JERASOFT

USER
GUIDE

FOR VERSION 3.22

www.jerasoft.net

User Guide

Welcome to JeraSoft Billing 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 **JeraSoft Billing 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
- Rates Section
- Retail
- Statistics
- Tools
- Routing
- Configuration
- Integration
- System
- Client Panel
- System Shell Tools
- APIs

Interface Basics

In this article
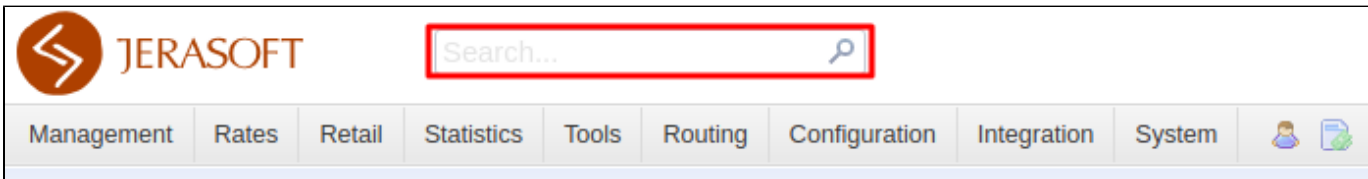
- Global Search Bar
- SmartBar
- InfoBar
- My Profile
- About
- Page Load Time
- Rows per Page
- Delete Confirmation
- System Logout
- Section Tabs

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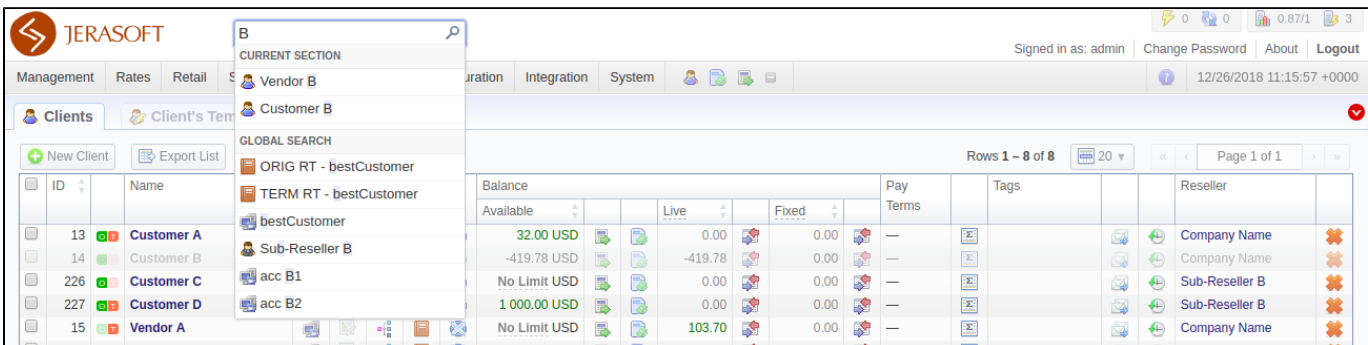
Several JeraSoft Billing sections have advanced search settings. To open these settings, click on downwards arrow ⌄ icon on the toolbar of a respective section. Red downwards arrow ⌄ icon on the toolbar means that the data is sorted by default *(see screenshot above)*.

SmartBar

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

To add the shortcut, open a respective section and then click the plus sign ⊞ on the panel. As a 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
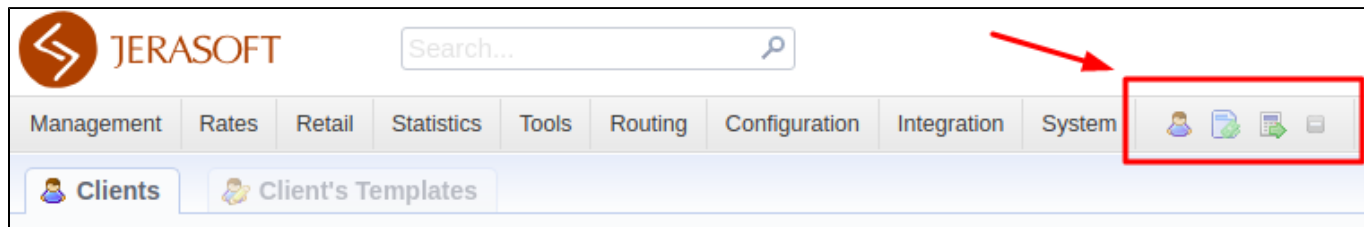
InfoBar

To have access to fast-changing system information, JeraSoft Billing features the information panel – **InfoBar.** You can find this panel in the top-right corner of the system and it is available from any section.
Screenshot: InfoBar settings
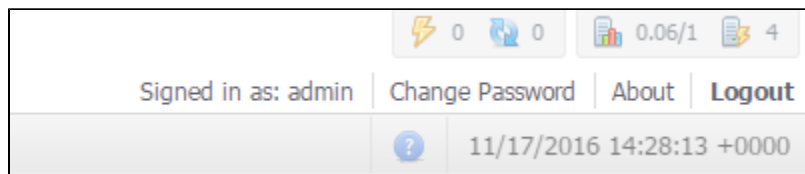
Icon	Description
	CDR queue
	CDRs in queue for rerating
	CDRs in queue for parsing
	Information about system alerts
	Load average on server / Number of CPU cores
	Number of running billing services
	Shortcut to a relevant article regarding certain section on Documentation Portal

My Profile

You can set your timezone and locale in the **Preferences** menu, and change the current password by using **Change Password** menu. The changes will be implemented in the system immediately. When setting your timezone, the system will pull these settings to all the statistics reports query forms and transactions timestamps.

Screenshot: Change Password settings

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

Rows per Page

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

Screenshot: Rows Per Page dropdown button
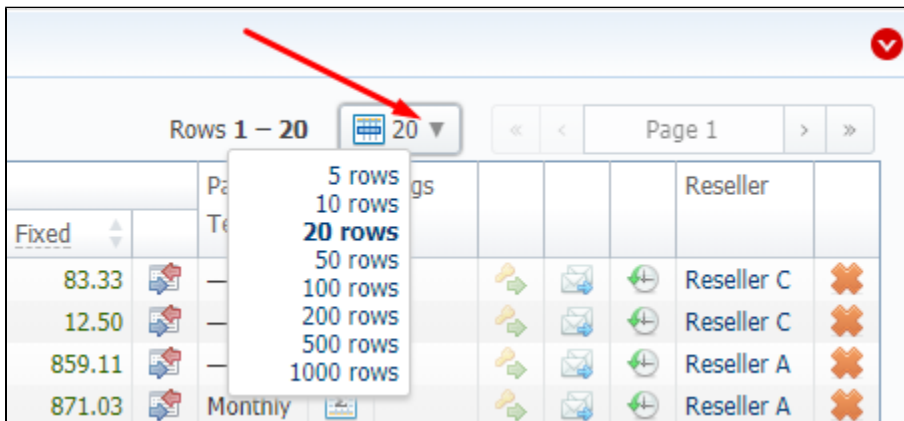
Delete Confirmation

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

Animation: Delete confirmation
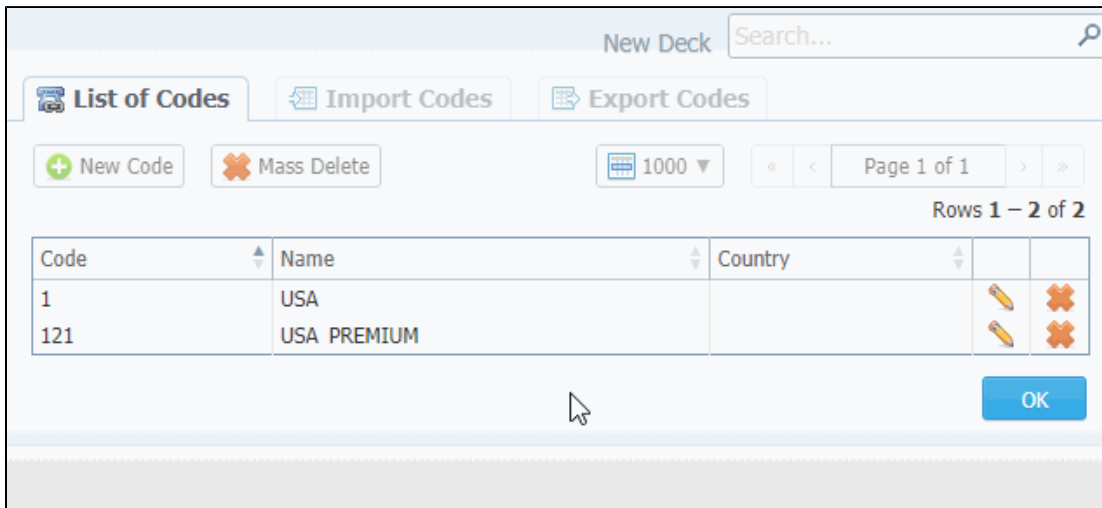
System Logout

You can log out from the 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
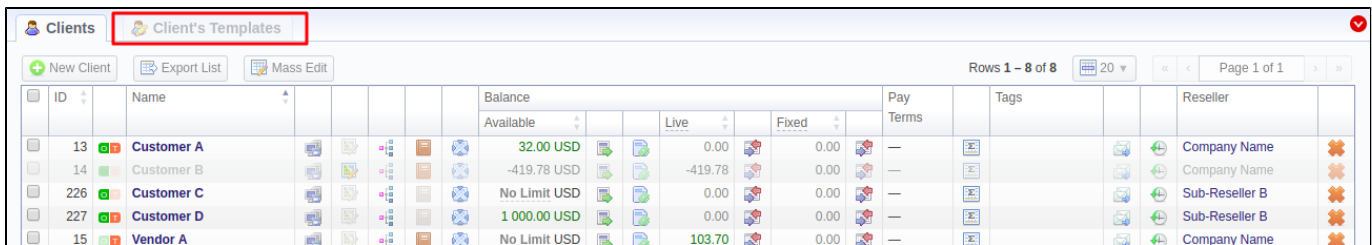
Management

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

Take note that while navigating throughout the **system**, you will come across plenty of tool-tips to provide a better understanding of the system mechanisms. It's easy to determine, whether there is one or not. All tool-tips in the system are shown as the text with a dotted underline, for example, **ORIGINATOR SETTINGS**. All you need is to hover over it, and additional information becomes visible.

The list of management section includes:

- Clients
- Accounts
- Invoices
- Transactions
- Balance Report
- Resellers
- Subscriptions
- 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, the **Clients** section is rightfully considered a core element of the whole **JeraSoft Billing**. In the section, user can manage the personal information of any client on the list, trace customer's balances, review resellers a particular client belongs to, etc. The section is presented in the form of a table with the following columns:
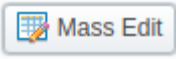
Screenshot: Clients section

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 the basis of the performed payments and processed calls	
	• *Fixed*	Client's balance calculated on the 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 managing the 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 the **Accounts** section (an icon will be colored if an account is assigned)
	Allows accessing the client's current routing plan (an icon will be colored if the plan is assigned)
	Allows accessing the **Traffic Processing** section for dynamic routing management
	Allows viewing client's rates (an icon will be colored if a rate table is assigned)

• **ORIG**	Rate tables for origination calls
• **TERM**	Rate tables for termination calls

	Allows accessing the **Subscriptions** section for new clients packages management
	Allows accessing the **Transactions** section for client's balance management
	Allows accessing the **Invoices** section for client's invoices management
	Allows accessing the **Balance Report** section for client's balance report (Live or Fixed) management
	Allows accessing the **Summary Report** section for client's summary report management
	Allows accessing the **Mail Queue** section to view sent emails history
	Allows accessing the **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 clicking a respective icon ✖, the Client Panel of this client will be disabled and origination/termination settings of its accounts will be turned off. However, its 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 by first letters only (*start with* rule). To find all clients with a 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 a 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, click the **Search** button; to cancel the applied parameters, click **Reset**.

Adding New Client

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

Screenshot: Adding a new client

Information block	Fields & Description	
General Settings	General information about the client	
	• **Name**	Indicate a 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 a 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, or time profiles.
	• **Status**	Select a 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-existent in the system. You can provide an unlimited number of tags for each client.
	• **Tax Profile**	You can specify a tax profile, which will be reflected in invoices. In order to select a tax profile in this field, the tax profile should be created first in the section **Configuration>Taxes profiles**. Check out the **Taxes Profiles** article for more information. There can be 3 types of the tax profiles used: • **Customer** (you will need to manage the tax values manually) • **SureTax** (integration with a third-party tax calculation service) • **Compliance** (integration with a third-party tax calculation service) ⚠️ **Attention** For proper usage of SureTax and Compliance, the **Invoice Number** should contain only Latin and numeric characters. Max length is 40 symbols. **Dst** and **Src Numbers** should be in the **NPANXXNNNN (10 digits)** format. More info about these third-party tax calculation services can be found in the article US Taxation.
	• **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** checkbox	When checked, allows you to hide some part of the client's destination numbers in invoices, xDRs reports and during export. ✅ **Tip** If the client has the **Hidden Numbers** option enabled 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, 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 **login** 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 fields:	
	• *Login*	Client's login
	• *Password*	Client's password
Originator Settings	Settings for your customers, who send events to your switch. Clients' originator settings are as follows:	
	• *Unlimited* c heckbox	Here you can set the unlimited credit for a client if you enable the checkbox. It is disabled by default.
	• *Credit limit*	The additional field next to the *Unlimited* checkbox. Here you can set the **credit limit** allowed for a client. You could fill this field with any of the positive or negative numbers, but no more than 9 digits. If the *Unlimited* checkbox is marked, this field becomes **inactive**.
	• *Payment Terms*	Select the payment terms template from the general list of all available ones in the **Payment Terms** section
	• *Rate Table*	From the list of all rate tables in the **Rate Tables** section, select an origination one for this client
	• *Routing Plan*	Select an appropriate routing plan that will be used to route all calls of this customer (but it may be overridden for any of the customer's accounts in the *Accounts* tab). The full list of routing plans is presented in the Routing Plans section
	• *Capacity*	Indicate the 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 a termination one for this client
	• *Credit limit*	Define the credit limit you have on the vendor's side. It will be applied to vendors during the routing check to remove them from the routing result if vendor balance + credit limit hits the entered threshold.
	• *Capacity*	Define the termination capacity of channels for this client. For unlimited amount, leave empty
Low Balance Notifications	Here you can set up whether the system should send low balance notifications or not when the client's **Available** balance is lower than a set threshold	
	• *Notify Client*	When clients' balance+credit is below the entered value, the system will send a notification to email, specified in the clients' *Billing Email* field
	• *Notify Admin*	When clients' balance+credit is below the entered value, the system will send a notification to an administrator via **E vents Log**
	• *Threshold*	Available balance threshold, below which the special capacity setting will be applied
	• *Capacity*	Origination capacity limit that will be applied when the available balance is below the 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
Rate Notification c heckbox	Here you can enable or disable automatic rates notifications for the current client		
		• **Format**	Select the desirable format of rate notification (.**xlsx** 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 (not repeated codes)** - if there are two or more new rates with different effective dates for the same code, several files will be sent, each containing a full list of rates and only one unique rate for this code ✅ **Tip** 1. The system will push notification after adding new rates. Please note, if the user changes the **Effective Date** field of current rates manually, they will also be included in the notification. 2. When you *force* Rate Notification, it does not send all the rates with the **Effective Date** in the future but only the rates that it will be late to send with the next scheduled notification (according to the **Agreement** assigned to the Rate Table). If there's no **Agreement**, the Rate Notification <u>will not be sent</u>. 3. We recommend using forced notifications for testing purposes. It doesn't cancel a regular notification nor change the last export date.
Company Info	Some additional information about a client can be entered here		
		• **Name**	Company name
		• **Main Email**	Company email for general inquiries. Use only Latin characters.
		• **NOC Email**	Company email for technical related questions. Use only Latin characters.
		• **Notify about Factors Watcher blocks** che ckbox	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 the Clients form
		• **Billing Email**	Automatically generated invoices and notifications will be sent to this email address. Use only Latin characters.
		• **Rates Email**	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 the client's bank account or payment details	
• **Locale**	The 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 a certain Rate Table.
>
> Please note, the **email address should contain only Latin characters** for proper work of email notifications and invoices.

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

Mass Edit

If there is a need to **change the 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** functionality. Follow the next steps:

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

Screenshot: Mass edit functionality
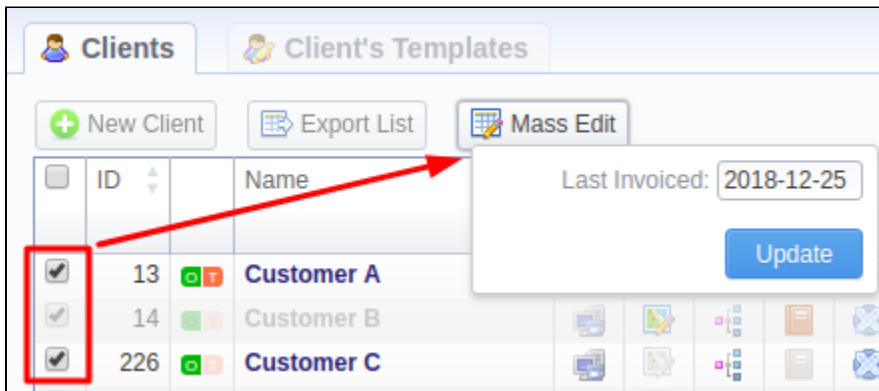
Clients Templates

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 tariff parameters for customers, managers, or resellers in several clicks. For more details**,** check out a related article: **Clients Templates**.

Knowledge Base Articles

> **Error rendering macro 'contentbylabel'**

parameters should not be empty

Clients Templates

In this article

- [Tab overview](#)
- [Advanced Search](#)
- [Creating a 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
Reseller	Name of the reseller's company respective client's template belongs to

Advanced Search

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

Screenshot: Advanced Search drop-down menu

Creating a New Client's Template

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

Screenshot: New Client Template settings

Clients				Company Name - default
GENERAL SETTINGS		**ORIGINATOR SETTINGS**		**LOW BALANCE CONTROL**

Name: Company Name - default   Credit: 0 USD   Notify Client: USD   Notify Admin: USD

Reseller: Company Name   Rate Table: Threshold: USD   Capacity: Channels

Currency: USD   Routing Plan:

Capacity: Channels

[OK] [Cancel] [Apply]

Information block	Fields Description	
System Information	General information regarding client's template settings	
	• *Name*	Indicate the title of the client's template
	• *Reseller*	Select a reseller that will be assigned to this template (this name will be used in invoices)
	• *Currency*	Indicate preferred currency (will be used in invoices)
Originator Settings	Billing settings and tariffication parameters for customers, who send the calls to your switch	
	• *Credit*	Credit limit allowed for a 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 set up whether the 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 the entered value, the system will send a notification to email, specified in the clients' **Billing email** field
	• *Notify Admin*	When clients' balance+credit is below the entered value, the system will send a notification to an 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 the available balance is below the threshold

> ✅ **Tip**
>
> Clients Templates allow 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 **Clients Templates** will take these values from templates (during authorization).
>
> **Please note:** the system can fill only empty fields with standard default values overridden from the 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 the assigned template. When there are no values in the template assigned to the Client, they will be taken from **Manager's/Reseller's settings**.

Interface properties

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

- Go to the **Clients** list, click on the **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 the **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 is:

- Go to the **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 Clients 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 ᐅ its Manager ᐅ its Reseller**
3. If there are no found values mentioned above in the closest template, further search stops and values are not defined.

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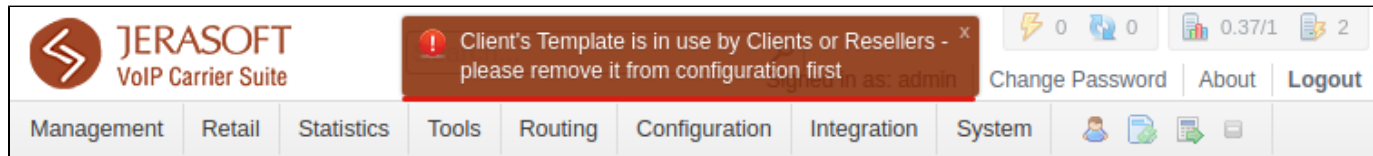
Reports

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 to their Reseller only.**

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 be used in invoice templates as custom functions.

Screenshot: Custom Fields tab

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

Screenshot: Custom Fields Reseller section

Field	Description
Field Key	Specify a ***unique*** custom key for using the created field in invoice templates. Please note that only characters, number or underscores are allowed for this field. No blank spaces.
Title	Create the title of the client's 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

Client Info	Custom Fields	# DIDs	Notes				Rose term
⊕ Add DID			Rows **1 – 1** of **1**	▦ 20 ▾	« ‹	Page 1 of 1	› »
DID	Status	Assigned to		Package			
1111	Active	rose_term		2	Package DID	‖	■

Column	Description
DID	List of DID numbers
Status	Status of a current DID
Assigned to	Shows clients' accounts, to whom the current DID number is assigned
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 DID number.

The **Add DID** button is **visible only if a client has at least one account and an activated package**. You can assign a 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 the ***in stock*** status. You can also use the **Import DID's** button.
> 3. Go to the **Retail > Packages** section. Create a package, that will include tags specified in DID's settings and a number of allowed DID's to be picked from it.
> 4. Assign a respective Package to the customer in the **Client Packages** section.
> 5. Open the **DIDs** tab in the **Clients** section. Then, 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 ▾	Status	Assigned to	Package		
Package:	▾	Active	Acc2	TESTPackages	‖	■
DID:						
	Add DID					

Notes

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

To add a new note, open the **Note** tab of the 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 the respective client. **To change an existing note**, hover over the comment you'd like to edit and click on the edit ✎ icon . Then, a new pop-up window with settings will appear.

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

Screenshot: Notes tab

Client Info	Custom Fields	DIDs	**Notes**	Rose orig

⊕ Add Note		Rows **1 – 0** of **1**

Updated by	Comments		
admin 04/11/2018 14:42:01 +0000	Notes on client accessibility File: clients_list_6-03-2018.csv	✎	✖

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 an unlimited number of unique accounts. Accounts are a key tool for clients' identification in JeraSoft Billing. The section is presented in the 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	Originator settings
Term Details	Terminator settings

⚠️ **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 the client's balance will increase.** We recommend deactivating useless accounts instead of completely deleting them from the system. You can deactivate an account by 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
(icon)	Allows filtering accounts by a specified client
(icon)	Allows viewing specified client's profile in the **Clients** section
(icon)	Allows viewing client's change history in the **Audit log** section
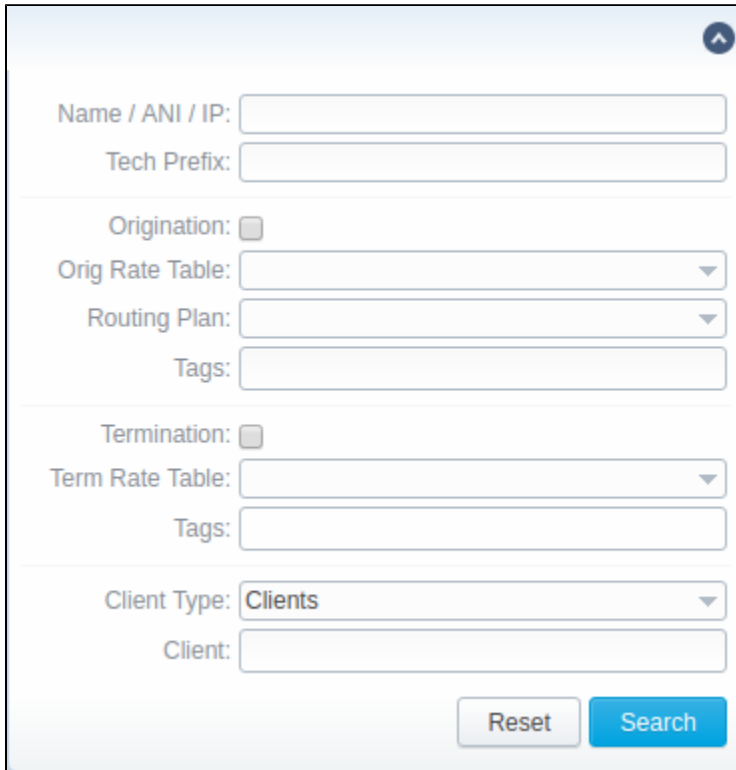
	✔	Indicates that the Orig/Term rate table or routing plan is assigned to an account
	✖	Allows deleting an account from the system

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 a red downward arrow ⬇ icon.

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

Screenshot: Advanced Search drop-down menu

Adding New Account

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

Screenshot: Adding new account

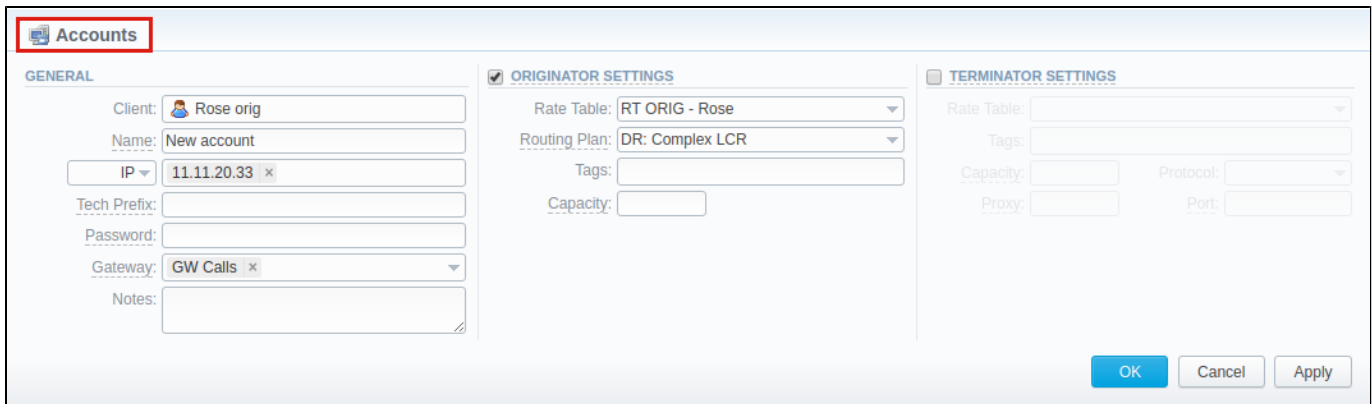| Information block	Fields and Description	
General	General information about a new client's account	
	• *Client*	Specify a client, to whom this account belongs
	• *Name*	Define the name of an account for JeraSoft Billing
	• *Ident by*	The *JeraSoft Billing system* allows client identification in 3 different 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) – callee's or caller's 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 the 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 the ⤭ icon or the abc 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 a current account
Originator Settings	Settings for your customers, who send calls to your switch	
	• *Rate Table*	Select a rate table for a current origination account (it will have higher priority than a rate table set for the whole client)
	• *Routing Plan*	Indicate 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 a rate table for a current termination account (it will have higher priority than a rate table set for the whole client)
	• *Tag*	Specify a tag for a current termination account

	• *Cap acity*	Indicate capacity for respective traffic direction
	• *Prot ocol*	Select respective protocol for a 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

Error rendering macro 'contentbylabel'

parameters should not be empty

Invoices
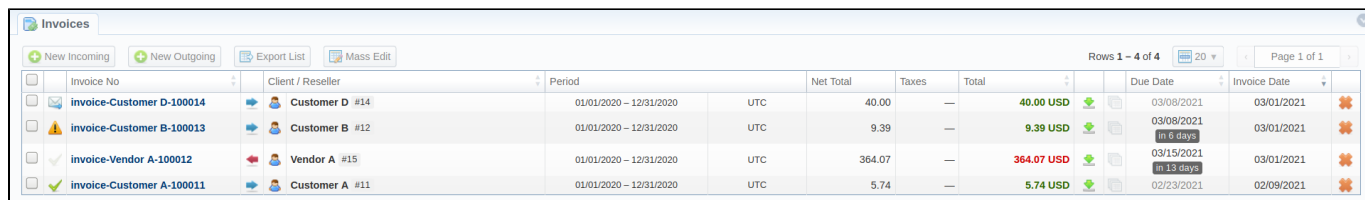
In this article
• Invoices List • Advanced Search • Creating a New Invoice • Mass Editing • Differences in totals

Invoices List

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

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

Screenshot: Invoices section main window
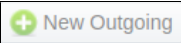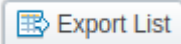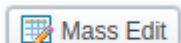
Column Name	Description
Invoice No	Number of an invoice
Client /Reseller	Name of a respective Client or Reseller along with the identification number. ✅ **Tip** You can create an invoice for a root Reseller
Period	Invoice period
Net Total	The invoice sum, excluding the taxes
Taxes	The taxes amount if applicable
Total	The total sum of the invoice
Due Date	Determined due date of invoice
Invoice Date	Date of invoice creation ✅ **Tip** When you leave the **Invoice Date** field empty, it will be identical to the time of 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:
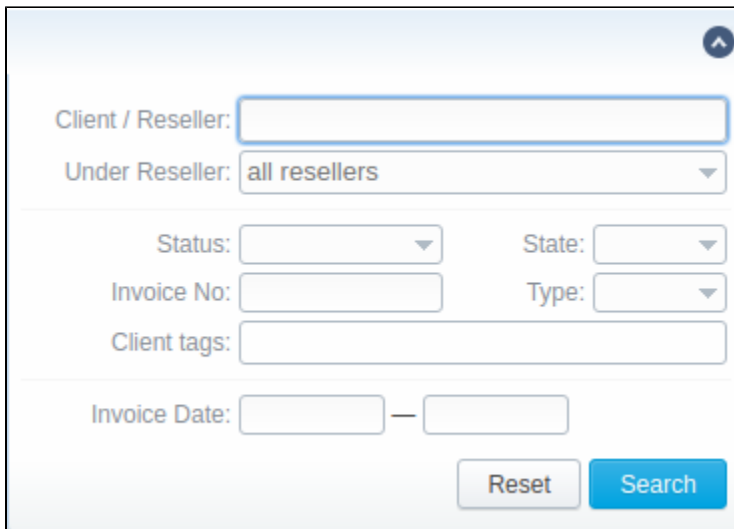
Buttons/Icon	Description

New Incoming	Allows creating a new incoming invoice in the system
New Outgoing	Allows creating a new outgoing invoice in the system
Export List	Allows exporting a list of invoices in a .csv file
Mass Edit	Allows managing the state for the selected invoices in the list
✓	Indicates **normal** state meaning that a respective invoice was paid in full. If the invoice is not fully paid, the 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 a respective invoice file in a .csv format
▤	Allows downloading an xDR file, if one is attached to invoice. If there are no attached xDR files, the icon will be grey
✖	Allows deleting a respective invoice from the list

Advanced Search

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

Screenshot: Advanced Search drop-down menu

Creating a New Invoice

Invoices are created through the **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 **client** or **reseller**
Period	Define a period of statistics that will be included in an invoice
Type	Specify the type of invoice: **outgoing** or **incoming**. By default, the **Type** is set for **incoming** for your convenience as that's usually the case for manual Invoices creation. **Outgoing** Invoices are usually automatically generated.
Currency	Select invoice currency from a drop-down menu
Invoice	A number of an invoice. The number length can't exceed 200 symbols
State	Select the state for a new invoice: • **normal** - use this state to indicate that an invoice is paid • **to send** - use this state to indicate that an invoice is paid, but not verified yet • **to verify** - use this state to indicate that an 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 of the **Included Charges** settings. ✅ **Tip** It's not possible to include a charge twice with standard settings. To **re-include an already used charge** in the invoice, you need to **combine *uncovered + covered* parameters** 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 the **Invoices Templates section**. To select a target template, select it from the drop-down menu in the **Template** field.
	Attach existing invoice	If this option is selected, the following additional fields are displayed: **Attach Invoice** - allows the user to attach additional invoice; **Attach xDR** - allows attaching additional xDR file in a .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 **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 to avoid the situation of having **invoices with an identical number** in the system.

Mass Editing

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

Screenshot: Mass Edit button
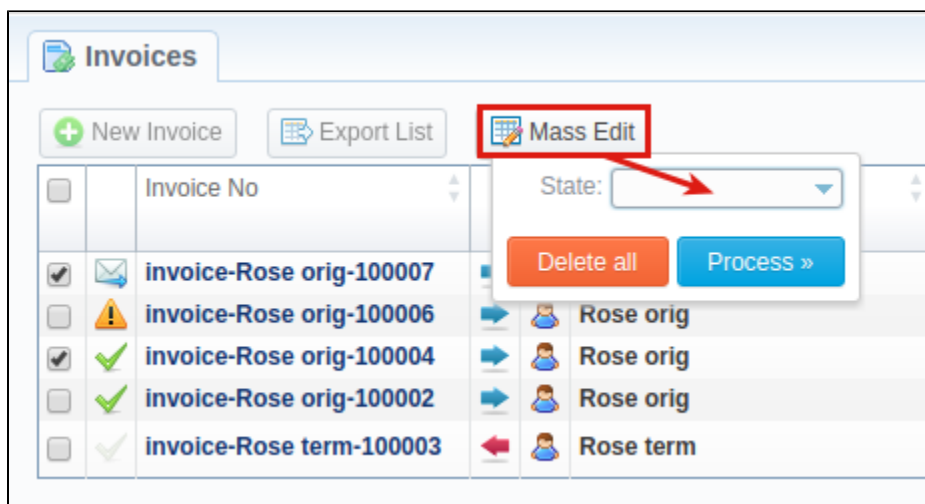
> ⚠️ **Attention**
>
> Please note:
>
> 1. While generating invoices, the system sorts packages in invoices by numbers. The names of packages could include numerical symbols. Please use numerical symbols like **001 name, 002 name, etc.** in the names of packages, and avoid names with special symbols like **%001 name, -001 name**.
> 2. The currency rate of extra charges will be taken on the **date of the charge**, **not on the date of the invoice.**

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

Screenshot: API Testbed settings

Differences in totals

You may have noticed that while creating different reports, such as a **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 *Included Calls* (*Attach xDRs list to the invoice* settings) option 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 a non-zero duration that have any cost and use packages.

Therefore, invoice totals depend on the 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 are usually based on all calls. As a result, a difference between invoice and report totals appears; even though an invoice may have completely another totals vs report data.

> ⚠️ **Attention**
>
> The invoice and report totals could differ if you made a rerating 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 information, follow this link or read about the general principals of rounding in JeraSoft Billing in this article.

Besides, take note of **currency settings**: there you may specify the 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 for an xDR report.

- **Totals precision** - the number of decimal places for total monetary values formatting.

Error rendering macro 'contentbylabel'

parameters should not be empty

Transactions

In this article

Section overview

This section allows a user to perform and trace all the financial operations regarding the client's/reseller's balances. The 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 the transactions section is a key tool for managing client's/reseller's balances, 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 non-zero 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 the 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 the form of a table of all conducted transactions with the following columns:
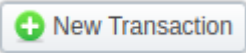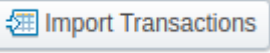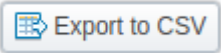
Screenshot: Transactions section main window

Column Name	Description
ID	Payment through an ID number
Payment Account	Shows a respective payment account, related to a performed payment or a respective charge type, such as *calls, products, extra charges* (each type has a visual representation in a form of a respective icon)
Client /Reseller	Displays the name of a 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
Transactio n Date	Displays a 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 a charge)

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

Button/Icon	Description
New Transaction	Allows to create a new transaction
Import Transactions	Allows to import user's transactions into the system
Export to CSV	Allows to download a list of transactions in a .csv file
(payment icon)	Indicates the type of transaction - payment
(extra charges icon)	Indicates the type of transaction - extra charges
(services charges icon)	Indicates the type of transaction - services charges
(packages fees icon)	Indicates the type of transaction - packages fees
(check icon)	Indicates that a transaction is approved
(delete icon)	Allows deleting 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 a blue downward arrow (icon) 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 a transaction has been added **manually** by a user through the **Transactions** section in **JeraSoft Billing** or the **Refill Balance** page on **JeraSoft Client Portal**. In case a transaction is automatically generated by the system, the **Author** column will be empty.

Field	Description
Client	Indicate a client you wish the section to be filtered by
Under Reseller	Filter the list of all payments for the selected Reseller's Clients. This field can take multiple values.
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 covered by the invoices to be displayed by selecting from the list: • *Covered* • *Uncovered*
Date	Specify the date in the date picker

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

Adding New Payment/Charge

To add a payment, click the **New Transaction** button. A new pop-up window will appear after that. Specify the following parameters and click the **Apply** button.

Screenshot: New transaction settings

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

Payment Account	Choose a respective account from the drop-down list of all 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 **extra charges outgoing**. It will guarantee that this charge will be visible in the invoice.
Amount	Insert an amount of the transaction, which can be positive or negative: • **positive** amount is credited to a client; • **negative** amount is debited from a client. ✅ **Tip** Transaction amounts could be specified with a 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 tax rate is based on the tax profile of the client's reseller.
Transaction Date	Indicate the actual date of the transaction in a date picker
Description	Notes for a new transaction
Status	Define the state of the transaction: • **pending** • **approved** ✅ **Tip** If you change the transaction status in the respective field from **Approved** to **Pending** when adding a payment, this payment will have to pass additional approval check by a 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 second 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) cannot be assigned to this payment account.

Exporting and Importing Transactions

By clicking the **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 clicking the **Import Transactions** button and following on-screen instructions:

Step 1: Selecting a 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 click **Process**.

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, click **Process >>** again.

Screenshot: Transactions importing process. Step 2

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, click **Process>>** to finish the importing process.

Screenshot: Transactions importing process. Step 3

Transactions

CHECK ROWS (STEP 3 OF 3)

	Identified by	Transaction Date		Client Info		Amount			Skip
		Original	Parsed	Original	Parsed	Original	Parsed	Currency	
✔	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

Balance report section is a helpful balance analysis tool aimed at taking control over your funds as painlessly as it can possibly be. It shows a full client's charges and payments history 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

Creating a 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 the required parameters for the report. To cancel any filter, click on the delete ✖ icon next to the filter. You can start a **quick search** by typing filters' names in the bar at the top of a drop-down menu with filters.	
	Period	Specify the time interval for the report and a timezone. Please note that the **Period** field is mandatory.
	Report Basis	Select a balance mode to show a respective set of data • **Accrual** - *this mode is compiled by invoices and payments, it shows fixed balance* • **Cash** - *this 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 the following accessible options to group 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 the plus ◳ icon next to **Columns** and select the required columns to add them to the Output information block. Also, you can cancel any chosen item.

Accessible columns in the report
The following columns are to add in the report:
Client, Client ID, Payment Account, Document Icon, Document Info, Opening Balance (report), Debit (report), Credit (report), Closing Balance (report), Type, NO, Notes, Date, Credit (client), Debit (client), Opening Balance (client), Closing Balance (client), Client Currency.

Document	
Client	Name of the **client/reseller/calling card/call shop**, to which that current operation is assigned
Client ID	A 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 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	
Opening Balance (report)	Start client's balance prior to a respective operation, displayed in the **report currency**
Closing Balance (report)	Final client's balance after a respective operation, displayed in the **report currency**
Debit (report)	Operation sum that has positive income **(incoming payment/invoice)**, displayed in the **report currency**
Credit (report)	Operation sum that has negative income **(outgoing payment/invoice)**, displayed in the **report currency**
Opening Balance (client)	Start client's balance prior to a respective operation, displayed in the **client currency**
Closing Balance (client)	Final client's balance after a respective operation, displayed in the **client currency**
Debit (client)	Operation sum that has positive income **(incoming payment/invoice)**, displayed in the **client currency**
Credit (client)	Operation sum that has negative income **(outgoing payment/invoice)**, displayed in the **client currency**
Client Currency	Currency indicated in a 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 type of table view: ***Plain*** - a simple table view ***Grouped*** - a table view with grouped data and a possibility to collapse it ⚠ **Attention** Please note that the **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. 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

Balance Report

						Opening Balance (report)	Debit (report)	Credit (report)	Closing Balance (report)	Client Currency	Opening Balance (client)	Debit (client)	Credit (client)	Closing Balance (client)
Month	Client	Payment Account	Client ID		Document Info									
11/2019						0.00 USD		1 195.98 USD	-1 195.98 USD		0.0000			0.0000
11/2019	Customer A	General	12		Payment 2	0.0000 USD		1 000.0000 USD	-1 000.0000 USD	USD	0.0000 USD		1 000.0000 USD	-1 000.0000 USD
11/2019	Vendor B	General	17		Payment 3	-1 000.0000 USD		100.0000 USD	-1 100.0000 USD	USD	-1 000.0000 USD		100.0000 USD	-1 100.0000 USD
11/2019	Customer C	General	14		Payment 5	-1 100.0000 USD		95.9800 USD	-1 195.9800 USD	USD	-1 100.0000 USD		95.9800 USD	-1 195.9800 USD

About   0.2598s

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🔴 **Warning**

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

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

Simple scheme: how to generate a balance report

To create a simple report you need to:

- select target parameters for the report in the **Filters** menu;
- enter the interval and specify a timezone;
- select the ***Mode*** and ***Client Type***;
- specify parameters in the ***Group by*** field; for example, **Client ID**;
- choose columns in the **Output** form; for example, ***Client, Payment Account, Document Icon, Document Info, Opening Balance, Debit, Credit, Closing Balance, Date***;
- specify the ***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 icons.
> - 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 sorted by values specified in the **Group by** field.

Creating a Query Template

To create a template for reports and save specified parameters, click on the **Save Query** button. A pop-up window with settings will appear, and you will 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 generate reports automatically at the appropriate time and send the results to the list of emails. > ⚠️ **Attention** > > Please note that this tool is not available for the **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 generate a report automatically. It could be several times, for example, *10:00, 12:00, 18:00.*
	Days of Week	Indicate days of the week to generate a report automatically. For example, you can run a report only on Mondays or each day of the week.
Report Query	Here you need to specify the filters that will be used for generating a correct report and choose the output type to view the report.	

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

Export Generated Report

You can export data to **XLSx** file, which contains currently presented data, by clicking **Export to XLSx** , respectively.

Screenshot: Balance Report section

⚠️ **Attention**

- You can check an ***actual date interval*** of the report by clicking the **Info** ℹ️ 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 Balance Report in **Excel XLSx** format, values will be displayed in the report currency. The client and transaction currencies will not be shown in the exported file.

