Manager Guide

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Business Process of Service Management

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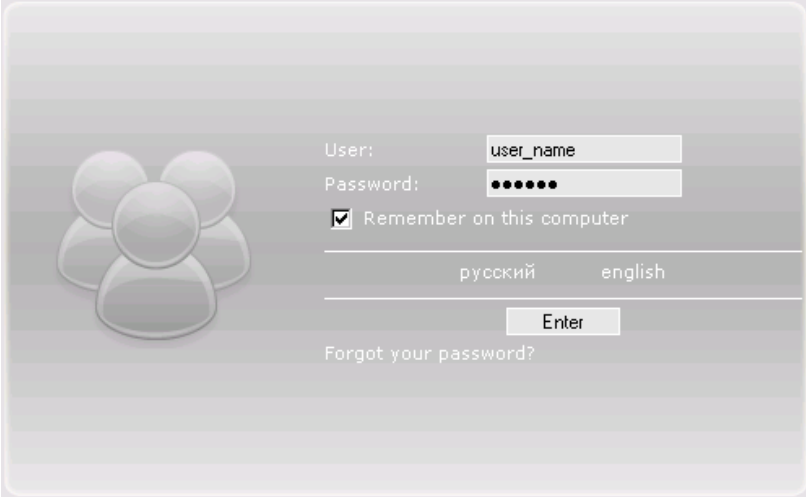
This topic depicts the process of creating a small service. All features are described briefly without details. For further information read other sections of this guide.

The general plan of creating a service is as follows:

1. Enter CMS Manager site.
2. Create CMS managers for managing the service.
3. Create users (service clients).
4. Create units and unit groups.
5. Assign for users access rights on system objects.

1. Login to CMS Manager

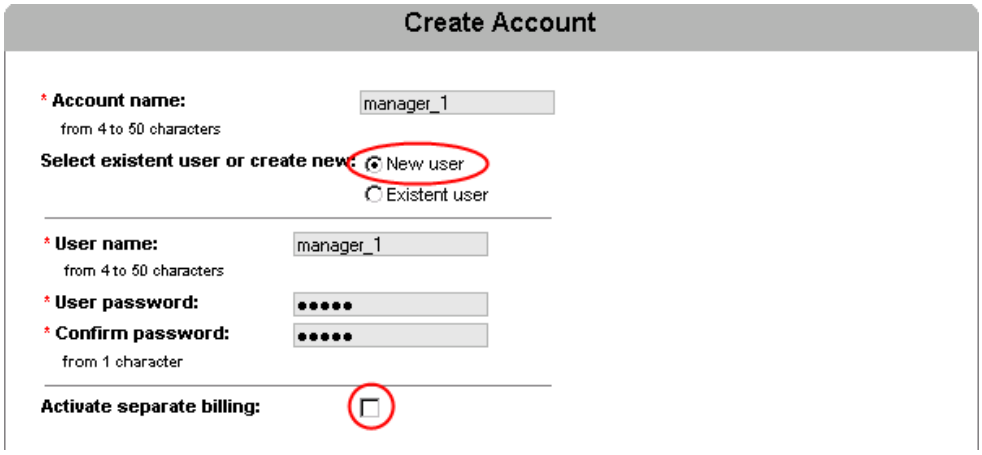
Use your user name and password to login to the system.



2. Creating Managers

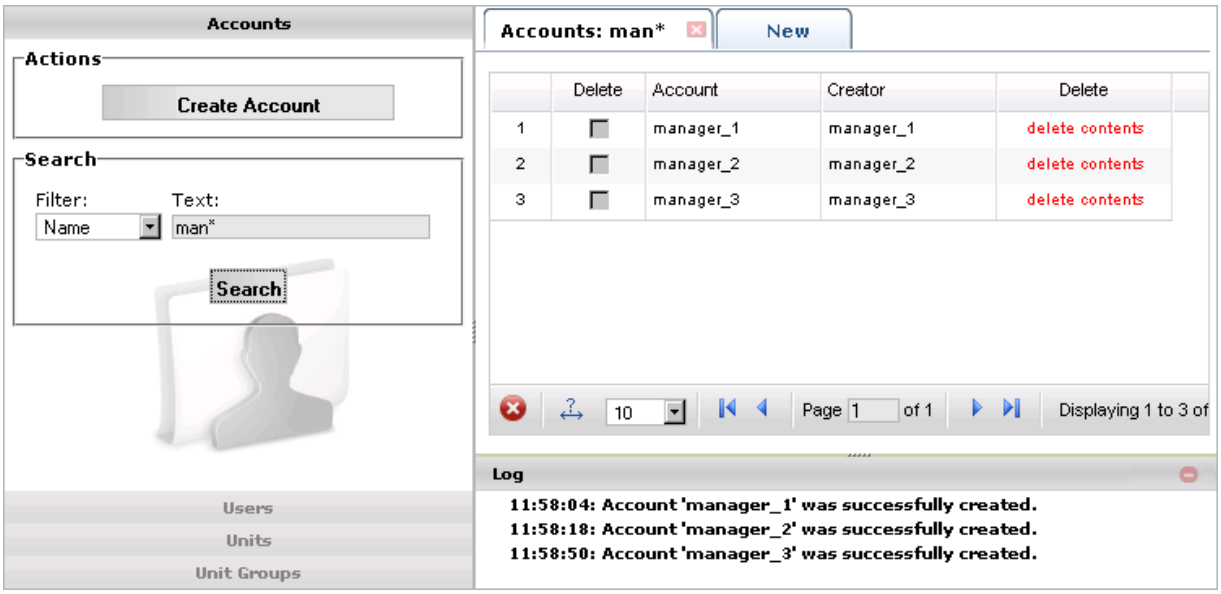
Creating other managers is convenient to divide the whole work between managers.

Open the **Accounts** panel on the left part of the window and push the **Create Account** button.



Enter a name for a new account. Choose to create a *new user*, enter a login and password for this user. *Disable the separate billing option* to create an account with the same billing plan as yours. When finished, press OK. In a similar way other managers can be created.

To view the created accounts, press the **Search** button while being on the Accounts panel. The table with all accounts will be displayed. To form more precise request, please, use the filter.



3. Creating Users (Clients)

Note.
If you do not use a billing system, creating users with various billing plans can be skipped.

Created managers can use their logins and passwords to enter CMS Manager and create end users (clients) there. Such a manager then will be a creator of these users.

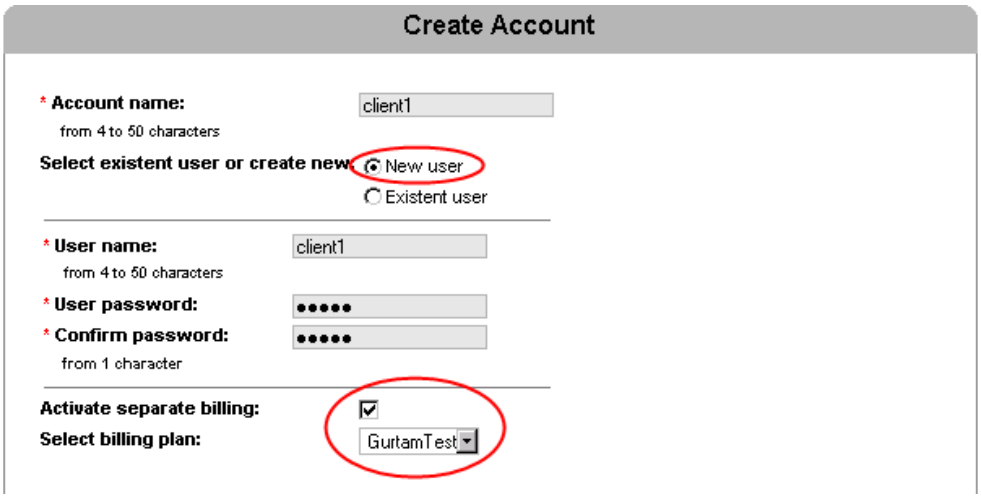
Two types of creating users are available:

1. User which is created simultaneously with its account. This client can login to the monitoring site, track units, create and control geofences, generate reports, get notifications, etc. (functionality depends on package contents).
2. User without account. This client will also have login and password to enter the monitoring site where s/he can track units (location in real time, sensors values, speed, movement history). However, s/he cannot use jobs, notification, geofences, reports without an account.

User with Account

This kind of user is specific because it is created together with an account. This gives the user possibility to create reports, notifications, etc. within this accounts' billing plan.

A tough user can be created on the *Accounts* panel when pressing the *Create Account* button. Give the account a name; choose *new user*; enter user's login and password. *Activate separate billing* and select a billing plan from the dropdown list. Billing plans can be created by the service administrator only.



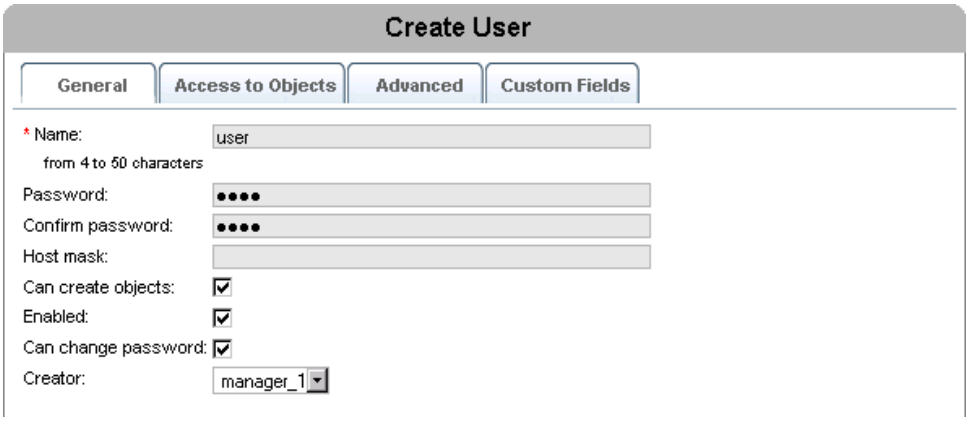
When an account is created, and a billing plan is activated fro the account, in account's properties you can control available services and their number on the *Features* tab, and register payment and add days on the *Payment* tab.

In a similar way you can create more users. You can also assign various billing plans to the clients.

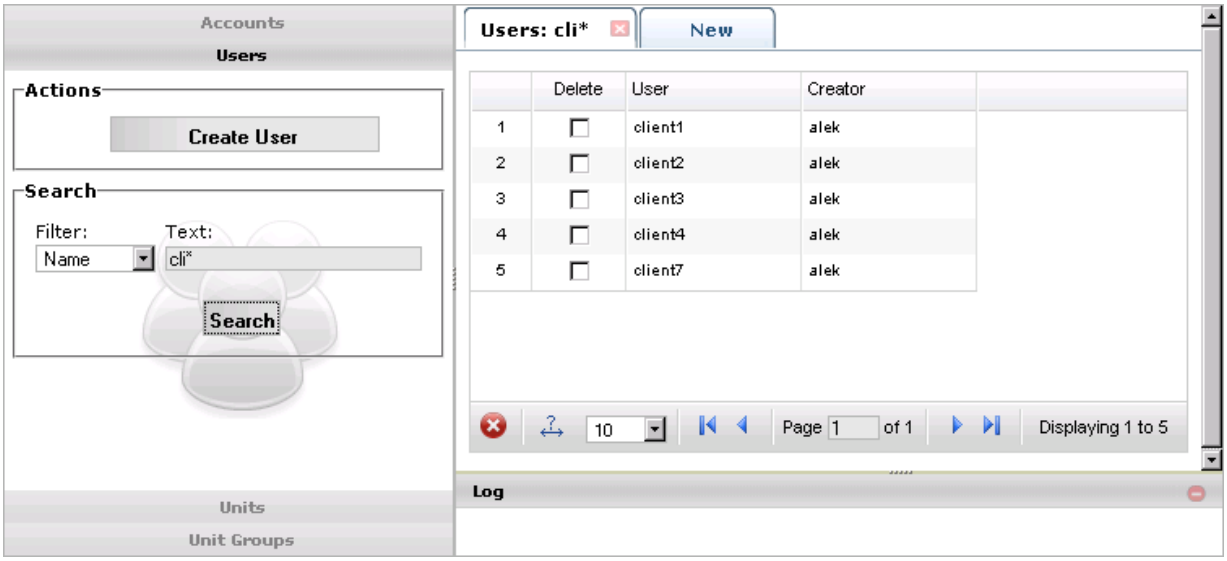
User without Account

This kind of user is created without its own account and has initially no rights until they are assigned. If no access to any account is given to a user, s/he will not be able to create reports, geofences, etc., but can monitor units in case s/he has rights on any.

To create such a user, go to the *Users* panel and push the *Create User* button. Enter user name, password and other parameters. Find their detailed description in the Users section of the guide.

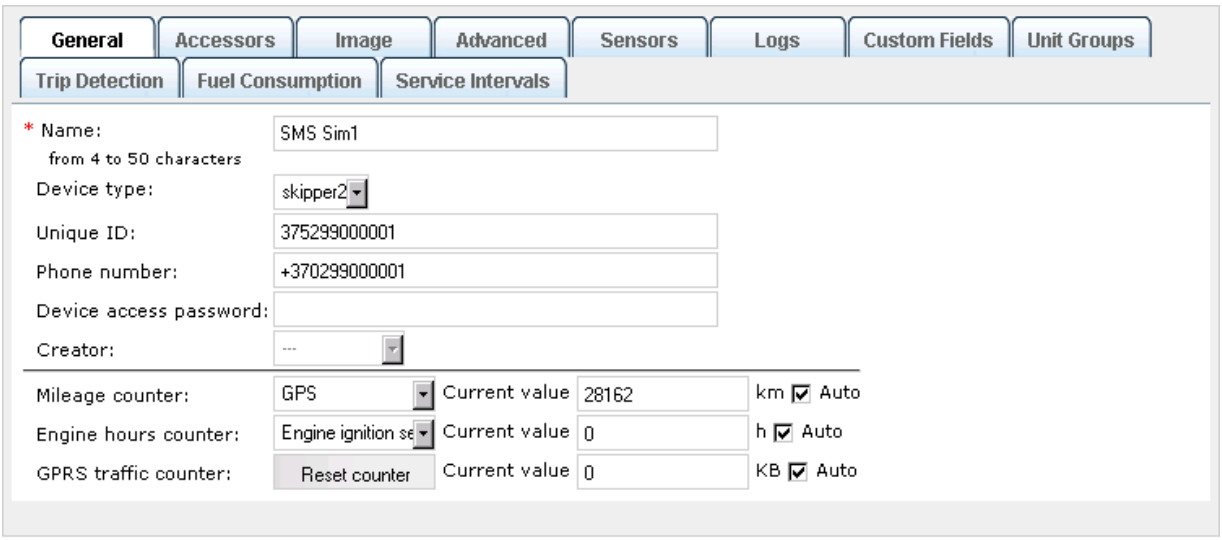


To view the created users, press the *Search* button while being on the *Users* panel. In the list there will be displayed both ordinary users without account or users with account.



4. Creating Units

To create a unit, move to the *Units* panel and press the *Create Unit* button. In the dialog key in unit name, its type, unique ID, phone number (if it has embedded SIM card), access password (if needed), and indicate a creator. In other tabs of the dialog you can also attach an image to the unit, configure its sensors, define trips|stays parameters, as well as fuel consumption calculation method, speed limitations and many more. The exhaustive description of all these parameters is given in Units section of the guide.

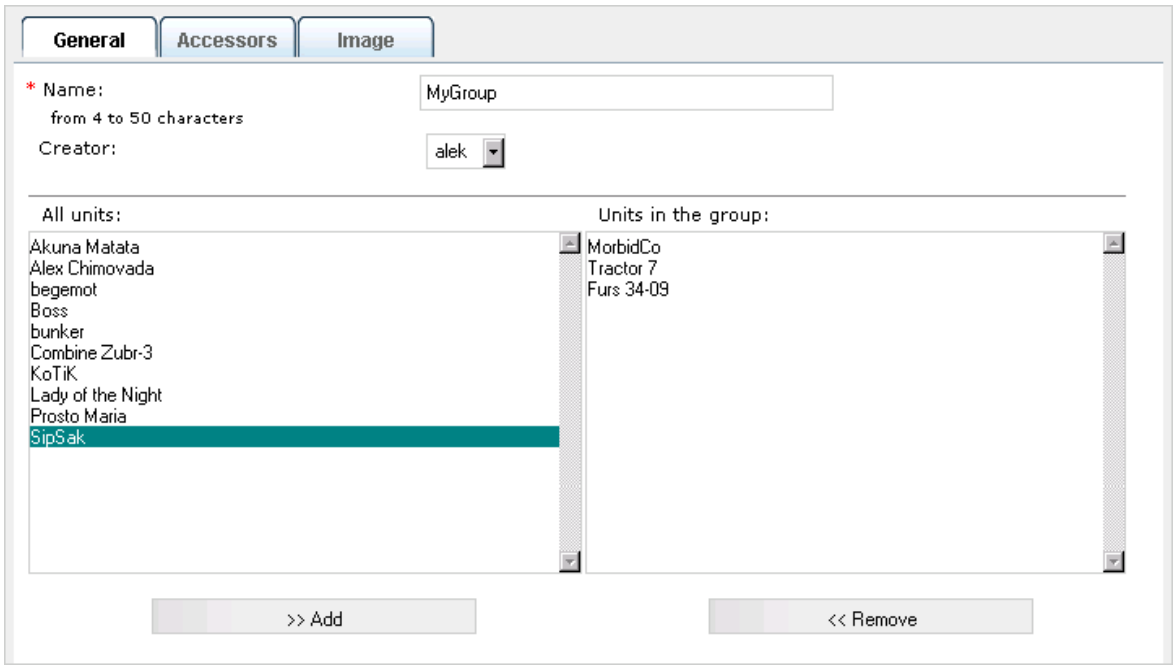


Forming Unit Groups

If there are too many units in the system, it is very useful to unite them into groups. Operating groups is easier then separate units.

To create a new group of units, move to the *Unit Groups* panel and press the *Create Unit Group* button.

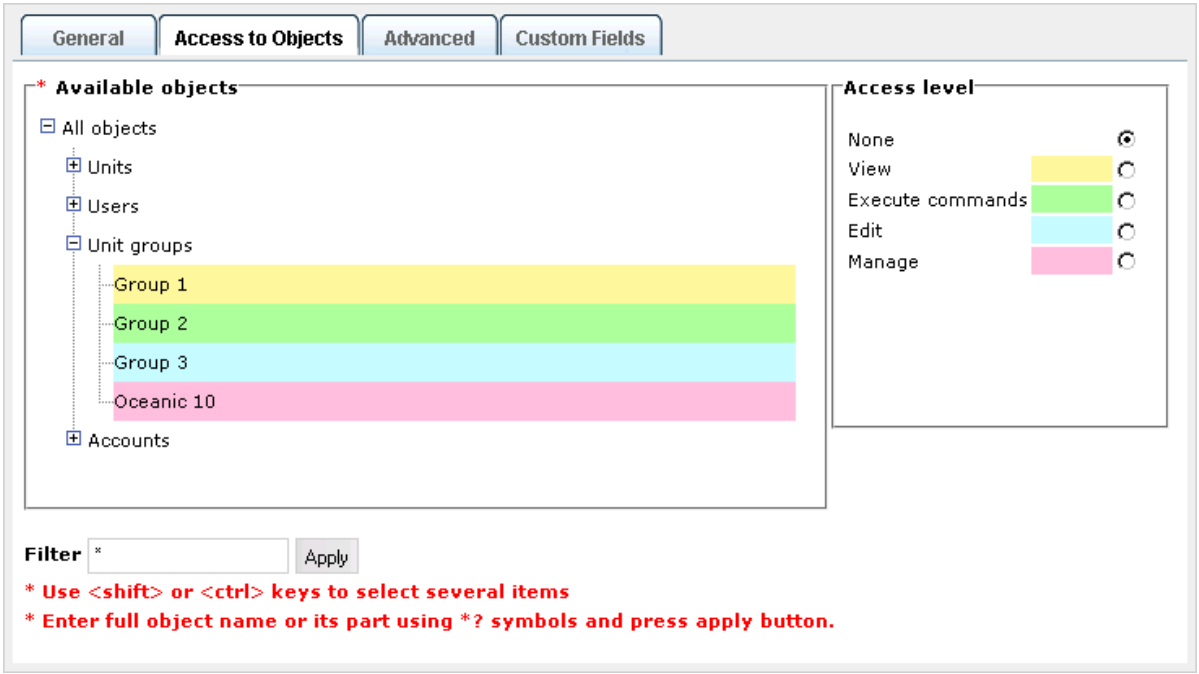
Enter a name for the group, assign a creator and select units which will form the group. Detailed instructions are in Unit Groups section.



5. Access to Objects

Access rights can be assigned to each user individually and can affect various system objects.

To define rights, in the list of users click on any user to update it. In user configuration dialog open the *Access to Objects* tab.



Here the following objects types can be presented: units, unit groups, users, accounts. On the left the objects are selected, and on the right access levels are assigned with the help of radio buttons. When assigning rights to a group of units, they are applied to any unit belonging to the group. Access to an account assumes also the same rights on all its contents that is geofences, places, report templates, notifications, jobs.

Access levels are the following:

- **view**: the user can see the objects and view its properties.

- **execute commands**: the user is allowed to execute commands over units, for example, request location or send a custom message.
- **edit**: the user can edit objects' properties.
- **manage**: full access.

Besides, the rights can be assigned in Unit/Unit Group dialogs on the **Accessors** tab.

