

Installation d'Asterisk

```
|useradmin1@debian:~$ apt get install asterisk
```

L'arrêt et le redémarrage d'Asterisk peuvent se faire à l'aide de la commande service.

```
|useradmin1@debian:~$ systemctl restart asterisk
```

Les clients SIP peuvent utiliser les ports TCP et UDP 5060 pour se connecter au serveur. Le port 5061 est utilisé dans le cas d'une utilisation de TLS. La commande ps permet de vérifier que notre serveur est prêt. Il est aussi possible d'utiliser la commande service asterisk status.

```
|useradmin1@debian:~$ ps -ef|grep asterisk
```

Interface en ligne de commande d'Asterisk :

```
root@debian:/# sudo asterisk -r www
Asterisk 16.16.1~dfsg-1, Copyright (C) 1999 - 2018, Digium, Inc. and others.
Created by Mark Spencer <markster@digium.com>
Asterisk comes with ABSOLUTELY NO WARRANTY; type 'core show warranty' for details.
This is free software, with components licensed under the GNU General Public
License version 2 and other licenses; you are welcome to redistribute it under
certain conditions. Type 'core show license' for details.
=====
Connected to Asterisk 16.16.1~dfsg-1 currently running on debian (pid = 663)
debian*CLI>
```

Créer un utilisateur :

```
|root@debian:/# cd /etc/asterisk
|root@debian:/etc/asterisk# nano users.conf
```

```

GNU nano 5.4                                users.conf
[general]
hasvoicemail = yes
hassip = yes

[template](!)
type = friend
host = dynamic
dtmfmode = rfc2833
disallow = all
allow = ulaw
allow = alaw

[0120](template)
fullname = John
username = JOJO
secret = 1234 ;
mailbox = 0120
context = finance

[0121](template)
[ Lecture de 32 lignes ]
^G Aide      ^O Écrire    ^W Chercher  ^K Couper    ^T Exécuter
^X Quitter   ^R Lire fich.^_ Remplacer  ^U Coller    ^J Justifier

```

Creation du DiaPlan

```

GNU nano 5.4                                extensions.conf
[general]
static = yes
writeprotect = yes
clearglobalvars = yes

[finance]
exten => _01XX,1,DIAL(SIP/${EXTEN},10)
exten => _01XX,2, HangUp()

```

Après avoir redémarrer le service Asterisk, on peut vérifier la prise en compte du « Dial plan » :

