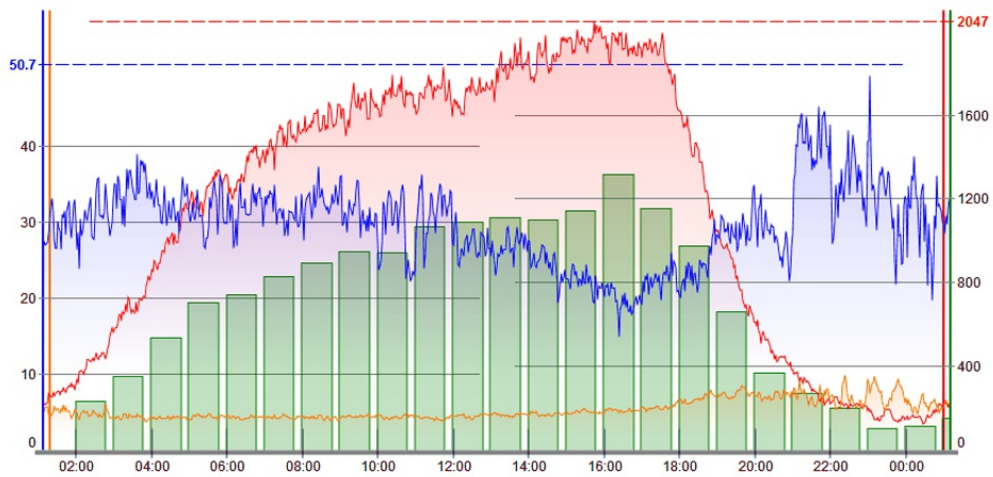




Release notes



User manual

Product version: 2.3

Copyright: 5gFuture Inc., 2011-2017

www.5gFuture.com

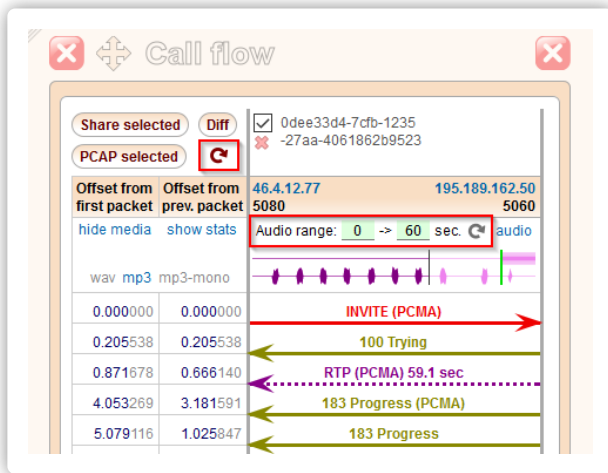
Release notes

If you were upgraded to the next release, please read the release notes below. You may also see the changes that were not applied to your system yet.

Release 2.2-965

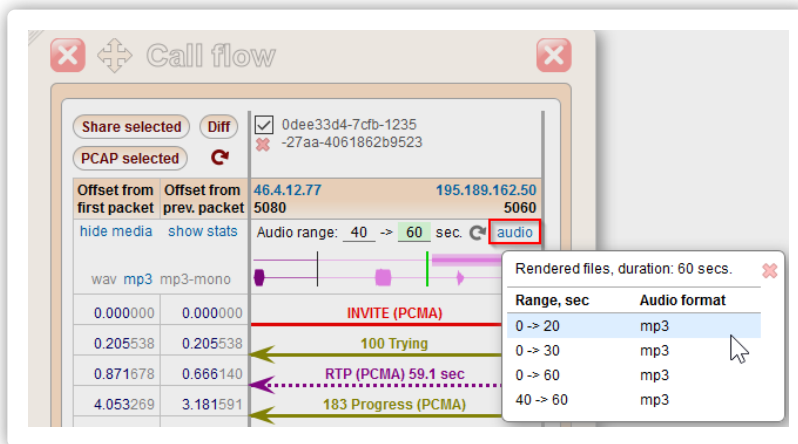
Several major improvements were made to **working with media** in a **Call flow**.

1. With the full media collection enabled, some media is very long and takes a lot of time to extract. In most cases, people don't need to listen to full 2 hours of a call, but just for the first 1-2 minutes. For this reason, a concept of **Media ranges** was introduced. You may select the exact **time range** you want to listen to in a browser, download as a file, get media statistics for, or export to .pcap.



2. A new button to **refresh the Call flow** was added. It may be useful when you see incomplete packets or need to check if media for this call exists. See the above picture.

3. If you work with a long call and need to listen to different ranges, you may easily get back to previously rendered files:



4. Ranges also work for **media statistics**. Calculating it for 1-2 hours may take a couple of minutes. Instead, you may choose to only calculate it for a shorter range, like 10 minutes, to get a quick feeling if anything is wrong, and then recalculate for a longer range, or for a specific part of a call, for instance, from 50th to 70th minute.

The **range for which stats were calculated** is shown in the stats table head. The range is green if it covers full media duration, and red otherwise. Depending on your traffic, stats may not be calculated by default to speed up media processing by the logger, in this case you will see "no stats" in this cell, and will need to manually calculate the stats for the range you need.

Offset from first packet	Offset from prev. packet	213.251.215.14	188.94.208.10
hide media	hide stats	5060	5060

Media stats range:	0	->	39	sec.
Get stats for the time range above				
0 -> 39	<input checked="" type="checkbox"/> SRC->DST	<input checked="" type="checkbox"/> DST->SRC		
Duration:	36.5	38.8		
Media start:	2.4	0.1		
Early media:	5.0	7.3		
MOS:	4.1	4.1		
R-factor:	82.2	82.2		
Total packets:	1824	1942		
Lost packets:	0	0		
Lost, %:	0	0		
Jitter avg:	0.07	0.59		
Jitter max:	1.28	1.82		
Media IPs:	213.251.215.1 188.94.208.10			
Media ports:	20514 61468			
Codecs:	18: G729 18: G729			

Audio range: 0 -> 39 sec. audio

wav mp3 mp3-mono

0.000000	0.000000	INVITE (PCMA)
0.004311	0.004311	100 Trying
0.113733	0.109422	RTP (G729) 38.8 sec - 0%

5. In **Media calls** table, and when you export **.pcap**, you will get a window to select the range for any call with duration over 5 minutes:

Share selected Diff b08da0cc6ee411e6
 9076d89d672bcf81

PCAP selected

Offset from first packet 213.251.215.14 188.94.2
 Offset from prev. packet 5060

hide media hide stats Media stats range: 0 -> 39 s

Get stats for the time range above

Export pcap

Include media to .pcap:

Media range beginning, sec: 120

Media range end, sec: 600

OK

Release 2.2-964

It is possible to determine which tables are accessible to non-Admin users starting from this version. A new config table **Role rules** was added.

Config: Users Users Role rules User rules Object groups Param. groups Table groups More... ?

Save Cancel Rows: 27

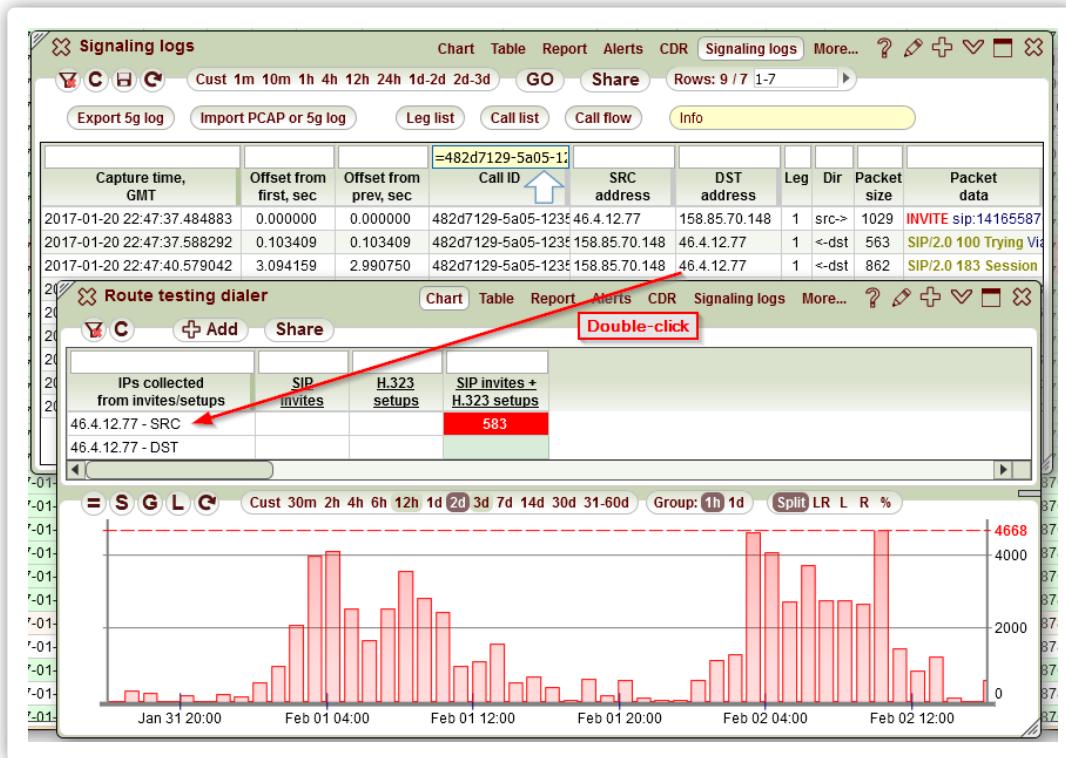
Force all non-Admin users to refresh their web pages

