HOMER 5 & CAPTAGENT 6

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Presentation Written by:

Alexandr Dubovikov & Lorenzo Mangani

HOMER Development Team

http://sipcapture.org

Introduction

About the Authors - Behind the Project

Alexandr Dubovikov

Senior Voice Expert for QSC AG, one of the major German voice and data providers. Alexandr holds a diploma in physics of Odessa State University and brings 20 years of experience in telecommunication techniques, contributing to many Open Source projects like FreeSwitch, SER, Kamailio, SEMS, Asterisk, SIPp, Wireshark. Alexandr is founder and the main developer of Homer SIP Capture project. Also founder of IRC RusNet Network, one of the biggest national IRC networks in the world.

Lorenzo Mangani

Sr. Voice Engineer and Designer for the largest international cable operator worldwide, founder of Amsterdam based QXIP BV, Co-Founder and Developer of Homer SIP Capture project and voice specialist of the NTOP Team. Formerly a Sound Engineer, Lorenzo has been deeply involved with telecommunications and VoIP for well over a decade and has contributed ideas, design concepts and code to many voice-related Open-Source and commercial projects specializing in active and passive monitoring solutions.

Introduction

About this presentation

HOMER has been a resident *guest* since the inception of ***Kamailio World*** and over time the event also became the clock of our major project releases and the stage where we love to introduce the fruit of our hard work to a familiar crowd.
This year is of course no exception and we proudly bring you:

HOMER v5

NEW *New Features*

- New User-Interface!
- New Core Functionality!
- Easy to Extend and Integrate
- … and so much More!

CAPTAGENT v6

NEW *New Features*

- New Internal Architecture!
- Capture Scenarios configuration!
- Multiple sockets, multiple input & outputs!
- Additional Protocols & Statistics!
- … and so much More!

SIPCAPTURE

Proudly Presenting

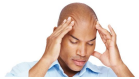
HOMER 5

HOMER 5

Introduction & History

HOMER 5? *Wait a second!*

... and whatever happened to **HOMER 4** ?



A bit of recent history is due…

HOMER 1.x has been our glorious and first embryonal version based on ngrep and MySQL.

HOMER 2.x has been the first version with an embryonal UI based on Joomla CMS and MySQL.

HOMER *3.x* has been our master release and top runner for a couple of years now and despite being still able to get the job done, started to show the signs of time on its UI Face, originally handcrafted from scratch using jQuery and lots of custom code and solutions to achieve what we envisioned at the time, resulting in overall simple code being extremely hard for contributors to attach to and extend/improve upon.

~~HOMER 4.x~~ was developed in 2013-2014, was pretty slick and delivered several design improvements and usage innovations all over the place over a cleaner codebase. Unfortunately we have been naive and did not consider good ideas could be also "borrowed" by those lucky enough to preview them - Long story short, we decided to drop H4 and start over once again to avoid sharing any technical field with possible commercial clones of our application or ideas.

HOMER *5.x* is the newest and latest inception of our platform, re-integrating all of our familiar core features and delivering so much more over an Angular JS UI, now hopefully more attractive for both users and developers to adopt and extend. H5 vastly crosses the line of its predecessors and geared towards becoming a more generic packet troubleshooting framework where voice relevant data can come together and empower troubleshooting and investigation to melt and merge without boundaries and with greater flexibility than ever before.

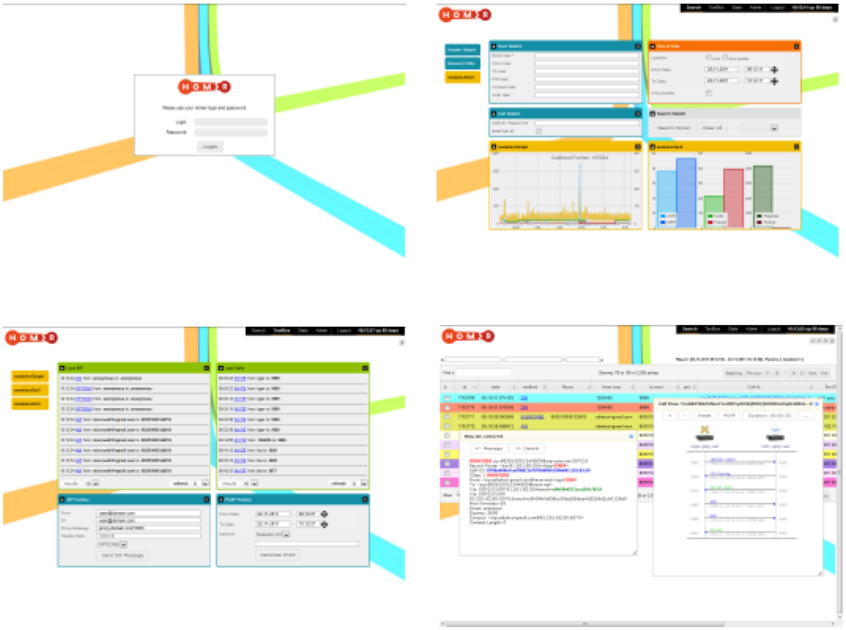
HOMER 5

New to the Project? What is HOMER?

HOMER is a powerful tool enabling Voice Engineers to focus on their actual job without having to spend hours figuring how to get the data they need to work with on each instance by providing a self-contained SIP Analysis and Troubleshooting environment fully customizable based on the preferences of its users:

HOMER is a turnkey solution providing many advantages:

- Instant centralized access to present and past signaling & stats
- Full SIP/SDP payload with precise timestamping
- Automatic correlation of sessions and reports
- Visual representation of multi session call-flows
- Fast detection of usage and system anomalies
- System agnostic view of VoIP traffic flows
- Unlimited plug & play capture agents and HEP data feeds
- Easy data integration with other systems via API
- No Desktop/Mobile client software required
- Ease of installation *(no more 1st setup headaches!)*



Homer 3.x

HOMER: http://github.com/sipcapture/homer

HOMER 5

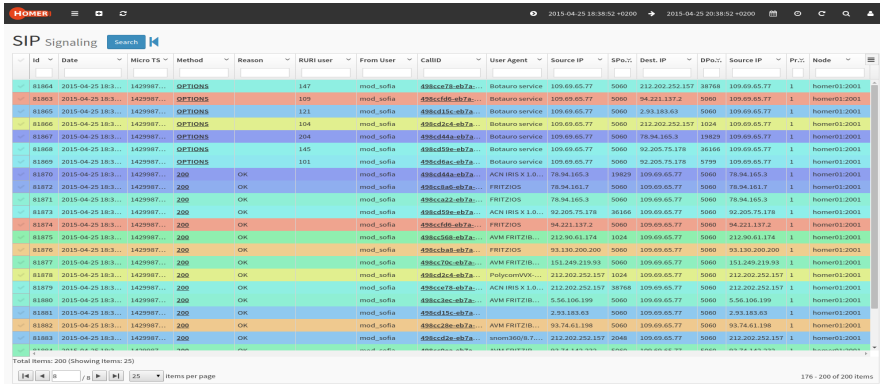
What's New in Homer 5 UI?

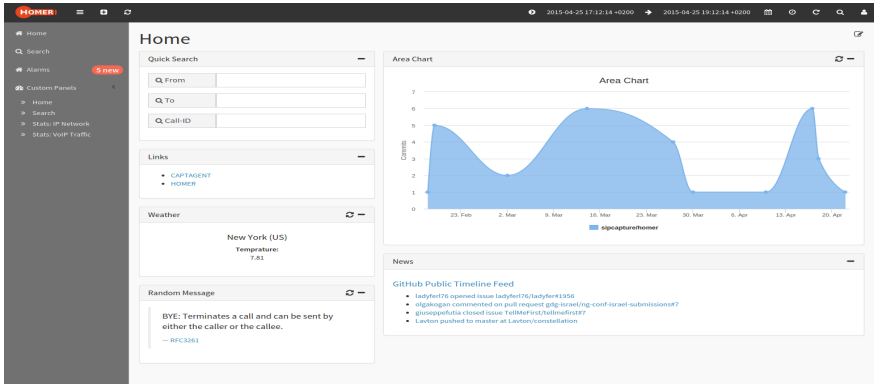
HOMER 5 brings many core improvements and module extensions to handle so much more than just signaling, and delivers a complete overhaul of the web User-Interface component migrating to modern JS framework while retaining the simplicity and style many users worldwide rely upon daily.

HOMER's Main Features:

- 100% HTML5 & API Based User Interface
- No Defaults! All Pages and Dashboards fully customizable
- Multiple DB options *(MySQL/MariaDB, PgSQL, ElasticS, InfluxDB …)*
- Modern & Extensible Angular Drag & Drop UI
- User Customizable Widgets for Charts & Analytics
- Powerful SIP Search and Filtering functionality
- Native Canvas Call-Flow display with multi-session correlation
- Native support for PCAP and Text file export of all results
- Supports token Authentication for API and User Interface
- Multi-User support with Local, LDAP, Radius options
- Production Ready, supports high volumes and PPS rates
- Supported by a strong and growing community

New HOMER 5.x





HOMER: http://github.com/sipcapture/homer

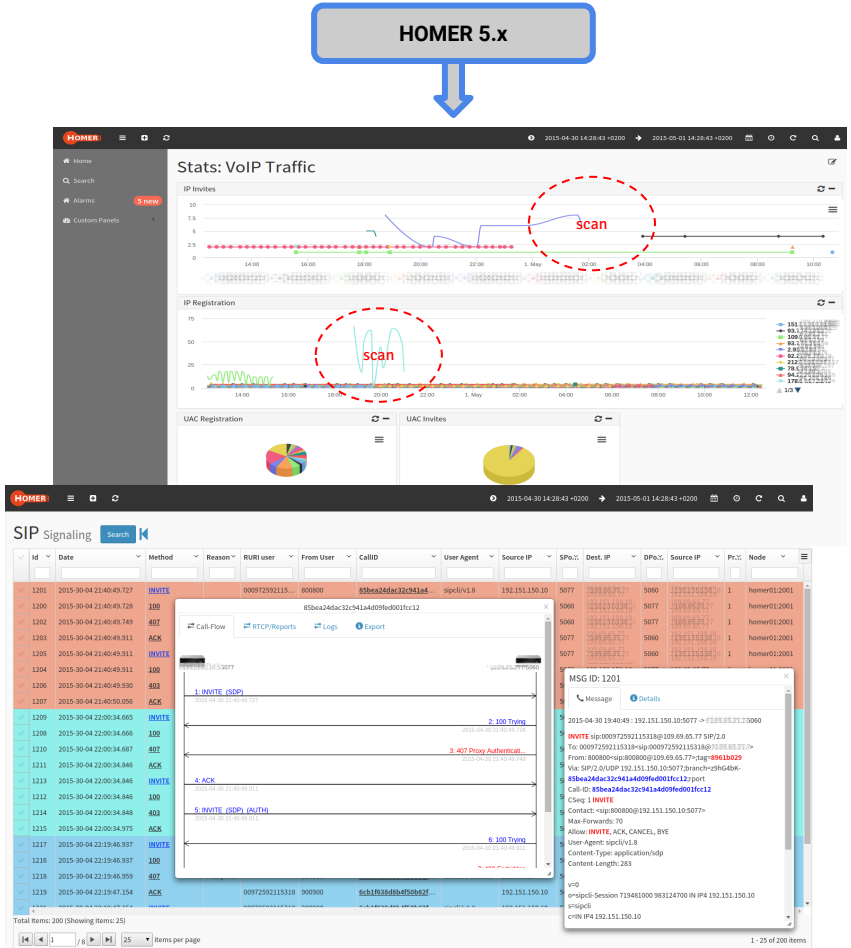
HOMER 5

What's New in Homer 5 core?

