

**DMA**  
**RADIUS MANAGER**  
**BILLING SYSTEM**

**USER MANUAL**

version 4.1



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## FOREWORD

DMA Radius Manager is an easy to use RADIUS and DOCSIS provisioning system. It is suitable for ISPs, Internet cafes, airports and other places where public Internet access is available. The system is running on Linux OS, utilizing a very stable *FreeRadius 2.x* RADIUS server with MySQL database backend. The integrated software components ensure high stability and reliability.

### Basic features:

1. RADIUS authentication, accounting (PPPoE, PPTP, L2tP, Hotspot)
2. DOCSIS provisioning (cable modems)
3. Traffic (download, upload, online time) and data rate control
4. Prepaid and postpaid billing, invoicing
5. Payment tracking
6. Financial reports
7. Prepaid card system and IAS
8. Online payments
9. Linu account synchronization (mailbox)

### Special features:

1. Connection Tracking System (CTS)
2. Signal level monitoring (wireless, DOCSIS)
3. Automatic account registration
4. Instant Access Services (IAS)
5. Online payment gateway support
  - PayPal Express Checkout
  - PayPal Website Payments Standard
  - PayPal Website Payments Pro
  - Netcash.co.za
  - Payfast.co.za
  - Authorize.net
  - DPS Payment Express
  - 2Checkout.com

PayPal Express Checkout and Website Payments Standard work with premier and business accounts, but PayPal Website Payments Pro requires US / UK Pro account or better.

### NAS compatibility:

1. **Mikrotik 2.8+**. Use final releases only, RC versions are not recommended. The supported main features are: PPPoE, PPTP, L2tP, Hotspot and Wireless Access List authentication and accounting.
2. **Chillispot** running on Linux or on a DD-WRT device. You can download the tested Linux version from our download portal.
3. **StarOS v2** or **v3** server. Supported features: full PPPoE and partial RADIUS Wireless Access List support.
4. **Cisco NAS**. Correct IOS version is required. VPDN, BBA GROUP and Virtual template support is necessary to accept RADIUS authenticated PPPoE, PPTP and L2tP calls.
5. **pfSense** Hotspot server.

**CMTS compatibility:**

Both routing and bridge mode CMTS devices are supported. A partial list of supported CMTS models:

- **Routing mode:** Motorola BSR series, Cisco UBR series etc.
- **Bridge mode:** Arris series etc.

Please note this is not a CMTS user manual. You can find the configuration details for your CMTS in the manual which has been shipped with your device.

This manual consists of two main parts:

1. **General description**
2. **Reference manual**

To achieve the best results with DMA Radius Manager billing system we strongly recommend to learn this user manual entirely.



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## GENERAL DESCRIPTION

Radius Manager consists of the following main WEB interfaces:

1. **ACP** – Administration Control Panel
2. **UCP** – User Control Panel

There are some more WEB interfaces available in the system:

1. **New user registration** (self registration)
2. **Purchase Instant Access Service (IAS)**
3. **Password recovery**

The **ACP** is available for system administrators and resellers, while the **UCP** is designed for regular users. In the UCP users can check their statistics, payments, refill the balance etc.

In the following chapters You will find detailed information about both Control Panels (CP) and extra functions.



# ADMINISTRATION CONTROL PANEL (ACP)

## Getting started

When You first time use DMA Radius Manager it is recommended to log into ACP. A Javascript enabled WEB browser is required.

The default URL of ACP is:

<http://yourhost/radiusmanager/admin.php>

The default login data are:

User name: **admin**

Password: **1111**

If the login was successful You will see the main screen of the ACP:



You can access all system functions using the drop down menus.

## RADIUS authentication and accounting

Complete the following steps in ACP in order to enable the RADIUS authentication and accounting:

1. Define a new **NAS**
2. Define a new **service**
3. **Register** a new user **account**
4. **Assign service** to user account

Entering correct **NAS** parameters is required to accept RADIUS requests from a certain NAS. Access the **NAS / New NAS** menu to begin this operation.

1. Enter the **NAS name**, **IP address**, **NAS type**, **shared secret** and **NAS password** (only for StarOS). Radius Manager automatically updates *raddb/clients.conf*. Radius Manager restarts FreeRadius automatically upon updating any NAS in ACP. FreeRadius restart also can be forced from Linux shell or from **ACP / Tools** menu.