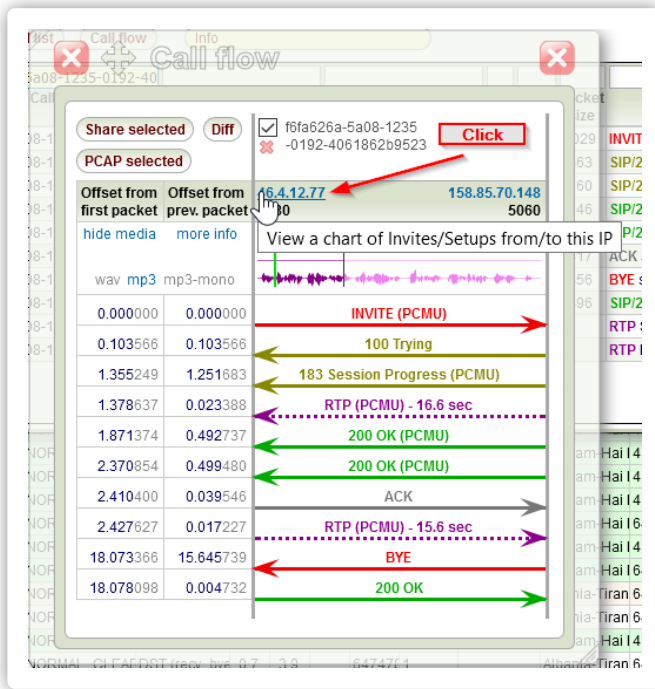
Row ID	Status	User roles	Show tables	Record Add	Record Edit	Record Del	Action buttons	Interface screen	Interface tables (empty=all in screen)
15	✓	User; User read-only	✓	✓	✓	✓	✓	Billing	
16	✓	User; User read-only	✓	✓	✓	✓	✗	CDR comparison	
17	✓	User; User read-only	✓	✓	✓	✓	✓	Routing	
18	✓	User; User read-only	✓	✓	✓	✓	✓	SMS switch	
19	✓	User; User read-only	✓	✓	✓	✓	✓	LNP	
20	✓	User; User read-only	✓	✗	✗	✗	✗	Config: System	
21	✓	User; User read-only	✓	✓	✓	✓	✓	Config: Styles	
22	✓	User; User read-only	✓	✗	✗	✗	✗	Config: Objects	
23	✓	User; User read-only	✓	✗	✗	✗	✗	Config: SNMP	
24	✓	User; User read-only	✓	✓	✓	✓	✓	Config: Alerts	
25	✓	User; User read-only	✓	✗	✗	✗	✗	Config: Tickets	
26	✓	User; User read-only	✓	✓	✓	✓	✓	System logs	
27	✓	Hosted; Hosted read-only	✓	✗	✗	✗	✗		Chart; Table; Report; CDR; C

After you are done editing this table, please press the **Force all non-Admin users to refresh their web pages** button if your changes are critical and you want to update access rights of all logged-in users with non-Admin roles.

Release 2.2-953

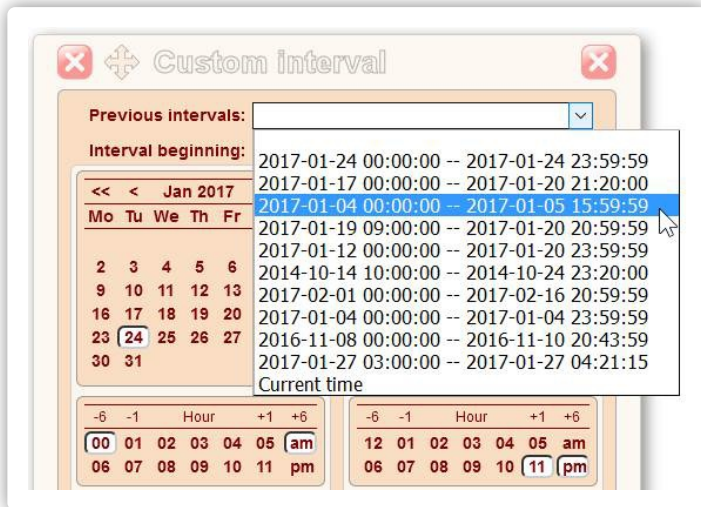
You may now Double-click any **IP address** in the signaling log table, or click it in the **Call flow** and get a **chart of Invites/Setups** from/to this IP.





Release 2.2-950

The last 10 **custom intervals** chosen in the Calendar for each table are now saved and are available after you reload the page.



Release 2.2-942

User password management was improved:

1. A new global parameter **Password pattern** was added to "Config: System -> System config". All new passwords will be checked against this pattern.

For instance, **6/1/2/3/0** will mean:

- **6** - minimum password length,
- **1** - number of lowercase letters in a password,
- **2** - number of uppercase letters in a password,
- **3** - number of digits in a password,
- **0** - number of special characters (! @ # \$ % ^, etc.) in a password.

2. When adding new users or changing passwords for existing users, you may now **generate passwords** automatically according to the above pattern.

Rows: 10		Generate passwords	
	Login	Password	
	user_a	Mb0CAb6	
	user_b	8KnHsm3	

3. You may force a user to **change his/her password** at the first login:

The 'User screens' dialog box contains the following settings:

- User to clone screens from: [Dropdown menu]
- User Manual screens:
- Monitoring screens, main:
- Monitoring screens, advanced:
- Traffic collector screens:
- Route testing dialer screens:
- Rate management screens:
- Routing screens:
- SMS switch screens:
- LNP screens:
- Config screens:
- Force password change: (indicated by a red arrow)

Buttons: OK, Cancel

or at any next login:

Save		Cancel		Rows: 11		Generate passwords	
User Name	Login	Password	Force passwd change	User role			
Test	test		Yes	User			

A user will have the following login window in this case:



You may also make a password visible with the "eye" icon.

Release 2.2-940

An extensive **memory optimization** was performed to allow 5gVision to work on certain **iPhone and iPad** devices that impose very strict memory limits to web sites (as low as 25 Mbytes).

One of the outcomes of this is that all object names from statistics are not loaded any more to mobile devices, rather, only names of the objects that had any stats in the last 2 hours are loaded. This allows to cut memory usage 2-3 times in most cases, but may result in some of the names not shown in Reports if they are done over a long period of time.

Release 2.2-935

It became possible to view **Vendor->Customer** statistics in **Charts** and **Tables** in the recent versions, so there are **3 modes** we may suggest to our customers now:

1. Show Vendor->Customer stats. We believe this is the best option giving you the most flexibility, so this will be the default behavior, unless you request to switch to 2 other modes below.

Imagine that you have a Customer and a Vendor sending the same area to each other, for simplicity. Then this mode will show you full set of stats:

NAME	In Hr Atmpt	In Hr Mins	Out Hr Atmpt	Out Hr Mins
Carrier 1	20.0K	12.0K	200	60
Pink Floyd cellular	15.0K	7500	150	70
Carrier 2	50	13	13.0K	5500
Carrier 2	10.0K	6000	100K	30.0K
Pink Floyd cellular	7000	4000	60.0K	16.7K
Carrier 1	13.0K	5500	50	13

The partner on the 3rd level shows both IN and OUT stats. The arrows demonstrate that once we get to the 3rd level, stats **criss-cross**, for instance, out of 150 attempts Carrier 1 got as a Vendor (stats are in the OUT column, so it is a Vendor), 50 were sent by Carrier 2 as a Customer (in the IN column).

2. Clone OUT stats into IN columns. Traditionally, a lot of our customers got used to a different way to view stats: the OUT stats on the 3rd level were cloned to the IN columns. This way, only Vendor stats could exist on the 3rd level, and if a partner on the 3rd level had any IN stats - they would be overwritten:

NAME	In Hr Atmpt	In Hr Mins	Out Hr Atmpt	Out Hr Mins
Carrier 1	20.0K	12.0K	200	60
Pink Floyd cellular	15.0K	7500	150	70
Carrier 2	13.0K	5500	13.0K	5500
Carrier 2	10.0K	6000	100K	30.0K
Pink Floyd cellular	7000	4000	60.0K	16.7K
Carrier 1	50	13	50	13

This mode is easier to work with, and shows all stats in combinations like Customer->Area->Vendor in just one column (the IN column). You may also hide the OUT columns altogether, and still be able to view Vendor stats on the 3rd level.