HOMER's New Core Features:

- Support for multiple database tables by method type
- Support for table sharding (date and transaction methods)
- Support for schema changes without drops (next partition)
- Support for exporting/importing of tables for archiving
- Parsing and Aggregation of external QoS reports *(RTCP-XR/X/P-RTP-Stat)* and Logging *(HEP logs)*
- Configurable Alarms and Triggers
- Supports own capture route in kamailio.cfg
- Correlation logic can be expressed in kamailio.cfg

HOMER: http://github.com/sipcapture/homer



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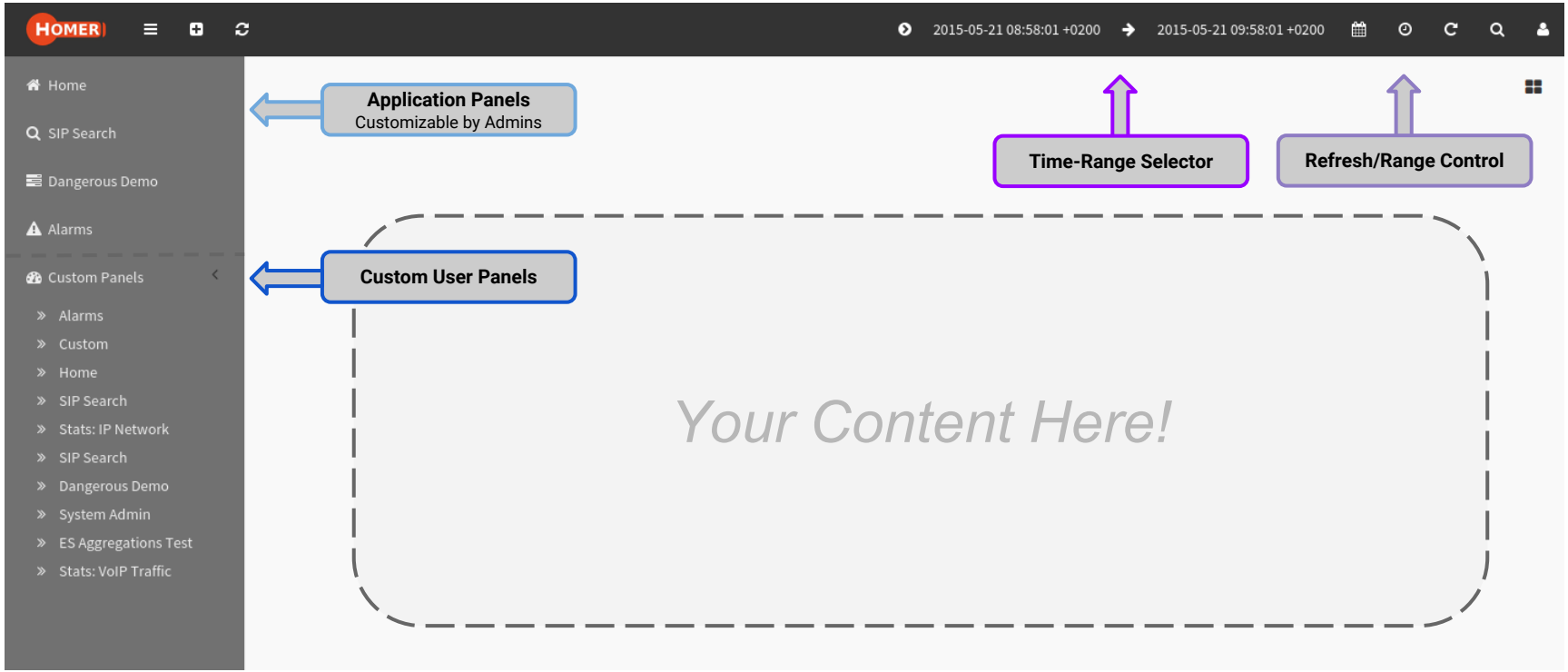
A Brand New UI

