

Opensips Summit August 2013

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Interfacing with Opensips Peripherals

looking beyond port 5060

Interfacing with Opensips Peripherals

Some tools allow us to refine and streamline the proxy config while others give us additional capabilities without impacting proxy performance.

- Monitoring
- Statistics
- Benchmarking
- Event notification

There is no one RIGHT way to perform most any task.

Interfacing with Opensips Peripherals

Monitoring

- net-snmp
- zenoss monitoring system
 - ping polling
 - snmp metrics
 - snmp traps
 - zenlog (rsyslog listener)
- rsyslog

Interfacing with Opensips Peripherals

SNMP setup

snmp.conf

```
pass .1.3.6.1.4.1.2021.255.4 /usr/local/scripts/freeswitchstats.sh
```

```
pass .1.3.6.1.4.1.2021.255.5 /usr/local/scripts/opensipsstats.sh
```

```
#Send Traps to zenoss
```

```
trapsink zenoss WHATEVS
```

```
snmpwalk -O s -v2C -c WHATEVS localhost OPENSER-SIP-SERVER-MIB::openserSIPServerObjects
```

```
snmpwalk -O s -v2C -c WHATEVS localhost OPENSER-REG-MIB::openser
```

```
snmpwalk -O s -v2C -c WHATEVS localhost OPENSER-MIB::openserDialog
```

```
openserCurNumDialogs.0 = Gauge32: 0
```

```
snmpwalk -O n -v1 -c WHATEVS localhost OPENSER-MIB::openserCurNumDialogs.0
```

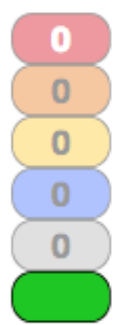
```
.1.3.6.1.4.1.27483.3.1.3.1.3.2.1.0 = Gauge32: 0
```

- Main Views
 - Dashboard
 - Event Console
 - Device List
 - Network Map
- Classes
- Events
- Devices**
- Services
- Processes
- Products
- Browse By
 - Systems
 - Groups
 - Locations
 - Networks
 - Reports
- Management
 - Add Device
 - Mibs
 - Collectors
 - Settings

Status
OS
Hardware
Software
Events
Perf
Edit

Device Status

Device: [redacted] IP: [redacted] Status: ● Up



Availability	99.981%
Uptime	01d:01h:06m:17s
State	Production
Priority	Normal
Locks	None
Last Change	2013/08/01 14:12:11
Last Collection	2013/08/01 14:12:14
First Seen	2013/07/30 21:05:23

Component Type	Status
IpRouteEntry	●
IpInterface	●
OSProcess	●
FileSystem	●
IpService	●
CPU	●

Device Information

Organizers

Location	None
Groups	/
Systems	/
Collector	localhost

OS

Tag #	
Serial #	
HW Make	Unknown
HW Model	.1.3.6.1.4.1.8072.3.2.10
OS Make	Unknown
OS Version	Linux 2.6.32-358.11.1.el6.x86_64
Rack Slot	0

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- Event Manager

▼ Status **OS** Hardware Software Events Perf Edit

▼ Interfaces

Select: [All](#) [None](#)

Name	IP Address	Network	MAC	O	A	M	Lock
<input type="checkbox"/> eth0	<input type="text"/>	<input type="text"/>	52:54:00:D7:F8:AF				
<input type="checkbox"/> lo	127.0.0.1/8						

▼ OS Processes Monitored

Select: [All](#) [None](#)

Name	Class	Restarts	Fail Severity	Status	M	Lock
<input type="checkbox"/> /bin/sh /usr/bin/mysqld_safe --datadir=/var/lib/my	/mysqld_safe	True	Critical			
<input type="checkbox"/> opensips	/opensips	True	Critical			

1 of 2 show all Page Size ok

▼ IP Services Monitored

Name	Proto	Port	ips	Description	Status	M	Lock
1 of 0 <input type="text"/> show all Page Size <input type="text" value="600"/> ok							

