JeraSoft Billing

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User Guide

Welcome to JeraSoft VCS User Guide

This is the Telecom Billing Software that we think is **a quantum leap** to develop the VoIP telephony services. This guide provides a general **overview** of the **VCS interface, key features** and useful information regarding its usage. We hope to make **the process of using** our application as painless as possible.

Please check the categories on the left navigation bar to get started or use search toolbar to find an answer to your questions.

- Interface Basics
- Management
- Retail
- Statistics
- Tools
- Routing
- Configuration
- System
- Client Panel
- System Shell Tools
- APIs

Interface Basics

In this article

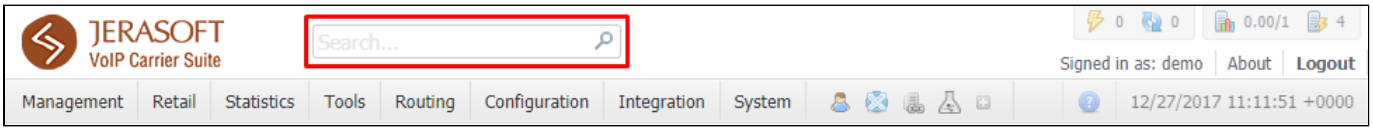
- Global Search Bar
- SmartBar
- InfoBar
- Change Password
- About
- Page Load Time
- Rows per Page
- Delete Confirmation
- System Logout
- Section Tabs

Prior to jumping straight to system sections, it's advisable to take a look at basic interface elements that user comes across from section to section. By getting used to common VCS features, navigation throughout the system becomes easier and faster. Despite the fact that not every interface feature, mentioned in this article, is present in all VCS sections, all of them are pretty common for the majority of system sections. The full list of interface basics is as follows:

Global Search Bar

This tool is used to globally search for items within the entire system, as well as find elements within a current section. For example, you can search for ***clients, accounts, packages, rate tables, DIDs, code decks, routing plans, etc***. This bar is located on the top of the system and it's designed to predict a user's search and show results while you type. It is a time-saving feature. The items found as a result of your search are placed on the drop-down list as links and headings. You can click on the item to open respective settings.

Screenshot: Global search bar

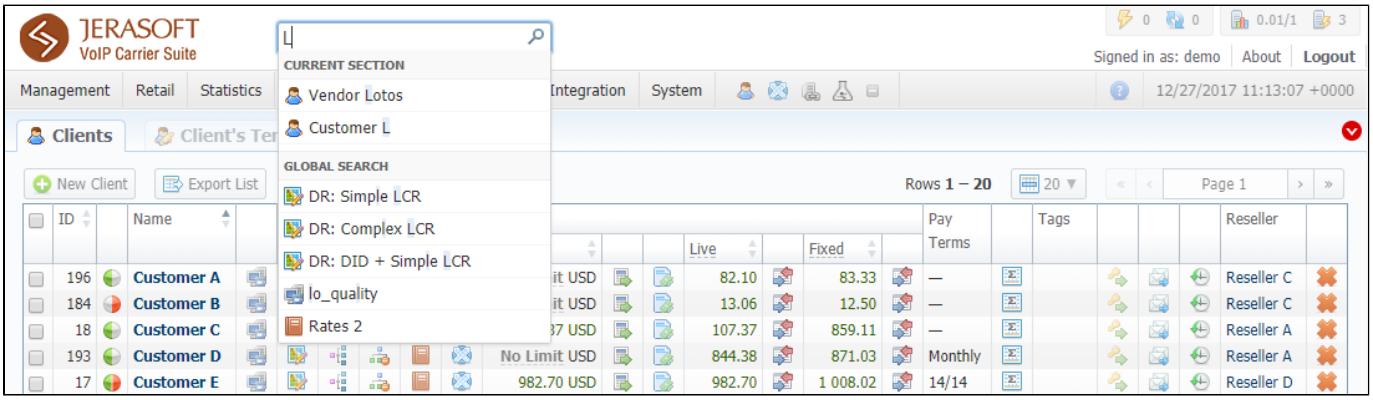


This search bar displays two parts of results: from the ***current section*** and ***global search*** in the system. Therefore, it shows a drop-down list with 10 first items matched your keyword from the current section and from a whole system at all (see screenshot below).

Tip

1. When you fill in the field and press **ENTER**, the search will be applied to the current section.
2. If you search in the section with no list of items to select from and press **ENTER**, the system will redirect to the **Clients** section and show results.
3. To open the edit form of the entity, click on it.
4. You can use the search bar for ***filtering items in the section***, for example, clients or DIDs.

Screenshot: Global search bar



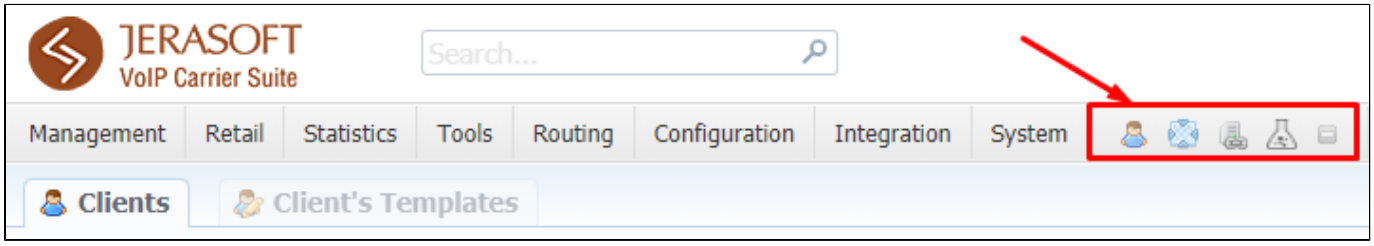
Several VCS sections have advanced search settings. To open these settings, click on downwards arrow icon on the toolbar of a respective section. Red downwards arrow icon on the toolbar means that the data is sorted by default *(see screenshot above).*

SmartBar

There is **SmartBar** shortcut panel to provide quick access to frequently used sections. You can add any number of sections to the panel.

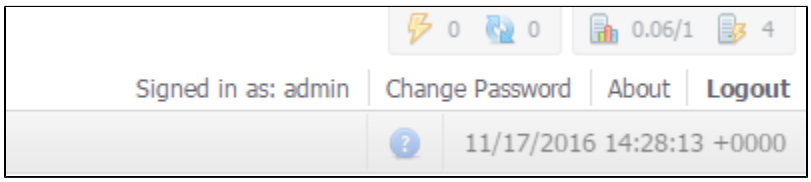
To add the shotcut, open a respective section and then click the plus sign on the panel. As the result, a corresponding icon will be the rightmost on the panel. To remove the shortcut, click the minus sign at the same location.

Screenshot: SmartBar panel



InfoBar

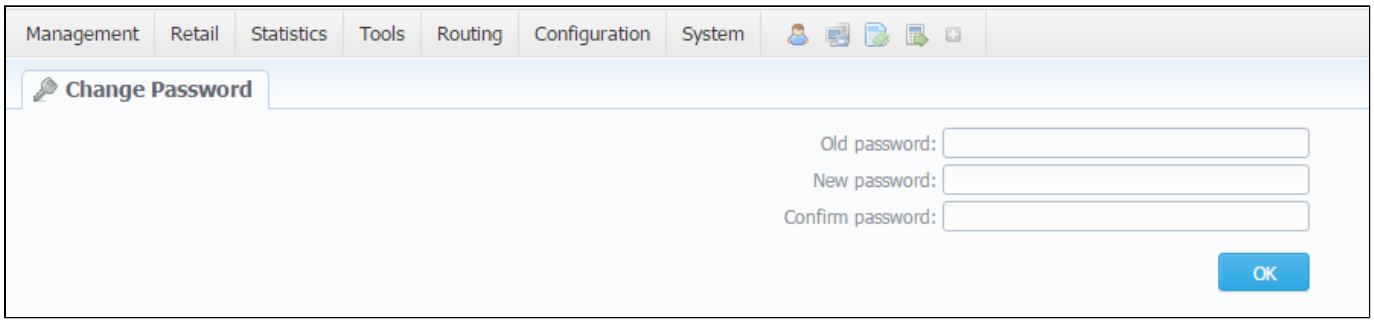
To have access to fast-changing system information JeraSoft VCS features the information panel – **InfoBar.** You can find this panel in the top-right corner of the system and is available from any section.
Screenshot: InfoBar settings



Icon	Description
	CDR queue
	CDRs in queue for rerating
	CDRs in queue for parsing
	Information about system alerts
	Load average on server / Number of CPU cores
	Number of running billing services
	Shortcut to a rellevant article regarding certain section on Documentation Portal

Change Password

You can change current password by using **Change Password** menu (see screenshot below):
Screenshot: Change Password settings



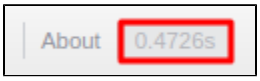
To change a password, enter current password in ***Old Password*** field, and a new one in ***New Password*** and ***Confirm Password*** fields. Then, click **OK**.

About

To get more details about the VCS system, current version, license number, limits, and other components, click **About** either on the **InfoBar** or in the bottom-left corner of the system.

Page Load Time

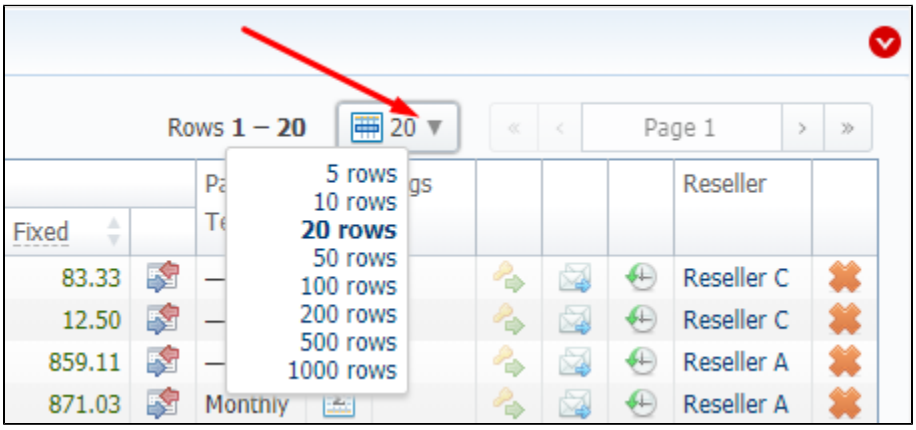
To provide user with relevant information about the system, in the bottom-left corner of any page next to **About** button **Page Load Time** is displayed.



Rows per Page

In sections that are presented in a form of a table, JeraSoft VCS allows to customize the number of rows displayed on a page. To do so, click on **Rows Per Page** dropdown button and set the required quantity. (see screenshot below).

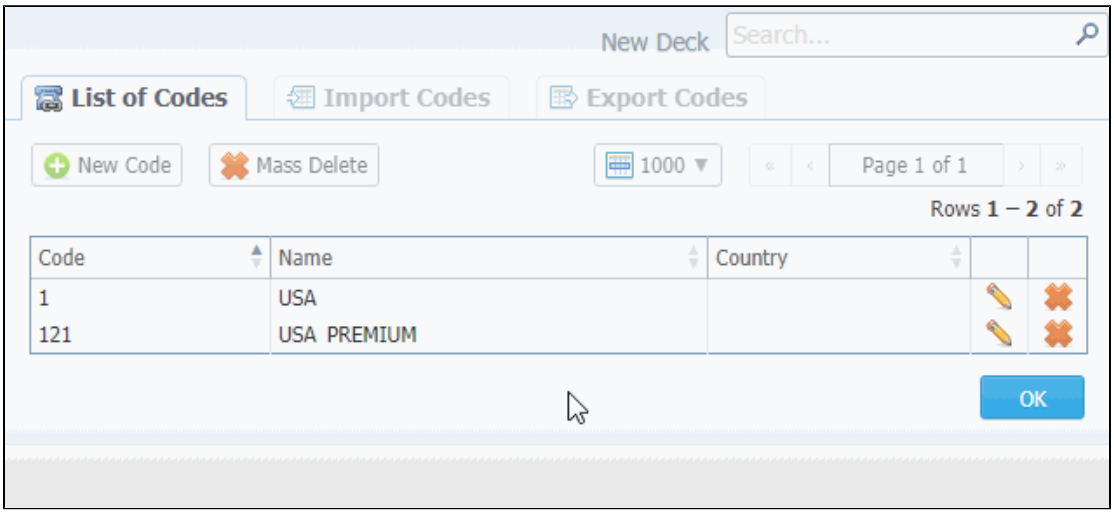
Screenshot: Rows Per Page dropdown button



Delete Confirmation

To prevent a situation when you delete any entity from the system by accident, in the majority of cases after hitting **Delete** icon/ **Mass Delete** button, a **Dele te Confirmation** dialog window will appear, requiring to confirm your action. To proceed with the deletiong, press **OK**, and an entity will be removerd from the system. The whole process is illustrated on the animation below.

Animation: Delete confirmation

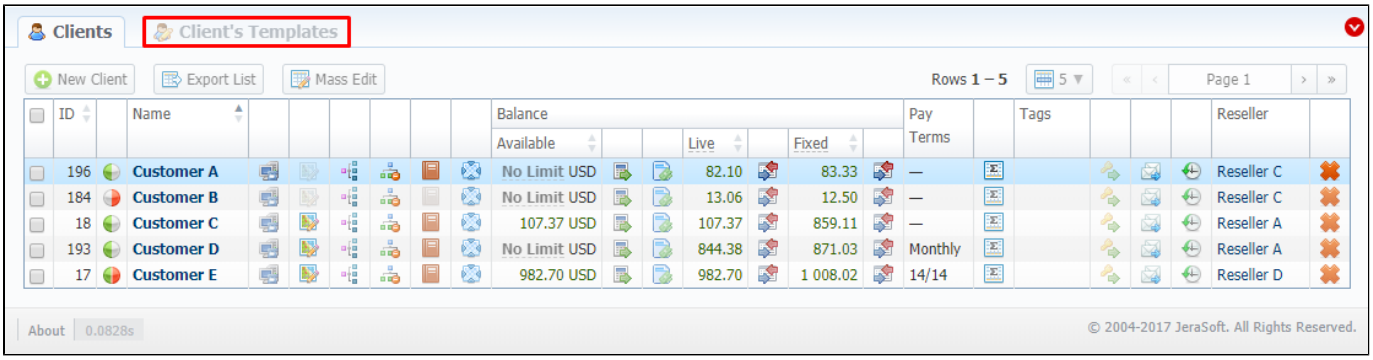


System Logout

You can logout from system by clicking **Logout** on the **InfoBar**.

Section Tabs

Several sections in the system have respective tabs for making the work with billing much more easier and comfortable.
Screenshot: Clients section settings/tabs



Management

This chapter outlines how **the main components of the JeraSoft VCS** could be used to provide various management capabilities through the system.

Take a note that while navigating throughout the **system**, you will come across find plenty of tooltips to provide a better understanding of the system mechanisms. It's easy to determine, whether there is one or not. All tooltips in the system are shown as the text with a dotted underline, for example,

. All you need is to hover over it, and an additional information becomes visible.

The list of management section includes:

- Clients
- Accounts
- Rate Tables
- Invoices
- Transactions
- Balance Report
- Resellers
- Client Packages
- Traffic Processing

Clients

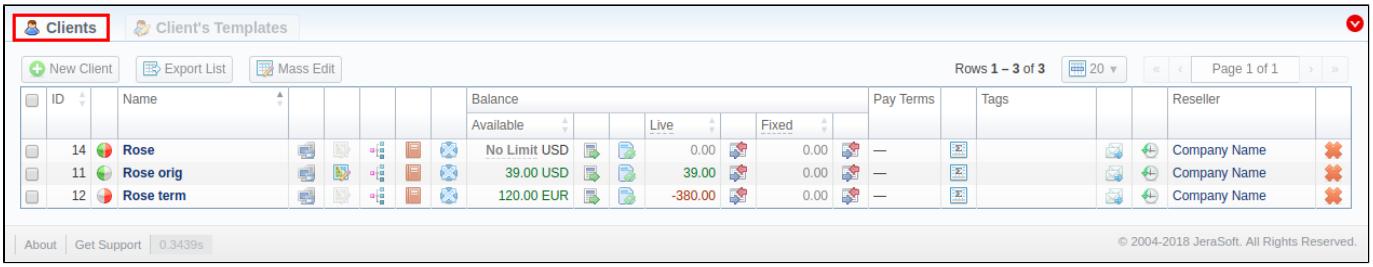
In this article

- Section overview
- Advanced Search
- Adding New Client
- Mass Edit
- Clients Templates
- Knowledge Base Articles

Section overview

Beyond any doubts, clients are a cornerstone and the most valuable asset of any type of business. Hence, **Clients** section is rightfully considered as a core element of the whole **JeraSoft VoIP Carrier Suit**. In the section, user can manage personal information of any client on the list, trace customer's balances, review resellers a particular client belongs to, etc. Section is presented in a form of a table with the following columns:

Screenshot: Clients section



Column Name	Description	
ID	Client's identification number	
Name	Client's name	
Balance	Client's balance values	
	• ***Available***	'Live' client's balance including allowed credit
	• ***Live***	Client's balance calculated on basis of performed payments and processed calls
	• ***Fixed***	Client's balance calculated on basis of the outstanding invoices and performed payments
Pay Terms	Payment terms of each client	
Tags	List of tags, applied to a client	
Reseller	Name of reseller's company respective client belongs to	

Functional buttons and **icons**, presented in the section, are as follows:

Button/Icon	Description
New Client	Allows adding a new client to the system
Export List	Allows exporting a list of user's clients in a **.csv** file

Mass Edit	Allows management of last invoice date of a client
	Identifies the Orig client
	Identifies the Term client
	Identifies the Orig/Term client
	Allows accessing the list of client's accounts in **Accounts** section (icon will be colored if any account is assigned)
	Allows accessing client's current routing plan (icon will be colored if plan is assigned)
	Allows accessing **Traffic Processing** section for dynamic routing management
	Allows viewing client's rates (icon will be colored if rate table is assigned)
	• ***ORIG*** — Rate tables for origination calls
	• ***TERM*** — Rate tables for termination calls
	Allows accessing **Client Packages** section for new clients packages management
	Allows accessing **Transactions** section for management of client's balance
	Allows accessing **Invoices** section for client's invoices management.
	Allows accessing **Balance Report** section to manage client's balance report (Live or Fixed)
	Allows accessing **Summary Report** section to manage client's summary report
	Allows accessing **Mail Queue** section to view history of sent emails
	Allows accessing **Audit Log** section to view change history
	Allows deleting a client from the system

Warning

When you **delete the client** by changing the status to ***deleted*** or click a respective icon , the Client Panel of this client will be disabled and origination/termination settings of his accounts will be turned off. However, his accounts will not be deleted from the system.

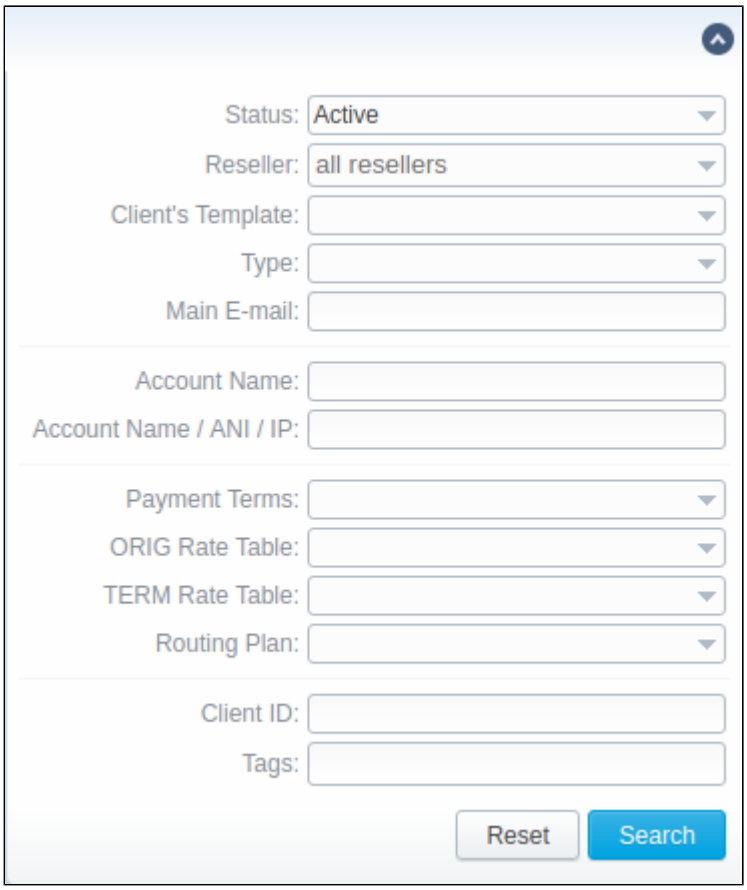
Helpful Tip

- If the prepaid mode is enabled, calls will be subject to balance check on a stage of call authorization (when RADIUS Authorization is used). If the postpaid mode is enabled, calls duration will be limited to ***Max all length*** setting in **Configuration > Settings**.
- You can search through clients by ***Name*** and only by first letters (***start with*** rule). To find all clients with specified main email, use ***** (asterisk) in the ***Main Email*** field.

Advanced Search

In the top right corner of the section above the table, the **Advanced Search** drop-down menu is located. By clicking on red downwards arrow icon (clients in the section are filtered by ***Active*** status by default), the following drop-down menu is displayed:

Screenshot: Advanced Search drop-down menu

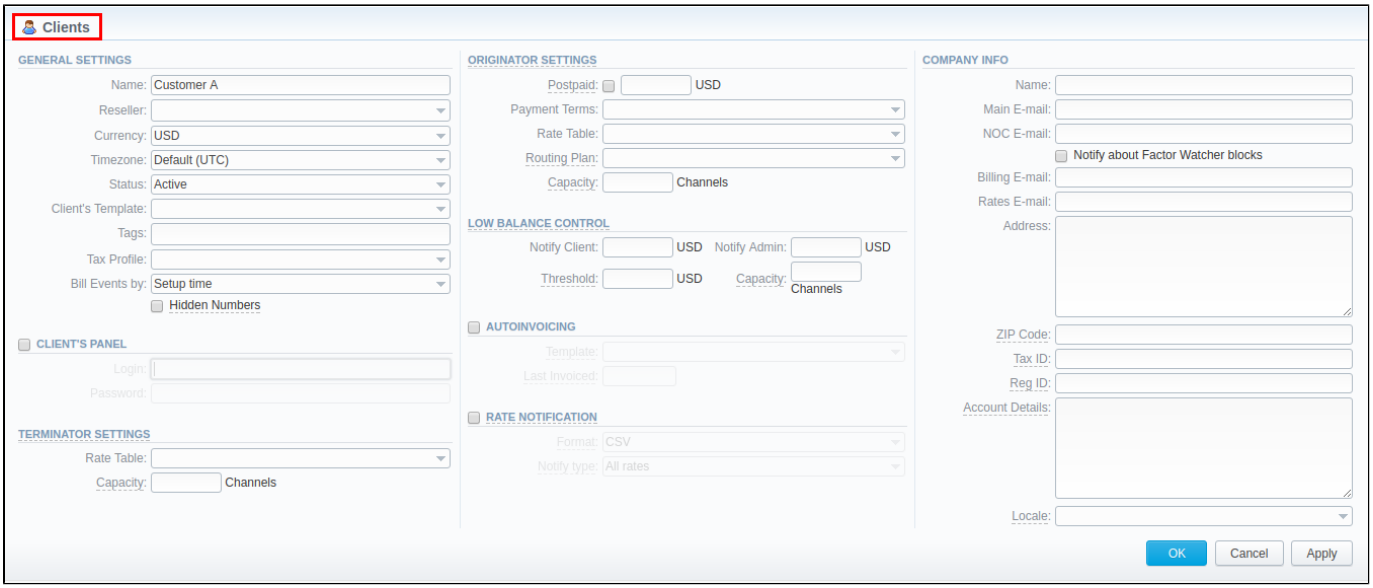


To apply the specified search criteria, press **Search** button; to cancel the applied parameters, press **Reset** button.

Adding New Client

To add a new customer in the system, press **New client** button in a top-left corner of the section. A pop-up window with the following fields will show up:

Screenshot: Adding new client



Information block	Fields & Description

General Settings	General information about client	
	• ***Name***	Indicae client's name
	• ***Reseller***	Select a reseller new client belongs to (this name will be used in invoices)
	• ***Currency***	Define preferred currency (will be used in invoices)
	• ***Timezone***	Choose the timezone from the drop-down list of all available. This timezone will be used in invoices by default. **UTC** is a default parameter for timezone ⚠ **Attention** If this parameter is not indicated, the timezone of the database will be automatically applied to the client's settings of the zone. It could lead to some problems while working with packages, rate tables, time profiles.
	• ***Status***	Select respective status for the client: • ***active*** • ***stop*** • ***deleted***
	• ***Client's Template***	Here you can apply the required template from the list to a new customer
	• ***Tags***	You can indicate tag(s) here that will be applied to a new customer. The tag doesn't need to be pre-existed in the system. You can provide unlimited number of tags for each client.
	• ***Tax Profile***	You can specify a tax profile which will be reflected in invoices (refers to **Taxes Profiles** section). • ***SureTax*** is a tax, levied on top of another tax. It allows to manage your compliance with tax law. This profile is used for further calculation in invoices. To get more details, check out the article "US Taxation". ⚠ **Attention** For proper usage of SureTax, the ***Invoice Number*** should contain only Latin and numeric characters. Max length is 40 symbols. ***Dst*** and ***Src Numbers*** should be in format ***NPANXXNNNN*** **(10 digits).**
	• ***Bill Events By***	Select how the system should bill events of a new client – ***by setup time, by connect time or by disconnect time*** (most switch models use **disconnect** time)
	• ***Hidden Numbers*** c heckbox	When checked, allows you to hide some part of client's destination numbers in invoices, xDR's reports and during export. ✓ **Tip** If the client has enabled ***Hidden Numbers*** option and the code appears in the code deck from the invoice template, the number, code and code name become hidden. If the code doesn't appear in the code deck, then the last *n characters of the number are hidden. The code deck from the rate table is only used to identify code names.
Client Panel c heckbox	Activates/deactivates the **log in** procedure to the client's control panel for this client. Customer can get access to this control panel by using the following link: ***http://vcs_address/clients/***, after filling in the following fileds:	

	• ***Login***	Client's login
	• ***Password***	Client's password
Originator Settings	Settings for your customers, who send events to your switch. Clients' originatior settings are as follows:	
	• ***Postpaid*** checkbox	Here you can set needed paid mode for a client. If you enable the postpaid mode, the client will have unlimited credit. It is disabled by default.
	• ***Credit***	Additional field next to the ***Postpaid*** check box. Here you can set the **credit limit** allowed for a client. You could fill this field with any of positive and negative numbers, but no more than 9 digits. If ***Postpaid*** checkbox is marked, this field becomes **inactive**.
	• ***Payment Terms***	Select the payment terms template from the general list of all available ones in **Payment Terms** section
	• ***Rate table***	From the list of all rate tables in **Rate Tables** section, select an origination one for this client
	• ***Routing Plan***	Select appropriate routing plan that will be used to route all calls of this customer (but it may be overridden for any of customer's accounts in *Accounts* tab). The full list of routing plans is presented in Routing Plans section
	• ***Capacity***	Indicate origination capacity of channels for this client. For unlimited amount, leave empty
Terminator Settings	Settings for your vendors, whom you send events from your switch. Clients' termination settings are as follows:	
	• ***Rate table***	From the list of all rate tables, select an termination one for this client
	• ***Capacity***	Define termination capacity of channels for this client. For unlimited amount, leave empty
Low Balance Notifications	Here you can setup whether system should make low balance notifications or not when client's **Available** balance is lower than a set threshold	
	• ***Notify Client***	When clients' balance+credit is below entered value, system will send a notification to email, specified in clients' ***Billing e-mail*** field
	• ***Notify Admin***	When clients' balance+credit is below entered value, system will send a notification to administrator via **Events Log**
	• ***Threshold***	Available balance threshold below which the special capacity setting will be applied
	• ***Capacity***	Origination capacity limit that will be applied when available balance is below threshold
Autoinvoicing checkbox	Activates/deactivates the automatic invoice generation feature for the current client. Information block parameters are:	
	• ***Template***	Select an **invoice template** for this customer
	• ***Last Invoiced***	Specify the last date when the client was invoiced
	Here you can enable or disable automatic rates notification for the current client	

Rate Notification checkbox	• ***Format***	Select desirable format of rate notification (**xls** or **csv**)
	• ***Notify Type***	Specify a type of notification: • ***All rates*** - full rates list will be sent • ***Only changed rates*** - only changed rates will be sent • ***All rates have unique mode*** - if there are two or more new rates with different effective dates for the same code, several files will be sent, each containing all unchanged rates and only one unique rate for this code **Tip** 1. The system will push a notification after new rates were added. Please note, if the user changes manually the **Effective Date** field of current rates, it won't activate notifications. 2. We recommend to use this type of notification for testing purposes. It doesn't cancel a regular notification and doesn't change the last export date.
Auto Payment checkbox	Activates/deactivates the automatic charge from customer's credit card registered in Authorize.net electronic payment service. Please note that you can register a credit card via **Refill balance** section on the **Client Panel.**	
	• ***Extra Amount***	Define a payment amount
Company Info	Some additional information about client can be entered here	
	• ***Name***	Company name
	• ***Main E-mail***	Company email for general inquiries. Use only Latin characters.
	• ***NOC E-mail***	Company email for technical related questions. Use only Latin characters.
	• ***Notify about Factor Watcher blocks*** checkbox	This tool watches over different parameters and generates alerts if some conditions are met. This function is optional, i.e. you can enable or disable them in Clients form
	• ***Billing E-mail***	Automatically generated invoices and notifications will be sent to this e-mail address. Use only Latin characters.
	• ***Rates E-mail***	Company email for rates related questions. Use only Latin characters.
	• ***Address***	Physical company address
	• ***Zip Code***	Postal code for SureTax integration
	• ***Tax ID***	Customer's tax ID
	• ***Reg ID***	Customer's registration ID

• ***Account Details***	Reference information about client's bank account or payment details
• ***Locale***	Preferred locale, that will be sent as a reply to RADIUS Authorization. It is used for IVR platforms to define the language

Attention

Autoinvoicing tool sends rates in separate files for each time profile used in certain Rate Table.

Please note, **email address should contain only Latin characters** for proper work of email notifications and invoices.

Warning

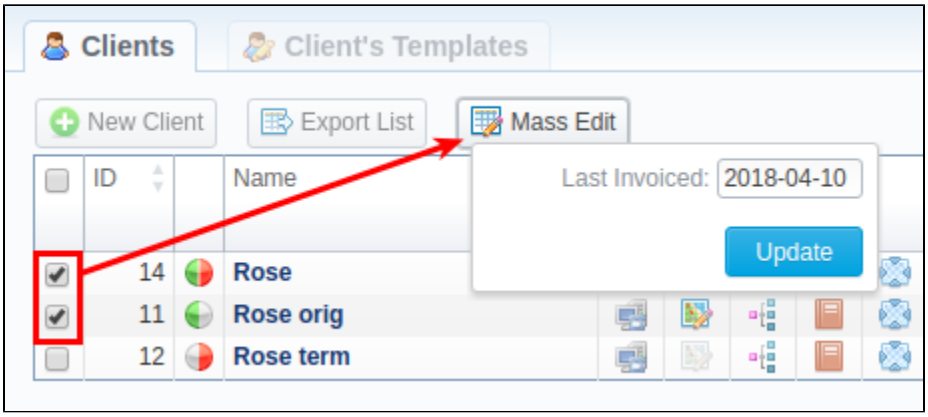
Full Delete button can be used to permanently remove a client from the system, disregarding any statistics or rate tables data connections. Please, use this feature with care – deleted client can not be restored by any means

Mass Edit

If there is a need to **change last invoice date** (*i.e. the day that the client has already been invoiced for*) for more than one client, you can use **Mass Edit** fu nctionality. Follow the next steps:

- Select target Clients;
- Press **Mass Edit** button and specify the date in ***Last Invoiced*** field;
- Press **Update** button.

Screenshot: Mass edit functionality



Clients Templates

This section allows you to create a client template, where you can specify the main information about a client, originator settings, etc. Further, this template can be used to set the billing and tariffication parameters for customers, managers, or resellers in several clicks. For more details**,** check out a related article: **Clients Templates.**

Knowledge Base Articles

- US Taxation
- How to set Prepaid or Postpaid mode?
- How to set up a functional capacity?
- Priority of Capacity field use in Clients section

Clients Templates

In this article

- Tab overview
- Advanced Search
- Creating New Client's Template
- Interface properties
- Functional properties
- Reports

Tab overview

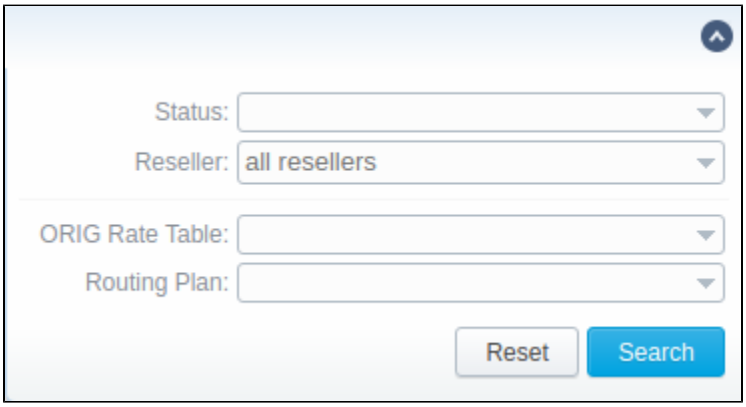
This tab allows you to create a client template where you can specify the main information about a client, originator settings, etc. Moreover, this template can be used to set the billing and tariffication parameters for Customers, Managers or Resellers in several clicks.
Screenshot: Client's Templates List

Column Name	Description
ID	Client's template identification number
Name	Client's template name
Credit	Credit volume in a template
ORIG Rate Table	Origination rate table, assigned to this client's template
Routing Plan	Routing plan, assigned to this client's template
Tags	List of client's templates tags
Reseller	Name of reseller's company respective client's template belongs to

Advanced Search

To navigate effectively in the tab, user is advised to use **Advanced Search** drop-down menu by pressing blue downwards arrow icon in the top right corner of the page.

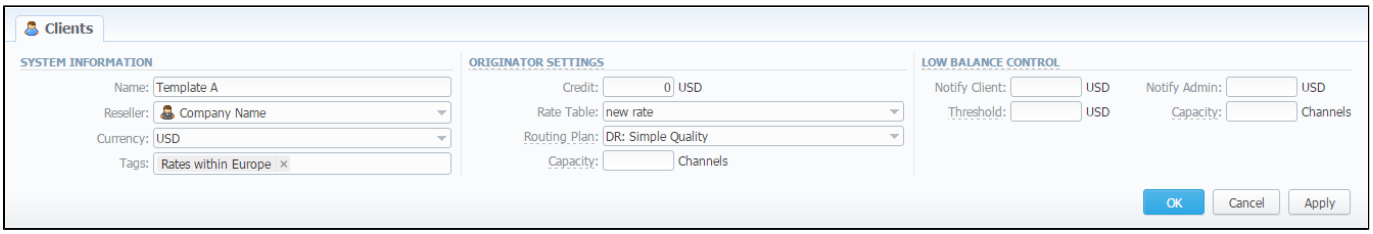
Screenshot: Advanced Search drop-down menu



Creating New Client's Template

To create a new template you need to press **New Client Template** button.
A new pop-up window with the following fields will appear:

Screenshot: New Client Template settings



Information block	Fields Description	
System Information	General information regarding client's template settings	
	• ***Name***	Indicate the title of client's template
	• ***Reseller***	Select reseller that will be assigned to this template (this name will be used in invoices)
	• ***Currency***	Indicate preferred currency (will be used in invoices)
	• ***Tags***	Specify tags that will belong to a current client
Originator Settings	Billing settings and tariffication parameters for customers, who send the calls to your switch	
	• ***Credit***	Credit limit allowed for client
	• ***Rate table***	Select the origination rate table
	• ***Routing Plan***	Select an appropriate routing plan that will be used to route all calls for this customer
	• ***Capacity***	Summary origination capacity for the client
Low Balance Notifications	Here you can setup whether system should make low balance notifications or not when client's **Available** balance is lower than a set threshold	
	• ***Notify Client***	When clients' balance+credit is below entered value, system will send a notification to email, specified in clients' ***Billing email*** field
	• ***Notify Admin***	When clients' balance+credit is below entered value, system will send a notification to administrator via ***Events Log***
	• ***Threshold***	Available balance threshold below which the special capacity setting will be applied

	• ***Capacity***	Origination capacity limit that will be applied when available balance is below threshold

Tip

Client's Templates allows you to fill out customer's settings with **standard default values**. If you do not specify the values *(i.e Credit, Rate Table, Routing Plan, Capacity, Notify Client, Notify Admin)* in the *Client form*, the ***Client's Templates*** allows to take the following values from templates (during authorization).

Please note: the system can fill only empty fields with standard default values overridden from assigned template. For example, if the client has ***0*** (specified by default) in the ***Credit*** field near the **Postpaid** checkbox, you need to clear it manually, otherwise, this value will not be taken from the template. But these values **will not be shown** in the **Client form**.

Sample: When there are no values in the Client form, the system will take them from assigned template. When there are no values in the template assigned to the Client, they will be taken from **Manager/Reseller's settings**.

Interface properties

The process of applying a template to the client is pretty simple. All you need to do:

- Go to **Clients** list, click on **New Client** button or select the needed client;
- Fill in the ***Client's Template*** field by selecting a needed template from the drop-down list;

In **Reseller** section, there is an option for Manager/Reseller to set a ***Client's Template***, i.e. this template will be used under this Reseller or Manager by default. All you need to do:

- Go to **Reseller** section and select the needed ***Manager/Reseller*** (configuration window will pop-up)
- Fill in the ***Client's Template*** field by selecting a template from the drop-down list

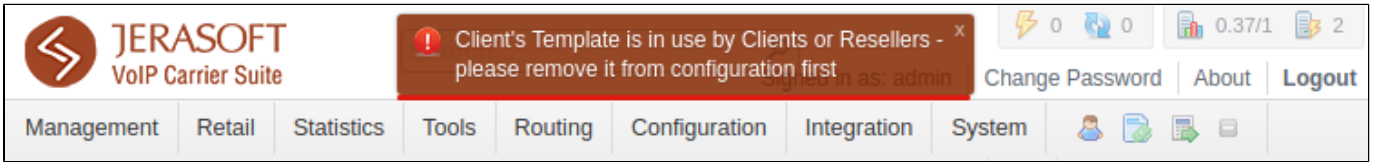
Tip

Please be advised that values overridden from templates, i.e. ***Routing Plan, Rate Table, Credit*** are displayed only on the Client list. They **will not be shown** on the Client's account.

Functional properties

1. If there are no indicated values (such as ***Credit, Rate Table, Routing Plan, Capacity, Notify Client, Notify Admin***) in the **Client's Settings**, it will automatically override these values from the closest template.
2. The closest template is considered a first template found by the following chain: **Client his Manager his Reseller**
3. If there are no found values mentioned above in the closest template, a further search stops and values are not defined.

When you remove the template, there is a validation of use this template by Client, Manager or Reseller. The pop-up window with notification will appear.
Screenshot: Removing template



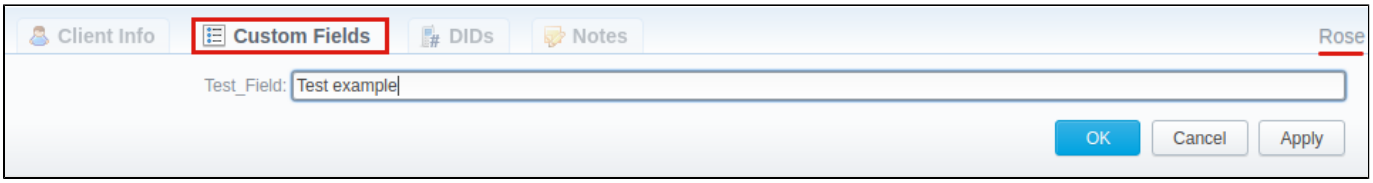
Reports

1. If you want to **change the *Reseller***, you will proceed without any application checks of this template by the ***Client/Manager/Reseller***.
2. The **currency** indicated in the ***Client Template*** and the currency of the customer to which it applies should be the same to work properly.
3. All ***Managers*****,** regardless of their nesting level, have a possibility to **see the full list of templates** that **belong only to their *Reseller*.**

Custom Fields

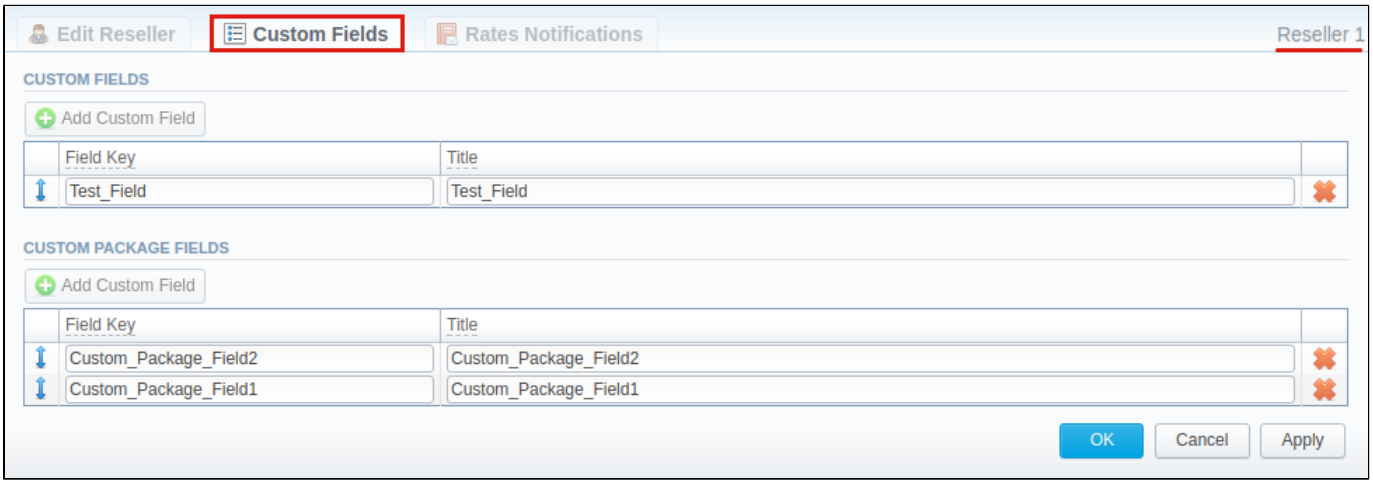
This tab represents the list of **Custom Fields** that have already been added and assigned to the respective client by its reseller. The data specified in these fields will will be used in invoice templates as custom functions.

Screenshot: Custom Fields tab



You can add these fields in **Management > Resellers** section by clicking ***Add Custom Field*** button, then you need to specify field key and title.

Screenshot: Custom Fields Reseller section

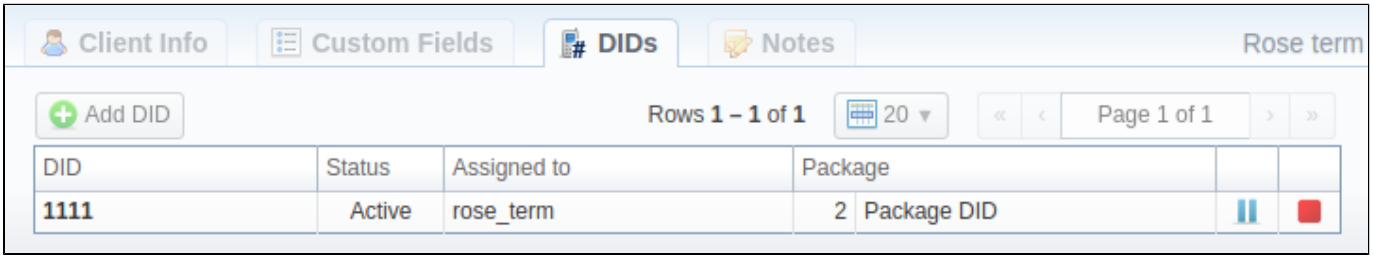


Field	Description
Field Key	Specify ***unique*** custom key for using the created field in invoice templates. Please note that only characters, number or underscore are allowed for this field. No blank spaces.
Title	Create the title of the clients Custom Fields form. Please note that it is obligatory to specify the title.

DIDs

This tab allows assigning already existing DID numbers to a certain clients' account.

Screenshot: DIDs section



Column	Description
DID	List of DID numbers
Status	Status of current DID
Assigned to	Shows clients' accounts whom the current DID number is assigned to
Package name	List of packages

Icon	Description
	Allows activating the DID
	Allows blocking the DID
	Allows holding the DID

Add DID Button

To assign a DID number, click the **Add DID** button, then specify an account, package and a DID number.

The **Add DID** button is **visible only if a client has at least one account and activated package**. You can assign only defined number of DIDs, which you previously specified during package creation.

Tip

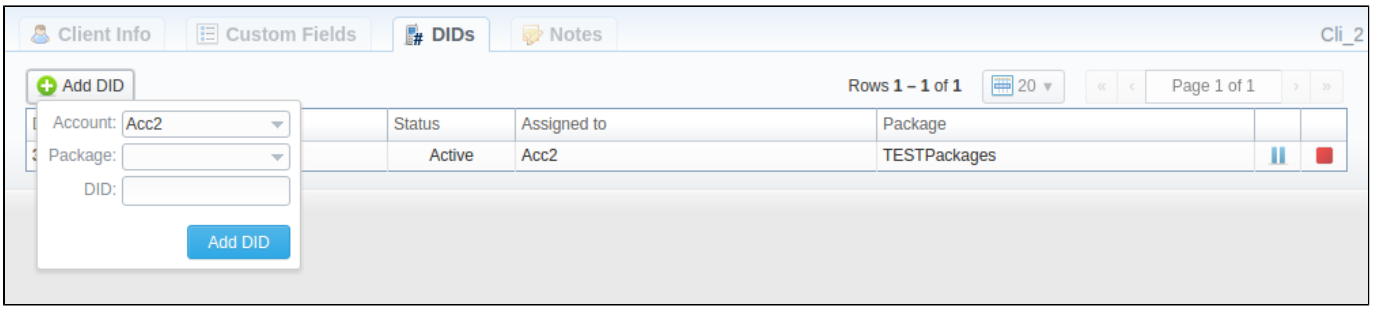
Detailed instructions on how to create a DID number you can find in the DID Management section, chapter **Creating DID Number**.

1. Go to **Retail > DID Management > Operators List** tab**.** Create one or more operators (DID providers).
2. Open the **DID Management** section, add one or more DID numbers with tags.
   Make sure that these DID's have ***in stock*** status. You can also use the **Import DID's** button.
3. Go to **Retail > Packages** section. Create a package, that will include tags specified in DID's settings and number of allowed DID's to be picked from it.
4. Assign respective Package to the customer in the **Client Packages** section.
5. Open the **DIDs** tab in the **Clients** section. Here, pick one or more DID numbers

This will effectively assign a DID number to one of the customer's accounts. Please note that this functionality is switch dependent, and additional development or testing may be required.

Please contact JeraSoft Support team for help, if you have any doubts or questions.

Screenshot: Add DID button


Client Info
Custom Fields
DIDs
Notes
Cli_2
Add DID
Rows 1 – 1 of 1
20
Page 1 of 1
Account: Acc2
Package:
DID:
Add DID
Status
Assigned to
Package
Active
Acc2
TESTPackages

Notes

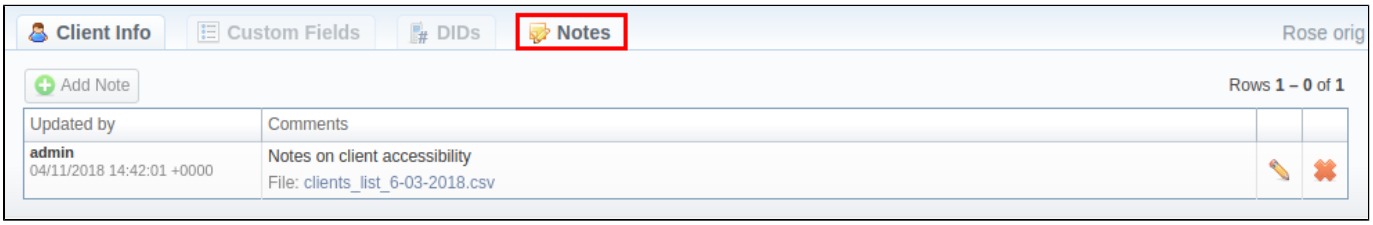
This tab represents a notebook for saving different additional information concerning current client. For example, this may be used by managers to share relevant info regarding particular customer.

To add a new note, open the **Note** tab of respective client, click the **Add Note** button on the toolbar, enter the message or select a file and click **OK**.

Also, you can edit or remove notes associated with respective client. **To change an existing note**, hover over the comment you'd like to edit and click on e dit icon . Then, a new pop-up window with settings appears.

To quickly **remove a note**, hover over the comment you'd like to cancel and click delete icon .

Screenshot: Notes tab



Accounts

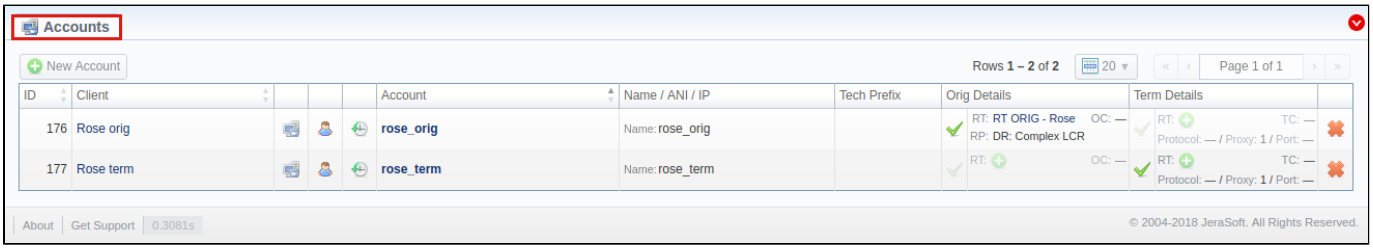
In this article

- Section overview
- Advanced Search
- Adding New Account
- Knowledge Base Articles

Section overview

This section is designed to create and manage all clients' accounts in the system. Any clients can have unlimited amount of unique accounts. Accounts are a key tool for clients' identification in JeraSoft VCS. Section is presented in a form of a table with the following columns:

Screenshot: Accounts section



Column Name	Description
ID	Account's identification number
Client	Client's name
Account	Account's name
Name/ ANI / IP	The way of clients identification
Tech Prefix	Technical prefix for users identification
Orig Details	Settings of the Originator
Term Details	Settings of the Terminator

Attention

- It's possible to add multiple accounts with the same IP address and different protocols/ports.
- When you **delete an account** from the system, all **associated statistics will be removed, amounts will be refunded and client balance will increase.** We recommend deactivating useless accounts instead of completely deleting from the system. You can deactivate an account simply disabling ***Originator/Terminator Settings*** checkboxes.

The section contains the respective list of functional buttons and icons.

Button/Icon	Description
New Account	Allows creating a new client's account
	Allows filtering accounts by a specified client
	Allows viewing specified client's profile in **Clients** section
	Allows viewing client's change history in **Audit log** section

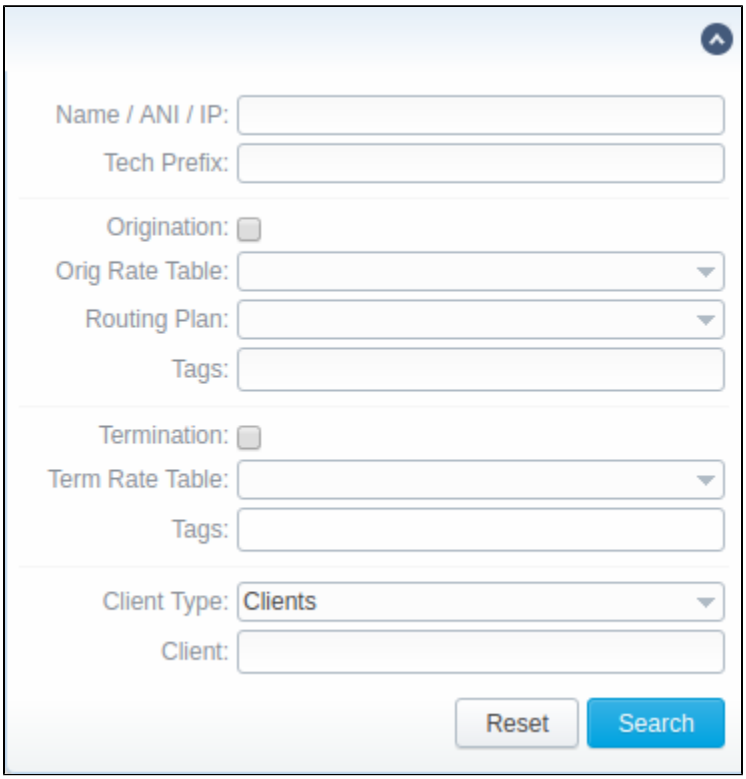
	Indicates that Orig/Term rate table or routing plan is assigned to an account
	Allows deleting an account from the system

Advanced Search

Use the ***Advanced Search*** drop-down menu for fast navigation in the section (for instance, displaying accounts belonging to a certain client*)* by clicking on red downwards arrow icon.

You can start a quick search by typing your keywords into a target field and pressing **Search** button.

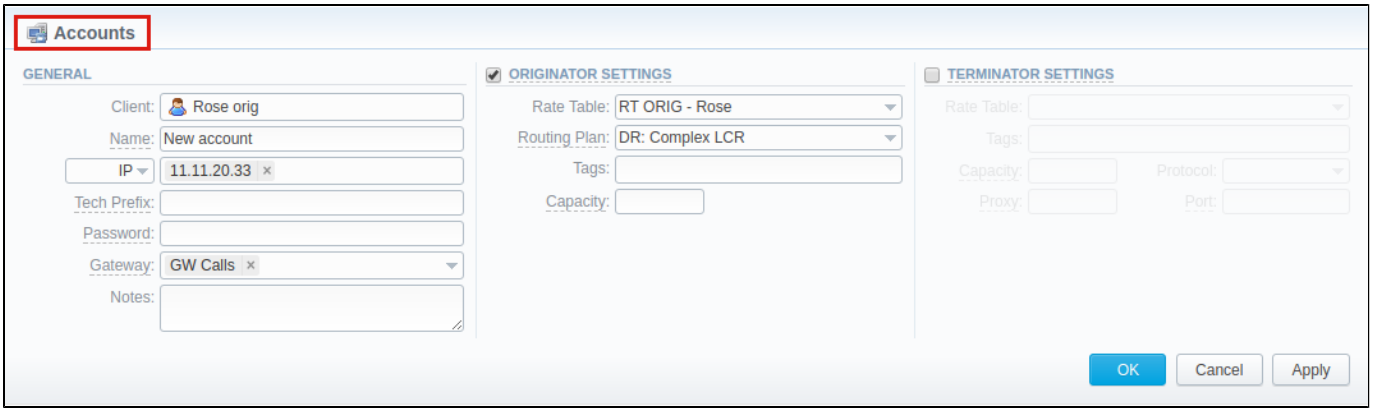
Screenshot: Advanced Search drop-down menu



Adding New Account

To add a new account, press **New Account** button and fill in the respective fields. After, press **OK** button. The list of fields is as follows:

Screenshot: Adding new account



Information block	Fields and Description	
General	General information about new client's account	
	• ***Client***	Specify a client whom this account belongs to
	• ***Name***	Define a name of an account for JeraSoft VCS
	• ***Identby***	The *VCS system* allows client identification in 3 different ways, you need to select one of below-mentioned: • **IP** – gateway IP-address. You can specify multiple addresses, by dividing them with ";". Moreover, you can specify the **subnet with mask here** in CIDR-format, e.g. ***10.0.0.0/24, 200.200.200.208/28*** • **Name** – gateway name or user login, used for identification • **ANI** (Automatic Number Identification) – called or caller phone number
	• ***Tech Prefix***	Define technical prefix, that is used to identify users, when **multiple clients use the same gateway**
	• ***Password***	Set a user's password that is used with login/password identification on a switch. Also, it can be used through default authentication mechanism. For more info, please consult your switch system manuals. Note that you can **automatically generate** a password or **show** it by clicking on icon or icon, respectively.
	• ***Gateway***	Specify a gateway for the account which will be in use only when billing this host calls. It is possible to assign more than one gateway to one account.
	• ***Notes***	Additional information about current account
Originator Settings	Settings for your customers, who send calls to your switch	
	• ***Rate Table***	Select rate table for current origination account (it will have higher priority than rate table set for the whole client)
	• ***Routing Plan***	Idicate a routing plan for a current origination account
	• ***Tag***	Specify a tag for a current origination account
	• ***Capacity***	Set limitation for the number of simultaneous calls within this account
Terminator Settings	Settings for your vendors, whom you send calls from your switch to	
	• ***Rate Table***	Select rate table for a current termination account (it will have higher priority than rate table set for whole client)
	• ***Tag***	Specify a tag for a current termination account
	• ***Capacity***	Indicate capacity for respective traffic direction

	• ***Protocol***	Select respective protocol for current termination gateway
	• ***Proxy***	Define proxy for a current termination gateway
	• ***Port***	Set port for a current termination gateway

⚠ **Attention**

- You can add an **unlimited** number of accounts for **each client**
- It's possible to add multiple accounts with the **same IP** address and **different protocols/ports** or **different gateways**

Knowledge Base Articles

- How to specify CLI and non-CLI traffic?
- How to set up a functional capacity?
- Why the Account cannot be added, same IP / Name exists within other client message during adding an IP to an account appeared?

Rate Tables

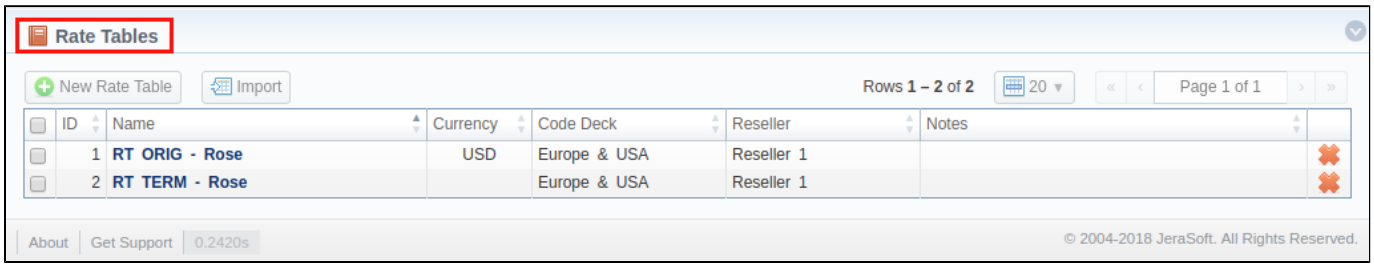
In this article

- Section overview
- Advanced Search
- Adding New Rate Table
- onfiguring Rates
- Rate Import
- Knowledge Base Articles

Section overview

Rate Table is one of three core elements of the entire JeraSoft VCS system. Its purpose is to contain determined rates (prices) for each code (destination) on the list. This section provides you with a full scope of tools for management of your rate tables. Section is presented in a form of a table with the following fields:

Screenshot: Rate Tables section



Column Name	Description
ID	Rate table's identification number
Name	Name of a rate table
Currency	Currency of a rate table
Code Deck	Name of a code deck, specified in a rate table
Reseller	Name of reseller respective rate table belongs to
Notes	Additional information about a rate table

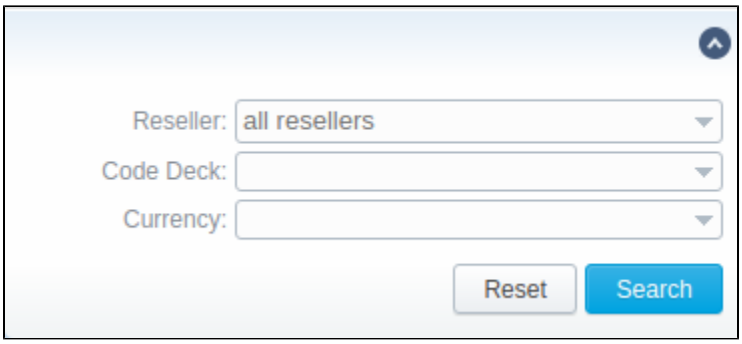
Functional buttons and **icons**, presented in the section, are as follows:

Button/Icon	Description
New Rate Table	Allows adding a new rate table to the system
Import	Allows import a list of user's clients in a .csv file
	Allows deleting a client from the system

Advanced Search

In the top right corner of the section above the table, an **Advanced Search** drop-down menu is located. By clicking on red downwards arrow icon *(clien* ts in the section are filtered by ***Active*** status by default*)*,the following drop-down menu is displayed:

Screenshot: Advanced Search drop-down menu

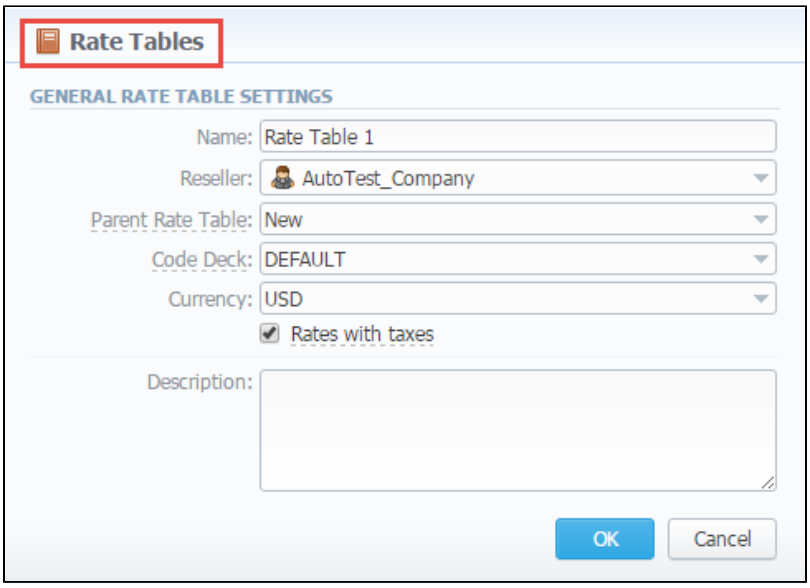


Adding New Rate Table

In order to add a new rate table, press **New Rate Table** button and in a pop-up window define respective values:

Field	Description
Name	The title of a respective rate table
Reseller	The Reseller to whom this rate table belongs to
Parent Rate Table	The rable table to inherit rates from. Codes with the same length in the current rate table will have the priority. However, longer codes from the parent rate table will override the codes in this rate table **Attention** 1. Please note that the **currencies** of a parent and current rate tables **should be the same**. 2. The working method with **Parent Rate Table** could be applied **only for origination**. For example, you can create a *Child Rate Table* for some destinations and add special rates. Then, specify a respective *Parent Rate Table* (t hat includes all standard rates) in the *Child Rate Table* settings. And assign this *Child Rate Table* to the Client.
Code Deck	The deck that consists of a destination code and a destination name
Currency	Preferred currency (will be used in invoices)
Rates with taxes *checkbox*	Tax settings. It's disabled by default. If you enable it, all rates will include above tax in their values. When it is disabled, the tax value will be added as an additional invoice parameter.
Description	Additional information

Screenshot: New rate table window



This section will also store all rate tables that you plan to analyze via **Rates Analysis** section**.** You will be able to change these settings later by using **Para meters**tab. After everything is entered, click **OK** button. New rate table will appear on the list.

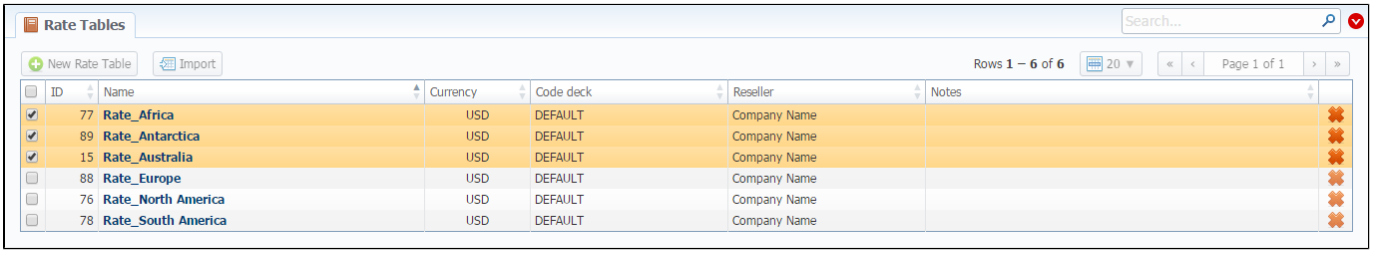
onfiguring Rates

You can configure the rates by clicking on the respective name of the rate in the full list. The rate management has a panel with following tabs:

Tab	Description
Rates	Rates configuration
Simulate	Call simulation tool
Import	Rates importing from ***csv*** or ***xls*** files
Export	Rates exporting to ***csv*** or ***xls*** files
Parameters	Here you can change some parameters that you've specified during rate table creation

Rate Import

In general, you can **import all existing rate tables** from this section of the VCS. To **import multiple rates:** first, select rates and then click the **Import** butt on on the toolbar at the top left of the rate tables to launch the import wizard.
Screenshot: Rate Tables section main window



For information about import process, see Rates Import tab article.

Knowledge Base Articles

- How to bill by Access Numbers (A-number billing)?

Rates Tab

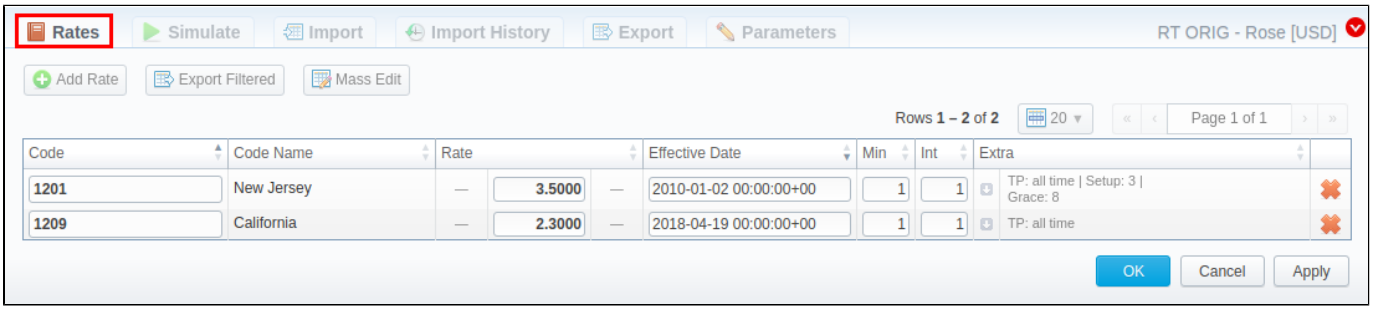
In this article

- Tab Description
- Adding New Rate
- Mass Rate Edit
- Advanced Search
- Stashed rates

Tab Description

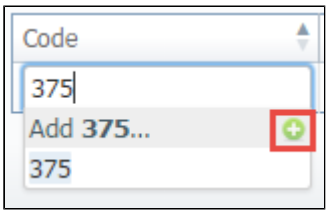
This tab is a corner stone of the whole section, containing the list of all codes with indication of personal parameters of each of it. Tab allows adding new rates, as well mass its mass editing and export.

Screenshot: Rates tab settings



Adding New Rate

To create a new rate for a target code, you need to press **Add Rate** and the following fields will appear:

Field	Description
Code	Destination code. Please note, you can add a code to already chosen code deck while creating a new rate. To do it, while indicating a new for a rule, click on the plus icon next to the respective code (see screenshot below). The plus icon will be visible if there is code deck specified previously. 
Code Name	Name of a code group (available if code deck is attached)
Rate	Price per unit of a servie. Here you can see changes (how current rate differs from previously effective on) by clicking up/down arrows
Effective Date	Rate start date (newest available rate for a particular destination)
Min	Minimal time of call that will be tariffed. For example, if total call time was **20** seconds and ***Min* is 30**, then client will pay for **30** seconds of call
Int	Tariffication interval. This parameter is used, when ***Min Time*** time expires. For instance, if call time is **26** seconds, ***Min* is 25** and ***Int* is 8**, client will pay for **33** seconds
Extra Fields	Additional parameters are stored under gray downwards arrow icon.

• ***Tag***	Specify a tag for respective rates. If it's not applicable, assign a ***(@) tag*** as default.
• ***Policy***	This option allows selecting a rate type for a code: regular rate or an additive (extra) rate: • ***regular rate*** - this policy signifies a usual rate definition for the event; • ***additive (extra) rate*** - this policy signifies that this rate will be added to a regular rate for the event. During billing, the system takes one regular rate and all additive (extra) rates that are appropriate for the call. Please note, a regular/additive rate table will be determined by accessible dynamic and static tags, used for the call.
• ***Profile***	Time profile that will be used for a current rate, for example, ***business time***, ***non-business time***, ***weekends***, etc.
• ***End Date***	After specified date, target rate will not be used
• ***Setup Fee***	Setup fee (charged when event duration is ***longer than 0 seconds***)
• ***Grace Volume***	Time interval that will not be tariffed (free time). For instance, if you specified 5 sec as a ***Grace Time*** , all calls with duration up to 5 seconds (including calls with session time of 5 seconds) will be free of charge
• ***Notes***	Additional information about current rate

After you finish filling in all fields, press button.

Also, you can quick export the rates by pressing **Export Filtered** button or opening the **Export** tab***.***

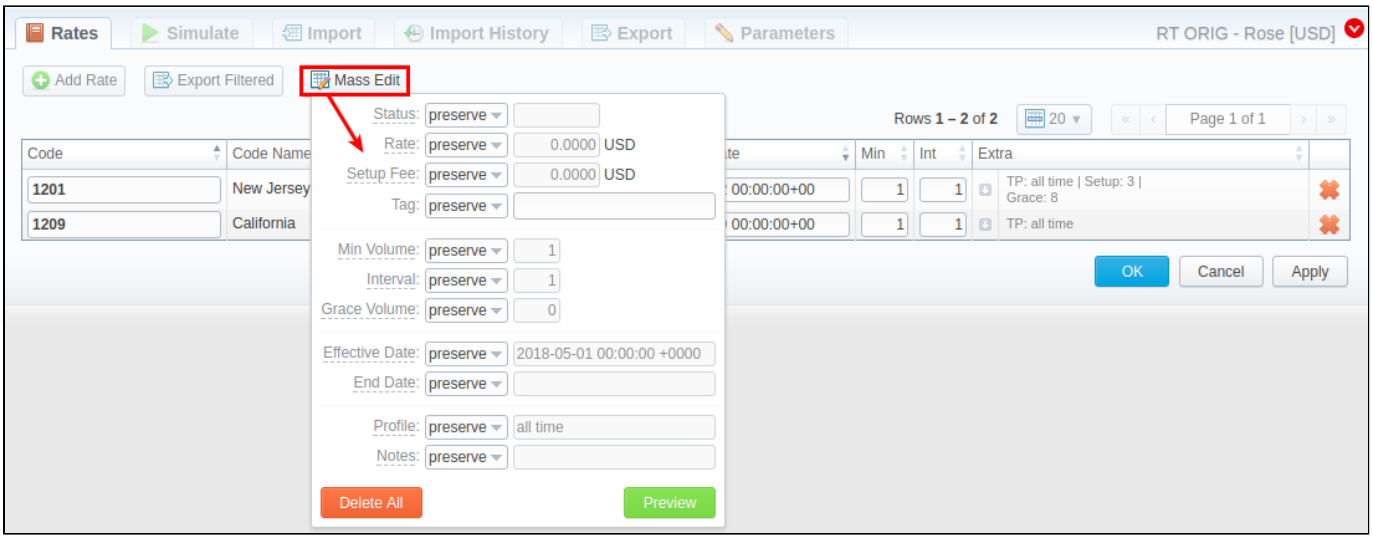
Mass Rate Edit

It's possible to make a mass update of the rates by clicking on Mass Edit for the drop-down menu to appear. Then, you need to fill in the fields according to your needs. There are four general parameters that can be applied to a field.

- **preserve -** the default configuration that saves the rate not edited. Leave this parameter unchanged if required;
- **set to -** it allows to edit rates, for example, specify the same effective date for all rates at once, regardless of previous configurations;
- **inc for -** here you can indicate how the original value increased;
- **dec for -** here you can indicate how the original value decreased.

The list of mass edit fields is as follows:

Screenshot: Mass Edit button



Field	Description
Status	Change rates statuses. Available options: ***preserve, set to***
Rate	Change rates values. Available options: ***preserve, set to, inc for, dec for***. You can increase or decrease the value either by fixed number or percent. To increase or decrease by percent enter % sign before desired number
Setup Fee	Change setup fee value. Available options: ***preserve, set to, inc for, dec for***. You can increase or decrease the value either by fixed number or percent. To increase or decrease by percent enter % sign before desired number
Tag	Change rates tag. Available options: ***preserve, set to***
Min. Volume	Change minimal volume value. Available options: ***preserve, set to***
Interval	Change tariffication interval value. Available options: ***preserve, set to***
Grace Volume	Change grace volume value. Available options: ***preserve, set to***
Effective Date	Change rate start date value. Available options: ***preserve, set to***
End Date	Change rate end date value. Available options: ***preserve, set to***
Profile	Change rate profile. Available options: ***preserve, set to***
Notes	Change rates note. Available options: ***preserve, set to***

After indicating necessary fields, press **Preview** button. You will be displayed a new rate table with edited details, where you can choose one of the following options:

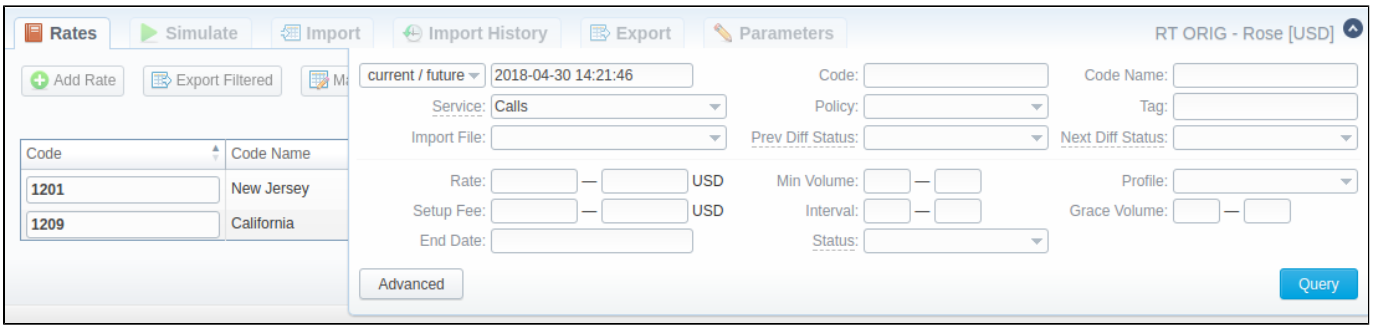
- By pressing **Insert As New** button, edited rates will be added as new ones that will replace existent under specified conditions (for example, change of rate and effective date);
- By pressing **Update Current** button, edited rates will have their values updated with the new ones;

To delete all displayed rates press **Delete All** button in a Mass Edit menu.

Advanced Search

Use the **Advanced Search** drop-down menu (see screenshot) by clicking on red downwards arrow icon in the top right corner of the tab. To open additional settings, press **Advanced** button.

Screenshot: Rates tab search settings



Field	Description
State	Search by ***the period of a rate*** during which the rate is active, expired, etc., as compared with data specified in the next field. The following states are available to choose from drop-down list: • ***current on*** - search includes rates that are active for specified data • ***old for*** - search rates that are expired for specified data • ***future for*** - the future rates compared with specified data • ***current/new*** - includes current and future rates • ***all*** - includes all rates
Code/Name	Search by **the title or code**
Tag	Search by an **assigned tag**
Imported File	Search by the **title of an imported file**, choose a file from the drop-down list of all available. If the list is empty, there is no imported files.
Difference Status	Search by **the cost changes of the rate**. The following types are available to choose from drop-down list: • ***Decreased*** • ***Increased*** • ***Not changed*** • ***New***
Status	Search by the state of the rate: • ***active*** • ***stashed*** *(not confirmed).* This state means that the rate is not used for the billing or routing process.
Rate	Search by **the rate**, the price interval could be specified
Setup Fee	Search by the **setup fee of the rate**, the interval could be specified
End Date	Search by **the expiration date** of the rate
Min Volume	Search by the **minimal volume of eveny** that will be tariffed
Interval	Search by the **tariffication interval**
Profile	Search by the **time profile** of the rate
Grace Volume	Search by the **interval of the free event volume**

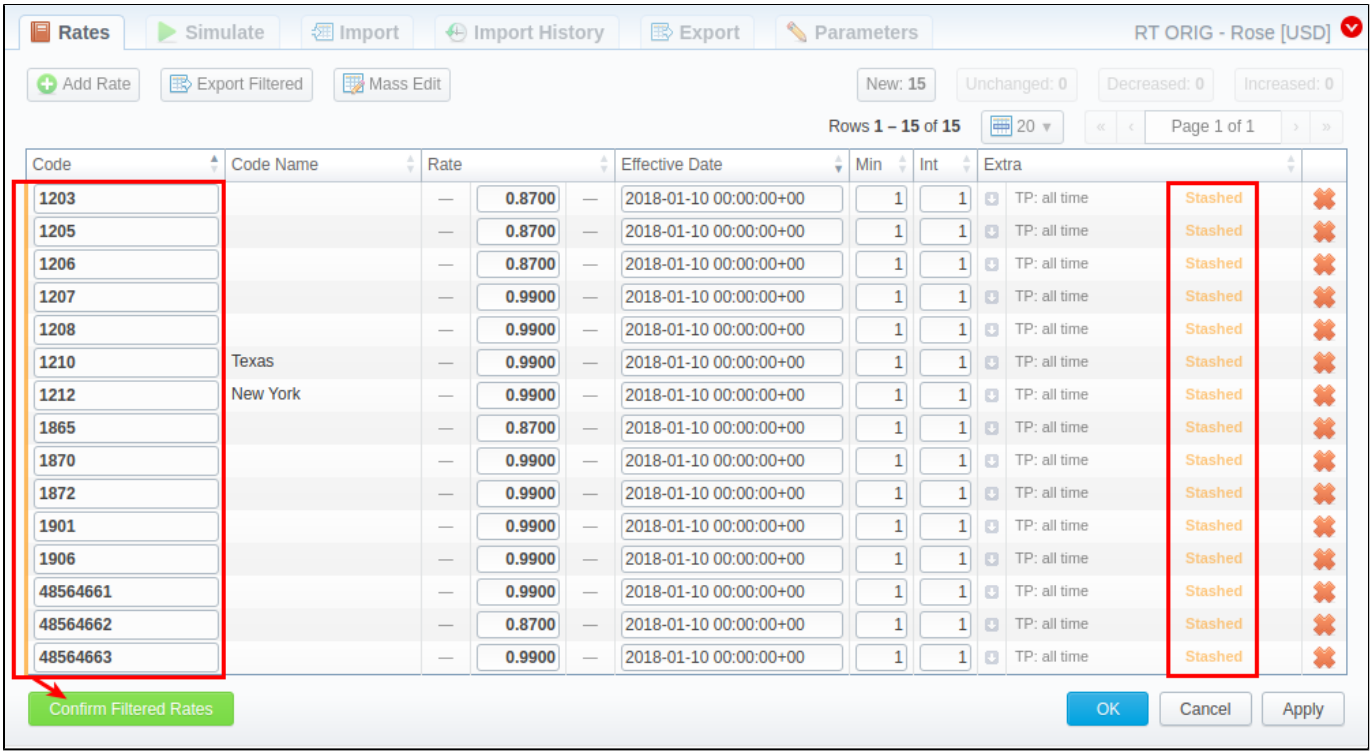
Attention

When you filter rates by the state (for example, **current/new, future for, current on**), **stashed** (not-confirmed) rates will not show up in the search results. To include these rates, choose ***all***from the drop-down list.

Stashed rates

If you see the rate rows colored in yellow, it means these rates are in pending state and you need to confirm them all (press **Confirm Filtered Rates** button). Not confirmed rated appears while import process.

Screenshot: Rates tab settings



Rates Management

Recommended rates management practice includes a few tips that can make routine job easier.

Tip 1: If you received an update for your rate table, do not delete or edit already existing information. Simply import updated price list on top of your current one, this will update your rates with new effective dates, while no longer actual rates will be hidden. Read more about importing process in Import article.

Tip 2: If an existing rate was changed and ***Effective From*** field specifies a date that have passed, then all calls will not be automatically rerated using this new rate. You must rerate them manually with **xDRs Rerating** section.

Tip 3: As an example of calculation, let's imagine that ***Rate*** = 1, ***Min Time*** = 30, ***Interval*** = 1, ***Grace Time*** = 2, ***Setup Fee*** = 0,3, where*:*

- ***Rate*** – is a price per unit of a servie.
- ***Min Time*** – minimal time of call that will be tariffed.
- ***Interval*** – tariffication interval which is used, when ***Min Time*** time expires.
- ***Grace Volume*** – time interval that will not be tariffed (free time). For instance, if you specified 5 sec as **Grace time**, it means that all calls with duration up to 5 seconds (including calls with session time of 5 seconds) will be free of charge.
- ***Setup Fee*** – call fee, which is charged when call duration is longer than 0 seconds, and there is no specified grace time.

So, according to the given data if call duration was less than 2 seconds, then total call cost will be 0 currency units. If call duration was between 3 and 30 seconds, then total call cost will be $Setup\ fee + \frac{Rate}{Rate\ Formulas} \cdot Min\ Time$ where ***Rate Formulas*** is the amount of seconds in one minute that will be used while billing the calls, which is 0,8 currency units regarding the presented data. If call duration was more than 30 seconds, then total call cost will be $Setup\ fee + \frac{Rate}{Rate\ Formulas} \cdot quantity\ of\ call\ seconds$ currency units.

Tip 4: You can change rate tables' currency in **Parameters** tab.

Tip 5: All rate fields that define time have time format in seconds, while in ***Rate*** field you specify the cost for 1 full minute of call.

Tip 6: If you require to perform bulk update or edit of your rates, you can use **Mass Edit** feature. Please be advised that mass edit will be applied only to ***cu rrent / future*** rates. So, prior to editing, make sure you filtered target rates accordingly.

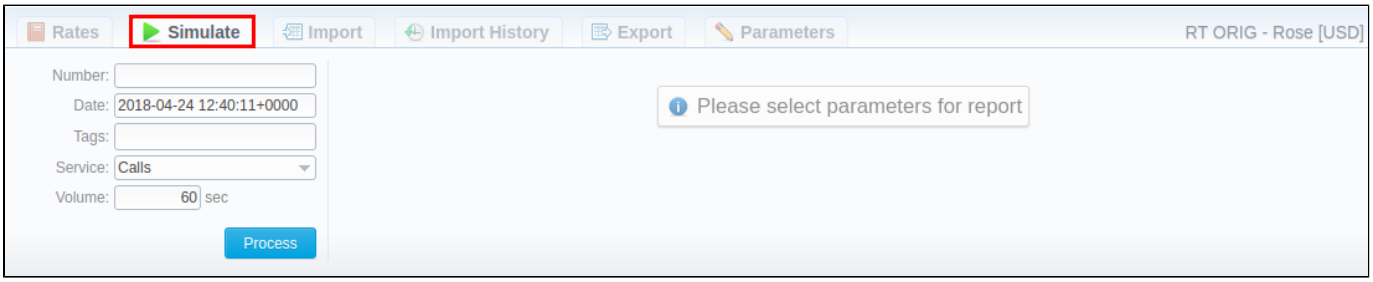
Knowledge Base Articles

- Jurisdictional Billing
- US Billing & Taxation

Simulate

Simulate tab gives you possibility to see the exact rate which will be used for specified destination number, and also resulting cost, if such event would take place. To simulate an event, fill in the following fields and press **Process** button:

Screenshot: Simulate tab



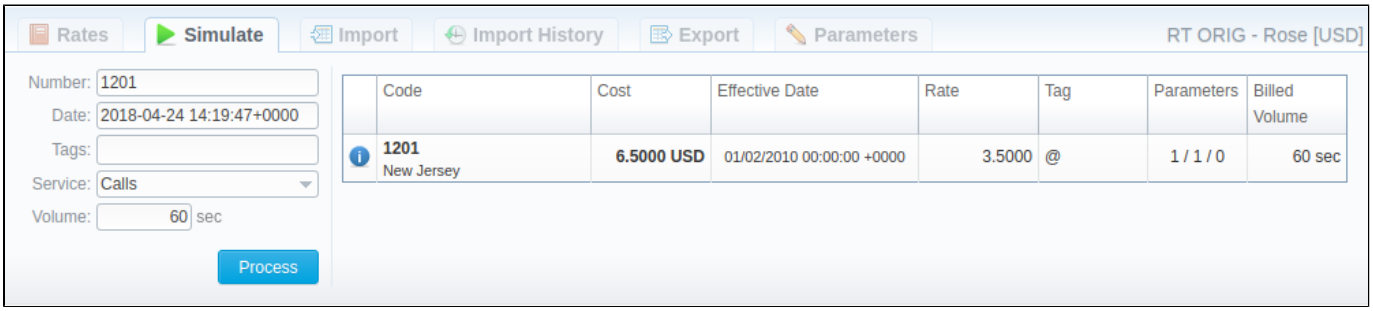
Field	Description
Number	Specify dst number of the event
Date	Indicate the event date
Tags	Fill in this field if you wish to specify certain rate tags
Service	Specify a type of service
Volume	Specify event volume (seconds, bytes, events, etc.)

Attention

Note that from now on **only** rates with ***Active*** status can be used to simulate rates. Rates with ***Stashed*** status will not be displayed.

The results of simulated event are presented in a table with the following structure (see screenshot below):

Screenshot: Event simulating results



Column	Description
Info icon	Hover over this icon to view additional parameters (**setup fee**, **profile**, **end date**, etc.)
Code	Destination code
Cost	Cost of an event
Effective Date	Rate start date
Rate	Event price for a specified unit. Units ratings are configured in **Services** section. For instance, for call service indicated rate may be a price for **1 second, 1 minute, 1 hour** or **1 day**.
Parameters	Information of minimal time of call that will be tariffed, tariffication interval and time interval below which event is not tariffed (grace volume), separated by /

Billed Time	Billed time (minimal time of billing increment)

Import

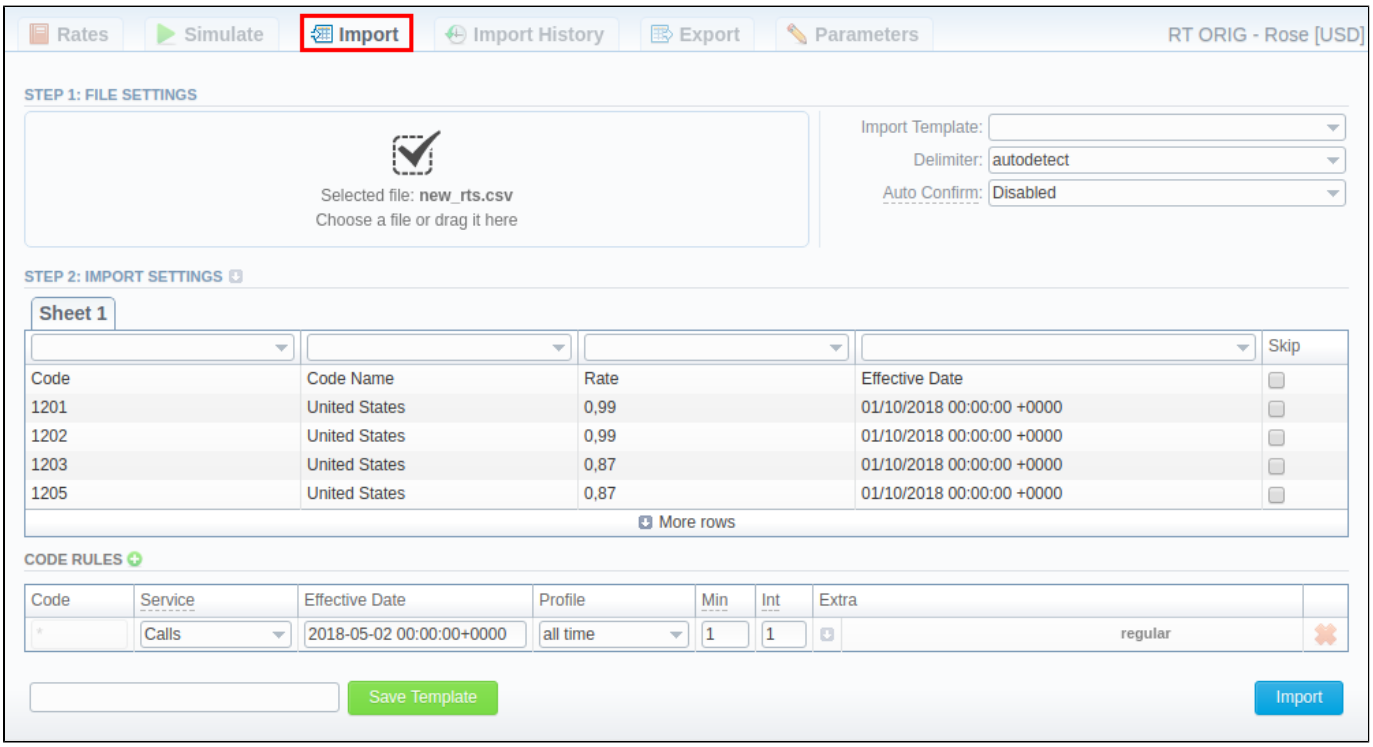
In this article

- Import Tab
  - Step 1. Selecting File and Specifying Additional Parameters
  - Step 2. Import Settings
  - Step 3. Import Errors
  - Comfirming Rates
- Import History Tab

Import Tab

The tab is designed to provide user with a possibility to import rate to VCS by uploading **.csv** or **.xls** file. The whole process can be divided in the following steps:

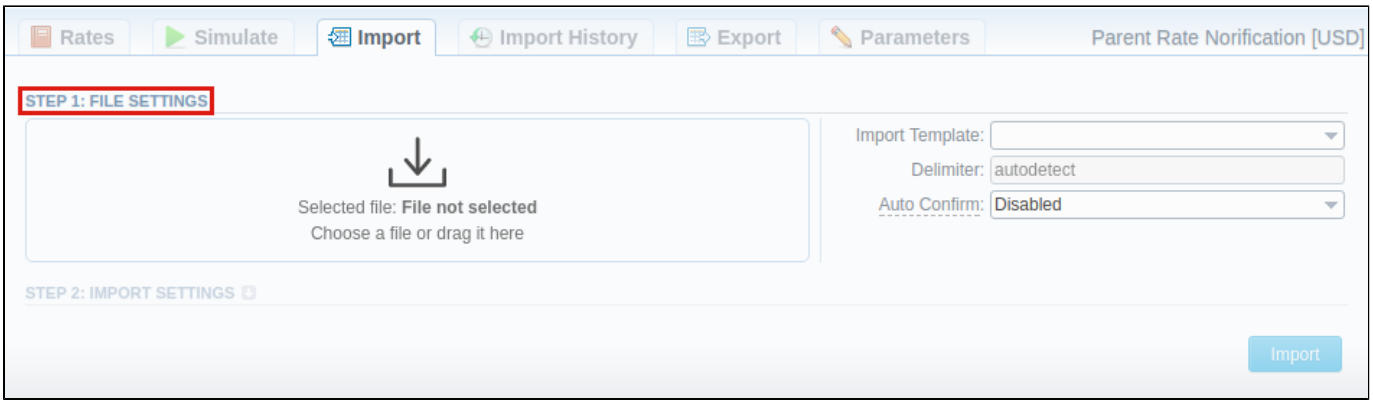
Screenshot: Import tab



Step 1. Selecting File and Specifying Additional Parameters

First, you need to select a file for import. Additionally, you can specify the following parameters:

Screenshot: Step 1. File Settings



Field	Description
Import template	Select a target template for rates importing
Delimiter	Specify here a delimiter symbol. Possible options are: • ***autodetect*** • ***,*** • ***;*** • ***tab*** By default, **autodetect** option is chosen.
Auto Confirm	Select whether the system must confirm imported rates automatically or not. Auto confirm will work even if **multiple rate tables** are selected for import

Warning

1. It's not possible **to import a file** into the ***Rate Table*** with **the Min Time and Interval = 0.** These fields must have at least 1 second.
2. While specifying the ***Effective Date*** and ***End Date*** keep in mind that by default ***Time zone*** is **UTC (+0000)**.

Step 2. Import Settings

The system will recognize the file and display first 5 rows of it. Then, you need to indicate the following required columns:

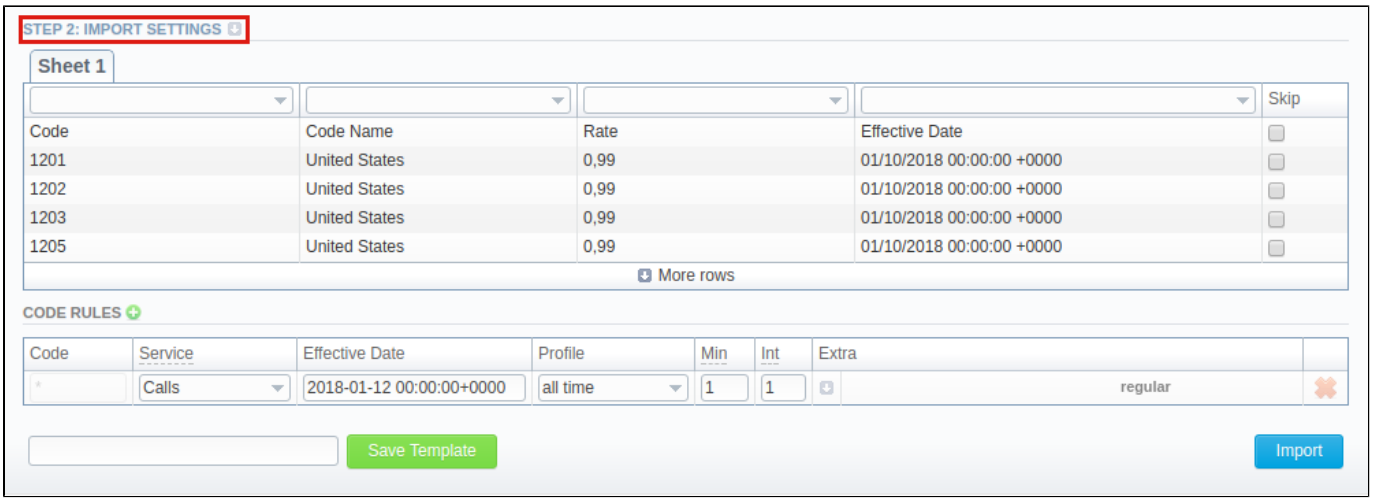
- **Code/Code Name** - indicate at least one of them
- **Rate**
- **Effective Date** - if you don't indicate this column, the Effective Date, specified in the Code Rules information block, will be applied to imported rates.

To switch from one sheet with rates to another, click on respective tab: **Sheet 1**, **Sheet 2**, etc.

On this step, you can also save the importing rate table as a template for further usage in importing process. To do so, in the bottom left corner of the tab, specify a template title and press **Save Template** button.

To open advanced configurations, click on grey downwards arrow icon next to the **Step 2: Import Settings**. Advanced settings contain the following fields

Screenshot: Step 2. Import Settings



Field	Description
On Duplicates	Determines billing behavior if it finds duplicate rate row. Duplicates are checked by **Code** + **Effective Date** pair of columns. • ***Update with the latest value*** - if multiple duplicates were found, the last value is stored • ***Skip duplicate rows*** - if there are multiple duplicates, only first value will be stored • ***Alert me about duplicates*** - if duplicates are detected, VCS will alert you about their presence **Attention** **Alert limitation** about rate duplicates during import process. It means that the import process cannot proceed if you get more than 1,000 duplicate alerts. This limitation applies while the **Alert me about duplicates** option is enabled in the ***On duplicate rates*** field in the **Import** tab
On Errors	Determines billing behavior if an inconsistency or error was found in importing file (data inconsistency, incorrect symbols, etc.) • ***Import correct rows and show all found errors*** - import error-free rows and display the list of errors, if any • ***If errors are found, abort import and show all errors*** - if any error is found, stop import and display a list of errors
Date Format	Specify date format of imported file. Please note, the auto-detection of date and time can be performed with files that contain one of the date and time formats, listed below: • DD-MM-YYYY (%d-%m-%Y) = 28-12-2018 • YYYY-MM-DD (%Y-%m-%d) = 2018-12-28 • MM/DD/YYYY (%m/%d/%Y) = 12/28/2018 • DD.MM.YYYY (%d.%m.%Y) = 28.12.2018 • YYYY/MM/DD (%Y/%m/%d) = 2018/12/28 • YYYYMMDD (%Y%m%d) = 20181228 • YYYY-MM (%Y-%m) = 2018-12
Custom format	If defined, this format will be used for date parsing instead of ***Date Format*** field
Optimize Codes	This option allows to make shorter codes of importing code range. For example, code range 4400-4409 will be shortened to 440. Please note, a single code 44001 will not be shortened to 440, it only works for code ranges specified with dash "-". **Tip** Therefore, when you make an import with enabled ***Optimize codes*** option and your importing file consists of code 440 and code range 4400-4409 at the same time, the import result will depend on the ***On duplicate rates*** settings.

Update Code Deck	Select the way you want a code deck to be updated with new/existing code names from current rates file • ***Disabled*** - leave selected code deck unchanged • ***Import only not existing codes*** - code deck will be updated with codes and their names if they are missing • ***Import all codes (update existing)*** - ode deck and codes will be updated with code names taken from file,overwriting of existing ones • ***Import all codes (purge code deck first)*** - code deck is fully cleared and then all codes and code names are imported from file
Code Deck	Code Deck that will be used for ***Update Code Deck*** option. Select a code deck that you want to update with the above-mentioned settings (note that code deck specified settings here will only be available if you are importing file which contains ***Code Names*** in addition to ***Codes***)
Notificator Code Deck	Specify code decks that will be used for the next rates notification
AZ Mode	A special mode that determines system behavior regarding **active/future** rates: • ***Disabled*** - leave active/future rates unchanged. Selected by default • ***Simple mode*** - active rates from current Rate Table will be closed on the specified ***AZ close date*** if they aren't present in this import. • ***Extended mode*** - all existing future rates will be marked as stashed. Currently active rates (not presented in this import) will be closed by the date specified below.
AZ codes	Available if AZ Mode is **active**. Specify the exact code(s), **AZ Mode** is going to be applied to. By default, field value is *** (all codes)**

AZ interval (days)	Available if AZ Mode is **active**. It consists of two fields where time and date of rates closure are specified:
	
	1. **Time** - select from a drop-down list:
	  • ***Beginning of the day*** - active/future rates will be closed at ***00:00*** of the specified day
	  • ***Import time*** - active/future rates will be closed at the exact **time of import** on the specified day
	2. **Day -** specify the interval of days after which rates will be closed
	
	Tip
	For a detailed explanation, check out our Knowledge Base article
	
	Attention
	Starting from version **3.16.0**, in ***Day*** field you can specify **a negative value** to close active rates with a past date

AZ close date	Available if AZ Mode is **active**. Field displays the time and date of rates closure based on the **AZ interval (day)** parameters

Attention

Starting from version **3.16.0, *Close rates marked by*** field in Settings section works for ***Rate*** field of imported file as well.

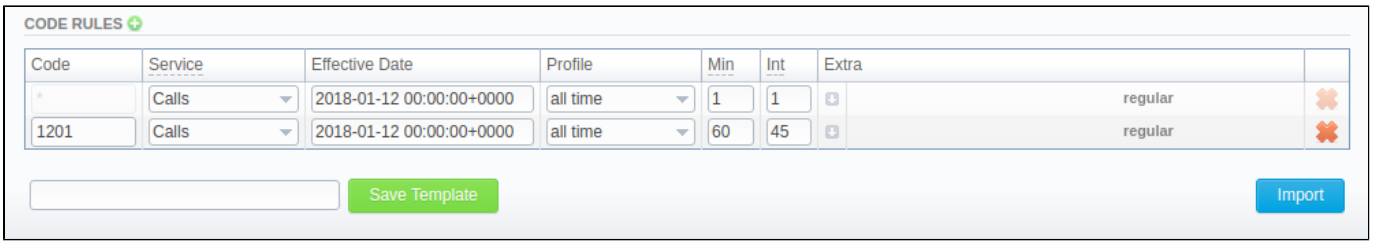
Code Rules Information Block

For adding a new code rule, click on the plus icon next to information block name.

