testing environment

System: Rocky Linux (CentOS 8)
Dahdi-3.2.0
Asterisk-20
Libpri 1.6.0

download
Download the DAHDI source code package from the OpenVox official website
https://www.openvoxtech.com/pub/drivers/dahdi-linux-complete/openvox_dahdi-linux-complete-current.tar.gz
Get Libpri from Digium website:
https://downloads.asterisk.org/pub/telephony/libpri/libpri-current.tar.gz
Get Asterisk from Digium website:
https://downloads.asterisk.org/pub/telephony/asterisk/asterisk-18-current.tar.gz
Usually run the following command in the directory/etc/src/to download and decompress DAHDI, Asterisk, and Libpri:
#wget https://www.openvoxtech.com/pub/drivers/dahdi-linux-complete/openvox_dahdi-linux-complete-current.tar.gz
#wget https://downloads.asterisk.org/pub/telephony/asterisk/asterisk-20-current.tar.gz
#wget https://downloads.asterisk.org/pub/telephony/libpri/libpri-current.tar.gz
tar -xvzf openvox_dahdi-linux-complete-current.tar.gz
tar –xvzf asterisk-20-current.tar.gz
tar –xvzf libpri-current.tar.gz

install

Dependency package installation
Before installing DAHDI, please check if all dependency packages have been successfully installed. If the dependency packages have not been installed, it will result in subsequent software installations being unable to proceed smoothly
#dnf -y install epel-release
#dnf group -y install "Development Tools"
#dnf -y install git wget vim net-tools sqlite-devel psmisc bison ncurses ncurses-devel libtermcap-devel newt-devel libxml2-devel libtiff-devel gtk2-devel libtool libuuid-devel subversion initscripts kernel-devel kernel-devel-$(uname -r) crontabs cronie-anacron libedit libedit-devel zlib zlib-devel openssl openssl-devel gnutls-devel gcc gcc-c++
If no matching kernel level is found in the update source, it is necessary to download the matching RPM package for manual installation, or perform the following specified upgrade to the latest stable kernel version:
dnf install kernel kernel-devel
After installation, restart the system and apply the new kernel to continue the subsequent operations on the new kernel.
In the above dependency package detection process, if the dependency package has already

been installed, the system will prompt that it has been installed and will not continue to install this package. The user can run the next command to install other packages;
If not installed, it will be automatically installed until the system prompts for successful installation.

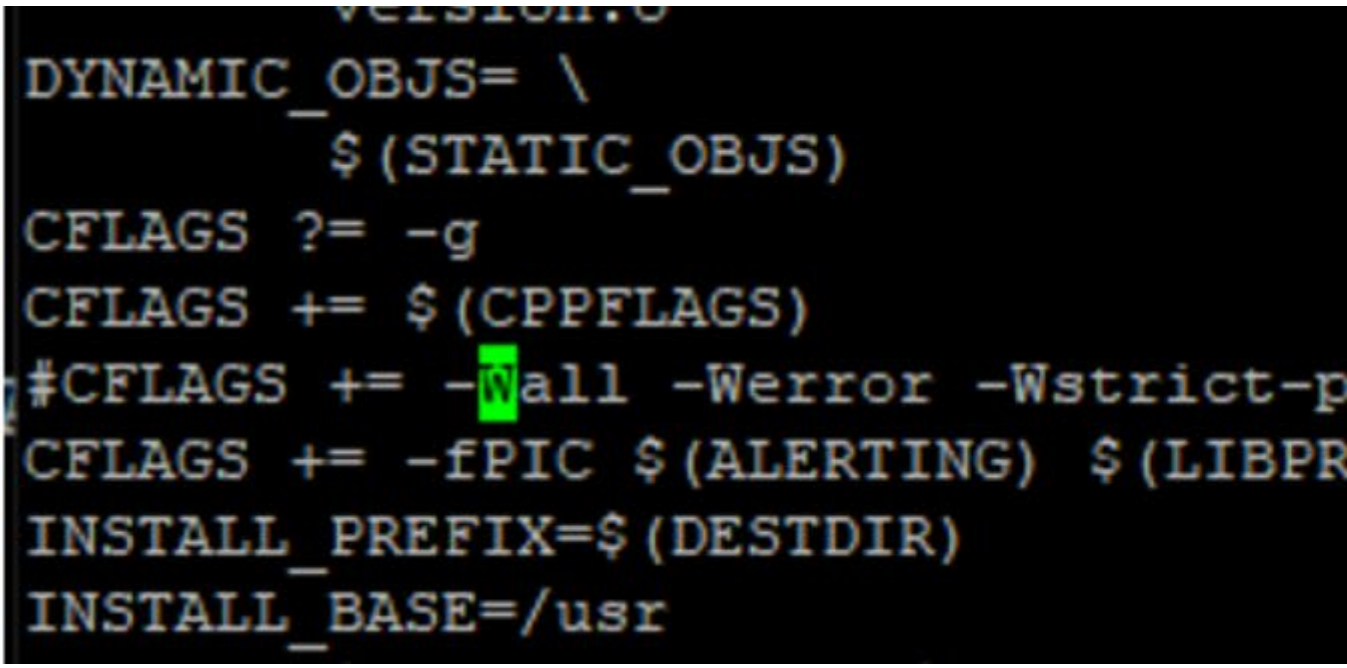
Dahdi installation
Convert the path to the directory of the dahdi linux-comple-XX source code package (XX represents the DAHDI version), and run the following command to install DAHDI:
cd /usr/src/dahdi-linux-complete-XX
make
make install
make config
#systemctl enable dahdi

