



Траблшутинг связи в Asterisk. Рассмотрение и дебаг наиболее часто встречающихся проблем



Частые проблемы:



- Слышимость
- Регистрации
- Прохождение вызовов
- Обрывы вызовов

Чтение log'a Asterisk



Ключевые слова и метки:

- WARNING, NOTICE, Registered...
- C-00000000 метка вызова
- Переменные диалплана (dialplan show)

Использование утилит



- Fgrep, cat, egrep
- Регулярные выражения, основанные на служебных символах и словах
- Sip (iax2) show peers/registry
- Вывод подробной информации по подключениям, получение нужной информации

Дампы и Debug



- Снимаем дампы по нужным портам:
 - UDP 5060,5061,5062
- Используем sip/iax2 set debug <peer>/<ip>
- Обращаем внимание на поля в пакетах
 - From, To, Contact...
- Использование дампа на конечном устройстве (ПК с софтбоном), через Wireshark

```
192.168.170.157:5060      37.139.38.17:5060      37.139.38.35
10:27:45.285437          INVITE (SDP)           >
+0.040369               407 Proxy Authentication R
10:27:45.325806          <
+0.000212               ACK                    >
10:27:45.326018          INVITE (SDP)           >
+0.000106               100 trying -- your call is
10:27:45.326124          <
+0.041998               200 OK (SDP)          >
10:27:45.368122          <
+3.034806               ACK                    >
10:27:48.402928          <
+0.000493               ACK                    >
10:27:48.403421          <
RTP (g711a) 887         >
10:27:48.417085          38660
RTP (g711a) 954         >
10:27:48.460451          38660 <
RTP (telephone-event/8000) 71 >
10:27:52.757629          38660
+19.187265
10:28:07.590686          <
BYE
```


RTP показатели влияющие на качество

Анализ RTP, разбор показателей

No.	Time	Source	Destination	Protocol	Length	Info
1	2021-09-10 10:30:45,350755	192.168.170.157	37.139.38.17	SIP/SDP	834	Request: INVITE sip:74959898533@sip.zadarma.com
2	2021-09-10 10:30:45,391043	37.139.38.17	192.168.170.157	SIP	519	Status: 407 Proxy Authentication Required
3	2021-09-10 10:30:45,391261	192.168.170.157	37.139.38.17	SIP	455	Request: ACK sip:74959898533@sip.zadarma.com
4	2021-09-10 10:30:45,391440	192.168.170.157	37.139.38.17	SIP/SDP	1089	Request: INVITE sip:74959898533@sip.zadarma.com
5	2021-09-10 10:30:45,433575	37.139.38.17	192.168.170.157	SIP	380	Status: 100 trying -- your call is important to us
6	2021-09-10 10:30:48,635846	37.139.38.17	192.168.170.157	SIP/SDP	837	Status: 200 OK
7	2021-09-10 10:30:48,636210	192.168.170.157	37.139.38.17	SIP	479	Request: ACK sip:74959898533@37.139.38.61:5060
8	2021-09-10 10:31:00,714338	37.139.38.17	192.168.170.157	SIP	560	Request: BYE sip:37.139.38.61@83.239.229.105:5060
9	2021-09-10 10:30:48,656195	192.168.170.157	37.139.38.61	RTP	216	PT=ITU-T G.711 PCMA, SSRC=0x609E6875, Seq=20177, Time=160
10	2021-09-10 10:30:48,675724	192.168.170.157	37.139.38.61	RTP	216	PT=ITU-T G.711 PCMA, SSRC=0x609E6875, Seq=20178, Time=320
11	2021-09-10 10:30:48,695696	192.168.170.157	37.139.38.61	RTP	216	PT=ITU-T G.711 PCMA, SSRC=0x609E6875, Seq=20179, Time=480
12	2021-09-10 10:30:48,710931	37.139.38.61	192.168.170.157	RTP	216	PT=ITU-T G.711 PCMA, SSRC=0x570D3997, Seq=12890, Time=3520566288, Mark
13	2021-09-10 10:30:48,715823	192.168.170.157	37.139.38.61	RTP	216	PT=ITU-T G.711 PCMA, SSRC=0x609E6875, Seq=20180, Time=640
14	2021-09-10 10:30:48,735862	37.139.38.61	192.168.170.157	RTP	216	PT=ITU-T G.711 PCMA, SSRC=0x570D3997, Seq=12891, Time=3520566448
15	2021-09-10 10:30:48,736085	192.168.170.157	37.139.38.61	RTP	216	PT=ITU-T G.711 PCMA, SSRC=0x609E6875, Seq=20181, Time=800
16	2021-09-10 10:30:48,750858	37.139.38.61	192.168.170.157	RTP	216	PT=ITU-T G.711 PCMA, SSRC=0x570D3997, Seq=12892, Time=3520566608