More about access rights...

Basic Definitions

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- Basic Definitions
  - Management Site
  - Management Structure
  - System Objects
  - Creator
  - Access Rights

Management Site

Management site (or CMS Manager) is a system designed to manage the contents of your service. CMS refers to Content Management System.

The main contents of the service includes system objects which can belong to one of four types: accounts, users, units or unit groups. The site is designed to work with these objects (create, configure, update, copy, delete them).

Partly these functions can be performed also in the monitoring and administration sites. The main difference here is that the management site has an handy easy-to-use interface that allows working with a great number of objects, filters them by different criteria, displays them in the form of a table, creates tabs with search results, and many more.

The management site is designed as a web page. By default, the access to the management site is done through 8023 port.

Management Structure

Service administrator is a user who configures the service and manages it. This is the only user who can create billing plans. An administrator can like a manager, can create users, accounts, and units, but the main administrator's job is to create a source account with its billing plan and create users-managers. Administrators have their separated site to perform these functions.

Service manager is a user who also manages the service but in a different way. Manager's main task is to create accounts, end users, units, unit groups and assign access right on all these objects. These functions are performed on the management site - CMS Manager.

System Objects

Account is a contract with a client. An account includes users (one of which is its creator), report templates, notifications, etc. When deleting an account, all its contents is deleted, too. Accounts can be created and deleted only by service manager (or its administrator).

User is a system object which has its specific name (login) and password. User has access rights for interacting with other system objects (unis, users, etc.). These rights are assigned by service manager. A user exercises its rights on the monitoring site. However, there can be a user-manager who has different functions and executed its rights on site CMS Manager.

Unit is a system object which is distinguished for its device type and unique identification number (UID).

Unit group is a unity including several units which have something in common. In many cases it is convenient to operate a group of units instead of performing an action over each unit individually, in particular, when you assign access rights.

There are also other system objects: places, geofences, jobs, notifications, report templates, drivers, routes. They are created and operated by end users on the monitoring site and are always a part of some account. In contrast to these objects, such objects as units, users, and unit groups are independent and can exist without an account.

Creator

Creator is a user that initially has full access rights to an object being created and can define access rights for other users. The creator of a user also automatically gets manage rights to units created by this user. Afterwards creator's rights can be dimensioned if needed.

Building hierarchy with the help of creator allows to divide the whole work among several users, assign different rights to objects, as well as reduce information content processed on the screen.

In the system there can be no objects without creator. The creator is assigned when creating an object and cannot be changed later. Usually (when a user, a unit or a unit group is created) the creator is selected from the list of existent users. But when a new account is created, its creator can be created with it simultaneously.

It is impossible to delete a user that is the creator of some object. You first should delete this object. For usual users it is done manually. What concerns an account creator, it can be deleted only deleting this account.

Access Rights

Access right is a possibility to view some system objects and perform allowed actions over them. There are five access levels: from *none* to *manage*. More about access rights...

Access Rights Levels

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- Access Rights Levels
  - Who Defines Access Rights
  - Who Owns Access Rights
  - What Can Be Accessed
  - Access Levels
  - Assigning Rights

Access right is a possibility to view some system objects and perform allowed actions over them. There are five access levels: from simple viewing to management.

Who Defines Access Rights

Access rights are defined primarily by service **manager**. However, the administrator can also control access, and in some case it can be done by end users on the monitoring site.

Who Owns Access Rights

Rightholders can be any system **users** (end users, managers, etc). The rights for each of them are defined individually in user properties dialog on the tab *Access to objects*. The rights can be reassigned at any moment.

What Can Be Accessed

A user can obtain access to any system objects:

Units

A user can get possibility to see unit location on the map, observe its parameters (such as speed, altitude, sensors values), execute commands over this unit, send messages, receive notifications on unit activity, generate reports, etc.

Users

One user can have access to others. Then this user can edit them, define their rights, etc, for example, as it is done by service manager.

Accounts

Access to an account assumes access to all its contents that is **geofences**, **POI**, **report templates**, **notifications**, **jobs**, **routes**. Access to an account assumes also that the user can create such objects.

Unit groups

When assigning *rights to unit group*, they are applied to any unit belonging to the group. This rule works in the direction of increasing rights. It means you can assign a higher access level to units in group but not cut down access rights if a higher level was assigned earlier.

Access Levels

Five access levels exist in the system.

None

Any access is denied, and is a user cannot either see the object or do something with it.

View

A user that has such rights can only see the object and view its properties but not edit them. If the object is an account, it means that the user will get the right to view all objects belonging to this account. If the object is a unit group, the user gets the right to view all units included in this group. However, if before that the user has had more rights to some unit from this group, these rights will remain.

Execute commands

A user having this access level can execute commands over units, for example, request location or send a message to driver. This right has sense for units and unit groups. If it is applied to accounts or users, then it is equal to the previous level - *view*.

Edit

This access level allows user to perform all above-mentioned actions and in addition change objects' properties. If this level is applied to an account, the user can edit objects belonging to this account: create, update and delete geozones, places, reports within this account.

Manage

A user obtains a complete control over an object, even can delete it.

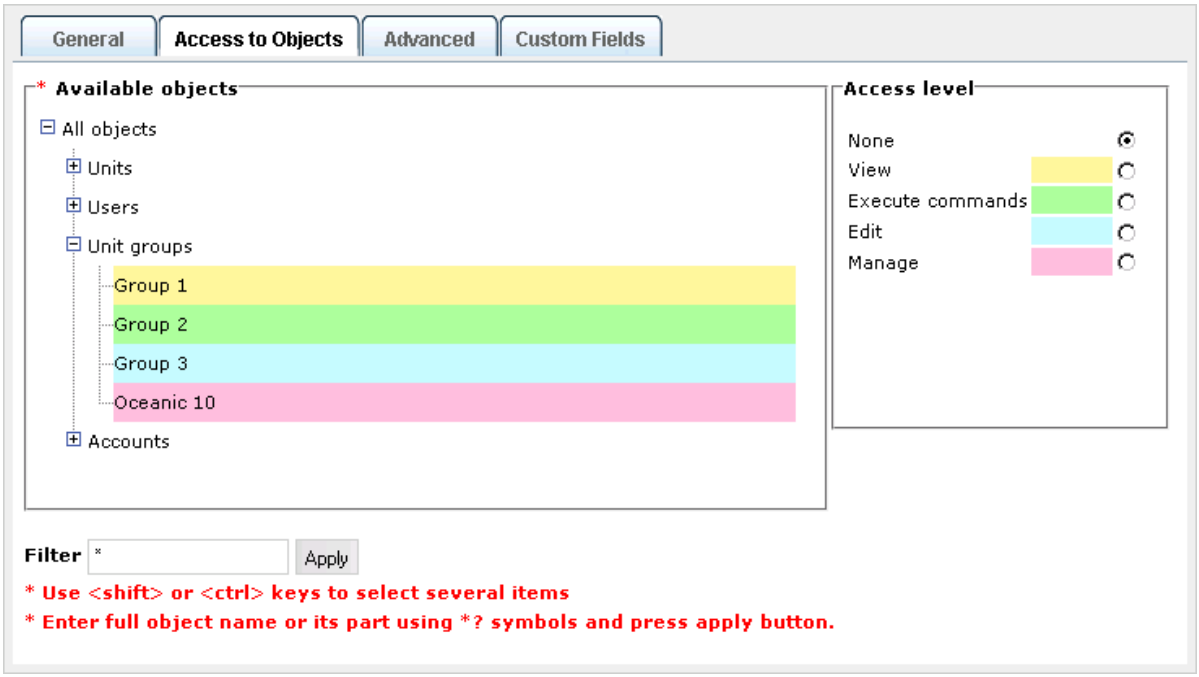
Assigning Rights

The rights are assigned to each user individually when creating, copying or updating the user, on the *Access to objects* tab. Other ways to define rights is when configuring a unit (or unit group) on the **Accessors** tab.

To assign access rights you need to have *manage* access both to objects to which you set rights, and to users to which you give rights.

Through User Properties

Open user configuration dialog and go to the *Access to objects* tab. On the left there is the objects tree (units, unit groups, users, accounts), on the right there are several radio buttons which represent different access levels. In the objects tree select needed objects and assign the access to them using radio buttons on the right. In accordance with rights assigned, items acquire a background of the corresponding color. To save changes, push OK.



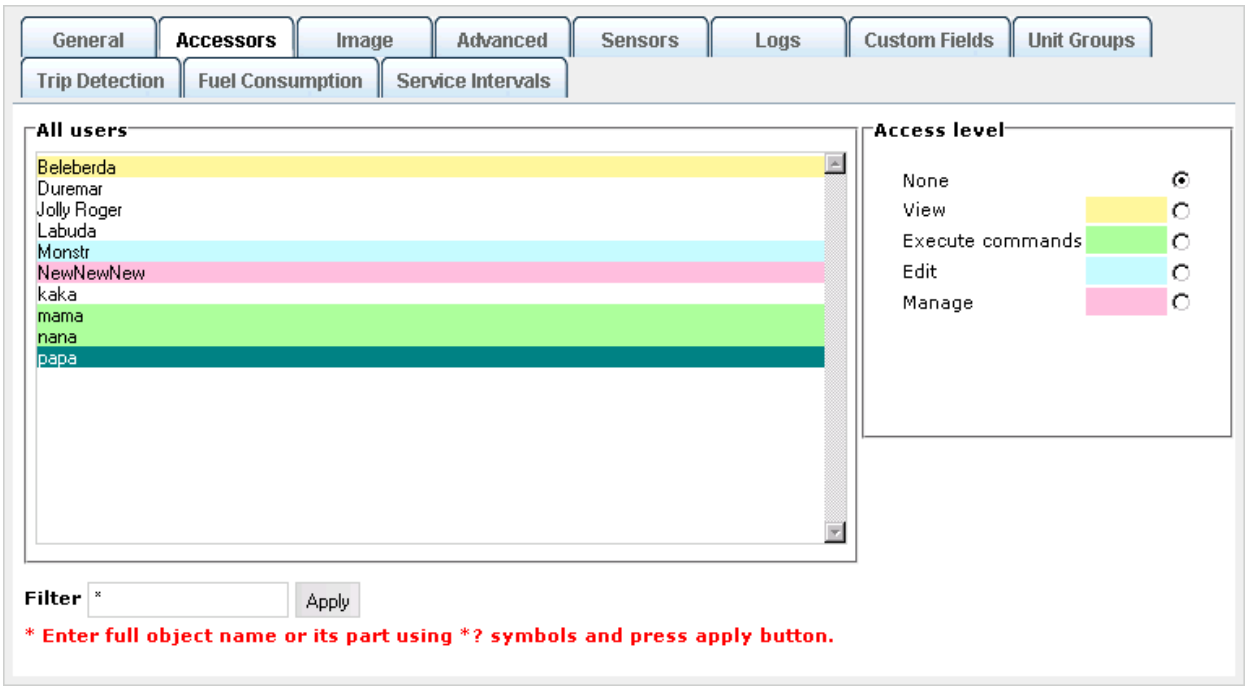
Hint.

If you have less than 100 objects, the full list of available objects is displayed when you open the tab. If you have more than 100 objects, the list is empty, and you need to apply the filter to search and display objects. On the bottom of the dialog enter request text using wildcard symbols * (replaces any number of characters) and ? (replaces one character). After entering a text, press Apply. Search results will be displayed on the list.

To select several objects at once, use <ctrl> and <shift> keys. Hold any of these keys and click on a tree node, this node will be selected entirely with all its items. Holding <ctrl> key it is possible to select several objects clicking on them in a random order. Holding <shift> key it is possible to select several objects going in succession. To do this, click on the first item and then on the last item in the succession.

Through Unit Properties

Open unit properties dialog and move to the **Access for users** tab. On the left there is a list of all users available. On the right you assign for them access level to the unit. Here <ctrl> and <shift> keys are used in the same way.



Through Unit Groups Properties

In a similar way access rights on unit groups are assigned. When creating, updating or copying a group, move to the **Accessors** tab. Remember that rights assigned here are applied to each ans every unit in the group. Here you can increase rights only and not vice versa.

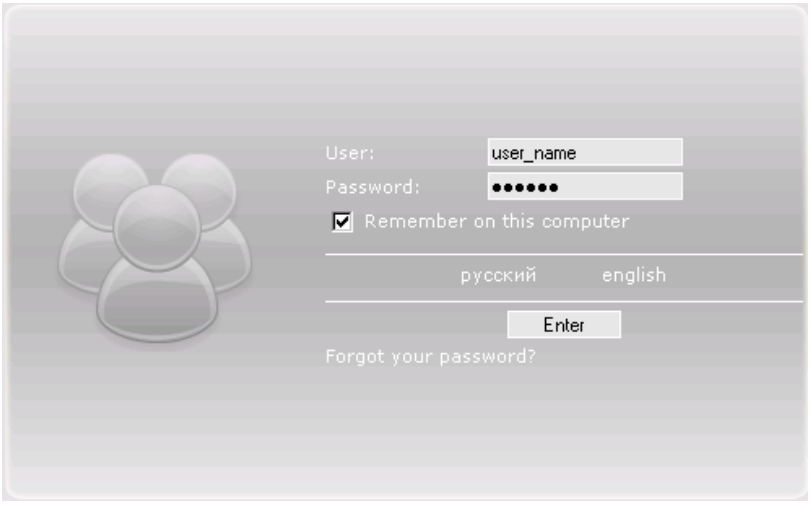
Login

Enter service URL into the address line of your browser.

On the login page key in your **username** (**login**) and **password** that were given to you while registering. If you are using a private computer, you can put a check mark near *Remember on this computer*. In this case, the next time you enter the system you will not be asked to input your login and password again.

When user name and password are entered, press <enter>.

You can also choose interface language (English or Russian), however it can be changed later when in the system.



If You Forgot the Password

If you have already registered in the system but forgot the password, please, follow the link *Forgot your password?* There you will be asked to key in your user name and e-mail address that were indicated while registering. Then push the *Reset password* button. A password reset link will be sent to you. Follow this link to get your new password.

If you press *Forgot your password?* by accident, just ignore the e-mail with password reset link and use your former login and pass. If you still follow this link, you will have to accept a new password.

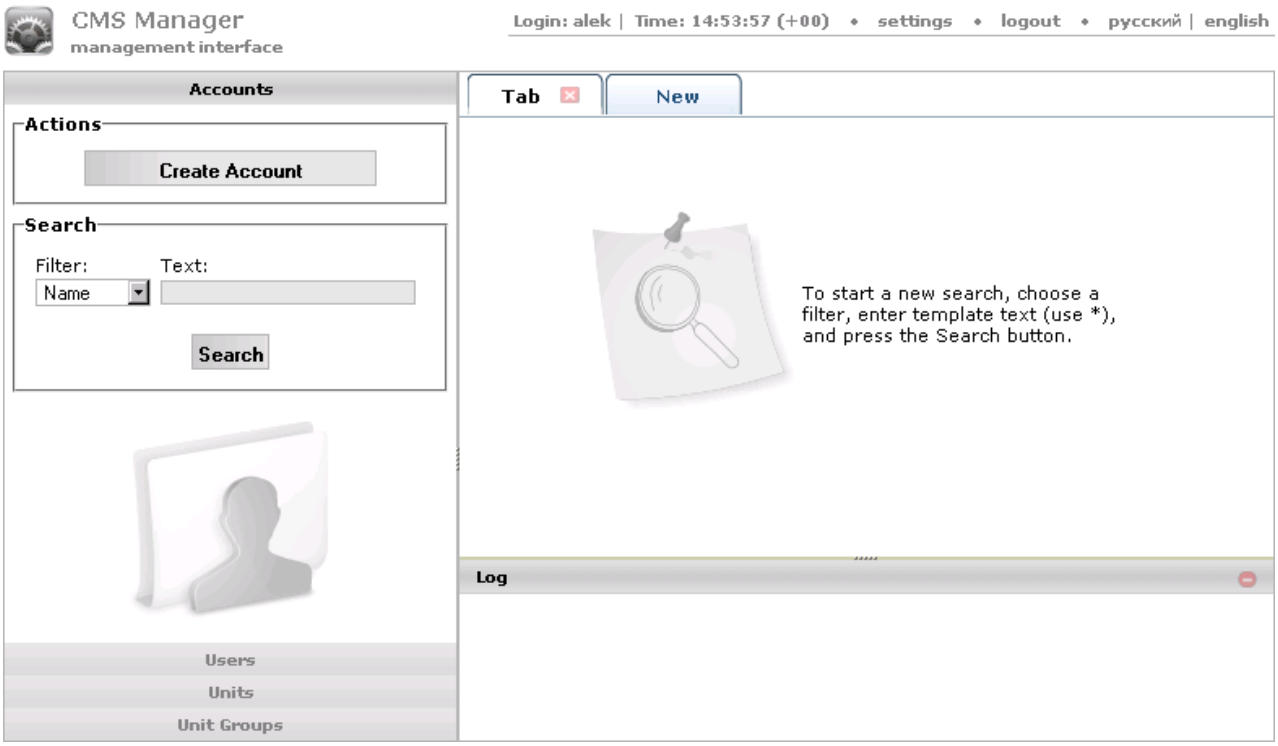
Note.
The current password can be changed in the Settings dialog.

Interface

User interface of the service is simple and in many cases intuitive intelligible. There is plenty of screen tips associated with various buttons, icons, dialog boxes and other interface elements.

The work area can be divided into several parts:

- Top panel is situated at the top of the window. It shows where you are (service name), how you have entered (your login), and contains also a menu through which several options are available.
- Navigation and search panel is a panel with four tabs at the left of the window. Here you can switch tabs: accounts, users, units, unit groups.
- Results panel is the central part. Here you can manage created objects.
- Log is situated at the bottom of the window. Here you can view messages about action undertaken or errors occurred.



Panels sizes are customizable. To adjust the size of the results panel and the log in relation to each other, drag the horizontal slider between them up or down. To adjust the width of the navigation panel, find a vertical slider and drag it right or left.

Further reading:

- **Top Panel**
- **Navigation and Search**
- **Results Panel**
- **Log**

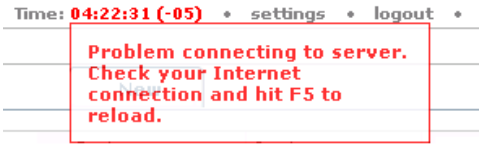
Top Panel

At the top of the window there are the following elements:

- the name of the service where you are (CMS Manager);
- login of the user-manager under which you have entered the service;
- current time (in the brackets - time zone;
- the Settings button to configure service settings;
- the Logout button;
- language bar to select Russian or English as interface language.

If the current time is displayed in red color, it means that the server is not available at the moment. This can happen by a number of reasons. For example, the Internet connection is broken or some trouble has happened to the server.

In case you see the red time, refresh the Internet page by pushing <F5> or <Ctrl+F5> (these keys are supported by most of browsers).



Related topics:

- **Navigation and Search**
- **Results Panel**
- **Log**

Navigation and Search

Table of Contents
- Navigation and Search
  - Navigation
  - Search

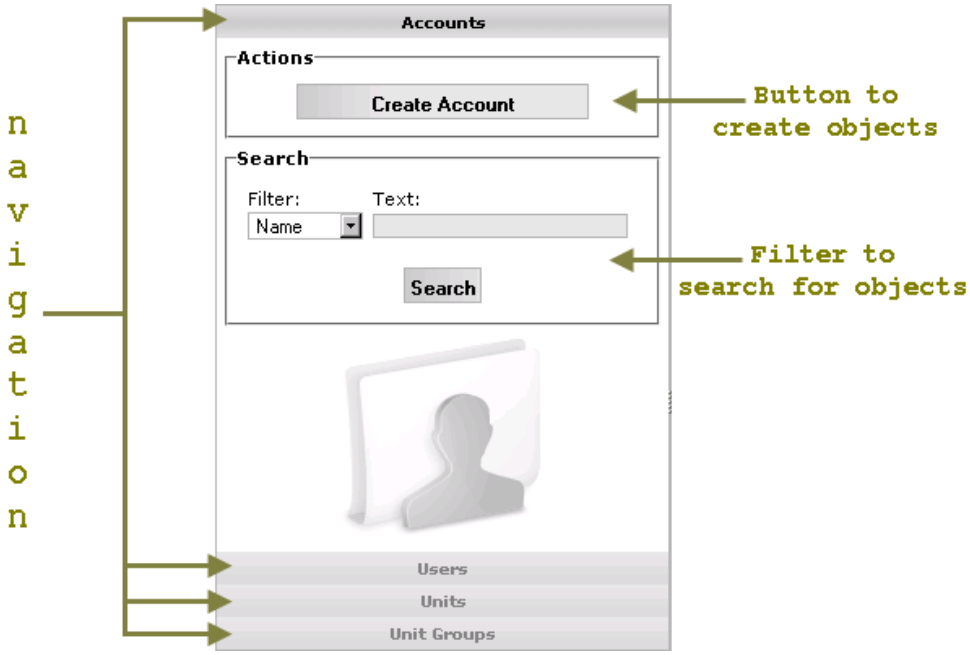
Navigation and search panel is situated on the left of the window.

Navigation

In the navigation panel there are four tabs. Each of then represents some system object: Accounts, Users, Units, Unit Groups. To move to a tab, just click on its name.

Each tab consists of two sections: Actions and Search. The **Actions** section contains a button to create a new object. The detailed instructions for creating and configuring objects are given in the further topics of this guide.

The **Search** section is used to find already created objects and display them in the results panel where you can manage objects, view and edit their properties.