When you add a rule and set the value in the fields, it will overwrite parameters specified the respective columns of the file. If you leave fields empty, it will take the parameters from the file.

If you a add a rule with *** code** for a certain service, not specified columns of the imported rates will be filled in with respective field values of this code rule. You can add rules with * code for all services. The list of code rules fields is as follows:

Screenshot: Rates import - Code Rules settings



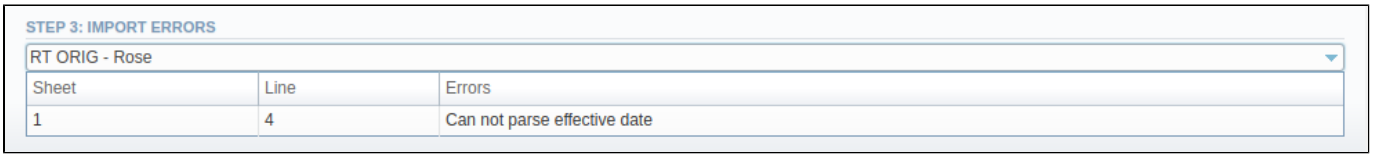
Field	Description
Code	Indiacte a destination code. For all codes, use * (asterisk)
Service	Select a service for rate
Effective Date	Specify a start date of a rate
Profile	Indicate time profile that will be used for current rate, for example ***business time, non-business time, weekends***, etc.
Min	Minimal time of call that will be tariffed. For example, if total call time was **20** seconds and ***Min* is 30**, then client will pay for **30** seconds of call
Int	Tariffication interval. This parameter is used, when ***Min Time*** time expires.
Extras	Additional parameters are stored under downwards arrow icon. • ***Tag* -** pecify a tag for respective rates. If it's not applicable, assign a (@) tag as default. • ***Grace Volume* -** volume that will not be tariffed (i.e. it's free). • ***Policy* -** rate's type for a code: **regular** rate or an **additive** (extra) rate. • ***Setup Fee* -** an initial fee that is charged. • **End Date -** final date after which the rate will expire. • ***Notes* -** additional information.

After specifying all additional parameters, press **Import** button.

Step 3. Import Errors

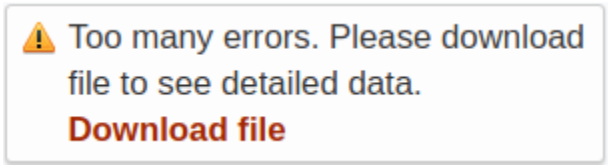
Provided a non-critical error(s) occured, you will be displayed a table, where exact sheet, line and error description are specified (see screenshot). In this case, you need to start the whole import procedure from the beginning.

Screenshot: Step 3. Import Errors



In case numerous errors occurred while **importing** rates, you will be displayed the respective notification:

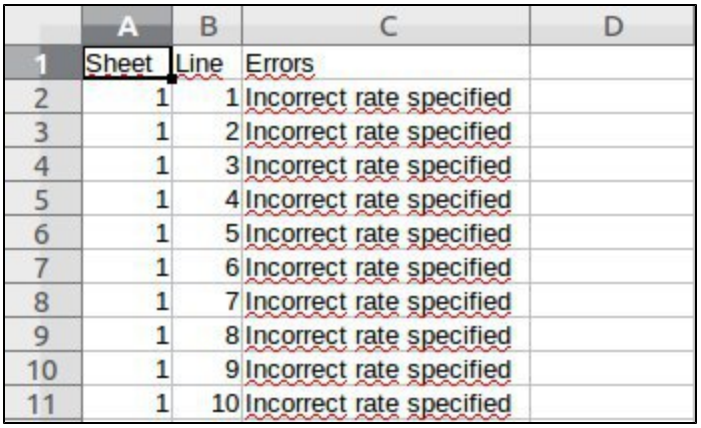
Screenshot: Error notification



By clicking on **Download file**, a **.csv** file with the following columns is downloaded:

Column	Description
Sheet	Index number of the sheet, where error occurred
Line	Line of the sheet, where error occurred
Errors	Description of the error that occurred

Screenshot: .csv file with detailed error data



	A	B	C	D
1	Sheet	Line	Errors	
2	1	1	Incorrect rate specified	
3	1	2	Incorrect rate specified	
4	1	3	Incorrect rate specified	
5	1	4	Incorrect rate specified	
6	1	5	Incorrect rate specified	
7	1	6	Incorrect rate specified	
8	1	7	Incorrect rate specified	
9	1	8	Incorrect rate specified	
10	1	9	Incorrect rate specified	
11	1	10	Incorrect rate specified	

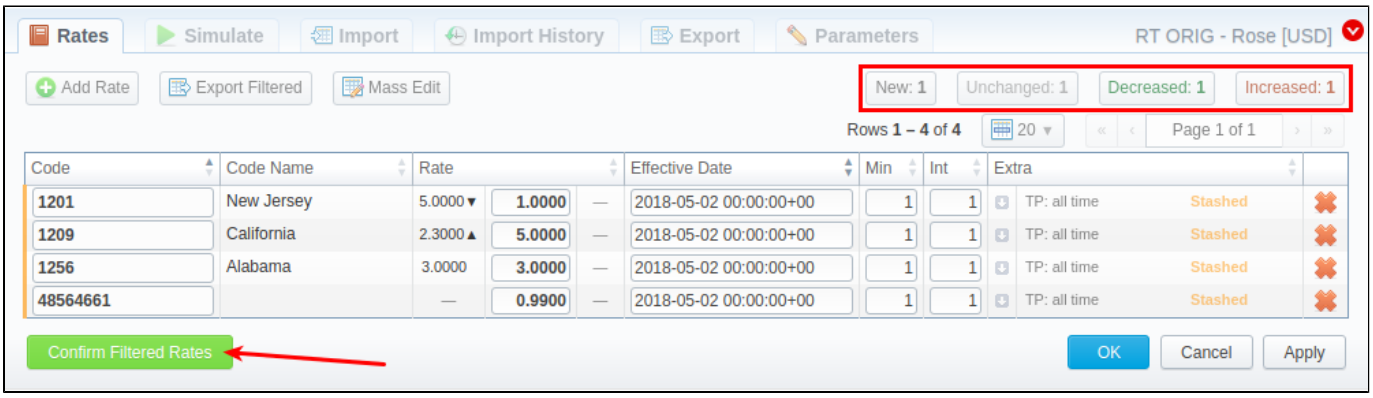
Comfirming Rates

When the procedure has been executed, you will be forwarded to **Rates** tab where all imported rates will be displayed. They are divided into the following types: **Unchanged, Increased, Decreased, New**. By clicking on respective buttons in the top right corner of the tab, you can filter rates by the type (see screenshot).

> **Attention**
>
> Imported rates will be marked as **Unchanged**, **Increased**, or **Decreased** only if their Effactive Date value (e.g. **04.25.2018**) is higher than Effective Date of a current rate (**e.g. 04.10.2018**)

If **Auto-Confirm** option is disabled, you need to press **Confirm Filtered Rates** button (see screenshot) to change rates status from ***stashed*** to ***active***.

Screenshot: Confirming Rates



Import History Tab

The tab contains information about all executed imports to this rate table. It is presented in a form of table with the following columns:

Screenshot: Import History tab

Column	Description

Date	Time and date of import execution
User Login	Login of a user who executed import
File	Import file. By clicking on icon, the file will be downloaded
Total	Total amount of imported rates
New	Total amount of rates with New type
Increased	Total amount of rates with Increased type
Decreased	Total amount of rates with Decreased type
Unchanged	Total amount of rates with Unchanged type
A-Z Closed	Number of rates, closed by A-Z import
A-Z Stashed	Number of rates, stashed by A-Z import
Status	Status of imopt procedure (***done/failed***)
Error File	File that contains description of all errors, occured during import. By clicking on icon, the file will be downloaded
icon	When clicked on, deletes respective import data from the system

Export

In this article

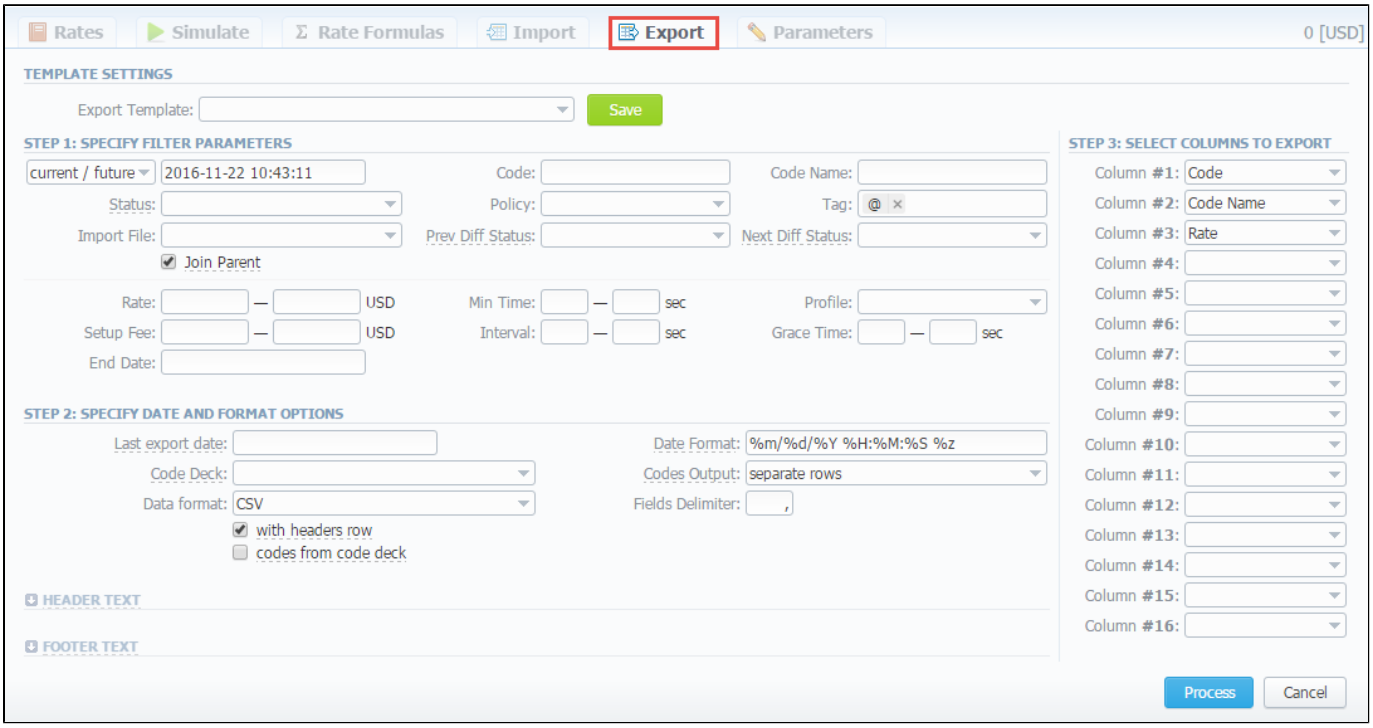
- Tab overview
- Rates Exporting Process
  - Step 1. Specifying Filter Parameters
  - Step 2. Specifying Date And Format Options
  - Step 3. Selecting Columns To Export

Tab overview

Export tab provides great flexibility in configuring the way rates will be exported in **.csv** or **.xls** file (see screenshot below).

You can use same advanced search tool as provided on Rates tab, to choose which rates you would like to export (including ***all, old, current, future*** or ***current/future***).

Screenshot: Rates exporting window



Rates Exporting Process

Whole export process is logically divided in three steps.

Step 1. Specifying Filter Parameters

Here you need to fill in next fields:

Field	Description

Type	Indicate a rate type: • ***current / future*** • ***current on*** • ***future for*** • ***past for*** • ***all*** and respective effective date
Code / ode Name	Specify code / code name of exporting file
Service	Specify a target service
Policy	Select the policy of the rate: • ***additive*** - this policy signifies a usual rate definition for the event; • ***regular*** - this policy signifies that this rate will be added to a regular rate for the event.
Tag	Indicate a respective label
Imported File	Select target imported file
Join Parent checkbox	Enable this checkbox if you need to include rates from the parent rate table
Prev Diff Status	Indicate how current rates differ from the previous ones by choosing: • ***Decreased*** • ***Increased*** • ***Unchanged*** • ***New***
Next Diff Status	Indicate how should differ a next rate table from a current one: • ***Decreased*** • ***Increased*** • ***Unchanged*** • ***New***
Rate	Specify price interval
Setup Fee	Specify setup fee interval
Min Volume	Specify minimal volume interval of tariffed events
Interval	Specify tariffication interval
Profile	Select time profile (***all time, business time, non-business time, weekends***)
Grace Volume	Specify grace volume interval
End Date	Indicate a final date
Status	Determine rate status: • ***stashed*** means that the rate will not be used for billing or routing process; • ***active*** means that tha rate is confirmed and used for billing.

Step 2. Specifying Date And Format Options

On this step, fill in the following fields:

Field	Description
Last Export Date	Parameter that affects *Rate changes* field (depending on it exported rates will be marked as ***new, changed***, ***deleted***, etc.)
Date Format	Date format in your export file. Syntax is following: for example, if you indicate ***%d-%m-%Y*** here, your date will look like ***25-03-2018***
Code Deck	Select a code deck here to rewrite code names in export file if needed
Codes Output	Specify how codes must be displayed. The options are:

	• ***Separate rows***	Each code is placed into a single row
	• ***Delimited list***	Codes are grouped by code name in a row, for example: ***5510, 5511, 5512***
	• ***Ranges list***	Codes are grouped by code name into ranges plus delimiter, for example: ***5510-5512, 5515***
Data Format	Specify output file format, **.xls** or **.csv**	
Fields Delimiter	Set delimiter for fields if you've chosen **.csv**	
With headers row checkbox	Include column names into the file	
Codes from code deck check box	Allows you to additionally filter the export by selecting only codes which are present in specified **Code Deck**	
Header text / Footer text	Allows you to additionally put some text into exported file as header and footer, respectively	

Tip

You may save settings as a template of Rate Notification. But note that reseller's rate notification template will be overridden by existing rate export template.

Step 3. Selecting Columns To Export

Here you can select from the drop-down list of maximum 16 columns to export:

Field	Description
Code / ode Name	Code / code name of rates
Effective Date	Start date before which the rate will not be used
Rate	Price per unit, specified in respective service settings
Min Volume	Minimal time interval of tariffed calls
Interval	Tariffication interval
Grace Volume	Free of charge unit
Setup Fee	An initial fee that is charged when event duration is longer than 0 seconds
Profile	Time profile (*all time, business time, non-business time, weekends*)
End Date	Final date after which the rate will expire
Previous Rate	Last rate in usage
Prev Diff	Cost changes of the rates
Prev Diff Status	Difference between current rate and the previous one
Prev Diff Status (export)	Rate's changes after the last export. Shows the status how current rate differs from previous one. The rate will have an ***unchanged*** status if the ***Effective Date*** of rate is lower than the ***Last Notification Date***

Step 1: Notification type: All rates unique mode - First Notification: 07/07/2017						
Code	Rate	Effective Date	Previous Rate	Prev Diff	Prev Diff Status	Prev Diff Status (export)
1	10	07/01/2017 00:00:00 +0000	-	-	new	unchanged
2	10	07/01/2017 00:00:00 +0000	-	-	new	unchanged
3	10	07/01/2017 00:00:00 +0000	-	-	new	unchanged
Step 2: Added new rates with effective date 07/21/2017 - Second Notification: 07/14/2017						
Code	Rate	Effective Date	Previous Rate	Prev Diff	Prev Diff Status	Prev Diff Status (export)
1	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)
2	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)
3	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)
Step 3: Rate with code 1 was edited and the increase was canceled - Third Notification: 07/21/2017						
Code	Rate	Effective Date	Previous Rate	Prev Diff	Prev Diff Status	Prev Diff Status (export)
1	**10**	07/21/2017 00:00:00 +0000	10	0	unchanged	**unchanged**
2	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)
3	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)
Step 4: Rate with code 2 was edited and added a new rate for code 3 - Fourth Notification: 07/28/2017						
Code	Rate	Effective Date	Previous Rate	Prev Diff	Prev Diff Status	Prev Diff Status (export)
1	10	07/21/2017 00:00:00 +0000	10	0	unchanged	unchanged
2	**20**	07/21/2017 00:00:00 +0000	10	10	increased	**unchanged**
3	20	07/31/2017 00:00:00 +0000	15	5	increased	increased (5.0000)

Notes	Additional information about rate
Tag	Tag, assigned to a respective rate
Policy	Rate policy (***additive*** or ***regular***)
Status	Rate status

Click on **Process** button and save exporting file when you finish configuring the parameters.

Tip

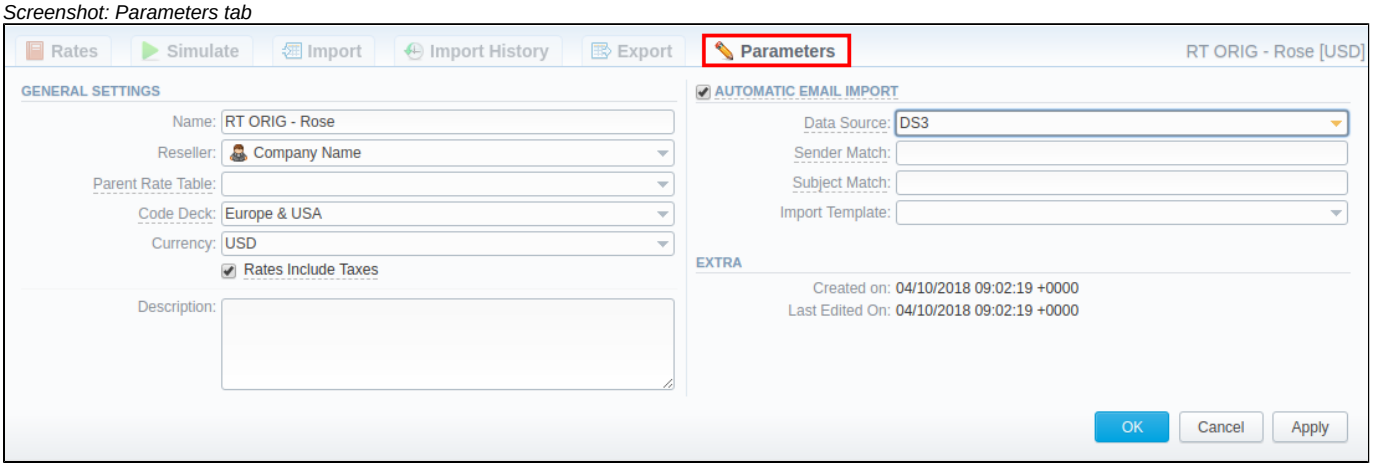
Rates sorting will be made by the very first column. For example, if you want rates to be sorted by A-Z destination name than make **Code Name** your first column.

Please note that for reseller's rate notification existing rate export template settings have higher priority than personal .

Parameters

This tab allows you to modify settings that you entered while creating a current Rate Table. Moreover, you can enable ***Automatic Email Import*** checkbox for an automatic rate tables import from emails.

Screenshot: Parameters tab



Information block	Fields description	
General Settings	General rate table information	
	• ***Name***	Name of the rate table
	• ***Reseller***	Reseller whom this rate table belongs to
	• ***Code Deck***	Code deck, used for current rate table
	• ***Currency***	Currency, specified for this rate table
	• ***Rates Include Taxes*** checkbox	If the field is checked, taxes are already included in rate value. Otherwise, taxes will be added to rate value as an additional invoice item
	• ***Description***	Additional information concerning the current rate table
Automatic Email Import checkbox	Data used for automatic rates import into current rate table (see Automatic Email Import article)	
Extra	Information concerning the date of the rate table creation and last editing	

Automatic Email Import

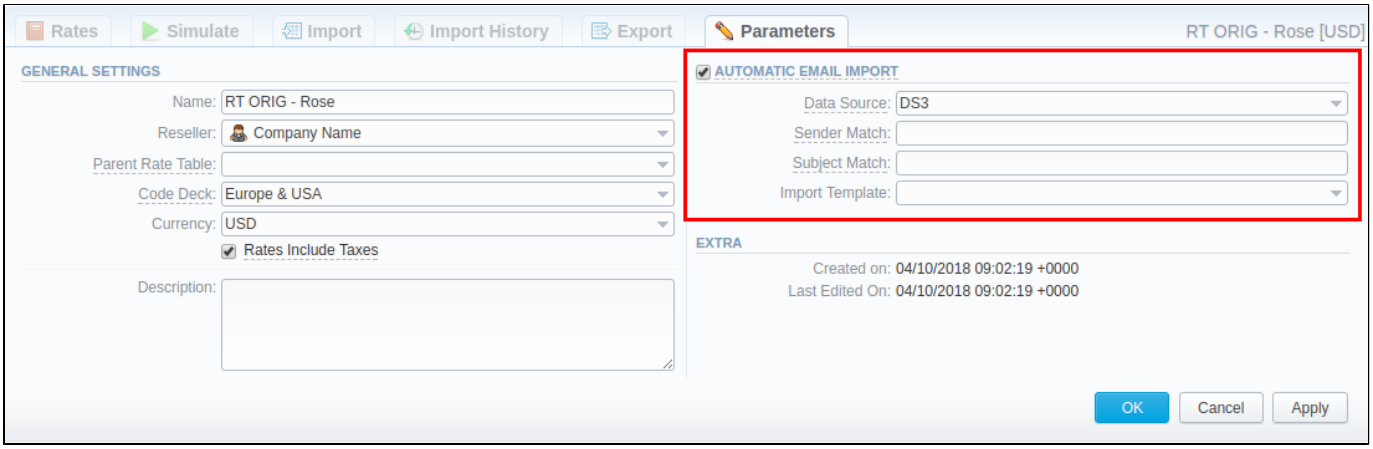
In this article

- Automatic Email Import
- Creating Import Template

Automatic Email Import

This option allows user to import rate tables from automatically emails. It means that the rate table data will be automatically updated by the data, taken from specified email-box, using a defined template. To activate this tool, go to the **Rate tables > Parameters** tab, enable the **Automatic Email Import** checkbox and fill in all fields.

Screenshot: Automatic Email Import checkbox



Field	Description
Data Source	Specify a data source (**IMAP** conncetion type only), where import files are located
Sender Match	Specify a sender name or email address for searching
Subject Match	Define a regular expression for searching of specific mail titles
Import Template	Specify an import template

Attention

Please note that starting from **version 3.16.0**:

- ***Login*** and ***Password*** fields have been substituted by ***Data Source*** field
- **Email Rates Import Settings** information block in **Reseller** settings has been removed

Creating Import Template

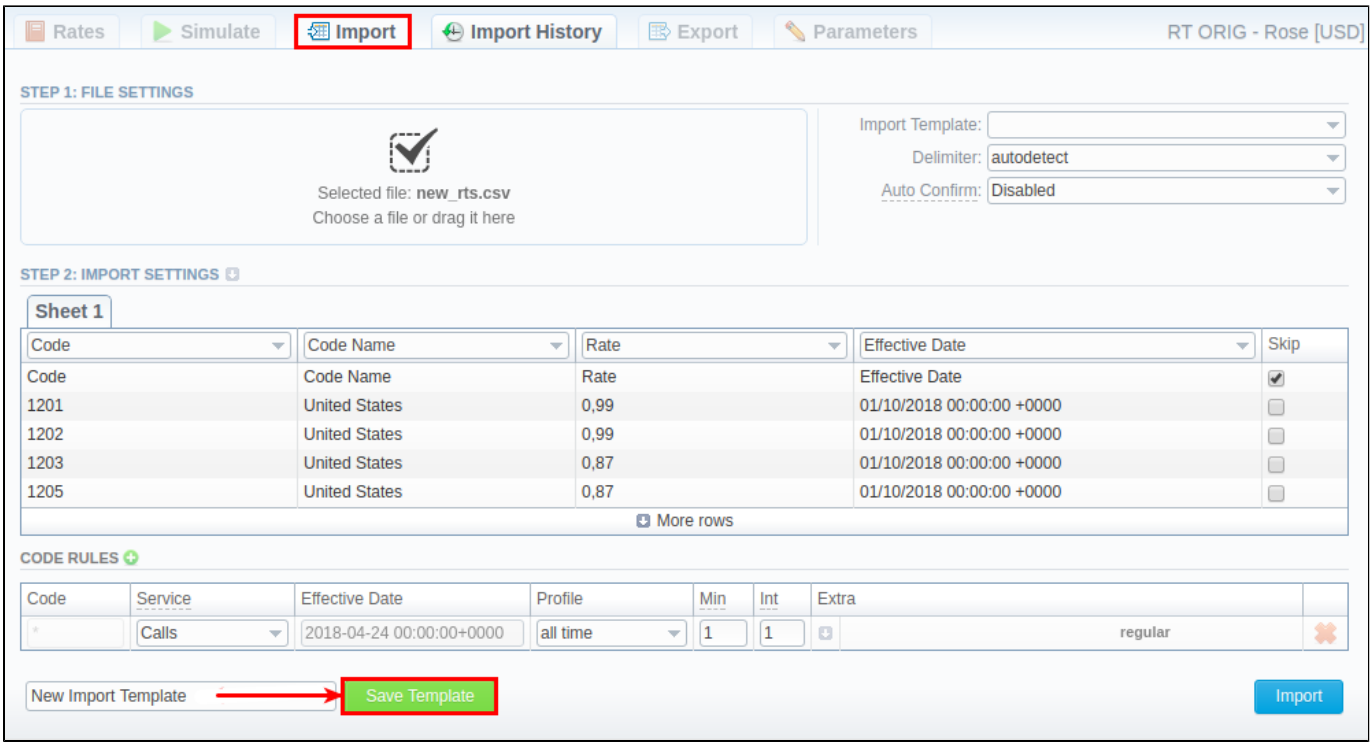
Attention

Please note that **Automatic Email Import** will not work without specified **Import Template**

The process of creating an **Import Template** is quite simple. Firstly, you should import at least one rate table.

Secondly, during importing a rate table on the second step of importing process, you need to specify template name and press **Save Template** button (see screenshot below). After the importing process will be finished, a new rate table template will be added and seen in templates list in respective field.

Screenshot: Rates importing process. Step 2


Rates
Simulate
Import
Import History
Export
Parameters
RT ORIG - Rose [USD]
STEP 1: FILE SETTINGS
Selected file: new_rts.csv
Choose a file or drag it here
Import Template:
Delimiter: autodetect
Auto Confirm: Disabled
STEP 2: IMPORT SETTINGS
Sheet 1
Code
Code Name
Rate
Effective Date
Skip
Code
Code Name
Rate
Effective Date
1201 United States 0,99 01/10/2018 00:00:00 +0000
1202 United States 0,99 01/10/2018 00:00:00 +0000
1203 United States 0,87 01/10/2018 00:00:00 +0000
1205 United States 0,87 01/10/2018 00:00:00 +0000
More rows
CODE RULES
Code
Service
Effective Date
Profile
Min
Int
Extra
Calls
2018-04-24 00:00:00+0000
all time
1
1
regular
New Import Template
Save Template
Import

Invoices

In this article

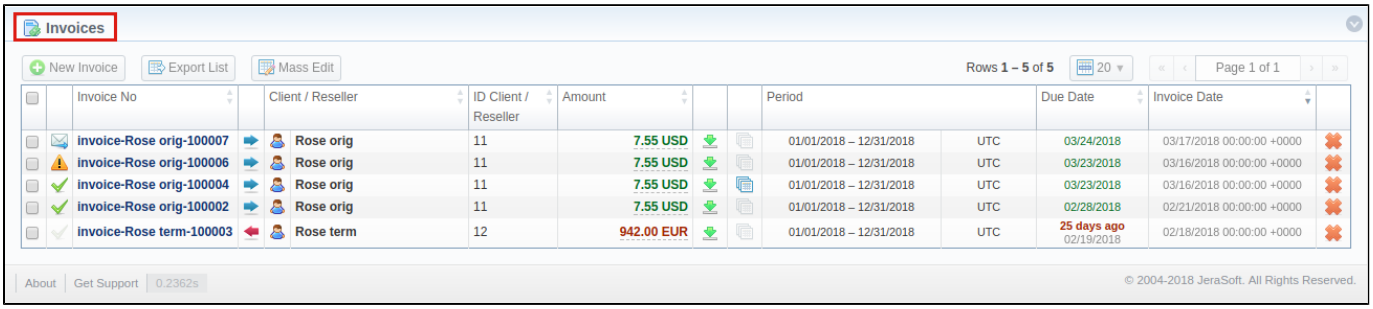
- Invoices List
- Advanced Search
- Creating New Invoice
- Mass Editing
- Differences in totals

Invoices List

Since invoice is an ultimate tool for controlling the volumes of provided services and their prices, **Invoices** section of JeraSoft VCS is a staple instrument for your management of your business. It allows you to create and adminster all outgoing and incoming invoices. By clicking on **Download** icon, you can export and view respective invoice. By using the **Export List** option, you can download a currently stored list of invoices in **.csv** format.

The section is presented in a form of a table of all invoices with the following columns:

Screenshot: Invoices section main window



Column	Description
Invoice No	Number of invoice
Client / Reseller	Name of a respective Client or Reseller. **Tip** You can create an invoice for a root Reseller
ID Client / Reseller	Client or Reseller identification number
Amount	Total sum of invoice
Period	Invoice period
Due Date	Determined due date of invoice
Invoice Date	Date of creation the invoice **Tip** When you leave the ***Invoice Date*** field empty, it will be identical to the time of an invoice creation. In case you determine it, the system sets the midnight of a specified day

Functional buttons and icons, presented in the section are as follows:

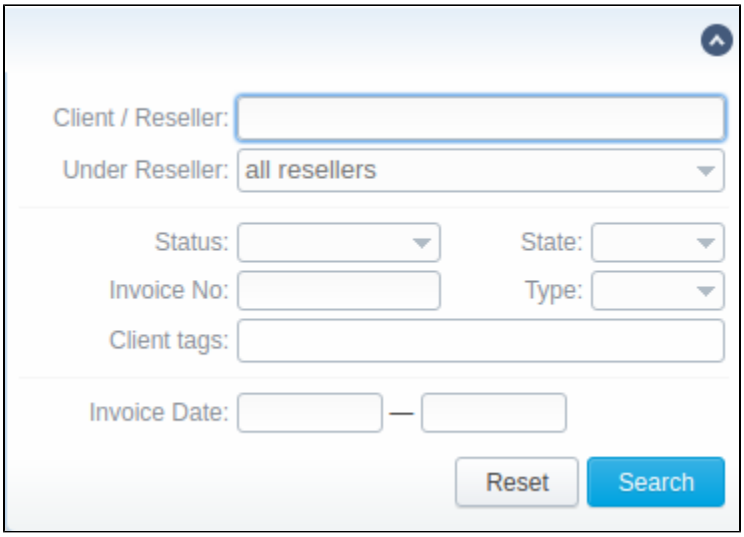
Buttons/Icon	Description

New Invoice	Allows creating a new invoice in the system
Export List	Allows exporting a list of invoices in a .csv file
Mass Edit	Allows management of state for the selected invoices on the list
	Indicates ***normal*** state meaning that respective invoice was paid in full. If the invoice is not fully paid, this icon will be grey
	Defines ***to verify*** state meaning that this invoice is waiting to be checked before it is sent to a client
	Defines ***to send*** state meaning that invoice is in sending queue
	Indicates outgoing invoice
	Indicates incoming invoice
	Allows downloading respective invoice file in .csv format
	Allows donloading xDR file, if one is attached to invoice. If there is no attached xDR file, this icon will be grey
	Allows deleting a respective invoice from the list

Advanced Search

To filter data in the section, use Advanced Search drop-down menu, which can be accessed by pressing blue downwards arrow icon in the top right corner of the screen.

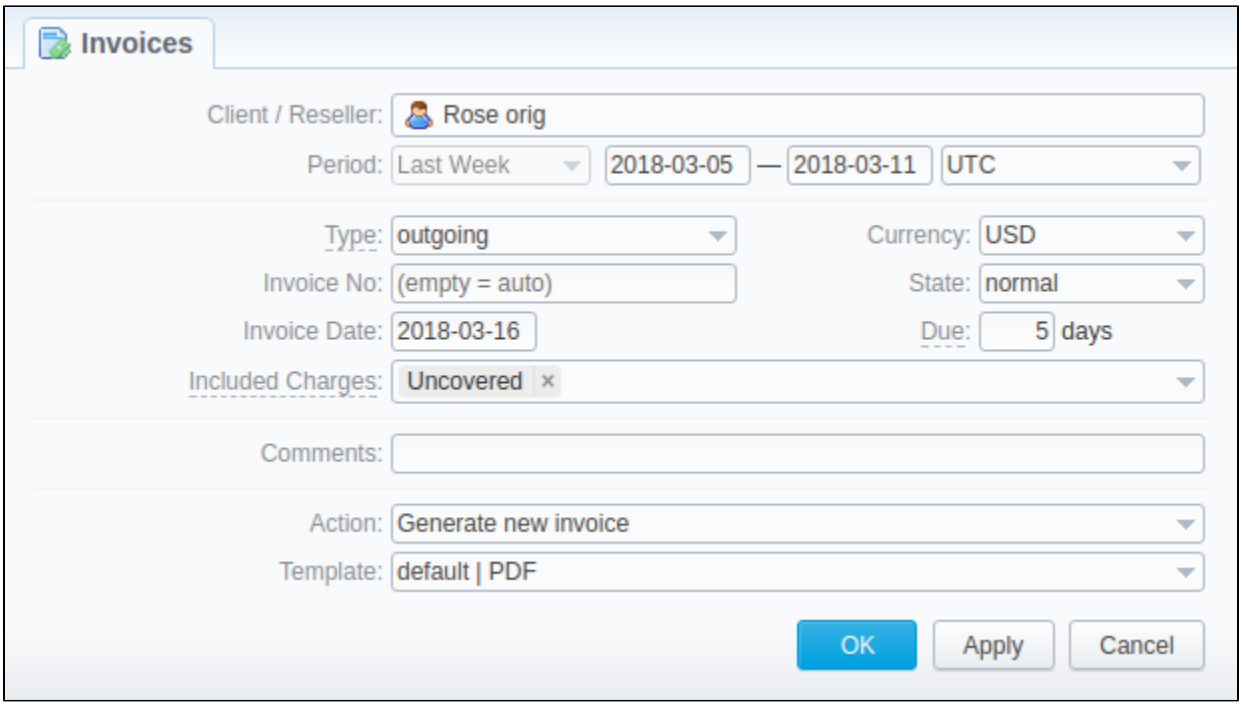
Screenshot: Advanced Search drop-down menu



Creating New Invoice

Invoices are created through **New Invoice** button. When you click on it, a pop-up window shows up:

Screenshot: Create Invoice window



Field	Description
Client /Reseller	Name of the ***lient*** or ***reseller***
Period	Define period of statistics that will be included into invoice
Type	Specify the type of invoice: ***outgoing*** or ***incoming***
Currency	Select an invoice currency from a drop-down menu
Invoice	Number of Invoice. The number length can't exceed 200 symbols
State	Select the state for a new invoice: • ***normal*** - use this state to indicate that invoice is paid • ***to send*** - use this state to indicate that invoice is paid, but not verified yet • ***to verify*** - use this state to indicate that invoice is created but has not been sent to a client yet
Invoice Date	Specify the actual invoicing date
Due (days)	Define a number of days when an invoice is expected to be paid
Included Charges	Select the type of charges for invoices: • ***uncovered*** - all charges that are not included in any previous invoice; • ***covered*** - all charges already included in the previous invoice; • ***pending*** - all pending charges. Please note, these charges don't include calls. Therefore, *call* charges will be added to any invoice regardless the ***Included Charges*** settings. **Tip** It's not possible to include a charge twice with standard settings. To **re-include already used charge** in the invoice, you need to **comb ine parameters *uncovered* + *covered*** in the ***Included Charges*** field.
Comments	Specify additional information if necessary
Action	Select one of two available actions:

	Generate new invoice	a new invoice will be generated, based on predefined templates in **Invoices Templates section**. To select a target template, select it from the drop-down menu in ***Template*** field
	Attach existing invoice	if this option is selected, the following additional fields are displayed: • ***Attach Invoice*** - allows user to attach additional invoice • ***Attach xDR*** - allows attaching additional xDR file in .csv format • ***Events Amount*** - indicate a total amount, charged for services (***calls, sms, data, etc.***) traffic • ***Other Amount*** - indicate a total amount, charged for any other events (***e.g. package fees***)

Tip

All automatically created invoices will have ***to verify*** **state**. To send an invoice to a client, you will need to change the state to ***send*** **manually**!

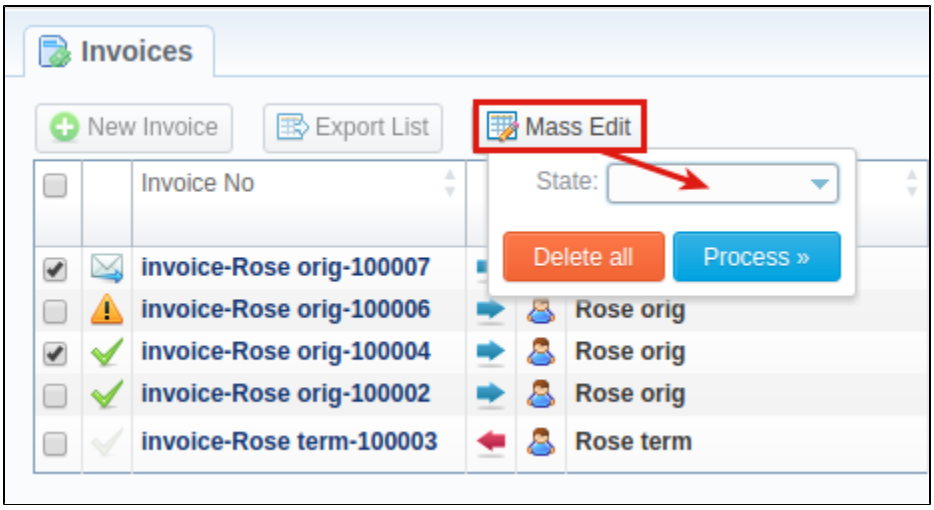
Warning

When generating invoices under ***one reseller*** for ***different clients***, it is recommended to wait till the invoice for one client will be generated and only after that start generating the other one (avoid generating them simultaneously). That is important for avoiding the situation of having ***invoices with an identical number*** in the system.

Mass Editing

To easily change invoices **state**, use **Mass Edit** button (screenshot below). First of all, you need to select invoices for which state should be changed, then specify state from drop-down list of all states and press **Process** button for applying the change. Also, using the following window, you may delete all marked invoices by pressing **Delete all** button.

Screenshot: Mass Edit button



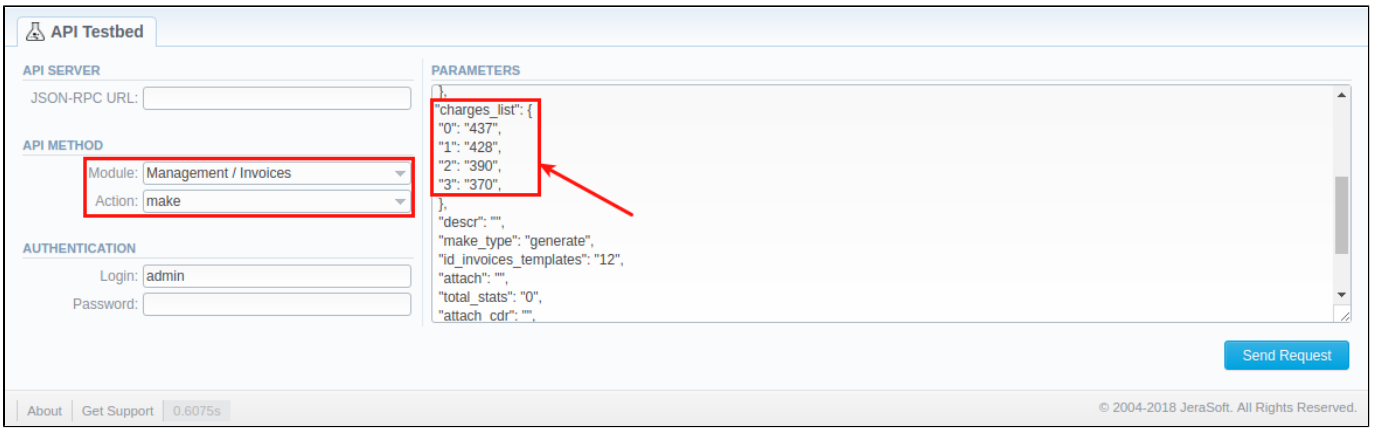
Attention

Please note:

1. While generating invoices, the system sorts packages in invoices by numbers. The names of packages could include numerical symbols. Please use numerical symbols like ***001 name, 002 name, etc.*** in names of packages, and avoid names with special symbols like ***%001 name, -001 name***.
2. Currency rate of extra charges will be taken on the **date of charge**, **not on the date of invoicing.**

You can **include specific charges by ID** in the invoices (only for API). The ID for extra charges and packages you can check in the *Transactions section.* Then you need to add the variable ***charges_list*** with respective values in the ***Parameters*** field of the **API Testbed** section (see screenshot below):

Screenshot: API Testbed settings



Differences in totals

You may have noticed while creating different reports like **Summary report**, **xDRs list**, etc. and then generating an invoice, you can get different totals. Here is a little background on what makes those differences.

Due to the option ***Included Calls*** *(****Attach xDRs list to the invoice*** settings*)* in the ***Invoice Templates,*** you can create an invoice based on different types of calls:

- ***All payable*** - includes calls with any duration that have non-zero costs and use packages
- ***Non-zero payable*** - includes calls with non-zero duration that have any cost and use packages.

Therefore, invoice totals depend on selected parameters and settings, for example, whether to include calls with any cost / duration / package or not. However, when you generate a report (), the statistics is usually based on all calls. As the result, a difference between invoice and report totals appears even an invoice may have completely another totals vs report data.

> **Attention**
>
> The invoice and report totals could differ if you made a re-rating for a previous invoice period or the statistics were updated.

You may also need to know how **totals are rounded and calculated** in invoices, to get more follow this link or read about the general principals of rounding in VCS in this article.

Besides, take a note of **currency settings**: there you may specify number of symbols that will be displayed in all reports with cost and rate values in the statistics. Also, it will be shown in the invoices, except total values (totals **always have 2 decimal places** in invoices).

- **Rates precision** - the number of decimal places for rates formatting.
- **Details precision** - the number of decimal places for detailed monetary values formatting. This precision is used for all reports except xDR report.
- **Totals precision** - the number of decimal places for total monetary values formatting.

- Incoming VS Outgoing Invoices
- Method of calculating and rounding values for Invoices
- Why generated invoice is not sent?
- Why there is no logo in generated invoice?

Transactions

In this article

- Section overview
- Advanced Search
- Adding New Payment/Charge
- Exporting and Importing of Transactions

Section overview

This section allows a user to perform and trace all the financial operations regarding client's / reseller's balances. Section offers an overview of every single transaction performed in the system regardless of whether it's payment or charge and provides a wide variety of functionality for transactions management. Since transactions section is a key tool for managing client's / reseller's balance, it's inseparable from the following sections of the system: **Clients**, **Invoices**, **Resellers**, etc.

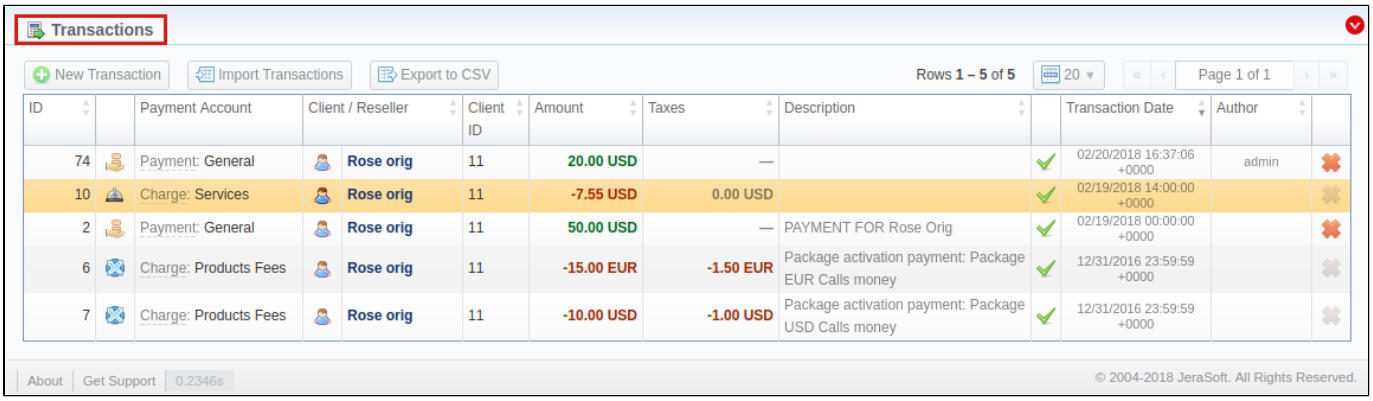
Transaction charges will be created according to the **configurations of Tax Profiles, Rate Tables** (including tax or not) and the **next parameters:**

– invoice time (transaction date);
– client ID;
– currency ID;
– positive or negative amount.

Tips

- In case you change one of the parameters listed above and the rerating is done, you might have additional transactions (with zero or nonzero taxes).
- When a customer has calls with and without taxes for the same hour, two charges will be listed in the transactions section: one charge with taxes and second one without taxes.
- If you see a transaction with a tax represented as a dash (), it means that all taxes were included in rate tables.

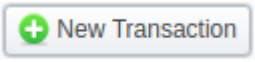
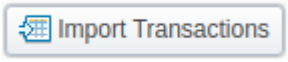
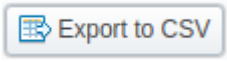
The section is presented in a form of a table of all conducted transaction with the following columns:
Screenshot: Transactions section main window



Column Name	Description
ID	A payment through ID number
Payment Account	Shows respective payment account, related to a performed payment or respective charge type, such as *calls, products, extra charges* (ea ch type has visual representation in a form of respective icon)
Client / Reseller	Displays the name of client or reseller that was engaged in payment operation
Client ID	Customer's identity
Amount	The respective payment operation sum
Taxes	An amount of taxes

Description	Comments about a respective payment
Transaction Date	Displays respective payment date, related to a performed payment
Author	Name of the user who performed the latest transaction (regardless whether it's a payment or charge)

The list of **functional buttons/icons** is as follows:

Button/Icon	Description
	Allows to create a new transaction
	Allows to import user's transactions into the system
	Allows to download a list of transactions in a .csv file
	Indicates the type of transaction - payment
	Indicates the type of transaction - extra charges
	Indicates the type of transaction - services charges
	Indicates the type of transaction - packages fees
	Indicates that transaction is approved
	Allows to delete a transaction from the system. Requires confirmation

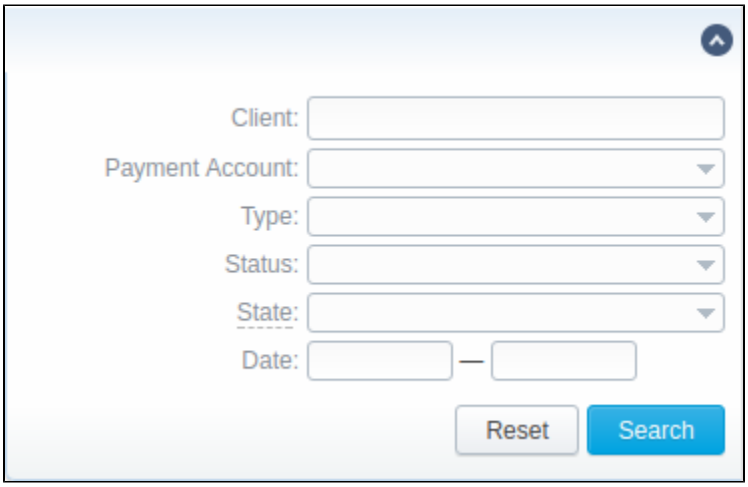
Advanced Search

In the top right corner of the section above the table, an **Advanced Search** drop-down menu is located. By clicking on blue downwards arrow icon, a drop-down menu with the following structure is displayed:

Screenshot: Advanced Search drop-down menu

Attention

Author column is going to be filled only if transaction has been added **manually** by a user through **Transactions** section in **JeraSoft VCS** or **Refill Balance** page on **JeraSoft Client Portal**. In case transaction is automatically generated by the system, **Author** column will be empty.



Field	Description
Client	Indicate a client you wish the section to be filtered by

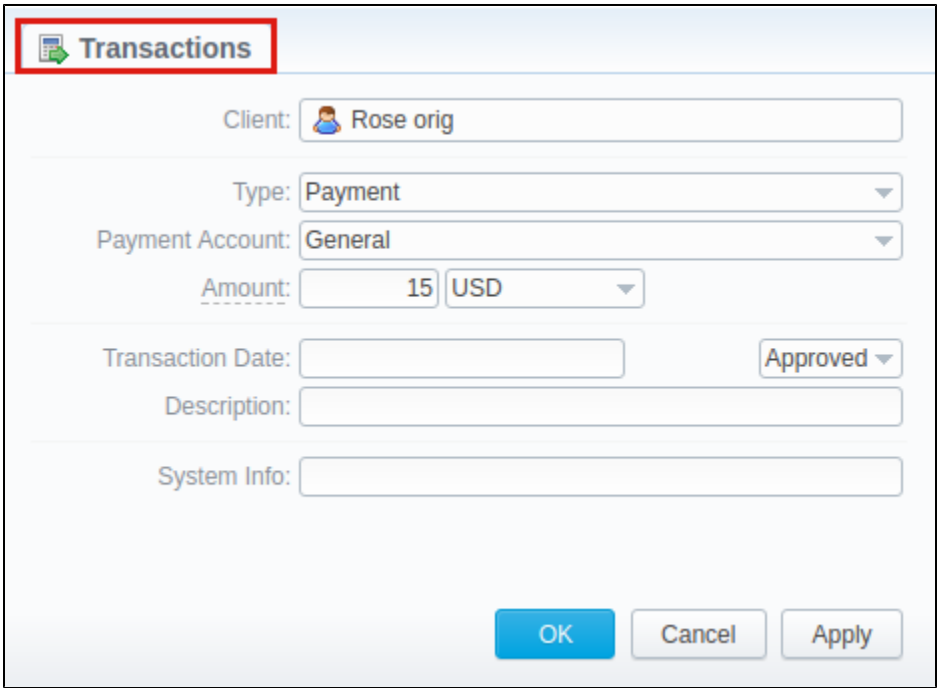
Payment Account	Select from the list of all payment accounts in the system
Type	Select a type of transaction: • ***Payment*** • ***Charge***
Status	Select from the list of transaction statuses: • ***Pending*** • ***Approved***
State	Indicate whether you wish payments coverd by the invoices to be displayed by selecting from the list: • ***Covered*** • ***Uncovered***
Date	Specify the date in the datepicker

After filling in the fields, press **Search** to filter section data or **Reset** to clear search results.

Adding New Payment/Charge

To add a payment, press **New Transaction** button. In the appeared pop-up window, specify following parameters and click on **Apply** button.

Screenshot: New transaction settings



Field name	Description
Client	Indicate a target client
Type	Specify a type of the transaction. For incoming transaction select **Payment** operation type, for outgoing one – select **Charge**.

Payment Account	Choose a respective account from the drop-down list of available payment accounts. For ***charge type***, you can select: • ***extra charges outgoing;*** • ***extra charges incoming.*** **Attention** Please note that you will have the same type of payment account in invoices. So, you can choose where the following charge will be shown in an outgoing/incoming invoice. For example, if you want to give a refund to the client, please select an ***extra charges outgoing***, it will guarantee that this charge will be visible in the invoice.
Amount	Insert an amount of the trasaction, which can be positive or negative: • **positive** amount is credited to client; • **negative** amount is debited from client. **Tip** Transaction amounts could be specified with comma as a decimal delimiter, for example, ***2,45***. If your transaction type is ***Charge***, you can choose whether a specified amount **includes a tax or not** by choosing a respective value in the drop-down list: • ***no taxes;*** • ***including taxes;*** • ***excluding taxes***. The text rate is based on the tax profile of the client's reseller.
Transaction Date	Indicate actual date of the transaction in a datepicker
Description	Notes for a new transaction
System Info	Here you can add system information for transactions. Also, it's possible to add a variable in the invoices templates. Then, the variable will show this info for extra charges.
Status	Define the state of the transaction: • ***pending*** • ***approved*** **Tip** If you change transaction status in the respective field from ***Approved*** to ***Pending*** when adding a payment, this payment will have to pass additional approval check by billing operator

Attention

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 se cond one - **without taxes***. In case you change one of the parameters listed above and the rerating 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.

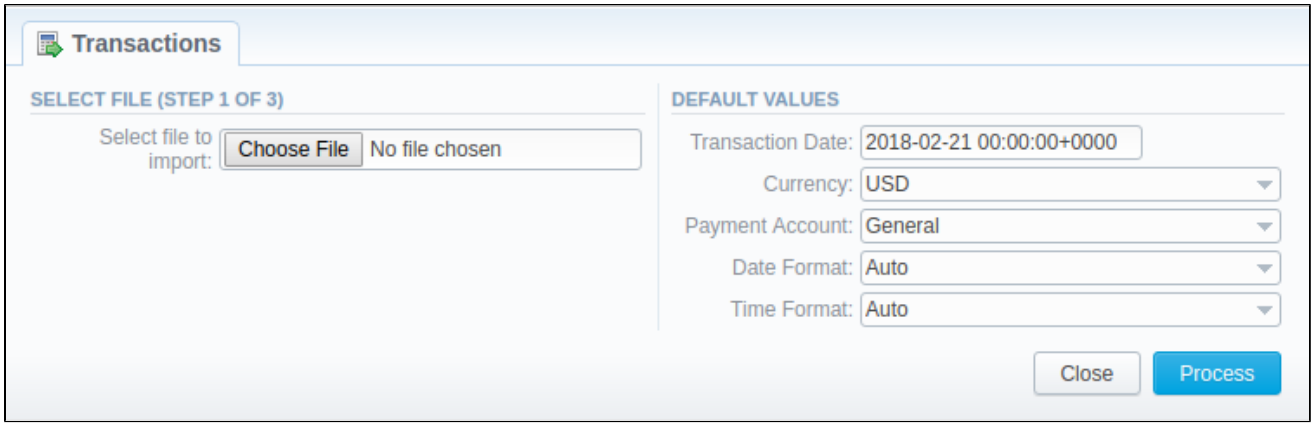
Exporting and Importing of Transactions

By clicking **Export to CSV** button, you will be able to export all currently stored payments in a **.csv** file.

You can easily perform an import of payments by pressing **Import Transactions** button and following on-screen instructions:

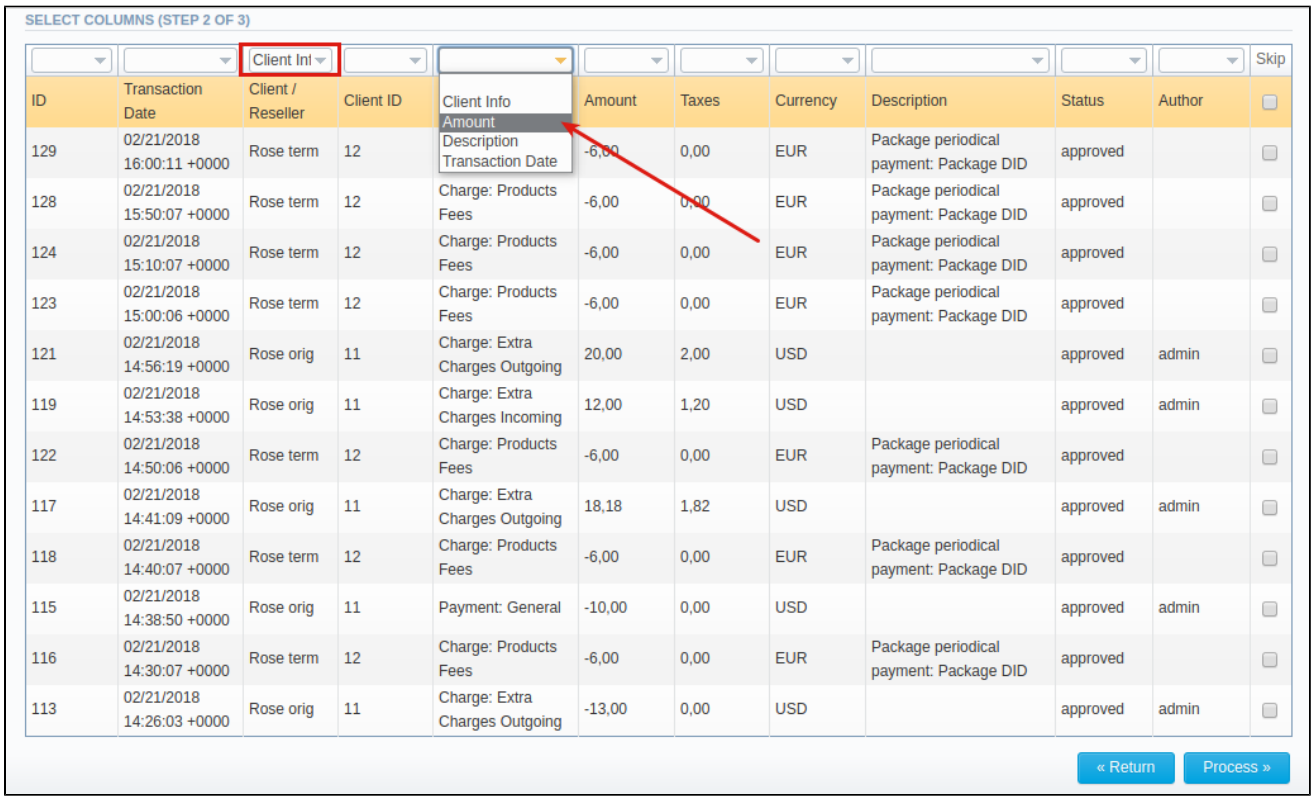
Step 1: Selecting File and Specifying Additional Parameters
Upload a file from your computer, indicate such default parameters as: ***Transaction Date, Currency, Payment Account, Date and Time Format,*** and pre ss **Process** button

Screenshot: Transactions importing process. Step 1



Step 2: Recognizing The File
The system will recognize the file and you need to select 3 mandatory columns: **Client Info, Amount, and Transaction Date**. Following this, press **Proces s>>** again.

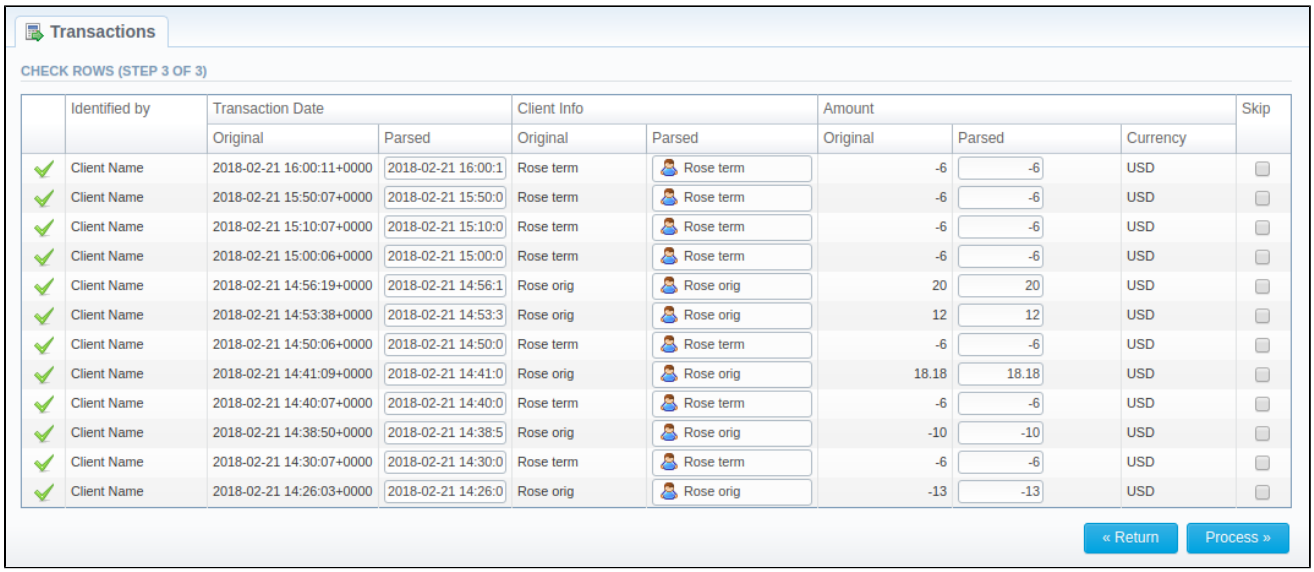
Screenshot: Transactions importing process. Step 2



ID	Transaction Date	Client / Reseller	Client ID		Amount	Taxes	Currency	Description	Status	Author	
129	02/21/2018 16:00:11 +0000	Rose term	12		-6,00	0,00	EUR	Package periodical payment: Package DID	approved		
128	02/21/2018 15:50:07 +0000	Rose term	12	Charge: Products Fees	-6,00	0,00	EUR	Package periodical payment: Package DID	approved		
124	02/21/2018 15:10:07 +0000	Rose term	12	Charge: Products Fees	-6,00	0,00	EUR	Package periodical payment: Package DID	approved		
123	02/21/2018 15:00:06 +0000	Rose term	12	Charge: Products Fees	-6,00	0,00	EUR	Package periodical payment: Package DID	approved		
121	02/21/2018 14:56:19 +0000	Rose orig	11	Charge: Extra Charges Outgoing	20,00	2,00	USD		approved	admin	
119	02/21/2018 14:53:38 +0000	Rose orig	11	Charge: Extra Charges Incoming	12,00	1,20	USD		approved	admin	
122	02/21/2018 14:50:06 +0000	Rose term	12	Charge: Products Fees	-6,00	0,00	EUR	Package periodical payment: Package DID	approved		
117	02/21/2018 14:41:09 +0000	Rose orig	11	Charge: Extra Charges Outgoing	18,18	1,82	USD		approved	admin	
118	02/21/2018 14:40:07 +0000	Rose term	12	Charge: Products Fees	-6,00	0,00	EUR	Package periodical payment: Package DID	approved		
115	02/21/2018 14:38:50 +0000	Rose orig	11	Payment: General	-10,00	0,00	USD		approved	admin	
116	02/21/2018 14:30:07 +0000	Rose term	12	Charge: Products Fees	-6,00	0,00	EUR	Package periodical payment: Package DID	approved		
113	02/21/2018 14:26:03 +0000	Rose orig	11	Charge: Extra Charges Outgoing	-13,00	0,00	USD		approved	admin	

Step 3: Checking The Rows
Having specified the required columns, you need to check the rows to make sure that no mistake has been made. On doing it, press **Process>>** to finish importing process.

Screenshot: Transactions importing process. Step 3


Transactions
CHECK ROWS (STEP 3 OF 3)
Identified by
Transaction Date
Original
Parsed
Client Info
Original
Parsed
Amount
Original
Parsed
Currency
Skip
Client Name 2018-02-21 16:00:11+0000 2018-02-21 16:00:1 Rose term Rose term -6 -6 USD
Client Name 2018-02-21 15:50:07+0000 2018-02-21 15:50:0 Rose term Rose term -6 -6 USD
Client Name 2018-02-21 15:10:07+0000 2018-02-21 15:10:0 Rose term Rose term -6 -6 USD
Client Name 2018-02-21 15:00:06+0000 2018-02-21 15:00:0 Rose term Rose term -6 -6 USD
Client Name 2018-02-21 14:56:19+0000 2018-02-21 14:56:1 Rose orig Rose orig 20 20 USD
Client Name 2018-02-21 14:53:38+0000 2018-02-21 14:53:3 Rose orig Rose orig 12 12 USD
Client Name 2018-02-21 14:50:06+0000 2018-02-21 14:50:0 Rose term Rose term -6 -6 USD
Client Name 2018-02-21 14:41:09+0000 2018-02-21 14:41:0 Rose orig Rose orig 18.18 18.18 USD
Client Name 2018-02-21 14:40:07+0000 2018-02-21 14:40:0 Rose term Rose term -6 -6 USD
Client Name 2018-02-21 14:38:50+0000 2018-02-21 14:38:5 Rose orig Rose orig -10 -10 USD
Client Name 2018-02-21 14:30:07+0000 2018-02-21 14:30:0 Rose term Rose term -6 -6 USD
Client Name 2018-02-21 14:26:03+0000 2018-02-21 14:26:0 Rose orig Rose orig -13 -13 USD
« Return
Process »

Balance Report

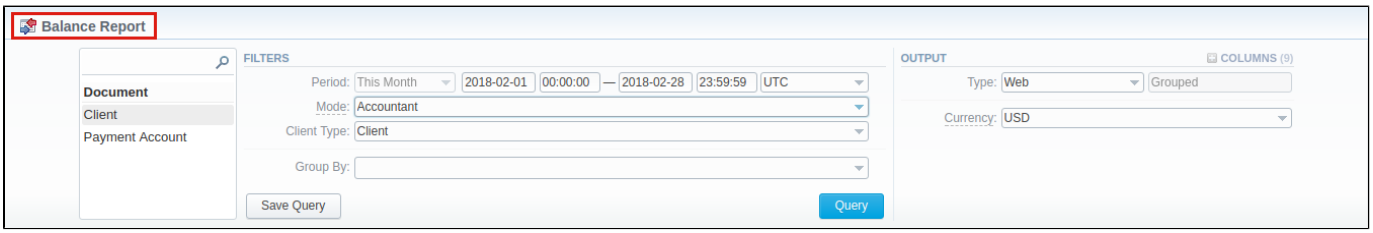
In this article

- Section overview
- reating New Balance Report
- Simple scheme: how to generate a balance report
- Creating Query Template
- Export Generated Report

Section overview

Balance report section is a helpful balance analysis tool aimed at making the control over your funds as painless as it can possibly be. It shows a full history of client's charges and payments for the selected period and provides a possibility to export the report data to **.csv, .xls** or **.xls** files depending on your preferences.

Screenshot: Balance Report query form



reating New Balance Report

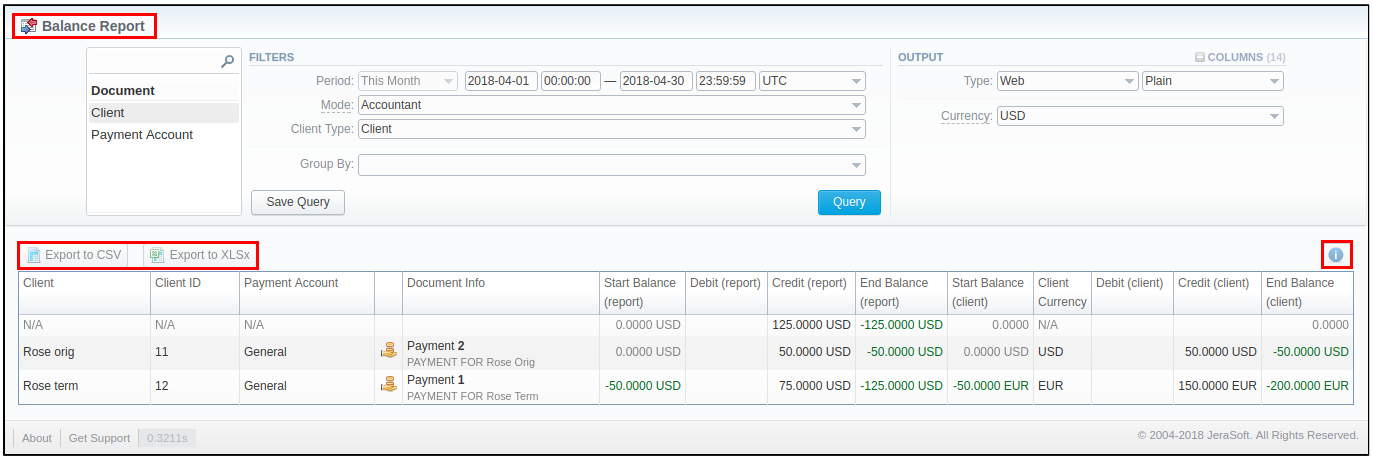
To create a new summary report, you need to fill in the following parameters in the form and press **Query** button:

Information block	Field Description	
Filters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click on the delete sign next to the filter. You can start a **quick search** by typing filters' names in the bar at the top of drop-down menu with filters.	
	Period	Specify the time interval for the report and a timezone. Please note that the ***Period*** field is mandatory.
	Mode	Select a balance mode to show a respective set of data • ***Accountant*** *- this mode is compiled by invoices and payments, it shows fixed balance* • ***Live balance*** *- this report mode is compiled by payments and charges, it shows live balance*
	Client Type	Choose the system entity for the report from the following • ***Client*** • ***Reseller*** • ***Calling Card*** • ***Call Shop***
	Group By	Select from the list of following accessible options to group the data in reports: • ***Time:*** *Month, Date.* • ***Document*****:** *Client ID, Payment Account ID.*
	Additional Filters	
	Client	Define an origination client for the report
	Payment Account	Enter a target payment account for the report

Output	This form contains settings of the output data of the report. Click plus sign next to ***Columns*** and select required columns in order to add them to Output information block. Also, you can cancel any chosen item.	
	Accessible columns in the report	
	There are following columns to add in the report: *Client, Client ID, Payment Account, Document Icon, Document Info, Start Balance, Debit, Credit, End Balance, Type, NO, Notes, Date.*	
	Document	
	Client	Name of the ***client / reseller / calling card / call shop*** for that current operation is assigned to
	Client ID	Client identification number that is also present in the full list of **Transactions** and **Invoices**.
	Payment Account	Respective payment account, used for the indicated transactions
	Document Icon	File icons that generally display a type of the document in the report: • This icon shows different payments in the system. • This icon defines extra incoming/outgoing charges. • This icon means different charges or payments of the calls. • This icon represents payments of the packages. • This icon displays service charges. • This icon represents the invoices in the system.
	Document Info	The document that an operation corresponds to ***(charge, payment, invoice, etc.)***
	Type	Indicated type of document
	NO	Number of transactions
	Notes	Notes indicated in the comments of transactions or in invoices
	Date	An operation date
	Amount	
	Start Balance (report)	Start client's balance prior to respective operation, displayed in **report currency**
	End Balance (report)	Final client's balance after respective operation, displayed in **report currency**
	Debit (report)	Operation sum that has positive income ***(incoming payment / invoice)***, displayed in **report currency**
	Credit (report)	Operation sum that has negative income ***(outgoing payment / invoice)***, displayed in **report currency**
	Start Balance (client)	Start client's balance prior to respective operation, displayed in **client currency**
	End Balance (client)	Final client's balance after respective operation, displayed in **client currency**
	Debit (client)	Operation sum that has positive income ***(incoming payment / invoice)***, displayed in **client currency**
	Credit (client)	Operation sum that has negative income ***(outgoing payment / invoice)***, displayed in **client currency**
	Client Currency	Currency, indicated in client's profile
	Other output settings	

Type	Choose a format of the report from a drop-down list: **Web / CSV / Excel XLS / Excel XLSx.** Also, a kind of table view: • ***Plain*** - a simple table view • ***Grouped*** - a table view with grouped data and possibility to collapse it **Attention** Please note that **Grouped** type of table view is available only for **Excel XLSx** and **Web** formats, it doesn't work with **CSV** and **Excel XLS**.
Send to	You can send generated reports via email. Also, it is possible to specify several emails. **Attention** This feature is available only for **CSV / Excel XLS / Excel XLSx** formats of the report, although it doesn't work with **Web**.
Currency	Specify a currency for the report. And all values will be automatically converted in the report to the specified currency.

Screenshot: Balance Report section



Warning

Please note, the system shows rounded values in the reports. But while calculating the system takes an exact value. Hence, the procedure of the rounding is following:

- system rounds currency values according to the settings of a respective currency;
- other parameters are rounded to the nearest ten thousandth. For example, 3.879256 to 3.8793.

Simple scheme: how to generate a balance report

In order to create a simple report you need to:

- On the **Filters** menu, select target parameters for the report.
- Enter the interval and specify a timezone
- Select the ***Mode*** and ***Client Type***.
- Specify parameters in the ***Group By*** field, for example, **Client ID.**
- Then, choose columns in the **Output** form, for example, ***Client, Payment Account, Document Icon, Document Info, Start Balance, Debit, Credit, End Balance, Date***.
- Specify ***Type*** field or leave its default settings (Web / Grouped)
- Click the **Query** button.

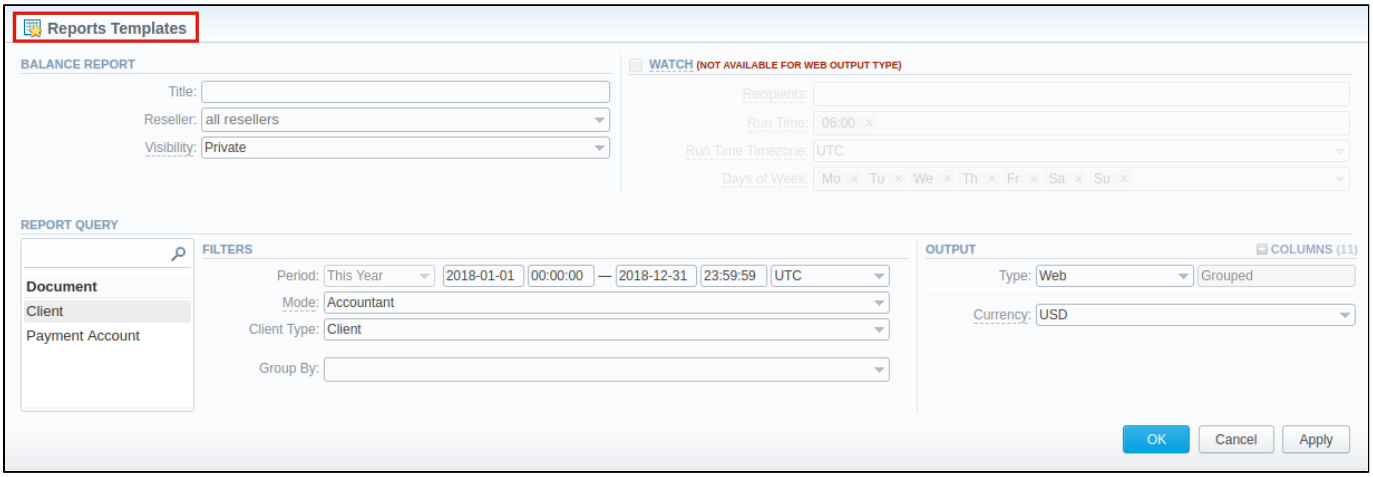
Tip

- If the data is grouped in the report, it will be shown initially collapsed. To expand or collapse data in your report, click the plus or minus signs.
- Please note, the ***Order By*** option is active when the ***Type*** of the Output form is **Plain**. When it is **Grouped**, the data is only sorting by values specified in the ***Group By*** field.

Creating Query Template

To create a template for reports and save specified parameters, click on **Save Query** button. A pop-up window with settings will appear, and you need to fill in the following form:

Screenshot: New Query Template form



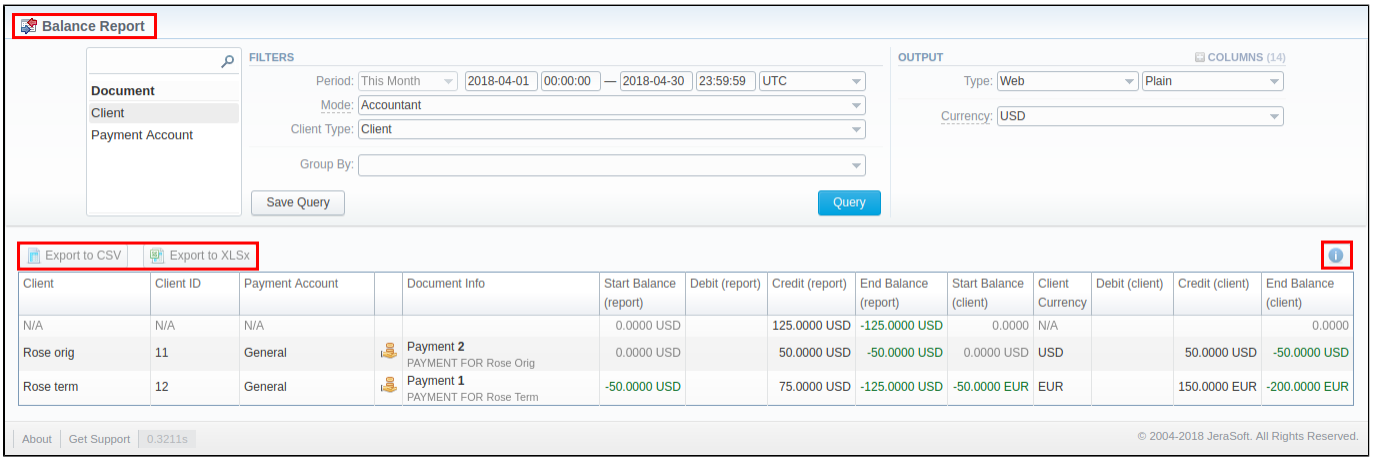
Information block	Description	
Balance Report	Here you can specify parameters for the template that will be used while running reports	
	Title	Specify a name of the template
	Reseller	Indicate a Reseller for the report template
	Visibility	Define who can review this template: • ***Public*** - anyone can view this template • ***Private*** - only template owner can view it
Watch	This tool allows to automatically generate reports at the appropriate time and send the results to the list of emails. **Attention** Please note that this tool is not available for **Web** output type, only for **CSV / Excel XLS / Excel XLSx.**	
	Recipients	Specify recipients: it can be your own email, other users of the system or even 3rd parties
	Run Time	Define an appropriate time to automatically generate a report. It could be several times, for example: ***10:00, 12:00, 18:00***
	Days of Week	Indicate days of the week to automatically generate a report. For example, you can run a report only on Monday or each day of week
Report Query	Here you need to specify filters that will be used for generating a correct report and choose the output type to view the report.	

To load already existing templates while generating statistic reports, click **Load Query** button.

Export Generated Report

You can export data to **XLSx** or **CSV** file, which contains currently presented data by pressing **Export to XLSx** or **Export to CSV** button, respectively. Please note that **Export to CSV** is available only when the ***Type*** of the output is **Plain**.

Screenshot: Balance Report section



Attention

- You can check an ***actual date interval*** of the report by clicking on **Info** icon, and it could be different from ***the Interval*** specified above if there is no date for the period.
- When you export the file from the Balace Report in **Excel XLS/CSV** formats, values will be displayed in the report currency. The client and transaction currencies will not be shown in the exported file.

- Why are there differences between reports?

Resellers

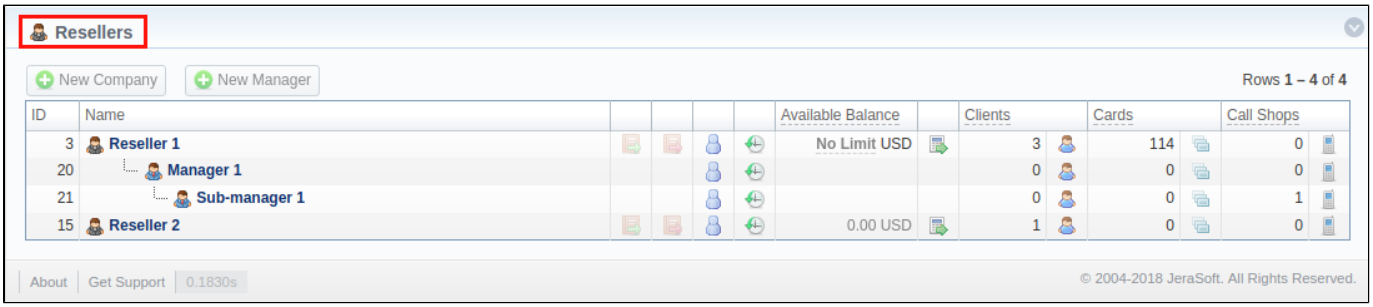
In this article

- Section overview
- Advanced Search
- Adding New Reseller
- Adding New Manager
- Reseller Removal
- Custom Fields
- Rates Notifications
- Configuration Syntax
- Knowledge Base Articles

Section overview

Reseller in JeraSoft VCS, in the majority of cases, is a company who has a certain amount of clients and governs their activities in the system. As any company, it can have a range of managers, each responsible for a certain group of company clients. Manager has a limited functionality: doesn't have his own balance, therefore, cannot perform any transactions; neither origination, nor termination rate table cannot be assigned to him, etc. **Resellers** section is designed to provide a user with a possibility to **track and manage his company information and activity**, **build hierarchy of company affiliates**, **or assign its managers**. Section is presented in a form of table with the following columns:

Screenshot: Resellers section



Column name	Description
ID	Reseller's/manager's identification number
Name	Name of reseller/manager
Available Balance	Reseller's available balance (live balance + credit)
Clients	Total amount of a respective reseller's/manager's clients
Cards	Total amount of a respective reseller's/manager's calling cards
Call Shops	Total number of a respective reseller's/manager's call shops

The following functional buttons and icons are present in the section:

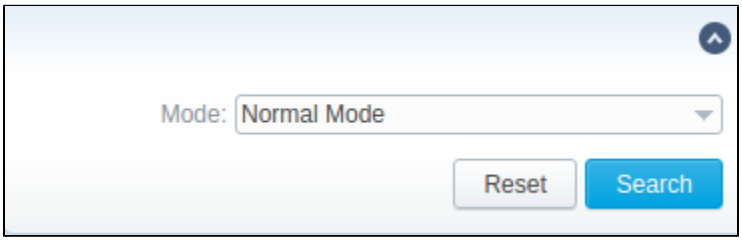
Button/Icon	Description
New Company	Allows creating a new reseller
New Manager	Allows creating a new manager
	Allows assigning an origination rate table to a respective reseller
	Allows assigning a termination rate table to a respective reseller

	Allows viewing a list of a following reseller's/manager's users
	Allows viewing a history of changes for a respective reseller/manager in **Audit log section**
	Allows viewing reseller's balance operations in **Transactions section**
	Allows viewing a list of reseller's/manager's clients in **Clients section**
	Allows viewing a list of reseller's/manager's calling cards in **Calling Cards section**
	Allows viewing a list of reseller's/manager's call shops for a current reseller/manager in **Call Shops section**

Advanced Search

In the top right corner of the section above the table, an **Advanced Search** drop-down menu is located. By clicking on blue downwards arrow icon, a drop-down menu with the following structure is displayed:

Screenshot: Advanced Search drop-down menu



Field	Description
Mode	Select a mode for resellers display: • ***Normal Mode*** - only resellers with Active status will be displayed • ***Archive Mode*** - all resellers regardless of the status will be displayed

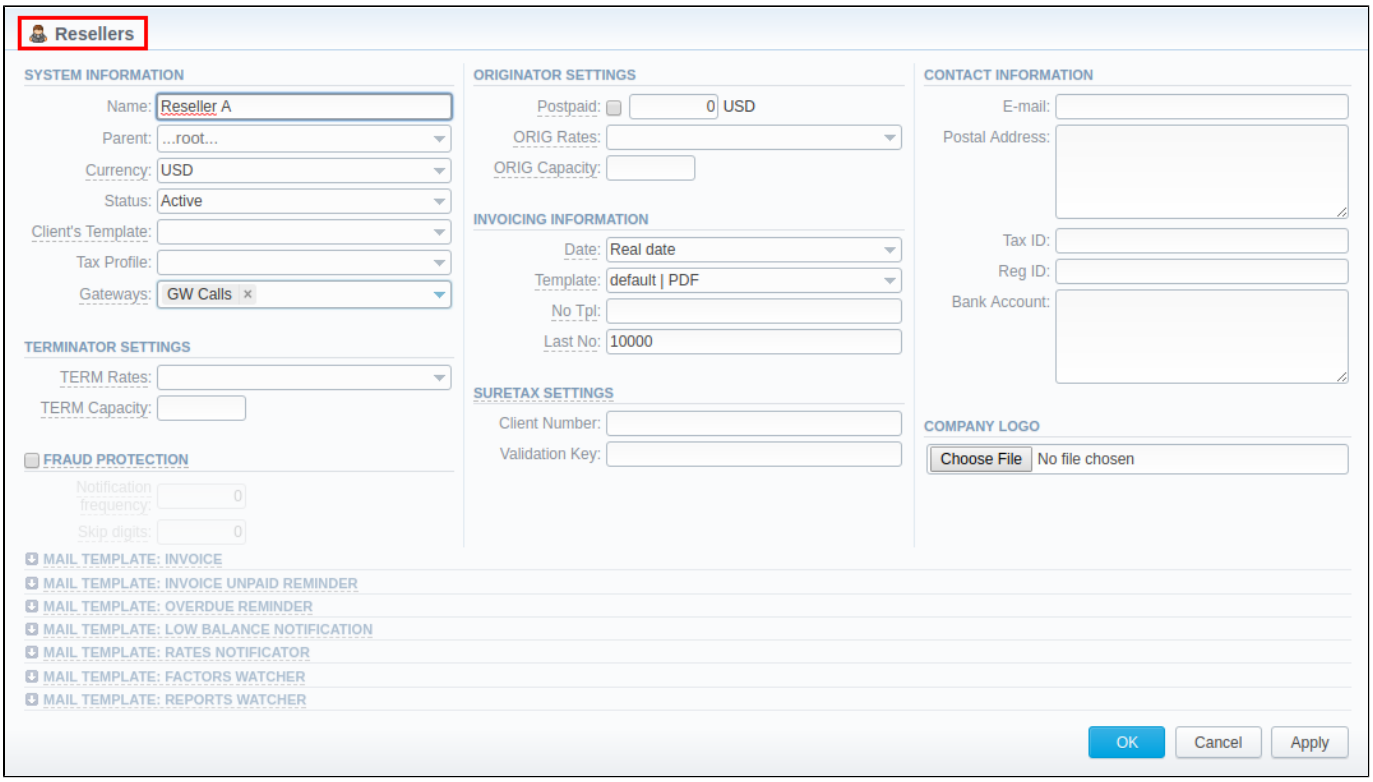
To apply the specified search criteria, press **Search** button; to cancel the applied parameters, press **Reset** button.

Adding New Reseller

To add a company, you need to:

- press **New Company** button;
- fill in all required fields in the appeared pop-up window (see below) and press **OK** button.

Screenshot: Adding new company



Information block	Fields Description	
System Information	General information about a company	
	• ***Name***	Specify the name of one of your companies (or affiliates). This field is mandatory.
	• ***Parent***	Indicate a parent for a reseller or make it a root one. By default, field value is set to ***root***
	• ***Currency***	Select a preferred currency for rates and invoices from the drop-down list of available ones (see **Currencies section**)
	• ***Status***	Define a status of reseller: • ***Active*** • ***Deleted***
	• ***Client Template***	Select a template that will be used for all clients belonging to this reseller or manager by default (see **Clients Template section**)
	• ***Tax Profile***	Indicate a tax profile that will be used for this reseller and reflected in invoices (refers to **Taxes Profiles section**). • ***SureTax*** is a tax, levied on top of another tax. It allows to manage your compliance with tax law. This profile is used for further calculation in invoices. To get more details, check out the article "US Taxation". **Attention** For proper usage of SureTax, ***Invoice Number*** should contain only Latin and numeric characters. Max length is 40 symbols. ***Dst*** and ***Src Numbers*** should be in ***NPANXXNNNN*** (10 digits) format.

	• ***Gateways***	Select gateway(s) for this reseller
Terminator Settings	Reseller's billing settings for outcoming calls	
	• ***TERM Rates***	Rates for outgoing events from customers under current reseller. Enables resellers billing mode **Tip** For more information about resellers billing mode, address this article
	• ***TERM Capacity***	Termination capacity for all clients, belonging to this reseller. Leave this field empty for unlimited capacity
Fraud Protection checkbox	Enables/disables administrator notification in case of multiple simultaneous calls made to the same number from the current Reseller. **Attention** Please note that all notifications can be found in **System > Events Log**. If you want to receive them on exact email, go to **Configuration** tab of **Events Log** section, and add a new rule with the indication of target email and ***aaa.fraud*** value in ***Tag*** field. Here you need to specify the following:	
	• ***Notification frequency***	Set minimum time in seconds between sent notifications (minimum interval must be ***0 sec***)
	• ***Skip digits***	Define amount of the last number digits which will be ignored when determining a destination number. For instance, with one digit for ignoring, the numbers 123456 and 123457 will be considered as the same number
Origination Settings	Current Reseller's billing settings for incoming calls	
	• ***Postpaid*** checkbox	Here you can set specific paid mode for a client. Postpaid mode means that client will have unlimited credit. Otherwise, client's Balance + Credit value will be checked on RADIUS or SIP authorization. When this field is checked, Credit field become unavailable.
	• ***Credit***	Additional field next to ***Postpaid*** checkbox. User can indicate an amount of reseller's credit
	• ***ORIG Rates***	Specify rates for incoming events from customers under current reseller. Enables resellers billing mode
	• ***ORIG Capacity***	Indicate origination capacity for all clients, belonging to this reseller. Leave this field empty for unlimited capacity
Invoicing Information	Current Reseller's invoicing settings	
	• ***Date***	Allows you to select how system sets invoicing date: • ***Real date*** – sets invoicing date to actual invoicing date • ***Last day*** – sets invoicing date to date of last day of invoicing period

	• ***Template***	Select an invoice template that will be assigned to reseller
	• ***No Tpl***	Allows to define default format of invoice's name
	• ***Last No***	Define last used invoice number
SureTax Settings	SureTax profile settings. SureTax is a third-party tax calculation engine. This tax calculation is based on the location of the customer's taxing jurisdiction. This profile is used for further calculation in invoices. To get more details, check out the article "US Taxation".	
	• ***Client Number***	Specify a unique number that identify an individual in the SureTax service
	• ***Validation Key***	Defien a unique validation key of the SureTax service.
Contact Information	Some additional information	
	E-mail	Company's email (it is required to specify email in order to receive notifications). Use only Latin characters. This field is mandatory
	• ***Postal Address***	Company's postal address
	• ***Tax ID***	An ID of tax paying entity
	• ***Reg ID***	Company's registration ID
	• ***Bank Account***	Company's bank account info
Company Logo	Here you can add a file with company's logo. To delete the company logo, open the edit form of a respective Reseller with logo, then click the delete icon to remove the old logo.	
Mail Templates	A detailed description of all Mail Templates and their configuration is presented at the end of the article	

Attention

- hanges of Resellers' settings will not be applied instantly. They will be automatically reloaded at the next run of **Cache Manager** service.
- ***Parent Reseller* has access to all information of his *Sub-Resellers*** and also can assign **any routing plan and rate table** to his *Sub-Resellers*.

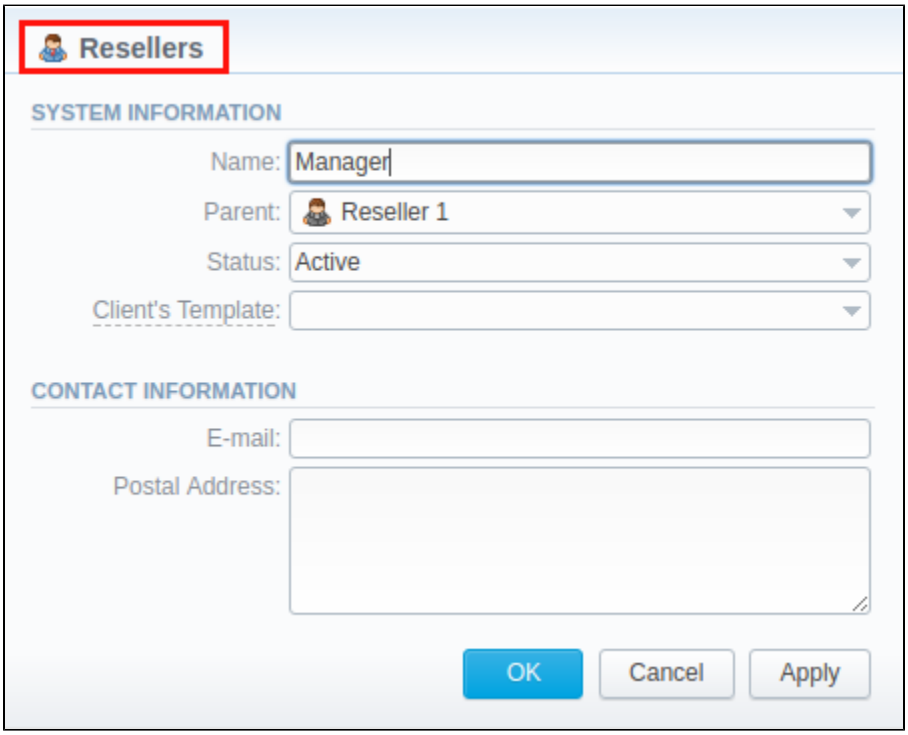
Attention

Email Rates Import Settings infromation block has been removed from **Resellers** settings in **VCS 3.16.0** due to introduction of **Data Source** section**.**

Adding New Manager

To add a manager, press **New Manager** button and after specifying required fields press **OK**.

Screenshot: Adding new manager.

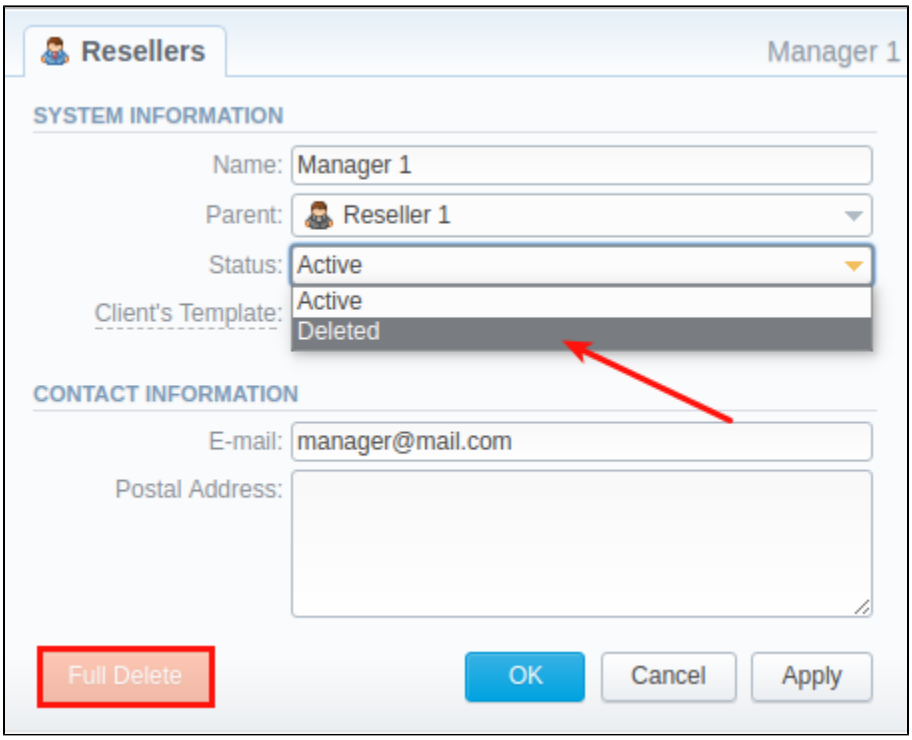


Information block	Fields Description	
System Information	General information about Manager	
	• ***Name***	Here you can specify the name of a manager. This field is mandatory.
	• ***Parent***	Select a parent for a manager
	• **Status**	Select current status of a manager: • ***Active*** • ***Deleted***
Contact Information	Some additional information	
	• ***E-mail***	Manager's email. Use only Latin characters.
	• ***Postal Address***	Manager's postal address

Reseller Removal

To delete a Reseller/Manager from the system you need to **change the status** from ***Active*** to ***Deleted*** in Reseller's/Manager's profile editing form.

Screenshot: Editing reseller's status



Please note, that in fact Reseller/Manager **will not be deleted fully**, it will be put to **Archive**. To display them, use **Advance Search** (see above). To delete a profile completely, you need to press **Full Delete** bottom in this very profile editing window.

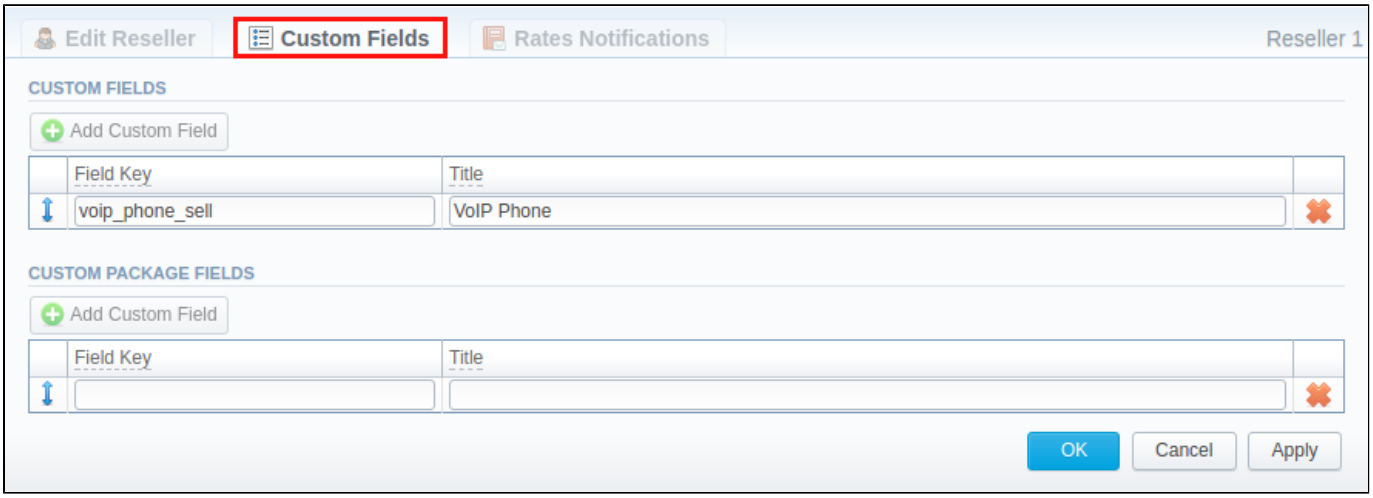
Custom Fields

- **Custom Field** is used as custom variables that will be represented as readable text in invoice templates. Custom Field allows to add an information about client.
- **Custom Package Field** is also used as as custom variables that allows adding information about package.

To add new field follow next steps:

1. Click the **Add Custom Field** button.
2. Specify ***Field Key*** and ***Title*** fields for custom item: for example: ***voip_phone_sell*** as Key and ***VoIP Phone*** as common Title which will be visible for all clients. Please note that the ***Field Key* must contain word characters only**.
3. Add respective notes ***VoIP Phone*** field in ***Client's settings/Package settings*** > ***Custom Fields*** tab.
4. Create an invoice template and assign it to a target reseller. Then, ***Clients Custom Fields*** and ***Package Custom Fields*** tables will appear in the **I nvoice Template** settings. You simpy need to add those tables in the invoice template.
5. Finally, you can generate an invoice.