Wireshark · Поток RTP · dump_test.pcap

Адрес Источника	Порт Источника	Адрес Получателя	Порт Получателя	SSRC	Полезная Нагрузка	Пакеты	Потеряно	Максимальная Дельта (мс)	Максимальный Джиттер	Средний Джиттер
37.139.38.61	19298	192.168.170.157	39240	0x570d3997	g711A	587	10 (1.7%)	119.878	6.550	1.503
192.168.170.157	39240	37.139.38.61	19298	0x609e6875	g711A, telephone-event	594	15 (2.5%)	141.662	22.371	1.183

Alias'ы для работы

- alias rm='rm -i'...
- Статические alias'ы в файле ~/.bashrc
- Создание alias'a для ранее рассмотренных способов работы с логом Asterisk, как пример: fegrep () { cat \$1 | egrep \$2; }

```
[root@test ~]# fegrep /var/log/asterisk/full "[0-9]{3,}@%"
[2021-09-10 10:26:59] VERBOSE [30489] [C-0000000a] pbx.c: Executing [101@from-internal:1] GotoIf("SIP/102-0000000e", "1?ext-local,101,1:followme-check,101,1") in new stack
[2021-09-10 10:27:02] VERBOSE [30512] [C-0000000b] pbx.c: Executing [84959898533@from-internal:1] Macro("SIP/102-0000000f", "user-callerid,LIMIT,EXTERNAL,") in new stack
[2021-09-10 10:27:04] VERBOSE [30512] [C-0000000b] pbx.c: Executing [84959898533@from-internal:2] Gosub("SIP/102-0000000f", "sub-record-check,s,1(out,84959898533,dontcare)") in new stack
[2021-09-10 10:27:04] VERBOSE [30512] [C-0000000b] pbx.c: Executing [84959898533@from-internal:3] Set("SIP/102-0000000f", "MOHCLASS=default") in new stack
[2021-09-10 10:27:05] VERBOSE [30512] [C-0000000b] pbx.c: Executing [84959898533@from-internal:4] Set("SIP/102-0000000f", "NODEST=") in new stack
[2021-09-10 10:27:05] VERBOSE [30512] [C-0000000b] pbx.c: Executing [84959898533@from-internal:5] Macro("SIP/102-0000000f", "dialout-trunk,10,84959898533,,off") in new stack
[2021-09-10 10:27:45] VERBOSE [30559] [C-0000000c] pbx.c: Executing [84959898533@from-internal:1] Macro("SIP/102-00000011", "user-callerid,LIMIT,EXTERNAL,") in new stack
[2021-09-10 10:27:45] VERBOSE [30559] [C-0000000c] pbx.c: Executing [84959898533@from-internal:2] Gosub("SIP/102-00000011", "sub-record-check,s,1(out,84959898533,dontcare)") in new stack
[2021-09-10 10:27:45] VERBOSE [30559] [C-0000000c] pbx.c: Executing [84959898533@from-internal:3] Set("SIP/102-00000011", "MOHCLASS=default") in new stack
[2021-09-10 10:27:45] VERBOSE [30559] [C-0000000c] pbx.c: Executing [84959898533@from-internal:4] Set("SIP/102-00000011", "NODEST=") in new stack
[2021-09-10 10:27:45] VERBOSE [30559] [C-0000000c] pbx.c: Executing [84959898533@from-internal:5] Macro("SIP/102-00000011", "dialout-trunk,10,84959898533,,off") in new stack
[2021-09-10 10:30:45] VERBOSE [30728] [C-0000000d] pbx.c: Executing [84959898533@from-internal:1] Macro("SIP/102-00000013", "user-callerid,LIMIT,EXTERNAL,") in new stack
[2021-09-10 10:30:45] VERBOSE [30728] [C-0000000d] pbx.c: Executing [84959898533@from-internal:2] Gosub("SIP/102-00000013", "sub-record-check,s,1(out,84959898533,dontcare)") in new stack
[2021-09-10 10:30:45] VERBOSE [30728] [C-0000000d] pbx.c: Executing [84959898533@from-internal:3] Set("SIP/102-00000013", "MOHCLASS=default") in new stack
[2021-09-10 10:30:45] VERBOSE [30728] [C-0000000d] pbx.c: Executing [84959898533@from-internal:4] Set("SIP/102-00000013", "NODEST=") in new stack
[2021-09-10 10:30:45] VERBOSE [30728] [C-0000000d] pbx.c: Executing [84959898533@from-internal:5] Macro("SIP/102-00000013", "dialout-trunk,10,84959898533,,off") in new stack
[root@test ~]#
```


Спасибо за внимание!

У кого-нибудь есть вопросы?

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