Search

To search objects:

1. Select a filter;
2. Form a request in the Text field;
3. Push the Search button or <enter>;
4. Observe the found objects in the results panel.

Filter

In the *Filter* combo box select the criteria of search. It can be:

- *Name*: the name given to the object when it was created;
- *Creator*: the creator of the object.
- *Account*: account to which required object is attached (that is the object is created by account's creator or by a user which is created by account's creator).

If you are searching for units, except these filters some additional filters are available:

- *Unique ID*: unique identification number given to a unit when creating it;
- *Phone number*: the phone number of a SIM card if one is embedded to equipment;
- *Device type*: equipment type/name;
- *Unit group*: a group where a unit is included;
- *Custom fields*: custom fields assigned when configuring the unit.

Text

Formulate you request in the *Text* field. Use any characters allowed and the asterisk sign (*). The asterisk is a wildcard sign which represents any combination of characters. The asterisk can be placed at the beginning, at the middle or at the end of the request text. It can be used even several times.

For example, to find all MANs, select search by name, type **man** in the Text field, and push the Find button (or <enter>). All units which names contain this combination of characters (both at the beginning and at the end of the name) will be found and displayed.

The request is not case sensitive.

Note.
To simply **find all objects** of some kind (for example, all users), leave the Text field empty (or with just a single asterisk) and press <enter>.

Related topics:

- **Top Panel**
- **Results Panel**
- **Log**

Results Panel

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- Results Panel
  - Tabs
  - Managing Tables
  - Deleting Objects

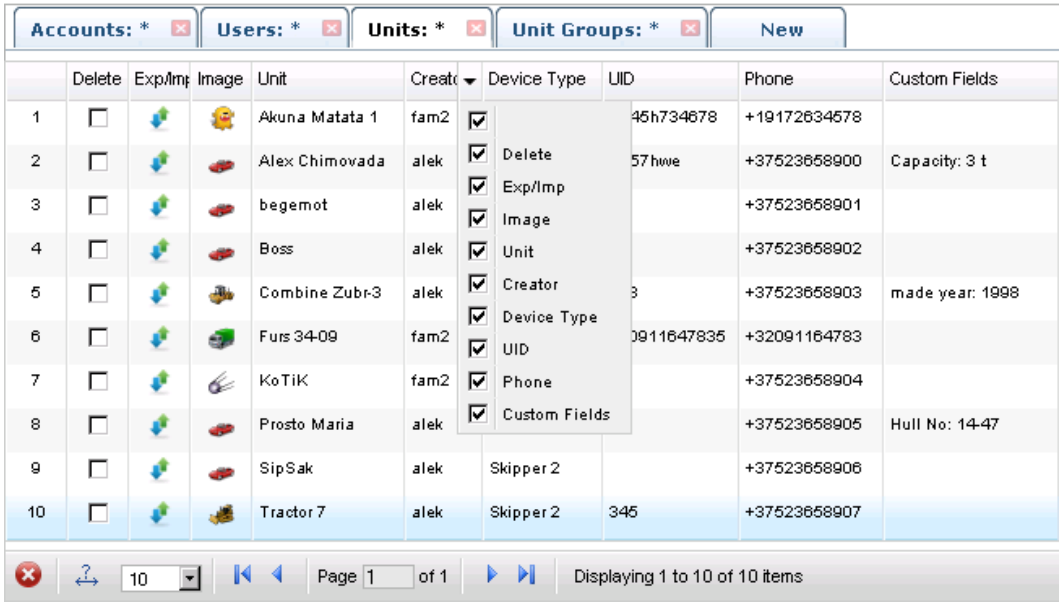
The results panel is located at the right top part of the window. Here the results of objects search are displayed.

Tabs

It is possible to create up to five tabs in the results panel. To create a new tab, press on an inactive **New** tab that is situated on the right of all created tabs. To navigate between tabs, just click on a needed one. To close a tab, press on a red cross near its name.

The name of the tab represents the request, that is contains the type of searched object (users, units, accounts or unit groups) and search text. It allows when switching between tabs restore initial parameters for each of them. Besides, when switching tabs, if they represent different object types, the navigation panel changes, too.

You actions (such as search) are applied always to an active tab. If this tab contains already any records, they will be replaced.



Managing Tables

The data is given in the form of a table. Records are sorted by name in the direct order that is from *A* to *Z*.

For different type of objects, table contents are also different. The most columns are provided for units.

The set of columns is adjustable. To customize it, click on the table header and check needed items (or vice versa unselect some items to hide them).

At the bottom of the table there is tools panel that is useful to perform several tasks such as delete objects, move to another page, etc.

Columns width can be adjusted manually. To do this, click on a column edge and holding the left mouse button drag it to the needed direction. To restore auto width, push **Columns auto width** button.

Adjust the number of rows to be displayed on one page (10, 50, 100, 500, 1000 are available).

To navigate between pages, use the corresponding arrow-shaped buttons. It is also possible to enter page number manually and press <enter> to move to an indicated page.

To view or change object properties, click on the corresponding row in the table.

Deleting Objects

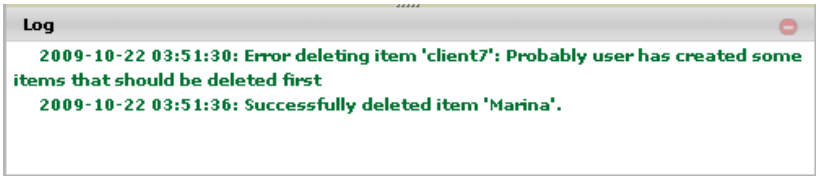
This section describes how to delete users, units, and unit groups.

To delete system objects, you should have manage rights or be creator of the object.

In the **Delete** column check the objects you want to delete. The objects which are not allowed to be deleted cannot be checked.

Then push the button **Delete checked objects**  at the bottom of the table. When getting a warning message, confirm your intentions or cancel the action.

The result of the action is displayed in the log.



Attention!
An account can be deleted only with all its contents (users, geozones, reports, etc.), that is why the deleting accounts is different from deleting other system objects. More about deleting accounts...

Related topics:

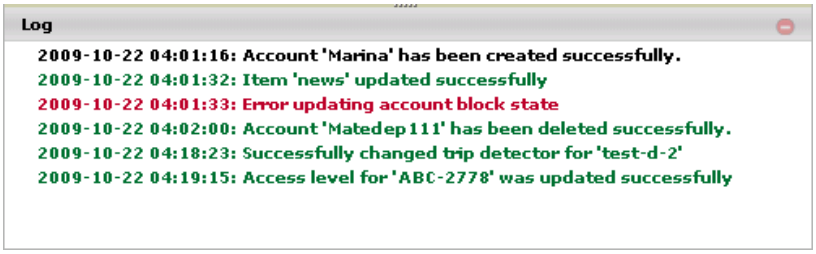
- **Top Panel**
- **Navigation and Search**
- **Log**

Log

The log is situated at the bottom of the window. It contains records of current events and operations running in the system.

The structure of a record is simple: date, time, text (description of the event).

The log uses fonts of different colors in order to separate different type of entries from each other. Black color is for information messages, for example, about the number of tabs allowed to create. Green color is used for preventive messages, for example, when a new object is created or successfully deleted, or its configuration is changed. Red records mean error messages.



You can clean up the log using the appropriate button which is in the right top corner of the log panel.

Related topics:

- **Top Panel**
- **Navigation and Search**
- **Results Panel**

Settings

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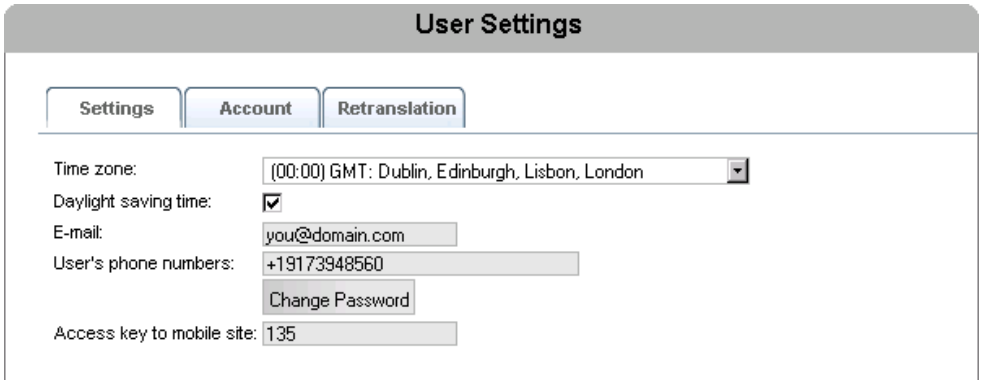
- Settings
  - General Settings
  - Account
  - Retranslation

To view user settings, click on Settings on the top panel. Here you can customize some parameters of service functionality.

The User Settings dialog can contain up to three tabs according to the service configuration: Settings, Account, and Retranslation.

General Settings

The first tab contains general settings. Here you indicate you time zone, input your e-mail address, change the password to enter the system, and set many other parameters.



Time zone
Indicate your time zone accurately because all time values in messages got from units are displayed in accordance with time zone selected.

Daylight saving time
Check this option if in your region you use summer and winter time.

E-mail
This e-mail address will be used to send you a reset password link in case you forget your password.

User's phone numbers
Key in one or more phone numbers which you are going to use to manage units via SMS. If a command comes from some other phone, it is not processed. Phone numbers should be written in international format (for instance, +7903726154,+15551234567) and separated by comma (with no spaces). They should start from "+", then follow country code, communication statement code and the phone number itself.

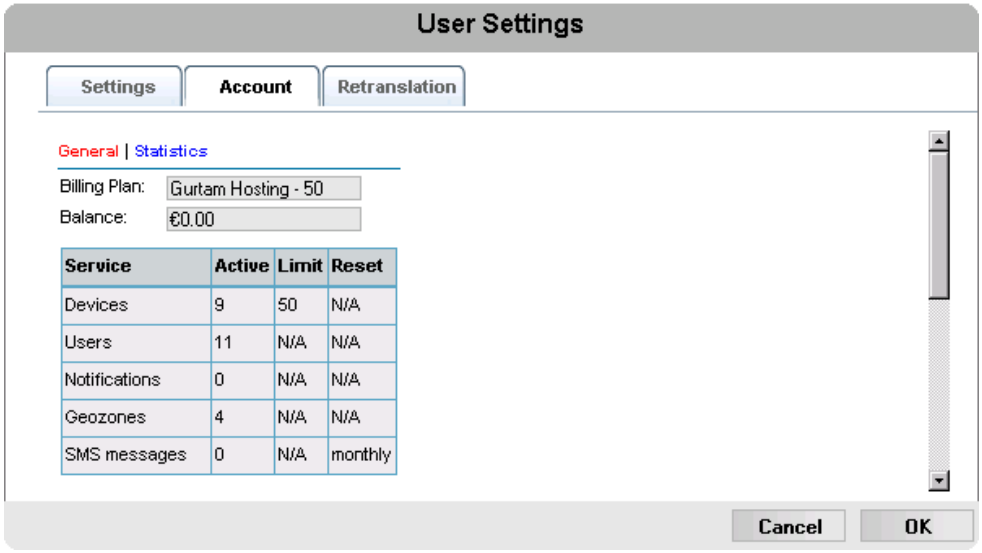
Change password
If you push this button, some additional fields will appear. You will be asked to input your current password, and then your new password (two times).

Access key to mobile site
If you are going to use mobile phone or PPC to manage the server, enter the access key. If you leave this field empty, the access will be denied.

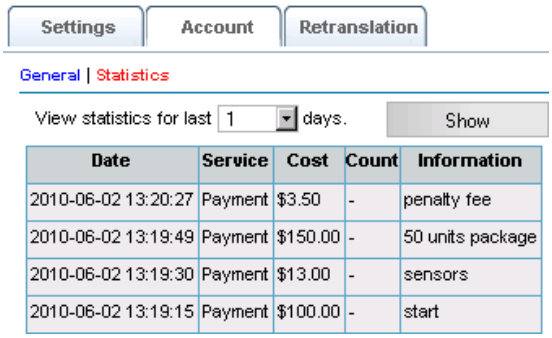
Account

Attention! This tab is available when billing system is used.

The Account tab has two sections: General and Statistics. In the General section information on billing plan and current balance is presented. You see also how many objects (like places, geofences, units, users, etc.) you can create and how many of them already exist.



In the Statistics section you can make an inquiry about charges for different operations produced over a given period. Specify the period of time and push the **Show** button to see statistics.



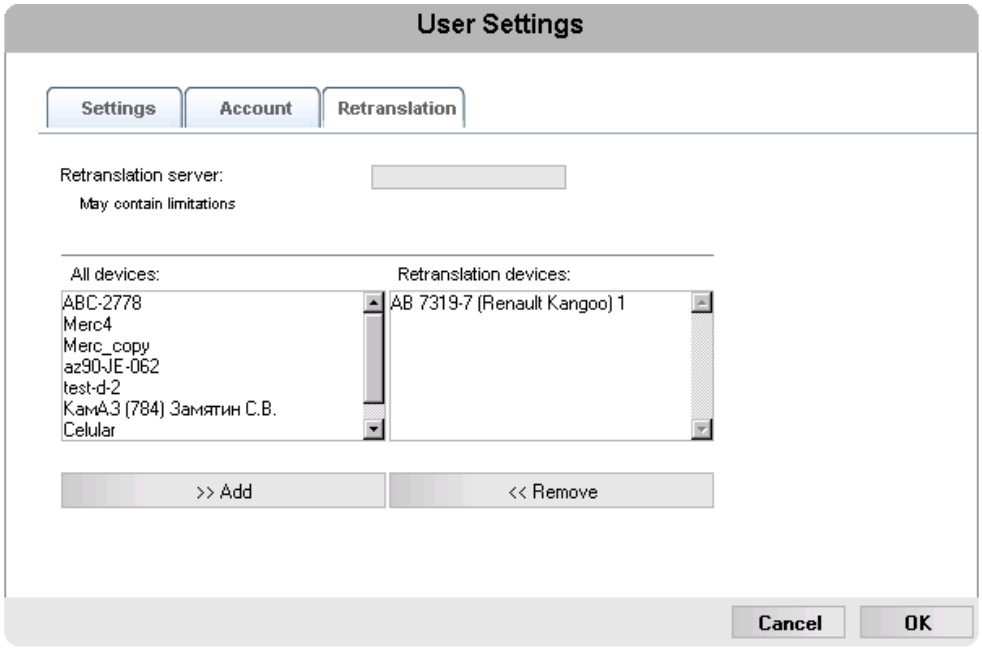
Retranslation

Attention! You must have Retranslation module purchased to use this feature.

Messages from unit can be retranslated in real-time operation mode from your server to other servers or systems including Wialon B2.

The address of retranslation server should be entered in the form “host:port”. If **Retranslation server** field is left empty, retranslation will not occur.

Bellow select units for retranslation operation. To do this, move items from the left list to the right double-clicking on unit or using the **Add** button. To remove an item from the right list, push the **Remove** button.



Accounts

Table of Contents

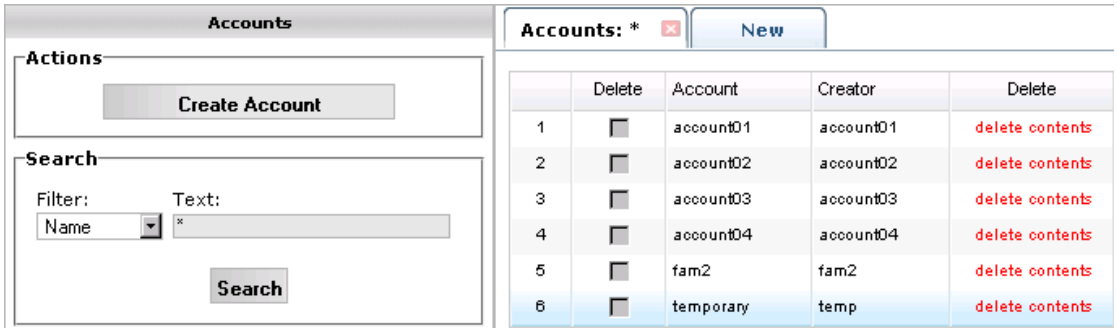
- Accounts
  - Creating an Account
  - Accounts Management
    - General
    - Payment
    - Statistics
    - Features
    - Account
    - List of Services
    - Deleting Accounts

Account is a contract with a client; this is a unity of resource and users (one of them is account's creator). Most of objects which are created by end users on the monitoring site (like report templates, notifications, geofences, etc.) belong to account. Availability of an account gives user opportunity to create such objects. Besides, billing plan is applied just to account and not to user.

To work with accounts, choose **Accounts** in the navigation panel on the left of the window.

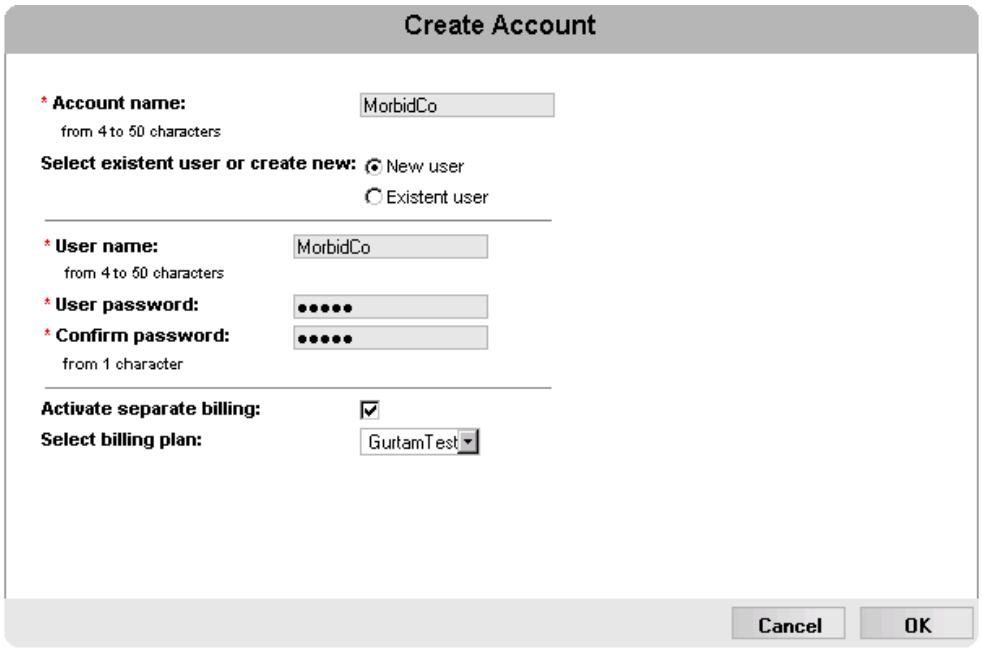
Here you can:

- Create a new account.
- Find and display existent accounts.
- Control client's balance, add payments, define possibilities, etc.
- Delete accounts.



Creating an Account

Accounts can be created and deleted only by service manager (or its administrator). To create a new account, press the **Create Account** button. Fill in the given fields. If this button is not active, it means you have no rights to create system objects.



Account name
Give the account its unique name from 4 to 50 characters. In the system there can be no accounts with the same names.

Creator
As a creator of the account an existent user can be selected or a new user can be created together with the account.

- **New user**: a new user will be created and assigned as account's creator. You have to give it login and password. By default, it is offered to give it the same login as the name of the account, but you can enter different name.
- **Existent user**: in the dropdown list choose a user from available.

Activate separate billing
If activated, a separate billing plan can be assigned to this account (select billing plan from the dropdown list). If not activated, an account with the same billing plan as yours will be created, so a user with the same possibilities as yours will be created.

Note.
If you have no other billing plan except your own, separate billing cannot be used. Billing plans are developed by service administrator, and you can be given access to these plans.

If all fields are filled in correctly, the OK button becomes active. Push the button to save the account. See the result in the log.

As the result, a new account (resource) is created or both account and user are created. By default, the user indicated while creating the account is assigned to be its creator. However, *manage* access to the account are given both to this user and the manager who created the account. If a user was created together with account, this user receives *manage* access to account and *edit* access to user itself. The creator of such a user becomes the manager who created it.

Accounts Management

To view created accounts in the results panel and proceed the work with them, specify the corresponding search parameters. How to fulfil a search...

In the table of results you see accounts' names and creators. Learn more about managing tables...

Click on any account in the table to see its properties. The dialog contains several tabs described above. Their number depends on account configuration and modules you have in your service.

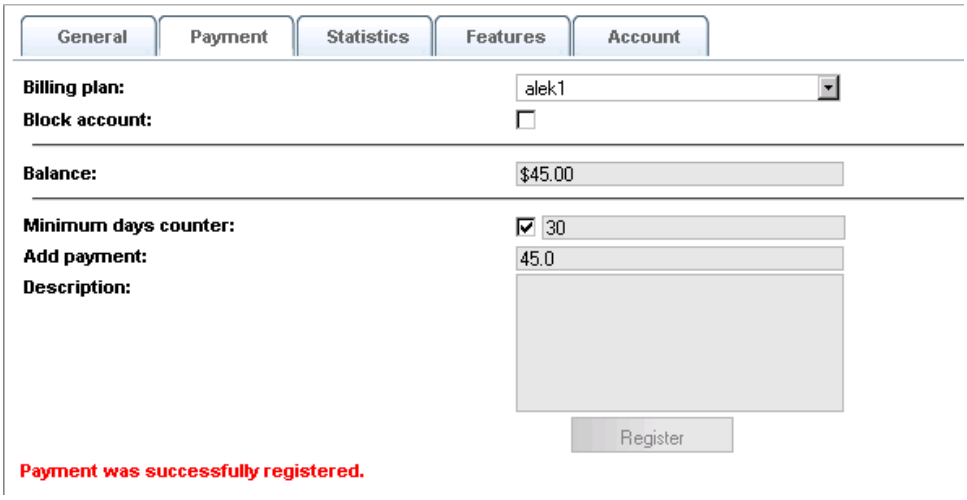
General

On the *General* tab you can change account's name.