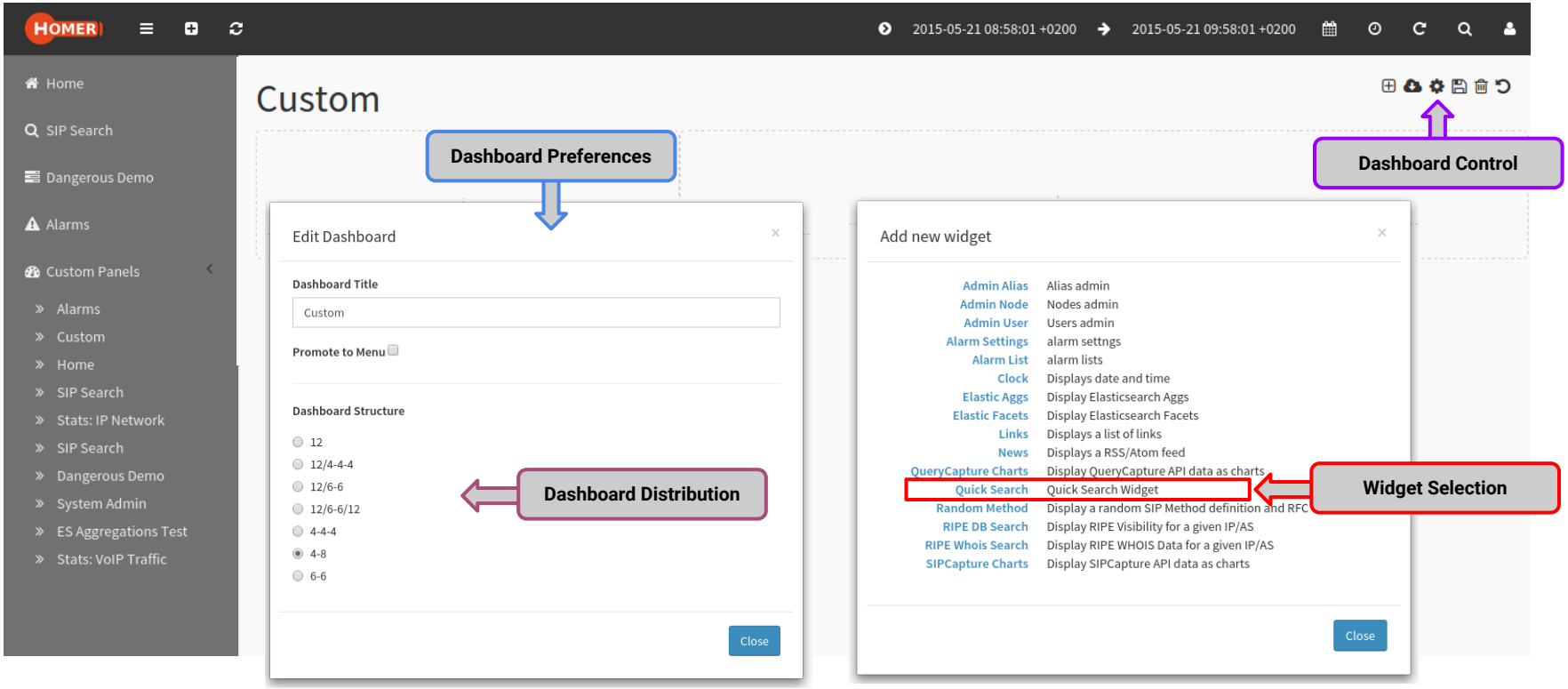
HOMER 5

New Interface Layout



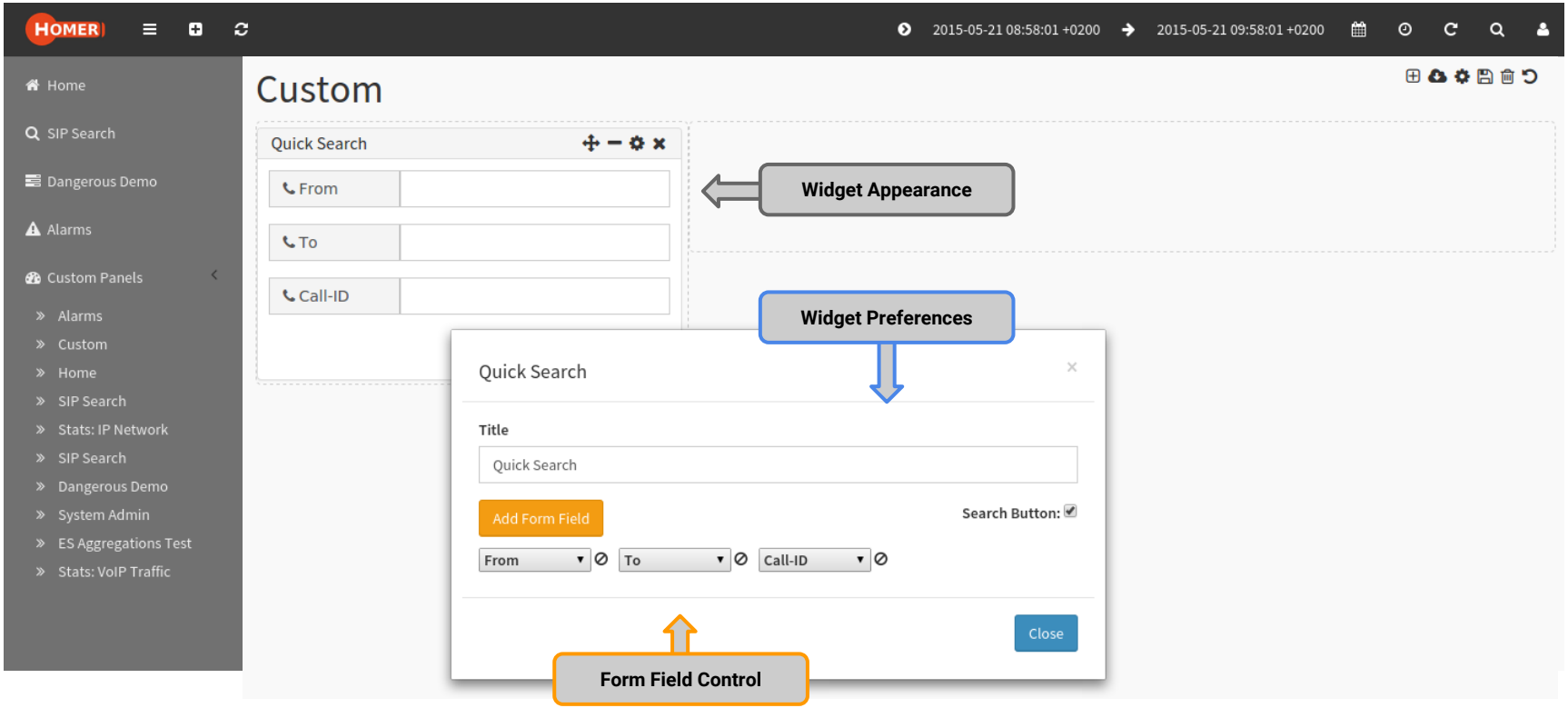
HOMER 5

Create a Dashboard in seconds



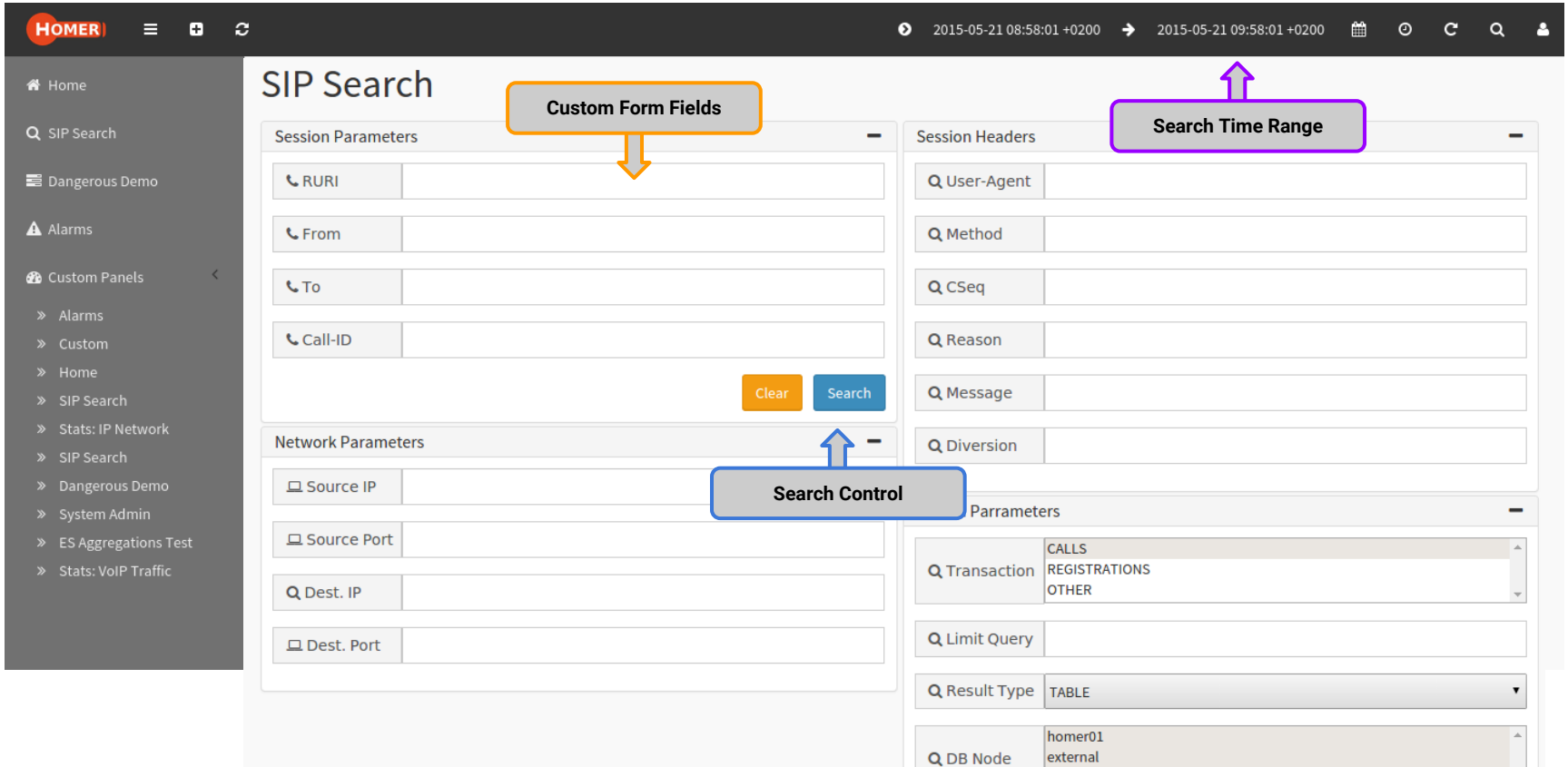
HOMER 5

Create a Search Widgets



HOMER 5

Your new SIP Search Dashboard is ready to use!



SIPCAPTURE

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SIP Search Application

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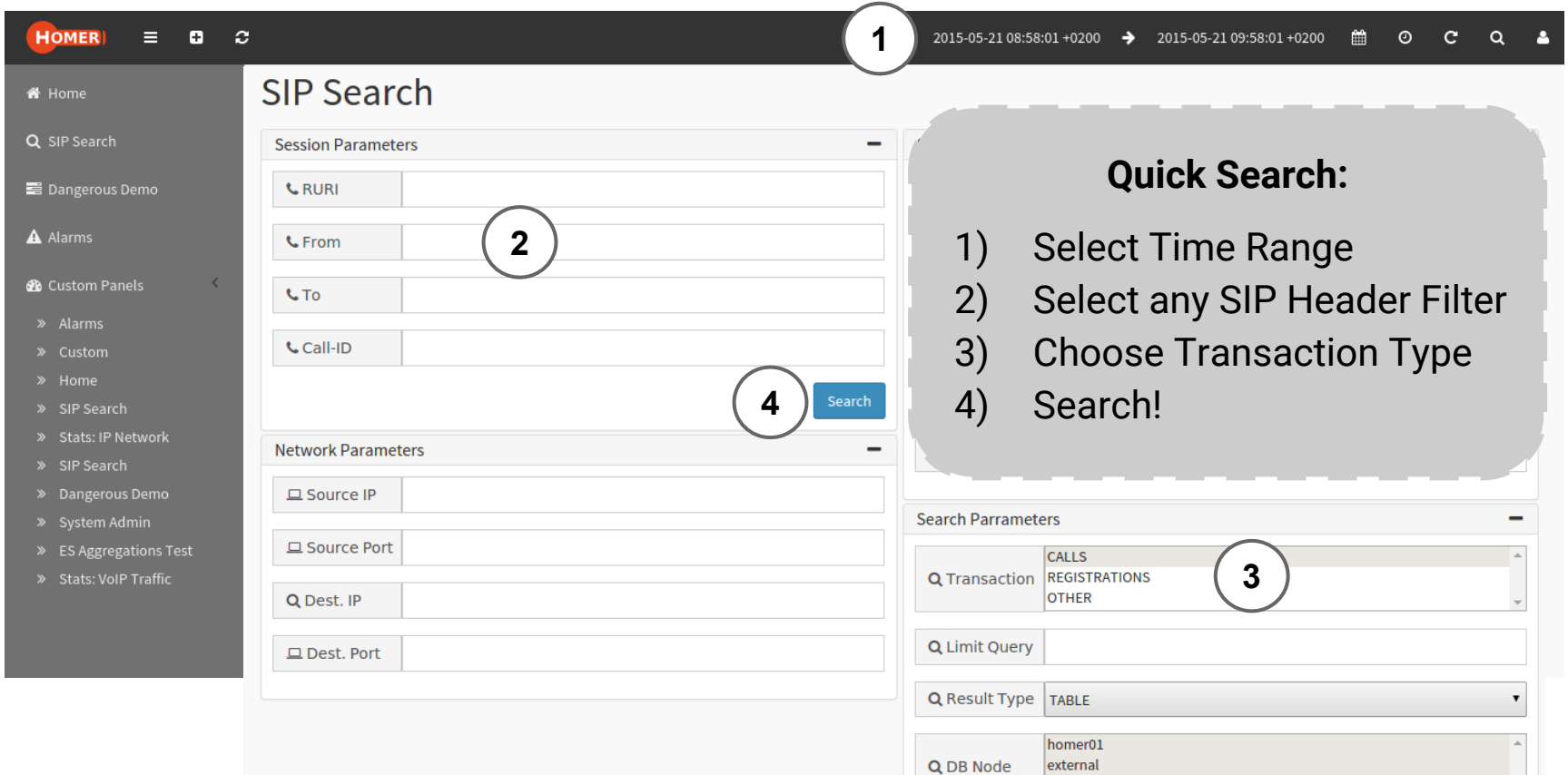
Let's find some SIP traffic next!