Error rendering macro 'contentbylabel'

parameters should not be empty

Resellers

In this article

- [Section overview](#)
- [Advanced Search](#)
- [Adding a New Reseller](#)
- [Adding a New Manager](#)
- [Reseller Removal](#)
- [Custom Fields](#)
- [Rates Notifications](#)
- [Autocharge Settings](#)
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Section overview

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

Screenshot: Resellers section

Column name	Description
ID	Reseller's/Manager's identification number
Name	Name of a reseller/manager
Available Balance	Reseller's available balance (live balance + credit)
Clients	The total amount of a respective reseller's/manager's clients
Cards	The 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:
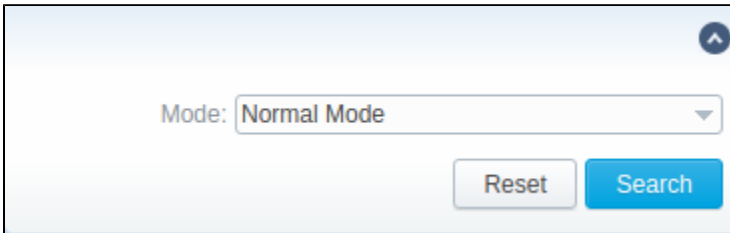
Button/Icon	Description
	Allows creating a new reseller
	Allows creating a new manager
	Allows assigning an origination rate table to a respective reseller
	Allows assigning a termination rate table to a respective reseller
	Allows viewing a list of a following reseller's/manager's users

	Allows viewing history of changes for a respective reseller/manager in the **Audit log section**
	Allows viewing reseller's balance operations in the **Transactions section**
	Allows viewing a list of reseller's/manager's clients in the **Clients section**
	Allows viewing a list of reseller's/manager's calling cards in the **Calling Cards section**
	Allows viewing a list of reseller's/manager's call shops for a current reseller/manager in the **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 a blue downward arrow icon, a drop-down menu with the following structure is displayed:

Screenshot: Advanced Search drop-down menu
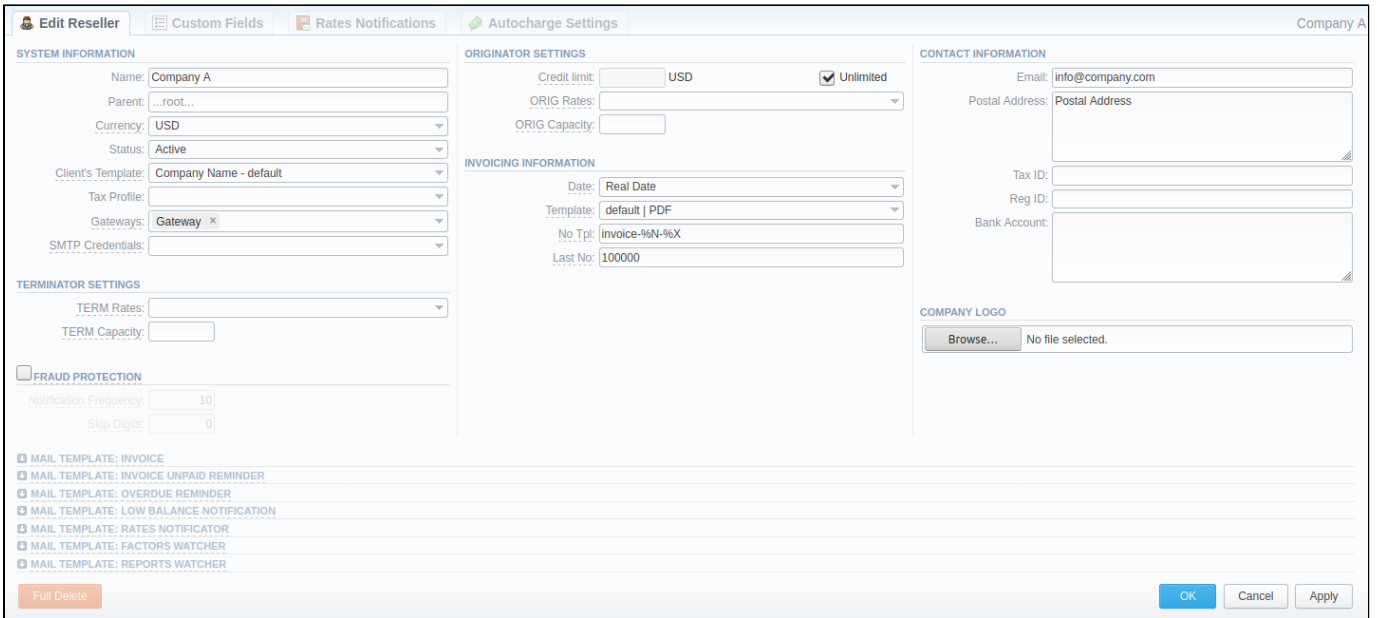
Field	Description
Mode	Select a mode for the resellers' display: • **Normal Mode** - only resellers with Active status will be displayed • **Archive Mode** - all resellers regardless of the status will be displayed

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

Adding a New Reseller

To add a company, you need to:

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

Screenshot: Adding a 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, the field value is set to *root*
• *Currency*	Select a preferred currency for rates and invoices from the drop-down list of all available ones (see the **Currencies section**)

• *Status*	Define the status of a reseller:
	  • *Active*
	  • *Deleted*

• *Client's Template*	Select a template that will be used for all clients belonging to this reseller or manager by default (see the **Clients Template section**)
• *Tax Profile*	Indicate a tax profile that will be used for this reseller and reflected in invoices (refers to the **Taxes Profiles section**). • *SureTax* and *Compliance* are tax calculation services, which allow managing your compliance with tax law. These profiles are used for further calculation in invoices. To get more details, check out the US Taxation article. ⚠️ **Attention** For proper usage of SureTax and Compliance, *Invoice Number* should contain only Latin and numeric characters. Max length is 40 symbols. *Dst* and *Src Numbers* should be in the *NPANXXNNNN* (10 digits) format.
• *Gateways*	Select gateway(s) for this reseller
• *SMTP Credentials*	Select SMTP Credentials for this Reseller. Credentials are managed in the Data Sources section
Terminator Settings	Reseller's billing settings for outgoing calls
• *TERM Rates*	Rates for outgoing events from customers under a 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 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 to exact email, go to the **Configuration** tab of the **Events Log** section, and add a new rule with the indication of target email and *aaa.fraud* value in the *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 the 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 the same number.
Origination Settings	Current Reseller's billing settings for incoming calls	
	• *Unlimited* checkbox	Here you can set a specific payment mode for a client. Unlimited mode means that a client will have unlimited credit. Otherwise, the client's Balance + Credit value will be checked on RADIUS or SIP authorization. When this field is checked, the Credit limit field becomes unavailable.
	• *Credit limit*	The additional field next to the *Unlimited* checkbox. User can indicate an amount of reseller's credit
	• *ORIG Rates*	Specify rates for incoming events from customers under a 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 the system sets an invoicing date: • *Real date* – sets an invoicing date to actual invoicing date • *Last day* – sets an invoicing date to date of last day of invoicing period
	• *Template*	Select an invoice template that will be assigned to a reseller
	• *No Tpl*	Allows to define a default format of invoice's name
	• *Last No*	Define the last used invoice number
Contact Information	Some additional information	
	• *Email*	Company's email (it is required to specify an email to receive notifications). Use only Latin characters. This field is mandatory

	• *Posta l Addr ess*	Company's postal address	
	• *Tax ID*	An ID of the tax-paying entity	
	• *Reg ID*	Company's registration ID	
	• *Bank Acco unt*	Company's bank account info	
Company Logo		Here you can add a file with a company's logo. To delete the company logo, open the edit form of a respective Reseller with a 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**

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

⚠️ **Attention**

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

Adding a New Manager

To add a manager, click the **New Manager** button. After specifying the required fields, click **OK**.

Screenshot: Adding a new manager

Information block	Fields Description	
System Information	General information about a Manager	
	• **Name**	Here you can specify the name of a manager. This field is mandatory.
	• **Parent**	Select a parent for a manager
	• **Status**	Select the current status of a manager: • **Active** • **Deleted**
Contact Information	Some additional information	
	• **Email**	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 the Reseller's/Manager's profile editing form.

Screenshot: Editing reseller's status

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

Custom Fields

- **Custom Fields** are used as custom variables that will be represented as readable text in invoice templates. A Custom Field allows adding information about a client.
- **Custom Package Fields** are also used as custom variables that allow adding information about a package.

To add a new field, follow these steps:

1. Click the **Add Custom Field** button.
2. Specify the **Field Key** and **Title** fields for a 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 to the **VoIP Phone** field in the **Client's settings/Package settings** > **Custom Fields** tab.
4. Create an invoice template and assign it to a target reseller. Then, the **Clients Custom Fields** and **Package Custom Fields** tables will appear in the **Invoice Template** settings. You simply need to add those tables to the invoice template.
5. Finally, you can generate an invoice.

Screenshot: Custom Fields

Rates Notifications

Rates Notification settings in the **Resellers** profile allow creating a **default rate notification** for the clients that belong to a target reseller.

Screenshot: Rates Notifications

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

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

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

> ⓘ Note that the first selected column will be the one used for sorting the rates list.

Column Name	Description
Code / Code Name	Code or Code Name of a respective rate
Effective Date	Date, on which a rate to be applied
Rate	Price
Min Volume	The minimum volume of chargeable events
Interval	Chargeable interval

Grace Volume	Free of charge interval
Setup Fee	Interval of a 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 the current rate's status changed in comparison to a previous one (unchanged, increased, decreased)
Prev Diff (export)	Shows how the current rate differs from a previous one after export
Prev Diff Status (export)	Rate's changes after the last export. Shows the status of how the current rate differs from a previous one. The rate will have an *unchanged* status if the *Effective date* 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 that are assigned to a respective rate
Policy	Indicated policy of the rate
Status	Define a current rate status

Autocharge Settings

Autocharge Settings in the **Resellers** profile allow configuring the settings for Authorize.net or USAePay payment gateways. These settings will be true for all the clients under the respective Reseller.

Screenshot: Autocharge Settings

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

Field	Description
Authorize.Net	
Login	API login
Transaction Key	API transaction key
Gateway Currency	A currency declared by the Payment Gateway
System Currency	Default JeraSoft Billing system currency
Payment Account	Payment Account name
USAePay	
API Key	API key
API PIN	API PIN to the API key
System Currency	Default JeraSoft Billing system currency
Payment Account	Payment Account name

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 an invoice to the customer
Mail Template: Invoice Unpaid Reminder	Used when sending a payment notification to a customer (sending notification on *"Notify Days (before)"*)
Mail Template: Overdue Reminder	Used when sending a payment notification to a customer (sending notification on *"Notify Days (after)"*)
Mail Template: Low Balance Notification	Used when sending a low balance notification to a customer ✅ **Tip** You can **add a rounding rule** for a client's balance during 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 the ***Totals Precision*** field of the **Currencies** section.

Mail Template: Rates Notificator	Used when sending a rate changes notification to a customer
Mail Template: Factors Watcher	Used when sending a notification to a customer once a Preset by Factors Watcher has been added
Mail Template: Reports Watcher	Used when sending reports by email

All mail templates have the following structure:

Screenshot: Reseller/Mail Template: Factors Watcher form


```
⊞ MAIL TEMPLATE: FACTORS WATCHER
                            From:  "${company['name']}" <${company['c_email']}>
                            BCC:
                         Subject:  Factors watcher notification ${company['name']}
Direction ${direction} blocked by: ${reason}

--
Autogenerated by JeraSoft VCS
```

Field	Description
From	Specify a name and email of a company
BCC	Specify who will receive a blind copy of an email
Subject	Indicate an 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**).
• *Values {values}*	Actual value, which was exceeding the one specified in Factors Watcher settings (for example, **calls_total = 1234**).

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

Configuration Syntax

General Configuration Syntax Concerning Clients' Data

Templates Configuration Syntax	Description
${client['status']}	Client's status: • ***Active*** • ***Deleted***
${client['name']}	Client's name
${client['balance']}	Client's live balance

${client['balance_accountant']}	Client's fixed balance
${client['credit']}	Client's available credit
${client['c_company']}	Client's official company name
${client['c_address']}	Post address of a client's company
${client['c_email']}	Client's email
${client['locale']}	Client's location
${client['currencies_id']}	Currency ID, used by a client
${client['tz']}	Timezone 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's/Reseller's 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 postal address
${company['c_email']}	Email of a company
${company['locale']}	Company's location
${company['currencies_id']}	Company's currency ID
${company['tz']}	Company's timezone
${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 timezone

${invoice['state']}	Invoice state
${invoice['name']}	Invoiced client's name
${client['currency']}	Client'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']}	Client's currency
${client['alert_threshold']}	Notification for a client regarding reaching a balance limit
${client['alert_athreshold']}	Notification for an administrator regarding 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 a rate table was edited last
${date}	Date when the notification was sent

Configuration Syntax for Mail Template: Reports Watcher

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

✅ **Tip**

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

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Subscriptions

In this article

- Section overview
- Advanced Search
- Assigning a New Package
- Editing a Subscription

Section overview

This section is designed to provide a wide variety of functions to control and manage subscriptions. First and foremost, in this section, a user can assign a relevant package to a respective client or client's account, edit and cancel it, etc. Moreover, there is detailed information regarding all the limits that have been used over a set period. The section is presented in the form of a table with the following columns:

Screenshot: Subscriptions list

Column	Description
ID	Subscription identification number
Client	Name of a client (and account, if specified), to whom a package is assigned
Package	Name of an assigned package
Qty	Quantity of the assigned packages
Limits	Shows if a respective package has some volume limits and time or money left • On the left side of the bar, it shows the ***service***, ***destinations***, ***code***, or ***code names***. • On the right side of the bar, it shows a ***specified limit*** and the amount left.
Current Period	Date of package activation for a respective client/account End date of a package period (a package period is set in Packages Period Settings)
Subscription Period	Effective start and stop date of the subscription
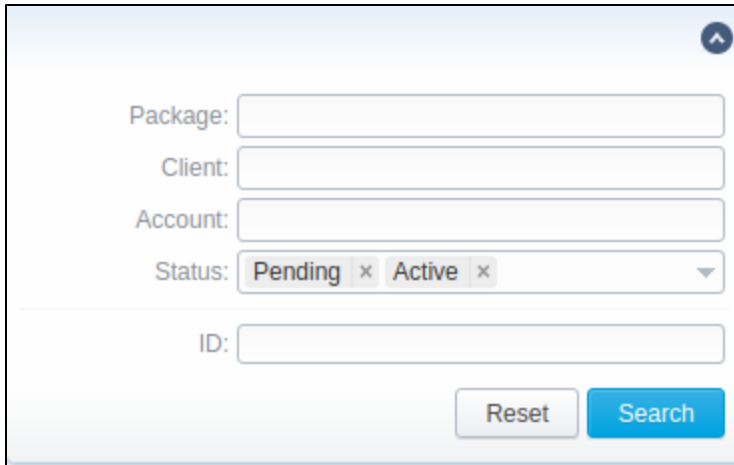
Button/Icon	Description
Assign Package	Allows assigning a package to a corresponding client/account
	Shows the full list of packages that were assigned to this client/account
? Unknown Attachment	Marks a package that was successfully activated and will renew itself due to the package settings
? Unknown Attachment	Marks a package that is new for a current user and was not activated yet
? Unknown Attachment	Marks a package that is in the archive
	Allows editing a client's subscription
	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 a subscription completely

Advanced Search

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

Screenshot: Advanced Search drop-down menu

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

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

Assigning a New Package

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

Screenshot: Subscriptions add form

Information block	Field	Description
General Settings	*Package*	Name of an assigned package
	Client	Name of a client, to whom a package is assigned
	Account	Name of an account, to whom a package is assigned
	Quantity	Number of packages to be assigned. You can assign multiple packages ▪ as a single subscription *(will create one line in a list of assigned Subscriptions with respective Qty value)* or ▪ as multiple subscriptions (*will create several lines respectively in a list of assigned Subscriptions for each individual one to manage separately*)
Subscription Duration	*Start Date*	Package limits and discounts are only effective after a specified date
	Cancel Date	Package limits and discounts are disabled after a specified date
Special Processing	*First Charge*	Determine when the first charge should be created: • **Before period start** • **On period start**
	Activate in the past checkbox	If checked, and the **Start Date** field value is in the past, a subscription will be activated on the specified date
Override Package Fees	*Fee Type*	Select the type of fee. There are two possible types: • **Activation –** a fee that will be charged upon subscription activation • **Subscription –** a fee that will be charged upon subscription renewal
	Fee Name	Specify the name of a fee. This field is obligatory
	Fee Note	Here you may enter additional information about a fee
	Rate, (currency)	Indicate the price for a fee. Price is indicated in the package currency. This price will overwrite the fee of a Package

---

🛑 **Warning**

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

To delete the package completely, you need to do the following:
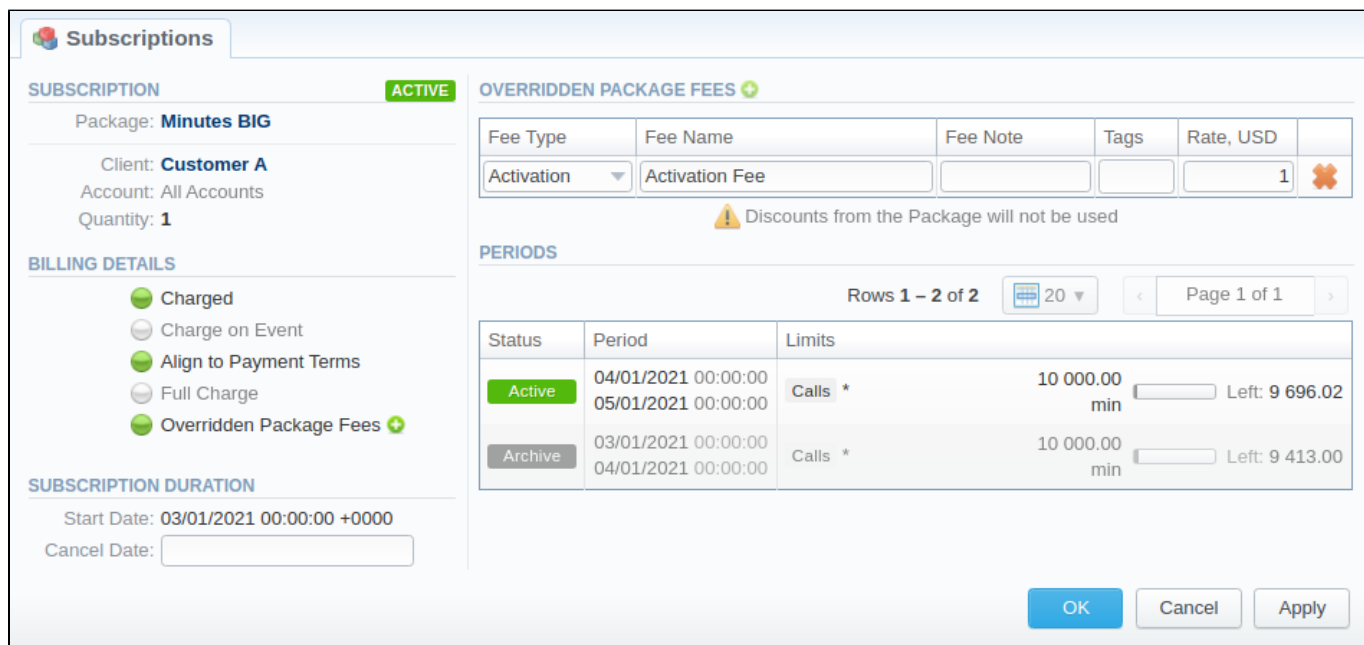
- click the ⬛ icon opposite a respective package on the section list;
- filter the list of packages by the **Archive** status;
- find a respective package and click the icon to delete it entirely from the system.

Editing a Subscription

When clicking on the edit ✏️ icon, detailed information on a subscription is displayed. In the **Billing Details** & **Overridden Package Fees** data blocks, a user can view and manage general info regarding the subscription charges. Also, a user can change the subscription **Cancel Date** in a respective field of the **Subscription Duration** block.

To make it easier for a user to keep records of package limits, the **Periods** information block provides a detailed view of package limits for each activation period.

Screenshot: Subscription edit form

⚠️ **Attention**

When you change the **name of the package** in the **Retail > Packages**, it will be automatically changed in the **Management > Subscriptions** section as well, even if this package is already assigned. As a result, in the **Invoices** and **Transactions** sections, an **old** name of the package will be specified.

We do not recommend editing the name of an already assigned package in the *Retail > Packages*.

Traffic Processing

In this article

Section overview

This section allows a user to configure and perform number translations. Here you can add and remove rules for traffic processing. The section includes 2 tabs: **Traffic Processing** and **Orig/Term Rules**:

Screenshot: *Traffic Processing section*

Column Name	Description
ID	Rule's identification number
Stage	Stage of a rule (the rules are grouped by following stages: *Initial*, *After Client*, *After Rate*, *After Routing*)
Filters	Depending on rule parameters, a table can display the following scope of details: • Name of **service**, the rule is created for • **Gateway**, specified in a rule • **Tag(s)**, indicated in a rule • **Client's name**, specified in a rule • **Client's account**, defined in a rule • Indicated **Code** • **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, a table can display the following scope of details: • **Replacement** for a matched rule for **Src number** (Src) • **Replacement** for a matched rule for **Dst number** (Dst) • **List of tags** added during traffic processing rule execution • **Deny** plank for blocking rules • **LNP/MNP** db specification with LNP direction and *Revert LNP* indication (if enabled) • Any blocked termination Clients/Accounts from the **Routing Blocks** section
Notes / Expiry Date / Created By	Depending on rule parameters, a table can display the following scope of details: • **Notes**, specified in a rule • Rule's **Expiry date** • **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

⊕ Add Rule	Allows creating a new traffic processing rule
⊞ Import	Allows importing a **.csv** file with a traffic processing rule(s)
⊡ Export	Allows exporting a current list of rules in a **.csv** format
	Indicates that a rule origin is **origination**
	Indicates that a rule origin is **termination**
	Allows editing existing rules in a section list
	Allows deleting a 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 a blue downward arrow ⌄ icon, a drop-down menu with the following structure is displayed:

Screenshot: Advanced Search drop-down menu

Field	
Type:	
Origin:	
Service:	
Gateway:	
Tag:	
Src Prefix:	
Dst Prefix:	
Client:	
Account:	
Code:	
Mode:	
LNP/MNP:	

Reset   Search

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

Creating a New Traffic Processing Rule

To perform a number translation, click the **Add Rule** button and fill in the following fields:

Screenshot: New Traffic Processing rule

Information block	Field	Description
General	***Stage***	Specifies **at what stage** a current translation rule will be applied: • ***Initial*** - execute this rule before a Client is identified • ***After Client*** - execute this rule after client identification but before rate identification • ***After Rate*** - execute this rule after rate identification but before routing • ***After Routing*** - execute this rule after routing
	Order	Sets rules ordering that works within the same rule ***Stage***. ⚠️ **Attention** Note that this field indicates the order of rules execution only within a specified stage. It means that a rule with the ***Initial*** stage and order ***1*** will be executed before any other rule of the same stage with order ***2.*** However, such rule will be executed prior to a rule with the ***After Rate*** stage and order ***0***, even though the latter has a higher order, due to the fact that ***Initial*** is the **1st** on the stages list.
	Origin	Specify the event origin: • ***Origination*** • ***Termination***
	Company	Specify a Reseller for this rule to be executed under. Default - *all resellers*
	Notes	Specify additional information about a rule
	Expiry Date	Define a date when this rule will expire and will be removed from the system
	Src Deck	Identify a code deck that will be used for **Src** codes or code names filtering
	Dst Deck	Identify a code deck that will be used for **Dst** codes or code names filtering
Filters		Select the required parameters for a traffic processing rule on the **Filters** menu. 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 the **Filters** menu. ✅ **Tip** If, for instance, the ***Client*** filter is empty, it means that this rule will implicate all clients.

General	
Service ID	Select a target from the drop-down list of all services, presented in the Services section of your JeraSoft Billing
Gateway	Select a respective VoIP gateway, for which rule is applied, from the drop-down list
Tags (Any)	A rule will work if an event has at least one of the tags, specified in this field
Tags (All)	A rule will work if an event has all tags, specified in this field
Tags (Not)	A rule will work if an 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.
Src Prefixes (Any)	A rule will work if an 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 an event has no Src prefixes (e.g., *010, 810*), specified in this field
Src Prefixes Names (Any)	A rule will work if an 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 an 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, by which a number will be analyzed.
Dst Prefixes (Any)	A rule will work if an 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 an event has no Dst prefixes (e.g., *010, 810*), specified in this field
Dst Prefixes Names (Any)	A rule will work if an 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 an 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 the **Client** or **Account** field.
	Account	Specify a respective account
	Dst Code	Specify a destination code
	Dst Code Name	Specify a destination code name
	Src Code	Specify a source code
	Src Code Name	Specify a source code name
Parties ID Translations	**Type**	Define a type of translation: • **Src** • **Dst**
	Order	Specify the order of translation ✅ **Tip** If you need to do multiple translations for the same call flow, it's better to create them all in one rule than to create multiple rules for the same type (time) of translations. That's where ordering would be useful.
	Match	In this field, you may indicate POSIX regular expressions syntax (**see best practice example below**), by which a number will be analyzed. If an expression matches the number, the translation will occur in respective settings in the **Replace** field.
	Replace	Replacement for a matched rule.
Actions	**Mode**	Defines an action that will be executed if a traffic rule matches: • **Allow** - allow a current event to proceed. Stop further traffic processing rules within this type of rule; • **Allow and Continue** - allow a current event to proceed. Search for the next traffic rule; • **Deny** - deny a current event.
	Add Tags	Here you can add tags that will be added for events matching this rule
	Set Service	Allows to change a specified service to another one while processing them
LNP / Jurisdiction	**LNP /MNP**	Define a provider for the LNP/MNP service, which will be dipped for translation ⚠️ **Attention** In the VCS 3.17.0, a new feature regarding TJA database has been added. Starting from this version, while creating a new rule, in the **LNP/MNP** field, a user can select either **tja.ee (Routing Number)** or **tja.ee (Owner)**. The difference is as follows: • **tja.ee (Routing Number)** - if a traffic processing rule executes, **372+Original Number** will be substituted by **372+Routing Number**, specified in the TJA database. • **tja.ee (Owner)** - if a traffic processing rule executes, **372+Original number** will remain unchanged. Instead, a **Dynamic Tag** indicating an **owner** of the number will be added to the call. Please find more about TJA database here.

	Revert LNP	Allows returning original numbers to vendors after routing: • **Enabled** • **Disabled**
	LNP Party	Define, which **Party ID(s) (Src, Dst, or both)** will be used for LNP dipping. To enable this feature, you need to specify the **LNP/MNP** field.
	US NANP	Define if NANP processing will be used for LNP dipping: • **Enabled** • **Disabled**
Routing Blocks	**Block Clients**	Specify, which termination Clients to block for the originator, specified in the **Filters** block
	Block Accounts	Specify, which termination Accounts to block for the originator, specified in the **Filters** block

> ✅ **Best Practice Example**
>
> To get a better understanding of how the **Src/Dst Match** and **Src/Dst Replace** fields work, let's consider the following example:
>
> If our Src/Dst number is **123#456**, the **Src/Dst Match** field is **^123#(.*)$** and the **Src/Dst Replace** field is **789\1**, the resulting number will be **789456**. That's because the **^123#(.*)$** expression tells the system that from **123#456** number it must remember only the **(.*)** part, which stands for **456.** Now, in the **Src/Dst Replace** field we have **789\1,** which means that instead of **123#456**, it must insert **789** + add **\1** that equals **(.*).** 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 the **Src/Dst Replace** field you can insert random number with fixed digit length using the **$rnd(xxx-yyy)$** 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

A user can import a **.csv** file containing a list of traffic processing rules. To import the file, click the **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 a file for import**	Select a .csv file to import a traffic processing rule from
	Fields Delimiter	Specify a delimiter symbol here. The possible options are: • **Autodetect** • **,** • **;** • **Tab** By default, the **Autodetect** option is selected.

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 the new ones. By default, the **Keep previous data** option is selected.

When all fields are filled in, click **Process>>**. You will be transferred to the second step to indicate the default values in respective fields and specify rows and columns. To finish importing, click **Process>>** again.

Rules Export

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

Screenshot: Rules export
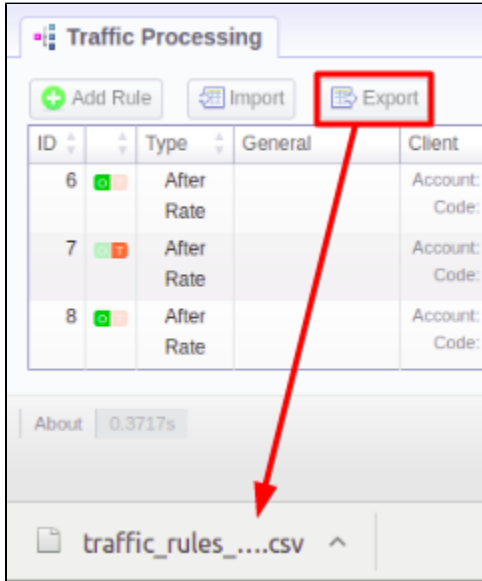
Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Rates Section

This chapter has everything to do with **rates management**, and provides information regarding the **rates analysis** and **rates generator** tools of **the JeraSoft Billing**, as well as **agreements** upon rates notifications.
For more details, please check the related sections of our Guide:

- Rate Tables
- Rates
- Special Rates
- Rates Analysis
- Rates Generator
- Agreements
- Swap Deals

Rate Tables

In this article

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

Section overview

A Rate Table is one of the three core elements of the entire JeraSoft Billing system. Its purpose is to contain determined rates (prices) for each code (destination) on the list. This section allows you to manage your rate tables. It is presented in the 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	The currency of a rate table
Src Code Deck	Name of a source code deck, where names for Src codes are taken from
Dst Code Deck	Name of a destination code deck that contains Dst code names
Reseller	Name of a 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
	Allows managing rates within a specified rate table
	Allows managing special rates within a specified rate table
	If active (in color), allows running a rates generator tool on a specified rate table
	Forces rates notification to the clients
	Prompts to the import window for the respective Rate Table
	Prompts to the Import History tab for the selected Rate Table
	Allows deleting a rate table 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 a blue downward arrow icon, the following drop-down menu is displayed:

Screenshot: Advanced Search drop-down menu

Adding New Rate Table

To add a new rate table, click the **New Rate Table** button and define the respective values in a pop-up window:

Field	Description
Name	The title of a respective rate table
Reseller	The Reseller, to whom this rate table belongs
Parent Rate Table	The rate 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 a **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* (that includes all standard rates) in the *Child Rate Table* settings. And assign this *Child Rate Table* to the Client.
Src Code Deck	Indicate a code deck that contains source codes and code names
Dst Code Deck	The deck that consists of a list of destination codes and code names
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 the 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 the **Rates Analysis** section. You will be able to change these settings later by using the **Parameters** tab. After everything is entered, click **OK**. A new rate table will appear on the list.

Configuring 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 the following tabs:

Tab	Description
Parameters	Here you can change some parameters that you've specified during rate table creation
Simulate	Call simulation tool
Import History	Here you can view the history of importing from the .*csv* or .*xls* files

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Automatic Email Import

In this article

- [Automatic Email Import](#)
- [Creating Import Template](#)

Automatic Email Import

This option allows a user to import rate tables from emails automatically. It means that the rate table data will be automatically updated by the data taken from a 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 the fields.

Screenshot: Automatic Email Import checkbox

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

Creating Import Template

> ⚠️ **Attention**
>
> Please note that **Automatic Email Import** will not work without a specified **Import Template**

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

Second, during rate table import, on the second step of the importing process, you need to specify a template name and click the **Save Template** button in the bottom left corner. After the importing process will be finished, a new rate table template will be added to the templates list in a respective field.

Screenshot: Rates importing process. Step 2

Import

STEP 1: FILE SETTINGS

Rate Table: RT 0 ORIG

Import Template:

Selected File: **rt.csv**
Choose a file or drag it here

STEP 2: IMPORT SETTINGS

rt.csv

"Rates" sheet type

code	code name	effective from	rate	min length	max length	billing increment
301	Code 301	24-07-1996	1.23	2	9	1/1/1
302	Code 302	24-07-1995	2.23	3	10	1/1/2
303	Code 303	24-07-1994	3.23	4	11	1/1/3
304	Code 304	24-07-1993	4.23	5	12	1/1/4
			+5 ⇧ 9771 rows skipped +5 ⇩			
10073	Code 10073	24-07-100	9773.23	9774	9781	1/1/9773
10074	Code 10074	24-07-99	9774.23	9775	9782	1/1/9774
10075	Code 10075	24-07-98	9775.23	9776	9783	1/1/9775
10076	Code 10076	24-07-97	9776.23	9777	9784	1/1/9776
10077	Code 10077	24-07-96	9777.23	9778	9785	1/1/9777

CODE RULES

Code	Status	Effective Date		Time Profile	Min	Int	Extra	
`	Active	in	days from the midnight	all time	1	1		regular

Save Template

Import

ⓘ **Info**

If your vendor sends you zipped files, the system is able to unzip them during import.

Simulate

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

Screenshot: Simulate tab

				RT 0 ORIG [USD]
✎ Parameters	▶ Simulate	⊕ Import History		

Dst Party ID: _____

Src Party ID: _____

Date: 2019-01-04 10:09:32+0000

Tags: _____

Service: Calls

Volume: 60 sec

ⓘ Please select parameters for report

[Process]

Field	Description
Dst Party ID	Specify Dst number of the event
Src Party ID	Specify Src 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, (sec)	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 a simulated event are presented in a table with the following structure:

Screenshot: Event simulating results

✎ Parameters	▶ Simulate	⊕ Import History						RT 0 ORIG [USD]

Dst Party ID: 1

Src Party ID: 65432

Date: 2019-01-04 10:09:32+0000

Tags: _____

Service: Calls

Volume: 60 sec

[Process]

✓ The simulation with specified parameters proceeded ✕

	Code	Cost	Effective Date	Rate	Tag	Parameters	Billed Volume
ⓘ	1 USA	0.1100 USD	12/12/2018 10:30:38 +0000	0.1100	@	1 / 1 / 0	60 sec

Column	Description
Info ⓘ icon	Hover over this icon to view additional parameters (**setup fee**, **time profile**)
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 the **Services** section. For instance, for call service, an indicated rate may be a price for **1 second, 1 minute, 1 hour,** or **1 day**.
Tag	Tags of an event (@ by default).
Parameters	Information of minimal call time that will be tariffed, tariffication interval, and time interval, below which the event is not tariffed (grace volume), separated by "/".

Billed Time	Billed time (minimal time of billing increment)

Parameters

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

Screenshot: Parameters tab

Parameters	Simulate	Import History		RT 0 ORIG [USD]

GENERAL SETTINGS

		AUTOMATIC EMAIL IMPORT	
Name:	RT 0 ORIG	Data Source:	mail
Reseller:	Company Name	Sender Match:	
Parent Rate Table:		Subject Match:	
Src Code Deck:		Import Template:	template
Dst Code Deck:	DEFAULT		
Currency:	USD	**RATES GENERATION**	
	☐ Rates Include Taxes	Rates Generator:	
Description:		Agreement:	
		☐ Automatic generation	

TABLE INFORMATION

Created on: 10/24/2018 14:03:31 +0000
Last Edited on: 12/28/2018 14:45:01 +0000

OK   Cancel   Apply

Information block	Fields description		
General Settings	General rate table information		
	• **Name**	Name of the rate table	
	• **Reseller**	Reseller, to whom this rate table belongs	
	• **Src Code Deck**	Indicate a code deck that contains source codes and code names	
	• **Dst Code Deck**	The deck that consists of a list of destination codes and code names	
	• **Currency**	Currency, specified for this rate table	
	• **Rates Include Taxes** checkbox	If the field is checked, taxes are already included in the rate value. Otherwise, taxes will be added to a 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 a current rate table (see the Automatic Email Import article)		
Rates Generation	• **Rates Generator**	Select a Rates Generator for generating rates to this particular rate table	
	• **Agreement**	Specify an Agreement to be used during rates generation	
	• **Automatic Generation** checkbox	If enabled, lets the current rate table to be updated automatically due to being bound to the previously selected Rates Generator	
Table Information	Information concerning the date of the rate table creation and last editing		

Rates

In this article

Section Overview

This tab is a cornerstone of the whole section, containing the list of all codes with indication of personal parameters. The tab allows adding and managing rates, as well as their mass editing, importing, and exporting.

Screenshot: Rates window

Rate Table	Src Code	Code	Code Name		Rate		Effective Date	End Date	Tag	Service	Notes	SF	Min	Int	Time Profile		
ORIG RT - Customer A		1	USA	R	—	0.0065 USD	2020-03-23 00:00:00+0000		@	Calls		0	1	1	all time		
ORIG RT - Customer A		1143	USA	R	—	0.0065 USD	2020-03-23 00:00:00+0000		@	Calls		0	1	1	all time		
ORIG RT - Customer A		1204	CANADA MANITOBA PROPER	R	—	0.0065 USD	2020-03-23 00:00:00+0000		@	Calls		0	1	1	all time		
ORIG RT - Customer A		1226	CANADA ONTARIO PROPER	R	—	0.0065 USD	2020-03-23 00:00:00+0000		@	Calls		0	1	1	all time		
ORIG RT - Customer A		1242	BAHAMAS	R	—	0.1741 USD	2020-03-23 00:00:00+0000		@	Calls		0	1	1	all time		
ORIG RT - Customer A		1246	BARBADOS	R	—	0.2184 USD	2020-03-23 00:00:00+0000		@	Calls		0	1	1	all time		
ORIG RT - Customer A		1250	CANADA BRITISH COLUMBIA PROPER	R	—	0.0065 USD	2020-03-23 00:00:00+0000		@	Calls		0	1	1	all time		

Column Name	Description
Rate Table	Rate table of a rate
Src Code	Source code of a rate
Code	Destination code of a rate
Code Name	Destination code name of a rate
Policy	Policy of a rate (A for **additive**, R for **regular**)
Rate	Price per unit of service
Effective Date	Date when a rate becomes active
End Date	Date when a rate expires
Tag	Tag of a rate
Service	Service of a rate
Notes	Additional information about a rate
SF	Setup fee of a rate
Min	Minimal billed volume
Int	Billed interval
Time Profile	Time profile of a rate

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

Button/Icon	Description
Add Rate	Allows adding a new rate to the system

	Allows editing a rate
	⚠️ **Attention** Please note that a rate cannot be edited if it was created along with a special rate. For editing such a rate, go to the **Special Rates** section and edit a respective special rate.
✖️	Allows deleting a rate from the system

Adding New Rate

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

Field	Description
Rate Table	Indicate a rate table for a new rate
Code	Indicate a destination code for a new rate ⓘ The field accepts multiple values, delimited by a comma, or ranges.
Code Name	Name of a destination code group ⓘ If the Code Name is missing for some Code, you'll have a functional button - **Create Code Name** - that will prompt you to add the missing Code Name to the Rate Table's Code Deck.
Src Code	Specify a source code for a new rate ⚠️ **Attention** Please note that **rates with Src Codes are not used** when termination tariffs are chosen for Dynamic Routing. This functionality is going to be reworked in the upcoming releases.
Src Code Name	Indicate a source code name
Rate	Price per unit of a service
Interval	Tariffication interval. This parameter is used when **Min Volume** expires. For instance, if call time is **26** seconds, **Min Volume** is **25**, and **Interval** is **8**, the client will pay for **33** seconds
Min Volume	Minimal time of the call that will be tariffed. For example, if the total call time was **20** seconds and the **Min Volume** is **30**, the client will pay for **30** seconds of the call.
Grace Volume	Time interval that will not be tariffed (free time). For instance, if you specified 5 sec as **Grace Volume,** all calls with duration up to 5 seconds (including calls with a session time of 5 seconds) will be free of charge.
Setup Fee	Setup fee (charged when event duration is **longer than 0 seconds**)
Effective Date	Rate start date (newest available rate for a particular destination)
End Date	After a specified date, the target rate will not be used
Services	Select a service for a current rate (calls, SMSs, data)

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.
	
	⚠️ **Attention**
	
	Please note that the system uses **only the 'Rate' parameter from the additive rates' settings** when billing.

Time Profile	Time profile that will be used for a current rate. For example, **business time**, **non-business time**, **weekends**, etc.
Tag	Specify a tag for the respective rates. If it's not applicable, assign a **(@) tag** as default
Notes	Additional information about the current rate

Stash Future Rates	Select what the system should do to the future rates for the same destinations existing in the system:
	
	    • **preserve**;
	    • **stash**.

Force Notification	Select the system behavior regarding the notification process for the newly created rate:
	
	    • **hold**;
	    • **force**.

Number Length	Specify a minimum and maximum length of the destination number. For example, if you have a rate of **3 USD** for **123 Dst Code** with indicated number length from **6** to **9**, and another rate of **5 USD** for the same **123 Dst Code** without specified number length, all calls with a **Dst Number** between **6** and **9** digits will be billed by **3 USD**, otherwise, by **5 USD.**

Screenshot: Adding a New Rate

After you finish filling in all the fields, click .

Editing Rate

Starting from the v.3.18, there is a possibility of inline rates editing. For this, click on a respective rate line once. You will be able to correct the **Src** and **Dst Code**, **Rate**, **Effective Date**, **Notes**, **SF**, **Min**, **Int**, and **Time Profile** columns:

Screenshot: Inline editing a Rate

When you are done, click the ✔ icon to confirm the change without page reload.

> ⚠️ **Attention**
>
> After a rate was updated, it is still present in the list of filtered rates (if enabled) regardless of the set values. You need to **update the page** to see the filtered list without the changed rate (if the changes do not align with the filter).

Mass Rate Edit

It's possible to make a mass update of the rates filtered by the rate table by clicking on Mass Edit. The drop-down menu will appear, where you need to fill in the fields according to your needs. There are six 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;
- **absolute** - take the entered value as an absolute one;
- **relative** - take the entered value as a relative one.

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, absolute, relative***. You can increase or decrease the value either by fixed number or percent. To increase or decrease by percent, enter % sign after the desired number. ⛔ **Warning** Do not enter non-numeric symbols.
SF	Change setup fee values. Available options: ***preserve, set to, inc for, dec for, absolute, relative***. You can increase or decrease the value either by fixed number or percent. To increase or decrease by percent, enter % sign after the desired number. ⛔ **Warning** Do not enter non-numeric symbols.
Tag	Change rates tags. Available options: ***preserve, set to***
Min. Volume	Change minimal volume values. Available options: ***preserve, set to***
Interval	Change tariffication interval values. Available options: ***preserve, set to***
Grace Volume	Change grace volume values. Available options: ***preserve, set to***
Effective Date	Change rates start date values. Available options: ***preserve, set to***
End Date	Change rates end date values. Available options: ***preserve, set to***
Time Profile	Change rates profiles. Available options: ***preserve, set to***
Notes	Change rates notes. Available options: ***preserve, set to***
Number Length Min	Change the minimum length of destination numbers. Available options: ***preserve, set to***
Number Length Max	Change the maximum length of destination numbers. Available options: ***preserve, set to***

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

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

To delete all displayed rates, click **Delete All** in a Mass Edit menu.

Advanced Search

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

Screenshot: Rates tab search settings

Field	Description
Rate Table	Filter rates by a selected **rate table**
State	Search by **the period of a rate** during which the rate is active, expired, etc., as compared to the date specified in the next field. The following states are available to choose from a drop-down list: • **current/future** - includes current and future rates • **current on** - the search includes rates that are active for a specified date • **future for** - the future rates compared with a specified date • **past for** - the search rates that are expired for a specified date • **all** - includes all rates
Time Profile	Search by the **time profile** of the rate
Tag	Search by an **assigned tag**
Notification status	Search by the **date of rate notifications** to the clients: • **sent/not sent** • **sent** • **not sent** The field will be autocompleted with a date of the last notification of the filtered rates.
Prev Diff Status	Search by **the cost changes of the current rate from previous**. The following types are available to choose from a drop-down list: • **Decreased** • **Increased** • **Not changed** • **New**
Next Diff Status	Search by **the cost changes of the next rate from the current**. The following types are available to choose from a drop-down list: • **Decreased** • **Increased** • **Not changed** • **New**

When you have a filtered output and want to add a new rate, it will inherit filtered settings (a.k.a. will have them autocompleted in the adding form). These settings are **Rate Table**, **Policy**, **Time Profile**, **Service**, **Tag**.

> ⚠ **Attention**
>
> When you filter rates by the state (for example, **current/future, future for, current on**), the **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 (click the **Confirm Filtered Rates** button on). Unconfirmed rates appear during the import process.