3. Hide IN stats. To make it even less confusing, the IN stats may be simply hidden on the 3rd level, thus, you can see only Vendor stats there, and only in the OUT columns:

NAME	In Hr Atmpt	In Hr Mins	Out Hr Atmpt	Out Hr Mins
Carrier 1	20.0K	12.0K	200	60
Pink Floyd cellular	15.0K	7500	150	70
Carrier 2	-	-	13.0K	5500
Carrier 2	10.0K	6000	100K	30.0K
Pink Floyd cellular	7000	4000	60.0K	16.7K
Carrier 1	-	-	50	13

Please let us know if you want to change to the modes 2 or 3.

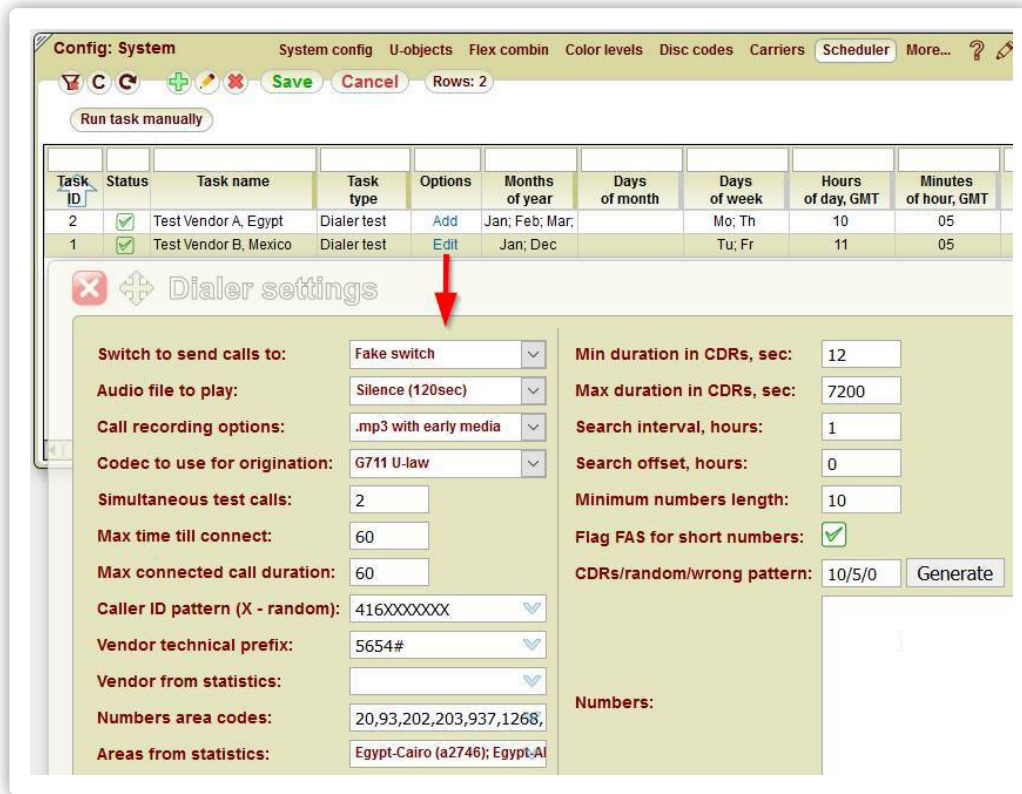
Release 2.2-917

An object type letter **p** used for "Poller internal statistics" (**p001** - Server CPU load) was changed to **i** (for Internal), the new objects will look like **i001**. Letter **p** will be used in currently developed statistics per Products / Rate plans / Partitions. For instance: Premium, Standard, CLI, etc.

This change may only affect you if you are watching Internal statistical parameters, or have alerts configured on them. Most of the web configs should be updated accordingly, however, we would kindly ask you to double check them.

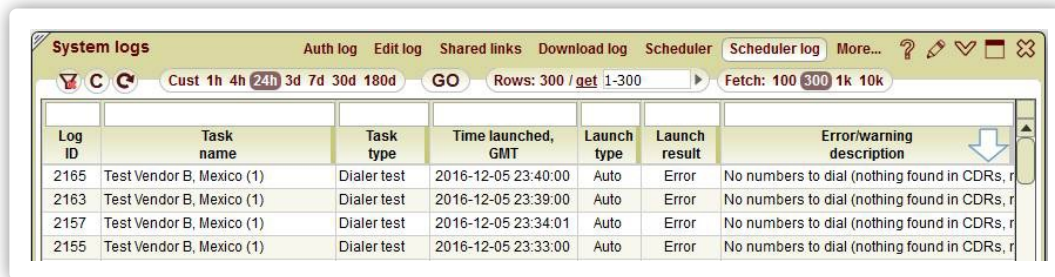
Release 2.2-916

A **Task scheduler** is introduced with this version to allow users to run various tasks automatically. The first task added is a request to test routes via a **Dialer**. The Scheduler table is in the **Config: System** screen.



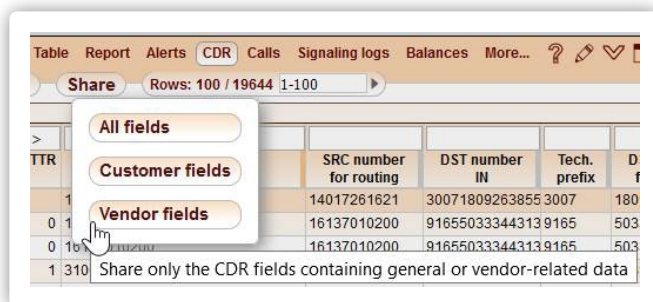
You may specify the options each task will run with. For the Dialer, the options are quite the same as with the manual request, except that there is no need to manually generate the numbers from CDRs, it will be done with each task run, so different numbers will be tested each time. Any numbers left if the "Numbers:" textbox will be tested over and over (not recommended).

Each scheduled run of a Dialer will create a record in the Dialer "Request" table, and a record in a "Scheduler log" table on the **Config: System logs** screen. Please check this log for any errors.



Release 2.2-915

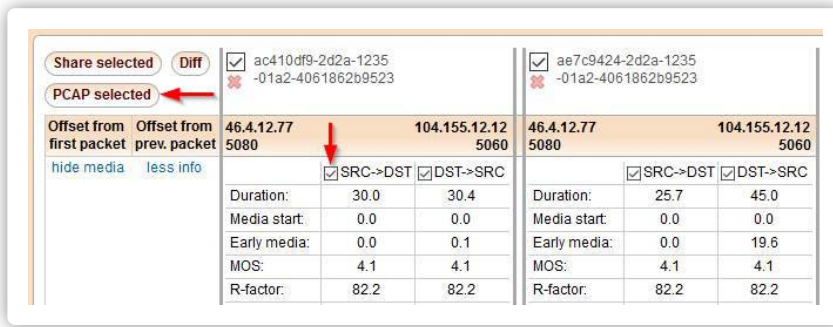
When **sharing CDRs** with your partners over public links, you may now automatically include only Customer- or Vendor-related columns out of all the columns visible in the table you share. Generic columns like Duration, Disconnect code, etc. are included in any case.



Release 2.2-908

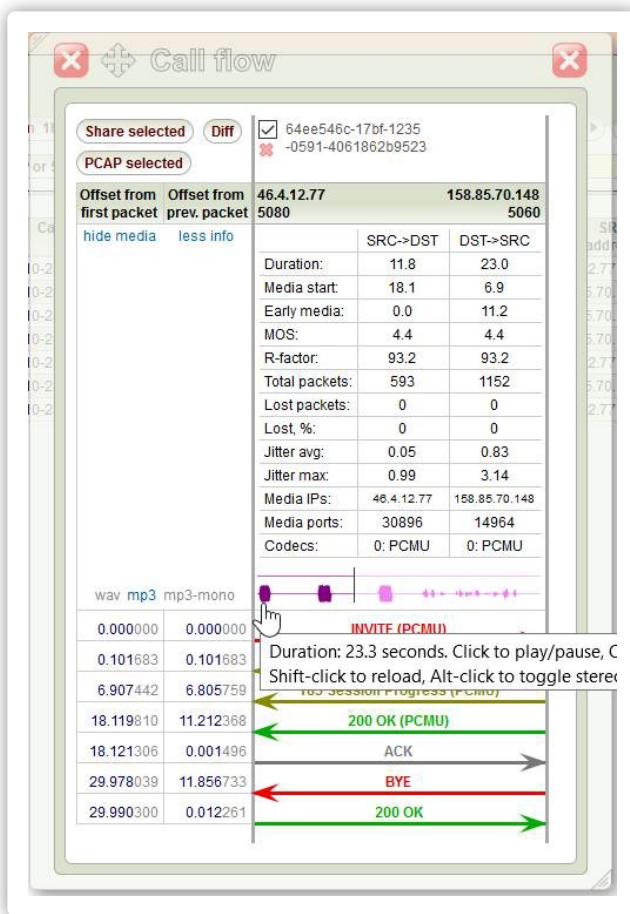
1. Each **media** waveform in a table cell or in a **Call flow** will have a Right-click menu, allowing to open each audio file in a separate **player**. You may also simply Right-click any cell without a waveform yet loaded, and go to a player right away.