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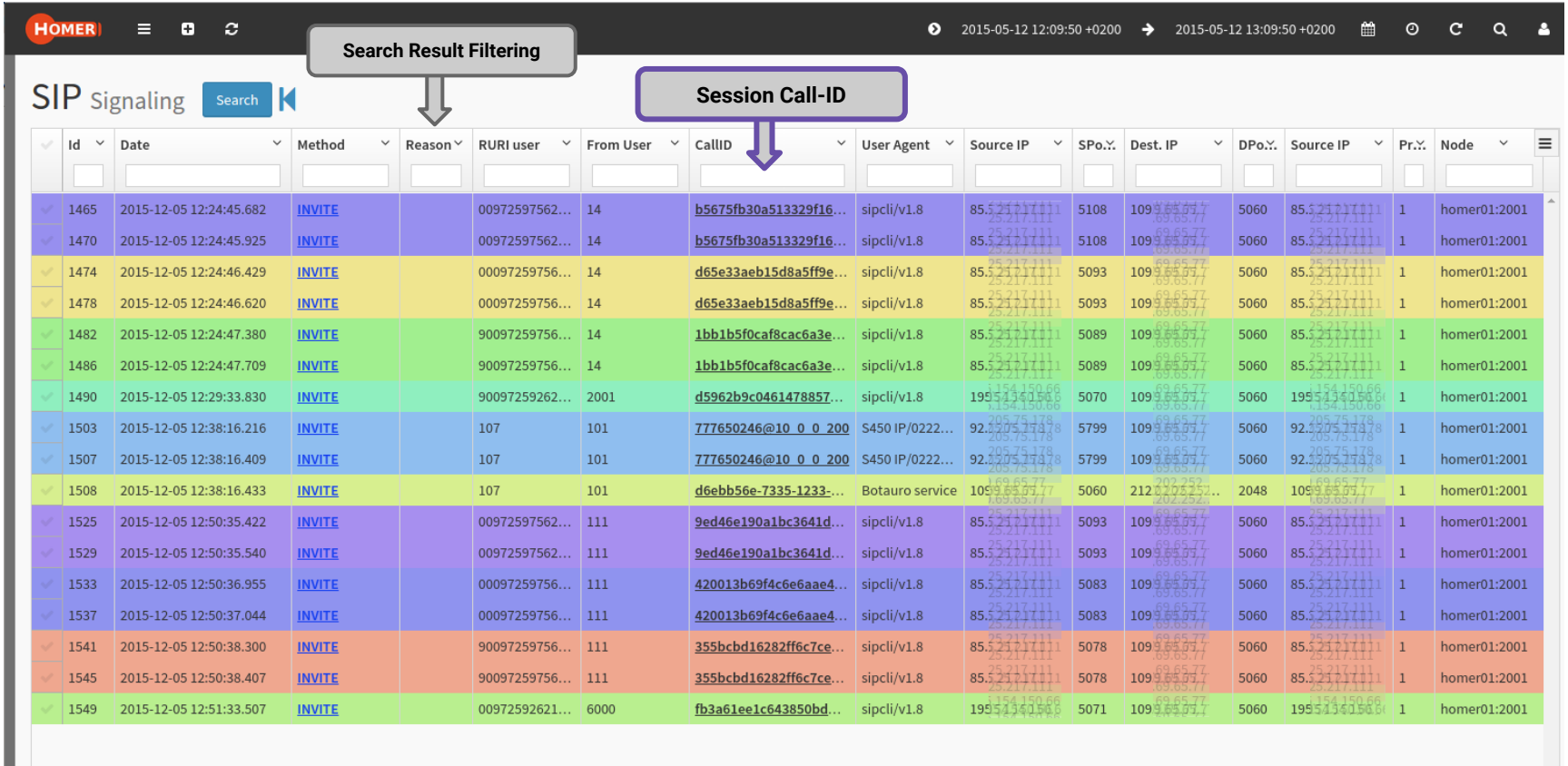
Example: Search Results

1 Find the session of interest



Id	Date	Method	Reason	RURI user	From User	CallID	User Agent	Source IP	SPo.Y.	Dest. IP	DPo.Y.	Source IP	Pr.Y.	Node
1465	2015-12-05 12:24:45.682	INVITE		00972597562...	14	b5675fb30a513329f16...	sipcli/v1.8	85.[redacted]	5108	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1470	2015-12-05 12:24:45.925	INVITE		00972597562...	14	b5675fb30a513329f16...	sipcli/v1.8	85.[redacted]	5108	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1474	2015-12-05 12:24:46.429	INVITE		00097259756...	14	d65e33aeb15d8a5ff9e...	sipcli/v1.8	85.[redacted]	5093	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1478	2015-12-05 12:24:46.620	INVITE		00097259756...	14	d65e33aeb15d8a5ff9e...	sipcli/v1.8	85.[redacted]	5093	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1482	2015-12-05 12:24:47.380	INVITE		90097259756...	14	1bb1b5f0caf8cac6a3e...	sipcli/v1.8	85.[redacted]	5089	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1486	2015-12-05 12:24:47.709	INVITE		90097259756...	14	1bb1b5f0caf8cac6a3e...	sipcli/v1.8	85.[redacted]	5089	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1490	2015-12-05 12:29:33.830	INVITE		90097259262...	2001	d5962b9c0461478857...	sipcli/v1.8	195.[redacted]	5070	109.[redacted]	5060	195.[redacted]	1	homer01:2001
1503	2015-12-05 12:38:16.216	INVITE		107	101	777650246@10_0_0_200	S450 IP/0222...	92.[redacted]	5799	109.[redacted]	5060	92.[redacted]	1	homer01:2001
1507	2015-12-05 12:38:16.409	INVITE		107	101	777650246@10_0_0_200	S450 IP/0222...	92.[redacted]	5799	109.[redacted]	5060	92.[redacted]	1	homer01:2001
1508	2015-12-05 12:38:16.433	INVITE		107	101	d6ebb56e-7335-1233-...	Botauro service	109.[redacted]	5060	212.[redacted]	2048	109.[redacted]	1	homer01:2001
1525	2015-12-05 12:50:35.422	INVITE		00972597562...	111	9ed46e190a1bc3641d...	sipcli/v1.8	85.[redacted]	5093	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1529	2015-12-05 12:50:35.540	INVITE		00972597562...	111	9ed46e190a1bc3641d...	sipcli/v1.8	85.[redacted]	5093	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1533	2015-12-05 12:50:36.955	INVITE		00097259756...	111	420013b69f4c6e6aae4...	sipcli/v1.8	85.[redacted]	5083	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1537	2015-12-05 12:50:37.044	INVITE		00097259756...	111	420013b69f4c6e6aae4...	sipcli/v1.8	85.[redacted]	5083	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1541	2015-12-05 12:50:38.300	INVITE		90097259756...	111	355bcbd16282ff6c7ce...	sipcli/v1.8	85.[redacted]	5078	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1545	2015-12-05 12:50:38.407	INVITE		90097259756...	111	355bcbd16282ff6c7ce...	sipcli/v1.8	85.[redacted]	5078	109.[redacted]	5060	85.[redacted]	1	homer01:2001
1549	2015-12-05 12:51:33.507	INVITE		00972592621...	6000	fb3a61ee1c643850bd...	sipcli/v1.8	195.[redacted]	5071	109.[redacted]	5060	195.[redacted]	1	homer01:2001

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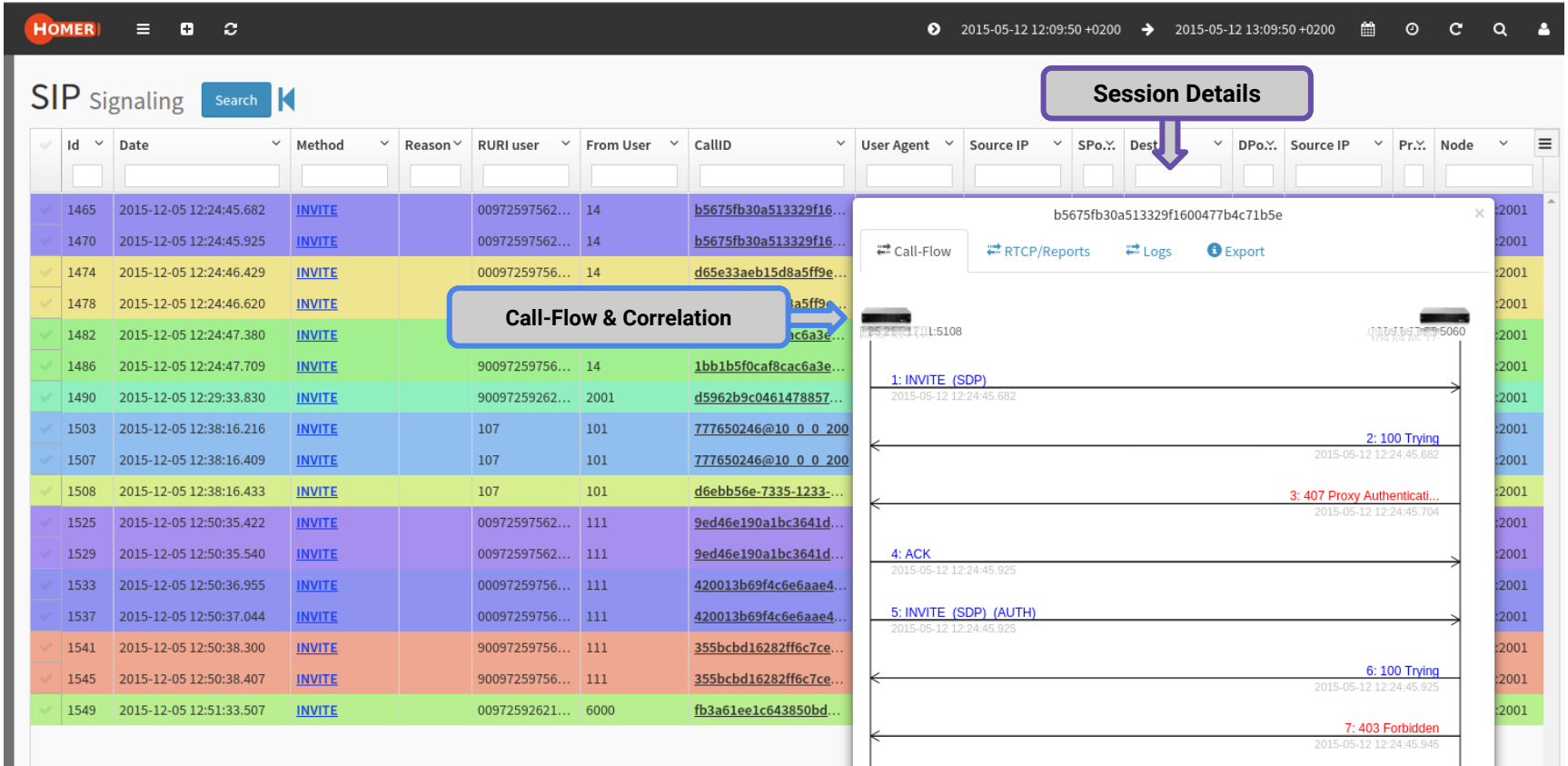
Example: Session Details

