JeraSoft Billing 3.12

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JeraSoft is excited to announce the major release of **VCS 3.12.** This version includes a variety of new features and capabilities for VCS users.

VCS Version Numbering

Starting from **VCS 3.12.0**, we introduce new guidelines for **the version numbering**.
VCS versions are denoted using a standard triplet of integers:

- **GENERAL BRANCH -** contains major features and significant changes to VCS, (i.e. modifications in system architecture and/or user experience).
- **MAJOR** - the major version contains significant changes, might have backward incompatible API changes.
- **MINOR** - the micro version with backwards-compatible bug fixes that do not affect either consumers or providers of the API.

We encourage customers to upgrade to the latest version of the software.

It is important to note that **our clients are never at risk of updating to the latest MINOR versions**. These versions don't contain any backward-incompatible API changes and will not break any integration made.

Key Features in this Release

JeraSoft VCS 3.12.0 delivers the following main features:

- **Internet of Things (IoT) services** enabling VCS users to bill any type of event within their business model.
- **CoreAPI methods** for a real-time integration with 3rd party systems.
- **Customer Dynamics Report** tool for creating dynamic reports in terms of customer base growth, subscriptions and on-demand services usage, balance refills, etc.
- **Provisioning API** that allows calling of external handlers triggered by events within billing platform. This will greatly simplify data synchronisation with 3rd party systems such as application servers, gateways, CRMs.

Here you can find a full list of new functions and improvements available by updating the software.

IoT services

To rate and bill vast amounts of network traffic gathered from several devices (computers, vehicles, smartphones, traffic lights, droids etc.), we integrated **s ervices** covering multiple IoT/M2M billing needs. JeraSoft IoT services gather, analyze and monetize data from smart things, bridging the gap between financial, operational, and development initiatives within IoT business infrastructure.

For more details, go to the *Configuration* *Services* in our *User Guide.*

CoreAPI

JeraSoft introduces **CoreAPI methods** for a real-time integration with 3rd party systems. It's designed for a limited number of most used methods for integrations.
Typically, the CoreAPI methods can be used for the following:

- for developing customers' portals;

- for mobile applications;
- for data synchronization with the 3rd party system, including softswitches, gateways.

For more details, open the *APIs CoreAPI* article in our *User Guide.*

> Please note, that all methods available through *CoreAPI* make the same methods deprecated in the *Management API.* Starting from VCS 3.13, methods equivalent to *CoreAPI,* will be not supported in the *Management API.*

Management

This release contains updates to the next modules of the *Management* section:

1. ***Clients*****:** new column "Tags" was added to the list of Export parameters.
2. ***DIDs tab*****:** appeared additional package identification *(Client's Package ID)* while assigning a DID.
3. ***Accounts:*** added validation to prevent removing accounts with active packages.
4. ***Rate Table:*** new possibility to add additive rates with empty *"Code"* or *"Code Name"* fields.

   > All ***extra rates*** have been renamed into ***additive rates*** in reports due to the previous billing updates.

5. ***Transactions:***

   a. The logic has been significantly reworked. Now charges will be created according to the **Tax Profiles, Rate Tables** (including tax or not) **co nfigurations** and the **next parameters:** *invoice time* (transaction date), *client ID*, *currency ID*, *positive or negative amount.*

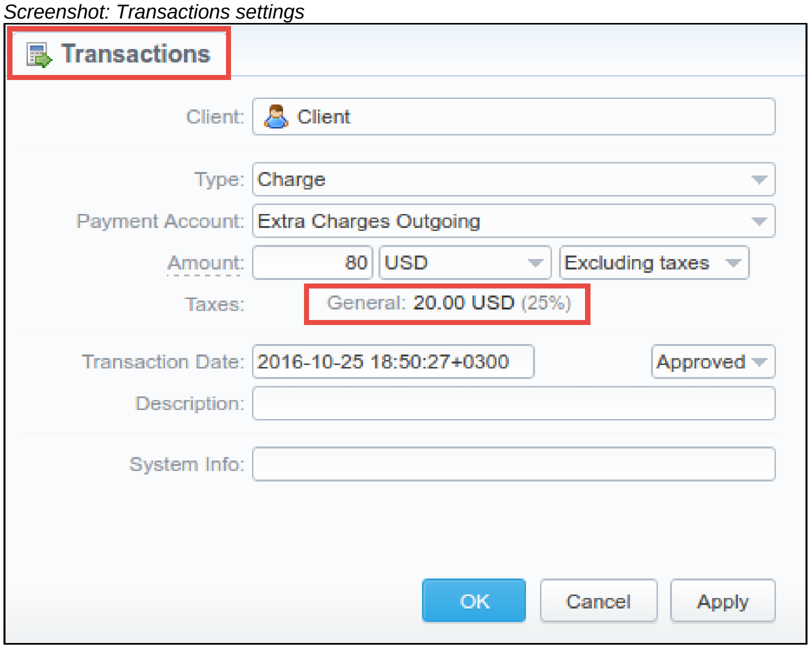
   b. The option ***"Group Charges"*** in the *quick search tool* was removed. By default, all transactions are filtered by hours.