Libpri installation
Convert the path to the directory where the libpri source code package is located, and run the following command to install Libpri:
cd libpri-XX
make
make install

Compiling encountered the following issues

```
gcc -g  -Wall -Werror -Wstrict-prototypes -Wmissing-pro
q921.c: In function 'q921_dump':
q921.c:1333:85: error: array subscript 0 is outside the
 1333 |                 if ((h->u.ft == 3) && (h->u.m3
      |
In file included from pri_internal.h:35,
                 from q921.c:38:
```

Solution: Annotate the - Wall line in the libpri-1.6.0/Makefile file file



Asterisk installation

Convert the path to the Asterisk source code package directory (XX represents Asterisk version), and run the following command to install Asterisk:

cd asterisk-20.xx

#contrib/scripts/install_prereq install

. /configure --libdir=/usr/lib64 --with-jansson-bundled=yes

make

make install

make samples

#systemctl enable asterisk

configuration

Load Driver

After compilation, please run the following instructions to load the driver according to the corresponding board model:

modprobe dahdi

#Modprobe zaphfc (B100 in TE mode)//If it is NT mode, then modprobe zaphfc modes=1 force_11_up=0

#Modprobe wcb4xxp (B200, B400, B800)//If B800 has an NT port, refer to the following diagram to explain how to set the te_nt_override value according to the corresponding NT port and then execute modprobe wcb4xxp te_nt_override=required value

dahdi_genconf -vvv

dahdi_cfg –vvvvvv

If B100 and B800 have NT ports, edit/etc/modprobe.d/dahdi.cnf according to the following diagram to automatically load parameters during startup

#vi /etc/modprobe.d/dahdi.conf

```
# You should place any module parameters for your DAHDI
# Example:
#
# options wctdm24xxp latency=6

# B100 in NT mode
options modprobe zaphfc modes=1 force_l1_up=0

#The default value of parameter te_nt_override=0xFF set
#ports as TE mode. "1" stands for TE,"0" stands for NT.
#example, if user wants to set port 1-2 to TE mode, port
#te_nt_override should be 0x03 (it is 0000 0011 in binar
#The system runs "modprobe wcb4xxp" with value 0xFF in d
#it will set all ports as TE mode , so it is necessary t
#wcb4xxp te_nt_override=0x03" for NT mode when the machi

#B800 port 1-2 to TE mode, port 3-8 to NT mode
options modprobe wcb4xxp te_nt_override=0x03
~
~
~
```

Under normal circumstances, after executing the command "dahdi_gengconf", the system will automatically generate two files:/etc/dahdi/system.exe and/etc/asterisk/dahdi-channels.exe. Check if the generated configuration file meets your requirements, or you can manually modify the relevant parameters. It is worth noting that it is confirmed that dahdi-channels.conf is included in chan_dahdi.conf. If not, please run the command:
echo "#include dahdi-channels.conf" >>/etc/asterisk/chan_dahdi.conf

Add the corresponding board driver to the/etc/dahdi/modules file to achieve automatic loading of board drivers during startup
vi /etc/dahdi/modules

```
# Contains the list of modules to be loaded / unloaded b
#
# NOTE:  Please add/edit /etc/modprobe.d/dahdi or /etc/m
#        would like to add any module parameters.
#
# Format of this file: list of modules, each in its own
# Anything after a '#' is ignore, likewise trailing and
# whitespaces and empty lines.

# Digium TE205P/TE207P/TE210P/TE212P: PCI dual-port T1/E
# Digium TE405P/TE407P/TE410P/TE412P: PCI quad-port T1/E
# Digium TE220: PCI-Express dual-port T1/E1/J1
# Digium TE420: PCI-Express quad-port T1/E1/J1


#OpenVox D130
opvxd115

#OpenVox D230
#OpenVox D430
#OpenVox D830
#OpenVox D1630
wct4xxp

-
#OpenVox B100
zaphfc

#OpenVox B200
#OpenVox B400
#OpenVox B800
wcb4xxp

#OpenVox A400
wctdm

#OpenVox A810
#OpenVox A1610
#OpenVox A2410
opvxa24xx

# Digium TE435
# Digium TE235
```