2 Click a Call-ID to correlate a Session



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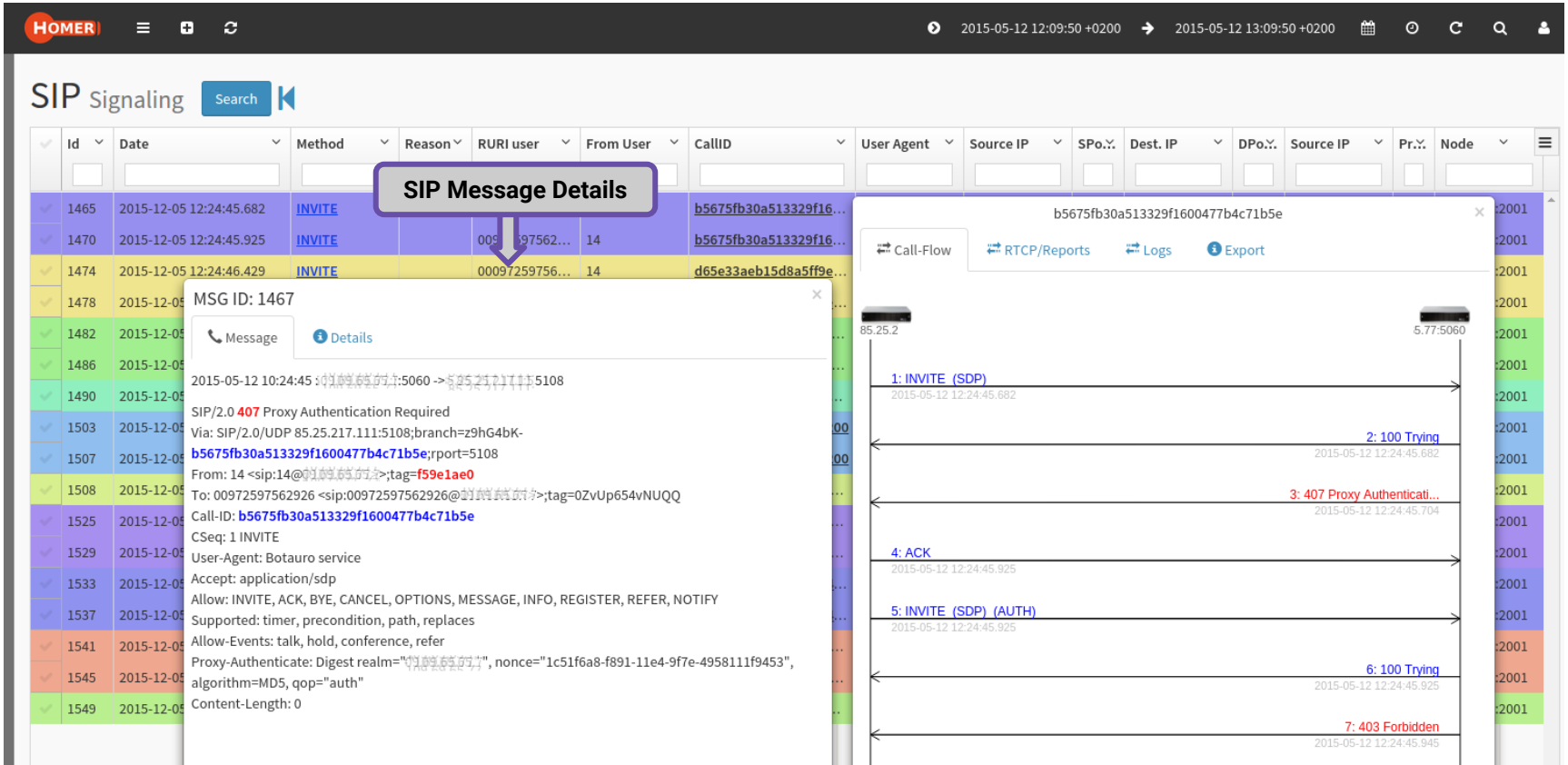
Example: Session and Packet Details

3 Click & Inspect any SIP Message



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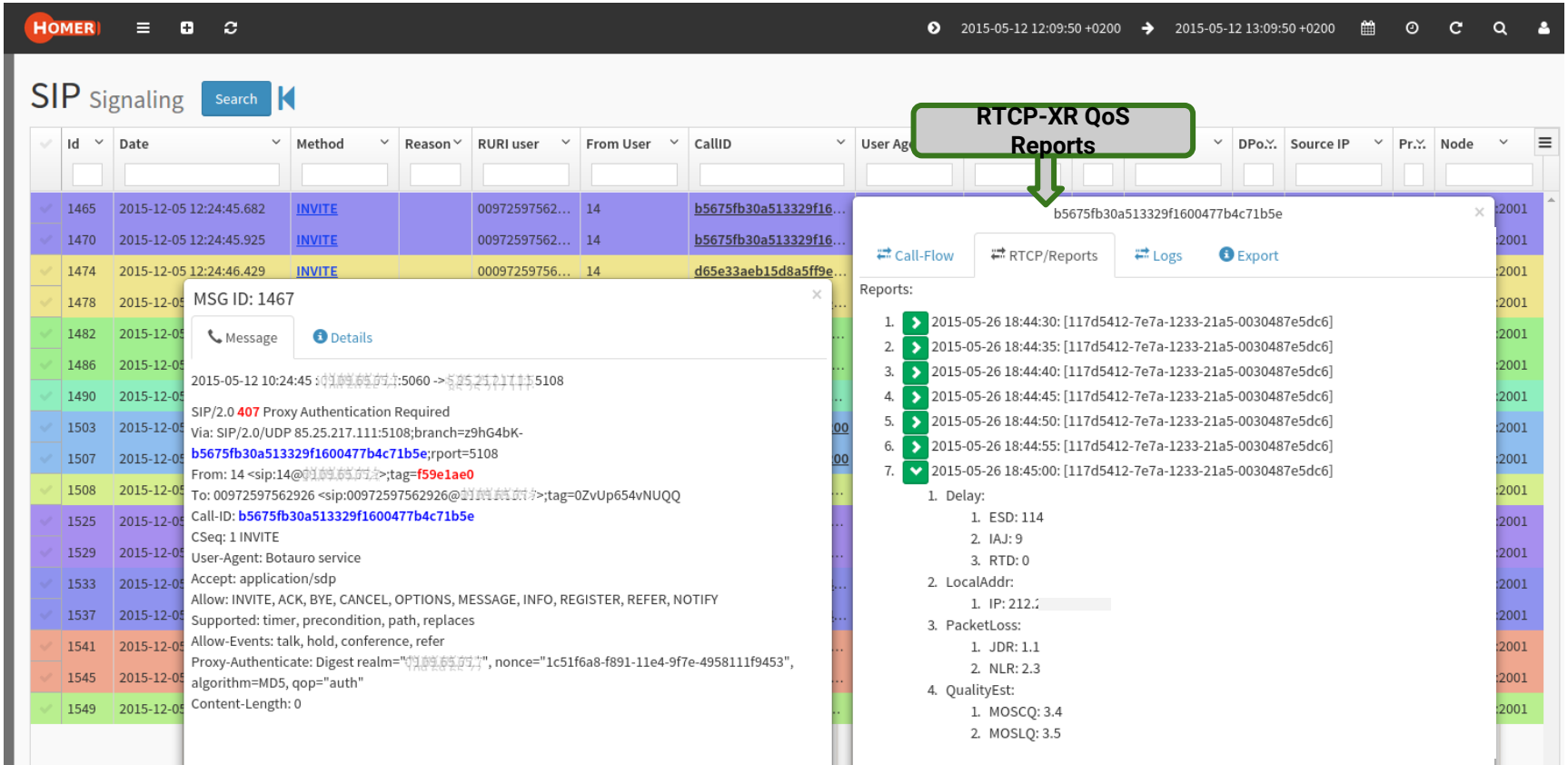
Example: Session and Packet Details

4 Click & Inspect RTCP-XR Reports



SIPCAPTURE

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Statistics & Charts Widgets

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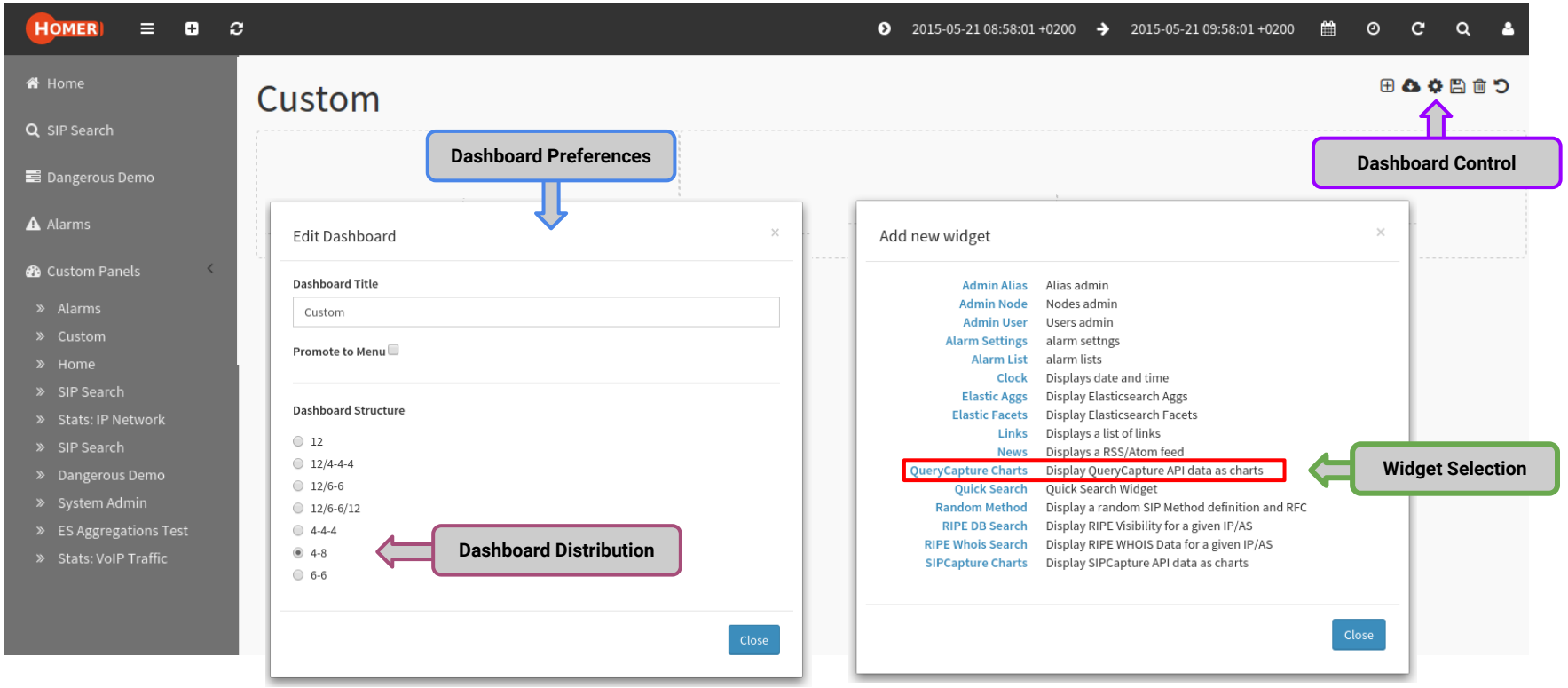
Create a Stats Dashboard in seconds