▼ File Systems

Select: [All](#) [None](#)

Mount	Total bytes	Used bytes	Free bytes	% Util	M	Lock
<input type="checkbox"/> /	15.3GB	5.3GB	10.1GB	34		
<input type="checkbox"/> /boot	484.2MB	72.4MB	411.8MB	14		
<input type="checkbox"/> /dev/shm	64.0MB	0.0B	64.0MB	0		
<input type="checkbox"/> /mysql-ramtable	1.0GB	12.0KB	1024.0MB	0		

▼ Routes

Select: [All](#) [None](#)

Destination	NextHop	Interface	Protocol	Type	Lock
<input type="checkbox"/> 0.0.0.0/0	<input type="text" value="(None)"/> (None)	eth0	local	indirect	
<input type="checkbox"/> 169.254.0.0/16	(None)	eth0	local	direct	
<input type="checkbox"/> <input type="text"/>	(None)	eth0	local	direct	

Interfacing with Opensips Peripherals

Statistics

- `opensipsctl fifo get_statistics all:`
 - invites, memory, snmpstats, and lots more
 - script anything you want to count

`script:onnet = 0`

`script:outbound = 9`

`script:inbound = 4`

`dialog:active_dialogs = 0`

`snmpstats:200_in = 0`

`snmpstats:200_out = 1131`

`shmem:total_size = 268435456`

`shmem:used_size = 2890648`

`core:rcv_requests = 184`

`core:rcv_replies = 1296`

`core:fwd_requests = 10`

`tm:received_replies = 1135`

`tm:relayed_replies = 1098`

`tm:local_replies = 23`

`script:invite200 = 6`

`script:initialinvite = 13`

- benchmarking

Interfacing with Opensips Peripherals

/usr/local/scripts/opensipsstats.sh output sample

.1.3.6.1.4.1.2021.255.5.11.2

gauge

2775

#script generic

.5.11.1 script:invite200

.5.11.2 script:initialinvite

.5.11.3 script:other_firstrej

.5.11.4 script:other_sent

#shared memory stats

.5.2.12.1 shmem:total_size

.5.2.12.2 shmem:used_size

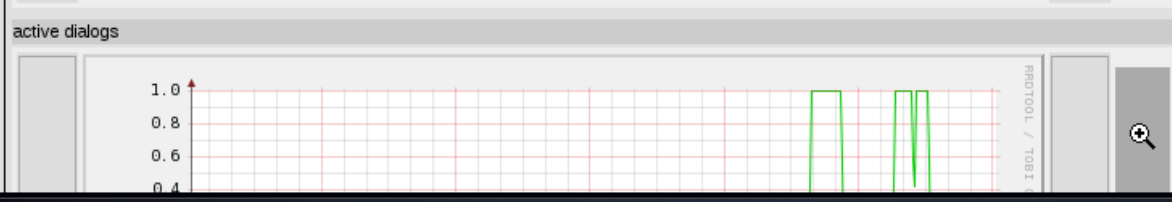
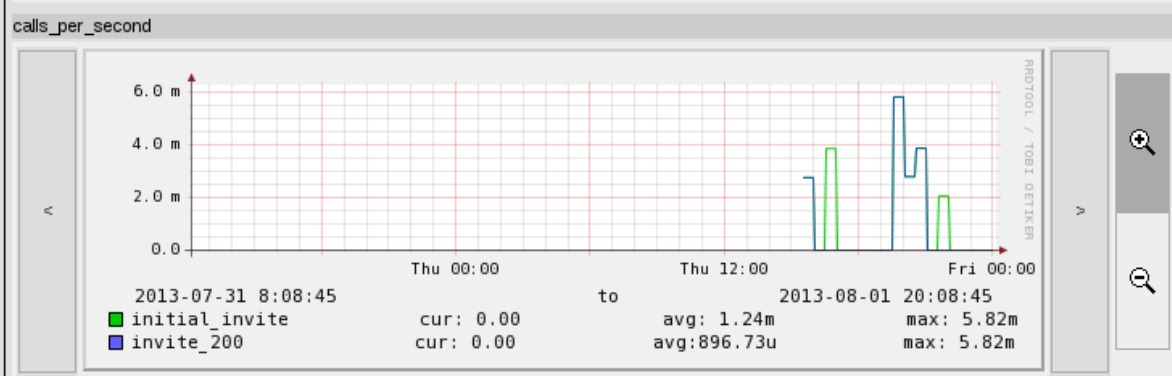
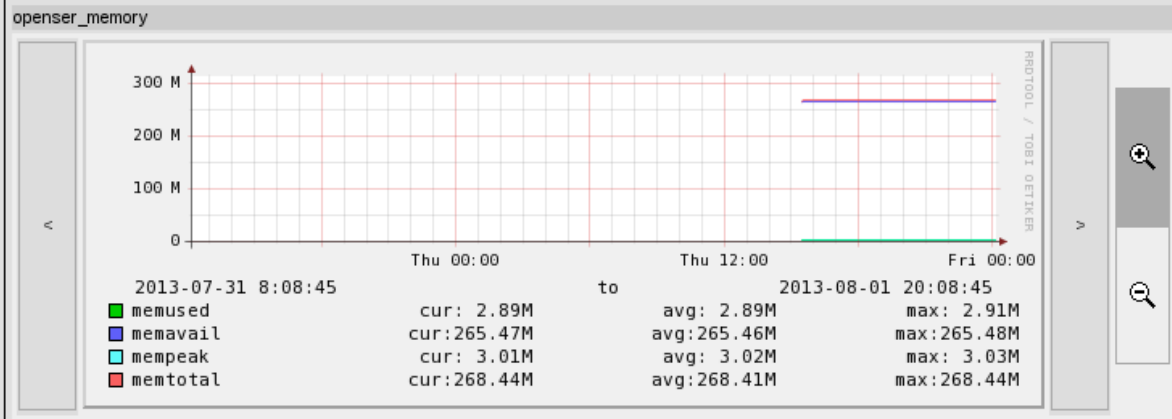