2. Export to **.pcap with media** is supported now for both (or only one) of the streams of each chosen leg. Shared links will contain media statistics, if media is shown at the moment of creating a link. You may also choose to upload audio files to a link sharing server to let your partners listen to media streams while working with your links. Media in links will always contain both streams.



Release 2.2-894

1. The **Call flow** will now let you **play media** of each leg, as well as view the media stats. Full media collection should be enabled for your switch in this case. Please contact support to investigate if your traffic will allow to support full collection.



2. The **Route testing dialer** CDRs will now have 2 columns to play media:

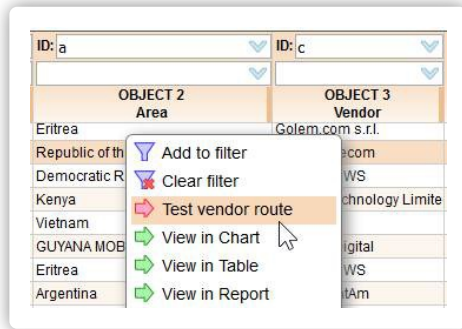
- **Audio recorded by 5g media logger** will play the audio collected by the logger installed at a dialer. This media will always have early media included, regardless of the media settings in the request. You may play or download media in one of the 3 formats - **wav**, **mp3**, **mp3-mono**, regardless of the format chosen in the request. Alt-clicking the waveform will split it into the up and down streams.
- **Audio recorded by Freeswitch** will play the audio that the Freeswitch, used as a dialer, records itself. This media may have early media missing due to restrictions of the Freeswitch, and will not have up and down streams separated in left and right channels. This column is hidden by default and is left for compatibility and for rare cases when 5g own media is not available.

Audio recorded by Sg media logger	Audio get file	Audio recorded by Freeswitch	Audio get file FS	MOS src->DST	MOS DST->src	R-factor src->DST	R-factor DST->src	Packets src->DST	Packets lost src->DST	Lost % src->DST
	get file		20161028/	4.4	4.4	93.2	93.2	593		
	play/pause, ctrl-click to jump		20161028/							

There is also new media stats added to the Dialer CDRs per each media stream: packets, **losses**, **MOS**, **R-factor**, **Jitter**.

Release 2.2-865

The [Route testing dialer](#) was upgraded with a possibility to **initiate route tests** right from the [Table](#), [Report](#), or [Alert](#) modules.



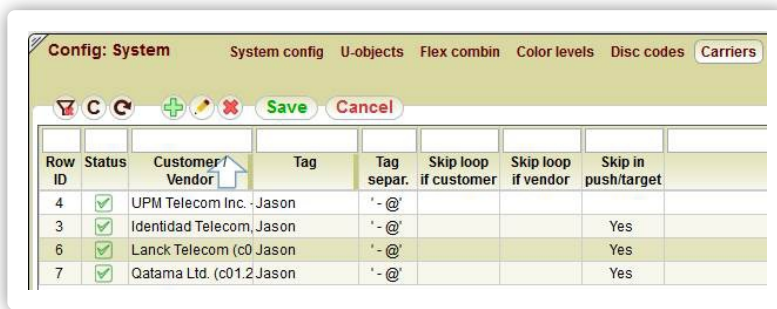
The Area and Vendor will be **filled automatically** into the test form, as well as the Vendor technical prefix (needs to be configured in the "Config: System -> Carriers" table), and the codes, belonging to the Area. The codes will be used to retrieve test numbers from CDRs.

Release 2.2-860

You may now **assign an arbitrary tag** to any customer or vendor in your system. This tag will be added to the configured object names via a separator, and will be visible in [Tables](#), [Reports](#), [CDRs](#), etc.

NAME	In Calls	In Hr Atmpt
Count	Total	Total 2
4	12	0
Qatama Ltd. - @Jason	12	36
Lanck Telecom - @Jason	-	4
LPM Telecom Inc. - @Jason	-	-
Identidad Telecom, LLC. - @Jason	-	-

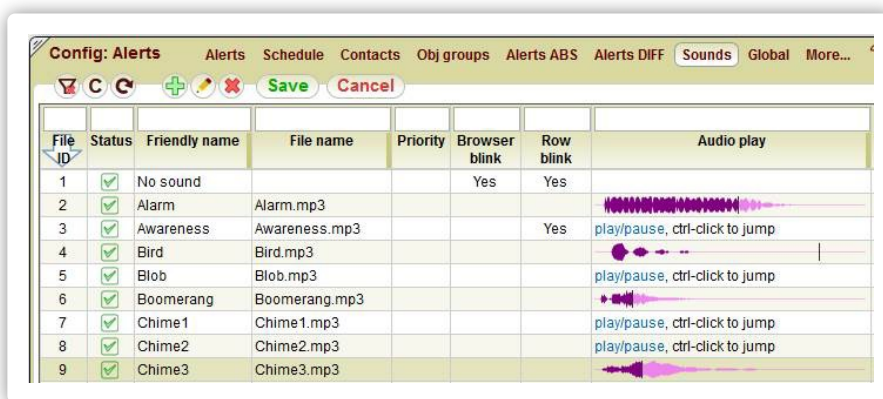
One of possible uses might be to **associate each customer or vendor with an account manager**. This way you will be able to quickly filter out only the objects, belonging to certain managers. We would recommend to use separators ending in @ or # to make sure your filters are more precise. To configure tags for each carrier, please go to "Config: System -> Carriers" table.



You, or any other users that need to see your changes in carrier names, will need to refresh the browser page to pick up the new settings.

Release 2.2-859

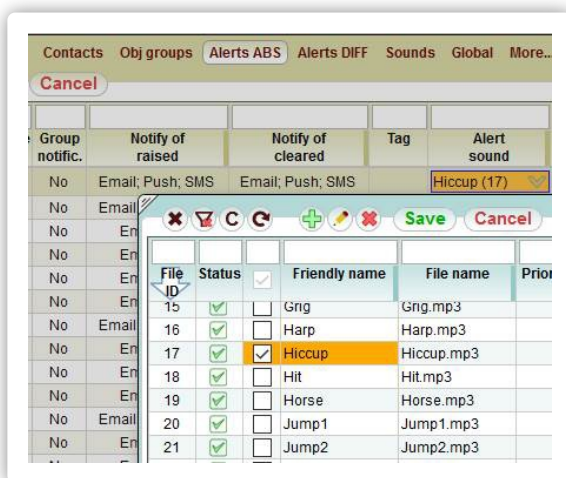
You may now assign a **sound** that a browser will play once **new alerts** of certain types arrive. Sounds may have priorities, if several sounds correspond to arrived alerts, only one sound with the highest priority will play.



It is also possible to:

- force the browser title to blink, this will be visible in the browser tab and in the operating system taskbar (if the 5gVision tab is active and app icons have text names),
- force the newly arrived rows in the alert log to blink.