To activate other tabs it is needed that a billing plan were assigned to the account.

Payment

On the *Payment* tab you can change billing plan, block account, check the current balance, and add a payment.



To change *billing plan*, select one from the dropdown list of available plans. If billing plan is *none*, it means this account will use your own billing plan.

Here you can block the access to the account (in case of nonpayment, expiration of the contract, etc.). For this just put the check mark near *Block account*.

In the next field you see the current *balance* of the account.

Below you can register a *payment*. To register a payment, enter sum and *description* (description required). The sum will be added to the current balance, and the payment will be saves in payment history (see *Statistics* tab).

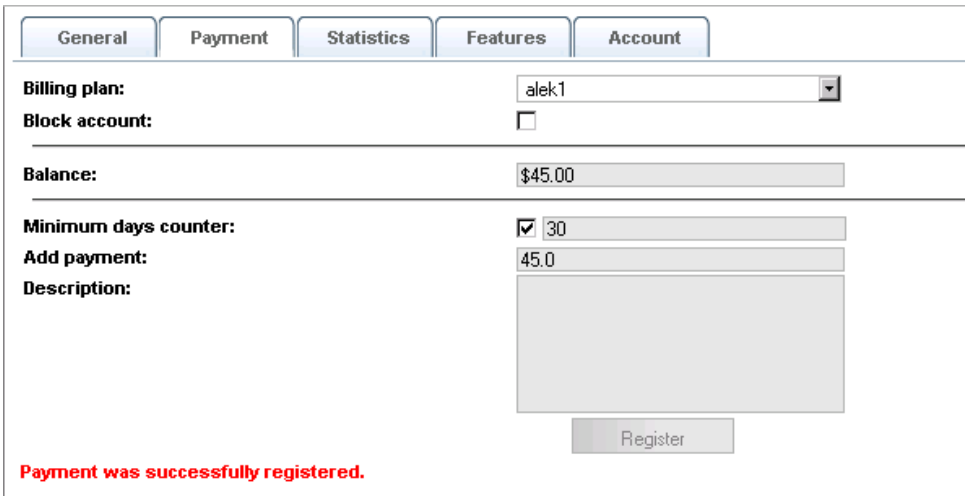
Optionally you can activate *minimum days counter*. In this case the account can be blocked automatically not only when the balance is 0, but also if there are no days left. It can be useful for demo access, for example. To operate days, first activate the option *Minimum days counter* and apply changes by pressing *OK*.

Then open the dialog again, and you will find new fields there. *Days left* will appear above in the same section with the current balance. There you see how much days has left until the account is blocked. Days are counted down automatically when a new day comes. push the *Register* button. The caption *Payment was successfully registered* means your payment was accepted. You can also add days without adding money, but anyway the description field is required. Indicate *Minimum days counter* to notify user that the access expires soon. The notification appear when user logins to the monitoring site (or CMS Manager): *Your account will be disabled automatically in … days*. The first time this caption appears when the number of days left is equal to the number of minimum days. The notification appears next days until the account is finally blocked or until more days are added by the manager.

Days are added in the same way as payment. Indicate the needed number of days in *Add days* field, enter description, and press *Register*. Days and money can be added simultaneously in the same payment or separately from each other.

Statistics

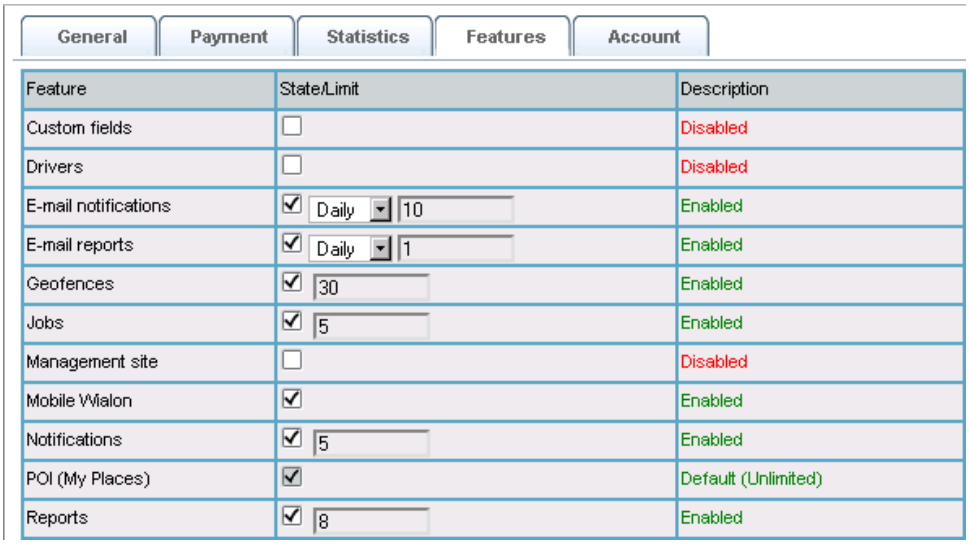
On the *Statistics* you can estimate services expenses for indicated period of time (payment history). Define time interval and press *Show*. All registered payments will appear in the table regardless whether money or days were added.



Features

The *Features* tab allows to manage the number of available units, SMS, geofences and other system objects, as well as enable or disable access to different services such as retranslator, mobile site, etc. The complete list of features is given below.

On this tab you see the list of services available according to chosen billing plan.



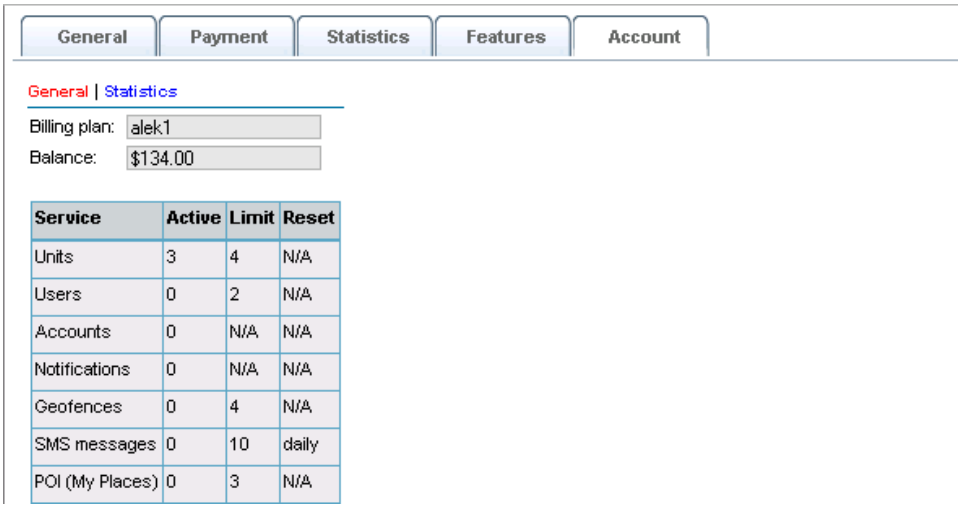
At the left you see features (services) names.

In the central column you define service state and enter limitations. Check services to make the available to this account or unselect services to deny access to them. This flag has three states: *on*, *off* and *default*. If the state is *on*, you can enter quantitative restriction manually, for example, allow only 10 geofences to be created for this account.

In the right column you see the current state of the service (enables/disabled) and, if the state is *default*, the description of default conditions is given in the brackets.

Account

On the *Account* tab the chosen billing plan and account balance are indicated, and the list of available features is presented. If a service is periodic (limited number of items in an interval), the interval is indicated. For example, 10 SMS messages in one day (*dayly*).



Note.
The information presented on this tab is available to the end user through the *settings* dialog.

List of Services

Service	Description
Accounts	Accounts count (at least one account must be allowed to create)
Advanced reports	The possibility to create reports on unit groups and users
Alarms	Active alarms count
Connector	Authorization through a service connector (Wialon Pro Client)
Custom fields	Custom fields allowed for one unit or user
Drivers	Drivers count
E-mail reports	The possibility to send a report by e-mail (within the Jobs module). Recommended limitation - 10 reports in an hour (to not to overload the server).
E-mail notifications	The possibility to send notifications by e-mail. Recommended limitation - 10 reports in an hour (to not to overload the server).
Geofences	Geofences count
Jobs	Jobs count
Manager site	Access to the management site (CMS Manager)
Notifications	Notifications count
POI (My Places)	POIs count
Reports	Report templates count
Retranslator	Transmitting messages from a unit to other servers and systems
Routes	Control routes of movement
Service intervals	Service intervals allowed for one unit
SMS messages	Sending SMS messages
Unit groups	Unit groups count
Unit sensors	Sensors count (calculated for all units in overall)
Units	Units count
Wialon Mobile	The possibility to track unit from a mobile phone or PPC
Wialon Web	Access to the monitoring site (Wialon Mobile)

Deleting Accounts

To delete an account, you need to have management access rights for it.

Attention!
When deleting an account, all its contents (geofences, users, etc.) is deleted, too. Besides, all users, units, unit groups are deleted, too, if they were created as account's creator or other users which were created as account's creator.

To delete an account, press **delete contents** and then confirm your intentions.

Users

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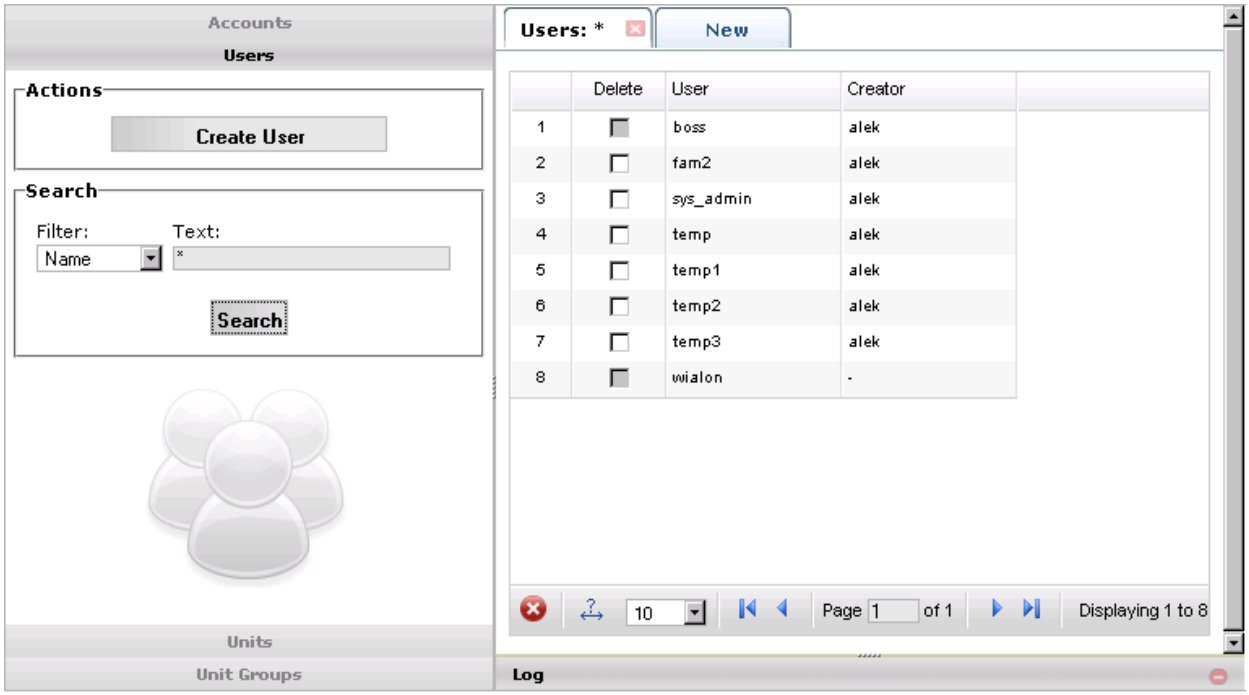
Users
Creating a User
Managing Users

User is system object which has its specific name (login) and password. User has access rights for interacting with other system objects (units, users, accounts, etc.). These rights are assigned by service manager. End user exercises these rights on the monitoring site. However, other types of users can be managers or administrators.

To work with users, choose **Users** in the navigation panel on the left of the window.

Here you can:

- Create a new user.
- Find and display existent users.
- View and/or edit their properties.
- Give users access rights to different objects.
- Delete users.

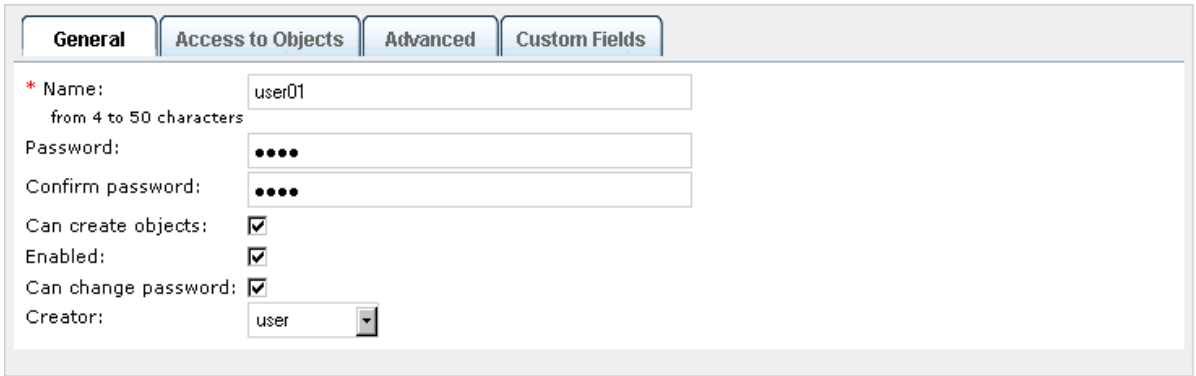


Creating a User

To create a new user, push the **Create user** button. In the dialog that appears, fill in the field on the given tabs.

General

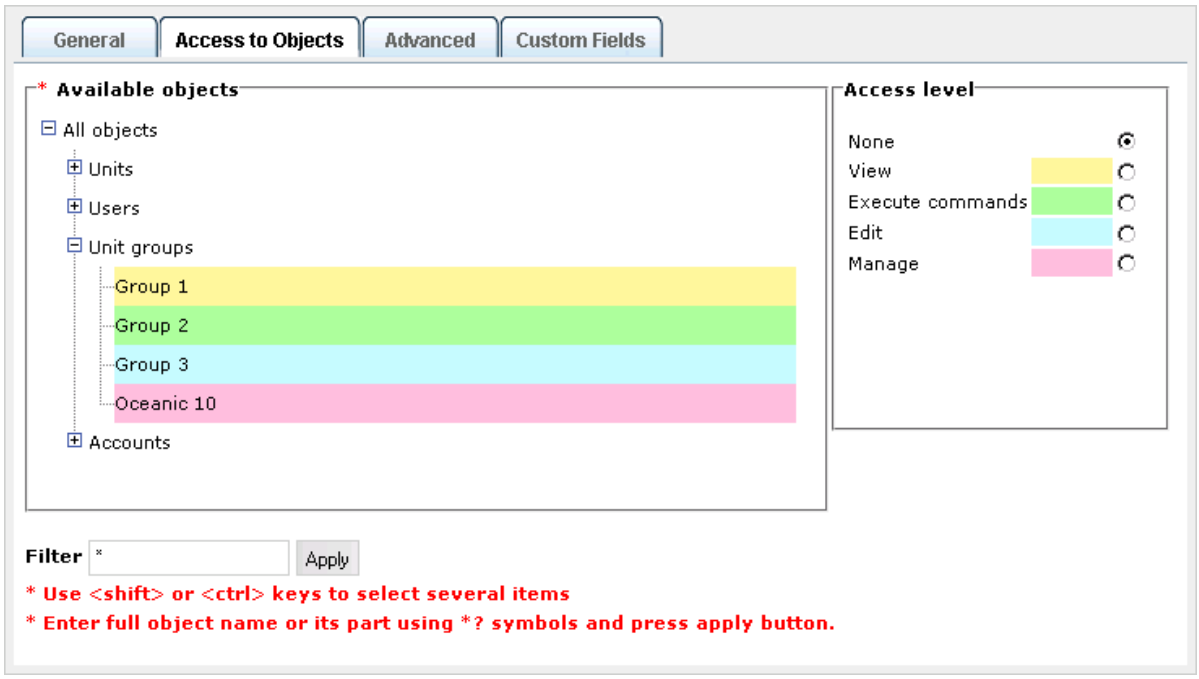
Enter a name and a password (and its confirmation) for the user. This name and password will be used by this user to login to the monitoring site. Mark the check boxes **Can create objects** and **Can change password** to give the user the corresponding rights if needed. Tick **Activated** to let the user login to the service. Select creator from the dropdown list.



Host mask can be applied to user to restrict IP addresses from which to enter service sites. For example, to allow user to login to sites from office only. To set a mask, use the wildcard symbol *, for example, host mask can be set like this: '212.0.13.*'.

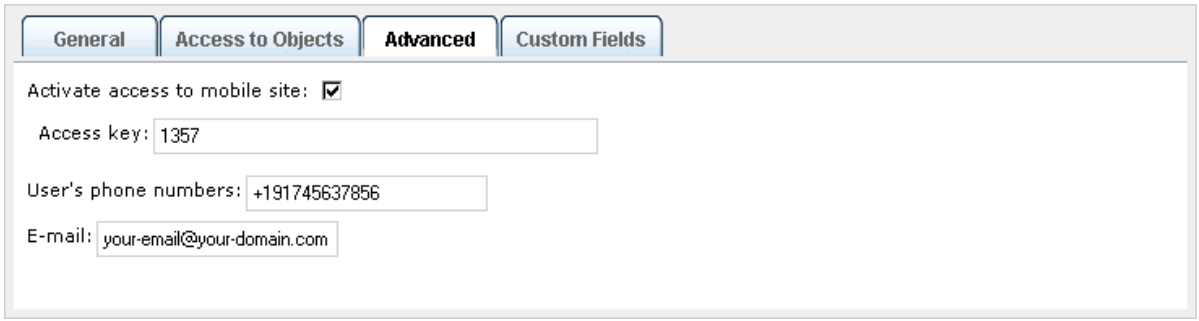
Access to Objects

Here you give the user access rights to objects existing in the system: devices, accounts, devices groups, and users. On the left choose objects and assign access type to them on the right. To select several objects at once, use <ctrl> and <shift> keys. After the access level has been assigned to an object, it acquires the corresponding background. If this tab is left empty, it is assumed by default that this user has no access rights to existing objects (except cases when the user is a creator of an object). Access levels description...



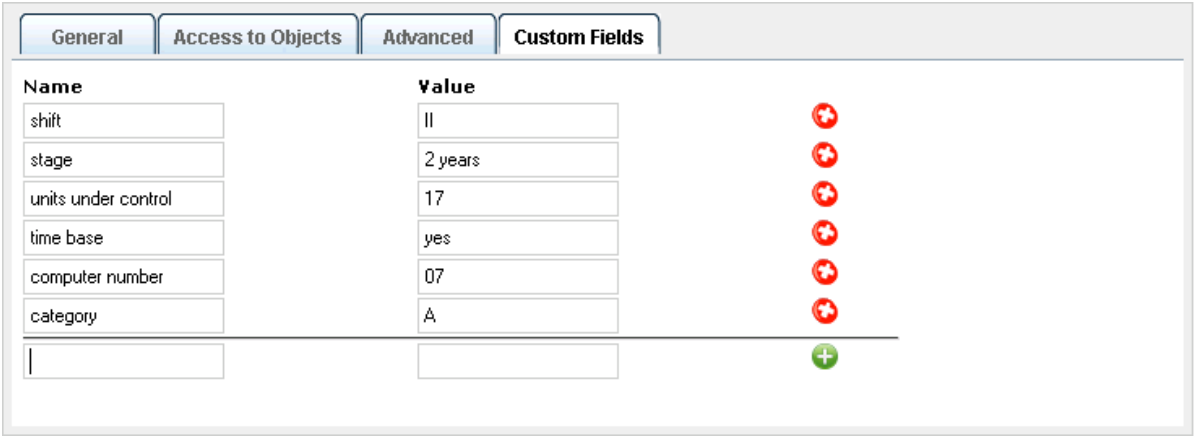
Advanced

Activate access to mobile site for the user if needed and enter access key which is necessary to login to the system from a cell phone. Type user's phone number(s) in the international format to let the user manage devices via SMS. Enter e-mail address that will be used to get notifications from the service administration. These settings can be changed by the user in User Settings when hi/she logs in.



Custom fields

Any kind of information can be added to users account using custom fields. This can be private phone, home address, post, experience, and so on.



The next time you open the dialog custom fields will be automatically alphabetized.

Notes:

- Another way to create a new user is to make a copy of an existing user and edit it. This feature is aimed to speed up the process of creating objects. Click a user holding down <ctrl> key. In the **Create Copy User** dialog edit user properties and save the user by clicking OK.
- One more way to create a user is to create it together with account.