   c. Possibility to set up **taxes** is only accessible for charges.

   d. Transaction amounts could be specified with comma as a decimal delimiter, for example, 2,45.

   e. While creating a new transaction with taxes, the system calculates a tax rate and displays it under the amount in the same pop-up window (see screenshot below).

Screenshot: Transactions settings



- When a customer has 2 calls (with and without taxes) for the same hour, **two charges will be listed in the transactions**: *one charge with taxes* and *a second one - without taxes.* In case you change one of the parameters listed above and the re-rating is done, you might have additional transactions.
- If you see a transaction with a **tax represented as a dash (),** it means that all taxes were included in rate tables.
- When the **Reseller owns a payment account**, transactions for this account can be created for Clients and Sub-Resellers belonging to this Reseller. However, transactions of this Reseller (owner of the account) can not be assigned to this payment account.

6. ***Balance Report:*** client's charges and payments will be **displayed without currency**. This change refers to ***csv, * xlsx** and ***xls*** formats of the report.

7. ***Reseller*s:** new variable ${date} for mail templates. It allows adding the data when the notification was sent. This variable is accessible for all types of Mail Templates.

Retail

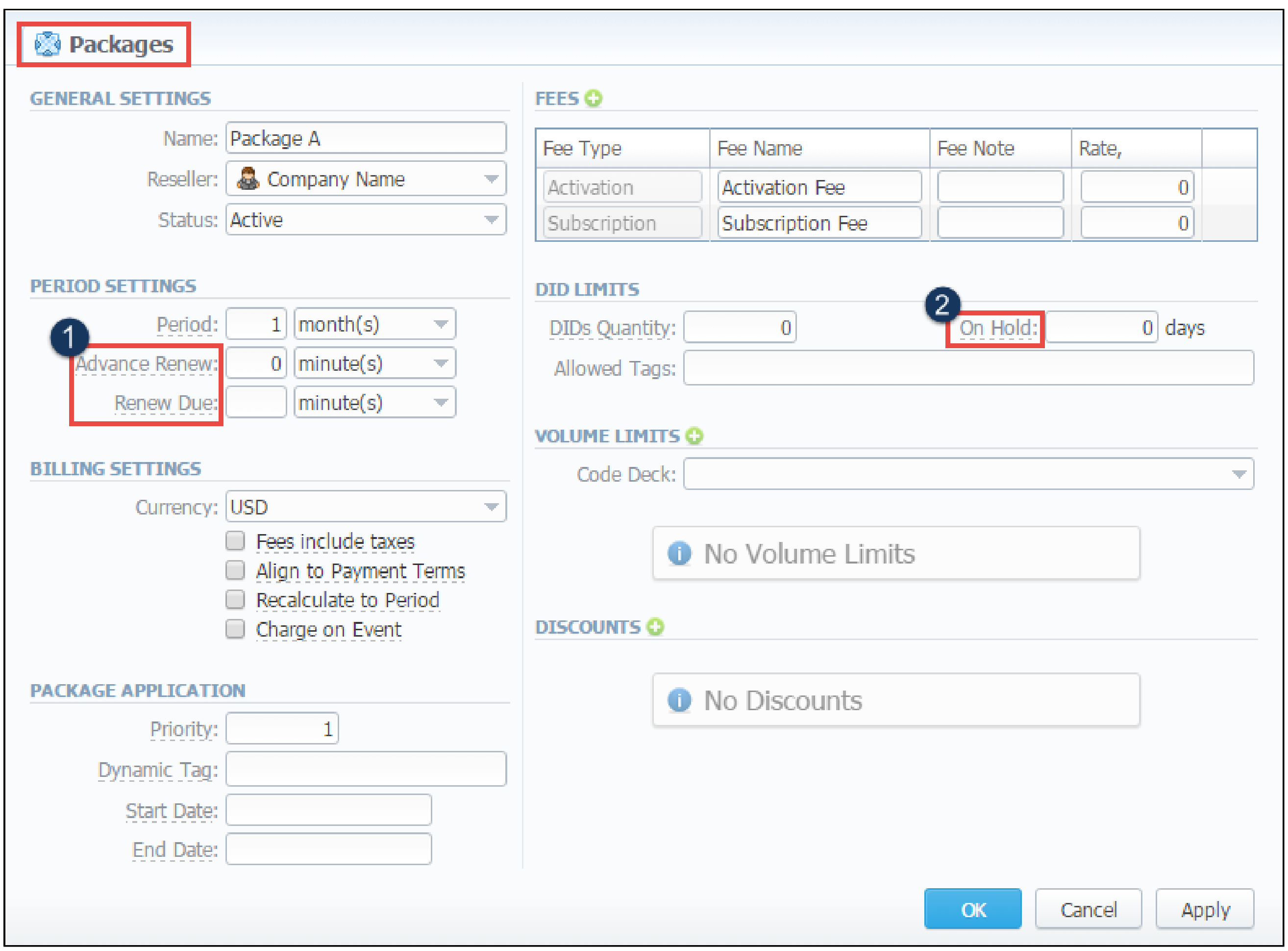
Packages

1. We have reworked an interface of *Clients Packages* and *Packages* forms and added next options:

- ***advance renew*** - allows to specify a period before renewal date to process renewal;
- ***renew due*** - allows to indicate a period the system will try to renew a package.