Click the **Add NAS** button to store the newly defined NAS.

2. The next step is to **define** the **service plan**. Select **Services / New service**. Enter the name of the service. For the most simple service enter the following parameters:

- **Enable service**: checked
- **Type of the service**: Prepaid regular
- **Data rate**: 512 / 128

This defines a simple prepaid service with 512 / 128 kbps data rate (download / upload) and unlimited traffic and time.

Click the **Store service** button to save the service data.

3. To register a **new account** select **Users / New user**. The required data are:

- **User name**: enter the name of the user
- **Enable user**: checked
- **User type**: regular
- **Password**: enter the password
- **Service**: select the previously defined service

Finally press the **Add user** button to store the account data.

Now if You select **Users / List users**, You can see the newly registered account in green color. This color code represents an active account. You will also see the name of the service assigned to user and the current limits. In our example there are no limits set for the user.

Now configure the PPP or Hotspot service in your Mikrotik NAS and try to authenticate (PPPoE / PPTP / Hotspot) the newly registered user. If this operation fails, You can try the default username and password combination (user / 1111). The default user is available in every new DMA Radius Manager installation.

If You still can't get logged in, debug the RADIUS communication enabling the FreeRadius debug

mode. First stop the running daemon (Fedora):

```
[root@localhost]# service radiusd stop
```

On Debian:

```
[root@localhost]# /etc/init.d/radiusd stop
```

Or use the universal method:

```
[root@localhost]# ps ax | grep radiusd
32442 ?    Ssl  0:00 /usr/local/sbin/radiusd
16715 pts/0  R+   0:00 grep radiusd
[root@localhost]# kill 32442
```

Be sure to kill the correct process. In our example the PID is 32442.

Now start *radiusd* in debug mode:

```
[root@localhost]# radiusd -X
```

You will see the following output if FreeRadius and MySQL are working properly:

```
Listening on authentication address * port 1812
Listening on accounting address * port 1813
Listening on command file /usr/local/var/run/radiusd/radiusd.sock
Listening on proxy address * port 1814
Ready to process requests.
```

If errors are present FreeRadius is not working properly. Consult the Installation Manual to locate and fix FreeRadius related problems.

After a successful PPP or Hotspot authentication You have to see the active user and a newly created simple queue for user (Queues / Simple queues) in Winbox. If the simple queue is not present, the bandwidth limitation will not work (maybe You have enabled unlimited bandwidth in the service definition.)

In ACP **Reports / Online RADIUS users** You have to see the authenticated users, the used online time, session start time, used traffic and time etc. The used NAS is also available on this page.

The last thing You have to do is to test the remote disconnection function (POD = Packet of Disconnect). Select the test user in ACP online user list and select **Disconnect** from the action box. This command has to disconnect the user immediately. Check the Winbox log for the incoming disconnection packet. The remote disconnection is available with all supported NAS types (except

pfSense, it uses reauthentication instead of POD). If it is not working, You cannot enable the auto disconnection function which will have impact on many Radius Manager features.

## Managers

The system supports multiple resellers (managers). There is only one **super user** available in the system (admin) while unlimited number of regular managers can be registered. The super user cannot be deleted, while You can add, edit and delete regular managers freely.

When You add a new manager with function **Managers / New manager**, the following parameters are definable: manager name, password, personal data and permissions.

Multiple resellers are useful in many situations. An example is explained below:

You have multiple NAS devices on multiple locations (different regions etc.) with one reseller in each region. The local manager can register new account and refill account balance, but he can't delete users and can't modify the user data. When a local manager refills an account, the action will be logged and the super user can track the sold credits and the collected money.

Precise accounting is available for resellers: every credit and debit is trackable (in ACP / List invoices). You can **credit** or **debit** a any manager in **ACP / Manager / Edit manager** form.

## Service plans

One of the most complicated part of Radius Manager is the service plan system. In the service editor You can set various properties of users. You can assign one service to multiple accounts.

You need to completely understand the structure of service plans before You can configure them properly. Please read the following part carefully for a detailed explanation.

To define a new service select **Services / New service**.