Screenshot: Custom Fields



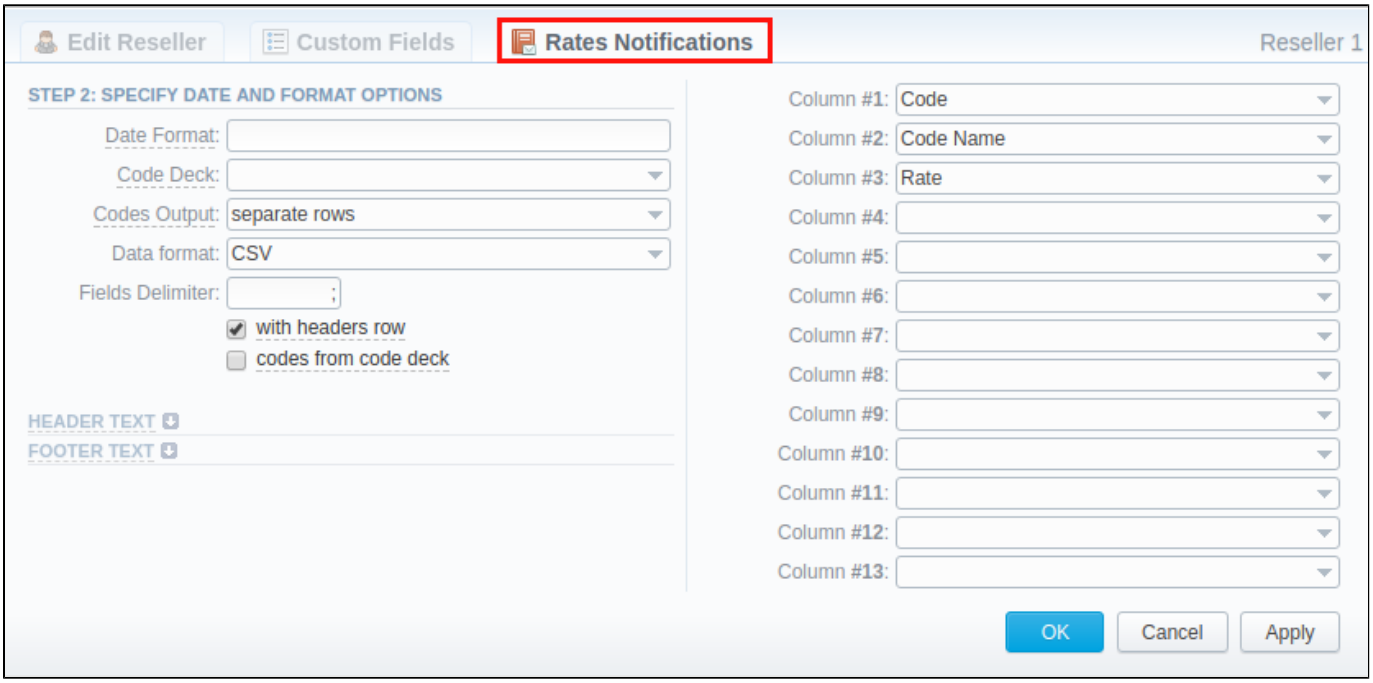
Rates Notifications

Rates Notification settings in **Resellers** profile allows to create **default rate notification** for clients that belong to a target reseller.

Attention

- If any rate table (**child**) in the system has the assigned **parent** rate table, clients will be notified through **Rate Notification** service about changes in **both tables**.
- If child and parent rate tables both have the rule for the same code, priority is given to a **child one**. However, if the rule in a child rate table has expired due to ***End date*** field value, and a parent rule is still active, notifications will regard the latter one.

Screenshot: Rates Notifications



To configure these settings, open **Rate Notifications** tab in reseller profile. The structure of the tab is as follows:

Field	Description	
Date Format	Specify date format in your export file. Example of field syntax: if you enter ***"%d-%m-%Y"*** here, your date will look like ***25-02-2018***	
Code Deck	Select a code deck here to rewrite code names in export file if needed	
Codes Output	Select a way, codes must be displayed	
	• ***Separate rows***	Each code is placed into single row
	• ***Delimited list***	Codes are grouped by code name in a row, for example, ***5510, 5511, 5512***
	• ***Ranges list***	Codes are grouped by code name into ranges plus delimiter, for example, ***5510-5512, 5515***
Data Format	Specify an output file format, **.xls** or **.csv**	
Fields Delimiter	Set delimiter for fields if you've chosen **.csv**. For **.xls** format this field is unavailable	
With headers row checkbox	Include into the file a row with column names	
Codes from code deck check box	Include only codes which are present in a specified ***Code Deck***	
Header text / Footer text	Allows you to specify additional text into exported file as header and footer, respectively	

Description of all columns that could be selected for rate notification is provided below:

Column Name	Description
Code / Code Name	Code or Code Name of respective rate
Effective Date	Date on which a rate to be applied
Rate	Price
Min Volume	Minimum volume of chargeable events
Interval	Chargeable interval
Grace Volume	Free of charge interval
Setup Fee	Interval of setup fee
Profile	Time profile (*all time, business time, non-business time, weekends*)
End Date	Date on which the rate ends
Previous Rate	Rate used before the present time
Prev Diff	Shows how current rate differs from a previous one after import
Prev Diff Status	Shows how current rate's status changed in comparison to a previous one (unchanged, increased, decreased)
Prev Diff (export)	Shows how current rate differs from a previous one after export
Prev Diff Status (export)	Rate's changes after the last export. Shows the status how differs current rate from previous. The rate will have an ***unchanged*** status if the ***Effective date*** of rate is lower than the ***Last Notification Date***

Step 1: Notification type: All rates unique mode - First Notification: 07/07/2017

Code	Rate	Effective From	Previous Rate	Prev Diff	Prev Diff Status	Prev Diff Status (export)
1	10	07/01/2017 00:00:00 +0000	-	-	new	unchanged
2	10	07/01/2017 00:00:00 +0000	-	-	new	unchanged
3	10	07/01/2017 00:00:00 +0000	-	-	new	unchanged

Step 2: Added new rates with effective date 07/21/2017 - Second Notification: 07/14/2017

Code	Rate	Effective From	Previous Rate	Prev Diff	Prev Diff Status	Prev Diff Status (export)
1	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)
2	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)
3	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)

Step 3: Rate with code 1 was edited and the increase was canceled - Third Notification: 07/21/2017

Code	Rate	Effective From	Previous Rate	Prev Diff	Prev Diff Status	Prev Diff Status (export)
1	**10**	07/21/2017 00:00:00 +0000	10	0	unchanged	**unchanged**
2	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)
3	15	07/21/2017 00:00:00 +0000	10	5	increased	increased (5.0000)

Step 4: Rate with code 2 was edited and added a new rate for code 3 - Fourth Notification: 07/28/2017

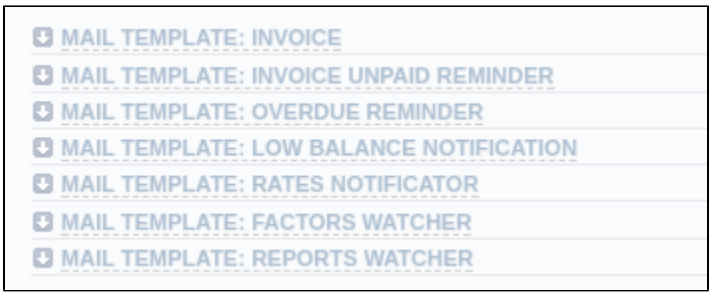
Code	Rate	Effective From	Previous Rate	Prev Diff	Prev Diff Status	Prev Diff Status (export)
1	10	07/21/2017 00:00:00 +0000	10	0	unchanged	unchanged
2	**20**	07/21/2017 00:00:00 +0000	10	10	increased	**unchanged**
3	20	07/31/2017 00:00:00 +0000	15	5	increased	increased (5.0000)

Notes	Additional information
Tag	Tags thar are assigned to respective rate
Policy	Indicated policy of the rate
Status	Define a current rate status

Configuring Mail Templates

Also, there are different mail templates you can configure in your company's profile:

Screenshot: Mail Templates



Template Name	Description
Mail Template: Invoice	Used when sending invoice to the customer
Mail Template: Invoice Unpaid Reminder	Used when sending payment notification to a customer (sending notification on *"Notify Days(Before)"*)
Mail Template: Overdue Reminder	Used when sending payment notification to a customer (sending notification on *"Notify Days(After)"*)
Mail Template: Low Balance Notification	Used when sending low balance notification to a customer **Tip** You can **add a rounding rule** for client's balance while low balance notification. For example, to round up to 2 decimal places you need to add the variable ***${client['balance']}*** in ***the Mail template: Low balance notification*** in reseller's settings and specify the number of rounding decimals in ***Totals precision*** field in **Currencies** section.
Mail Template: Rates Notificator	Used when sending rate changes notification to a customer
Mail Template: Factors Watcher	Used when sending notification to a customer once Preset by Factors Watcher has been added
Mail Template: Reports Watcher	Used when sending reports by email

The structure of all mail templates is identical and has the following structure:

Screenshot: Reseller/ Mail Template:Factors Watcher form

Field	Description

From	Specify name and email of company	
BCC	Specify who will receive a blind copy of an email	
Subject	Indicate email subject that may contain company name, invoice number, etc.	
Mail body	Content of the letter. On the screenshot above the following information is specified:	
	• ***Direction {direction}***	*Code* or *Code name* that will be automatically filled in by the system
	• ***Reason {reason}***	Values specified in Factors Watcher settings (for example: ***calls_total >0***).

To configure any of these templates, simply click on its name. Below, you will find full list templates configuration syntax used almost in all kinds of configured mails concerning Clients and Resellers data and configuration syntax which is used in foregoing list of mail templates.

Configuration Syntax

General Configuration Syntax Concerning Client Data

Templates Configuration Syntax	Description
${client['status']}	A client status: • ***Active*** • ***Deleted***
${client['name']}	lient's name
${client['balance']}	lient's live balance
${client['balance_accountant']}	lient's fixed balance
${client['credit']}	lient's available credit
${client['c_company']}	lient's official company name
${client['c_address']}	Post address of a client's company
${client['c_email']}	lient's email
${client['locale']}	Client's location
${client['currencies_id']}	urrency ID, used by a client
${client['tz']}	Time zone of a client
${client['taxes_profiles_id']}	Taxes profile's ID, used by a client
${client['tax_id']}	Customers tax ID of a client's company
${client['reg_id']}	Registration ID of a client's company

General Configuration Syntax Concerning Company/Reseller Data

Templates Configuration Syntax	Description
${company['status']}	Company's status: • ***Active*** • ***Deleted***
${company['balance']}	Company's current balance
${company['balance_accountant']}	Company's fixed balance
${company['credit']}	Company's available credit
${company['c_address']}	Company's post address

${company['c_email']}	Email of a company
${company['locale']}	Company's location
${company['currencies_id']}	Company's currency ID
${company['tz']}	Company's time zone
${company['taxes_profiles_id']}	Company's taxes profiles
${company['name']}	Name of a company
${company['tax_id']}	Company's customers tax ID
${company['reg_id']}	Company's registration ID

Configuration Syntax for Mail Template: Invoice and Payment Reminder Notification

Templates Configuration Syntax	Description
${invoice['c_dt']}	Invoice date
${invoice['type']}	Invoice type
${invoice['amount']}	Invoice total sum
${invoice['period_start']}	Invoice period start
${invoice['period_finish']}	Invoice period end
${invoice['due_date']}	Invoice due date
${invoice['no']}	Invoice number
${invoice['descr']}	Invoice comments
${invoice['tz']}	Invoice time zone
${invoice['state']}	Invoice state
${invoice['name']}	Invoiced client name
${client['currency']}	lient's currency

Configuration Syntax for Mail Template: Low Balance Notification

Templates Configuration Syntax	Description
${client['balance_avail']}	Client's available balance: live balance + credit
${client['currency']}	lient's currency
${client['alert_threshold']}	Notification for a client regardig reaching a balance limit
${client['alert_athreshold']}	Notification for an administrator regardig reaching a balance limit

Configuration Syntax for Mail Template: Rates Notificator

Templates Configuration Syntax	Description
${msg['rt_name']}	Rate table name
${msg['lastedit_dt']}	Date when rate table was last time edited
${date}	Date when the notification was sent

Configuration Syntax for Mail Template: Reports Watcher

Templates Configuration Syntax	Description
${report["title"]}	Title of report template
${report["interval"]}	Actual report period of time
${report["title-full"]}	Title of report template with indication of actual report period of time
${report["webUrl"]}	URL to view report on the web portal
${report["id"]}	ID of report template

Tip

If you want the date of sending letter to be present, you can add the **${date}** variable in any mail template.

Knowledge Base Articles

- US Taxation
- What is resellers billing mode?
- How to set up a functional capacity?
- What is real time fraud protection functionality and how to set it up?

Client Packages

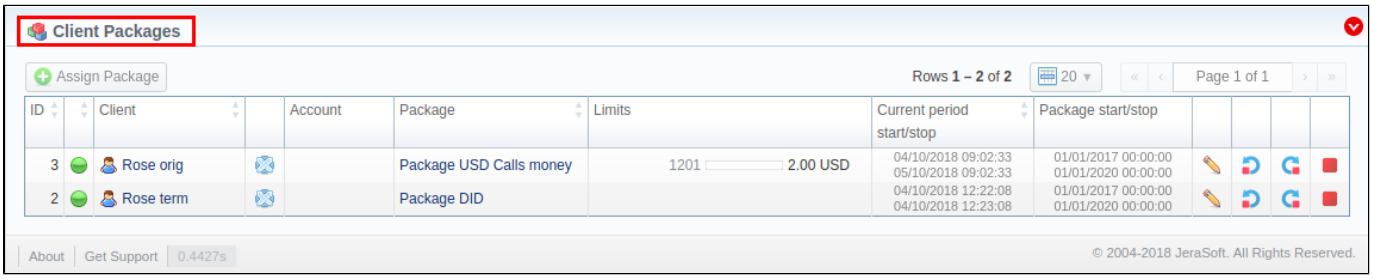
In this article

- Section overview
- Advanced Search
- Assigning New Package
- Editing Clients Package

Section overview

This section is designed to provide a vide variety of fucntions to control and manage clients' packages. First and foremost, in this section user can assign relevant package to a respective client or client's account, edit and cancel it, ect. Moreover, there is a detailed information regarding all the limits that have been used over a set period. Section is presented in a form of a table with the following columns (see screenshot below):

Screenshot: Client Packages list



Column	Description
ID	Package identification number
Client	Name of client whom package is assigned to
Account	Name of account whom package is assigned to
Package	Name of assigned package
Limits	Shows, if respective package has some volume limits and time or money left 1. On the left side of the bar it shows the ***destinations***, ***code*** or ***code names***. 2. On the right side of the bar it shows a ***specified limit***.
Current period start/stop	A date of package's activation for respective client/account A date of package's deactivation for respective client/account
Package start/stop	Effective start and stop date of the package

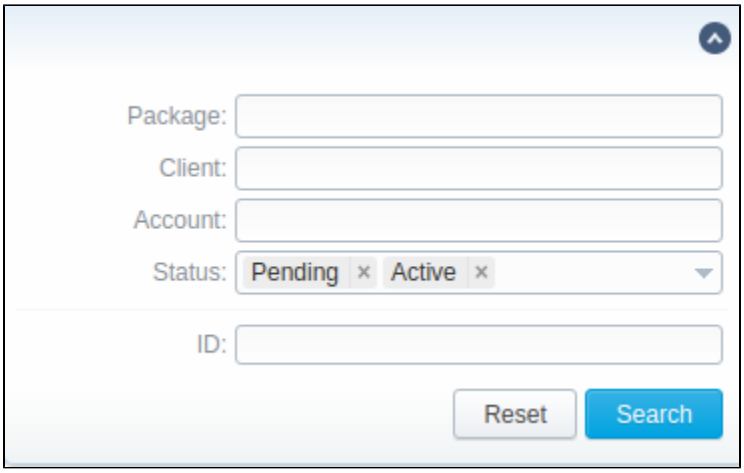
Button/Icon	Description
Assign Package	Allows assigning a package to corresponding client/account
	Shows the full list of packages that were assigned to this client/account
	Marks package, that was successfully activated and will renew itself due to the package settings
	Marks package, that is new for current user and not activated yet
	Marks package, that is in the archive
	Allows editing client's package
	Allows a user to stop the package at the beginning of the current period (with balance rollback).

	Allows a user to stop the package at the end of the current period.
	Cancels the active package
	Removes assigned package completely

Advanced Search

By default, information in a section is filtered by **Pending** and **Active** statuses. To open **Advanced Search** drop-down menu, click on red downwards arrow icon and fill in the following fields with required information:

Screenshot: Advanced Search drop-down menu



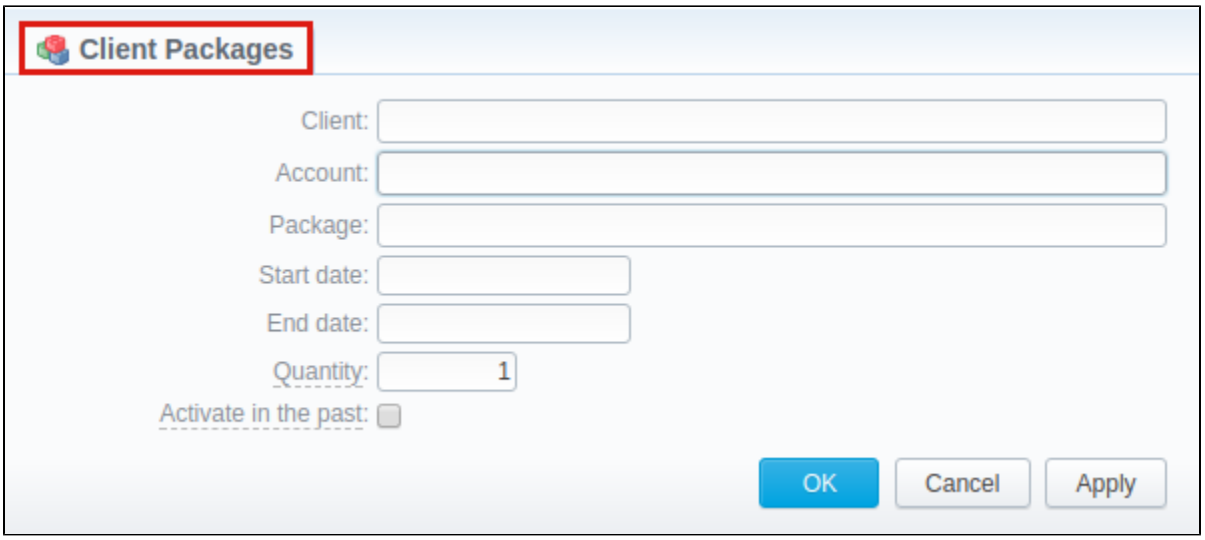
Field	Description
Package	Indicate a name of a target package
Client	Specify a target client
Account	Specify a client's target account
Status	Select a status of a client's package: • ***Pending*** • ***Active*** • ***Archive***
ID	Specify respective client's package ID

To apply the specified search criteria, press **Search** button; to cancel the applied parameters, press **Reset** button.

Assigning New Package

Click **Assign Package** button for a new pop-up window with settings to appear. Then, fill in the form and click **Apply** button. You can assign any number of packages. They will be activated when ***Package Manager*** service runs, and if a customer has enough balance for activation+subscription fees.

Screenshot: Client Packages form



Field	Description
Client	Name of lient whom package is assigned to
Account	Name of account whom package is assigned to
Package	Name of assigned package
Start Date	Package's limits and discounts are only effective after specified date
End Date	Package's limits and discounts are disabled after specified date
Quantity	Number of packages to be assigned.
Activate in the past checkbox	If checked and Start Date field value is in the past, package will be activated on the specified date

Warning

If you click the delete icon (**remove an archived package entirely**) in the **Client Packages** section, you will delete a package with all transactions from the system.

To delete the package completely you need to do the following:

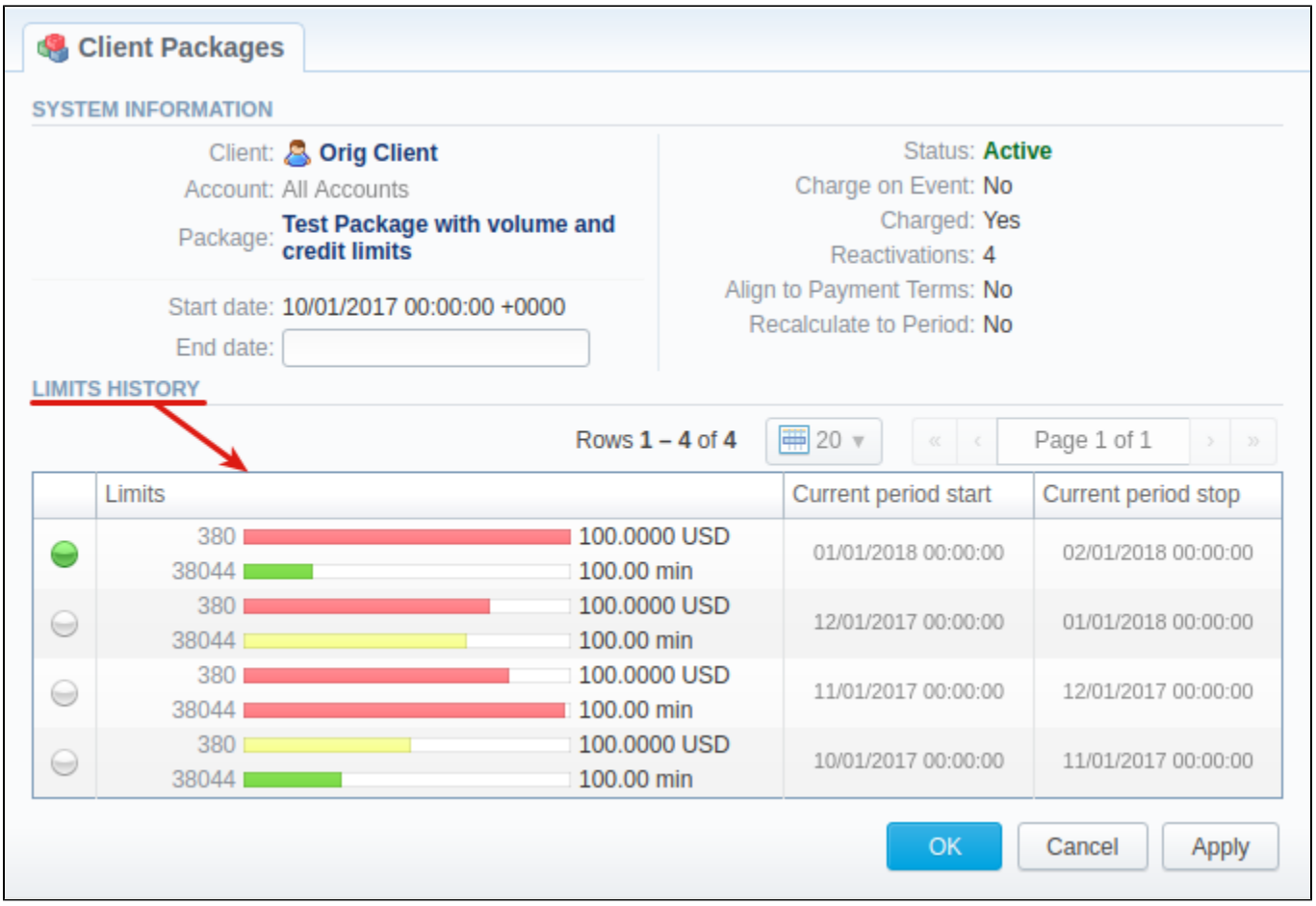
- press icon opposite a respective package on the section list
- filter the list of packages by **Archive** status
- find a respective package and click icon to delete it entirely from the system.

Editing Clients Package

When clicking on edit icon, a detailed information on client's package is displayed. In **System information** data block, user can view general info regarding the package including client himself, start date, status and so on. What is more emportant, user can change package's **End date** in a respective field.

To make it easier for a user to keep records of package limits, a new **Limits History** information block on an **Edit Client's Package** (see screenshot below) page has been introduced in **VCS 3.15.0**. It provides a detailed view of package limits for each specified period.

Screenshot: Limits History information block



Attention

When you change the **name of the package** in the **Retail > Packages**, it will be automatically changed it in **Management > Client Packages** section as well, even if this package is already assigned. As a result, in **Invoices** and **Transactions** sections, an **old** name of the package will be specified. **We do not recommend to edit the name of already assigned package in the Retail > Packages.**

Traffic Processing

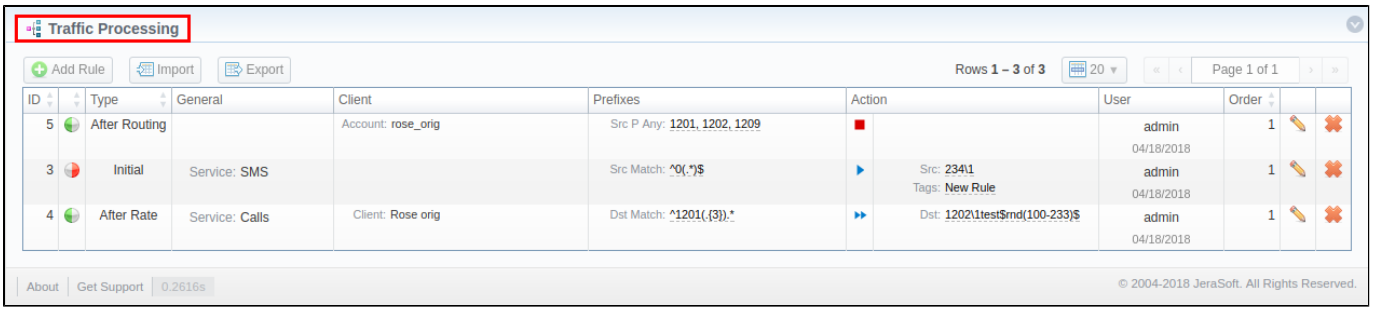
In this article

- Section overview
- Advanced Search
- Creating New Traffic Processing Rule
- Rules Import
- Rules Export
- Knowledge Base Articles

Section overview

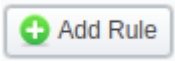
This section allows user to configure and perform number translations. Here, you can add and remove rules for the traffic processing. Section is presented in a form of a table of traffic processing rules with the following columns:

Screenshot: *Traffic Processing section*



Column	Description
ID	Rules identification number
Type	Type of a rule
General	Depending on rule parameters, can display the following scope of details: • Name of **service**, rule is created for • **Gateway**, specified in a rule • **Tag(s)**, indicated in a rule
Client	Depending on rule parameters, can display the following scope of details: • **Client's name**, specified in a rule • **Client's account**, defined in a rule • Indicated **Code**
Prefixes	Depending on rule parameters, can display the following scope of details: • **POSIX regular expression** for Src number (Src Match) • **POSIX regular expression** for Dst number (Dst Match) • Src **Prefixes** (Src P Any/Src P Not) • Src **Prefixes Names** (Src PN Any/Src PN Not) • Dst **Prefixes** (Dst P Any/Dst P Not) • Dst **Prefixes Names** (Dst PN Any/Dst PN Not)
Action	Depending on rule parameters, can display the following scope of details: • **Replacement** for a matched rule for **Scr number** (Src) • **Replacement** for a matched rule for **Dst number** (Dst) • **List of tags**, added during traffic processing rule execution
User	User name and time, when a rule was created/edited
Order	Specified order for rule execution

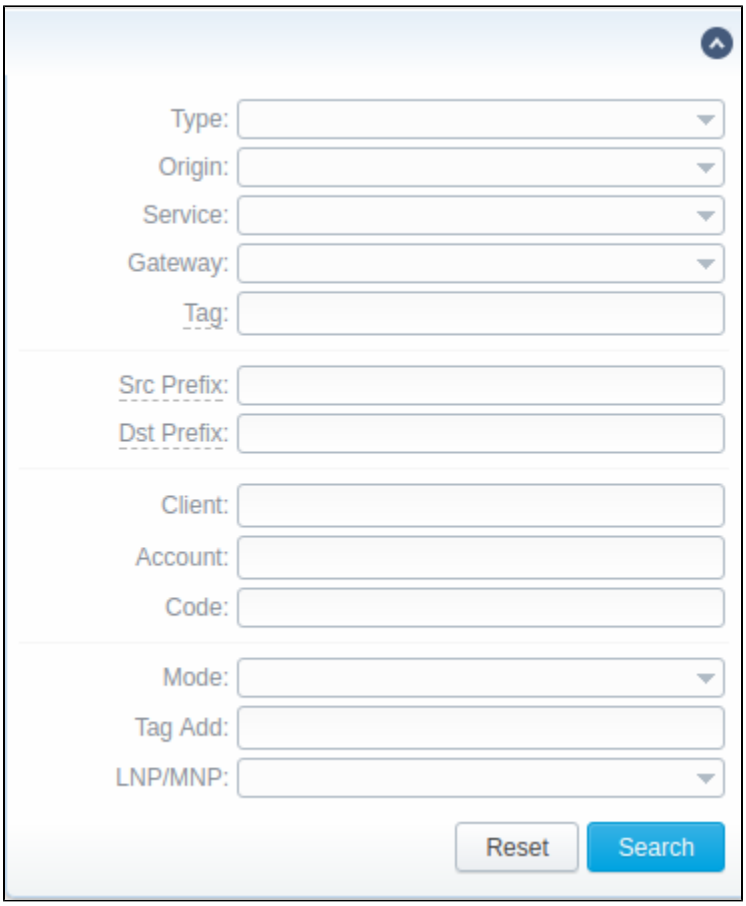
Functional **buttons/icons**, presented in the section, are as follows:

Button/Icon	Description
	Allows creating a new traffic processing rule
	Allows importing a **.csv** file with traffic processing rule(s)
	Allows exporting current list of rules in **.csv** format
	Indicates that a rule origin is ***origination***
	Indicates that a rule origin is ***termination***
	Indicates the ***Allow*** action of a rule
	Indicates the ***Allow and Continue*** action of a rule
	Indicates the ***Deny*** action of a rule
	Allows editing existing rules in a section list
	Allows deleting traffic processing rule from the system

Advanced Search

In the top right corner of the section above the table, an **Advanced Search** drop-down menu is located. By clicking on blue downwards arrow icon, a drop-down menu with the following structure is displayed:

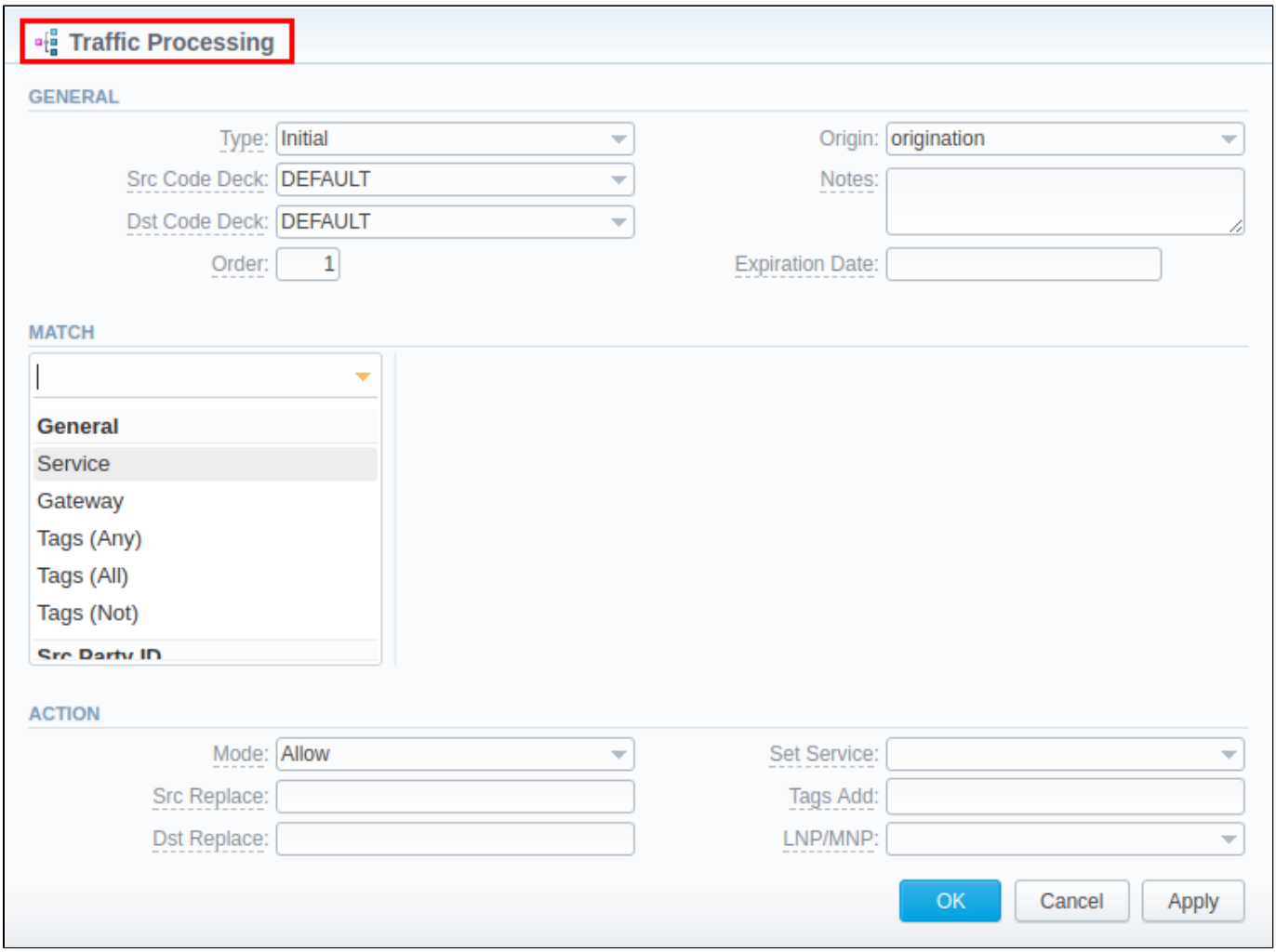
Screenshot: Advanced Search drop-down menu



To apply the specified search criteria, press **Search** button; to cancel the applied parameters, press **Reset** button.

Creating New Traffic Processing Rule

To perform a number translation, press **Add Rule** button and fill the following fields (see screenshot below):
Screenshot: New Traffic Processing rule



Information block	Field	Description
General	***Type***	Specifies, **at what stage** a current translation rule will be applied: • ***Initial*** - execute this rule before Client is identified • ***After Client*** - execute this rule after client indentification but before rate identification. • ***After Rate*** - execute this rule after rate indentification but before routing • ***After Routing*** - execute this rule after routing
	Scr Code Deck	Identify a code deck that will be used for **src** codes or code names filtering
	Dst Code Deck	Identify a code deck that will be used for **dst** codes or code names filtering
	Order	Sets rules ordering that works within the same rule **Type**. **Attention** Note that this field indicates the order of rules execution only within a specified type. It means that rule with ***Initial*** type and order ***1*** will be executed before any other rule of the same type with order ***2.*** However, such rule will be exectued prior to rule with ***After Rate*** type and order ***0***, even though the latter has a higher order, due to the fact that ***Initial*** **is the 1st** on the types list.

	Origin	Sprecify the event origin: • ***Origination*** • ***Termination***
	Notes	Specify additional informational about a rule
	Expiration Date	Define a date when this rule will expire and will be removed from the system
Match	On the **Match** menu, select required parameters for a trafic processing rule. To cancel any filter, click on the delete sign next to its name. You can start a **quick search** by typing filters' names in the field at the top of **Match** menu. **Tip** If any of the filters in the section, for instance, ***Client*** filter is empty, it means that this rule will implicate all clients	
	General	
	Service	Select a target from the drop-down list of all services, presented in Services section of your VCS
	Gateway	Select from the drop-down list a respective VoIP gateway for which rule is applied
	Tags (Any)	A rule will work if event has at least one of the tags, specified in this field
	Tags (All)	A rule will work if event has all tags, specified in this field
	Tags (Not)	A rule will work if event has no tags, specified in this field
	Scr Party ID	
	Src (Match)	In this field you may indicate POSIX regular expressions syntax by which a number will be analyzed, and if expression matches the number, the translation will occur in respective settings in ***Src Replace*** field
	Src Prefixes (Any)	A rule will work if event has at least one of the src prefixes (e.g., ***010, 810***), specified in this field
	Src Prefixes (Not)	A rule will work if event has no src prefixes (e.g., ***010, 810***), specified in this field
	Src Prefixes Names (Any)	A rule will work if event has at least one of the src prefixes names (e.g., ***vodafone***), specified in this field
	Src Prefixes Names (Not)	A rule will work if event has no src prefixes names (e.g., ***vodafone***), specified in this field
	Dst Party ID	
	Dst (Match)	In this field you may indicate POSIX regular expressions syntax (***see best practice example below***) by which a number will be analyzed, and if expression matches the number, the translation will occur in respective settings in ***Dst Replace*** field
	Dst Prefixes (Any)	A rule will work if event has at least one of the dst prefixes (e.g., ***010, 810***), specified in this field

	Dst Prefixes (Not)	A rule will work if event has no dst prefixes (e.g., ***010, 810***), specified in this field
	Dst Prefixes Names (Any)	A rule will work if event has at least one of the dst prefixes names (e.g., ***vodafone***), specified in this field
	Dst Prefixes Names (Not)	A rule will work if event has no dst prefixes names (e.g., ***vodafone***), specified in this field
	Client	
	Client	Specify a respective client ⚠ **Attention** Please be advised that any traffic processing rule can have either ***Client*** or ***Account*** field.
	Account	Specify a respective account
	Code	Specify a code of destination (use * as a wildcard)
Action	***Mode***	Defines an action that will be excuted if traffic rule matches: • ***Allow*** - allow current event to proceed. Stop further traffic processing rules within this type of rule • ***Allow and Continue*** - allow current event to proceed. Search for the next traffic rule • ***Deny*** - deny current event.
	Scr Replace	Replacement for matched rule. In order this field to work, ***Scr Match*** filter must be used in **Match** information block.
	Dst Replace	Replacement for matched rule. In order this field to work, ***Dst Match*** filter must be used in **Match** information block.
	Set Service	Allows to change a specified service to another one while processing them
	Tags Add	Here you can add tags that will be added for events matching this rule
	LNP /MNP	Define provider fro LNP/MNP service which will be dipped for translation

Best Practice Example

To get a better understanding how ***Src/Dst Match*** and ***Src/Dst Replace*** fields work, let's consider the following example:

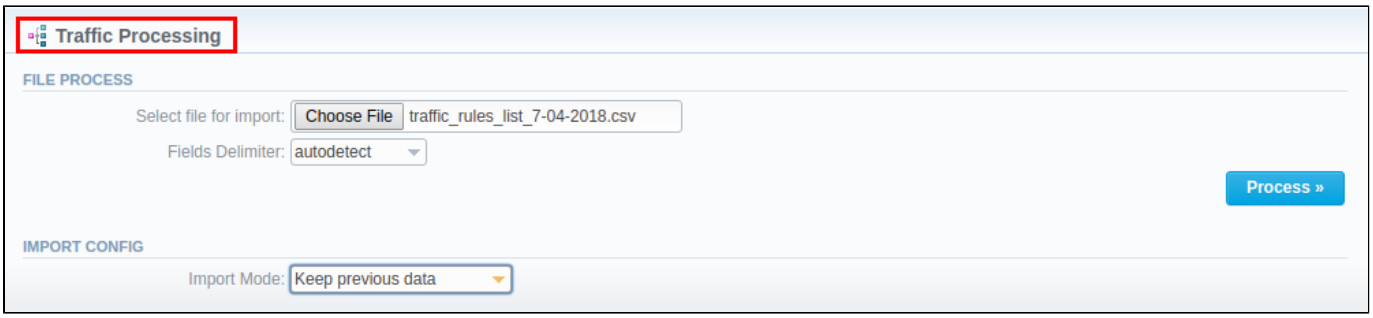
If our scr/dst number is ***123#456***, ***Src/Dst Match*** field is ***^123#(.*)$*** and ***Src/Dst Replace*** field is ***789\1***, then the resulting number will be ***789456***. That's because ***^123#(.*)$*** expression tells the system that from ***123#456*** number system must remember only ***(.*)*** part which stands for ***456.*** Now, in ***Src/Dst Replace*** field we have ***789\1,*** which means that instead of***123#456*** it musy insert ***789*** + add ***\1*** that equalls ***(.*).*** Therefore, our resulting number will be ***789+456= 789456.*** These **translation rules use the PostgreSQL regular expressions syntax** (based on POSIX regex with some extensions). For more information, please refer to the PostgreSQL documentation portal.

In addition, in ***Src/Dst Replace*** field you can insert random number with fixed digit length using **$rnd(xxx-yyy)$** variable, where **xxx** - start number and **yyy** - end number of the range. For example, **$rnd(050-950)$** will be replaced by a **3-digit random number from 50 to 950**.

Rules Import

Now, user can import a **.csv** file containing a list of traffic processing rules. To do so, press **Import** button and a pop-up window with the following structure will appear:

Screenshot: Traffic processing rule import



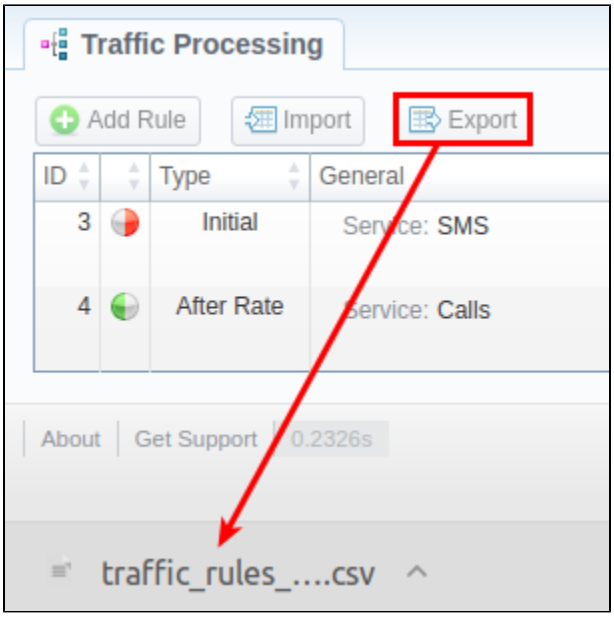
Information block	Field	Description
File Process	***Select file for import***	Select a .csv file to import traffic processing rule from
	Fields Delimeter	Specify here a delimiter symbol. Possible options are: • ***Autodetect*** • ***,*** • ***;*** • ***Tab*** By default, **Autodetect** option is chosen.
Import Config	***Import Mode***	Specify what to do with the current traffic processing rules: • ***Keep previous data*** - new rules will be added to the old ones • ***Purge all other rules*** - old rules will be deleted and substituted by new ones. By default, **Purge all other rules** option is chosen.

When all fields are filled in, press **Process>>** button. You will be moved to the second step where you must indicate default values in respective fields and specify rows and columns. To finish importing, press **Process>>** button once again.

Rules Export

By clicking on **Export** button, you can download a current list of rules in **.csv** file

Screenshot: Rules export



Knowledge Base Articles

- How to configure LNP/MNP?
- Jurisdictional Billing
- US Routing & Billing Configuration
- New features of Traffic Processing

Retail

This chapter digs into the **retail functions of JeraSoft VoIP Carrier Suite**. Please be advised that for all these functions are available if your JeraSoft VCS installation includes **the Retail Module.**

In addition to vast wholesale functionality, JeraSoft VCS offers the retail module described in below sections of this chapter. Each section describes an important aspect of retail-based VoIP business such as Calling Cards, Payment Gateways, Subscription Packages, Top-Up Cards and Call Shops. All of these options are grouped within the **Retail** section of your JeraSoft VCS solution.

The list of sections is as follows:

- Packages
- DID Management
- Calling Cards
- Top-up Cards
- Call Shops

Packages

In this article

- Section overview
- Advanced Search
- Adding New Package
- Knowledge Base Articles

Section overview

The Packages section helps to add and manage any one-time or regular supplementary services that your company may provide in addition to VoIP. For example, you can create a package with rent of some equipment or create a free minutes promotional package. Section is designed in a form of a table that displays all packages that are currently available and has the following structure:

Screenshot: Packages section main window

Column	Description		
ID	ID of a package		
Status	Status of a package		
		Active	Package is in use by a customer
		Disabled	Package isot used
		Archived	Package is not used and not available anymore
Name	Title of a package		
Activation fee	Fee that will be charged upon package activation		
Subscription fee	Fee that will be charged upon package renewal		
Period	Renewal package period		
Reseller	Name of reseller, target package belongs to		

List of functional **buttons/icons** in the section includes:

Button/Icon	Description
New Package	Allows to create a new package
	Allows to delete a package from the list. Requires confirmation

Advanced Search

By default, information in a section is filtered by **Active** statuses. To open **Advanced Search** drop-down menu, click on red downwards arrow icon and fill in the following fields with required information:

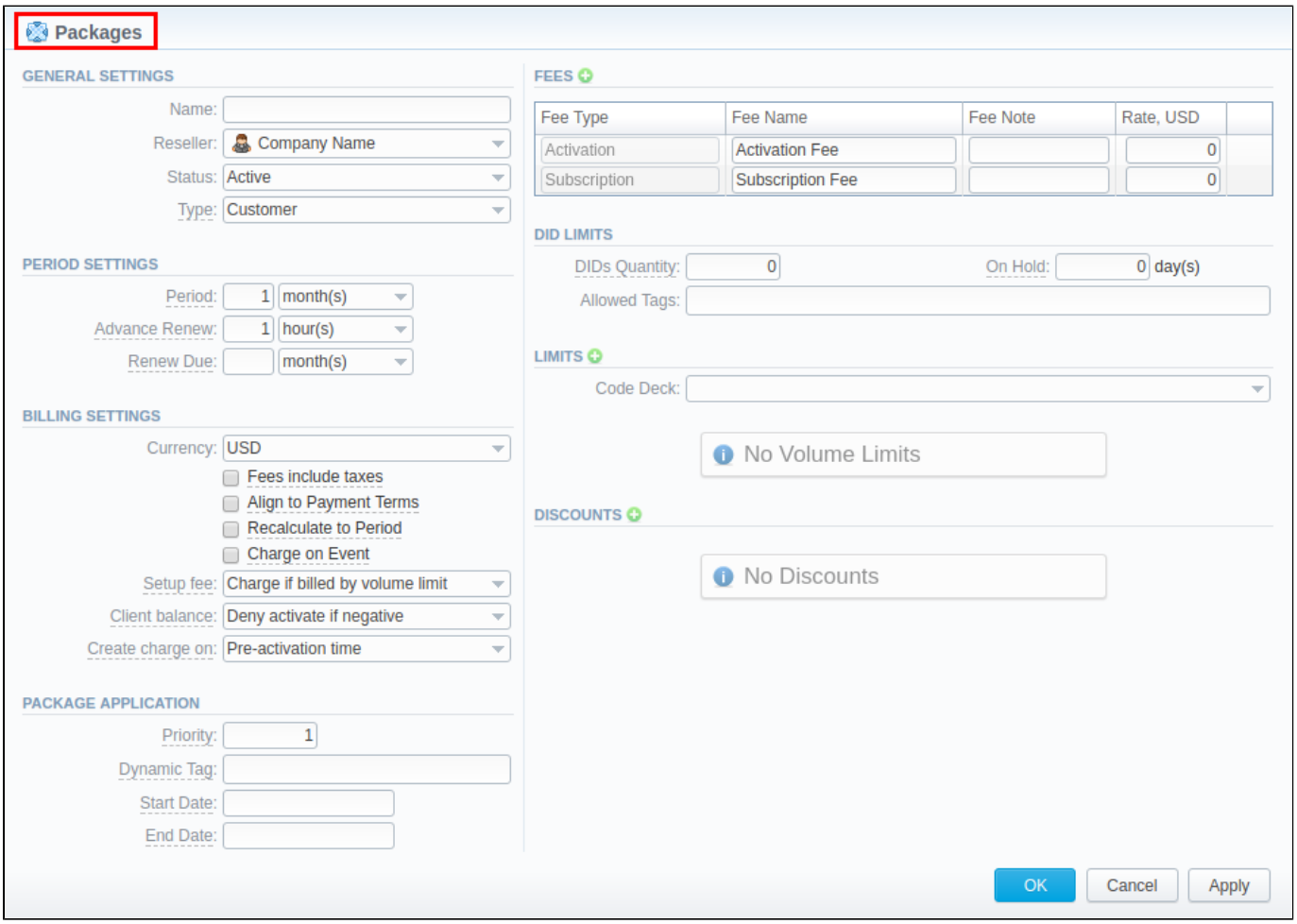
Screenshot: Advanced Search drop-down menu

Field	Description
Reseller	Indicate a name of a target reseller
Status	Select a status of a package: • ***Active*** • ***Disabled*** • ***Archive***

To apply the specified search criteria, press **Search** button; to cancel the applied parameters, press **Reset** button.

Adding New Package

You can add new package by clicking on **New Package** button. A pop-up window with settings contains the following information:
Screenshot: New package creation form



Information block	Field and Description	
General settings	General information about a package	
	Name	Determine a name of your package
	Reseller	Specify an owner of this package
	Status	Select a current status for the package: ***active / disabled / archive***
	Type	Specify the package type: • **Customer** - this type indicates that services are provided to customers by user's company. • **Vendor** - this type indicates that services are provided to user's company by vendors. ⚠ **Attention** This option has been added in version **3.16.0.**
Period settings	Settings regarding package period	
	Period	Specify a period for current package if it's renewable
	Advance Renew	Next renewal will be made whithin a specified period of time in advance (before renewal date). Be advised that renew intervals of packages will be converted to the smallest units. For example, 1 day + 1 hour = 25 hours. **Warning** Please be aware that for a correct work of your system, ***Advanced Renew*** field value **must be higher** than the run period of **Package Manager** tool in Task Scheduler section. The rocommended ***Advanced Renew*** field value is ***1 hour***
	Renew Due	Indicate a period the system will try to renew a package. If no value is specified, attempts to renew a package will be endless.
Billing settings	List of settings concerning billing feature	
	Currency	Define a currency for this package
	Fees include taxes checkbox	If enabled, taxes are included in package prices, if disabled – taxes will be calculated regarding respective **Tax Profile** of a customer
	Align to payment Terms checkbox	Allows system to align period of package to customer's Payment Terms, equalising Package billing with actual invoicing
	Recalculate to Period checkbox	Allows recalculation of days up to Payment Terms period if the package was activated somewhere in the middle of it
	Charge on event checkbox	If enable, package subscription fee will be applied when the first call within this package is made. Otherwise, package would be free.
	Setup fee	Select from a list of available options of setup fee settings: • ***Charge if billed by volume limit*** - setup fee will be charged when event is billed by volume limit • ***Don't charge if billed by volume limit*** - setup fee won't be charged when limit by volume is used for the event billing
	Client balance	Choose one of the following options: • ***Allow activate if negative*** - client's package will be activated regardless of clinet's balance; however, package limits will be used only when it's not nevegative • ***Deny activate if negative*** - client's package will be activated only if there are sufficient funds on the balance

	Create charge on	Determine when the charge should be created: • ***Pre-activation time*** - create charge at the moment of period creation • ***Period start time*** - create charge at the moment when a new period starts
Package application	Information on package application	
	Priority	If there are multiple packages that satisfy a call, then a package with the highest priority will be used (i.e. ***priority 2 < priority 1***). **Attention** Please note that packages with minutes will always be used before packages with money regardless of the priority.
	Dynamic Tag	Add a tag for the events, billed by this package
	Start Date	Indicate an effective start date of a package. This feature is used for temporary packages.
	End Date	Determine an effective end date of a package. This feature is used for temporary packages.
Fees	Information block is used for package fees indication and presented in a form of a table. To add a new fee type, you need to click on icon next to its name.	
	Fee Type	Select the type of a fee. There are two possible types: • ***Activation –*** a fee that will be charged upon package activation • ***Subscription –*** a fee that will be charged upon package renewal
	Fee Name	Specify a name of a fee
	Fee Note	Here you may enter additional information about a fee
	Rate	Indicate the price for a free. Price is indicated in the package currency
DID Limits	Specify how many DIDs and from which group it can be assigned to a customer with this package	
	DIDs Quantity	How many DIDs can be assigned to client's accounts
	Allowed tags	Specify tags that are used while creating DIDs
	On hold	Indicate how many days DID is kept on hold after the package is deactivated
Limits	Here you can create promotional minute packets that will be included in the package. To add a new limit, click on icon next to **Limits** .	
	Code Deck	Specify Code Deck if you plan to create ***limits*** by using Code Names
	Service	Define a service this limit will be used for
	Type	Select a limitation type from the drop down list: • ***Money*** • ***Volume*** You can set **both** types within the same package
	Code	Specify a code. Please note that package limits are working only for exact code, i.e. if a short code like ***121*** was added, package limits will work only for this code and won't automatically work for longer codes like ***12157***. To make volume limits work for long codes you must add ***** (for example, ***121**** code). If ***Code Name*** field is specified, this one will be inactive.
	Code Name	Specify a code name from selected Code Deck. If ***Code*** field is specified, this one will be inactive.
	Limit	Enter amount of free minutes or bonus money (depends on selected limitation type) that will be used for specified code or code name

	Warning When you assign different packages (with specified volume limits and tags) to the same client, two or more packages could not be used simultaneously.	
Discounts	A promotional discount of the package subscription fee. To add a new discount, click on icon next to **Discounts**.	
	Activation Count	Specify the sequence number of the reactivation when the package will trigger the discount. For example: if the Activation Count is **2**, the discount will be applied for the second package reactivation and further.
	Discount	Specify the amount of subscription fee cut. Discount is indicated in the package currency

Tip

1. If the **client doesn't have enough money for a package activation**, a respective pending charge appears. This charge includes all amounts needed for a package activation. Also, you can add this charge in the invoice.
2. You can **assign the package in the past** and add package minutes backdated.
   For example, you assign the ***Canada 200 minutes*** package on April 12th, but you want the package to be used since April 1st. Then, apply package rerating to recalculate the tariffication during the period. Please, run rerating after the assignment of the package for a current month
3. **Volume Limits** will be recalculated according to payment terms if the period is specified and both ***Align to payment terms*** and ***Recalculated to Period*** checkboxes are enabled.
4. Package reactivation will be stopped after ***Renew Due*** period. However, DID for this package will be expired after ***On Hold*** period. Therefore, we recommend to set the same values for DID ***On Hold*** and Package ***Renew Due*** parameters.

Please keep in mind that:

1. When **two similar packages** (for example, with the same destinations) are **assigned to a client**, the system takes the package with the highest priority or earlier expiration date. Thus, only one package is used for one established call. The second package will be applied right after the first one is fully used.
2. If the **client doesn't have enough funds** for the package (with DID number) reactivation and DID hold date has already expired, attempts for package reactivation will be stopped.

Attention

When you change the **name of the package** in **Retail > Packages**, it will be automatically changed it in **Management > Client Packages** section as well, even if this package is already assigned. As a result, in **Invoices** and **Transactions** sections, an **old** name of the package will be specified.
We **do not recommend** to edit the name of already assigned package in **Retail > Packages**

Knowledge Base Articles

- How to apply discounts without having to create a new package?

DID Management

In this article

- Section overview
- DID Management Tab
  - Advanced Search
  - reating DID Number
  - Mass Edit of DIDs
  - DIDs Importing
  - DIDs Exporting
- Operators tab
  - reating New Operator

Section overview

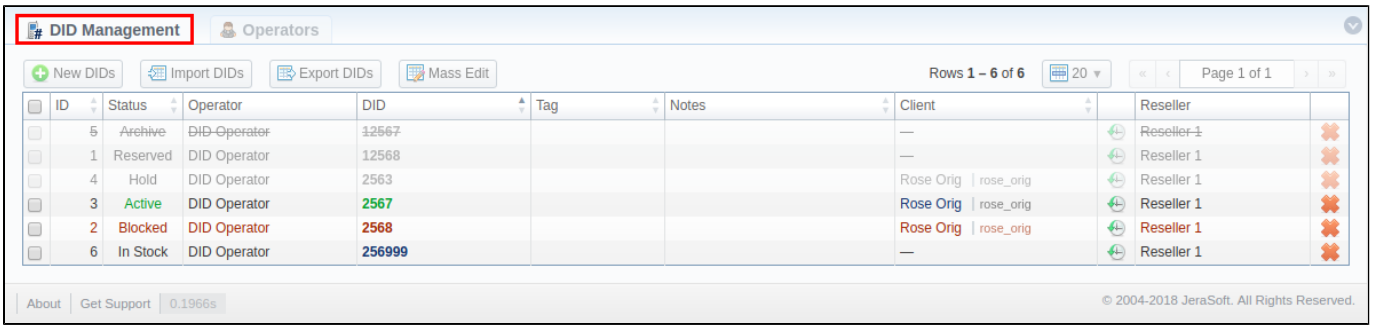
This section allows to create the DID numbers, which may be later assigned to one of the packages and finally provided to a customer under Package terms. Section consists of two tabs:

- **DID Management**;
- **Operators**.

DID Management Tab

Tab contains a list of all existing DID(s) and is presented in a form of table with the following columns:

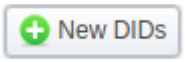
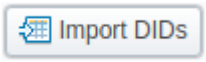
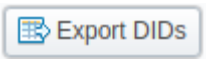
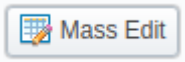
Screenshot: DID Management section



Column	Description	
ID	ID of current DID number	
Status	Status of a current DID number	
	• ***Active***	DID is in use by a customer
	• ***In Stock***	DID is in stock and available for usage
	• ***Blocked***	DID is temporarily not available for usage
	• ***Reserved***	DID is not used but at the same time not available for purchase yet
	• ***Hold***	DID is on hold after usage

	• ***Archive***	DID is not used and not available anymore
Operator	Current DID's operator, an owner of a current DID number	
DID	Current DID number	
Tag	Specify the tag for respective DID number you would like to be tagged in the future	
Notes	Additional information about certain DID	
Client	Shows client and account, which current DID belongs to	
Reseller	Name of reseller, under which respective DID's operator was created	

Functional buttons, presented in the tab are as follows:

Button/Icon	Description
	Allows creating new DID(s)
	Allows imporing DID(s) from **.csv** or **.xls** files
	Allows exporting currently displayed DID(s) in a **.csv** file
	Allows editing selected DID(s).
	Allows viewing history of DID changes in Audit Log section
	Allows deleting DID from the system

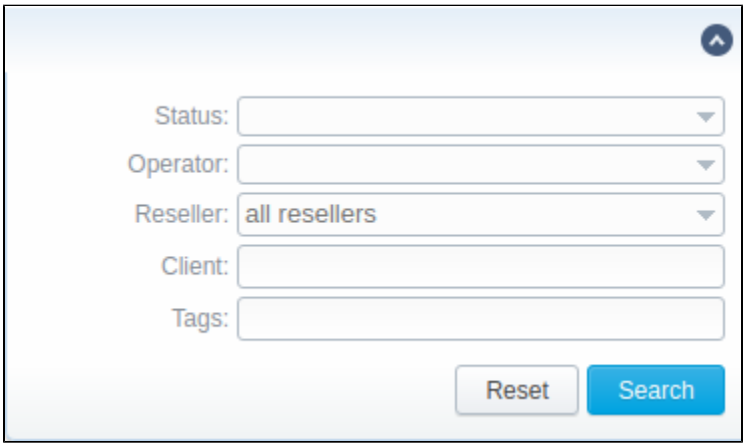
Attention

When a package with ***assigned DID number*** is not active, this DID number will be in ***Hold*** status and routing destination is unreachable.

Advanced Search

In the top right corner of the section above the table, the **Advanced Search** drop-down menu is located. To filter section data, fill in the following drop-down menu and press **Search**:

Screenshot: Advanced Search drop-down menu



reating DID Number

The whole process of creating DID number can be described in few steps:

1. Go to **Retail > DID Management > Operators** tab**.** Create one or more operators (DID providers).
2. Open the **DID Management** tab, add one or more DID numbers.
   Make sure that these DIDs have ***In Stock*** status. You can also use the **Import DID's** button.

Field	Description
DID(s)	Indicate one or multiple DID numbers **Tip** Also, you can **set the range of DID numbers** here. Specify the range using the upper and lower numbers and the dash (-) to separate them, for example, ***111-222***. Therefore, the system will create a range of DIDs from ***111*** to ***222*** (included).
Operator	Specify a target DID provider
Status	Choose one of the status DID(s) can acquire: • ***Reserved*** • ***In Stock*** • ***Archive***
After Hold	Define what status DID is going to acquire after being in ***Hold*** status. ***Hold*** status is acquired after Package, this DID is assigned to, is deactivated
Tag	Specify an additional tag for better division of DIDs in certain groups. Useful when clients have multiple DIDs
Notes	Define additional info regading DID(s)

3. Go to **Retail** > **Packages** section. Create a package a number of allowed DID's to be picked from will be specified.
4. Assign respective Package to a target customer in the **Client Packages** section.
5. Open the **DIDs** tab in the target client settings. Here, pick one or more DID numbers to assign.

For more details, look through the How to configure DIDs scheme article in our Knowledge Base.

This will effectively assign a DID number to one of the customer's accounts. Please note, this functionality is very switch dependent, and additional development or testing may be required. Please contact JeraSoft Support team for help, if you have any doubts or questions.

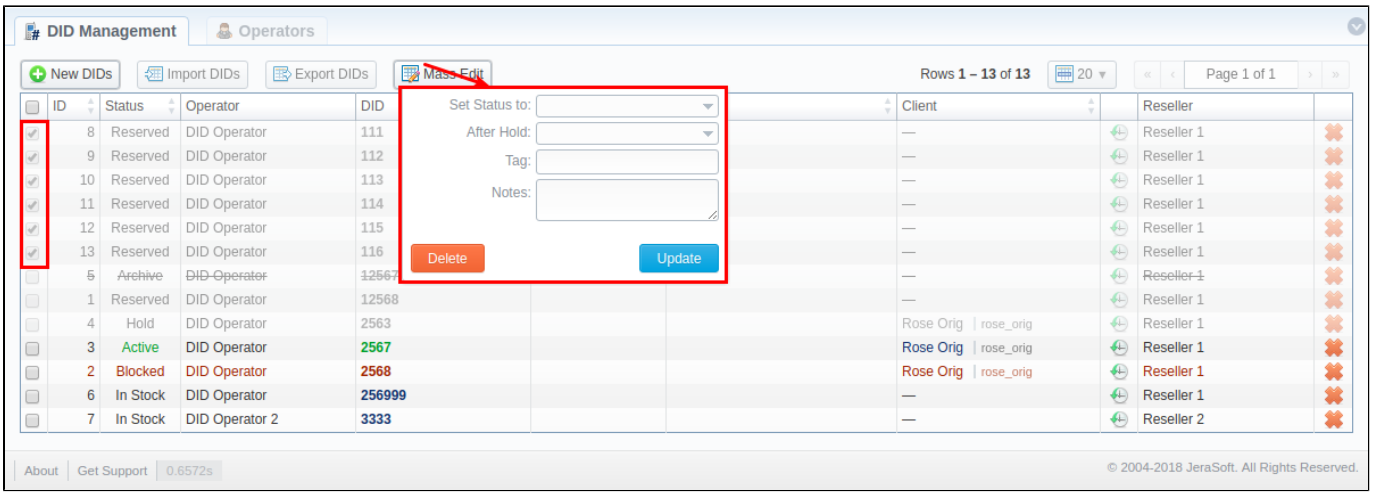
Tip

We recommend using **tags** to make navigation between a great deal of DIDs easier and more effective.

Mass Edit of DIDs

You can easily change the status of multiple selected DIDs, specify tags and number of hold days using the **Mass Edit** button. To do so, you need to select DIDs (for which the status must be changed), then press **Mass Edit** button and in a pop-up window specify the status from the drop-down list in a respective ***Set Status to*** field, click on the **Update** button for confirming the change. Also, using the **Mass Edit** button you can add a tag and notes. If you press the **Delete** button only selected DIDs will be deleted.

Screenshot: Mass Edit window

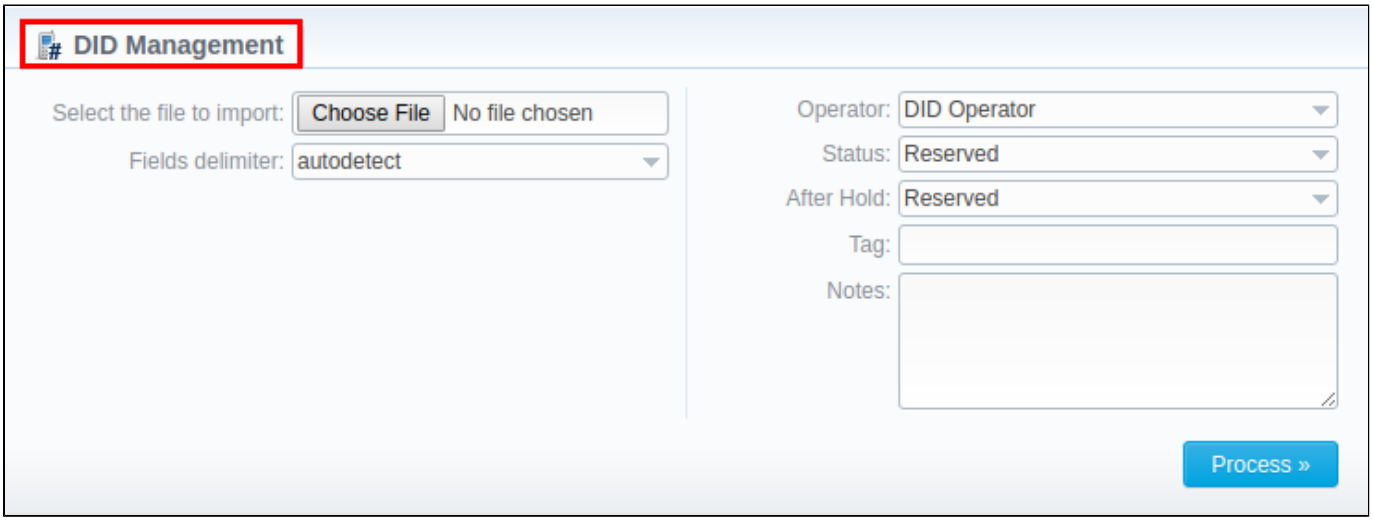


DIDs Importing

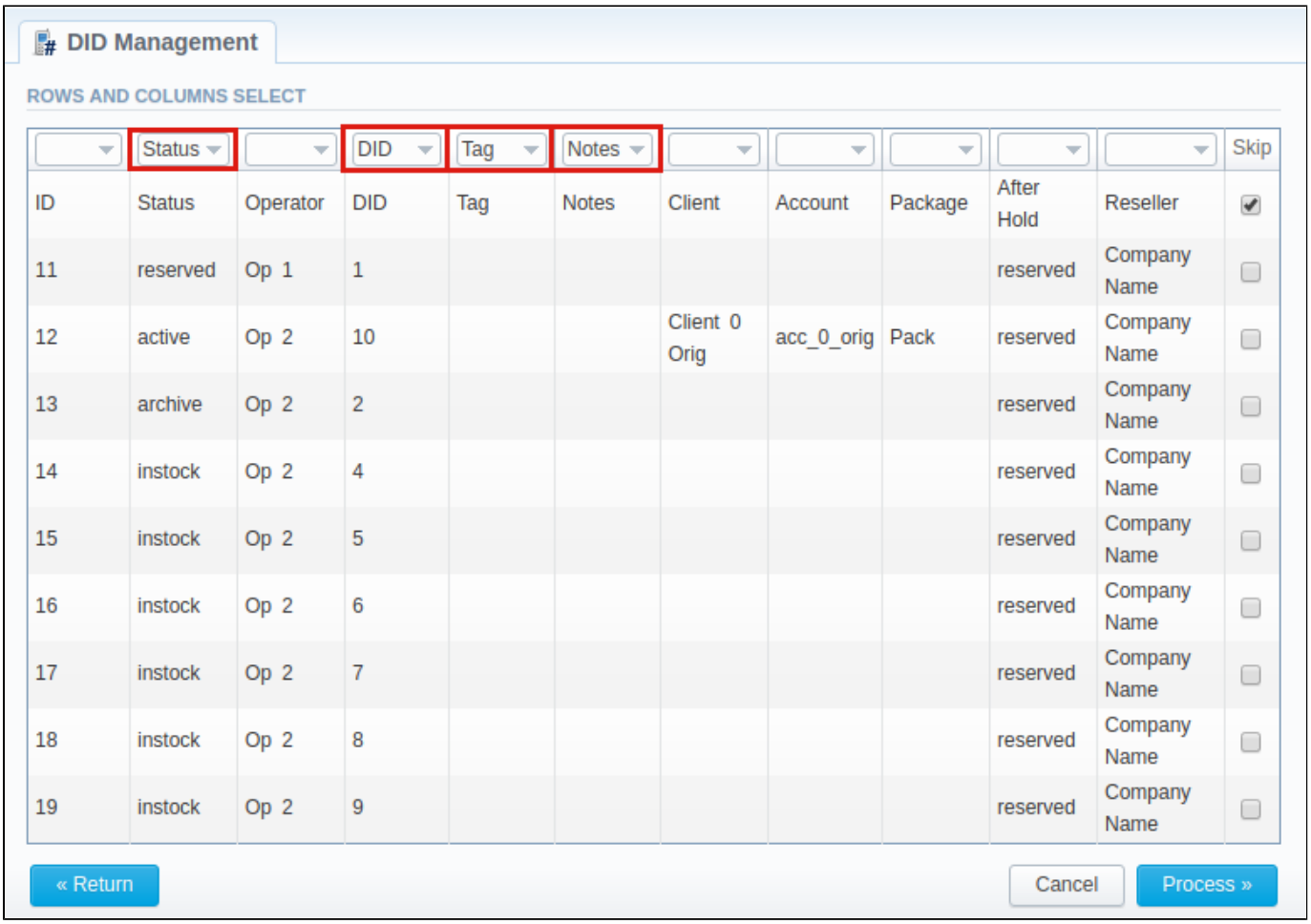
The process of DIDs importing is pretty simple:

1. Click on **Import DIDs** button which in the section
2. In a pop-up window, you need to attach a **.csv** file you wish to be imported and fill in respective fields (see screenshot below)
3. Press **Process>>** button
4. Specify columns name from a select drop-down list (see sreenshot) and once again press **Process>>** button
5. All imported DIDs will be displayed in a section table

Screenshot: Importing DIDs



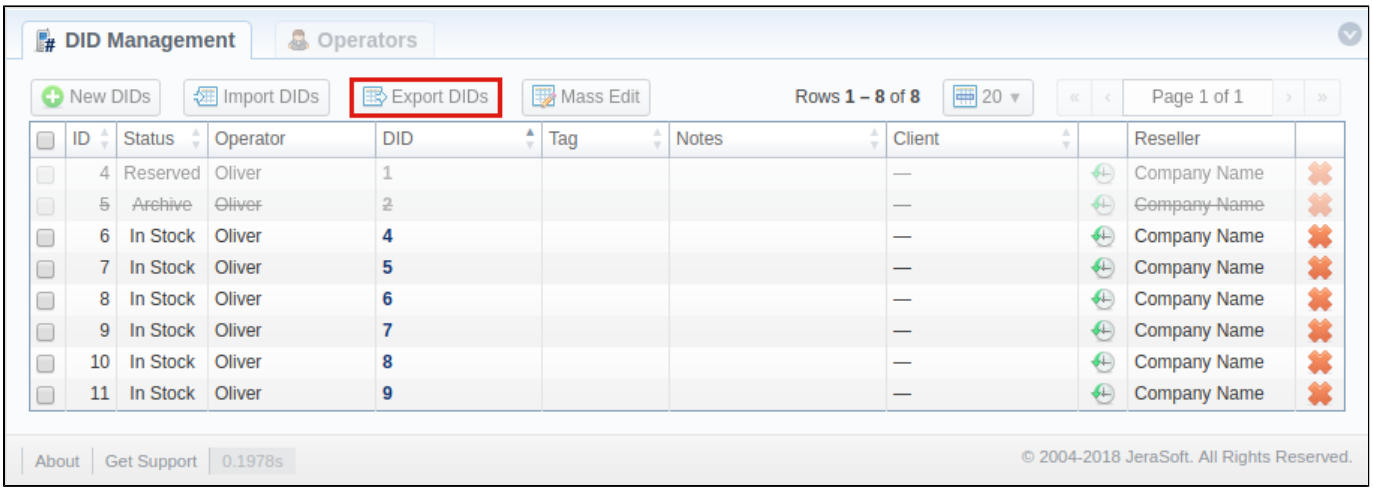
Screenshot: Rows and Columns Select



DIDs Exporting

DIDs export allows a user to download a **.csv** file that contains information that is currently displayed in a section table. Apart from all the the columns of section table, the file contains an extra Package column, where respective package name, if any of the DIDs is assinged to the package, will be displayed (see screenshots below).

Screenshot: Export DIDs button



Screenshot: Package column in exported file

	A	B	C	D	E	F	G	H	I	J	K
1	ID	Status	Operator	DID	Tag	Notes	Client	Account	Package	After Hold	Reseller
2	4	reserved	Oliver	1						reserved	Company Name
3	5	archive	Oliver	2						reserved	Company Name
4	6	instock	Oliver	4						reserved	Company Name
5	7	instock	Oliver	5						reserved	Company Name
6	8	instock	Oliver	6						reserved	Company Name
7	9	instock	Oliver	7						reserved	Company Name
8	10	instock	Oliver	8						reserved	Company Name
9	11	instock	Oliver	9						reserved	Company Name
10											

Operators tab

This section shows the list of operators who are owners of DID numbers. Tab is presented in a form of a table with the following columns (see screenshot below):

Screenshot: Operators tab

Column	Description
ID	ID of a operator
Name	Operator's name
DID's count	The amount of DID numbers owned by the current operator
Reseller	Current operators' reseller

The functional button/icons in the tab are:

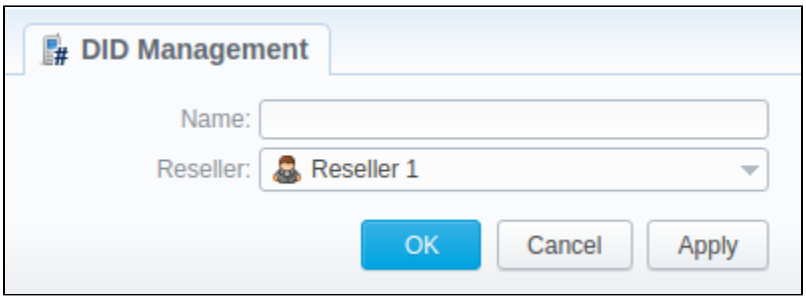
Button/Icon	Description
New Operator	Allows creating new operator
	Allows filtering DID numbers in **DID Management** tab by a target operator
	Allows deleting a respective operator

You can filter tab data by Resellers using Advanced Search in the top right corner of the page.

reating New Operator

To add a new operator, click on the **New Operator** button and in the pop-up window specify an operator's name and target reselle . Then, press **OK** for confirmation.

Screenshot: New Operator creation form


DID Management
Name:
Reseller:
Reseller 1
OK
Cancel
Apply

Calling Cards

In this article

- Section overview
- Advanced Search
- Creating Card Series
- Calling Cards Series Properties

Section overview

This section represents built-in calling cards generator that allows you to create or change cards series for prepaid customers. Each generated card is considered a billing client, so a customer can perform calls, log in to his lient panel to browse statistics and other relevant information.

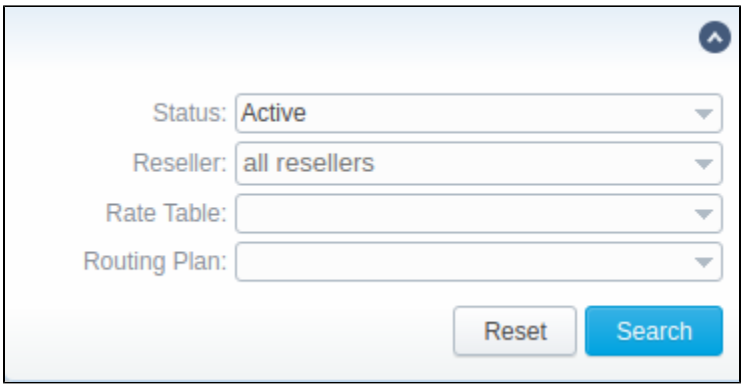
Screenshot: Calling Cards section main window

Column	Description	
Status	A name that describes current cards series	
		Indicates that cards series is ***active***
		Indicates that cards series is ***stopped***
		Indicates that cards series is ***deleted***
Number of Series | Name of Series	A code of cards series and its name (if indicated). This code will prepend serial number (only numeric, up to 100,000,000)	
Balance	Cards balance value within current series	
Qty	Quantity of cards within a series	
Reseller	Name of reseller, who owns cards series	
Rate Table	Rate table, applied to respective cards series	
Act. Fee	Price of cards series activation fee	
Maint. Fee	Fixed charge for activated cards within series	

Advanced Search

In the top right corner of the section above the table, the **Advanced Search** drop-down menu is located. By clicking on red downwards arrow icon (calling cards in the section are filtered by ***Active*** status and ***All resellers*** by default), the following drop-down menu is displayed:

Screenshot: Advanced Search drop-down menu

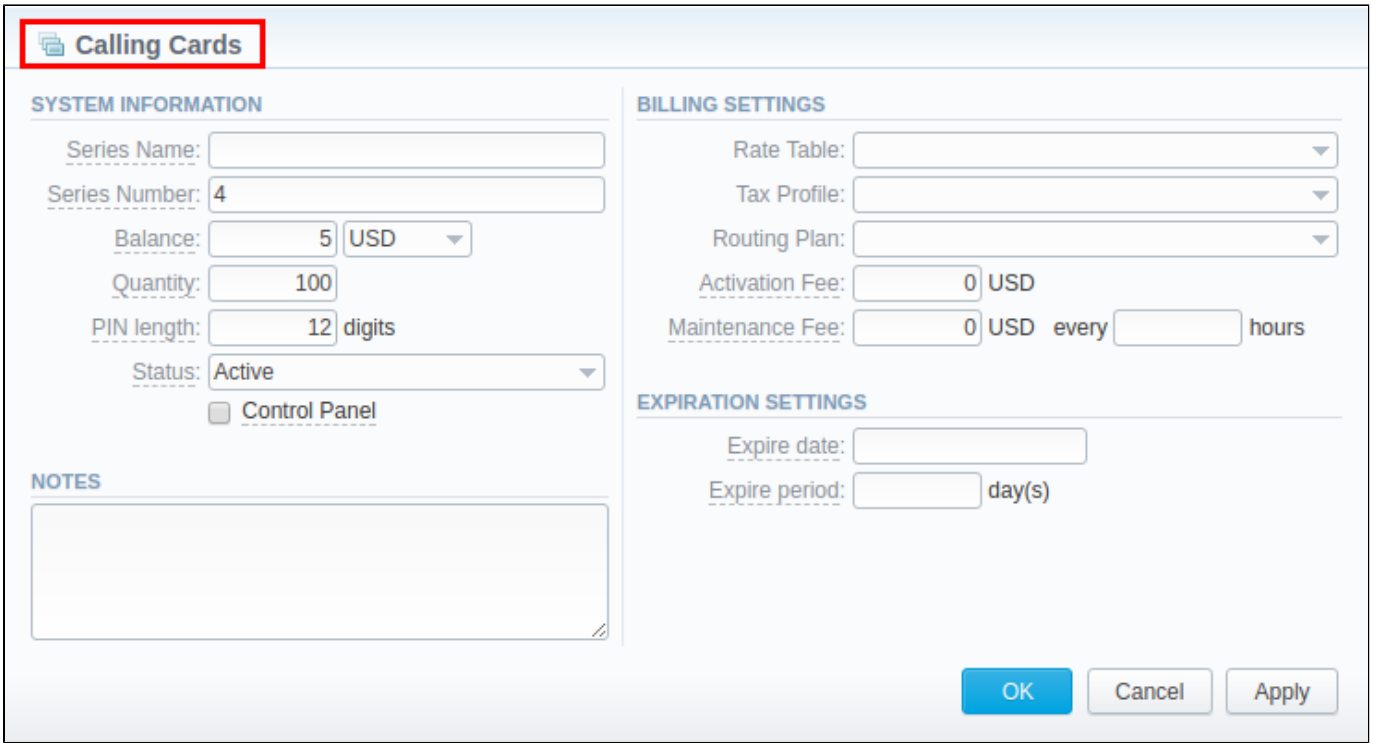


To apply the specified search criteria, press **Search** button; to cancel the applied parameters, press **Reset** button.

Creating Card Series

To create card series, press **New Cards Series** button and a new window with settings will pop-up:

Screenshot: Generate cards series window



Field	Description
Series Name	Indicate a name for a cards series
Series Number	Define a code of cards series. This code will prepend serial number (only numeric, up to 100 000 000). For example, if the ***Series Number*** is ***45***, cards number will start with 45: ***45-001122333, 45-001122334*** and so on.
Balance	Specify cards balance value within current series
Quantity	Set number of calling cards within current series
PIN length	Specify a PIN-code length for current calling cards series (it can be no less than 8 digits)
Status	Define an initial status of created calling cards within series. Can be changed later in cards series settings

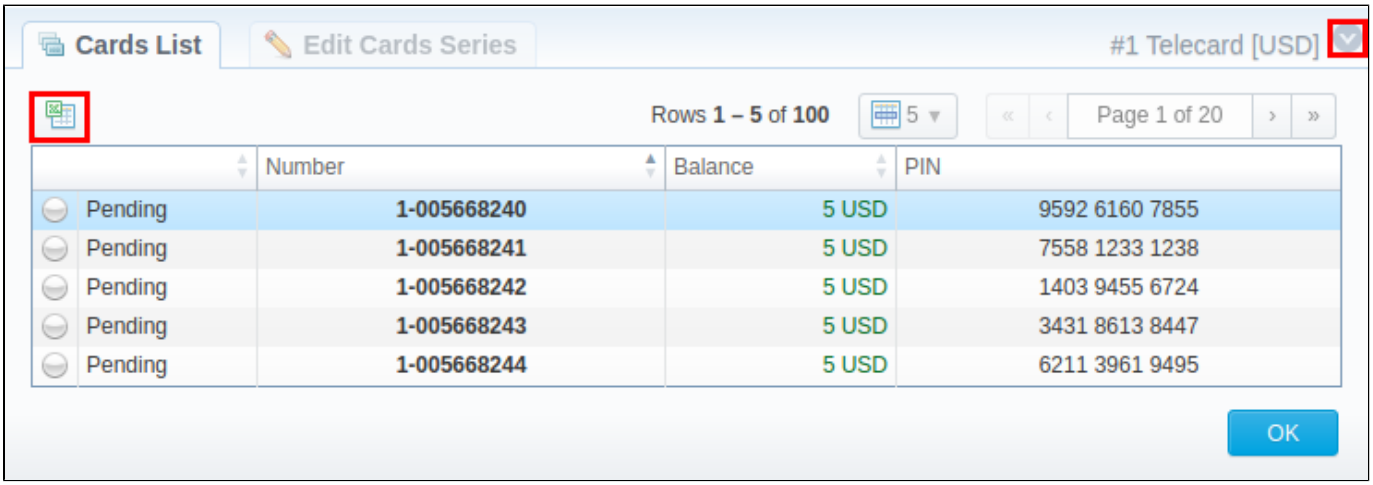
Control Panel c heckbox	Defines whether calling cards users can login to their control panels or not. If enabled, user can log in to control panel by using card serial number as login and PIN-code as password
Notes	Indicate additional information regarding cards series (optional)
Rate Table	Define a rate table for all cards within a series. This field is mandatory
Tax Profile	Select a respective tax profile that will be used for billing settings
Routing Plan	Select a routing plan for current cards series
Activation Fee	Enter activation fee in this field (if necessary)
Maintenance Fee	Define a charged fee each X hours for all activated cards
Expire date	Current calling cards series will be expired on specified date
Expire period	When specified number of days pass, starting from activation date, current calling cards series will be expired

After specifying all necessary fields, press **OK** and a new cards series will be created.

Calling Cards Series Properties

In order to open series properties, click on the ***Series Number*** and you will be displayed a table of calling cards with the following columns:

Screenshot: Cards List tab

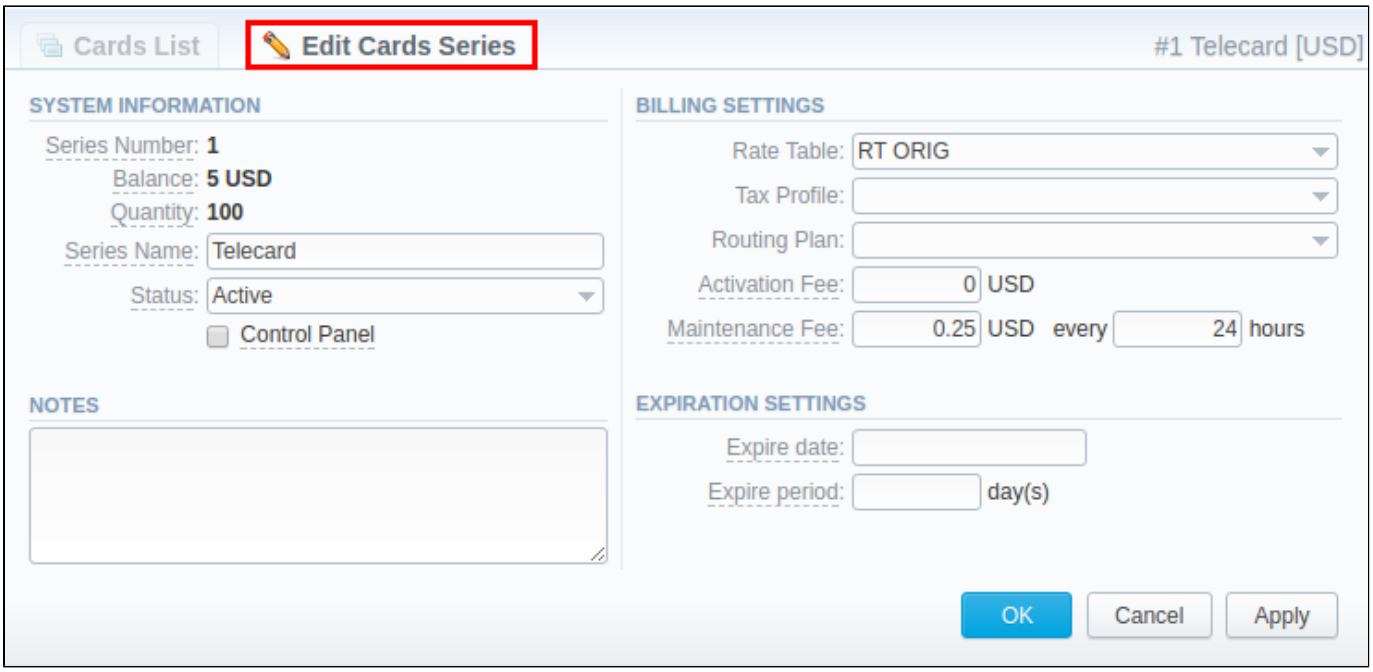


Column	Description
Status	Status of a card within current series. There are **4** possible statuses: ***activated, pending, expired, used***
Number	Number of a card within current series
Balance	Balance of respective calling card
PIN	Respective calling card PIN-number

1. You can export whole card series to **.xls** file by clicking on the **Download XLS** icon (see screenshot above).
2. You can use the **Advanced Search** drop-down menu to find a card by clicking on blue downwards arrow icon in the right-hand corner of the page (see screenshot above).

To change parameters previously entered while creating series, please open the **Edit Cards Series** tab.

Screenshot: Edit Cards Series tab



Attention

Calling Cards feature works only via RADIUS-protocol, so to make use of it, you need to have RADIUS enabled. Also, you would like to use a specific platform that is able to handle calling card series authorization, for example, **Mera IP Centrex** or **Quintum Tenor DX** (class 5 switch).

Top-up Cards

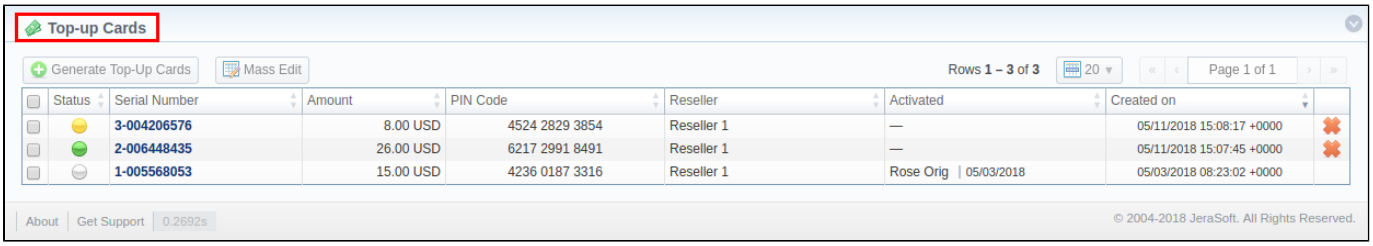
In this article

- Section overview
- Advanced Search
- Creating New Top-Up Cards
- Mass Top-up Cards Edit

Section overview

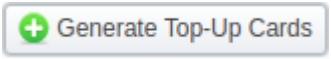
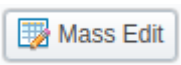
This section allows generating series of top-up cards for your customers. These cards can be used to recharge the balance. Section is presented in a form of a table with the following columns:

Screenshot: Top-Up Cards section



Column	Description	
Status	Status of a respective top-up card	
		Indicates that the current card is **new**
		Indicates that the current card is **activated**
		Indicates that the current card is **expired**
Serial Number	Identifying number of a card	
Amount	Amount of money, stored on a card	
PIN Code	Card PIN code	
Reseller	Name of a reseller, a respective card belongs to	
Activated	Identification of a date and client who activated a card (if card status is ***activated***)	
Created on	Time and date when a card was created in the system	

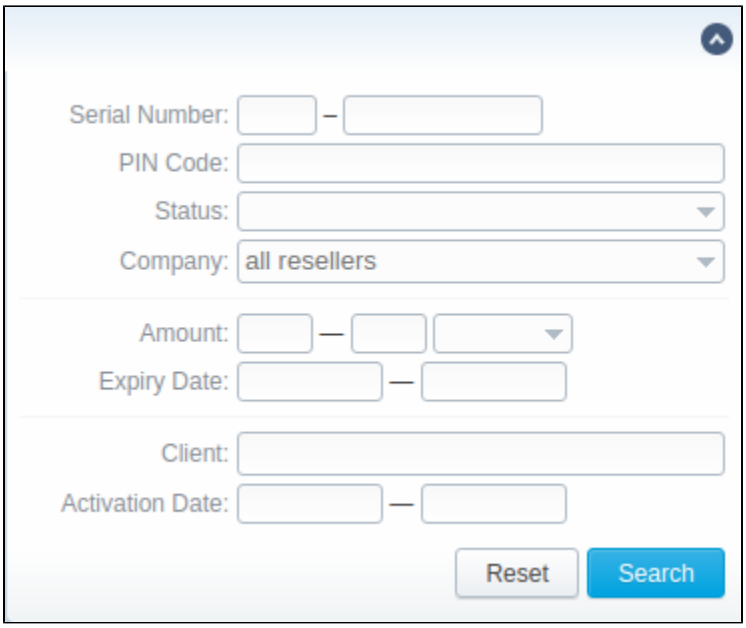
The following functional buttons are presented in the section:

Button	Description
	Allows creating new top-up card(s)
	Allows mass editing of top-up cards

Advanced Search

In the top right corner of the section above the table, the **Advanced Search** drop-down menu is located. To filter section data, fill in the following drop-down menu and press **Search**:

Screenshot: Advanced Search drop-down menu

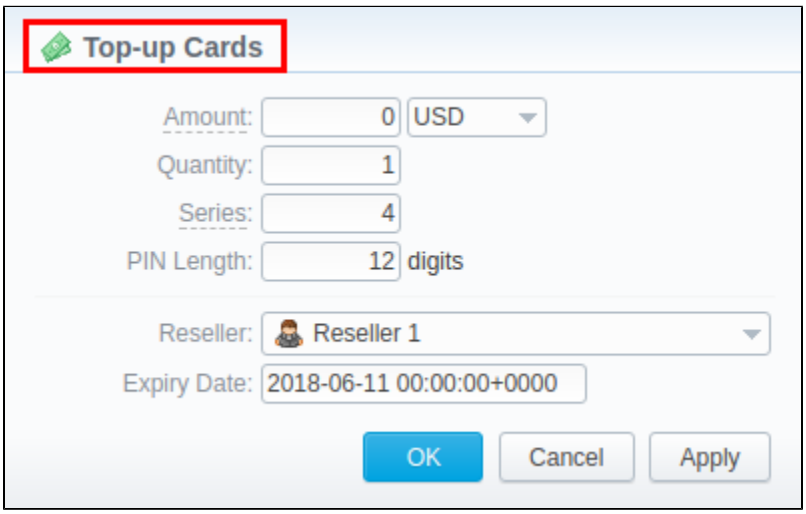


Creating New Top-Up Cards

In order to create new top-up cards, you need to:

1. Press **Generate Top-Up Cards** button;
2. In the opened pop-up window fill in respective fields (see table below);
3. Confirm creation by clicking **OK**.

Screenshot: New Top-up Cards window



Field	Description
Amount	Indicate cards balance value. This amount will be added to a customer's balance on activation.
Quantity	Specify number of cards, you wish to be created.
Series	Set a code identifier of card series. This code will prepend a serial number. For example, if the ***Series*** is ***101***, the full card number will be ***101-23423423***.
PIN Length	Specify the desired PIN-code length for current calling card series (it can be **no less than 5 digits**)
Reseller	Defines the reseller that owns current calling card(s)

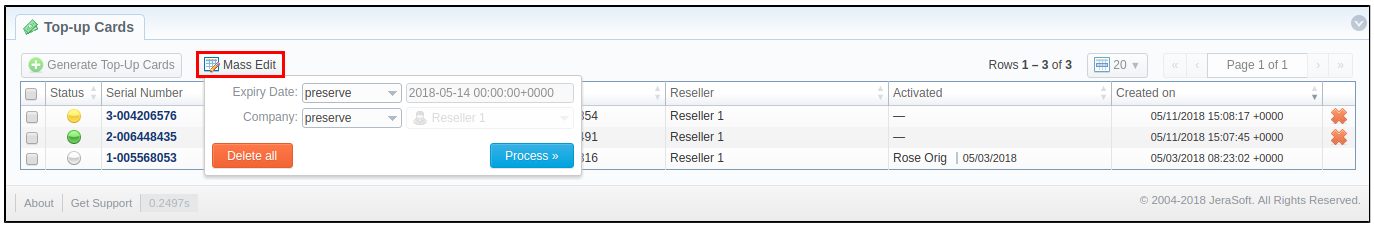
Expiry date	Specify the date when current calling card(s) will be expired

After top-up card(s) is created, customers will be able to enter respective PINs in their client panel in **Redeem Voucher** section, to recharge their balance (respective rights for users are required).

Mass Top-up Cards Edit

Also, you may delete cards or change some settings for already top-up cards using **Mass Edit** button. In the following window you can specify expiration date of cards by changing ***Expiry Date*** field value to ***set to*** and select data and time, or define a reseller who will be the owner of these cards by changing ***Company*** field value to ***set to*** and select a reseller from drop-down list, then press **Process** button and all changes will be applied. The **Delete all** button will wipe out all existing top-up cards.

Screenshot: Top-up cards Mass Edit window



Field	Description
Optional parameters	• **preserve -** the default configuration that saves the rate not edited. Leave this parameter unchanged if required; • **set to -** it allows to edit rates, for example, specify the same expiry date for all rates at once, regardless of previous configurations.
Expiry Date	Final date after which the rate will expire
Company	Name of one of your companies (or affiliates) that you can add in Reseller section

Call Shops

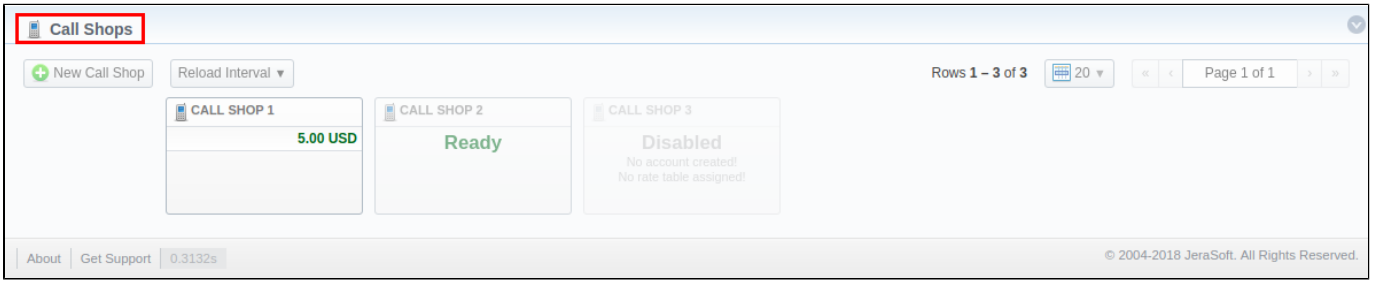
In this article

- Section overview
- Advanced Search
- Creating New Call Shop
- Steps to activate a call shop
- Interval Reload
- Finalize/Reactivate Call Shop

Section overview

Call Shops section allows you to create and manage call shops networks. Each call shop is **a RADIUS-based** customer. That's why for correct work of Call Shops section, RADIUS must be enabled. Section consists of all existing call shops, each containing such details as name, balance, rate table, etc (see screenshot below).

Screenshot: Call Shops section main window



Advanced Search

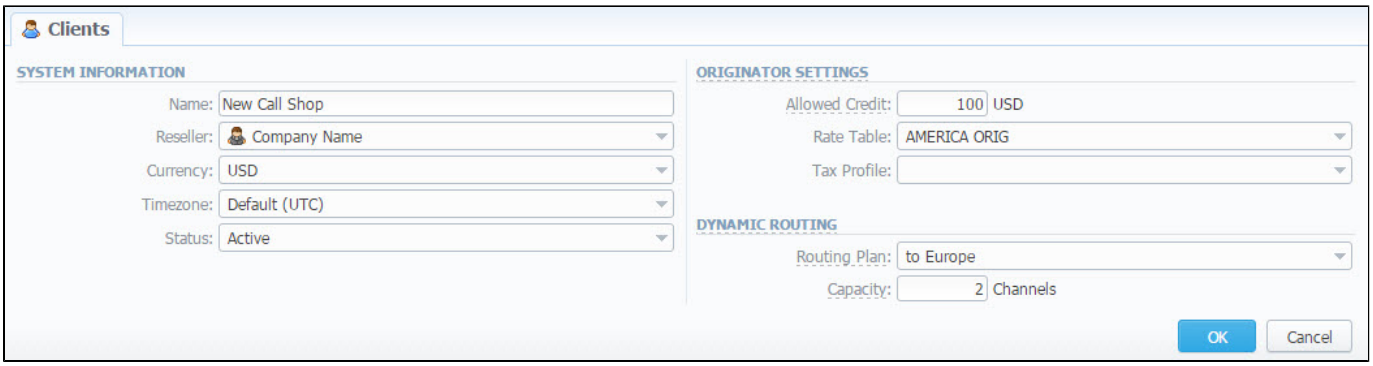
In the top right corner of the section above the table, the **Advanced Search** drop-down menu is located. To filter section data, fill in the following drop-down menu and press **Search**:

Screenshot: Advanced Search drop-down menu

Creating New Call Shop

To create a new call shop, press **New Call Shop** button and fill in the following details in a pop-up window:

Screenshot: Creating new call shop / Clients form



Field	Description
Name	Enter name for call shop
Reseller	Select a reseller that will be an owner of this call shop
Currency	Specify preferred currency
Timezone	Choose preferred timezone
Status	Select a status for this call shop: • ***active*** • ***stop*** • ***deleted***
Allowed Credit	Specify credit value here
Rate Table	Choose a rate table this call shop will be using
Tax Profile	Specify a Tax Profile this call shop will be using
Routing Plan	Select a routing plan, if you wish to use dynamic routing for this call shop
Capacity	You can limit origination capacity for this call shop in this field

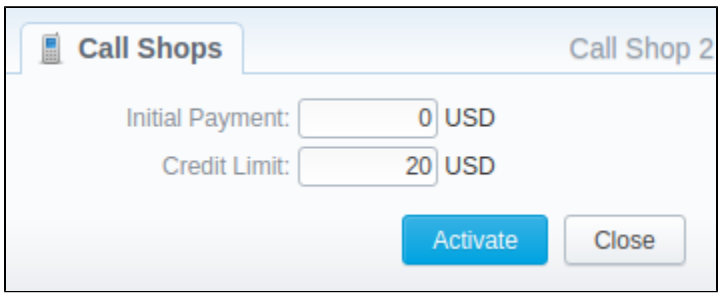
When all information is entered, press **OK** and call shop will appear on the list.

Steps to activate a call shop

When a call shop is created, you will be forwarded to **Accounts** section. In order to activate a call shop, you need to follow these steps:

1. In **Accounts** section, create an account for your call shop's account. Specify a rate table ihere, if you didn't indicate it in call shop's settings.
2. Return to the **Call Shops** section. Your call shop will be marked as Ready. To proceed, click on its name.
3. Fill in the respective form (see screenshot below) and click the **Activate** button. Now, your call shop is ready.

Screenshot: Call shop settings



Interval Reload

Also, you may **set an interval** for call shops list **reloading.** To do this, click the **Reload Interval** button and select the value from the drop-down list.

Attention

Please note, that **Calculator** tool must be in a **real time mode** for correct Call Shops work.