Using B100 board as an example to configure
The following shows a portion of the basic channel configuration file/etc/dahdi/systemconf:

```
# Span 1: ZTHFC1 "HFC-S PCI A ISDN card 0 [TE] " (MASTER)
span=1,1,0,ccs,ami
# termtype: te
bchan=1-2
hardhdlc=3
echocanceller=mg2,1-2
# Global data
loadzone = us
defaultzone = us
```

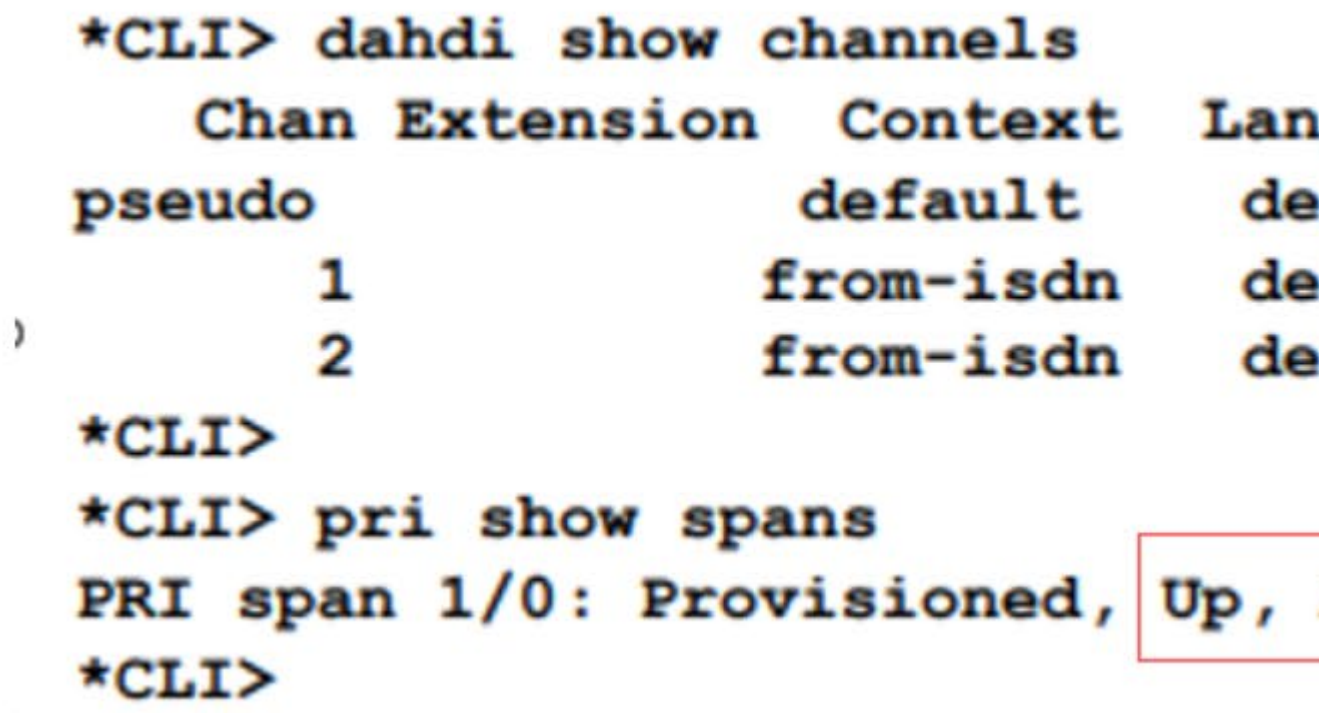
A part of the file/etc/asterisk/dahdi-channels.exe is shown in the following figure:

```
; Span 1: ZTHFC1 "HFC-S PCI A ISDN card 0 [TE] " (MASTER)
group=0,11
context=from-isdn
overlapdial=yes # must add this line
switchtype = euroisdn
signalling = bri_cpe_ptmp
channel => 1-2
context = default
group = 63
```

Start Asterisk

```
# asterisk -vvvvvgc
```

If Asterisk is already running, run 'asterisk-r' instead. In the CLI interface, please run Dahdi Show Channels "and" Pri Show Spans ":



Write a dialing plan

Please write a dial plan in the extensions.onf file. The following diagram illustrates a simple inbound and outbound plan:

#vi /etc/asterisk/extensions.conf

When a call comes in from the BRI board, SIP/100 will ring If the extension created is xxxx, modify it to sip/xxxx

[from-isdn]

exten => _X.,1,Dial(SIP/100,,r)

exten => _X.,n,Hangup()

When the extension is set to 'from internet', outgoing calls will be sent from E1 card dahdi/1 (where 1 represents channel 1), with ${INTERN} being the called number

[from-internal]

exten => _X.,1,Dial(dahdi/1/${EXTEN},,r)

exten => _X.,n,Hangup()

After setting up the dial plan, please run "asterisk-r" and execute the command "dialplan reload" in the CLI interface, and then you can dial