Screenshot: Rates tab settings

Src Code	Src Code Name	Dst Code	Dst Code Name	Rate		Effective Date		Min	Int	Extra		
902	Canada	1210	United States	—	0.9900	2018-12-12 00:00:00+00	—	1	1	⊞ TP: all time	Stashed	✖
782	Canada	1212	United States	3.0000 ▼	2.0000	2018-12-12 00:00:00+00	—	1	1	⊞ TP: all time	Stashed	✖
778	Canada	1205	United States	—	0.8700	2018-12-12 00:00:00+00	—	1	1	⊞ TP: all time	Stashed	✖
709	Canada	1209	United States	1.4000 ▲	2.0000	2018-12-12 00:00:00+00	—	1	1	⊞ TP: all time	Stashed	✖
604	Canada	1203	United States	—	0.8700	2018-12-12 00:00:00+00	—	1	1	⊞ TP: all time	Stashed	✖
506	Canada	1207	United States	—	0.9900	2018-12-12 00:00:00+00	—	1	1	⊞ TP: all time	Stashed	✖
431	Canada	1201	United States	1.0000	1.0000	2018-12-12 00:00:00+00	—	1	1	⊞ TP: all time	Stashed	✖
250	Canada	1202	United States	—	0.9900	2018-12-12 00:00:00+00	—	1	1	⊞ TP: all time	Stashed	✖
236	Canada	1206	United States	—	0.8700	2018-12-12 00:00:00+00	—	1	1	⊞ TP: all time	Stashed	✖

Confirm Filtered Rates

OK   Cancel   Apply

Import

In this article

Import Tab

The tab is designed to provide a user with a possibility to import rates to JeraSoft Billing by uploading a **.csv** or **.xls** file. The whole process can be divided into several steps discussed below. You can access the rates import by clicking the **Import** button in the Rates section:

Screenshot: Import button

> ⚠️ **Note**
>
> The button will only be active when you filter the rates by the rate table.

Step 1. Selecting a File and Specifying Additional Parameters

The first thing you need to do in the import configurations view is to select a rate table (the import template will autocomplete if existent). Then, drag-and-drop or upload an import file. Additionally, you can specify the following parameters:

Screenshot: Step 1. File Settings

Field	Description
Rate Table	This field will be autocompleted with the name of a rate table if the rates are filtered in the Rates section. If not applicable, select a target rate table
Import Template	Select a target template for rates importing if available

> ⚠ **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 *Timezone* is **UTC (+0000)** by default.
> 3. Please **DO NOT** import duplicates of the same *Code* in one import file.

Step 2. Import Settings

The system will recognize the file and display the first and last 5 rows of the first sheet. You will need to select the start and end lines of an import table (marked green). The middle lines are skipped, you can unfold them both ways by five lines by clicking the respective buttons. To switch from one sheet with rates to another, click on a respective tab: i.e., **Sheet 1**, **Sheet 2**, etc.

Screenshot: Step 2. Import Settings

Starting from **VCS 3.17.0**, the user has a possibility to specify a type for each sheet of an imported file. Each sheet type has its own list of columns. Currently, there are 3 sheet types:

- **Rates** type - an equivalent to an importing page from earlier versions. While importing, **at least 1 sheet must be of Rates type.** For this type, the following columns are mandatory:
  1. **Dst Code/Code Name** - indicate at least one of them
  2. **Rate**
  3. **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.
- **Src Codes** type - this type allows a user to perform the import to the code deck attached to the rate table. For this, indicate source codes/code names in the two columns: **Src Code** and **Src Code Name**. If selected, both columns must be specified.
- **Codes** type - this type allows a user to perform the import to the code deck attached to the rate table. For this, indicate destination codes/code names in the two columns: **Code** and **Code Name**. If selected, both columns must be specified.

Starting from **JeraSoft Billing v3.18.0**, the user has an option to select the *Skip this sheet* option for the system to ignore the respective sheet during import. More about sheet types configuration here.

Screenshot: Sheet types

On the second step, you can also save the importing rate table as a template for further usage during import. To do so, specify a template title in the bottom left corner of the tab, and click the **Save Template** button (see screenshot above).

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

Screenshot: Advanced settings

Field	Description
If Unchanged	Determines system behavior if it detects rates in the imported file with all the same settings as the ones already present in the Rate Table but *Effective Date*. Has two options: • *Save rows* • *Skip rows*
On Warnings	Manages alerts from the *Analysis Settings* section. If any, you'll have the option to: • *Save rows* • *Skip rows* • *Abort import*
On Errors	Determines billing behavior if inconsistency or error was found in the 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 the import and display a list of errors

Datetime Format	Specify the date format of an 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
Billing Increment	Billing Increment defines the way events are billed and combines two parameters: *minimum volume* and *tariffication interval* or three parameters: *minimum volume, tariffication interval* and *grace volume*. Indicate the order of parameters recognition in the **Billing Increment** column: • *Min Volume/Interval* • *Interval/Min Volume* • *Min Volume/Interval/Grace Volume* • *Interval/Min Volume/Grace Volume* For example, if the **Billing Increment** column in your import file is *1, 5,* and you selected *Min Volume/Interval* value in this field, the system will recognize *1* as **Minimum Volume** and *5* as a **Tariffication Interval** for a target rate.
Skip dash in codes	Select whether a dash in codes must be skipped or not: • *Enabled* - codes, written as *1201-1205*, will be imported as a single *12011205* code • *Disabled* - *1201-1205* codes will be imported as separate *1201, 1202, 1203, 1204, 1205* codes
Split Src Code Name	This option is used only in case source code names contain an *underscore* symbol. Choose one of the following: • *Disabled* - if an Src Code Name is, for instance, **USA_Columbia**, it will be preserved as it is after import. • *By underscore* - if selected, a **USA_Columbia** Code Name will be changed to **Columbia** after import.
Notificator Code Deck	Specify code decks that will be used for the next rates notification
Update Code Deck	Select the way you want **both Src** and **Dst** code decks to be updated with new/existing code names from current rates file: • *Disabled* - leave selected code decks unchanged • *Import only not existing codes* - code decks will be updated with codes and their names if they are missing • *Import all codes (update existing)* - ode decks and codes will be updated with code names taken from a file, overwriting of existing ones • *Import all codes (purge code deck first)* - code decks are fully cleared and then all codes and code names are imported from a file ⚠️ **Attention** If **Src Code** and/or **Dst Code** sheet type is selected, you need to enable this feature
Code Deck	Dst Code Deck that will be used for an *Update Code Deck* option. Select a destination 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 a file, which contains *Code Names* in addition to *Codes*).
Src Code Deck	Src Code Deck that will be used for an *Update Code Deck* option. Select a source 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 a file, which contains *Code Names* in addition to *Codes*).
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 a 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, the field value is **"*" (all codes)**

AZ interval	Available if AZ Mode is **active**. Specify the period for AZ mode to close rates. The selectable options are: • **days from last midnight** - the rates will be closed after the specified amount of days from the midnight of the import day • **days from now** - the rates will be closed after the specified amount of days from the import day • **hours from XX:00** - the rates will be closed after the specified amount of hours from the start of an hour of the import timestamp • **hours from now** - the rates will be closed after the specified amount of hours from the import timestamp ✅ **Tip** For a detailed explanation, check out our Knowledge Base article
AZ close date	Available if AZ Mode is **active**. The field displays the time and date of rates closure based on the **AZ interval** parameters.
Billing Increments Check	Select whether you need billing increments checking during import or not: • **Enabled** - the system will raise an error in case imported rates' billing increments differ from those already present in the Rate Table. • **Disabled**
Deviation Tolerance, (%)	Define the value of how much can an imported rate differ from an existing one in percent. If exceeded, the system will generate an alert for the manager.
Agreements Tolerance, (days)	Define a number of days that the system will take into account while analyzing the new import and the current agreement with the vendor. If the dates of an agreement and the import are closer then the specified amount, the system will generate an alert for the manager.
Changes Threshold, (rates)	Define a number of changed rates that will serve as a threshold for the selected rate table. If exceeded, the system will generate an alert for the manager.

⚠️ **Attention**

If you have rates with missing **Rate** value in the importing file, the system will find the previous rate for the same destination and take this value from there (if the previous rate was not closed).

When you have rates with missing **Effective Date** value, the system will take it from the **End Date** value.

Code Rules Information Block

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

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

There is one default rule with ***** **code** that affects all the imported codes. The not specified columns of the imported rates will be filled in with the respective field values of this code rule. The list of code rules fields is as follows:

Screenshot: Rates import - Code Rules settings

CODE RULES ➕						
Code	Status	Effective Date	Time Profile	Min	Int	Extra
*	Active ▼	in ___ days from the midnight ▼	all time ▼	1	1	⊕ regular ✖

Field	Description
Code	Indicate a destination code. For all codes, use * (asterisk)
Status	Indicate a status for the rates. By default, it will be **Active**. Set the **Stashed** status if you want to double-check them later after import.
Effective Date	Specify a start date of a rate. There are various options to schedule this date: • **days from last midnight** - the rates will be active after the specified amount of days from the midnight of the import day • **days from now** - the rates will be active after the specified amount of days from the import day • **hours from XX:00** - the rates will be active after the specified amount of hours from the start of an hour of the import timestamp • **hours from now** - the rates will be active after the specified amount of hours from the import timestamp

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

After specifying all additional parameters, click the **Import** button.

Step 3. Import Errors

Provided a non-critical error(s) occurred, you will see a table, where the 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 will be downloaded:

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

Screenshot: .csv file with detailed error data

Confirming Rates

When the procedure has been executed, you will be forwarded to the **Rates** section where all imported rates will be displayed. If the **Auto-Confirm** option was disabled during the import process, you need to **Mass Edit** the rates' status from *stashed* to *active*.

Screenshot: Confirming Rates

Import History Tab

The tab contains information about all executed imports to this rate table. You can access it in the **Rate Tables {Specific Rate Table} Import History**. It is presented in the form of a table with the following columns:

Screenshot: Import History output

Date	Details			Total	New	Increased	Decreased	Unchanged	A-Z Closed	A-Z Stashed	Status	
2020-10-01 16:10:34+00	User Login: admin	File: test-1.csv		0	0	0	0	0	0	0	Success	
2020-08-26 18:47:49+00	User Login: admin	File: test-1.csv		0	0	0	0	0	0	0	Failed	
2020-08-26 18:40:35+00	User Login: admin	File: test-1.csv		1	0	0	0	0	0	0	Success	
2020-08-26 18:37:20+00	User Login: admin	File: test-1.csv		1	0	0	0	0	0	0	Success	
2020-08-26 18:33:51+00	User Login: admin	File: test-1.csv		1	0	1	0	0	0	0	Success	
2020-08-26 18:31:59+00	User Login: admin	File: test-1.csv		1	0	1	0	0	0	0	Success	
2020-08-26 18:31:14+00	User Login: admin	File: test-1.csv		1	0	1	0	0	0	0	Success	

Column	Description

Date	Time and date of import execution
User Login	Login of a user who executed the import
File	Import file. By clicking on the ⬇ icon, the file will be downloaded
Total	Total amount of imported rows
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 import procedure (***success***/***failed***)
↩ **icon**	When clicked on, deletes respective import data from the system

The imported rates are divided into the following types: **Unchanged, Increased, Decreased, New**. By clicking on the respective numbers of rates, you can see filtered rates by type (see screenshot above) in the *Rates* section.

> ⚠ **Attention**
>
> Imported rates will be marked as **Unchanged**, **Increased**, or **Decreased** only if their *Effective Date* value (e.g., **04.25.2018**) is higher than *Effective Date* of a current rate (**e.g., 04.10.2018**) and they don't have an *End Date* value. If the *End Date* value is present in a previous rate, the fresh one will be marked as **New**.
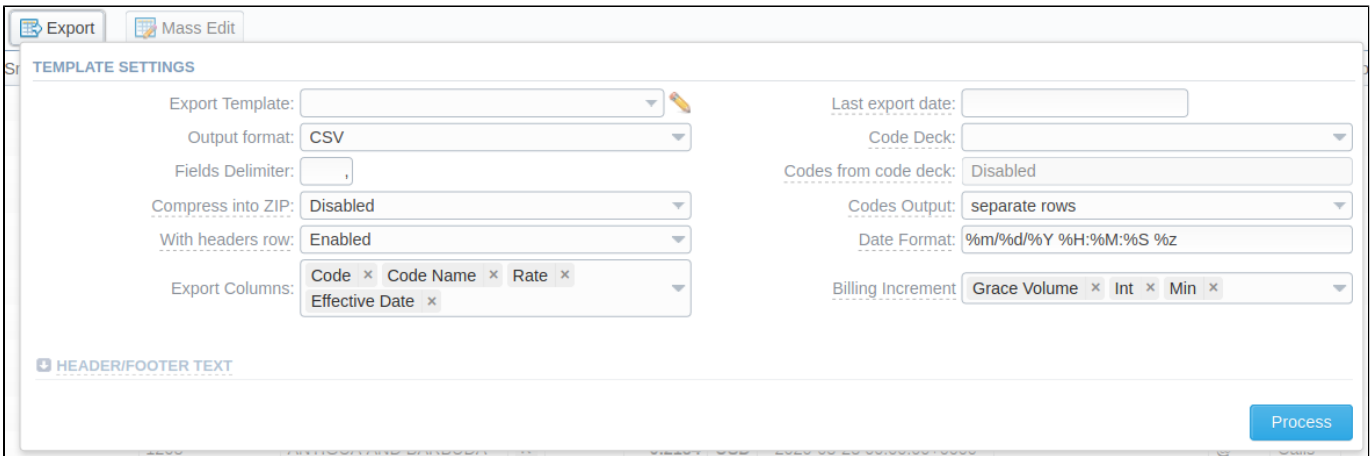
Export

Rates export provides great flexibility in configuring the way rates will be exported in **.csv** or **.xlsx** files. To access the export settings, click the **Export** button in the Rates section.
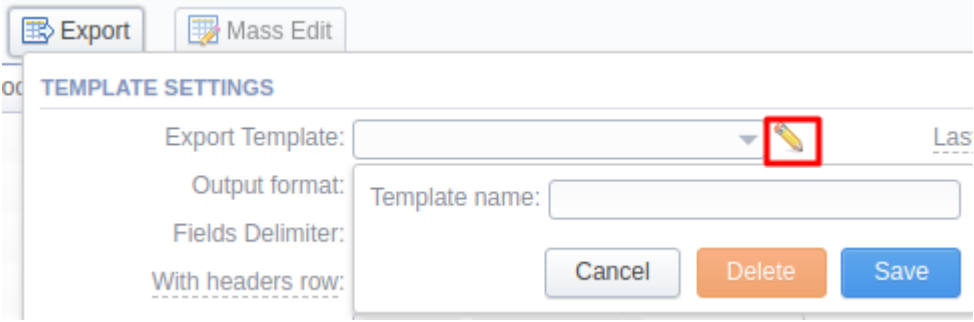
Screenshot: Rates export button
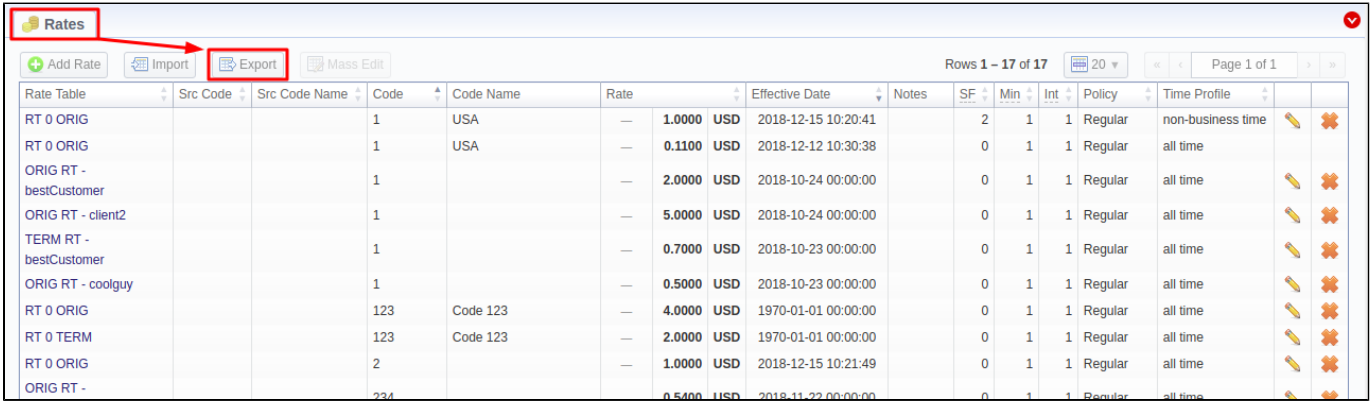
You can use the same advanced search tool, as provided on the Rates tab, to choose which rates you would like to export (including **all, past, current, future,** or **current/future**) prior to actually doing it. After clicking a respective button, the following settings will be visible:

Screenshot: Rates exporting window

Field	Description
Export Template	Select an export template or save an existing one using the **Save** button (will be visible after clicking the edit button):
Output Format	Specify output file format, **.xlsx** or **.csv**
Fields Delimiter	Set delimiter for fields if you've chosen **.csv**
Compress into ZIP	Specify whether you want the output file to be compressed. By default this option is **disabled**.
With headers row	Include column names into the file
Export Columns	Here you can select from the drop-down list of maximum 25 columns to export:

• *Src Code/Src ode Name*	Src Code/code name of rates
• *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
• *Billing Increment*	Min Volume, Interval and Grace Volume combined, and their order
• *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
• *Time Profile*	Time profile (*all time, business time, non-business time, weekends*)
• *End Date*	A final date, after which the rate will expire
• *Number Length min*	Minimum number length
• *Number Length max*	Maximum number length
• *Previous Rate*	Last rate in usage
• *Prev Diff*	Cost changes in the rates
• *Prev Diff (export)*	Cost changes in the rates after the last export
• *Prev Diff Status*	Difference between a current rate and a previous one
• *Prev Diff Status (export)*	Rate's changes after the last export. Shows the status of how a current rate differs from a previous one. The rate will have an *unchanged* status if the *Effective Date* 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 a rate
• **Tag**	Tag, assigned to a respective rate
• **Policy**	Rate policy (**additive** or **regular**)
• **Status**	Rate status
• **Service**	Service of a rate
• **Tech Prefix**	Tech prefix of a rate

Last Export Date	Parameter that affects the *Rate changes* field (depending on it, the exported rates will be marked as **new, changed, deleted**, etc.)
Code Deck	Select a code deck here to rewrite code names in an export file if needed
Codes from code deck	Allows you to filter the export by selecting only codes, which are present in a specified **Code Deck**
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 a 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**

Date Format	The date format in your export file. The syntax is as follows: if you indicate **%d-%m-%Y** here, your date will look like **25-03-2018**
Billing Increment	Select these parameters here and drag them to align anyhow: • **Grace Volume** • **Int** • **Min**
Header text/Footer text	Allows you to put some text into an exported file as header and footer, respectively

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

Click the **Process** button and save an 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, make **Code Name** your first column.

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

Rates Management

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

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

Tip 2: If an existing rate was changed and the *Effective Date* field specifies a date that has passed, 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, and *Setup Fee* = 0,3, where*:*

- *Rate* is a price per unit of a service.
- *Min Time* is a minimal time of the call that will be tariffed.
- *Interval* is a tariffication interval, which is used when *Min Time* time expires.
- *Grace Volume* is a 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 a session time of 5 seconds) will be free of charge.
- *Setup Fee* is a 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 the call duration was less than 2 seconds, the total call cost will be 0 currency units. If the call duration was between

3 and 30 seconds, the total call cost will be $$Setup\ fee + \frac{Rate}{60\ seconds} \cdot Min\ Time$$, which is 0,8 currency units regarding the presented

data. If the call duration was more than 30 seconds, the total call cost will be $$Setup\ fee + \frac{Rate}{60\ seconds} \cdot quantity\ of\ call\ seconds$$ currency units.

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

Tip 5: All rate fields that define time have time format in seconds, while in the *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 the **Mass Edit** feature. Please be aware that mass edit will be applied only to *current/future* rates. So, make sure you filtered target rates accordingly before editing.

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Special Rates

In this article

- Section overview
- Advanced Search
- Adding New Special Rate

Section overview

The **Special Rates** section has been created since version 3.18 of the JeraSoft Billing. Its purpose is to separate regular prices for the destinations and the exclusive prices based on agreements between vendors and clients. The section is presented as a table like the one below:

Screenshot: Special Rates section

Rate Table	Code Name	Rate				Effective Date	Notes	SF	Min	Int	Time Profile			
RT 0 TERM	USA	—	0.1500	USD	—	2018-12-24 10:25:14		3	1	1	all time			
RT 0 ORIG	USA	—	0.1100	USD	—	2018-12-12 10:30:38		0	1	1	all time			
RT 0 TERM	USA	—	0.1500	USD	—	2018-12-24 10:25:14		3	1	1	all time			
RT 0 TERM	USA	—	0.1500	USD	—	2018-12-24 10:25:14		3	1	1	all time			

Column Name	Description
Rate Table	Rate table of a special rate
Code Name	Destination code name of a special rate
Rate	Price per unit of service
Effective Date	Date, when a special rate becomes active
Notes	Additional information about a special rate
SF	Setup fee of a special rate
Min	Minimal billed volume
Int	Billed interval
Time Profile	Time profile of a special rate

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

Button/Icon	Description
Add Rate	Allows adding a new special rate to the system
	Allows managing rates within a specified special rate
	Allows editing a special rate
	Allows deleting a special rate 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 a blue downward arrow icon, the following drop-down menu is displayed:

Screenshot: Advanced Search drop-down menu

Field	Description
Rate Table	You can filter the special rates belonging to a certain rate table
Code Name	You can filter the special rates by code names
State	Search by **the period of a rate** during which the rate is active, expired, etc. The following states are available to choose from a drop-down list: • **current/future** - the search includes current and future rates • **current on** - includes rates that are active for a specified date • **future for** - includes future rates compared with a specified date • **past for** - includes rates that are expired for a specified date • **all** - includes all rates
Status	You can search by the status of the special rate: ■ **active** ■ **stashed**
Services	You can filter the special rates by services

Adding New Special Rate

To add a new special rate, click the **Add Rate** button and define the respective values in a pop-up window:

Screenshot: Adding new Special Rate

Field	Description
Rate Table	Indicate a rate table, in which the rates will be created inheriting the settings of a current special rate
Code Name	Indicate a code name of the special rate ⚠ This field is inactive if the Code Deck is not specified.
Rate	Price per unit of a service
Interval	Tariffication interval. This parameter is used when **Min Volume** expires. For instance, if call time is **26** seconds, **Min Volume** is **25**, and **Interval** is **8**, the client will pay for **33** seconds
Min Volume	Minimal time of the call that will be tariffed. For example, if total call time was **20** seconds and **Min Volume** is **30**, the client will pay for **30** seconds of the call
Grace Volume	Time interval that will not be tariffed (free time). For instance, if you specified 5 sec as **Grace Volume,** all calls with duration up to 5 seconds (including calls with a session time of 5 seconds) will be free of charge.
Setup Fee	Setup fee (charged when event duration is **longer than 0 seconds**).
Effective Date	Indicate a date, on which this special rate will become effective. Before this date, the rate will not be used
End Date	Indicate a date, after which this special rate will not be used
Services	Select a service for this rate (calls, SMSs, data)
Time Profile	Define a time profile to be used for a current special rate
Tag	Specify a tag for the respective rates. If it's not applicable, assign a **(@) tag** as default.
Notes	Additional information

Stash Future Rates	Select what the system should do to the future rates for the same destinations existing in the system: • ***preserve***; • ***stash***.
Force Notifica tion	Select the system behavior regarding the notification process for the newly created rate: • ***hold***; • ***force***.
Number Length	Specify a minimum and maximum length of the destination number. For example, if you have a rate of ***3 USD*** for ***USA Code Name*** with indicated number length from ***6*** to ***9***, and another rate of ***5 USD*** for the same ***USA Code Name*** without specified number length, all calls with a **Dst Number** between ***6*** and ***9*** digits will be billed by ***3 USD*** , otherwise, by ***5 USD.***

⚠️ **Attention**

Please note that the creation of a special rate leads to the creation of regular rates in the **Rates** section. You will be able to edit them only by editing a special rate.

Rates Analysis

In this article

Rates Analysis Form

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

Screenshot: Rates Analysis section

Creating a 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 the required parameters for the report. To cancel any filter, click on the delete ✖ icon next to the filter. You can start a **quick search** by typing filters' names in the field at the top of a 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
	Client Tags	Select clients matching specified tags for analysis
	Group by	Select a grouping option from the following list: • ***Dst Code*** - aggregation by default output. • ***Dst Code Name*** - grouping by rate rows with the same names and rates for all codes in each rate table. This option is intended to simplify grouping, the system will automatically group data in specified columns.
	Additional Filters	

The accessible additional filters are:

- **Events:** *Dst Code, Dst Code Name, Country Name*
- **Extras:** *Client Tags, Actual On, Master Table, Lowest Position, Get Margins For, Tag, Rate Age*

Events settings

Dst Code	Specify a code of the needed destination.
Dst Code Name	Define a code name of the desired destination.
Country Name	Enter the name of the respective country.

Extra settings

Actual on	Define the Effective Date of rates.
Master Table	Specify a rate table that all other rate tables 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 several rates, type 1 in this field. Please note that this feature only works with the **Master Table** option.
Tag	Indicate a tag, which relates to a specified rate table
Get margins for	Define a rate table, from which the respective margins will be taken. 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, to which the current report in the selected format will be sent.
	Currency	Specify a currency of the report. All values will be automatically converted to the specified currency in the report.
	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 checkbox	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** checkbox, the system will try to simulate the longest available code with the shorter one. For example, we analyze two rate tables, one of which has code *380*, and the other has *380* and *38044* codes. When the mentioned checkbox is active, the first rate table will have unavailable *38044* code simulated with the price of available *380*. Rates like these have the **Simulated** label when you hover the mouse pointer over them and are colored in light-red, light-green and grey respectively.

After clicking the **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 the following fields: *Rate tables, Originators, Terminators.*

Screenshot: Rates Analysis section

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

Screenshot: Info icon

Creating a New Template

Also, you can create a template and save specified parameters by clicking the **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 the visibility of respective reports templates. You can set up whether you want to keep templates private or leave them visible for users under a 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 the creator.	
Watch	This tool allows to generate the report automatically 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 generate a report automatically, it could be several times, for example, *10:00, 12:00, 18:00*	
	Days of Week	Indicate days of the week to generate a report automatically. 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 clicking it, you can select report settings to be filled in from a list of templates for rates analysis.

Export generated report

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

Sharing a Report

Each time you get a report output, the system generates a unique link in the format of "/view?id=<uniq-string>". It allows sharing data between the users, even if they belong to different resellers (the feature works similarly to Share by Link in Google Drive).

The link refers to the report data valid for a specific moment.

Example: When you send a link to a report, you ensure the recipient would see the same data as you do. If you change data in the system (for example, perform rerating), the previously copied link to the report will display data valid for the moment of generation (even though the actual data is now different).

You can also view the additional information about the generated report by hovering over the **Info** icon, which is located under the **Output** section:

Title	Description
Generated by	Indicates the **Role** of the user who generated a report and specifies a generation time
Duration	Time spent to generate a report

Screenshot: Rates Analysis Info icon

Rates Generator

In this article

Section overview

Rates Generator is a 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 a new rate table for vendors or updating new ones. The section is presented in the form of a table with the following columns:

Screenshot: Rates Generator form

ID	Name	Company	Description	
1	Generator	Company Name		✖

Rows **1 – 1** of **1**   20 ▾   Page 1 of 1
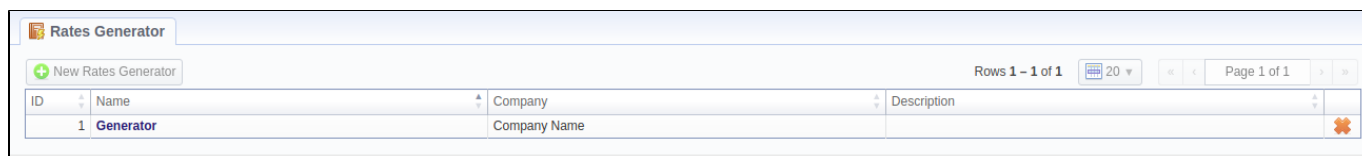
Column	Description
ID	Identification number of a rates generator
Name	Name of a rates generator
Company	Name of a reseller, whom a rates generator belongs to
Descripti on	Additional information about a rates generator

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

Button/Icon	Description
New Rates Generator	Allows creating a new rates generator
✖	Allows deleting a rates generator from the system

Creating New Rates Generator

To create a new rates generator, you need to click the **New Rates Generator** button and a pop-up creation form will appear. It consists of **general** and **add itional** settings. The list of general settings includes the following fields:

Screenshot: General settings

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

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

Optimization Options

Screenshot: Rates Generator form/Optimization checkbox

Information Block	Description
Simplify Mode	It allows applying the same price for all codes inside the same code name by using three options:
	• **min** minimum available price.
	• **max** maximum available price.

		average price of all available.
	avg	
	Example	For instance, if the **USA** code name consists of **3** codes with **1, 5**, and **6** USD rates, respectively, depending on a chosen option, the 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

Codes Optimization checkbox	This option allows compressing an imported code range. For example, **4400-4409** will be shortened to **440**. At the same time, **4400-4491** will be shortened to **440, ..., 448, 4490, 4491**.

Adjust Options

The *Adjust Results* section enables results adjusting by data from a 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 a rate table has 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 a rate table has 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 a rates generator. Let's leave the default @ tag
Policy	Select the policy (regular or additive) that will be applied to code(s), presented in a code deck, but not in a source rate table. For example, **Regular** policy
Rate	Define a rate for codes, which are present in a code deck but missing in a rule's source rate table. For example, **7.5 USD**
Setup Fee	Define a setup fee for a new rate(s). For example, **8 USD**
Min Volume	Indicate minimum volume for a new rate(s). **6 sec**, for instance
Interval	Specify the interval for a new rate(s). For example, **2 sec**
Grace Volume	Determine grace volume for those rates. For example, **2 sec**
Time Profile	Define a time profile for a new rate(s). For instance, leave the 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 has **4**: ***1201, 1202, 1203,*** and ***1205***. If you enable ***Adjust Results*** and specify the above-mentioned fields with respective parameters, a new rate table, created by a 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 a source rate table misses **more than 1 code** from the selected code deck, all added codes will have **identical parameters**, specified in the respective fields above.

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

Advanced & Quality Options

Screenshot: Advanced and Quality Options information block

The 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 will the rate system use for these codes:

Field	Description
Detect Fake	Enable detection of fake rates if at least a specified number of rates is present in all source rate table, specified in generator rules.
Skip Distance	A percentage value of the difference between the average rate value and a particular rate from all rates, used for the ***Detect Fake*** operation.

Rate Position	Define what rate from a total amount of rates left after **Detect Fake** operation will be used for certain code. Rates are ordered from the cheapest to the most expensive. Thus, if you specify 1, The 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 a rate for the **1201** code, but with different prices in USD: <table><tr><th>Rate Table Name</th><th>Rate</th></tr><tr><td>RT 1</td><td>0.98</td></tr><tr><td>RT 2</td><td>0.2</td></tr><tr><td>RT 3</td><td>1.1</td></tr><tr><td>RT 4</td><td>1.7</td></tr></table> In **Advanced Options** of rates generator settings, we've specified values, seen in the screenshot above. It means that the system will pick **all 4** rates for the **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 an average rate of 0.99 USD that is between **0.85 USD** and **1.13 USD**. Then, the 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**, the 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 a rates generator.

The Quality Options information block contains additional parameters for more precise rate generation, based on the Summary Report. The system will analyze the report taking into account a 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 existing one including these parameters. The information block consists of the following fields:

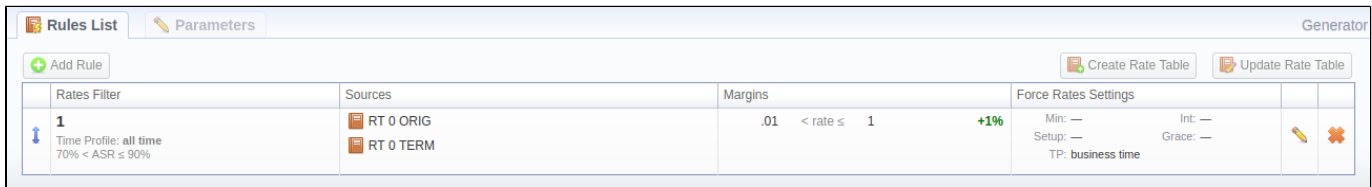| Field	Description
Analyze Period	Define a number of hours to analyze the **Summary Report** for. For example, **24 hours**
Code Min Volume	Define a minimum event volume for certain code. For example, **60 min** for the **Calls** service
Unmatched Price	Define a price for all codes that do not satisfy 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 the Quality options, the respective parameters are the same as indicated in an example (see screenshot above). If you click **Create Rate Table** or **Update Rate Table** buttons on May 16th, at, i.e., 3:25 PM, the rates generator will run a Summary Report with the following parameters: <table><tr><th>Field</th><th>Value</th></tr><tr><td>Period</td><td>May 15, 15.25 PM - May 16, 3:25 PM</td></tr><tr><td>Code</td><td>1201, 1202, 1205</td></tr><tr><td>Total Volume</td><td>60</td></tr></table> Subsequently, a report showed that the 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: <table><tr><th>Code</th><th>Old Rate</th><th></th><th>New Rate</th></tr><tr><td>1201</td><td>1.5</td><td></td><td>1.5</td></tr><tr><td>1202</td><td>2.5</td><td>»</td><td>100</td></tr><tr><td>1205</td><td>5.5</td><td></td><td>5.5</td></tr></table>

> ⚠️ **Attention**
>
> If you want to use **Quality Options** for Rates Generator, you have to define a **Terminator** as a Source for a Rates Generator's rule.

Rules List Tab

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

Screenshot: Rules List Tab

Rules List	Parameters			Generator
Add Rule			Create Rate Table	Update Rate Table

	Rates Filter	Sources	Margins	Force Rates Settings		
	1 Time Profile: **all time** 70% < ASR ≤ 90%	RT 0 ORIG RT 0 TERM	.01 < rate ≤ 1 **+1%**	Min: — Int: — Setup: — Grace: — TP: **business time**	✏	✖

Columns	Description
Rates Filter	Code or Code Name, used in this rule
Sources	Rate Tables or Terminators Names that serve as sources for this rule
Margins	Amount of margin that will be applied to a rate if specified margin parameters are met
Force Rates Settings	Additional 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
Create Rate Table	Allows creating a new rate table with data from respective rules that will be added to the **Rate Tables** section
Update Rate Table	Allows updating a target rate table(s) with data from respective rules

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

Creating New Rules

To create a new rule, you need to click the **Add Rule** button. In the opened creation form (see screenshot below), specify the respective fields and click **OK**. A new rule will be added at the top of the **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 a current rule. Use the * *(asterisk)* symbol for all codes. If a code is specified, the **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 a rates generator creates a **Summary Report**, it will analyze codes not only by their volumes, indicated in the **Code Min Volume** field, but also if their ASR complies with the value, indicated in the **ASR, %** field. The same behavior is expected for the specified **ACD, min** field	

	• **ASR, %**	Specify ASR ranges for target code that are checked in a Summary Report by the rates generator
	• **ACD, min**	Specify ACD ranges for target code that are checked in a Summary Report by the 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 a new price list	
	• **Rate Tables**	Specify source rate tables
	• **Terminators**	Specify vendors (termination clients) for this rule
	• **Terminators Tags**	Specify vendors' tags for this rule
Margins	By clicking on the ⊕ icon, you can add a margin to a respective rate.	

MARGINS ⊕

Rate >		USD
Rate ≤		USD
Add Margin:		USD / %

Add Margin

If the rate for an indicated code is within the range of rates, defined in the **Rate>** and **Rate** fields, a margin (specified in respective currency or %) will be applied to this rate. Add the **%** symbol to the **Add Margin** field value to indicate that a margin is in percent.

✅ **Tip**

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

⚠️ **Attention**

Rate Generation does not work with rates with **Src Codes** indicated.

ⓘ **Info**

In case the currency of a source **Rate Table** differs from **Rate Generator** currency, it will convert prices to correspond to its assigned currency.

Agreements

The **Agreements** section has been introduced in version 3.18 of the JeraSoft Billing. It provides a list of agreements between clients and vendors on the rates changes and notifications. The system considers agreements while generating rates and during clients' notifications.

Screenshot: Agreements section

Agreements								
⊕ New Agreement						Rows 1 – 1 of 1	20 ▼	Page 1 of 1
ID	Name	Notification Day	Increased Rate	Decreased Rate	Unchanged Rate	New Rate	Closed Rate	Reseller	Sort Order
1	Agreement	Monday	in 7 days from last midnight	in 0 days from last midnight	in 0 days from last midnight	in 7 days from last midnight	in 0 days from last midnight	Company A	100 ✖

Column Name	Description
ID	Agreement's identification number
Name	Name of an agreement
Notification Day	Day, on which a vendor agreed to send notifications to the customer
Increased Rate	Delay that indicates the minimal period between notification date and date of an increased rate
Decreased Rate	Delay that indicates the minimal period between notification date and date of a decreased rate
Unchanged Rate	Delay that indicates the minimal period between notification date and date of an unchanged rate
New Rate	Delay that indicates the minimal period between notification date and date of a new rate
Closed Rate	Delay that indicates the minimal period between notification date and date of a closed rate
Reseller	A reseller of an agreement
Sort Order	Order of the entity in the list

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

Button/Icon	Description
⊕ New Agreement	Allows adding a new agreement to the system
✖	Allows deleting an agreement from the system

Creating a New Agreement

To create a new agreement, you need to click the **New Agreement** button, and the following fields will appear:

Field	Description
Name	Title of an agreement (must be text with no more than 128 symbols)
Reseller	Reseller of an agreement
Notification Day	Define the date of the notification to the customer
Agreement Terms	
New Rate	Define a minimal period between notification date and date of a new rate (must be an integer between 0 and 365). There are various options to schedule this date: • ***days from last midnight*** - the rate will be changed after the specified amount of days from the midnight of the defined Notification Day • ***days from notification*** - the rate will be changed after the specified amount of days from the defined Notification Day • ***hours from XX:00*** - the rate will be changed after the specified amount of hours from the start of an hour of the current agreement creation • ***hours from notification*** - the rate will be changed after the specified amount of hours from the defined Notification Day

Increased Rate	Define a minimal period between notification date and date of an increased rate (must be an integer between 0 and 365). There are various options to schedule this date: • **days from last midnight** - the rate will be changed after the specified amount of days from the midnight of the defined Notification Day • **days from notification** - the rate will be changed after the specified amount of days from the defined Notification Day • **hours from XX:00** - the rate will be changed after the specified amount of hours from the start of an hour of the current agreement creation • **hours from notification** - the rate will be changed after the specified amount of hours from the defined Notification Day
Decreased Rate	Define a minimal period between notification date and date of a decreased rate (must be an integer between 0 and 365). There are various options to schedule this date: • **days from last midnight** - the rate will be changed after the specified amount of days from the midnight of the defined Notification Day • **days from notification** - the rate will be changed after the specified amount of days from the defined Notification Day • **hours from XX:00** - the rate will be changed after the specified amount of hours from the start of an hour of the current agreement creation • **hours from notification** - the rate will be changed after the specified amount of hours from the defined Notification Day
Closed Rate	Define a minimal period between notification date and date of a closed rate (must be an integer between 0 and 365). There are various options to schedule this date: • **days from last midnight** - the rate will be changed after the specified amount of days from the midnight of the defined Notification Day • **days from notification** - the rate will be changed after the specified amount of days from the defined Notification Day • **hours from XX:00** - the rate will be changed after the specified amount of hours from the start of an hour of the current agreement creation • **hours from notification** - the rate will be changed after the specified amount of hours from the defined Notification Day
Unchanged Rate	Define a minimal period between notification date and date of an unchanged rate (must be an integer between 0 and 365). There are various options to schedule this date: • **days from last midnight** - the rate will be changed after the specified amount of days from the midnight of the defined Notification Day • **days from notification** - the rate will be changed after the specified amount of days from the defined Notification Day • **hours from XX:00** - the rate will be changed after the specified amount of hours from the start of an hour of the current agreement creation • **hours from notification** - the rate will be changed after the specified amount of hours from the defined Notification Day

Screenshot: Adding a new Agreement

After filling in all the required fields, click **OK**, and the new agreement will appear in the list.

Swap Deals

In this article

- [Section overview](#)
- [Adding a New Swap Deal](#)
    - [Items List tab](#)
    - [Edit Swap Deal tab](#)
- [Adding a New Item](#)
- [Swap Deals' in-system functioning](#)
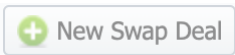
Section overview

The **Swap Deals** section has been created since version 3.20 of the JeraSoft Billing. Its purpose is to comprise all the bilateral agreements for further monitoring and analysis. The section is presented as a table like the one below:

Screenshot: Swap Deals section

Column Name	Description
ID	ID of the Swap Deal
Alert	This column is showing whether the Swap Deal goes as planned. If the current traffic speed is insufficient to close the deal as planned, there will be a ⚠ icon to let you know.
Name	Name of the Swap Deal
Status	The deal's status. It can be either one of the following: • **pending** - the Swap Deal's start day is in the future • **in process** - meaning the Swap Deal is in process of completing • **archive** - inactive Swap Deal • **success** - the result status after the success deal's completion • **fail** - the result status after the failed deal's completion
Period	Period of the Swap Deal
Forecast Date	The forecasted date of the Swap Deal completion with the current speed
Live Profit	The sum of inbound and outbound live revenue
Progress	The progress bar for the Swap Deal, shows the percentage of completion
Client	The Client's name and its Account, with whom the deal was agreed

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

Button/Icon	Description
New Swap Deal	Allows adding a new Swap Deal to the system
🖉	Allows editing a Swap Deal
✖	Allows deleting a Swap Deal from the system

Adding a New Swap Deal

To add a new swap deal, click the **Add Swap Deal** button and define the respective values in a pop-up window:

Screenshot: Adding a New Swap Deal

Field		Description
General	**Name**	Define the name for the Swap Deal
	Status	Specify the Swap Deal status. There are two options: • **active** • **archive**
	Currency	Specify the Swap Deal currency
	Client	Select the Client for the current Swap Deal ⚠ Note that the **Client** and **Account** fields are mutually exclusive.
	Account	Select the Account for the current Swap Deal
Period Settings	**Period**	Indicate a period in days or months for this Swap Deal
	Start Date	Indicate a start date for this Swap Deal

Items List tab

Inside of the Swap Deal entity, there are **Items** - the agreements on traffic volumes and pricing per destination. The Items are in the **Items List** tab of the current Swap Deal. This tab looks like this:

Screenshot: Items List tab

Field		Description
General	**Client**	Displays the Client and its Account, with whom the deal was agreed upon
	Period	Shows the period for the current Swap Deal
	Update Time	Last time the system renewed information for this Swap Deal according to current statistics
	Status	Displays the current Swap Deal status

Profit	Planned	The sum of inbound and outbound planned revenue
	Live	The sum of inbound and outbound live revenue
	Sales	Shows profit according to current statistics and sales rates ⓘ **Counted like** **sales profit = inbound sales revenue + outbound sales revenue** where inbound sales revenue is a sum of all inbound items' sales revenue and outbound sales revenue is a sum of outbound respectively
	Margin	Indicates the Swap Deal efficiency ⓘ **Counted like** **margin = live profit - sales profit**
Inbound	Planned	Planned inbound revenue based on Swap Deal volume and price
	Live	Current inbound revenue according to the statistics within the Swap Deal
	Forecast	Forecasted end date with current speed (concerning inbound traffic)
	Progress	Progress bar based on current inbound traffic
Outbound	Planned	Planned outbound revenue based on Swap Deal volume and price
	Live	Current outbound revenue according to the statistics within the Swap Deal
	Forecast	Forecasted end date with current speed (concerning outbound traffic)
	Progress	Progress bar based on current outbound traffic
Items	ID	ID of the Item
	Direction	Item's direction: - 🔵 for inbound traffic; - 🔵 for outbound traffic.
	Destination	Dst Code or Code Name
	Rate	Indicates the Swap Deal rate (first) and average sales rate (second) for the destination
	Volume, min	Shows how much traffic from the planned amount is currently within the Swap Deal (Live Volume | Planned Volume)
	Revenue	Shows how much you earned on a specific destination within the Swap Deal from the planned amount (Live Revenue | Planned Revenue)
	Sales Revenue	Shows how much you would have earned on a specific destination without a Swap Deal agreement ⓘ **Counted like** **sales revenue = live volume * sales rate**
	Alert	Shows whether the Item's progress goes as planned. If the current traffic speed is insufficient to close the deal as planned, there will be a ⚠️ icon.
	Run Rate, min	Current speed of filling out the Swap Deal as per this Item (the first is the actual Run Rate, the second is the Required Run Rate)
	Progress, %	Item's progress

Edit Swap Deal tab

To edit the Swap Deal details, there is an Edit Swap Deal tab available. It has the following outlook:

Screenshot: Edit Swap Deal tab

Adding a New Item

To add a new item to the swap deal, click the [+ New Item] button in the **Items List** tab and define the respective values in a pop-up window:

Screenshot: Adding a New Item

Field		Description
General	**Direction**	Specify the traffic direction: • **Inbound** • **Outbound**
	Volume	Indicate an expected volume for the swap deal item.
	Code	Indicate a code of the item. ⚠ Note that the **Code** and **Code Name** fields are mutually exclusive.
	Code Name	Indicate a code name of the item.
Rating	**Rate**	Indicate a rate that you agreed upon with your partner.
	Sales Rate	Specify an average rate that would be applied if not for the swap deal.
	Service	Select a service for this swap deal (calls, SMS, data).