Managing Users

Search & Display

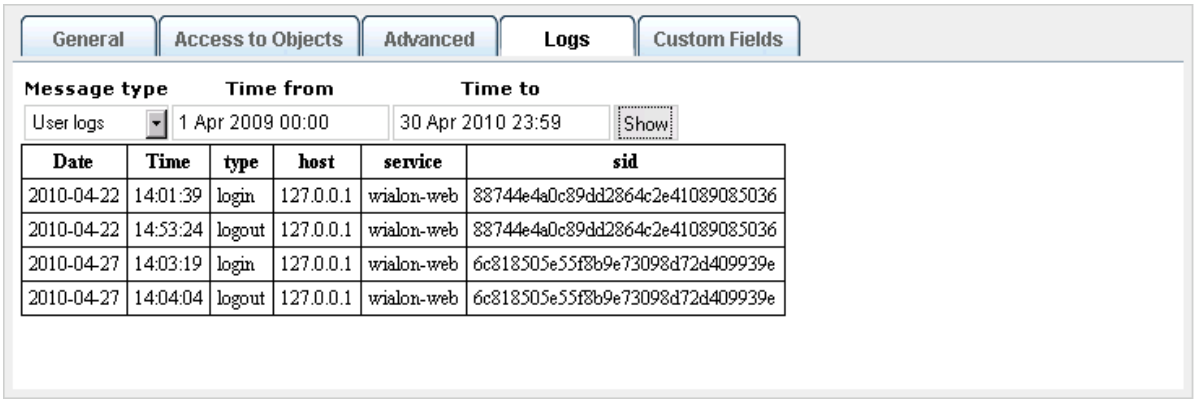
To view created users in the results panel and proceed the work with them, specify the corresponding search parameters. How to fulfil a search...

In the table of results you see users' names and creators. Learn more about managing tables...

View & Edit

When clicking on a user, the dialog with user properties is displayed. Here you can change user's properties described above.

The tabs of the dialog are similar to those when creating a user, but there is an additional tab titled **Log**. Here all user's logins to the system and logouts from the system can be displayed. Specify the period of time and press the **Show** button.



Delete

To delete a user (*menege* access needed), simply check it and press the delete button . Learn more about deleting objects...

Units

Table of Contents

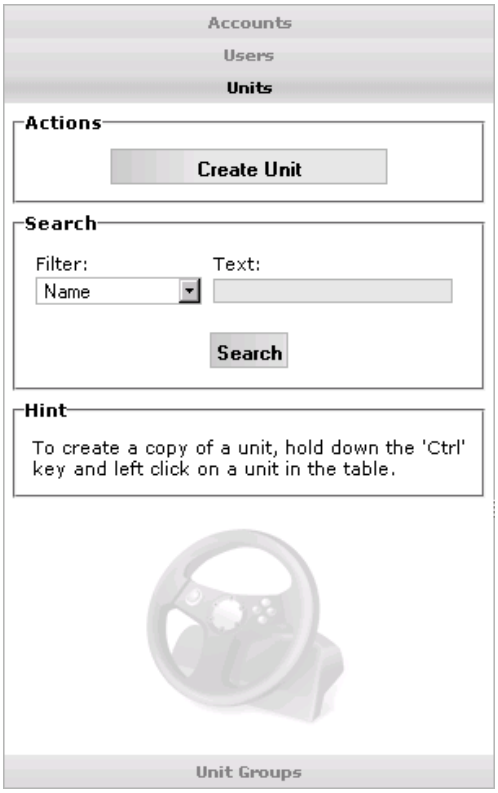
- Units
  - Creating Units
  - Managing Units

Unit is system object which is specific for its equipment type and unique identification number (UID).

To work with units, choose **Units** in the navigation panel on the left of the window.

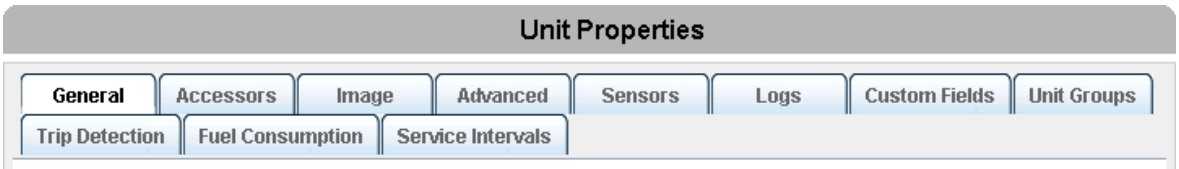
Here you can:

- Add a new unit to the system.
- Find existent units.
- View or edit their properties.
- Define access rights to units.
- Perform settings import and export.
- Remove units from the system.



Creating Units

To add a new unit to the system, press the button *Create Unit*. Configure units in the dialog filling needed tabs. Use the following links to get to nkow the details about each parameter:



- **General**
- **Accessors**
- **Image**
- **Advanced**
- **Sensors**
- **Logs**
- **Custom Fields**
- **Groups**
- **Trip Detection**

- **Fuel Consumption**
- **Service Intervals**

At the end press OK.

The alternative way to create a unit is to clone a unit. This way is convenient to quickly create units with similar properties. Click on an existing unit holding the <ctrl> key. The *Create Unit* dialog will be displayed, and there you can enter a new name for a unit, correct any properties, and then save the new unit.

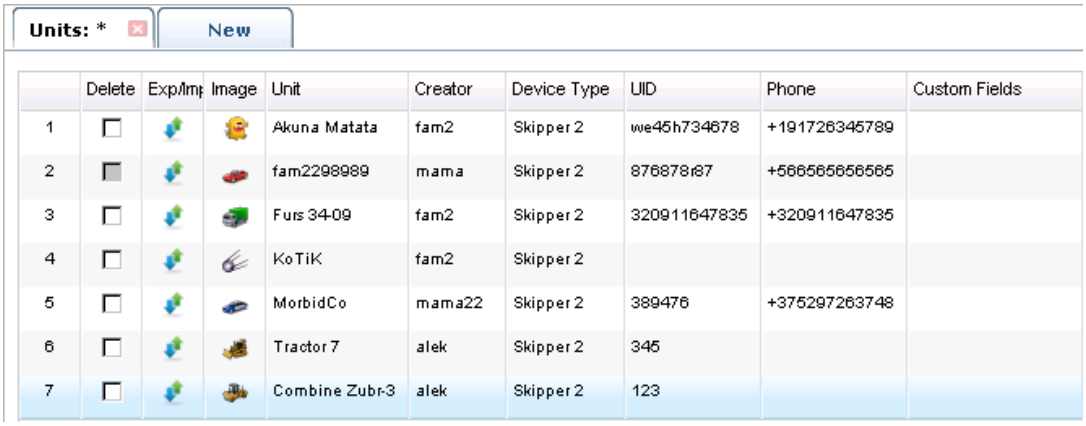
ATTENTION!
Units with the same IDs or phone numbers cannot exist in the system. If you are trying to create a unit with ID or phone number which already belongs to a unit in the system, an alert will be displayed and you will be offered to edit the unit. If you will not edit these fields, the unit will be created anyway but with *no* ID or phone number.

Managing Units

Search & Display

To view created units in the results panel and proceed the work with them, specify the corresponding search parameters. How to fulfil a search...

In the table you see the unit's image, its name, creator, device type, unique ID, phone number, custom fields, and the buttons to import/export properties and to delete units. Learn more about managing tables...



	Delete	Exp/Imp	Image	Unit	Creator	Device Type	UID	Phone	Custom Fields
1	☐			Akuna Matata	fam2	Skipper 2	we45h734678	+191726345789	
2	☐			fam2298989	mama	Skipper 2	876878r87	+566565656565	
3	☐			Furs 34-09	fam2	Skipper 2	320911647835	+320911647835	
4	☐			KoTiK	fam2	Skipper 2			
5	☐			MorbidCo	mama22	Skipper 2	389476	+375297263748	
6	☐			Tractor 7	alek	Skipper 2	345		
7	☐			Combine Zubr-3	alek	Skipper 2	123		

View & Edit

To view unit properties on details or change them, just click on a unit in the table. In the *Unit Properties* dialog you can view and/or edit any parameters.

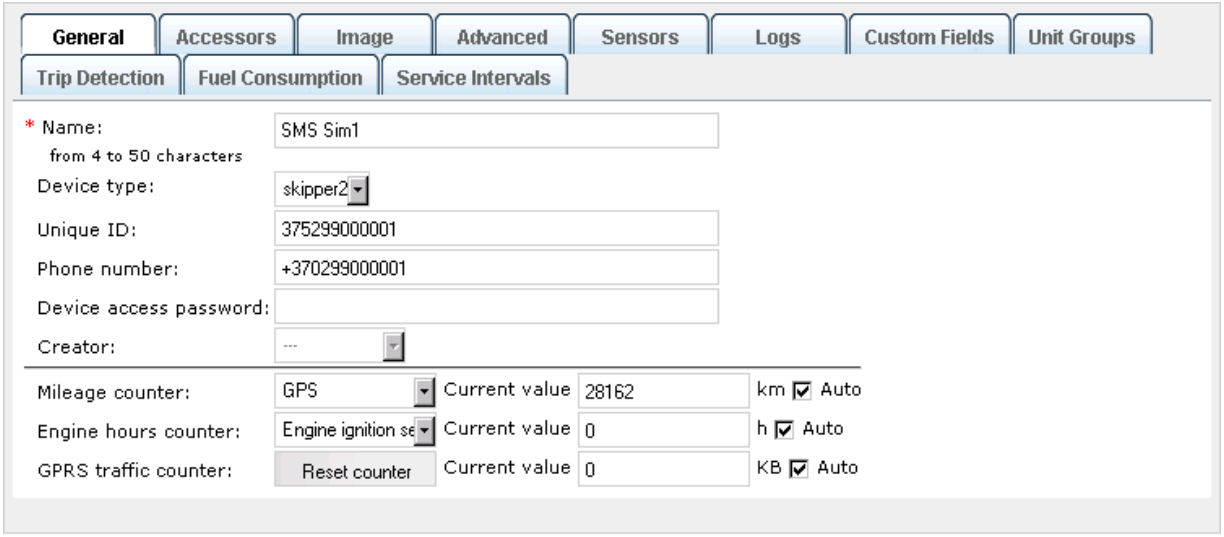
Delete

To delete a unit, check it and press delete button . Do not forget, you need to have *manage* rights to delete any objects from the system. Learn more about deleting objects...

General

In the General tab set the following parameters:

- **Name**
  Enter a name for the unit from 4 to 50 characters.
- **Device type**
  Select device type from the list of supported equipment.
- **Unique ID**
  Enter a unique ID for the unit to be identified by the system. Usually it is IMEI or serial number.
- **Phone number**
  Here type phone number of the unit if it has embedded SIM card. Phone number should be written in international format, that means they start from "+", then follow country code, communication statement code and the phone number itself. Examples: +7903726154,+15557654321).
- **Device access password**
  Type password to manage the unit remotely if needed.
- **Creator**
  This combo box is available if you have several users under your control.



Note!
If you access rights to the unit is *View*, some of the fields will be hidden.

Counters

On the General tab counters parameters are adjusted.

Mileage counter is used to unify distance calculation in different modules like Tracks panel, Messages Mode, and reports. Four methods are suggested for calculating mileage:

- GPS: mileage is calculated by GPS coordinates. It means if the change of coordinates was detected, the distance between them is added to mileage.
- Mileage sensor: mileage is calculated by mileage sensor.
- Relative odometer: mileage is calculated by relative odometer sensor.
- GPS + engine ignition sensor: mileage is calculated by GPS coordinates considering ignition state.

Be careful when selecting a method. If you choose to calculate mileage by a sensor, and your unit does not have this sensor, then mileage values will be zero.

Engine hours counter calculates engine hours by one of two sensors:

- engine ignition sensor,
- engine hours sensor.

GPRS traffic counter is used to calculate Internet traffic consumed by the unit to transmit and receive data.

The traffic is measured in kilobytes (KB). At any moment you can reset this counter manually if pressing the **Reset counter** button. At this you will be offered to save the event of reset and teh current value in unit events history to be exported to a report later.

You can set the **Current value** for each counter, and the further calculations will start from the indicated point. In order the new data were added to the current value automatically, activate the **Auto** option at the right of the counter. You can manually zero counters if entering '0' to the current value field. To enter a fractional number, use dot as delimiter and enter no more than two decimal places.

Accessors

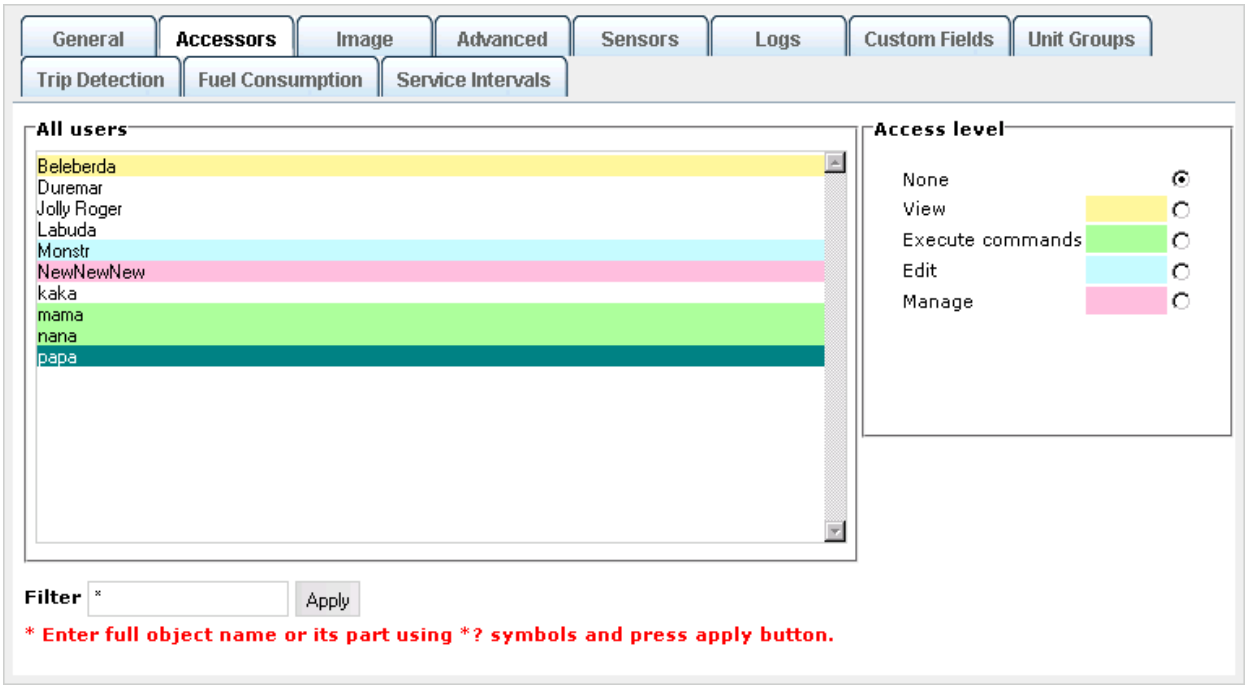
On this tab you indicate access level to the unit for different users. There are four access types:

- **None**: the user will have no access to the unit at all.
- **View**: the user will be able to view unit movement and location on the map, read notifications, generate reports.
- **Execute commands**: the user is allowed to execute commands over unit.
- **Edit**: the user is allowed to change unit properties.
- **Manage**: the user will have exhaustive rights, up to delete the unit.

Select user at the left, and assign access type at the right. You can determine rights for several users at once. To do this, select the needed items holding **<ctrl>** or **<shift>** key. After the access level has been assigned to a user, this user's name on the left acquires the corresponding background.

If you have less than 100 users, the full list of available users is displayed when you open the tab. If you have more than 100 users, the list is empty, and you need to apply the filter to search and display users. On the bottom of the dialog enter request text using wildcard symbols * (replaces any number of characters) and ? (replaces one character). After entering a text, press **Apply**. Search results will be displayed on the list.

To assign access for users to a unit, you need to have *manage* rights to these users. Otherwise, you will not see the users on the list at all.



Note.
This tab is not available if:

- you have no users;
- you have no *manage* right to your users;
- your access rights to this unit are lower than *manage*.

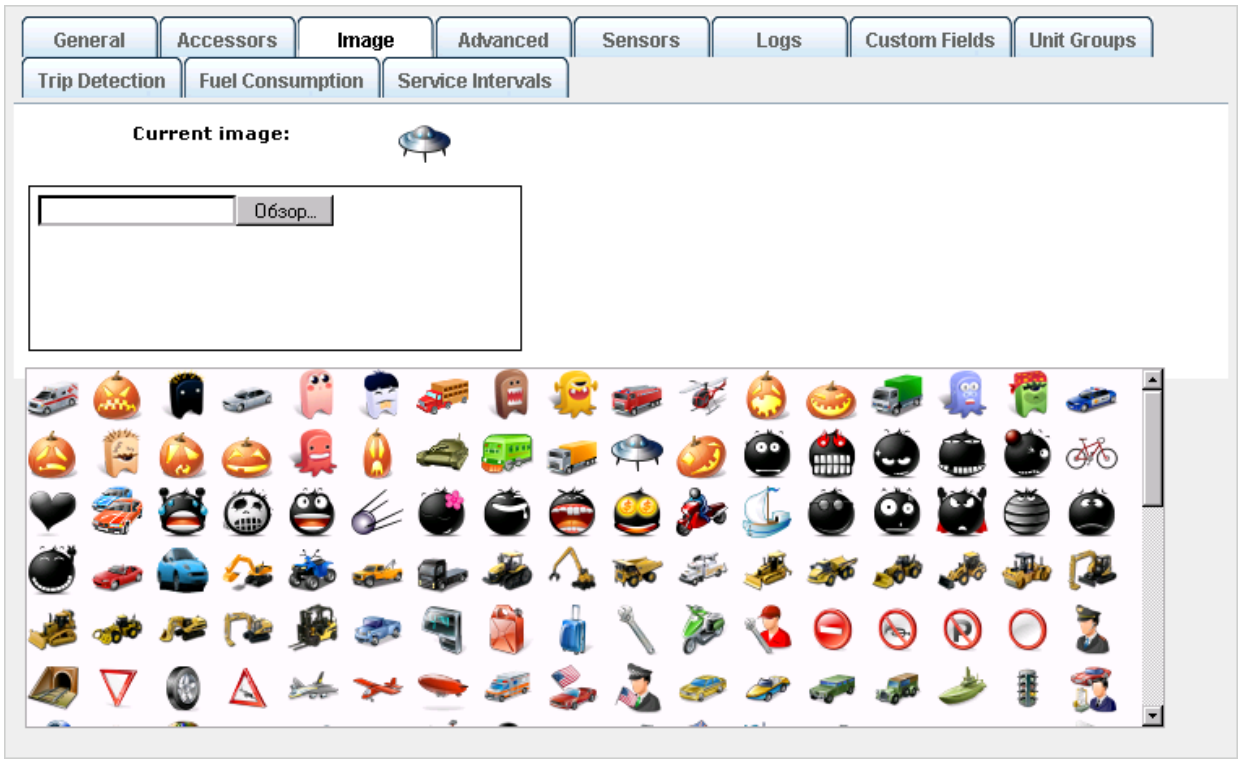
Image

You can select and load any image to display the unit on the map.

There is a number of standard images: push the **Image Library** button and select one.

You can load your own image. Push **Browse** and select a file on the disk.

Otherwise you can leave the unit without image. In this case the unit is represented on the map by its name or by motion/stop signs (depending on user settings).



Advanced

Table of Contents

- Advanced
  - Speed limit
  - Maximum interval between messages
  - Daily engine hours rate
  - Speed based track colors
  - Sensor based track colors
  - Sensor color in the Monitoring panel
  - Enable filtration of unit position information in messages

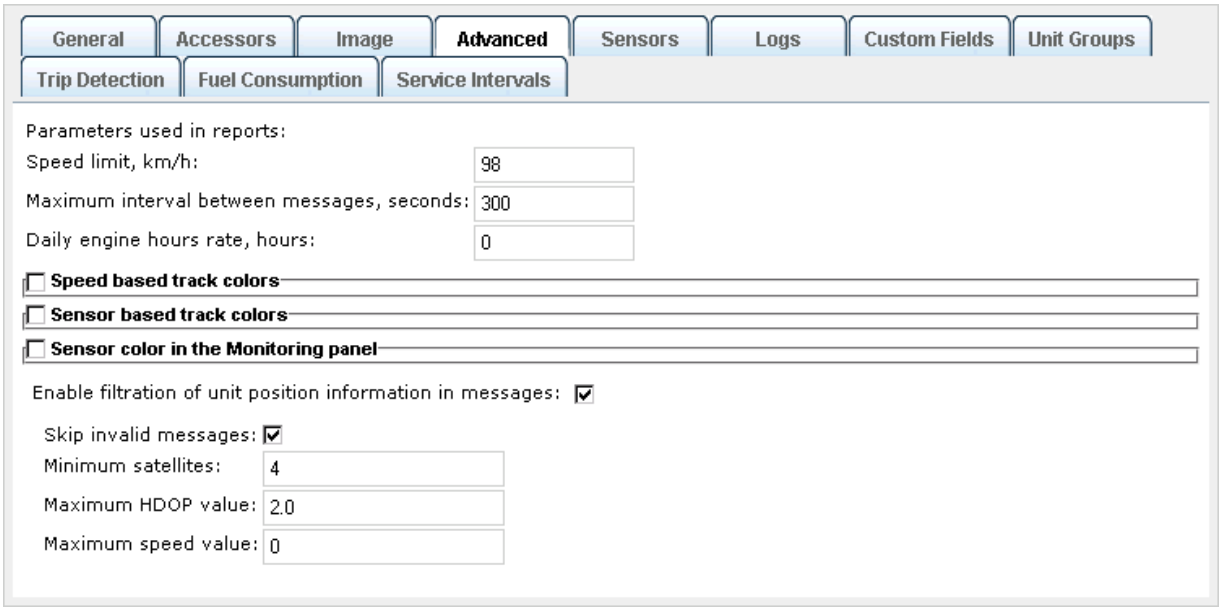
On this tab messages validity parameters are defined, colors for tracks are adjusted, and speed limitations are set.