Enter the **name** of the service.

Select the **service type**. The following service types are supported:

- **Prepaid regular** – Used by prepaid regular users.
- **Prepaid card or IAS** – Used by Classic Prepaid Cards and Instant Access Services (IAS). Refill cards don't have services.
- **Postpaid** – Used by postpaid users. The billing period is freely definable, but monthly billing is strongly recommended.
- **Email only** – When this is assigned to user, authentication is not possible (PPP / Hotspot), only a new Linux account is created (if enabled in ACP / System settings) for storing emails, personal WEB presentation etc.
- **Access list entry** – Special account type supporting Mikrotik and StarOS wireless access lists.

Select the correct **capping type** if the account requires capping:

- **Limit download** – Limits the available download Bytes.

- **Limit upload** – Limit the available upload Bytes.
- **Limit total traffic** – Limit the available total traffic.
- **Limit expiration** – Used by classic date limited service plans (You can set the expiration date in ACP / edit user form).
- **Limit online time** – Select this if You want to register a classic dialup service. It limits the available online time (10 hours Internet etc.).

Reaching any active limit set in user details the session will be **terminated immediately** (automatic disconnection).

Define a **data rate** for the service. Enter the download and upload data rates in **kbps**. Enter 0 if You don't want to limit the data rate at all. For Cisco You can use **policy maps** if your Cisco doesn't support the **rate-limit** directive.

**Daily quotas** are also supported. It is the daily available traffic and / or time for the user. Download / upload **capping is not required** to enable the daily quota system, but it requires **remote disconnection** method. Enter a number larger than 0 to enable the daily quota.

- **Download quota per day** – Defines the daily available download traffic.
- **Upload quota per day** – Defines the daily available upload traffic.
- **Total quota per day** – Defines the daily available total traffic.
- **Time quota per day** – Defines the daily available online time.

In service definition You can also enable the **burst mode** (Mikrotik only). The parameters are:

- **Burst limit (DL / UL)** – Sets the burst limit for download and upload. This is the peak traffic the user can achieve. Burst limit is always greater or equal than the nominal data rate.
- **Burst threshold (DL / UL)** – Sets the threshold for download and upload. If the account uses higher data rate than this value, after a predefined time the data rate will be reduced to the nominal level.
- **Burst time (DL / UL)** – Defines the timeout after the data rate will drop if the client uses higher data rate than the nominal. Experiment with this value. Some Mikrotik versions don't interpret the value properly. Measure the time more times and add correction factor to it.
- **Priority** – Sets the priority for simple dynamic queue.

In the service You can also enter the **IP pool name** from which the user gets the IP address. Enter the pool name which already exists in NAS (Mikrotik, Cisco). If the pool doesn't exist in NAS, the user will not be able to authenticate (no IP address will be assigned).

**Next disabled service** gets activated if the account has been disabled.

**Next expired service** gets activated once the current service limits have been reached.

**Next daily service** gets activated once the daily quota has been exceeded.

The next service is useful in many situations. An example:

The user has a **combined monthly service** (1 GB / month) and You don't want to disable the user in a middle of the month if he reaches the traffic limits. If You enable the "Next expired service" the user can authenticate even if he has no more traffic available. The "Next expired service" can force lower bandwidth or anything else You need.

**Ignore static IP** is used to ignore the static IP address defined in user details. Useful in next services

to assign an IP from the expired pool (for static IP users).

**Custom RADIUS attributes** are designed for advanced system administrators to control the NAS with special attributes.

**Generate TFTP boot file** is used by DOCSIS services. If enabled, the system will generate a new TFTP boot file automatically if a service has been updated.

**Advanced CM configuration** is a DOCSIS option. It allows entering custom TFTP boot file directly in the service definition form.

After entering the basic parameters the price definition follows. You have to define the price parameters precisely if You want to generate invoices and use Radius Manager for financial accounting.

The first thing is to select the postpaid **price calculation method**. Uncheck the following checkboxes if the current service is not postpaid. It is allowed to **combine** the various calculation methods:

- **Download traffic** – The price of the downloaded traffic will be added to the total price..
- **Upload traffic** – The price of the uploaded traffic will be added to the total price.
- **Online time** – The price of the used online time will be added to the total price.