Please note, renew intervals of packages will be converted to the smallest units. For example, 1 day + 1 hour = 25 hours.

Screenshot: Package settings/ edit form



2. ***"On Hold"* option** for DIDs appeared in the ***Packages settings***. You can set how many days to keep a respective DID on hold in the *Packages* e dit form. After update to the latest version, *"On Hold"* of existing packages will be set to the largest value of all Hold days from all DIDs with tags specified in *"Allowed Tags".*

3. New possibility to assign the package in the past and add package minutes backdated.

> **For example:**
>
> You assign the "*Canada 200 minutes"* package April 12, but you want that the package has been used since April 1.
> Then, apply package re-rating to recalculate the tariffication during the period. Please, run the re-rating after the assignment of the package for a current month.

4. Package's prioritization was reworked. Now, the package with 1 priority will be higher than the package with 2 priority.

DID Management

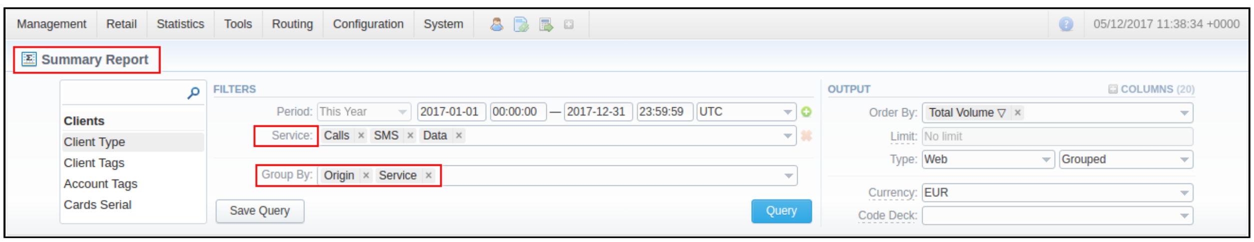
New ***"After Hold "*** option is available in the *DID Management edit form*. It's intended to determine which status (reserved, in stock, archived) DID should be moved to after staying *On Hold.*

Statistics

VCS statistics tools continue to evolve with users' needs and there are several updates to the reports due to **IoT services** integrated into the billing platform:

- Added possibility to generate a statistics report of limitless data of all types (calls, sms, bytes, etc.). To get more information, read the *"Se rvices"* article in our *User Guide.*
- *CDRs List* and *Calls Rerating* sections were renamed to *XDRs List* and *XDR Rerating* due to new billing entities (sms, data, IoT events).
- Report's option *"Group By"* was enlarged by a new parameter *"Services"*.