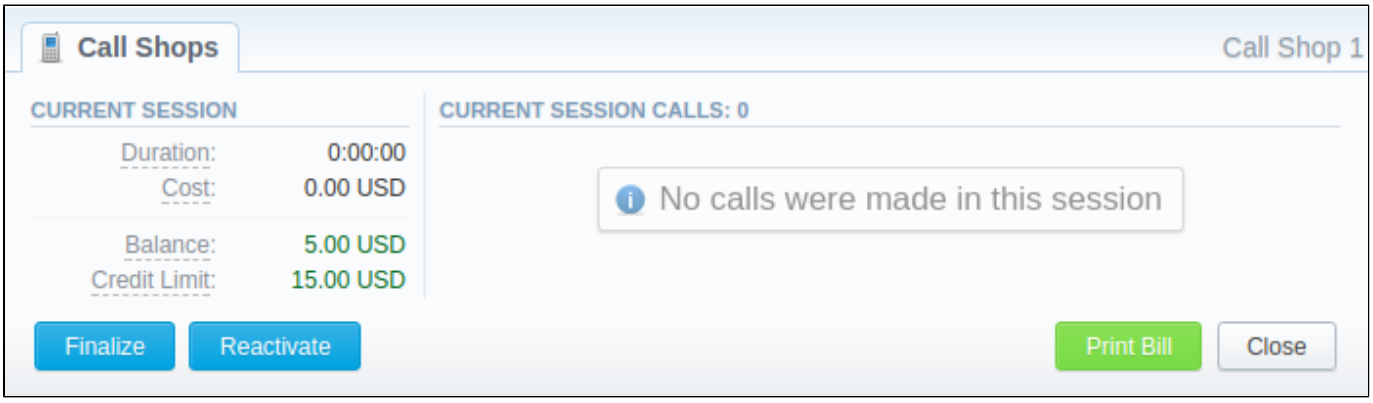
Finalize/Reactivate Call Shop

According to your demands, you can change an active period of the call shop.

Therefore, you may finish the call shop activities by clicking on **Finalise** button. Or you can activate once again the same call shop when it's over by pressing the **Reactivate** button on the toolbar.

To open the window with respective settings, click on the name of the call shop when it's already activated.

Screenshot: Call Shop settings



Also, you can print the bill of the following call shop by using the **Print Bill** button. To close the window, press respective button.

Statistics

This chapter of our Guide is dedicated to **figures and various statistical reports in JeraSOft VCS.** Here, user can monitor his customer's activities or form different reports. For more details please check the related sections:

- Dashboard
- Customer Dynamics
- Summary Report
- Orig-Term Report
- Profit Report
- LCR Lists
- Invoicing Report
- xDRs List
- Mismatches Report
- xDRs Rerating
- Reports Templates
- Archive Management

Dashboard

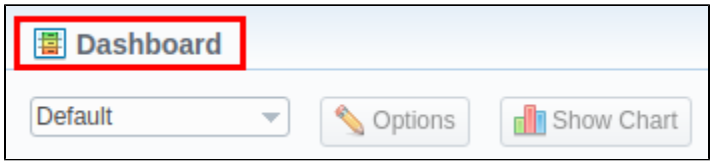
Dashboard is the customizable section with charts that provides vivid visual representation of the most relevant report data in one place.

It allows you to monitor your customer's activities in real-time by providing visual charts on some most crucial information. Here you can find all charts that were created in the ***Summary Report, Orig-Term Report*** and ***Active Calls*** sections and exported to the ***Dashboard***.

To know more about charts visit our "How to create a statistic chart?" article in Knowledge Base.

To start work with this section, please use the quick access toolbar (see the screenshot below):

Screenshot: Dashboard toolbar

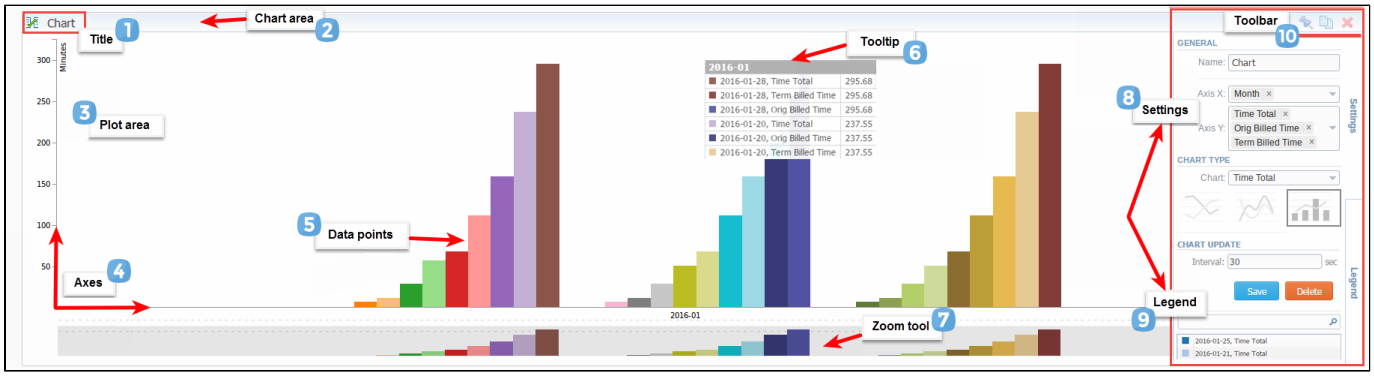


1. In the section, you can can have **several dashboards**. To pick a target dashboard, lick on the respective field and select a relevant dashboard (for example, ***Default***) from the drop-down list.
2. To view the advanced settings press **Options** button on the toolbar.
    - You can **change the name** of the respective dashboard, specify a new name in ***Dashboard name*** field, press **Save**, and reload the page.
    - To **copy the dashboard**, click on **Copy** and reload the page. Then you select it in the list of available dashboards.
    - Also, you can **remove any dashboard.** Simply select it, open settings, and press **Delete** button.
3. To add a relevant chart to the dashboard, press **Show Chart** button. Then choose the category of the chart (i.e., **Summary** report /**Orig-Term** rep ort/ Active Calls*)* and select the respective chart from the drop-down list. You could add several charts and use the vertical scrolling to browse the dashboard.

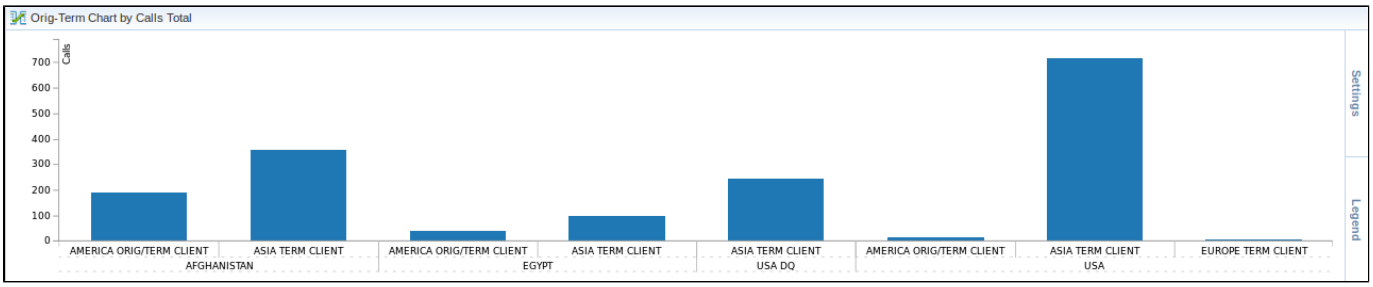
Attention

- **Resellers and administrators** have its own dashboards. The created dashboards while logged in the system as respective Reseller will be visible **only** for this Reseller.
- You can **plot in the chart only existing statistics** in the report. It doesn't show time periods where there is no data. You can check an actual date interval by clicking the **Info** icon and it could be different from the specified interval if there is no date for the period.
- When you choose the ***Time parameters for the X Axis*** (i.e. Year, Month, Date, Time) and there is only one period, the ***line chart*** will not display the data. For example, if you choose the ***Month*** option on **X Axis** and the statistics is only presented for January, the ***line chart*** will be empty in this case.

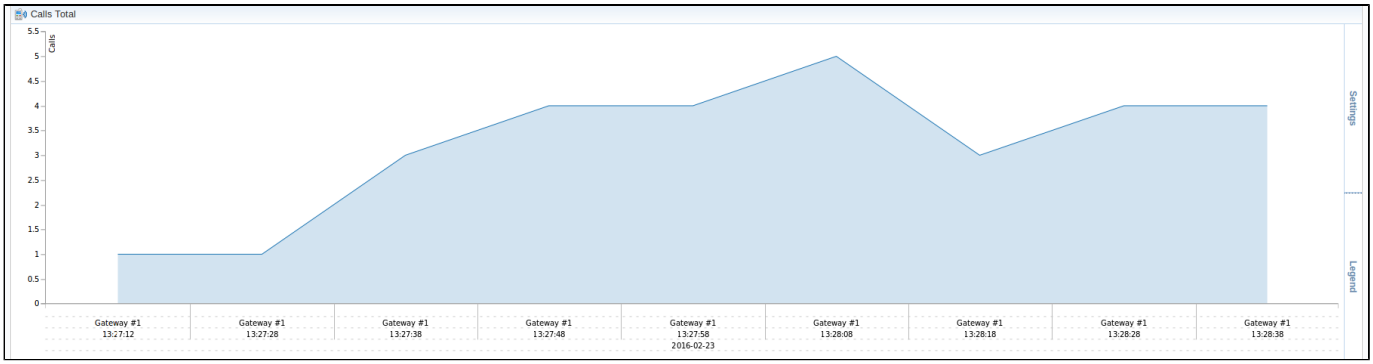
Screenshot: General example of chart



Screenshot: Orig-Term chart



Screenshot: Active calls chart



Knowledge Base Articles

- Why there are no active sessions?
- Why it is impossible to use Code and Code Name filters in Dashboard section?
- Why Dashboard doesn't show statistics?

Customer Dynamics

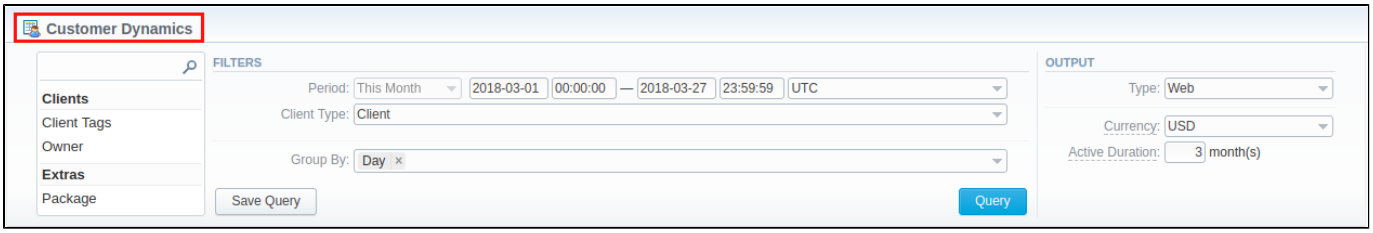
In this article

- Section overview
- Creating New Report
- Customer Dynamics buttons: export, chart.

Section overview

Customer Dynamics section is designed to easily illustrate the data for analyzing and improving efficiency. Here, reports are presented 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



Creating New Report

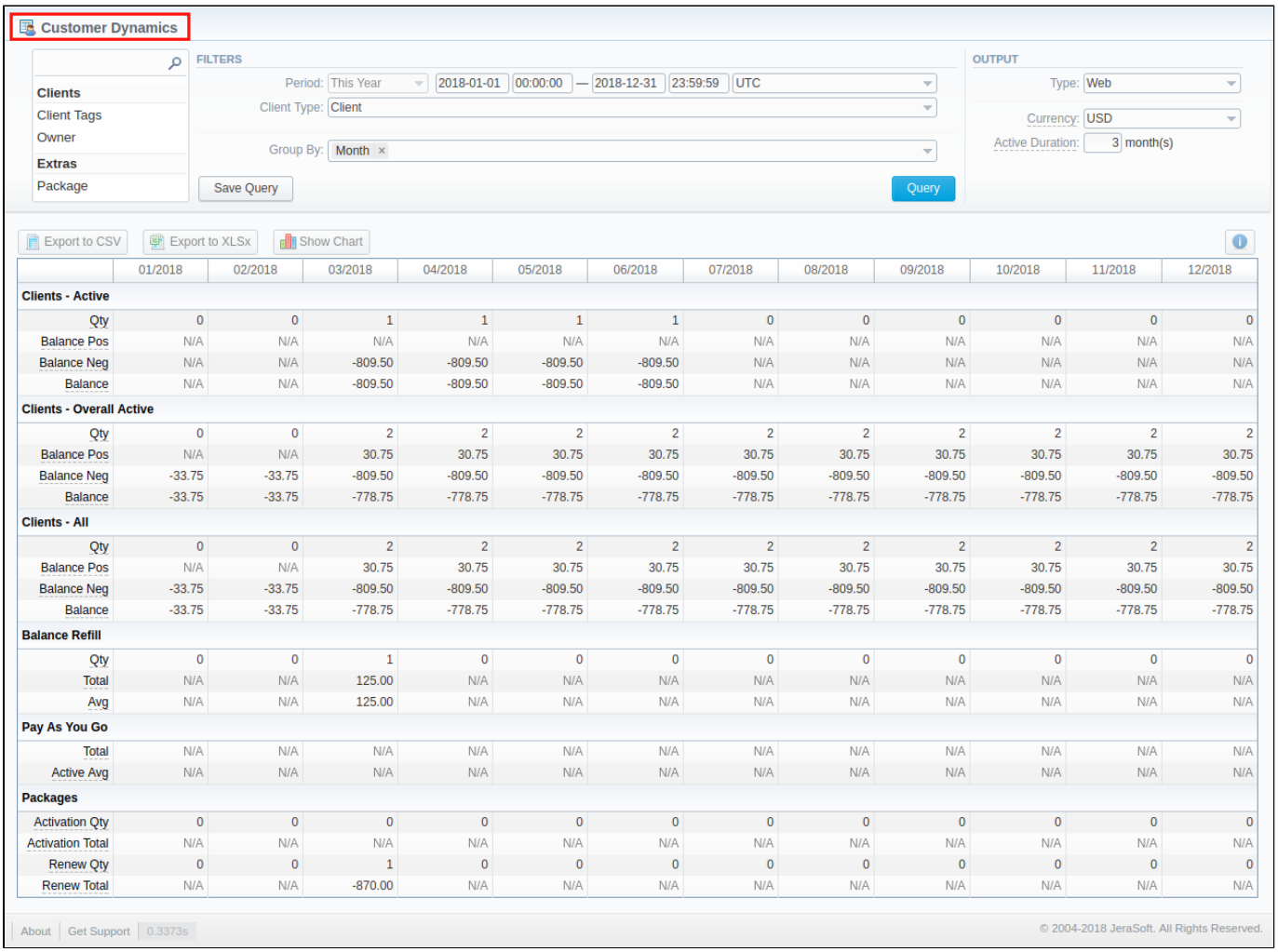
In order to generate a report, you need to fill in the form and press **Query** button. The query form consists of the following parameters:

Information block	Field Description	
Filters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click on the delete sign next to the filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Period	Specify the time interval for the report and a timezone. Please note that the ***Period*** field is mandatory.
	Client Type	Select a client type from a drop-down list of the following options: • ***Client*** • ***Reseller*** • ***Calling Card*** • ***Call Shop***
	Additional Filters	
	There are following accessible additional filters: • ***By clients*****:** *Client Tags, Owner.* • ***Extras:*** *Package.*	
	Client Tags	Specify certain tags to filter clients and show more detailed results in the report
	Owner	Define a reseller for the report
	Package	Enter a package for the report
Group By	There are following accessible options to group the data in reports: • ***Time:*** *Year, Month, Date.* • ***Extras:*** *Package Name.*	
Output	This form contains settings for the output data of the report.	
	Type	Choose a format of the report from a drop-down list: **Web / CSV / Excel XLS / Excel XLSx**

Send to	You can send generated reports via email. Also, it is possible to specify several emails. **⚠ Attention** This feature is available only for **CSV / Excel XLS / Excel XLSx** formats of the report, it doesn't work with **Web**.
Currency	Specify a currency for the report. All values will be automatically converted in the report to the specified currency.
Active Duration	Determine the period (in months). If the customer has used any paid services within this period, he will be considered as an active client.

A generated Customer Dynamics report is demonstrated on a screenshot below:

Screenshot: Customer Dynamics report



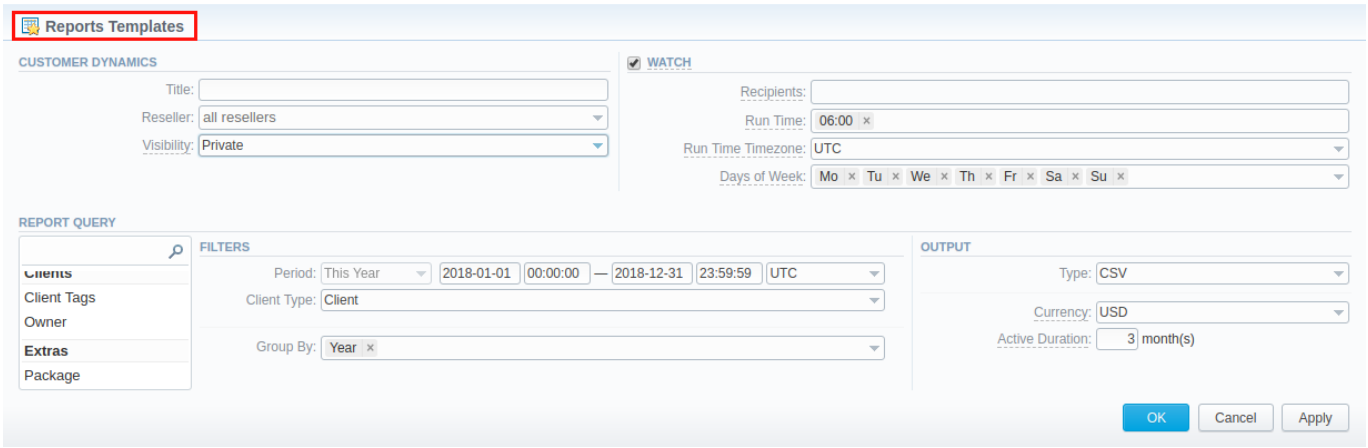
01/2018	02/2018	03/2018	04/2018	05/2018	06/2018	07/2018	08/2018	09/2018	10/2018	11/2018	12/2018
Clients - Active											
Qty	0	0	1	1	1	1	0	0	0	0	0	0
Balance Pos	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Balance Neg	N/A	N/A	-809.50	-809.50	-809.50	-809.50	N/A	N/A	N/A	N/A	N/A	N/A
Balance	N/A	N/A	-809.50	-809.50	-809.50	-809.50	N/A	N/A	N/A	N/A	N/A	N/A
Clients - Overall Active												
Qty	0	0	2	2	2	2	2	2	2	2	2	2
Balance Pos	N/A	N/A	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75
Balance Neg	-33.75	-33.75	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50
Balance	-33.75	-33.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75
Clients - All												
Qty	0	0	2	2	2	2	2	2	2	2	2	2
Balance Pos	N/A	N/A	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75	30.75
Balance Neg	-33.75	-33.75	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50	-809.50
Balance	-33.75	-33.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75	-778.75
Balance Refill												
Qty	0	0	1	0	0	0	0	0	0	0	0	0
Total	N/A	N/A	125.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Avg	N/A	N/A	125.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pay As You Go												
Total	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Active Avg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Packages												
Activation Qty	0	0	0	0	0	0	0	0	0	0	0	0
Activation Total	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Renew Qty	0	0	1	0	0	0	0	0	0	0	0	0
Renew Total	N/A	N/A	-870.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Title	Description
Clients - Active	This subdivision shows statistic data of customers that actively use services according to the period specified in the ***Active Duration*** field • ***Qty*** - Overall number of clients that used any paid services within last ***Active Duration*** period. • ***Balance Pos*** - Total of all positive balances for the clients that used any paid services within last ***Active Duration*** period. • ***Balance Neg*** - Total of all negative balances for the clients that used any paid services within last ***Active Duration*** period. • ***Balance*** - Total of all balances for the clients that used any paid services within last ***Active Duration*** period.

Clients - Overall Active	Here a statistic data of customers that actively used paid services at any time is displayed • ***Qty*** - Total quantity of clients that used any paid services at any time. • ***Balance Pos*** - Total of all positive balances for the clients that used any paid services at any time. • ***Balance Neg*** - Total of all negative balances for the clients that used any paid services at any time. • ***Balance*** - Total of all balances for the clients that used any paid services at any time.
Clients - All	It presents all customers according to the filter settings • ***Qty*** - Total quantity of clients according to current filters. • ***Balance Pos*** - Total of all positive balances for the clients according to current filters. • ***Balance Neg*** - Total of all negative balances for the clients according to current filters. • ***Balance*** - Total of all balances for the clients according to current filters.
Balance Refill	• ***Qty*** - Number of balance refills during the specified period. • ***Total*** - Total amount of balance refills during the specified period. • ***Avg*** - Average amount of each refill during the specified period.
Pay As You Go	• ***Total*** - Total amount spent on any services out of package subscription plans. • ***Active Avg*** - Average amount of ***Pay as you Go*** services usage per currently active customers.
Packages	• ***Activation Qty*** - Number of packages activations during the specified period. • ***Activation Total*** - Total amount charged for all activations of the packages. • ***Renew Qty*** - Number of packages renewals during the specified period., including initial ***renew*** within activation of the package. • ***Renew Total*** - Total amount ,charged for packages renewals, during the specified period, including initial ***renew*** within activation of the package.

Also, you can create a template for reports and save specified parameters by clicking **Save Query** button. A pop-up window with settings will appear and you need to fill in the following form:

Screenshot: New Template form



Tip

To find more details about templates, please refer to the *Report Templates* article in our **User Guide.**

Customer Dynamics buttons: export, chart.

You can export data to a **CSV** and **XLSx** file, which contains only currently displayed data, with no automatic request to update data while exporting. Also, it is possible to create charts for easily illustrating a crucial information

1. To download a report in **.csv**, click on the **Export to CSV** button above the report.
2. To download a **.xlsx** file, press **Export to XLSx** button above the report

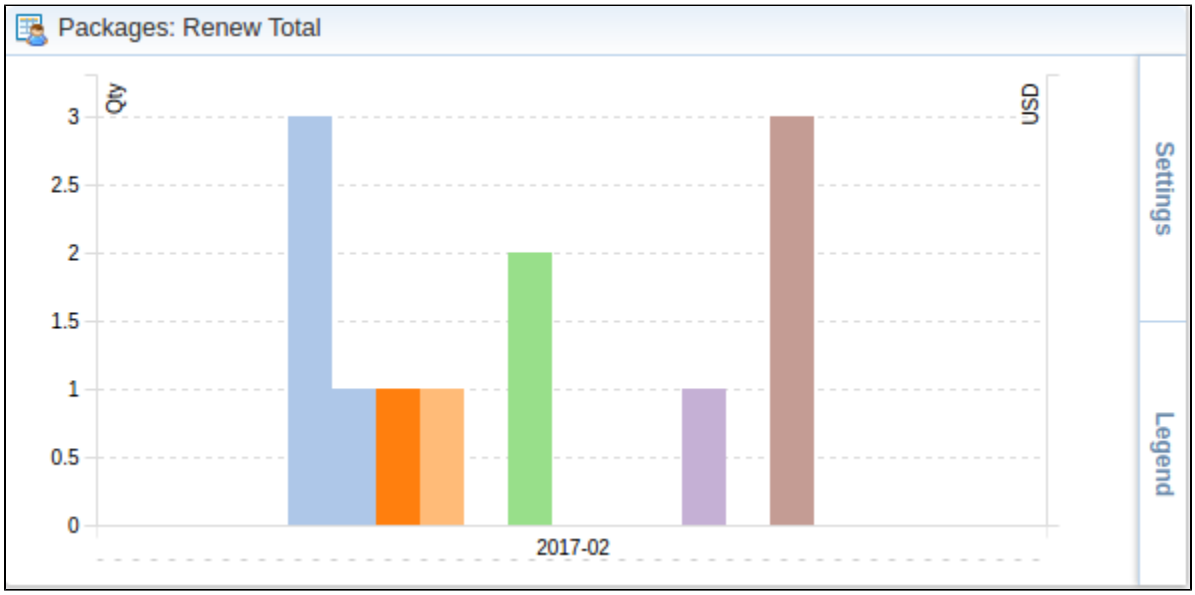
3. To create a **visual chart**, click the **Show Chart** button above the report. There is more information available on this topic in the article **How to create a statistic chart?** in our Knowledge Base. From the drop-down list on this option, you can find the next pre-configured templates for chart:

- ***Clients - Active: Qty***
- ***Balance Refill: Total***
- ***Pay as you Go: Total***
- ***Packages: Renew Total***
- ***Blank Chart***

Therefore, you can create a new chart or select ***Blank Chart*** to have a new empty worksheet for configuring custom chart

4. You can check an actual date interval by clicking on **Info** icon. The displayed data could be different from the Interval specified above if there is no date for the period.

Screenshot: Customer Dynamics chart



Summary Report

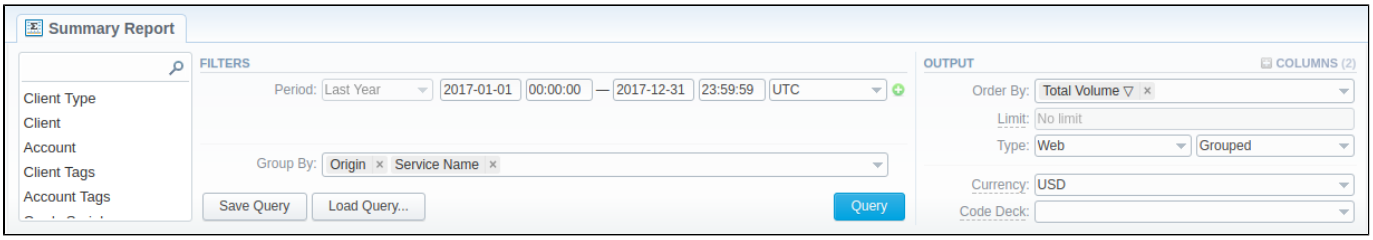
In this article

- Section overview
- Creating New Summary Report
- Simple scheme: how to generate a summary report
- Creating Query Template
- Summary Report buttons: reports, export, chart.
- Side-by-side report
- Knowledge Base Articles

Section overview

This section is designed to help users create a report that would contain summary information regarding all exsiting services from the perspective of both origination and termination sides. Not only can it provide a general overview of total services cost and billed volumes of service units, but it can be customized to outline even more detailed information regarding different client types, ASR / ACD Current, etc.

Screenshot: Summary Report query form



Creating New Summary Report

To create a new summary report, you need to fill in the following parameters in the form and press **Query** button:

Information block	Field Description	
Filters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click on the delete sign next to the filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Period (1)	Specify the time interval for the report and a timezone. Please note that the ***Period*** field is mandatory.
	Period 2	Accessible when you enable the **Compare Period** option by clicking on the plus sign next to the ***Period***. Specify the second interval for the report.
	Group By	Select from the list of following accessible options to group the data in reports: • ***Time****: Year, Month, Day, Hour* • ***Clients****: Client Type, Client, Account, C Series, Owner, Package Name* • ***Events****: Code, Code Name, Currency, Rate, Additive Rate, Origin, Result Code, Gateway* • ***Totals****: Setup Fee* • ***Extras****: Gateway Tag, Service Name.* **Attention** • ***Group By*** field is mandatory, it couldn't be empty in order to generate the report. • If you group by **Client** and **his/her Timezone** differs from **system Timezone**, the **latter** will be used in the respective report.
	Additional Filters	

The accessible additional filters are:

- ***Clients***: *Client Tags, Client Type, Client, Account, Account Tags, Cards Serial, Package.*
- ***Events****: Code, Code Name, Cost Total, Origin, Result Code, Gateway.*
- ***Extras****: Owner, Total Volume, Total records, Not Zero Records, ASR Current, ACD Current, Service Name.*

Client Type	Select a client's type for report: **Client, Reseller, Calling card or Call shop**
Client	Define a client for the report
Account	Enter an account for the report
Client /Account Tags	Define a client's or account's tag
Cards Serial	Indicate cards serial for the report
Package	Enter a package for the report
Code	Specify a code of needed destination
Code Name	Specify a code name of a desired destination
Cost Total	Enter the range of total call cost
Origin	Indicate origin - origination or termination of the event
Result Code	Define a result code as a filtering parameter
Gateway	Specify a gateway
Owner	Indicate the owner
Total Volume	Enter the range of total duration
Total Records	Enter the range of total records
Not Zero Records	Define the range of records that have duration equal to or more than 1 unit
ASR Current	Specify the range of ***ASR Cur*** for records you would like to display
ACD Current	Specify the range of ***ACD Cur*** for records you would like to display
Service Name	Determine the name of service for the report

Output

This form contains settings of the report output data.

Click plus sign next to ***Columns*** and select required columns in order to add them to Output information block. Also, you can cancel any chosen item.

Accessible columns in the report

The list of additional columns include:

Columns for main period:

Cost Total, Average Rate, Package Credit, Total Volume, Billed Volume, Package Volume, Total Records, Not Zero Records, Success Records, Busy Records, No Channel Records, Error Records, ASR Std, ASR Cur, ACD Srd, ACD Cur, PDD Avg, SCD Avg, xDRs List.

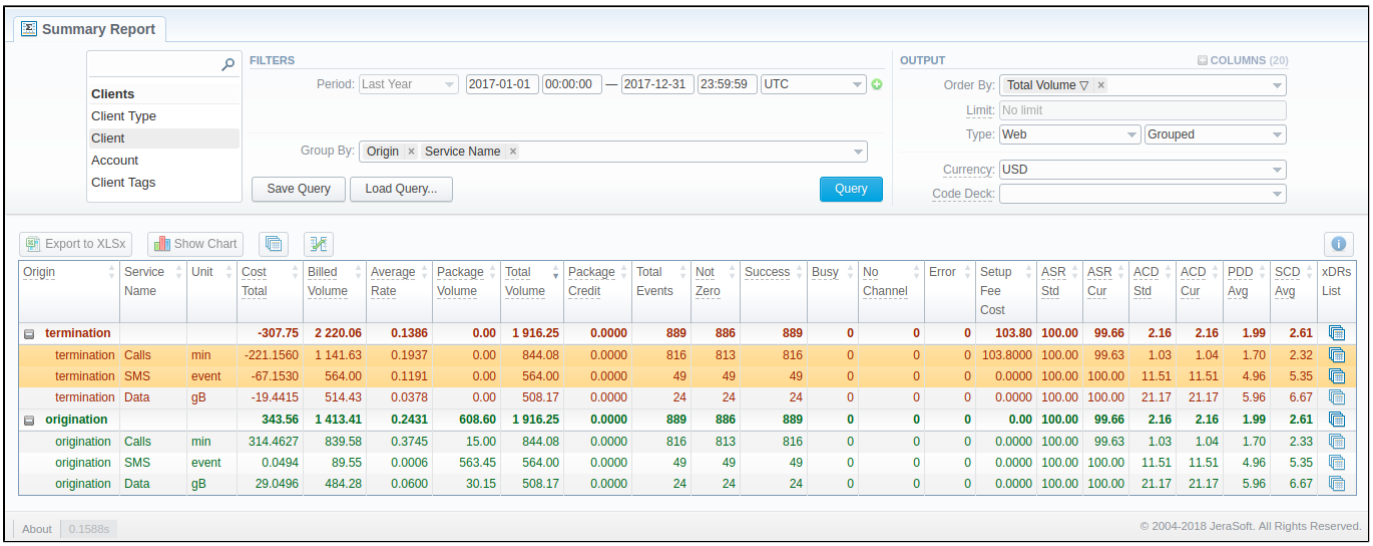
Columns for comparative period are the same as for the main period. Moreover, all parameters could be selected expressed in percentage.

Rate	***Avg. Rate*** - an average cost calculated

Totals	• ***Cost Total*** - Full price of all services including additional services • ***Total Volume*** - a whole volume of the events in units (specified in the Services settings "Reports" field) • ***Billed Volume*** - a whole billed volume of events. It could differ from the total volume due to the rates settings, for example, grace volume, min volume and interval. • ***Package Volume*** - a volume within respective package that billed according to the package limits • ***Package Credit*** - a volume of credit that has been charged within respective package • ***Total Events*** - Entire quantity of events • ***Not Zero Records*** - Quantity of records, that have the volume equal to or more than 1 • ***Success Records*** - Quantity of records, that have a duration equal to or more than 1 and successful end code, records with Q.931 disconnect cause 16 or 31 • ***Busy Records*** - Busy records quantity with Q.931 disconnect cause 17 • ***No Channel Records*** - No circuit / channel available, records quantity with Q.931 disconnect cause 34
Statistics	***ASR*** - Average success rate (successful records percentage) • ***Std*** - value calculated on the base of records with status "success" divided by the total number of records minus all records with “no channel available” status • ***Cur*** - value calculated on the base records with volume > 0 divided by total number of records ***ACD*** - Average call duration in minutes • ***Std*** - Sum of all records duration divided by number of records with status "success" • ***Cur*** - Sum of all records duration divided by number of records with duration > 0 ***PDD Avg*** - Average post dial delay in seconds ***SCD Avg*** - Average session connect delay in seconds
Extras	***xDRs List*** - list of detailed records statistics
Other output settings	
Order By	Select parameters to sort already grouped data in columns. Here you can sort data from highest to lowest values (or vice versa) and select different values.
Type	Choose a format of the report from a drop-down list: **Web / CSV / Excel XLS / Excel XLSx** Also, select next to the ***Type*** field a look of table view: • **Plain** - a simple table view • **Grouped** - a table view with grouped data and possibility to collapse it ⚠ **Attention** Please note that **Grouped** type of table view is available only for **Excel XLSx** and **Web** formats, it doesn't work with **CSV** and **Excel XLS**.
Limit	Determine the number of rows that will be visible in the report. It is useful for displaying some top positions by chosen parameter. It is available only for ***Plain*** type of the report.
Send to	You can send generated reports via email. Also, it is possible to specify several emails. ⚠ **Attention** This feature is available only for **CSV / Excel XLS / Excel XLSx** formats of the report, it doesn't work with **Web**.
Currency	Specify a currency of the report. All values will be automatically converted in the report to the specified currency.
Code Deck	Select a code deck from a drop-down list. All codes in the following report will be presented according to the specified code deck.

The example of the generated summary report is presented on a screenshot down below:

Screenshot: Summary Report section



If the data is grouped in the report, it will be shown initially collapsed. To expand or collapse data in your report, click the plus or minus signs. To expand all data in the report, please press Ctrl + the icon.

Warning

Please note, the system shows rounded values in the reports. But while calculating the system takes an exact value. Hence, the procedure of the rounding is following:

- system rounds currency values according to the settings of a respective currency
- all types of events (e.g. not zero, success, busy, as well as total quantity) are not rounded
- such parameters as **Setup Fee Cost, Package Credit, Average Rate, Cost Total** are rounded to the nearest ten thousandth. For example, 3.879256 to 3.8793
- others are rounded to the nearest hundredth. For example, 4.8763 to 4.88

Simple scheme: how to generate a summary report

In order to create a simple summary report you need to:

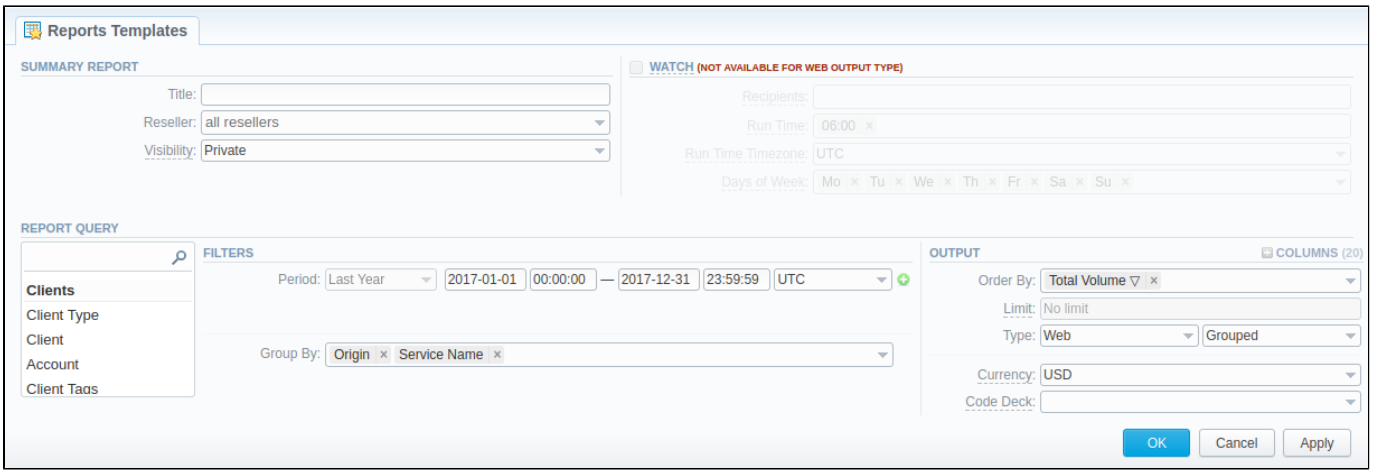
- On the ***Filters*** menu, select desired parameters for the report.
- Enter the interval and specify a timezone
- Select parameters in the ***Group By*** field, for example, **Currency, Origin**, etc.
- Then choose **Columns** in the Output form, for example, **Average Rate, ASR Std, ASR Cur, ACD Std, ACD Cur, Total Records**, etc.
- Specify ***Type*** field or leave its default settings (Web / Grouped)
- Specify the currency and choose the code deck (if applicable).
- Press **Query** button.

Tip

- If you want to sort already grouped data in columns, select respective parameters in ***Order By*** field. Also, you can sort from highest to lowest values (or vice versa).
- Please note, the ***Order By*** option is active when the ***Type*** of the Output form is **Plain**. When it is **Grouped**, the data is only sorting by values specified in the ***Group By*** field.

Creating Query Template

Also, you can create a template for reports and save specified parameters by clicking on **Save Query** button. A pop-up window with settings will appear, and you need to fill in the following form.
Screenshot: New Template form



To load already existed templates while generating statistic reports click **Load Query** button in the **Summary Report** section.

Tip

To find more details about templates, please refer to the Report Templates article in our **User Guide**.

Summary Report buttons: reports, export, chart.

You can export data to a **CSV** and **XLSx** file, which contains only currently displayed data, with no automatic request to update data while exporting. Also, it is possible to create charts for easily illustrating a crucial information. And you can generate a report using the same criteria in the **Orig-Term report** and the **xDRs list** sections.

1. To download a report in **.csv**, click on the **Export to CSV** button above the report.

Attention

Please note, this button will be visible only when the ***Type*** of the output is **Plain**. For the ***Grouped*** output type it is not available.

2. To download an **.xlsx** report file, press **Export to XLSx** button above the report.

3. To create a **visual chart**, click the **Show Chart** button above the report. There is more information available on this topic in the article **How to create a statistic chart?** in our Knowledge Base.

4. You can generate a detailed report using the same criteria in the **xDRs list** section by clicking the **xDRs list** icon above the report.

Tip

When you make a report based on two periods, **two xDRs list** icons appear:

- the first xDRs list icon allows to generate a xDR's report based **on the first period**;
- the second xDRs list icon allows to generate data based **on the second period** in the xDRs list.

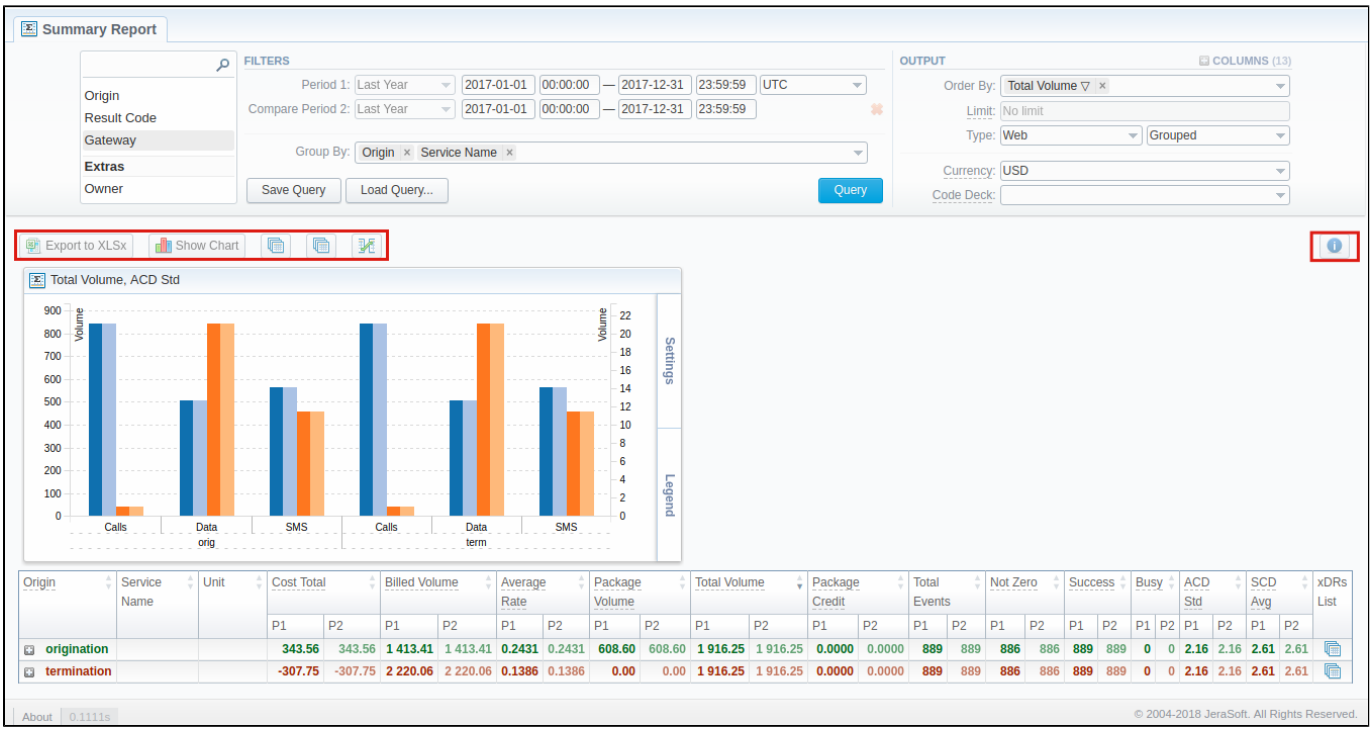
When you make a report and filter data by ***Client / Client Tags / Account / Code / Code Name / Owner*** parameters, two Orig-Term icons appear. They allows to generate reports with **origination** and **termination** data separately.

- 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**.

5. It is possible to generate a report using the same criteria in the **Orig-Term** section report by clicking the **Orig-Term** icon on the toolbar.

6. You can check an actual date interval by clicking on **Info** icon. The displayed data could be different from the Interval specified above if there is no date for the period.

Screenshot: Summary Report section

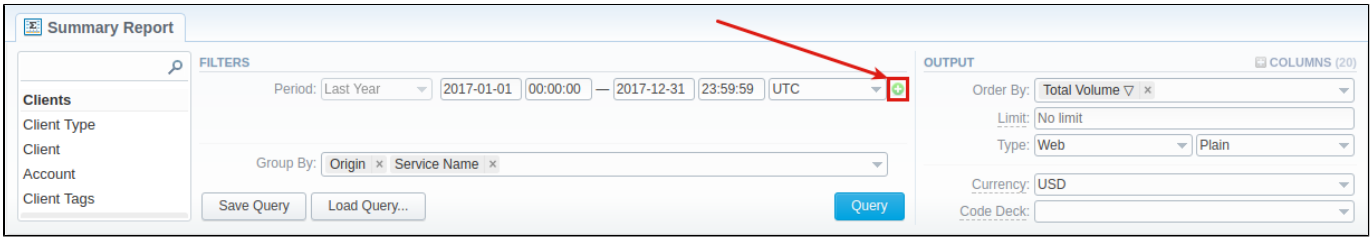


Side-by-side report

This tool allows building a report with side-by-side sub-reports. Use it to run a comparative analysis on the same page. It's helpful for reviewing multiple parameters, totals and compare results at different time intervals. The ***Compare Period*** option is designed to create a report that shows two sub-reports side-by-side.

To enable this option, click on the plus sign next to the ***Period*** field and specify both intervals (***Period 1 / Period 2***) for the report.

Screenshot: Summary Report section

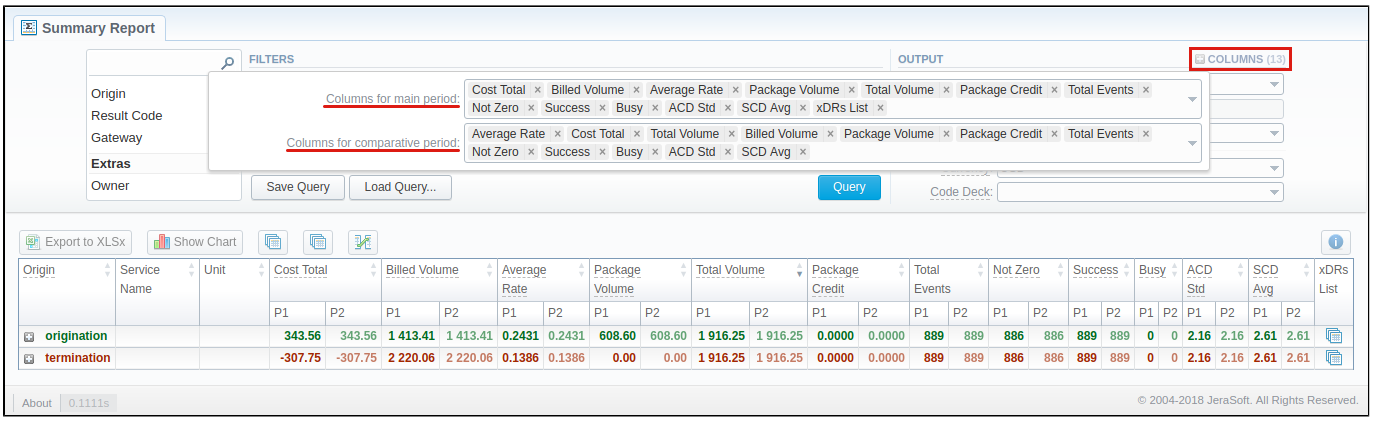


Then, choose columns for main and comparative period in the report Output form. When all required parameters are specified, click the **Query** button.

To remove this filter, please click the delete icon.

You can modify a comparative mode by changing periods and columns. For example, to compare how different the cost total of the two periods is in percentage terms. To do this, choose the **Cost Total (%)** value from the Columns. Therefore, the final report splits **Cost Total (%)** into separate columns (see screenshot below).

Screenshot: Summary Report section



Attention

- When you use **Compare Period** option in the **Summary Report** and **Orig-Term Report** sections, default chart templates will not be accessible.
- When you select one of ***Time*** parameters (**Year, Month, Week**) for ***Group By*** field, the **End date** of the ***Period 2*** will be set automatically to make intervals of ***Period 1*** and ***Period 2*** equal. Moreover, **End date** field of ***Period 2*** becomes non editable

Knowledge Base Articles

- Why are there differences between reports?
- How to hide rates in Summary Report for specific system users?

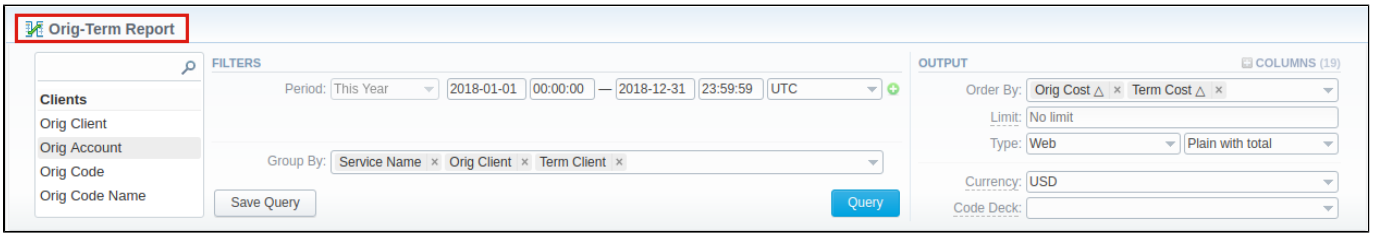
Orig-Term Report

In this article

- Section overview
- Creating New Orig-Term Report
- Simple scheme: how to generate an orig-term report
- Creating Reports Templates
- Orig-Term Report buttons: reports, export, chart.
- Side-by-side report
- Knowledge Base Articles

Section overview

This section is designed to provide a user with a possibility to generate a report and trace all call routes from **Client** to any **Provider** with orig-term cost and profit. Here you can create a report based on an existing template or generate a new one. Also, you can get the information sorted by clients, events, profit, etc.
Screenshot: Orig-Term Report query form



Creating New Orig-Term Report

To create a new summary report, you need to fill in the following parameters in the form and press **Query** button:

Information block	Field Description	
Filters	On the ***Filters*** menu, select required parameters for the report. To cancel any filter, click the delete sign next to the filter. filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Period (1)	Specify the time interval for the report and a timezone. Please note that the ***Period*** field is mandatory.
	Period 2	Accessible when you enable the **Compare Period** option by clicking on the plus sign next to the ***Period***. Specify the second interval for the report. **Tip** When you select one of **Time** parameters for **Group By**, the end date of the *Period 2* will be set automatically to make equal intervals of *Period 1* and *Period 2*.
	Group By	There are following accessible options to group the data in reports: • ***Time:*** *Year, Month, Date, Hour.* • ***Clients***: *Orig Client, Orig Account, Orig Code, Orig Code Name, Orig Rate, Term Client, Term Account,Term Code, Term Code Name, Term Rate* • ***Extras:*** *Service Name, Orig Serial, Orig Client Type, Orig Owner, Orig Time profile, Term Client Type, Term Owner, Term Time profile* **Attention** Please note, the ***Group By*** field is mandatory, it couldn't be empty in order to generate the report
	Additional Filters	

There are following accessible additional filters:

- ***Clients*****:** *Orig Client/ Orig Account/ Orig Code/ Orig Code Name/ Orig Serial/ Orig Owner/ Orig Client's Tags/ Orig Account's Tags/ Term Client/ Term Account/ Term Code/ Term Code Name/ Term Owner/ Term Client's Tags/ Term Account's Tags*
- ***Events:*** *Total/ Profit/ Volume,Total/ Events Not Zero/ ASR Cur/ ACD Cur*
- ***Extras:*** *Service Name/ Orig Time profile/ Term Time profile*

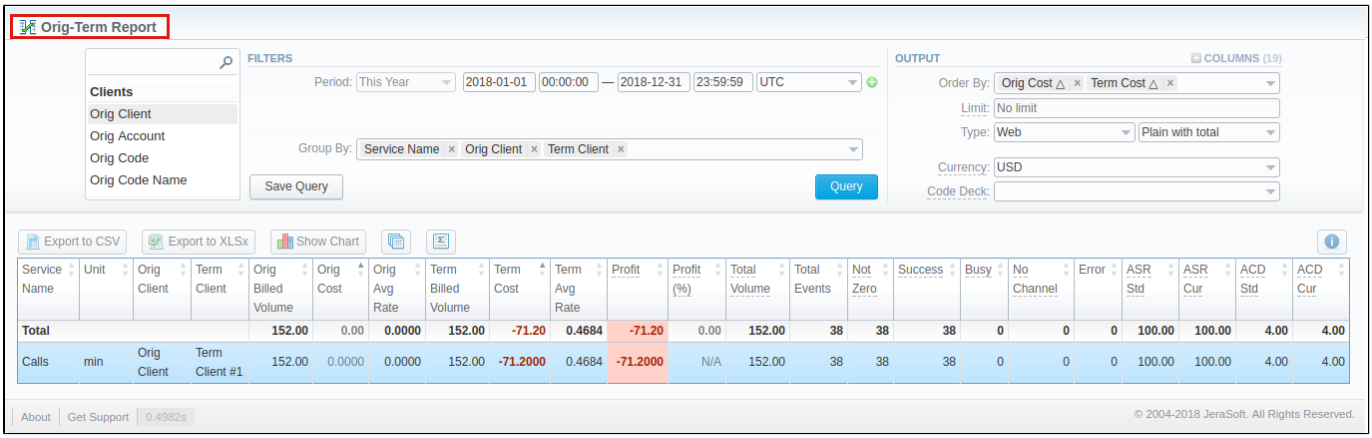
Clients Settings	
Orig Client	Define an origination client for the report
Orig Account	Enter an orig account for the report
Orig Code	Specify an orig code for the report
Orig Code Name	Indicate an orig code name
Orig Serial	Define an origination serial
Orig Owner	Define an origination Reseller for report
Orig Client's Tags	Determine tags that belong to an orig client
Orig Account's Tags	Specify tags that determined for an orig account
Term Client	Define a termination client for the report
Term Account	Enter a termination account for the report
Term Code Name	Indicate a termination code name
Term Owner	Define a Reseller for report
Term Client's Tags	Determine tags that belong to an termination client
Term Account's Tags	Specify tags determined for an termination account
Term Code	Specify a termination code for the report
Events Settings	
Total	Enter the range of total events
Profit	Enter the range of the revenue you would like to display
Events Not Zero	Define the range of events, that have duration greater than 0
ASR Current	Specify the range of ***ASR Cur*** for events you would like to display
ACD Current	Specify the range of ***ACD Cur*** for events you would like to display
Volume, Total	Enter the range of total volume of services
Extra Settings	
Orig Time Profile	Select an orig time profile that will be used as filter criteria

	Term Time Profile	Specify a term time profile that will be used as filter criteria
	Service Name	Determine the name of service for the report
Output	This form contains settings of the output data of the report. Click plus sign near the ***Columns*** to select respective columns to output a report data. Also, you can cancel any chosen item.	
	Accessible columns in the report	
	Columns for main period are: *ASR Std, ASR Cur, ACD Std, ACD Cur, Total Volume, Error, Profit, Profit (%), Orig Billed Volume, Orig Cost, Orig Avg Rate, Term Billed Volume, Term Cost, Term Avg Rate, Total Events, Not Zero, Busy, No Channel, Success.* **Columns for comparative period** are the same as for the main period. Moreover, all parameters could be selected expressed in percentage.	
	Orig	*Origination information:* • ***Billed Volume*** - Billed event volume • ***Cost*** - Price of the event • ***Avg. Rate*** - Average event rate
	Term	*Termination information:* • ***Billed Volume*** - Billed event volume • ***Cost*** - Event cost • ***Avg. Rate*** - Average event rate
	Profit	• ***Profit*** - Revenue in respective currency, for example, USD (in fact, any system currency can be specified here) • ***Profit (%***) - Revenue in percent value
	Total Volume	Total volume of services
	ASR	*Average successful rate (successful events percentage):* • ***Std*** - Number of events with ***success*** status divided by total number of events minus all events with ***no channel available*** status • ***Cur*** - Number of events with duration > 0 divided by total number of events
	ACD	*Average call duration:* • ***Std*** - Sum of all event duration divided by number of events with ***success*** status • ***Cur*** - Sum of all event duration divided by number of evetns with duration > 0
	Events	*Quantity of events in database* • ***Total Events***- Total events quantity • ***Not Zero*** - Quantity of events that have duration equal to or more than 1 second • ***Success*** - Quantity of events that have duration equal to or more than 1 second and successful end code, events with Q.931, disconnect cause 16 or 31 • ***Error*** - Quantity of declined events • ***Busy*** - Busy events quantity • ***No Channel*** - No circuit / channel available. Events with Q.931, disconnect cause 34
	Other output settings	
	Order By	Select parameters to sort already grouped data in columns. Here you can sort data from highest to lowest values (or vice versa) and select different values.

Type	Choose a format of the report from a drop-down list: **Web / CSV / Excel XLS / Excel XLSx** Also, select next to the ***Type*** field a look of table view: • **Grouped** - a table view with grouped data and possibility to collapse it • ***Plain*** - a simple table view • ***Plain with total*** - a simple table view with an additional **Total** row at the beginning of the report **Attention** Please note, that ***Grouped*** type of table view is available only for **Excel XLSx** and **Web** formats, it doesn't work with **CSV**.
Limit	Determine the number of rows that will be visible in the report. It is useful for displaying some top positions by chosen parameter. It is available only for ***plain*** and ***plain with total*** types of the report.
Send to	You can send generated reports via email. Also, it is possible to specify several emails. **Attention** This feature is available only for **CSV / Excel XLS / Excel XLSx** formats of the report, it doesn't work with **Web**.
Currency	Specify a currency for the report. All values will be automatically converted in the report to the specified currency.
Code Deck	Select a code deck from a drop-down list. All codes in the following report will be presented according to the specified code deck.

A generated orig-term report is demonstrated on a screenshot below:

Screenshot: Orig-Term Report section



If the data is grouped in the report, it will be shown initially collapsed. To expand or collapse data in your report, click the plus or minus signs. To expand all data in the report, please press **Ctrl** and

Warning

Please note, the system shows rounded values in the reports. But while calculating the system takes an exact value. Hence, the procedure of the rounding is following:

- system rounds currency values according to the settings of a respective currency
- all types of events (e.g. not zero, success, busy, as well as total quantity) are not rounded
- such parameters as **Orig Avg Rate, Term Avg Rate, Profit, Term Cost** are rounded to the nearest ten thousandth. For example, 3.879256 to 3.8793
- others are rounded to the nearest hundredth. For example, 4.8763 to 4.88

Simple scheme: how to generate an orig-term report

An easy way to generate a simple orig-term report is:

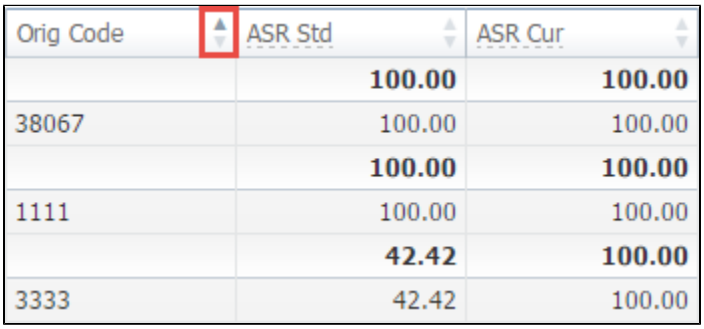
- On the ***Filters*** menu, select desired parameters for the report.
- Enter the period.
- Select some parameters in ***Group By*** field, for example, *Orig Client, Service Name.*
- Then choose **Columns** in the Output form, for example, *ASR Std, ASR Cur, ACD Std, ACD Cur, Success, Error, Profit (%).*
- Specify ***Type*** field or leave its default settings (Web / Grouped)
- Specify the currency and choose the code deck (if applicable).
- Click the ***Query*** button.

Tip

- If you want to sort already grouped data in columns, select respective parameters in ***Order By*** field. Also, you can sort from highest to lowest values (or vice versa).
- Please note, the ***Order By*** option is active when the ***Type*** of the Output form is **Plain** or **Plain with Total**. When it is **Grouped**, the data is only sorting by values specified in ***Group By*** field.

Also, you can sort data in report manually using special arrows next to the name of respective columns.

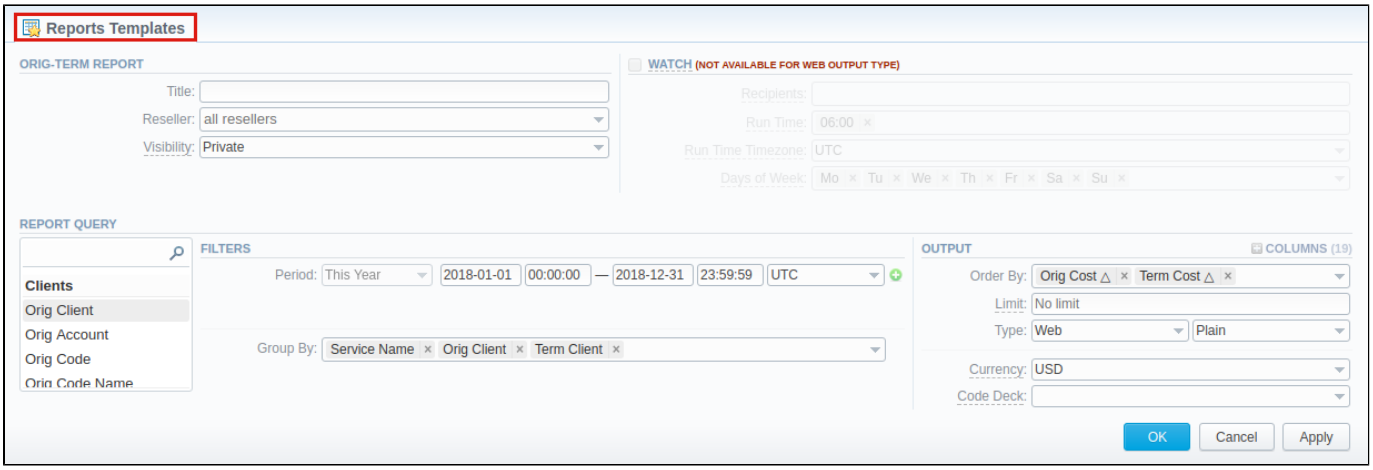
Screenshot: Orig-Term Report



Orig Code	ASR Std	ASR Cur
	100.00	**100.00**
38067	100.00	100.00
	100.00	**100.00**
1111	100.00	100.00
	42.42	**100.00**
3333	42.42	100.00

Creating Reports Templates

Also, you can create a template for reports and save specified parameters by clicking ***Save Query*** button. A pop-up window with settings will appear and you need to fill out the following form:
Screenshot: New Template creation form



Tip

To find more details about templates, please refer to the Report Templates article in our **User Guide.**

Orig-Term Report buttons: reports, export, chart.

You can export data to a **CSV** and **XLSx** file which contains only currently displayed data, no automatic request to update data while exporting. Also, it is possible to create charts for easily illustrating a crucial information. And you can generate a report using the same criteria in the **Summary report** and the **x DRs list** sections.

1. To download a report in *.csv,* click the **Export to CSV** button on the toolbar.

> **Attention**
>
> Please note, this button will be visible only when the ***Type*** of the output is **Plain**. For the ***Grouped*** output type it is not available.

2. To download a **.xlsx** file, click the **Export to XLSx** button on the toolbar.

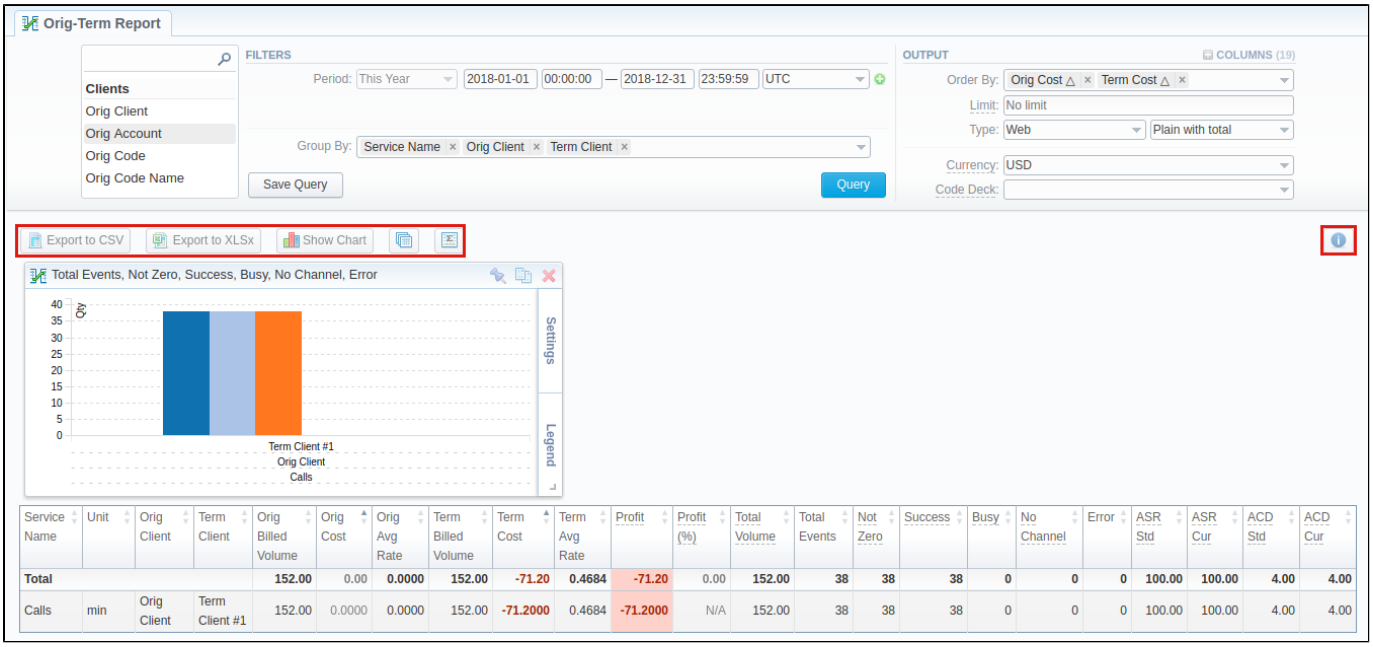
3. To create a **visual chart**, click the **Show Chart** button on the toolbar. There is more information available on this topic in the article **"How to create a statistic chart?"** at our Knowledge Base.

4. You can generate a detailed report using the same criteria in the **xDRs list** section by clicking the **xDRs list** icon on the toolbar.

5. And it is possible to generate a report using the same criteria in the **Summary report** section by clicking the **Summary** icon on the toolbar.

6. You can check an ***actual date interval*** of the report by clicking the **Info** icon and it could be different from *the Interval* specified above if there is no date for the period.

Screenshot: Orig-Term Report section/ chart

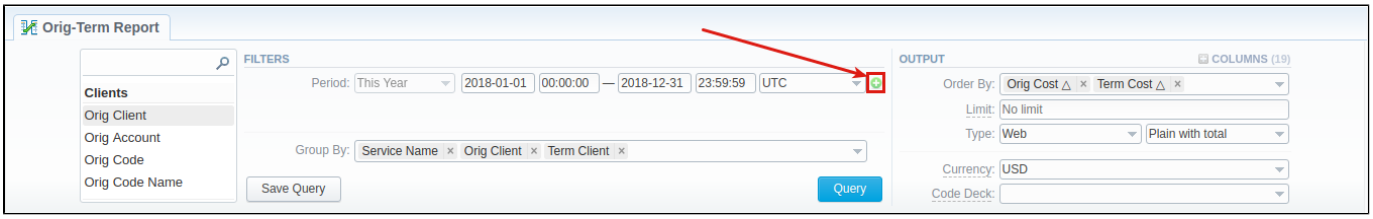


Side-by-side report

This tool allows building a report with side-by-side sub-reports. Use it to run a comparative analysis on the same page. It's helpful for reviewing multiple parameters, totals and compare results at different time intervals. The ***Compare Period*** option is designed to create a report that shows two sub-reports side-by-side.

To enable this option, click the plus sign next to the ***Period*** field and specify both intervals ***(Period 1/Period 2)*** for the report.

Screenshot: Orig-Term Report query form

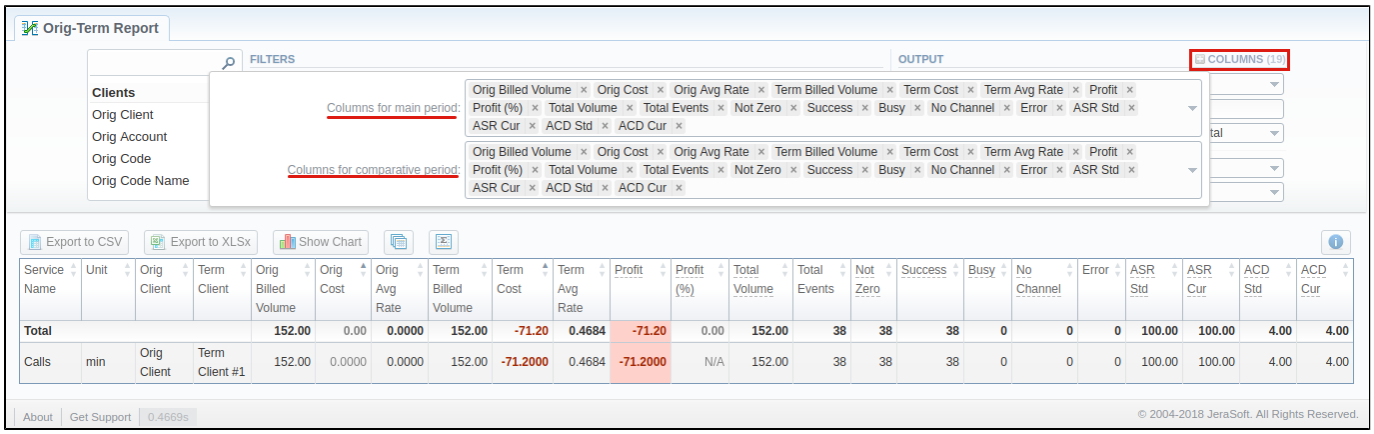


After, choose columns for main and comparative period in the report output form. When all required parameters are specified, click the **Query** button.

To remove this filter, please click the delete icon.

You can modify a comparative mode by changing periods and columns. For example, to compare how different the cost total of the two periods is in percentage terms. To do this, choose the **Cost Total (%)** value from the Columns. Therefore, the final report splits **Cost Total (%)** into separate columns (s ee screenshot below).

Screenshot: Orig-Term Report example



Knowledge Base Articles

- Why are there differences between reports?

Profit Report

In this article

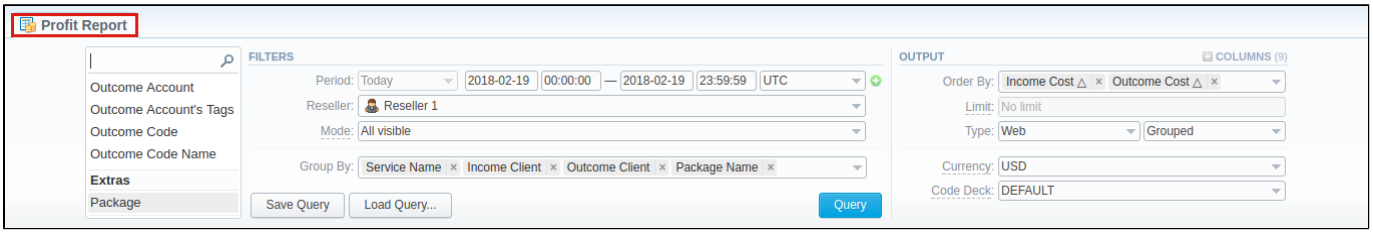
- Section overview
- Creating Profit Report
- Creating Query Template
- Export Generated Report
- Side-by-side report

Section overview

This section allows generating the profit report, which analyses profitability data and defines profits between **Reseller** parties (companies and managers) and **Clients** belonging to the respective Reseller/Manager.

For example, when **Manager_1** executes profitability report, it allows to see his origination customers sending traffic to **Manager_2**, who owns actual terminator vendors. In this case, Reseller's permissions apply to every query, which guarantees that **Manager_1** will **not** be able to see any actual name of a client belonging to another manager, or another party that restricts such access.

Screenshot: Profit Report query form



Creating Profit Report

To generate a profit report, you need to fill in the required parameters in the form and press **Query** button. To get information sorted, use the ***Group by*** opti on and choose respective values from the drop-down list.

The list of query fields is as follows:

Information block	Field Description	
qFilters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click the delete sign next to the filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Period (1)	Specify the time interval for the report and a timezone. Please note that the ***Period*** field is mandatory.
	Period 2	Accessible when you enable the **Compare Period** option by clicking on the plus sign next to the ***Period***. Specify the second interval for the report. **Tip** When you select one of **Time** parameters for **Group By**, the end date of the *Period 2* will be set automatically to make equal intervals of *Period 1* and *Period 2*.
	Reseller	Specify the name of target Reseller.
	Mode	Choose the mode of the report: • ***All visible*** - all represented visually. • ***Hide External Originators*** - all external originators of the selected manager will not be displayed. • ***Hide External Clients*** - only events made by solely between clients of the chosen manager will be shown. By default, field value is set to ***All visible***

	Group By	Select a grouping option, here you can choose and swap columns, as well as change its order. There are following accessible options to group data in reports: • ***Time:*** *Year, Month, Day, Hour.* • ***Clients***: *Income Client, Income Account, Income Code, Income Code Name, Orig Rate, Outcome Client, Outcome Account, Outcome Code, Outcome Code Name.* • ***Extras:*** *Service Name, Income Series.* **Attention** Please note, the ***Group By*** field is mandatory, it couldn't be left empty in order to generate the report.
	Additional Filters	
	There are following accessible filters: • ***Clients*****:** *Income Client, Income Client's Tag, Income Account, Income Account's Tag, Income Code, Income Code Name, Income Serial, Income Reseller, Outcome Client, Outcome Client's Tag, Outcome Account, Outcome Account's Tag, Outcome Code, Outcome Code Name.* • ***Extras:*** *Package*	
	Income Client	Specify an origination client(s) for the report
	Income Client's Tag	Specify tag(s) assigned to orignation clients
	Income Account	Determine origination client's account(s)
	Income Account's Tag	Indicate origination account's tags
	Income Code	Define an incoming code
	Income Code Name	Specify an incoming code name
	Income Serial	Indicate a serial number of originator's call card
	Income Reseller	Specify target reseller(s) for the report
	Outcome Client	Define a termination client(s)
	Outcome Client's Tag	Define termination client's tag(s)
	Outcome Account	Indcate account(s) of termination client(s) for the report
	Outcome Account's Tag	Specify termination account's tags if any
	Outcome Code	Specify a termination code of the client
	Outcome Code Name	Indicate termination code name
	Package	Determine a name of the used package
Output	This form contains settings of the output data of the report. Click plus sign next to ***Columns*** and select required columns in order to add them to Output information block. Also, you can cancel any chosen item.	
	Accessible columns in the report	

Additional columns of the report are:

Columns for main period:

Volume Total, Income Cost, Income Avg Rate, Income Billed Time, Outcome Cost, Outcome Avg Rate, Outcome Billed Time, Profit, Profit (%).

Columns for comparative period:

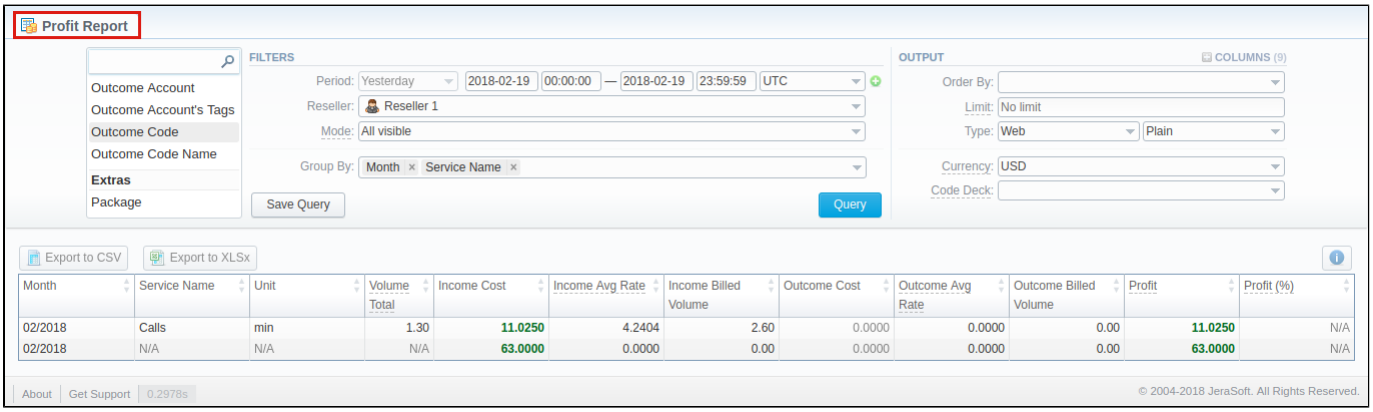
Total time, min; Income Rate, Outcome Rate, Income Cost, Income Avg Rate, Income Billed Time, Outcome Cost, Outcome Avg Rate, Outcome Billed Time, Profit, Profit (%), Profit Difference.
And it's possible to choose each parameter expressed as percentage.

Volume Total	Total time of calls in minutes
Rate	The call rate • ***Income Avg Rate*** - an average call rate that is used for origination • ***Outcome Avg Rate*** - an average call rate that is used for termination
Profit	The revenue • ***Profit*** - a revenue in a respective currency (in fact, any system currency can be specified here) • ***Profit (%)*** - a revenue in percent value
Time	The billed time • ***Income Billed Volume*** - the whole billed time for origination • ***Outcome Billed Volume*** - the whole billed time for termination
Cost	The call cost • ***Income Cost*** - a call cost that is used for origination • ***Outcome Cost*** - a call cost that is used for termination
Other output settings	
Order By	Select parameters to sort already grouped data in columns. There are following accessible options to order the data: ***by Time, Clients, Extras***. Here you can sort data ***from highest to lowest values*** (or vice versa) and select different values.
Type	Choose a format of the report from a drop-down list: **Web / CSV / Excel XLS / Excel XLSx** Also select next to the ***Type*** field a table view: • ***Plain*** - a simple table view • ***Grouped*** - a table view with grouped data and possibility to collapse / expand it **Attention** Please note that **Grouped** type of table view is available only for **Excel XLSx** and **Web** formats, it doesn't work with **CSV**.
Limit	Determine the number of rows that will be visible in the report. It is useful for displaying some top positions by chosen parameter. It is available only for ***plain*** type of the report.
Send to	You can send generated reports via email. Also, it is possible to specify several emails. **Attention** This feature is available only for **CSV, Excel XLS, Excel XLSx** formats of the report, it doesn't work with **Web**.
Currency	Specify a currency for the report. And all values will be automatically converted in the report to the specified currency.

	Code Deck	Using a drop-down list select a respective code deck. All codes names will be rewritten and presented according to the specified code deck. If there is no value specified, code deck assigned to the Client or Rate Table will be in usage.

A generated profit report is demonstrated on a screenshot below:

Screenshot: Profit report section



If the data is grouped in the report, it will be shown initially collapsed. To expand or collapse data in your report, click the plus or minus signs.

Warning

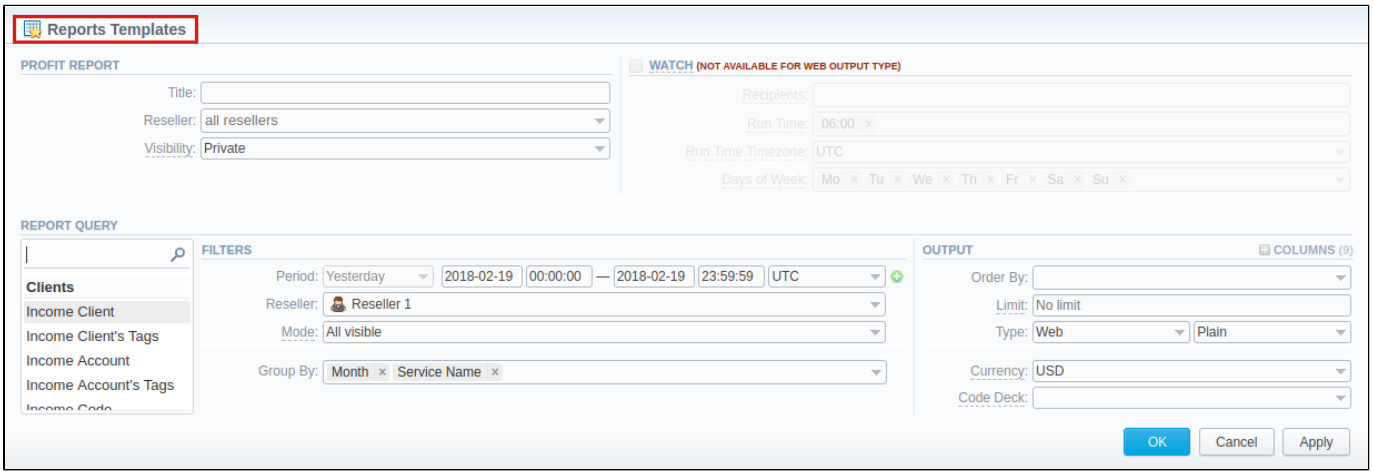
Please note, the system shows rounded values in the reports. But while calculating the system takes an exact value. Hence, the procedure of the rounding is following:

- system rounds currency values according to the settings of a respective currency;
- other parameters are rounded to the nearest ten thousandth. For example: 3.879256 to 3.8793.

Creating Query Template

User can create a template for profit reports and save specified parameters by clicking **Save Query** button. A pop-up window with settings will appear and you need to fill out the following form:

Screenshot: New Template form



Section	Description	
Profit report	Here you can specify parameters for the template that will be used while running reports	
	Title	Specify a name of the template

	Reseller	Indicate a Reseller of the report template
	Visibility	It allows controlling visibility of respective reports templates. Whether you want to keep templates private or leave them visible for users under specified Reseller. To enable this option, select one parameter from the drop-down list: • ***Public*** **-** available for users according to the settings of the ***Reseller*** field; • ***Private*** **-** accessible strictly for creator.
Watch	This tool allows to automatically generate reports at the appropriate time and send the results to the list of e-mails **Attention** Please note, this tool is not available for **Web** output type, only for **CSV / Excel XLS / Excel XLSx**.	
	Recipients	Specify recipients: it can be your own email, other users of the system or even 3rd parties
	Run Time	Define an appropriate time to automatically generate a report. It could be several times, for example: ***10:00, 12:00, 18:00***
	Days of Week	Indicate days of the week to automatically generate a report. For example, you can run a report only on Monday or each day of week
Report Query	Here you need to specify filters that will be used for generating a correct report and choose the output type to view the report.	

To preview or load already existing templates while generating statistic reports, click **Load Query** button and click on a template name or icon, respectively.

Export Generated Report

You can export data to **XLSx** or **CSV** file, which contains currently presented data by pressing **Export to XLSx** or **Export to CSV** button respectively. Please note that **Export to CSV** is available only when the ***Type*** of the output is **Plain**.

Attention

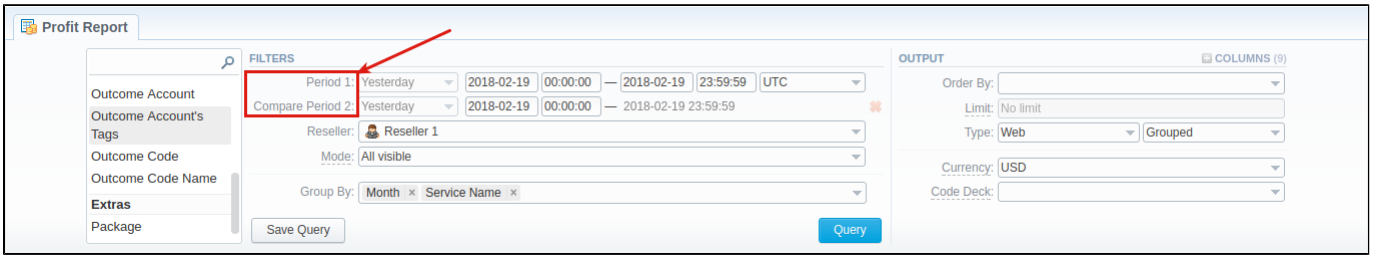
You can check an ***actual date interval*** of the report by clicking on **Info** icon, and it could be different from ***the Interval*** specified above if there is no date for the period.

Side-by-side report

This tool allows building a report with side-by-side sub-reports. Use it to run a comparative analysis on the same page. It's helpful for reviewing multiple parameters, totals and compare results at different time intervals. The ***Compare Period*** option is designed to create a report that shows two sub-reports side-by-side.

To enable this option, click on the plus sign next to the ***Period*** field and specify both intervals (***Period 1*** / ***Period 2***) for the report.

Screenshot: Profit Report query form

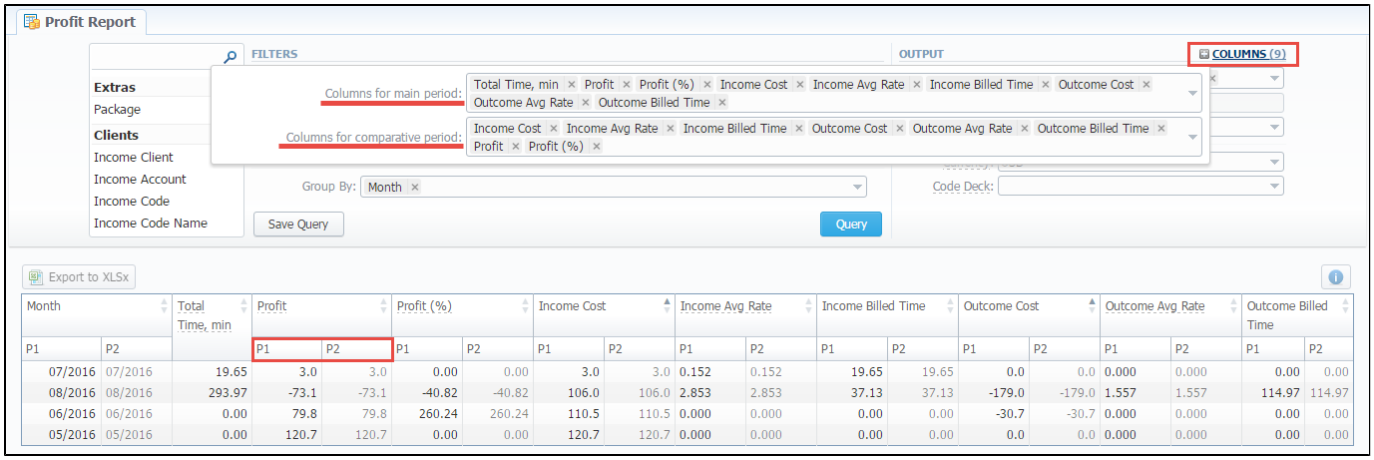


Then, choose columns for main and comparative period in the report Output form. When all required parameters are specified, click the **Query** button.

To remove this filter, please click the delete icon.

You can modify a comparative mode by changing periods and columns. For example, to compare how different the profit of the two periods is , choose the ***Profit*** value from the Columns. Therefore, the final report splits the ***Profit*** into separate columns *(see screenshot below).*

Screenshot: Profit Report query form



Month		Total Time, min	Profit		Profit (%)		Income Cost		Income Avg Rate		Income Billed Time		Outcome Cost		Outcome Avg Rate		Outcome Billed Time	
P1	P2		P1	P2	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2
07/2016	07/2016	19.65	3.0	3.0	0.00	0.00	3.0	3.0	0.152	0.152	19.65	19.65	0.0	0.0	0.000	0.000	0.00	0.00
08/2016	08/2016	293.97	-73.1	-73.1	-40.82	-40.82	106.0	106.0	2.853	2.853	37.13	37.13	-179.0	-179.0	1.557	1.557	114.97	114.97
06/2016	06/2016	0.00	79.8	79.8	260.24	260.24	110.5	110.5	0.000	0.000	0.00	0.00	-30.7	-30.7	0.000	0.000	0.00	0.00
05/2016	05/2016	0.00	120.7	120.7	0.00	0.00	120.7	120.7	0.000	0.000	0.00	0.00	0.0	0.0	0.000	0.000	0.00	0.00

Invoicing Report

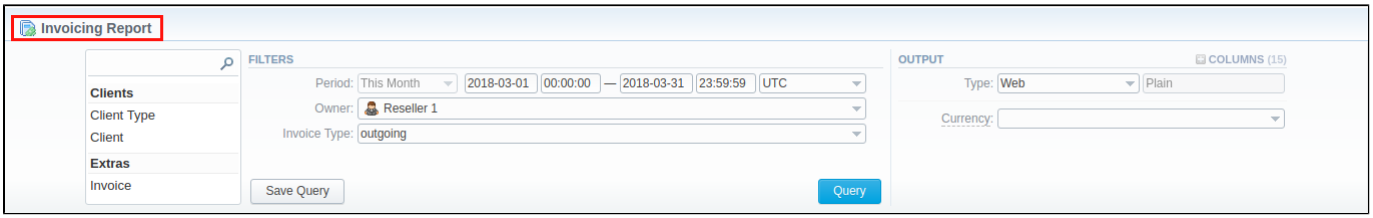
On this page

- Section overview
- Creating New Invoicing Report
- Invoicing Report buttons: export, chart.

Section overview

This section allows user to build a report, based on information from issued invoices with a possibility to export data (***.xls, .xlsx***, and ***.csv***). Since **Invoicing Report** generates statistics according to invoices, if you delete an invoice, the data will be no longer present in the report. The report shows data according to the variables determined in the **Invoices Template** section.

Screenshot: Invoicing Report section



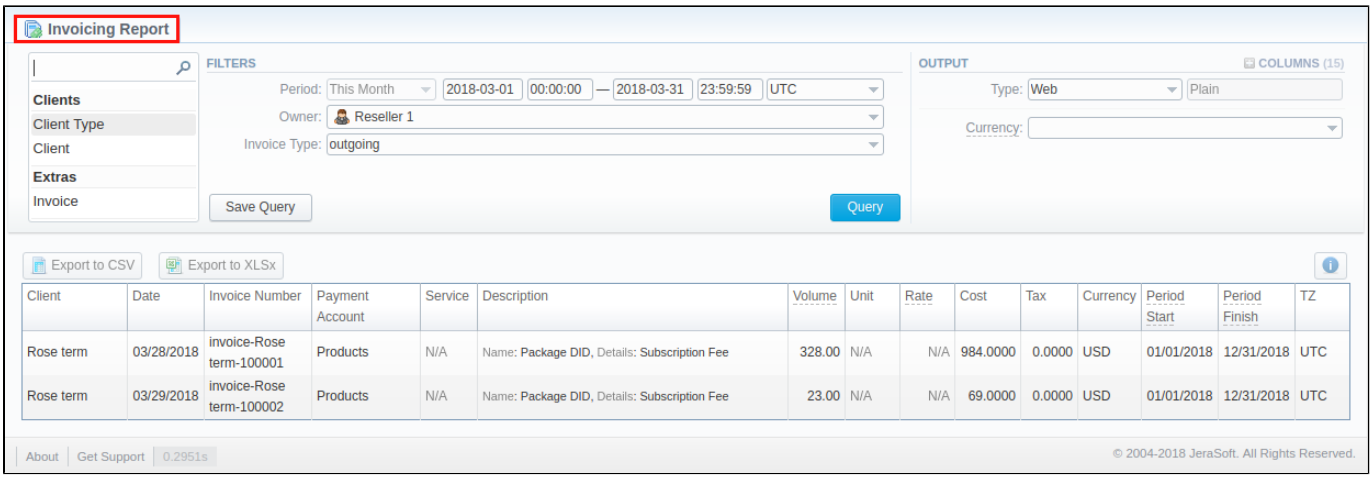
Creating New Invoicing Report

To create a new invoicing report, fill in a following query form:

Information block	Field and Description	
Filters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click on the delete sign next to the filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Period	Specify the time interval for the report and a timezone. Please note that the ***Period*** field is mandatory.
	Owner	Define a reseller for the report
	Invoice Type	Select from the drop-down list the type of invoice: • ***outgoing*** • ***incoming***
	Additional Filters	
	The accessible additional filters are: • ***Clients***: *Client, Client Type.* • ***Extras***: *Invoice, Payment Account*	
	Client Type	Choose a respective parameter for statistics data: • ***Client*** • ***Reseller*** • ***Calling Card*** • ***Call Shop.***
	Client	Define a client for the report
	Invoice	Specify the name/number of target invoice

	Payment Account	Select from the drop-down list of predefined system payment accounts: • ***Services*** • ***Products fees*** • ***Extra charges outgoing*** • ***Extra charges incoming*** • ***SureTax*** • ***Calling Cards Fees*** • ***Accounts Receivable*** • ***Accounts Payable*** • ***General*** and all manually created accounts from **Payment Accounts** section
Output	This form contains settings of the report output data Click plus sign next to ***Columns*** and select required columns in order to add them to Output information block. Also, you can cancel any chosen item.	
	Accessible columns in the report	
	Client	Name of a client
	Date	The date when an invoice was generated
	Payment Account	Type of payment account: • ***services*** • ***packages***
	Invoice Number	Number of an invoice, used in the report
	Service	Type of services
	Description	Details specified in invoice templates, for example, quantity of services, country code, code name, package name, etc.
	Volume	Volume of the service, for example, duration of the event
	Unit	Unit that was used for rates and packages limits
	Rate	Price per 1 rating unit that was used
	Cost	Total price of used services/products
	Tax	Financial charge for services/products used in invoice
	Currency	Currency used in invoices
	Period Start	Start period of an invoice
	Period Finish	End period of an invoice
	TZ	Timezone of invoices
	Other output settings	
	Type	Choose a format of the report from a drop-down list: **Web / CSV / Excel XLS / Excel XLSx**
	Send to	You can send generated reports via email. Also, it is possible to specify several emails. ⚠ **Attention** This feature is available only for **CSV / Excel XLS / Excel XLSx** formats of the report, it doesn't work with **Web** .
	Currency	Specify an output currency for the report. And all values will be automatically converted in the report to the specified currency

After selecting all needed parameters, press **Query** button and the system will generate a report:
Screenshot: Invoicing Report



Moreover, you can create a template for reports and save specified parameters by clicking **Save Query** button. Then fill in the required fields in a pop-up window with settings and confirm template creation.

Tip

To find more details about templates, please refer to the *Report Templates* article in our **User Guide.**

Invoicing Report buttons: export, chart.

You can export data to a **CSV** and **XLSx** file, which contains only currently displayed data, with no automatic request to update data while exporting.

1. To download a report in **.csv**, click on the **Export to CSV** button above the report.

2. To download a **.xlsx** file, press **Export to XLSx** button above the report

6. You can check an actual date interval by clicking on **Info** icon. The displayed data could be different from the Interval specified above if there is no date for the period.

LCR Lists

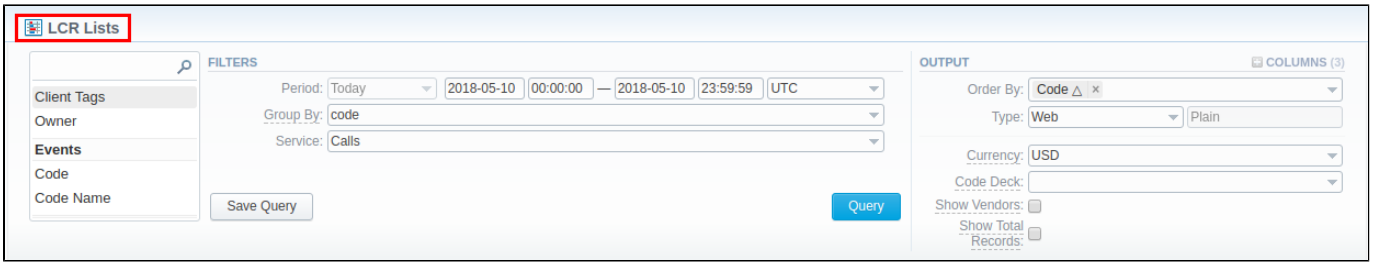
On this page

- Section overview
- Creating LCR Report
- Export generated report

Section overview

This section provides user with a possibility to generate a report with a focus on actual traffic over the specified period of time. The report allows customizing display of routes limits, vendor, total records, etc.

Screenshot: LCR Lists query form



Creating LCR Report

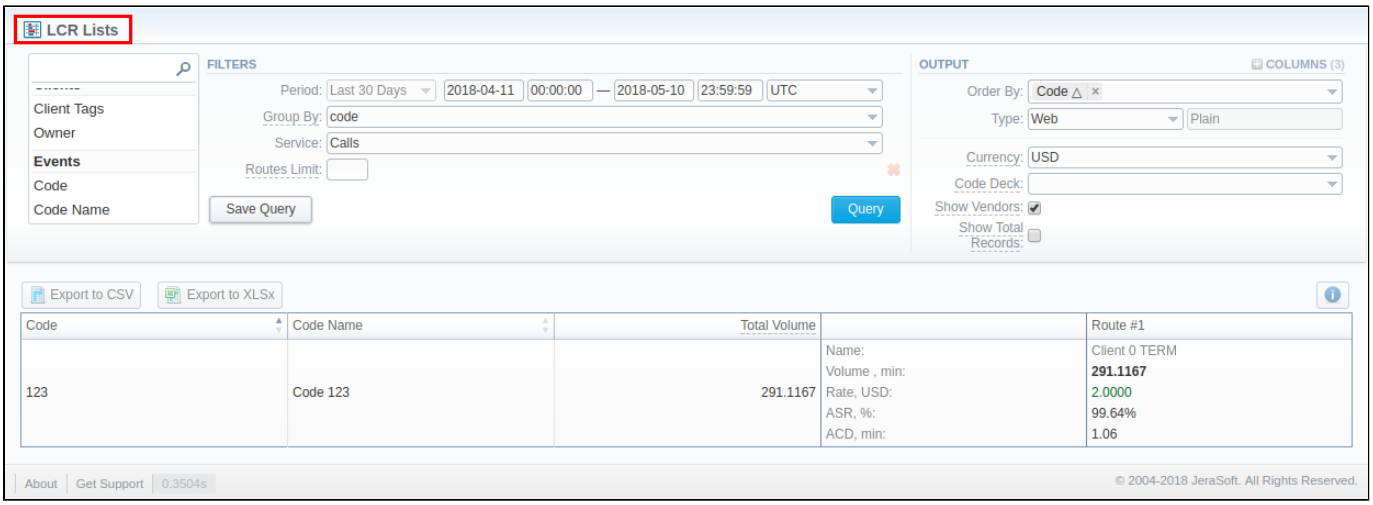
In order to create a new *LCR report* go to the ***Statistics*** section and open the ***LCR Lists***. Then you need to fill out the search form with next parameters:

Information block	Field Description	
Filters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click on the delete sign next to the filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Period	Specify an interval for the report and time zone. Please note that the ***Period*** field is mandatory.
	Group By	Select from the list of following accessible options to group the data in reports: • ***Code*** • ***Code Name*** This option is intended to simplify grouping option, the system will automatically group data in specified columns. **Attention** • Please note, the ***Group By*** field is mandatory, it couldn't be empty in order to generate the report. Grouping by **code** is a default output. • When you select the grouping by **code name**, please be aware that simulation marks will not be shown and effective date, also the next rate, may not be accurate. This data is taken from one of codes of the group.
	Service	Specify a target service ***(calls, data, sms)***
	Additional Filters	
	There are following accessible additional filters: • ***Clients*****:** *Owner, Client Tags* • ***Events:*** *Code/ Code Name* • ***Extras:*** *Routes Limit*	
	Owner	Specify a target reselle

	Client Tags	Indicate client tags that will be used for the report
	Code	Enter the code of a target destination
	Code Name	Define the code name you would like to be displayed in a report
	Routes Limit	Indicate the limit of route that will be shown. To display all possible routes, leave this field **empty**.
Output	This form contains settings of the report output data. Click plus sign next to ***Columns*** and select required columns in order to add them to Output information block. Also, you can cancel any chosen item.	
	Accessible columns in the report	
	There are following columns to add to the report: • ***Code*** • ***Code Name*** • ***Total Volume***	
	Other output settings	
	Type	Choose a format of the report from a drop-down list: **Web / CSV / Excel XLS / Excel XLSx.** The table view of the report is ***Plain*** by default.
	Send to	You can send generated reports via e-mail. For example, it is useful when it takes a lot of time to run the report. Also, it is possible to specify several emails. **Attention** This feature is available only for **CSV / Excel XLS / Excel XLSx** formats of the report, it doesn't work with **Web**.
	Currency	Specify a currency of the report. All values will be automatically converted in the report to the specified currency.
	Code Deck	Select a code deck from a drop-down list. All code decks in the following report will be presented according to the specified code deck. All data will be unified by code names. **Warning** 1. Please be aware that if you do not specify the code deck, the system will use the code decks assigned to each pulled client or rate table. 2. Code deck must contain code names and codes used for calls, otherwise the LCR report would not show results for missing codes and code names in the code deck.
	Show Vendors checkbox	Specify whether you need vendor(terminator) names to be displayed in the report or not
	Show Total Calls checkbox	Check if you want total calls amount to be shown.

LCR report has the following look (see screenshot):

Screenshot: LCR report



Each route, presented in a report, besides total number of events and vendors (displayed when respective checkboxes are marked) has the following data specified (see screenshot above):

- ***Event volume;***
- ***Event rate;***
- ***ASR***
- ***ACD.***

Also, you can create a template for reports and save specified parameters by clicking **Save Query** button. Visit our Report Templates article for a detailed information.

To query by template, press Load Query button and click on icon .