Swap Deals' in-system functioning

Swap Deals work within the billing system using the information on rates and current statistics. There is a separate service in **System Task Scheduler** section - *Swap Deals Manager*. This service updates each Swap Deal's statistics maximum once an hour. It monitors the current statistics and updates the Swap Deal information putting a timestamp of the latest changes to the *Update Time* field in the *General* section of an *Items List* tab.

If the Swap Deals Manager detects during its analysis that any item in a swap deal is performing not as expected, it will generate an alert to **System Events Log**. Such alerts are sent at a frequency of maximum once in 4 hours. Apart from that, you will see an alert ⚠ icon in the Swap Deals section of the web interface.

From Events Log, you can configure it so that Swap Deals alerts will be sent to your mailbox upon occurrence. Learn more about how to set this up in the Events Log article.

Retail

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

In addition to vast wholesale functionality, JeraSoft Billing 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 Billing 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 a New Package](#)

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. The section is designed in the form of a table that displays all currently available packages 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 is not 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	Package renewal period		
Reseller	Name of a reseller, to which a target package belongs		

> ⚠️ **Attention**
>
> Please note that the **Package archiving** will perform closing of the current **Subscription** used for this package.
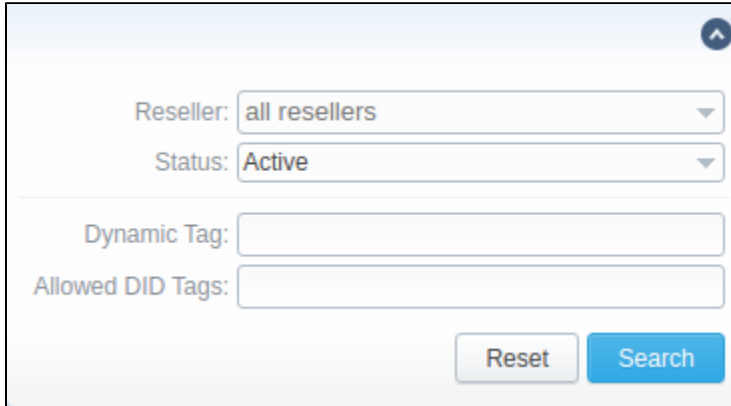
The list of functional **buttons/icons** in the section includes:

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

Advanced Search

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

Screenshot: Advanced Search drop-down menu

Field	Description
Reseller	Indicate a name of a target reseller
Status	Select the status of a package: • ***Active*** • ***Disabled*** • ***Archive***
Dynamic Tag	Indicate a target dynamic tag of a package
Allowed DID Tags	Indicate target DID tags of a package

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

Adding a New Package

You can add a new package by clicking the **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 the 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 will be applied to traffic with negative transaction cost (generally, origination traffic); • **Vendor** - this type will be applied to traffic with positive transaction cost (generally, termination traffic).

> ⊘ **Tip**
>
> As Packages are applied after the Rate identification in the system, it's important to understand which type of a Package will be used in a particular case. Let's say we have a Client with both Orig and Term roles in the system with the following setup:
>
> • both Customer and Vendor type Packages assigned with limits for '1' destination
> • orig Rate for '1' destination
> • term Rate for 1' destination
>
> If this Client has MADE a call for '1' destination, the system will be going to create a negative Transaction for this call. As we have a respective Customer type Package assigned, it will be used to bill this call.
>
> The same Client has RECEIVED a call for '1' destination, the system will be going to create a positive Transaction for this call. As we have a respective Vendor type Package assigned, it will be used to bill this call.
>
> **Note**: in case of negative pricing (negative Rates for origination or negative Rates for termination), the opposite types of Packages will be used. I.e., if we pay our Client for origination, and they have both Customer and Vendor type Packages assigned, the Vendor type Package will be used to bill origination traffic.

> ⚠ **Attention**
>
> This option has been added in version **3.16.0.**

Period Settings	Settings regarding a package period	
	Period	Specify a period for the current package if it's renewable. Allowed values: 1-24 hours, 1-99999 days, 1-12 months, 1-99999 years.
	Advance Renew	Next renewal will be made within a specified period in advance (before the renewal date). Allowed values: 1-24 hours, 1-99999 days, 1-12 months, 1-99999 years.
	Renew For	Indicate a period, during which the system will try to renew a package. If no value is specified, attempts to renew a package will be endless. Allowed values: 1-24 hours, 1-99999 days, 1-12 months, 1-99999 years.

> ⚠ **Attention**
>
> Please note that **Period**, **Advance Renew** and **Renew For** fields cannot be set to non-normalized time intervals (example: 75 hours).

Billing Settings	List of settings concerning the 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 a customer's respective **Tax Profile**
	Align to Payment Terms checkbox	Allows the system to align a package period to customer's Payment Terms, equalizing Package billing with actual invoicing.

> ⚠ **Attention**
>
> The length of the first **Subscription period** can be reduced in order to allow the following periods to match the invoicing periods in the Client's **Payment Terms**. All the charges and limits of the first period will be proportionally recalculated if the duration of the first period has been reduced.
>
> In order to process it correctly, the **Package Period** should match the Client's **Payment Terms** length. Alternatively, the periods of the **Package** and **Payment Terms** need to equal to a multiplex number. In this case, we will get equal **Package** charges in each invoice provided the periods are equal. If the **Package period** is longer than the **Payment Terms** length, we will get the **Package** charges with an equal interval.

	Full charge checkbox	Allows forcing full charge and limits for the first period regardless of the enabled **Align to Payment Terms** option.
	Charge on Event c heckbox	If enabled, a package subscription fee will be applied when the first call within this package is made. Otherwise, a package would be free.
	Setup Fee	Select from a list of available options of setup fee settings: • ***Charge*** - setup fee will be charged when an event is billed by volume limit • ***Don't charge*** - setup fee won't be charged when limit by volume is used for event billing
	Client's Balance	Choose one of the following options: • ***Allow activating if insufficient***- client's package will be activated regardless of the client's balance; however, package limits will be used only when the clients balance is sufficient; • ***Deny activating if insufficient***- client's package will be activated only if there are sufficient funds on the balance
	Renewal Charge	Determine when the charge should be created: • ***Before period start*** • ***On period start*** ⊘ **Tip** This parameter will affect when the Package charge will be included in an Invoice. For example: ○ the ***Before period start*** option is typically used for pre-paid as the system will create a charge just before the Package renewal. Thus, for a monthly Package, a charge for Feb will be created on Jan 31st and fall into Jan Invoice, etc. ○ the ***On period start*** option is typically used for post-paid as the system will create a charge right on the renewal. So, for a monthly Package, a charge for Feb will be created on Feb 1st and fall into Feb invoice, etc.
Package Application	Information on package application	
	Priority	If there are multiple packages that satisfy a call, 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 the form of a table. To add a new fee type, you need to click on a ⊕ icon next to its name.	
	Fee Type	Select the type of 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 fee. Price is indicated in the package currency
DID Limits	Specify how many DIDs and from which group can be assigned to a customer with this package	

	DIDs Quantity	How many DIDs can be assigned to the client's accounts
	Allowed Tags	Specify tags that are used while creating DIDs
	On Hold	Indicate for how many days a 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 a ⊕ icon next to **Limits**.
	Code Deck	Specify a 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 the 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 the *Code Name* field is specified, this one will be inactive.
	Code Name	Specify a code name from a selected Code Deck. If the *Code* field is specified, this one will be inactive.
	Limit	Enter the number of free minutes or bonus money (depends on a selected limitation type) that will be used for a 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 the ⊕ 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 will appear. This charge includes all amounts needed for package activation. Also, you can add this charge to 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* is enabled.

4. Package reactivation will be stopped after the *Renew Due* period. However, a DID for this package will be expired after the *On Hold* period. Therefore, we recommend setting 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 a 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 in the **Management > Client Packages** section as well, even if this package is already assigned. As a result, in the **Invoices** and **Transactions** sections, an **old** name of the package will be specified. We **do not recommend** to edit the name of an already assigned package in **Retail > Packages**.

# DID Management

In this article

Section overview

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

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

DID Management Tab

The tab contains a list of all existing DID(s) and is presented in the form of a table with the following columns:
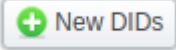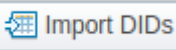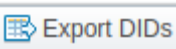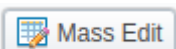
Screenshot: DID Management section
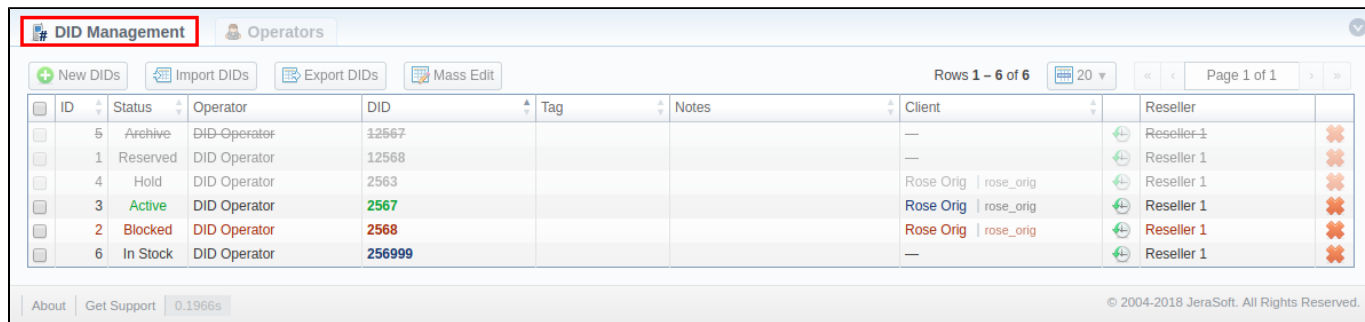
Column	Description		
ID	ID of a current DID number		
Status	Status of a current DID number		
	• *Active*	DID is in use by a customer	
	• *In Stock*	DID is in stock and available for usage	
	• *Blocked*	DID is temporarily not available for usage	
	• *Reserved*	DID is not used but at the same time not available for purchase yet	
	• *Hold*	DID is on hold after usage	

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

Functional buttons, presented in the tab are as follows:

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

> ⚠️ **Attention**
>
> When a package with the ***assigned DID number*** is not active, this DID number will be in ***Hold*** and a routing destination will be 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

Creating a DID Number

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

1. Go to the **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 the **In Stock** status. You can also use the **Import DIDs** 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).
Operat or	Specify a target DID provider
Status	Choose one of the statuses a DID can acquire: • **Reserved** • **In Stock** • **Archive**
After Hold	Define what status a DID is going to acquire after being in **Hold** status. The **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 regarding DIDs

3. Go to the **Retail** > **Packages** section. Create a package, where a number of allowed DID's to be picked from will be specified.
4. Assign a respective Package to a target customer in the **Subscriptions** 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 easily can change the status of multiple selected DIDs, specify tags and a 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 click the **Mass Edit** button and in a pop-up window specify the status from the drop-down list in a respective **Set Status to** field, then, click the **Update** button to confirm the change. Also, using the **Mass Edit** button, you can add a tag and notes. If you click 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 the **Import DIDs** button
2. In a pop-up window, you need to attach a **.csv** file you wish to be imported and fill in the respective fields
3. Click the **Process>>** button
4. Specify columns names from a drop-down list, and once again click **Process>>**
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 currently displayed in a section table. Apart from all the columns, the file contains an extra Package column, where a respective package name, if any of the DIDs is assigned to the package, will be displayed.

Screenshot: Export DIDs button

Screenshot: Package column in an 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. The tab is presented in the form of a table with the following columns:

Screenshot: Operators tab

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

The functional buttons/icons in the tab are:

Button/Icon	Description
New Operator	Allows creating a new operator
#	Allows filtering DID numbers in the **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.

Creating a New Operator

To add a new operator, click on the **New Operator** button and specify an operator's name and target reseller in the pop-up window. Then, click **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 a Card Series
- Calling Cards Series Properties

Section overview

This section represents a 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 their client panel to browse statistics and other relevant information.

Screenshot: Calling Cards section main window
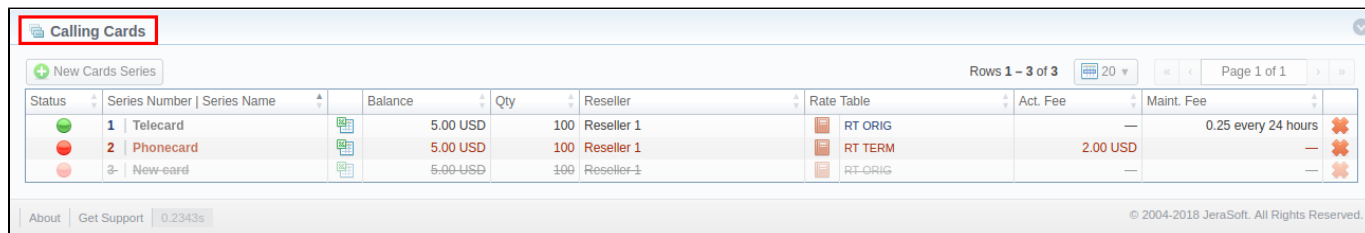
Column	Description
Status	A name that describes current cards series
	Indicates that cards series is **active**
	Indicates that cards series is **stopped**
	Indicates that cards series is **deleted**
**Number of Series	Name of Series**	A code of cards series and its name (if indicated). This code will prepend a serial number (only numeric, up to 100,000,000)
Balance	Cards balance value within a current series
Qty	Quantity of cards within a series
Reseller	Name of a reseller, who owns a 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 a 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 a 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, click the **Search** button; to cancel the applied parameters, click **Reset**.

Creating a Card Series

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

Control Panel checkbox	Defines whether calling cards users can log in to their control panels or not. If enabled, a user can log in to the control panel by using the card serial number as login and a PIN-code as password
Notes	Indicate additional information regarding a 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 a current cards series
Activation Fee	Enter an activation fee in this field (if necessary)
Maintenance Fee	Define a charged fee each X hours for all activated cards
Expiration date	Current calling cards series will be expired on a specified date
Expiration period	When a specified number of days passes, starting from activation date, a current calling cards series will be expired

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

Calling Cards Series Properties

To open series properties, click **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 a current series. There are **4** possible statuses: *activated, pending, expired, used*
Number	Number of a card within a current series
Balance	Balance of a respective calling card
PIN	Respective calling card PIN-number

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

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

Screenshot: Edit Cards Series tab

⚠ Attention

The 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).
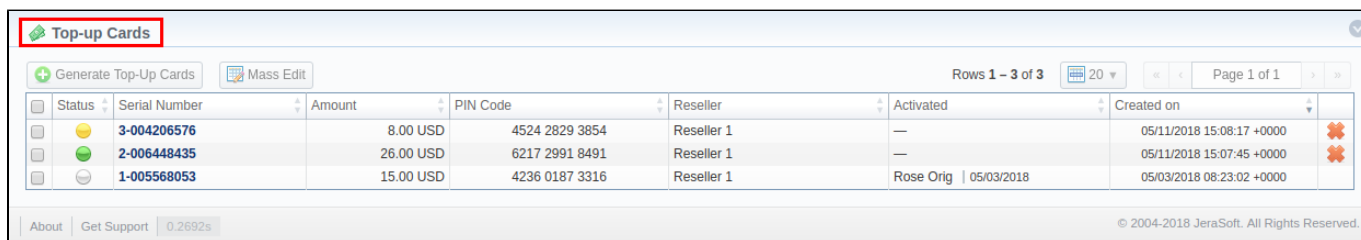
Top-up Cards

In this article

- [Section overview](#)
- [Advanced Search](#)
- [Creating New Top-Up Cards](#)
- [Mass Top-up Cards Edit](#)

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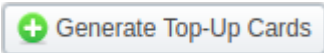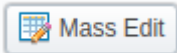
This section allows generating series of top-up cards for your customers. These cards can be used to recharge the balance. The section is presented in the form of a table with the following columns:

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 a 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 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
Generate Top-Up Cards	Allows creating a new top-up card(s)
Mass Edit	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 click **Search**:

Screenshot: Advanced Search drop-down menu

Creating New Top-Up Cards

To create new top-up cards, you need to:

1. Click the **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 the cards balance value. This amount will be added to a customer's balance on activation.
Quantity	Specify the number of cards you wish to be created.
Series	Set a code identifier of a cards 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 a current calling cards series (it can be **no less than 5 digits**)
Reseller	Defines the reseller that owns a current calling card(s)
Expiration date	Specify the date when a current calling card(s) will be expired

After a top-up card(s) is created, customers will be able to enter respective PINs in their client panel in the **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 existent top-up cards using the **Mass Edit** button. In the following window, you can specify the expiration date of cards by changing the *Expiration 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 the *Company* field value to *set to* and select a reseller from a drop-down list, then click the **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 expiration date for all rates at once, regardless of previous configurations.
Expiration Date	Final date, after which the rate will expire
Company	Name of one of your companies (or affiliates) that you can add in the Reseller section

Call Shops

In this article

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

Section overview

The 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 the Call Shops section, RADIUS must be enabled. The 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
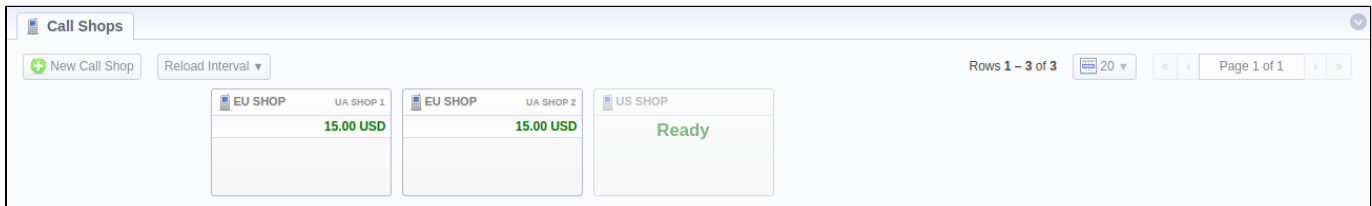
Advanced Search

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 click **Search**:

Screenshot: Advanced Search drop-down menu

Creating a New Call Shop

To create a new call shop, click the **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 a name for a call shop
Reseller	Select a reseller that will be an owner of this call shop
Currency	Specify preferred currency
Timezone	Choose a preferred timezone
Status	Select a status for this call shop: • **active** • **stop** • **deleted**
Allowed Credit	Specify the 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, click **OK** and a call shop will appear on the list.

Steps to activate a call shop

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

1. In the **Accounts** section, create an account for your call shop's account. Specify a rate table here, 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.

Finalize/Reactivate a Call Shop

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

Therefore, you may finish the call shop activities by clicking the **Finalize** button. Or you can reactivate the same call shop when it's over by clicking **Reactivate** 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, click a respective button.

Statistics

This chapter of our Guide is dedicated to **figures and various statistical reports in JeraSoft Billing.** Here, a user can monitor their 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
- Report Queries
- Archive Management

Dashboard

The **Dashboard** is the customizable section with charts that provide a 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 the 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 working with this section, please use the quick access toolbar (see the screenshot below):

Screenshot: Dashboard toolbar
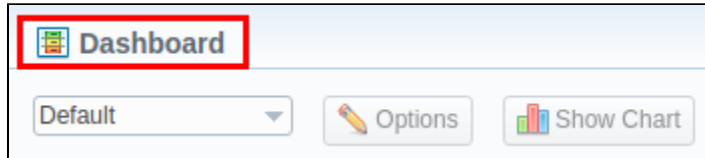
1. In the section, you can have **several dashboards**. To pick a target dashboard, click on the respective field and select a relevant dashboard (for example, *Default*) from the drop-down list.
2. To view the advanced settings, press the **Options** button on the toolbar.
   - You can **change the name** of the respective dashboard, specify a new name in the *Dashboard name* field, click **Save**, and reload the page.
   - To **copy the dashboard**, click **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 click the **Delete** button.
3. To add a relevant chart to the dashboard, click the **Show Chart** button. Then choose the category of the chart (i.e., **Summary** report/**Orig-Term** report/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 their 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** ℹ️ icon and it could be different from the specified interval if there is no data 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 are only presented for January, the *line chart* will be empty in this case.
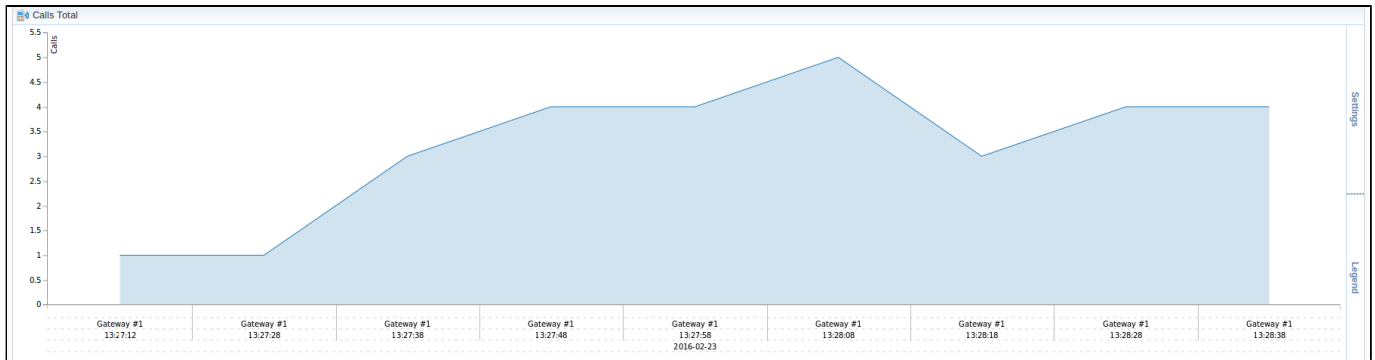
Screenshot: General example of a chart
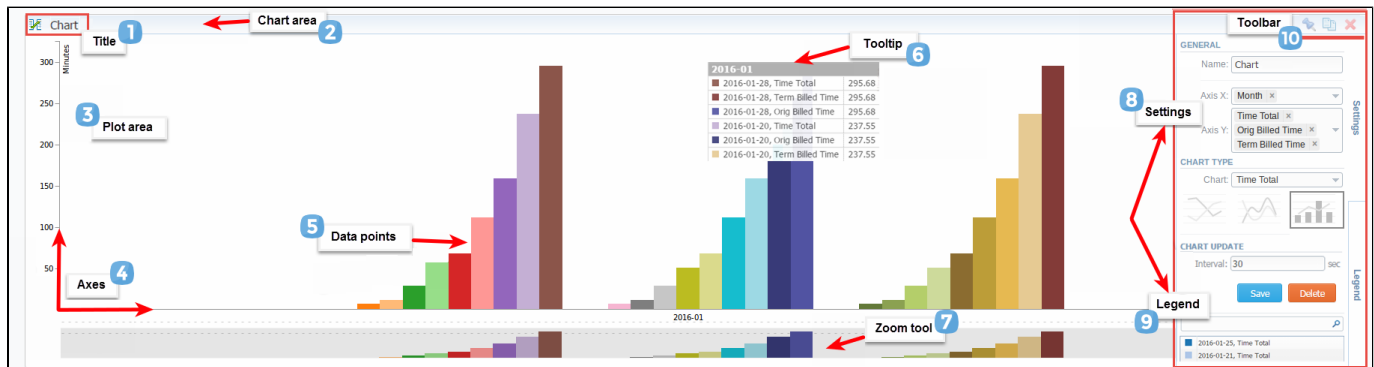
Screenshot: Orig-Term chart
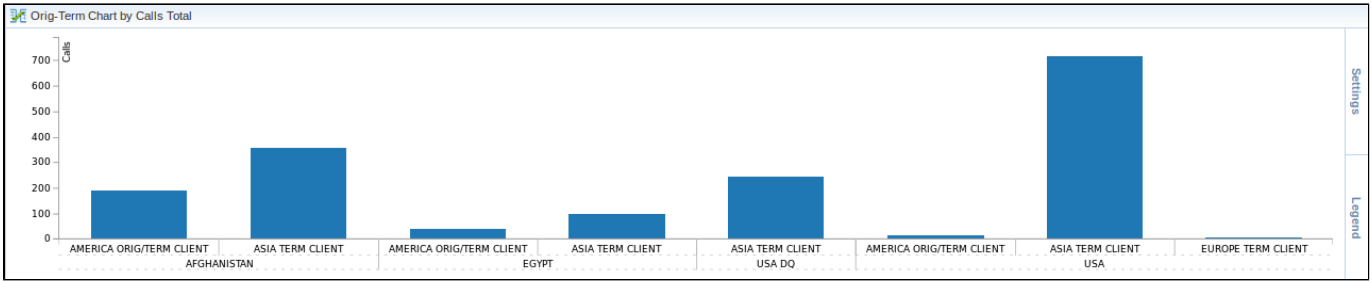
Screenshot: Active calls chart

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Customer Dynamics

In this article

Section overview

The **Customer Dynamics** section is designed to illustrate the data for analyzing and improving efficiency easily. Here, reports are presented in the form of a table. However, you can create a chart to interpret key information effectively and facilitate the decision-making process.

Screenshot: Customer Dynamics section/query form

Creating a New Report

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

Information Block	Field Description		
Filters	On the **Filters** menu, select the required parameters for the report. To cancel any filter, click on the delete ✹ icon next to the filter. You can start a **quick search** by typing filters' names in the field at the top of a 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 the 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 the 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 to the specified currency in the report.	
Active Duration	Determine the period (in months). If the customer has used any paid services within this period, (s)he will be considered 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 statistical 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 the last **Active Duration** period. • **Balance Pos** - Total of all positive balances for the clients that used any paid services within the last **Active Duration** period. • **Balance Neg** - Total of all negative balances for the clients that used any paid services within the last **Active Duration** period. • **Balance** - Total of all balances for the clients that used any paid services within the 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 the activation of the package. • **Renew Total** - Total amount charged for packages renewals, during the specified period, including initial **renew** within the activation of the package.

Also, you can create a template for reports and save specified parameters by clicking the **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 illustrating crucial information easily:

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

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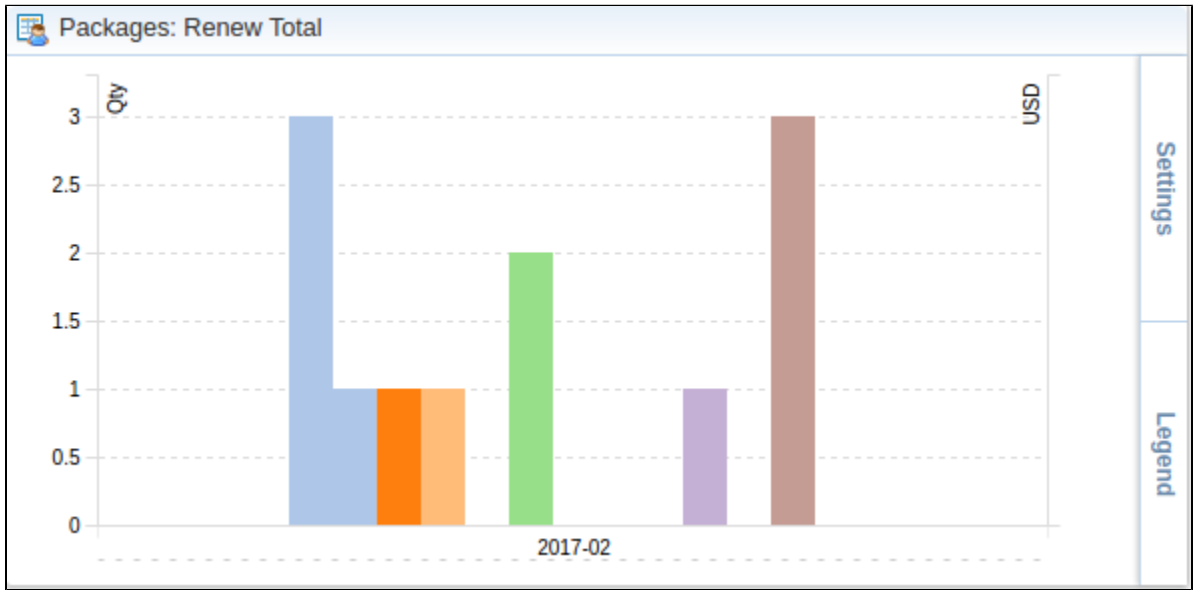
3. To create a **visual chart**, click on the **Show Chart** button above the report. There is more information available on this topic in the article **How to create a statistic chart?** in our Knowledge Base. From the drop-down list on this option, you can find the next pre-configured templates for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

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

Screenshot: Customer Dynamics chart

Sharing a Report

Each time you get a report output, the system generates a unique link in the format of "/view?id=<uniq-string>". It allows sharing data between the users, even if they belong to different resellers (the feature works similarly to Share by Link in Google Drive).

The link refers to the report data valid for a specific moment.

Example: When you send a link to a report, you ensure the recipient would see the same data as you do. If you change data in the system (for example, perform rerating), the previously copied link to the report will display data valid for the moment of generation (even though the actual data is now different).

You can also view the additional information about the generated report by hovering over the **Info** icon, which is located under the **Output** section:

Title	Description
Data Period	States the period set for a report
Generated by	Indicates the **Role** of the user who generated a report and specifies a generation time
Duration	Time spent to generate a report

Screenshot: Customer Dynamics Info icon

OUTPUT

Type: Web

Currency: USD

Active Duration: 3 month(s)

ⓘ

06/202

Data Period: 06/01/2020 00:00:00 +0000 — 06/01/2020 00:00:00 +0000
Generated by: Administrator on 06/24/2020 10:29:33 +0000
Duration: 0.0159 sec

0

Summary Report

In this article

Section overview

This section is designed to help users create a report that would contain summary information regarding all existing 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 a New Summary Report

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

Information block	Field Description
Filters	On the **Filters** menu, select the required parameters for the report. To cancel any filter, click on the delete ✖ icon next to the filter.
	You can start a **quick search** by typing filters' names in the field at the top of a 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 ➕ icon next to the **Period**. Specify the second interval for the report: • **Previous Period** • **Previous Day** • **Previous Week** • **Previous Month** • **Previous Year**

	Group by	Select from the list of the following accessible options to group the data in reports: • **Time**: Year, Month, Day, Hour • **Clients**: Client Type, Client, Account, C Series, Owner, Package • **Events**: Dst Code, Dst Code Name, Dst Country, Currency, Origin, Service, Result Code, Gateway, Gateway Tag • **Extras**: Time Profile, Setup Fee, Rate, Additive Rate. ⚠️ **Attention** • The **Group by** field is mandatory, it couldn't be empty in order to generate the report. By default, there must be at least two options: *Origin* and *Service* • If you group by **Client** and **his/her Timezone** differs from the **system Timezone**, the **latter** will be used in the respective report. • When you are grouping by **year**, it is recommended to indicate the calendar year in the period. The same goes for other period types.

Additional Filters
The accessible additional filters are: • **Clients**: Client, Client Tags, Client Type, Account, Account Tags, Package, Owner, Cards Serial • **Events**: Origin, Dst Code, Dst Code Name, Dst Code Country, Src Code, Src Code Name, Src Code Country, Rate (avg), Result Code, Gateway, Gateway Tag, Time Profile, Service • **Statistics**: ASR Std, ASR Current, ACD Std, ACD Current, PDD (avg), SCD (avg) • **Totals**: Volume Total, Volume Billed, Package Volume, Cost, Package Credit, Setup Fee Cost, Additive Cost, Taxes Total, Total Records, Non Zero Records, Success Records, Busy Records, No Channel Records, Error Records • **Extras**: Match Client, Match Rate

Output		This form contains settings of the report output data. Click the plus 🖼️ icon next to **Columns** and select the required columns to add them to the Output information block. Also, you can cancel any chosen item.

Accessible columns in the report
The list of additional columns include: **Columns for the main period:** Cost Total, Setup Fee Cost, Average Rate, Package Credit, Total Volume, Billed Volume, Package Volume, Total Events, Not Zero, Success, Busy, No Channel, Error, ASR Std, ASR Cur, ACD Srd, ACD Cur, PDD Avg, SCD Avg, xDRs List, Taxes Total, Additive Cost. **Columns for the 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** - the 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 a respective package that is billed according to the package limits • **Package Credit** - a volume of credit that has been charged within the respective package • **Total Events** - the entire quantity of events • **Not Zero Records** - the number of records that have the volume equal to or more than 1 • **Success Records** - the number of records that have a duration equal to or more than 1 and a 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** - the value calculated based on the records with "success" status divided by the total number of records minus all records with "no channel available" status • **Cur** - the value calculated based on the records with volume > 0 divided by the total number of records	
	ACD - average call duration in minutes	
	• **Std** - the sum of all records duration divided by the number of records with "success" status • **Cur** - the sum of all records duration divided by the number of records with duration > 0	
	PDD Avg - average post-dial delay in seconds	
	SCD Avg - average session connect delay in seconds	
	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 a look of a table view next to the **Type** field: • **Plain with total** - a simple table view with an additional row with calculated totals • **Plain** - a simple table view • **Grouped** - a table view with grouped data and possibility to collapse it ⚠️ **Attention** Please note that the **Grouped** type of a 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 the chosen parameter. It is available only for the **Plain** report type.	
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 to the specified currency in the report.	
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 a generated summary report is presented on a screenshot below:

Screenshot: Summary Report section

If the data in the report is grouped, it will be shown initially collapsed. To expand or collapse data in your report, click the ⊞ plus or ⊟ minus icons. To expand all data in the report, please click 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 as follows:
>
> - the 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

To create a simple summary report, you need to:

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

> ✅ **Tip**
>
> - If you want to sort already grouped data in columns, select respective parameters in the *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 sorted by values specified in the *Group by* field.

Creating a Query Template

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

To load already existed templates while generating statistic reports, click the **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** or **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 illustrating crucial information easily. You can generate a report using the same criteria in the **Orig-Term report** and the **xDR s list** sections.

1. To expand/collapse all the data for the *Grouped* output, click on the ⊞ icon above the report.

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 a **.xlsx** report file, click the **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.

5. 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 generating an xDRs report based **on the first period**;
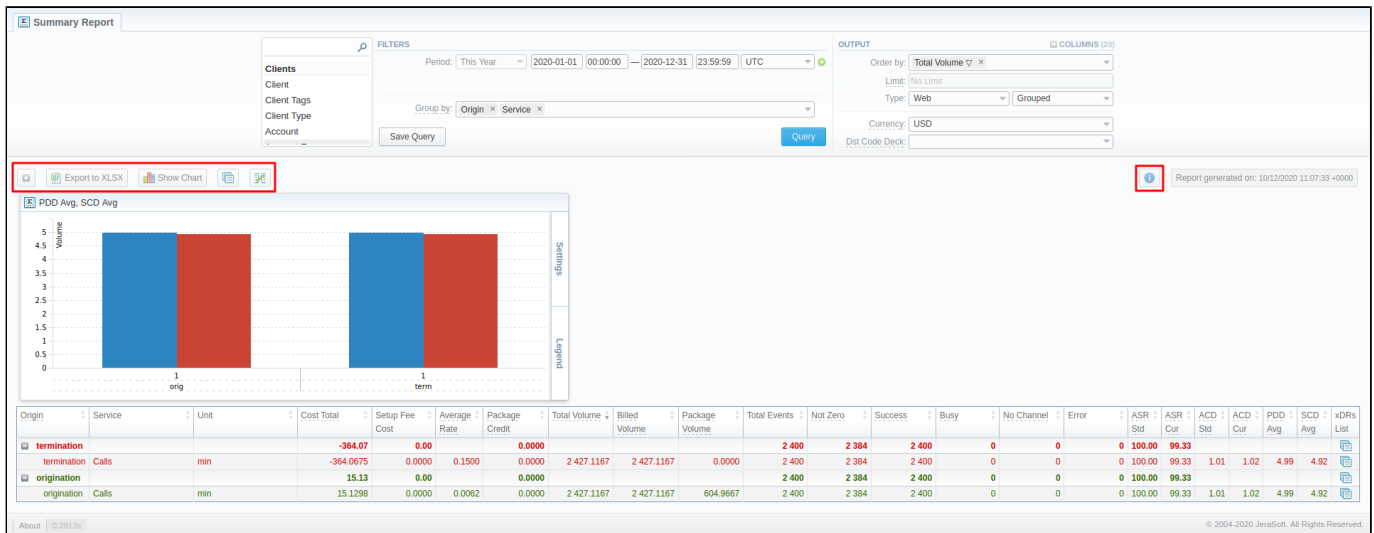> - the second xDRs list icon allows generating data based **on the second period** in the xDRs list.
>
> When you make a report and filter data by *Client/Client Tags/Account/Code/Code Name/Owner* parameters, two Orig-Term icons appear. They allow generating reports with **origination** and **termination** data separately.
>
> - this Orig-Term icon allows generating a report **based on origination data**;
> - this Orig-Term icon allows generating a report **based on termination data**.

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

7. You can check an actual date interval by clicking on the **Info** icon. The displayed data could be different from the Interval specified above if there is no data 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. You can view more info about it in the article How to compare report parameters over the periods?.

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

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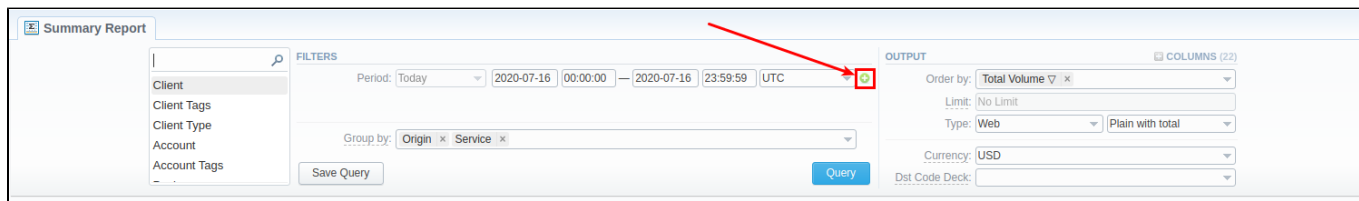
Then choose columns for a main and comparative period in the report Output form. When all required parameters are specified, click the **Query** button.

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
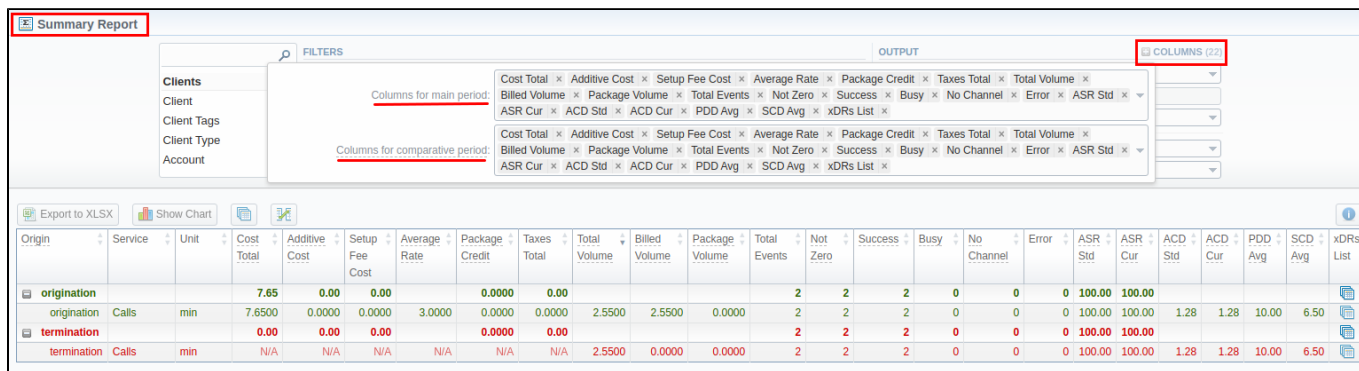

Origin	Service	Unit	Cost Total	Additive Cost	Setup Fee Cost	Average Rate	Package Credit	Taxes Total	Total Volume	Billed Volume	Package Volume	Total Events	Not Zero	Success	Busy	No Channel	Error	ASR Std	ASR Cur	ACD Std	ACD Cur	PDD Avg	SCD Avg	xDRs List
⊟ origination			7.65	0.00	0.00		0.0000	0.00				2	2	2	0	0	0	100.00	100.00					📋
origination	Calls	min	7.6500	0.0000	0.0000	3.0000	0.0000	0.0000	2.5500	2.5500	0.0000	2	2	2	0	0	0	100.00	100.00	1.28	1.28	10.00	6.50	📋
⊟ termination			0.00	0.00	0.00		0.0000	0.00				2	2	2	0	0	0	100.00	100.00					📋
termination	Calls	min	N/A	N/A	N/A	N/A	N/A	N/A	2.5500	0.0000	0.0000	2	2	2	0	0	0	100.00	100.00	1.28	1.28	10.00	6.50	📋

✅ **How does the Compare Period work?**

Example 1:

If you select the **Period** to be **Today** 00:00:00 til 23:59:59, the **Previous Period** and **Previous Day** values would be the same and show yesterday. The **Previous Week** option would display the same day last week (i.e., Monday for Monday), the **Previous Month** option would show the same date last month, and the **Previous Year** will display the same date last year.

