDD very soon. On such cases using RAMDISK and separate HDD may solve the problem.

Install freepbx. If you are not using SAN use 2 HDDs for better results. One for OS+asterisk and one as a storage for recorded files. Here I'm using /record as the storage location and /astrec as the mount point for RAMDISK. Format and mount the 2nd HDD to /record at the time of OS installation(or create an fstab entry if you are doing it later). After installation give write permission or assign asterisk user as the owner of /record & /astrec.

```
/bin/chown -R asterisk.asterisk /record
/bin/mkdir /astrec
/bin/chown -R asterisk.asterisk /astrec
```

After the freepbx installation edit “/boot/grub/grub.conf” and put the the ramdisk size.

```
#boot=/dev/hda
default=0
timeout=5
splashimage=(hd0,0)/grub/splash.xpm.gz
hiddenmenu
title Elastix (2.6.18-194.3.1.el5)
    root (hd0,0)
    kernel /vmlinuz-2.6.18-194.3.1.el5 ro root=LABEL=/
ramdisk_size=1000000
initrd /initrd-2.6.18-194.3.1.el5.img
```

Here I used RAMDISK size as 1GB(1000000) . The size depends on the number of calls,the average time for one call,and the recording format.

Remove the 3 directories from asterisk spool directory because we are going to use ramdisk instead of those.

```
rm -rf /var/spool/asterisk/monitor
rm -rf /var/spool/asterisk/system
rm -rf /var/spool/asterisk/tmp
```

Edit the file “/etc/rc.local” and append the below code.

```
#Put this in rc.local to create ramdisk during bootup
/sbin/mke2fs -m 0 /dev/ram0
/bin/mount /dev/ram0 /astrec
/bin/mkdir /astrec/monitor
```

```

/bin/mkdir /astrec/system
/bin/mkdir /astrec/tmp
/bin/chown -R asterisk.asterisk /astrec
#For more infor on ramdisk:
#http://www.vanemery.com/Linux/Ramdisk/ramdisk.html

```

```

#Link asterisk's default folders to our ramdisk
/bin/ln -s /astrec/system /var/spool/asterisk
/bin/ln -s /astrec/tmp /var/spool/asterisk
/bin/ln -s /astrec/monitor /var/spool/asterisk

```

At the time of booting the above lines in rc.local creates RAMDISK and mount it to “/astrec”.

Create the file “/var/lib/asterisk/agi-bin/mvrec.sh” and put the below contents.

```

#!/bin/bash
/bin/mv $1/$2.$3 /record 3>&1 1>&2 2>&3 | tee /var/log/asterisk/mvrec.log

```

The above code will transfer the recorded file from RAMDISK to the location /record., Use the file “/var/log/asterisk/mvrec.log” for troubleshooting purpose. Make the script executable.

```
chmod 755 /var/lib/asterisk/agi-bin/mvrec.sh
```

Log in to freepbx interface and change the General Settings as shown in screen shot.

Extension Recording Override:Enabled

Call recording format: wav

Recording Location: /var/spool/asterisk/monitor/

Run after record: /var/lib/asterisk/agi-bin/mvrec.sh ^{MIXMON_DIR} ^{CALLFILENAME}
 ^{MIXMON_FORMAT}

Dialing Options

Asterisk Dial command options:

Asterisk Outbound Dial command options:

Call Recording

Extension Recording Override:

Call recording format:

Recording Location:

Run after record:

Voicemail

On FreePBX GUI goto “Extensions” and select one of the extensions in which you want to enable call recording.

If you are using Elastix change the recording directory in elastix monitoring configuration file.

```
/var/www/html/modules/monitoring/configs/default.conf.php
$arrConfModule['records_dir'] = '/record/';
```

Select the appropriate recording option.

```
Executing [macro-record-enable:20] ExecIf("SIP/604-0000003d", "0MacroExit()") in new stack
Executing [macro-record-enable:21] NoOp("SIP/604-0000003d", "Recording enable for 602") in new stack
Executing [macro-record-enable:22] Set("SIP/604-0000003d", "CALLFILENAME-20110727-135413-1311740579.61") in new stack
Executing [macro-record-enable:23] MixMonitor("SIP/604-0000003d", "/var/spool/asterisk/monitor/20110727-135413-1311740579.61.wav,./var/lib/asterisk/
in/wvrec.sh "(CALLFILENAME) "(MIXMON_FORMAT)" in new stack
Executing [macro-record-enable:24] Set("SIP/604-0000003d", "CDR(userfield)=audio:20110727-135413-1311740579.61.wav") in new stack
Executing [macro-record-enable:25] MacroExit("SIP/604-0000003d", "") in new stack
Executing [macro-exten-vn:9] Macro("SIP/604-0000003d", "dial,,r,602") in new stack
Executing [macro-dial:1] GotoIf("SIP/604-0000003d", "1dial") in new stack
Goto (macro-dial,s,3)

-- Spawn extension (macro-hangupcall, s, 12) exited non-zero on 'SIP/604-0000003d' in macro 'hangupcall'
-- Spawn extension (from-internal, h, 1) exited non-zero on 'SIP/604-0000003d'
-- MixMonitor close filestream
-- Executing [/var/lib/asterisk/agi-bin/wvrec.sh /var/spool/asterisk/monitor/ 20110727-135413-1311740579.61 wav]
-- End MixMonitor Recording SIP/604-0000003d
```