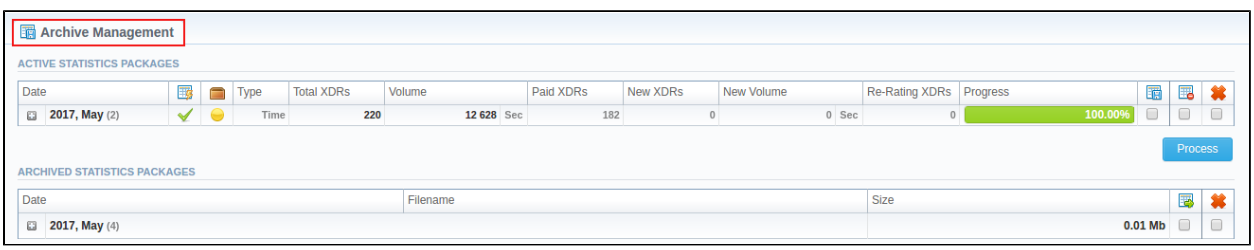
Screenshot: Summary Report query form



Other modifications:

- Query form of reports saves previously selected set of columns.
- Tougher restrictions on data visibility were applied.
- ***Orig-Term Report:*** a new row "Total" is accessible in the plain view of the report.
- ***Routing Analysis***: the method of logging to the report via web is modified; improved filtering option and tooltip properties.
- ***Archive Management***: the interface was substantially modified, covering new components.

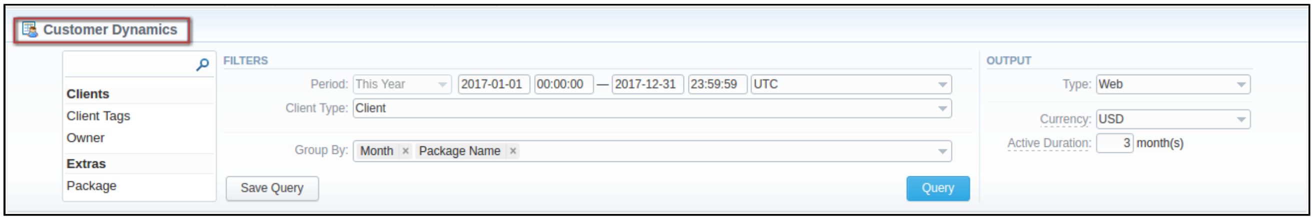
Screenshot: Archive Management section



Customer Dynamics

We implemented a new type of statistics report that allows your company to watch clients' dynamics. As usual, **Customer Dynamics** reports are represented in the form of the table. However, you can create a chart to effectively interpret key information and facilitate the decision-making process.

Screenshot: Customer Dynamics section/query form

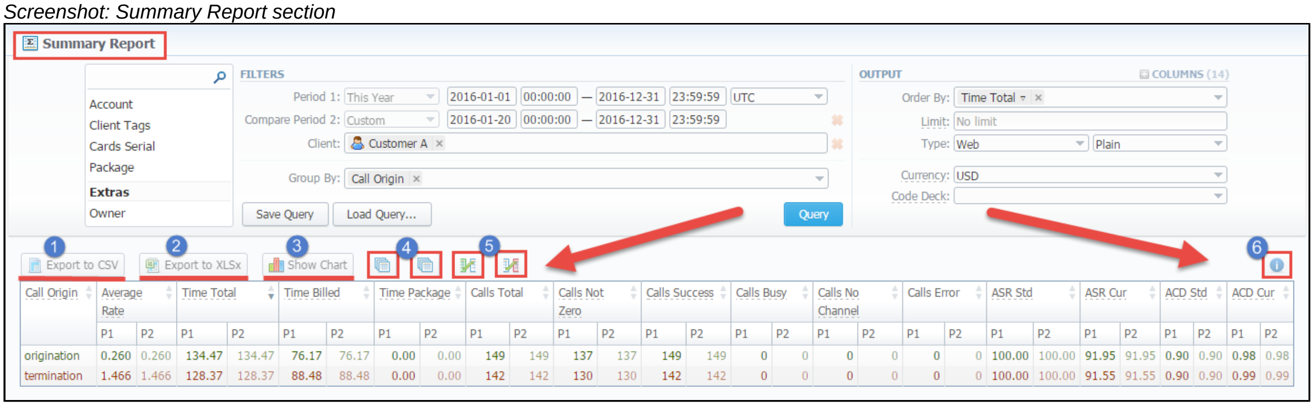


Summary Report

When you make a report and filter data by *Client/ Client Tags/ Account/ Code/ Code Name/ Owner* parameters, two *Orig-Term icons* appears on the toolbar.
They allows to generate reports with **origination** and **termination** data separately.