Example 2:

If you select the **Period** to be **This Week**, the system will take the period starting Monday 00:00:00 and up to 23:59:59 on the *current day*. That is if your current day is Thursday, **This Week** would be Monday to Thursday. The comparative periods will work accordingly, selecting the same periods from the past week, month, year. Only the **Previous Day** option will result in offsetting a period one day behind (if a period is Monday to Thursday, comparative would be Sunday to Wednesday).

⚠️ **Attention**

When you use the **Compare Period** option in the **Summary Report** and **Orig-Term Report** sections, default chart templates will not be accessible.

Sharing a Report

Each time you get a report output, the system generates a unique link in the format of "/view?id=<uniq-string>". It allows sharing data between the users, even if they belong to different resellers (the feature works similarly to Share by Link in Google Drive).
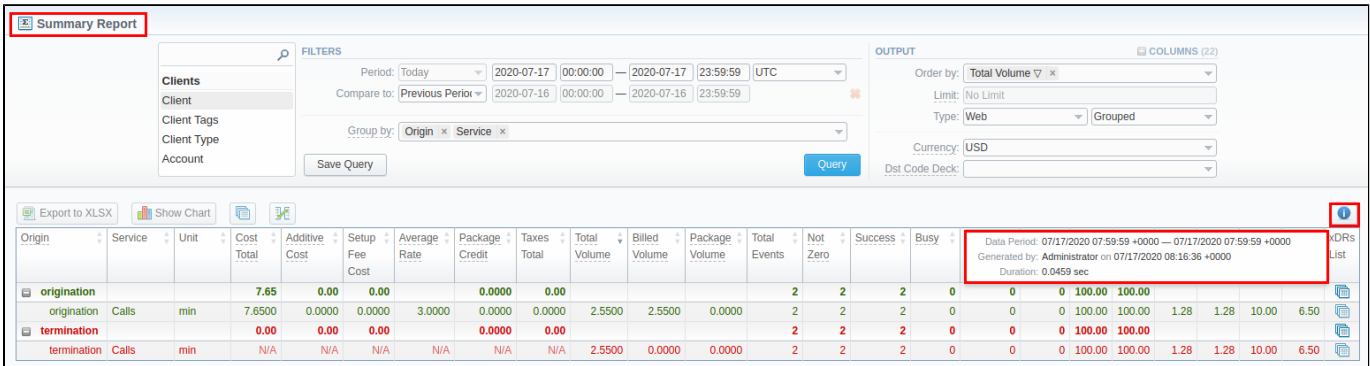
The link refers to the report data valid for a specific moment.

Example: When you send a link to a report, you ensure the recipient would see the same data as you do. If you change data in the system (for example, perform rerating), the previously copied link to the report will display data valid for the moment of generation (even though the actual data is now different).

You can also view the additional information about the generated report by hovering over the **Info** ⓘ icon, which is located under the **Output** section:

Title	Description
Data Period	States the period set for a report
Data Period 2	States the period set for a Compare Mode
Generated by	Indicates the **Role** of the user who generated a report and specifies a generation time
Duration	Time spent to generate a report

Screenshot: Summary report Info icon

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Orig-Term Report

Section overview

This section is designed to provide a user with a possibility to generate a report and trace all call routes from a **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 a New Orig-Term Report

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

Information Block	Field Description	
Filters	On the **Filters** menu, select the required parameters for the report. To cancel any filter, click the delete ✖ icon next to the filter. You can start a **quick search** by typing filters' names in the field at the top of a 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 ➕ icon next to the **Period**. Specify the second interval for the report. ✅ **Tip** When you select one of the **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 the 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 Code Country, Orig Rate, Term Client, Term Account, Term Code, Term Code Name, Term Code Country, Term Rate • **Extras:** Service, Orig Serial, Orig Client Type, Orig Owner, Orig Time profile, Term Client Type, Term Owner, Term Time profile ⚠️ **Attention** Please note that the **Group by** field is mandatory, it couldn't be empty in order to generate the report.
	Additional Filters	

There are the following accessible additional filters:

Clients	
Orig Owner	Define an origination Reseller for the report. *Accepts multiple values.*
Orig Client	Define an origination client for the report
Orig Client Type	Determine the type of origination client: *Client, Reseller, Calling Card, Call Shop*
Orig Client Tags	Determine tags that belong to an origination client
Orig Serial	Define an origination serial
Orig Account	Enter an origination account for the report
Orig Account Tags	Specify tags determined for an origination account
Term Owner	Define a Reseller for the report. *Accepts multiple values.*
Term Client	Define a termination client for the report
Term Client Type	Determine the type of termination client: *Client, Reseller, Calling Card, Call Shop*
Term Client Tags	Determine tags that belong to a termination client
Term Account	Enter a termination account for the report
Term Account Tags	Specify tags determined for a termination account
Events	
Service	Determine the name of service for the report
Match Orig Client	Search for matched/mismatched origination clients
Match Orig Rate	Search for matched/mismatched origination rates
Orig Dst Code	Specify an origination code for the report
Orig Dst Code Name	Indicate an origination code name
Orig Dst Code Country	Indicate an origination country name
Orig Src Code	Specify an origination source code for the report
Orig Src Code Name	Indicate an origination source code name
Orig Src Code Country	Indicate an origination source country name
Orig Rate (avg)	Enter the range of average call rate for origination
Orig Time Profile	Select an orig time profile that will be used as filter criteria
Match Term Client	Search for matched/mismatched termination clients
Match Term Rate	Search for matched/mismatched termination rates
Term Dst Code	Specify a termination code for the report
Term Dst Code Name	Indicate a termination code name

	Term Dst Code Country	Indicate a termination country name
	Term Src Code	Specify a termination source code for the report
	Term Src Code Name	Indicate a termination source code name
	Term Src Code Country	Indicate a termination source country name
	Term Rate (avg)	Enter the range of average call rate for termination
	Term Time Profile	Specify a term time profile that will be used as filter criteria
	Statistics	
	ASR Std	Specify the range of **ASR Std** for events you would like to display
	ASR Current	Specify the range of **ASR Cur** for events you would like to display
	ACD Std	Specify the range of **ACD Std** for events you would like to display
	ACD Current	Specify the range of **ACD Cur** for events you would like to display
	Totals	
	Volume Total	Enter the range of total volume of services
	Orig Volume Billed	Enter the range of orig volume of billed services
	Term Volume Billed	Enter the range of term volume of billed services
	Profit (abs)	Enter the absolute profit range
	Profit (rel)	Enter the relative profit range
	Margin	Enter the margin range
	Total Records	Enter the range of total events
	Not Zero Records	Define the range of events, that have a duration greater than 0
	Success Records	Define the range of successful events
	Busy Records	Define the range of busy events
	No Channel Records	Define the range of no channel events
	Error Records	Define the range of error events
Output	This form contains settings of the output data of the report.	
	Click the plus ⊞ icon 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 the main period are: *ASR Std, ASR Cur, ACD Std, ACD Cur, Total Volume, Profit (abs), Profit (rel), Orig Billed Volume, Orig Cost, Orig Rate (avg), Term Billed Volume, Term Cost, Term Rate (avg), Total Events, Not Zero, Busy, No Channel, Success, Error, Margin.* **Columns for the 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 (abs)*** - Revenue in respective currency, for example, USD (in fact, any system currency can be specified here) • ***Profit (rel)*** - Revenue in percent value	
Total Volume	The total volume of services	
Margin	The absolute value of profit divided by volume billed (orig and term).	
ASR	*Average successful rate (successful events percentage):* • ***Std*** - Number of events with ***success*** status divided by the total number of events minus all events with ***no channel available*** status • ***Cur*** - Number of events with duration > 0 divided by the total number of events	
ACD	*Average call duration:* • ***Std*** - Sum of all event duration divided by the number of events with ***success*** status • ***Cur*** - Sum of all event duration divided by the number of events with a duration > 0	
Events	*Quantity of events in a database* • ***Total Events*** - Total events quantity • ***Not Zero*** - Quantity of events that have a duration equal to or more than 1 second • ***Success*** - Quantity of events that have a duration equal to or more than 1 second and a 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 a look of a table view next to the ***Type*** field: • **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 the ***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 the 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 to the specified currency in the report.
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 icons. To expand all data in the report, please click **Ctrl** and ⊞.

> ⚠ **Warning**
>
> Please note, the system shows rounded values in the reports. However, while calculating, the system takes an exact value. Hence, the procedure of the rounding is as follows:
>
> - the 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:

- Select the desired parameters for the report on the **Filters** menu.
- Enter the period.
- Select some parameters in the **Group by** field, for example, *Orig Client, Service*
- Select **Columns** in the Output form, for example, *ASR Std, ASR Cur, ACD Std, ACD Cur, Success, Error, Profit (%).*
- Specify the **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 the respective parameters in the **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 the **Group by** field.

You can also sort data in a report manually using special arrows 🔼🔽 next to the name of the respective columns.

Screenshot: Orig-Term Report

Creating Reports Templates

You can also create a template for reports and save specified parameters by clicking the *Save Query* button. A pop-up window with settings will appear and you will 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** or **XLSx** file, which contains only currently displayed data, no automatic request to update data while exporting. Also, it is possible to create charts for illustrating crucial information easily. And you can generate a report using the same criteria in the **Summary report** and the **xDRs list** sections.

1. To expand/collapse all the data for the *Grouped* output, click on the ⊞ icon above the report.

2. 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.

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

4. 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?"** in our Knowledge Base.

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

6. 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.

7. 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 data for the period.

Screenshot: Orig-Term Report section/ chart
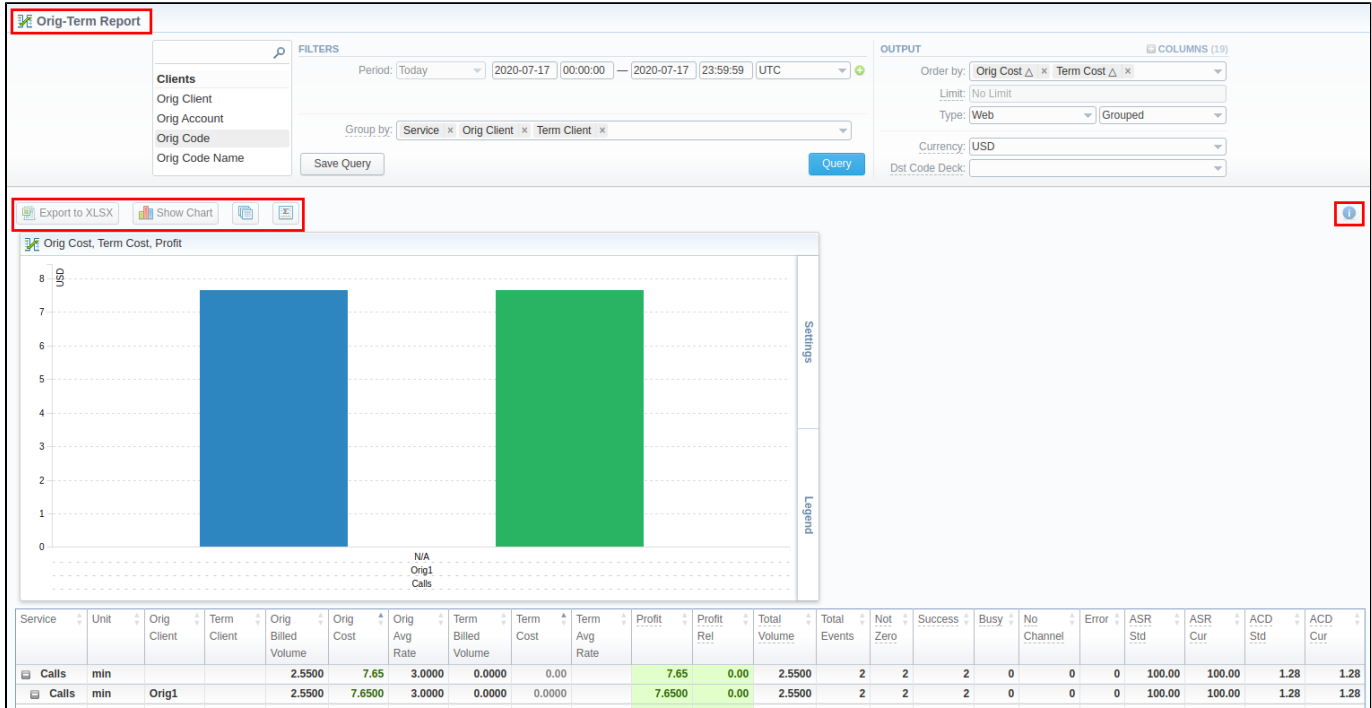
Side-by-side report

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 icon next to the **Period** field and specify both intervals *(**Period 1/Period 2**)* for the report.

Screenshot: Orig-Term Report query form

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

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: Orig-Term Report example

Sharing a Report

Each time you get a report output, the system generates a unique link in the format of "/view?id=<uniq-string>". It allows sharing data between the users, even if they belong to different resellers (the feature works similarly to Share by Link in Google Drive).

The link refers to the report data valid for a specific moment.

Example: When you send a link to a report, you ensure the recipient would see the same data as you do. If you change data in the system (for example, perform rerating), the previously copied link to the report will display data valid for the moment of generation (even though the actual data is now different).

You can also view the additional information about the generated report by hovering over the **Info** icon, which is located under the **Output** section:

Title	Description
Data Period	States the period set for a report
Generated by	Indicates the **Role** of the user who generated a report and specifies a generation time
Duration	Time spent to generate a report

Screenshot: Orig-Term Report Info icon

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Profit Report

In this article

- [Section overview](#)
- [Creating a Profit Report](#)
- [Creating a Query Template](#)
- [Export a Generated Report](#)
- [Side-by-side report](#)
- [Sharing a Report](#)

Section overview

This section allows generating the profit report, which analyzes 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 a profitability report, it allows seeing their origination customers sending traffic to **Manager_2**, who owns the 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 a Profit Report

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

The list of query fields is as follows:

Information block	Field Description	
Filters	On the **Filters** menu, select the required parameters for the report. To cancel any filter, click the delete ✖ icon next to the filter. You can start a **quick search** by typing filters' names in the field at the top of the 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 ➕ icon next to the **Period**. Specify the second interval for the report. ✅ **Tip** When you select one of the **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 a 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 solely between clients of the chosen manager will be shown. By default, the field value is set to **All visible**

	Group by	Select a grouping option. Here you can choose and swap columns, as well as change their order. There are the 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, Term Rate, Package name.* • **Extras:** *Service Name, Income Series.* ⚠️ **Attention** Please note that the **Group by** field is mandatory, it couldn't be left empty to generate the report.
	Additional Filters	
		There are the 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, Service*
	Income Client	Specify an origination client(s) for the report
	Income Client's Tag	Specify a tag(s) assigned to origination clients
	Income Account	Determine an 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 the originator's calling card
	Income Reseller	Specify a target reseller(s) for the report
	Outcome Client	Define a termination client(s)
	Outcome Client's Tag	Define a termination client's tag(s)
	Outcome Account	Indicate an account(s) of the 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 a termination code name
	Package	Determine the name of the used package
	Service	Specify the service
Output		This form contains settings of the report output data. Click a plus 🖼 sign next to **Columns** and select required columns to add them to the Output information block. Also, you can cancel any chosen item.

Accessible columns in the report

Additional columns of the report are:

Columns for the main period:

Volume Total, Income Cost, Income Avg Rate, Income Billed Volume, Outcome Cost, Outcome Avg Rate, Outcome Billed Volume, Profit, Profit rel.

Columns for the comparative period:

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

And it's possible to choose each parameter expressed in 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 rel*** - 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 the 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 report format from a drop-down list: **Web/CSV/Excel XLS/Excel XLSx** Also, select a table view next to the ***Type*** field: • ***Plain*** - a simple table view • ***Grouped*** - a table view with grouped data and possibility to collapse/expand it ⚠ **Attention** Please note that the **Grouped** type of a 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 a chosen parameter. It is available only for the ***plain*** type of 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 to the specified currency in the report.	
Code Deck	Using a drop-down list, select a respective code deck. All code names will be rewritten and presented according to the specified code deck.	
	If there is no value specified, the 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 [icon] plus or [icon] minus icons.

> ⚠️ **Warning**
>
> Please note that the system shows rounded values in the reports. However, while calculating the system takes an exact value. Hence, the procedure of the rounding is as follows:
>
> - the system rounds currency values according to the settings of a respective currency;
> - other parameters are rounded to the nearest ten thousandths. For example 3.879256 to 3.8793.

Creating a Query Template

A user can create a template for profit reports and save specified parameters by clicking the **Save Query** button. A pop-up window with settings will appear and you will 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 the visibility of respective reports templates. Whether you want to keep templates private or leave them visible for users under a 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 a creator.

Watch		This tool allows to generate reports automatically 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 generate a report automatically. It could be several times, for example, *10:00, 12:00, 18:00*
	Days of Week	Indicate days of the week to generate a report automatically. 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 the **Load Query** button and click on a template name or a ▶️ icon, respectively.

Export a Generated Report

You can export data to **XLSx** or **CSV** file, which contains currently presented data by clicking the **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**
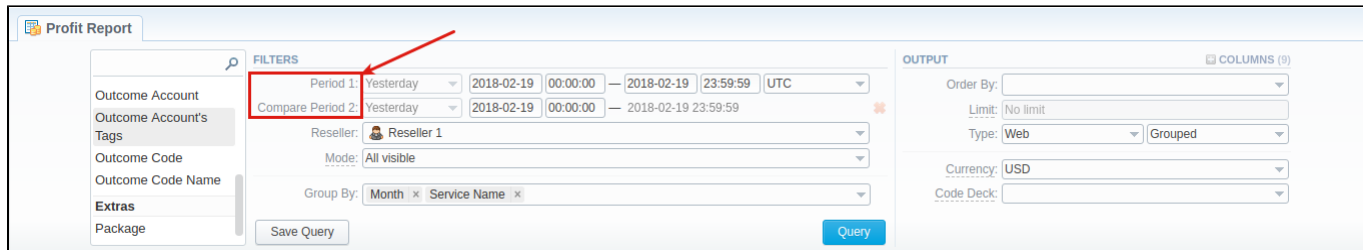
You can check an **actual date interval** of the report by clicking the **Info** ℹ️ icon, and it could be different from **the Interval** specified above if there is no data for the period.

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 ➕ icon 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 the 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 **Profit** into separate columns *(see screenshot below)*.

Screenshot: Profit Report query form

Sharing a Report

Each time you get a report output, the system generates a unique link in the format of "/view?id=<uniq-string>". It allows sharing data between the users, even if they belong to different resellers (the feature works similarly to Share by Link in Google Drive).

The link refers to the report data valid for a specific moment.

Example: When you send a link to a report, you ensure the recipient would see the same data as you do. If you change data in the system (for example, perform rerating), the previously copied link to the report will display data valid for the moment of generation (even though the actual data is now different).

You can also view the additional information about the generated report by hovering over the **Info** 🛈 icon, which is located under the **Output** section:

Title	Description
Data Period	States the period set for a report
Generated by	Indicates the **Role** of the user who generated a report and specifies a generation time
Duration	Time spent to generate a report

Invoicing Report

In this article

Section overview

This section allows a user to build a report, based on information from the issued invoices with a possibility to export data (*.xls, .xlsx*, and *.csv*). Since the **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
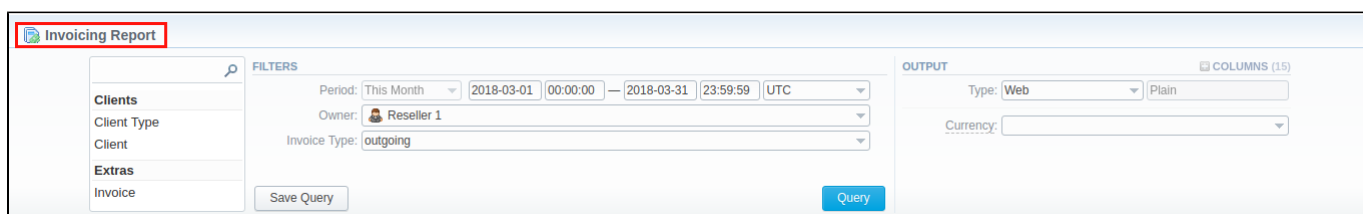
Creating a New Invoicing Report

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

Information Block	Field and Description		
Filters	On the **Filters** menu, select the required parameters for the report. To cancel any filter, click on the delete ✖ icon next to the filter. You can start a **quick search** by typing filters' names in the field at the top of a 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 the type of invoice from the drop-down list: • *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 a 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 the **Payment Accounts** section
Output		This form contains settings of the report output data Click a plus 🔲 icon next to **Columns** and select the required columns to add them to the 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 a 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, the number of services, country code, code name, package name, etc.
Volume	Volume of the service, for example, the 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 an 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. All values will be automatically converted to the specified currency in the report

After selecting all needed parameters, click the **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 the **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 *Reports Templates* article in our **User Guide.**

Invoicing Report buttons: export, chart.

You can export data to a **CSV** or **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 the **Export to CSV** 📄 button above the report.

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

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

Sharing a Report

Each time you get a report output, the system generates a unique link in the format of "/view?id=<uniq-string>". It allows sharing data between the users, even if they belong to different resellers (the feature works similarly to Share by Link in Google Drive).

The link refers to the report data valid for a specific moment.

Example: When you send a link to a report, you ensure the recipient would see the same data as you do. If you change data in the system (for example, perform rerating), the previously copied link to the report will display data valid for the moment of generation (even though the actual data is now different).

You can also view the additional information about the generated report by hovering over the **Info** ℹ icon, which is located under the **Output** section:

Title	Description
Data Period	States the period set for a report
Generated by	Indicates the **Role** of the user who generated a report and specifies a generation time

LCR Lists

In this article

Section overview

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

Screenshot: LCR Lists query form

Creating an LCR Report

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

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

	Owner	Specify a target reseller
	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 routes that will be shown. To display all possible routes, leave this field **empty**.
Output	This form contains settings of the report output data. Click the plus ⊞ icon next to **Columns** and select the required columns to add them to the Output information block. Also, you can cancel any chosen item.	
	Accessible columns in the report	
	There are the 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 email. 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 to the specified currency in the report.
	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.

The LCR report has the following look:

Screenshot: LCR report

Each route, presented in a report, besides a 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 the **Save Query** button. Visit our Reports Templates article for detailed information.

To query by template, click the Load Query button and the ⏵ icon .

Export generated report

You can export data to a **CSV** or **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, click on the **Export to XLSx** button above the report.

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

Sharing a Report

Each time you get a report output, the system generates a unique link in the format of "/view?id=<uniq-string>". It allows sharing data between the users, even if they belong to different resellers (the feature works similarly to Share by Link in Google Drive).

The link refers to the report data valid for a specific moment.

Example: When you send a link to a report, you ensure the recipient would see the same data as you do. If you change data in the system (for example, perform rerating), the previously copied link to the report will display data valid for the moment of generation (even though the actual data is now different).

You can also view the additional information about the generated report by hovering over the **Info** ⓘ icon, which is located under the **Output** section:

Title	Description
Data Period	States the period set for a report
Generated by	Indicates the **Role** of the user who generated a report and specifies a generation time

xDRs List

In this article

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

Section overview

This section allows you forming 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. The section consists of a query form similar to those of other reports:

Screenshot: xDRs List query form

Creating an xDR Report

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

Information Block	Field Description
Filters	On the **Filters** menu, select the required parameters for the report. To cancel any filter, click on the delete 🟠 icon next to the filter.
	You can start a **quick search** by typing filters' names in the field at the top of a 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 the following accessible additional filters:
	- **Clients:** *Client Type, Client, Client Tags, Account Tags, Cards Serial, Account, Package.* - **Events:** *Dst Code, Dst Code Name, Origin, Result Code, Tags, Gateway.* - **Extras:** *Service, Owner, Src Code, Src Code Name, 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 the report (*Client, Reseller, Calling Card or Call Shop*)
	Client Define a client for the report
	Client Tags Specify customer's tags
	Account Enter a 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 (can be active or archived Package)
	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 a filtering criterion
	Service Name	Select a type of service (**data, call, SMS**) for the report
	Owner	Indicate a reseller
	Src Code	Specify a code of a source number
	Src Code Name	Specify a code name of a source number
	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 a setup fee of an event
	DST Party ID	Determine the 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 the 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 rerating**)
	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 the plus ⊞ icon next to **Columns** and select the required columns to add them to the Output information block. Also, you can cancel any chosen item.
	Accessible columns in the report	

There are the following columns to add to the report:

- **Clients:** *Client Type, Clients Tags, Client ID, Client, Account, Account ID, Accounts Tags, 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 Source, 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 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 to the specified currency in the report.
Dst Code Deck	Select a destination code deck from a drop-down list. All codes in the following report will be presented according to the specified code deck.
Src Code Deck	Select a source 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 xDRs report:

Screenshot: xDRs report

Event time	Code	Currency	Rate	Origin	Client	Service Name	Billed Volume	Connect Time	Gateway ID
05/02/2018 07:25:43 +0000	123	USD	2.00000000	termination	Client 0 TERM	Calls	118.0000	05/02/2018 07:25:43 +0000	11
05/02/2018 07:25:43 +0000	123	USD	4.00000000	origination	Client 0 ORIG	Calls	118.0000	05/02/2018 07:25:43 +0000	11
05/02/2018 07:25:43 +0000	123	USD	2.00000000	termination	Client 0 TERM	Calls	118.0000	05/02/2018 07:25:43 +0000	11
05/02/2018 07:25:43 +0000	123	USD	4.00000000	origination	Client 0 ORIG	Calls	118.0000	05/02/2018 07:25:43 +0000	11
05/02/2018 07:25:45 +0000	123	USD	2.00000000	termination	Client 0 TERM	Calls	116.0000	05/02/2018 07:25:45 +0000	11

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

xDR Report export buttons

You can export data to a **CSV** or **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, click on the **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 *1647398901830024226688*. To filter calls by:

- **first digits of the Session ID**, enter digits + asterisk (*): *16**.
- **middle digits of the 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

Error rendering macro 'contentbylabel'

parameters should not be empty

Mismatches Report

In this article

- [Section overview](#)
- [Creating a New Mismatches Report](#)
- [Knowledge Base Articles](#)

Section overview

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

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

Screenshot: Mismatches Report section

Creating a 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 the **Query** button.

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

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

Screenshot: Mismatches Report query form

Mismatches Report

Period: Custom   2018-01-01   00:00:00 — 2018-01-15   23:59:59   UTC

Service: SMS

Query

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

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

Screenshot: Creating a report

Type: all

Duration: non-zero

Output: Web

Query xDR

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

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

xDRs Rerating

In this article

- [Section overview](#)
- [Performing xDRs Rerating](#)
- [Knowledge Base Articles](#)

Section overview

This section allows rerating calls, SMS, data. It's useful when some changes were applied to the rates, currencies, client accounts, or you need to correct errors with a **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 click the **Query** button.

Information Block	Field Description
Filters	On the **Filters** menu, select the required parameters for the report. To cancel any filter, click on the delete ✖ icon next to the filter. You can start a **quick search** by typing filters' names in the field at the top of a 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 the **Services** section
	Additional Filters
	There are the 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 a needed destination.
	Code Name — Enter a code name of a 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 a 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.
	Dst 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, and you will need to approve the process by clicking the **Confirm Rerating** button.

Screenshot: xDRs Rerating approval notification
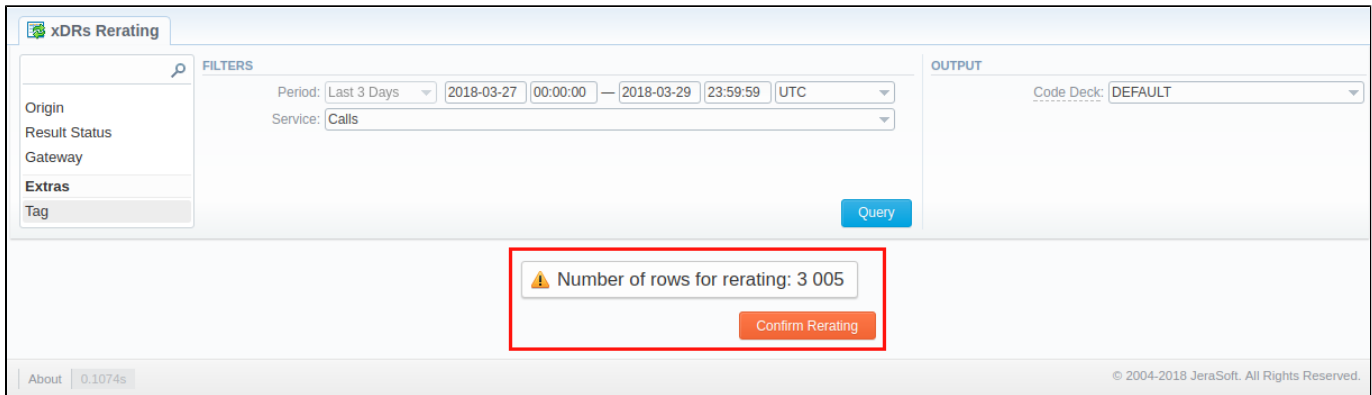
3. Finally, the calls will undergo rerating, and you will need to wait for the system procedure to be completed. You can see the respective number of calls for the rerating on the toolbar at the top of the page.

Screenshot: xDRs in the queue for rerating

You will also receive the following notification: **xDRs have been added to queue now. Please wait while the system processes them.** Then, you need to run the **Calculator** in the **System Services** 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

Error rendering macro 'contentbylabel'

parameters should not be empty

Report Queries

In this article

- Report Queries List
- Creating a Report Query
  - To Email Tab

Report Queries List

This section allows you to view, execute and manage the Report Queries of **Active Sessions, Balance Report, Customer Dynamics, Invoicing Report, LCR Lists, Orig-Term Report, Profit Report, Rates Analysis, Routing Analysis, Summary Report,** and **xDRs List**. Moreover, you can send reports to email to keep yourself informed about the traffic status without the need to log in to the system and query reports. The section structure is as follows:

Screenshot: Report Queries section main window

Column	Description
ID	Query ID
Name	Name of the query
Query	Query details
To Email	Tool to run a report automatically at the exact time and send the results to the list of emails

The section contains the following functional icons:

Icon	Description
New Report Query	Allows creating a new report query
(preview icon)	Allows previewing a query
(run icon)	Allows running a respective report by this query
(green icon)	Indicates that **sending a report via email** option is enabled. ⓘ You can **enable/disable** the **to email** rule after it's been created in the system by clicking the indication icon.
(grey icon)	Indicates that **sending a report via email** option is disabled.

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

Creating a Report Query

You can create a report query either using a **New Report Query** button in the main section, or from the respective sections while generating reports. If you are adding a new query from the report section, you need to:

1. open the target report section;
2. fill in a query form with respective parameters;
3. click the **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 Query form

Information Block	Description
Name	Specify a name of the template
Visibility	It allows controlling the visibility of respective reports templates whether you want to keep templates private or leave them visible for other users: • **Public -** available for all users of the same **Reseller**; • **Private -** accessible strictly for the creator.
Report	Here, a report type will be prefilled.
Filters / Output	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 Email Tab

After creating the Query, you can manage whether to allow generating reports at the specific times and send results to specified emails. For this, open the needed **Report Query**, and click the **To Email** tab:

Screenshot: To Email tab

Information Block		Description
General	**Status**	Specify if this function is on: • **Enabled** • **Disabled**
	Output Type	Specify a file type to be sent: • **CSV** • **Excel**

Recipients	Users	Define system Users to send a Query to (can be empty if the *Extra Emails* field is filled in)
	Extra Emails	Specify the needed extra email addresses (can be empty if the *Users* field is filled in)
Scheduling	Run Times	Determine an appropriate time to generate a report automatically, it could be several times, for example, ***10:00, 12:00, 18:00***
	Run Times Timezone	Indicate a timezone for a selected report run time
	Days of the Week	Define days of the week to generate a report automatically. For example, you can run a report only on Monday or each day of the week.

⚠ Warning

If you create the report query and the **To Email** option is enabled, the client will receive the file with a report even when there are no statistics for a specified period.

Archive Management

In this article

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

Section overview

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

Screenshot: Archive Management section

Active Statistics Packages

The **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 icon to expand all available active packages. Information about packages is presented in the 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 number of processed xDRs (origination/termination)
Volume	Total amount of processed events (origination/termination)
Paid xDRs	Total number 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
Rerating xDRs	Quantity of events queued for rerating
Progress	Overall data processing progress

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

Icon	Description
	Updates a selected package to the latest database format (useful after a system update to a new version). All updated packages are marked with the ✔ 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 a package to archive and removes from database
	Deletes a package from the database **without** performing balance rollback
	Deletes a package from the database **with** balance rollback

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

Archived Statistics Packages

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

Screenshot: Archived Statistics Packages

ARCHIVED STATISTICS PACKAGES				
Date	Filename	Size		
⊞ **2018, April** (14)		0.00 Mb	☐	☐
⊞ **2018, March** (48)		0.14 Mb	☐	☐
⊞ **2018, February** (33)		0.00 Mb	☐	☐
⊞ **2017, October** (129)		0.00 Mb	☐	☐
⊞ **2017, September** (204)		0.00 Mb	☐	☐
⊞ **2017, July** (12)		0.40 Mb	☐	☐
⊞ **2017, May** (537)		4.18 Mb	☐	☐
⊞ **2017, March** (412)		4.20 Mb	☐	☐
⊞ **2016, November** (42)		0.00 Mb	☐	☐
⊞ **2016, October** (132)		0.00 Mb	☐	☐
⊞ **2016, September** (108)		0.00 Mb	☐	☐
⊞ **2016, July** (8)		0.00 Mb	☐	☐
⊞ **2016, June** (28)		0.00 Mb	☐	☐
⊞ **2016, May** (2)		0.00 Mb	☐	☐
⊞ **2011, December** (4)		0.00 Mb	☐	☐

You can download these files from the billing server:
/opt/jerasoft/vcs-data/archive

Process

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

Information block function buttons include:

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

To perform a target action, check the respective package and click the **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 the current day's package.

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Tools

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

- Active Sessions
- Factors Watcher
- xDR Disputes

Active Sessions

In this article

- [Active Sessions Search Form](#)
- [Creating an active sessions report](#)
- [Query templates](#)
- [Active Sessions buttons: reports, export, chart.](#)
- [Knowledge Base Articles](#)

Active Sessions Search Form

This section provides 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 icons.

> ⚠️ **Attention**
>
> Please note, this function requires **RADIUS Accounting Start packets** to be sent from your Gateway and the **Track Active Events** option enabled in the **Gateways** section.
>
> Be advised that the **Track Active Events** option **diminishes system performance**. Please, activate it only if you use capacity control by billing and/or require active sessions status monitoring.

Creating an active sessions report

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

Information Block	Field Description	
Filters	On the **Filters** menu, select the required parameters for the report. To cancel any filter, click on the delete ✖ icon next to the filter. You can start a **quick search** by typing filters' names in the field at the top of a drop-down menu with filters.	
	Group by	Select a grouping option. Here you can choose and swap columns, or change their order. There are the following accessible options to group 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 the 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 origination account for the report
Orig Code	Specify an origination code for the report
Orig Code Name	Indicate an origination code name
Term Client	Define a termination client for the report
Term Account	Enter a termination account for the report
Term Code	Specify a termination code for the report
Term Code Name	Indicate a termination code name

Output	This form contains settings of the report output data. Click the plus 🖼 icon next to **Columns** and select the required columns to add them to the Output information block. Also, you can cancel any chosen item.

Accessible columns in the report	
There are the following columns to add in the report: • *Total, Info, Originator, Terminator, Src Number, Dst Number, Duration.*	
Total	Total quantity of sessions in the database.

Info	By hovering over the **Info** ℹ icon, 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 the **Grouped** type of a 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 a chosen parameter. It is available only for the *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 the *Save Query* button in the form. A pop-up window with settings will appear, and you will need to fill in the form. A detailed description of creating a template can be found in the Report Templates article in our **User Guide.**

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

Active Sessions buttons: reports, export, chart.

You can export data to a **CSV** or **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 illustrating crucial information easily. 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, click the respective **Reload options** button and select needed values in the **Interval** and **Show Last** fields.

✅ **Tip**

The *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, specify it in the *Show last* field.

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, click the **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.
> - click the **Show Chart** button and open the chart settings.
> - select the *Date* and *Time* parameters on the **X Axis**, and the *Calls Total* parameter on the **Y Axis**.
> - specify a **line type** of the chart and click on the **Save** button.

Knowledge Base Articles

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parameters should not be empty

Factors Watcher

In this article

Factors Watcher List

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

Screenshot: Factors Watcher main section

Column	Description
ID	Identification number of factors watcher
Name	Name of a factors watcher
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 a factors watcher
	Allows editing a factors watcher
	Allows deleting a factors watcher

Creating a New Factors Watcher

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

Screenshot: Adding a New Factors Watcher

Field	Description
Name	Factors watcher's name. This field is mandatory. The name must 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 further usage (optional) ⚠️ **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.**
Check Every, min	Frequency of checks, performed by a factors watcher
Compare Mode	This period is used to compare the 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. The options here are: • **Previous Period** • **Previous Day** • **Previous Week** • **Previous Month** • **Previous Year**
Period Start	Enter the specific time to set a factors watcher starting date
Timezone	Specify a timezone that will be used for reports queries/blocking routes
Query information block	**Indicate the 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 a client(s), the **Account** field becomes unavailable and vice versa.
Account	Select a target client's account
Code Name	Indicate a code name
	⚠️ **Attention**
	The **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 a selected parameter (**client, account, code name, code** or **gateway**). Pay attention that based on selected parameters, respective **Action** options will be available. For instance, if you group by **Code**, in the rule settings you will have the **Block Code** option and so on.
Test Query button	Click on this button to perform a test query in the Summary or xDRs List Report for the period, specified in the **Check Every** and **Analyze Interval of** fields

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

Configuring Watch Rules

Next, you need 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 rule;
2. click on the name of the Factors Watcher or the **watch rule** 📊 icon;
3. in the appeared window, click the **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 a similar **Match** parameter
Match	A set of parameters that are used as a basis for checks
	Service — Determine the type of service (e.g., **calls**, **SMSs**, **data**)

Origin	Type of route to check (*Origination/Termination*)
Code Name	Indicate the code name to apply a rule to
Gateways	Specify the gateway to apply a 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, the 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 a **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 a measurement unit specified in the service - **records_total, records_notzero, records_success, records_busy, records_nochannel, records_error** - with a measurement unit: numbers; - **cost_total, rate_avg** - with a measurement unit: money; - **asr_std, asr_cur** - with a measurement unit: percentage (%). For example, if you enter *total_volume > 100*, it means that when the total event volume (e.g., call time) count for respective match parameters goes over 100 (here - minutes), the system will create an alert. It's possible to add a factors watcher rule with negative values. For example, *total_cost < -10*.
	Factors with a 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* - the 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: > > - click the **New Factors Watcher** button; > - fill in the *Name* field and others according to your needs; > - specify intervals in the next fields: *Analyze Interval of, Period Start* and *Period Offset*; > - 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 the *Group By #* field in factors watcher rule is 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 the analyzed route in case of a block action (0 value means infinite lockout)
Periodic Lock	If enabled, the rule will expire at the end of a period specified in the *Analyze interval of* field in the Watcher settings. Please note, that this option has a higher priority than the *Expiration Date*.
Expiration Date	Specify the 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 the *Group by #* field 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 code in the query, you will be able to block codes in watcher rules, etc.

xDR Disputes

In this article

Section overview

xDR Disputes Manager is a 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

	ID	Client / Account	Period		Total Qty	No L	No E	Updated	
☐	4	Rose orig / all accounts	05/17/2018 – 05/17/2018	UTC	3	0	1	05/17/2018 13:30:00 +0000	✖
☐	3	Rose orig / all accounts	05/17/2018 – 05/17/2018	UTC	3	0	1	05/17/2018 13:26:43 +0000	✖
☐	2	Rose orig / all accounts	05/17/2018 – 05/17/2018	UTC	2	0	1	05/17/2018 13:21:05 +0000	✖
☐	1	Rose orig / all accounts	05/17/2018 – 05/17/2018	UTC	3	1	1	05/17/2018 13:17:42 +0000	✖

Column	Description
ID	ID of a dispute
Client/Account	Client 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 that were not found in the system
No E	Number of xDRs that 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
Add New Dispute	Allows adding a new dispute to the system
Mass Edit	Allows editing selected disputes
(edit icon)	Allows viewing dispute details
(delete icon)	Allows deleting a dispute from the system

⚠️ **Attention**

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

Creating a New Dispute

The whole process can be divided into three steps.

Step 1. Selecting a File and Specifying All Required Parameters

To create a new dispute, click the **Add New Dispute** button. Then, you need to upload a 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, the **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 a code name of the desired destination. If indicated, the **Code** field is disabled (and vice versa)
Code	Specify a code of the 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** and 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 fill in all required fields, click the **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 a 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, click **Process>>** again (see screenshot below).

Screenshot: Rows and Columns Select window. Step 2

Import

ROWS AND COLUMNS SELECT

	Connect Time	SRC Party Id	DST Party Id	Volume	Finish Time	Skip
Event time	Connect Time	Src Party ID	Dst Party ID	Volume	Finish Time	☑
05/17/2018 13:07:37 +0000	05/17/2018 13:05:59 +0000	1111131458	1201140538	98,0000	05/17/2018 13:07:37 +0000	☐
05/17/2018 13:07:37 +0000	05/17/2018 13:05:59 +0000	1111131458	1201140538	98,0000	05/17/2018 13:07:37 +0000	☐

« Return   Process »

Step 3. Receiving Results of comparison

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

Screenshot: Disputes Details window. Step 3

Dispute Details

Update

COMPARISON OPTIONS

SRC party id: [   ]
DST party id: [   ]
Connect Time: [0]
Finish Time: [0]
Volume: [0]

Refresh

ⓘ No items were found

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

Screenshot: Disputes Details window. Step 3

Dispute Details

Update

Rows **1 – 3** of **3**   20 ▼   « ‹   Page 1 of 1   › »

	SRC Party Id	DST Party Id	Connect Time	Finish Time	Volume	
L	1111131458	1201140538	2018-05-17 13:05:59+00	2018-05-17 13:07:37+00	98	▤
E	No matched xDRs					
L	1111131458	1201140538	2018-05-17 13:05:59+00	2018-05-17 13:07:37+00	98	▤
E	1111131458	1201140538	2018-05-17 13:05:59+00	2018-05-17 13:07:37+00	98	
L	1111131458	1201140538	2018-05-17 13:05:59+00	2018-05-17 13:07:37+00	98	▤
E	1111131458	1201140538	2018-05-17 13:05:59+00	2018-05-17 13:07:37+00	96	

Icon	Description
E	Red color indicates the mismatched xDRs (external or local, it depends on the marked letter *L* or *E*)
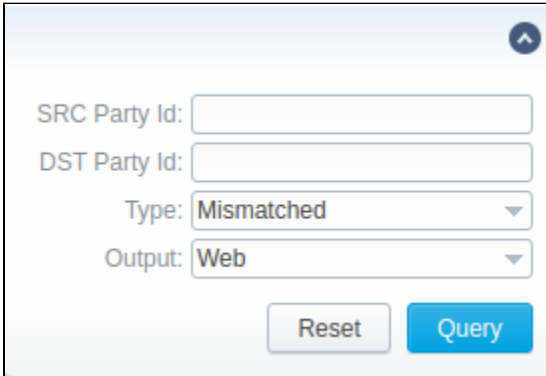
L	Yellow color indicates the matched xDRs with offset (external or local, it depends on the marked letter **L** or **E**). For example, the **Volume** value on a screenshot above for a local xDR is **98** and for external - **96**
L	Green color indicates the exactly matched xDRs (external or local, it 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 the range of values specified in the ***Update*** option, it will be indicated as exactly matched xDRs (green color).

