

SCOPEL IP PBX Software - Troubleshooting

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General Troubleshooting

Most telephony errors are caused by one of the following causes:

- Bad authentication credentials
- DNS resolution
- Class of Service misconfigurations
- Firewall issues
- Asterisk bugs
- User error (DND, call forwarding etc.)

CLI tools are used to debug most of these issues

Log files

- Server Logs: /var/log/messages
- SMTP Logs: /var/log/maillog
- Hardware Logs: dmesg
- Asterisk Logs: /var/log/asterisk/messages
- Asterisk Files: /etc/asterisk
- SCOPSERV PHP logs: /tmp/php2.log
- Asterisk Core Dumps (GDB files): dir /tmp/core*

SIP Response Codes 3XX

Redirection	3xx	
300	Multiple Choices	
301	Moved Permanently	
302	Moved Temporarily	
305	Use Proxy	
380	Alternative Service	

SIP Response Codes 4XX

Request Failure	4xx	
400	Bad Request	
401	Unauthorized	
402	Payment Required	
403	Forbidden	
404	Not Found	
405	Method Not Allowed	

406	Not Acceptable	
407	Proxy Authentication Required	
408	Request Timeout	
410	Gone	
412	Conditional Request Failed	[RFC3903]
413	Request Entity Too Large	
414	Request-URI Too Long	
415	Unsupported Media Type	
416	Unsupported URI Scheme	
417	Unknown Resource-Priority	[RFC4412]
420	Bad Extension	
421	Extension Required	
422	Session Interval Too Small	[RFC4028]
423	Interval Too Brief	
424	Bad Location Information	[RFC6442]
428	Use Identity Header	[RFC4474]
429	Provide Referrer Identity	[RFC3892]
430	Flow Failed	[RFC5626]
433	Anonymity Disallowed	[RFC5079]
436	Bad Identity-Info	[RFC4474]
437	Unsupported Certificate	[RFC4474]
438	Invalid Identity Header	[RFC4474]
439	First Hop Lacks Outbound Support	[RFC5626]
440	Max-Breadth Exceeded	[RFC5393]
469	Bad Info Package	[RFC6086]
470	Consent Needed	[RFC5360]
480	Temporarily Unavailable	
481	Call/Transaction Does Not Exist	
482	Loop Detected	
483	Too Many Hops	
484	Address Incomplete	
485	Ambiguous	
486	Busy Here	
487	Request Terminated	
488	Not Acceptable Here	
489	Bad Event	[RFC6665]
491	Request Pending	
493	Undecipherable	
494	Security Agreement Required	[RFC3329]

SIP Response Codes 5XX

Server Failure	5xx	
500	Server Internal Error	
501	Not Implemented	
502	Bad Gateway	
503	Service Unavailable	
504	Server Time-out	
505	Version Not Supported	
513	Message Too Large	
580	Precondition Failure	[RFC3312]

SIP Response Codes 6XX

Global Failure	6xx	
600	Busy Everywhere	
603	Decline	
604	Does Not Exist Anywhere	
606	Not Acceptable	

OS CLI Commands

<code>SCOPSERV_yum update</code>	executes a full software update
<code>SCOPSERV_yum install <package name></code>	installs a package from repositories
<code>SCOPSERV_dumpkey</code>	displays license and admin password
<code>dkms status</code>	shows install status of dahdi wanpipe mISDN drivers
<code>asterisk -r</code>	opens Asterisk CLI for Asterisk command line debugging
<code>asterisk -vr</code>	opens Asterisk CLI for Asterisk command line debugging with increased verbosity
<code>lsof -i :5555</code>	shows which service is using port 5555
<code>rpm -qa <package name></code>	shows package version
<code>rpm -e <package name> --nodeps</code>	removes package without uninstalling dependencies
<code>rpm -qa grep <package name></code>	shows installed packages version
<code>chown -R SCOPSERV:SCOPSERV /<path></code>	changes ownership recursively on a path
<code>kill -KILL <pid></code>	kills a process ID
<code>htop</code>	shows all processes and consumption
<code>top</code>	shows all processes and consumption
<code>ngrep -d any port 25 -W BYLINE</code>	network trace on port 25 to debug SMTP issues
network trace on port 25 to debug SMTP issues	Linux DNS lookup for MX record on specified domain
<code>rm -rf /root/.ssh/known_hosts</code>	<code>rm -rf /root/.ssh/known_hosts</code>