- this *Orig-Term icon* allows to generate a report based **on origination data**;
- this *Orig-Term icon* allows to generate a report based **on termination data.**

Screenshot: Summary Report section



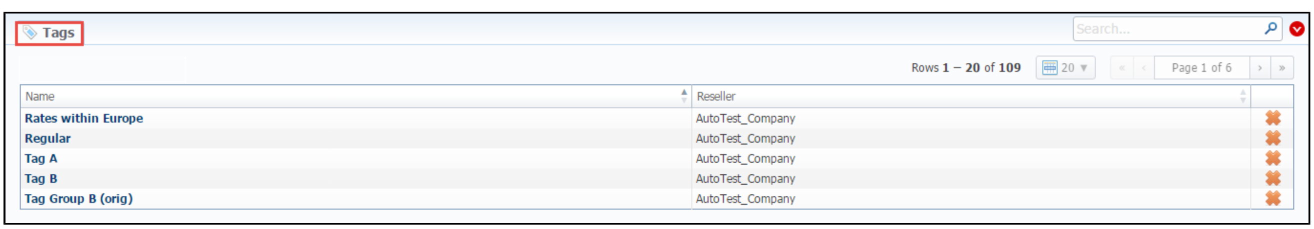
Configuration

Tags

Added possibility to bill **on-net calls** where both the calling and called parties are on the same provider's network **by using tags.**

To do so, you need to create a rule for the *Traffic Processing* with *Src/Dst match* and add a *tag* (for example, *on-net tag* for calls matching this rule). Then, add this tag to rate tables. As result, calls within a respective operator will be billed by an added tag.

Screenshot: Tags section



All tags added while rates import process will be present in *Tags* section for further usage.

Invoices Templates

Due to integrated **IoT services,** several parameters of invoices templates were changed.
After the update, the system will automatically update variables.

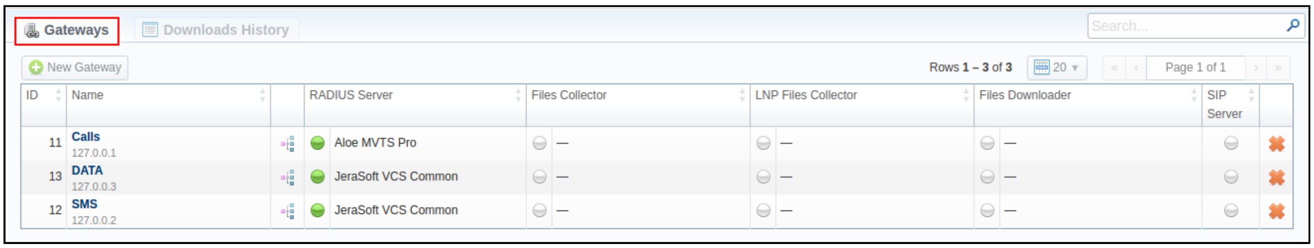
You can find a list of changes below:

```
{inv_due_days} to {due_days}
{package_time} to {package_volume}
{total_calls_count} to {service_ID_count_total}
{total_calls_minutes} to {service_ID_volume_total}
{total_cost_calls} to {cost_total}
{calls_subtotal} to {count_subtotal}
{total_calls_tax} to {services_tax_total}
{time} to {volume}
{currency_rate} variable removed
```