.5.2.12.4 shmem:max_used_size

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Devices / Server / Linux / ... Zenoss server time: 4:09:54

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Performance Graphs Range Hourly Reset Link graphs? Stop 300



Interfacing with Opensips Peripherals

rsyslog setup

```
*.info;mail.none;authpriv.none;cron.none;local0.none;local1.none
/var/log/messages
#opensips stuff
:msg, contains, "benchmark (timer"@192.168.124.152:514
& ~
local0.*                               /var/log/opensips.msg;TraditionalFormat
& @192.168.124.152:514
$ModLoad omprog
$ActionOMPProgBinary                  /usr/local/scripts/webhits

local1.*                               /var/log/opensips.acc
& :omprog;;RSYSLOG_TraditionalFileFormat
```

Interfacing with Opensips Peripherals

```
if $syslogfacility-text == 'local0' and ($msg contains_i 'congest' or \  
    $msg contains 'out of pkg memory' or \  
    $msg contains 'pkg memory allocation failure' or \  
    $msg contains 'no more share memory' or \  
    $msg contains 'no private memory left' ) then  
@zencollector-01:2514;opensipsZenFmt  
  
if $syslogfacility-text == 'local0' and ($syslogseverity-text != 'debug' and \  
    $syslogseverity-text != 'info' and \  
    $syslogseverity-text != 'notice') then @zencollector-01:  
2514;opensipsZenFmt
```

Interfacing with Opensips Peripherals

central rsyslog server setup

```
$UDPServerRun 514
```

```
$UDPServerAddress 192.168.124.152
```

```
$template DynOpensips, "/var/log/opensips-remote/opensips-%fromhost%.msg"
```

```
$template DynBenchmark, "/var/log/opensips-remote/benchmark-%fromhost%.log"
```

```
:msg, contains, "benchmark (timer" ?DynBenchmark  
& ~
```

```
local0.* ?DynOpensips
```