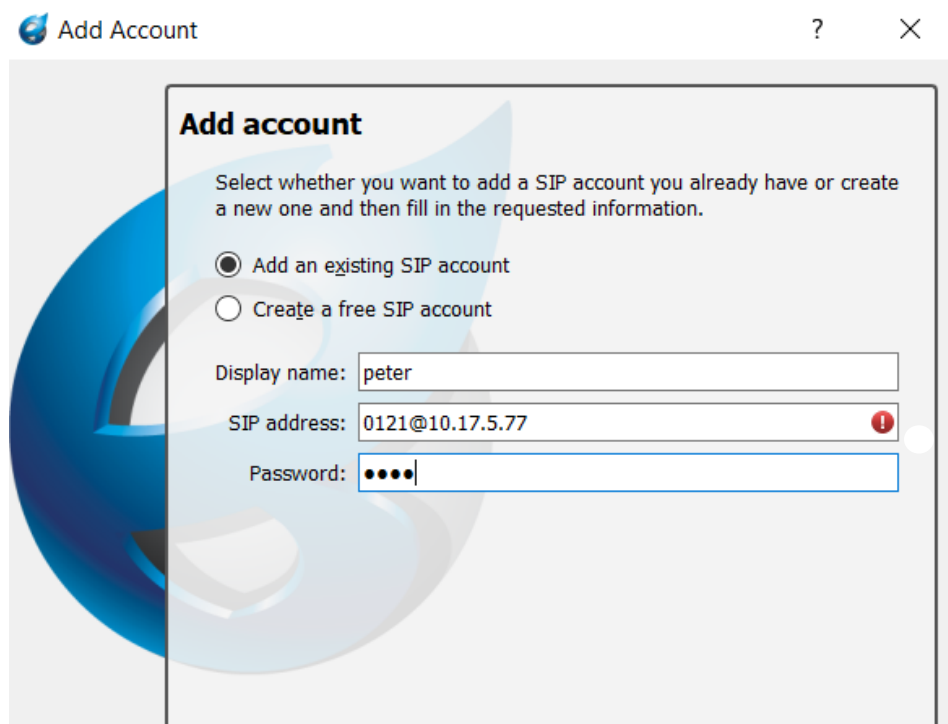
```

debian*CLI> diaplan show
No such command 'diaplan show' (type 'core show help diaplan show' for other possible commands)
debian*CLI> dialplan show
[ Context 'default' created by 'pbx_config' ]
'0120' =>          hint: SIP/0120                      [pbx_config]
                1. Gosub(0120,stdexten(${HINT}))      [pbx_config]
'0121' =>          hint: SIP/0121                      [pbx_config]
                1. Gosub(0121,stdexten(${HINT}))      [pbx_config]
'0122' =>          hint: SIP/0122                      [pbx_config]
                1. Gosub(0122,stdexten(${HINT}))      [pbx_config]
'1234' =>          hint: SIP/1234                      [pbx_lua]
Alt. Switch =>    'Lua/'                               [pbx_lua]

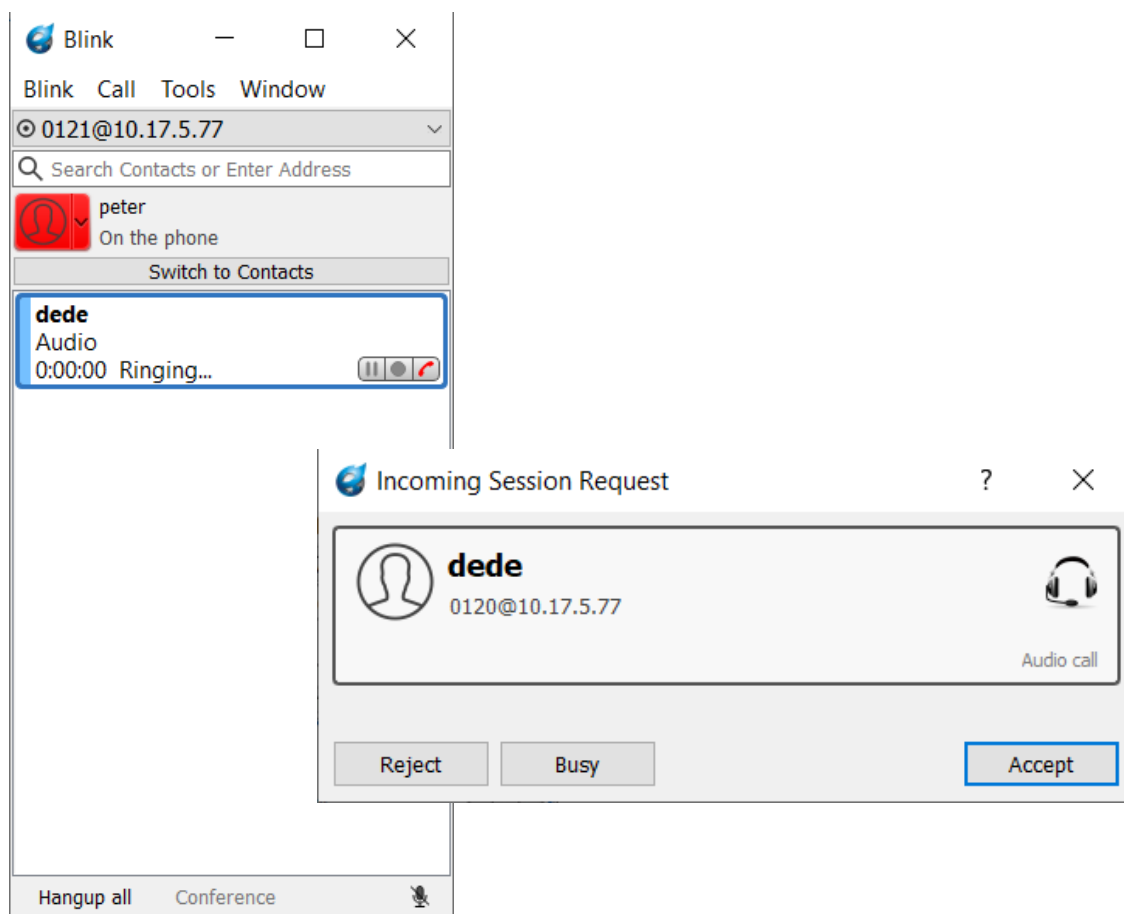
[ Context 'public' created by 'pbx_lua' ]
Alt. Switch =>    'Lua/'                               [pbx_lua]

```

Blink :



Je vais appeler mon second utilisateur et inversement :



Wireshark :

The screenshot shows the Wireshark interface with the filter `ip.addr == 10.17.5.77`. The packet list displays several SIP and DHCP messages. The packet details pane shows the structure of a DHCP Request (Frame 126).