Export generated report

You can export data to a **CSV** and **XLSx** file, which contains only currently displayed data, with no automatic request to update data while exporting.

1. To download a report in **.csv**, click on the **Export to CSV** button above the report.
2. To download an **.xlsx** report file, press **Export to XLSx** button above the report.

Attention

You can check an actual date interval by clicking on **Info** icon. The displayed data could be different from the Interval specified above if there is no date for the period.

xDRs List

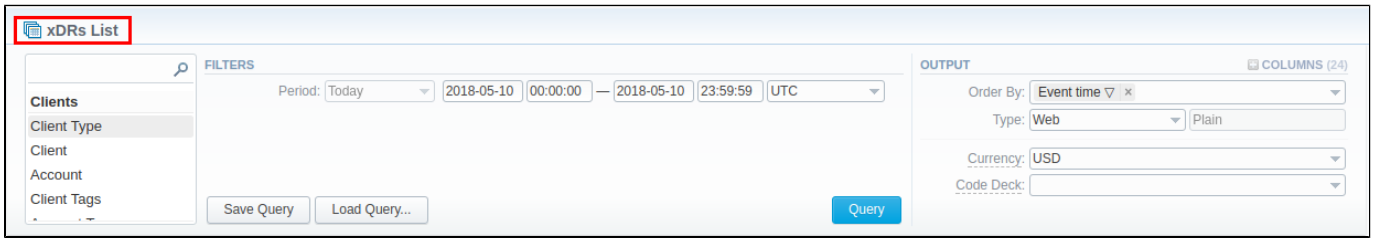
On this page

- Section overview
- reating xDR Report
- xDR Report export buttons
- Search by partial Session ID
- Knowledge Base Articles

Section overview

This section allows you to form a detailed statistics on each client with a description of each event. Here you can create a report, based on an existing template or generate a new one. Section consists of a query form similar to those of other reports:

Screenshot: xDRs List query form



reating xDR Report

To create a new summary report, you need to fill in the following parameters in the form and press **Query** button:

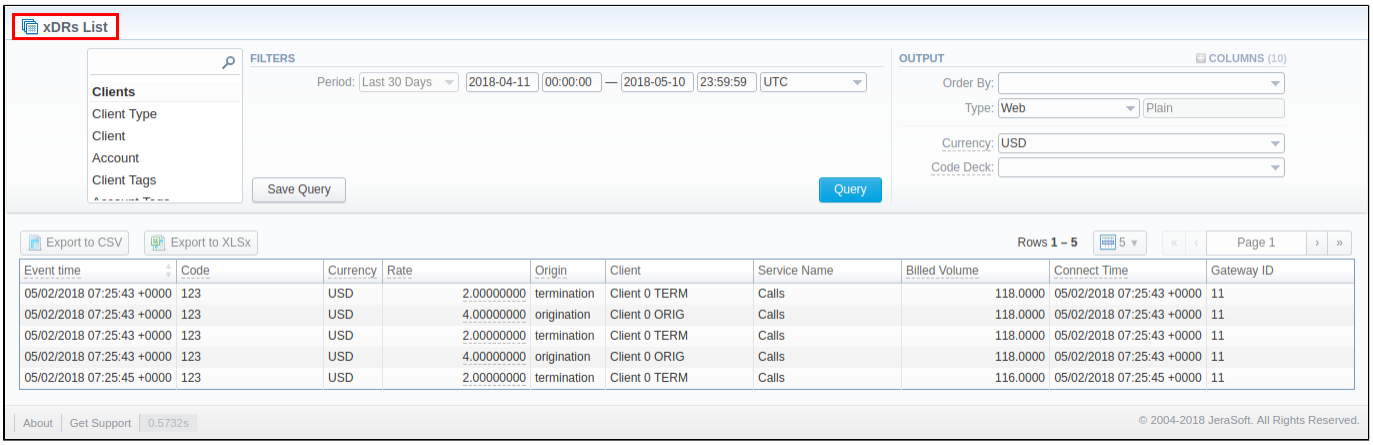
Information block	Field Description	
Filters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click on the delete sign next to the filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Period	Specify the time interval for the report and a timezone. Please note that the ***Period*** field is mandatory.
	Additional Filters	
	There are following accessible additional filters: • ***lients*: *Client Type, Client, Client Tags, Account Tags, Cards Serial, Account, Package.*** • ***Events:** Code, Code Name, Origin, Result Code, Tags, Gateway,* • ***Extras:** Service Name, Owner, Result Status, Rate, Setup Fee, DST Party ID, SRC Party ID, Session ID, XDR ID, Volume, Cost, Status, Match Clients, Match Codes, Currency.*	
	Client Type	Select a client's type for report (*Client, Reseller, Calling card or Call shop*)
	Client	Define a client for the report
	Client Tags	Specify customer's tags
	Account	Enter client's account for the report
	Account Tags	Determine account's tags
	Cards Serial	Indicate cards serial for the report
	Package	Enter a package name for the report

	Code	Specify a code of a target destination
	Code Name	Specify a code name of a target destination
	Origin	Indicate event origin
	Result Code	Determine a disconnect code as a filtering parameter
	Tags	Indicate tags for the report
	Gateway	Specify a host as filtering criteria
	Service Name	Select a type of service (***data, call, sms***) for the report
	Owner	Indicate a reseller
	Result Status	Choose a disconnect processing state: • ***Success*** (code = 16 or 31) • ***Busy*** (code = 17) • ***No channel*** (code = 34) • ***Error***
	Rate	Indicate the destination rate
	Setup fee	Specify setup fee of an event
	DST Party ID	Determine DST Party ID (destination number or any other identification of destination) that is used for detection of destination and billing (after all translations)
	SRC Party ID	Determine SRC Party ID (source number or any other source identification)
	Session ID	ID of the session, received from the gateway
	xDR ID	xDR ID value
	Volume	Volume of the service (e.g. call duration)
	Cost	Enter the range of event cost
	Status	Processing state ***(all/processed/in re-rating)***
	Match Clients	Choose a respective state: • ***matched clients*** (identified), • ***mismatched clients*** (not identified).
	Match Codes	Choose a respective state: • ***matched codes,*** • **mismatched codes.**
	Currency	Indicate a respective currency
Output	This form contains settings of the report output data. Click plus sign next to ***Columns*** and select required columns in order to add them to Output information block. Also, you can cancel any chosen item.	
	Accessible columns in the report	

There are following columns to add to the report: • ***Clients:*** *Client Type, Client ID, Client, Account, Account ID, CC Series, Owner, Owner ID, Package ID, Package Name.* • ***Events:*** *Code, Code Name, Country Name, Currency, Rate, Setup fee, Origin, Result Status, Result Code, Gateway ID, Gateway .* • ***Extras:*** *Event time, Client Tags, Accounts Tags, Tags, Volume, Billed Volume, Package Volume, Package Credit, Cost, Taxes, Subscriber IP, Subscriber Name, Switch Code, Start Time, Connect Time, Finish Time, PDD, SCD, Session ID, x ID, Src Party ID, Dst Party ID, SCR Party ID EXT, DST Party ID EXT, SCR Party ID BILL,DST Party ID BILL, xDR Rource, xDR ID, Uniq Sign, Custom, Extra Data, Status, Service Name, Unit.*	
Other output settings	
Order By	Select parameters to sort already grouped data in columns. Here you can sort data from highest to lowest values (or vice versa) and select different values.
Type	Choose a format of the report from a drop-down list: **Web / CSV / Excel XLS / Excel XLSx.** The ***Plain*** type of view is set by default.
Send to	You can send generated reports via e-mail. Also, it is possible to specify several e-mails. **Attention** This feature is available only for **CSV / Excel XLS / Excel XLSx** formats of the report, it doesn't work with **Web**.
Currency	Specify a currency for the report. All values will be automatically converted in the report to the specified currency.
Code Deck	Select a code deck from a drop-down list. All codes in the following report will be presented according to the specified code deck.

Below, you will find an example of a generated xDR report:

Screenshot: xDRs report



Also, you can create a template for reports and save specified parameters by clicking **Save Query** button. Visit our Report Templates article for a detailed information.

xDR Report export buttons

You can export data to a **CSV** and **XLSx** file, which contains only currently displayed data, with no automatic request to update data while exporting

1. To download a report in **.csv**, click on the **Export to CSV** button above the report.
2. To download a **.xlsx** report file, press **Export to XLSx** button above the report.

Search by partial Session ID

How to perform a search by partial Session ID:

For example, the Session ID of a respective call is *164739890183002422668*8. To filter calls by:

- **First digits of Session ID**, enter digits + asterisk(*): ***16****.
- **Middle digits of Session ID**, enter a search term by this formula: asterisk(*) + digits + asterisk(*): ***7398****. It will match any Session ID containing the 7398 string, even if it occurs in the middle of a large number.
- **Last digits of Session ID**, enter asterisk(*) + digits: ***88***.

Knowledge Base Articles

- What to do if there is no new statistics?
- Why new xDRs are not generated?

Mismatches Report

In this article

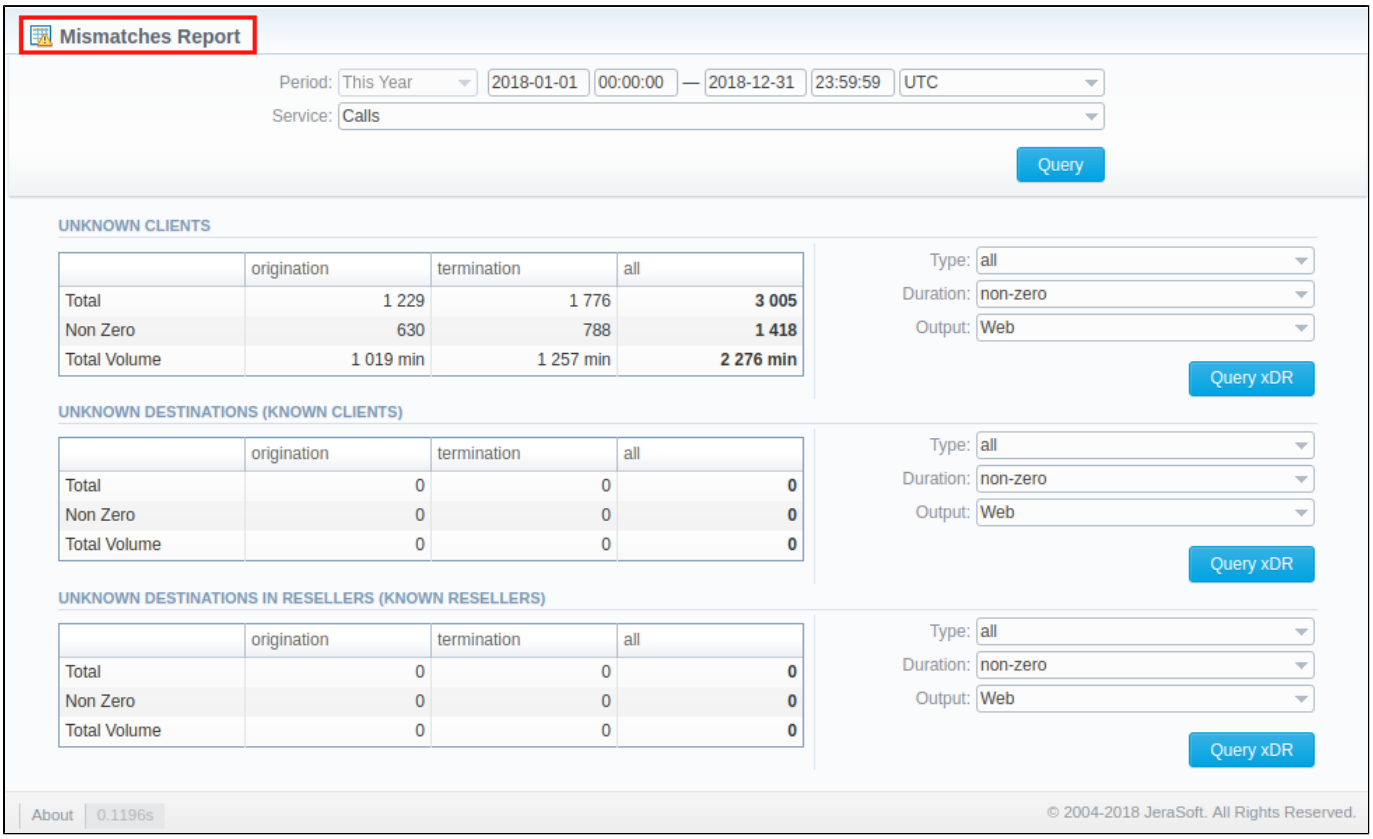
- Section overview
- Creating New Mismatches Report
- Knowledge Base Articles

Section overview

This section allows you to find ***unrecognized calls / clients*** by the system due to unavailability of respective information. Here you can see the general info about unknown clients, unknown destinations, calls stats, the total number of mismatched calls. Section consists of a query form and 3 tables, each representing a specific type of mismatched data:

- ***Unknown Clients*** - calls with unrecognized clients.
- ***Unknown Destionations (Known Clients)*** - calls with unrecognized destinations.
- ***Unknown Destionations in Resellers (Known Reseller)*** - calls with unrecognized destinations or unknown destinations in Resellers.

Screenshot: Mismatches Report section



Creating New Mismatches Report

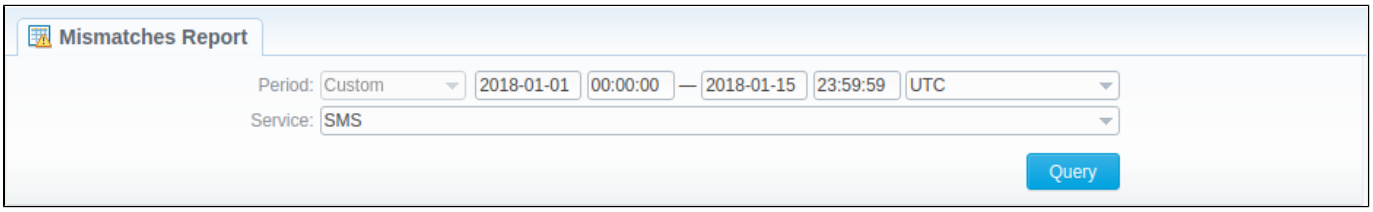
To create a report you need to follow the next steps:

- Filter the data for all tables. To do so, fill in the following fields of the query form and click **Query** button.

Fields	Description
Period	Define the period the mismatches report. You can make it custom by selecting specific time and date or choose a predifined options from the list like: ***This Year, Last Month, Yesterday***, etc.
Timezone	Select a timezone from the list. By default, field value is set to ***UTC***

Service	hoose a desired service from the list (e.g. ***Calls, SMS***, etc.)

Screenshot: Mismatches Report quey form



- Once the data has been filtered, you need to fill in the fileds to the right of a desired table and press a respective **Query xDR** button in order to create a report.

Fileds	Description
Type	Choose the type of calls for generating the report: ***all / origination / termination.***
Duration	Select the continuance of the calls: ***all / non-zero / zero.***
Output	Indicate the output type: **Web / CSV / Excel XLSx / Excel XLS.**

Screenshot: Query xDR button

If you've selected **Web** in ***Output*** field, you'll be forwarded to **xDRs List** section with a detailed information on a selected mismatched data. However, if in ***Output*** field you've selected any file format from the list, a mismatched report of the chosen format will be downloaded to your computer.

Knowledge Base Articles

- What does it mean when client or destination is "unknown" in reports?

xDRs Rerating

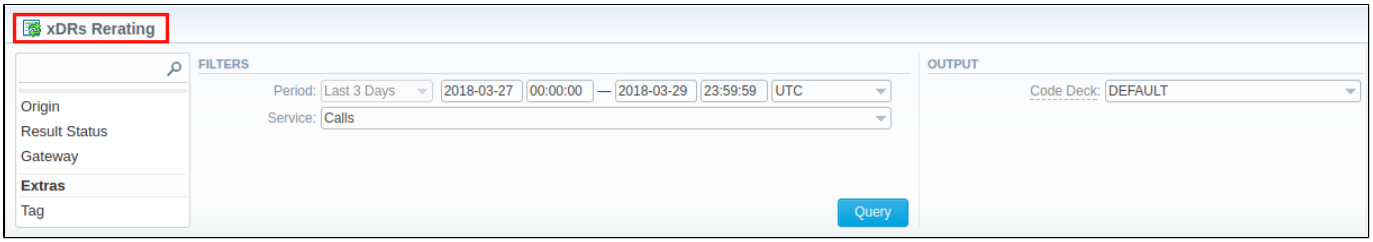
In this article

- Section overview
- Performing xDRs Rerating
- Knowledge Base Articles

Section overview

This section allows to rerate calls, sms, data. It's useful when some changes were applied to the rates, currencies, client accounts or you need to correct errors with **Mismatches Report**.

Screenshot: xDRs Rerating section



Performing xDRs Rerating

The whole procedure consists of the following ***3 steps***:

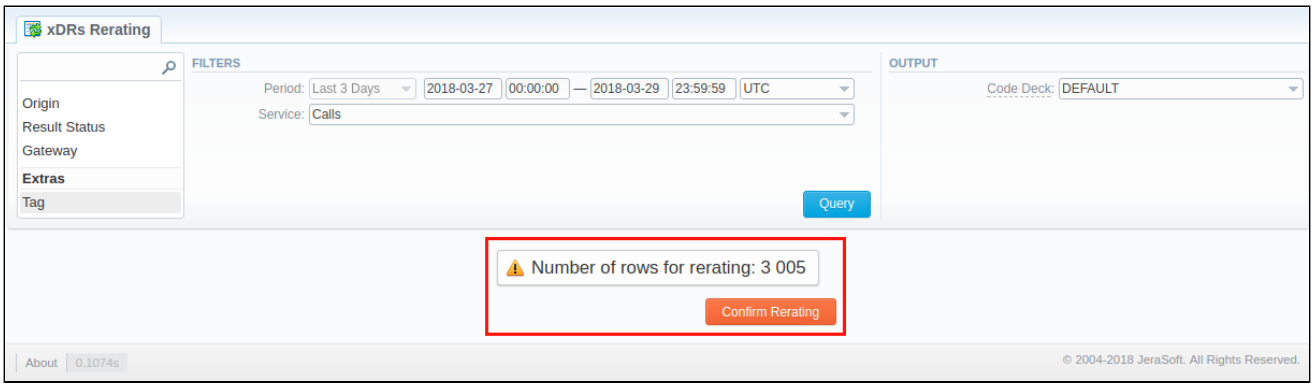
1. Choose filters, specify an interval and respective values in the query form and press **Query** button.

Information block	Field Description	
Filters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click on the delete sign next to the filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Period	Specify the time interval for the report and a timezone. Please note that the ***Period*** field is mandatory.
	Service	Indicate a target type of services from **Services** section
	Additional Filters	
	There are following accessible additional filters: • ***Clients:*** *Client.* • ***Events:*** *Code, Code Name, Call Origin, Result Status, Gateway.* • ***Extras****: Tag, Match Clients, Match Codes, Duration.*	
	Client	Define a client for the report.
	Code	Define a code of needed destination.
	Code Name	Enter a code name of desired destination.
	Call Origin	Specify a call origin for the report: • ***origination*** • ***termination***

	Result Status	Indicate the status of the call for the report: • ***success*** • ***busy*** • ***no channel*** • ***error***
	Gateway	Define target gateway.
	Tag	Specify target tags
	Match Clients	Indicate a respective type: • ***matched*** **(identified)** • ***mismatched*** **(not identified)**
	Match Codes	Choose an appropriate type: • ***matched*** • ***mismatched***
	Duration	Select the continuance of the call: • ***zero*** • ***non-zero*** (i.e.. calls that have a duration equal to or more than 1 second).
Output	This form contains settings of the output data of the report.	
	Code Deck	Select a respective code deck for the report from the drop-down menu. If you **do not select it**, code decks assigned to each specified client or rate table will be in use. If you **select it**, all code names will be rewritten according to the names from the selected code deck. Also, all data will be unified by code names.

2. Then, you will see a respective notification (see screenshot below) and you need to approve the process by clicking **Confirm Rerating** button.

Screenshot: xDRs Rerating approval notification



3. Finally, the calls will undergo rerating, and you need to wait for the system procedure to be completed. The respective number of calls for the rerating you can see on the toolbar at the top of the page.

Screenshot: xDRs in a queue for rerating

Also, you will receive the following notification: ***xDRs are settings to queue now. Please wait while the system will process them.*** Then, you need to run the ***Calculator*** in the **Task Scheduler** section.

Warning

The xDRs rerating is a time-requiring procedure. It's not recommended to create a rerating query with large chunks of information (for example, rerating 3 million calls at once)

Knowledge Base Articles

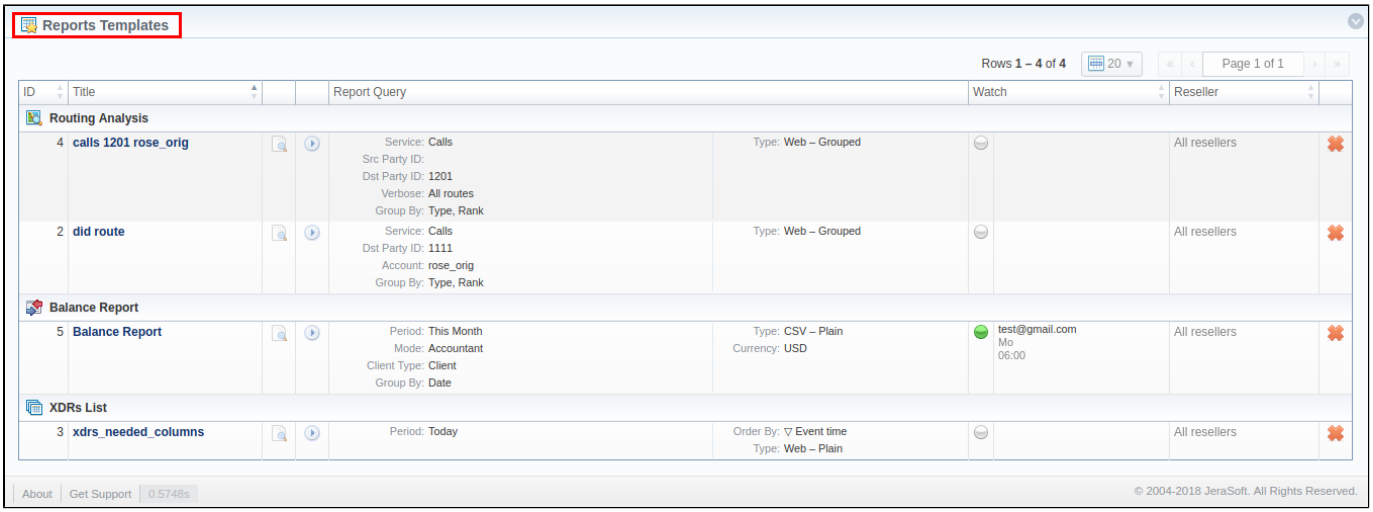
- How to do rerating?

Reports Templates

Reports Templates List

This section allows you to view, execute and manage already existing templates of **Routing Analysis, Profit Report, CDR's list, Mismatches Report, Orig-Term Report, Summary Report**. Moreover, you can send reports to email to keep yourself informed about the traffic status without the need to login into the system and request reports. Section structure is as follows:

Screenshot: Reports Templates section main window



Column	Description
ID	Template ID
Title	Name of the template
Report Query	Template details
Watch	Tool to automatically run a report at the exact time and send the results to the list of emails
Reseller	Name of the Reseller

The section contains the following functional icons:

Icon	Description
	Allows previewing a template
	Allows running a respective report by this template
	Indicates that ***To send a report via e-mail*** watch option is enabled.
	Indicates that ***To send a report via e-mail*** watch option is disabled.

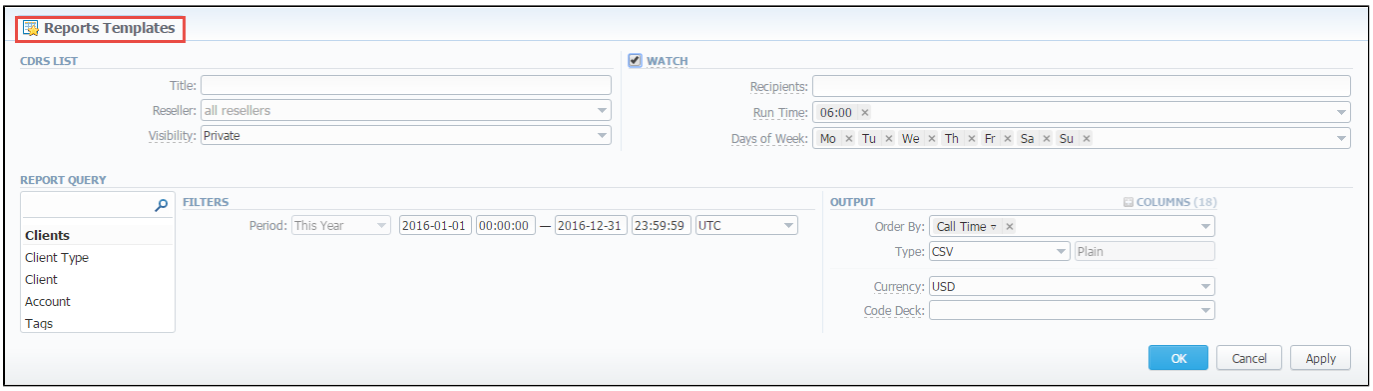
To start managing, choose the respective template from the section and click on the name to open the settings.

Creating Report Template

All reports templates are created from respective sections while generating reports. To add a new template, you need to:

1. Open target report section.
2. Fill in a query form with respective parameters.
3. Press **Save Query** button.
4. In a pop-up window with template settings fill in all required fields (screenshot and field description is provided down below).
5. Click **Apply** to save a template.

Screenshot: New Template form



Information block	Description	
Report name	Here you can specify parameters for the template that will be used while running reports	
	Title	Specify a name of the template
	Reseller	Indicate a Reseller for the report template
	Visibility	It allows controlling visibility of respective reports templates. Whether you want to keep templates private or leave them visible for users under specified Reseller. To enable this option, select one parameter from the drop-down list: • ***Public*** **-** available for users according to the settings of the ***Reseller*** field; • ***Private*** **-** accessible strictly for creator.
Watch	This tool allows generating reports at the appropriate time and send results to specified emails **Attention** Please note that this tool **is not available** for **Web** output type, only for **CSV / Excel XLS / Excel XLSx**.	
	Recipients	Specify emails of recipients. Here you can indicate your own or other users' email, even those of 3rd parties.
	Run Time	Determine an appropriate time to automatically generate a report, it could be several times, for example: ***10:00, 12:00, 18:00***
	Run Time Timezone	Indicate a timezone for a selected report run time
	Days of Week	Define days of a week to automatically generate a report. For example, you can run a report only on Monday or each day of week
Report Query	Here you need to specify filters that will be used for generating correct report and choose the output type to view the report	

Warning

- If you create the report template and the **Watch** option is enabled, the client will receive the file with report even when there is no statistics for a specified period.
- Please be aware that the templates previously existing in the **Reports to email** section could not be restored automatically. Note that you can recreate them in the case of need.

Archive Management

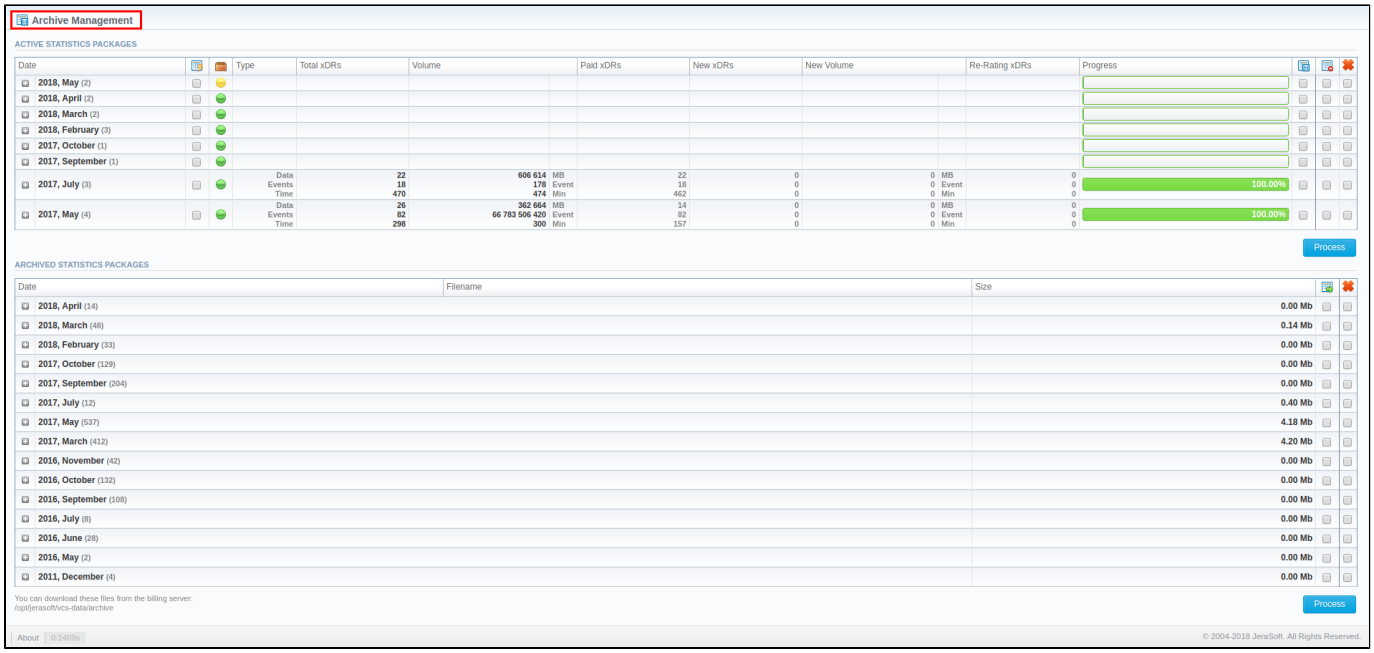
In this article

- Section overview
- Active Statistics Packages
- Archived Statistics Packages
- Knowledge Base Articles

Section overview

This section represents an archive of system statistics packages manager. Statistics package is a pack of billing entities, created during a respective day. Section is divided into 2 Information blocks: **Active Statistics Packages** and **Archived Statistics Packages**, presented in a form of tables (see screensho t below):

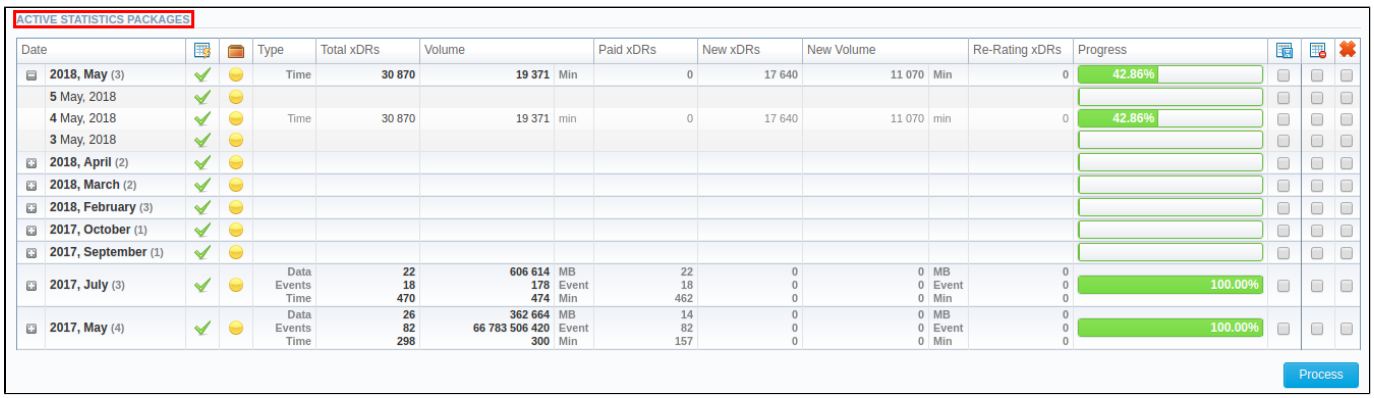
Screenshot: Archive Management section



Active Statistics Packages

Active Statistics Packages information block contains information regarding statistics packages that are currently present in the database. All statistics packages are grouped by month. Click on the plus sign to expand all available active packages. Information about packages is presented in a form of a table with the following columns:

Screenshot: Active Statistics Packages



Column	Description
Date	System package creation date
Type	Type of package entity: **time/events/data**
Total XDRs	Total amount of processed XDRs (origination/termination)
Volume	Total amount of processed events (origination/termination)
Paid XDRs	Total amount of paid XDRs
New XDRs	Total number of XDRs that have not been processed yet
New Volume	Volume of events that have not been processed yet
Re-rating XDRs	Quantity of events, queued for re-rating
Progress	Overall data processing progress

Functional icons, presented in the information block, are as follows:

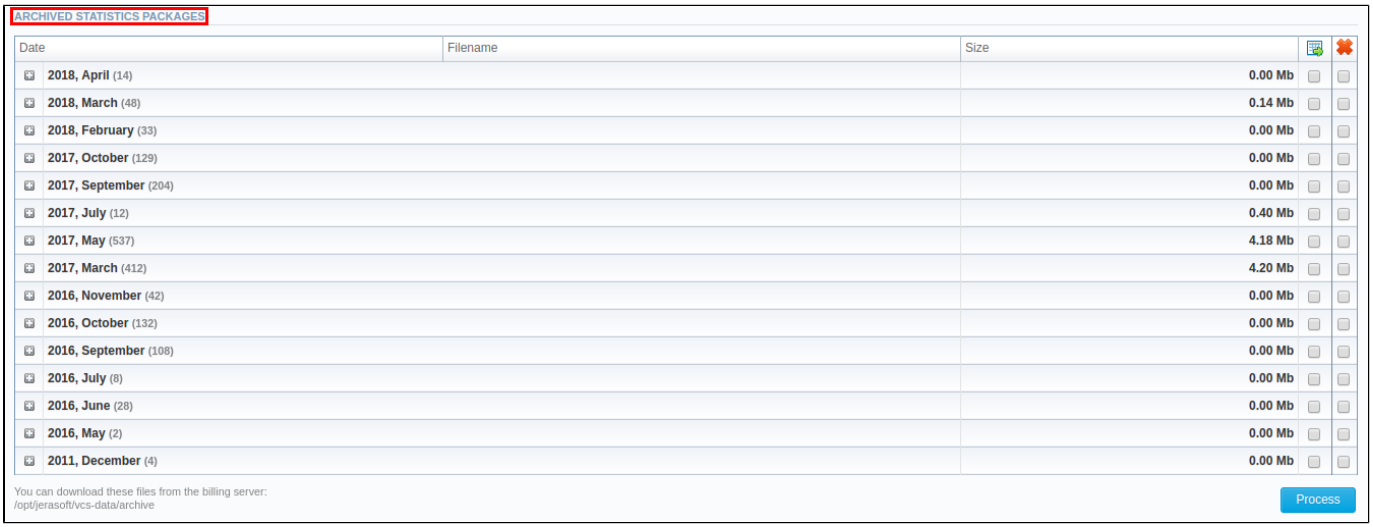
Icon	Description
	Updates selected package to latest database format (useful after system update to new version). All updated packages are marked by icon.
	Shows the status of the package: • icon indicates that the package is not archived for the respective day (month). • icon indicates that the package is archived.
	Moves package to archive and removes from database
	Deletes package from database **without** performing balance rollback
	Deletes package from database **with** balance rollback

To update, move or delete a package, you need to mark a respective checkbox and press **Process** button. The operation itself will be executed after the next run of **Statistics Manager** tool.

Archived Statistics Packages

Archive Statistics Packages table displays statistics packages that are kept in the archive (**/opt/jerasoft/vcs-data/archive** folder of your billing server). Click on the plus sign to view detailed information on archived packages.

Screenshot: Archived Statistics Packages



Column	Description
Date	Package archive creation date
Filename	Name of the archive file which contains system package
Size	Size of an archived file

Information block function buttons include:

Icon	Description
	Restores package from archive to database
	Removes archived package from the database

To perform target action, check respective package and click on **Process** button.

Attention

Moving or rotating the current day statistics package may result in errors! It is strongly recommended not to do any operations to current day's package.

Knowledge Base Articles

- How to do one-day statistics re-parsing
- How to rotate statistics packages?
- Why statistics is not rotated?
- How to update statistics package to the format of latest version?
- How to use Statistics Manager Tool?

Tools

This chapter describes how to **manage the rates, active calls, xDR disputes** and provides the information regarding the factors watcher tool of **the JeraSoft VCS.**
For more details, please check the related sections of our Guide:

- Rates Analysis
- Rates Generator
- Active Sessions
- Factors Watcher
- xDR Disputes

Rates Analysis

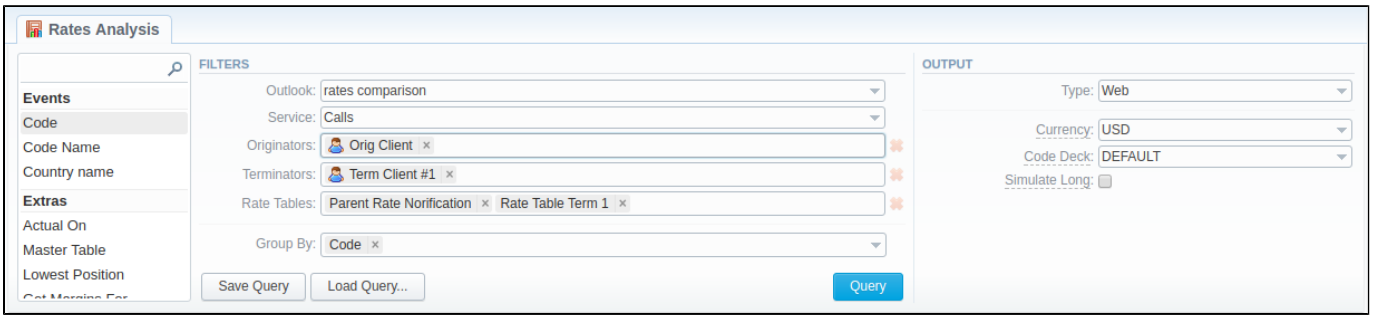
In this article

- Rates Analysis Form
- Creating New Analysis Report
- Creating New Template
- Export generated report

Rates Analysis Form

Rates Analysis is an advanced feature of the **VCS Rates Management Module**. It allows you to analyze and compare rates within the VCS web interface without the usage of any third-party software.

Screenshot: Rates Analysis section



Creating New Analysis Report

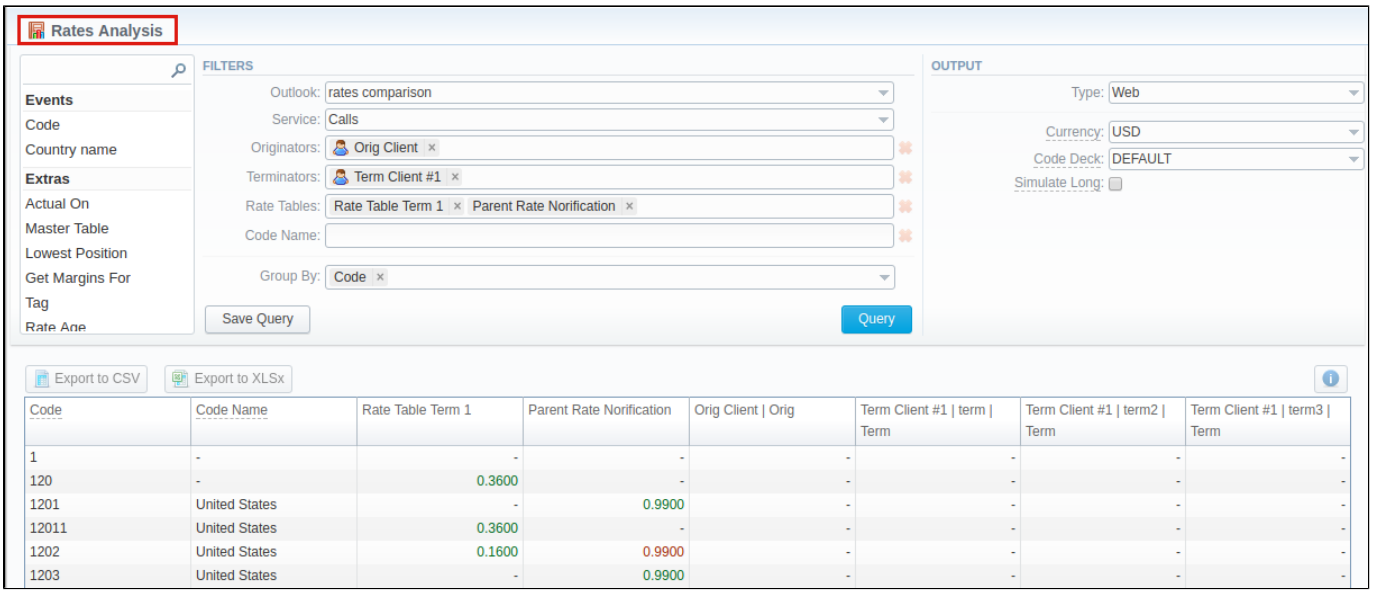
To analyze and compare different rates, you need to fill in the form with the next parameters:

Information block	Field Description	
Filters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click on the delete sign next to the filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Outlook	Choose the form of the rate analysis report for data display. Please note that this field is mandatory and should be filled in to make a report. • ***Rates comparison*** - compares rates in general and particular rates, assigned to certain Clients and Accounts. • ***Least costs list*** - shows the cheapest rate for each code in a particular rate table
	Service	Select a service for rates analysis
	Originators	Specify origination clients for analysis.
	Terminators	Indicate termination clients for analysis
	Rate Tables	Define rate tables for analysis.
	Group By	Select a grouping option from the following list: • ***Code*** - aggregation by default output. • ***Code Name*** - grouping by rate rows with the same names and rates for all codes in each rate table This option is intended to simply grouping option, the system will automatically group data in specified columns.
	Additional Filters	
	The accessible additional filters are: • ***Events:*** *Code, Code Name, Code Country* • ***Extras:*** *Actual On, Master Table, Lowest Position, Get Margins For, Tag, Rate Age*	

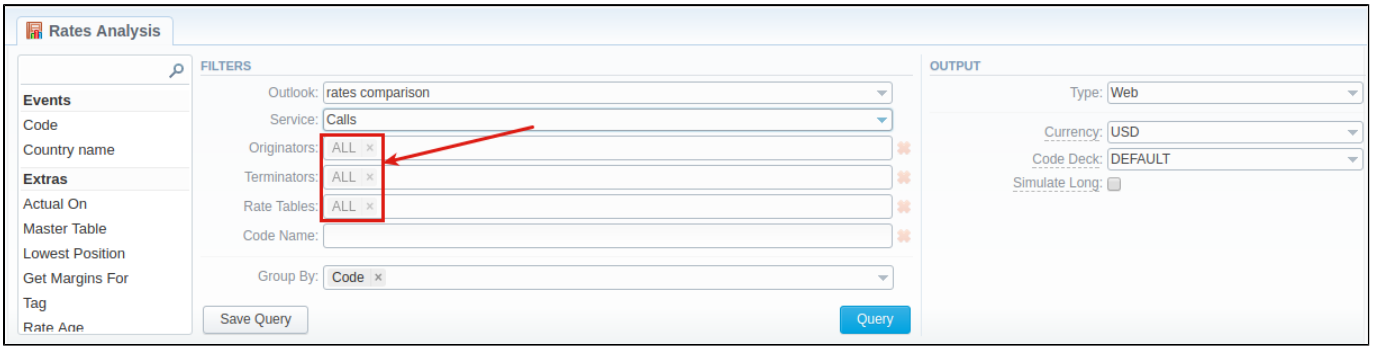
	Events settings	
	Code	Specify a code of needed destination.
	Code Name	Define a code name of the desired destination.
	Code Country	Enter a code of the respective country.
	Extra settings	
	Actual on	Define the Effective Date of rates.
	Master table	Specify a rate table that all other rates table will be compared to. ⚠ **Attention** Please note that this field is active only during rate tables analysis
	Lowest Position	Enter the number of the position from the full list of rates. For example, if you are looking for the cheapest destination in the several rates, tape 1 in this field. Please note that this feature only works with *Master table* option.
	Tag	Indicate a tag which retales to a specified rate table
	Get margins for	Define a rate table which respective margins will be taken from. It is used to analyze margins.
	Rate age	Specify the number of days
Output	This information block contains settings of the report output data.	
	Type	Choose a format of the report from a drop-down list: • ***Web*** • ***CSV*** • ***Excel XLS*** • ***Excel XLSx*** If ***CSV, Excel XLS*** or ***Excel XLSx*** type has been selected, an additional ***Send to*** field will be displayed. In this field, you can specify emails of the clients, where the current report in the selected format will be sent to.
	Currency	Specify a currency of the report. All values will be automatically converted in the report to the specified currency.
	Code Deck	Select a code deck from a drop-down list. All codes in the following report will be presented according to the specified code deck.
	Simulate long codes check box	Check if a rate table does not have codes which are presented in other tables for simulating them using shorter codes. ⚠ **Attention** If you check the ***Simulate long codes*** check box, the system will try to simulate the longest available code with shorter one. For example, we analyze two rate tables, one of which has code *380*, and the other has *380* and *38044* codes. When mentioned check box is active, the first rate table will have unavailable *38044* code simulated with the price of available *380.* Rates like these have ***Simulated*** label when you hover the mouse pointer over them and are colored in light-red, light-green and grey respectively.

After pressing **Query** button, the system will form a list of rates with prices for each destination. The highest rate available for the destination is colored in red, the lowest – in green, and middle rates are colored in black.

Screenshot: Rates Analysis section



Also, there is a possibility to **select all** values in the ***Rates Analysis form*** for next fields: *Rate tables, Originators, Terminators.*
Screenshot: Rates Analysis section



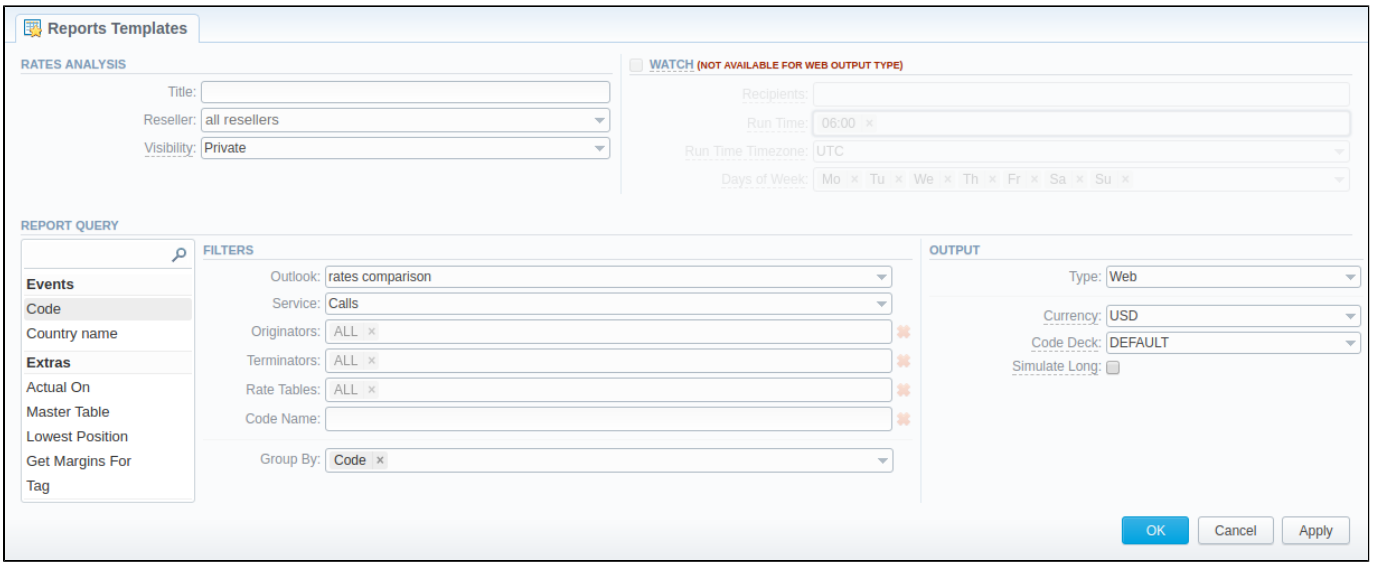
By clicking on **Info** icon above the report on the right, **user's name** and **time/date** when a report was generated will be displayed in a pop-up window

Screenshot: Info icon

Creating New Template

Also, you can create a template and save specified parameters by clicking **Save Query** button. A pop-up window with settings will appear, where you need to fill out the following form:

Screenshot: New Template form



Section	Description	
Rates Analysis	Here you can specify parameters for the template that will be used while running reports	
	Title	Specify a name of the template
	Reseller	Indicate a Reseller for the report template
	Visibility	It allows controlling visibility of respective reports templates. You can set up whether you want to keep templates private or leave them visible for users under specified Reseller. To enable this option, select one parameter from the drop-down list: • ***Public*** **-** available for users according to the settings of the ***Reseller*** field. • ***Private*** **-** accessible strictly for creator.
Watch	This tool allows to automatically generate the report at the appropriate time and send the results to the list of emails ⚠ **Attention** Please note that this tool is **not available** for ***Web*** output type, only for ***CSV / Excel XLS / Excel XLSx***	
	Recipients	Specify recipients, you can indicate your own email or other users of the system, or even 3rd parties
	Run Time	Indicate an appropriate time to automatically generate a report, it could be several times, for example: ***10:00, 12:00, 18:00***
	Days of Week	Indicate days of the week to automatically generate a report. For example, you can run a report only on **Monday** or **each day of the week**.
Report Query	Here you need to check filters and the output type. These values will be pre-selected by default according to the formed rate analysis query.	

After a template has been created, a new **Load Query** button will be added to the section. By pressing it, you can choose from a list of templates for rates analysis a report to be displayed.

Export generated report

You can export report data either in .xls file or .csv that would contain currently presented data. Press **Export to XLSx** or **Export to CSV** button to download a file of the respective format.

Rates Generator

In this article

- Section overview
- Creating New Rates Generator
  - Optimization Options
  - Adjust Options
  - Advanced Options
  - Quality Options
- Rules List Tab
- Creating New Rules

Section overview

Rates Generator is tool aimed at making rates management more flexible and versatile by allowing setting up specific rules that will be applied to codes and rate tables in general. Additionally, it allows both generating new rate table for vendors or updating new ones. Section presented in a form of a table with the following columns:

Screenshot: Rates Generator form

Column	Description
ID	Identification number of a rates generator
Name	Name of a rates generator
Reseller	Name of reseller, whom a rates generator belongs to
Description	Additional information about a rates generator

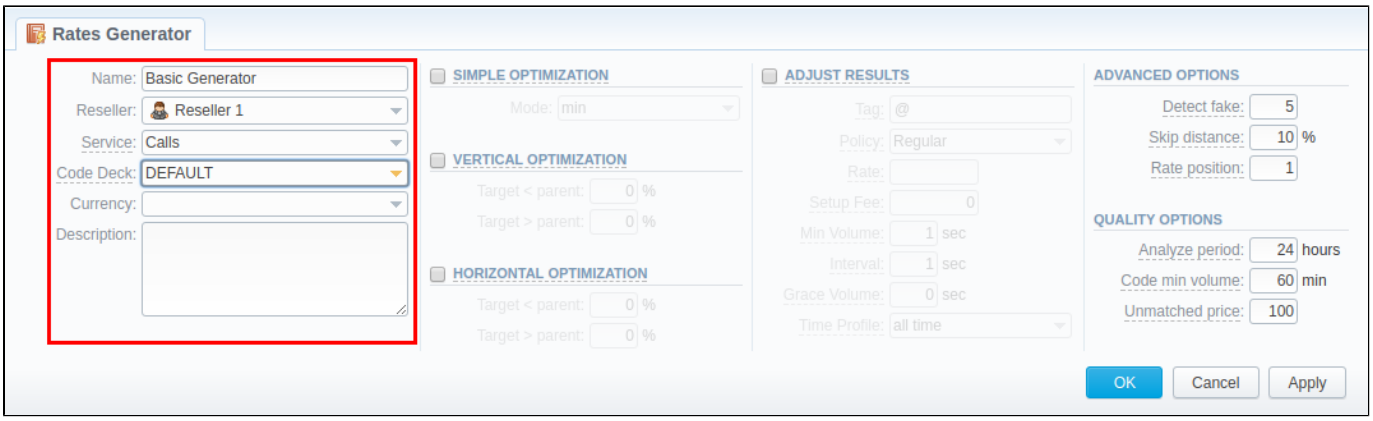
Functional buttons/icons, presented in the section, are as follows:

Button/Icon	Description
New Rates Generator	Allows creating new rates generator
	Allows downloading rate table with rates generator rules in **.csv** or **.xls** formats
	Allows deleting rates generator from the system

Creating New Rates Generator

In order to create a new rates generator, you need to press New Rates Generator button and a pop-up creation form will appear. It consists of **general** settings and **additional** ones. The list of general settings include the following fields:

Screenshot: General settings

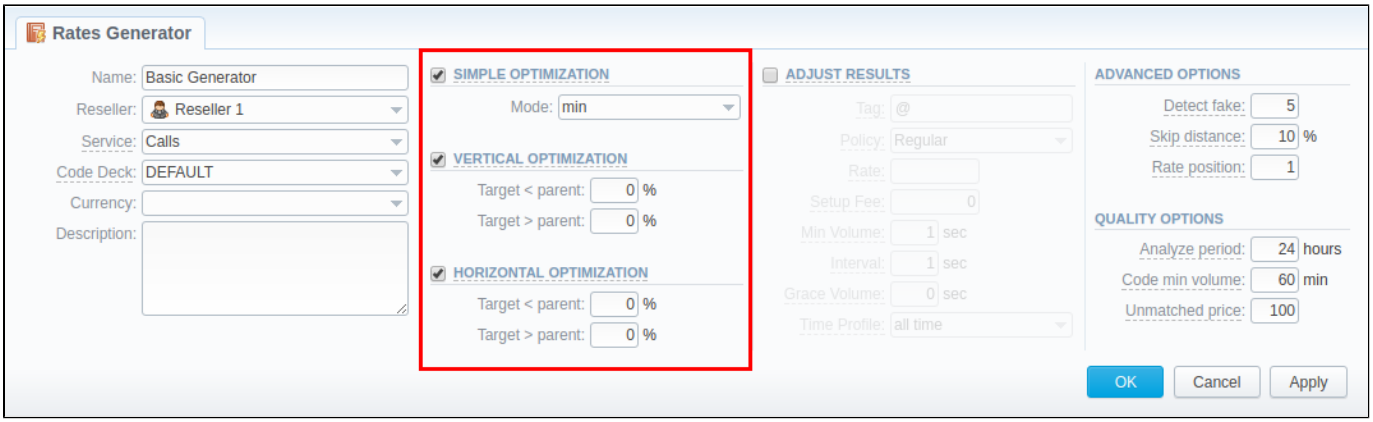


Field	Description
Name	Specify the name of new rates generator
Reseller	Select the reseller to whom newly created rates generator should belong
Service	Choose the service to be applied for respective rates generator (calls, sms, data, etc).
Code Deck	Select the code deck that will be used to name destination codes in new price list if **Adjust Results** option is checked
Currency	Specify the currency of rates in new price list
Description	Additional information about current rates generator

To refine your results, you can use following additional criteria:

Optimization Options

Screenshot: Rates Generator form/ Optimization sub-panel



Information block	Description	
Simple Optimization	It allows applying the same price for all codes inside same code name by using three options.	
	• ***min***	minimal available price.
	• ***max***	maximal available price.
	• ***avg***	average price of all available.

Example

For instance, if **USA** code name consists of **3** codes with ***1***, ***5***, and ***6* USD** rates, respectively, depending on a chosen option results will be:

Code	Source Rate		Result Rate for*min*	Result Rate for *max*	Result Rate for *avg*
1201	1	»	1	6	4
1202	5		1	6	4
1203	6		1	6	4

Vertical Optimization

This option allows replacing longer codes by the shorter ones within a Code Name.

Target < Parent

If a current rate is less of an entered percent, then it will be optimized. The longest codes will be merged to shorter codes within the same code name.

Target > Parent

If a current rate price is above an entered percent, then it will be optimized. The longest codes will be merged to shorter codes within the same code name.

Example

For instance, you have **USA** code name that consists of **5** following codes: ***120, 1201, 1202, 120345, 120456*** *with* ***1, 1.05, 0.98, 1.5, 0.6 USD*** rates, respectively**.**

Then you need to specify the ***Target < Parent*** and ***Target > Parent*** fields: let's say **10%** for each field. **Parent** code is the shortest sub-code within a Code Name (e.g. ***120*** is a sub-code for ***1202***, ***1203***, ***1205*** but not for ***121***, ***1222***, etc.). Thus, the boundaries for vertical optimization are **0.9 USD** and **1.1 USD** with parent's code rate of **1 USD.** As a result, ***1201*** and ***1202*** codes will be merged into ***120*** code since they are located within the specified interval. On the other hand, ***120345*** and ***120456*** codes will remain unchanged.The resulting rate table with vertical optimization will have the following look:

Source Code	Source Rate	Target < Parent	Target > Parent		Result Code	Result Rate
120	1	10% (0.9)	10% (1.1)	»	120	1
1201	1.05					
1202	0.98					
120345	1.5				120345	1.5
120456	0.6				120456	0.6

Horizontal Optimization

This option allows applying the same rate to codes of same lengths within a Code Name.

Target < Parent

If a current rate price is less of an entered percent, then it will be optimized. The price will be set for all codes with the same length within a respective code name.

Target > Parent

If a current rate price is above an entered percent, then it will be optimized. The price will be set for all codes with the same length within a respective code name.

Example

For instance, you have **USA** code name that consists of **3** following codes: ***120***,***120345***,***120456*** *with* ***1, 14, 15*** rates, respectively**.**

Then you need to specify the **Target < Parent** and **Target > Parent** with **5%** and **10%**. For this type of optimization, system will check each code that matches the optimization rule (be of the same lenght) as a parent one. In our case, ***120345*** and ***120456*** will be checked. Therefore, boundaries for ***120345*** code will be **13.3 USD** and **15.4 USD**. Since ***120456*** code has ***15* USD** rate that matches the interval, its rate will be changed to ***14 USD***. As a result, the generated rate table will have the following look.

Source Code	Source Rate	Target < Parent	Target > Parent		Result Code	Result Rate
120	1	5%	10%	»	120	1
120345	14				120345	14
120456	15				120456	14

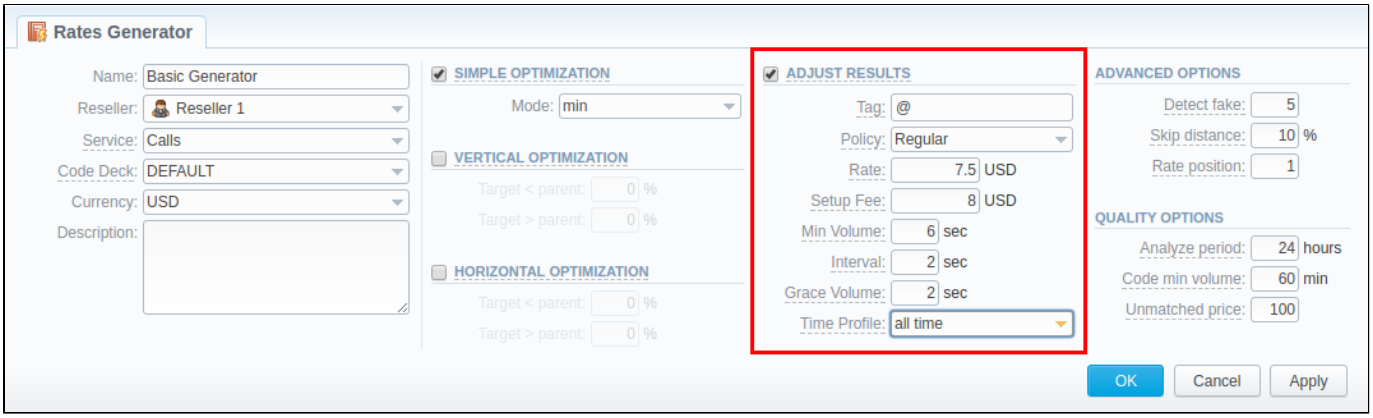
Attention

Please be advised that **we don't recommend** to use all types of optimization within one rates generator. ***Simple optimization*** is designed to work solely, thus, no other type will work, if simple optimization is enabled. However, you can enable ***verical*** and ***horizontal optmization*** within the same rates generator. Nevertheless, we recommend to enable only type of optimization per rates generator.

Adjust Options

Adjust Results checkbox enables results adjusting by data from currently selected **Code Deck**. It means that the number of codes in your **source rate table** (specified in rules after a new rates generator is created) **must be equal** to the number of codes in your Code Deck. If your Code Deck has only 5 codes, but rate table 10, those extra codes that are not specified in a selected Code Deck will be removed from a generated rate table. On the other hand, if your Code Deck has 15 codes, but rate table only 5, 10 extra codes will be added to a generated rate table with parameters, specified in this information block. A detailed example is provided in the table below.

Screenshot: Adjust Results information block



Field	Description
Tag	Specify a tag that will be applied to new rates, if such were created by rates generator. Let's leave default @ tag
Policy	Select the policy (regular or additive) that will be applied to code(s), present in code deck, but not in source rate table. For example, **Regular** policy
Rate	Define a rate for code(s) which are present in code deck but missing in a rule's source rate table. For example, ***7.5 USD***
Setup Fee	Define setup fee for new rate(s). For example, ***8 USD***
Min Volume	Indicate minimum volume for new rate(s). ***6 sec***, for instance
Interval	Specify interval for new rate(s). For example, ***2 sec***
Grace Volume	Determine grace volume for those rates. For example, ***2 sec***
Time Profile	Define time profile for new rate(s). For instance, leave default **all time** profile
Example	Let's say our DEFAULT code deck contains **5** codes: ***1201, 1202, 1203, 1204, 1205***. But our source rate table comprises of **4** codes: ***1201, 1202, 1203,*** and ***1205***. If you enable ***Adjust Results*** and specify the above-mentioned fields with respective parameters, a new rate rable, created by rates generator, will consist of **5** codes: ***1201,1202, 1203, 1205*** with their **original parameters** and a new ***1204*** code with the following ones (see screenshot above):

Field	Value
Code	1204
Code Name	According to DEFAULT code deck
Rate	7.5
Setup Fee	8
Min Volume	6
Interval	2
Grace Volume	2
Time Profile	all time
Tag	@
Policy	Regular

If source rate table misses **more than 1 code** from the selected code deck, all added codes will have **the identical parameters**, specified in the respective fields above.

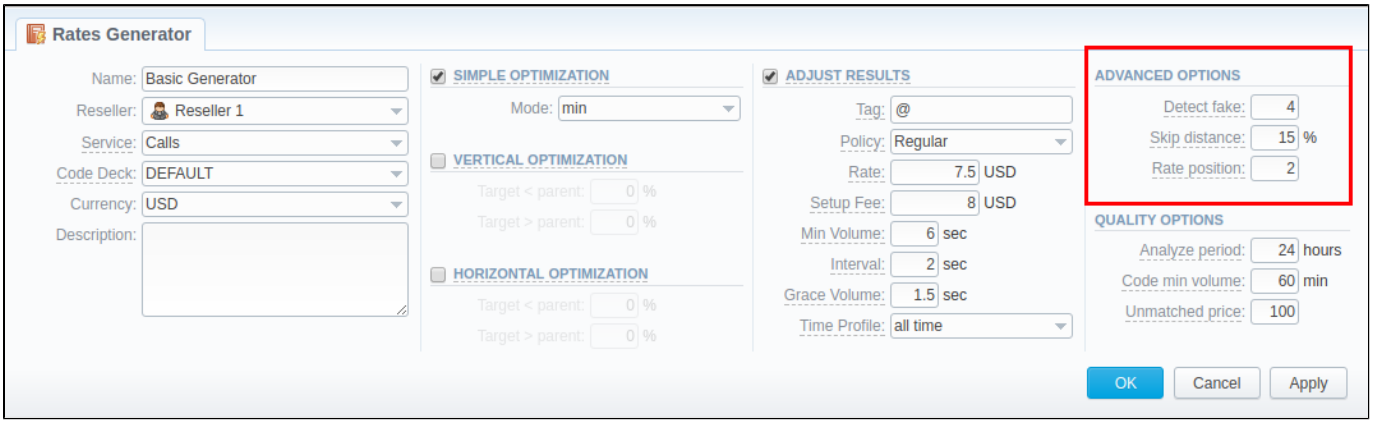
Attention

Please note, if you enable **Adjust Results** option but don'y specify ***Rate*** field, new rates for missing codes **won't be added** to a new rate table

Advanced Options

Advanced Options information block is designed to resolve cases when rates generator rules are created for different source rate tables that share certain identical codes. By specifying the following fields, you can configure what rate system will use for these codes:

Screenshot: Advanced Options information block

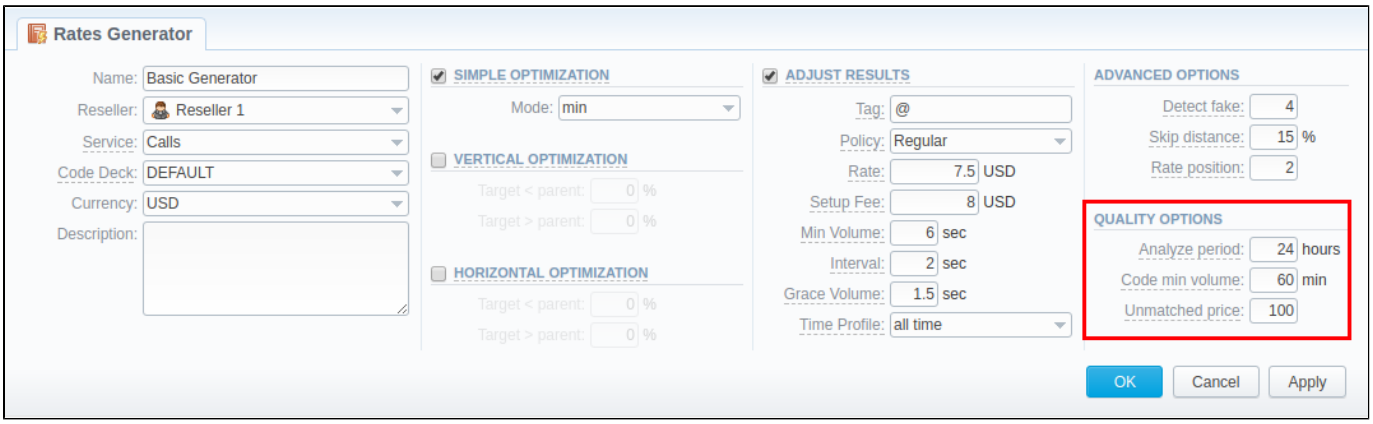


Field	Description
Detect fake	Enable detection of fake rates if at least specified number of rates is present in all source rate table, specified in generator rules.
Skip distance	A percentage value of difference between the average rate value and a particular rate from all rates, used for ***Detect Fake*** operation.
Rate position	Define what rate from a total amount of rates left after ***Detect Fake*** operation will be used for a certain code. Rate are ordered from the chepaest to the most expensive, thus, if you specify 1, system will use the cheapest rate, if 2 - the second cheapest and so on.
Example	Let's say we have **4** rules in our rates generator, each with a different source rate table. Each rate table has rate for ***1201*** code, but with difference prices in USD: **Rate Table Name** / **Rate** **RT 1** 0.98 **RT 2** 0.2 **RT 3** 1.1 **RT 4** 1.7 In **Advanced Options** of rates generator settings, we've specified values, seen on the screenshot above. It means that system will pick **all 4** rates for ***1201*** code and execute the following actions: 1. Count an **average rate** for all 4 rates that equals ***0.99 USD***. 2. Count the interval of **15%** for average rate of 0.99 USD that is between ***0.85 USD*** and ***1.13 USD***. Then, system will compare all rates and skip ***1.7 USD*** rate from **RT 4** and ***0.2. USD*** rate from **RT 2**. 3. Since the ***Rate position*** field value is ***2***, system will pick **the second cheapest rate** for this code that is ***1.1*** from **RT 3** and apply it as a basic rate for ***1201*** code in a new rate table, created by rates generator.

Quality Options

Quality Options information block contains additional parameters for a more precise rate generation, based on Summary Report. System will analyze the report taking into account specified time interval, specified in a report, minimum event value for codes, specified in generator rules, as well replace rate values for unmatched codes and will generate a new rate table or update an exisiting one including these parameters. Information block consists of the following fields:

Screenshot: Quality Options information block



Field	Description
Analyze period	Define a number of hours to analyze **Summary Report** for. For example, ***24 hours***
Code min volume	Define a minimum event volume for a certain code. For example, ***60 min*** for **Calls** service
Unmatched price	Define price for all codes which do not satisfy quality parameters (***Code min volume*** value), For example, ***100 USD***
Example	For example, you created a new rates generator and set up **3** rules for the following codes: ***1201***, ***1202***, ***1205*** with ***1.5***, ***2.5***, and ***5.5 USD*** rates, respectively. In Quality options, respective parameters are same as indicate in the example (see screenshot above). If you press either **Generate To file**, **Create Rate Table** or **Update Rate Table** button on May 16, at, for example, 15.25 PM, rates generator will run a Summary Report with the following parameters:

Field	Value
Period	May 15, 15.25 PM - May 16, 15.25 PM
Code	1201, 1202, 1205
Total Volume	60

Subsequently, report showed that billed volume for ***1201*** code is **79** mins, ***1202*** - **49** mins, and ***1205*** - **61** mins. As a result, a newly generated rate table will contain the following data:

Code	Old Rate		New Rate
1201	1.5		1.5
1202	2.5	»	100
1205	5.5		5.5

Attention

If you want to use **Quality Options** for Rates Generator, you have to specify a **Terminators** field as a Source for Rates Generator's rule, not a **Rate Tables** field.

Rules List Tab

When your rates generator has been created, you need to specify its rules. Rules List tab consists of all rules, created for a target rates generator and is presented in a form of a table with the following columns:

Screenshot: Rules List Tab

Colums	Description
Rates Filter	Code or Code Name, used in this rule
Sources	Rate Tables or Terminators Names that serves a source for this rule
Margins	Ammount of margin that will be applied to rate if specified margin parameters are met
Force Rates Settings	Additiona information on a rate: ***Setup fee, Grace Volume,*** etc.

List of functional buttons, presented in the tab, includes:

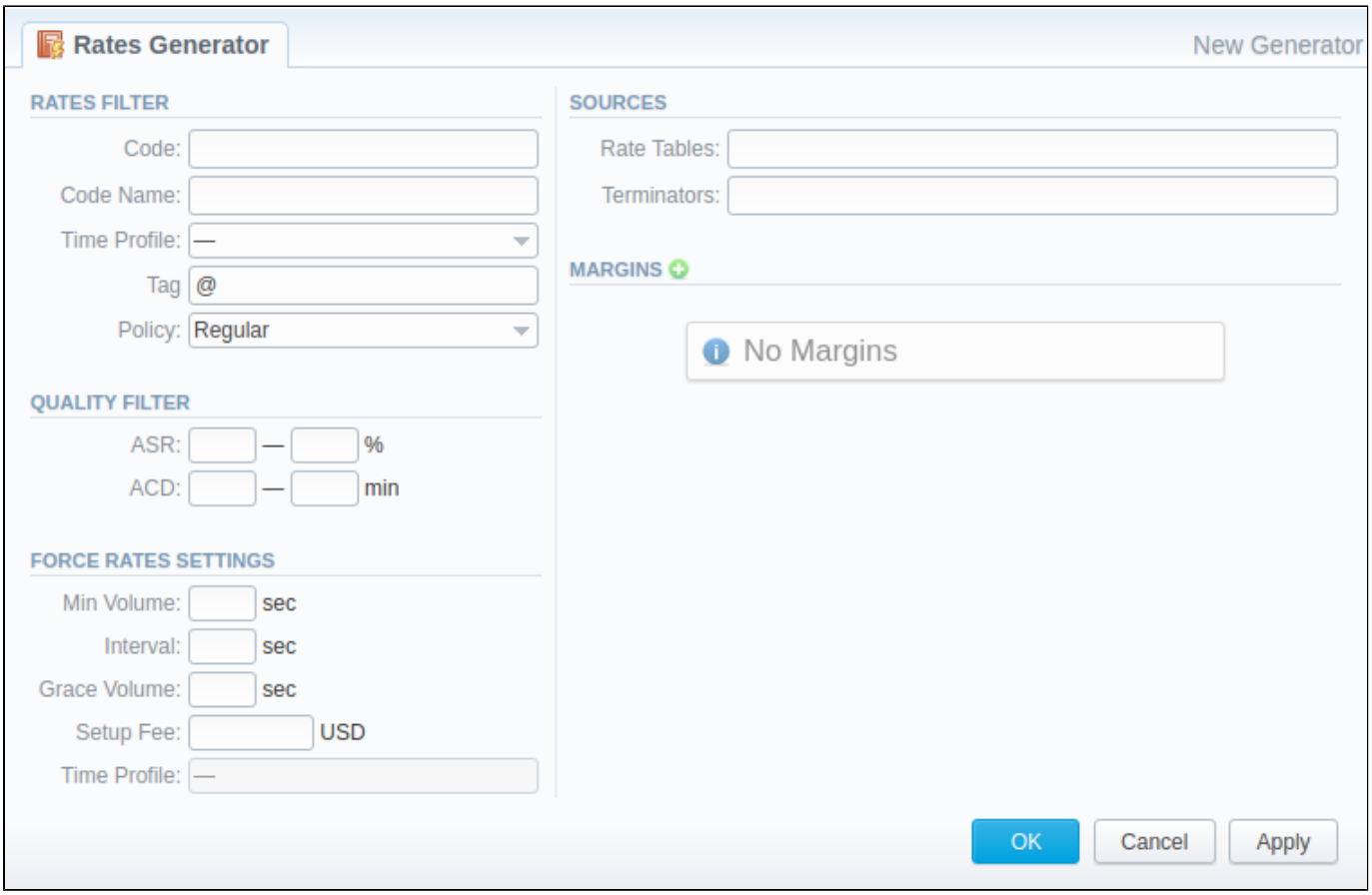
Button/Icon	Description
Add Rule	Allows creating new generator rules
Generate To File	Allows downloading a new rate table in **.csv** or **.xls** formats
Create Rate Table	Allows creating a new rate table with data from respective rules that will be added to **Rate Tables** section
Update Rate Table	Allows updating target rate table(s) with data from respective rules

You can change an order of rules with the help of icon. Simply click on it and drag-and-drop it to a desired place.

Creating New Rules

In order to create a new rule, you need to press **Add Rule** button. In the opened creation form (see screenshot below) specified respective fields and click **OK**. A new rule will be added at the top of **Rules List** tab:

Screenshot: New rule creation form



Information block	Fields and Description	
Rates Filter	Basic parameters of a new rule	
	• ***Code***	Indicate a code for current rule. Use **** (asterisk)*** symbol for all codes. If code is specified, ***Code Name*** field is inactive and vice versa
	• ***Code Name***	Specify a respective Code Name for this rule
	• ***Time Profile***	Select a time profile for codes that will be picked from sources
	• ***Tag***	Specify a tag for a current code of a rule
	• ***Policy***	Choose a respective policy (regular/additive)
Quality Filter	Set quality parameters of your rule here: **Attention** Please be advised that these parameters work in combination with **Quality Options** in generator settings. It means that if **ASR%** is set to ***85-95***, when rates generator creates a **Summary Report**, it will analyze codes not only by their volumes, indicated in ***Code min volume*** field, but also if their ASR complies with value, indicated in ***ASR, %*** field. The same behaviour is expected for specified ***ACD, min*** field	

	• ***ASR, %***	Specify ASR ranges for target code that are checked in Summary Report by rates generator
	• ***ACD, min***	Specify ASR ranges for target code that are checked in Summary Report by rates generator
Force Rates Settings	Specify additional parameters that must be noted when picking destinations from sources: • ***Setup Fee*** • ***Min. Volume*** • ***Interval*** • ***Grace Volume*** • ***Time Profile***	
Sources	Select one or multiple sources for picking data for new price list	
	• ***Rate Tables***	Specify source rate tables
	• ***Terminators***	Specify a vendors (termination clients) for this rule
Margins	By clicking on icon, you can add margin to a respective rate. If the rate for indicated code is within the ranges of rates, defined in ***Rate>*** and ***Rate*** fields, a margin (specified in respective currency or %) will be applied to this rate. Add ***%*** symbol to ***Add Margin*** field value to indicate that margin is in percent.	

Tip

Section rules abide following priority: top placed rule is picked first and if some of the lower priority rules are able to provide same codes, those codes will be ignored.

Attention

Rates Generator generates **stashed rates** that must be confirmed. When you confirm rates and there are duplicate active rates, it changes the status of an active rate to ***stashed*** and a new confirmed rate (created by rates generator) becomes ***active***. You can confirm rates in the **Rate Tables** section.

Active Sessions

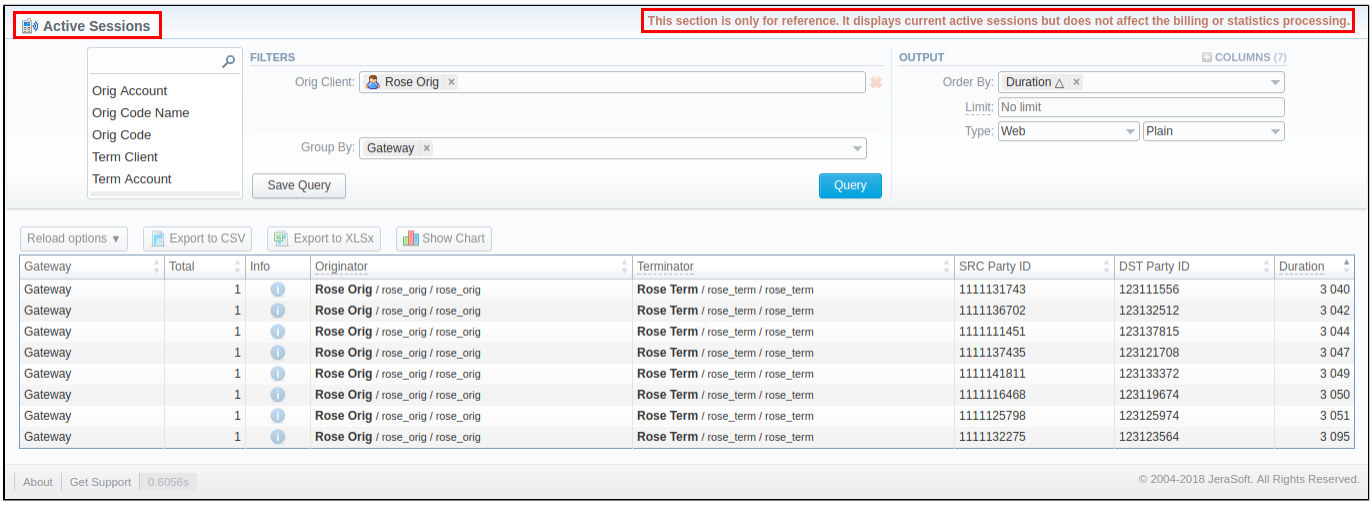
In this article

- Active Sessions Search Form
- Creating active sessions report
- Query templates
- Active Sessions buttons: reports, export, chart.
- Knowledge Base Articles

Active Sessions Search Form

This section provides an easy and convenient active sessions monitoring tool. Upon access, you can see the full list of active sessions that are currently being processed by your switch.

Screenshot: Active Sessions section



If the data is grouped in the report, it will be shown initially collapsed. To expand or collapse data in your report, click the plus or minus signs.

Attention

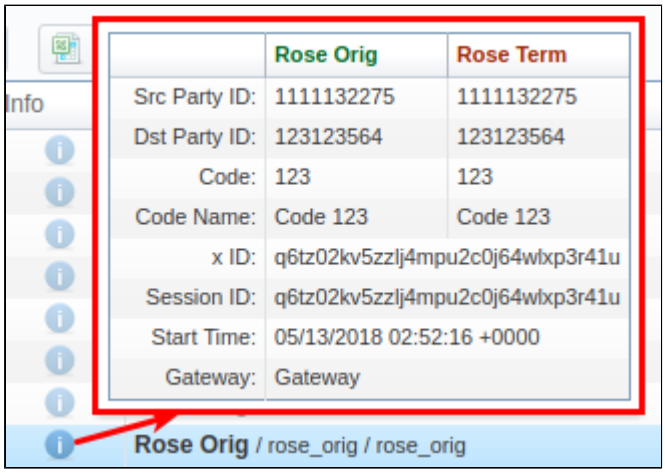
Please note, this function requires **RADIUS Accounting Start packets** to be sent from your Gateway and **Track Active Events** option enabled in **Gateways** section.

Be advised that **Track Active Events** option **diminishes system performance**, activate it only if you use capacity control by billing and/or require active sessions status monitoring.

Creating active sessions report

In order to create a report, fill in the query form with the parameters, specified below, and press Query button. A screenshot of a generated report is presented above.

Information block	Field Description	
Filters	On the **Filters** menu, select required parameters for the report. To cancel any filter, click on the delete sign next to the filter. You can start a **quick search** by typing filters' names in the field at the top of drop-down menu with filters.	
	Group By	Select a grouping option, here you can choose and swap columns, or change their order. There are following accessible options to group the data in the report: • ***Orig Client, Orig Account, Orig Code, Orig Code Name.*** • ***Term Client, Term Account, Term Code, Term Code Name.*** • ***Gateway.***

	Additional Filters	
	There are following accessible additional filters: • *Orig Client, Orig Account, Orig Code, Orig Code Name.* • *Term Client, Term Account, Term Code, Term Code Name.*	
	Orig Client	Define an origination client for the report
	Orig Account	Enter an orig account for the report
	Orig Code	Specify an orig code for the report
	Orig Code Name	Indicate an orig code name
	Term Client	Define a termination client for the report
	Term Account	Enter a term account for the report
	Term Code	Specify a term code for the report
	Term Code Name	Indicate a term code name
Output	This form contains settings of the report output data. Click plus sign next to ***Columns*** and select required columns in order to add them to Output information block. Also, you can cancel any chosen item.	
	Accessible columns in the report	
	There are following columns to add in the report: • *Total, Info, Originator, Terminator, SRC Number, DST Number, Duration.*	
	Total	Quantity of sessions in the database, total quantity.
	Info	By hovering over **Info** icon, an additional data about sessions will be displayed (see screenshot below): • ***Src and Dst Party ID*** • ***Code and Code Name*** • ***x ID*** • ***Session ID*** • ***Start time and Gateway*** *Screenshot: Info* 
	Originator	The name of the originator, orig gateway, account IP, Name or ANI.
	Terminator	The name of the terminator, term gateway, account IP, Name or ANI.

Src Party ID	The source number.
Dst Party ID	The destination number.
Duration	Session duration, specified in seconds.
Other output settings	
Order By	Select parameters to sort already grouped data in columns. Here you can sort data from highest to lowest values (or vice versa) and select different values.
Type	Choose a format of the report from a drop-down list: **Web / CSV / Excel XLS / Excel XLSx** Also, select next to the ***Type*** field a look of table view: • **Plain** - a simple table view • **Grouped** - a table view with grouped data and possibility to collapse it **Attention** Please note that **Grouped** type of table view is available only for **Excel XLSx** and **Web** formats, it doesn't work with **CSV** and **Excel XLS**.
Limit	Determine the number of rows that will be visible in the report. It is useful for displaying some top positions by chosen parameter. It is available only for ***Plain*** type of the report.
Send to	You can send generated reports via email. Also, it is possible to specify several emails. **Attention** This feature is available only for **CSV / Excel XLS / Excel XLSx** formats of the report, it doesn't work with **Web**.

Query templates

Also, you can create a template for reports and save specified parameters by clicking ***Save Query*** button in the form. A pop-up window with settings will appear and you need to fill in the form. Detailed description on creating a template can be find in Report Templates article in our **User Guide.**

To load already existing templates while generating statistic reports, press **Load Query** button and click on icon opposite a target template on the list.

Active Sessions buttons: reports, export, chart.

You can export data to a **CSV** and **XLSx** file, which contains only currently displayed data, with no automatic request to update data while exporting. Also, it is possible to create charts for easily illustrating a crucial information. And you can generate a report using the same criteria in the **Orig-Term report** and the **xDRs list** sections.

1. To set a reload interval of the report, press the respective **Reload options** button and choose a needed values in **Interval** and **Show last** fields.

Tip

Show last field defines the period for which data is generated in a report.For example, if you want to display the data for 1 day, in ***Show last*** field specify .

2. To download a report in **.csv**, click on the **Export to CSV** button above the report.

Attention

Please note, this button will be visible only when the **Type** of the output is **Plain**. For the **Grouped** output type it is not available.

3. To download an **.xlsx** report file, press **Export to XLSx** button above the report.

4. To create a **visual chart**, click the **Show Chart** button above the report. There is more information available on this topic in the article **How to create a statistic chart?** in our Knowledge Base.

Tip

If you want to create a proper **Line chart** for **different clients**, please follow these steps:

- choose the **Orig Client** parameter in the **Group By** field.
- press the **Show Chart** button and open the chart settings.
- select ***Date*** and ***Time*** parameters on **X Axis**, and ***Calls Total*** parameter on **Y Axis**.
- specify a **line type** of the chart and click on the **Save** button.

Knowledge Base Articles

- Why there are no active sessions?

Factors Watcher

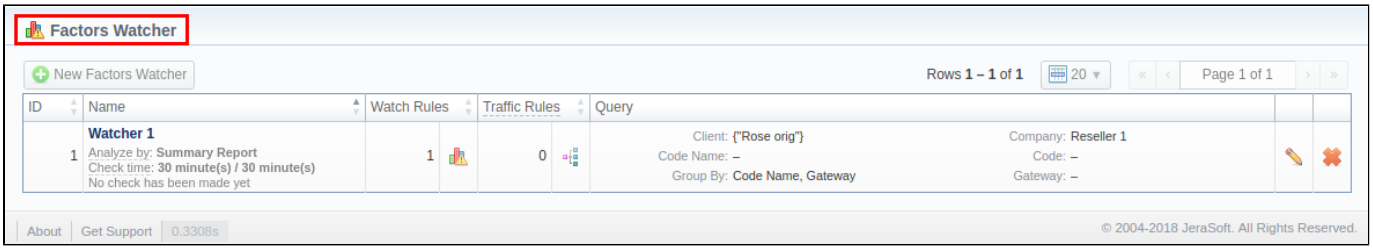
In this article

- Factors Watcher List
- Creating New Factors Watcher
- Configuring Watch Rules

Factors Watcher List

This section represents built-in tool to monitor statistics and generate alerts if some conditions are met, as well as, block numbers, codes/code names, destinations, clients or accounts. Section is presented in a form of a table with the following columns:

Screenshot: Factors Watcher main section



Column	Description
ID	Identification number of a factors watcher
Name	Factors watcher name
Watch Rule	Total number of watch rules within a factors watcher
Presets	Total amount of traffic rules, created by a factors watcher
Query	Factors watcher query

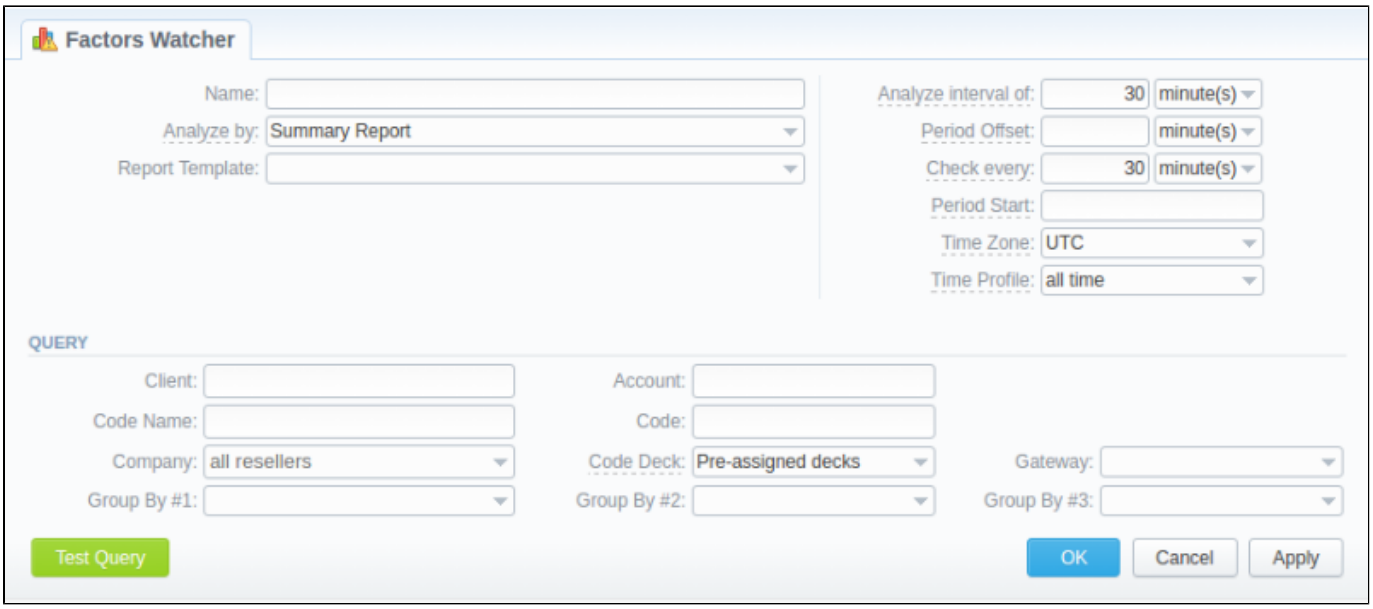
Functional buttons/icons, presented in the section, are as follows:

Icon	Description
	Allows editing existing watch rules
	Allows viewing traffic rules, created by factors watcher
	Allows editing factors watcher
	Allows deleting factors watcher

Creating New Factors Watcher

The tool is based on periodical queries in **Summary** or **xDRs List** sections. To create a new query, press **New Factors Watcher** button and specify parameters in the following form:

Screenshot: Adding New Factors Watcher



Field	Description
Name	Factors watcher name. This field is mandatory. Name nust be no longer than 128 symbols.
Analyze by	Select a report (**Summary** or **xDRs List**), a new factors watcher will be based on Different reports provide a different set of parameters that are available for monitoring. For instance, **xDRs List** allows you to work with service sources (phone numbers, data) while **Summary report** allows such operations with ACD and ASR.
Report Template	Specify the template for a further usage (optionally) **Attention** Please note that the system enables to set a limited number of parameters overridden from the assigned template. For example: If there are 2 or more clients assigned to the respective template, the system will use the first client for Factors Watcher settings, all others will be ignored.
Analyze interval of, min	Interval of time to check. Please note, this option checks **a current period, not the past hour.**
Period Offset	This period is used to compare results of different intervals. It deducts a specified period from the ***Period Start*** date, then takes the statistics according to the ***Analyse interval of*** value and the date calculated above.
Check every, min	Frequency of checks, performed by factors watcher
Period Start	Enter the specific time to set factors watcher starting date
Time Zone	Specify timezone that will be used for reports queries / blocking routes
Time Profile	When you choose the time profile, it will use the statistics in the factors watcher according to the chosen value, for example at peak times. However, if you click on **Test Query**, it will display the statistics without the selected time profile.
Query information block	**Indicate query fields that will be used for generating a selected type of report**
Client	Select a client. You can specify multiple clients. **Attention** If you specify client(s), ***Account*** field becomes unavailable and vice versa.
Account	Select target client's account

Code Name	Indicate a code name **Attention** ***Code*** and ***Code Name*** fields are mutually exclusive
Code	Define the code
Company	Specify a Reseller
Code Deck	Indicate a target code deck
Gateway	Select a respective gateway
Group by #	Group query by selectable parameter (***client, account, code name, code*** or ***gateway***). Pay attention that based on selected parameters, respectible ***Action*** options will be available. For instance, if you group by ***Code***, in rule settings you will have ***Block Code*** option and so on
Test Query button	Click on this button to perform test query in Summary or xDRs List Report for the period, specified in ***Check every*** and ***Analyze Interval of*** fields

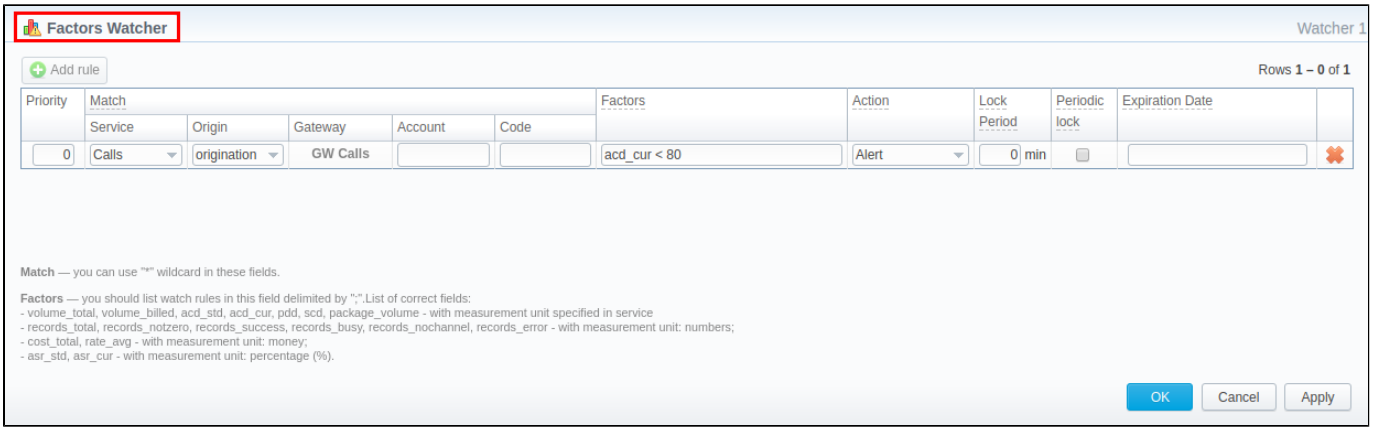
When you press **OK**, the new factors watcher will be created. You can edit properties of this watcher later by clicking edit icon.

Configuring Watch Rules

Next step you need to take is to configure the watcher rules – parameters under which conditions are monitored. To do this:

1. Choose the already existed Factors Watcher from the list or create a new.
2. Click on the name of the Factors Watcher or watch rule icon.
3. In the appeared window, press **Add rule** button and fill in the following fields:

Screenshot: Editing Factors Watcher rules



Field	Description	
Priority	Define a priority of rules execution if they have similar ***Match*** parameter	
Match	A set of parameters that are used as base for checks	
	Service	Determine the type of service (e.g. ***calls***, ***sms***, ***data***)
	Origin	Type of route to check (***Origination/Termination***)
	Code Name	Indicate the code name to apply rule to
	Gateways	Specify the gateway to apply rule to

	Tip To create a temporary rule that will override other rules with the same match parameters, you need to set up the rule with the highest priority and specify an appropriate ***Expiration Date***. Therefore, existed multiple rules with the same match parameters will override each other and the rule with the highest priority will be applied.
Factors	**Enter factors that will be applied to a current rule.** Parameters must be listed with **semi-colon *";"* as a delimiting symbol.** The list of parameters available for usage: • **volume_total, volume_billed, acd_std, acd_cur, pdd, scd, package_volume** - with measurement unit specified in service • **records_total, records_notzero, records_success, records_busy, records_nochannel, records_error** - with measurement unit: numbers; • **cost_total, rate_avg** - with measurement unit: money; • **asr_std, asr_cur** - with measurement unit: percentage (%). For example, if you enter ***total_volume > 100***, it means that when total event volume (e.g. call time) count for respective match parameters goes over 100 (here minutes), system will create an alert It's possible to add factors watcher rule with negative values. For example, ***total_cost < -10***.
	Factors with reference to the side-by-side reports: You can adjust these factors on your own, using the next formula and pre-existing factors mentioned above: ***factors_name_1*** - value for the first period; ***factors_name_2*** - value for the second period; ***factors_name_diff*** - difference between periods. For example: **total_cost_1** (of the 1st period), **total_cost_2** (of the 2nd period), **total_cost_diff** (difference in %). **Tip** Users can add the Factors Watcher based on the side-by-side Summary Report. All you need to do is: • press the **New Factors Watcher** button; • fill in the ***Name*** field and others according to your needs; • then specify intervals in the next fields: ***Analyze interval of***, ***Period Start*** and ***Period Offset.*** • and click the **Test Query** button.
Action	An action that must be taken if a matched rule is found. There are respective options: ***Alert, Block Code Name/Account/Client*** When one of these options is applied, the message will be shown in the **Events log** section. **Attention** The ***Block Code Name/Client/Account*** options will be invisible if***Group By #*** fields in factors watcher rule are empty. If you group by the ***Client***, the ***Block Account*** option won't be visible in the drop-down list of the ***Action*** field.
Lock Period	Defines the lockout time in minutes for analyzed route in case of block action (0 value means infinite lockout)
Periodic lock	If either calendar period or fixed period is enabled, this lock will be expired at the end of a given period
Expiration Date	Specify date when the rule must be automatically deleted

Attention

Please note that the **set of rules** in the ***Action*** field depends on how many parameters you defined in ***Group by #*** fields when a current query was created.

The **Block Code** option is available only if you set respective grouping in the factors watcher settings. For example, if you defined a code in the query, you will be able to block codes in watcher rules, etc.

xDR Disputes

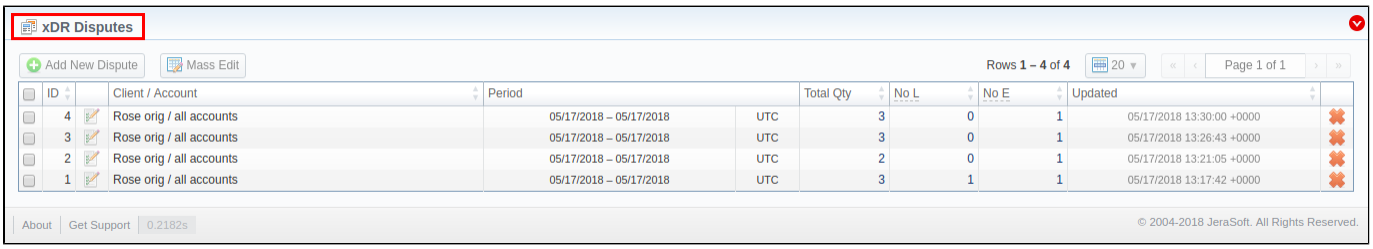
In this article

- Section overview
- Creating New Dispute
  - Step 1. Selecting File and Specifying All Required Parameters
  - Step 2. Rows and Columns Select
  - Step 3. Receiving Results of comparison
- Mass Edit

Section overview

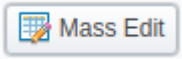
xDR Disputes Manager is full-featured add-on of the system that could be used to compare xDRs given by your client/vendor with xDRs stored in the system.

Screenshot: xDR Disputes List



Column	Description
ID	ID of a dispute
Client/Account	lient and Accounts of a current dispute
Period	Period of compared xDR files and timezone
Total Qty	Total amount of compared xDRs
No L	Number of xDRs which were not found in the system
No E	Number of xDRs which were not found in the external xDR file
Updated	Date of the last dispute update

Functional buttons/icons, presented in the section, are as follows:

Button/Icon	Description
	Allows adding new dispute to the system
	Allows editing selected disputes
	Allows viewing dispute details
	Allows deleting dispute from the system

Attention

If **xDRs Disputes** section is not displayed in your VCS , you need to enable it in **System > Roles** section.

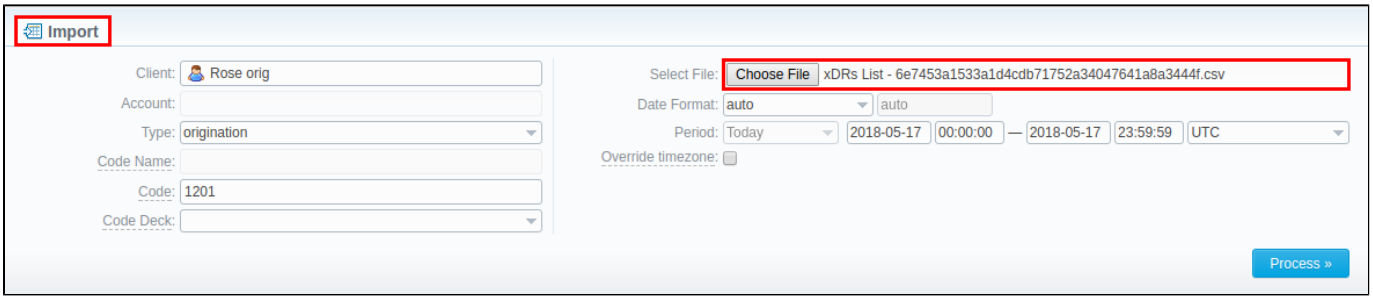
Creating New Dispute

Whole creating dispute process can be divided into three steps.