Interfacing with Opensips Peripherals

```
[root@trunking1 ~]# tree /var/log/opensips-remote/  
/var/log/opensips-remote/  
|-- benchmark-2XX.XX.XX4.31.log  
|-- benchmark-2XX.XX.XX4.35.log  
`-- opensips-2XX.XX.XX4.31.msg
```

benchmark log contents:

```
2013-08-01T21:21:25+00:00 sip01 /usr/local/sbin/opensips[26678]:  
benchmark (timer trelay_timer_benchmark [3]): 43689 [  
msgs/total/min/max/avg - LR: 1/43689/43689/43689/43689.000000 | GB:  
27/614484/82/182222/22758.666667]
```

```
2013-08-01T21:21:09+00:00 sip01 /usr/local/sbin/opensips[26678]:  
benchmark (timer avp_store_to_db_benchmark [0]): 24001 [  
msgs/total/min/max/avg - LR: 1/24001/24001/24001/24001.000000 | GB:  
10/242508/5186/51873/24250.800000]
```

Interfacing with Opensips Peripherals

Event Notification - What's old

- pbx control module
- webhits w/ rsyslog
- ~~system-exec~~

Event Notification - What's new

- event module
- rabbit mq module

Interfacing with Opensips Peripherals

```
fsrefer(struct sip_msg *msg, char *str1, char *str2);  
//fslookupcall(struct sip_msg *msg, char *str1, char *str2);  
fstransfer(struct sip_msg *msg, char *str1, char *str2);  
fsenduuid(struct sip_msg *msg, char *str1, char *str2);  
fssetuuidvar(struct sip_msg *msg, char *str1, char *str2);  
astoriginate( struct sip_msg *msg, char *str1, char *str2);
```

Interfacing with Opensips Peripherals

```
$ModLoad omprog
```

```
$ActionOMProgBinary /usr/local/scripts/webhits
```

```
local1.* /var/log/opensips.acc
```

```
& :omprog;;RSYSLOG_TraditionalFileFormat
```

```
3496 ? Sl 0:00 /sbin/rsyslogd -i /var/run/syslogd.pid -c 5
3501 ? S 0:23 \_ [webhits]
3502 ? S 0:18 \_ [webhits]
3503 ? S 0:18 \_ [webhits]
3504 ? S 0:18 \_ [webhits]
3505 ? S 0:18 \_ [webhits]
3506 ? S 0:18 \_ [webhits]
```


Interfacing with Opensips Peripherals

```
GET /phoneNotification/establishedCall.php?  
service=bandwidth&callId=1225639574_52740612@192.168.47.68  
&to=19194397461&from=19192495321&codec=999&token=4f8f3a8bc30d38942  
ce9bb949845e91d0bdde84f HTTP/1.0
```

```
GET /phoneNotification/endedCall.php?  
service=bandwidth&callId=1225639574_52740612@192.168.47.68  
&to=19194397461&from=19192495321&callDirection=caller-hung-  
up&disposition=487&token=241e452541f98035179dff3fd3f614be5afacfc6  
HTTP/1.0
```

(default sending to www.yahoo.com - change in source before building)

Interfacing with Opensips Peripherals

```
$avp(e_attrs) = "user";  
$avp(e_values) = $fU;  
$avp(e_attrs) = "calling";  
$avp(e_values) = $rU;  
raise_event("EVENT_SIP_INVITE", $avp(e_attrs), $avp(e_values));
```

```
ngrep -q -W byline -d eth0 port 1984
```

```
EVENT_SIP_INVITE
```

```
calling::9197023718
```

```
user::9194397461
```

Interfacing with Opensips Peripherals

IT'S (still) ALL ABOUT THE LATENCY!

Often when we think of latency we think of the round trip time of a packet on the network. However, it doesn't do any good to get there fast if the endpoint takes 2 minutes to process the request. Let's look at a few numbers.

- 100 calls per second
- 20 processing threads
- 7 messages per call (INV, 100, 18x, 200, ACK, BYE, 200)
- 29 milliseconds per message average