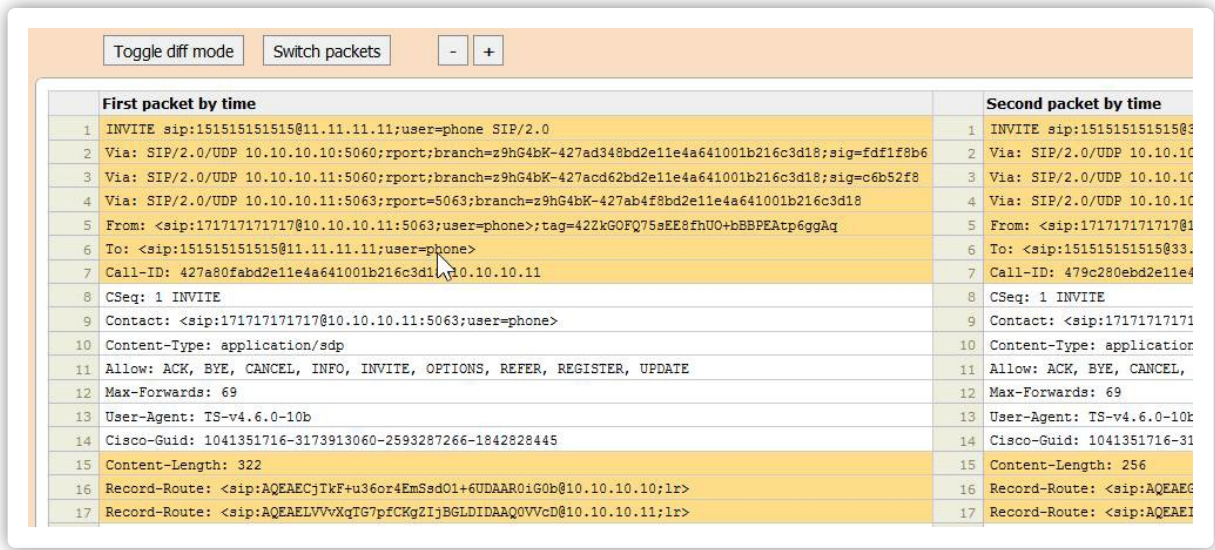
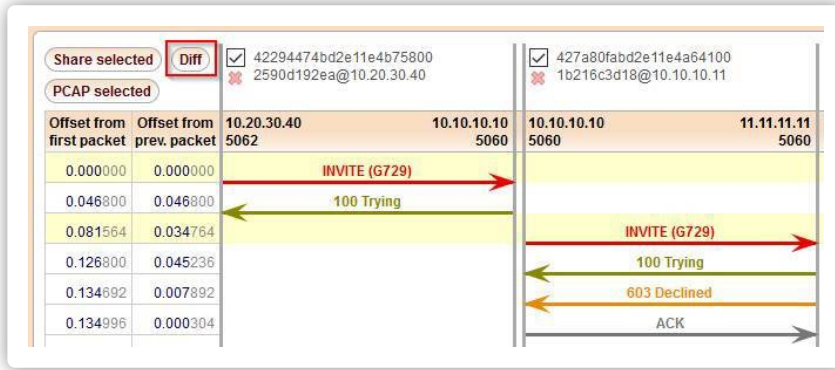
Sounds and other notifications will trigger only when the **Alerts** table is auto-refreshed, manual refreshes result in no notifications. The alert table should be on screen for auto-refresh, and, thus, notifications to work. Sounds are assigned to alerts in the **Alerts ABS** and **Alerts DIFF** config tables.



Release 2.2-856

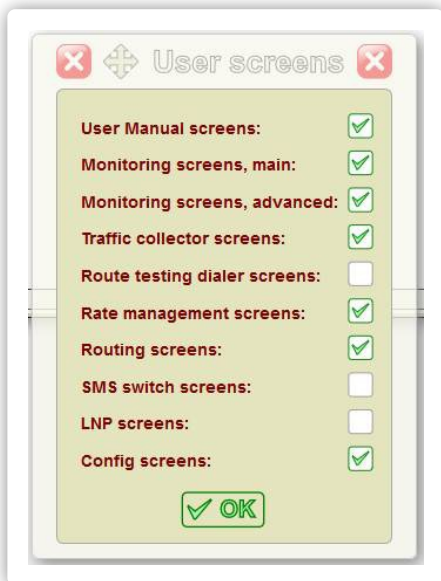
It became possible to **get a diff of two signaling packets**, comparing them side by side. Please press the **Diff** button in a **Call flow** or choose

this option from a right-click menu in a log table.



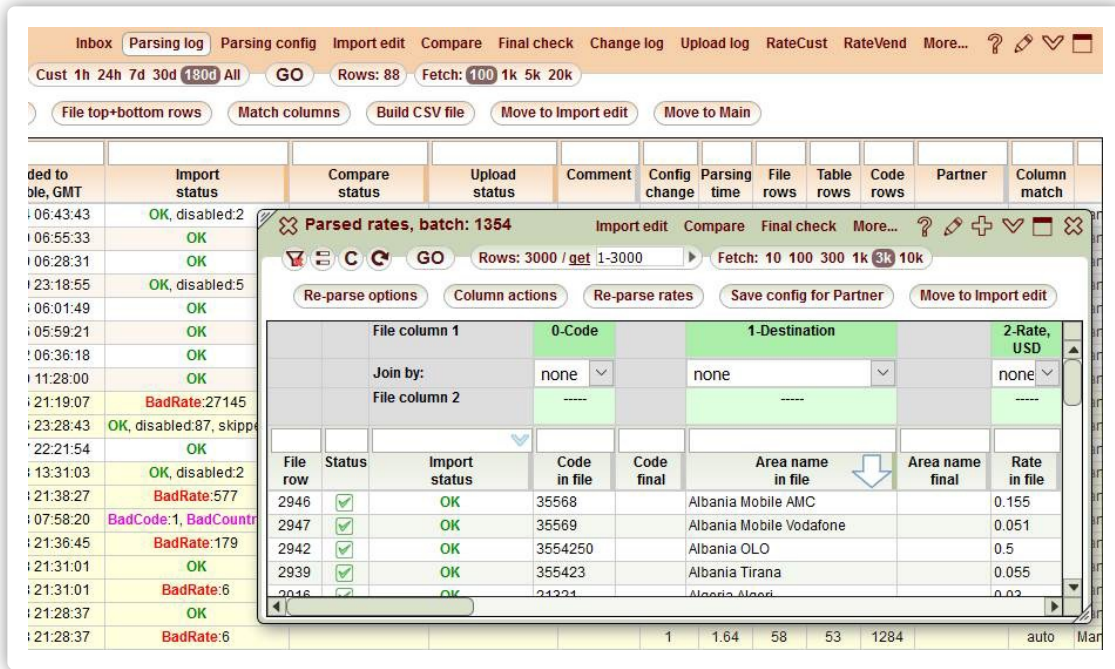
Release 2.2-844

When **adding a new user**, you would now be able to choose **which screens to show** to this user after you press the Save button. You may add, for example, only the very basic monitoring screens and no configs, or all screens for all products.



Release 2.2-804

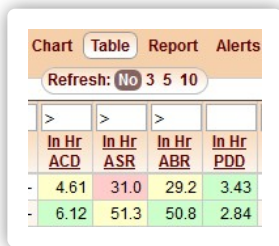
Parameters like **height**, **width**, **column layout** can now be saved for **Floating blocks**. Once you change any of these settings, all further floating blocks/tables in all screens will have them by default. You may now configure floating blocks to be as big or small as you like, and contain your set of columns.



Release 2.2-795

An **Auto-refresh** strip was added to the **Table** and **Alerts** modules. You may now decide how often these tables will auto-refresh. By default, Alerts refresh every 5 minutes, and Tables dont auto-refresh.

Charts auto-refresh as before: every minute if this results in at least a two-pixel move of a chart. Otherwise, an auto-refresh period is adjusted so that a chart moves by 2+ pixels after a refresh.



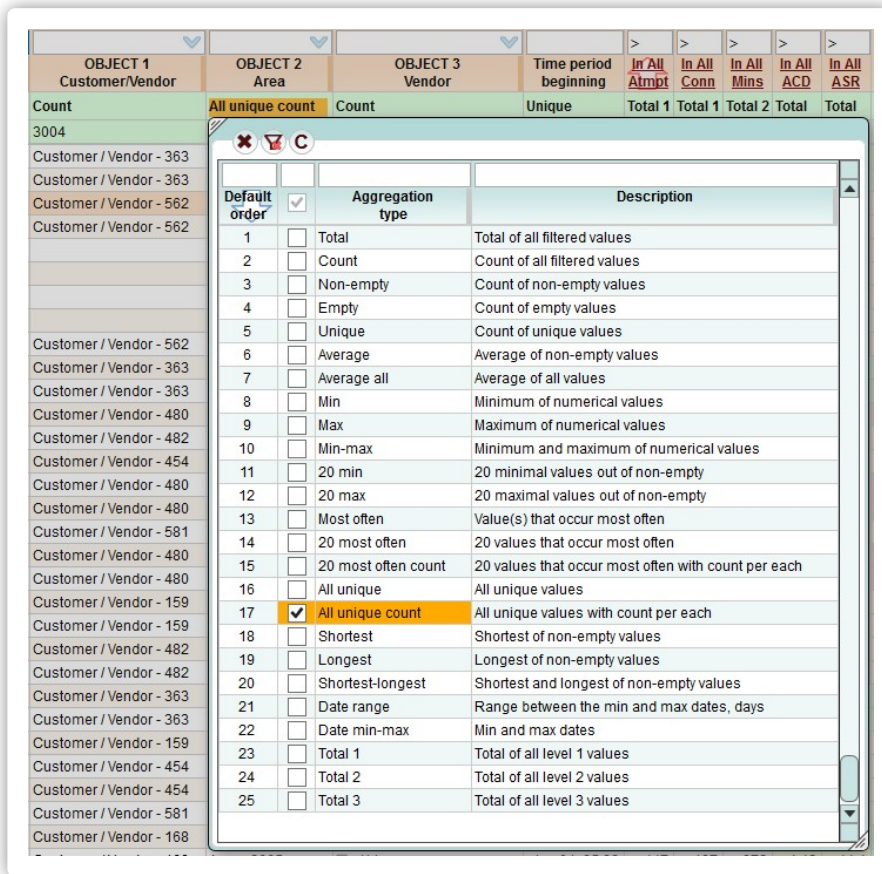
Release 2.2-794

A **Highlight** of table rows is now saved to a DB for all tables (previously it was saved for only small config tables, excluding large tables like **CDR**, **Alerts**, **Rates**, etc.). Thus, your highlight will survive a page refresh.