Gateways

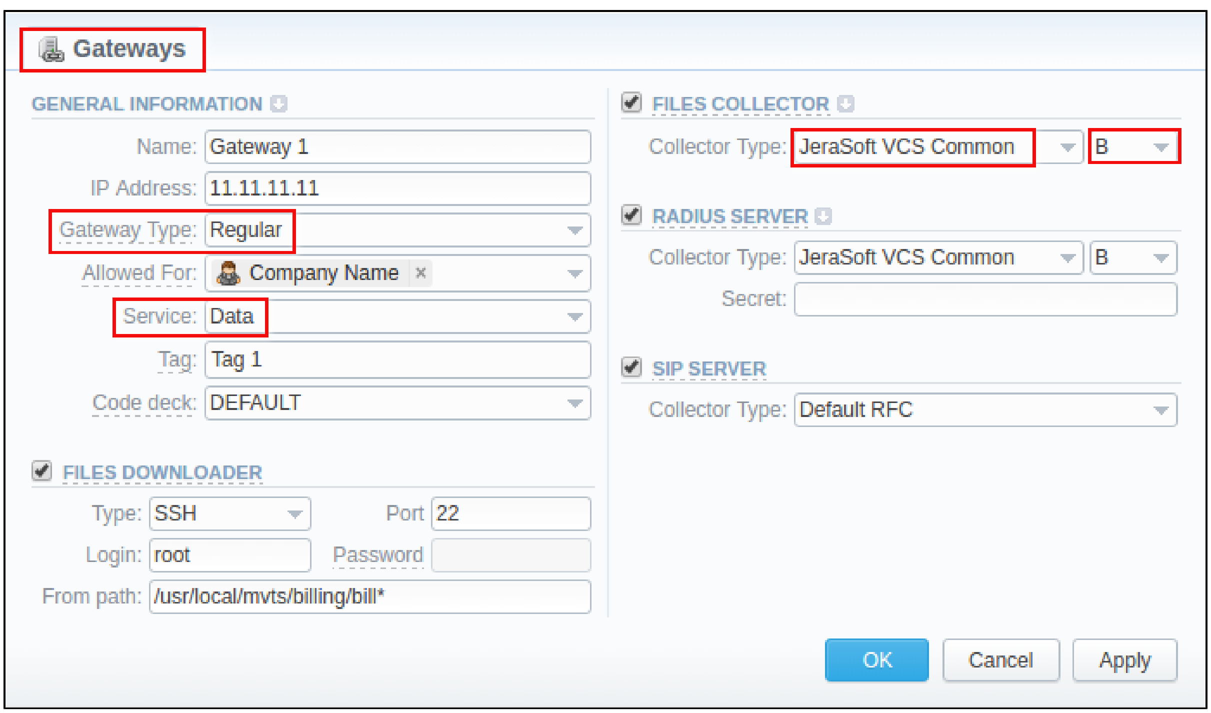
Gateways functionality was enhanced as a part of IoT services development. Thus, our team integrated a new collector "*JeraSoft VCS Common*" for new billing entities (sms, data, IoT events). This collector is available in the *Files Collector* and *RADIUS Server* settings.

Screenshot: Gateways section



- Moreover, the *"VoIP"* gateway type was renamed to *"Regular" (i.e. default gateway that uses SIP, RADIUS or XDR files).*
- New field *"Services"* was integrated to allow selecting different types (call, sms, data) for a gateway. Each gateway can only have one type of service.
- The *VoIP Gateways* section was renamed to *Gateways.*

Screenshot: Gateway edit form



New modification for the **RADIUS collector: Brekeke SIP Server.** Now, the behavior of this server is the following:

1. When the "src-number-in" contains **strictly digits**, then this number will be used as SRC number by the VCS.

   Packet 1

   src-number-in - 789789789789;
   Other fields as *P-Preferred-Identity, Privacy or Remote-Party-ID* will not used.

   Result: src-number-in = '789789789789'.

2. When the "src-number-in" has a following value: *"**Anonymous**"/"anonymous", "Unknown"/"unknown", "Restricted"/ "restricted", "Asterisk"/" asterisk", "Unavailable"/ "unavailable"*, then the VCS will check other fields: *P-Asserted-Identity, Privacy: id.* As the result, the VCS will use the value from the *"P-Asserted-Identity"* field, **if the *"P-Asserted-Identity"* has a number only with digits.**

   Packet 2

   src-number-in - Anonymous;
   Privacy - id;
   P-Asserted-Identity = <sip:789789789789@10.10.10.10>;

   Result: src-number-in = '789789789789'.

   Packet 3

   src-number-in - Anonymous;
   Privacy - id;
   P-Asserted-Identity = <sip:example@10.10.10.10>;

   Result: src-number-in = 'Anonymous'.

   Packet 4

   src-number-in - Anonymous;
   Privacy - id;
   P-Asserted-Identity = <sip:789789789789@10.10.10.10>;
   P-Preferred-Identity => <sip:48223906005@80.72.35.50>;

   Result: src-number-in = '789789789789'.

   Packet 5

   src-number-in - Anonymous;
   Privacy - id
   P-Asserted-Identity = <sip:example@10.10.10.10>
   P-Preferred-Identity => <sip:48223906005@80.72.35.50>

   Result: src-number-in = 'Anonymous'.