Speed limit

Enter the maximum speed allowed. All messages with higher speed will be detected as cases of violation and exported to the report on speedings.

Maximum interval between messages

Maximum interval between messages (in seconds) is needed to exclude invalid messages. When the indicated value is exceeded it is regarded as connection loss (GSM). These cases can be viewed in the report on connection quality.



Daily engine hours rate

If the unit has an engine hours sensor, here you can indicate the daily rate of engine hours to use this value in the corresponding report.

Speed based track colors

This feature is used to draw unit tracks in the Tracks panel, in the Messages Mode, and in the reports. If this option is activated, track colors will depend on unit speed. If not activated, one color is applied to the track regardless the speed.

Enter pairs Speed/Color separating them by ';'. For example, if '0 ff0000; 60 cc0000ff' is entered the track consisting of messages with speeds form 0 to 59 km/h will be displayed in red color, over 60 km/h - in blue.

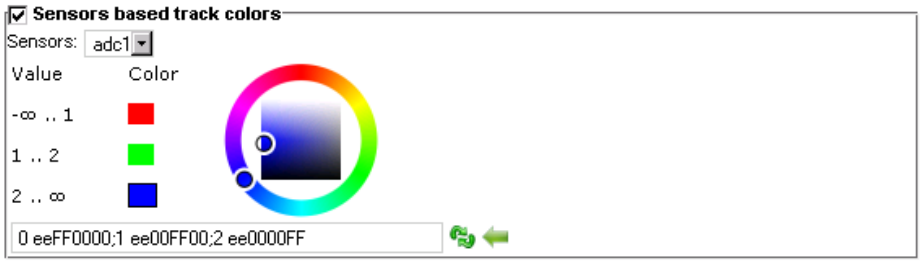
To set a color you can use also a color panel on the right of the table of speed and colors. To activate the panel, click on any colored rectangle.

To apply settings push **Refresh** .

To restore default colors push **Reset to default** .

Sensor based track colors

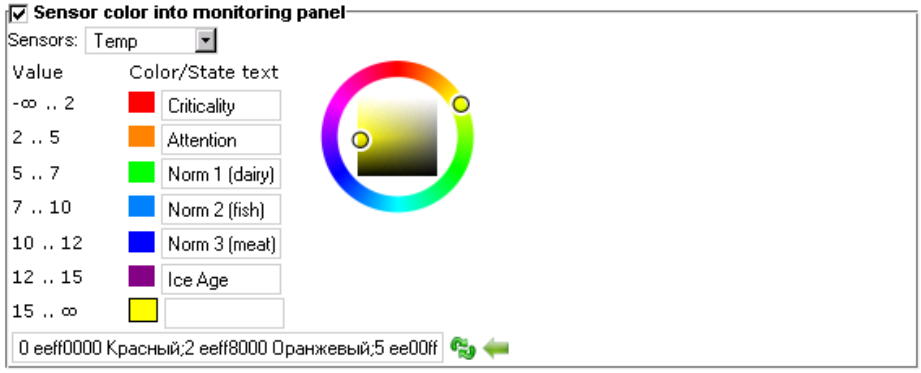
The track can be drawn in different colors according to a sensors values. Choose a sensor to be taken into account. Then define sensor values and colors corresponding to them in the same way as for speed based track colors.



Sensor color in the Monitoring panel

It is possible to visualize sensor state on the monitoring panel in the appropriate column that is activated in User settings => Monitoring panel.

Value intervals and colors are set in the manner as for track colors. Besides, you can enter description for each interval. These descriptions will be used in popup windows for the Sensor Value column in the monitoring panel. If no description is assigned here, the exact value will be displayed in the popup window.



Enable filtration of unit position information in messages

All messages without any exception are stored in the system. However, if having outlying data, it can affect reports and other processes based on database analysis. That is why, it is recommended to enable filtration of data. For example, if there are outlying data, messages without coordinates, etc, these messages can be marked as invalid and ignored when generating reports, calculating mileage, and so on. To adjust filtration settings, fill in the fields:

Skip invalid messages
Some controllers may send a flag about coordinates validity/invalidity in messages. A messages with invalid coordinates is marked by the flag of invalidity, and when sending such a message to the server, the current time and the last valid coordinates are given. Wialon will consider this message as a message without position data, and it will be not used when constructing movement tracks, detecting location in reports, etc. However, if this messages contains other parameters (such as sensors values), they will be used.

Maximum speed
The messages which contain the speed higher than set here, are marked as invalid.

Minimum satellites
If the number of satellites locked is lower, the message considered to be invalid. Recommended value is three and more, but some equipment can give correct coordinates beginning form two satellites.

Maximum HDOP value
HDOP refers to Horizontal Dilution of Precision. Here you set the minimum HDOP value for messages to be regarded as valid. The lower this parameter, more accurate the coordinates.

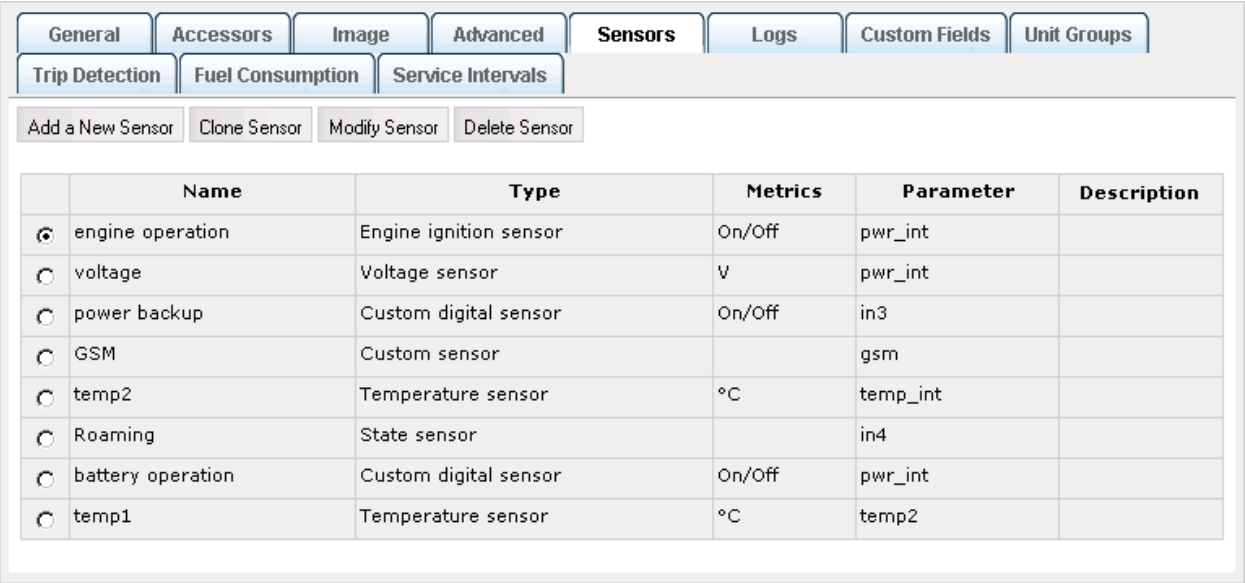
Sensors

Table of Contents

- Sensors
  - Sensor Parameters
  - Calculation Table
  - Calculation Table Wizard
  - Calculation Chart

On this tab sensors connected to equipment are added and configured as well as edited and removed.

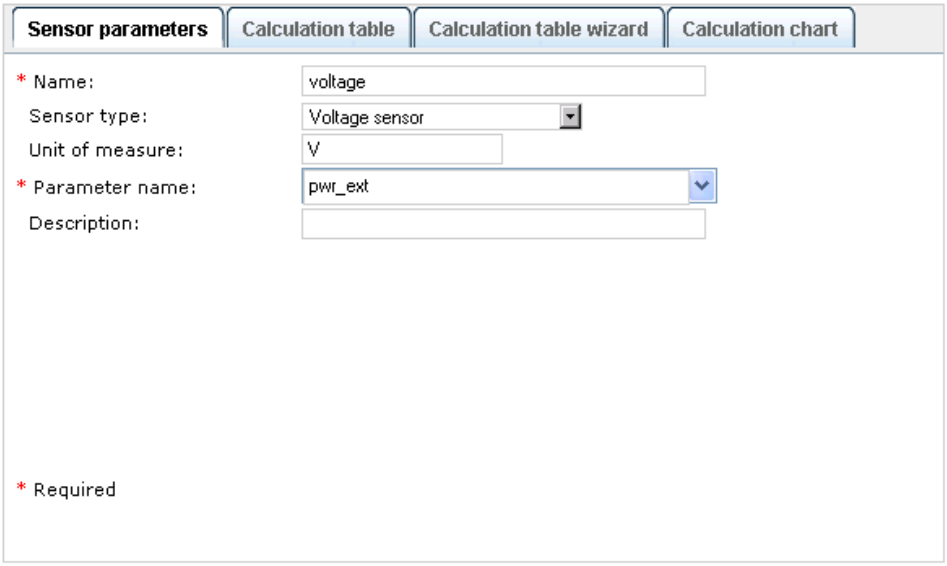
To create a new sensor push **Add a new sensor** button, fill in the fields and press OK.



	Name	Type	Metrics	Parameter	Description
◉	engine operation	Engine ignition sensor	On/Off	pwr_int	
○	voltage	Voltage sensor	V	pwr_int	
○	power backup	Custom digital sensor	On/Off	in3	
○	GSM	Custom sensor		gsm	
○	temp2	Temperature sensor	°C	temp_int	
○	Roaming	State sensor		in4	
○	battery operation	Custom digital sensor	On/Off	pwr_int	
○	temp1	Temperature sensor	°C	temp2	

Sensor Parameters

- **Name**
  Give a name to the sensor. It will be visible.
- **Sensor type**
  Choose the sensor type form the dropdown list of available types.
- **Unit of measure**
  As a rule, possible unit of measure is given. However you can key in your own. This is especially applicable for digital sensors such as engine operation sensor, cargo load sensor or custom digital sensors. Instead of default On/Off values you can key in Activated/Deactivated, “Laden/Unladen”, and so forth.
- **Parameter name**
  This name comes in messages. If the unit already has messages, parameter's name can be picked up from the list of available in the last message.
- **Description**
  This field is optional. Add any description and options if needed.



Digital inputs/outputs and analog inputs are defined in the system automatically. The numeration starts from 1.

inX	digital input parameter
outX	digital output parameter
adcX	analog input parameter

(where *X* is the sequence number of input/output)

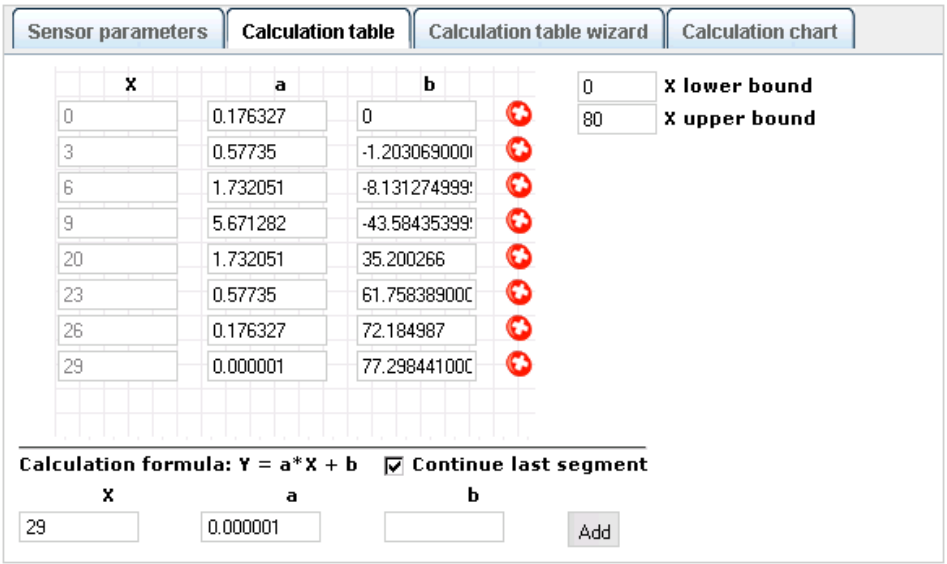
For example, *adc8* is refereed to as parameter which registers the values coming form the eighth analog input.

Calculation Table

For analog sensors it is usually needed to compile a calculation table from the equations of straight line. When a value comes, it is substituted for *X*, and *a* and *b* are taken from the calculation table. As a result *Y* value becomes known. Each row of the table operates only within its segment that is till *X* value on the next row. *X* values cannot repeat.

a coefficient is the tangent of angle (relation of the opposite cathetus to the adjoining one), *a* coefficient is Y-axial displacement. If you use *a* coefficient and want to take into account the previous segment for Y-axial displacement, put the **Continue last segment** flag.

It is possible to get the tangent of angle (that is needed to be substituted for *a* coefficient) using mathematics. To do this, find on *X* and *Y* axes segments of values operation (deltas). Then divide the values **Δy/Δx**. The result value is the tangent of angle.



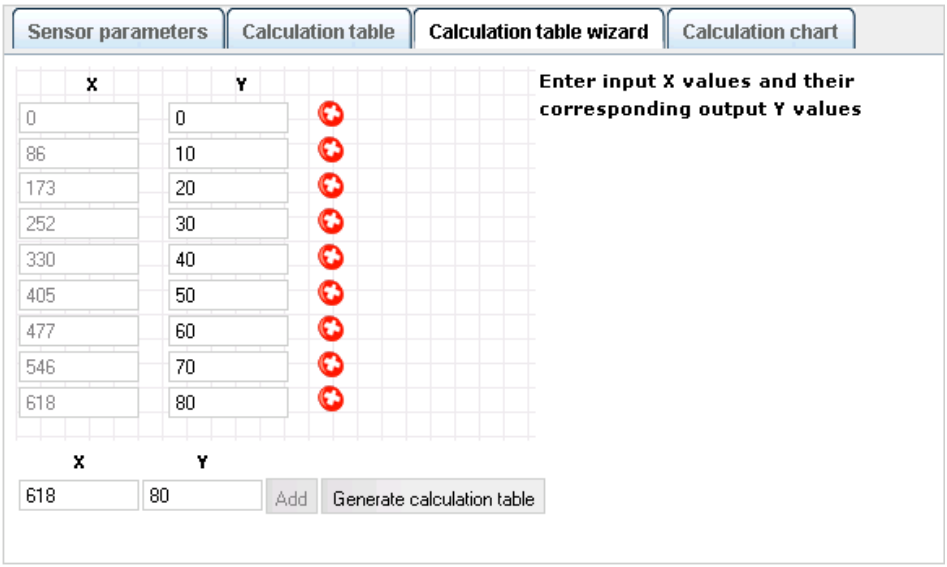
Here you have some examples of how the table can be compiled:

1. Fill in *X* and *b* values, and *a* set as zero. This method is convenient if converting a analogue signal to a digital.
2. Select *Continue last segment* if needed to count Y-axial displacement. Fill in *X* and *a* values. This method is convenient if needed to get a curve knowing the angles.
3. Fill in *X*, *b* and *a* values. Use this method to get the calculation table under your complete control.

Calculation Table Wizard

This way of creating the calculation table if more atomized. Here it is enough to enter input *X* values and output *Y* values. After entering each pair of values, push the **Add** button. Incorrect pairs can be deleted using  button.

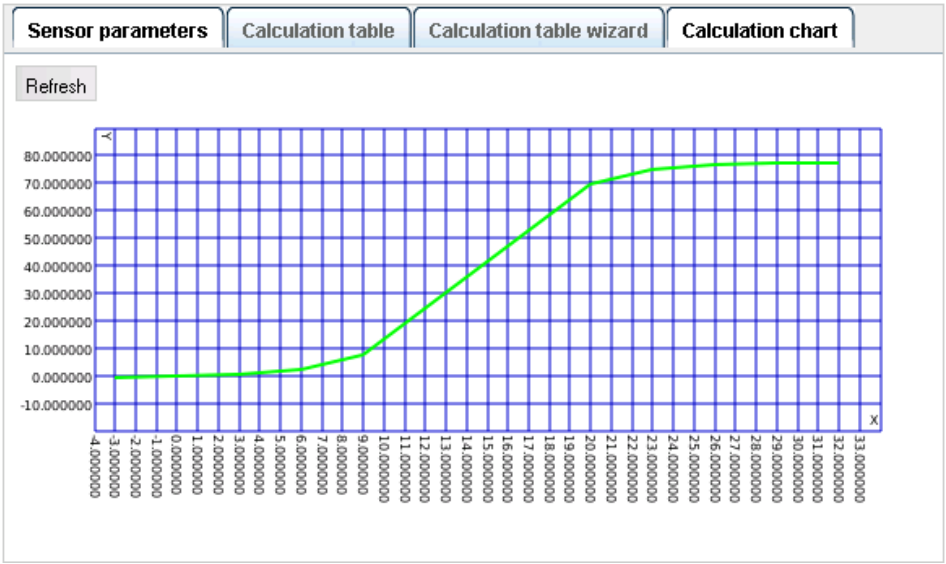
When all values are entered, press **Generate calculation table**. The calculation table in the previous tab will be replaced with new values.



Calculation Chart

The graphic implementation of the created calculation table can be viewed in the **Calculation Chart** tab. Push the **Refresh** button to build the chart on the basis of your calculation table.

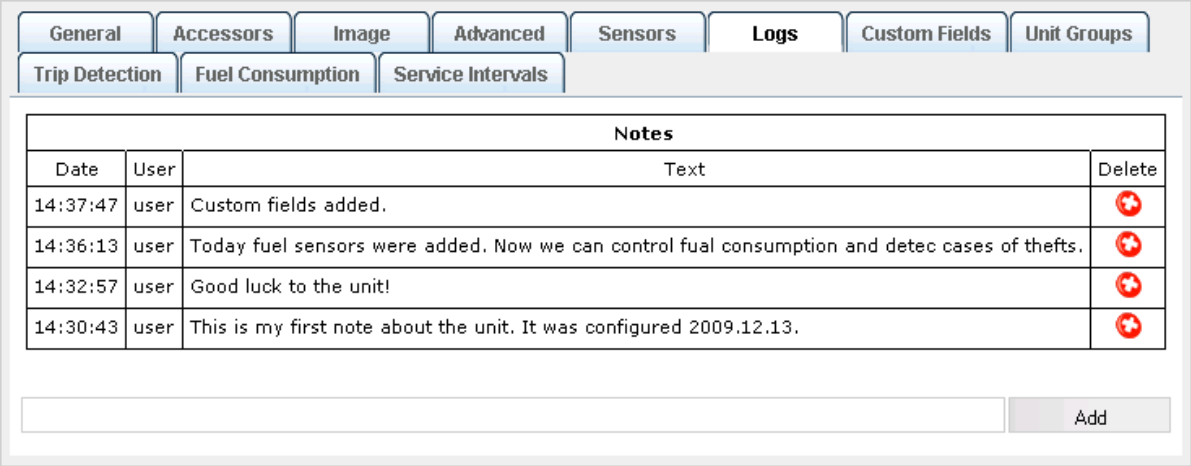
The function continue operating to infinity if there is no limitations. The chart extends also to the left to minus infinity. If there are limitations, the chart expands quarter-size to both sides right and left.



Logs

Here you can enter any custom notes about your unit. To add a note, type in and press Add. In the list of notes you see:

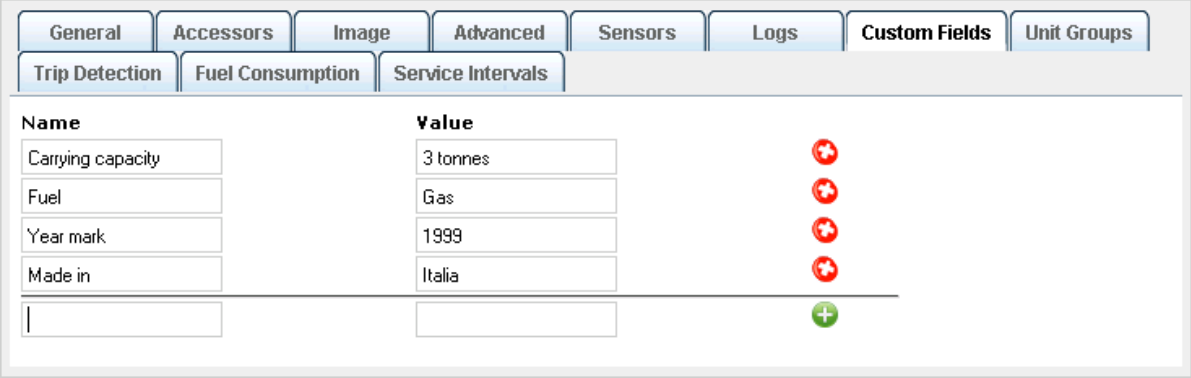
- **date** and time when the note was added;
- **user** who added the note;
- **text** for the note;
- **delete** button.



Custom Fields

Custom fields can be added to register additional information of any type. This can be some notes or precisions about the equipment, vehicle or any other information needed.