Set the monthly checkbox for **monthly** accounts. Monthly accounts has the most complicated service type. They are based on one month and can combine upload, download and / or total traffic limits. If the user reaches one of these limits, the account will expire.

Select **automatic renewal** option to renew the accounts automatically. Postpaid accounts will be renewed on a fixed day in every month (as defined in ACP / system settings), while prepaid accounts on the day when they expire (if they have enough deposit available which covers the renewal cost). In a same time an email / SMS notification will be sent for all renewed accounts.

**Carry over remaining MBs** is useful in account auto renewal: it will add the new traffic credit to remaining value (if the user has not used all his traffic in the past month).

**Reset counters if date has expired** is a special option. It is useful if You have date capped service with traffic capping enabled (combined monthly service). Enabling this option when You add credits and the account expiry date has been reached, the system will **reset the remaining credits to zero**. It is useful in situation when You offer for instance 10 GB for 3 months. If all 3 months have been passed and the user has not used all his 10 GB, next time when he purchases credits he will get again 10 GB and the new expiration date will be added to the **current date**.

There is one more special option used by combined monthly services: **enable additional credits**. For instance You offer 1 GB / month. When a user reaches his traffic limit (1 GB) in the middle of the month the accounts gets expired. The user can purchase additional MegaBytes, while the original **expiration date will remain unchanged**.

Define the **net unit** price for the service. The system automatically calculates the gross price and the VAT.

In a same manner set the price of the **additional unit**. It is used by monthly services only if additional credits are enabled.

The **time and date addition modes** describe how the system adds time or calculates the new expiration when adding credits:



- **Reset online time or expiration date** – The time will be added to the current time. It is useful for monthly accounts where You add 1 month to the current date.
- **Prolong online time or expiration date** – It is mainly used by dialup services where a user purchases hours. The hours will be added to the **remaining** hours. For example he has bought 10 hours and left him 2 hours. When he buys again 10 hours he will have totally 12 hours available.
- **Prolong expiration date with correction** – Additional mode, with exception: if the date is in the past the new expiry will be added to the **current date** instead of the original date.

Define the **traffic addition** mode:

- **Reset traffic counters** – When You add credits the system will **reset the currently available Bytes**. It is useful for monthly, traffic limited accounts. For example the user has 1 GB / month combined plan and the account has already expired (only the date, but he has 100 MB remaining traffic). When he next time refills his account, the 100 MB **will be lost** and a new 1GB / month will be activated.
- **Additive** – New traffic will be added to the remaining traffic.

Now define the **credit addition units**:

- **Expiration date unit** – Date unit for adding days or months.
- **Online time unit** – Time unit for adding minutes or hours.
- **Download traffic unit** – How many MBs to add at once. For MB based services enter value 1, while for monthly combined services enter the available monthly traffic amount. For example, if You offer 1 GB / month, enter 1024 here.
- **Upload traffic unit** – This is the same as the download traffic unit but it defines the upload.
- **Total traffic unit** – This is the same as the download traffic unit but it defines the total traffic.
- **Minimal base amount** – The minimal base traffic what user can purchase in UCP.
- **Minimal additional amount** – Define the minimal amount of additional traffic the user can purchase in UCP at once.

The **initial fields** are used to set the **initial data / time** for self registered users. They are also used by the account **auto renewal** function.

You can select the **NAS** devices where the current **service is available**. **Managers** who are allowed to use the current service are also selectable here.

The **Special accounting editor is accessible** from **ACP / Edit service** screen. In special accounting editor You can define the accounting rate for any period. Connections are also controllable.

The **Dynamic data rate editor** can be invoked from **ACP / edit service**. It is used to change the data rate of online session on the fly. Only Mikrotik is currently supported.

Once You have defined the new service click the **Store service** to save it.

## Example services

In this chapter You can find details about the most commonly used services included in the default system installation.

- **Prepaid MB download** – A standard prepaid service. The user pays for the Internet service in advance and he can use the Internet while he has enough MegaBytes available. When the user consumes all the available download traffic, the online session will be terminated and can't reconnect while he the account is not refilled. You can also combine the traffic limitats (download, upload or total traffic).