Click on a blue downward arrow ⌄ in the top right corner of the page to use Advanced Search. Note that by default, dispute details are filtered by the ***Mis matched*** type.
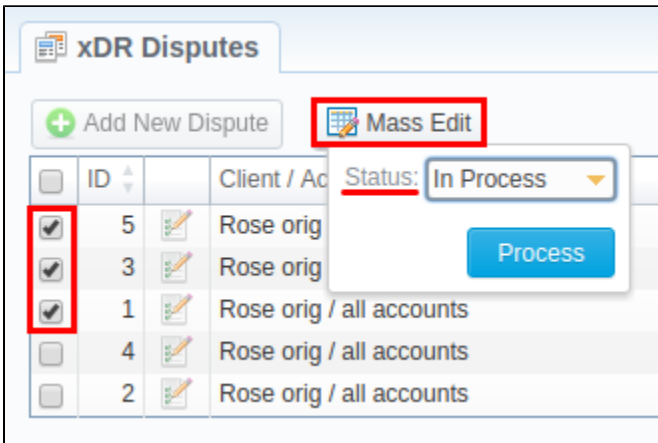
Screenshot: Advanced Search drop-down menu

Mass Edit

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

Screenshot: Mass Edit button

Routing

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

Introduction to JeraSoft Billing Routing Module

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

In JeraSoft Billing, the Dynamic Routing work is based on three principles: *Routing Plans, Routing Policies, and Routing Table generation.*
So, there are a few easy steps 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 the desired policy for your rules – a special formula to decide, which routes should get top priority (for example, this way you decide whether you want to do LCR or Quality Routing);

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

Please check the 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 a New Routing Plan](#)
- [Routing Rules tab](#)
- [Import/Export tab](#)
- [Routing Plan](#)
- [Knowledge Base Articles](#)

Section overview

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

This section allows managing your routing rules for customers, providers, and destinations. Each routing plan should be assigned to a respective customer (originator) for the proper work of the 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 a reseller a corresponding routing plan has been assigned to as an 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	A number 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
(copy icon)	Allows to copy an existing routing plan to the section
(delete icon)	Allows deleting a routing planfrom 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 a blue downward 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 Resellers, Sub-resellers, and Managers that are assigned to a routing plan in the *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 a routing plan
Additional DR Plan	Select a routing plan that was assigned as an additional in the *Additional Routing Plan* field
TERM Client	Specify a termination client that was assigned to any routing plan rule

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

Adding a New Routing Plan

To create a new routing plan, click the **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 a DR plan, which will be additional for a 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 the 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 the company or companies, which will have a limit in termination for vendors who use it (sub-companies are not included)
	Rooting Loop Protection checkbox	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, the **longest only** option is set.
	DR Order	Specify a method of routes sorting in a routing table. The options are: • **by appeal/code** – routes will be sorted according 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, the **by code/appeal** option is set.
	Match Increments	Define if the system should check whether Customers' increments proportionally overlap Vendors' increments: • **disabled** - selected by default • **dynamic only** - will exclude vendors with increments that do not match customers' rates from the routing list for dynamic rules. • **dynamic and static** - will exclude vendors with increments that do not match customers' rates from the routing list for dynamic and static rules.

Sample Scenarios

Customer Rate		Vendor Rate		Result	Notes
Min Time	Pay Internal	Min Time	Pay Interval		
60	60	60	60	OK	Exact match
30	6	30	1	OK	Full overlap
30	6	6	6	OK	Full overlap
1	1	30	6	FAIL	Vendor Increments are higher
7	7	6	6	FAIL	Even though Customers increments are higher, with call duration of 7 seconds this case will lead to 7 seconds billed on customer and 12 seconds billed on vendor

	PM	Define a Profit Margin value for a current rule here. It 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 the **Origination Limit** and **Termination Limit** fields are visible only during:

- new routing plan creation;
- editing of already created routing plan if a 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 a routing plan's name and you will enter **Routing Rules** tab, then, click the **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 a current routing rule, use * as a wildcard.
Code Name	If you have a code deck assigned to this routing plan, a corresponding code name, specified in the *Code* field, will be displayed automatically. If
Type	Select a type of routing for a current rule: • **Static Client** - if selected, in the *Terminator/Policy* field you can specify a certain termination client • **Static Account** - if selected, in the *Terminator/Policy* field you can specify a certain termination account of a client • **Dynamic** - if selected, in the *Terminator/Policy* field you can specify a certain dynamic policy for the rule • **DID** - if selected, the *Terminator/Policy* and *Code* fields become inactive
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 r
PM	Define a *Profit Margin* value for a current rule here. ⚠️ **Attention** If the *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 the ⬇ icon (see screenshot below)
	
	• *O ri g i n a t o r T a gs* — You can specify respective originator tags here. 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 the specified tags is presented.

- *T e r m i n a t o r T a gs*

Here you can add terminator tags that will be used for terminators. If nothing is indicated, it works only for terminators **without** tags. Ple

- *T i m e P r o fi le*

Specify a time profile from the list

- *E x p ir a ti o n D a te*

Here you can determine if a Rule will expire or not. If a date/time is specified here, the respective Rule will stop working after said times

If empty, the said Rule will work indefinitely.

ⓘ   If the Expiration Date will be set for the past, it will be highlighted in red to draw attention that it's not in use. With the next run o

- *B al a n ci ng*

Define the percentage or proportion amount of traffic, which will be sent to a respective vendor who participates in balancing

⚠ **Attention**

Please note that after changing *balancing value,* you will need to restart the **Traffic Rules manager** or wait till its next run.

ⓘ   Among the rules of the same priority, balancing will not be performed if the value is 100 or more in the **Balancing** field.

✅ **Useful tip**

To balance routes equally among, say, three vendors, you can set **Balancing** to 33/33/33 for them OR 1/1/1 OR 99/99/99, etc.

Priority	Code	Code Name	Type
1	1907	ALASKA	Static Client
1	1907	ALASKA	Static Client
1	1907	ALASKA	Static Client
1	212	MOROCCO	Static Client
1	212	MOROCCO	Static Client
1	212	MOROCCO	Static Client

		Set **minimum** and **maximum** length of destination number that will be matched by this routing rule
	• *N u m b e r L e n g th*	
	• *M i n A SR*	Specify **minimum** ASR (successful records percentage) value to reject the routes that don't correspond to it
	• *M i n A CD*	Specify **minimum** ACD (in Service units) value to reject the routes that don't correspond to it
Capaci ty		Limit capacity for the current rule (leave blank for unlimited)
Stop Hunt checkb ox		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 exe

Screenshot: Routing rules settings

Import/Export tab

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

Screenshot: Import/Export tab

| Routing Rules | **Import / Export** | Routing Plan | | | | | | | | | DR: Complex LCR |

IMPORT ROUTING RULES

Select CSV file to import rules (please refer to VCS Users Guide for correct import column order). All current rules will be removed.

Select file: [Choose File] No file chosen   [Process]

EXPORT ROUTING RULES

Export rules to CSV file. After export you can use external editor to edit the file.

[Process]

Please pay attention that the column order in importing file must correspond to the one presented in 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 information 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 the 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

| Routing Rules | Import / Export | **Routing Plan** | | | AZ General |

GENERAL INFORMATION

Name: AZ General
Reseller: 👤 Company A
Additional Routing Plan:
Code Deck: DEFAULT
Origination Limit:
Termination Limit:
☑ Routing loop protection

RULES PROCESSING

Rules Hunting: longest only
DR Order: by code / appeal
Match Increments: disabled
PM: 0 [USD / %]
Vendor Limit:

[OK] [Cancel] [Apply]

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Routing Analysis

In this article

- [Section overview](#)
- [Creating a Routing Analysis Report:](#)
- [Export a generated report](#)
- [Sharing a 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 case you are using the **Dynamic Routing feature.**

The **Routing Analysis** section represents a query form with the following parameters:

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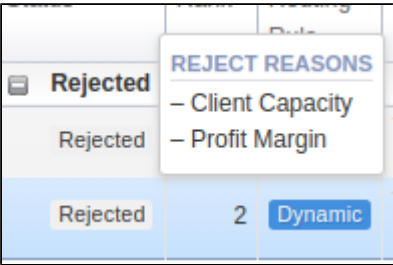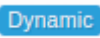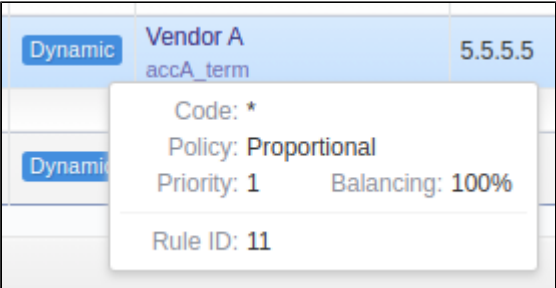
> ⚠️ **Attention**
>
> Please note that if there are changes in **the Term Rate Table,** you need to launch **Dynamic Routing Manager** in the **Task Scheduler** section **(System > Task Scheduler)**. Routing Analysis shows routes based on the routing table built on the last run of the **Dynamic Routing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

Creating a Routing Analysis Report:

To generate routing analysis, enter the next parameters in the query form:

Section	Field Description	
Filters	Select desired parameters for the report in the **Filters** menu. To cancel any filter, click the delete icon ✖ 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, the 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 **call shops.** This field is mandatory.
	Account	Select an account for the report.
	Additional Filters	
	There are the following accessible additional filters: - **Events:** *Gateway.* - **Extras:** *Src Party ID; Dynamic Tags; Routing Plan.*	
	Events Settings	
	Gateway	Define a gateway specified in the term account

		Extra Settings
	Src Party ID	Specify a source number or any other source identification to check the translations
	Dynamic Tags	Enter additional dynamic tags for this routing
	Routing Plan	Enter the plan with a respective routing rule
Output		This form contains **settings of the output** data of the report.
		Click the plus icon ⊞ near **Columns** to select respective columns to output report data. Also, you can cancel any chosen item.

	Accessible columns in the report
	Following columns can be added to the report: *Status, Rank, Routing Rule, Vendor, Account, Code, Rate, Dst Party ID, Src Party ID, Appeal, Reject Reasons.*

Status	The following information is displayed in the column: ***the state of the route***, ***reject reasons (if any)***
	Accepted for ***accepted*** route
	Rejected for ***rejected*** route due to some reasons *(to see them, hover over the icon)*
	To view detailed information on a rejected route status, hover over a corresponding icon in the column.
	Screenshot: Detailed information on a route status
Rank	Vendor position during routing. It's applicable and the system puts values in order when route status is accepted.
Routing Rule	Type of the route that includes: ***destination, policy and rule properties (balancing, priority), time profile, orig groups, term groups, debug information***
	A grey Static icon in the column shows a ***static route***
	A violet # icon indicates a ***DID route***
	A blue Dynamic icon in the column shows a ***dynamic route***
	To view detailed information on a route type hover over a corresponding icon in the column.
	Screenshot: Detailed information on a routing rule

Vendor	The name of the respective terminator specified in the Client's settings and its account name
Account	The name or IP of the account
Code	Here you can see matched code in the terminator's rate table
Rate	Rate that is used to terminate the call
Dst Party ID	Shows destination party ID that is sent to the provider when all matching number translations are performed
Src Party ID	Shows source party ID after all number translations
Appeal	Shows the appeal automatically calculated by the system according to the chosen **DR Policies** (**Routing section > DR Policies**)
	ⓘ The Appeal is displayed as a value if a route is dynamic. If a route is static, it's displayed as N/A. Regardless of the route type, you can hover over the appeal value to get additional insights on ASR, ACD, SCD, PDD, Vendor Debt, Payment Due, Stats Qty.
Reject Reasons	Displays respective rejection reasons for a particular route
Other output settings	
Type	Choose a format of the report from a drop-down list: **Web/CSV/Excel XLS/Excel XLSx.**
	Also, select a look of table view next to the **Type** field:
	• ***Plain*** - a simple table view • ***Grouped*** - a table view with grouped data and possibility to collapse it
	⚠ **Attention**
	Please note that the ***Grouped*** type of a 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.
Verbosity	Select which routes should be displayed (***accepted and rejected***, or ***accepted only***).
Skip Reasons	Specify the reasons under which routes should be excluded from the output list. The available skip reasons are: • *Reseller Mismatch* • *Blocked Reseller* • *Blocked Client* • *Blocked Account* • *Vendor Qty* • *Stop Hunting* • *Party ID Length* • *Profit Margin* • *Rate Increments* • *Orig Tags* • *Term Tags* • *Traffic Processing* • *Reseller Capacity* • *Client Capacity* • *Account Capacity* • *Rule Capacity* • *Quality* • *Vendor Credit Limit*

After selecting all needed parameters, click the **Query** button and the system will generate a report.

Screenshot: Routing Analysis

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

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

> ⚠️ **Attention**
>
> Please mind the naming of your codes. For example, if your client has:
>
> - a **447911** code in a Rate Table,
> - an assigned Code Deck that has only **44-UK**, but **not 447911**,
> - an assigned Routing Plan with a static rule for **UK** to a vendor,
>
> in the Routing Analysis you **_will not_** see this vendor as available for a call to, say, 4479110000, even though the Orig parameters state a Code Name as UK. This happens, because it's a *simulated Code Name* (from 44 Code, present in a Code Deck).
>
> If you'd like to see the said vendor, the code should be either 447911, or 44*.

To expand or collapse data in your report, click the **plus**⊞or **minus**⊟icons. If the data is **Grouped** in the report, it will be shown **initially expanded**.

Screenshot: Expand/collapse report data

If applicable, you can check the **future terminator's rate**, its **effective date**, and **profit** in the report by hovering over a current rate in the **Term Rate** column.

Screenshot: Future Terminator's Rate

✅ **Tip**

Please note that it analyses the profitability by comparing orig and term rates. Therefore, an orig rate should be equal or greater than a term rate and profit margin.

⚠️ **Attention**

Please note that if a **Reseller** has an orig rate assigned, the profit margin will be counted taking into account both client-originator's rate and Reseller's rate.

By hovering over the **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 a generated report

You can export report data either in a .xlsx or .csv file that would contain currently presented data. Click the **Export to XLSx** or **Export to CSV** button to download a file of the respective format. Be advised that the **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 immediate Routing Analysis functioning.

Sharing a Report

Each time you get a report output, the system generates a unique link in the format of "/view?id=<uniq-string>". It allows sharing data between the users, even if they belong to different resellers (the feature works similarly to Share by Link in Google Drive).

The link refers to the report data valid for a specific moment.

Example: When you send a link to a report, you ensure the recipient would see the same data as you do. If you change data in the system (for example, perform rerating), the previously copied link to the report will display data valid for the moment of generation (even though the actual data is now different).

You can also view the additional information about the generated report by hovering over the **Info** 🛈 icon, which is located under the **Output** section:

Title	Description
Generated by	Indicates the **Role** of the user who generated a report and specifies a generation time

Screenshot: Routing Analysis Info icon

Knowledge Base Articles

> **Error rendering macro 'contentbylabel'**
>
> parameters should not be empty

Dynamic Routing Policies

Section overview

This section describes the list of **currently available routing policies for JeraSoft Billing. Routing policy** is a set of regulations and principles (**appeal**) that 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
Cash Flow	When vendors owe you the most and have long periods to invoice due date, they get higher priority in routing.
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.

Adding a New DR Policy

To add your custom DR policy, click the **Add Routing Policy** button. The following window will open showing the available settings:

Screenshot: Adding a New DR Policy

Field	Description
Name	Set the **name** of the respective policy.
Factors	Specify the factors for the system to consider during building the DR table: • **Rate** - vendor's rate for the destination, vendors with a lower rate will get higher position in routing; • **ASR** - vendor's ASR, analyzed by Summary Report data for the duration given in the System Confirmation; • **ACD** - vendor's ACD, analyzed by Summary Report data for the duration given in the System Confirmation; • **PDD** - vendor's PDD, analyzed by Summary Report data for the duration given in the System Confirmation; • **SCD** - vendor's SCD, analyzed by Summary Report data for the duration given in the System Confirmation; • **Vendor Debt** - considers the amount a vendor owes you; vendors, that owe you the most, are moved to a higher position in routing; • **Payment Due** - considers the next payment date to a vendor (date of next invoice + due days); vendors with longer periods till due date get higher positions. You can select multiple factors.

ⓘ Note that it is possible to create a **Routing Policy** without any factors. As a result, all Appeal values will be the same for this Policy. During the routing process all routes with all other similar parameters will be randomly reordered.

Dynamic Routing Table

The **JeraSoft Billing solution** operates with its own *Routing Table* that is automatically generated over specified regular periods 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 updates, 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 the** 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 Billing.** Here users 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
- Time Profiles
- Taxes Profiles
- Tags
- Invoices Templates
- Services
- Settings

Code Decks

In this article

- [Section overview](#)
- [Creating a 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 the same codes and change them in real-time.

The section is presented in the 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

Code Decks				
+ New Code Deck		Rows 1 – 1 of 1	20 ▾	Page 1 of 1
ID	Name	Reseller		
1	DEFAULT	All Resellers	✎	✖

Column	Description
ID	Code deck's identification number
Deck Name	Name of a code deck
Reseller	List of resellers corresponding deck was assigned to

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

Button/Icon	Description
+ New Code Deck	Allows to create a new code deck
✎	Allows to manage an existing code deck on a list
✖	Allows deleting a code deck from the system. Requires confirmation

Creating a New Code Deck

To create a new code deck:

- Click the **New Code Deck** button
- Fill in all required fields of a pop-up window (see screenshot below)
- Click **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

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 the **List of Codes** tab, click the **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. Auto-filled by the system
Code	New destination code
Code Name	Displayed name of a code group
Country	Country the codes in the 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 search box
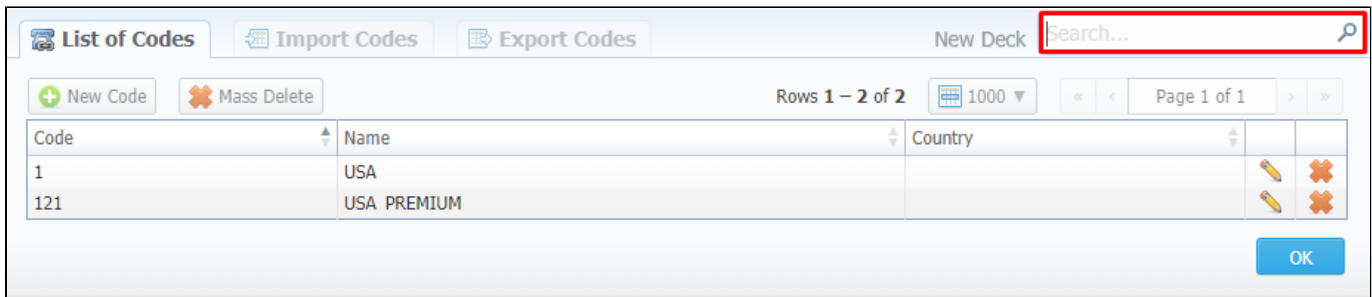
Deleting Codes

You can either delete *each* code separately by clicking the ✖ 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
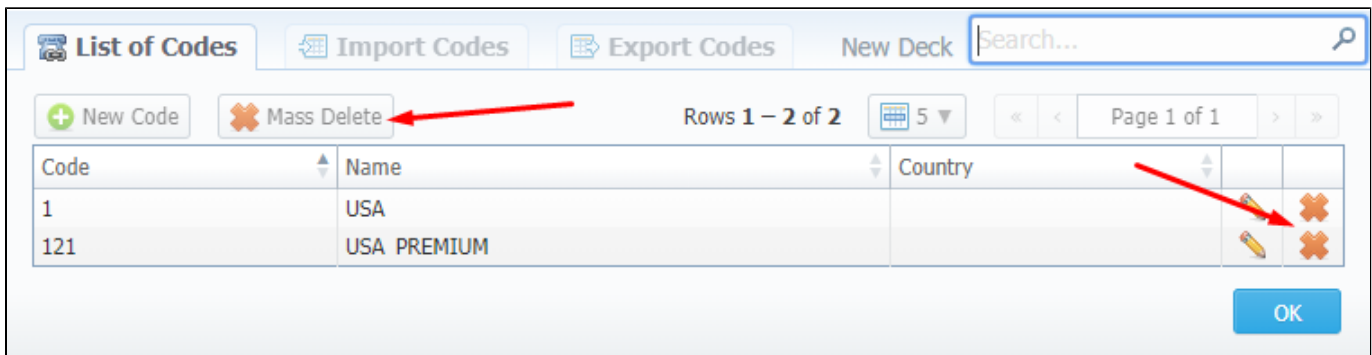
To verify mass deletion, click **OK** in a pop-up window (see animation below).

Animation: Codes deletion
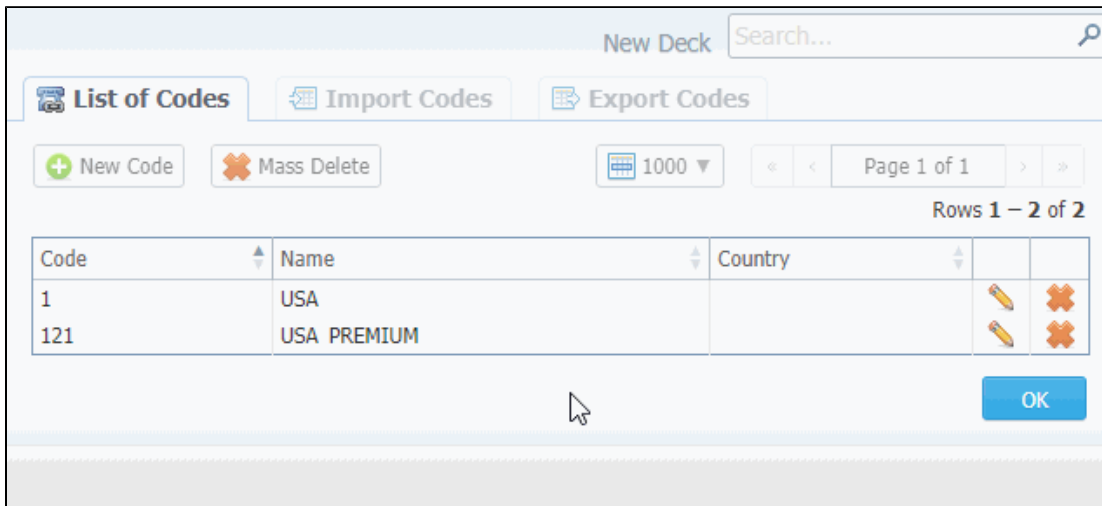
Importing Codes

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 the **Process>>** button.

Screenshot: Import Codes - Step 1

Section	Field	Description
File Process	*Select File to Import*	Select an import file by clicking the **Choose File** button
	Fields Delimiter	Specify a delimiter symbol. Possible options are: • *Autodetect* • *,* • *;* • *Tab* By default, the **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 inconsistency or error was found in the importing file: • *Import correct rows and show all found errors* • *If errors are found, abort import and show all errors* By default, the **Import correct rows and show all found errors** option is chosen.

During the **second step,** the system will recognize the file and display the 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 the **Skip** column (see screenshot). To abort the importing process, click the **Return** button, and you will be redirected to the **Import Codes** tab. To finish importing, click **Import** (see screenshot).

Screenshot: Import Codes - Step 2

After you click **Import**, the system will start the importing process. When the progress bar reaches 100%, your import is done. Congrats!

> ✅ **Knowledge Base Tip**
>
> See what happens if your file contains the Country Code column.

Exporting Codes

This feature allows you to export the content of a code deck to a file. To initiate export, do the following:

- Go to the **Export Codes** tab (screenshot down below)
- Specify a delimiter symbol in the *Fields delimiter* field and a 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
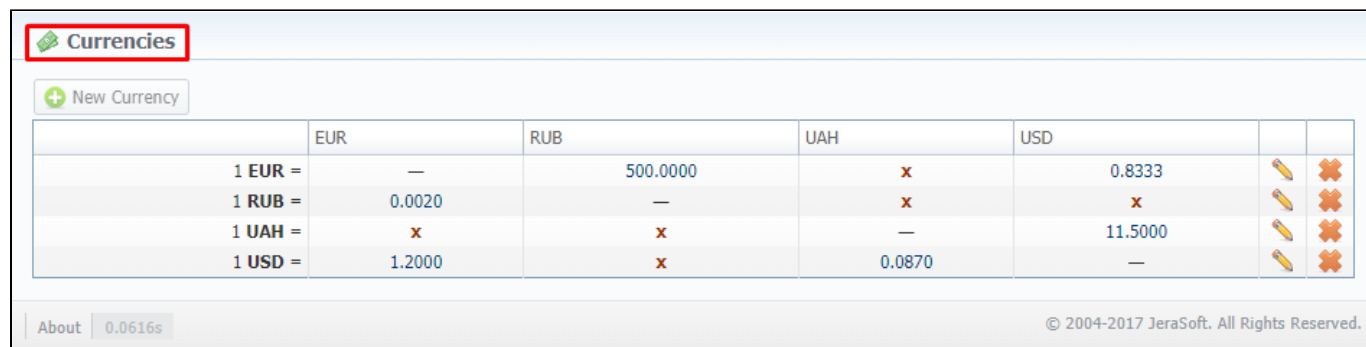
Currencies

In this article

- Section overview
- Adding a New Currency
- Specifying a Currency Rate

Section overview

This section displays the list of all **currencies**, registered in the system, in the 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 cornerstone 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 managing an existing currency on a list
✖	Allows deleting a currency from the system. Requires confirmation
x	Allows managing an exchange rate of a currency

Adding a New Currency

You can add a new currency by clicking the **New Currency** button above the list. In a pop-up window (see screenshot below), you need to fill in the **require d fields** and click **OK**.

Screenshot: New Currency pop-up window

New Currency

Name: [ ]
Rates precision: [4]
Details precision: [4]
Totals precision: [2]

[OK] [Cancel] [Apply]

Field	Description
Name	Name of a new currency
Rates Precision	Number of decimal places for rates formatting. By default, the field value is set to **4**.
Details Precision	Number of decimal places for detailed monetary values formatting. By default, the field value is set to **4**.
Totals Precision	Number of decimal places for total monetary values formatting. By default, the 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. They will also be shown in the invoices, except total values (totals **always** have 2 decimal places in invoices).
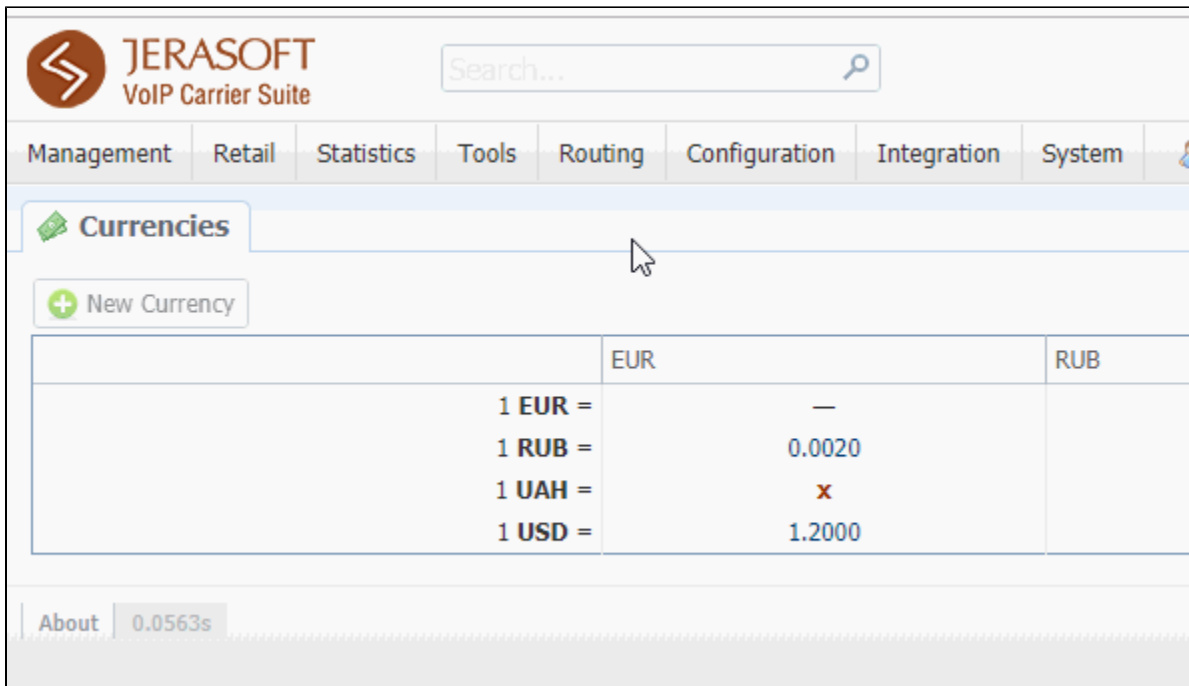
Specifying a Currency Rate

After you add a currency, you need to specify the rate. To do this, you need to (see animation down below):

- Click the **X** icon in the currency column, for which you wish to specify the exchange rate
- Click the [+ 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 the **Date** column.

Animation: Specifying a currency rate

✅ **Tip**

Statistical data of a new currency will be available after it'd been added to the system. However, 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 a *routing table* with rates in the new system currency.

Payment Accounts

In this article

- Section overview
- Adding a New Payment Account

Section overview

Payment accounts serve as the exact definitions used in the Transactions section. For example, you can have a **Bank Transfer** and **Credit Card** paymen t 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**. The section is presented in the form of a list of payments with the following structure (see screenshot):

Screenshot: Payment Accounts section
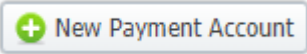
☐ Payment Accounts				
⊕ New Payment Account			Rows 1 – 1 of 1 ⊞ 20 ▼ ‹ Page 1 of 1 ›	
ID	Name	Reseller		Sort Order
1	General	all resellers		100

Column Name	Description
ID	Payment account's identification number
Name	Account's name
Reseller	Name of the reseller a new payment account will be attached to
Sort Order	Order of the entity in the list

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

Button/Icon	Description
⊕ New Payment Account	Allows to create a new payment account
✖	Allows deleting a payment account from the system. Requires confirmation

⚠ **Attention**

Please note that the user **cannot** edit or delete the **General** payment account with ID = 1 (see screenshot above)
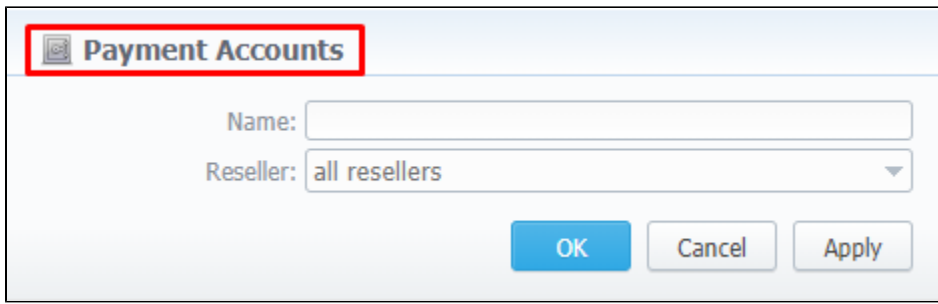
Adding a New Payment Account

The following steps are to be taken to create a new payment account:

- Click the **New Payment Account** button
- Specify an account name in the **Name** field and a **Reseller** from a drop-down list of all registered resellers (see screenshot below).
- Click **OK**.

A new account will be added to the list and will become available in the **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 Billing, **payment terms** are implemented as sets of rules and regulations that define the clients' **payment dates** and **noticing periods** (before a nd/or after the payment day). Primarily, they help to make the clients' invoicing easier and faster by allowing to use **auto-invoicing profiles**. Payment terms are indicated in clients' profiles.

The section constitutes a list of profiles that determine **payment terms**. The structure of the section is presented on a screenshot below.

Screenshot: Payment Terms section

ID	Name	Payment	Grace Period	Notify Days (before)	Notify Days (after)	Sort Order		
2	14/14	every 14 days	14 days	on 10, 5, 3, 1 day(s) before the due date	*none*	100	✎	✖
1	7/7	every 7 days	7 days	on 5, 3, 1 day(s) before the due date	*none*	100	✎	✖

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 deleting 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 the **New Payment Terms** button
- Specify the **required fields** in the appeared pop-up window (see table below);
- Confirm new payment terms profile creation by clicking **OK**

Screenshot: Adding new payment terms profile

Field	Description
Name	Name of a new payment terms profile
Payment	The exact day when a payment must be performed or its frequency (for example, on the 7th day of the month or every 10 days) ⚠️ **Attention** Please note that when you choose the **on** mode, the allowed days are limited to 1-28 values (to avoid ambiguity with the cases of 29-31 days that are not present in all months). Thus, the best practice to issue a monthly invoice is issuing it on the 1st of the next month. ***In case you put the 29-31 value, the system will convert it to 28.***
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.

Time Profiles

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 based on the time of usage. For instance, such a profile can be used to sell traffic for an **increased** price during business hours and for the **reduced** one during non-business hours.

This section is used to create and manage time profiles. The 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
(pencil icon)	Allows to manage an existing time profile on a list
(x icon)	Allows deleting a time profile from the system. Requires confirmation

Adding a New Time Profile

To add a new time profile, you need to:

- Click the **New Time Profile** button
- In the appeared dialog-window, fill in the required fields
- Click **OK**

Screenshot: Adding a new time profile
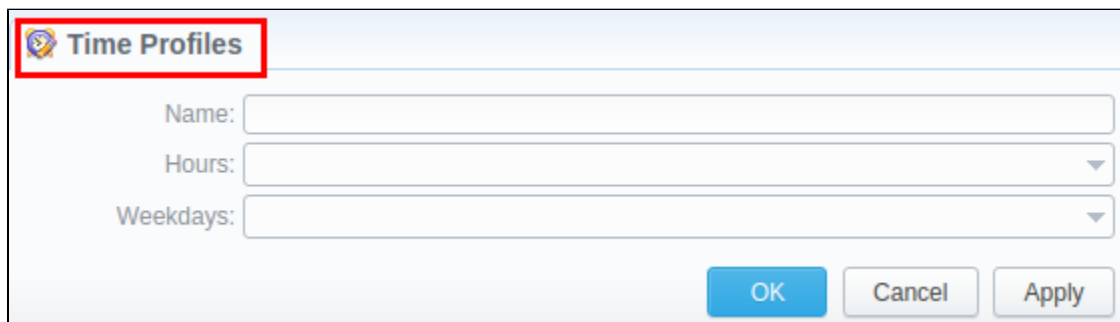
Field	Description
Name	Name of a new time profile
Hours	Select hours that will be used for a particular time profile. More than one hour range can be added (e.g. *03.00 - 03.59, 08.00 - 08.59*)
Weekdays	Specify days that will be used for the particular time profile. You can add more than one day to the profile (e.g. *Monday, Tuesday, Thursday, Sunday*)

Taxes Profiles

In this article

- [Section overview](#)
- [Advanced Search](#)
- [Creating a New Taxes Profile](#)
- [Tax Values Management](#)

Section overview

Taxes profiles, equally as [Time profiles](#), is a JeraSoft Billing tool that makes the process of clients' [rate tables](#) management exceptionally agile. Taxes profile is a **set of tax 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 the form of a table with the following columns (see screenshot):

Screenshot: Taxes Profiles section

Column Name	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 taxes profile
Sort Order	Order of the entity in the list

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

Button/Icon	Description
New Taxes Profile	Allows to create a new taxes profile
(pencil icon)	Allows to manage an existing taxes profile on a list
(delete icon)	Allows deleting a taxes profile from the system. Requires confirmation
(% icon)	Allows to manage a list of tax values of a particular profile
	Opens the 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 clicking on a blue downward 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 the status of a taxes profile:
	
	    • *Active*
	    • *Archive*

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

Creating a New Taxes Profile

To create a new profile, you need to:

- Click the **New Taxes Profile** button
- Fill in mandatory fields (specified in tables below)
- Click the **OK** button

Starting from **JeraSoft Billing v3.21.0**, we have introduced the integration with a third-party tax calculation service called **Compliance**. In addition to **SureTax** service we had integration with before, now you have one more advanced option to calculate taxes. Please also note that there are no pre-generated taxes profiles in the system anymore.

You can select the type of a taxes profile while creating a profile:

Screenshot: New Taxes Profile window (Customer)

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

Type	Select the tax profile type from a drop-down list:
	
	    • **Customer**
	    • **SureTax**
	    • **Compliance**

Invoice Notes	If specified, this information will be displayed in issued Invoices
Notes	Additional information regarding a taxes profile
Sort Order	Order of the entity in the list

Screenshot: New Taxes Profile window (SureTax)

Section	Field	Description
General Settings	**Name**	Name of a taxes profile
	Profile Owner	Select from the list of all Resellers, Sub-resellers and Managers registered in the system
	Type	Select the tax profile type from a drop-down list: • **Customer** • **SureTax** • **Compliance**
	Invoice Notes	If specified, this information will be displayed in issued invoices
	Notes	Additional information regarding a taxes profile
	Sort Order	Order of the entity in the list
SureTax Settings	**Client Number**	Used when issuing invoices for clients with selected SureTax profile
	Validation Key	Used for clients with selected SureTax profile
	Test profile *checkbox*	Check to specify that a created SureTax profile is a test one
	Exemption Codes	List Tax Exemption Codes to not calculate them within this profile

Extra Chagres Settings	Default settings for Extra Charges taxation.
	✅ **Tip** You can set <u>separate</u> Rules/Codes per Extra Charge if needed. For this, when creating an **Extra Charge** in **Transactions**, add a **Tag**, specifying either: • only Trans Type Code, like **suretax:010101**; • only Situs Rule, like **suretax:04**; or • both Situs Rule and Trans Type Code, like **suretax:04-010101**.

	Situs Rule Select a Situs Rule from the list of available ones:
	
	    • **04 - Zip code**
	    • **05 - Zip code + 4**

	Trans Type Code Specify a Trans Type Code for this Rule (e.g., **010101**)
Package Fees Settings	Default settings for Package Fees taxation.
	✅ **Tip** You can set <u>separate</u> Rules/Codes per Package Fee if needed. For this, when adding a **Fee** to a **Package**, set a **Tag**, specifying either: • only Trans Type Code, like **suretax:010101**; • only Situs Rule, like **suretax:04**; or • both Situs Rule and Trans Type Code, like **suretax:04-010101**.

	Situs Rule Select a Situs Rule from the list of available ones:
	
	    • **04 - Zip code**
	    • **05 - Zip code + 4**

	Trans Type Code Specify a Trans Type Code for this Rule (e.g., **010101**)
Services Settings	Default settings for Services taxation.
	✅ **Tip** You can set <u>separate</u> Rules/Codes per Account if needed. For this, when creating an **Account**, add a **Tag**, specifying either: • only Trans Type Code, like **suretax:010101**; • only Situs Rule, like **suretax:04**; or • both Situs Rule and Trans Type Code, like **suretax:04-010101**. You can also do this via the **Traffic Processing** section by creating a rule that will be adding needed **Tags** to traffic.

	Service Set a Service for the rule:
	
	    • **Calls**
	    • **SMS**
	    • **Data**

Direction	Select a Direction from the list of available ones: • **NANP to NANP** • **NANP to non-NANP** • **non-NANP to NANP** • **non-NANP to non-NANP**
Trans Type Code	Specify a Trans Type Code for this Rule (e.g., **010101**)
Situs Rule	Select a Situs Rule from the list of available ones: • **01 - Two-out-of-Three test using NPA-NXX** • **02 - Billed to number** • **03 - Origination number** • **04 - Zip code** • **05 - Zip code + 4**

Screenshot: New Taxes Profile window (Compliance)

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
Type	Select the tax profile type from a drop-down list: • **Customer** • **SureTax** • **Compliance**
Invoice Notes	If specified, this information will be displayed in issued invoices
Notes	Additional information regarding a taxes profile
Sort Order	Order of the entity in the list
Client Access Code	Used when issuing invoices for clients with selected Compliance profile
Exemption Codes	List Tax Exemption Codes to not calculate them within this profile
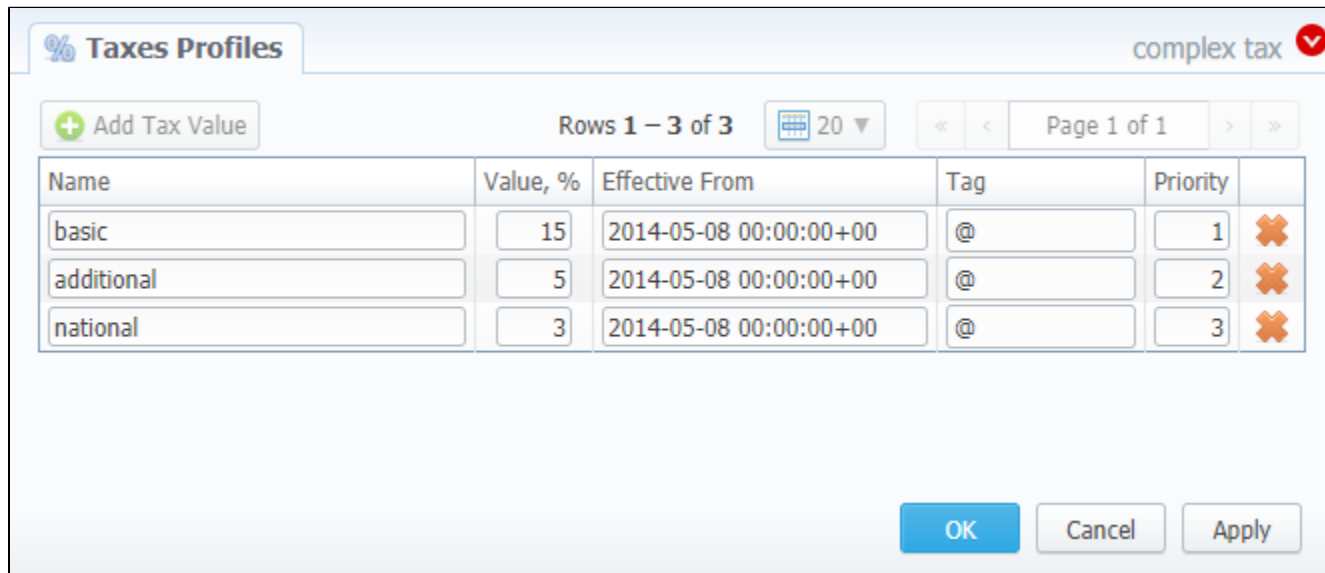
While using **SureTax** or **Compliance** profile type, the tax values cannot be managed manually in the system as the taxes will be automatically dipped from third-party tax calculation services. Only the **Customer** profile allows managing the tax values.

⚠ Please note that you cannot change the taxes profile **type** after the creation is completed.

Tax Values Management

To manage a tax value within the **Customer** type of the taxes profile, you need to click the ⛛ icon to the left of a corresponding profile name on the list. In the pop-up window, you can add a new rule by clicking **Add Tax Value** or edit already existing values. The 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 corresponding tax value. If no tags are added, you can leave the field blank
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 a red downward arrow ⛛ icon in the top right corner of the pop-up window and set the **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** field value **> Date**, 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 the **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 a **value of 10%**, the taxation result will be *10 USD*, so full operation plus tax is **110 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 a 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 the 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 a 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 an 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:

New tag "Tag D" was added successfully.