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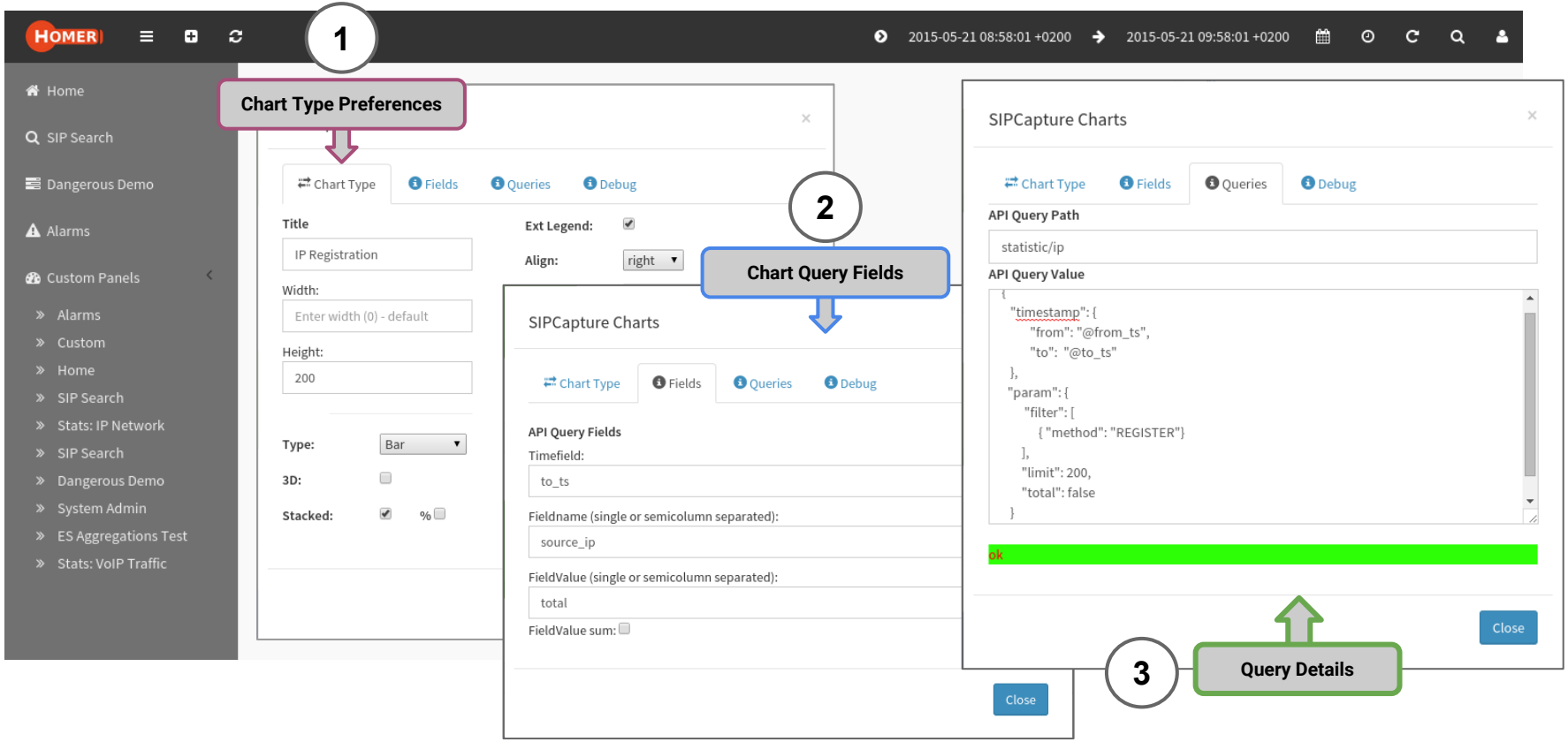
Create a Stats Dashboard in seconds

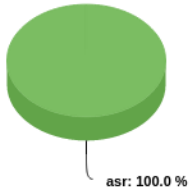


SIPCAPTURE

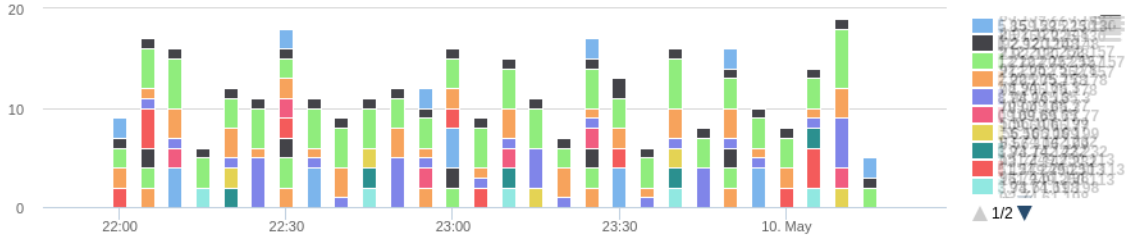
SIPCapture API Charts

Stats: VoIP Traffic

Answer Seizure Ratio

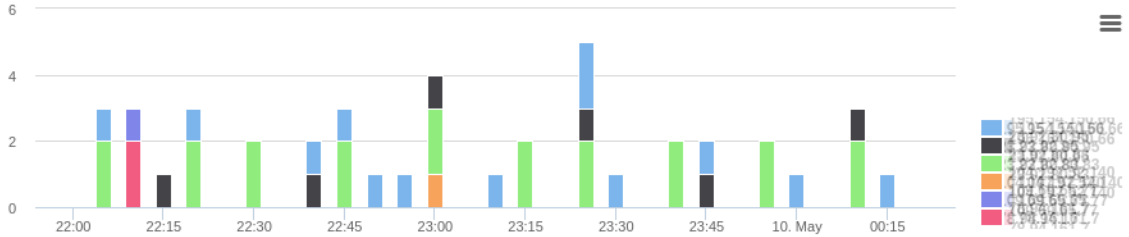


IP Registration



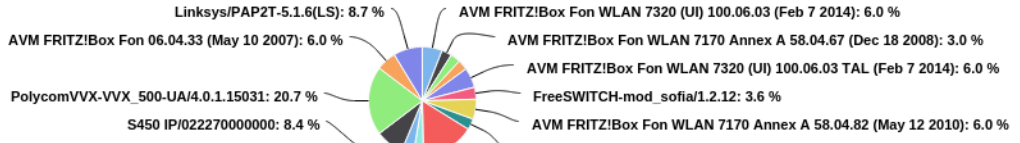
Network Efficiency Ratio

IP Invites



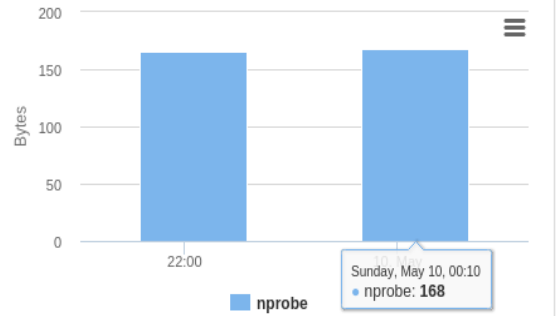
UAC Invites

UAC Registration

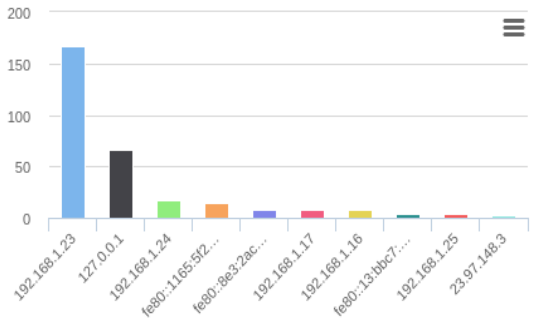


Stats: IP Network

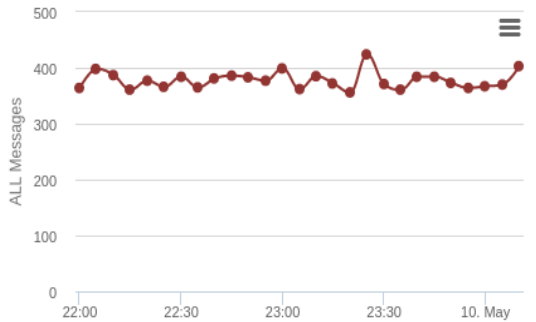
Elasticsearch Histograms



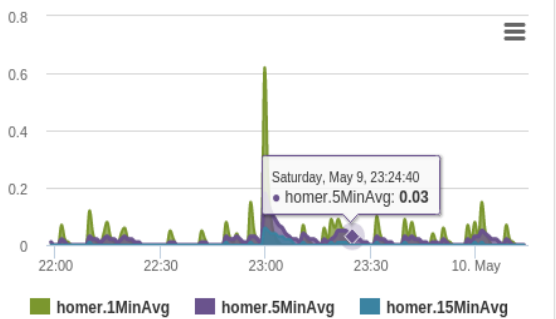
Elasticsearch Top IP SRC



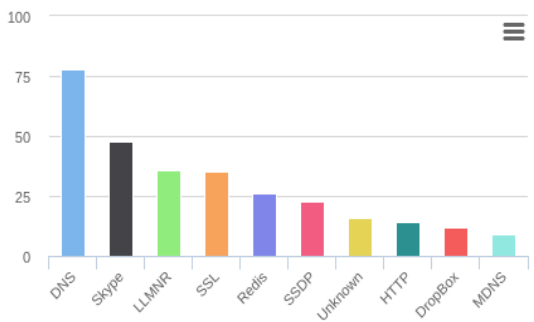
SIPCapture Packet Rate



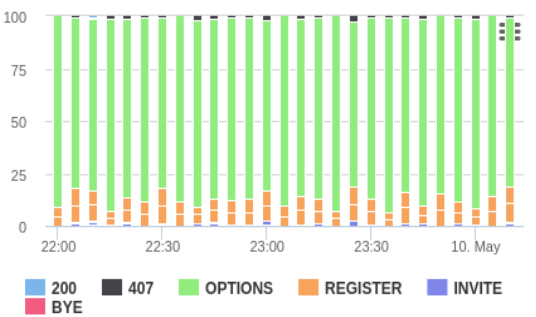
InfluxDB Server Load



Elasticsearch L7 Proto Aggs



SIPCapture Method Distrib..