Step 1. Selecting File and Specifying All Required Parameters

To create a new dispute, press **Add New Dispute** button. Then, you need to upload target xDR file and specify the next information in the opened pop-up window:

Screenshot: Adding New Dispute. Step 1



Field	Description
Client	Specify a client for the dispute. If indicated, ***Account*** field is disabled (and vice versa)
Account	Specify an account for the dispute
Type	Choose the type of compared xDRs: • ***origination*** • ***termination***
Code Name	Specify code name of a desired destination. If indicated, ***Code*** field is disabled (and vice versa)
Code	Specify code of a desired destination
Code Deck	Select a code deck that will be used for a current dispute
Select File	Upload the xDR file for comparison
Date Format	Specify date format of xDRs **Attention** Please note that by default date format is set to ***auto*** which has the following format ***YYYY-MM-DD HH:MM:SS***.
Period	Specify a period of a dispute
Override timezone checkbox	If enabled, the timezone in the imported file will be replaced with the specified timezone in the ***Period*** field

When you filled in all required fields, press **Process>>** button.

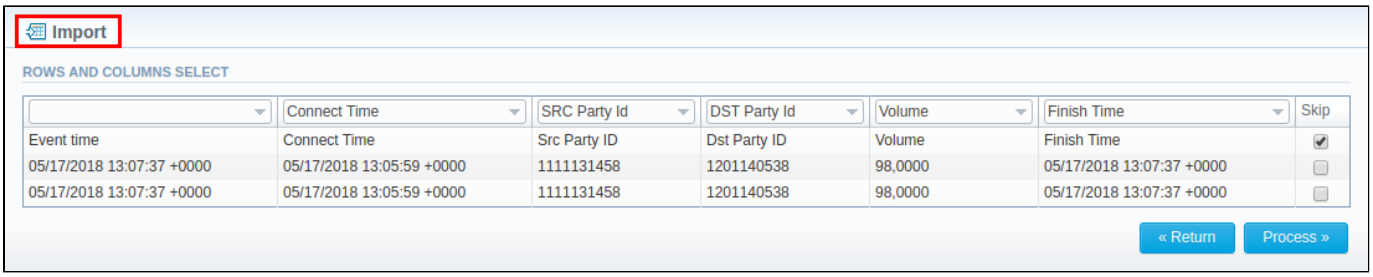
Warning

xDR Disputes have developed optimization algorithms of the file uploading process. Hence, we strongly recommend uploading files with a limited number of columns. **The dispute file must contain only 6 columns** for correct auto-detection while importing.

Step 2. Rows and Columns Select

The system will recognize the file and display few first rows of it. Following this, you need to select these mandatory columns: **SRC Party ID**, **DST Party ID**, **Volume**, **Connect Time**, **Finish Time**. Then, press **Process>>** again (see screenshot below).

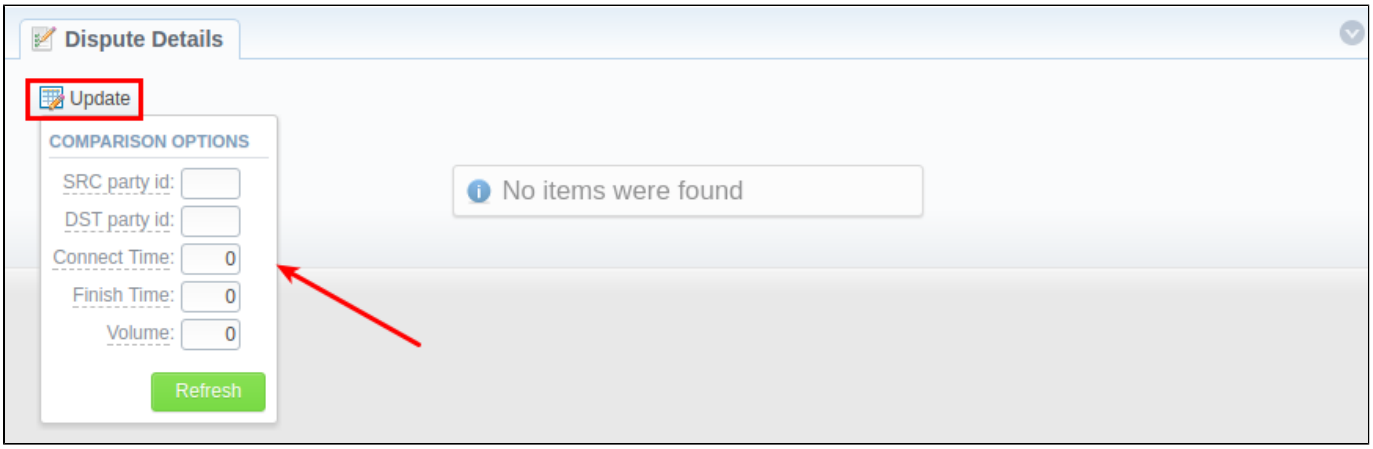
Screenshot: Rows and Columns Select window. Step 2



Step 3. Receiving Results of comparison

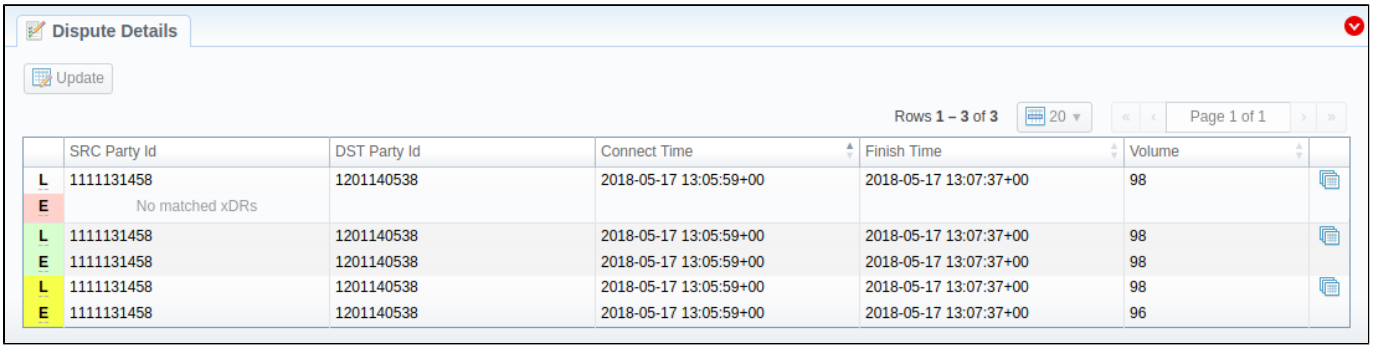
After you click the **Process>>**, the system will execute the comparison of local xDR and the imported one, and the **Dispute Details** window will be opened. Then, you need to click on **Update** button and specify ***Compare Options*** in a respective pop-up window. Following this, click on **Refresh** button for the disputes results to be displayed (see screenshots below).

Screenshot: Disputes Details window. Step 3



Field	Description
SRC Party ID	Enter number of the last digits for source number comparison
DST Party ID	Indicate number of the last digits for destination number comparison
Connect Time	Specify possible time offset (in seconds) between the system and external xDRs
Finish Time	Define possible time offset (in seconds) between the system and external xDRs
Volume	Specify possible time offset (in seconds) between the system and external xDRs

Screenshot: Disputes Details window. Step 3



Icon	Description
E	Red color indicates the mismatched xDRs (external or local, it depends on the marked letter ***L*** or ***E***)

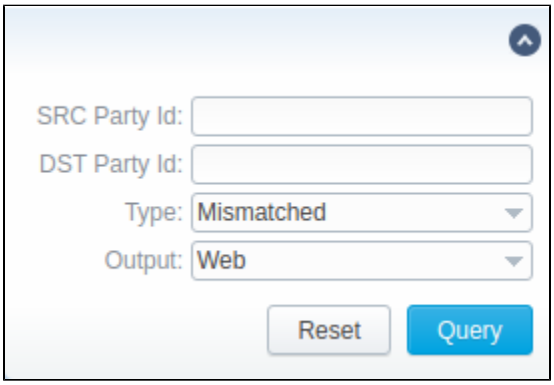
L	Yellow color indicates the matched xDRs with offset (external or local, it depends on the marked letter ***L*** or ***E***). For example, **Volume** value on a screnshot above for local xDR is ***98*** and for external - ***96***
L	Green color indicates the exact matched xDRs (external or local, it depends on the marked letter ***L*** or ***E***).

Attention

Please note, if at least one of the xDR's comparison parameters (***Session Time/Connect Time*** or ***Session Time/Finish Time***) matches to the range of values specified in the ***Update*** option, it will be indicated as exact matched xDRs (green color).

Click on blue downwards arrow in the top right corner of the page to use Advanced Search. Note that by default, dispute details are filtered by ***Mismatched*** type.

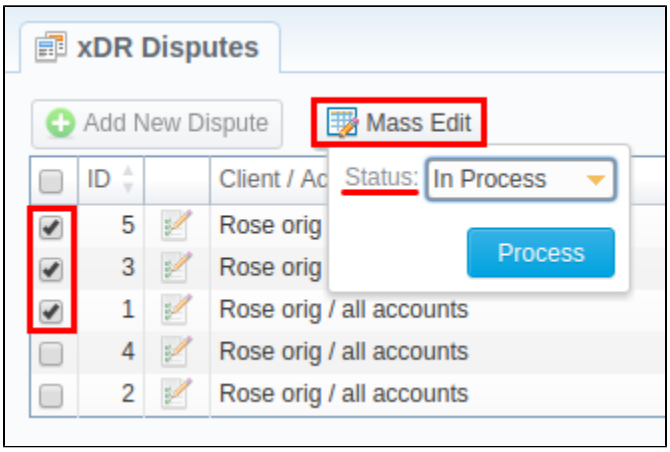
Screenshot: Advanced Search drop-down menu



Mass Edit

You may change the status of selected disputes by using **Mass Edit** button (Screenshot). Simply select target disputes, press **Mass Edit** button, choose a status in a respective field and press **Proceess**. All changes will be applied immediately.

Screenshot: Mass Edit button



Routing

This chapter describes **routing capabilities of JeraSoft VoIP Carrier Suite**. Please note that your JeraSoft VCS must include the ***Routing Module*** to have functional capabilities described below.

Introduction to VCS Routing Module

JeraSoft VCS is able to provide so-called Dynamic Routing features, also often called *External Routing*. Depending on your switch manufacturer, VCS provides these functions via RADIUS Protocol or SIP Redirect Server. To find out more about possible options of your switch manufacturers, please look through *VCS Integration Manual* or contact *JeraSoft Support.*

In VCS, the Dynamic Routing work is based on three principles: *Routing Plans, Routing Policies and Routing Table generation*.
So, there are few easy steps how to set it working:

Step 1: You need to create a so-called Routing Plan with rules that describe your routing preferences and other criteria;

Step 2: You need to choose desired policy for your rules – a special formula to decide which routes should get a top priority (for example, this way you decide whether you want to do LCR or Quality Routing);

Step 3: Assign created Routing Plan to your origination customer(s). Then, you need to wait until the Routing Table is created.

Please check sections below to get more information:

- Routing Plans
- Routing Analysis
- Dynamic Routing Policies
- Dynamic Routing Table

Routing Plans

In this article

- Section overview
- Advanced Search
- Adding New Routing Plan
- Routing Rules tab
- Import / Export tab
- Routing Plan
- Knowledge Base Articles

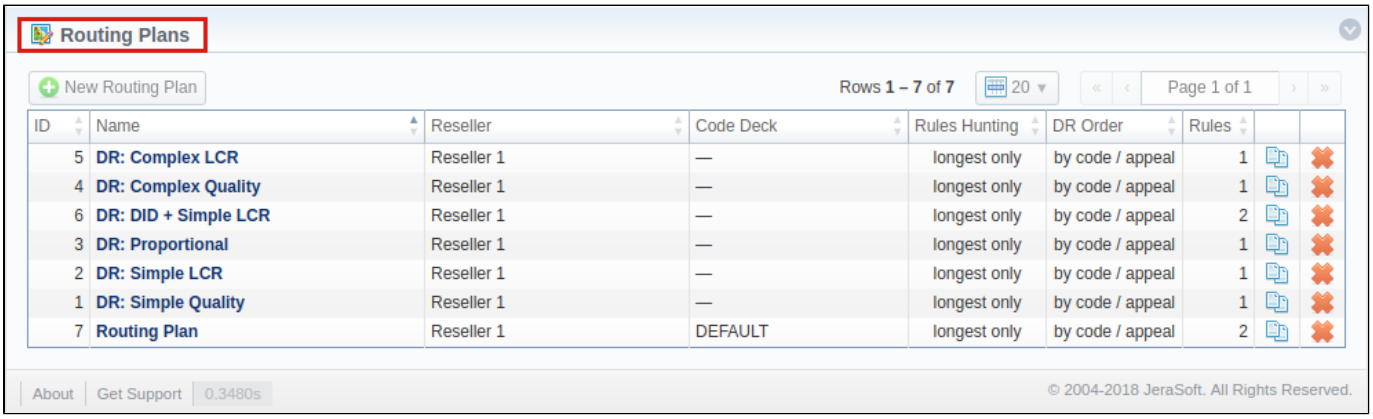
Section overview

Routing Plans section is available if your JeraSoft VCS includes the **Routing Module**. To access *Routing Plans* section, please log in to your system and go to **Routing > Routing Plans**.

This section allow to manage your routing rules for customers, providers and destinations. Each routing plan should be assigned to a respective customer (originator) for proper work of routing process.

You can combine both routing rules (**dynamic** and **static**) while creating a routing plan, also assign separate rules to each destination. Here you can find a list of created routing plans.

Screenshot: Routing Plans section



Column	Description
ID	ID number of a routing plan
Name	Name of a routing plan
Reseller	Name of reseller, a corresponding routing plan has been assigned to as owner
Code Deck	Name of code deck that has been applied to a corresponding routing plan
Rules Hunting	A respective hunting rule that has been applied to a routing plan
DR Order	A name of dynamic routing order that has been selected to organize routing rules
Rules	An amount of rules specified in a respective routing plan

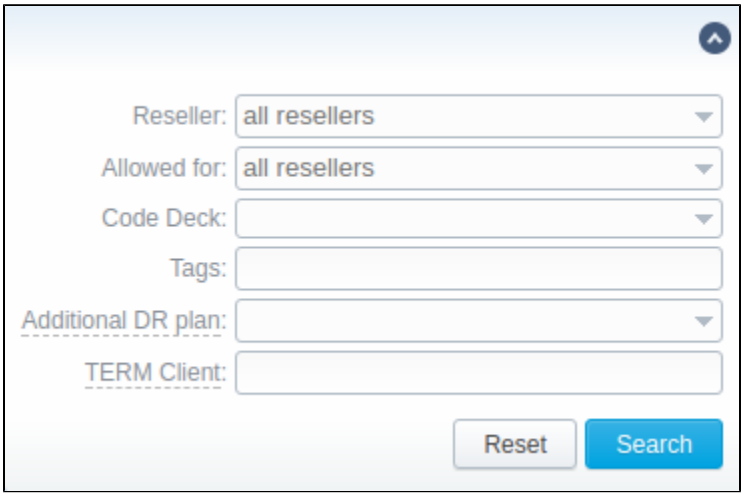
Functional **buttons/icons**, presented in the section, are as follows:

Button/Icon	Description
New Routing Plan	Allows to create a new routing plan
	Allows to copy an existing routing plan to the section

Advanced Search

In the top right corner of the section above the table, an **Advanced Search** drop-down menu is located. By clicking on blue downwards arrow icon, a drop-down menu with the following structure is displayed:

Screenshot: Advanced Search drop-down menu



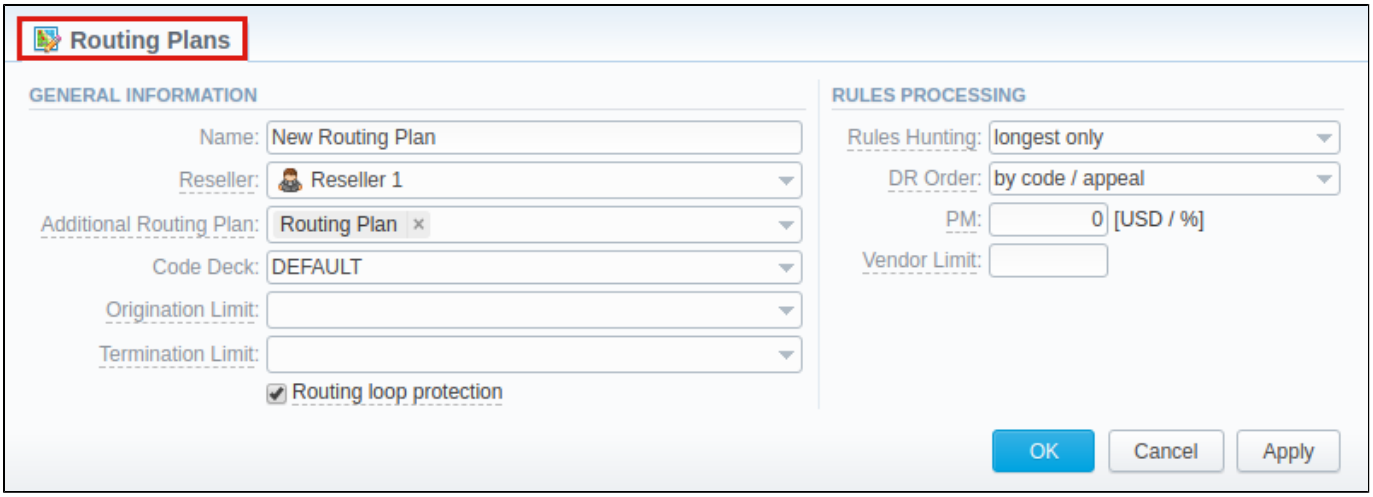
Field	Description
Reseller	Select from the list of all Resellers, Sub-resellers and Managers registered in the system
Allowed for	Select from the list of all Reseleers, Sub-resellers and Managers that are assigned to routing plan in ***Origination Limit*** field
Code Deck	Select from the list of all Code Decks in the system
Tags	Specify a certain Tag that was added to routing plan
Additional DR Plan	Select a routing plan that was assigned as an additional in ***Additional Routing Plan*** field
TERM Client	Specify a termination client that was assigned to any of a routing plan rule

To apply the specified search criteria, press **Search** button; to cancel the applied parameters, press **Reset** button.

Adding New Routing Plan

To create a new routing plan press **New Routing Plan** button, and fill in the following fields in the pop-up window.

Screenshot: Routing Plans window



Information block	Fields description

General information	General routing plan information	
	Name	Title of a routing plan
	Reseller	Define the reseller/owner of a current routing plan
	Additional Routing Plan	Specify DR plan which will be addiitonal for current plan
	Code Deck	Select a Code Deck if you wish to have names of your code to be specified in the ***Code Name*** field
	Origination Limits	Define company or companies which will have access to this routing plan (also this restriction will be extended to their sub-companies) If there is no specified company, the following routing plan is available for all companies.
	Termination Limits	Select company or companies which will have limit in termination for vendors who use it (sub-companies are not included)
	Rooting Loop protection ch eckbox	Excludes originating client from the list of terminators. If it is unchecked, it will be possible to route calls between different accounts of the same client. It is **enabled** by default.
Rules processing	Options of rules processing	
	Rules Hunting	Select a hunting mode (the way how rules will be executed). They are as follows: • ***longest only*** – routing will find only the longest matching code • ***all matching*** – all possible matches will be found, including even the shortest codes By default, **longest only** option is set.
	DR Order	Specify a method of routes sorting in routing table. The options are: • ***by appeal / code*** – routes will be sorted in accordance to their resulting appeal value and then grouped by codes • ***by code / appeal*** – routes will be grouped by codes and then sorted by appeal value By default, **by code / appeal** option is set.
	PM	Define a Profit Margin value for current rule here. In can be specified either as a percent value (e.g. ***16%***) or in a system currency (e.g ***5*** for ***5 USD***)
	Vendor Limit	Determine the number of allowed routes for the same vendor to use (if a vendor has multiple accounts). You can set the **limit only for accepted account routes**, not including the accounts blocked by the term groups. If the field is left empty, the number is unlimited.

Attention

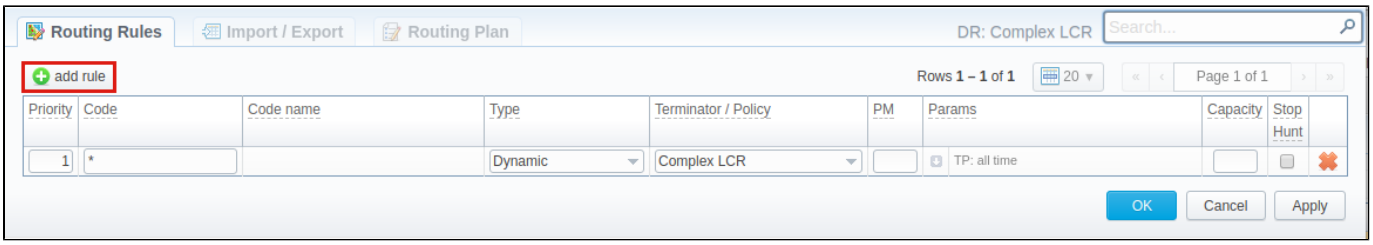
Please note that ***Origination Limit*** and ***Termination Limit*** fields are visible only during:

- new routing plan creation;
- editing of already created routing plan if specified *Reseller* of this routing plan has **at least one sub-reseller or manager**.

Routing Rules tab

Once a routing plan has been created, routing rules are to be determined (see screenshot below). To do that, click on routing plan's name and you will enter **Routing Rules** tab, then press **Add rule** button and fill in the following fields:

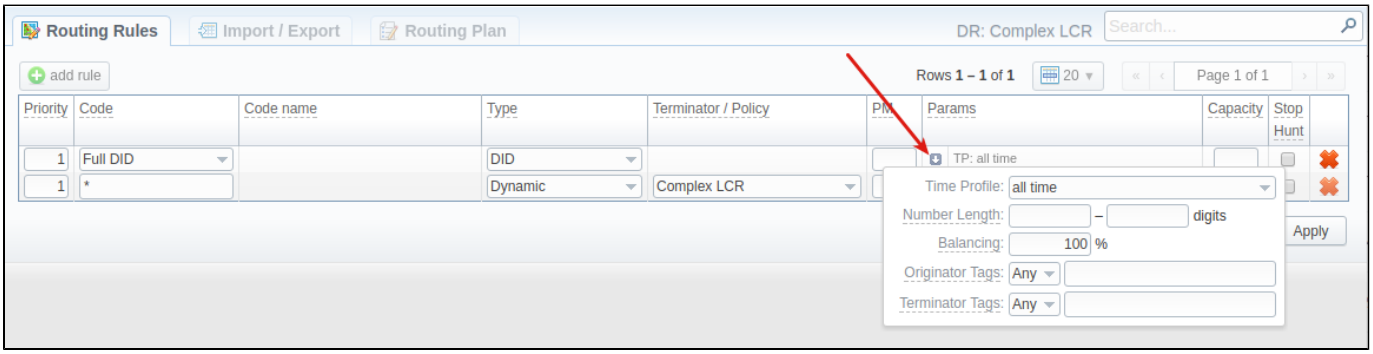
Screenshot: Routing Rules tab



Field	Description
Priority	Define a priority of rule execution if two or more rules have similar code or code name specified
Code	Enter a code which will be used in current routing rule, use * as wildcard. If ***DID type*** for current routing rule is selected, you may specify a ***code***: • **Any destination** – rules with longer codes will be ahead of DID route, possibly leaving it out entirely if **longest only** mode is used (* wildcard will be used as DID code) • **Full DID** – DID route will always be the first route (entire DID number will be used as a code) By default, **Full DID** option is selected.
Code Name	If you have a code deck assigned to this routing plan, a corresponding name of code, specified in ***Code*** field, will be displayed automatically. If no code deck is attached, field will remain empty.
Type	Select a type of routing for a current rule: • ***Static lient*** - if selected, in ***Terminator / Policy*** field you can to specify a certain termination client • ***Static Account*** - if selected, in ***Terminator / Policy*** field you can to specify a certain termination account of a client • ***Dynamic*** - if selected, in ***Terminator / Policy*** field you can to specify a certain dynamic policy for the rule • ***DID*** - if selected, ***Terminator / Policy*** field becomes inactive, and ***Code*** field is automatically changed to **Full DID**
Terminator / Policy	If you selected static type, you may specify a termination client/account here; if you selected dynamic type, specify routing policy for the current rule
PM	Define a *Profit Margin* value for current rule here. **Attention** If ***PM*** field has been specified both for the entire routing plan and for a certain rule, **the latter has a higher priority.**
Params	A number of additional parameters available by clicking on icon (see screenshot below)
• ***Time Profile***	Specify time profile from the list
• ***Number Length***	Set **minimum** and **maximum** length of destination number, that will be matched by this routing rule
• ***Balancing***	Define percentage or proportion amount of traffic which will be sent to respective vendor who participates in balancing **Attention** Please note that after changing *balancing value*, it is needed to restart SIP and/or RADIUS daemons.
• ***Originator Tags***	You can here specify respective originator tags. If nothing is specified, it works for all. ***all*** - applies for originators if all specified tags are present. ***any*** - applies for originators if at least one of specified tags is presented.

	• ***Terminator Tags***	Here you can add terminator tags that that will be used for terminators. If nothing is indicated, it works only for terminators **without** tags. Please note, this parameter is available only for dynamic rules
Capacity	Limit capacity for the current rule (leave blank for unlimited)	
Stop Hunt *checkbox*	If this field is checked, this means that rule search will be stopped when matched with the current one and all the consecutive rules will not be executed for current call	

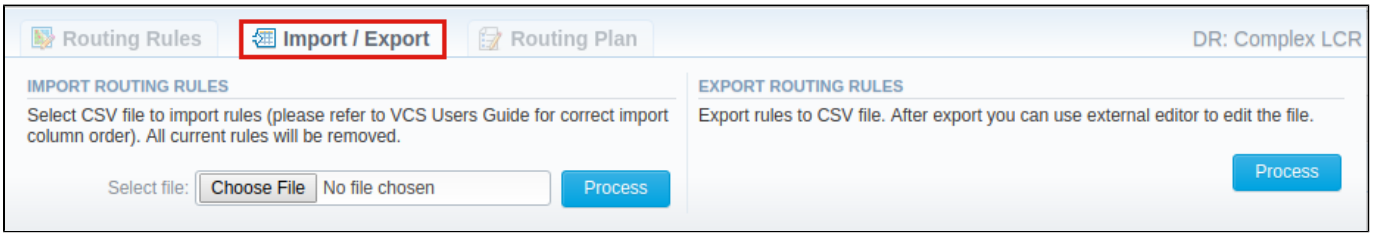
Screenshot: Routing rules settings



Import / Export tab

Import / Export tab allows user to either upload a desired routing rules (choose a file on a computer through a form and press **Process** button) or download current routing plan rules in .csv file by pressing **Process** button (see screenshot).

Screenshot: Import / Export tab



Please pay attention that the column order in importing file must correspond to the one presented on the screenshot below.

Screenshot: Importing file format

Code	Code name	Priority	Type	Client	Account	Policy	PM	Time Profile	Number length min	Number length max	Balancing	Originator Tags	Terminator Tags	Capacity	Stop Hunt
1268*		1	Static	Vendor Figaro				all time			100				
7		1	Dynamic			Simple LCR		all time			100				
1758*		1	Static	Vendor Lotos				all time			100				
1		1	Static	Vendor Figaro			5%	all time		15	70				
1		1	Static	Vendor Lotos				all time			30				
1		2	Dynamic			Simple Quality		all time			100	origination group 1	Termination group		
*		2	Dynamic			Simple LCR		all time			100				
2		1	Static	Vendor Figaro				all time			50	origination group 2			
3		1	Static	Vendor Profit				all time			100				
4		1	Static	Vega_DID_provider				all time			100				

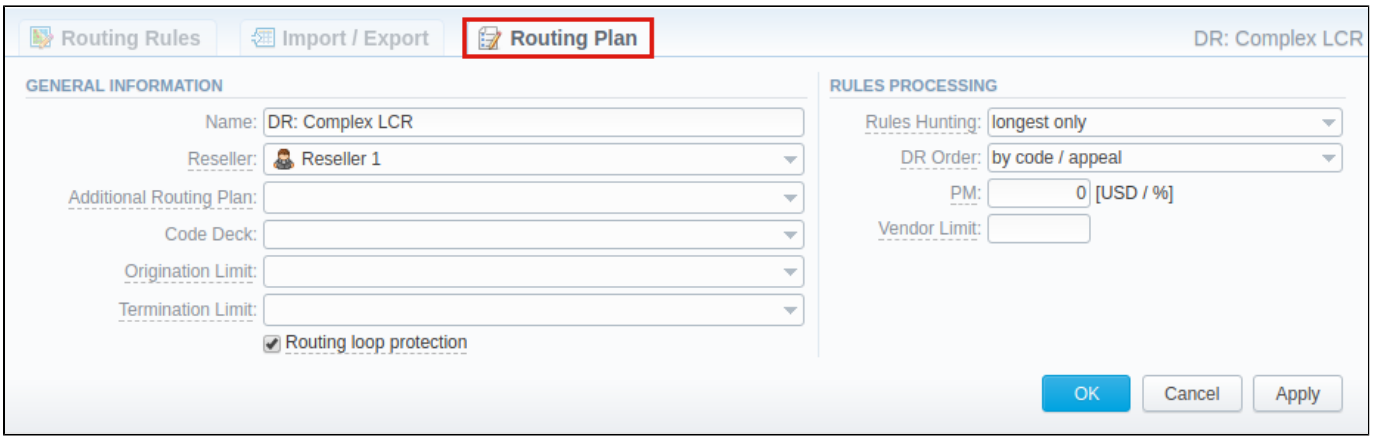
Attention

After all info has been entered and rules created, you need to go to ***Management > Clients / Accounts*** sections and assign this routing plan to one or more of your origination clients or client's accounts.

Routing Plan

If you wish to change your routing plan settings, you can always do so by going to Routing Plan tab. The list of fields in a tab is identical to that on a routing plan creation page (see screenshot below).

Screenshot: Routing Plan tab



Knowledge Base Articles

- How to route by SRC Number / Orig Group?
- US Billing & Taxation
- How to set calls to come from one specific originator?
- How to set up a functional capacity?
- How to exclude specific vendor from Dynamic Routing?

Routing Analysis

In this article

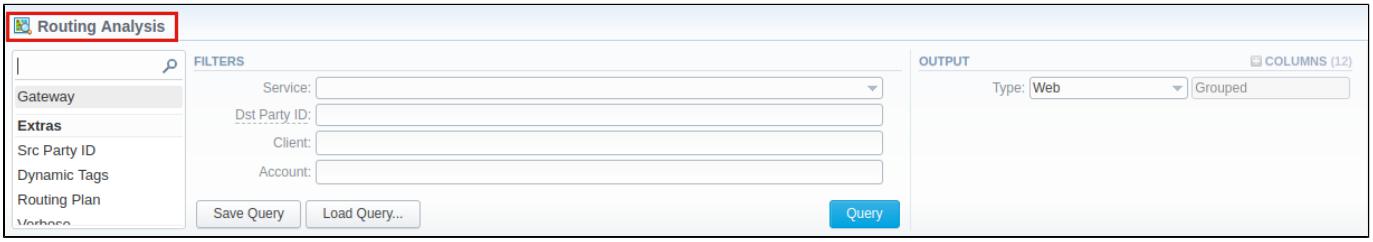
- Section overview
- Creating Routing Analysis Report:
- Export generated report

Section overview

This section represents a **route analyzer tool** that allows to manage dynamical routes and simulate different routing models without hurting live voice traffic. It should be noted that this tool can be used only in a case when you are using **Dynamic Routing feature.**

Routing Analysis section represents a query form with following parameters:

Screenshot: Routing Analysis form



Attention

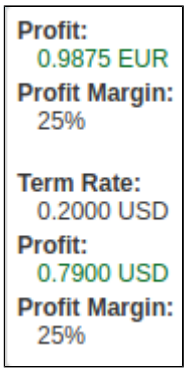
Please note that if there are changes in ***the Term Rate Table,*** you need to launch ***Dynamic Routing Manager*** in **Task Scheduler** section **(System > Task Scheduler)**. Routing Analysis shows routes based on routing table built on the last run of the ***Dynamic Routing Manager.*** So you won't be able to see the latest changes regarding Routing Rules until Dynamic Routing Manager is **restarted**.

Creating Routing Analysis Report:

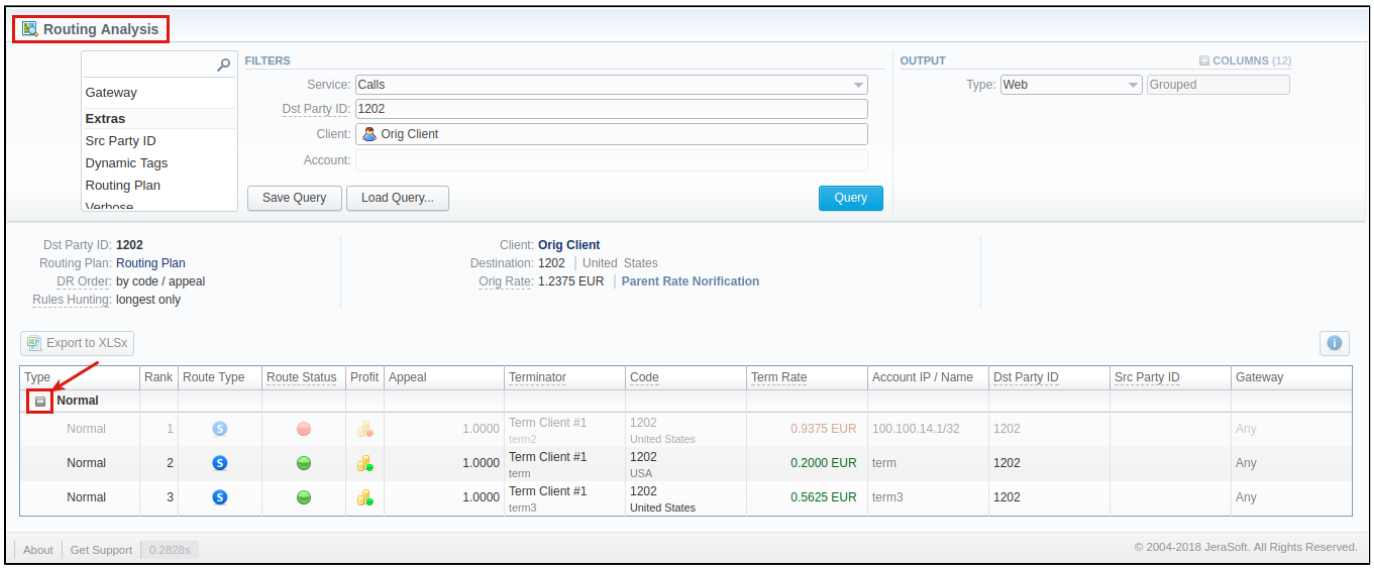
In order to generate routing analysis enter next parameters in the query form:

Section	Field Description	
Filters	In the **Filters** menu, select desired parameters for the report. To cancel any filter, click the delete sign next to the filter. You can use a **quick search** by typing filters' names in the respective field at the top of the filters list.	
	Service	Select the service for the report. By default, field value is set to **Calls**. This field is mandatory.
	Dst Party ID	Enter the destination party id to define a destination. This field is mandatory.
	Client	Select a client for the report. Also, you can specify respective **calling shops.** This field is mandatory.
	Account	Select an account for the report.
	Additional Filters	
	There are following accessible additional filters: • ***Events*****:** *Gateway.* • ***Extras:*** *Scr Party ID; Dynamic Tags; Routing Plan; Verbose.*	
	Events Settings	
	Gateway	Define a gateway that specified in the term account
	Extra Settings	
	Dynamic Tags	Enter additional dynamic tags for this routing

	Routing Plan	Enter the plan with a respective routing rule
	Scr Party ID	Specify a source number or any other source identification in order to check the translations
	Verbose	Select which routes should be displayed *(active, active and non-profit or all routes).*
Output	This form contains **settings of the output** data of the report. Click plus sign near **Columns** to select respective columns to output a report data. Also, you can cancel any chosen item.	
	Accessible columns in the report	
	Following additional columns can be added to the report: *Rank, Route Type, Route Status, Profit, Appeal, Termination, Code, Term Rate, Account IP / Name, Dst Party ID, Src Party ID, Gateway.*	
	Rank	Vendor position during routing. It's applicable and the system puts values in order when route status is accepted.
	Route Type	Type of the route that includes: ***destination, policy and rule properties (balancing, priority), time profile, orig groups, term groups, debug information*** A blue S icon in the column shows a ***static route*** A violet # icon indicates a ***DID route*** A green D icon in the column shows a ***dynamic route*** **To view a detailed information on route type hover over a corresponding icon in the column.** *Screenshot: Detailed information on route type* **Rule Destination:** 1202 | Static route **Rule Properties:** Balancing: 100% Priority: 1 **Debug Info:** #1 {DST#1202 TP#1 P#1 RP#7 T#s C#12 "Term Client #1 / term"}
	Route Status	The following information is displayed in the column: ***the state of the route***, ***routing rule capacity, termination client / account / reseller capacity*** for ***accepted*** for ***no capacity*** for ***denied*** *(for example, not matched Reseller/ number length limit)* **To view a detailed information on route status hover over a corresponding icon in the column.** *Screenshot: Detailed information on route status* **Route Status:** accepted **Routing Rule Capacity** — 0 active sessions **Terminator Account Capacity:** — 0 active sessions **Terminator Client Capacity:** — 0 active sessions **Terminator Reseller Capacity:** — 0 active sessions

Profit	Information on **Profit** and **Profit Margin** in the currency, indicated in the **Client's settings**, is displayed in the section. Also, it shows **Term Rate, Profit** and **Profit Margin** in the system currency only if system currency differs from the one in Client's settings. To view detailed information hover over **Profit** icon in the respective column. *Screenshot: Routing Analysis / Profit*  **Profit:** 0.9875 EUR **Profit Margin:** 25% **Term Rate:** 0.2000 USD **Profit:** 0.7900 USD **Profit Margin:** 25% **Tip** Please note, it analyses the profitability by comparing orig and term rate. Therefore, an orig rate should be equal or greater than a term rate and profit margin.
Appeal	Shows the appeal automatically calculated by the system according to the chosen **DR Policies** (**Routing section > DR Policies**)
Terminator	The name of the respective terminator or his account name specified in the Client's settings
Code	Here you can see matched code in the terminator's rate table
Term Rate	Rate that is used to terminate the call
Account IP / Name	The name or IP of the account
Dst Party ID	Shows destination party ID that is sent to provider when all matching number translations are performed
Scr Party ID	Shows source party ID after all number translations
Gateway	Displays a respective gateway that is specified in the term account
Other output settings	
Type	Choose a format of the report from a drop-down list: ***Web / CSV / Excel XLS / Excel XLSx.*** Also, select next to the **Type** field a look of table view: • ***Plain*** - a simple table view • ***Grouped*** - a table view with grouped data and possibility to collapse it **Attention** Please note, that ***Grouped*** type of table view is available only for **Excel XLSx** and **Web** formats, it doesn't work with **CSV** or **Excel XLS**. If **CSV, Excel XLS** or **Excel XLSx** type has been selected, an additional ***Send to*** field will be displayed. In this field, you can specify emails of the clients, where the current report in the selected format will be sent to.

After selecting all needed parameters click **Query** button and the system will generate a report.
Screenshot: Routing Analysis



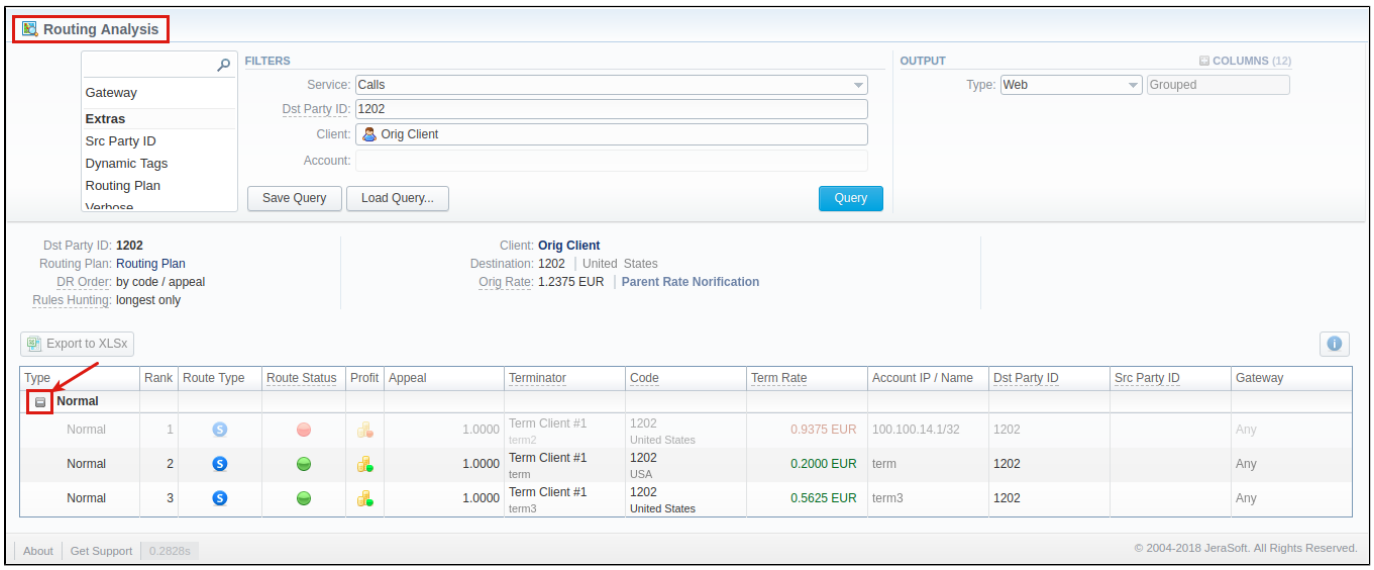
Moreover, you can create (save) and display previously saved report template by licking on **Save Query** and **Load Query** buttons respectively. Keep in mind that load button will be present only if there is at least one routing analysis report in **Report Templates** section.

Tip

To find more details about templates, please refer to the Report Templates article in our **User Guide.**

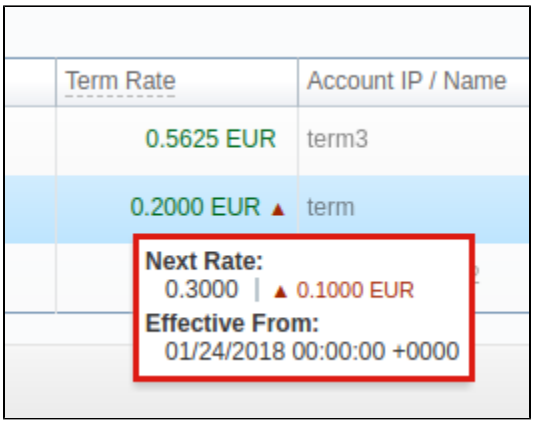
To expand or collapse data in your report, click the **plus** or **minus** signs. If the data is **Grouped** in the report, it will be shown **initially collapsed**.

Screenshot: Expande / collapse report data



If applicable, you can check the **Future Terminator's Rate** and **its effective date** in the report, by hovering over a current rate in **Term Rate** column (see screenshot below).

Screenshot: Future Terminator's Rate



By clicking on **Info** icon above the report on the right, **user's name** and **time/date** when a report was generated will be displayed in a pop-up window

Screenshot: Info icon

Export generated report

You can export report data either in .xls file or .csv that would contain currently presented data. Press **Export to XLSx** or **Export to CSV** button to download a file of the respective format. Be advised that **Export to CSV** button is only available if **Output** is set to ***Web / Plain.***

Attention

Please note:

1. Inactive additive rates with non-zero value (for respective tags) won't be shown. Active additive rates with zero value will be shown.
2. If you change the currency in the **Settings**, you need to restart ***Dynamic Routing Manager*** in the **Task Scheduler** section for an immediate Routing Analysis functioning.

Knowledge Base Articles

- Why does not Routing Analysis show routing according to rule's changes?
- Why there is no route observed?
- What to do if routing doesn't work?

Dynamic Routing Policies

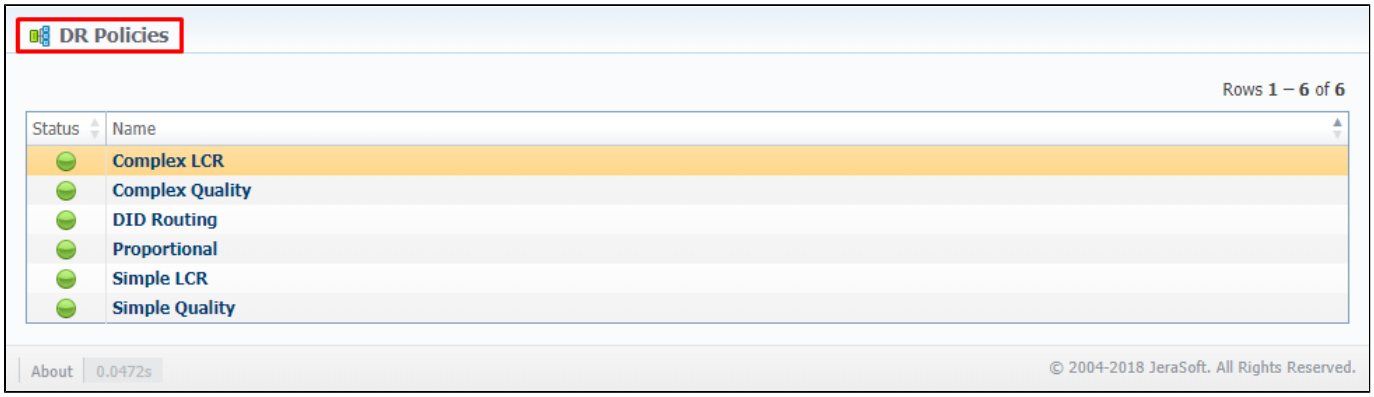
In this article

- Section overview
- Management of DR Policies

Section overview

This section describes the list of **currently available routing policies for VCS. Routing policy** is a set of regulations and principles (**appeal**) the determine the **way** all available **terminators are prioritized** during dynamic routing. Each policy has its **unique principles** of terminators prioritizing and allows a user a wide variety of possibilities to configure the system in the best suitable way. Below you will find a description of ***6*** standard **DR Policies**:

Screenshot: DR Policies section

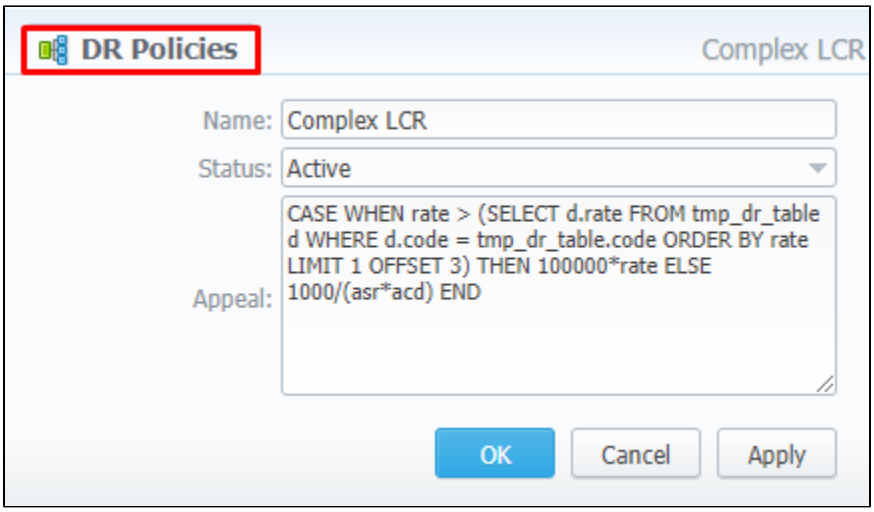


Policy	Description
Complex LCR	Three cheapest routes that are sorted by the quality.
Complex Quality	Three routes with the highest quality that are sorted by price.
DID Routing	The only applicable policy if your routing plan has DID type of rule.
Proportional	When the price is lower and a route quality is higher, it has a higher priority.
Simple LCR	Generic price-based routing.
Simple Quality	Generic quality-based routing.

Management of DR Policies

In the section, you are unable to **add** or **delete** any of policy. Nor can you edit its appeal. However, you can edit **policy name** or its **status**. To do so, click on its name on the list, and a pop-up window, displaying policy details, will be displayed. Window's structure is as follows:

Screenshot: DR Policies management



Field	Description
Name	**Name** of the respective policy. Can be modified by a user
Status	**Policy** can have **two** statuses: • ***Active*** - represented by green icon in the section • ***Disabled*** - represented by red icon in the section Status can be modified by a user
Appeal	Regulations and principles represented as a **formula** for terminators prioritizing. **Cannot** be modified

Dynamic Routing Table

The **JeraSoft VCS solution** operates with its own ***Routing Table*** that is automatically generated over specified regular periods of time to provide the ***"dynamic"*** *part of the routing*.

The **Routing Table** deals with the latest changes of the whole routing process, including all updates made to system configuration such as clients or rates update, changes to routing plans, accounts reconfiguration, etc. It is always a good idea to recreate your routing table, to be able to see how your routing will work with current settings. Of course, if you don't have time to wait till it is created automatically, you can do that in a manual mode.

To generate a routing table manually, please **go to System > Task Scheduler,** and **click on** **icon** opposite ***Dynamic Routing Manager***.

Configuration

This chapter of our Guide contains information that relates to section designed for **setting up and configuration of JeraSoft VoIP Carrier Suite.** Here, user can arrange invoices templates, time and taxes profiles, currencies and many other elements, used throughout the entire system. For more details, please go to the related sections:

- Code Decks
- Currencies
- Payment Accounts
- Payment Terms
- Payment Gateways
- Time Profiles
- Taxes Profiles
- Tags
- Invoices Templates
- Services
- Settings

Code Decks

In this article

- Section overview
- Creating New Code Deck
- Managing Code Decks
  - Adding Codes
  - Deleting Codes
  - Importing Codes
  - Exporting Codes

Section overview

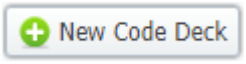
Code deck is a list of ***destination codes***, each with its corresponding ***name*** and ***country*** it represents (optional). Code deck is by far one of the key elements of any **Rate Table** and is used pretty much throughout the whole system (sections like **Invoices**, **Packages**, **LCR Lists**, and so on). By having multiple code decks, you can freely operate with different names for same codes and change them in the real time.

Section is presented in a form of a list of all existing code decks in the system. The table of code decks consists of the following columns:

Screenshot: Code Decks section

Column	Description
ID	Code deck's identification number
Deck Name	Name of a code deck
Reseller	List of resellers corresponding deck was assigned to
Codes	Total number of codes presented in the deck

Functional **buttons/icons**, presented in the section, are as follows:

Button/Icon	Description
	Allows to create a new code deck
	Allows to manage an existing code deck on a list
	Allows to delete a code deck from the system. Requires confirmation

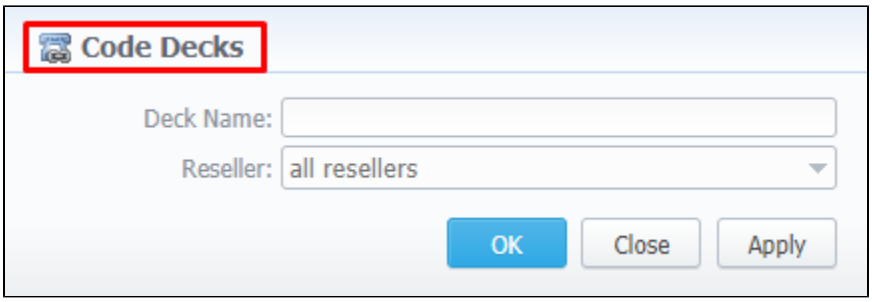
Creating New Code Deck

To create a new code deck:

- Click **New Code Deck** button
- Fill in all required fields of a pop-up window (see screenshot below)
- Press **OK**

Subsequently, a new code deck will be added to the general list in the section.

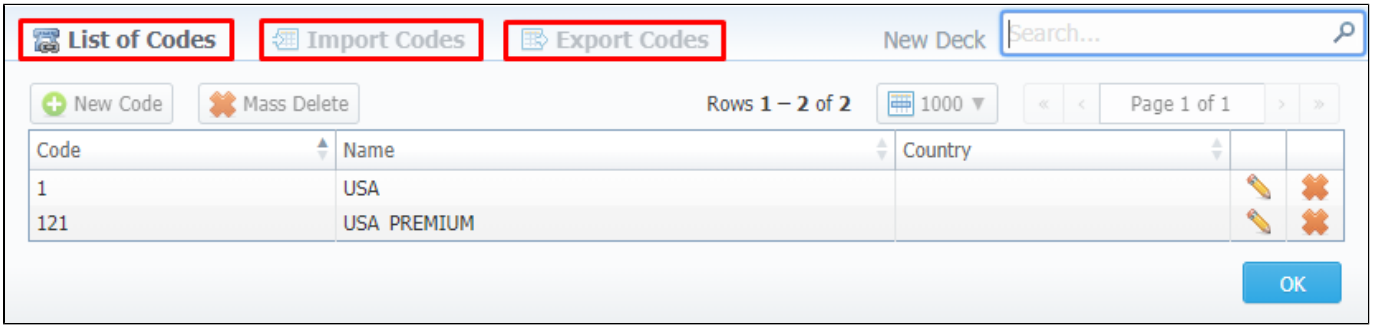
Screenshot: Code Deck pop-up window



Managing Code Decks

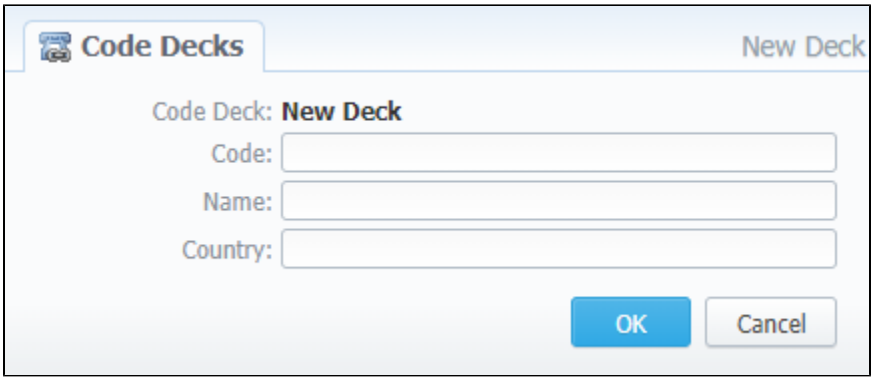
In order to manage your code deck, left-click on the deck's name or edit icon opposite the deck on the right. The opened pop-up window consists of 3 tabs: **List of Codes, Import Codes** and **Export Codes** (see screenshot), where you can perform operations pointed out below.

Screenshot: Code deck's tabs



Adding Codes

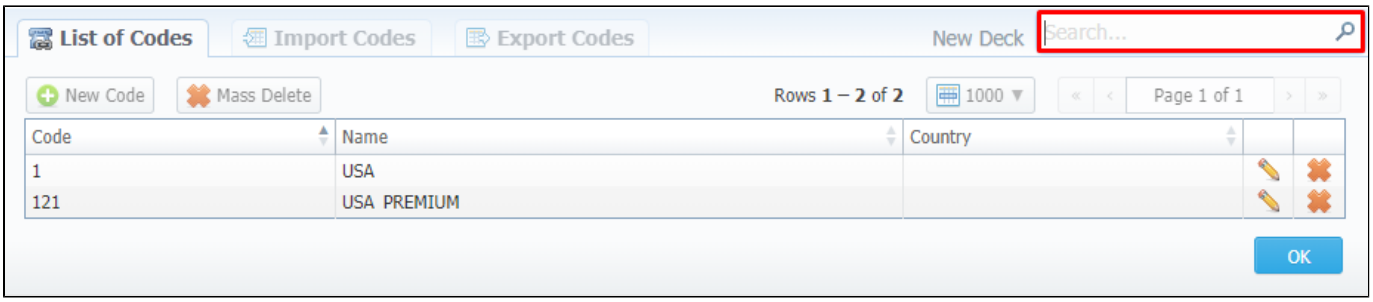
In **List of Codes** tab, click on **New Code** button to add a code group to your deck. The pop-up window contains the following parameters (see screenshot below):
Screenshot: Adding new codes



Field	Description
Code Deck	Name of the code deck. Autofilled by the system
Code	New destination code
Code Name	Displayed name of a code group
Country	Country the codes in current group will belong to

To manage navigation between thousands of codes on the list, you can always look for the necessary code using a **Search** box (see screenshot).

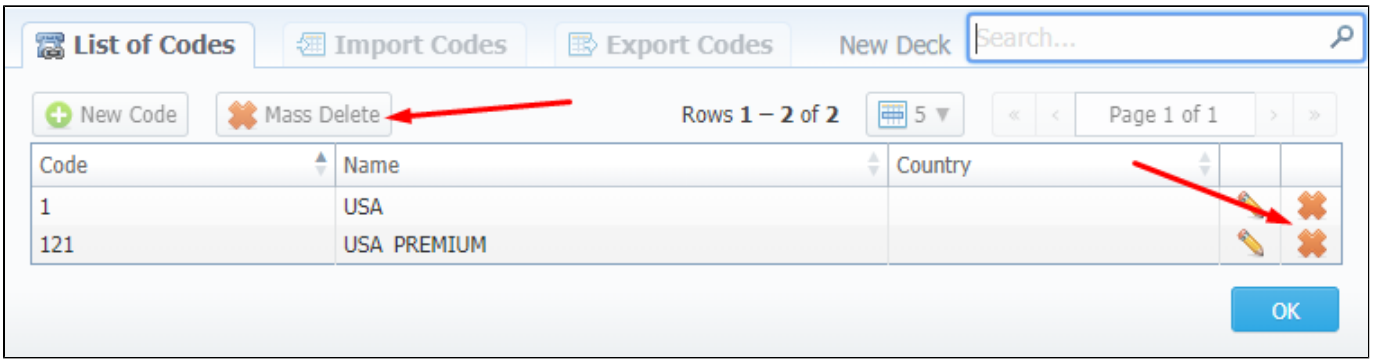
Screenshot: Section searchbox



Deleting Codes

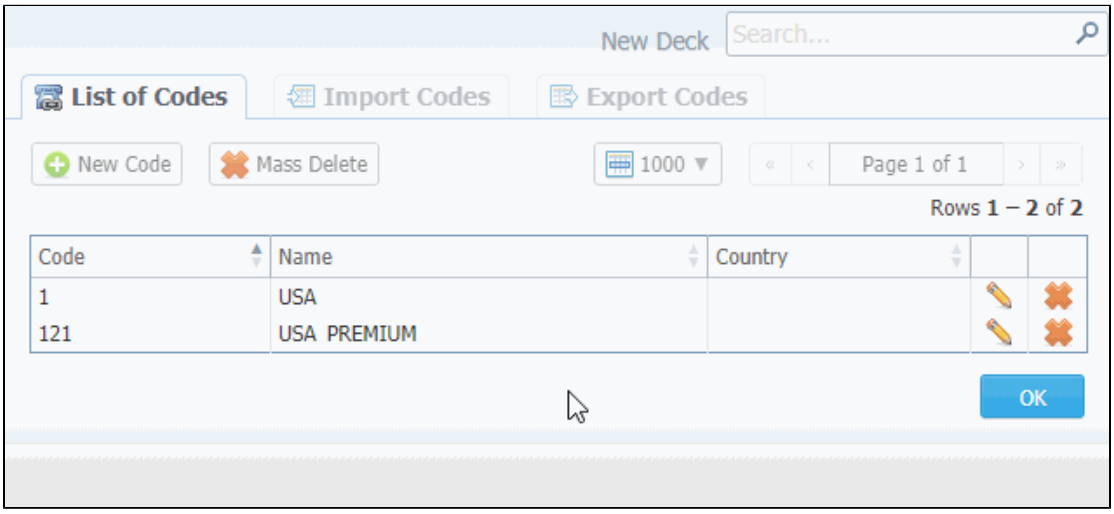
You can either delete ***each*** code separately by pressing delete icon opposite corresponding code on the list or delete ***all*** codes at once by pressing **Mass Delete** button (see screenshot below*).*

Screenshot: Codes deletion



To verify mass deletion, press **OK** button in a pop up window (see animation below).

Animation: Codes deletion

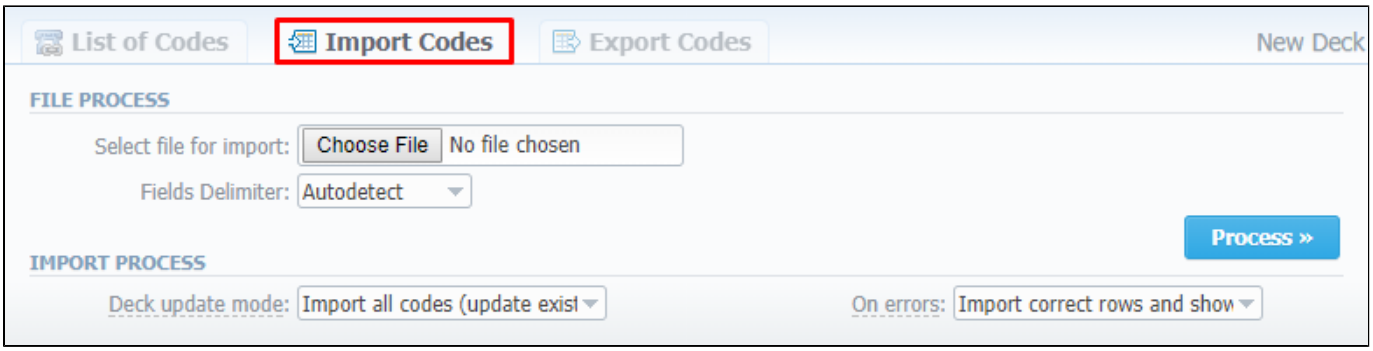


Importing Codes

Not only can you add codes to the lists manually, but also **import** them from a file. The whole import process can be logically divided into two steps:

The **first step** is to go to the **Import Codes** tab (screenshot below) and fill in the required fields. After selecting a file and specifying all additional fields, click on **Process>>** button.

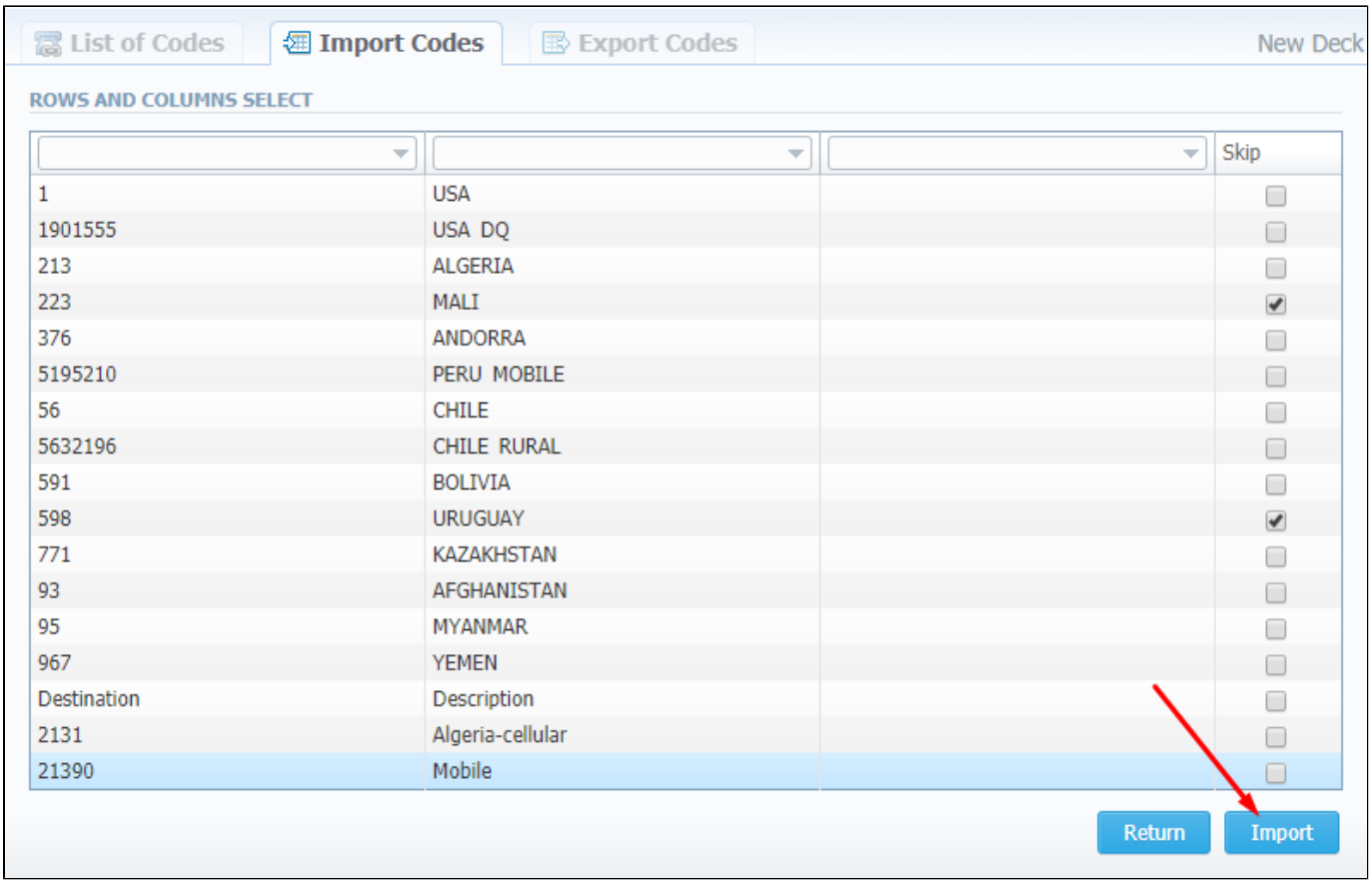
Screenshot: Import Codes - Step 1



Section	Field	Description
File Process	***Select file to import***	Select an import file by pressing **Choose File** button
	Fields delimeter	Specify here a delimiter symbol. Possible options are: • ***Autodetect*** • ***,*** • ***;*** • ***Tab*** By default, **Autodetect** option is chosen.
Import Process	***Deck update mode***	Specify the code deck update mode. There are three possible modes: • ***Import only not existing codes*** • ***Import all codes (update existing)*** • ***Import all codes (purge code deck first)*** By default, **Import all codes (update existing)** mode is chosen.
	On errors	Define what to do if an inconsistency or error was found in importing file: • ***Import correct rows and show all found errors*** • ***If errors are found, abort import and show all errors*** By default, **Import correct rows and show all found errors** option is chosen.

During the **second step,** system will recognize the file and display first 17 rows. Then, you need to select the header for each column. In case you don't need some rows, you can easily skip them by checking boxes opposite unnecessary rows in **Skip** column (see screenshot). To abort imorting process, click on **Return** button, and you will be redirected to **Import Codes** tab. To finish importing, click on **Import** button (see screenshot).

Screenshot: Import Codes - Step 2



After you click on **Import** button, the system will start importing process. When the progress bar reaches 100%, your import is done. Congrats!

Knowledge Base Tip

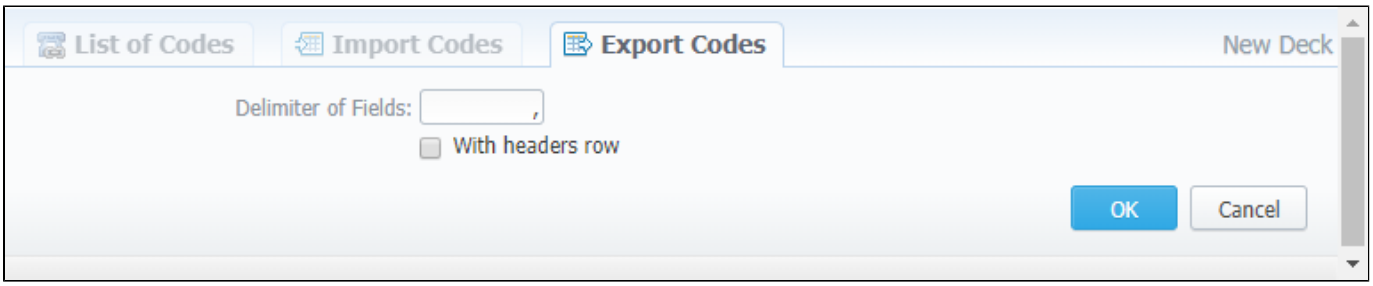
See what happens if your file contains Country Code column.

Exporting Codes

This feature allows you to export a content of a code deck to a file. To initiate export, do the following:

- Go to **Export Codes** tab (screenshot down below)
- Specify delimiter symbol in ***Fields delimiter*** field and first CSV file row as a title row by marking ***With headers row*** checkbox (optional).
- Click **OK,** and a CSV file will be downloaded to your computer.

Screenshot: Export Codes tab



Currencies

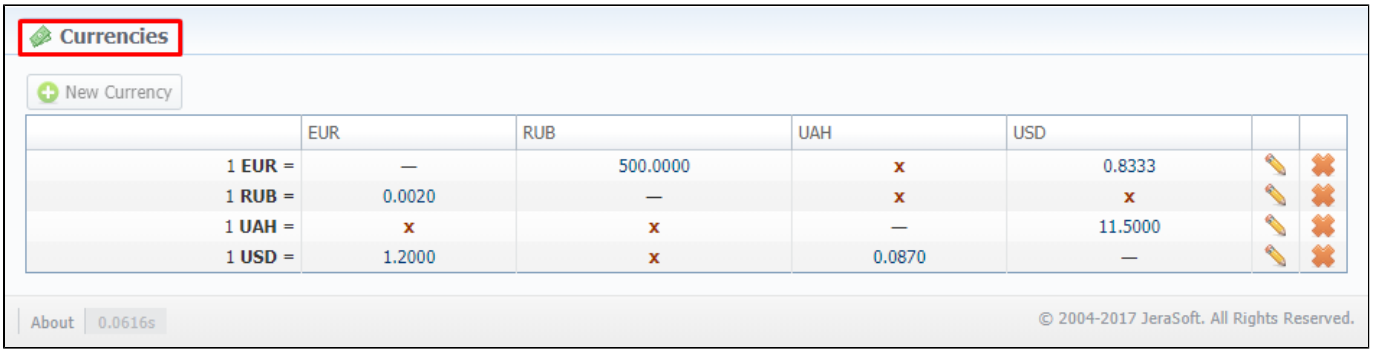
In this article

- Section overview
- Adding New Currency
- Specifying Currency Rate

Section overview

This section displays the list of all **currencies**, registered in the system, in a form of a **table of exchange rate relationships**. Each currency has a direct **exchange rate** to any other currency on the list. Since currencies are the corner stone of the billing process, they are specified in various section of the system, such as **Invoices**, **Rate Tables**, **Clients**, **Resellers**, etc. Check out the section structure on the screenshot down below.

Screenshot: Currencies section main window



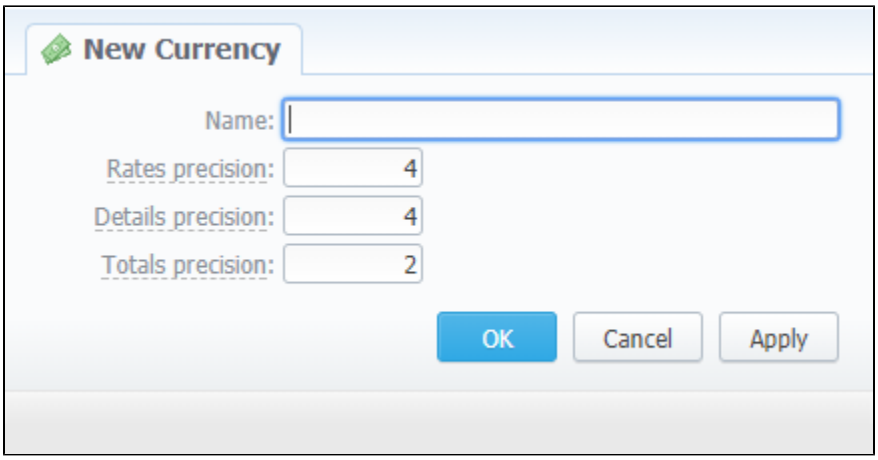
Functional **buttons/icons**, presented in the section, are as follows:

Button/Icon	Description
New Currency	Allows to create a new currency
	Allows to manage an existing currency on a list
	Allows to delete a currency from the system. Requires confirmation
x	Allows to manage an exchange rate of a currency

Adding New Currency

You can add a new currency by clicking **New Currency** button above the list. In a pop-up window (see screenshot below), you need to fill in the **required fields** and press **OK**.

Screenshot: New Currency pop-up window



Field	Description
Name	Name of a new currency
Rates precision	Number of decimal places for rates formatting. By default, field value is set to **4**.
Details precision	Number of decimal places for detailed monetary values formatting. By default, field value is set to **4**.
Totals precision	Number of decimal places for total monetary values formatting. By default, field value is set to **2**.

The respective numbers will be displayed in all reports (***details precision*** is used for all reports except xDR report) with cost and rate values in the statistics. Also, they will be shown in the invoices, except total values (totals **always** have 2 decimal places in invoices).

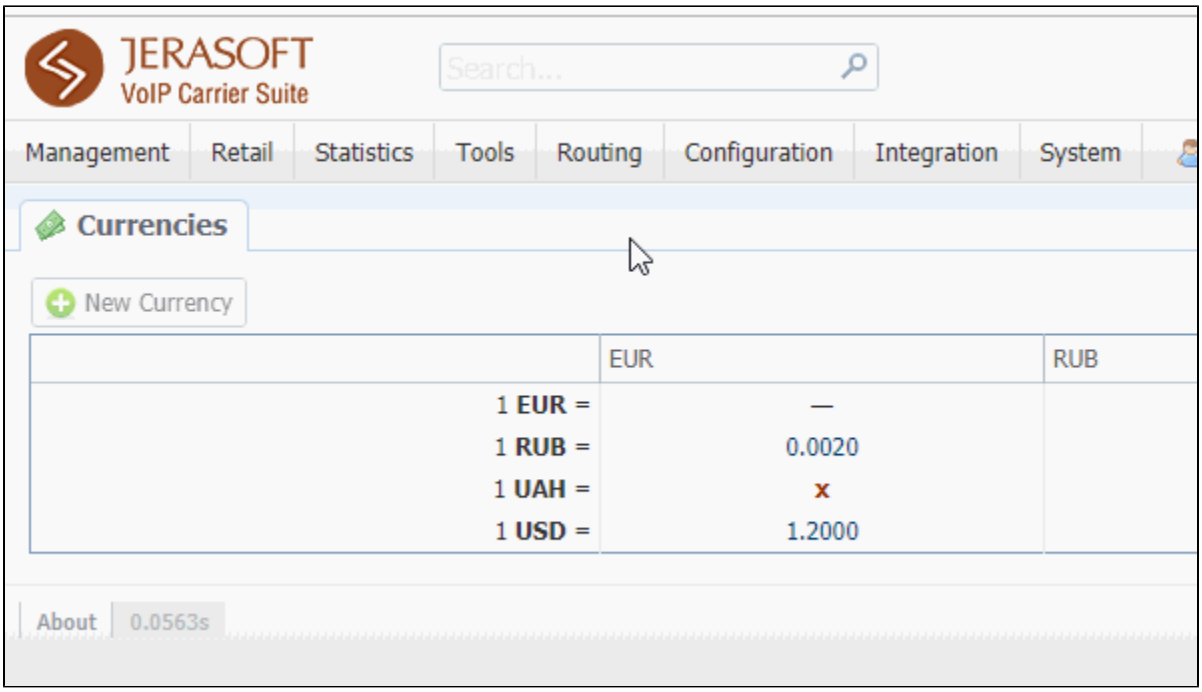
Specifying Currency Rate

After you add currency, you need to specify the rate. To do this, you need to (see animation dow below):

- Click on icon in the currency column whose exchange rate you wish to specify
- Press Add button in a pop-up window and set ***Currency Rate*** and ***Date***
- Click **Add**

As a result, a new rate for the currency pair will be added. If more than one currency rate had been added, you can view a history of changes in **Date** column.

Animation: Specifying currency rate



Tip

Statistical data of a new currency will be available after its adding into the system, but if the currency has an old start date, and you want old data to be billed in this currency, you need to run calls rerating.

Attention

Please note that *changing of the system currency* requires running of *Dynamic Routing Manager* to generate *routing table* with rates in the new system currency.

Payment Accounts

In this article

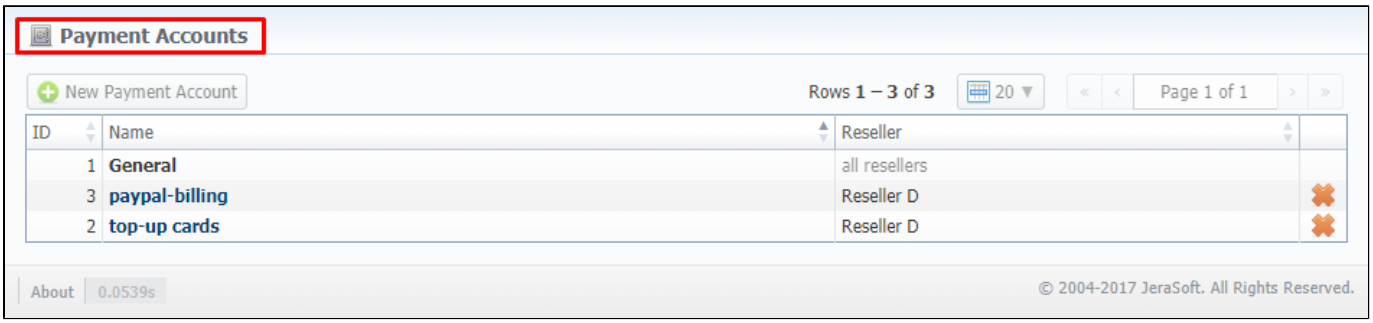
- Section overview
- Adding New Payment Account

Section overview

Payment accounts serve as the exact definitions used in Transactions section. For example, you can have ***Bank Transfer*** and ***Credit Card*** payment accounts, and, while applying respective payments, you will be able to define payment origin by selecting a corresponding payment account.

This section allows you to **create different payment accounts** for correct and precise **transactions (payments) management**. Section is presented in a form of a list of payments with the following structure (see screenshot):

Screenshot: Payment Accounts section



Column	Description
ID	Payment account's identification number
Name	Account's name
Reseller	Name of the reseller a new payment account will be attached to

Attention

Please note, the user ***cannot*** edit or delete the **General** payment account with id = 1 (see screenshot above)

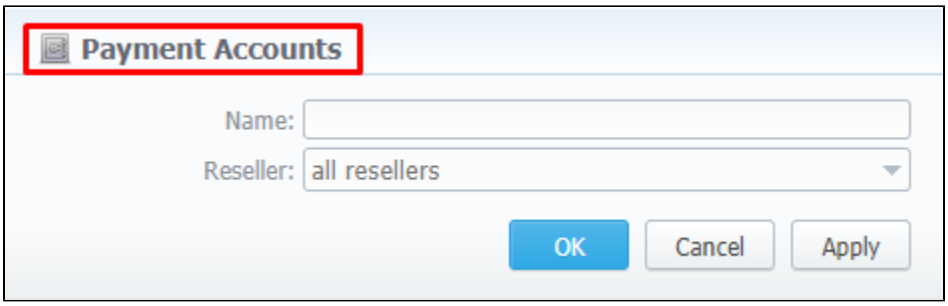
Adding New Payment Account

The following steps are to be taken in order to create a new payment account:

- Click **New Payment Account** button
- Specify an account name in ***Name*** field and a ***Reseller*** from a drop-down list of all registered resellers (see screenshot below).
- Press **OK**.

A new account will be added to the list and will become available in **Transactions** section.

Screenshot: Payment Account creation form


Payment Accounts
Name:
Reseller:
all resellers
OK
Cancel
Apply

Payment Terms

In this article

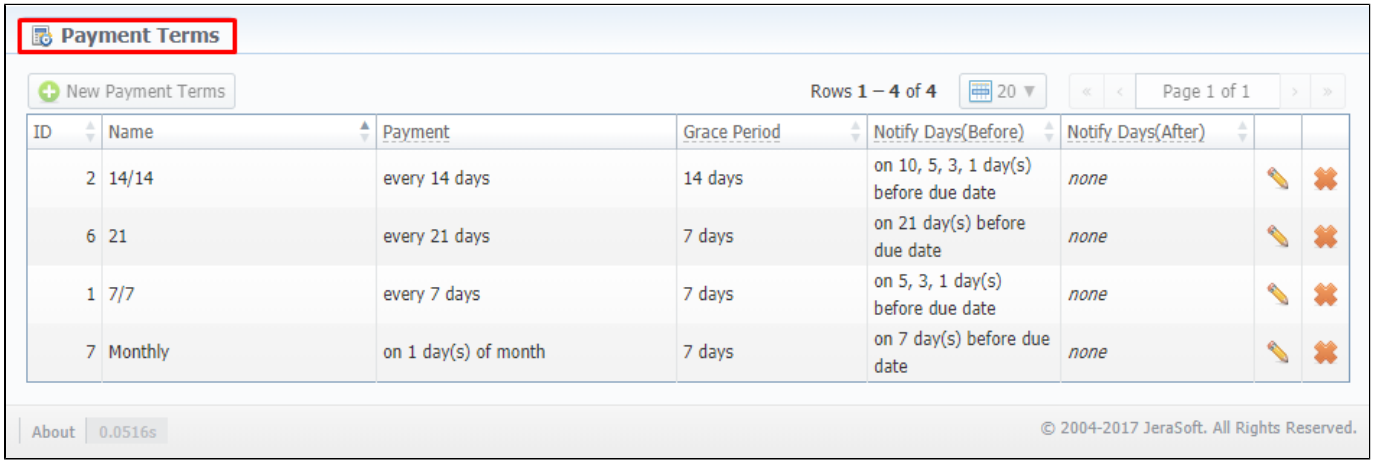
- Section overview
- Adding New Payment Terms

Section overview

In JeraSoft Carrier Suit, **payment terms** are implemented as sets of rules and regulations that define the clients' ***payment dates*** and ***noticing periods*** (before or/and after the payment day). Primarily, they help to make the clients' invoicing easier and faster by allowing to use **auto-invoicing profiles**. Paym ent terms are indicated in clients' profiles.

The section constitutes as a list of profiles that determine **payment terms**. Structure of the section is presented on a screenshot below.

Screenshot: Payment Terms section



Functional **buttons/icons**, presented in the section, are as follows:

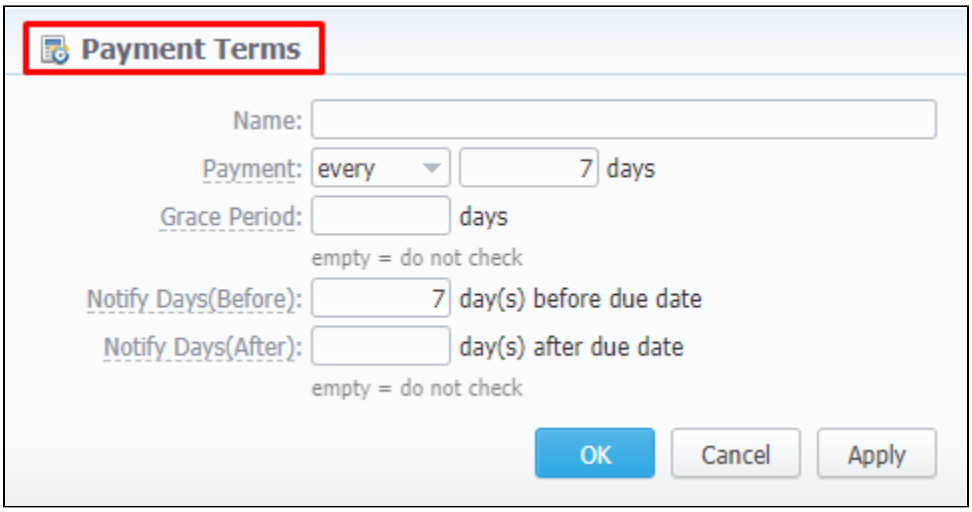
Button/Icon	Description
New Payment Terms	Allows to create a new payment terms profile
	Allows to manage an existing payment terms profile on a list
	Allows to delete a payment terms profile from the system. Requires confirmation

Adding New Payment Terms

To create a new payment terms profile, you need to do the following:

- Click on **New Payment Terms** button
- Specify the **required fields** in the appeared pop-up window (see table below);
- Confirm new payment terms profile creation by pressing **OK**

Screenshot: Adding new payment terms profile



Field	Description
Name	Name of a new payment terms profile
Payment	The exact day when a peyment must be performed or its frequency (for example, on the 7-th day of the month or every 10 days)
Grace Period	Period that specifies how many days the client has to pay the bill after he was invoiced. It's the ***Due Date*** field in invoices (so-called "Deferral period")
Notify Days (Before)	Set how many days **before** the payment date (invoicing date + grace period) have to pass before automatic reminders will be sent to a client. For example, if you enter *10*, the reminder will be sent *10* days before the payment date. You can specify **more than one** value in this field separating them with **commas** - ***10, 5, 3***
Notify Days (After)	Specify how many days **after** the payment date have to pass before reminders will be sent to a client. The field can have **more than one** value, each separated with a comma.

Payment Gateways

In this article

- Section overview
- Configuring Payment Gateways

Section overview

This section is designed to configure methods your customers may use to recharge their balance.
Currently, there are following default methods in the system (see screenshot below):

- ***Authorize.net***
- ***PayPal***
- ***Top-Up cards***
- ***Moneybookers***
- ***QIWI***

Screenshot: Payment Gateways section

Payment Gateways

Settings for: Sub-Reseller A

AUTHORIZE.NET

ORDER POSITION: 0

Login:		Add your API login ID
Transaction Key:		Add your API transaction key
Amount Limits:		Possible values for top-up separated by comma (eg "5, 20, 100"). If empty — user can specify any value. Field should be empty for top-up cards.
Payment Account:	General	Specify account which will be used for transactions from this payment gateway.
Description:	Here you can add funds to your balance by using your PayPal account.	A user will see this text as a help-tip for respective payment method.

MONEYBOOKERS

ORDER POSITION: 0

E-mail:		Your Moneybookers e-mail, payment recipient
Secret word:		Your Moneybookers secret word you set in your Moneybookers profile Merchant Tools
Gateway Currency:	U.S. Dollar (USD)	Currency which will be used by user to perform a payment
System Currency:	USD	This setting reflects currency of the gateway. Amount received will be treated as specified currency. Leave empty if not required for the gateway *(eg. top-up cards)*.
Amount Limits:		Possible values for top-up separated by comma (eg "5, 20, 100"). If empty — user can specify any value. Field should be empty for top-up cards.
Payment Account:	General	Specify account which will be used for transactions from this payment gateway.
Description:	Here you can add funds to your balance by using your PayPal account.	A user will see this text as a help-tip for respective payment method.

PAYPAL

ORDER POSITION: 0

E-mail:		You PayPal e-mail, payment recipient.
Gateway Currency:	U.S. Dollar (USD)	Currency which will be used by user to perform a payment.
System Currency:	USD	This setting reflects currency of the gateway. Amount received will be treated as specified currency. Leave empty if not required for the gateway *(eg. top-up cards)*.
Amount Limits:		Possible values for top-up separated by comma (eg "5, 20, 100"). If empty — user can specify any value. Field should be empty for top-up cards.
Payment Account:	General	Specify account which will be used for transactions from this payment gateway.
Description:	Here you can add funds to your balance by using your PayPal account.	A user will see this text as a help-tip for respective payment method.

QIWI

ORDER POSITION: 0

E-mail:		Your QIWI e-mail, payment recipient.
Provider ID:	0	Qiwi provider ID.
IP:		Qiwi gateway IP. Separated by comma without spaces.
Payment Account:	General	Specify account which will be used for transactions from this payment gateway.
Description:	Here you can add funds to your balance by using your PayPal account.	A user will see this text as a help-tip for respective payment method.

TOP-UP CARDS

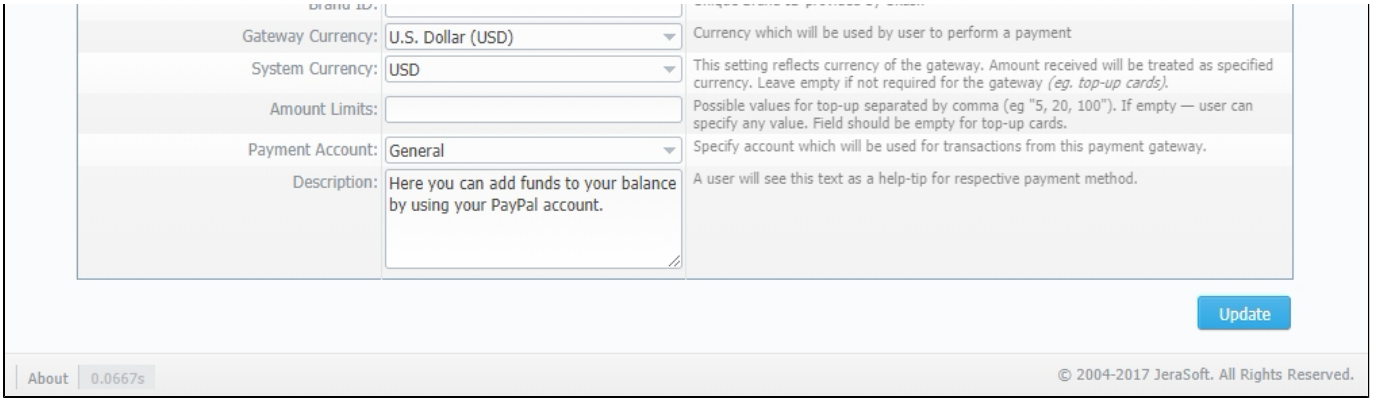
ORDER POSITION: 0

Payment Account:	General	Specify account which will be used for transactions from this payment gateway.
Description:	Here you can add funds to your balance by using your PayPal account.	A user will see this text as a help-tip for respective payment method.

UKASH

ORDER POSITION: 0

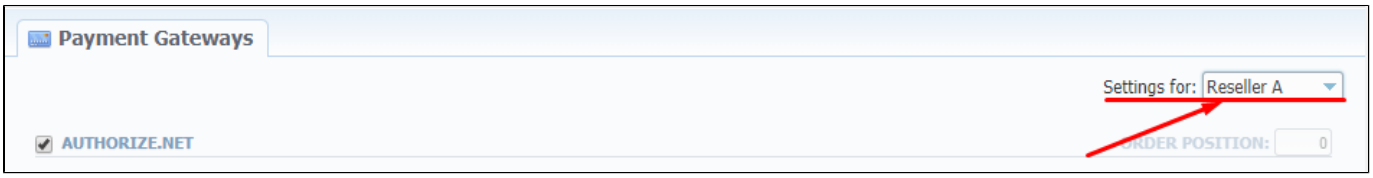
Security Request Token:		20-Character alphanumeric unique Request-Token provided by Ukash. The token is used to validate the merchant account.
Security Response Token:		20-Character alphanumeric unique Response-Token provided by Ukash. The token is used to validate the merchant account.
Brand ID:		Unique Brand ID provided by Ukash



Configuring Payment Gateways

To configure the gateways, you need to select a **Reseller** by using ***Settings for*** drop-down menu in the top-right corner of the section (see screenshot below). It means that **all clients** belonging to the selected Reseller will have these settings. The settings depend on the payment system and can include specific options for each. Below, as an example, you can find a description of fields that have to be specified while choosing **QIWI** service.

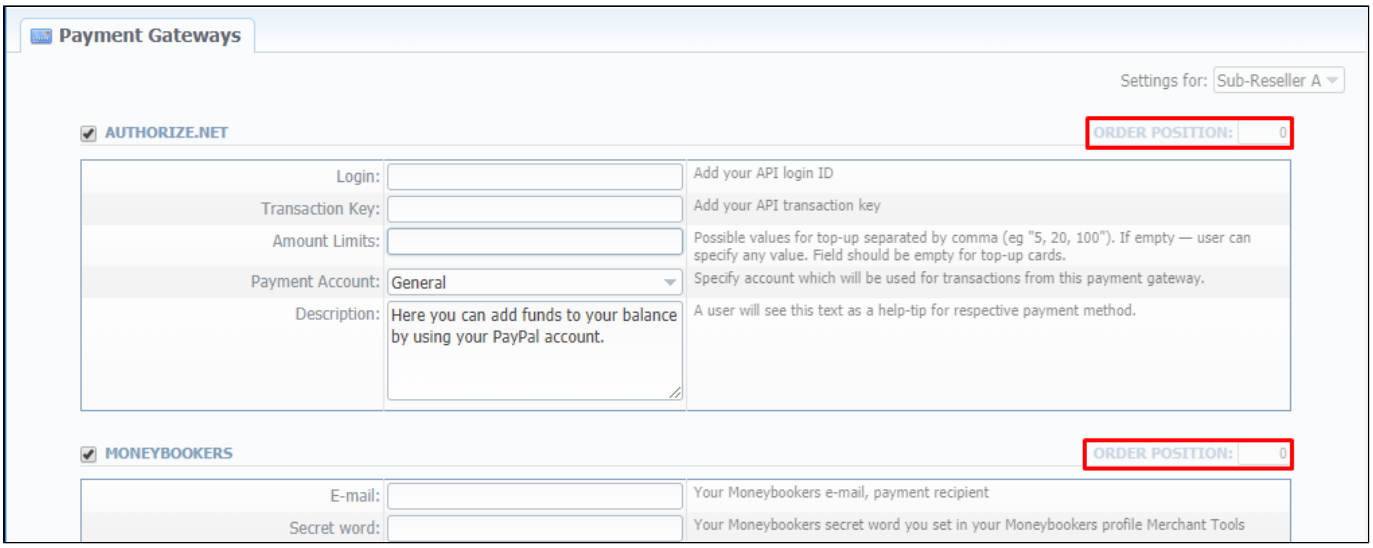
Screenshot: Settings for drop-down menu



Field	Description
Email	Respective QIWI **email** that should be used
Provider ID	**Identification number** of Qiwi provider
IP	Qiwi gateway **IP**. Specified IP address must be **separated by comma without spaces**
Payment Account	Payment **account** that should be used for payment from respective payment **gateway**
Description	User will see this text as **tooltip** for current payment method

What is more, you may specify the order of displayed payment methods (if more than one method is selected) in the ***Order position*** field in the top-right corner of the **Payment method** section.

Screenshot: Order position field



Attention

For proper work of ***PayPal service***, you should ***enable an access for a list of IP addresses in your Firewall settings***, which can be found here.

Moreover, you can find ***detailed description on how to enable IPN*** by visiting the following link.

Time Profiles

In this article

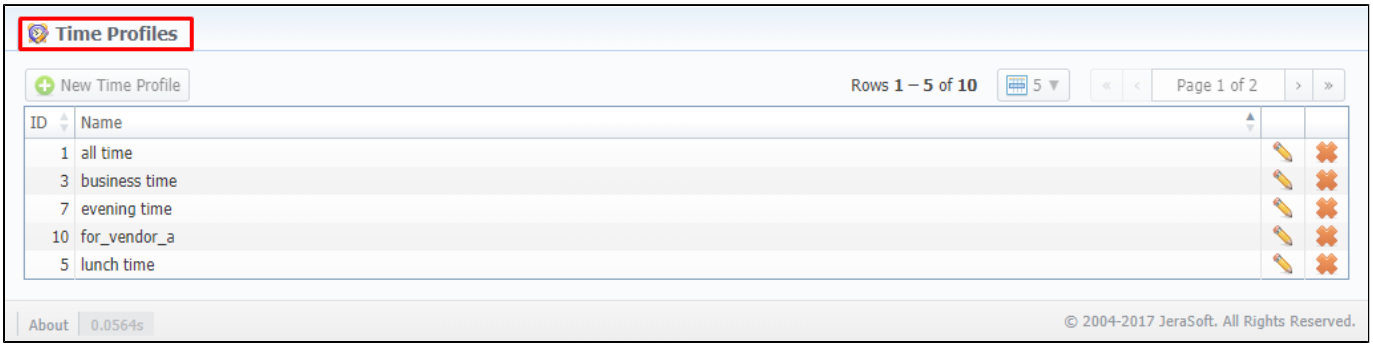
- Section overview
  - Adding New Time Profile

Section overview

Time profile is a great way to make your billing more flexible and convenient. Time profiles can be attached to your clients' rate tables and are used to adjust rates by dividing them on the basis of time of usage. For instance, such profile can be used to sell traffic for an **increased** price in business hours, and for the **reduced** one during non-business hours.

This section is used to create and manage time profiles. Structure of the section is presented on a screenshot below.

Screenshot: Time Profiles section main window



Functional **buttons/icons**, presented in the section, are as follows:

Button/Icon	Description
New Time Profile	Allows to create a new time profile
	Allows to manage an existing time profile on a list
	Allows to delete a time profile from the system. Requires confirmation

Adding New Time Profile

To add a new time profile, you need to:

- Press **New Time Profile** button
- In the appeared dialog-window, fill in the requried fields
- Press **OK**

Screenshot: Adding new time profile

Field	Description
Name	Name of a new time profile
Hours	Select hours that will be used for the particular time profile. More than one hour range can be added (e.g. ***03.00 - 03.59, 08.00 - 08.59***)
Week Days	Specify days that will be used for the particular time profile. You can add more than one day to the profile (e.g. ***Monday, Tuesday, Thursday, Sunday***)

Taxes Profiles

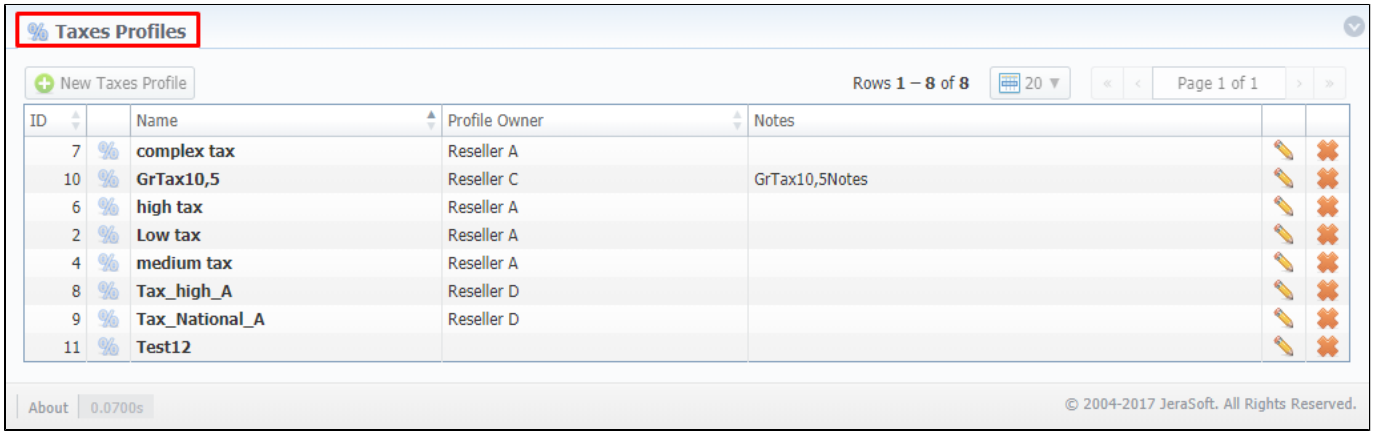
In this article

- Section overview
- Advanced Search
- Creating New Taxes Profile
- Tax Values Management

Section overview

Taxes profiles, equally as Time profiles, is a VCS tool that makes the process of clients' rate tables management exceptionally agile. Taxes profile is a **set of taxation rules** that can be applied to client's rate tables in different taxation schemes. This section allows you to add, edit, and delete profiles and is presented in a form of a table with the following columns (see screenshot):

Screenshot: Taxes Profiles section



Column	Description
ID	Taxes profile's identification number
Name	Name of a taxes profile
Profile Owner	List of resellers corresponding taxes profile was assigned to
Notes	Additional information regarding a text profile

Functional **buttons/icons**, presented in the section, are as follows:

Button/Icon	Description
New Taxes Profile	Allows to create a new taxes profile
	Allows to manage an existing taxes profile on a list
	Allows to delete a taxes profile from the system. Requires confirmation
	Allows to manage list of tax values a particular profile

Advanced Search

In the top right corner of the section above the table, an **Advanced Search** drop-down menu is located. By clicking on blue downwards arrow icon, a drop-down menu with the following structure is displayed:

Screenshot: Advanced Search drop-down menu

Field	Description
Profile Owner	Select from the list of all Resellers, Sub-resellers and Managers registered in the system
Status	Select a status of a taxes profile: • ***Active*** • ***Archive***

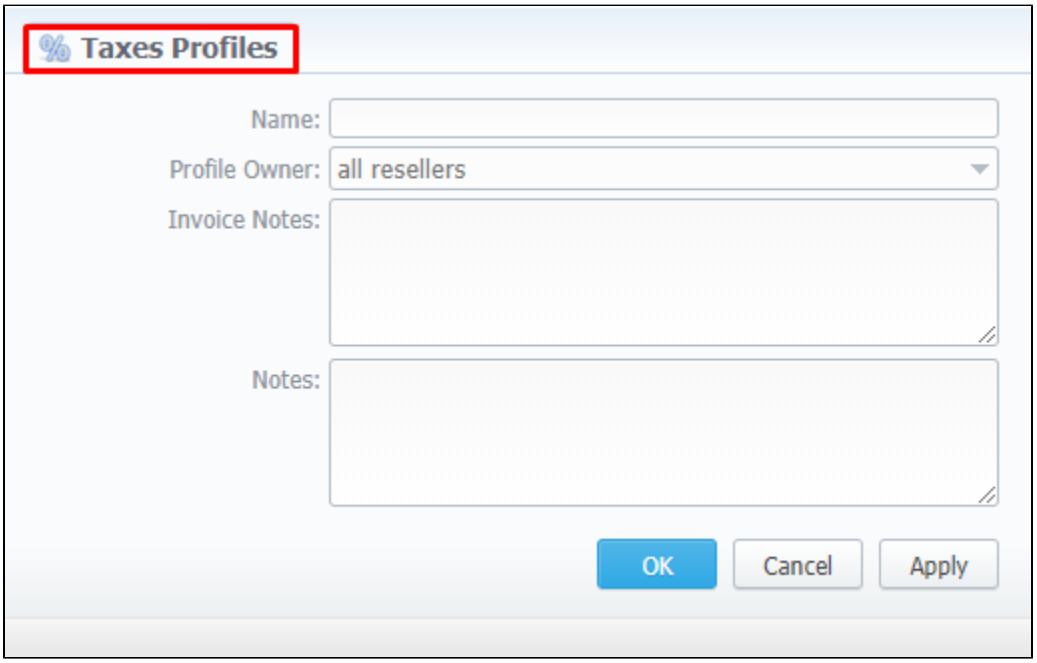
To apply the specified search criteria, press **Search** button; to cancel the applied parameters, press **Reset** button.