To remove a tag from the system, click the 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" **(@)** symbol 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 the 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 Tag**s — tags that were added to account profiles.
- ○ **Tags** - all **dynamic** tags of the processed call. Dynamic are those tags that were assigned to *Accounts, Clients, or Gateways* through **Tra ffic Processing** or **Number Portability**.

Screenshot: xDRs List section

Invoices Templates

In this article

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. The section is presented in the form of a table of invoices templates with the following columns (see screenshot below):

Screenshot: Invoices Templates section main window

ID	Name	Type	Reseller	Notes	
1	default	PDF	all resellers	default invoice template	✖
5	default extended	PDF	all resellers		✖
6	default with taxes details	PDF	all resellers	default invoice template with detailed taxes table	✖
2	estonian	PDF	all resellers	estonian default template	✖

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 a 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 the invoice	
	• **Locale**	Language for the text representation of **totals** in the 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 summed; • **sum then round** - raw values are summed first, then 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 an xDR file for the invoicing period and attaches it to the invoice. To view advanced settings, click the ▣ icon next to its name.	
		• **xDRs List Format**	List of xDR file format (*.csv, .xlsx* or *.xls*)

			Types of calls that will be included in invoices:
		• *Included Calls*	• *All payable* - includes calls with any duration that have non-zero costs and use packages • *Non-zero payable* - permits including calls with a non-zero duration that either have any cost or use packages.
		• *Select Columns*	List of columns which can be presented in the attached xDR file
	• *Notes*		Additional information concerning the invoice template
Excel Template Parameters	Settings of an 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 the selected period
	• *Template*		Defined displaying format of xDRs list in a template

---

✓ Tip

When you select a **Non-zero payable** parameter in the *Attached xDRs list to the invoice* advanced settings, then:

1) created **outgoing** Invoice for Client **will have attached xDRs file with**:

- incoming/outgoing non-free calls that should be paid by the Client
- outgoing free calls with non-zero duration
- outgoing free calls by package volume limits with non-zero duration

2) created **incoming** Invoice for Client **will have attached xDRs file with**:

- incoming/outgoing 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 xDRs 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 divided into the following steps:

1. Add a table to your workspace, right-click on it, choose **Table Properties**, and define the ***Class*** field (*stats, xDRs, packages, custom_taxes, custon*) in the **General** tab;
2. Fill a table with relevant information, which should be present in invoices by using **functional variables,** which you can pick from a list provided in the same window on the right drop-down panels;
3. After an invoice template is created, fill in its **Name** and other **fields** in the **General Information** section, then click **OK**;
4. Go to **Management > Resellers** and select your invoice template in the reseller's properties. It will ensure that **all customers** of this reseller will be using this template;
5. When creating an invoice in **Management > Invoices,** you can use an invoice template prior to generating an invoice. JeraSoft Billing includes **def ault .pdf templates,** called *default* and *default extended.*

✅ For creating an invoice template for **SureTax** or **Compliance**, view the info in the US Taxation article.

⚠️ **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 the 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 percent
   - **{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
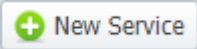
Section overview

Services, presented in this section, reflect the major utilities for billing all types of data, including **calls**, **SMSs**, **IoT events**, *etc.* This section represents a list of all existing services in the system.

Screenshot: Services section

ID	Quantity	Name	Ident Code	Rating	Rating Params	Reports	Detailed Reports	Sort Order	
1	time	**Calls**	calls	min	sec	min	sec	100	✖
3	data	**Data**	data	gB	B	gB	B	100	✖
2	event	**SMS**	sms	event	event	event	event	100	✖

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

Button/Icon	Description
⊕ New Service	Allows to create a new service
✖	Allows deleting a service from the system. Requires confirmation

Adding a New Service

To proceed to the service creation process:

- Click the **New Service** button
- Fill in all required fields in a pop-up window (screenshot below)
- Click **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
	• **Rounding Precision**	Number of decimal places for volume formatting. Used in reports.
	• *Ident Code*	ID that will be used to identify the unit in the xDRs
Units	Depending on a unit group chosen in the *Quantity* field, the following unit values will be applied to the fields of the **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 reports

Settings

This section is designed for management of system notification messages distribution, as well as specifying the system time and date format. The section is divided into 13 information blocks listed below:

- System Settings
- Regional Settings
- Mail Server Settings
- Reports and Processing Settings
- Output and Import/Export
- Invoicing Settings
- RADIUS Server
- SIP Server
- Dynamic Routing
- Rates Generator Settings
- Notification and Monitoring
- Autorotation and Cleaning
- Backup Settings

To apply any changes, made in the section, click the **Update** button. The whole **Settings** section is presented in the screenshot below:

Screenshot: Settings section

JeraSoft Billing 3.22

Settings

SYSTEM SETTINGS

Domain Name:	https://172.17.172.17:443	The "Domain name" field must always start with "https://" and cannot be empty!
Public IP:		The system public IP address used for LNP DIP requests. This field is mandatory if LNP is enabled in the system.
☑	Collect anonymized data	Allow collection of the **anonymized** system usage statistics. It will allow us to make whole system usage experience better for you. Please note that we collect only usage data, no personal or monetary information will be collected.

REGIONAL SETTINGS

Default Currency:	USD	Default currency is used for routing, profitability margin check and new entities creation.
Default Language:	English	Set default locale for the interface if not set in user preferences.
Timezone:	UTC	Default system timezone. You can change timezone in statistic reports queries.
Date Format:	%m/%d/%Y	Output format for dates, you can check syntax for this field in the User Guide.
Date and Time Format:	%m/%d/%Y %H:%M:%S %z	Output format for dates and times, you can check syntax for this field in the User Guide.

MAIL SERVER SETTINGS

SMTP Credentials:	Default SMTP	Credentials of SMTP server to be used for system notifications (e.g. Events Watcher, Reports Watcher, etc).
From:	billbery@localhost	Specify email address to send mail from, it is a system address for the SMTP server, not the one that appears in the "From" field in emails.

REPORTS AND PROCESSING SETTINGS

Files Collector Workers:	1	Number of parallel workers running files collector tasks.
Statistics processing order:	old calls first	Order of statistics processing when the queue is large.
Calculator Workers:	4	Number of parallel workers running calculator tasks (number of CPU cores / 2).
Calculator Mode:	periodically run	Select calculator processing mode: **periodically run** – runs every X minutes by Task Scheduler; faster processing of xDR bulks, but causes some delay. **realtime process** – processes calls in realtime; slower processing in case of xDR bulks; use only if you really need realtime.
☐	Round Monetary Value	Round monetary value in xDRs report and xDRs files. Default without rounding.
☐	Cross-Gateway Connection	Used for **Orig-Term and Profit Reports**: allows Reports Generator tool to concatenate orig and term legs from different gateways.

OUTPUT AND IMPORT/EXPORT

Items per Page:	20	Default number of items per page in the system interfaces.
CSV Delimiter:	,	Default delimiter used for CSV files when importing/exporting.
CSV Decimal Point:	.	What will be used as a decimal separation point for numbers ("." for most cases).
Close Rates marked by:	delete, block, close	When importing a rate table, if some rates have notes that they are closed, the system will close the appropriate destinations after importing them. This field defines what marking words must be taken as ones closing a rate. The system also searches for longer words. For example: close - closed, delete - deleted, etc. Please avoid sentences and use only single words, separated by a comma (block, close).
Hidden Numbers:	0	The number of digits, which must be hidden in a destination number.
Import Encoding:	UTF-8	Encoding that will be used during importing data from a file.
Export Encoding:	UTF-8	Encoding that will be used during importing data from a file.

INVOICING SETTINGS

Invoice No Template:	%Y%m/%x	Format for Invoices No, you can use next replacements: %Y - current year, %m - current month, %d - current day, %C - client ID, %N - client name, %x - system incremental integer, %X - reseller incremental integer.
Invoice Last No:	100332	Last Invoice No used in the system for invoices generation.
Autoinvoicing Default State:	to verify	Default state for all automatically created invoices.
Autoinvoicing Delay:	5 hour(s)	Time in hours that system is going to wait from the end of a previous day before invoicing. Required is a positive integer. Otherwise, the system will invoice a customer before the moment of full statistics process. Recommended value is around 5-6 hours.
☐	Check for empty code names in invoices	In case invoice template shows code names, but the "Code Name" field is not presented in a rate table of a client, invoice will not be generated.
☐	Allow Zero Invoices	Enables creation of zero invoices.

RADIUS SERVER

Bind to Address:		Specify your server IP address to bind to, empty field means bind to all addresses.
Accounting Port:	1813	Listen for accounting packets on a specified port.
Authorization Port:	1812	Listen for authorization packets on a specified port, same for dynamic routing if available.
Number of Workers:	2	Number of threads that process packets. The value of this parameter also affects the number of SIP workers.
Max Call Length:	7200	Maximum call duration in seconds, for customers with **unlimited credit**.
Max Routes Quantity:	10	Maximum routes quantity to be returned.

Changes will be applied only after you restart RADIUS server from the Task Scheduler section.

SIP SERVER

SIP Port:	5060	Listen for auth packets on a specified port.
Max Routes Quantity:	10	Maximum routes quantity to be returned.

DYNAMIC ROUTING

Analyze Period:	300 minute(s)	How many last minutes of statistics will be analyzed to build a routing table.
Minimal Statistics Quantity:	100	Minimal quantity of statistics records required for considering quality factors. Otherwise defined default values will be used.
Default ASR:	30	Default value to use, if statistics quantity volume is not reached by particular vendor. Minimal allowed value is 0.1.
Default ACD:	2	Default value to use, if statistics quantity volume is not reached by particular vendor. Minimal allowed value is 0.1.
Default PDD:	1	Default value to use, if statistics quantity volume is not reached by particular vendor. Minimal allowed value is 0.1.
Default SCD:	5	Default value to use, if statistics quantity volume is not reached by particular vendor. Minimal allowed value is 0.1.

RATES GENERATOR SETTINGS

Number of workers:	4	Number of threads that process rates generation.
Rates Generation Delay:	1 hour(s)	System will start Automatic Rates Generation in given amount of hours after the sources rates changes.

NOTIFICATION AND MONITORING

☑	Event on Missing Account	Send an event to events log, when client/account was not identified during processing of xDRs or RADIUS Authorization.
☑	Event on Missing Rate	Send an event to events log, when destination/rate was not identified during processing of xDRs or RADIUS Authorization.
☐	Event on zero time calls	Send events even if a call has zero length.
Resend low-balance events every:	24 hour(s)	How often to resend email regarding low customer's balance.
Rate changes notification period:	300 minute(s)	Customer will be informed regarding rates changes in given amount of minues after the actual change.

AUTOROTATION AND CLEANING

Delete events from log after:	1 day(s) (from 1 to 90)	Delete events from Events Log after a specified period of days.
Statistics Archiving Delay:	0 day(s) (0 - do not archive)	Archive statistics in advance. Advance archiving minimizes the time needed for backup.
Statistics Rotate Delay:	100 day(s) (0 - do not rotate)	Rotate statistics to archive after specified number of days.
Delete not actual rates after:	360 day(s) (0 - do not delete)	Delete rates from the system when they are not relevant for a specified number of days from the end date.

Delete parsed xDR files after:	180	day(s) (0 - do not delete)	Number of days, after which already parsed and processed xDR files must be deleted from the local server.
Delete archived log files after:	90	day(s) (0 - do not delete)	Number of days, after which archived log files must be deleted from the local server.
Delete emails from Mail Queue after:	365	day(s) (0 - do not delete)	Number of days, after which emails from Mail Queue must be deleted from the local server.

BACKUP SETTINGS

System Backup Period:	167	hour(s) (0 - do not backup)	How often to backup the system. Please note that actual backup will be done at the time when the Backup Manager process runs.
Destination for Backup Packages:	/opt/jerasoft/backups		Absolute path where to put backup packages. It cannot be inside the root of the system.
Include into backup:	Database ×	▼	Which components of system should be included into backup.
Disk usage treshold:	40 %		Threshold for backup size relative to free disk space. Contact Support Team if you need to change the value.
Leave last X Packages:	3		How many last backup packages to leave.
Number of Backup Manager workers:	1		Number of threads that run database backup.

Update

⚠ **Warning**

We strongly recommend that you **do not add any symbols** (for example, a slash) after a domain name.

System Settings

The **System Settings** information block contains default system parameters specified below:

Screenshot: System Settings window

Field	Description
Domain Name	Enter **relevant domain** address of your JeraSoft Billing server. In most cases, **JeraSoft Billing 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
Collect Anonymized Data *checkbox*	Allows collecting **anonymized** system usage statistics

Regional Settings

The **Regional Settings** information block contains the following fields:

Screenshot: Regional Settings window

REGIONAL SETTINGS

Default Currency:	USD ▾	Default currency is used for routing, profitability margin check and new entities creation
Default Language:	English ▾	Set default locale for the interface if not set in user preferences
Timezone:	UTC ▾	Default system timezone. You can change timezone in statistic reports queries
Date Format:	%m/%d/%Y	Output format for dates, you can check syntax for this field in the User Guide
Date and Time Format:	%m/%d/%Y %H:%M:%S %z	Output format for dates and times, you can check syntax for this field in the User Guide

Field	Description		
Default Currency	Specify **currency** that will be used as the default for the generation of routing and new entities creation (accounts, invoices, transactions, clients, resellers, etc.). However, this currency **won't** be used for reports.		
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**		
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**	
Date and Time Format	Specify the date and 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	

⚠ **Attention**

If you change the **Default Currency**, you need to restart the **Dynamic Routing Manager** in the **Task Scheduler** section for an immediate **Routing Analysis** functioning.

Mail Server Settings

This information block allows you to specify mail server settings:

Screenshot: Mail Server Settings window

MAIL SERVER SETTINGS

SMTP Credentials: Default SMTP ▾	Credentials of SMTP server to be used for system notifications (e.g. Events Watcher, Reports Watcher, etc)
From: billbery@localhost	Specify email address to send mail from, it is a system address for the SMTP server, not the one that appears in the "From" field in emails

Field	Description
SMTP Credentials	Select **SMTP Credentials** that you want to be used by the system (Credentials are managed in the **Data Sources** section)
From	**Email address** that will be specified as a sender

Reports and Processing Settings

This information block contains the following reports settings information:

Screenshot: Reports and Processing Settings window

REPORTS AND PROCESSING SETTINGS

Files Collector Workers:	1	Number of parallel workers running files collector tasks.
Statistics processing order:	old calls first	Order of statistics processing when the queue is large.
Calculator Workers:	4	Number of parallel workers running calculator tasks (number of CPU cores / 2).
Calculator Mode:	periodically run	Select calculator processing mode: **periodically run** – runs every X minutes by Task Scheduler; faster processing of xDR bulks, but causes some delay. **realtime process** – processes calls in realtime; slower processing in case of xDR bulks; use only if you really need realtime.
	☐ Round Monetary Value	Round monetary value in xDRs report and xDRs files. Default without rounding.
	☐ Cross-Gateway Connection	Used for **Orig-Term and Profit Reports**: allows Reports Generator tool to concatenate orig and term legs from different gateways.

Field	Description
Files Collector Workers	Specify the **number of threads** processing files collection tasks
Statistics Processing Order	Specify what **statistics** to process first (newer or older)Specify the **number of threads** processing calculator tasks (number of CPU cores/2)
Calculator Workers	Specify the **number of threads** processing calculator tasks (number of CPU cores/2)
Calculator Mode	Defines the **calculator workout**, whether it will start **periodically** through Task Scheduler, or will be **constantly** running
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 the Reports Generator tool

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

OUTPUT AND IMPORT/EXPORT

Items per Page:	20	Default number of items per page in the system interfaces.
CSV Delimiter:	,	Default delimiter used for CSV files when importing/exporting
CSV Decimal Point:	,	What will be used as a decimal separation point for numbers ("," for most cases)
Close Rates marked by:	delete, block, close	When importing a rate table, if some rates have notes that they are closed, the system will close the appropriate destinations after importing them. This field defines what marking words must be taken as ones closing a rate. The system also searches for longer words. For example: close - closed, delete - deleted, etc. Please avoid sentences and use only single words, separated by a comma (block, close).
Hidden Numbers:	0	The number of digits, which must be hidden in a destination number
Import Encoding:	UTF-8	Encoding that will be used during importing data from a file.
Export Encoding:	UTF-8	Encoding that will be used during importing data from a file.

Field	Description
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**, the system will be able to close respective rates if the **Rate** column has one of the keywords 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** to use while **importing** data from a file

Invoicing Settings

Below, you will find a list of fields of the **Invoicing Settings** information block:

Screenshot: Invoicing Settings window

Field	Description
Invoice No Template	Default **template** for invoice number
Invoice Last No	**Number** of the 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** the system will wait until performing invoicing
Check empty code names in invoices *checkbox*	Enables checking of the correspondence of a **Code** with a **Code name**, and, in case of any **mismatches**, the system will give an **alert** and an invoice **will not be** generated
Allow Zero Invoices *checkbox*	Allows to create invoices with **zero amount**

RADIUS Server

JeraSoft Billing **RADIUS server** settings can be managed in this information block:

Screenshot: RADIUS Server settings window

RADIUS SERVER		
Bind to Address:		Specify your server IP address to bind to, empty field means bind to all addresses.
Accounting Port:	1813	Listen for accounting packets on a specified port.
Authorization Port:	1812	Listen for authorization packets on a specified port, same for dynamic routing if available.
Number of Workers:	2	Number of threads that process packets. The value of this parameter also affects the number of SIP workers.
Max Call Length:	7200	Maximum call duration in seconds, for customers with **unlimited credit**.
Max Routes Quantity:	10	Maximum routes quantity to be returned.
	Changes will be applied only after you restart RADIUS server from the System Services section.	

Field	Description
Bind to Address	Specify your **JeraSoft Billing server IP addresses**, separated by a comma, to bind RADIUS to
Accounting Port	Specify the **accounting port** here. By default, the field value is *1813*
Authorization Port	Specify the **authorization port** here. By default, the field value is *1812*
Number of Workers	Number of **RADIUS workers**. The value of this parameter also **affects SIP workers' number**.
Max Routes Quantity	Limit maximum routes quantity to be returned. Default - 10

SIP Server

JeraSoft Billing **SIP Server** settings can be managed in this information block:

Screenshot: SIP Server settings window

SIP SERVER		
SIP Port:	5060	Listen for auth packets on a specified port.
Max Routes Quantity:	10	Maximum routes quantity to be returned.

Field	Description
SIP Port	Specify the **SIP port** here. By default, the field value is ***5060***
Max Routes Quantity	Limit maximum routes quantity to be returned. Default - 10

Dynamic Routing

Settings for JeraSoft Billing Dynamic Routing is presented in the information block with the following fields:

Screenshot: Dynamic Routing settings window

Field	Description
Analyze Period	A **number** of minutes of **last** available statistics that will be used to build a routing table
Minimal Statistics Quantity	Minimal quantity of statistics records required for considering quality factors. Otherwise, defined default values will be used.
Default ASR	Default value to use if statistics quantity volume is not reached by particular vendor. Minimal allowed value is 0.1.
Default ACD	Default value to use if statistics quantity volume is not reached by particular vendor. Minimal allowed value is 0.1.
Default PDD	Default value to use if statistics quantity volume is not reached by particular vendor. Minimal allowed value is 0.1.
Default SCD	Default value to use if statistics quantity volume is not reached by particular vendor. Minimal allowed value is 0.1.

Rates Generator Settings

The **Rates Generator Settings** information block contains the fields specified below:

Screenshot: Rates Generator Settings window

RATES GENERATOR SETTINGS		
Number of workers:	4	Number of threads that process rates generation.
Rates Generation Delay:	1 hour(s)	System will start Automatic Rates Generation in given amount of hours after the sources rates changes.

Field	Description
Number of workers	Specify the number of system workers that run **rates generation**.
Rates Generation Delay, hour(s)	Specify rates generation delay (for example, if you enter **3** as a value, the system will generate rates **in three hours after** the sources rates changes).

Notification and Monitoring

Notification messages distribution and other monitoring settings contain the underwritten fields:

Screenshot: Notification and Monitoring settings window

NOTIFICATION AND MONITORING

☑	Event on Missing Account	Send an event to events log, when client/account was not identified during processing of XDRs or RADIUS Authorization
☑	Event on Missing Rate	Send an event to events log, when destination/rate was not identified during processing of XDRs or RADIUS Authorization
☐	Event on zero time calls	Send events even if a call has zero length
Resend low-balance events every:	24 hour(s)	How often to resend email regarding low customer's balance
Rate changes notification period:	5 hour(s)	Customer will be informed regarding rates changes in given amount of hours after the actual change.
Watch for free space at:	/opt/jerasoft:20;/var/lib/pgsql:30	Monitor free disk space. You can specify full path where to monitor and percent of space delimited by ":". When free space is less than specified percent of the whole disk size - the system will send an alert.

Field	Description
Event on Missing Account checkbox	If checked, activates notification sending when **no account** was found
Event on Missing Rate 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, hour(s)	Set the **frequency** of **low balance** notification **resending** service
Rate changes notification period, hour(s)	Specify the **frequency** of **rate changes** notification period
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 the **":" symbol**, choose the percentage 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 the */opt/jerasoft/* folder, the notification will be sent. You can add multiple folders in this field by delimiting them with the **";"** symbol.

Autorotation and Cleaning

Automatic statistics and backup management parameters are configured here:

Screenshot: Autorotation and Cleaning settings window

AUTOROTATION AND CLEANING

Delete events from log after:	1 **day(s)** (from 1 to 90)	Delete events from Events Log after a specified period of days.
Statistics Archiving Delay:	0 **day(s)** (0 - do not archive)	Archive statistics in advance. Advance archiving minimizes the time needed for backup.
Statistics Rotate Delay:	100 **day(s)** (0 - do not rotate)	Rotate statistics to archive after specified number of days.
Delete not actual rates after:	360 **day(s)** (0 - do not delete)	Delete rates from the system when they are not relevant for a specified number of days from the end date.
Delete parsed xDR files after:	180 **day(s)** (0 - do not delete)	Number of days, after which already parsed and processed xDR files must be deleted from the local server.
Delete archived log files after:	90 **day(s)** (0 - do not delete)	Number of days, after which archived log files must be deleted from the local server.
Delete emails from Mail Queue after:	365 **day(s)** (0 - do not delete)	Number of days, after which emails from Mail Queue must be deleted from the local server.

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 **archived**)
Delete not actual rates after	Cleans non-actual rates from the **database** when effective date is **older than a specified number** of days
Delete parsed xDR files after	Define when the system should delete **old parsed xDR-files**
Delete archived log files after	Define when the system should delete **archived log-files**
Delete emails from Mail Queue after	Define when the system should delete **emails from Mail Queue**

Backup Settings

Backup settings are presented with the following fields:

Screenshot: Backup Settings window

BACKUP SETTINGS

System Backup Period:	167 hour(s) (0 - do not backup)	How often to backup the system. Please note that actual backup will be done at the time when the Backup Manager process runs.
Destination for Backup Packages:	/opt/jerasoft/backups	Absolute path where to put backup packages. It cannot be inside the root of the system.
Include into backup:	Database ×	Which components of the system should be included into backup.
Disk usage threshold:	40 %	Threshold for backup size relative to free disk space. Contact Support Team if you need to change the value.
Leave last X Packages:	3	How many last backup packages to leave.
Number of Backup Manager workers:	1	Number of threads that run database backup.

Field	Description
System Backup Period	The field value specifies when the system **should backup itself** (for example, if you enter **24** as a value, it will mean that the system will backup itself **every 24 hours**).
Destination for Backup Packages	Absolute **path** to the folder where the system backup copies **will be stored**. 🛑 **Warning** This folder **shouldn't be** within any system folder!
Include into backup	Specify components of the system which should be included into backup.
Disk usage threshold	The percentage value of the disk space that backup needs **free** for correct work.
Leave last X Packages	This Parameter 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**).
Number of Backup Manager workers	Specify the number of system managers that run **a database backup.**

⚠️ **Attention**

The backup will not be created if the disk size is not enough.

Integration

This chapter of our Guide focuses upon sections that are called to govern the **integration process** of 3rd party software **with JeraSoft Billing.** Please look for more information on the following sections:

- Gateways
- Number Portability
- Data Sources
- Provisioning API
- API Testbed
- CoreAPI Docs

Gateways

In this article

Section overview

This section allows you to configure and integrate all switches into billing via RADIUS, SIP or xDR-files upload.

The section is presented in the 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)
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
	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.
	Allows deleting a gateway from the system. Requires confirmation

Adding a New Gateway

To add a gateway to the list, click the **New Gateway** button and specify parameters in a pop-up window with settings. You can access the advanced settings by clicking on a downward arrow icon next to the name of a respective information block.

Screenshot: Adding new Gateway

Information Block	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 (calls, SMSs, data, etc.) for a current gateway
	Tag	Indicate a particular tag to filter events by gateways while creating invoices and using reports.
	Click the downward arrow ⬇ icon next to the **General Information** information block to access the following advanced settings: • ***Ident Priority -*** a hierarchy of account identification. By default, the 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 (available options: ***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	
Files Collector	Information block regarding the **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

	• *D a t a S o u r ce*	Specify a data source, where xDR files are stored
	• *F r o m P a th*	Specify the xDR-files path (mask paths are allowed). Available only for **SSH** and **FTP** ⚠️ **Attention** If there are **/var/cdrs** folder with the latest CDR files and **/var/archive_cdrs/** folder with outdated ones, and a user needs to download CDR files from both of them, he can use **;** (semicolon) to separate paths or /**/ for recursive download. New paths may have the following look: **/var/cdrs/**/bill*; /var/archive_cdrs/bill*.**
	• *S e n d e r M a t ch*	Indicate the sender name or email. Solely for **IMAP**
	• *S u b je c t M a t ch*	Use a regular expression to search by message titles. Solely for **IMAP**
	Click the downward arrow 🔽 icon next to the **Files Collector** information block to access advanced settings: • **Overwrite TZ -** timezone selection (if you select a different timezone, the system will ignore a timezone stored in an 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)	
	• *C o ll e c t o r T y pe*	Select a collector type you plan to use from the list

			RADIUS-server password
	• *Secret*		
			Click the downward arrow ⬇ icon next to the **RADIUS Server** information block to access advanced settings: • *Overwrite TZ -* timezone selection (if you select a different timezone, the system will ignore timezone information stored in an 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 the database. By default, this checkbox **is marked**.
SIP Server			Allows acceptance of SIP packets from the current gateway. Required for SIP Redirect routing feature
	• *Collector Type*		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*		Select a collector type you plan to use from the list

Files Downloading History

To view files downloading history, where gateway name, filename, download date, and file size will be specified, open the **Downloads History** tab. Also, you can remove files from the list by selecting them and clicking the **Delete** button above the table.

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

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 (further on, we'll describe everything on the example of the two providers: **Numuri** and **TJA**). Here, you can find the list of ranges and 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 (RN):** During the translation of the call, the system verifies the code of a TJA number, identifies the number, and changes the Dst Number to **372+ RN Number**.
> **Numuri/TJA (Owner):** During the translation of the call, the number is verified and the system **applies a dynamic tag** (owner's name) to the call for further billing.

The section consists of 3 tabs:

- **Number Portability**
- **Gateways**
- **Downloads History**

Number Portability tab

The tab is presented in the form of a table of ranges of numbers with the following columns:

Screenshot: Number Portability

Column Name	Description
ID	Identification number of a number range
Provider	Name of a number range provider
Range Start	Starting number in a respective range
Range End	Final number in a respective range
Owner	Name of a number range owner
RN Number	Registration number for the range
Prefix	Number prefix
Effective Date	Indication of the latest date of numbers range modification
End Date	Indication of the date after which the range won't be valid

Functional **buttons/icons** that are present in a section are as follows:

Button/Icon	Description
⊕ New Range	Allows creating a new range of numbers for a 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. To display **JeraSoft LNP Common** provider data, select **JeraSoft LNP Common** in a drop-down menu of the *Provider* field. Click on the blue downward arrow 🔽 icon.

Screenshot: Number Portability section

Creating a New Range/Number

To create a **range** of numbers, click the **New Range** button and specify the fields listed below. After that, click **OK.**

Screenshot: Number Portability range creation form

Field	Description
Provider	Select the needed provider from the available dropdown: • **JeraSoft LNP Common** • **JeraSoft LNP - tags only** • **Numuri** • **TJA (RN)** • **TJA (Owner)** • **Lithuanian**
Range Start	Set the range's start position
Range End	Set the end position
RN Number	Indicate a registration number
Prefix	Number prefix

Owner	Determine an operator that owns a respective range of numbers/number
	⚠ **Attention** Further, the owner's name will be applied to the call as a tag (for example, EU Carrier 1) for billing the call.
Effective Date	Indicate the last modification date
End Date	Indicate the end date for the range
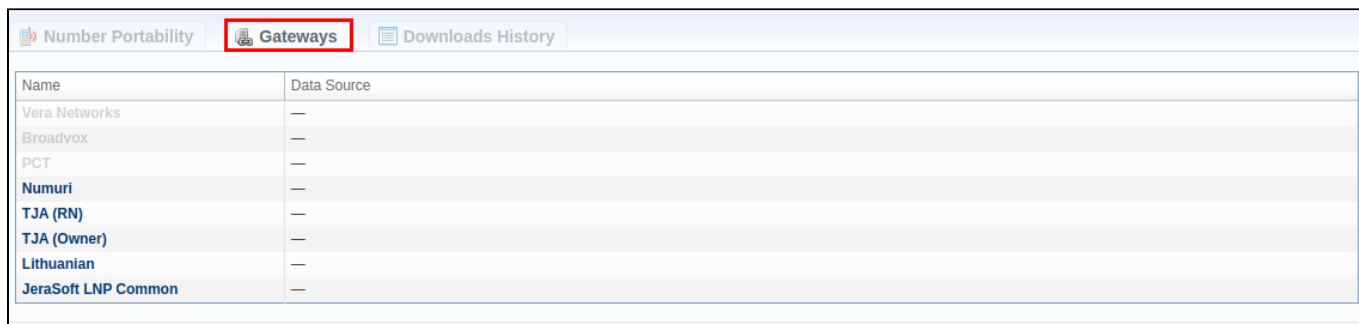
Gateways tab

⚠ **Attention**

In **VCS 3.17.0**, for the purpose of making the **Traffic Processing** section more versatile, the TJA gateway has been divided into ***TJA (Routing Number)*** and ***TJA (Owner)*** (more information can be found in this article). Please note that each gateway in the tab has its own unique and predefined format of the LNP update file, thus, we recommend addressing our support center to avoid any possible issues while configuring the gateways.

Apart from **Numuri, TJA, Lithuanian, JeraSoft LNP Common, JeraSoft LNP - tags only,** JeraSoft Billing is integrated with the following providers:
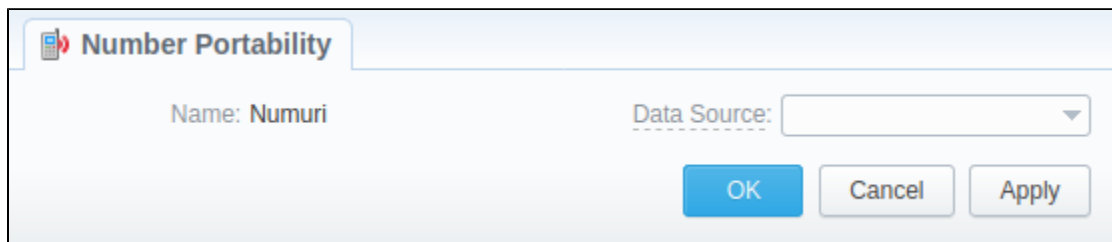
1. **Broadvox**
2. **Vera Networks**
3. **PCT**

The **Gateways** tab is presented in the form of a table of gateways of all the above-mentioned providers with indication of their names and assigned data sources. You can manage **Numuri, TJA, Lithuanian, and JeraSoft LNP Common**. To assign a new data source to a gateway, click on a 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

⚠ **Note**

When the database is local and has both ranges and single numbers present in it, we always select the most recent record by date (regardless of whether it is a single number or a range).

Downloads History tab

Downloads History tab displays files downloading history through one of the number portability gateways. It is presented in the form of a table where ID, gateway 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: Downloads History tab

☐	ID	Name	Filename	Download Date	File size
☑	1	tja	tmp9nKgkt	04/11/2018 08:25:04 +0000	6.74 Kb

Rows **1 – 1** of **1**   Page 1 of 1

Delete

About | Get Support | 0.2392s

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LNP/MNP Configuration

LNP/MNP configuration can be divided into 2 steps:

1. Set up the download of external data to local LNP/MNP databases
2. Configure communication between JeraSoft Billing 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 the **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 the **Downloads History** tab. After being parsed by the **Files Collector** tool, numbers will be displayed in the **Number Portability** tab.

Step 2

The next stage is to configure JeraSoft Billing addressing to our local LNP/MNP databases during routing. To do so:

1. Go to the **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.

Congrats! Your LNP/MNP is configured and ready for work.

Knowledge Base Articles

Error rendering macro 'contentbylabel'

parameters should not be empty

Data Sources
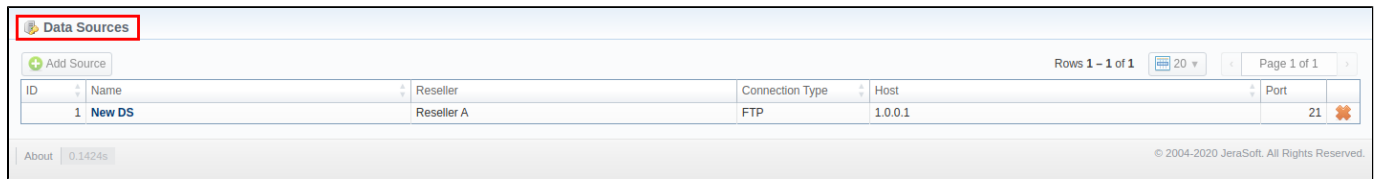
In this article

- [Section overview](#)
- [Creating a 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 settings 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 it throughout the entire system. The section is presented in the form of a table with the following columns:
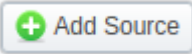
Screenshot: Data Source section

Column Name	Description
ID	Data source identification number
Name	Data source name
Reseller	The name of the reseller the data source is assigned to
Connection type	Type of connection to the 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 a New Data Source

To create a new data source, you need to follow these steps:

1. Click the **Add Source** button
2. In the pop-up window, fill in the required fields (see screenshot below) and click **OK**

Screenshot: New Data Source creation form

Field	Description
Name	Indicate a data source name
Reseller	The name of the reseller the data source is assigned to
Connection Type	Specify connection type: • **SSH** • **FTP** • **IMAP** - mail mode to download files • **Web (Numuri)** - web mode to download files • **SMTP** - for configuring a mail server ⚠ **Attention** Depending on a type you've chosen, the list of fields in the information block may differ
Security Layer	*FOR SMTP ONLY* Specify security layer for **SMTP** server: • **TLS** • **SSL** • **Plain**
Host	Specify an IP address or domain name of the server. Unavailable for **Web (Numuri)** connection type
Port	Specify the port for **SSH, IMAP** or **FTP** type. Unavailable for **Web (Numuri)**
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. For **SMTP** type, you can leave login&password fields empty if your server does not require such authentication.

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 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 the 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

ID		Priority	Name		Event		Handler		
1	🟢	1	**Block client on the switch**		Clients Balance Became <= 0		Script	/usr/local/script	✖
2	🔴	1	**Create client in the CRM**		Accounts Create		HTTP	crm.net/client-add	✖

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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
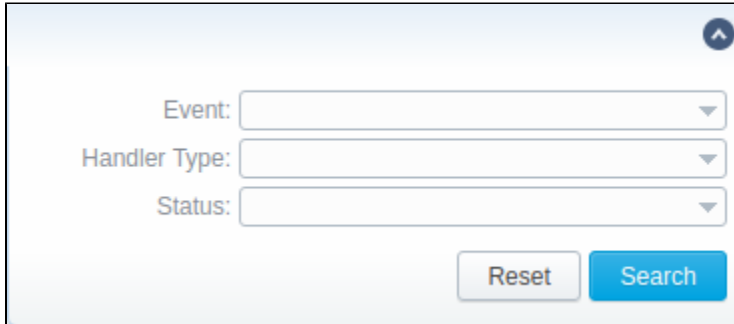
> ✅ **Tip**
>
> For a quick switch between *enabled* and *disabled* statuses, click on a respective *status icon* in the section. However, to change ***archived*** status, you need to do it from a handler edit form

Advanced Search

Advanced Search drop-down menu, located in the top right corner of the section, is called to facilitate easy access to required information. By clicking on a red downward arrow 🔽 icon, the following drop-down menu is displayed:

Screenshot: Advanced Search drop-down menu
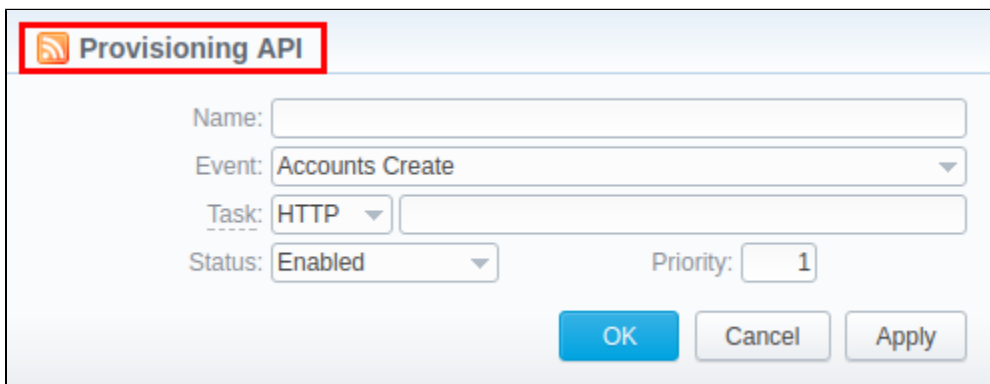
Field	Description
Event	Select from a list of all possible handler events
Handler Type	Indicate a type of handler: • ***script*** • ***HTTP***
Status	Choose a target status: • ***Enabled*** • ***Disabled*** • ***Archived*** or leave this field blank. In this case, both ***enabled*** and ***disabled*** handlers will be displayed. This field is empty by default

Creating a New Handler

To start with provisioning, you need to create a handler manually. Click the **New Handler** button and specify respective parameters 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*
	Subscriptions	*assign* *activate* *deactivate* *renew* *close*
	Import	- import process failed - import process success

Field	Description
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 3.17.0**, to prevent performance degradation and data inconsistency, affected by the external side, **Before** event type has been removed from the section.

✅ **Best practice example**

There is an example based on **http://handler** usage.

> 2. Open the **Provisioning section** and start creating a handler.
>
> > a. Specify the name, type, and status.
> > b. In the *Event* field, select **Clients Create** event from the drop-down list.
> > c. In the *Task* field, indicate **http://** type and determine the port and method, for example, *120.0.0.1:5000/api.*
> > d. Click **Apply**.