Release 2.2-792

It is possible now to add a **Total / aggregates row** to any table, allowing you to conveniently analyze data that is loaded to the web interface (but not all the data in the DB for this table).

Apart from common aggregates like **Total, Count, or Average**, you may see, for instance, **All unique values** in a table with counts, **Date ranges** for date columns in CDRs or Rate management, **Minimum-maximum** value ranges, etc.



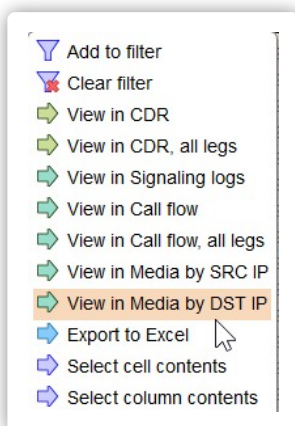
Release 2.2-787

Settings for a **loop detection** mechanism were updated with an option of **duration tolerance**.

If duration of a connected call suspected to be in a loop differ more than plus or minus the tolerance from other calls in a loop - this call is not counted as part of this loop.

Release 2.2-780

The new cross links are added to the **CDR** and **Signaling logs** tables: **View in Media by SRC IP** and **View in Media by DST IP**.



If you have the **Media collector** installed and your media is written randomly, you will be able to open all recorded calls for the same interval as you have in the CDRs or Signaling logs, filtered by the SRC or DST signaling IP. This way you may quickly check the quality by listening to suggested calls in any codec right in the web interface.

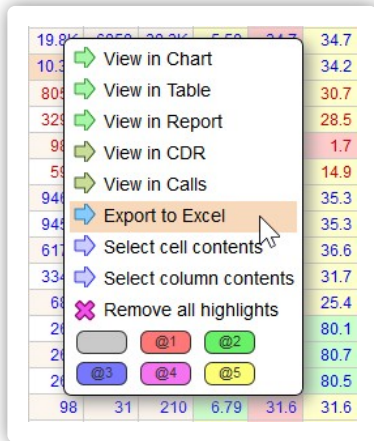
Codecs	Packet count	Lost packets	Captured duration	Early media duration	Connect	Audio play	Audio get file
0: G.711u	1279	0	25.6	25.6		play/pause, ctrl-click to jum	get file
8: G.711a	6046	0	34.0	34.0		play/pause, ctrl-click to jum	get file
0: G.711u	2951	0	31.9	4.6	yes		get file
8: G.711a	10539	5033	53.9	21.2	yes	play/pause, ctrl-click to jum	get file
8: G.711a	4328	0	48.2	9.4	yes		get file
0: G.711u	628	0	6.4	6.4		play/pause, ctrl-click to jum	get file
8: G.711a	2817	0	41.5	41.5		play/pause, ctrl-click to jum	get file
8: G.711a	8992	0	45.0	45.0			get file
8: G.711a	6256	30260	31.7	24.8	yes	play/pause, ctrl-click to jum	get file
8: G.711a	977	0	19.5	19.5		play/pause, ctrl-click to jum	get file
18: G.729	277	0	1.6	1.6			get file
0: G.711u	3496	0	35.2	35.2		play/pause, ctrl-click to jum	get file

Please note that by default the media is recorded randomly (about 1-5% of all media), so you may not listen to the very same call you viewed in CDRs or Signaling logs, but you may easily find similar calls to the same destination by filtering by the DST number.

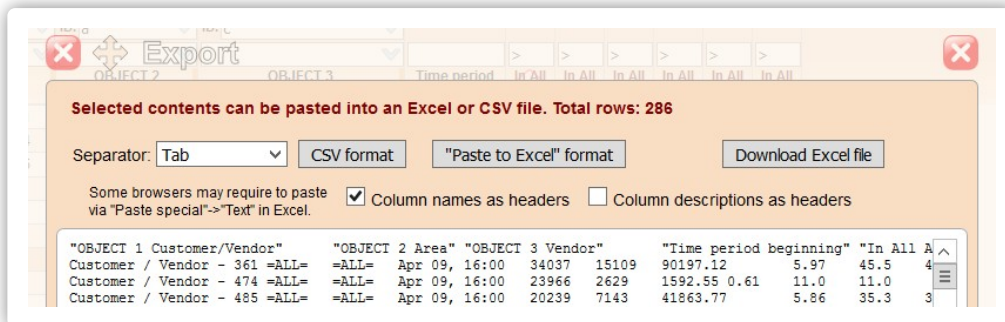
Full media can be recorded on request provided the proper hardware is used.

Release 2.2-778

You can now **export any web table into an Excel file**, preserving most of the formatting (or without formatting if you wish). The Export option is present for every table in the drop-down menu.



There is a new button in the export dialog: **Download Excel file**.



This is how a Report would look like after the export:

	A	B	C	D	E	F	G	H	I	J
1	OBJECT 1 Customer/Vendor	OBJECT 2 Area	OBJECT 3 Vendor	Time period beginning	In All Atmpt	In All Conn	In All Mins	In All ACD	In All ASR	In All ABR
2	Customer / Vendor - 361	ALL	ALL	Apr 09, 17:00	34.0K	15.1K	90.2K	5.97	45.5	44.4
3	Customer / Vendor - 474	ALL	ALL	Apr 09, 17:00	24.0K	2629	1593	0.61	11	11
4	Customer / Vendor - 485	ALL	ALL	Apr 09, 17:00	20.2K	7143	41.9K	5.86	35.3	35.3
5		Area - 1389	ALL		19.8K	6858	38.3K	5.59	34.7	34.7
6		Area - 1399	ALL		10.3K	3516	19.8K	5.62	34.2	34.2
7		Area - 1405	ALL		9461	3342	18.6K	5.56	35.3	35.3
8			Vendor - 360		7657	2396	11.4K	4.78	31.9	31.3
9			Vendor - 300		3146	885	6803	7.69	28.2	28.1
10			Vendor - 359		1044	27	131	4.86	2.6	2.6
11			Vendor - 159		246	34	195	5.73	37.8	13.8
12		Area - 1406	ALL		9458	3342	18.6K	5.56	35.3	35.3
13		Area - 1407	ALL		6171	2259	13.3K	5.9	36.6	36.6

Release 2.2-773

A possibility to send alert notification emails in **HTML format** was added. You may now create various email templates using an HTML editor. Here is one of the default templates:

The screenshot shows the 'Config: Alerts' window with a table of email templates. Below the table, an 'HTML editor' window is open, displaying a template with the following content:

```

{{stats_type}} statistics, {{abs_diff}} alerts:

{{object_type}}

{{object_name}}

{{param_name}} {{param_dir}} {{param_value1}} {{change_sign}} {{param_change}} {{raised_cleared}} {{link_chart}} {{link_cdr}} {{alert_id}} {{conf_id}}
{{param_value2}} {{cleared_after}} {{critical}} {{comment}}
    
```

And this is how your notifications may look like with another default template:

5gVision raised/cleared alert notifications sent at:
 2016-04-28 00:22:09 UTC
 2016-04-27 20:22:09 User time

SWITCH statistics, Absolute alerts:

Customers/Vendors <==> Areas

IVY Telecom ==> ID:a3.65611

Hour Minutes IN 274.78 >= 100.00 **RAISED Accum** [View chart](#) [View CDRs](#) ConfID:28 very long comment

IVY Telecom ==> TEST AREAS

Hour Minutes IN 265.80 >= 100.00 **RAISED Accum** [View chart](#) [View CDRs](#) ConfID:28 very long comment

The easiest way to create a new template would be to clone an existing one, change the colors and layout of the new one, and assign it to chosen emails in the Contacts tab.