In this service the **Traffic addition mode** is **Additive** and the **Combined traffic unit** is **1 MB**. You can also set the **Minimal amount** of MegaBytes the users can purchase at once. In this example it is **1 MB**. You can increase the Minimal amount to 10 MB or enter any other value You like.

- **Prepaid online time** – This service limits the available online time. It is a classic prepaid dialup tariff plan: the user pays in advance for the available online time. **Limit online time** is checked in the service definition. When the user has no more time available he will get disconnected automatically and can't reconnect while he hasn't purchased more time. The **Time addition mode** is set to **Prolong online time**. The **Online time unit** is **1 hour**. The **Minimal amount** is **1 hour**.

- **Prepaid monthly** – This plan defines a monthly prepaid flat service. Only date capping is enabled.

- **Prepaid monthly 1 GB download** – It is a 1 GB / month capped service. The user purchases a monthly Internet service and gets one month and 1 GB available traffic (calculated form the date of the purchase).

The **Limit download Bytes** checkbox is set. The **Monthly account** checkbox selects monthly account type. In this example the **Additional credits** are also enabled. When a user has no more available traffic (initially he has got 1 GB) but the account date has not expired yet, the user can purchase **additional MegaBytes** while the expiration date **remains unchanged**.

In UCP the system handles additional credits automatically. If additional credits are enabled and the user selects the **Purchase service** option in the UCP, the system will notify him about the additional credits mode.

Managers have to select the credit addition mode manually: **normal** or **additional** mode. New **combined month** can added only if the **current month has expired**.

Prepaid monthly plans can begin on **any day** in the month. Example: The client purchases a monthly service on september 13. He has to purchase a new monthly subscription again on october 13. The old subscription will expire at 00:00 hours on october 13.

Only **one combined month** can be added at once. Why? If You offer a 1 GB / month combined service and if You set amount = 2 when You refill an account, the account will get expired after 2 months and will have 2 GB traffic. This isn't limited anymore by the end of the month. If You need to add multiple months at once turn off the **Monthly account** checkbox and set **Limit expiration** checkbox. Set the **Time addition mode** to **Additive**. Now You can add (prolong) the subscription by any number of months. The **Time unit** should be set to **1 month**. With this setup You can add multiple months at once. If You combine this service with traffic limits – depending on the setup – the traffic will be added to the remaining value or to zero.

Usual problem is when a user forgets to refill a monthly subscription and his service expires. In the example managers cannot add a new monthly combines service before october 13. But what to do in the period from 00:00 to normal business hours when the office is open and users can purchase again a new monthly service?

The solution is the **Money deposit** system. Managers can enter **deposit** for any account. Users can purchase additional credits in UCP any time, using their internal balance. They can renew their monthly service when the current monthly service has **expired**. In our example the new monthly service can be bought after 00:00 hours on october 13.

**Automatic renewal** is also available for prepaid accounts. The account should has enough deposit which covers the monthly service fee. The system handles the renewals automatically and notifies users by email / SMS.

In our example service a separate price is defined for the base unit (the price of the monthly service) and for the additional MegaBytes. The **Time unit** is **1 month**, the **Download traffic unit** is **1000 MB**. **Time addition mode** is **Reset time**, **Traffic addition mode** is set to **Reset traffic counters**. The **Minimal amount** is **1 month**.

- **Prepaid monthly flat + quotas** – This is a monthly service without traffic limitation. It has 1 month validity with limited daily usage (**100 MB**).
- **Postpaid traffic** – A standard postpaid service. The user can use the Internet service in the whole month. The administrator will generate bill for the previous month the first period of the current month. For instance, on december 1. the administrator will generate invoices for all postpaid users for the past period (november month). You can print the generated invoices in the WEB browser and deliver them to customers.

Postpaid users have a **grace period** (ACP / System settings) to pay their invoices. The system administrator should check the banking account every day for the realised payments and enter the payment date into Radius Manager. To accomplish this access the **List invoices / Edit invoice** function. The system checks the generated postpaid invoices every day. If the grace period has expired and the user still hasn't paid the service, the account will be **disabled**.

To create a postpaid service select **Postpaid** mode, **disable traffic** and **time limitations**. Set the **bandwidth** freely.