than from-internal context, don't forget to add the Macros. For example

[custom-checklock]

```
exten => _,1,NoOp(AMPUSER/${CALLERID(num)}/locked)
exten => _,n,Gotoif(${DB_EXISTS(AMPUSER/${CALLERID(num)}/locked)}=0)?carryon)
exten => _,n,Set(PINCOUNT=0)
;exten => _,n,Set(VALIDPIN=1234)
exten => _,n(readpin),Read(PIN,vm-password,4,,4)
exten => _,n,Gotoif(${PIN}=${VALIDPIN})?carryon)
exten => _,n,Gotoif(${PIN}=${DB(AMPUSER/${CALLERID(num)}/locked)})?carryon)
exten => _,n,Set(PINCOUNT=${PINCOUNT}+1)
exten => _,n,Playback(vm-incorrect)
exten => _,n,GotoIf(${PINCOUNT}>2]?h)
exten => _,n,Wait(1)
exten => _,n,Goto(readpin)
exten => _,n(carryon),Set(DB(AMPUSER/${CALLERID(num)}/unlocked)=${PIN})
exten => _,n,NoOp(${DB_DELETE(AMPUSER/${CALLERID(num)}/locked)})
;exten => _,n,Dial(DAHD1/g0/${EXTEN})
exten => _,n,Macro(user-callerid,SKIPTTL,)
exten => _,n,Macro(record-enable,${AMPUSER},OUT,)
exten => _,n,Macro(dialout-trunk,2,${EXTEN},)
exten => h,1,Macro(hangupcall,)
;exten => 911,1,Goto(CallingRule_Out39,${EXTEN},1)
;exten => h,1,Hangup
```

[custom-setlock]

```
exten => s,1,NoOp(In Set Lock)
exten => s,n,Gotoif(${DB_EXISTS(AMPUSER/${CALLERID(num)}/unlocked)}=1)?lockit)
exten => s,n,Gotoif(${DB_EXISTS(AMPUSER/${CALLERID(num)}/locked)}=0)?readit)
exten => s,n,Read(LOCKEY,vm-password,4,,4)
exten => s,n,Gotoif(${LOCKEY}=${DB(AMPUSER/${CALLERID(num)}/locked)})?readit)
exten => s,n,Playback(vm-pls-try-again)
exten => s,n,Hangup
exten => s,n(readit),Read(PIN1,vm-newpassword,4,,4)
exten => s,n,Read(PIN2,vm-reenterpassword,4,,4)
exten => s,n,Gotoif(${PIN1}=${PIN2})?okey)
```

```

exten => s,n,Playback(an-error-has-occured)
exten => s,n,Hangup
exten => s,n(okey),Set(DB(AMPUSER/${CALLERID(num)}/locked)=${PIN1})
exten => s,n,Playback(locked)
exten => s,n,Hangup
exten =>
s,n(lockit),Set(DB(AMPUSER/${CALLERID(num)}/locked)=${DB(AMPUSER/${CALLERID(num)}/unlocked)})
exten => s,n,NoOp(${DB_DELETE(AMPUSER/${CALLERID(num)}/unlocked)})
exten => s,n,Playback(locked)
exten => h,1,Hangup

```

[national]

```

include => from-internal
exten => _XXXXXXXX,1,Goto(custom-checklock,${EXTEN},1)

```

[international]

```

include => from-internal
exten => _XXXX.,1,NoOp(AMPUSER/${CALLERID(num)}/locked)
exten => _XXXX.,n,Goto(custom-checklock,${EXTEN},1)

```

[mobile]

```

include => from-internal
exten => 123,1,Goto(custom-setlock,s,1)
exten => _XXXXXXXX,1,Goto(custom-checklock,${EXTEN},1)
exten => _XXXXXXXX,1,Goto(custom-checklock,${EXTEN},1)

```

[change pw]

```

exten => s,1,Read(LOCKKEY,vm-password,4,,4)
exten => s,n,Gotoif(${${LOCKKEY}=2008}?okey)
exten => s,n,Hangup
exten => s,n(okey),Read(EXTNO,superlock,3,,4)
exten => s,n,Set(DB(AMPUSER/${EXTNO}/locked)=1234)
exten => s,n,Playback(locked)
exten => h,1,Hangup

```