HOMER 5

Kamailio **4**.*x*

HOMER & Kamailio 4.x

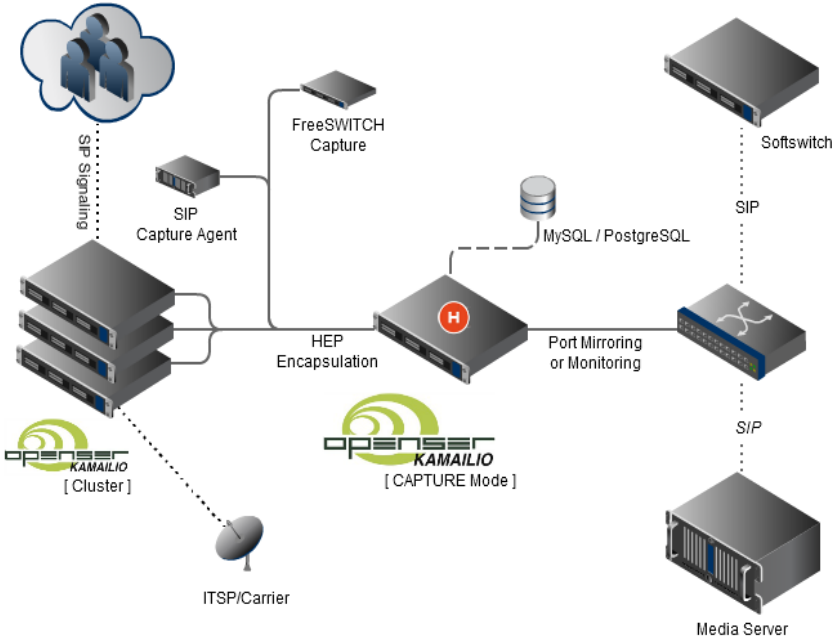
Build your own HOMER Capture Appliance using Kamailio

HOMER *sipcapture* module allows **Kamailio** to operate as a robust and scalable SIP Capture Server with native support for *HEP*, *IPIP* Encapsulation protocols and raw switch mirroring or monitoring port.

Kamailio can be configured to cover the following roles:

- **CAPTURE AGENT**
  (siptrace module)
  - Captures and sends HEP encapsulated packets to a server
- **CAPTURE SERVER**
  (sipcapture module)
  - Collects, Indexes and Stores SIP packets received from Capture Agents using (HEP v1/2/3), SBCs (IPIP) or Raw SIP from ethernet interface(s) and mirrored switch port(s) according to the capture plan configuration and rules.

Capture Agent role can be covered by different elements running on different platforms or architectures and distributed in a completely modular fashion, allowing it to support any network topology and complexity and to easily scale with the monitored architectures, as displayed in the illustration on the right.



HOMER Capture Server using Kamailio: QoS Reports and Logging

```
# PUBLISH REPORT

if(is_method("PUBLISH") && has_body("application/vq-rtcpxr"))
{
     $var(table) = "report_capture";
     $var(callid) = $(rb{re.subst,/(.*)CallID:([0-9A-Za-z@-]{5,120})(.*)$/\2/s});

     $var(temp) = $(rb{re.subst,/^(.*)JitterBuffer:(.*)JBN=([0-9]{1,5})(.*)$/\3/s});
     if(float2int("$var(temp)", 1)) $var(jbn) = $rc;

      #Mos
      $var(temp) = $(rb{re.subst,/^(.*)QualityEst:(.*)MOSCQ=([0-9.]{1,4})(.*)$/\3/s});
      if(float2int("$var(temp)", 10)) $var(mos) = $rc;

      statsd_set($var(customer)+"Mos", $var(mos));
      statsd_set($var(customer)+"JBN", $var(jbn));

      #save to db
      report_capture("$var(table)", "$var(callid)");

      drop;
}
```

More Examples: https://github.com/sipcapture

RTCP-XR provides a range of VoIP call and network quality metrics generated by user agents and devices supporting the protocol. The reports can be very useful to debug the user quality of a given session and are supported by HOMER. RTCP-XR packets can be handled in two different ways by a capture agent:

- ***STORE*** Mode
  Using HEP proto_id 99 QoS reports are sent to DB and presented in HOMER UI

- ***FORWARD*** Mode
  Using HEP SIP proto_id 1, QoS reports are forwarded to kamailio.cfg where users can parse and extract relevant information for statistical purposes and store to hashmap, Homer DB or statsd module

HINT: Don't miss our QoS Dangerous Demo!

References:

- RFC 3611 *(RTP Control Protocol Extended Reports)*
- RFC 6035 *(SIP Package for Voice Quality Reporting)*

HOMER Capture Server: Alarms and Statistic Logic

```
####### Routing Logic ########


        if(is_method("REGISTER")) {
                $var(table) = "sip_capture_registration";
        }
        else if(is_method("INVITE|BYE|CANCEL|UPDATE|ACK|PRACK|REFER"))
        {
                $var(table) = "sip_capture_call";
        }
        else if(is_method("INFO"))
        {
                $var(table) = "sip_capture_call";
        }
        else if(is_method("OPTIONS"))
        {
                $var(table) = "sip_capture_rest";
        }
        else {
                $var(table) = "sip_capture_rest";
        }

        $var(a) = $var(table) + "_%Y%m%d";

        sip_capture("$var(a)");
```

More Examples: https://github.com/sipcapture

```
####### Alarms & Statistic Parameters #########

if (is_method("INVITE|REGISTER")) {

                if($ua =~ "(friendly-scanner|sipvicious)") {
                        sql_query("cb", "INSERT INTO alarm_data_mem
(create_date, type, total, source_ip, description) VALUES(NOW(), 'scanner', 1,
'$si', 'Friendly scanner alarm!') ON DUPLICATE KEY UPDATE total=total+1");
                                route(KILL_VICIOUS);
                }

                #IP Method
                sql_query("cb", "INSERT INTO stats_ip_mem ( method, source_ip,
total) VALUES('$rm', '$si', 1) ON DUPLICATE KEY UPDATE total=total+1");



                if($au != $null)  $var(anumber) = $au;
                else $var(anumber) = $fU;



                #hostname in contact
                if($sel(contact.uri.host) =~ "^(\d{1,3}\.\d{1,3}\.\d{1,3}\.\d
{1,3})$") {
                        if($sht(a=>alarm::dns) == $null) $sht(a=>alarm::dns) =
0;
                        $sht(a=>alarm::dns) = $sht(a=>alarm::dns) + 1;
                }
}
```

Information courtesy of Homer and SER communities

Introducing...

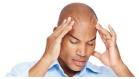
CAPTAGENT 6

CAPTAGENT 6

Introduction & History

CAPTANGENT 6? *Hem...*

... and whatever happened to **CAPTAGENT 5** ?



A bit of history is due… AGAIN!

Captagent has an even version stepping, so there are no odd versions released. Now you know ;)

CAPTAGENT *0.x* was the first, simple SIP capture agent enabling the initial concept of HOMER using *HEP v1/2*

~~*CAPTAGENT 2.x*~~ remained an internal development version and laid the foundations of *HEP v3* concepts

CAPTAGENT *4.x* was a complete redesign delivering a powerful, flexible, completely modular capture framework ready for virtually any kind of protocol, transport and encapsulation method, past, present and future. This version shipped with *HEP v3* support, universal protocol capture suitable for *SIP, XMPP* plus *HEP* encryption and compression.

CAPTAGENT *6.x* is the latest generation of our flagship agent once again delivering key core improvements over its internal design and leaping forward from the technology standpoint delivering unprecedented performance. continue….

CAPTAGENT

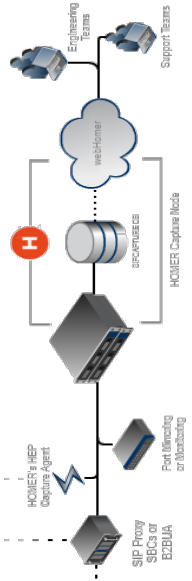
What's new in version 6

CAPTAGENT has been completely redesigned from the ground up and ships with new internal architecture expanding its performance range and core capabilities to handle more network protocols, the ability to relay and aggregate traffic for remote agents, parse and handle RTCP-XR and RTP statistics, RPC centralized control and much more.

CAPTAGENT 6

NEW New Core Features:

- Multiple incoming sockets *(PCAP, RAW, PF_RING, RX-RING, FILE)*
- Multiple outgoing types (HEP, JSON, CSV)
- HTTP JSON API for statistics, config changes etc
- RTCP-XR collector module
- RTCP output module (output in raw or json format)
- Capture scenario configuration (pseudo scripting via flex, bison)
- Call transaction tracking
- TCP/UDP reassembling and defragmentation.
- applying and change capture filter on demand
- LUA scripting (JITLua) (experimental)
- V7 Javascripting sandbox (experimental)
- SIPFIX Support (experimental)



CAPTAGENT 6

Modular Capture Agent w/ HEP3 Support

Captagent started as a SIP-only capture agent for HOMER. The codebase over time has been completely redesigned from the ground up to follow the evolution of the **HEP** protocol and **Captagent** grew to become a powerful, flexible, completely modular capture agent *framework* ready for virtually any kind of protocol and encapsulation method, past, present - *and future*.

Currently available modules:

- UNI Proto Module
  - SIP, XMPP and other text signaling Protocols
- RTCP Module
  - RTCP and RTCP-XR Parser and Collector
- CLI Module
  - CLI Shell Access and control of Captagent
- HEP Module
  - HEP Encapsulation output (v1/2/3)
- SSL/TLS Module
  - Encryption and Compression Module for HEP3

Upcoming modules:

- Remote API Module
  - Configure and Control a feet of Captagents from a Central server

CAPTAGENT: https://github.com/sipcapture/captagent

```
<!-- CORE MODULES -->

   <configuration name="core_hep.conf" description="HEP Socket">
      <settings>
        <param name="version" value="3"/>
        <param name="capture-host" value="capture.server.org"/>
        <param name="capture-port" value="9060"/>
        <param name="capture-proto" value="udp"/>
        <param name="capture-id" value="2001"/>
        <param name="capture-password" value="myHep"/>
        <param name="payload-compression" value="false" />
       </settings>
   </configuration>


<!-- PROTOCOLS -->

       <configuration name="proto_uni.conf" description="UNI Proto Basic
capture">
         <settings>
           <param name="port" value="5060"/>
           <!-- <param name="portrange" value="5060-5090"/> -->
           <!--
               use -D flag for pcap import
               use "any" for all interfaces in your system
           -->
           <param name="dev"  value="eth0"/>
           <param name="promisc" value="true"/>
           <!-- comment it if you want to see all IPProto (tcp/udp)  -->
           <param name="ip-proto" value="udp"/>
           <param name="proto-type"  value="sip"/>
           <!-- <param name="filter" value="not src port 5099"/> -->
         </settings>
       </configuration>
```