wget <package path>	CLI command to download a file from path
ngrep -d port any 69	network trace on port 69 to display TFTP traffic
cat /<path>	display contents of file to screen
nano /<path>	Linux text editor to edit path
service <service name> > restart	restart network without rebooting server
service <service name> > stop	stop service name without rebooting server
service <service name> > status	display service name status
reboot	reboot server
shutdown -h now	shutdown server
lynx <website address> >	Linux command line web browser
lynx <website address> >	Ping an IP address
lynx <website address> >	trace an IP address through multiple hops
tcpdump -nq -s 0 -i eth0 -w /tmp/sip.pcap port not ssh	saves a SIP pcap trace to /tmp using eth0
ps auwwwwx grep crond	prints all crond PID's
rpm -e --allmatches <package name> -nodeps	removes the package name without dependencies
rpm -e <package name> --nodeps -noscripts	removes a broken package forcibly
route	prints the routing table
ifconfig	The "ifconfig" command allows the operating system to setup network interfaces and allow the user to view information about the configured network interfaces.

Asterisk CLI Commands

core show channels	display active channels
sip show peers	show all SIP peers status
sip show peer <peer>	show details of SIP peer
database show	display astDB info (useful to see if a phone is in DND status)
queue show	displays all ACD queues info
pri show spans	displays status of all PRI spans
pri intense debug span 	shows Q.931 and SABME messages
pri set debug of span 	stop intense PRI debugging on span number

hangup request <channel> <all>	Request that a channel be hung up. The hangup takes effect the next time the driver reads or writes from the channel. If 'all' is specified instead of a channel name, all channels will see the hangup request.
core show hints	This command lists registered hints
agi set debug on	prints agi debug messages (always useful when creating a support ticket)
sip set debug <on/off>	prints SIP messages to the CLI

Database Repair Commands

mysqlcheck -A -o -r	Automatically optimizes and repairs mysql tables. If crashed on Slave (HA) then this need to be done on slave and not master
---------------------	--

If you have to rebuild queue_log db :

- service SCOPSERV_queueolog stop
- `` /var/www/SCOPSERV/telephony/scripts/queue2sql.pl --recover /var/log/asterisk/queue_log ``
- service SCOPSERV_queueolog start

Update CDR database direction mysql SCOPSERV (enter) update cdr set calldir='unknown';

MySQL Repair is Taking Too Long

If the Server is not configured in High Availability Mode (standard installation):

```
mysql SCOPSERV

truncate cel;
truncate phones_history;
truncate horde_histories;
```

If the Server is configured in High Availability Mode:

```
mysql SCOPSERV_repl

truncate cel;
truncate phones_history;
truncate horde_histories;
```

SCOPTEL GUI is Slow

mysqlcheck -A -o -r : Automatically optimizes and repairs mysql tables. If crashed on Slave (HA) then this need to be done on slave and not master

SCOPSERV_yum update : Older packages, especially prior to SCOPSERV_realtime nodejs changes are not fully optimized
Telephony>Configuration>Reports (CDR/ACD)>Archiving>Enable Archiving :[x]

The screenshot shows the SCOPTEL GUI configuration page for Reports (CDR/ACD) Archiving. The navigation tabs at the top include General, Telephony Modules, Advanced Modules, Commit Menu, Features Code, Call Parking, Voicemail, Virtual Fax, Logging and Errors, and Reports (CDR/ACD). The Reports (CDR/ACD) tab is selected. The configuration options are:

- Enable CDR logging?: Warning: Please note that if you uncheck this option, no CDR reports will be available!
- Enable Queue (ACD) logging?: Warning: Please note that if you uncheck this option, no Queue (ACD) reports will be available!
- Date Format display: 2013-12-19 (Default: 2013-12-19)
- Archiving section:
 - Enable Archiving ? (circled in red)
 - Archive Mode: Year(s) (Default: Year(s))

SCOPEL GUI Will Not Restart

mysqlcheck -A -o -r	Automatically optimizes and repairs mysql tables. If crashed on Slave (HA) then this need to be done on slave and not master
service SCOPSERV stop	Stops the GUI service and realtime
lsof -i :5555	Displays the PID that is bound to the SCOPSERV service port
kill -KILL <PID output of lsof -l 5555>	Kills the PID bound to the SCOPSERV port
service SCOPSERV start	Starts the GUI once the binding port is freed