Release 2.2-727

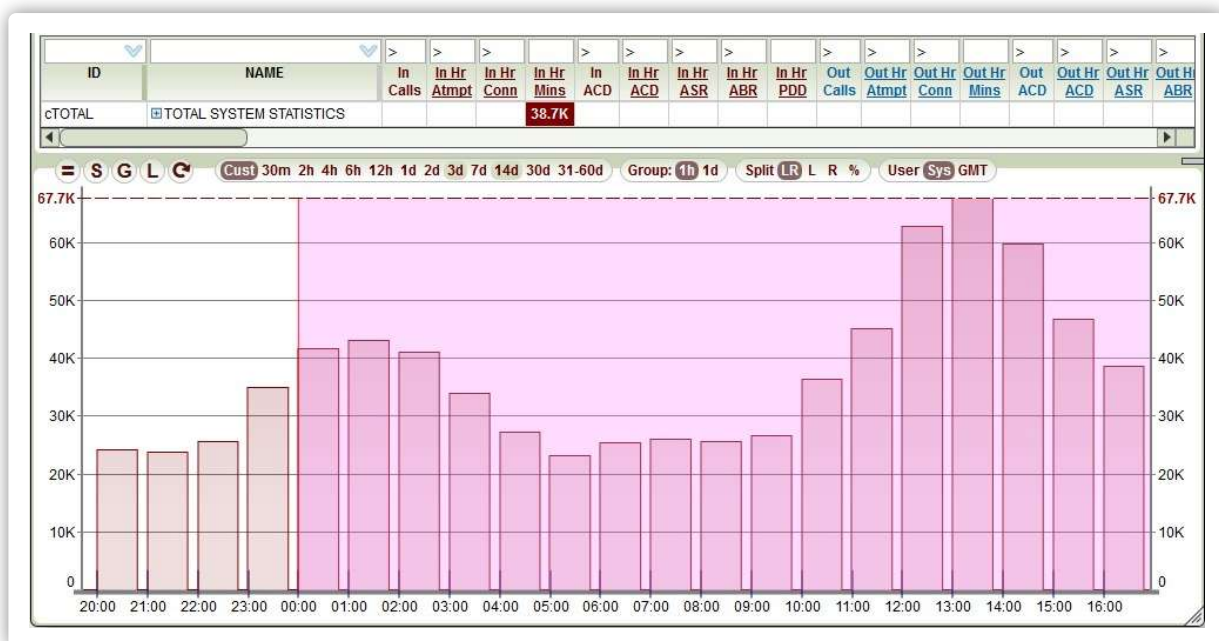
Ctrl-dragging the block resize handle will now **resize** the height of **all blocks** in a given row and the width of all blocks on screen for screens with multiple blocks.

Release 2.2-720

The Alerting module (see [Alerts](#)) was enhanced with the following functionality:

- Accumulative alerts** were added for the VoIP switch objects and SCR/DST numbers. Only the per-hour parameters can be accumulated. You may choose to start accumulating data from any **day of week** or **day of month**. For instance, you may set an alert if the minutes to a certain Vendor for a certain destination reach 300k from the beginning of the month or from Monday of each week. You may also set more granular accumulation periods like one day or 3 hours.

Accumulative alerts are part of the [Custom intervals](#) module.



- You may now set the change direction in the Differential alerts as **both** (a parameter goes either UP or DOWN over the threshold percentage).
- The [Alert log](#) table was added right to the alert configuration table to make it easier to configure and check alerts in one place.
- The Object groups, Alerts ABS, and Alerts DIFF tables now have the Status column to **enable/disable** the records in a more

convenient way (rather than doing it by setting the Schedule=DISABLED).

Release 2.2-716

1. The **screen add/edit** window was changed to make it easier to find and add various screens. Screens are now **arranged by the products**, and you may also add all screens of a particular product at once (for instance, if you choose the **Rate management** folder - the very folder and all the Rate management screens will be added. Please see more in [Add/edit menu](#).

2. The **column selection** window was redesigned to make it easier to find and then add/remove/re-arrange table columns. This is especially convenient for tables with a lot of columns, like [Chart](#), [Report](#), or [CDR](#).

Admin users may now create **Global presets** to share their column layout with other users. Please see more in [Column selection](#).

Release 2.2-705

1. The manual was significantly revised and split by products:

- [Monitoring and Alerting](#).
- [Traffic collector](#).
- [Route testing dialer](#).
- [CDR comparison](#).
- [Rate management](#).

The Rate management manual is not fully complete, though.

You will now see separate screens for each manual in the menu tree on the left. The former **User manual** screen was changed into a folder.

2. The messaging system was added, allowing us to share company and product news with you.

Please have a look at the new messages once they arrive by clicking the **Messages** link on top of your web page (if the block on this screen is maximized, please return to normal mode to see the links on top).

3. You can now **share screens** in addition to cloning them. If the screen is shared as view-only, only the owner of the screen (the one who shared it) will be able to save changes. All other users will be looking at a copy of the owner's screen.

If the screen is shared as editable, all users will be able to modify it. However, changes by other users are not synchronized with your shared screen automatically, you need to refresh the screen to upload them.

Release 2.1-665

1. The comparison tool in charts (the = button) can now be set to any number of days.

2. New parameters for number and % of calls using LRN were added (in case there is LRN info in the switch CDRs).

Release 2.1-657

For **MVTS II** switches **DST areas** are now determined in 5gVision in case an area is empty in CDRs (a call got rejected before the area was matched in a switch, for instance, for disconnect codes like DB-201 Full authentication failed).

Areas matched by 5gVision will be seen in stats, but will only be seen in CDRs if CDR replication is active.

Release 2.1-646

A **dot** symbol in filters was revised. Since dot is often used in object IDs (set 2 areas are **a2.**, etc.) and names (IP addresses, etc.), it seems more logical to treat the dot as is, not as a regular expression symbol for "any character". Previously, to make a dot a dot it was necessary to escape it: `\.`

An exception to this are 2 combinations frequently used in regular expressions: `.*` and `.+`, here the dot is still treated as "any character".

Release 2.1-640

A new parameter was added **Duration Per Attempt, minutes**. Names in the columns are **DPA** and **Per-hour DPA**.

This parameter is, effectively, ACD * ABR and is showing how many minutes (which is how much money) your network is making from every call attempted by a customer.

Release 2.0-604

If needed, you may now add the **3rd set of DST areas** in addition to the 2 set existed before. For instance, the first set will be from your switch, the second will have only full countries, and the third one will consist of several specific destinations where you need extra granularity on the code level.

IDs of areas of the third set will be prefixed with **a3**.

Release 2.0-601

Report column sorting was enhanced with the mode to **get back to the original DB sorting** by object groups (with red lines). After you sorted by any column (and ruined the red lines), you may simply click on the initially sorted column (the one with a vague red sort icon) and restore the original sort.

Release 2.0-595

1. It is possible now to define what to show in table cells for **null or 0** statistical values and whether to highlight them. This is configured in "Config: System -> Color levels", see [Color levels](#).

2. A Right-click browser menu can be called via pressing Shift + Right-click.

Release 2.0-585

The following new parameters were added: % of attempts and connected calls disconnected by Source, Destination, Switch.

Release 2.0-584

It is possible now to **push** alert notifications to the 5gVision own **Android client** (iPhone client will be added later).

[Please get the application here](#)

Please contact support to get the PINs needed to register the application at the 5gVision push server.

There is a new column in the **Contacts** table in alerts: **Mobile client PIN**. Once the PIN is filled and pushes are enabled at the Global table, you will start getting notifications of configured alerts to your mobile phone.

Push notifications have a lot of advantages over SMS:

- You don't have to pay for each message.
- Messages are not limited to 160 characters and are thus much more detailed.
- It is much easier to manage alerts in the 5gVision application.
- Our own application will allow us to add more features in future, like attached charts of alerts, links to stats for the alerted objects, etc.

Release 2.0-568

Generation of **Shared links** was added for **Table**, **Report** and **CDR** modules.

Please press the **Share** button in these modules (as well as **Chart** or **Log collector** modules) to get an easy-to-open link to the data you see on screen that you may share with your partners. Only the very data you share is uploaded to the Sharing server as a text file, your partners won't be able to see anything else.

Release 2.0-567

1. A **Shared links** log was added to **Config-System->Shared links**. It also became possible to remove links that were sent to partners in error.

2. The **User Access Rules** module was upgraded to support editing restrictions for tables and Options menus. It is possible to **block adding, editing or deleting** records in certain tables for certain users, as well as block any Action buttons (the buttons in the second row of the menu on top of each table).

Likewise, you may **restrict** users from **editing** of any individual **options** in each Options menu, and even **set default values** for the options.

These features come handy if you want to limit choices for non-advanced users in order to minimize a possibility of mistakes. For instance, when importing vendor rate sheets, or generating and emailing customer rate amendments.

Release 2.0-562

1. Log of user authentications was added to **Config: Users -> Auth log**.

2. On the chart canvas, it is possible now to open a "table" menu via right-click. When a blue zoom box is dragged over a chart, and **View in CDRs** is chosen from the menu, the interval in CDRs will match the zoom box interval.

If the zoom interval exceeds 12 hours, it is limited to 12 hours in CDRs. The end of the time interval in CDRs will match the end of the zoom box interval.

The chart object auto-filtered in CDRs will generally be the last object that was added to the canvas by clicking on a **Legend table** cell. If you dont get the object you need filtered, please just remove its chart and add it again.