Set the correct **Price calculation method** to fit your needs. In our example it is **Download traffic**. When generating invoices the system will add the price of the downloaded MegaBytes to the total price. You can also add the price of the uploaded traffic, the used hours or combine them (e.g. 100 MB download \$10,00 + 10 MB upload \$1,00 = \$11,00 total).

**Every started MegaByte** (0.1 MB etc.) is calculated as one **whole MegaByte**.

It is important to define the postpaid service price precisely otherwise You will generate invoices with incorrect sums.

- **Postpaid online time** – Postpaid hours are similar to postpaid MegaBytes, but the consumed online time is used to calculate the total price. If the user has spent 30 hours online, he will get an invoice with total price for 30 hours. The gross price of one hour is \$1,18, thus the total price for the 30 hours will be:  $30 \times \$1,18 = \$35,40$ . Every **started hour** counts as **one whole hour**.

- **Postpaid monthly flat** – A standard flat service. The user can use the Internet in the whole month without limitations. He will get the invoice with a fixed fee. You need to enable the **Monthly service** checkbox.
- **Postpaid monthly flat + quotas** – It is the same flat service as the previous, but it has 100 MB daily download limit. Don't forget to enable the **Monthly service** checkbox.

You can create invoices for postpaid accounts based on used traffic and online time for any period, not only for the past month (but monthly billing is strongly recommended).

## Prepaid card system

Radius Manager Pro and higher includes an integrated prepaid card system. The following card types are supported:

1. **Classic prepaid** – Users can authenticate by entering the card PIN code and password printed on the card. Card accounts are similar to regular prepaid accounts: online time, traffic, expiration and date capping is supported.
2. **Refill** – Value only cards and cannot be used for authentication. The PIN code can be entered in the UCP to increase the available balance of a prepaid regular account.

### Before You begin

The first thing You have to do is to select the card type You need. **Classic prepaid or refill?**

- For hotels, airports and other places with public Internet access generate **classic prepaid cards**.
- For Internet service providers **refill cards** are ideal. You can sell refill cards what registered users redeem in UCP to increase the internal balance which can be used to purchase services any time.

### Setting up the card services

To generate classic prepaid cards You have to define the card service first. Refill cards don't require a service.

Select **Service / New service** in ACP. You can also use the predefined card services.

Select **Prepaid card or IAS** checkbox and set **Time limit mode** to **Limit expiration**. With this You have defined a card service with predefined expiration date. The expiration date mode is selectable in the card generator form.

Classic prepaid cards always should have limitations: online time, expiration, available traffic or any combination of them. Expired cards are not reusable. Users have to purchase a new card in order to use the Internet service again.

Define the additional options if required: **bandwidth**, daily **quota**, **burst** mode etc. Leave the **price definitions** unchanged (use zero values).

Store the data and proceed to card generation.

### Generating cards

Select **Card system / Generate cards** in the ACP to generate card series. The available parameters are:

**Card type** – Classic prepaid or Refill card.

**Quantity** – Amount of cards to generate.

**Gross card value** – The value printed on the card. It also includes the VAT (if available).

**Valid till** – The expiration date of card serie.

- **Classic prepaid cards** – If expiration limit is enabled in the service, after a specific date the card can't be used for authentication.
- **Refill cards** – After a predefined date the card cannot be used to refill the balance.

**Prefix** – Prefix for card serie.

**PIN length** – Length of generated PIN codes.

**Password length** – Length of generated passwords. Refill cards have no password. Blank passwords are also allowed but not recommended.

**SMS verification required** – Force users to verify their identity by SMS code.

**User group** – Select the user group.

**Associated service** – The service name for the new card serie. Available for classic prepaid cards only.

**Download limit** – The available download traffic in MegaBytes. For classic prepaid cards only.

**Upload limit** – The available upload traffic in MegaBytes. For classic prepaid cards only.

**Total limit** – The available total traffic in MegaBytes. For classic prepaid cards only.

**Online time limit** – The available online time in hours or minutes. For classic prepaid cards only.

**Expiration** – Select the expiration date / time mode:

- **Defined by valid till** – **Valid till** field determines the fixed expiry date of card.
- **Calculated from card activation** – The available time is determined by the **Available time from card activation** field.