Key in a field name and its value and press the **Add** button. To delete a field press **Remove**.

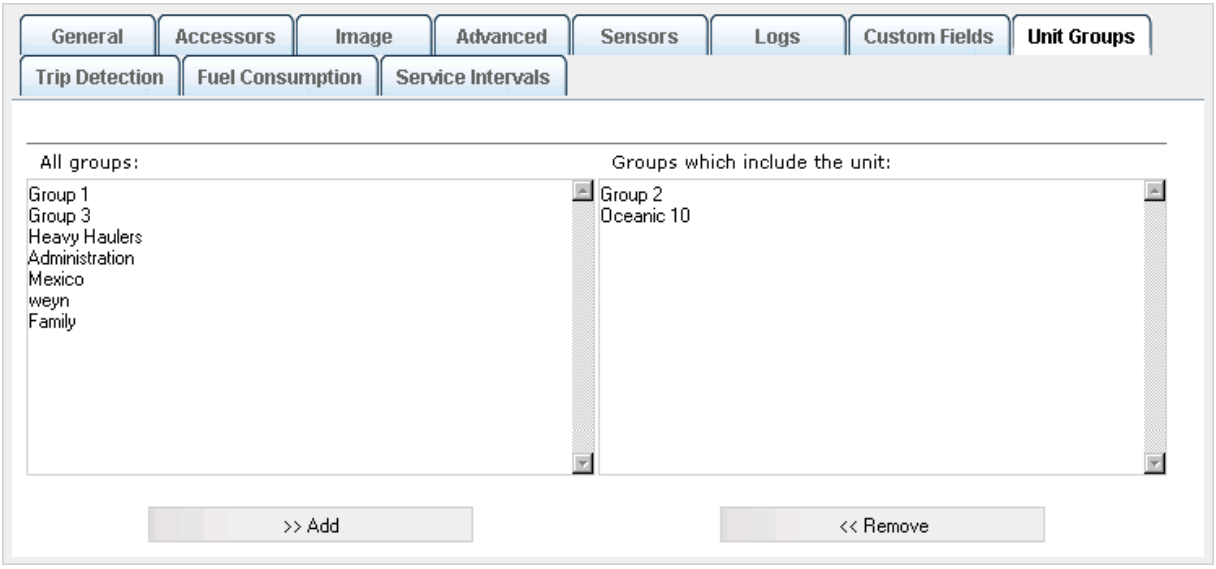


When the next time you will open unit properties dialog, the entered fields will be alphabetized. The same will happed when displaying custom fields in unit info tip and in statistics of reports.

Groups

On this tab you can view whether the unit is included in some group or not. You can also see the list of all existent groups and include the unit to one or several groups if needed.

To include/exclude the unit in/from groups, use the appropriate buttons **Add** and **Remove** or double-click on a group in the appropriate list.



Trip Detection

Table of Contents
- Trip Detection
  - Movement Detection
  - GPS Correction

Here you define parameters to detect trips and stays. Trip is a period of time when a unit was moving. Stay is a period of time when a unit was motionless.

Depending on the equipment installed and the parameters set on this tab the reports on movement intervals (trips) and idles (stops, parkings) can be rather different.

Movement Detection

There are five main methods of how movement intervals are detected:

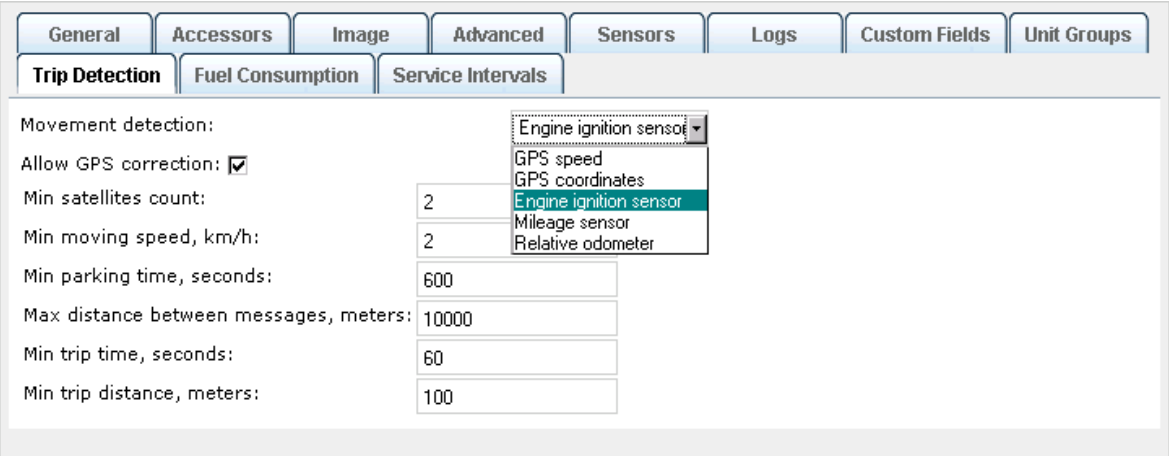
1. **GPS speed**
   This method is universal and can be applied to any device type and configuration. The parameters of this method are described below.

2. **GPS coordinates**
   This method is universal as well. The movement is detected if the coordinates in two successive messages are different. The fact is that some equipment types do not provide speed parameter in messages. In this case, movement can be detected by coordinated without installing additional equipment.

3. **Engine ignition sensor**
   This method is available for units having ignition sensor. If so, the trip begins when the sensor is switched on and ends when the sensor is switched off. Besides, GPS correction can be added.

4. **Mileage sensor**
   This method can be used for units which have a mileage sensor. The sensor transmits the absolute mileage. The beginning of a trip is detected when the mileage value increases, and the end is detected when mileage value stops to grow. Here GPS additional correction is also available.

5. **Relative odometer**
   shows what distance was rolled from the previous message. Note that 'Minimal movement speed' parameter must be '0'.



In all cases you can additionally use GPS correction to receive more precise data in reports.

GPS Correction

To activate GPS correction of data put a check mark near **Allow GPS correction**.

- **Minimum satellites count**
  It means how many satellites are needed to consider data to be valid. Recommended number is three and more, but two are enough for some types of equipment.

- **Minimum moving speed**
  Specify which speed should be considered as the beginning of the motion. This is needed to exclude adjustment of data. The equipment can locate coordinates with an accuracy of ±10, so a speed of 1-2 km/h can be assigned to the unit which is not moving in fact. To exclude such cases from the trips, set

this parameter.

- **Minimum perking time**
  Set time in seconds how long the unit should be immovable to register this as a parking. This option allows excluding stops in traffic jams, at a lights or at an intersections.

- **Maximum distance between messages**
  Indicate the distance in meters to exclude adjustment of data. It means if according to the message received the unit moved relatively to the previous message greater distance, then the previous trip is over and a new trip begins.

- **Minimum trip time**
  This is also to exclude cases of adjustment of data. For example, the unit on the parking moved from one place to another, and movement during 40 seconds was detected. To exclude such cases from trips, set minimum trip time (in seconds).

- **Minimum trip distance**
  This is a similar parameter. But here you indicate the minimum trip distance (in meters). For example, the car is parked, and the device sends coordinated according to which the car has moved a couple of meters. It can happen because of permissible equipment error. In order to not count such situation as movement, indicate how far the unit have to move to consider it as the start of a trip.

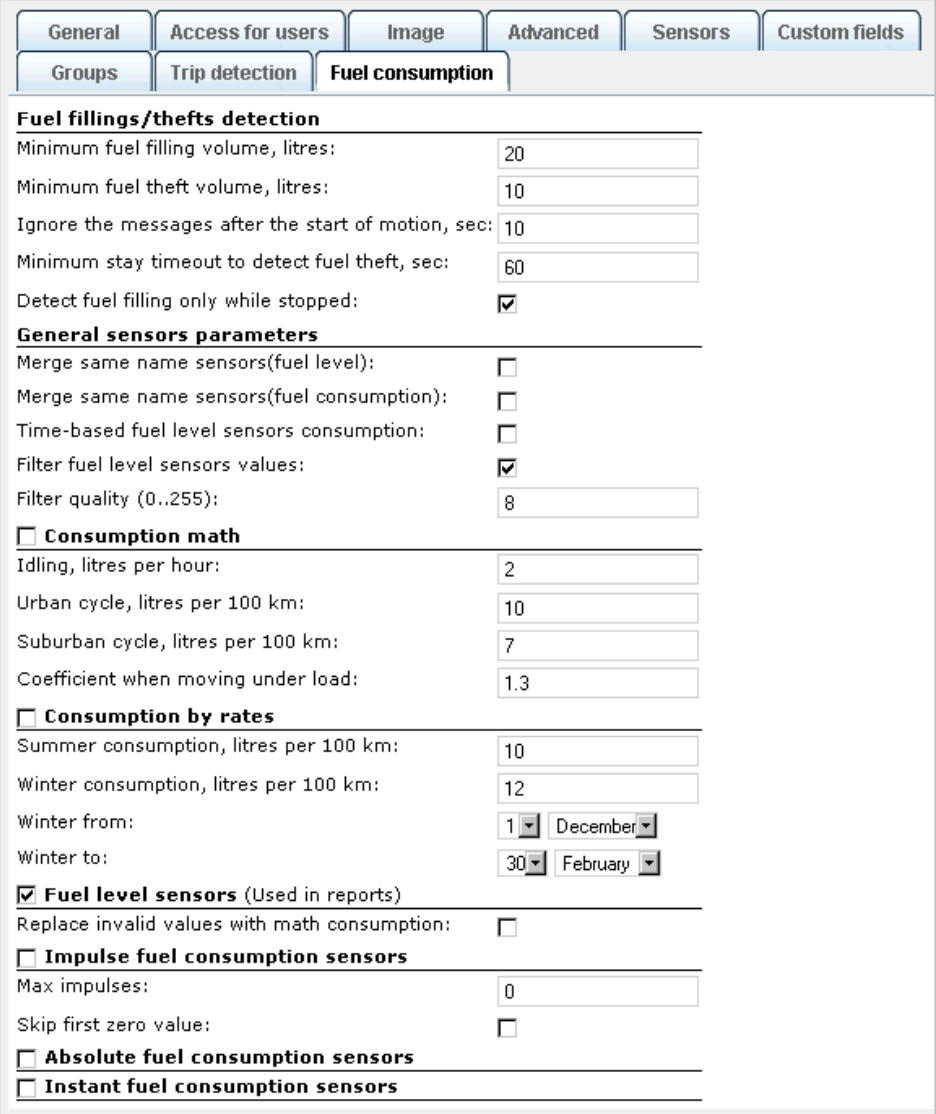
Fuel Consumption

Table of Contents

- Fuel Consumption
  - Fuel fillings/thefts detection
  - General sensors parameters
  - Consumption Math
  - Consumption by rates
  - Fuel level sensors
  - Impulse fuel consumption sensors
  - Absolute fuel consumption sensors
  - Instant fuel consumption sensors

Wialon has instruments to calculate fuel level and fuel consumption. Parameters to calculate fuel and calculation method itself are set on this tab.

Fuel fillings and thefts can be detected only if unit has fuel level sensors. Fuel consumption calculation will be more accurate if unit has fuel consumption sensors, however it can be calculated with mathematical method.



Fuel fillings/thefts detection

Minimum fuel filling volume: how considerable should be increasing of fuel level to be regarded as a filling.

Minimum fuel theft volume: how considerable should be fuel level fall to be regarded as a discharge. This is activated only when the unit is stationary.

Ignore the messages after the start of motion, sec. At the very beginning of movement the data on fuel level can not accurate, so you can ignore these messages.

Minimum stay timeout to detect fuel theft, sec: how long should continue a stay accompanied with fuel level decreasing to be regarded as fuel theft.

Detect fuel filling only while stopped. If activated, the volume of filling registered can be fewer. In this case, fuel level before filling is taken from the messages with zero speed only.

General sensors parameters

Merge same sensors values (fuel level). If there are several fuel level sensors, their values can be summed. If this feature is not activated, the search of fillings/thefts is done for each sensor separately.
Attention! If a message contains no value of a sensor, this message is ignored in calculations.

Merge same sensors values (fuel consumption). If a unit has several engines and absolute fuel consumption sensors or impulse fuel consumption sensors are installed, this feature is useful. The values from different sensors will be summed (the sensors must have the same names). If the option is not activated, each sensor is controlled separately.

Time-based fuel level sensors consumption. This option is useful for non moving units. As a rule, fuel consumption is calculate by mileage, but it can be calculated by time as well (for hoisting cranes, for example).

Filter fuel level sensors values: apply smoothing algorithm for sensors. If marked, set also **Filter quality** (from 0 to 255). The greater this parameter, the smoother are the charts.

Consumption Math

This is a purely mathematical method of calculate fuel consumption (no sensors are required). To use this method, the following parameters should be set:

- **Idling, litres per hour**: fuel consumption when staying with engine on;
- **Urban cycle, litres per 100 km**: fuel consumption when moving with a speed less than 36 km/h;
- **Suburban cycle, litres per 100 km**: fuel consumption when moving with a speed more than 80 km/h (fuel consumption at speed between 36 and 80 km/h is calculated in direct proportion of urban cycle to suburban cycle);
- **Coefficient when moving under load**: the impact of loading on fuel consumption (if there are several lading sensors their values are summed up).

Consumption by rates

This is also a mathematical method. If the previous method takes account of speed and load, this method considers the season (winter/summer time). Specify the following parameters:

- **Summer consumption, litres per 100 km**: the rate of fuel consumption in summer time.
- **Winter consumption, litres per 100 km**: the rate of fuel consumption in winter time.
- **Winter from/to**: winter time period.

Fuel level sensors

Fuel consumption is defined from fuel level in the tank where fuel level sensors are installed. The difference between the average values at the beginning and at the end of the period is calculated.

Impulse fuel consumption sensors

The readings are taken from impulse fuel consumption sensors. A sensor of this type needs a calculation table to convert impulses to liters. If there is a limit after which impulse counter is zeroed, this limit can be specified (*Maximum impulses* field). However, with such a limit, in case of abnormal reset, the further calculations become senseless. In such a case, the limit must be 0.

Absolute fuel consumption sensors

The readings are taken form absolute fuel consumption sensors. The calculation table is applied to each sensor separately, and then the difference between transformed sensor values in two consecutive messages is calculated. You may need to add a coefficient to get more precise values. Then add to the calculation table the following entries: *X:0, a:coefficient value, b:0*. For example, to increase fuel consumption level for 10%, *a* coefficient must be *1.1*.

Instant fuel consumption sensors

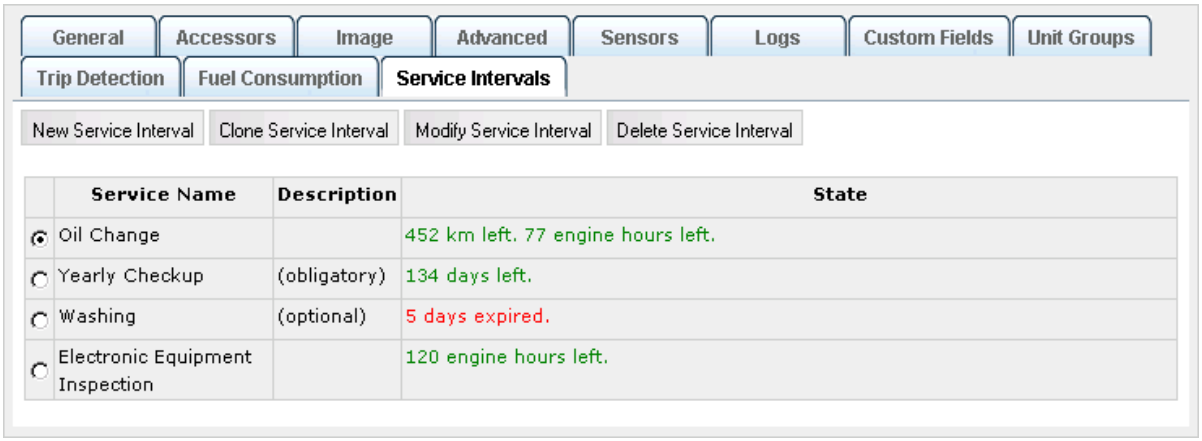
The readings are taken from instant fuel consumption sensors. It calculated how much fuel has been consumed since the previous message. Thus, unlike other fuel sensors, there is no connection between consecutive messages.

ATTENTION!
Fuel can be calculated by one selected and available method or using several methods at once (you can choose even all methods if there are enough sensors). However, using many methods can make your reports too large and complicated for reception and interpreting data. That is why it is recommended to choose one or two methods which fit better to a unit, its equipment type, configuration and operation conditions.

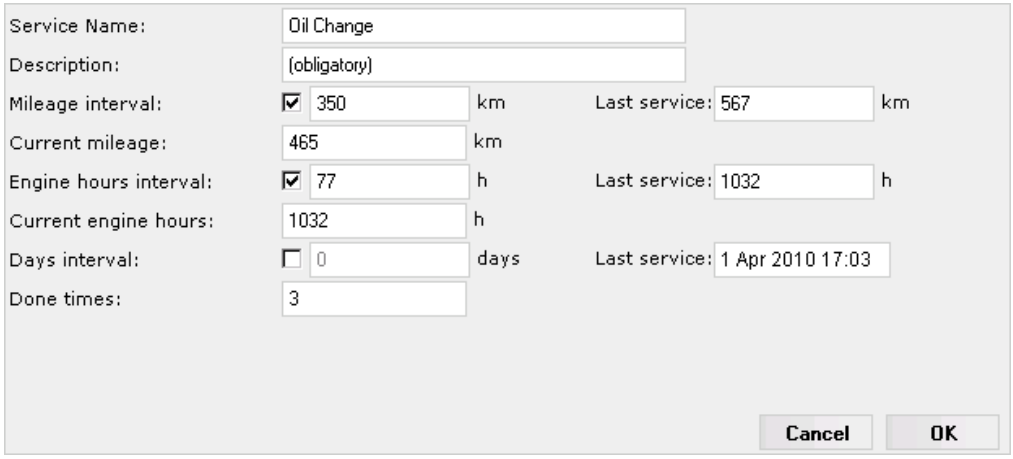
Service Intervals

In this tab you define maintenance intervals to perform all needed for your unit routine servicing in time. These can be oil change, yearly checkup or just a washing.

In the list you see the name of each interval, its description (if available) and the state - how much days, engine hours or kilometers has left or are already expired to do this service. Depending on the state (time left or expired), the lines are red or green.



To add a new service interval, press **New Service Interval** button. Then enter necessary parameters: name, description, interval and last execution time.



Three ways to indicate an interval are possible:

- **Mileage interval** means that the service must be done every *n* number of kilometers travelled.
- **Engine hours interval** means that the service must be done every *n* number of engine hours.
- **Days interval** means that the service must be done every *n* number of days.

You can simultaneously choose several interval types at once, and each of them will be calculated independently. That is the term by days cab by expired, but by mileage the term has not passed yet.

When choosing an interval, indicate which counter value (or day) was when this kind of service was made the previous time. Enter this value into the **Last Service** field. For your convenience, the current values of the counters are indicated below.

Attention.
Check your counters properties on the General tab, do not forget to mark the Auto checkbox.

Done times: here you indicate how many time this kind of service was already done. This number can be entered into this field manually or changed automatically when registering a service of this kind. Besides, after registration the time of the Last Service changes, and the count of days/kilometers/engine hours will be zeroed and started again.

At the end press OK. The newly created service interval will appear on the list. To manage intervals, use the following buttons:

- **New Service Interval** opens a dialog to create a new service interval and set parameters for it.

- **Clone Service Interval** opens a dialog with all parameters of the selected interval. You can edit these parameters and save the interval under another name.
- **Modify Service Interval** opens a dialog to view and/or edit the interval.
- **Delete Service Interval** deletes the selected interval.

Unit Properties Export/Import

Table of Contents

- Unit Properties Export/Import
  - Import Settings from File
  - Export Settings to XML File
  - Export Settings to Unit

Export option is useful when you have several units with similar equipment. You adjust these settings just once and then export them to other units.

Export to unit allows to copy several properties of the current unit to other existing unit(s).

Export to file allows to store several properties of the current unit to a text file (XML) that can be used at any time when configuring new units.

Import from file is used to transmit needed properties from a previously saved XML file to a unit.

Import and export are executed in the **Units** panel where a special menu of import/export exists:

import settings from a file to the current unit
(this button is not displayed if you have no *view* or *manage* access to the unit),

export the current unit settings to a file,

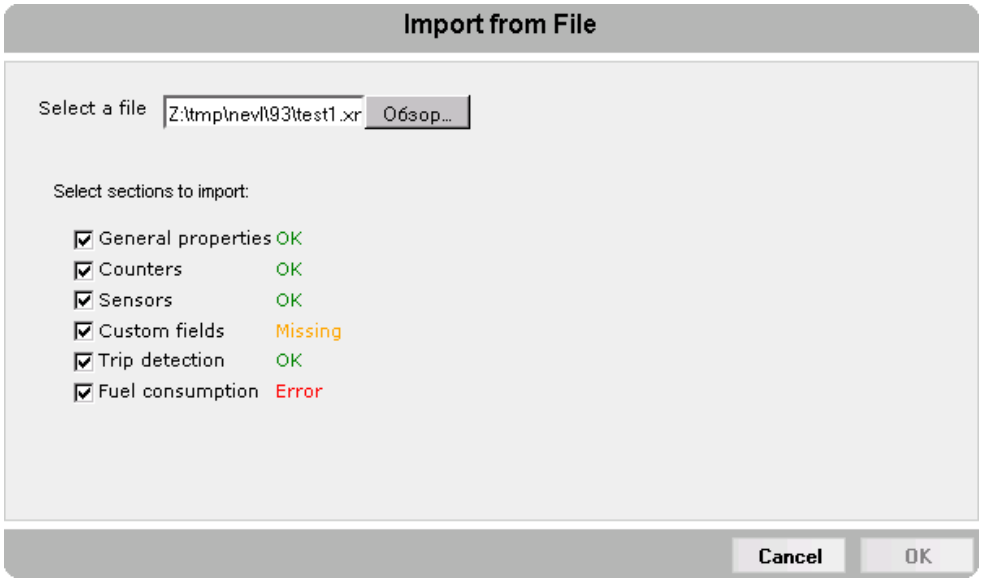
export the current unit settings to other unit(s).