   Packet 6

   src-number-in - Anonymous;
   Privacy - exampletext
   P-Asserted-Identity = <sip:789789789789@10.10.10.10>

   Result: src-number-in = '789789789789'.

3. When the "src-number-in" consists of a following value: *"**Anonymous**"/"anonymous", "Unknown"/"unknown", "Restricted"/ "restricted", "Asterisk"/" asterisk", "Unavailable"/ "unavailable"* and ***"P-Asserted-Identity"* is absent,** the VCS will check the next fields: *P-Preferred-Identity* and *Privacy: id.*

   Packet 7

   src-number-in - Anonymous;
   Privacy - id;
   P-Preferred-Identity = <sip:789789789789@10.10.10.10>;

   Result: src-number-in = '789789789789'.

Packet 8

src-number-in - Anonymous;
Privacy - id;
P-Preferred-Identity = <sip:example@10.10.10.10>;

Result: src-number-in = 'Anonymous'.

- In case, *P-Preferred-Identity* contains a number only with digits, this number will be used as SRC number by the VCS (i.e. src-number-in - Anonymous; P-Preferred-Identity - <sip:40000000000@10.10.10.10>, Privacy - id).
- In case, *P-Preferred-Identity* contains a number with mixed digits/characters or only characters/letters, then VCS will use the parameter specified in the *"src-number-in"* field (i.e. src-number-in - Anonymous; P-Preferred-Identity - <sip:Anonymous@10.10.10.10>, Privacy - id).

4. If the "src-number-in" contains a following value: *"**Anonymous**"/"anonymous","Unknown"/"unknown", "Restricted"/ "restricted",* then VCS will check the *"Remote-Party-ID"* (should be digits) and *"Privacy"* and take the SRC number from the *"Remote-Party-ID"* field.

- **Packet 9**

  src-number-in - Anonymous;
  Privacy - full;
  Remote-Party-ID = <sip:345345345@10.10.10.10>.

  Result: src-number-in = '345345345'

  Packet 10

  src-number-in - Anonymous;
  Privacy - full;
  P-Asserted-Identity = <sip:789789789789@10.10.10.10>;
  Remote-Party-ID = <sip:345345345@10.10.10.10>.

  Result: src-number-in = 'Anonymous'.

Services

JeraSoft team delivers new powerful business capabilities, namely, **Internet of Things (IoT) specific services** enabling providers and VCS users to bill calls, bytes and gain new revenues from IoT services. For more details, go to the *Configuration Services* in our *User Guide.*

Screenshot: Services section


Services

New Service   Rows 1 – 3 of 3   50   Page 1 of 1

ID	Quantity	Name	Ident Code	Rating	Rating Params	Reports	Detailed Reports	
1	time	Calls	calls	min	sec	min	sec	
3	data	Data	data	gB	B	gB	B	
2	event	SMS	sms	event	event	event	event	

System

Events Log

Now, an error message of a **blocking action of the Factors Watcher** will be further displayed as **an alert message.**

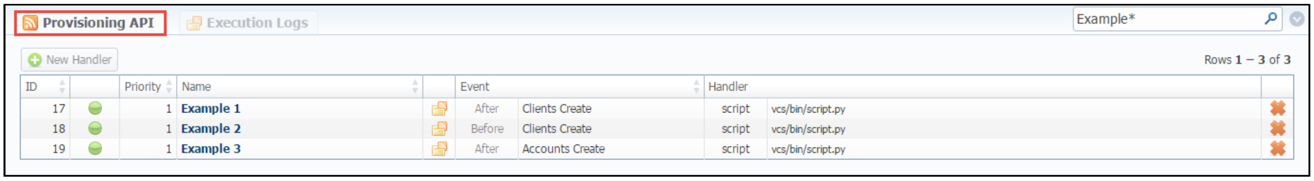
Provisioning API

We have implemented the **build-in Provisioning API** that can be used to call external handlers.

Provisioning API provides a mechanism for a real-time integration with 3rd party systems, including softswitches, gateways and CRM systems. It calls pre-defined handlers on an occurrence of specific events in the system. The handlers are allowed to modify data, allow or forbid the action or simply process given event.

This tool allows sending data to external hooks, whereas our current **API** *(API Testbed section)* functionality allows receiving data from external resources.