SCOPEL GUI Fatal Error and Dead Call Processing

- Most often this is caused by a full hard drive
- You must delete files on the hard drive to restore call processing
- Usually this is caused by:
 - Too many local backups
 - Too many recording files in /var/spool/asterisk/monitor/
 - Too many files in /var/log/asterisk/
 - Too many files in /tmp/
- To locate the largest folders do:

cd /	Change to root directory
du * -s	Print Disk Usage Summary and locate the largest folder

- Use the 'cd' command to change into the largest directory
- Use the Linux 'rm' command to remove files
- Keep drilling down from / and use the 'du * -s' command to locate the largest folders and keep deleting files with the 'rm' command until you have freed enough space in the file system to restore normal service.

Debugging Authentications Failures

Here is a typical authentication failure in Asterisk. The reason for this failure is that peer 228 does not exist!

```
[root@demo ~]# asterisk -vr
```

```
ERV'  
sk 1.8.12.0 currently running on demo (pid = 6006)
```

```
han_sip.c:24974 handle_request_register: Registration from "228"<sip:228@SCOPSERV.local> failed for "
```

Here is a typical authentication failure in Asterisk. The reason for this failure is that the password does not match!

```
[root@demo ~]# asterisk -vr
```

```
COPSERV'  
sk 1.8.12.0 currently running on demo (pid = 6006)
```

```
han_sip.c:24974 handle_request_register: Registration from "227"<sip:227@SCOPSERV.local> failed f
```

Here is a typical authentication success in Asterisk

```
[root@demo ~]# asterisk -vr
```

```
4:41:46] Running as group 'SCOPSERV'  
4:41:46] Connected to Asterisk 1.8.12.0 currently running on demo (pid = 6006)  
is at least 3  
g is at least 3  
01 14:56:00] NOTICE[6260]: chan_sip.c:20812 handle_response_peerpoke: Peer '227' is now Reachable.
```

Debugging Call Failures With 'database show'

In this first example a call from 227 to 221 fails to ring 221

```
default-local] new state InUse for Notify User 221  
default:9] Macro("SIP/227-00000005", "default-dial,SIP/221,221,default,,en,u221@default,twWxXkKg,,def  
t-dial:1] NoOp("SIP/227-00000005", ""CALL TO LOCAL EXTENSION FROM 227(227)"" ) in new stack  
ipt agi://127.0.0.1:4573/dial completed, returning 0  
t-dial:4] ExecIf("SIP/227-00000005", "1?Macro(all-vm,default,b,221@default,Local/0@default-local/n,  
:1] NoOp("SIP/227-00000005", "CALL TO VOICEMAIL") in new stack  
:2] VoiceMail("SIP/227-00000005", "221@default,b") in new stack
```

database show the extension has enabled the DND feature code! demo*CLI> database show

```
/CustomDevstate/dnd-default-221 : BUSY  
/DND/Local/*78@default : On  
/DND/SIP/221 : On
```

Debugging Call Failures with SIP Cause Codes

In this second example a call from 227 to 221 fails to ring 221

```
default:1] Set("SIP/227-00000009", "CDR(tenant)=default") in new stack  
default:9] Macro("SIP/227-00000009", "default-dial,SIP/221,221,default,,en,u221@default,twWxXkKg,,def  
t-dial:1] NoOp("SIP/227-00000009", ""CALL TO LOCAL EXTENSION FROM 227(227)"" ) in new stack  
ed Temporarily" back from 192.168.100.100:5060  
000009 to 'Local/555@default-default' (thanks to SIP/221-0000000a)  
2 do_forward: Not accepting call completion offers from call-forward recipient Local/555@default-de  
899 local_call: No such extension/context 555@default-default while calling Local channel  
0 do_forward: Forwarding failed to dial 'Local/555@default-default'  
ed at this time (1:0/0/1)
```

The SIP response code shows the extension has enabled a native SIP forward to 555 from the SIP phone! There is no 555 in the dial plan and the forward fails. The user must remove the bad forwarding attempt from their phone.

SCOPSTATS System Monitoring Logs

The SCOPSTATS reporting engine can also display System Logs instead of accessing the Linux file system