**Available time from card activation** – Enter the time available from the activation of the card.

**Simultaneous use** – You can allow more than one connection in a same time for a specific card. Useful for MB and online time limited cards. PfSense always requires Sim-use = 2 to allow the reauthentication to check the validity of the account (for automatic disconnection).

Let's create an example classic prepaid card serie. We will generate cards which can be used 24 hours from the activation and hold 300 MB download traffic. The card expiration will be 2015-12-31.

Enter the following values:

- **Card type:** Classic prepaid
- **Quantity:** 5
- **Gross card value:** \$10

- **Valid till:** 2015-12-31
- **PIN length:** 8
- **Password length:** 4
- **Associated service:** Card expiration + download limit
- **Download limit:** 300 MB
- **Expiration mode:** Calculated from card activation
- **Available time from card activation:** 1 day
- **Simultaneous use:** 1

**RADIUS MANAGER**

System Users Services Managers NAS AP CMTS IP pools Financials Card system IAS Reports Tools

Prepaid card generator

Card type:  Classic prepaid  
 Refill

\* Quantity:  cards

\* Gross card value:  USD

\* Valid till:  (YYYY-MM-DD)

Prefix:

PIN length:

Password length:

SMS verification required:

User group:

Associated service:

Download limit:  MB

Upload limit:  MB

Total limit:  MB

Online time limit:  minute(s)

Expiration:  Defined by valid till  
 Calculated from card activation

Available time from card activation:  day(s)

Simultaneous use:

\* Fields are mandatory

Manager: admin | Date: 2013-10-15 | Version: 4.1.0 beta 13 | RADIUS server: OK | DHCP server: NOT RUNNING!

Press the **Generate cards** button after You have entered the required parameters. On the next page You will see the overview of parameters. If everything is correct, press **Generate cards** button again. You can list the new card serie by accessing the **Card system / List card series** menu.

Click the **CSV** link in the table to export the card codes. The output will be similar to this:

**id;pin;password**

"000000000006"; "22839965"; "5264"

"000000000007"; "49422662"; "8575"

“000000000008“, “39749969“, “0997“

“000000000009“, “86978864“, “2962“

“000000000010“, “29341225“, “0362“

The **first column** is the **card serial** number. The **second column** is the **secret card code (PIN)**. The **third column** is the **password** (available for Classic prepaid cards only).

Sometimes it is required to disable or delete the complete card serie. The appropriate action is available in the **Action** dropdown list.

Revoked cards aren't deleted from the system; You can reactivate them later. In production environment it is recommended to use the **revoke / disable** function instead of delete.



# USER CONTROL PANEL (UCP)

## Getting started

The default URL of the **User Control Panel** is <http://yourhost/radiusmanager/user.php>

RADIUS MANAGER
cable and wireless control

Home Traffic report List invoices Change password Redeem voucher Purchase credits Change service

### User's details



**General information**

User name:	<b>user</b>
Account type:	<b>regular</b>
Account status:	<b>active</b>
Static IP address:	<b>n/a</b>
Allowed MAC address:	<b>n/a</b>
Deposit:	<b>58.81 USD</b>
Language:	<b>English</b>



**Service data**

Active service:	<b>Prepaid MB download</b>
Service type:	<b>prepaid</b>
Download datarate:	<b>1024 kbps</b>
Upload datarate:	<b>768 kbps</b>
Next service change date:	<b>n/a</b>
Scheduled service name:	<b>n/a</b>



**Personal data**

First name:	<b>John</b>
Last name:	<b>Smith</b>
Address:	<b>Oak road 1472.</b>
City:	<b>Tampa</b>
ZIP:	<b>1343</b>
Country:	<b>United States</b>
State:	<b>Florida</b>
Phone:	<b>455029545</b>
Mobile number:	<b>123456</b>
Email:	<b>viktork@viktork.info</b>
Company:	<b>My Company</b>
VAT ID:	<b>AV43782</b>



**Limits and quotas**

Available download:	<b>1.0 GB</b>
Available upload:	<b>no limit</b>
Available total traffic:	<b>no limit</b>
Available online time:	<b>no limit</b>
Account expiry:	<b>never</b>
Today's download quota:	<b>n/a</b>
Today's upload quota:	<b>n/a</b>
Today's total quota:	<b>n/a</b>
Today's time quota:	<b>n/a</b>



**WiFi details**

Access point:	<b>n/a</b>
Signal level:	<b>n/a</b>
SNR:	<b>n/a</b>
CCQ:	<b>n/a</b>

Edit account Logout

User: **user** | Date: **2013. 10. 15.** | Version: **4.1.0 beta 13**

A valid user name and password is required to log into UCP. In new installation the default user name and password combination is: **user / 1111**. If the login was successful the UCP home screen will appear.