Screenshot: Provisioning section



Provisioning API | Execution Logs | Example*

New Handler | Rows 1 – 3 of 3

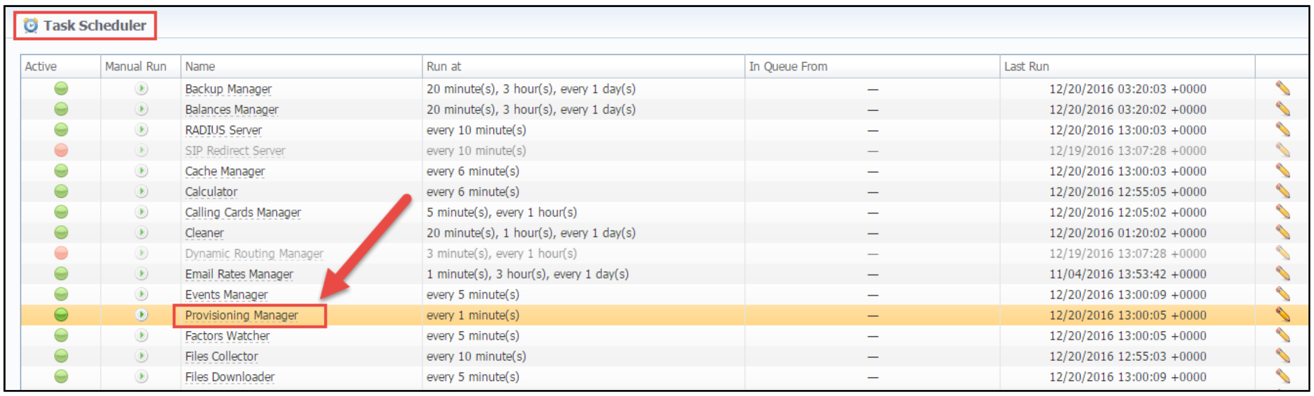
ID		Priority	Name		Event		Handler		
17		1	**Example 1**		After	Clients Create	script	vcs/bin/script.py	
18		1	**Example 2**		Before	Clients Create	script	vcs/bin/script.py	
19		1	**Example 3**		After	Accounts Create	script	vcs/bin/script.py	

For more details, open the ***ProvisioningAPI*** article with an additional information in our ***User Guide.***

Task Scheduler

Due to the ***Provisioning API*** functionality appeared in the system, *Task Scheduler* section contains a new ***Provisioning manager,*** that allows processing events asynchronously.

Screenshot: Task Scheduler section



Task Scheduler

Active	Manual Run	Name	Run at	In Queue From	Last Run	
		Backup Manager	20 minute(s), 3 hour(s), every 1 day(s)	—	12/20/2016 03:20:03 +0000	
		Balances Manager	20 minute(s), 3 hour(s), every 1 day(s)	—	12/20/2016 03:20:02 +0000	
		RADIUS Server	every 10 minute(s)	—	12/20/2016 13:00:03 +0000	
		SIP Redirect Server	every 10 minute(s)	—	12/19/2016 13:07:28 +0000	
		Cache Manager	every 6 minute(s)	—	12/20/2016 13:00:03 +0000	
		Calculator	every 6 minute(s)	—	12/20/2016 12:55:05 +0000	
		Calling Cards Manager	5 minute(s), every 1 hour(s)	—	12/20/2016 12:05:02 +0000	
		Cleaner	20 minute(s), 1 hour(s), every 1 day(s)	—	12/20/2016 01:20:02 +0000	
		Dynamic Routing Manager	3 minute(s), every 1 hour(s)	—	12/19/2016 13:07:28 +0000	
		Email Rates Manager	1 minute(s), 3 hour(s), every 1 day(s)	—	11/04/2016 13:53:42 +0000	
		Events Manager	every 5 minute(s)	—	12/20/2016 13:00:09 +0000	
		Provisioning Manager	every 1 minute(s)	—	12/20/2016 13:00:05 +0000	
		Factors Watcher	every 5 minute(s)	—	12/20/2016 13:00:05 +0000	
		Files Collector	every 10 minute(s)	—	12/20/2016 12:55:03 +0000	
		Files Downloader	every 5 minute(s)	—	12/20/2016 13:00:09 +0000	

Users

Appeared a possibility to view **CoreAPI Token** used for the authorization.

As always, we welcome any questions, bug reports, and other feedback on this release. We encourage users of JeraSoft VCS to take advantages of the latest features and upgrade.