Creating New Taxes Profile

To create new profile, you need to:

- Click on **New Taxes Profile** button
- Fill in mandatory fields (specified in the table below)
- Press **OK** button

Screenshot: New Taxes Profile window

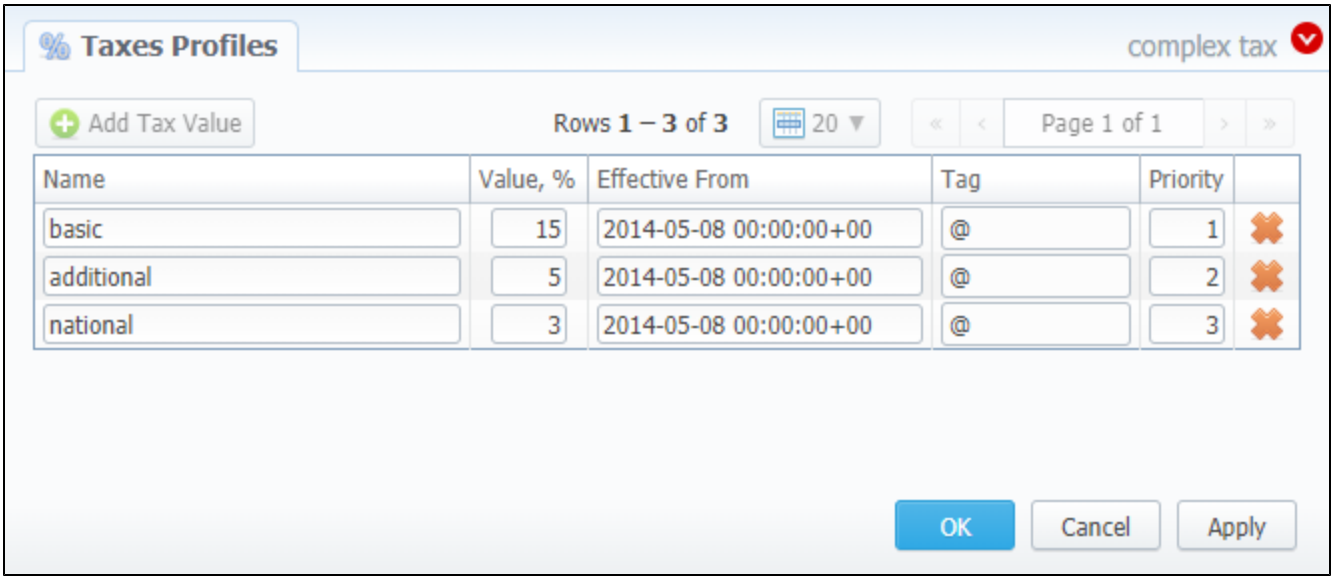


Field	Description
Name	Name of a taxes profile
Profile Owner	Select from the list of all Resellers, Sub-resellers and Managers registered in the system
Invoice Notes	If specified, this information will be displayed in issued invoices
Notes	Additional information regarding a text profile

Tax Values Management

To manage a tax value, you need to click on icon to the left of corresponding profile name on the list. In the pop-up window you can add new rule by clicking **Add Tax Value** button or edit already existing values. Structure of a pop-up window is as follows:

Screenshot: Tax Values Management



Field	Description
Name	Name of the tax value added to this profile
Value	Specify a tax value in **%**
Effective From	Start date of a corresponding tax value
Tag	Specify tag(s) you would like to be applied to a corresponding tax value. If not tags are added, "@" must be inserted
Priority	Specify the priority of tax value usage

While operating with tax values, you can apply **Advance Search** to find the value you might be interested in. To do so, click on red downwards arrow ic on in the top right corner of the pop-up window and set ***Status*** and ***Status Date*** fields:

- **Status**:
  - ***current on*** - if chosen, all tax values, with the latest **Effective From** field value, will be displayed
  - ***old for*** - if chosen, all tax values, whose **Effective From** field value is **older** in comparison to its current one, will be displayed
  - ***future for*** - if chosen, all tax values, whose **Effective From > Date** field value, will be displayed
  - ***all*** - if chosen, **all** tax values will be displayed
- **Date** - set the time and date that will be applied for the search.

By default, tax values displayed in a pop-up window are filtered by ***current on*** status.

Tip

In cases when you determine a **Priority** status, you basically set the order of the taxation. So, *the tax with* ***Priority 1*** will add % tax to operation sum, the *tax with* ***Priority 2*** will add tax % to the **resulted sum** (operation sum + 1st tax %). Each following priority will add % tax to operation sum plus all the previous priorities values.

For example:

If operation sum is ***100 USD***, and there is a single tax with ***Priority 1*** and ***value of 10%***, the taxation result will be *10 USD*, so full operation plus tax is ***1 10 USD***.

If there are **two taxes** with priorities of 1 and 2, and values of 10% and 20%, respectively, then the **first tax yield** will be ***10 USD***, and **second tax yield** will be ***22 USD*** (because 20% is calculated from sum of operation + previous tax), and total will be ***100 + 10 + 22 = 132 USD***.

Warning

You **cannot** delete or archive a tax profile that is **currently assigned** to the *Client, Call shop, Reseller, or Calling card*

Tags

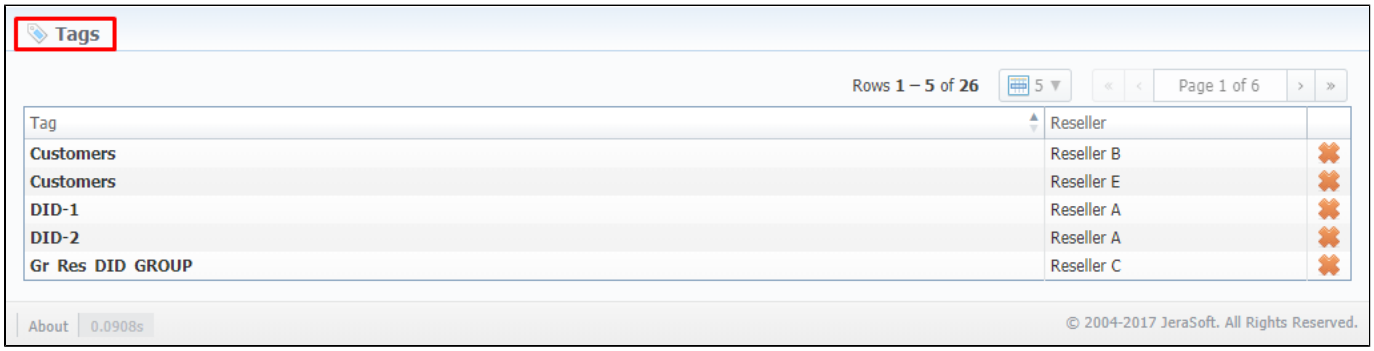
In this article

- Section overview
- Adding New Tag
- xDRs report tags

Section overview

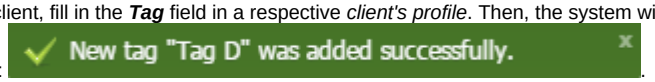
Tags enable you to organize resources for your billing environment in a more flexible way. With tags, you are able, for instance, to expand functional capabilities of rate tables by creating exclusive rates with specific tags. These tags can be applied to ***clients***, ***accounts***, ***VoIP gateways***, ***rate tables***, ***routing plans***, ***traffic processing***, ***packages***, ***DiDs***, and ***taxes profiles***. This section represents a list of tags that you created within the system and those belonging to your Reseller (see screenshot below).

Screenshot: Tags section



Adding New Tag

To start things off, you **can't create** a new tag, **nor** can you **edit** an existing one. The section is designed to display the list of all tags in the system with a possibility to delete any of them.

What is more important, you can add a tag to a entity straight in the corresponding section (listed above) of the system. For example, to assign a new tag to a client, fill in the ***Tag*** field in a respective *client's profile*. Then, the system will create this tag and show up a corresponding notification on the top of the page: 

To remove a tag from the system click on delete icon opposite a corresponding tag on the list.

Tip

1. You can create an **unlimited** number of tags for each entity.
2. Use the "at" **(@)** sign as a **default tag for rates.**
3. Please **avoid using commas** in the tag names.
4. When you **determine a tag for the call**, and there is no rate for this tag, the system will take a rate with a **default tag**.

You can 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 go to Traffic Processing section and create a rule for **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 a result, calls within a respective operator will be billed by an **added tag**.

Warning

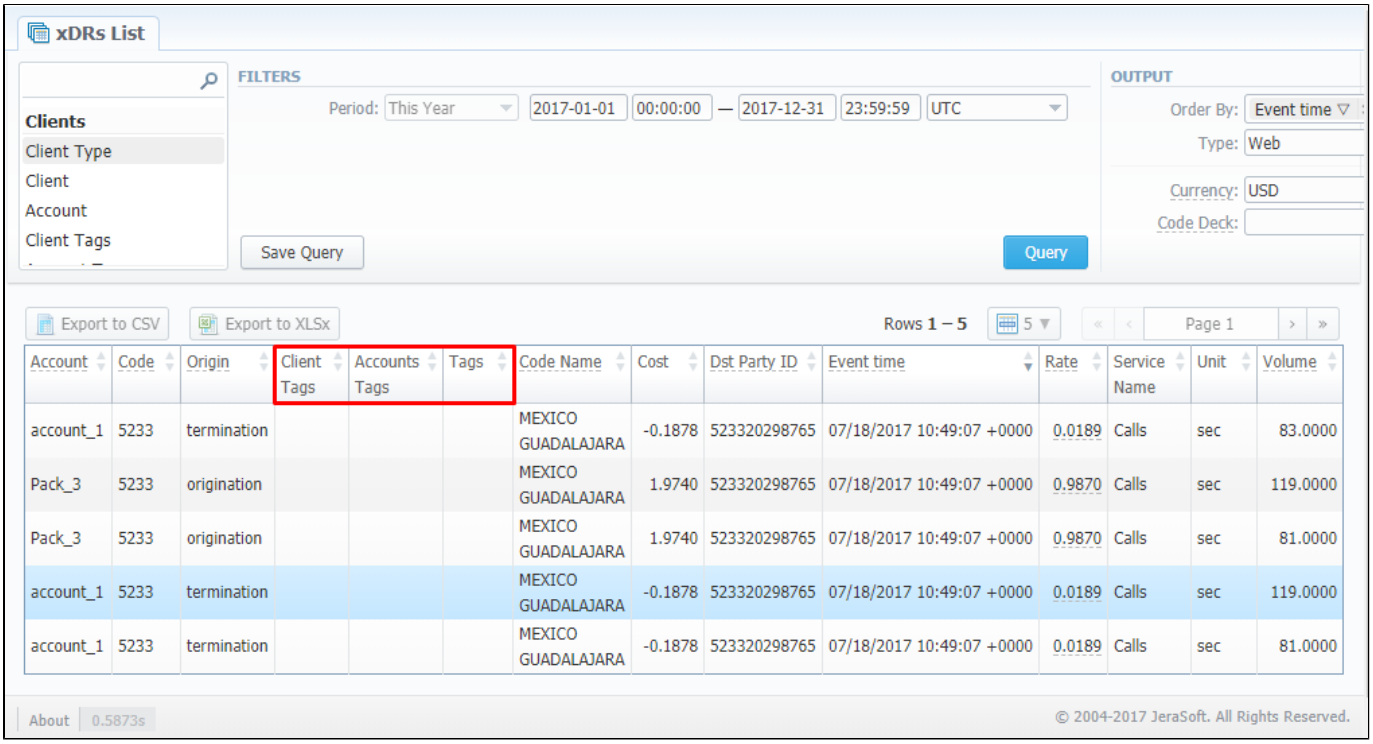
1. If you applied a tag for the *Taxes Profile*, please make sure it **matches** the tag specified in the respective ***Rate Table***.
2. We strongly recommend that you **properly configure rates and assign tags**. If you configure in the way that some rate tables will have **several** accessible tags, it will work **randomly**.

xDRs report tags

Also, in xDRs list, you can view **tags that were used while the calls were processed**. While building an xDRs report, the following columns related to tags may be added:

- ***Client Tags*** — respective tags that were assigned directly to the *Client.*
- ***Accounts Tags*** — tags that were added to accounts profiles.
- ***Tags*** - all **dynamic** tags of the processed call. Dynamic are those tags that were assigned to *Accounts, Clients, or Gateways* through ***Traffic Processing*** *or* ***Number Portability***.

Screenshot: xDRs List section



Invoices Templates

In this article

- Section overview
- Creating New Invoice Template
  - New XLS Template creation
  - New PDF Template creation
- Method of Calculating and Rounding Values

Section overview

Invoices templates is a convenient tool that makes the whole process of invoicing less time consuming and much more convenient and effective. It allows you to create custom invoice templates that would address your particular needs. Section is presented in a form of a table of invoices templates with the following columns (see screenshot below):

Screenshot: Invoices Templates section main window

Column Name	Description
ID	Invoice template's identification number
Name	Name of an invoice template
Type	Type of an invoice template format (**.pdf /.xls**)
Reseller	List of resellers corresponding invoice template was assigned to
Notes	Additional information on a template

Functional **buttons/icons**, presented in the section, are as follows:

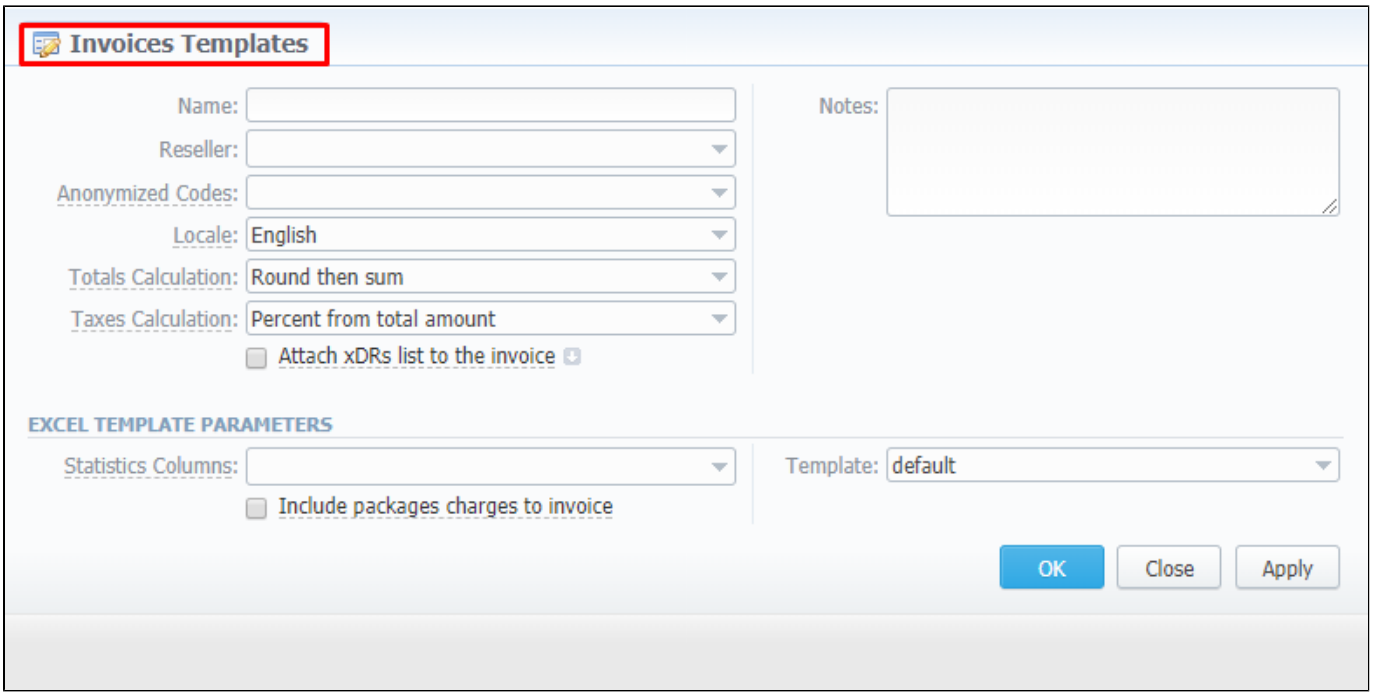
Button/Icon	Description
New PDF Template	Allows to create a new invoice template in **.pdf** format
New XLS Template	Allows to create a new invoice template in **.xls** format
	Allows to delete an invoice template from the system

Creating New Invoice Template

When creating a new template, you need to choose its type. Currently, there are **two types – *.xls* and *.pdf*.** For creating a new template, click the respective button: ***New XLS Template*** *or* ***New PDF Template***.

New XLS Template creation

Screenshot: New XLS invoice template creation form



Section	Fields Description	
General Information	General information about the invoice template	
	• ***Name***	Unique name to differentiate invoice templates
	• ***Reseller***	Reseller who owns this invoice template
	• ***Anonymized Codes***	Code Deck whose codes and their respective names will be hidden in invoice
	• ***Locale***	Language for text representation of **totals** in invoice
	• ***Totals Calculation***	The order of rounding while calculating the totals: • ***round then sum*** - raw values are rounded first according to the currency settings, then are summed; • ***sum then round*** - raw values are summed first, then are rounded.
	• ***Taxes Calculation***	The way taxes will be calculated: • ***percent from total amount*** - taxes are calculated as a percentage from the total amount; • ***sum of individual taxes*** - taxes are calculated as a sum of respective taxes.
	• ***Attach xDRs list to the invoice*** *checkbox*	If enabled, creates xDR file for invoicing period and attaches it to invoice. To view advanced settings, click on icon next to its name.
		• ***xDRs List Format*** — List of xDR file format (***.csv, .xlsx*** or ***.xls***)

		• ***Included Calls***	Types of calls that will be included in invoices: • ***All payable*** - includes calls with any duration that have non-zero costs and use packages • ***Non-zero payable*** - permits including calls with non-zero duration that either have any cost or use packages.
		• ***Select Columns***	List of columns which can be presented in attached xDR file
	• ***Notes***	Additional information concerning the invoice template	
Excel Template Parameters	Settings of invoice template		
	• ***Statistics Columns***	List of statistics columns. If selected, the invoice will include summary statistics with selected columns	
	• ***Include packages charges to invoice*** *checkbox*	If enabled, the invoice will include the data on ordered packages into a current invoice for selected period	
	• ***Template***	Defined displaying format of xDRs list in a template	

Tip

When you select **Non-zero payable** parameter in the ***Attached CDRs list to the invoice*** advanced settings, then:

1) created **outgoing** Invoice for Client **will have attached xDRs file with**:

- incoming/outcoming non-free calls that should be paid by the Client
- outcoming free calls with non-zero duration
- outcoming free calls by package volume limits with non-zero duration

2) created **incoming** Invoice for Client **will have attached xDRs file with**:

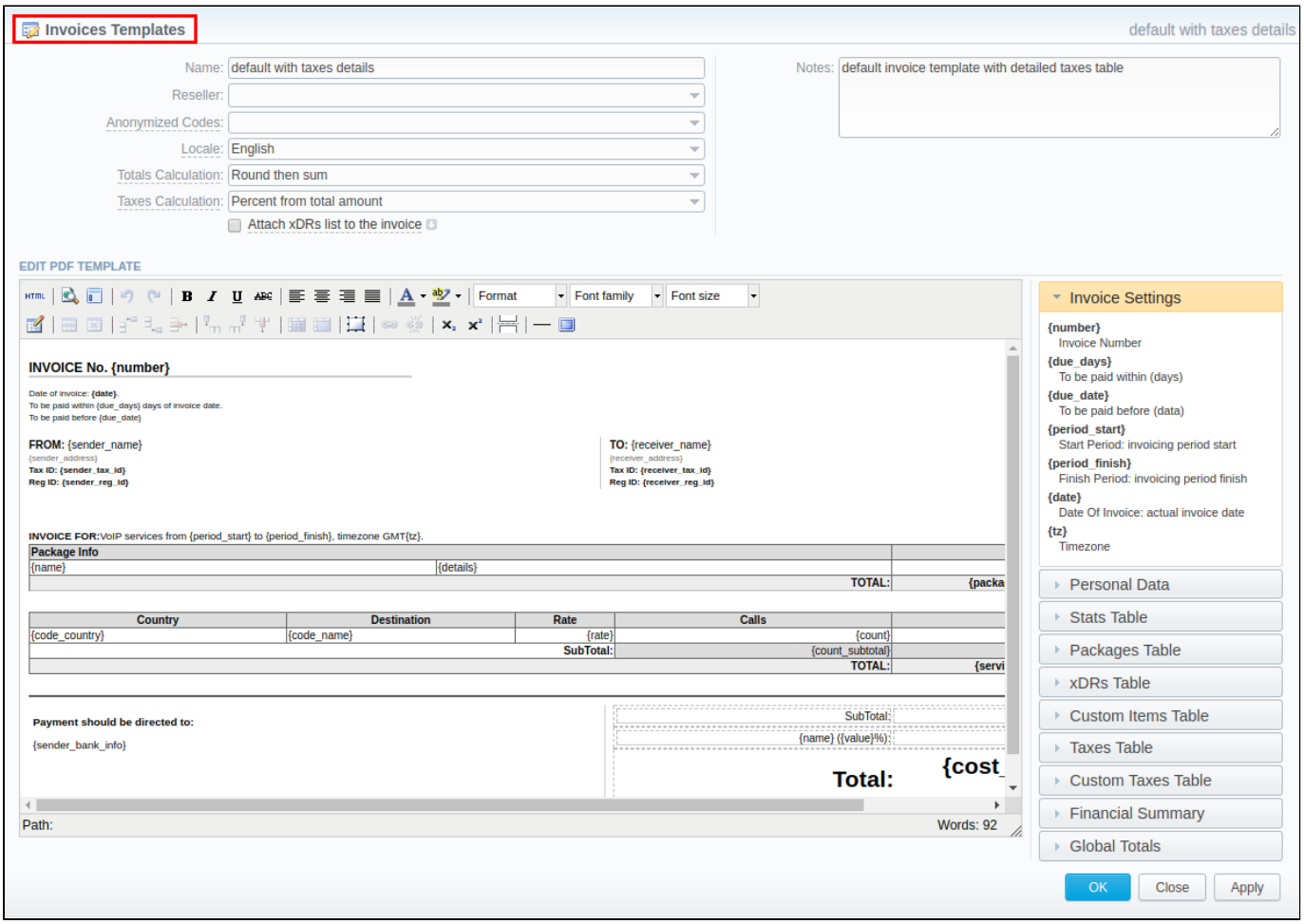
- incoming/outcoming non-free calls that should be paid to the Client
- incoming free calls with non-zero duration
- incoming free calls by package volume limits with non-zero duration (it's applicable in case of usage of termination limits)

Attention

- xDRs table of the created invoice displays calls according to the settings of ***Attach CDR's list to the invoices*** settings.
- Stats table of the created Invoice shows calls included in the xDRs table.

New PDF Template creation

Screenshot: New PDF invoice template creation form



The process of creating a new *PDF* invoice template is devided into the following steps:

1. Add a table to your workspace, right-click on it, choose **Table Properties**, and define ***Class*** field (*stats, xDRs, packages, suretax_items, custom*) i n **General** tab;
2. Fill table with relevant information which should be present in invoice by using **functional variables,** which you can pick from a list provided in same window on the right drop-down panels;
3. After invoice template is created, fill in its **Name** and other **fields** in the **General Information** section, then press **OK**;
4. Go to **Management > Resellers** and in reseller's properties select your invoice template. This will insure that **all customers** of this reseller will be using this template;
5. When creating invoice in **Management > Invoices**, you can use invoice template prior to generating an invoice. JeraSoft VCS includes several **default .pdf templates,** called ***default*** and ***default extended.***

Attention

Please note:

- You can select the **Time format** *(H:M:S) or (M:S)* while creating a **new invoice template.** The default format is in **minutes** *(M).*
- There is a package arrangement by numbers in ***Invoices*** and ***Invoices Templates***. While generating invoices, the system sorts packages in invoices. The names of packages could include numerical symbols. Please use numerical symbols as ***001 name***, ***002 name***, *etc*. in names of packages. Moreover, it's advisable to **avoid** names with special symbols like ***%001 name***, ***-001 name***.

Attention

In VCS 3.16.0.:

1. **Taxes Table** group of functional variables to display collected taxes in an invoice has been added. Taxes Table consists of the following variables:
    - **{name}** - Tax name
    - **{value}** - Tax value in percents
    - **{effective_from}** - Tax effective from date
    - **{amount}** - Tax amount
2. New ***default with taxes details template*** with included **Taxes Table** functional variables has been added to the section.

Method of Calculating and Rounding Values

Tip

To help you avoid rounding issues with **float numbers** and **missing cents**, check out our Best practice example or read about round half to even algorithm, applied in the system, here.

Services

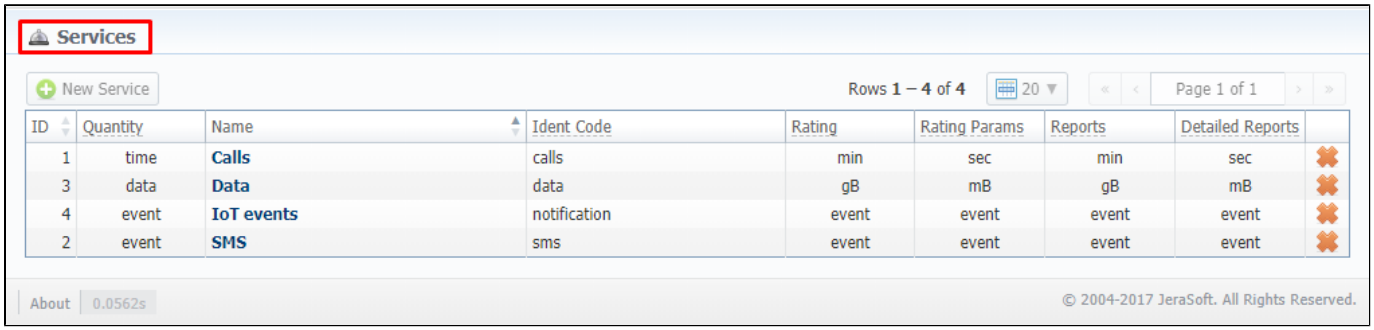
In this article

- Section overview
- Adding New Service

Section overview

Services, presented in this section, reflect the major utilities for billing all types of data, including ***calls***, ***sms***, ***IoT events***, *etc*. This section represents a list of all existing in the system services.

Screenshot: Services section



Functional **buttons/icons**, presented in the section, are as follows:

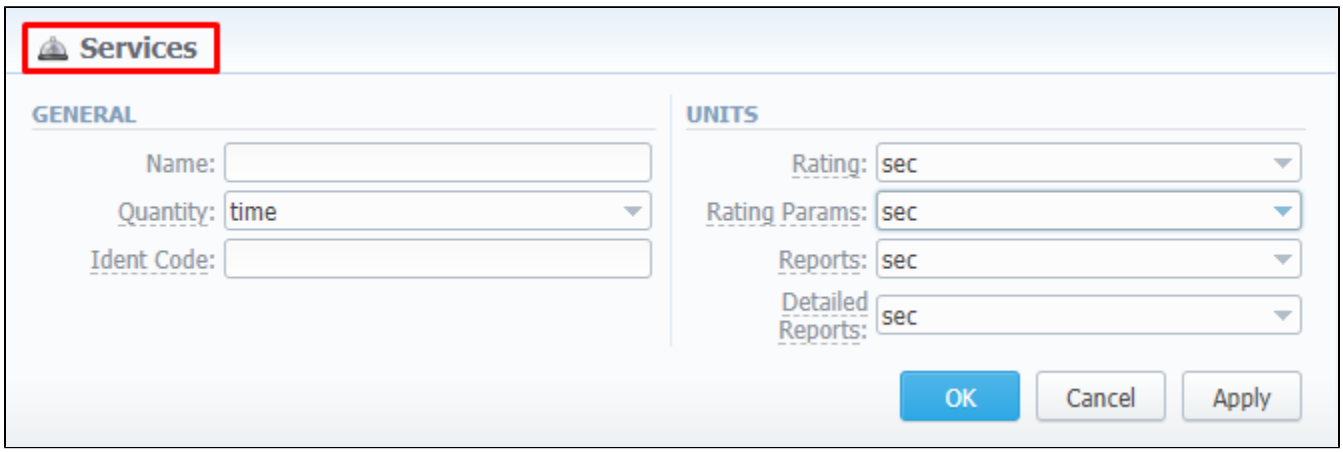
Button/Icon	Description
New Service	Allows to create a new service
	Allows to delete a service from the system. Requires confirmation

Adding New Service

In order to proceed to service creation process:

- Click on **New Service** button
- Fill in all required fields in a pop-up window (screenshot below)
- Press **OK**

Screenshot: New service creation form



Information block	Fields Description	
General	General information about a service	
	• ***Name***	Title of the new service
	• ***Quantity***	Type of a unit group (***time***, ***event***, ***data***) that will measure the service
	• ***Ident Code***	ID that will be used to identify unit in the xDRs
Units	Depending on a unit group chosen in ***Quantity*** field***,*** the following unit values will be applied to the fields of **Units** section • for time: ***sec, min, hour, day*** • for event: ***event*** • for data: ***B***, ***kB*** *(1000 B)*, ***KB*** *(1024 B)*, ***mB*** *(1000^2 B)*, ***MB*** *(1024^2 B)*, ***gB*** *(1000^3 B)*, ***GB*** *(1024^3 B)*	
	• ***Rating***	Choose the unit that will be used for rates and for packages limits
	• ***Rating Params***	Indicate the unit for extra rate parameters like **Min Volume**
	• ***Reports***	Select the unit for all aggregated reports
	• ***Detailed Reports***	Determine the unit for detailed xDR report

Settings

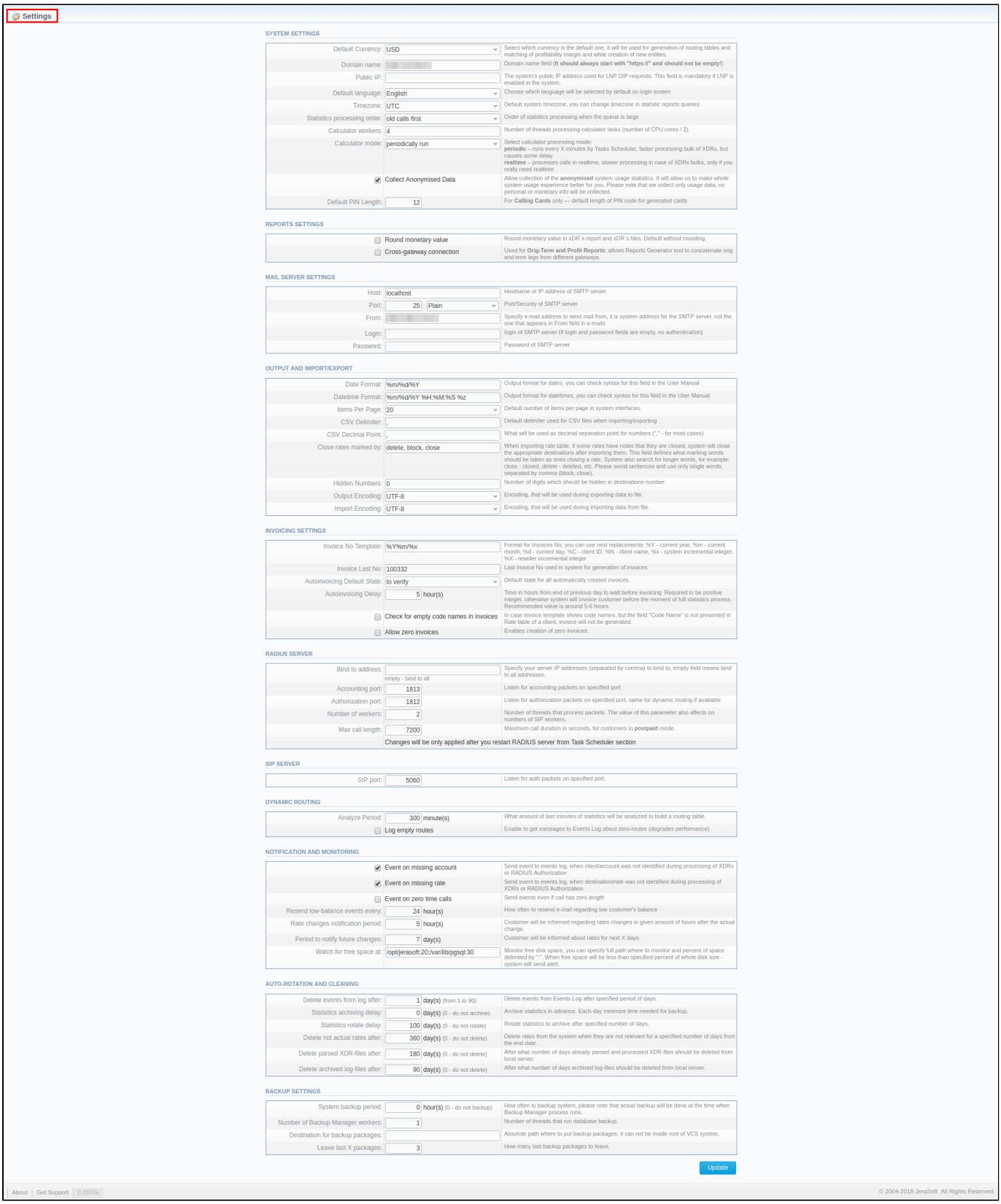
This section is designed for management of system notify messages distribution, as well as specifying of system time and date format. Section is divided into 10 information blocks listed below.

- System Settings
- Reports Settings
- Mail Server Settings
- Output and Import / Export
- Invoicing Settings
- RADIUS Server
- SIP Server
- Dynamic Routing
- Notification and Monitoring
- Auto-rotation and Cleaning
- Backup Settings

To apply any changes, made in the section, press

button. The whole **Settings** section is presented on the screenshot below:

Screenshot: Settings section



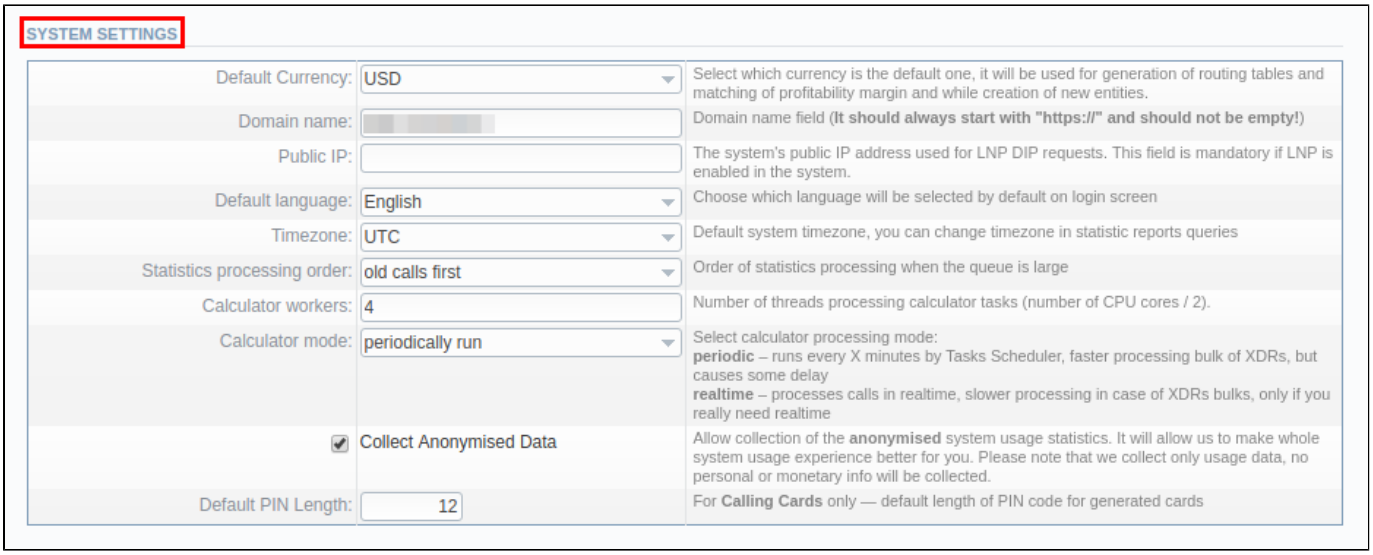
Warning

We strongly recommend that you **do not add any symbols** (for example, a slash) after a domain name.

System Settings

System settings information block contains default system parameters specified below:

Screenshot: System Settings window



Field	Description
Default Currency	Specify **currency** that will be used as default for generation of routing and new entities creation (accounts, invoices, transactions, clients, resellers, etc). However, this currency **won't** be used for reports.
Domain Name	Enter **relevant domain** address of your VCS server. In most cases, **VCS IP** address should be entered here. Please note, if this name is specified **incorrectly**, you may experience issues with reseller logos display
Public IP	Specify an **Internet Protocol address** that LNP DIP requests
Default Language	Select your default **language** for the system. You can **change** it to your preferred language **at any time**.
Timezone	Select your default **timezone**
Statistics processing order	Specify what **statistics** to process first (newer or older)
Calculator workers	Specify **number of threads** processing calculator tasks (number of CPU cores / 2)
Calculator mode	Defines the **calculator workout**, whether is will start **periodically** through Task Scheduler, or will be **constantly** running
***Collect Anonymised Data** c heckbox*	Allows collecting **anonymised** system usage statistics.
Default PIN length	Sets the default **length of PIN-code** when creating calling card series

Attention

If you change the ***Default Currency***, you need to restart ***Dynamic Routing Manager*** in the **Task Scheduler** section for an immediate **Routing Analysis** functioning.

Reports Settings

This information block contains the following reports settings information:

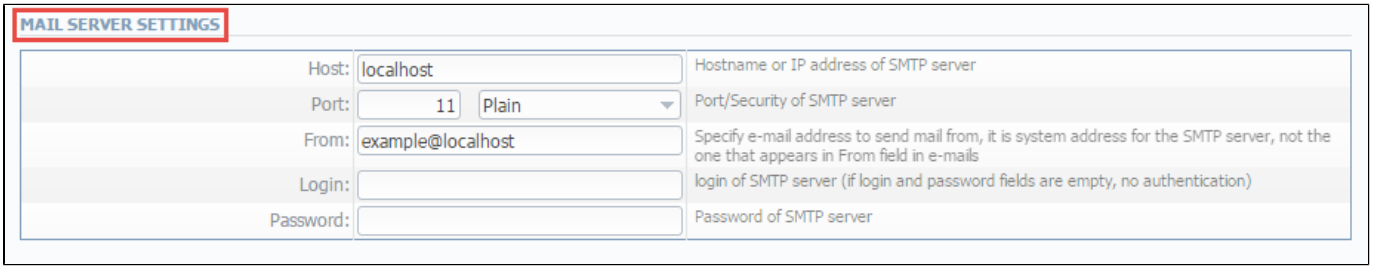
Screenshot: System Settings window

Field	Description
Round monetary value *checkbox*	forces the **values** in the xDRs report and xDRs files **to be rounded** according to currency settings
Cross-gateway connection *checkbox*	applies to **Orig-Term** and **Profit Reports**. When marked, it allows concatenating of orig and term records from different gateways by Reports Generator tool

Mail Server Settings

This information block allows you to specify mail server settings:

Screenshot: Mail Server Settings window

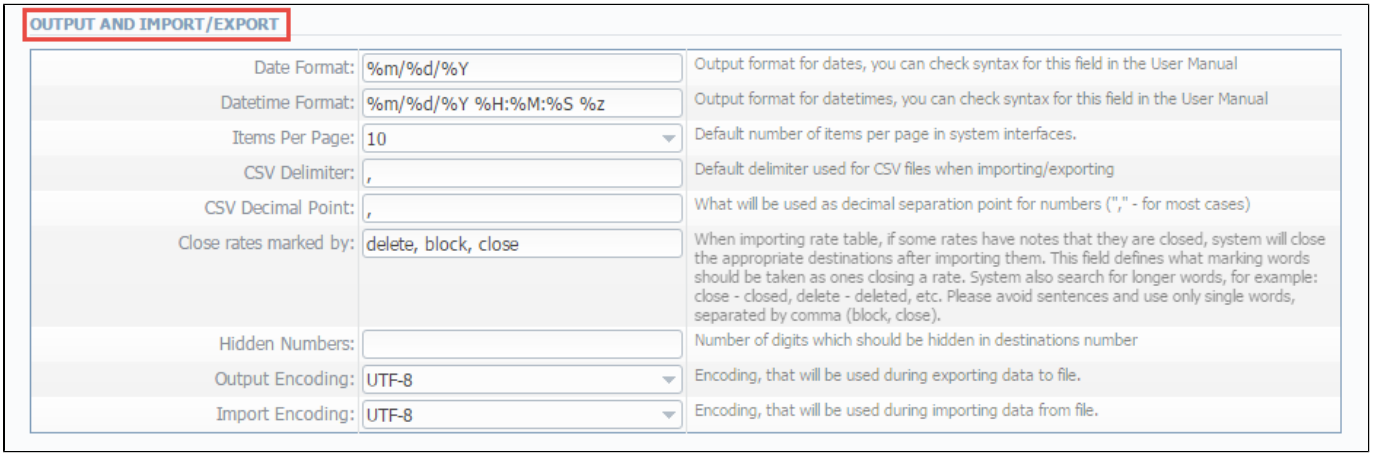


Field	Description
Host	**Mail server address** that is used by system
Port	Specify **port** and **security type** of SMTP server: • ***Plain*** • ***TLS*** • ***SSL***
From	**Email address** that will be specified as sender
Login	Login for SMTP server
Password	Password for SMTP server

Output and Import / Export

In this information block you can specify output and import / export parameters, including time and date parameters configuration:

Screenshot: Output and Import / Export settings window



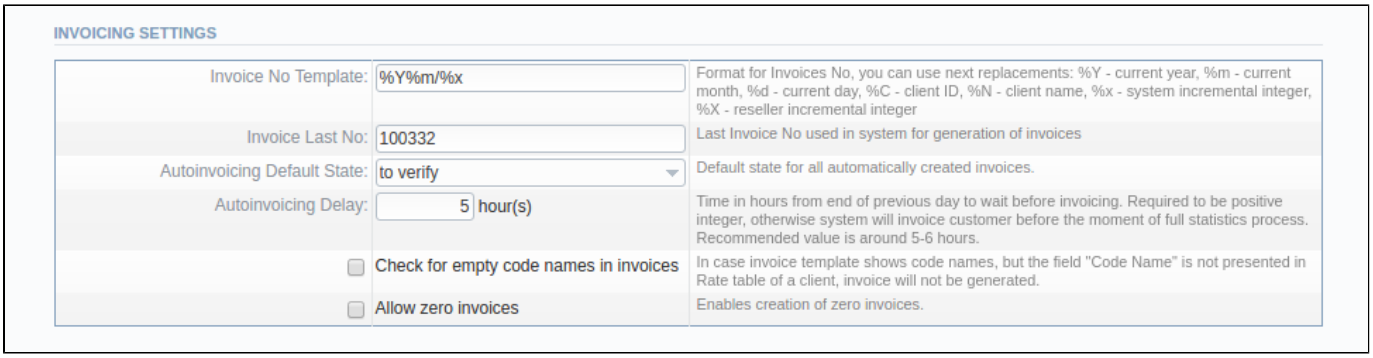
Field	Description	
Date Format	Specify date parameters here	
	• ***%d***	**Day** of the month in numeric form. Allowed values: from ***01*** to ***31***
	• ***%m***	**Month** number. Allowed values: from ***01*** to ***12***
	• ***%Y***	Number of the **year** that consists of **4** numbers. Value example: ***1999, 2005, 2010***
Datetime Format	Specify date time parameters here	
	• ***%d***	**Day** of the month in numeric form. Allowed values: from ***01*** to ***31***
	• ***%m***	**Month** number. Allowed values: from ***01*** to ***12***
	• ***%Y***	Number of the **year** that consists of **4** numbers. Value example: ***1999, 2005, 2010***
	• ***%H***	**Hours** in 24-hour format with leading zeroes. Allowed values: from ***00*** to ***23***
	• ***%M***	**Minutes** with leading zeroes. Allowed values: from ***00*** to ***59***
	• ***%S***	**Seconds** with leading zeroes. Allowed values: from ***00*** to ***59***
	• ***%z***	**Timezone** settings
Items Per Page	Set default **quantity** of items **displayed** on a single page	
CSV Delimiter	Set default **delimiter** for CSV files	

CSV Decimal Point	Set default **decimal point** for CSV files
Close rates marked by	When importing **rate sheets,** system will be able to close respective rates if ***Rate*** column has one of the key-words entered here
Hidden numbers	Specify how many **digits** of a number should be **hidden** when this function is activated for a customer
Output Encoding	Select which **encoding** to use when **exporting** a file
Import Encoding	Select which **encoding** while **importing** data from a file

Invoicing Settings

Below, you will find a list of fields of **Invoicing Settings** information block:

Screenshot: Invoicing Settings window

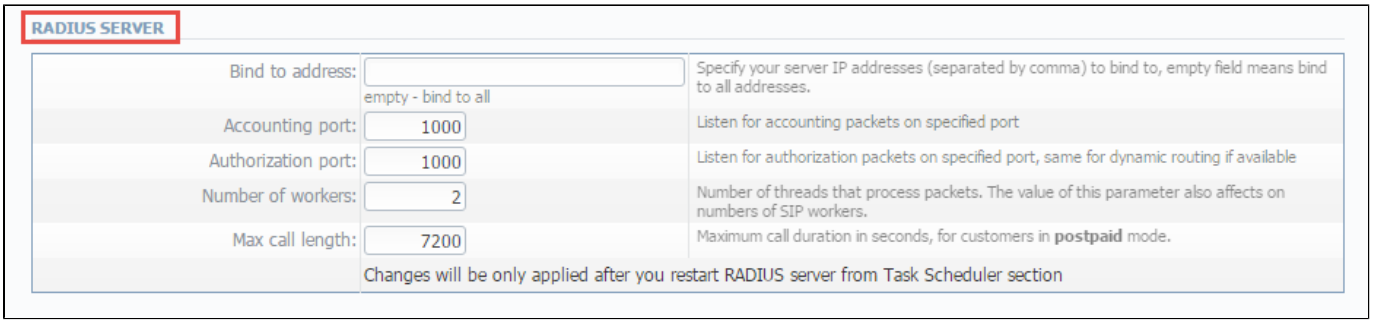


Field	Description
Invoice No Template	Default **template** for invoice number
Invoice Last No	**Number** of last issued invoice
Autoinvoicing Default State	Set the state for all automatically created invoices by choosing one of the following field values: • ***normal*** • ***to sent*** • ***to verify***
Autoinvoicing Delay	Time in **hours** system will wait until doing invoicing
Check empty code names in invoices *checkbox*	Enables checking of the correspondence of a ***Code*** with a ***Code name***, and in case of finding some **mismatching**, the system will give an **alert** and invoice **will not be** generated
Allow zero invoices *checkbox*	Allows to create invoices with **zero amount**

RADIUS Server

VCS **RADIUS server** settings can be managed in this information block:

Screenshot: RADIUS Server settings window

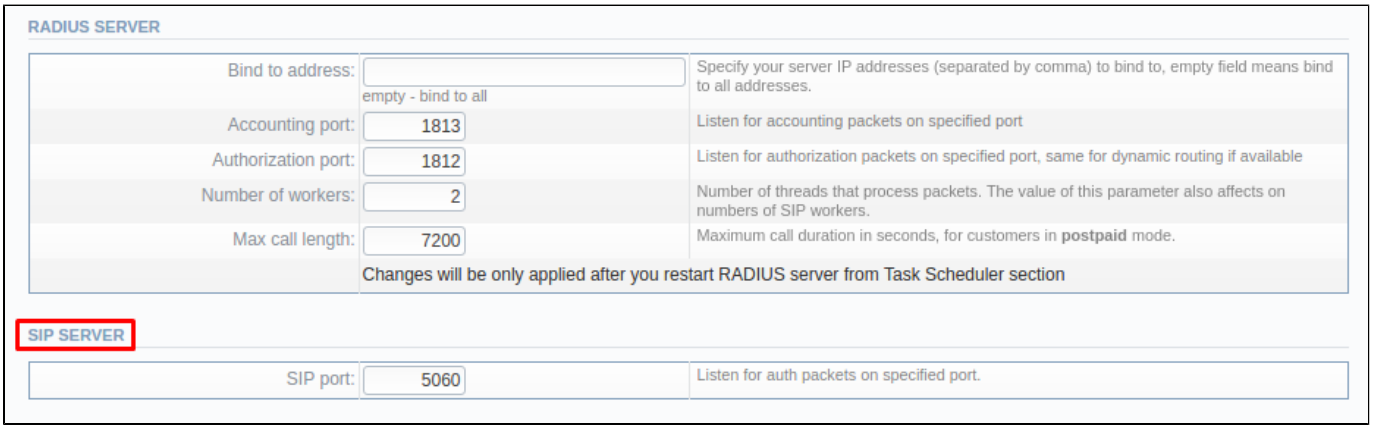


Field	Description
Bind to address	Specify your **VCS server IP addresses**, separated by comma to bind RADIUS to
Accounting port	Specify **accounting port** here. By default, field value is ***1813***
Authorization port	Specify **authorization port** here. By default, field value is ***1812***
Number of workers	Number of **RADIUS workers**. The value of this parameter also **affects SIP workers' number**.
Max call length	Limit maximum call length in **seconds**

SIP Server

SIP Server information block consists of a single ***SIP port*** field where you need to specify a SIP port that system should listen to. Below, you can find the screenshot of the following information block.

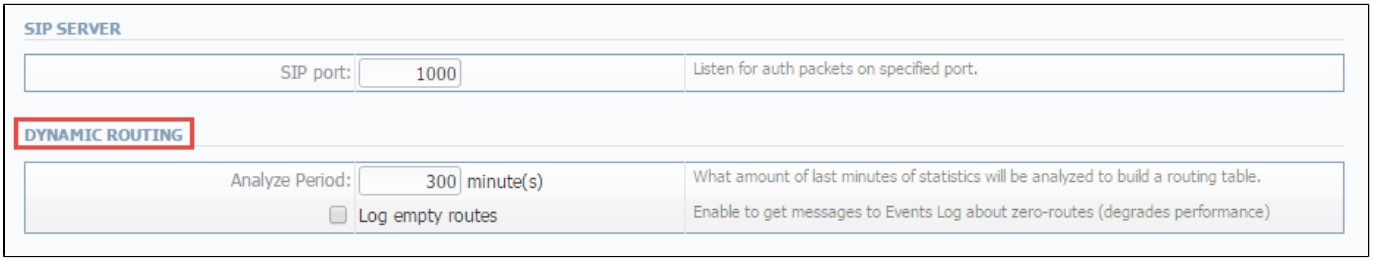
Screenshot: SIP Server settings window



Dynamic Routing

Settings for VCS Dynamic Routing is presented in the information block with the following fields:

Screenshot: Dynamic Routing settings window

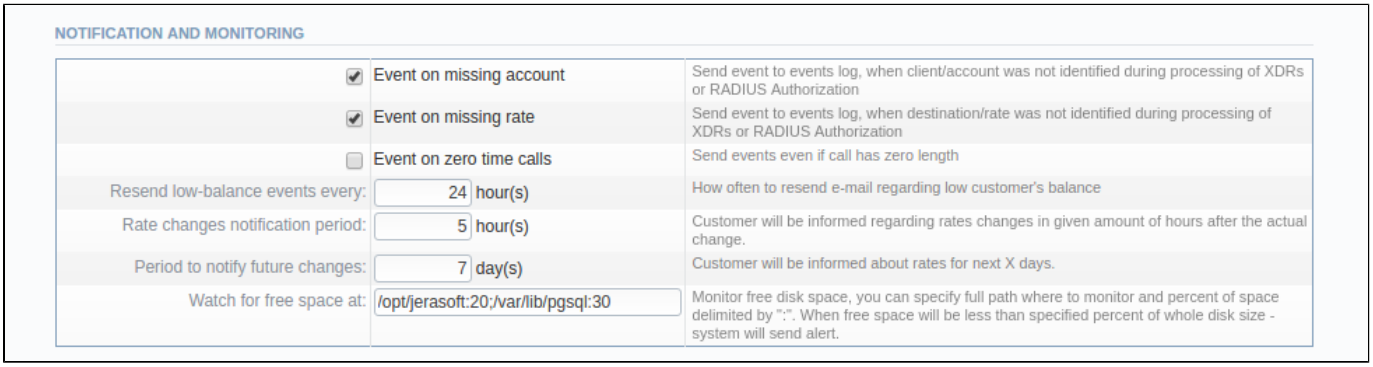


Field	Description
Analyze Period	An **amount** of minutes of **last** available statistics that will be used to build routing table
Log empty routes checkbox	Enable to get log messages regarding **zero routes**

Notification and Monitoring

Notify messages distribution and other monitoring settings contain underwritten fields:

Screenshot: Notification and Monitoring settings window

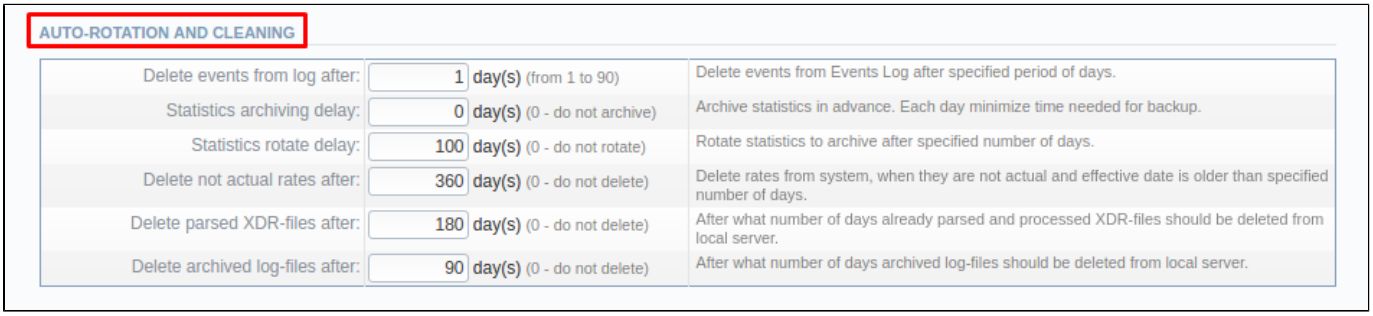


Field	Description
Event on not found account *checkbox*	If checked, activates notification sending when **no account** was found
Event on not found tariff *checkbox*	If checked, activates notification sending when **no rate** was found
Event on zero time calls *checkbox*	If checked, activates all **previous checkboxes effects** when calls with zero duration were found
Resend low balance events every (hours)	Set the **frequency** of **low balance** notification **resend** service
Rate changes notification period (hours)	Specify the **frequency** of **rate changes** notification period
Period to notify future changes, day(s)	Specify **number of days**, for customer to be informed about **rate change** in advance
Watch for free space at	Here you can specify **folders** that will be monitored for available disk space. To add a folder, specify its path, and by using ***":"*** *sign* choose the percent of disk space, below which the system will send **warning notifications** For example - ***/opt/jerasoft/:20*** means that if free disk space is below **20 percent** in folder ***/opt/jerasoft/*** the notification will be sent. You can add multiple folders in this field by delimiting them with **";"** sign

Auto-rotation and Cleaning

Automatic statistics and backup management parameters are configured here:

Screenshot: Auto-rotation and Cleaning settings window

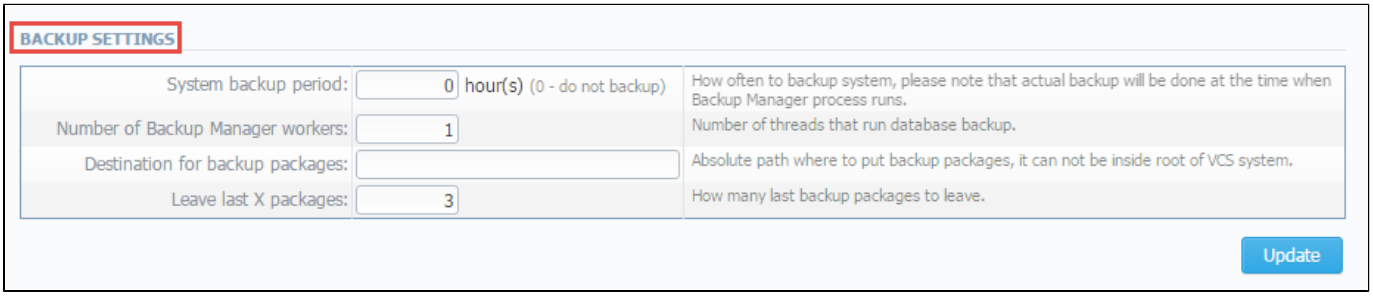


Field	Description
Delete events from log after	Specify the **number of days** in which events will be removed from the log-files (when ***0*** is the value – events **won't be deleted**)
Statistics archiving delay	Here it's possible to archive the **statistics** in advance to **reduce** the backup time.
Statistics rotate delay	Specify statistics packages rotation delay (for example, if you enter ***3*** as a value, **all** statistics packages that are **older than 3 days** will be automatically moved to **archive**)
Delete not actual rates after	Cleans non-actual rates from **database** when effective date is **older than specified number** of days
Delete parsed xDR-files after	Define when system should delete **old parsed xDR-files**
Delete archived log-files after	Define when system should delete **archived log-files**

Backup Settings

Backup settings are presented with the following fields:

Screenshot: Backup Settings window



Field	Description
System backup period	Field value specifies when system **should backup itself** (for example, if you enter ***24*** as a value, this will mean that that system will backup itself **every 24 hours**)
Number of Backup Manager workers	Specify a number of system managers that run **database backup**
Destination for backup packages	Absolute **path** to the folder where system backup copies **will be stored** **Warning** This folder **shouldn't be** within any system folders!
Leave last X packages	Parameter that specifies **how many** backup copies will be stored **at one given time** (for example, if you enter ***3*** as a value, only **three** copies will be stored. When the **fourth** copy is added, the oldest one **will be deleted**)

Integration

In this chapter of our Guide, a focus is made upon sections that are called to govern **integration process** of 3rd party software **with JeraSoft VoIP Carrier Suite.** Please look for more information in the following sections:

- Gateways
- Number Portability
- Provisioning API
- API Testbed
- CoreAPI Docs

Gateways

In this article

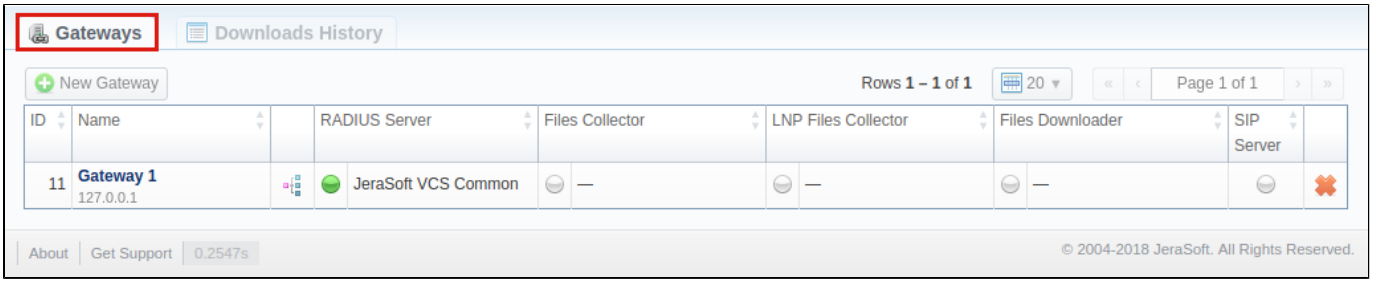
- Section overview
- Adding New Gateway
- Files Downloading History
- Knowledge Base Articles

Section overview

This section allows you to configure and integrate all switches into billing via RADIUS, SIP or xDR-files upload.

Section is presented in a form of a table of all created gateways in the system with the following columns (see screenshot):

Screenshot: Gateways section



Column	Description
ID	ID number of a gateway
Name	Name of a gateway
RADIUS Server	Description of current status and collector type of RADIUS Server (if such is applied)
Files Collector	Description of current status and collector type of applied Files Collector (if such is applied)
LNP Files Collector	Description of current status and collector type of applied LNP Files Collector (if such is applied)
Files Downloader	Description of current status and collector type of applied Files Downloader (if such is applied)
SIP Server	Description of current status and collector type of applied SIP Server (if such is applied)

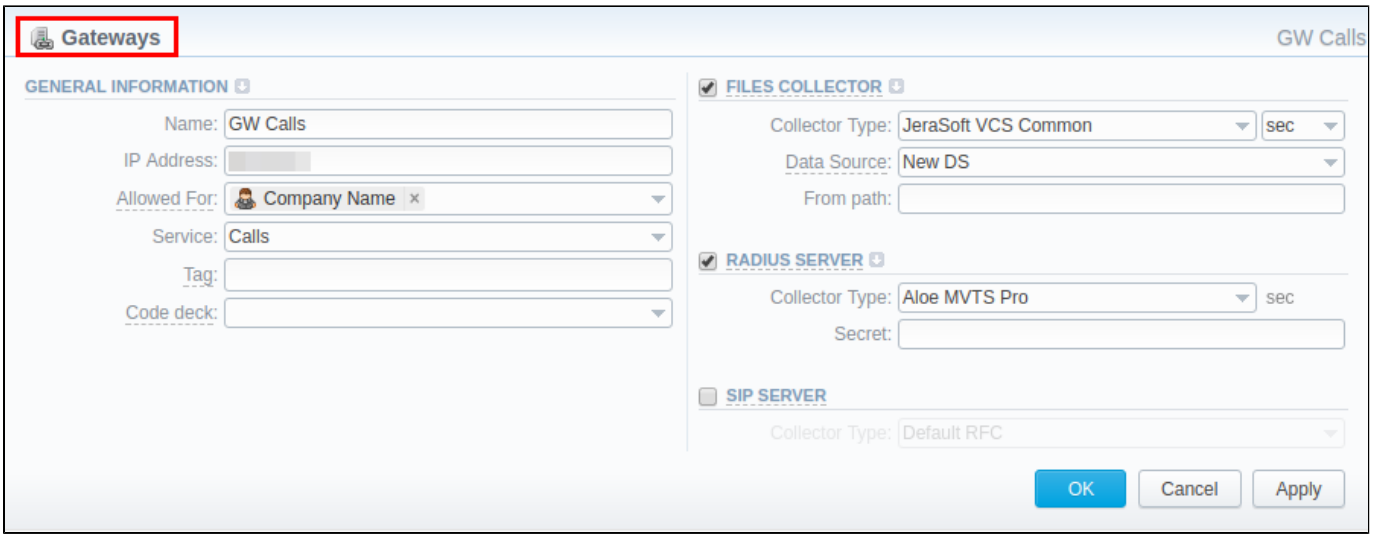
The following **functional buttons/icons** are present in the section:

Button/Icon	Description
New Gateway	Allows to create a new gateway
	Allows to set up traffic processing rules
/	Displays a current status—***enabled*** or ***disabled***—of RADIUS / SIP Server, Files Collector, etc.
	Allows to delete a gateway from the system. Requires confirmation

Adding New Gateway

To add a gateway to the list, click on **New Gateway** button and specify parameters in a pop-up window with settings. You can access the advanced settings by clicking on downwards arrow icon next to the name of respective information block.

Screenshot: Adding new Gateway



Information blocks	Fields and Descriptions	
General Information	General gateway and events processing information	
	Name	Gateway name
	IP Address	Gateway IP address
	Allowed For	Specify here, which resellers can use current gateway
	Service	Select a service (call, sms, data, etc.) for a current gateway
	Tag	Indicate a particular tag to filter events by gateways while creating invoices and using reports.
	Code Deck	The selected code deck will be used to pick codes and destination names for Mobile Number Portability feature. By browsing information from selected code deck, VCS will be able to perform appropriate number translations, which are processed by a current gateway.
	Click the downwards arrow icon next to the **General Information** information block to access the following advanced settings: • ***Ident Priority*** **-** a hierarchy of account identification. By defualt, field value priority is **ip,name,ani.** • ***ORIG ANI Ident*** **-** select ANI identification of originating events (available options : ***SRC number ext, SRC number bill, DST ext, DST number bill***) • ***TERM ANI Ident*** **-** select ANI identification of terminating events (options available: ***SRC number ext, SRC number bill, DST ext, DST number bill***) • ***Rate ORIG events by Dst In code*** checkbox **-** activation/deactivation of originating events billed by DST PARTY ID IN • ***Rate TERM events by Dst Out code*** checkbox **-** activation/deactivation of terminating events billed by DST PARTY ID OUT • ***Rate event only with "success" status*** checkbox **-** activation/deactivation of processing of events that have "success" end code. If it's activated, events with error diconnect code won't be billed	
Files Collector	Information block regarding **File Collector** settings. Files Collector gathers event data from xDR-files (activate this option if you plan to use integration via xDR-files)	
	• ***Collector Type***	Select a collector type you plan to use from the list
	• ***Data Source***	Specify a data source, where xDR files are stored

	• ***FromPath***	Specify xDR-files path (mask paths are allowed). Available only for ***SSH*** and ***FTP***
	• ***SenderMatch***	Indicate the sender name or email. Solely for ***IMAP***
	• ***SubjectMatch***	Use a regular expression to search by message titles. Solely for ***IMAP***
	Click the downwards arrow icon next to the **Files Collector** information block to access advanced settings: • ***Overwrite TZ -*** timezone selection (if you select a different timezone, system will ignore a timezone stored in xDRs-file and use **current** value) • ***Skip Zero Events*** checkbox - activation/deactivation of zero duration events ignoring • ***Skip Released Events*** checkbox - activation/deactivation of released events ignoring	
RADIUS Server	Information block regarding **RADIUS Server** settings. RADIUS Collectors gather packets from RADIUS-server via RADIUS-protocol (activate this option if you plan to use integration via RADIUS-protocol)	
	• ***CollectorType***	Select a collector type you plan to use from the list
	• ***Secret***	RADIUS-server password
	Click the downwards arrow icon next to the **RADIUS Server** information block to access advanced settings: • ***Overwrite TZ -*** timezone selection (if you select a different timezone, system will ignore a timezone information stored in xDR file and use **current** value) • ***Track Active Events*** checkbox - activation/deactivation of monitoring active events and event packets. This option is required for "Active Sessions" section to work and for RADIUS capacity control. Please note, it could slow down RADIUS for about 10-30% • ***Skip Zero Events*** checkbox - activation/deactivation of zero duration events ignoring • ***Skip Released Events*** checkbox - activation/deactivation of released events ignoring • ***Collect Accounting Data*** checkbox - if disabled, information from STOP packets will not be collected by database and *Radius Accounting* will be used only for *Active Sessions monitoring.* If enabled, information from STOP packets will be collected by database. By default, this checbox **is marked**.	
SIP Server	Allows acceptance of SIP packets from current gateway. Required for SIP Redirect routing feature	
	• ***CollectorType***	Select a collector type you plan to use from the list
LNP Files Collector	This collector processes downloaded LNP/MNP files and stores them in the database. It's accessible **only** when you **select the *LNP / MNP* type** of gateway.	

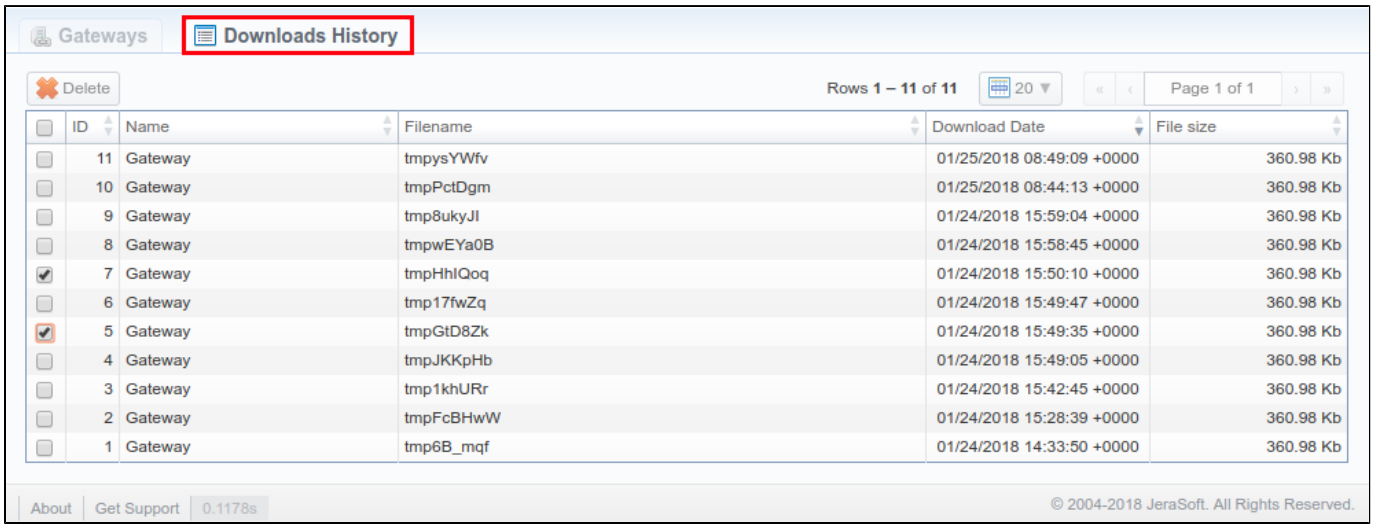
• ***Collector Type***	TSelect a collector type you plan to use from the list

Attention

With the introduction of **VCS 3.16.0.**, ***Gateway type*** field has been removed, and **Files Downloader** settings were transfered to **Files Collector** information block

Files Downloading History

To view files downloading history, where gateway name, filename, download date and file size will be specified, open **Downloads History** tab. Also, you can remove files from the list by selecting them and clicking on the **Delete** button above the table.



Knowledge Base Articles

- How to set up a functional capacity?
- How to add a new gateway to VCS?

Data Sources

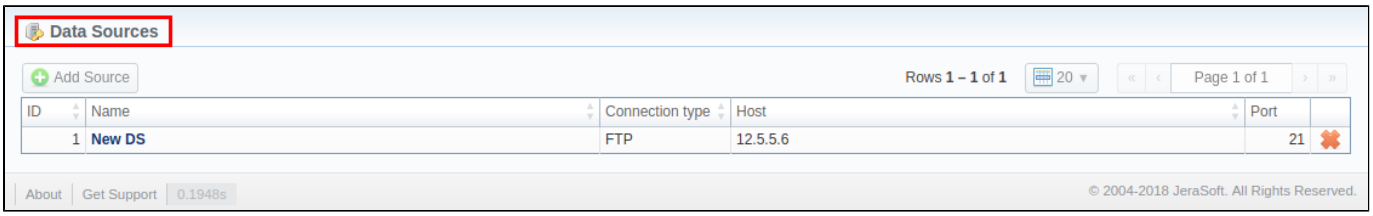
In this article

- Section overview
- Creating New Data Source

Section overview

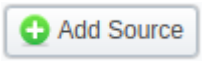
Data Source section is a first step to providing easier and more convenient work with data sources: files import, in particular. Previously, data source setting were split between **Rate Tables**, **Resellers**, **Gateways** and **Number Portability** and caused certain inconvenience in its configuration. Now, all these settings have been united in a single section making it possible to configure a data source in one place and use throughout the entire system. Section is presented in a form of a table with the following columns:

Screenshot: Data Source section



Column	Description
ID	Data source identification number
Name	Data source name
Connection type	Type of connection to data source
Host	IP address or domain name
Port	Data source port

Functional buttons and **icons**, presented in the section, are as follows:

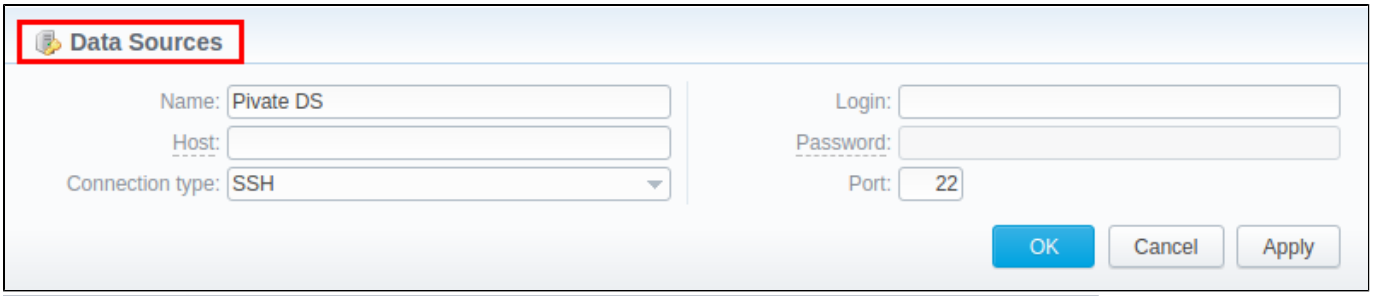
Button/Icon	Description
	Allows creating a new data source
	Allows deleting a data source from the system

Creating New Data Source

In order to create a new data source, you need to follow these steps:

1. Press **Add Source** button
2. In the pop-up window, fill in the required fields (see screenshot below) and press **OK**

Screenshot: New Data Source create form



Field	Description
Name	Indicate a data source name
Host	Specify an IP address or domain name of the server. Unavailable for ***Web (Numuri)*** connection type
Connection Type	Specify connection type: • ***SSH*** • ***FTP*** • ***IMAP*** - mail mode to download files. • ***Web (Numuri)*** - web mode to download files **Attention** Depending on a type you've chosen, the list of fields in the information block may differ
Login	Specify gateway server login
Password	Password for ***FTP*** connection, ***IMAP*** mailbox and ***Numuri*** web service. For ***SSH***, you have to create **SSH-keys**. Thus, this field is unavailable for this type.
Port	Specify port for ***SSH, IMAP*** or ***FTP*** type. Unavailable for ***Web (Numuri)***

Number Portability

In this article

- Section overview
- Number Portability tab
  - Advanced Search
- Gateways tab
- Downloads History tab
- LNP/MNP Configuration
- Knowledge Base Articles

Section overview

This section represents local databases of two providers: **Numuri** and **TJA.** Here, you can find the list of Numuri ranges and TJA numbers downloaded by **Files Collector**. It's intended to facilitate the administration of number portability. ***Number Portability*** refers to the ability to transfer either an existing fixed-line or mobile telephone number assigned by a local exchange carrier and reassign it to another carrier.

How it works

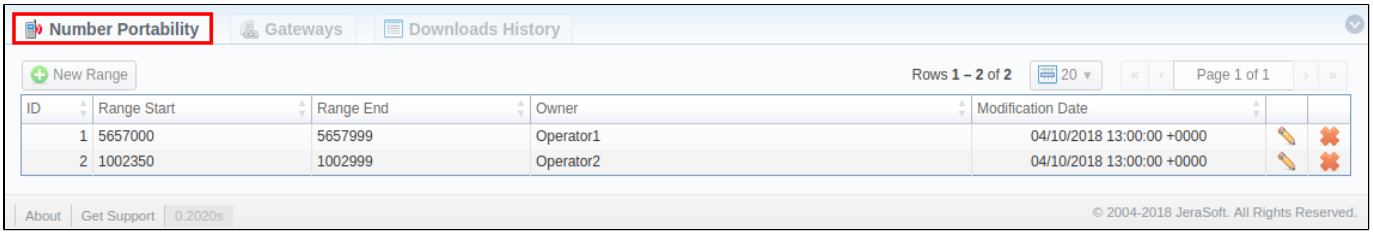
TJA: During translation of the call, system verifies the code of TJA number, identifies the number, and changes the Dst Number to **372+RN Number**.
Numuri: During translation of the call, the number is verifed with Numuri ranges, and system **applies a dynamic tag** (owner's name) to the call for further billing.

Section consists of 3 tabs:

- **Number Portability**
- **Gateways**
- **Downloads History**

Number Portability tab

Tab is presented in a form of a table of ranges of numbers with a following columns:
Screenshot: Number Portability



Column Name	Description
ID	Identification number of a number range
Range Start	Starting number in a respective range
Range End	Final number in a respective range
Owner	Name of a number range owner
Modification Date	Indication of the latest date of numbers range modification

Functional buttons/icon that are present in a section are as follows:

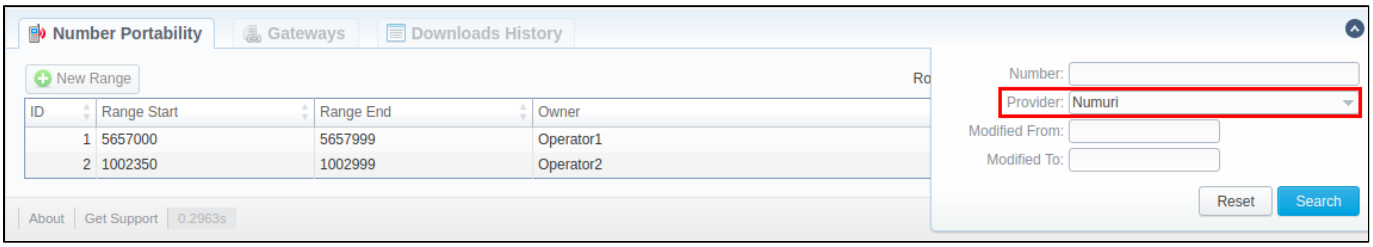
Button/Icon	Description
New Range	Allows creating a new range of numbers for **Numuri** provider

New Number	Allows adding a new number for **TJA** provider
	Allows managing an existing range of numbers on a list
	Allows deleting a range of numbers from the system. Requires confirmation

Advanced Search

Use the **Advanced Search** drop-down menu for fast investigation in this section. This tool provides a filter to limit the search results for higher working efficiency. By default, section data is filtered by **Numuri** provider. To display **TJA** provider data, in a drop-down menu select **TJA** in ***Provider*** field. click on the blue downwards arrow icon.

Screenshot: Number Portability section



Creating New Range/Number

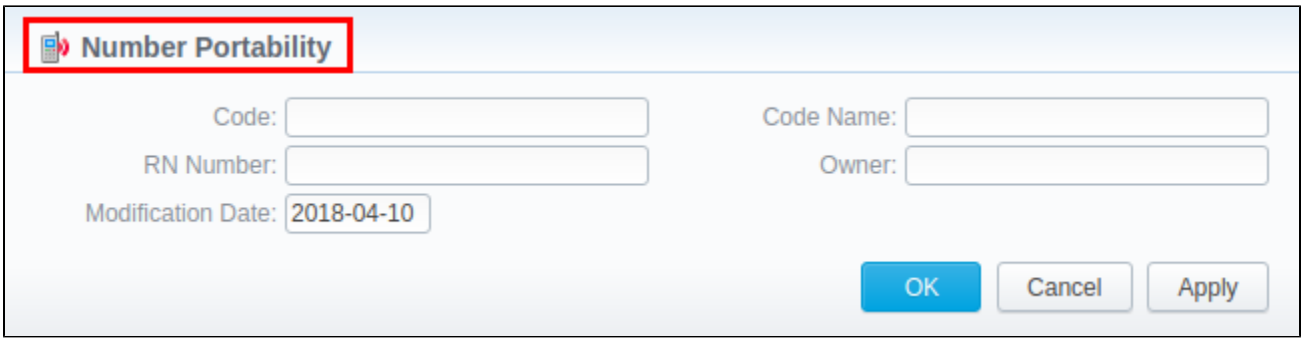
To create a **Numuri range** of numbers, press **New Range** button and specify the fields listed below. After that, press **OK.**

Screenshot: Number Portability section/Numuri range creation form

Field	Description
Range Start	Set the range's start position
Range End	Set the end position
Owner	Determine an operator that owns a respective range of numbers **Attention** Further, the owner's name will be applied to the call as tag (for example, EU Carrier 1) for billing the call.
Modification Date	Indicate the last modification date

To add **TJA number**, press **New Number** button, specify the required fields and confirm number creation, by pressing **OK**. The list of fields in a creation form is as follows:

Screenshot: Number Portability section/TJA number creation form



Field	Description
Code	Specify the code of TJA number
RN Number	Indicate a registration number
Modification Date	Indicate the last modification date
Code Name	Specify a respective code name of TJA provider
Owner	Determine an operator that owns a respective number

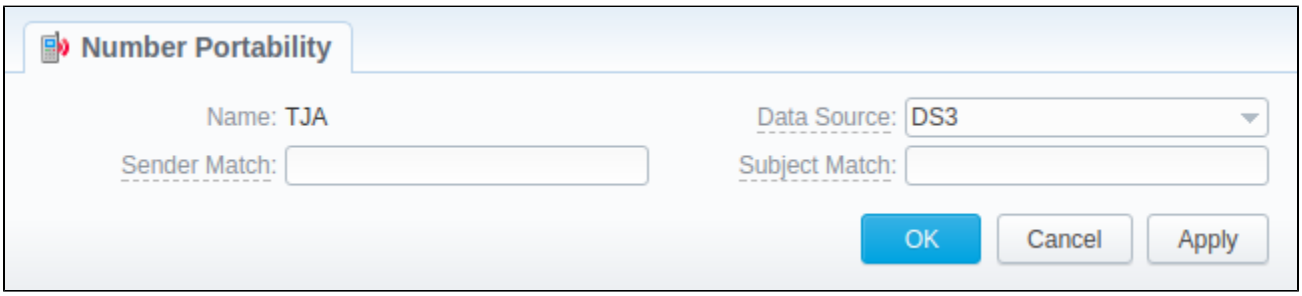
Gateways tab

Apart from **Numuri** and **TJA**, JeraSoft VCS is integrated with the following providers:

1. **Broadvox**
2. **Vera Networks**
3. **PCT**

Gateways tab is presented in a form of table of gateways of all 5 above-mentioned providers with indication of its name and assigned data source. However, only **Numuri** and **TJA** can be managed. To assing a new data source to a gateway, click on respective gateway name and specify a target data source in a corresponding field (see screenshot below). Depending on a selected data source, additional fields may differ (see **Data Source** section):

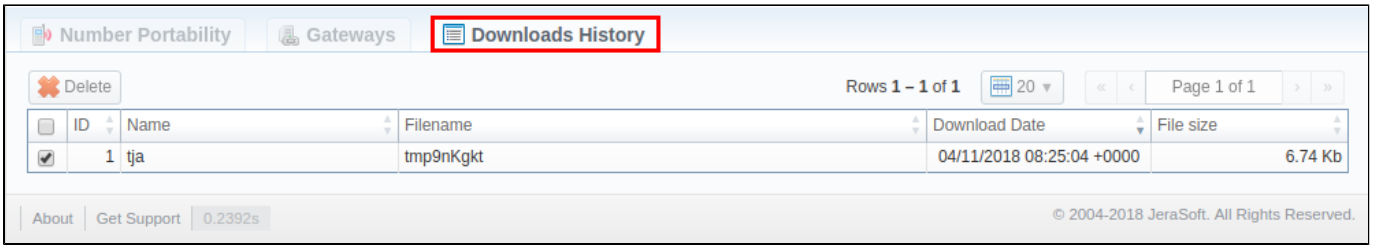
Screenshot: Numuri gateway management



Downloads History tab

Downloads History tab displays files downloading history through one of the number portability gateways. It is presented in a form of a table where id, gat eway name, filename, download date and file size are specified. Also, you can remove files from the list by selecting them and clicking on the **Delete** button above the tab.

Screenshot: Dowloads History tab



LNP/MNP Configuration

LNP/MNP configuration can be devided into 2 steps:

1. Set up download of external data a local LNP/MNP databases
2. Configure communication between VCS and these databases

Step 1

To configure a download of external data, namely LNP/MNP file updates, you need to:

1. Open **Data Source** section and create a new data source with ***IMAP*** or ***Web (Numuri)*** connection type.
2. Go to the **Gateways** tab of **Number Portability** section and open **TJA** or **Numuri** gateway settings.
3. Assign ***IMAP*** or ***Web (Numuri)*** data source to a respective gateway.

> **Tip**
> - ***IMAP*** - mail mode to download files. For this type, the format of the file must be ***csv.zip.**
> - ***Web (Numuri)*** - web mode to download files. For this type, the format of the file must be ***csv.**

4. At first, downloaded files will be displayed in **Downloads History** tab. After being parsed by **Files Collector** tool, numbers will be displayed in **Number Portability** tab.

Step 2

The next stage is to configure VCS addressing to our local LNP/MNP databases during routing. To do so:

1. Go to **Traffic Processing** section and create a new rule or open settings of an existing one.
2. Select a target provider from the drop-down list of ***LNP/MNP*** field and apply settings.

ongrats! Your LNP'/MNP is configured and ready for work.

Knowledge Base Articles

- How to configure LNP/MNP?
- New features of Traffic Processing

Provisioning API

In this article

- Section overview
- Execution Logs tab

Section overview

The following section allows **configuring and monitoring of hooks for Provisioning API**.

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, forbid or allow the action or simply process given event.

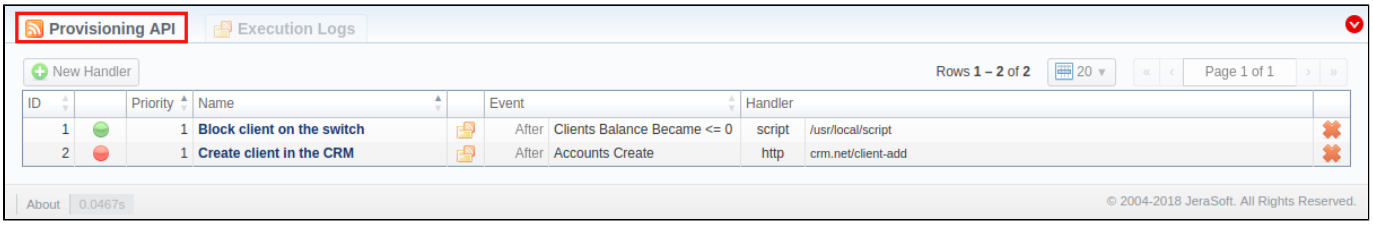
For detailed information about Provisioning API functionality, go to APIs section of our User Guide.

To configure handlers and check their call log, go to the ***Integration > Provisioning API.***

Tip

The full list of ***Provisioning API*** parameters matches with CoreAPI and they are available upon an individual request of your current clients.

Screenshot: Provisioning section



Column Name	Description
ID	Handler's identification number
Priority	Priority of handlers execution
Name	Handler's title
Event	Description of the handler event
Handler	Category of the handler that is used and location. There are two types of handlers that can be used: • **HTTP** scripts, called via POST requests (used in most cases) • **Local server scripts**, called locally on the server (used in very specific cases)

The list of section functional buttons/icons is as follows:

Button/Icon	Description
New Handler	Allows creating a new handler
	Identifies a ***disabled*** status of a handler
	Identifies an ***enabled*** status of a handler
	Identifies an ***archived*** status of a handler

	Allows viewing details of a target handlers' performance **Execution Logs** tab for a respective handler
	Allows deleting a handler from the system

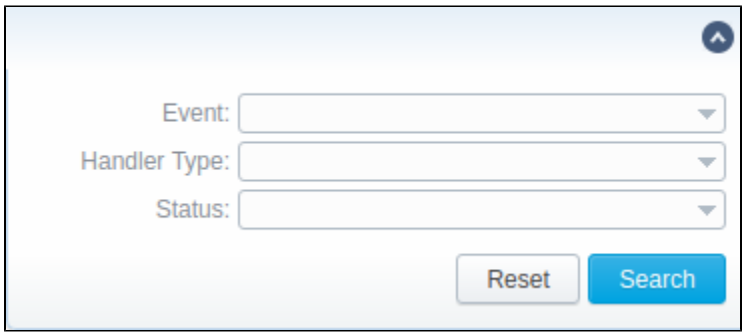
Tip

For a quick switch between ***enabled*** and ***disabled*** statuses, click on a respective *status icon* in the section. However, to change ***archived*** status, you need to do it from a hander edit form

Advanced Search

Advanced Search drop-down menu, located in the top right corner of the section, is called to facilitate an easy access to required information. By clicking on red downwards arrow icon, the following drop-down menu is displayed:

Screenshot: Advanced Search drop-down menu

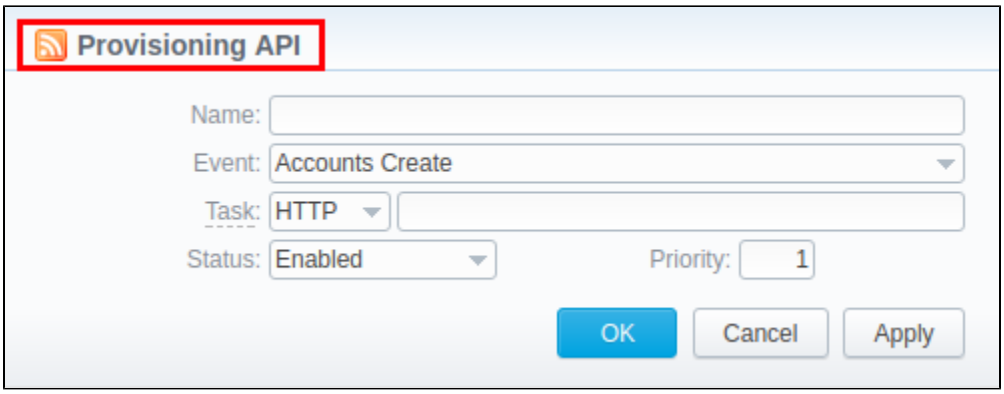


Field	Description
Event	Select from a list of all possible handler events
Handler Type	Indicate type of handler: • ***script*** • ***http***
Status	Choose a target status: • ***Enabled*** • ***Desabled*** • ***Archived*** or leave this field blank. In this case, both ***enabled*** and ***disabled*** handlers will be displayed. This field is empty by default

Creating New Handler

To start with provisioning, you need to create a handler manually. Press **New Handler** button and specify respective parameters of in the appeared pop-up window:

Screenshot: Provisioning section/Handler adding form



Field	Description	
Name	Specify a particular title for a handler	
Event	Specify a handler event from the following list:	
	Clients	• *create* • *update* • *delete* • *archive* • *custom fields update* • *balance became >=0* • *balance became <=0*
	Accounts	• *create* • *update* • *delete*
	Clients Packages	• *assign* • *activate* • *deactivate* • *renew* • *close*
Task	Determine a type of handler and details: • ***script*** - here you need to specify the path where a following script is located, for example: ***user/local/vcs/script.py.*** • ***http://*** - here specify the port and method, for example: ***120.0.0.1:5000/api.***	
Status	Choose the state of the handler: • ***enabled*** - select it to make a handler active; • ***disabled*** - select it to unable a handler; • ***archived*** - select it to archive a handler.	
Priority	Establish an order of handler performing. **Note**: The handler with ***1 priority*** will precede all other handlers in order.	

Attention

In **VCS 3.16.0**, to prevent performance degradation and data inconsistency, affected by external side, **Before** event type has been deprecated from the section.

Best practice example

Here there is an example based on **http://handler** usage.

2. Open the **Provisioning section** and start to create a handler.

    a. Specify the name, type, and status.
    b. In ***Event*** field select **Clients Create** event from the drop-down list.
    c. In ***Task*** field indicate ***http://*** type and determine the port and method, for example: ***120.0.0.1:5000/api.***
    d. Click **Apply**.

Find below an example of the **http://handler**:

```
from flask import Flask, request
import json
app = Flask(__name__)
@app.route("/api", methods=['GET', 'POST'])
def api():
    data = json.loads(request.data)
    return json.dumps(data)
if __name__ == "__main__":
    app.run()
```

Attention

In order to put handler into action, you need to **restart Cache Manager**. To do so, click on corresponding icon in **Task Scheduler** section

Execution Logs tab

You can access the details about handler execution in this tab. For more details, check out a related article: **Execution Logs.**

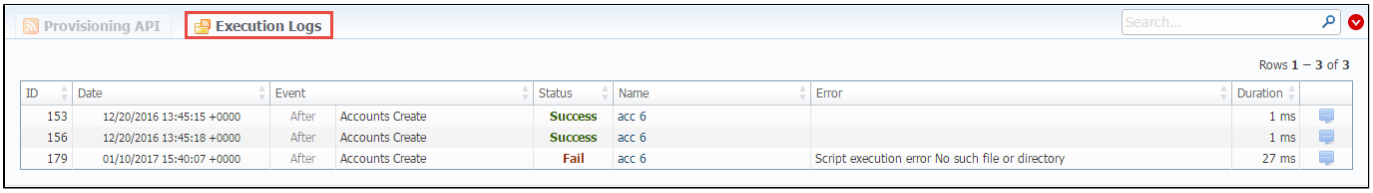
Warning

Please note, the Provisioning functionality is experimental and may be changed completely in future releases.

Execution Logs

Execution Logs tab provides information about handlers execution such as date and time of execution, status, duration, etc. Tab is presented in a form of a table with the following columns:

Screenshot: Execution Logs tab

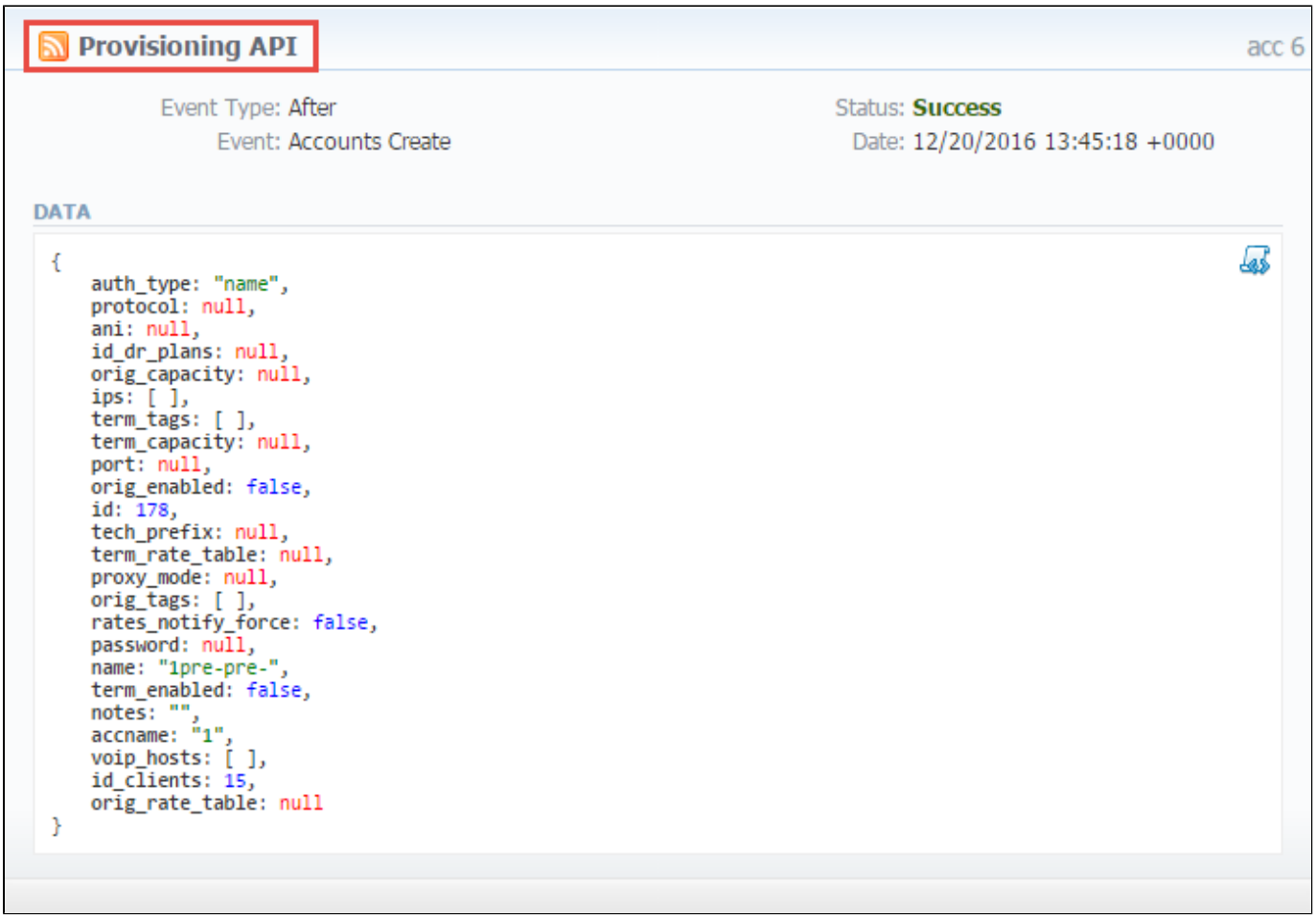


Column Name	Description
ID	Handler's identification number
Date	Time and date of handler execution
Event	Details on handler type and event
Status	Status of a handler: ***Success/Fail***
Name	Title of the handler
Error	Description of the event in case of an error
Duration	Amount of time, spent on handler execution

When you click on **Details** icon, a new window with a description of respective handler execution appears (see screenshot below). This windows contains an information that VCS billing sends via handler.

Click on this icon to expand logs. For example, logs for handlers with ***before*** type will only show modified data.