Example: Captagent Scenario programming

```
<module name="socket_pcap" description="HEP Socket" serial="2014010402">
 <profile name="socketspcap_sip" description="HEP Socket" enable="true"
serial="2014010402">
        <settings>
           <param name="dev" value="any"/>
           <param name="promisc" value="true"/>
           <param name="reasm" value="false"/>
           <param name="capture-plan" value="sip_capture_plan.cfg"/>
           <param name="filter">
                     <value>portrange 5060-5091</value>
           </param>
       </settings>
</profile>
<profile name="socketspcap_rtcp" description="RTCP Socket" enable="true"
serial="2014010402">
        <settings>
           <param name="dev" value="any"/>
           <param name="promisc" value="true"/>
           <param name="reasm" value="false"/>
           <param name="capture-plan" value="rtcp_capture_plan.cfg"/>
           <param name="filter">
                     <value>portrange 30000-50000</value>
           </param>
       </settings>
</profile>
</module>
```

More Examples: https://github.com/sipcapture

```
#sip_capture_plan.cfg
capture[pcap] {

   # here we can check source/destination IP/port, message size
   if(msg_check("size", "100")) {

       #Do parsing
       while(parse_sip()) {

           /* many packets */
           clog("NOTICE", "parsing SIP message ");

           if(source_ip("10.0.0.1")) {
                   #Can be defined many profiles in transport_hep.xml
                    if(!send_hep("hepsocket_homer01")) {
                        clog("ERROR", "Error sending HEP!!!!");
                    }
           }
           else {
                    #Can be defined many profiles in transport_hep.xml
                   if(!send_hep("hepsocket_homer02")) {
                        clog("ERROR", "Error sending HEP!!!!");
                   }
           }

           #Duplicate all INVITEs to JSON transport
           if(sip_is_method() && sip_check("method","INVITE")) {

                #Can be defined many profiles in transport_json.xml
                if(!send_json("jsonsocket")) {
                     clog("ERROR", "Error sending JSON");
                }
           }
       }
  }
  drop;
}
```

Information courtesy of Homer and SER communities

HEP Agents

HEP - Homer Encapsulation Protocol

Integrated Capture Agents in OSS Platforms

HOMER's own encapsulation protocol *(HEP/EEP)* is used to transfer your packets unmodified and carries several key information in its headers designed for perfect capturing.

HEP has been consistently integrated across the leading OSS solutions - chances are you have one in your fleet already!

The following projects provide integrated HEP support:

- Kamailio
- OpenSIPS
- FreeSWITCH
- Asterisk
- sipXecs

Examples are also provided for the following languages:

- Java
- C/C++
- Erlang
- Go

The *HEP/EEP* Protocol is defined in a mature Draft pending submission and is freely available for developers to integrate.

Find more about HEP: http://hep.sipcapture.org/

Kamailio Example:

https://github.com/sipcapture/homer/wiki/Examples%3A-Kamailio

OpenSIPS Example:

https://github.com/sipcapture/homer/wiki/Examples%3A-OpenSIPS

FreeSWITCH Example:

https://github.com/sipcapture/homer/wiki/Examples%3A-FreeSwitch

ACME SBC Example:

https://github.com/sipcapture/homer/wiki/Examples%3A-ACME-Packet

CaptAgent Example:

https://github.com/sipcapture/homer/wiki/Examples%3A-Captagent4

nProbe VoIP Example:

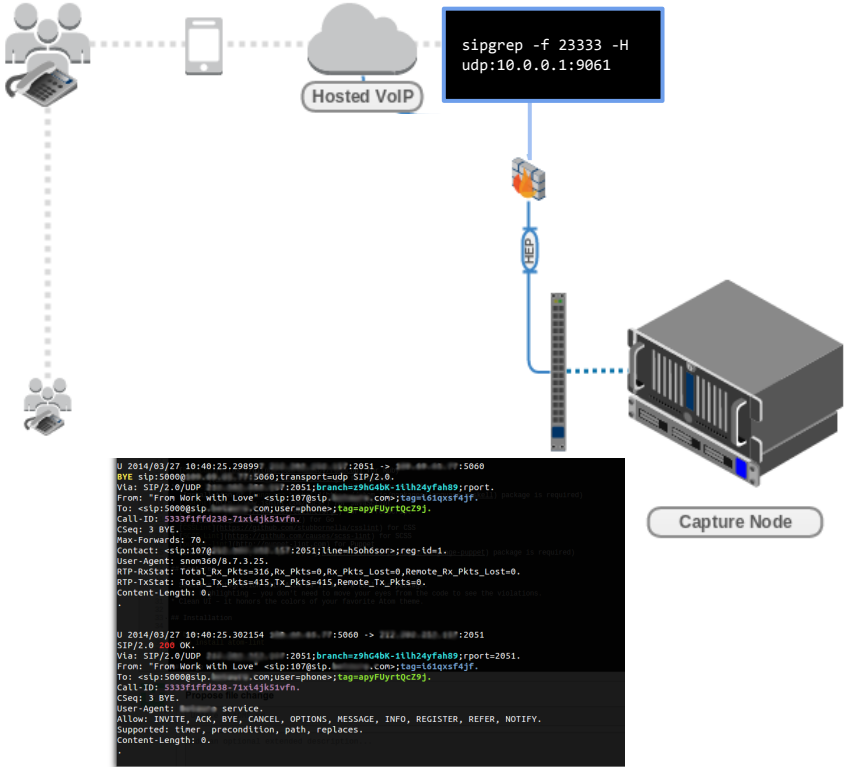
https://github.com/sipcapture/homer/wiki/Examples%3A-nProbe

SIPGREP2

Sipgrep as disposable HEP3 Agent

Sipgrep is able to act as a quick on-demand HEP3 capture agent and forward packets to a collector very easily when a simple terminal check does not suffice.

In the following example, Sipgrep is used to display the traffic of interest as well as log it to a remote location, useful for instance when troubleshooting issues on hosted platforms or disposable instances on the cloud.



HEP3 Example:

Display dialogs and duplicate all traffic to HOMER sipcapture in HEPv3:

```
sipgrep -f 23333 -H udp:10.0.0.1:9061
```

RTCP Statistics

Asterisk RTCP Statistics

The latest **Asterisk** patch developed by Alexandr Dubovikov and Matt Jordan implements module *res_hep_rtcp*

The module performs RTCP packet capturing for the internal RTP engine in Asterisk and transmits HEP3 encapsulated call quality metrics & statistics in HEP encapsulated JSON format.

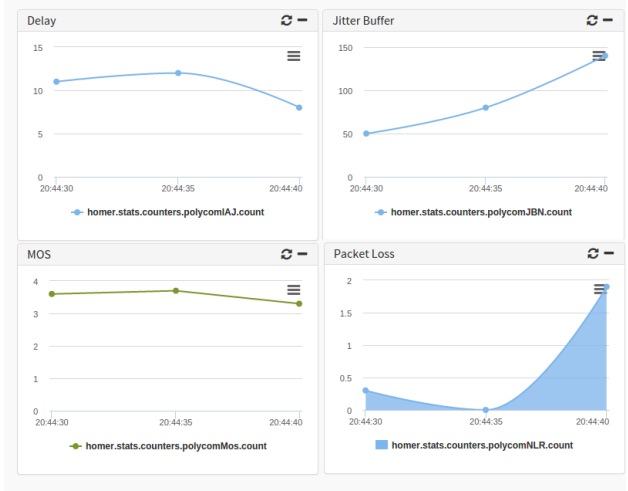
The module can be coupled with *res_hep* to build a full HEP capture node and send SIP signaling as well as call QoS.

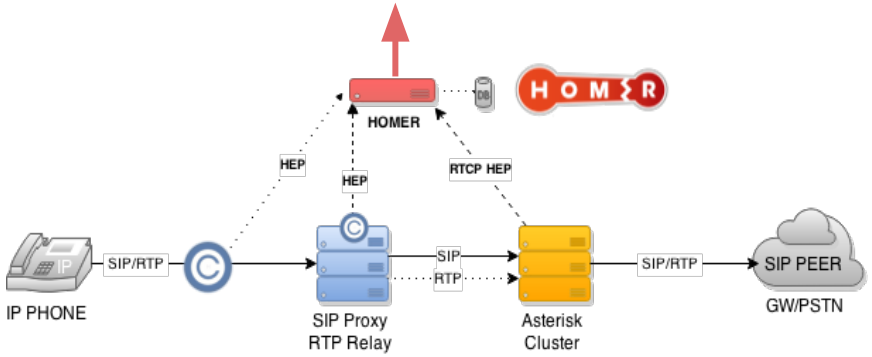
With the above setup, statistics can be observed historically and in real time as they reach the server when observing a call including pseudo-MOS score calculated on the client-side.

Example HOMER integration is presented on the side slide:

For more information and patch details:

https://github.com/sipcapture/homer/tree/master/asterisk_rtcp_patch





Voice CDRs & LOGS

Experiment with HEPipe

Troubleshooting is not all about network packets - many times system logs will hold valuable pointers at internal issues not expressed at the protocol level. There are many tools able to forward syslog/rsyslog to notorious collectors but for those looking to build their own voice data collection, we have developed a HEP3 playground utility called **HEPipe**

HEPipe *(pronounced HEP-pipe)* is an application for logging arbitrary data *(ie: logs, cdrs, debug lines)*to a *HEP/EEP* capture server such as HOMER or PCAPTURE via command pipe.

The utility can be used to prototype HEP3 implementations as well as to feed real data into a HEP Collector for real life usage, for instance by using the session Call-ID as correlation parameter.

```
INPUT FORMAT:

timestamp_sec; timestamp_usec; correlation_id; source_ip; source_port; destination_ip; destinaton_port; payload in json


USAGE EXAMPLE:

echo '1396362930;1003;18731b65be;127.0.0.1;5060;10.0.0.1;5060;{"pl": 10, "jt": 10}'|./hepipe -s hepserver -p 9061 -t 100
```

BONUS

SIPCAPTURE

Install & Run a **HOMER** Capture Server & Capture Agent in a snap!

Setup **HOMER** in just a few minutes using a fresh Debian (preferred) or CentOS setup using our installer:

```
# wget https://raw.githubusercontent.com/sipcapture/homer/master/scripts/extra/homer_installer.sh
# chmod 775 homer_installer.sh
# ./homer_installer.sh
```

The Installer will prompt for minimal user preferences and complete a basic server setup for your operating system. Within minutes *(depending on your network speed)* your HOMER instance will be accessible:

```
http://<hostname>/webhomer
```

Setup of a **CAPTAGENT** is just as easy using the provided installer:

```
# wget https://raw.githubusercontent.com/sipcapture/homer/master/scripts/extra/captagent_installer.sh
# chmod 775 captagent_installer.sh
# ./captagent_installer.sh
```

Adjust the capture agent configuration with your HOMER details in **/usr/local/etc/captagent/captagent.xml**
Service can be managed using standard init scripts:

```
# /etc/init.d/captagent start|stop
```

Time's UP!

HOMER 5 will be released in the coming hours *(or as soon as we recover from the event!)* Please keep your eyes on our GitHub "sipcapture" account or visit our official website at:

http://sipcapture.org