Find an example of the **http://handler below**:

```
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**
>
> To put a handler into action, you need to **restart** the **Cache Manager**. To do so, click on the 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. The tab is presented in the form of a table with the following columns:

Screenshot: Execution Logs tab

ID	Date	Event		Status	Name	Error	Duration	
153	12/20/2016 13:45:15 +0000	After	Accounts Create	Success	acc 6		1 ms	
156	12/20/2016 13:45:18 +0000	After	Accounts Create	Success	acc 6		1 ms	
179	01/10/2017 15:40:07 +0000	After	Accounts Create	Fail	acc 6	Script execution error No such file or directory	27 ms	

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 window contains information that JeraSoft Billing sends via the handler.

Click on this icon to expand logs. For example, logs for handlers with *before* type will only show modified data.

Screenshot: Provisioning details

Provisioning API   acc 6

Event Type: After   Status: **Success**
Event: Accounts Create   Date: 12/20/2016 13:45:18 +0000

DATA

{
    auth_type: "name",
    protocol: null,
    ani: null,
    id_dr_plans: null,
    orig_capacity: null,
    ips: [ ],
    term_tags: [ ],
    term_capacity: null,
    port: null,
    orig_enabled: false,
    id: 178,
    tech_prefix: null,
    term_rate_table: null,
    proxy_mode: null,
    orig_tags: [ ],
    rates_notify_force: false,
    password: null,
    name: "1pre-pre-",
    term_enabled: false,
    notes: "",
    accname: "1",
    voip_hosts: [ ],
    id_clients: 15,
    orig_rate_table: null
}

Advanced Search

By clicking on ⌄ *red downwards arrow,* the following **Advanced Search** drop-down menu is displayed:

Screenshot: Advanced Search drop-down menu

Status:	
Event Type:	After
Event:	Accounts Create
Data:	
Error:	
Date From:	
Date To:	

Reset   Search

Field	Description

Status	Indicate handler execution 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 the last date of handler execution

API Testbed

This section allows sending/receiving 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 clicked, you will see:

- **API Request** - full JSON message that has been sent;
- **API Response** - full JSON response from the 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.
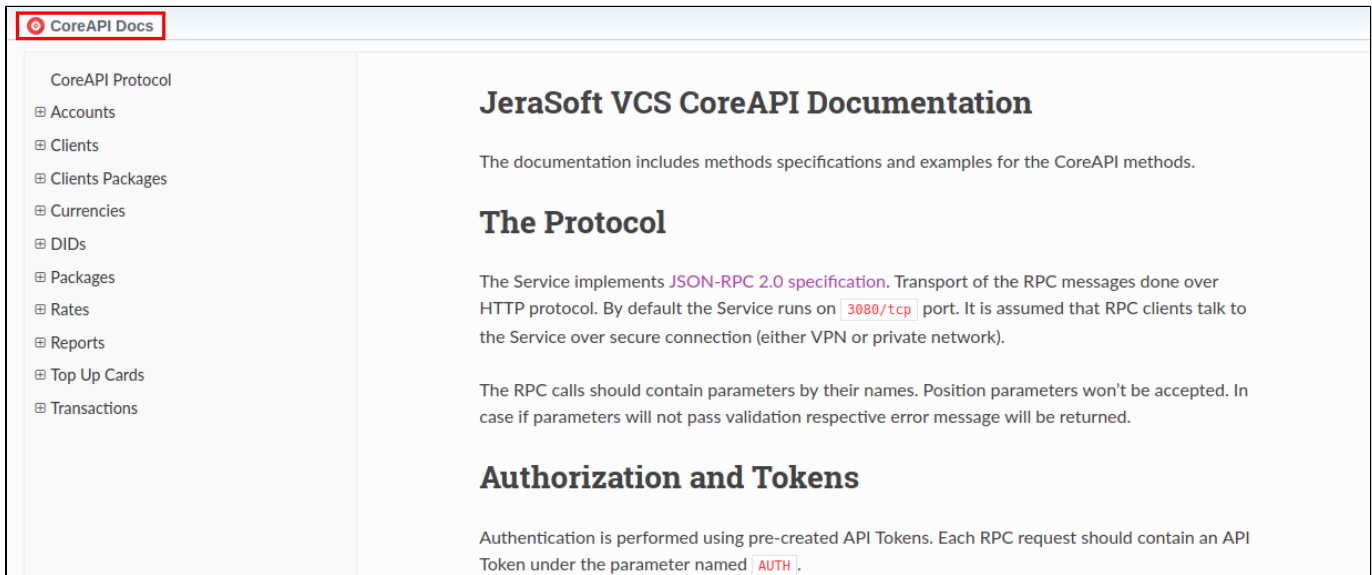
CoreAPI Docs

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 the APIs section of our User Guide.

System

Information in this chapter of the Guide provides an overview of major **JeraSoft Billing 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
- System Services
- Users
- Roles

Events Log

In this article

- [Section overview](#)
- [Events Log tab](#)
  - [Advanced Search](#)
  - [Detailed Description of the Event](#)
- [Configuration Tab](#)
  - [Adding a new rule](#)

Section overview

Since keeping track of all **events** that occur in the system is crucial, JeraSoft Billing offers you the **Events Log** section where you can view information regarding all **errors, alerts,** and **messages**, as well as configure the rules for email notifications sending. The section is divided into two tabs: **Events Log** and **Configuration.**

Events Log tab

Information in the tab is presented in the form of a list of all events recorded by the system. For example, the system records the following events:

- incoming or outgoing events of the client that are not registered within the system;
- number prefixes that are not registered within the system;
- incoming call prices that are higher than outgoing ones;
- incoming or outgoing calls that were rejected and others.

Tab structure is presented in 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
Node	Node ID that sent a notification

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

Button/Icon	Description
	Allows to filter the list of events by **errors**
	Allows to filter the list of events by **alerts**
	Allows to filter the list of events by **messages**

		Allows to view a **detailed description** of the event (if possible)

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 a blue downward arrow icon to open a menu with the following fields:

Screenshot: Advanced Search drop-down menu
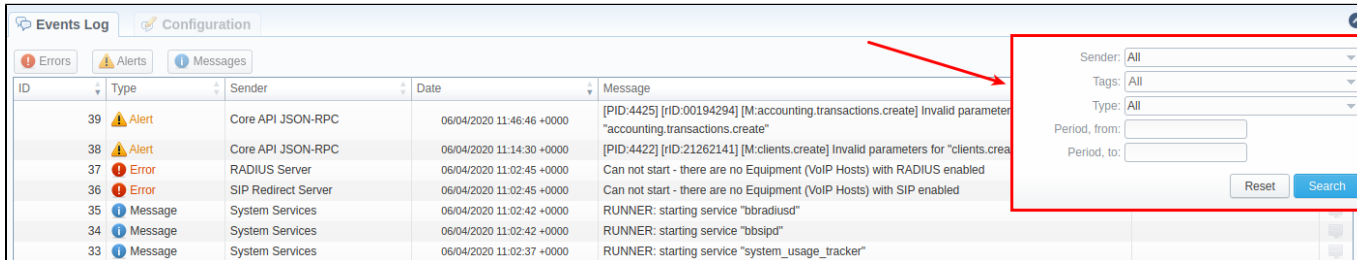
Field	Description
Sender	Select a respective **sender** from the given list. By default, the field value is **All**.
Tags	Select **one or multiple tags** from the provided list. By default, the field value is **All**.
Type	Specify a type of event: **error, alert,** or **message**. By default, the field 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, click the **Search** button to apply them. Click **Reset** to cancel the applied search.

Detailed Description of the Event

You can view detailed descriptions of some events by clicking the icon opposite a respective event on the right. A pop-up window consists of **Title** and **Event Description** (see screenshot below):

Screenshot: Detailed description of the event
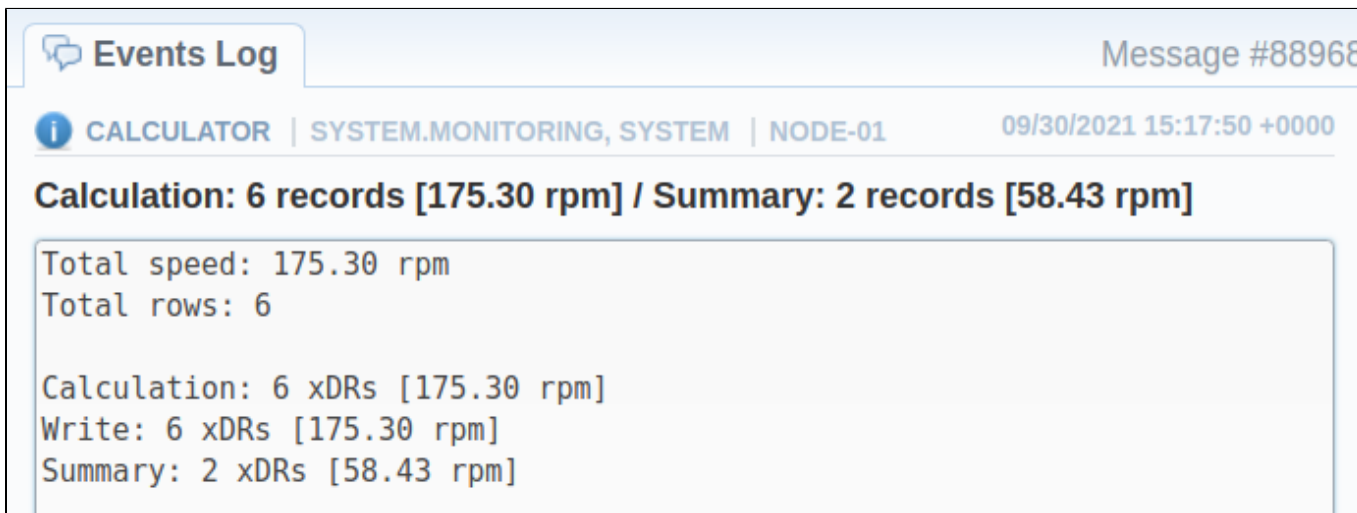
Configuration Tab

In the **Configuration** tab, you can create rules for email notifications about respective events within the system. The 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 **recipients' email addresses**
Filters	List of **services** and **types** of events added to the respective rule
Group Limit	**Number** of messages allowed to be sent **separately**

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

Button/Icon	Description
	Allows to add a new **rule** for **email notifications**
	Allows to **delete** an email notification **rule**

Adding a new rule

For adding a new rule to the system, you need to click the **Add Rule** button. Following this, **Event Log** pop-up window will show up with respective settings (shown below):

Screenshot: Event Log pop-up window

Information Block	Field	Description
General		General information block consists of the following fields:

	Title	**Name** of the **rule** that will be put into the subject of the message
	Emails	**Email addresses** of the **recipient**
	Group Limit	The **boundary** to control the **number of messages** to be sent. If there are **more messages** available for delivery within one monitoring cycle **than the specified value**, they will be sent as a **single email** (set **0** to get **all** messages **separately**, or an **ultimate high** value to receive **grouped** messages).
	Details Limit	**Data** will be **limited** and cut to a specified **number of characters** in the grouped messages. By default, the field 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 in 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; • Files Upload Service; • Import Manager; • Invoicing Manager; • JSON-RPC Core API; • Log Rotator; • Jurisdiction Manager; • Mail Manager; • Notificator; • Packages Manager; • Payment Gateways; • Provisioning Manager; • RADIUS Server; • Rates Generator; • Rates Notificator; • Orig-Term Report Generator; • Reports Watcher; • SIP Redirect Server; • Statistics Manager; • Statistic meta info manager; • Swap Deals Manager; • System Services; • Traffic Rules Manager; • Web.
	Types	Specify the category of events for the rule: *errors, messages, alerts*
	Tags	Set **labels** that will be applied to filter the rule. List of the **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;

	RegEx p Match	**Regular Expression Match** option to filter rules. Use **POSIX standart** while specifying regular expressions

After clicking **OK**, a new rule will be added to the general 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, the **Audit Log** section comes to your rescue. This section displays detailed information concerning all **actions** performed by users in JeraSoft Billing with **Clients**, **Resellers**, **Accounts**, **Calling Cards**, **DIDs** (see screenshot below):

Screenshot: Audit Log section main window

Column Name	Description
Date	**Data** and **time** of applied actions
Object	System item *(**Client, Account, Reseller, Calling Card, DID Management**)* that a certain action was applied to
Action	Action Name (*Account Creation, Client Removal, etc.*) and **Service** that is responsible for a specific action
Data	The list of **changes** with **detailed information** on what exactly was changed
Detailed Changes icon	If clicked, opens a more detailed log entry on **Action**

> ⚠️ **Attention**
>
> If you change the **Mail Templates** in the **Reseller** settings, these updates **will not** be displayed in the **Audit log**

Advanced Search

The displayed list of audit actions is grouped by date, and you can filter them using Advanced Search indicated by a blue downward arrow in the top right corner of the section. The search menu is presented with the following fields:

Screenshot: Advanced Search drop-down menu

Field	Description
Object Type	Select a respective **object type** from the given list: • Client • Client Template • Account • Reseller • DID Management • Payment
Object Name	Insert a **name** of the respective item (e.g., **Customer A**)
Object ID	Insert an ID of the needed object
Action	Choose a type of action available for object types separately
Period	Set an exact date and time period with **Datepicker**
By User	Select a User from the list. Users are grouped by status: **Active** and **Archived**.
By Service	Select a System Service from the provided list.

⚠ **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 the **Object** column.

Mail Queue

Section overview

Mail Queue is a section designed to provide a visual representation of all system emails that have already been sent or are in a queue to be delivered. The se emails can contain **invoices**, **low balance notifications** or **other types of messages**. The section is presented in the 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 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 an attached file
✖	Allows deleting an email from the queue. Requires confirmation

> ⚠ **Attention**
>
> Emails that have been sent **cannot** be deleted from the list; you can delete only those that are currently **in a queue**

Advanced Search

You can filter data, presented in the section, using an **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 a blue downward arrow ⌄ icon.

Screenshot: Mail Queue search toolbar

Field	Description
Client	Type the name of a client that you want to 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 the **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 an email has the **attached file**, its **name** will be specified in the field. By clicking on it, the 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
Node: [node_ident]-[ip]	**CPU Load**	CPU utilization within 1 min, 5 min, and 15 min periods.
	Memory	Amount of **Total** Memory with breakout for *cache*, *shared*, and *available*
	Uptime	Current **uptime** of the system
	Last Ping	A timestamp of how long ago we received a ping from the server
	CPU	Number of Central Processing Unit **cores**
	UDP Buffers	List of UDP ports with queue size in incoming/outgoing queues
	Assigned IPs	Current server IP(s)
	Service	**Name** of the system service. If the service is a daemon, it will be marked accordingly.
	Uptime	Current **uptime** of the service
	PID	Process ID of the system service
Master Database Sessions	**PID**	Database session process **ID**
	Application	**Name** of the application
	Client IP	IP of the server, accessing the Master database
	Session Duration	Session **duration**
	Query Duration	Query **duration**
	Query	Description of the **query**

The **section** allows a user to stop, and restart services **manually** with the help of certain icons.

Icon	Description
	Allows to **restart** a service that is currently running
	Allows to **stop** a service

⚠️ **Attention**

Note that you **cannot** stop some processes via the **web interface.** To do so, you need to login on a server via **SSH** to stop them.

System Services

In this article

- [Utility Description](#)
- [Utility Management](#)

The **System Services** section represents a list of all **system utilities** (see screenshot below) and is aimed at providing a possibility to manage and **configure** them as a **user** desires. List of system utilities has the following structure:

Screenshot: System Services section

Column Name	Description
Status	**Status** of the utility. Depending on the icon, the status can be either 🟢 **enabled** or ⚪ **disabled.** To change a utility status, click on the utility name in the table.
Name	**Name** of the utility. The full list of system utilities with their descriptions is provided in a table below
Schedule	**Periodicity** at which each utility is run. **Daemon** services don't have a schedule, **Periodic** are run in a defined period, **Fixed Time** - at predefined timeslots. By clicking the **Run utility** ▶ icon, you **manually** start this utility regardless of its **Schedule** column value (doesn't work for **Daemon Services**).
Allowed Nodes	**Nodes**, at which the service is allowed to run. This parameter is configured only during deployment and is not allowed to be changed by the user
Run Groups	**Run Groups** define, which services may not run in parallel with others. If two services have intersecting groups, the system will not run them simultaneously and will put one of the services in queue
Last Run	**Time** and **date** when the **last run** was initiated
In Queue	If the utility is run manually, **time** and **date** when its launch was initiated will be specified in the column

Utility Description

Group Name	Utility Name	Description
Daemon Services	These utilities do not have a schedule and are automatically run by the system when active	
	RADIUS Server	RADIUS server process
	SIP Redirect Server	SIP Redirect server process
	Import Manager	Manages rates import process
	Rates Generator	Utility that generates rates, both manually and automatically
Periodical Services	These utilities are run with a defined period in minutes. The period can be up to 60 minutes	
	Cache Manager	Cache Manager process whose main function is to monitor and include client-related changes for RADIUS and SIP Redirect continuously
	Calculator	Utility that processes all data collected from xDR-files
	Calling Card Manager	*Calling Cards* manager process
	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 emails according to *Events Config*
	Provisioning Manager	Utility that processes events asynchronously
	Factors Watcher	Utility that controls the *Factors Watcher* tool
	Files Collector	Utility that controls file collectors
	Files Downloader	Utility that automatically downloads xDR-files from switch host
	Invoicing Manager	Utility that manages the autoinvoicing feature
	Mail Manager	Sends emails from mail queue (invoices, notifications, etc.)
	Statistics meta info manager	Gathers meta-information about collected statistics
	Notificator	Notifies in case of a low balance or HDD space events
	Packages Manager	Utility that manages your packages
	Rates Notificator	Utility that notifies clients about rate changes
	Orig-Term Report Generator	Utility that manages data generation for Orig-Term Report

ⓘ

	Reports to Email	Utility that sends generated statistic reports by the scheduled time
		ⓘ Reports that will be sent by **Reports to Email** , will be sent using SMTP credentials, specified in the **Reseller**, to which owner of a **Reports Query** belongs. For Users without Reseller restrictions (super-admins), default system SMTP credentials will be used.
	Statistics Manager	Utility that manages statistics packages
	Swap Deals Manager	Caches statistics for Swap Deals module, analysis and notifications
	Traffic Rules Manager	Utility that manages all traffic rules in the system
Fixed Time Services	These utilities are run at predefined timeslots	
	Backup Manager	Utility that manages system backup processes
	Balances Manager	Creates automatic charges
	Cleaner	Utility that automatically cleans old messages from the Events Log section
	Jurisdiction Manager	Generates jurisdiction table from LERG/TMP data sources for US routing
	Log Rotator	Utility that controls log-files

⚠ **Attention**

Please note that if a customer had no assigned **packages**, **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 its job. Please note, that this is only applicable if a customer previously had absolutely no items listed above, in other words, if you add a second account to a customer, then that change will be effective instantly.

Utility Management

You can always configure the run time of any periodical or fixed time utility by clicking a respective name. A pop-up window for utility management has the following structure (see screenshots below):

Screenshot: Periodical service editing

Field	Description
Name	**Name** of the utility
Status	**Status** of the utility: • **Enabled** • **Disabled**

Sched ule	Set **Periodical** to define periodicity further
Period	Define run **period** for the utility. It can not be more than 60 minutes. If you want to use a longer period - use fixed time instead
align to	Align time is used to distribute services running in the same periods. For example, if a **period** is set to 5 min and **align to** is 2, service will be run at XX:02, XX:07, XX:12 and so on

Screenshot: Fixed time service editing

Field	Description
Name	**Name** of the utility
Status	**Status** of the utility: • **Enabled** • **Disabled**
Schedule	Set **Fixed Time** to define a specific run timeslot further
Run at	Set the time to run a utility. You can define multiple times here. The time should be given in system timezone

Users

In this article

- Section overview
- Advanced Search
- Adding a New User
- Archiving a User

Section overview

Users is a core section that provides an overview of all registered users in the system. The section allows to **create, edit,** and **disable** existing users. The list of users is presented in the form of a table with the following columns:

Screenshot: Users section

Column	Description
Status	User's **status**. Depending on the icon, the status can be either 🟢 *active*, 🔴 *deleted* or *archived.*
Login	User's **account name**
Reseller	Name of a **company** whom this user belongs to
Full Name	**Mailto links** of users (if specified in the user's account)
Role	User's role that determines the **access level** or **permissions**

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

Button/Icon	Description
	Allows **creating** a new user
	Allows **archiving** a user
	Opens an **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 a 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 the user's **status** is active or not, by selecting from a drop-down list: • *Yes* • *No* • *Empty (to display users with both statuses)*

Adding a New User

What you need to do to create a new user is:

- Click the **New User** button
- In the opened pop-up window, fill in all the **required fields** (list of them is presented in a column below)
- Confirm new user creation by clicking **OK**

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 a drop-down list

Status	Check if you need to **prevent** a user temporary from having **access** to the system. The statuses are:
	
	   • **Active**
	   • **Blocked**
	   • **Archive**

Full Name	Enter a **user's name.** Note that if a user's email is specified, full name in the section serves as a **mailto link**.
Email	Specify a user's **email**
Locale	Define a language for a user, and it will be used instead of the system one for displaying all dates, reports, etc. If not specified, the system settings are taken.
Timezone	Define a timezone for a user, and it will be used instead of the system one for displaying all dates, reports, etc. If not specified, the system settings are taken.
Reseller	Specify a reseller, sub-reseller or manager a user **belongs** to
CoreAPI Token	This field **cannot** be specified in the 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. the user will have access to the system only if he/she logs in via specified IPs

⚠️ **Attention**

While creating a new user, bear in mind the following things:

- Each user can have only **one** assigned role.
- We strongly recommend **avoiding non-Latin characters** in users' logins/passwords

Archiving a User

If you want to archive a **User**, click the ✖ button. The following window will open, where you will be able to transfer **Report Queries** ownership to another **User**:

Screenshot: Archiving a User

Roles

In this article

-
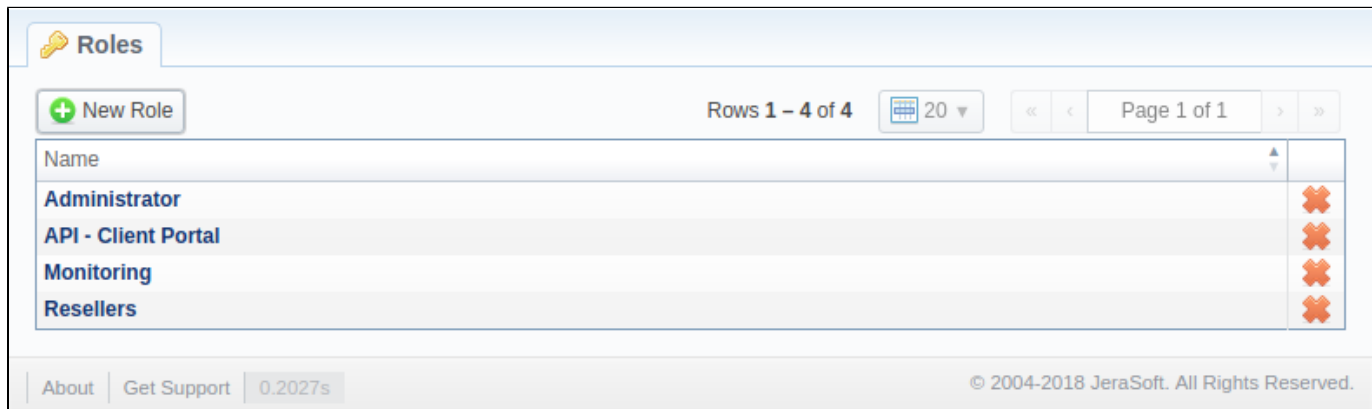
Roles List

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 JeraSoft Billing.

Screenshot: Roles section

Adding a 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 the **Entries** table. The *Default Module* field specifies a default section that will be displayed when you log in the 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 a 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,* and, 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

Error rendering macro 'contentbylabel'

parameters should not be empty

Client Panel

The **Client Panel** is a separate application integrated with JeraSoft Billing via API. It has a user-friendly interface and is tailored for your clients to manage the 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 a starting point for your own development or as a reference and example.

> ✅ **Tip**
>
> Starting from the **JeraSoft 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 JeraSoft Billing database and provides a more secure approach.

2. **Can be hosted separately**

   You can move the Client Panel to other server and just configure JeraSoft Billing IP address in the API settings. As a result, you can fully isolate JeraSoft Billing 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 the 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
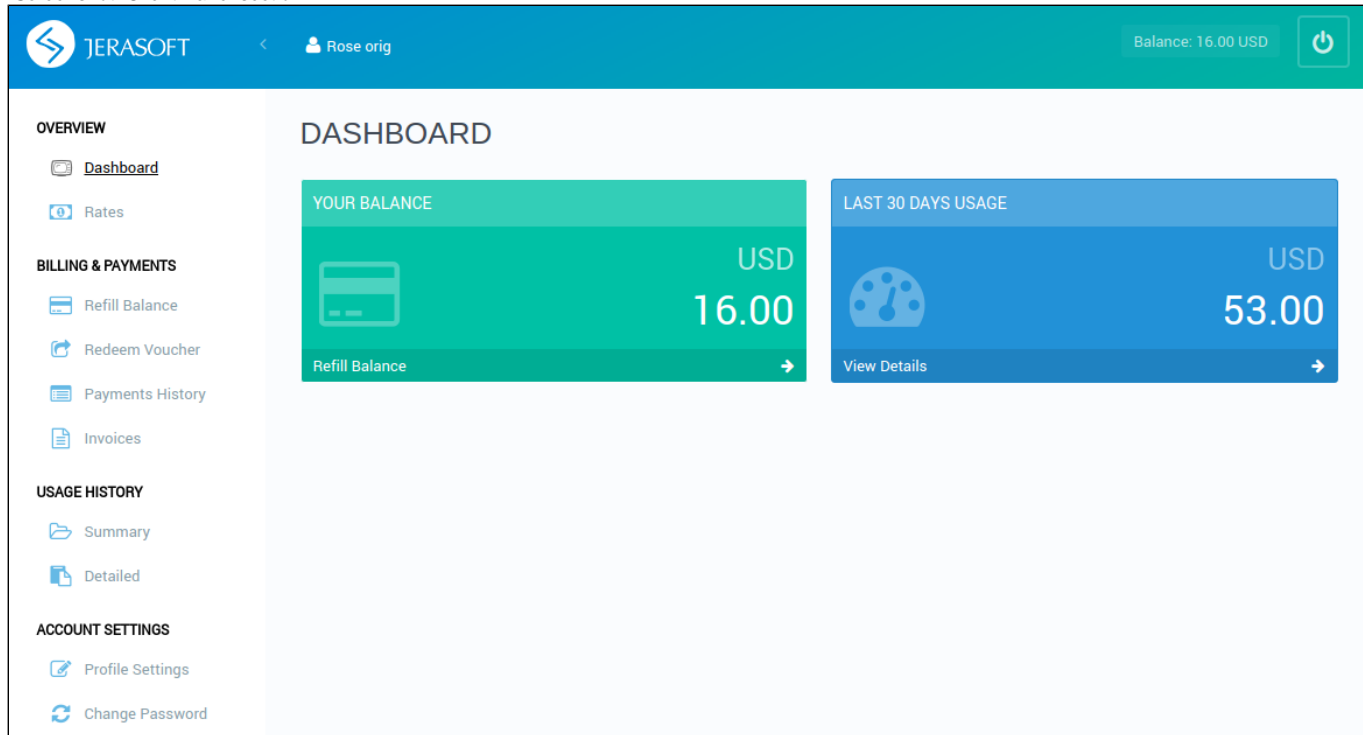
Overview

- **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 the 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 and Payments

- **Refill Balance** - allows replenishing client's balance by means of configured payment gateways. Currently, the **Client Panel** supports **PayPal**, **Authorize.net**, and **USAePay** service providers.
- **Redeem Voucher** - allows the 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 payments.
- **Charges History** - display a full history of conducted charges.
- **Invoices** - shows all invoices that belong to the user with a possibility to download them.

Usage History

- **Summary** - grants the user a possibility to view the 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 the user to update the profile settings, including company name, billing email, address, registration, and tax IDs.
- **Change Password** - allows the user to change his password to the Client Panel.

Panel Deployment

In this article

First and foremost, while deploying Client Panel is to set up an additional server for proxying access to the client panel within the 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, the next crucial step is to configure it, and in particular, **set panel domain name** and **obtain an 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 the panel domain name is set, you need to obtain a 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 the respective provider manual to deploy certificates.

Billing Firewall Configuration

The last stage of the deployment is to configure the **firewall on the billing servers**. In order to permit requests from panel proxy server to your JeraSoft Billing 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](#)
- [Per Reseller Configuration](#)
- [Configuration Options](#)
  - [General Settings](#)
  - [Output Formatting](#)
  - [Date and Time Formatting](#)
  - [Payment Gateways: PayPal](#)
  - [Payment Gateways: Authorize.Net](#)
  - [Payment Gateways: USAePay](#)
  - [Section: Charges History & Payments History](#)
  - [Section: Usage History / Detailed](#)
  - [Section: Usage History / Summary](#)
  - [Additional Settings](#)

Configuration File

The next step is to tune Client Panel settings. If you are using default deployment, the configuration is located at **/opt/jerasoft/vcs-data/conf/cp-customer-params.json**. If you are moving the panel to the other host, the file should be located in **<YOUR-PATH>/portal-backend/config/customer-params.json**.

During the installation process, the file is pre-created with all general settings like billing credentials, tokens, etc. At the same time there is a set of parameters that can be configured like:

- Payment gateway credentials
- Default locale and output settings
- Date and time formatting options
- Rates and costs rounding

To simplify the process, your deployment provides the **/opt/jerasoft/vcs/portal-backend/config/customer-params.default.json** file. This file has all the available settings with their default values. You do not need to change this file, it is provided as a reference.

> ⛔ **Warning**
>
> Do not edit default configuration at **/opt/jerasoft/vcs/portal-backend/config/customer-params.default.json**. If you need to change configuration parameters just add them to **/opt/jerasoft/vcs-data/conf/cp-customer-params.json**.

Per Reseller Configuration

The structure of your configuration file allows you to have different settings for different **Resellers** in the system. By default, the file contains a single section called **"default"** with all custom settings. If you want to have multiple Client Panels (for example, separated by domain names), you need to add another section with a simple distinguishable name and put all related settings in this section. The name may consist of Latin characters, numbers, minus and underscore characters.

After that, you need to pass this name from your web-server to the panel using FastCGI parameter called **"CONFIG_ID"**. It will tell panel which part of config to read to display a related Client Panel. If you are using **nginx** as your web server, use the following statement to pass the parameters:

Nginx Config

```
fastcgi_param CONFIG_ID "special";
```

Additionally, in the admin panel of the billing system, you'll need to add a **User** for each Reseller in the SystemUsers section. For each such user, set the **API - Client Portal** Role. From settings set up there, you will also get a login, password, and CoreAPI token values for the **customer-params.json** file.

> ⚠️ **Attention**
>
> Please note that for correct work each Reseller has to have its own separate redis databases (**redisMain** and **redisCache** are at db 1 and 2 respectively by default). **Redis** instance supports 16 databases (0-15 in numeric values) by default. You can increase the number of available databases in Redis config if needed.

Configuration Options

As mentioned above, you can use **/opt/jerasoft/vcs/portal-backend/config/customer-params.default.json** file as a reference for all available parameters. The table below describes each of them. Please put all settings into your config file and do not change **customer-params.default.json** as it will be overwritten on the system update.

General Settings

Setting Name	Description	Example
amountOptions	Array of available amounts for a top-up in the list to select.	[5, 20, 50, 100]
billingUrl	URL of the billing system. As it is accessible from the Client Panel host	`"https://127.0.0.1"`
companiesId	ID of the **Reseller** for the Client Panel	`3`
currenciesId	Currency ID (as per your system configuration) for the payments received from the specific Payment Gateway. Required.	`2`
currencyCode	Currency code of the Payment Gateway to charge payments in (declared by the gateway itself).	USD
logFile	Path to the Client Panel log file	`"/opt/jerasoft/vcs-data/log/cp.log"`
openedEndpoint	URL of the Client Panel (without "/" at the end). This URL will be used to return clients to after processing of the payment by the **Payment Gateways**	`"http://127.0.0.1"`
coreApi.url	URL of the Core API service	`"http://127.0.0.1:3080"`
coreApi. authToken	Authorization token for the Core API service. You can get this token in the **System/Users** section	`"PW2Ln6PSS3vpmmZrCQBV 5of2NO7jJbcU"`
managementApi.url	URL of the Management API	`"https://127.0.0.1/jsonrpc"`
managementApi.login	Login of the user used for the integration. You need to have a dedicated user for the integration, use the same user for the Core API service and Management API	`"api-client-portal"`
managementApi.password	Password of the user used for the integration	`"aqGW3loxHag8"`
paymentAccountsId	Payment Account's ID as per your system configuration.	`1`

Output Formatting

The following settings are located under **"defaults"** key of the configuration file.

Setting Name	Description	Example
locale	Default locale to start with. Available settings: en, ru	`"en"`
perPage	Quantity of rows to display per page. Allowed values: an integer from 1 to 1000	`10`
roundRates	Quantity of digits after the decimal point for display of rates. Allowed values: an integer from 0 to 16	`4`
roundAmounts	Quantity of digits after the decimal point for display of amounts. Allowed values: an integer from 0 to 16	`2`

Date and Time Formatting

The following settings are located under **"dateTimeConfig"** key of the configuration file. Please refer to the following guide for a list of possible values.

Date and Time Formatting [section: dateTimeConfig]		
Setting Name	**Description**	**Example**

monthFormat	Format string to display "Month Year" strings	`"F Y"`
dateFormat	Format string to display dates	`"m/d/Y"`
dateTimeFormat	Format string to display dates with time	`"m/d/Y, h:i A"`

Payment Gateways: PayPal

The following settings are located under **"paymentGateways.paypal"** key of the configuration file. Check your PayPal panel for the required parameters. Get more details.

Setting Name	Description	Example
enabled	Defines if the payment gateway is enabled. Allowed values: true, false. Do not forget to enable gateway in the respective section of the billing system	`true`
sandbox	Defines if the Sandbox mode is enabled. Allowed values: true, false	`false`
allowCustom	Defines if the custom amount payments are allowed. Allowed values: true, false	`true`
clientId	PayPal Client ID	`test@example.org`
feesPayer	Describes who pays fees for the transaction. Allowed values: provider, client	`provider`
clientSecret	PayPal Client Secret Key	
itemName	Item name displayed in the PayPal order	`"Credit Your Balance Item"`
orderDescription	Order description displayed in the PayPal	`"Credit Your Balance"`
currenciesId	Currency ID	26
currencyCode	Name of currency	"USD"

Payment Gateways: Authorize.Net

The following settings are located under **"paymentGateways.authorizenet"** key of the configuration file. Check your Authorize.Net panel for the required parameters. Get more details.

Setting Name	Description	Example
enabled	Defines if the payment gateway is enabled. Allowed values: true, false. Do not forget to enable gateway in the respective section of the billing system	`true`
sandbox	Defines if the Sandbox mode is enabled. Allowed values: true, false	`false`
allowCustom	Defines if the custom amount payments are allowed. Allowed values: true, false	`true`
apiLoginId	Authorize.Net API Login ID	
apiTransactionKey	Authorize.Net API Transaction Key	

Payment Gateways: USAePay

The following settings are located under **"paymentGateways.usaepay"** key of the configuration file. Check your USAePay panel for the required parameters. Get more details.

Setting Name	Description	Example
enabled	Defines if the payment gateway is enabled. Allowed values: true, false. Do not forget to enable gateway in the respective section of the billing system	`true`
sandbox	Defines if the Sandbox mode is enabled. Allowed values: true, false	`false`
allowCustom	Defines if the custom amount payments are allowed. Allowed values: true, false	`true`
apiKey	USAePay API Key	
apiPin	USAePay API Pin	

> ⚠️ **Attention**
>
> Payment Gateways integration requires a proper domain name and real SSL certificate. Please check the Panel Deployment guideline to get more information.

Section: Charges History & Payments History

The following settings are located under **"modules.transactionList"** key of the configuration file.

Setting Name	Description	Example
dateRangeDefault	Default dates range in the filter, in days. Allowed values: an integer from 1 to 90	`30`

Section: Usage History / Detailed

The following settings are located under **"modules.reportXdrs"** key of the configuration file.

Setting Name	Description	Example
queryOn Open	Defines if the report should be run right after section open. If set to *false*, the user will have to hit *Query* to get the report. Use this option if you have plenty of data to load. Allowed values: true, false	`true`
dateRangeDefault	Default dates range in the filter, in days. Allowed values: integer 1 to 90	`3`
columns	List of columns to display. Allowed values: origin, dt, accounts_name, cc_serial, clients_tags, accounts_tags, tags, code_country, code_name, code, src_code_country, src_code_name, src_code, volume, volume_billed, package_volume, package_credit, packages_id, packages_name, currencies_id, pay_setup, cost, rate, taxes, subscriber_host, subscriber_id, result_code, result_status, switch_code, start_time, connect_time, finish_time, pdd, scd, src_party_id, dst_party_id, src_party_id_ext, dst_party_id_ext, src_party_id_bill, dst_party_id_bill, voip_hosts_id, voip_hosts_name, voip_hosts_collectors_id, services_name, units_id, session_id, x_id, xdrs_id, uniq_id, custom, xdrs_extra, status	`["origin", "src_party_id"]`

Section: Usage History / Summary

The following settings are located under **"modules.reportSummary"** key of the configuration file.

Setting Name	Description	Example
queryOn Open	Defines if the report should be run right after section open. If set to *false*, the user will have to hit *Query* to get the report. Use this option if you have plenty of data to load. Allowed values: true, false	`true`
dateRangeDefault	Default dates range in the filter, in days. Allowed values: integer 1 to 180	`90`
columns	List of columns to display. Allowed values: origin, services_name, units_id, currencies_id, cost_total, pay_setup_cost, rate_avg, package_credit, volume_total, volume_billed, package_volume, records_total, records_notzero, records_success, records_busy, records_nochannel, records_error, asr_std, asr_cur, acd_std, acd_cur, pdd_avg, scd_avg	`["origin", "services_name"]`

Additional Settings

The following settings are located at the top level of the configuration section.

Setting Name	Description	Example
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`

Panel Access

Access to the panel for your customers is configured in a respective customer's properties of JeraSoft Billing web-interface: **Mangement** > **Clients** > **Clie nt'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 JeraSoft Billing upgrade**.

Functional customization

If you wish to tune panel in more details (for example add or remove features) you can just copy source code to another server and modify it. Do not modify code at default deployment location, otherwise, all the changes made will be removed during the system upgrade.

The panel consists of two parts:

- **Frontend** - responsible for the user interface (style, formatting, and logic)
  - Development Stack: JS/Angular, CSS/Bootstrap
  - Located at /opt/jerasoft/vcs/portal-frontend/
- **Backend** - responsible for serving data between system API and Frontend
  - Development Stack: PHP/Yii2, Swagger
  - Located at /opt/jerasoft/vcs/portal-backend/

These both parts have to be copied to a dedicated server if you would like to make any modifications in how Client Panel looks and works. Both parts come with all source code, which you can use as a starting point for your development or as a reference guide to developing your own portal from scratch.

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 an example of functional implementation.

System Shell Tools

In this article

This section describes **shell tools** required for the deployment management of the system. All these tools are part of the JeraSoft Billing distributive. In order to use the tools you will need either SSH or direct access to the server console. Some of the tools require *root permissions* to run.

> 🔴 **Important!**
>
> Please use these tools **only if you have a clear understanding** of what you are doing. Misuse of the tools may cause improper functioning of the system.

> ⚠️ **Attention**
>
> Please note, for simplification we introduced **<APP_PATH>** variable that refers to the JeraSoft Billing application files location. This location may differ, but typically it is **"/opt/jerasoft/vcs"**. So whenever you see an example with path like *"<APP_PATH>/bin/system/cluster"* it means *"/opt/jerasoft/vcs/bin /system/cluster"*.

Requirements Checker

The tool is aimed to check **minimal requirements** of your server before installation.

Usage

```
<APP_PATH>/bin/system/setup-checker
```

The tool requires *root* permissions and takes no arguments. It should be executed before installation of the system in order to check minimal hardware and software requirements.

> ⚠️ **Attention**
>
> The tool checks only minimal requirements. **Real hardware requirements** highly depend on your traffic and deployment model.

Safety Checker

The tool is aimed to check configuration of the main server settings after installation.

Usage

```
<APP_PATH>/bin/system/security-checks
```

The tool takes no arguments. When executed it performs numerous checks for the correctness of the network and server configuration.

Services Manager

The tool is used for **management of System Services**. It allows to correctly start, stop and perform other actions over various JeraSoft Billing Services such as RADIUS Server, SIP Server, Calculator, etc.

Usage
`<APP_PATH>/bin/system/service <COMMAND> [<service-name>] [<options>]`

The tool should be run under *root* or *vcs* user. The tool typically takes 2 arguments – action to perform and related system service. Actions prefixed with *"all-*"* do not require service name and operate over all services.

Command	Description
`start`	Start System Service Takes *"--wait"* option in order to wait and exit only when service finishes its execution.
`stop`	Stop System Service
`restart`	Stop and then start System Service
`reload`	Send reload (HUP) signal to the System Service (forces reload of settings, connections, etc)
`status`	Show current status of the System Service
`all-start`	Start all required System Services (list of services varies depending on the role of the current node in the cluster)
`all-stop`	Stop all running System Services
`all-status`	Show status of all System Services on the current node

Usage Examples

Restart RADIUS Server
`<APP_PATH>/bin/system/service restart bbradiusd`

Start Files Downloader
`<APP_PATH>/bin/system/service start files_downloader`

Start all required System Services
`<APP_PATH>/bin/system/service all-start`

Cluster Manager

The tool is used to **manage nodes in the cluster deployment**. It allows to initialize the cluster, add a new node, promote redundancy to master, etc.

Usage
`<APP_PATH>/bin/system/cluster <COMMAND> [<options>]`

The tool requires *root* permissions. The list of arguments and other requirements depend on the command used. Please refer to the below table for a summary and respective sections for details.

Command	Description	Nodes	Root Required
status	Show status of the cluster	Any node	No
init-master	Init Master Node configuration	Master	Yes
init-slave	Init Slave Node configuration	Master	Yes
promote	Promote current node to Master	Redundancy	Yes
sync-files	Sync files from Master	Redundancy, Reporting, Processing	No
remove-node	Remove Node from the Cluster	Master	Yes

Cluster Status

The command shows Cluster Status, including all nodes with their roles, IP addresses, current lag to Master, and overall status.

Bash

```
<APP_PATH>/bin/system/cluster status
```

The command can be executed **on the Master** in order to get the most detailed information about the cluster:

```
Role          Node ID    IP Address        Status        Receive Lag    Replay Lag    Replication

> Master      node-01    172.17.172.17     [ Current ]           N/A           N/A    Master
Redundancy    node-02    172.17.172.101    Connected        0.00 MB       0.00 MB    Streaming
Processing    node-03    172.17.172.102    Connected        0.00 MB       0.00 MB    Logical
```

Alternatively, the command can be executed at any other node - in this case, only the status of the connection between this particular node and the Master will be shown.

If any node failed and has been disconnected from the cluster it will be shown like this:

```
Role          Node ID    IP Address        Status         Receive Lag    Replay Lag    Replication

> Master      node-01    172.17.172.17     [ Current ]            N/A           N/A    Master
Redundancy    node-02    172.17.172.101    Disconnected      Unknown       Unknown    Streaming
Processing    node-03    172.17.172.102    Connected         0.00 MB       0.00 MB    Logical
```

In this case, you have to re-check failed node, fix it and then return to the cluster using the *"init-slave"* command.

Init Master

The command is used for the initial configuration of the Master Node.

Bash

```
<APP_PATH>/bin/system/cluster init-master <IP-ADDRESS> [<options>]
```

Command has to be executed **on the Master** node and requires **root** permissions. The following options are supported:

Option	Description	Default
`<IP-ADDRESS>`	IP Address of the Master server **(required)**	
`--ssh-port=<port>`	SSH Port as the master node	`22`
`--pg-data=<path>`	Path to PostgreSQL data directory	`autodetect`

Init Slave

The command is used to add a node to the cluster. There are different contexts when it is required:

- First-time deployment of the cluster
- Addition of a new slave node to the cluster
- Addition of the old master to work as a slave after failover

---

Bash

```
<APP_PATH>/bin/system/cluster init-slave <IP-ADDRESS> [<options>]
```

Command has to be executed **on the Master** node and requires **root** permissions. The following options are supported:

Option	Description	Default
`<IP-ADDRESS>`	IP Address of the Slave server **(required)**	
`--role=<role>`	Role of the new node: • **redundancy** - fully-featured redundancy, that acts as a hot standby and can be promoted to the Master at any time (may be used for redundancy and load balancing at the same time) • **reporting** - a node that receives most of the requests for the reports, holds a full snapshot of the database, however, it might be delayed from Master depending on the current load and requests (might be used for failover, as a last resort) • **processing** - lightweight node for processing of real-time requests (authentication, authorization, and routing), can not be used for failover as it does not hold any statistical data	`redundancy`
`--ssh-port=<port>`	SSH Port at the remote node	`22`
`--ssh-user=<user>`	SSH User at the remote node	`jerasupport`
`--pg-data=<path>`	Path to PostgreSQL data directory at the remove node	`autodetect`

Promote to Master

The command is used to **promote the Redundancy node to Master**.

Bash

```
<APP_PATH>/bin/system/cluster promote
```

Command has to be executed **on the Redundancy node** and requires **root** permissions. Reporting node can be used as a last resort if there are no Redundancy node alive. There are no options required.

After the promotion is performed, all required System Services will be started on the current node (new master). After you fix the old *Master,* you may add it as a new *Slave* using the *"init-slave"* command.

> ⚠️ **Attention**
>
> In case when you have more than 2 nodes in the cluster, you need to **re-init all other** nodes from this new *Master*.

Sync Files

The command is used to sync data and application files from the Master.

Bash
`<APP_PATH>/bin/system/cluster sync-files`

Command has to be executed **on the Redundancy node** and by default, it is added to the crontab for automatic synchronization.

Remove Node

The command is used to remove a node from the cluster.

Bash
`<APP_PATH>/bin/system/cluster remove-node <IP-ADDRESS>`

Command has to be executed **on the Master** node. The node in question shouldn't have any active database replication. The following options are supported:

Option	Description	Default
`<IP-ADDRESS>`	IP Address of the remote node **(required)**	

APIs

This section of our Guide contains detailed information about **JeraSoft Billing API** that lets you integrate 3rd party applications with the JeraSoft Billing platform or develop your own tools on top of it. The API makes it easy to get data in and out of the JeraSoft Billing. Depending on your needs, you may need to choose, which type of API 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
- Provisioning API
- Management API

CoreAPI

The **CoreAPI** is the high-performance mechanism for 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 systems.

⚠️ **Attention**

1. The JeraSoft team may modify the attributes and methods related to the CoreAPI usage from time to time without advance notice.
2. 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 is performed over the 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

In this article

- Handlers
- Events

The **Provisioning API** provides a mechanism for 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, **JeraSoft Billing Core API** and **Management API** provide utilities needed to receive requests from external systems. Now, you can configure the JeraSoft 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 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 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 is an example based on **http://handler** usage.
>
> 1. Open the **Provisioning section** and start creating a handler.
>
>   a. Specify the name, type, and status.
>   b. In the *Event* field, select the **Clients Create** event from the drop-down list.
>   c. In the *Task* field, indicate ***http://*** type and determine the port and method, for example, ***120.0.0.1:5000/api.***
>   d. Click **Apply**.
>
> Find an example of the **http:// handler** below:
>
> ```
> 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 the 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

In this article

- [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 the JeraSoft Billing 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 the **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 the rest of the world is blocked by the firewall. You can get more details about it in the JeraSoft Billing First Steps.

Authentication

To make any request to the API, you need to **authenticate** using login and password.

We strongly recommend having a **separate API account** for each application you make calls from. Besides this, we recommend having a 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" } }
```

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 the 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, xDRs 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 yourself. 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**.

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 the 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.