3. Object combinations **cav** (Customer->Area->Vendor) and **cv** (Customer->Vendor) will show both **IN and OUT** stats in **Charts, Tables, and Reports**. In essence, since both Customer and Vendor are present in these combinations, IN and OUT stats will be absolutely same for all parameters. However, viewing them in both IN and OUT columns is convenient in some cases.

Release 2.0-558

1. It is possible now to set up **per-minute intervals** in the Custom alert intervals module. Per-hour intervals will be applied to per-hour stats (bars on charts), as before, and per-minute ones will be applied to Active call and EMA stats (lines on charts).

Users of Custom alert intervals module will now be able to set up alerts like these:

- compare this minute active calls with a previous minute, catching very sharp call drops or raises, or
- compare average active calls over the last 7 minutes with average calls over 18 minutes 31 minutes ago.

The data available for such comparisons is limited to the last 50 minutes to avoid excessive load to the system. If you need to compare parameters over longer periods, please use per-hour parameters with per-hour custom intervals of up to 2 weeks.

2. A possibility to set UP/DOWN threshold as an **absolute value** was added to **DIFF alerts**. You may set both the % change and the value change, alerts will be raised on either of them, with % change having the priority, i.e. if both conditions are met, the alert will be raised on % change.

Release 2.0-556

Object ID regexp filters are added to an "Object groups" table in alerts. Please add the "ID include mask" and "ID exclude mask" columns as needed.

You may now, for instance, filter out only the main DST areas with a "a2\" exclude regexp, or only the DST set 2 areas with a "a2\" include regexp.

Release 2.0-532

SRC/DST number stats can now be viewed per range of numbers, like 123456XXX, cutting off the last N digits that you may set in the **Group** strip of the table menu. Alerts by ranges are also possible, please add **Group numbers** column to the Object groups table.

Release 2.0-524

This major new release introduces **Custom styles** - an existing new way to **change 5gVision interface** to whatever pleases your eyes.

You may try changing the style of this page right away:

This is just a quick demo, the new style will be lost after you refresh.

There are several "production" ways to apply, modify, and save the styles:

A. Simple and straightforward ones:

- If you click the **Interface** link on the very top of your page, next to the screen name, you will see a **Style menu**. There are several pre-defined **Saved styles** loaded in the system (and more to come), and you may try them out by simply choosing them in the drop-down box. Styles are not saved until you press the **OK** button below, if you refresh your browser page - you will get back to the previous style.
- Next, you might want to change the color of some of your block types clicking on color bars in the palette below. Most of the time you see **statistics blocks of column 1** in the interface, the first choice. You may always return to default colors of the current style you use by clicking the **Revert to default block colors** button.
- If you are still not happy with the pre-set colors, you may choose a custom color, or apply additional intensity filters in options like **Color intensity, block headers**.

B. Advanced. This part is for users understanding basic principles and semantics of **CSS** (Cascading Style Sheets). 5gVision interface configs mostly consist of plain CSS declarations, except when we need to change a logo, an icon, or color intensity based on another color, in which case we use proprietary attributes that are processed in a special way and not added to CSS sheets.

- If you want to change different other elements of the interface, not just the backgrounds, you may click the **Change style of interface elements** and choose the very element you need with the help of the red outline appearing around elements with custom styles assigned.
- Once you start creating your own style, the system will suggest you to load any of the default **Saved styles** as a base for your changes. Please do. You may also add a new screen **Config: Styles** to conveniently get back to style configuration whenever needed.
- You may share any style you create via **exporting** it as a text file, and sending to other users that may import it via a button in **Config: Styles** table.
- System **admins** can also create and save global styles that will be available to all users in the company in addition to the default Saved styles.

Release 1.9-508

A new **Media collector** module was developed to **capture and play back media** in any codec. The capturing will work in 2 modes:

A. You may set up IPs and number masks for which the media will be recorded randomly. Small customers/vendors/areas will have the preset minimum number of recorded calls per hour, lets say 10, objects with large traffic might have 100-500 calls recorded, depending on how many objects you are recording for.

B. You may force the system to record the next 5/10/20 calls in a row for specific IPs/numbers, for instance, if you are making a call and want to be sure it will be recorded.

Since media is recorded randomly and only for a short initial interval (we recommend 60-120 seconds) - it wont create too much of an additional load to the system, even if you want to monitor quality for all your customers and vendors.

Usually, 10-20 calls per hour is enough to understand what is going on with a specific vendor->area combination, there is no need to record absolutely every call.

The **Media collector** module comes at an additional price and requires the **Signaling Log collector** module installed, see [Log collector](#).

Release 1.9-504

There were 3 new statistical parameters added: **DC1, DC2, DC3** for the % of chosen disconnect codes. The codes to include in each parameter are configured in [Disconnect codes](#), you may have several codes included per parameter, if needed.

Release 1.9-491

1. A new cross-link **View in CDR, all legs** was added to a context menu. The link will open a CDR table with all legs of a call filtered out, including all hunt attempts. This feature only works for the switches that have a field like "Conference ID" to tie different legs of one call together.

2. Likewise, there is a new cross-link **View in Call flow, all legs** that will open packets flow for all legs in a chosen call. Up to 20 legs can be shown on the same Call flow.

3. A **Call flow** window in a [Log collector](#) module can now be resized. Double click on the resize icon will revert the window to the default height and width.

4. The [Packet viewing](#) window was revised to allow seeing only the selected packet(s), the full leg(s) belonging to the selected packet(s), or all legs in a table (up to 1000 packets in total).

5. It is possible now to **expand or collapse a packet body** in a packet viewer window by clicking on its header (INVITE, etc.).

Release 1.9-483

1. If there are 2 or more charts active in a [Legend table](#), moving a mouse over a cell in the Legend table will highlight a chart on the canvas below.
2. When CDRs are exported to a file, a window with export options will pop up, allowing to choose a separator, whether to preserve dates and long numbers in Excel or not, a file name format, and other options.
3. It is possible now to filter SRC/DST IPs in signaling and media logs using whole networks, like this: **=10.20.30.55/24**. Network filtering works only with **=** or **!=** signs.

Release 1.9-475

1. New Report logic.

The old Reports only allowed to see combinations like **ca**, **cac**, **cc**. The new report mechanism allows any combinations existing in the system, adding **cr**, **ar**, **car** (where **r** is the disc. code or reason), and in case SRC areas are collected, **bc**, **ba**, **bac** (where **b** is the SRC area).

In addition:

- It is possible to open the **3rd level** in Reports now, much like in Tables.
- In the old Reports, it was only possible to filter by ID in the first column, in the new Reports, each Object name column has a corresponding object ID column on top.
- Any object types can now be in any column, and you may also combine object types, for instance, you may set in the 3 top ID columns the values ID1: **c**, ID2: **a**, ID3: **c||r** this way you will get a report on 2 combinations: **cac** and **car** at the same time.
- If no IDs are chosen in the top filter rows, the **default** values of ID1: **c**, ID2: **a**, ID3: **c** will be added automatically.
- You may also add the separate ID columns for Objects 2 and 3 via the [Column selection](#), if needed.
- When requesting the next level in Reports by pressing the **plus** sign, the objects that will be fetched are determined by the **upper ID column**. For instance, if you have a report on Customers only, and want to open the next level for Object 2, having its ID filter set to **a||r**, you will get combinations **ca** and **cr** on the 2nd level.

See [Reports](#) in the manual for more info.

2. New ways to manage DST and SRC areas.

- For customers with the switches that don't have areas and codes in the CDRs, and areas are to be loaded from files, it is now possible to edit and add the areas manually via a new **Config: Objects -> DST 1 codes** table.
- Additionally, any customer may load the second independent set of areas to the **Config: Objects -> DST 2 codes** table. For example, you may wish to collect total stats by whole countries in addition to your standard areas. Or, on the contrary, collect more granular areas for some destinations.
- In the same fashion, one may now edit and add the SRC areas to the **SRC 1 codes** table to get SRC area stats (requires the Traffic analysis module).

3. Traffic logs: collection of H323 with Call flows was added. Log tables have new columns with SRC and DST numbers extracted from the packets.

4. SRC/DST numbers stats can now be used in alerts, plus additional tables were added to monitor attempts and connects per the length of number in each area.

5. A new parameter % of attempts for disconnect codes was added.

6. Horizontal scroll in tables is now working in case you use the normal mouse scroll wheel (that normally scrolls vertically) in the following cases:

- If a table is short and has no vertical scroll bar at all.
- If your mouse is positioned over the table header or horizontal scroll bar while scrolling by wheel.
- If Shift is pressed while scrolling.

7. CDRs for Route testing dialer have a new column **Play file**, allowing playing recorded media, viewing the waveform, and jumping directly to any place in the audio file.

8. A loop detection mechanism was added with a parameter "% of loops" and indication in CDRs which calls were part of a loop. This feature is available for an additional fee.

9. An API was developed to get 5gVision charts from any external application by sending a URL with proper parameters to a 5gVision server. Please contact support if you need more info. This feature is available for an additional fee.