No.	Time	Source	Destination	Protocol	Length	Info
20291	2558.7442065...	10.17.5.85	10.17.5.77	SIP	559	Status: 200 OK
20293	2559.2419467...	10.17.5.77	10.17.5.85	SIP	699	Request: NOTIFY sip:676
20294	2559.2441861...	10.17.5.85	10.17.5.77	SIP	559	Status: 200 OK
20299	2560.2417170...	10.17.5.77	10.17.5.85	SIP	699	Request: NOTIFY sip:676
20300	2560.2440250...	10.17.5.85	10.17.5.77	SIP	559	Status: 200 OK
20304	2562.2417852...	10.17.5.77	10.17.5.85	SIP	699	Request: NOTIFY sip:676
20305	2562.2437776...	10.17.5.85	10.17.5.77	SIP	559	Status: 200 OK
20325	2566.2414783...	10.17.5.77	10.17.5.85	SIP	699	Request: NOTIFY sip:676

Frame 126: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface ens33, id 0
 Ethernet II, Src: VMware_d9:c0:15 (00:0c:29:d9:c0:15), Dst: CiscoMer_77:48:00 (34:56:fe:77:48:00)
 Internet Protocol Version 4, Src: 10.17.5.77, Dst: 10.250.56.7
 User Datagram Protocol, Src Port: 68, Dst Port: 67
 Dynamic Host Configuration Protocol (Request)

The packet bytes pane shows the raw data of the DHCP Request, including Ethernet II, IP, UDP, and DHCP fields.

wireshark_ens33NI0Q90.pcapng Paquets: 20944 · Affichés: 680 (3.2%) Profile: Default

Je communique avec le second utilisateur :

The screenshot shows the Wireshark interface with the filter `ip.addr == 10.17.5.77`. The packet list displays SIP and ICMP messages. The packet details pane shows the structure of a DHCP Request (Frame 126).

No.	Time	Source	Destination	Protocol	Length	Info
22225	3270.8928519...	10.17.5.77	10.17.5.60	SIP/SDP	885	Request: INVITE sip:794
22226	3270.8954715...	10.17.5.60	10.17.5.77	RTCP	106	Receiver Report Source
22227	3270.8954716...	10.17.5.60	10.17.5.77	RTP	60	PT=ITU-T G.711 PCMU, SS
22228	3270.8954716...	10.17.5.60	10.17.5.77	RTCP	106	Receiver Report Source
22229	3270.8963603...	10.17.5.77	10.17.5.60	ICMP	134	Destination unreachable
22230	3270.8964804...	10.17.5.77	10.17.5.60	ICMP	134	Destination unreachable
22232	3270.9011586...	10.17.5.94	10.17.5.77	SRTP	106	Receiver Report Source
22233	3270.9012250...	10.17.5.77	10.17.5.94	ICMP	134	Destination unreachable

Frame 126: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface ens33, id 0
 Ethernet II, Src: VMware_d9:c0:15 (00:0c:29:d9:c0:15), Dst: CiscoMer_77:48:00 (34:56:fe:77:48:00)
 Internet Protocol Version 4, Src: 10.17.5.77, Dst: 10.250.56.7
 User Datagram Protocol, Src Port: 68, Dst Port: 67
 Dynamic Host Configuration Protocol (Request)

The packet bytes pane shows the raw data of the DHCP Request, including Ethernet II, IP, UDP, and DHCP fields.

wireshark_ens33NI0Q90.pcapng Paquets: 23197 · Affichés: 811 (3.5%) Profile: Default

Le second utilisateur appel le premier :

No.	Time	Source	Destination	Protocol	Length	Info
26452	3604.4383482...	10.17.5.60	10.17.5.77	SIP	414	Request: ACK sip:0121@1
26453	3604.4394646...	10.17.5.60	10.17.5.77	SIP/SDP	1179	Request: INVITE sip:012
26454	3604.4407261...	10.17.5.77	10.17.5.60	SIP	555	Status: 100 Trying
26455	3604.4426038...	10.17.5.77	10.17.5.94	SIP/SDP	882	Request: INVITE sip:930
26456	3604.4455582...	10.17.5.94	10.17.5.77	SIP	351	Status: 100 Trying
26457	3604.5303067...	10.17.5.94	10.17.5.77	SIP	514	Status: 180 Ringing
26458	3604.5307088...	10.17.5.77	10.17.5.60	SIP	571	Status: 180 Ringing

No.	Time	Source	Destination	Protocol	Length	Info
27212	3714.1288915...	10.17.5.77	10.17.5.60	SIP/SDP	838	Request: INVITE sip:794
27213	3714.1343865...	10.17.5.60	10.17.5.77	SRTCP	106	Receiver Report Sourc
27214	3714.1343866...	10.17.5.60	10.17.5.77	RTP	60	PT=ITU-T G.711 PCMU, SS
27215	3714.1343866...	10.17.5.60	10.17.5.77	SRTCP	106	Receiver Report Sourc
27216	3714.1344401...	10.17.5.77	10.17.5.60	ICMP	134	Destination unreachable
27217	3714.1345581...	10.17.5.77	10.17.5.60	ICMP	134	Destination unreachable
27218	3714.1355032...	10.17.5.94	10.17.5.77	SIP/SDP	905	Status: 200 OK
27219	3714.1361082...	10.17.5.77	10.17.5.94	SIP	458	Request: ACK sip:930241

INVITE : Le client demande une nouvelle session

ACK : Accusé de réception

REGISTER : Permet de s'enregistrer auprès de l'IPBX

Ringing : Entrain d'appeler le destinataire