The settings which can be saved, exported and imported are: General tab (including counters), sensors, custom fields, trip detector and fuel consumption.

Import Settings from File

Settings previously saved to an XML file can be imported to a unit. To do this, in the import/export menu select the option **Import from file**, choose a file on the disk, check needed settings and press OK. The result will be shown right in the dialog:

- "OK" - the section has been imported successfully;
- "Missing" - the source file does not contain such section at all, so this section in the destination file will remain untouched;
- "Error" - this section cannot be imported because of some file error.



After that you can press Cancel to finish the import operation or select another file and import settings from it.

To make import to a unit, you need to have *edit* or *manage* access rights to this unit.

Unit properties from file can be imported to several units at once - see Unit Groups.

Export Settings to XML File

Unit settings can be stored to a file. It gives possibility to create templates of unit configuration. Afterwards, the settings stored can be wholly or partly imported to new units of a similar kind which considerably facilitates unit creation.

To export unit properties to file, choose the option **Export to file**. Depending on browser settings, you will be asked to open or save the file. File format is XML. Here is an example of such a file:

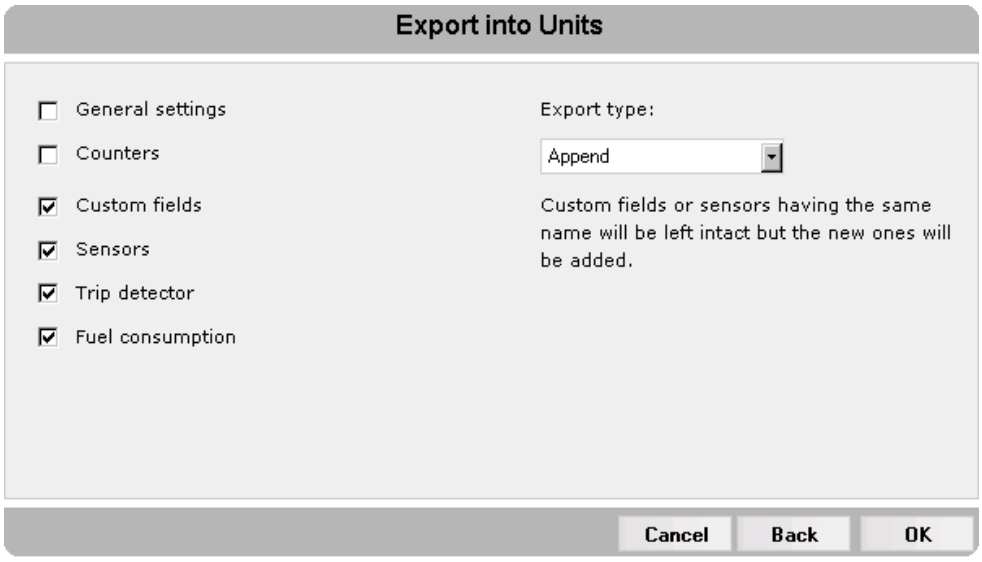
```
<devices>
	<device name="0025 МАЗ АА 7904-4" type="CAP WP AVL" unique_id="2888888108">
		<custom>
			<field name="Математический расход топлива" value="0 18 16.2"/>
			<field name="Новые коэф. с загрузкой" value="22.2 и 20"/>
			<field name="0025" value=""/>
		</custom>
		<fuelc>
			<absolute active="false"/>
			<impulse active="false" impulses="0" skip_first_zero="false"/>
			<instant active="false"/>
			<level active="false" correct_invalid_values="false"/>
			<math active="true" coefficient_when_loaded="1.3" idle="3.0" suburban="20.0"
urban="22.2"/>
			<rates active="false" summer_consumption="10.0" summer_idle="2.0"
winter_begin_day="1" winter_begin_month="11" winter_consumption="12.0" winter_end_day="30"
winter_end_month="1" winter_idle="3.0"/>
			<general filter_level_values="true" filter_quality="5"
merge_consumption_sensors="true" merge_level_sensors="false" time_based_calculation="false"/>
			<theft detect_fill_when_stopped_only="true" fill_volume="20.0"
ignore_stay_timeout="10.0" theft_timeout="60.0" theft_volume="10.0"/>
		</fuelc>
		<sensors>
			<sensor name="зажигание" parameter="in1" type="engine operation" unit="Вкл/
Выкл"/>
			<sensor name="Уровень топлива в баке." parameter="adc2" type="fuel level"
unit="litres">
				<ctable>
					<row a="0.0" b="-348201.3876" x="0.0"/>
					<row a="16.666667" b="-16.666667" x="1.0"/>
					<row a="10.309278" b="-6.494845" x="1.6"/>
					<row a="11.363636" b="-9.204545" x="2.57"/>
					<row a="11.764706" b="-10.588235" x="3.45"/>
					<row a="12.658228" b="-14.43038" x="4.3"/>
					<row a="11.627907" b="-9.186047" x="5.09"/>
					<row a="12.048193" b="-11.686747" x="5.95"/>
					<row a="11.494253" b="-7.931034" x="6.78"/>
					<row a="11.904762" b="-11.071429" x="7.65"/>
					<row a="11.235955" b="-5.393258" x="8.49"/>
					<row a="11.904762" b="-11.666667" x="9.38"/>
					<row a="10.869565" b="-1.086957" x="10.22"/>
					<row a="10.526316" b="2.736842" x="11.14"/>
					<row a="0.0" b="-348201.3876" x="11.3"/>
				</ctable>
			</sensor>
		</sensors>
		<tripd gps_correction="true" lock_to_roads="true" message_distance="10000"
moving_speed="2" satellites="3" stay_time="300" trip_distance="100" trip_time="60" type="3"/>
	</device>
</devices>
```

Export Settings to Unit

The fastest way to export unit properties is to export them right from one unit to another (others). Select the option **Export to unit**, in the list select choose unit(s) to export settings to. In the next page indicate which settings must be exported: general settings, counters, custom fields, sensors, trip detector and/or fuel consumption. At the end press OK.

If there are sensors or custom fields among selected sections, you need to indicate **export type** choosing it from three options:

- **Replace**: custom fields and sensors will be replaced completely.
- **Merge**: custom fields or sensors having the same name will be replaced and the new ones will be added.
- **Append**: custom fields or sensors having the same name will be left intact but the new ones will be added.



Sensors Types

How to create a sensor, see Sensors. Below is the list of sensor types which can be created:

Sensor type	Metrics	Description
Impulse fuel consumption sensor	-	The sensor shows fuel consumption over a period of time and presents this data number of impulses. Such sensors usually have a limit after which they are zeroed. The calculation table must be compiled to make it possible to convert impulses to liters. The sensor is needed to make reports on fuel consumption when the calculation method is 'Impulse fuel consumption sensor'.
Absolute fuel consumption sensor	liters (lt)	The sensor detects fuel consumption over all period of vehicle operation. The sensor is needed to make reports on fuel consumption when the calculation method is 'Absolute fuel consumption sensor'.
Instant fuel consumption sensor	-	The sensor shows fuel consumed from the previous measure (message). The sensor is needed to make reports on fuel consumption when the calculation method is 'Instant fuel consumption sensor'.
Fuel level sensor	liters (lt)	This sensor is placed in the tank. The sensor is needed to make reports on fuel consumption when the calculation method is 'Fuel level sensor'.
Fuel level impulse sensor	liters (lt)	The sensor detects the number of impulses in a period of time. Fuel level in the tank is calculated from receives values.
Temperature sensor	Celsius degrees (°C)	The sensor showing some parameter value (not necessary temperature). It can be used to analyze input data.
Engine RPM sensor	rounds per minute (rpm)	The sensor displays engine speed.
Engine operation sensor	On/Off	This is ignition sensor that is used in the report on engine hours as well as in trips/stays detection.
Cargo load sensor	On/Off	The sensor that shows whether a vehicle is laden or unladen. It can be also used as enlarging coefficient in the reports on fuel consumption where 'Mathematical' method of calculation is chosen.
Voltage sensor	volts (V)	The sensor showing some parameter value (not necessary voltage). It can be used to analyze input data.
Custom digital sensor	On/Off	This sensor can register two states. Its values can be displayed in unit info tip or sent to report.
Custom sensor	any	This is a custom sensor for which you can set any unit of measure. Its values can be displayed in unit info tip or sent to report.
Mileage sensor	kilometers (km) or miles (mi)	The sensor showing the distance travelled. It can be used to detect trips and stays.
Relative odometer	kilometers (km) or miles (mi)	The sensor shows the distance travelled since the previous message. It can be used to detect trips and stays.
Engine hours sensor	hours	The sensor registers the total amount of engine hours.
State sensor	custom	This sensor can show unit state like busy/free or busy/free/free soon, etc.
Counter	number	The sensor can show passenger traffic or count the number of some actions like opening/closing the door, etc. Several calculation methods can be applied to these sensors: instant (counts the number from the previous to the current message), differential (shows total number), differential with overflow (2 bytes), switcher from OFF to ON (counts the number of activations), switcher from ON to OFF (counts the number of deactivations).

Unit Groups

Table of Contents

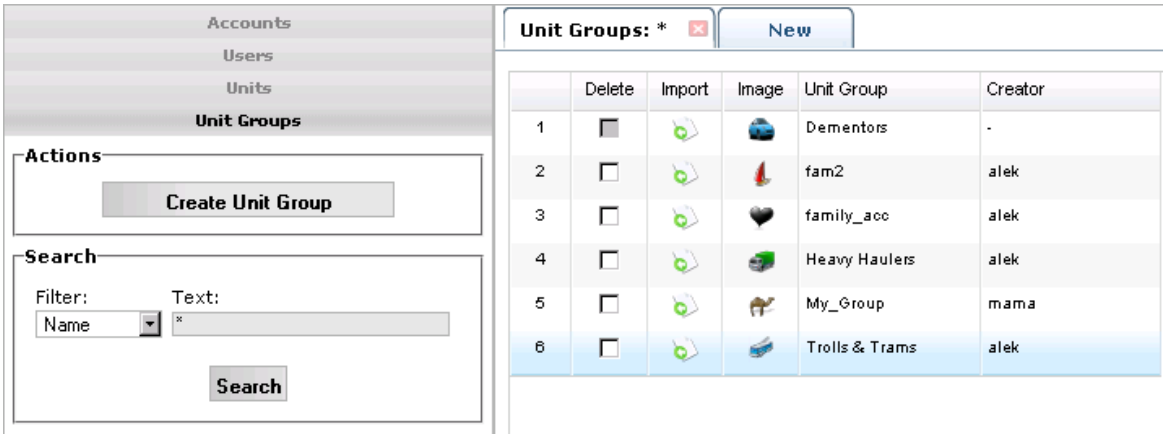
- Unit Groups
  - Creating a Group
  - Groups Management

Unit group is a unity including several units which have something in common. It is convenient to use unit groups to assign access rights to users.

To work with groups of units, choose **Unit Groups** in the navigation panel on the left of the window.

Here you can:

- Create a new group.
- Find existent groups.
- View or edit their properties.
- Define access rights to groups of units.
- Import unit properties to a group of units.
- Remove unit groups from the system.



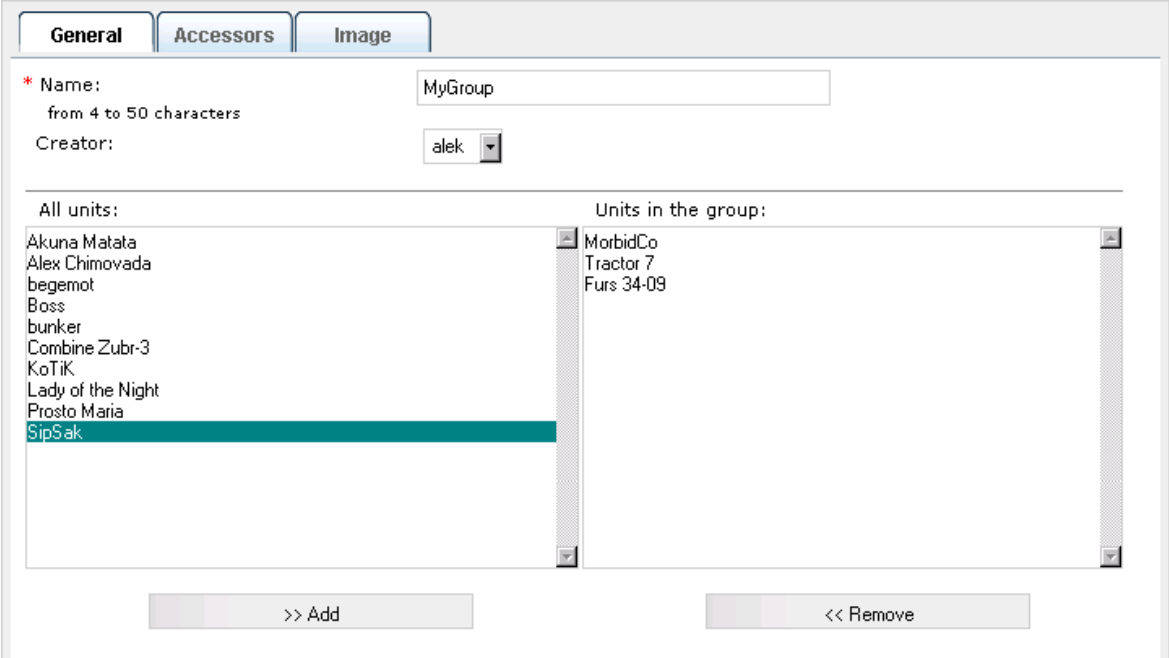
Creating a Group

To form a group of several units, press **Create Unit Group** button. Fill in the dialog and press **OK**.

General

Give group a name no less than 4 characters. Select creator from the dropdown list. Then add units to the group. On the left there is a list of all units available. On the right there is a list of units in the group. To add a unit to the group, double-click on it or push the **Add** button. To remove a unit from the group, push **Remove** or double-click on the unit in the right column.

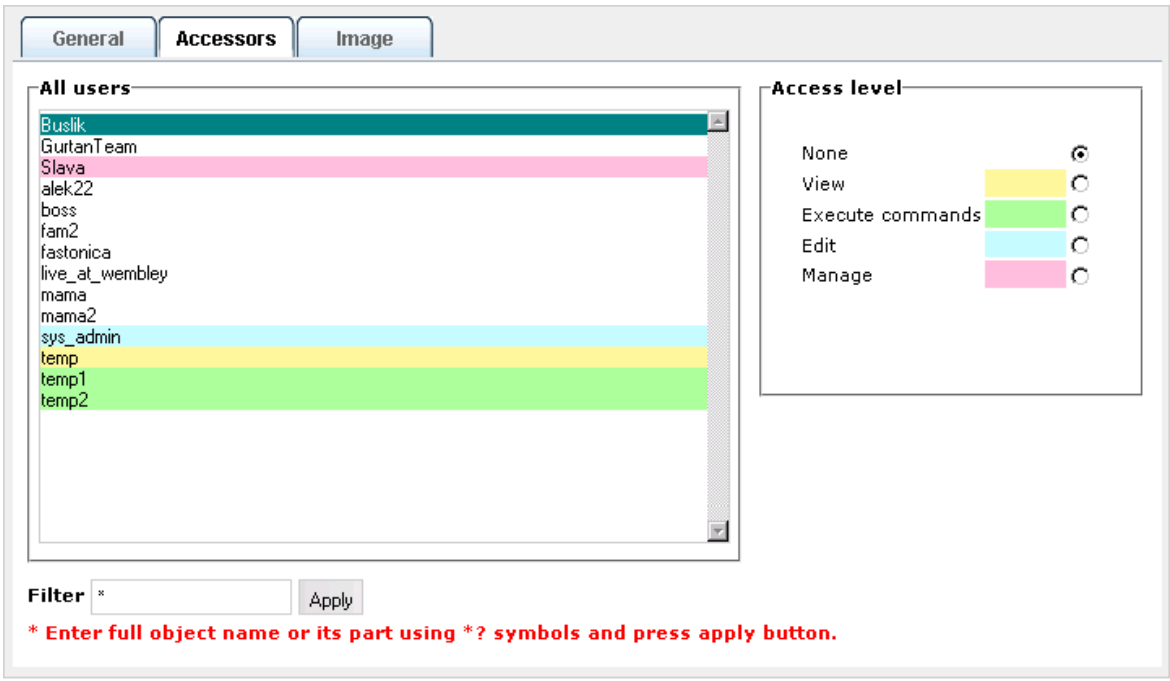
You can add and remove only units to which you have *manage* access.



Access for users

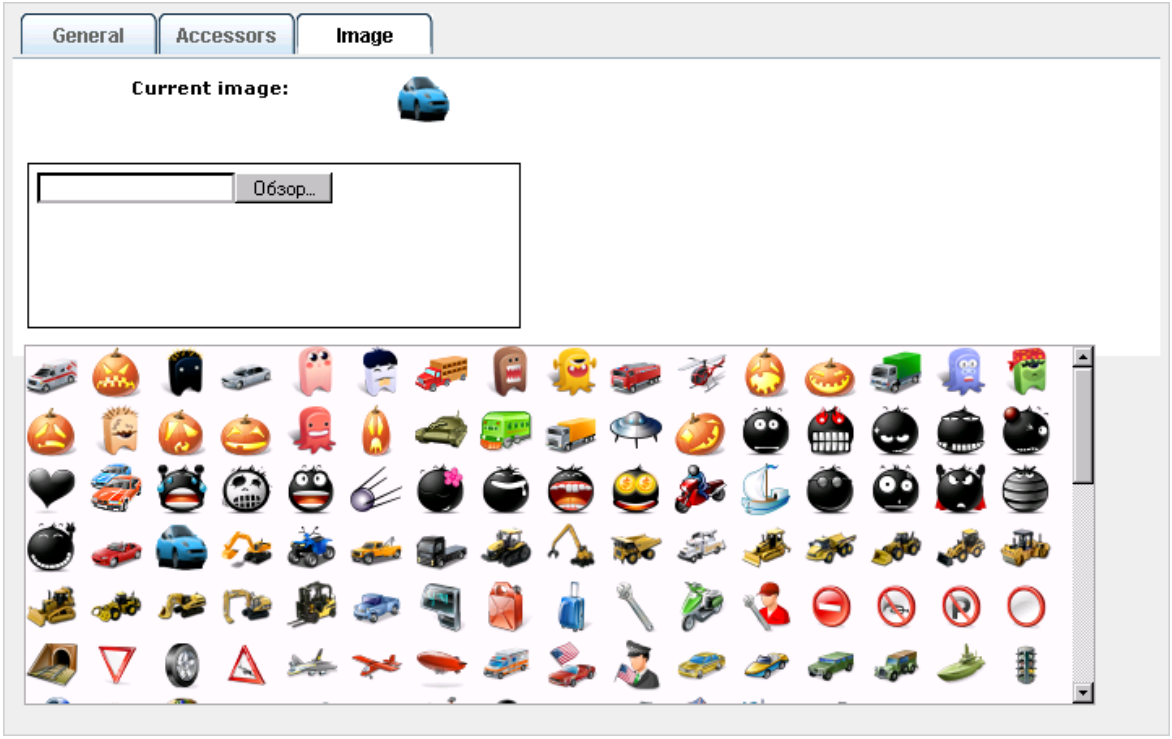
Access level to the group can be assigned to each user individually. On the left there is a list of users available. Click on a user name and select access level for this user on the right. Several items can be selected at once using **<shift>** and **<ctrl>** keys. The rights assigned are marked by the corresponding background color. Access levels description...

Access rights set here are applied to all units in group. However, if a higher access level is set for a unit in the individual way, it will remain. In other words, groups are appplied to enlarge rights but not to reduce rights.



Image

Attach an image to the group. It can be selected from the set of standard images (**Image Library** button) or load your own image (**Browse** button).



Note.
The other way to create a new group is to make a copy of an existing group and edit it. This feature is aimed to speed up the process of creating objects. Click on a group holding down the <ctrl> key. In the *Create Unit Group* dialog edit group information (name, units included, image, and other properties). Save the group by clicking **OK**.

Groups Management

Search & Display

To view created groups in the results panel and proceed the work with them, specify the corresponding search parameters. How to fulfil a search...

In the table you see the group's image, its name and creator, and import button. Learn more about managing tables...

View & Edit

When clicking on a group, you can see group properties and change them if necessary (image, units included, access, and other).

Delete

To delete a group (*manage* access needed), check it and press the delete buttom below . See Deleting Objects for details.

Deleting a group does not mean deleting units which were included to this group.

Import Settings from File

Unit properties previously saved to an XML file can be imported to several units at once if these units form a group. To import properties, press the Import button against the needed group. In the dialog check the units to import settings to and press Next. Then select a file, check needed sections and press OK. The result will be displayed in the same dialog. Details...