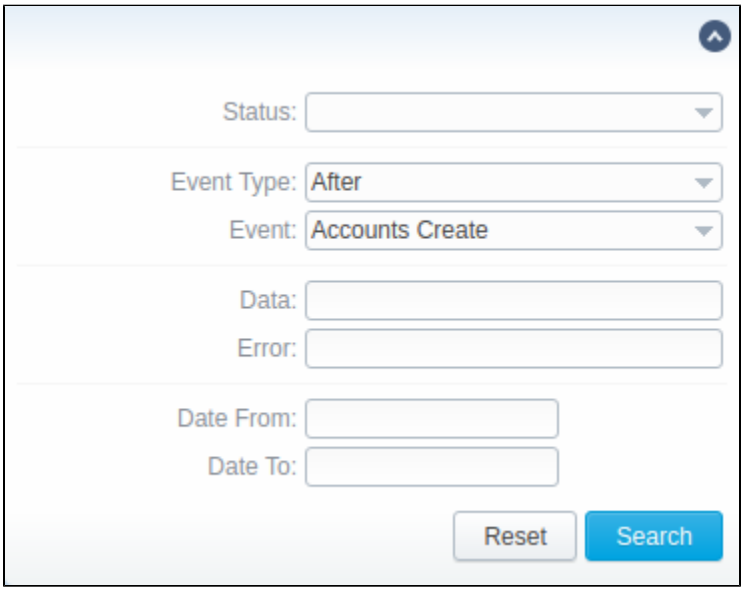
Screenshot: Provisioning details



Advanced Search

By clicking on *red downwards arrow,* the following **Advanced Search** drop-down menu is displayed:

Screenshot: Advanced Search drop-down menu



Field	Description

Status	Indicate handler exexcution status: • ***Success*** • ***Fail***
Event Type	Select a type of event: • ***After*** • ***Before*** ***After*** event type is set by default
Event	Select from a list of all possible handler events
Data	Indicate handler execution data, specified in **Details** pop-up window
Error	Indicate handler execution data, specified in **Error** pop-up window
Date From / Date To	Specify first and/or last date of handler execution

API Testbed

This section allows to send/receive JSON-RPC API calls via the web interface. It is important to understand that this section allows you to **actually run** API requests, and **it is not a simulation**. So, if you requested to delete or modify a client by running an API request, this client will be actually deleted from the system or modified.

Screenshot: API Testbed settings

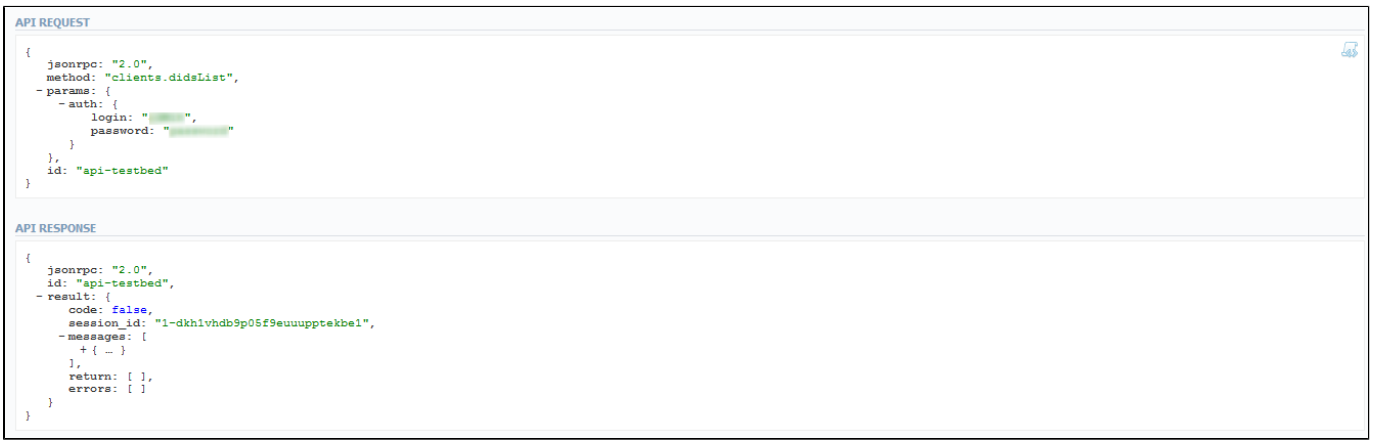
Field	Description
JSON-RPC URL	URL is set by default according to current server settings
Module	Select which module to call
Action	Set which action to call
Login	Specify a login that will be used during the call
Password	Specify a password that will be used during the call
Parameters	Enter JSON data that will be sent to the API

After the **Send Request** button is pressed, you will see:

- ***API Request*** - full JSON message that has been sent;
- ***API Response*** - full JSON response from RPC server.

Both request and response are shown as JSON tree with the ability to switch to RAW JSON (see screenshot below).

Screenshot: API Request & API Response



Warning

1. **API Testbed allows only to test Management API, not CoreAPI.**
2. If the user has access to delete gateways via *API Testbed*, he can **remove all gateways regardless of which Reseller owns** a respective gateway.

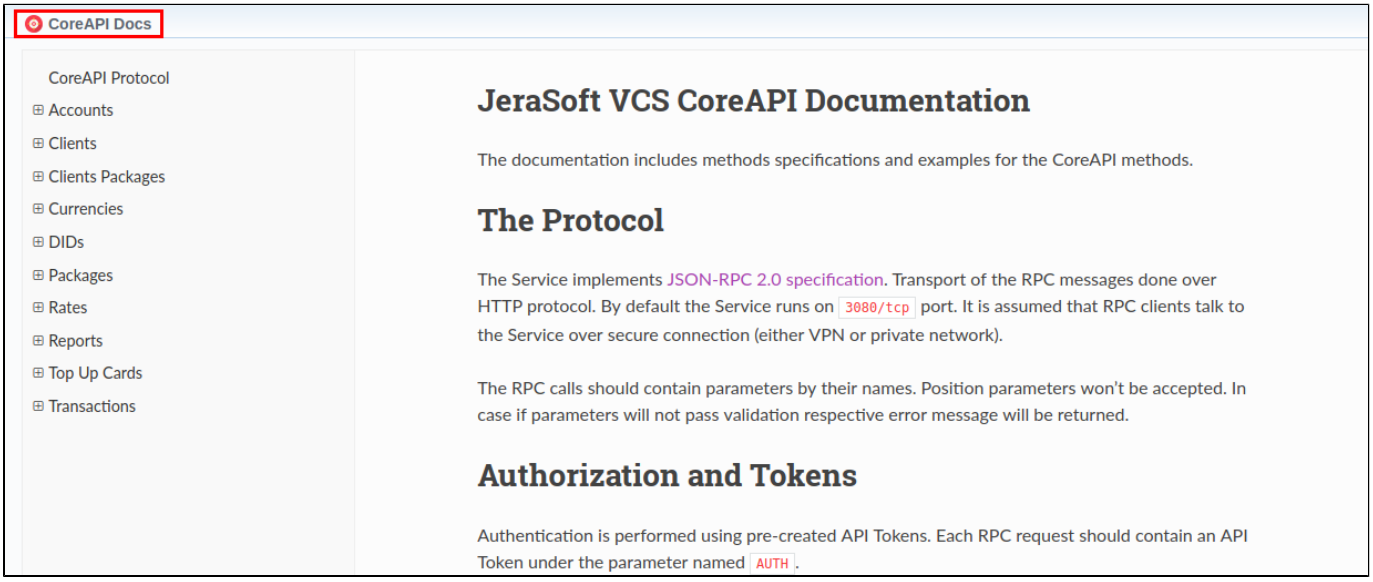
CoreAPI Docs

This section contains overall information describing CoreAPI as a whole; documentation on methods available through JSON-RPC service.

Use the sidebar to access different methods, grouped by respective parameters:

- **Account**
- **Clients**
- **Client's Packages**
- **Currencies**
- **DIDs**
- **Packages**
- **Rates**
- **Reports**
- **Top Up Cards**
- **Transactions**

Screenshot: CoreAPI Docs section



For more information about CoreApi, open the CoreAPI article in APIs section of our User Guide.

System

Information in this chapter of the Guide provides overview of major **JeraSoft VCS services and utilities, list of users and their roles with permits, system statuses**, etc. For more details, check out the following sections:

- Events Log
- Audit Log
- Mail Queue
- System Status
- Task Scheduler
- Users
- Roles

Events Log

In this article

- Section overview
- Events Log tab
  - Advanced Search
  - Detailed Description of Event
- Configuration Tab
  - Adding new rule

Section overview

Since keeping track of all **events** that occur in the system is crucial, VCS offers you **Events Log** section where you can view information regarding all **errors, alerts,** and **messages**, as well as configure the rules for email notifications sending. Section is divided into two tabs: **Events Log** and **Configuration.**

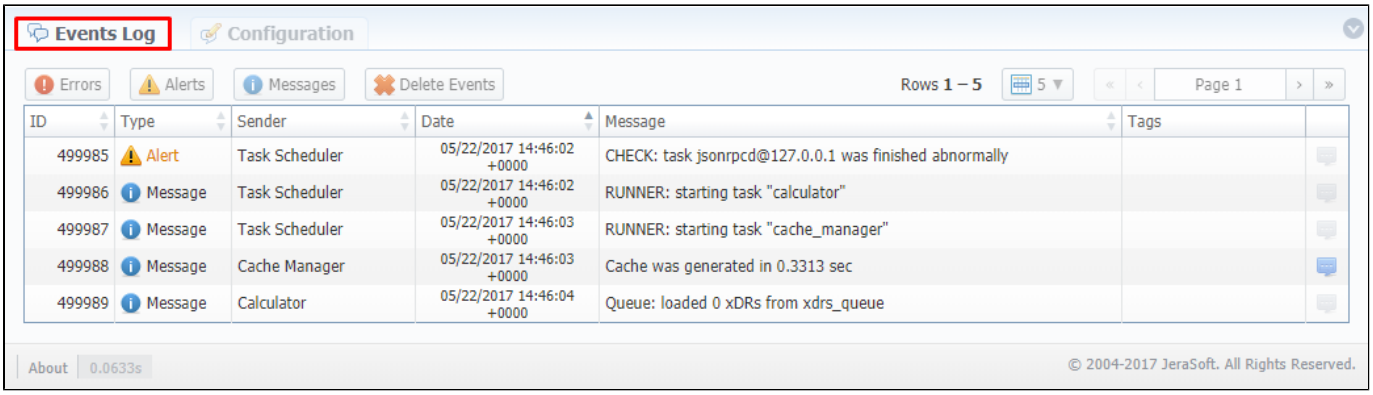
Events Log tab

Information in the tab is presented in a form of a list of of all events recorded by the system. For example, system records the following events:

- incoming or outgoing event of the client that is not registered within the system;
- number prefix that are not registered within the system;
- incoming call price that is higher than outgoing one;
- incoming or outgoing call that was rejected and others.

Tab structure is presented on the screenshot below:

Screenshot: Events Log tab



Column name	Description
ID	Identification number of the event
Type	Category of the event in the system (***error, alert,*** or ***message***)
Sender	Name of the system service that sent the event
Date	Date and time when the event occurred
Message	Description of the event
Tags	Tags that might have been added to the event

Functional **buttons/icons**, presented in the tab, are as follows:

Button/Icon	Description

Errors	Allows to filter the list of events by **errors**
Alerts	Allows to filter the list of events by **alerts**
Messages	Allows to filter the list of events by **messages**
Delete Events	Allows to **delete** currently displayed **events**
	Allows to view a **detailed description** of the event (if possible)

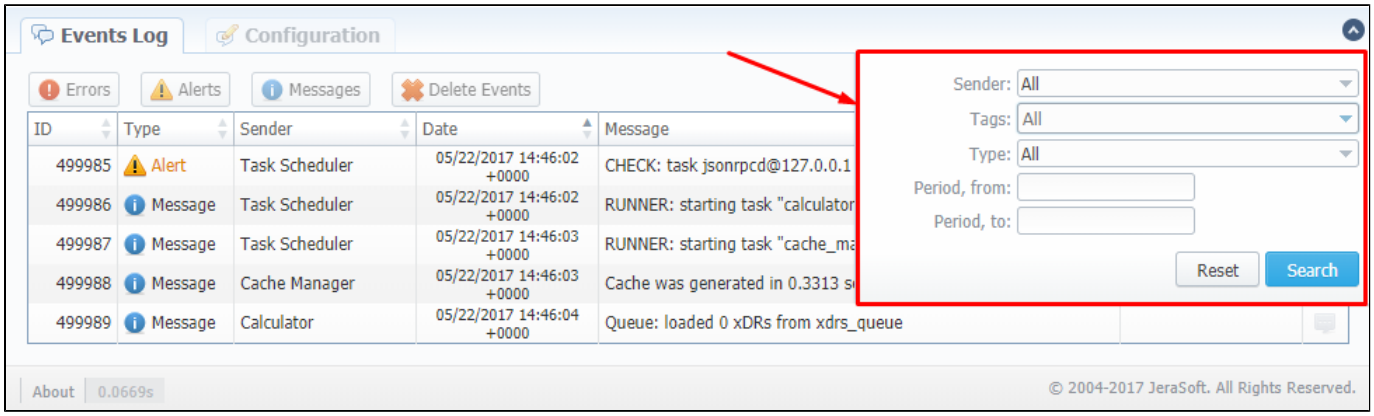
Warning

When you click the **Delete Events** button, **all events** that satisfy current search query **will be deleted from the system**

Advanced Search

You can find the build-in **Advanced Search** drop-down menu that provides an easy way of navigation between multiple columns of the table. Click blue do wnwards arrow icon to open menu with the following fields:

Screenshot: Advanced Search drop-down menu



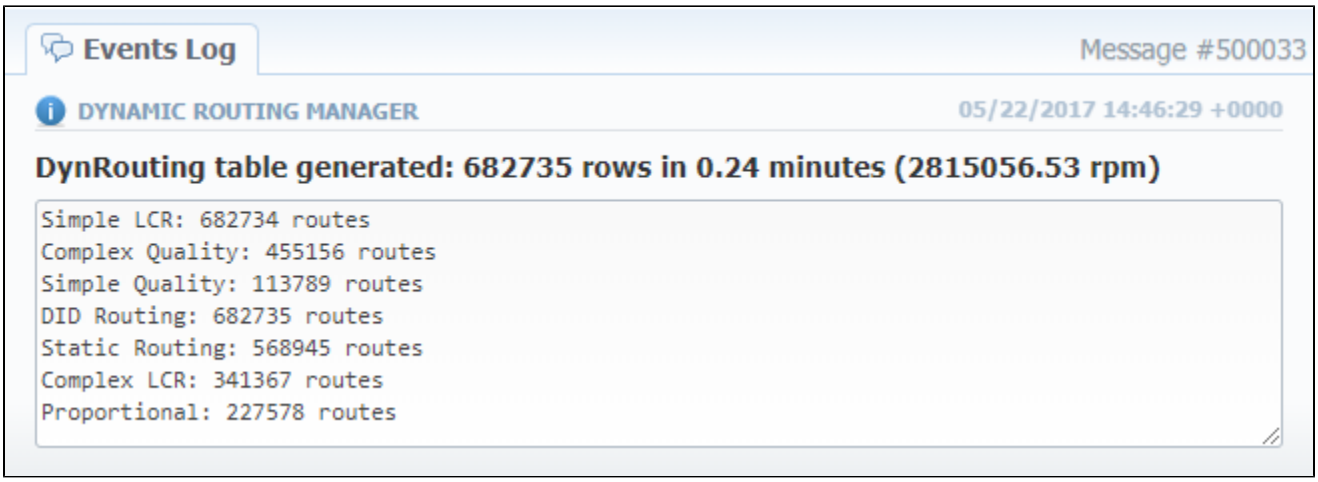
Field	Description
Sender	Select a respective **sender** from the given list. By default, field value is **All**.
Tags	Select **one or multiple tags** from the provided list. By default, field value is **All**.
Type	Specify a type of event: **error, alert,** or **message**. By default, field value is **All**.
Period, from:	When search settings are applied, only events whose **Date** value **Period**, **from** value will be displayed
Period, to:	When search settings are applied, only events whose **Date** value **Period, to** value will be displayed

When all search criteria have been set, press **Search** button to apply them. Press **Reset** to cancel the applied search

Detailed Description of Event

You can view detailed descriptions of some events by pressing icon opposite a respective event on the right. A pop-up window consists of **Title** and **Ev ent Description** (see screenshot below):

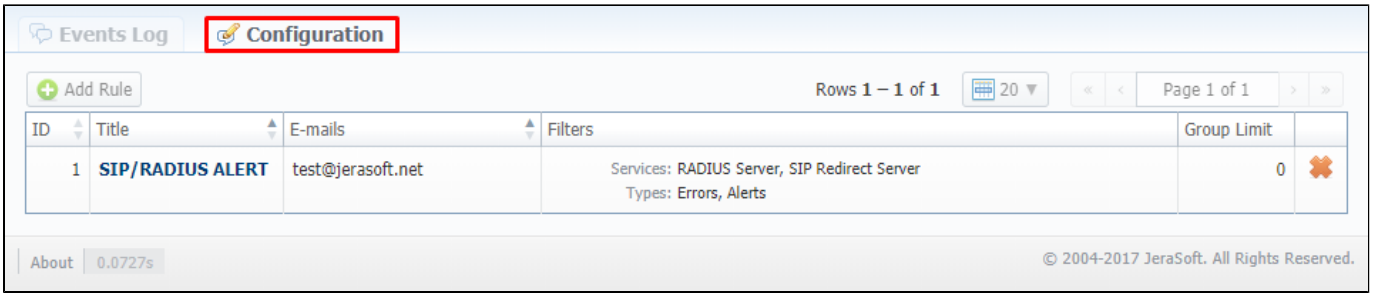
Screenshot: Detailed description of event



Configuration Tab

In **Configuration** tab, you can create rules for email notifications about respective events within the system. Main window represents a set of rules, presented in the form of a table (screenshot below):

Screenshot: Configuration tab



Column name	Description
ID	**Identification number** of the rule
Title	**Name** of the rule
Emails	List of **recepeints' email addresses**
Filters	List of **services** and **types** of events added to the respective rule
Group Limit	**Number** of massages allowed to be sent **separately**

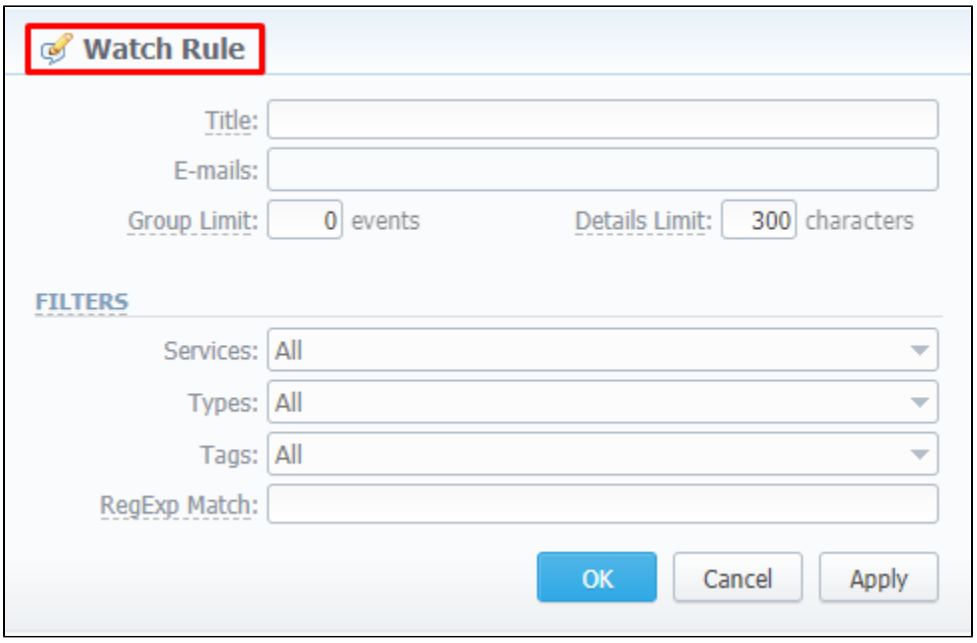
Functional **buttons/icons**, presented in the tab, are as follows:

Button/Icon	Description
Add Rule	Allows to add a new **rule** for **email notifications**
	Allows to **delete** an email notification **rule**

Adding new rule

For adding a new rule to the system, you need to click the button. Following this, **Watch Rule** pop-up window will show up with respective settings (shown below):

Screenshot: Watch Rule pop-up window



Information Block	Field	Description
General	Genetal information block consisting of the following fields:	
		Name of the **rule** that will be put into subject of the message
	Emails	**Email addresses** of the **recipient**
	Group Limit	The **boundary** to control the **amount of messages** to be sent. If there are **more messages** available for delivery within one monitoring cycle **than specified value** they will be sent as a **single email**. Set to **0** if you want to get **all** messages **separately**. Set to **ultimately high** value if you always want to receive **grouped** message. By defaul, filed value is set to **0** events.
	Details Limit	**Data** will be **limited** and cut to specified **number of characters** in the grouped messages. By defaul, filed value is set to ***300*** .
Filters	Fill in this information block to make your rule **more detailed** and **precise**.	

	Services	Specify billing services that will be included into this event rules. **List of available services:** • Backup Manager; • Balances Manager; • Cache Manager; • Calculator; Calling Cards Manager; • Cleaner; Email Rates Manager; • Dynamic Routing Manager; • Events Manager; • Factors Watcher; • Files Collector; • Files Downloader; • Invoicing Manager; • JSON-RPC Core API; • Log Rotator; • Jurisdiction Manager; • Mail Manager; • Notificator; • Packages Manager; • Payment Gateways; • Provisioning Manager; • RADIUS Server; • Rates Notificator; • Report Generator; • Reports Watcher; • SIP Redirect Server; • Statistics Manager; • Task Scheduler; • Web.
	Types	Specify category of events for the rule: ***errors, messages, alerts***
	Tags	Set **labels** that will be applied to filter the rule. List of **available tags**: • **aaa** - includes all accounting tags: aaa.fraud; aaa.ident; aaa.ident.client; aaa.ident.rate; aaa.ident.service; aaa.routing; aaa.traffic_processing; • **api** -includes all api tags: api.core; api.core.jsonrpcd; api.management; api.provisioning; • **coreapi;** • **dids;** • **factors watcher;** • **packages** - includes all package tags: packages.nofunds; • **system** - includes all system tags: system.cluster; system.config; system.database; system.license; system.mail; system.monitoring; system.security; system.storage; • **transactions** - includes all transactions tags: transactions.charge;
	RegExp Match	**Regular Expression Match** option to filter rules. Use **POSIX standart** while specifying regular expressions

After pressing **OK** button, a new rule will be added to the genetal list of the **Configuration** tab.

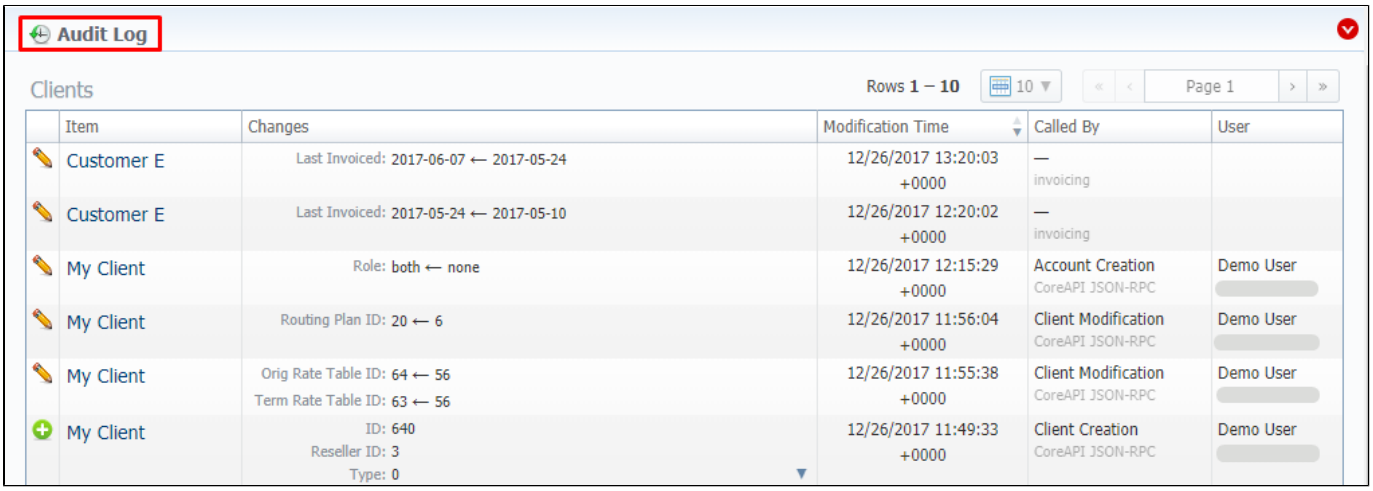
Audit Log

In this article

- Section overview
- Advanced Search

Section overview

When it comes to keeping an ear to the ground about what is going on in the system, **Audit Log** section come to your rescue. This section displays detaile d information concerning all **actions** performed by users in VCS with **Clients**, **Resellers**, **Accounts**, **Calling Cards**, **DIDs** (see screenshot below):
Screenshot: Audit Log section main window



Column Name	Description
Action Type	Depending on the **type** of action, one of the following **icons** will be displayed in the columns: - - a new system item was **created** - - a system item was **edited** - - a system item was **deleted**
Item	System item ***(Client, Account, Reseller, Calling Card, DID Management)*** that a certain action was applied to
Changes	The list of **changes** with **detailed information** on what exactly was changed
Modification Time	**Data** and **time** of applied actions
Called by	**Action Name** (*Account Creation, Client Removal, etc.*) and **Service** that is responsible for a specific action
User	**Name** and **IP address** of a user who performed an action

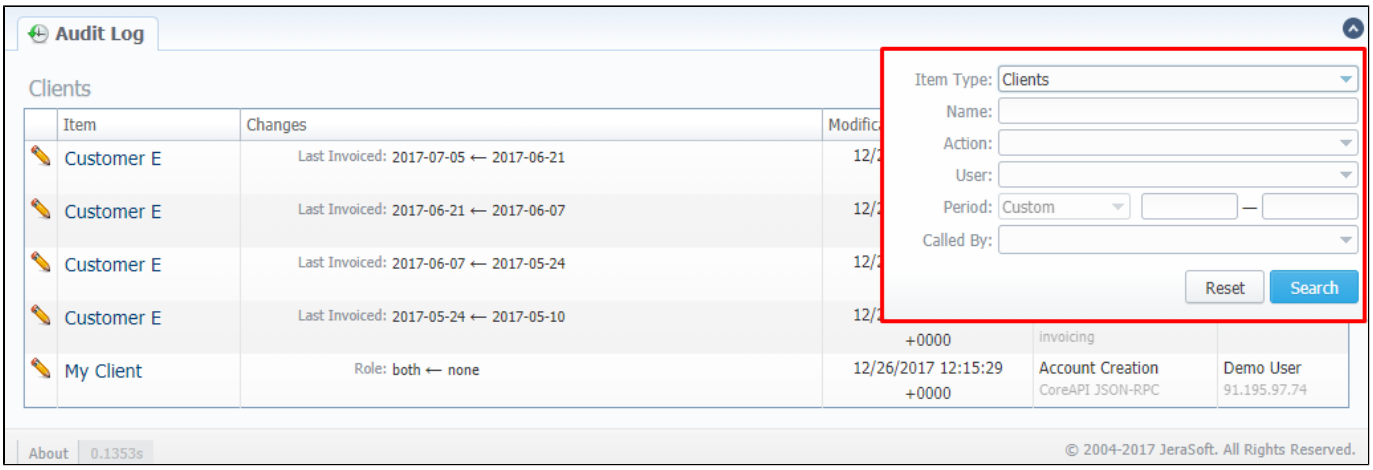
Attention

If you change the **Mail Templates** in the **Reseller** settings, these updates **will not** be displayed in the **Audit logs**

Advanced Search

The displayed list of audit action is automatically filtered by **Client** item that is indicated by red downwards arrow icon of **Advanced Search** drop-down menu. Search menu is presented with the following fields:

Screenshot: Advanced Search drop-down menu



Field	Description
Item Type	Select a respective **item type** from the given list: • Client • Account • Reseller • Calling Card • DID Management By default, field value is **Clients**.
Name	Insert a **name** of the respective item (e.g. ***Customer A, 3439-005318618, etc.***)
Action	Choose a type of action: **Creation, Modification** or **Removal**
User	When search settings are applied, only events whose **Date** value **Period**, **from** value will be displayed
Period	You can choose either Custom period (e.g. ***Today, Last 7 Days, Last Month, This Year***) or set an exact date and time with **Datepicker**
Called By	Select **Action Name** from the provided list: • Client Creation • Client Modification • Client Removal • Full Client Removal • Mass Client Modification • Note Creation • Forced Rate Notification • Account Creation • Account Modification • Account Removal • Reseller Creation • Reseller Modification • Reseller Removal • Calling Card Creation • Calling Card Modification • Calling Card Removal • DID Creation • DID Modification • DID Removal • DID Import • DID Mass Edit

Attention

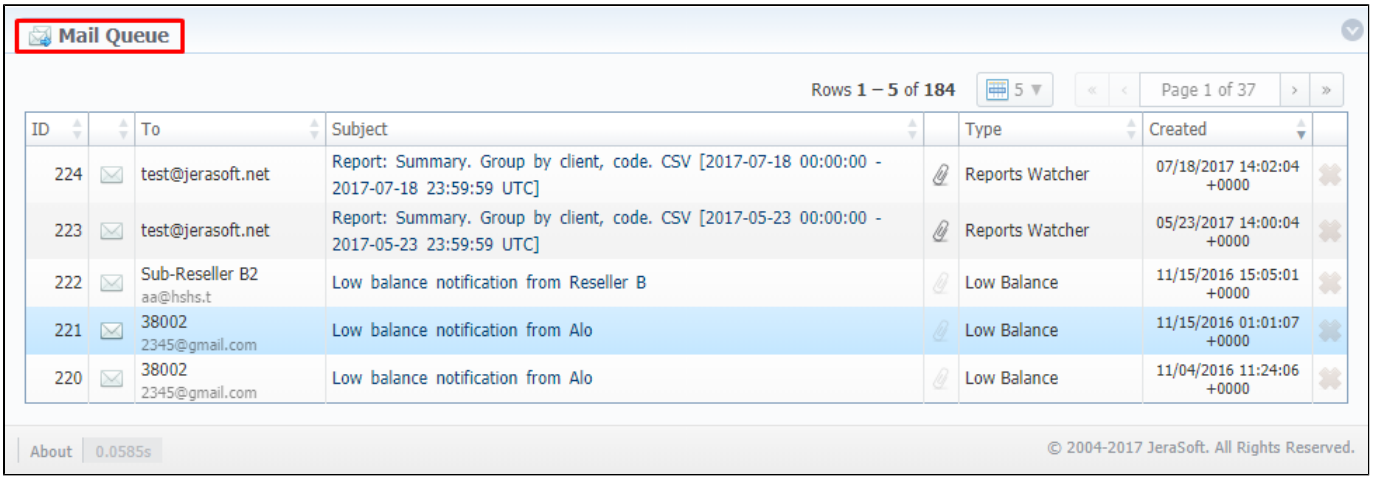
In case a ***client, account,*** or ***reseller*** was **deleted** (but not **fully**), there is a possibility to see a state of this item at the time of its removal, by clicking on its **name** in **Item** column.

Mail Queue

Section overview

Mail Queue is a section designed to provide visual representation of all system emails that have already been sent or are in a queue to be delivered. These emails can contain ***invoices***, ***low balance notifications*** or ***other types of messages***. Section is presented in a form of a table with the following columns:

Screenshot: Mail Queue section



Column Name	Description
ID	Email's identification number
To	A recipient of the email
Subject	Subject of the letter on the list
Type	Certain type of the email
Created	Date and time when the email was created

Functional **icons**, presented in the section, are as follows:

Button/Icon	Description
	Icon indicates that respective email is currently in a queue and hasn't been sent yet
	Icon indicates that respective email has already been sent
	Icon indicates that respective email contains attached file
	Allows to delete an email from the queue. Requires confirmation

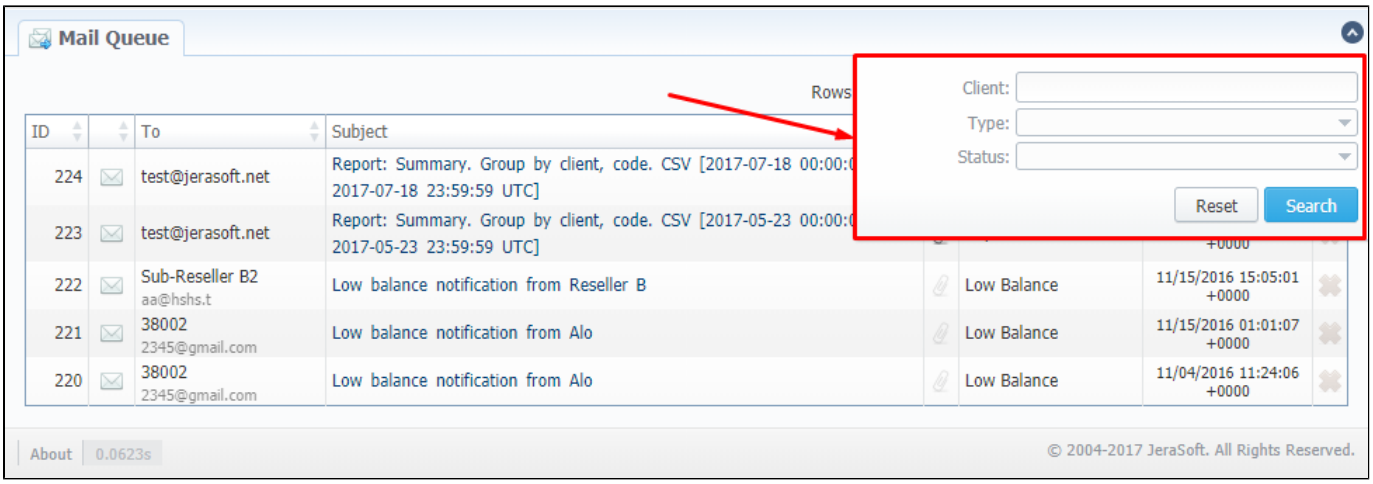
Attention

Emails that have been sent **cannot** be deleted from the list; only those that are currently **in a queue**

Advanced Search

You can filter data, presented in the section, using **Advanced Search** drop-down menu. It makes a search filter to limit the search results for higher working efficiency. To open this form, click on blue downwards arrow icon

Screenshot: Mail Queue search toolbar

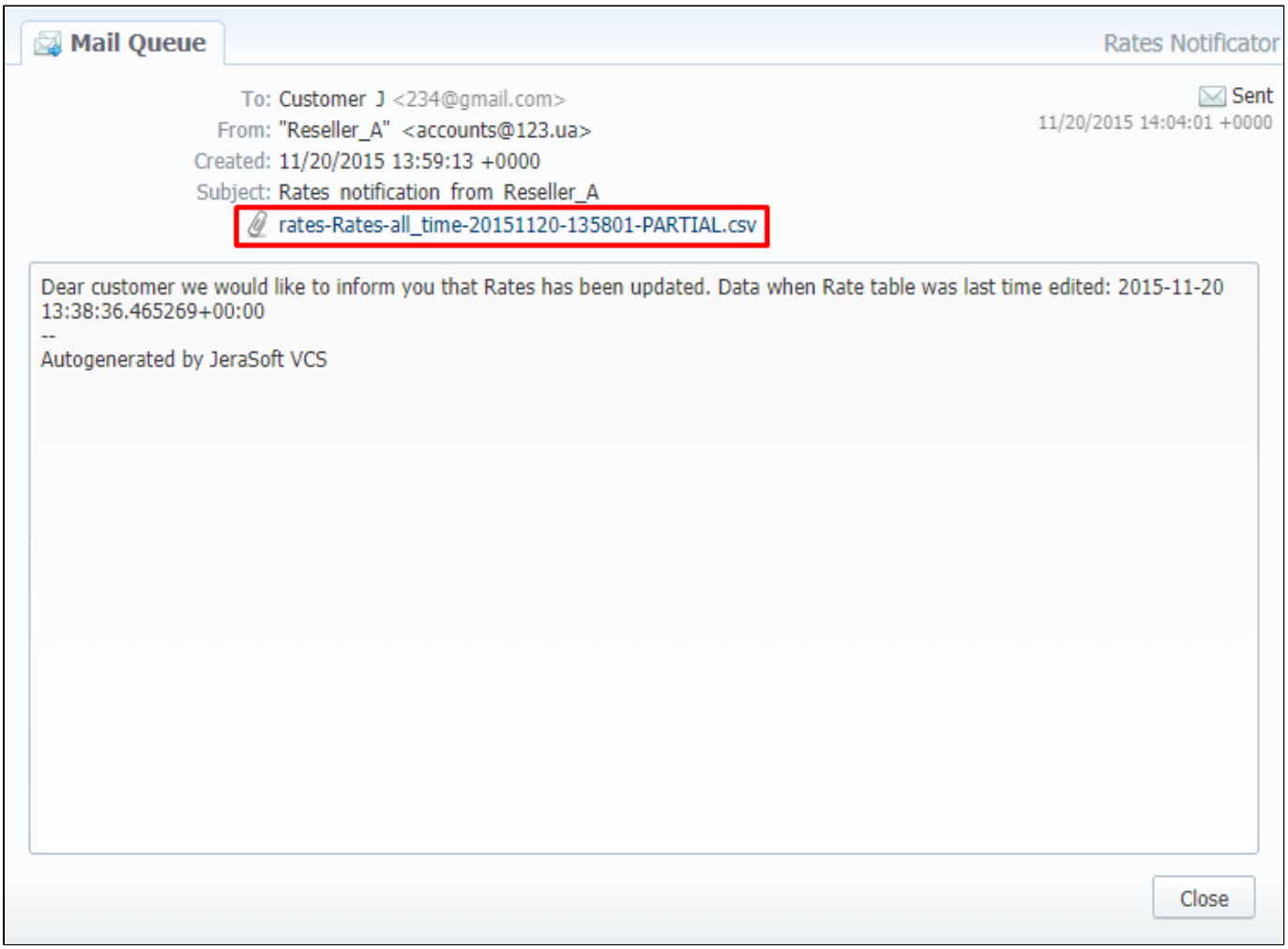


Field	Description
Client	Type the name of client that you want filter by
Type	Select the type of mail: • ***Invoice*** • ***Notify (Before)*** • ***Notify (After)*** • ***Low Balance*** • ***Reports Watcher*** • ***Rates Notificator***
Status	Choose a state of email: • ***In Queue*** • ***Sent***

Email view

To view any email on the list, click on a respective email's subject in **Subject** column. A pop-up window with the following structure will appear:

Screenshot: Detailed view of email letter

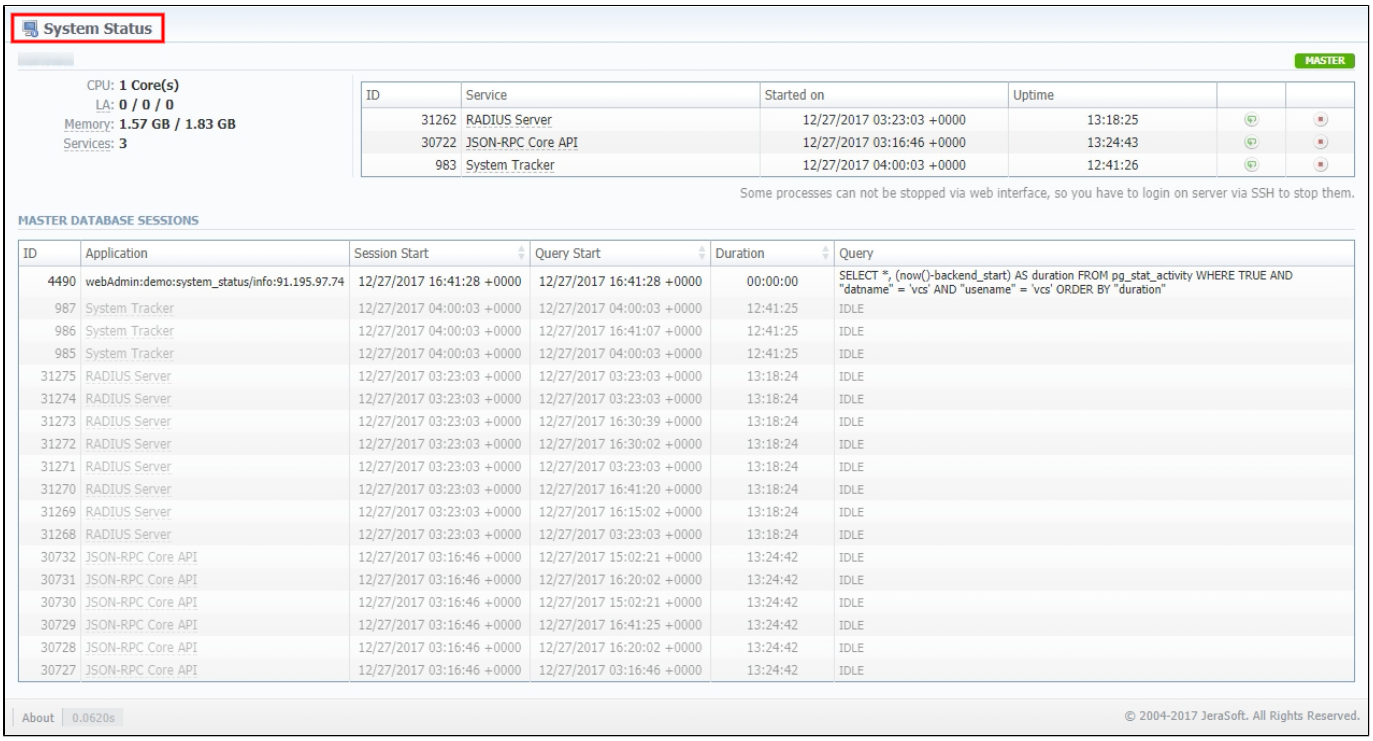


Field	Description
To	Full name and email address of **the recipient**
From	Full name and email address of **the sender**
Created	**Date and time** of email creation
Subject	**Subject** of the email letter
Attached file *(if any)*	If email has the **attached file**, its **name** will be specified in the field. By clicking on it, file will be **downloaded** to your computer
Status	Email status: ***Sent*** or ***In Queue***. If the status is ***Sent***, **time** and **date** when it was delivered will be specified
Message	**Body** of the letter

System Status

System Status displays all **currently launched** system **services**, **system load** info and current system **database sessions** of the main server, divided into two information blocks: **Localhost** and **Master Database Sessions**. In addition, this section displays the status of ***Redundancy*** and ***Reporting servers*** (see screenshot below). Section structure is a follows:

Screenshot: System Status section



Information block	Column	Description
Localhost	**CPU**	Number of Central Processing Unit **cores**
	LA	System **Load Average**
	Memory	Amount of **Used** and **Total** Memory
	Services	Number of currently **running services**
	ID	System service **identification number**
	Service	**Name** of the system service
	Started on	Start **date** and **time** of the service
	Uptime	Current **uptime** of the service
Master Database Sessions	**ID**	Database session **ID**
	Application	**Name** of the application
	Session Start	Session start **date** and **time**
	Query Start	Query start **date** and **time**
	Duration	Session **duration**
	Query	Description of the **query**

Section allows a user to start, stop, and restart services **manually** with help of certain icons.

Icon	Description

	Allows to **start** any service that is not currently running
	Allows to **restart** a service that is currently
	Allows to **stop** a service

Attention

Note that you **cannot** stop some processes via **web interface.** To do so, you need to login on server via ***SSH*** to stop them.

Task Scheduler

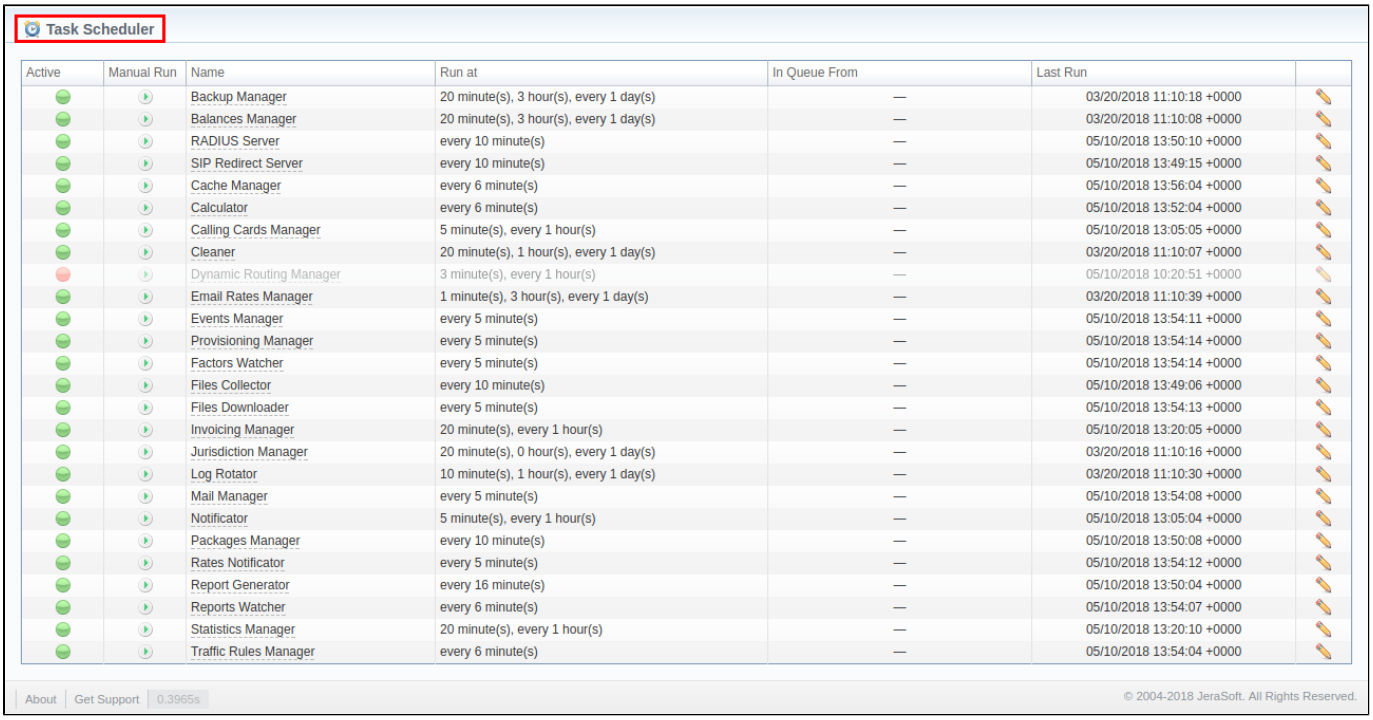
In this article

- Task Scheduler
- Utility management

Task Scheduler

Task Scheduler section represents a list of all **system utilities** (see screenshot below) and aimed at providing possibility to manage and **configure** them as **user** desires. List of system utilities has the following structure:

Screenshot: Task Scheduler section



Column	Description
Active	**Status** of the utility. Depending on the icon, status can be either ***enabled*** or ***disabled.*** In order to change a utility status, click on the icon in the table
Manual Run	**Each utility** is run with a certain **periodicity**, specified in **Run at** column. By pressing **Run utility** icon, you **manually** start this utility regardless of its **Run at** column value.
Name	**Name** of the utility. The full list of system utilities with their descriptions is provided in a table below
Run at	**Periodicity** at which each utility is run
In Queue From	If utility is run manually, **time** and **date** when its launch was initiated will be specified in the column
Last Run	**Time** and **date** when the **last run** was initiated

Utility Name	Description

Backup Manager	Utility that manages system backup processes
Balances Manager	Creates automatic charges
RADIUS Server	RADIUS server process
SIP Redirect Server	SIP Redirect server process
Cache Manager	Cache Manager process whose main function is to continuously monitor and include client-related changes for RADIUS and SIP Redirect
Calculator	Utility that processes all data collected from CDR-files
Calling Card Manager	*Calling Cards* manager process
Cleaner	Utility that automatically cleans old messages from *Events Log* section
Dynamic Routing Manager	Utility that creates routing tables used in Dynamic Routing feature
Email Rates Manager	Utility that imports rate tables updates from emails
Events Manager	Process that sends events to e-mails according to *Events Config*
Provisioning Manager	Utility that processes event asynchronously
Factors Watcher	Utility that controls *Factors Watcher* tool
Files Collector	Utility that controls file collectors
Files Downloader	Utility that automatically downloads cdr-files from switch host
Invoicing Manager	Utility that manages the autoinvoicing feature
Log Rotator	Utility that controls log-files
Mail Manager	Sends e-mails from mail queue (invoices, notifications etc)
Notificator	Notifies in case of low balance or HDD space events
Packages Manager	Utility that manages your packages
Rates Notificator	Utility that notifies clients about rate changes
Report Generator	Utility that manages data generation for reports
Reports Watcher	Utility that sends generated statistic reports by scheduled time
Statistics Manager	Utility that manages statistics packages
Traffic Rules Manager	Utility that manages all traffic rules in the system

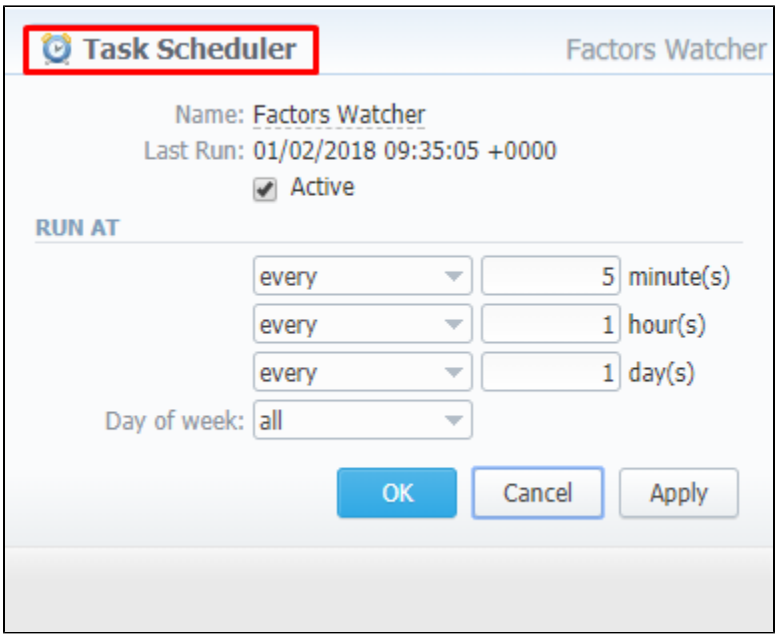
Attention

Please note that if customer had no assigned **packets**, **accounts**, **presets** or **translations**, and you decided to add one, then RADIUS or SIP Redirect servers will notice those changes only after *Cache Manager* runs and does it's job. Please note, that this is only applicable if customer previously had absolutely no items listed above, in other words, if you add second account to customer, then that change will be effective instantly.

Utility management

You can always configure the run time of any utility by pressing a respective ***edit*** icon. A pop-up window for utility management has the following structure (see screenshot below):

Screenshot: Utility editing



Field	Description
Name	**Name** of the utility
Last Run	**Time** and **date** when the **last run** was initiated
Active	Checkbox. If it's marked, utility is considered **active**
Run at	To set a **periodicity,** insert desired values into **minute(s), hour(s),** and/or **day(s)** fields and select **every** or **once on** condition for each the abovementioned field.
Day of week	Specify the **days of week** when the utilty will be run according to **Run at** fields values. You can choose either **one** specific day or **all** of them (set by default).

Users

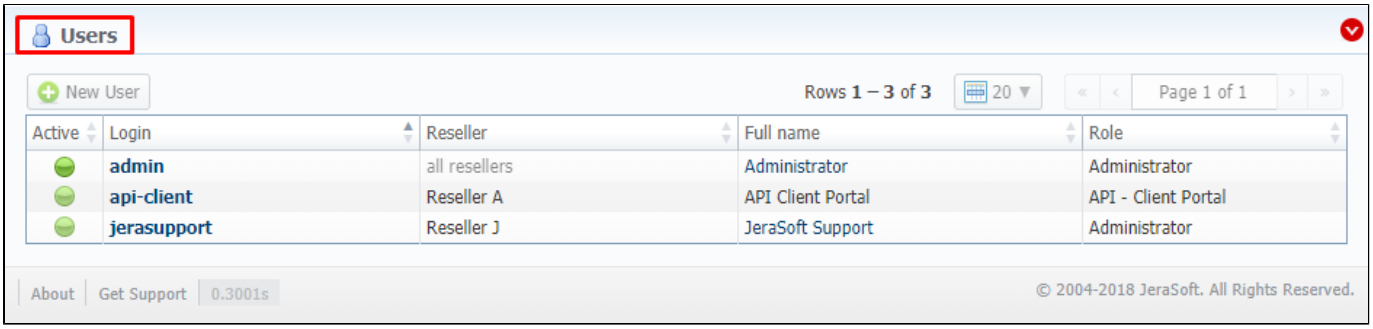
In this article

- Section overview
- Advanced Search
- Adding New User

Section overview

Users is a core section that provides overview of all registered users in the system. Section allows to **create, edit,** and **disable** existing users. The list of users is presented in a form of a table with the following columns:

Screenshot: Users section



Column	Description
Active	Users **status**. Depending on the icon, status can be either ***active*** or ***disabled.***
Login	User's **account name**
Reseller	Name of a **company** whom user belongs to
Full name	**Mailto links** of users (if specified in user's account)
Role	User's role that determines the **access level** or **permissions**

Tip

If your role implies relevant permits, by clicking on a status icon in **Active** column, you can **change user's status** from ***active*** to ***disabled*** and vice versa

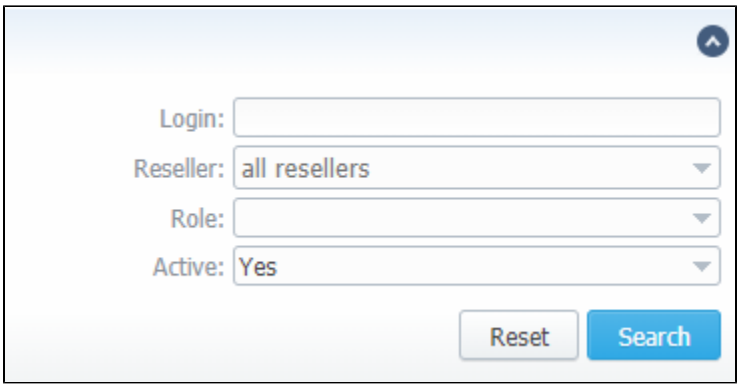
Functional **buttons/icons**, presented in the section, are as follows:

Button/Icon	Description
New User	Allows **creating** a new user
	Opens **Advanced Search** drop-down menu

Advanced Search

In the top right corner of the section above the table, an **Advanced Search** drop-down menu is located. By default, the list of clients is filtered by **Active** status. By clicking on red downwards arrow icon, a drop-down menu with the following structure is displayed:

Screenshot: Advanced Search drop-down menu



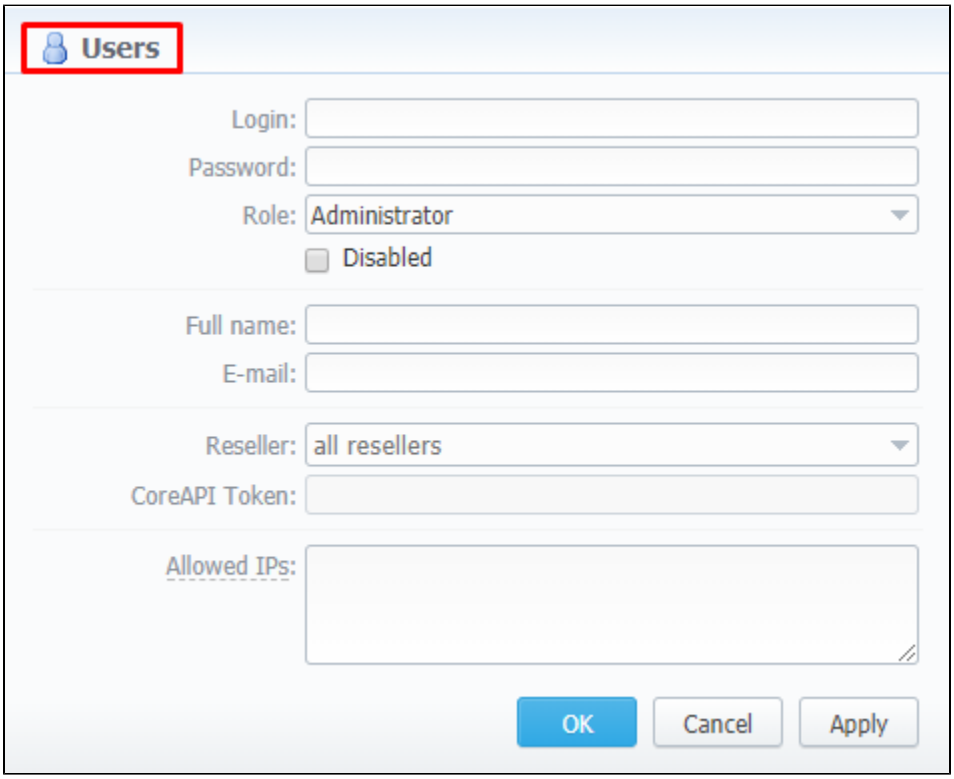
Field	Description
Login	Specify a desired **user's login**
Reseller	Select from the list of all **Resellers, Sub-resellers and Managers** registered in the system
Role	Select from the list of existing **system roles**
Active	Specify whether user's **status** is active or not, by selecting from a drop-down list: • ***Yes*** • ***No*** • ***Empty (to display users with both statuses)***

Adding New User

What you need to do to create a new user is:

- Click on **New User** button
- In the opened pop-up window fill in all the **requried fields** (list of them is presented in a column below)
- Confirm new user creation by pressing **OK** button

Screenshot: New user creation window



Field	Description
Login	Specify a user's **login**.
Password	Define a **password**

Role	Select a **role** for a user from drop-down list
Disabled checkbox	Check if you need to temporary **prevent** a user from having **access** to the system
Full name	Enter a **user's name.** Note that if user's email is specified, full name in the section serves a **mailto link**.
E-mail	Specify a user's **email**
Reseller	Specify a reseller, subreseller or manager user **belongs** to
CoreAPI Token	This field **cannot** be specified in creation form. CoreAPI Token is **automatically generated** by the system after a user is created
Allowed IPs	Enter **IPs** or **subnets**, one record per line, i.e. user will have access to the system only if he/she logs in via specified IPs

Attention

While creating a new user, bare in mind the following things:

- Each user can have only **one** assigned role for.
- We strongly recommend **avoiding non-latin characters** in users' login/passwords

Roles

In this article

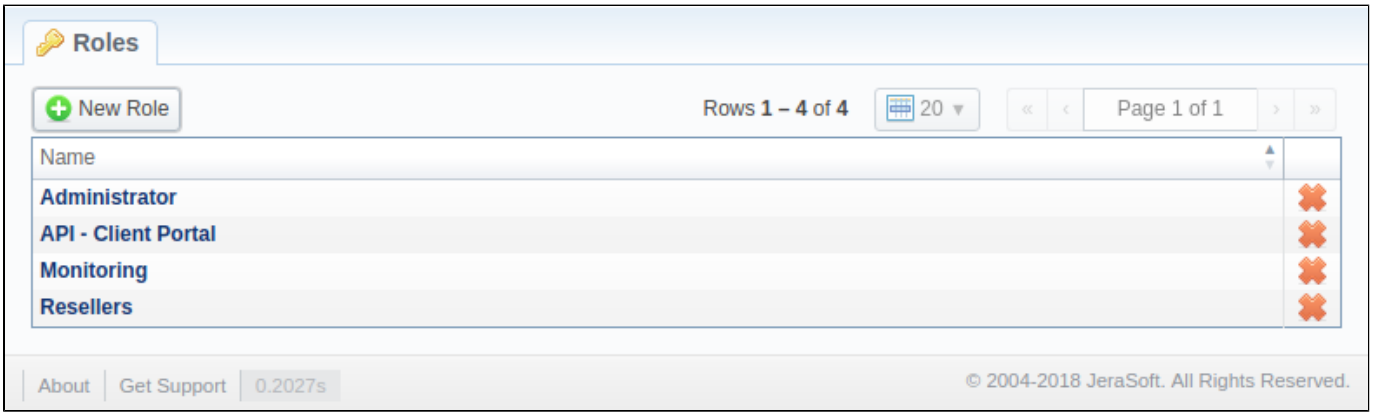
- Roles List
- Adding New Role
- Knowledge Base Articles

Roles List

This section allows to manage and specify access rights for all sections of the system. In the section, you can create new roles, as well as edit permissions of already existing ones. By default, there are 4 pre-installed roles:

- **Administrator** – this role has unlimited rights and access permissions in the system;
- **Monitoring** – this role has basic access permissions to work in the system that include viewing clients lists and summary reports, work with Factors Watcher, etc. However, the role doesn't stipulate for access to technical settings and some statistic info that is only available to Administrator;
- **Resellers** – this role has advanced access permissions for a complete work with the clients. User with this role also doesn't have access to technical settings and some statistic info that is only available to Administrator (use this role when adding Reseller or Agent user).
- **API - Client Portal** - this role has been created to simplify user's access to Client Portal and has next to none permissions for work inside VCS.

Screenshot: Roles section



Adding New Role

To add a new role, click the **New Role** button on the toolbar. A pop-up window with role settings will appear where you need to enter the name, choose the default module and select respective access rights in **Entires** table. The ***Default Module*** field specifies a default section that will be displayed when you log in into system.

Note that a created user can **assign the role with respective permissions**. Therefore, if the user has access to create roles, he can assign the role with permission similar to his own or less.

Screenshot: Adding new role window

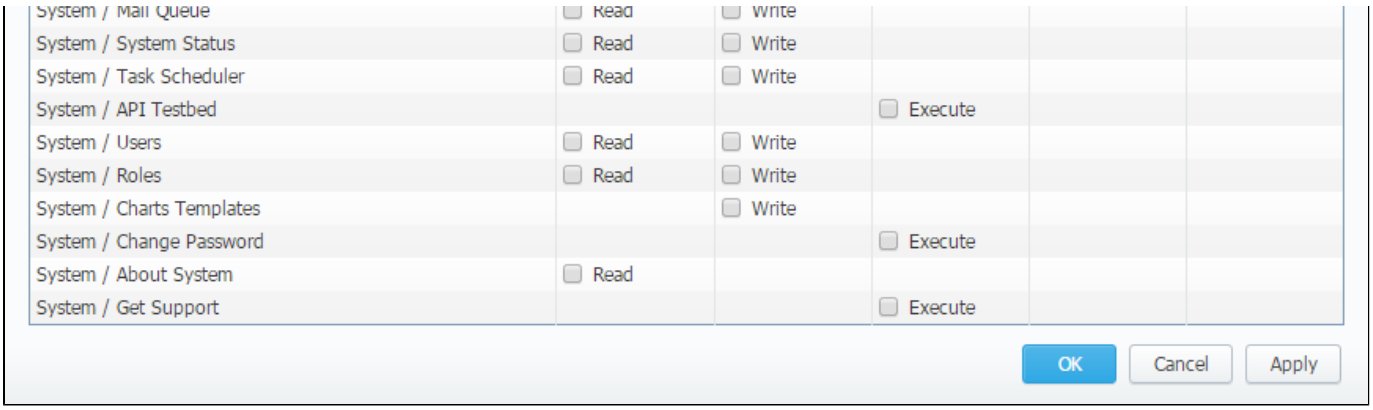
Roles

Name:

Default Module: Management / Clients

ENTRIES

Name	Access Permissions				
	☐	☐	☐	☐	☐
Management / Clients	☐ Read	☐ Write			☐ Full Delete
Management / Accounts	☐ Read	☐ Write			
Management / Rate Tables	☐ Read	☐ Write			
Management / Invoices	☐ Read	☐ Write			
Management / Transactions	☐ Read	☐ Write	☐ Execute		
Management / Balance Report	☐ Read		☐ Execute		
Management / Resellers	☐ Read	☐ Write			☐ Full Delete
Management / Client Packages	☐ Read	☐ Write			
Management / Presets	☐ Read	☐ Write			
Management / Traffic Processing	☐ Read	☐ Write			
Retail / Packages	☐ Read	☐ Write			
Retail / DID Management	☐ Read	☐ Write			
Retail / Calling Cards	☐ Read	☐ Write			
Retail / Top-up Cards	☐ Read	☐ Write			
Retail / Call Shops	☐ Read	☐ Write			
Statistics / Dashboard		☐ Write	☐ Execute		
Statistics / Summary Report	☐ Read		☐ Execute	☐ Billing data	
Statistics / Orig-Term Report	☐ Read		☐ Execute	☐ Billing data	
Statistics / Profit Report	☐ Read		☐ Execute		
Statistics / LCR Lists	☐ Read		☐ Execute		
Statistics / CDRs List	☐ Read	☐ Write	☐ Execute		
Statistics / Mismatches Report	☐ Read		☐ Execute		
Statistics / Calls Rerating			☐ Execute		
Statistics / Reports Templates	☐ Read	☐ Write			
Statistics / Archive Management	☐ Read	☐ Write			
Tools / Rates Analysis	☐ Read		☐ Execute		
Tools / Rates Generator			☐ Execute		
Tools / Active Calls			☐ Execute		
Tools / Factors Watcher	☐ Read	☐ Write			
Tools / CDR Disputes	☐ Read	☐ Write			
Routing / Routing Plans	☐ Read	☐ Write			
Routing / Routing Analysis	☐ Read		☐ Execute		
Routing / DR Policies	☐ Read	☐ Write			
Configuration / Code Decks	☐ Read	☐ Write			
Configuration / Currencies	☐ Read	☐ Write			
Configuration / Payment Accounts	☐ Read	☐ Write			
Configuration / Payment Terms	☐ Read	☐ Write			
Configuration / Payment Gateways	☐ Read	☐ Write			
Configuration / Time Profiles	☐ Read	☐ Write			
Configuration / Taxes Profiles	☐ Read	☐ Write			
Configuration / Groups	☐ Read	☐ Write			
Configuration / Invoices Templates	☐ Read	☐ Write			
Configuration / VoIP Gateways	☐ Read	☐ Write			
Configuration / Settings	☐ Read	☐ Write			
System / Events Log	☐ Read	☐ Write			
System / Audit Log	☐ Read				



Checkbox	Description
Read	Allows / forbids a user to view information, presented in a section
Write	Allows / forbids a user to create, edit and delete information, presented in a section
Execute	Allows / forbids a user to execute system services in a section
Full Delete	Allows / forbids a user to perform full deletion of entities in a section
Billing data	Allows / forbids a user to work billing data (rates, profit, taxes, etc) in a section

Attention

- **Parent Reseller has access to all information of his *Sub-Resellers,*** a therefore can assign **any routing plan and rate table** to them
- A user with disabled ***Management/Clients*** module in the **Roles section** will not see the Clients List from the *Clients Panel.*

Knowledge Base Articles

- How to hide rates in Summary Report for specific system users?

Client Panel

The **Client Panel** is a separate application integrated with JeraSoft VCS via API. It has a user friendly interface and it's tailored for your clients to manage services they purchased. For example, they can check their rates, refill balance, update contact and billing details, check a detailed call history with all related statistics and cost.

It has been designed to be as simple and easy to understand as possible and should cut a lot of basic customers' questions. The panel is provided as an open source, so it can be used as starting point for your own development or as a reference and example.

Tip

Starting from the **VCS 3.13**, the Client Panel will be hosted by default on 9080 port. To access it, open http://VCS-IP-ADDRESS:9080/. Moreover, you could assign your own domain name to the panel.

Functional advantages

1. **Fully API based**

   The system is fully based on API integration. Therefore, it does not require any direct access to the VCS database and provides more secured approach.

2. **Can be hosted separately**

   You can move the Client Panel to other server and just configure VCS IP address in the API settings. As result you can fully isolate VCS from the public internet.

3. **Full Open Sourced**

   The panel comes with all source code. It allows you to either customize the system or extend it, or just use as a reference guide for development of your own panel.

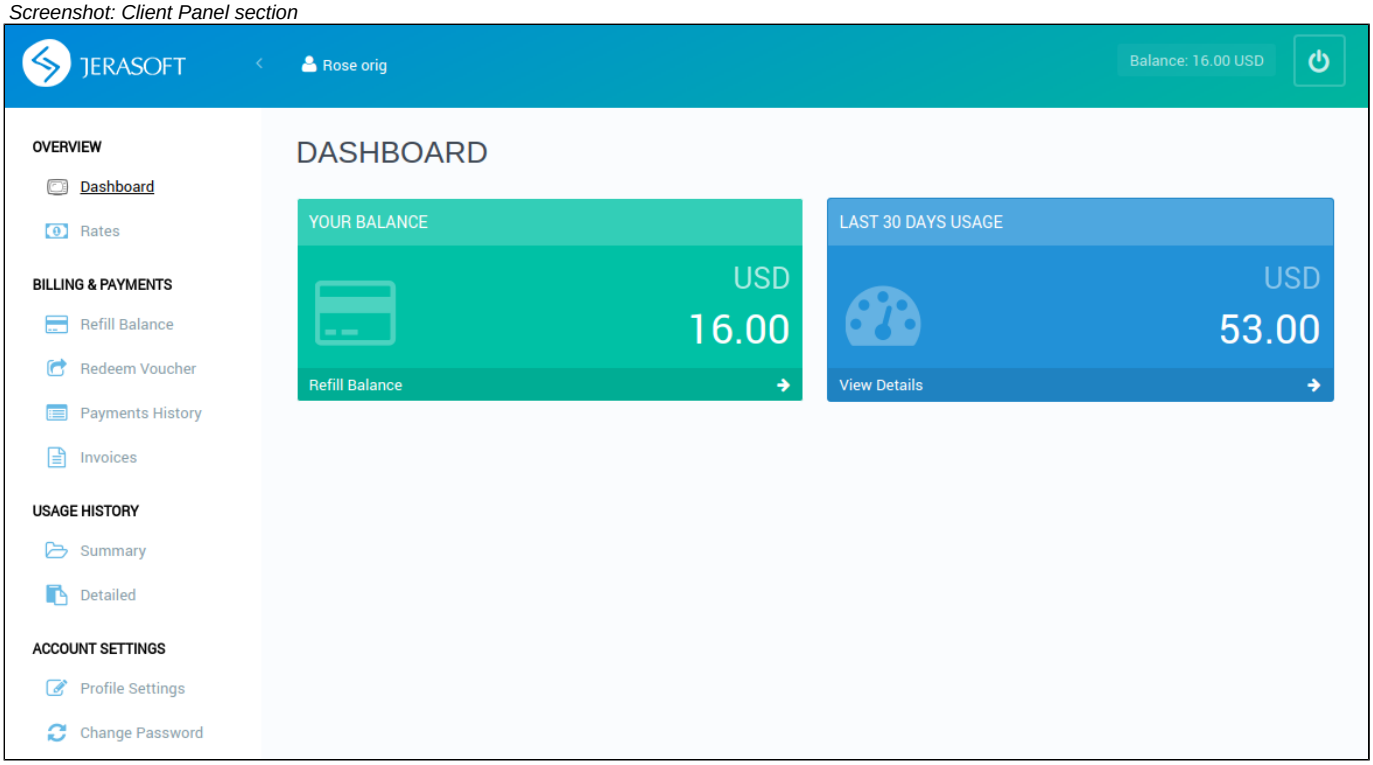
More details about Client Panel can be found in the following articles:

- Panel Features
- Panel Deployment
- Panel Configuration
- Panel Access
- Panel Customization

Panel Features

There are 4 main sections in the Client Panel – Overview, Billing & Payments, Usage History and Account Settings. Let's take a closer look at each of them.

Screenshot: Client Panel section



Overview

- **Dashboard** - displays an overview of a real-time user's balance and last 30 days of executed charges. By clicking on **Refill Balance**, you will be moved to corresponding **Refill Balance** page. By clicking on **View Details**, you will be forwarded to **Detailed** page.
- **Rates** - shows all rates and allows to easily sort and search them by services.

Billing & Payments

- **Refill Balance** - allows replenishing client's balance by means of configured payment gateways. Currently, **Client Panel** supports **PayPal** and **Authorize.net** service providers.
- **Redeem Voucher** - allows user to refill his account by means of top-up cards, specified in **Top-up Cards** section.
- **Payment History** - displays a full history of conducted transactions: both payments and charges.
- **Invoices** - shows all invoices that belong to user with a possibility to download them.

Usage History

- **Summary** - grants user a possibility to view summary report on the executed events, allowing to easily filter data by period, service, account or package.
- **Detailed** - shows detailed statistics about all client's calls, performed within a specified period of time.

Account Settings

- **Profile Settings** - allows user to update the profile settings, including company name, billing email, address, registration and tax IDs.
- **Change Password** - allows user to change his password to the Client Panel.

Panel Deployment

In this article

- Nginx Installation
- Nginx Configuration
- Obtaining SSL certificates
- Billing Firewall Configuration

First and foremost, while deploying Client Panel is to set up an additional server for proxying access to the client panel within billing platform. There are no specific requirements for the server - you can use either **virtual server** or **simple dedicated server**. Basic knowledge of server administration and shell usage is required.

Tip

All provided examples are given assuming usage of CentOS/RHEL based OS.

Nginx Installation

When you have your server up and running, you need to install Nginx. To do so, you need to execute the following command:

nginx install

```
yum -y update
yum -y install nginx
```

Once Nginx has been successfully installed, next crucial step is to configure it, and in particular, **set panel domain name** and **obtain SSL certificate**.

Nginx Configuration

You will need to setup **3 virtual hosts** within Nginx that will implement following configuration:

- **<panel_domain>:80** redirect to **<panel_domain>:443** *(https-redirect.conf)*
- **<panel_domain>:443** proxy to **<vcs-ip-address>:9080** *(panel-frontend.conf)*
- **<panel_domain>:9090** proxy to **<vcs-ip-address>:9090** *(panel-backend.conf)*

Config examples of the above-mentioned hosts are given below. You can simply put them in ***/etc/nginx/conf.d/*** and replace **"<panel-domain>"** and *"***<vcs-ip-address>"** with real data.

https-redirect.conf

```
server {
    listen 80;
    server_name <panel-domain>;
    return 301 https://$host$request_uri;
}
```

panel-frontend.conf

```
server {
    listen       443 default_server ssl http2;
    server_name  <panel-domain>;
    access_log   /var/log/nginx/frontend-access.log;
    error_log    /var/log/nginx/frontend-error.log;

    # SSL Settings
    ssl_session_cache shared:SSL:1m;
    ssl_session_timeout 10m;
    ssl_protocols TLSv1.2 TLSv1.1 TLSv1;
    ssl_prefer_server_ciphers on;
    ssl_ciphers EECDH+ECDSA+AESGCM:EECDH+aRSA+AESGCM:EECDH+ECDSA+SHA512:EECDH+ECDSA+SHA384:EECDH+ECDSA+SHA256:
ECDH+AESGCM:ECDH+AES256:DH+AESGCM:DH+AES256:RSA+AESGCM:!aNULL:!eNULL:!LOW:!RC4:!3DES:!MD5:!EXP:!PSK:!SRP:!DSS;
    ssl_certificate "/etc/pki/tls/certs/localhost.crt";
    ssl_certificate_key "/etc/pki/tls/certs/localhost.crt";

    # HSTS Header
    add_header Strict-Transport-Security "max-age=31536000; includeSubDomains";

    # Proxy
    location / {
        proxy_pass http://<vcs-ip-address>:9080;
    }
}
```

panel-backend.conf

```
server {
    listen       9090 default_server ssl http2;
    server_name  <panel-domain>;
    access_log   /var/log/nginx/backend-access.log;
    error_log    /var/log/nginx/backend-error.log;

    # SSL Settings
    ssl_session_cache shared:SSL:1m;
    ssl_session_timeout 10m;
    ssl_protocols TLSv1.2 TLSv1.1 TLSv1;
    ssl_prefer_server_ciphers on;
    ssl_ciphers EECDH+ECDSA+AESGCM:EECDH+aRSA+AESGCM:EECDH+ECDSA+SHA512:EECDH+ECDSA+SHA384:EECDH+ECDSA+SHA256:
ECDH+AESGCM:ECDH+AES256:DH+AESGCM:DH+AES256:RSA+AESGCM:!aNULL:!eNULL:!LOW:!RC4:!3DES:!MD5:!EXP:!PSK:!SRP:!DSS;
    ssl_certificate "/etc/pki/tls/certs/localhost.crt";
    ssl_certificate_key "/etc/pki/tls/certs/localhost.crt";

    # HSTS Header
    add_header Strict-Transport-Security "max-age=31536000; includeSubDomains";

    # Proxy
    location / {
        proxy_pass http://<vcs-ip-address>:9090;
    }
}
```

Obtaining SSL certificates

When Nginx is configured and panel domain name is set, you need to obtain valid SSL certificate. You can use Letsencrypt or any other SSL certificates provider. If you are going to use Letsencrypt, follow guideline at https://certbot.eff.org/lets-encrypt/centosrhel7-nginx. Otherwise, refer to respective provider manual to deploy certificates.

Billing Firewall Configuration

The last stage of the deployment is to configure **firewall on the billing servers**. In order to permit requests from panel proxy server to your VCS server, in firewall settings of the latter, you need to allow following ports from proxying server's IP: ***443, 3080, 9080, 9090***.

Panel Configuration

In this article

- Configuration File
- Payment Gateways: PayPal
- Payment Gateways: Authorize.net

Configuration File

The next step is to tune Client Panel settings. In order to do this, you will need to modify **customer-params.json** file located in **/opt/jerasoft/vcs/portal-backend/config** directory. This file is pre-created for you during system installation and has all required basic settings. However, if you're planning to use payment gateways: either **PayPal** or **Authorize.Net**, you must update values in respective fields of the file. In the same folder you can find **customer-params.json.sample** file which has examples for all required settings, explanations for which are given below.

> ⚠ **Attention**
>
> Starting from VCS **3.16.x**, **customer-params.json** is a symlink to **/opt/jerasoft/vcs-data/conf/cp-customer-params.json** file, and will be preserved th rough VCS upgrades.

Configuration Options

Below we provide a description of all settings you can find in **customer-params.json.sample** file:

Setting Name	Description	Example
coreApi.uri	URL for the Core API JSON-RPC service	`"http://127.0.0.1:3080"`
coreApi.authToken	CoreAPI Auth Token (could be found in the **Users > CoreAPI Token** field)	`"a4386b81a8d062f640f1d1edaa821a9c"`
managementApi.uri	URL for the Management API	`"https://127.0.0.1/jsonrpc"`
managementApi.login	Login of the user under which all request will be performed *(should be same user for which you use CoreAPI Auth Token)*	`"login"`
managementApi.passsword	Password of the user under which all request will be performed	`"password"`
billingUri	Admin Panel web-address	`"https://127.0.0.1"`
openedEndpoint	Link where payment gateways webhook will be returned to (must be without slash at the end)	`"https://127.0.0.1"`
redisMain.hostname	The hostname or ip address to use for connecting to the redis server.	`"localhost"`
redisMain.port	The port to use for connecting to the redis server.	`6379`
redisMain.database	The redis database to use.	`1`
redisCache.hostname	The hostname or ip address to use for connecting to the redis server.	`"localhost"`
redisCache.port	The port to use for connecting to the redis server.	`6379`
redisCache.database	The redis database to use.	`2`

Payment Gateways: PayPal

Check your PayPal panel for the required parameters. Get more details.

Setting Name	Description	Example
paypal.clientId	PayPal Client ID	
paypal.clientSecret	PayPal Client Secret Key	
paypal.sandbox	Defines PayPal working mode. Default working mode is **live**	`false`

Payment Gateways: Authorize.net

Check your Authorize.Net panel for the required parameters. Get more details.

Setting Name	Description	Example
authorizenet.apiLoginId	Authorize.Net API Login ID	
authorizenet.apiTransactionKey	Authorize.Net API Transaction Key	
authorizenet.apiSignatureKey	Authorize.Net API Signature Key	
authorizenet.sandbox	Defines Authorize.Net working mode. Default working mode is **live**	`false`

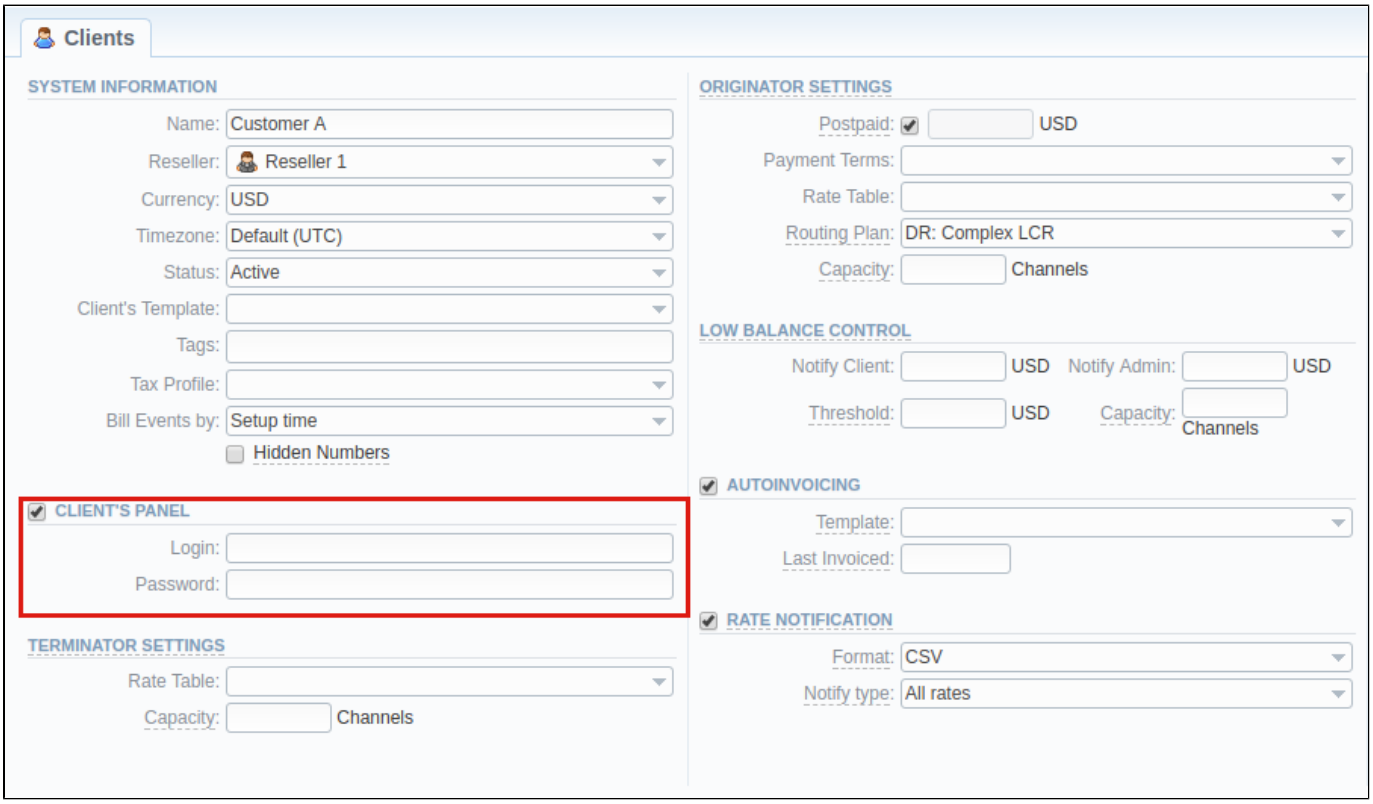
Attention

Payment Gateways integration requires proper domain name and real SSL certificate. Please check Panel Deployment guideline to get more information.

Panel Access

Access to the panel for your customers is configured in a respective customer's properties of VCS web-interface: **Mangement** > **Clients** > **Client's Panel** information block in a target client's profile. Make sure, you have enabled the access and specified login / password.

Screenshot: Client profile



Panel Customization

Personal logo and styles customization

You may personalize your panel to make it fit better to your company style. You can start with logo and, if you are familiar with CSS, you may add CSS styles. Below, you can find locations for the respective files. Please note that given paths relate to **/opt/jerasoft/vcs/portal-frontend/dist/assets**.

- **Logo for Login Page** – image-resources/logo-login.png
- **Logo for Client Portal** – image-resources/logo-panel.png
- **CSS Files** – client_portal_custom.css

Warning

You need to re-apply your settings **after each VCS upgrade**.

Development technologies

Note that the Client Panel comes with all source code, and you can use it as a reference guide or a starting point for your own development. Feel free to modify the code, improve it or extend, build it into some other platforms. For example, you can update the menu, a panel view, edit a set of filters, modify grouping options or create your own panel by taking it as example of functional implementation.

The technologies used for the development of the Client Panel are:

a. PHP: Yii2
b. JavaScript: Angular 2
c. HTML/CSS: Bootstrap
d. Tools: Swagger

Warning

If you wish to tune panel in more details, add or remove features, you can just copy source code to another server and modify it. Otherwise, all the changes you made will be removed during the system upgrade.

System Shell Tools

In this article

- Requirements Checker
- Services Manager
- Cluster Manager
  - Init Master
  - Master: Add new Slave
  - Slave: Promote to Master
  - Slave: Sync Files
  - Cluster Status

This section describes **shell tools** required for management of the system at the very system level. All these tools are shipped with the VCS distributive. You need to use SSH or direct access to the server in order to run any of these tools. Please notice that most of given tools require ***root*** access and show inline help when run without arguments.

Important!

Please use these tools **only if you have a clear understanding** of what you are doing. Misuse of the tools may cause an improper functioning of the system.

Attention

To free our clients from confusion while trying to indicate path to VCS system, we introduce the **<VCS_PATH> variable** that differs depending on VCS version**:**

- **<VCS_PATH>** before version **3.13.0** is **"/usr/local/vcs"**
- **<VCS_PATH>** after version **3.13.0** is **"/opt/jerasoft/vcs"**

The example is as follows:
To restart RADIUS Server, you need execute **<VCS_PATH>/bin/service bbradiusd restart**, which will look like

/usr/local/vcs/bin/service bbradiusd restart for clients with VCS version **3.12.0 and lower**

or **/opt/jerasoft/vcs/bin/service bbradiusd restart** for VCS version **3.13.0 and higher.**

Requirements Checker

The tool is aimed to check **minimal requirements** and **security recommendations** at your server before and after installation.

Usage

```
<VCS_PATH>/bin/setup-checker
```

The tool should be run under ***root*** permissions without any arguments. When the tool is run it will perform a list of checks and show results for each of them. Use it:

1. Before installation of the VCS to check **minimal hardware and software requirements**. At this stage you may download the tool separately from the VCS.
2. After installation of the VCS to check **security recommendations**. Usually you need to tune your firewall settings according to the VCS First Steps.

Attention

The tool checks only minimal requirements. **Real hardware requirements** highly depend on your traffic and deployment model.

Services Manager

The tool is used for **managing the VCS Services**. It allows to correctly start, stop, get status of the VCS Services as RADIUS Server, SIP Server, Calculator, etc.

Usage

```
<VCS_PATH>/bin/service <service-name> <action> [<options>]
```

The tool should be run under ***root*** or ***vcs*** user. Service manager takes 2 arguments:

Argument	Description
`<service-name>`	Short name of the service. Run the tool without arguments to get list of the services at your system.
`<action>`	Action to perform, one of the following: • *start* - start the service • *stop* - stop the service • *restart* - stop and then start the service • *reload* - force config re-read without restart • *status* - return current status of the tool

Additionally you may pass next options:

Option	Description
`--path=<path>`	Specify the VCS location. Only if different from <VCS_PATH>
`--user=<user>`	Specify user the VCS runs under. Only if different from *"vcs"*.

For your convenience there are some examples below:

Restart RADIUS Server

```
<VCS_PATH>/bin/service bbradiusd restart
```

Start Files Downloader

```
<VCS_PATH>/bin/service files_downloader start
```

Get status of SIP Server

```
<VCS_PATH>/bin/service bbsipd status
```

Attention

The tool also complies with LSB Init Scripts standard. It allows to analyse exit code of each action in case of automated usage.

Cluster Manager

The tool is used to **manage cluster**. It allows to init the cluster, add and promote slave to master, etc.

Usage

```
<VCS_PATH>/bin/cluster <command> [<options>]
```

The tool requires *"root"* permissions. Cluster Manager takes command as mandatory argument and additional options. Some of commands may be run only on Master and others only on Slave. There are two available types of Slave: redundancy and reporting. All extra options for the commands are explained below in the corresponding subsection.

Init Master

The command is **run on Master** and used for Master to configure its parameters.

Bash

```
<VCS_PATH>/bin/cluster init-master --ip=<IP-of-master> [<extra-options>]
```

This command may require additional options:

Option	Description	Default
`--ip=<ip>`	IP Address of the Master server	`none`
`--ssh-port=<port>`	SSH Port at the master server	`22`
`--data=<path>`	PostgreSQL data path on master system	`autodetect`
`--vcs-path=<path>`	Path to the VCS on Slave	`<VCS_PATH>`

Master: Add new Slave

The command is **run on the Master** and used for:

- **first time initialisation** of the cluster;
- **addition of the new slave** node to the cluster;
- addition of the **old master to work as slave** after failover.

Bash

```
<VCS_PATH>/bin/cluster init-slave --ip=<IP-of-slave> [<extra-options>]
```

This command encapsulates 4 sub-commands:

- configuration of the *Master* to ship replication logs (`init-master`)
- configuration of the *Master* to accept connections from the *Slave* (`init-master-access`)
- configuration of the *Slave* to receive replication logs (`init-slave`)
- show status of the cluster (`status`).

Each of this commands may be performed separately if you know exactly what you need.

This command may require additional options:

Option	Description	Default
`--ip=<ip>`	IP Address of the Slave server	`none`
`--ssh-port=<port>`	SSH Port at the slave server	`22`
`--username=<login>`	Login to the slave server	`jerasupport`

`--data=<path>`	PostgreSQL data path on slave system	same as master
`--vcs-path=<path>`	Path to the VCS on Slave	`<VCS_PATH>`
`--role=<role>`	Role of the secondary system. Could be [redundancy or reporting]	`redundancy`

Slave: Promote to Master

The command is **run on the Slave** and used to promote current *Slave* to *Master*.

Bash

```
<VCS_PATH>/bin/cluster promote
```

The command is used for failover. After you fix old *Master* you may add it as new *Slave* using *"init"* command.

> ⚠ **Attention**
>
> In case when you have more than 2 nodes in cluster, you need to re-init all other slaves from this new *Master*.

Slave: Sync Files

The command is **run on the Slave** and used to synchronise files from the *Master*. The command is mostly used in crontab for auto-sync.

Bash

```
<VCS_PATH>/bin/cluster sync-files
```

During initialisation of the cluster tool adds this command to the crontab *(/etc/cron.d/vcs-cluster)* at the *Slave* node.

Cluster Status

The command may be run **on any node** and used to get status of the cluster.

Bash

```
<VCS_PATH>/bin/cluster status
```

When command is run on the *Master* it shows type of the node and attached Slaves, that are up to date:

```
[ NOTICE ] Cluster Status
  ifconfig  | grep 'inet addr:'| grep -v '127.0.0.1' | cut -d: -f2 | awk '{ print $1}'

Master (master ip): ACTIVE
    Redundancy (slave ip): ACTIVE
```

When command is run on the *Slave* it shows type of the node and synchronisation delay.

```
[ NOTICE ] Cluster Status
  ifconfig  | grep 'inet addr:'| grep -v '127.0.0.1' | cut -d: -f2 | awk '{ print $1}'

Master (master ip): NOT AVAILABLE | Activity delay: -00:00:58.393423
    Redundancy (slave ip): ACTIVE
```

Please don't worry if you see the following:

```
the row: Master (master ip): NOT AVAILABLE
```

It's a normal behaviour. Instead, please pay attention to *"Activity delay" parameter* it shows large values if replication is broken and servers are not in sync.

In case when the *Slave* is not in synchronisation (NOT-in-sync) with the *Master* you need to re-initialise.

APIs

This section of our Guide contains detailed information about **JeraSoft VCS API** that lets you integrate 3rd party applications with VCS platform or develop your own tools on top of it. The API makes it easy to get data in and out of the VCS. Depending on your needs you may need to choose which type of APIs is best for you:

- **CoreAPI** - provides tools for main components' integrations, high loads and contains a limited number of most used API methods.
- **Provisioning API** - allows handling events on 3rd party systems.
- **Management API** - gives possibilities to retrieve, add or modify data. It has the same logic as the web interface. Thus, every object that you could use via the web interface can be accessed within API.

For more details, please go to the related subsections:

- CoreAPI
- ProvisioningAPI
- Management API

CoreAPI

The CoreAPI is the high-performance mechanism for a real-time integration with 3rd party systems, including softswitches, gateways, etc. 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 3rd party system.

Attention

1. The JeraSoft team may modify the attributes and methods related to the CoreAPI usage from time to time without advance notice.
2. In order to provide our users with the most up-to-date features, **we recommend using CoreAPI** instead of **Management API methods** for integrations.

Protocol

The Service implements JSON-RPC 2.0 specification. Transport of the RPC messages done over HTTP protocol. By default, the Service runs on `3080/tcp` port. It is assumed that RPC clients talk to the Service over a secure connection (either VPN or private network).

Authorization and Tokens

Authentication is performed using pre-created API Tokens. Each RPC request should contain an API Token under the parameter named `AUTH`. The API Tokens are linked to System Users and Resellers setting of the user is respected. At the same time, there is no module/method limitation within CoreAPI, all methods are available to all users.

Example

```
[
    {
        "jsonrpc": "2.0",
        "id": 1,
        "method": "rating.getTaxes",
        "params": {
            "amountGross": 100,
            "taxes": [
                {"priority": 1, "value": 10}
            ]
        }
    },
    {
        "jsonrpc": "2.0",
        "id": 2,
        "method": "transactions.create",
        "params": {
            "clients_id": 10562,
            "currencies_id": 16,
            "amount": "{$0.amountNet}",
            "descr": "Special Transaction"
        }
    }
]
```

Tip

You can access the user's CoreAPI token in his edit form, go to the **System > Users**

ProvisioningAPI

On this page

- Handlers
- Events

The Provisioning API provides a mechanism for a real-time integration with 3rd party systems, including softswitches, gateways and CRM systems. The mechanism 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.

Prior to that, **VCS Core API** and **Management API** provide utilities needed to receive requests from external systems. Now, you can configure VCS billing platform to send requests to your 3rd party system.

For example, you can monitor the client's balance status via this functionality. Thus, when the client's balance is below zero, you can configure that the billing will send to an external system a notification in order to avoid any disruptions to your organization current processes.

Tip

The full list of **Provisioning API** parameters matches with **CoreAPI** and they are available upon an individual request of your current clients.

Handlers

There are two types of handlers that can be used:

- **HTTP** scripts, called via POST requests (used in most cases)
- **Local server scripts**, called locally on the server (used in very specific cases)

Best practice example

Here there is an example based on **http://handler** usage.

2. Open the **Provisioning section** and start to create a handler.

    a. Specify the name, type, and status.
    b. In ***Event*** field select **Clients Create** event from the drop-down list.
    c. In ***Task*** field indicate ***http://*** type and determine the port and method, for example: ***120.0.0.1:5000/api.***
    d. Click **Apply**.

Find below an example of the **http:// handler**:

```
from flask import Flask, request
import json
app = Flask(__name__)
@app.route("/api", methods=['GET', 'POST'])
def api():
    data = json.loads(request.data)
    return json.dumps(data)
if __name__ == "__main__":
    app.run()
```

Events

The Provisioning API supports the following list of events:

Title	Action

Clients	• create • update • delete • archive • custom fields update • balance became >=0 • balance became <=0
Accounts	• create • update • delete
Clients Packages	• assign • activate • deactivate • renew • close

Tip

- For more information about **configuring and monitoring of hooks for Provisioning API**, visit our respective article **User Guide > System > Provisioning API**.
- If you need to process some of the actions that are not listed here, contact our support for a feature request.

Management API

On this page

- Access the API
- Authentication
- API Request
- API Response
- Work with files
- Examples: Pure JSON-RPC
- Examples: Python Library
- Methods Reference

The **Management API** allows you to easily integrate 3rd party applications with VCS platform. It may be accessed using JSON-RPC - a standard protocol for remote procedure calls.

Most programming languages have libraries to work with this protocol. The API uses the same logic as the web interface and works very similar, which makes its usage easier.

Access the API

To access **JSON-RPC** interface use:

```
https://<your-system-IP>/jsonrpc/
```

Before accessing the system make sure that your **IP is allowed** on the firewall. Also, please make sure that rest of the world is blocked by firewall. You can get more details about it in the VCS First Steps.

Authentication

In order to make any request to the API, you need to **authenticate** using login and password.

We strongly recommend having **separate API account** for each application you make calls from. Besides this, we recommend having dedicated Role for API users, which allows only needed actions. Authentication is done by sending the following array along with other arguments:

```
{
   "auth": {
      "login": "admin",
      "password": "password"
   }
}
```

In order to increase performance you may not authenticate for each call but do it once and **save Session ID** given back to you in response.
This Session ID may be sent in further requests instead of login and passwords to continue using the same session without re-authentication. Session ID should be sent with other arguments in the following format:

```
{
   "SID": "1-dsglnqr4qnsdihr8djj6da7qr4"
}
```

It should be mentioned that authentication should be made **within** the first call to the API.

API Request

Each request besides authentication information should include:

Name	Description	Example

Method Name	Name of the module and action to call	`clients.editForm`

Arguments	List of arguments for the method call	`id_clients = 11`
		`auth[login] = admin`
		`auth[password] = password`

API Response

Each response will include the following information:

Name	Description	Example
code	Return code, usually true on success or false on failure	`1`
return	Array with data returned by method	`[client] => Array ( [id] => 11 [id_companies] => 3 [type] => 0 [name] => Customer A [groups] => Customers [c_dt] => 2013-03-30 16:26:15+03 [status] => active [credit] => 100 ... )`
session_id	Session ID which may be used to speed up next calls	`1-dsglnqr4qnsdihr8djj6da7qr4`
messages	List of success / warning messages returned by message	`array()`
errors	List of abnormal errors if they fired during processing	`array()`

Work with files

There is a specific case when your request to the billing should provide file response. For example, it could be an invoice file download, CDRs List download, etc. Using plain JSON-RPC with base64 on top of it is not effective here as the file may contain hundreds of megabytes. This special case is handled with common **HTTP Request** to:

```
https://<your-system-IP>/admin/
```

The request may be either GET or POST and should include either Login and Password or Session ID. In response, the server will send the file according to HTTP protocol.

Examples: Pure JSON-RPC

JSON-RPC Request

```
{
  "method": "clients.editForm",
  "params": {
    "id_clients": 11,
    "SID": "1-bmdgeu6bn22jlmkuffg391t513"
  },
  "id": 1
}
```

JSON-RPC Response


```
{
  "jsonrpc": "2.0",
  "id": 1,
  "result": {
    "code": true,
    "session_id": "1-bmdgeu6bn22jlmkuffg391t513",
    "messages": [],
    "return": {
      "client": {
        "id": 11,
        "name": "Customer A",
        "groups": "Customers",
        "c_dt": "2013-03-30 16:26:15+03",
        "status": "active",
        "credit": 100,
        "c_company": "Mancy",
        "c_address": null,
        "c_email": "admin@example.net",
        "c_email_tech": "admin@example.net",
        "c_email_billing": "admin@example.net",
        "c_email_rates": "admin@example.net",
        "id_currencies": 27
      },
    },
    "errors": []
  }
}
```


Examples: Python Library

To download a sample library for Python, please visit **/opt/jerasoft/vcs/core/pycore/tools/vcsapi.py.** It will simplify work with API. You can find an example below:

Python Example

```
import vcsapi

# create an API object
api = vcsapi.Api('vcs-demo.jerasoft.net', 'demo', 'demo', 443)

# make a call to the API
response = api.clients.editForm({'id_clients': 8})

print response.code      # True
print response.messages  # [ ]
print response.data      # {'client': {'id': 8, 'type': 0, 'name': 'Customer 01', ...}}
```

Methods Reference

At the moment we are working hard to bring you a full and detailed list of methods, arguments and expected output. However as API fully duplicates web methods, it is easy to find their names and arguments yourselves. Let's check a quick example, like creating a reseller.

In the web interface, the link to this action is ***https://<your-billing-IP>/admin/companies/add***, with ***companies*** being a module and ***add*** being a method. The resulting method to call via API is ***companies.add***.

In order to find out arguments for this method, you may look for HTTP request in your browser (using FireBug in Firefox, Developer Tools in Chrome). Another way is to check for dump in **/opt/jerasoft/vcs-data/log/runtime.log** which looks like:

```
[20-Jan-2012 17:32:06+0200] [webAdmin/#260808] REQUEST: /companies/add
Array
(
        [type] => 10
        [name] => TESTCOMPANY
        [id_companies] =>
        [prepaid] => 1
        [credit] => 0.00
        ...
)
```

This log entry includes the full list of the arguments used. However many of them are optional. Try calling the method with the arguments you need and the system will let you know if you are missing any of the arguments.

Warning

The JeraSoft team may modify the attributes and methods related to the Management API usage from time to time without advance notice.