You can find the account overview on the home screen. The data are grouped in the following categories:

1. General information
2. Personal data
3. Service data
4. Limits and quotas
5. WiFi details

Using the menu options the user can examine the invoices, check the traffic details, enter refill card codes, purchase services and change the current service plan.

### Editing personal data

Click **Edit account** to edit the account details (if the function is enabled in ACP / System settings).

### Examining the traffic report

Click the **Traffic report** link to access the traffic details. With this function the user can examine his yearly, monthly and daily traffic data: login, logout, used time per session, uploaded, downloaded and total traffic, MAC address of CPE, IP address, free periods etc.

### Listing the invoices

Click the **List invoices** link to view the payments. It will list all payments for the current user, including the invoice number, date of payment, added traffic and time, purchased credits and the account balance.

### Using the refill cards

Refill cards are designed to increase the internal balance. The available deposit is displayed in the **General information** group. If the users needs to increase his deposit, he has to click the **Redeem voucher** link and enter the correct refill card PIN code. After 3 unsuccessful tries the account gets locked and only managers can unlock it.

Once the correct PIN code has been entered, the main UCP screen will reflect the new deposit immediately. The user can also check the credit refills clicking the **List invoices** link.

### Selecting services

In Radius Manager UCP the user can select a prepaid service he would like to use (if service selection is enabled in ACP / System settings).

Click the **Change service link** in the menu. It will list the available prepaid services. Select the desired service and click the **Change service**. On the next screen the selection should be confirmed. If the current service is not a monthly combined service, the service change will be completed immediately, otherwise it will be scheduled to a date when a current service expires.

### Purchasing prepaid credits

Radius Manager has a special feature: users can purchase prepaid services online, paying with their internal balance or other supported payment methods. Complete the following steps to refill an account in UCP:

1. Select **Purchase credits**.
2. On the next page You will see the current service description.
3. Enter the **amount** You want to purchase. For example, if it is a MegaByte service, enter the amount of MegaBytes.
4. On the next page select the **payment method**.
5. Follow the on screen instructions. The system will add the purchased MegaBytes and / or time to the account.

You can track all transactions in **List invoices** menu.

The term "amount" is universal and means the **amount of the service**. Thus, if the service is a monthly service, You have to enter 1 to purchase a one month prepaid Internet service.

The user can purchase additional MegaBytes if the current month has not expired yet, but all available prepaid traffic has been consumed. The system selects the refill mode automatically and displays a message about the actual mode upon purchasing credits.

### Account activation

Self registered and card accounts can be forced to verify their identity with entering a secret code in UCP, sent by in SMS to a mobile phone. The function is configurable in **ACP / System settings** and in prepaid **card generator module**.

If an unverified user logs into UCP, a verification link will appear beside the account status. Click on this link to initiate the account verification procedure.

### Hints for setting up the UCP

It is recommended to grant access to UCP even for unauthenticated users. This is very useful if the user has no more available credits and cannot authenticate with Hotspot or PPP to examine the statistics in UCP.

Complete the following steps to enable UCP access for expired users:

1. In ACP register an account which will never expire (username **info**, password **info**).
2. Register an **info** service with predefined IP pool (pool name **pool-info**), without capping.
3. Assign the **info** service to **info** account.
4. For **pool-info** define a firewall rule in your router to permit access to Radius Manager server and block all other Internet traffic.

You can also select the **info** service as next master service (in all capped services) to automatically shift the expired users to **pool-info**.

## ADDITIONAL FUNCTIONS

### Instant Access Services (IAS)

**Instant Access Services (IAS)** are ideal for customers who need instant Internet access, but don't want to register a regular account. IAS accounts are similar to prepaid cards: they have a PIN code as username. The main advantage of IAS over the prepaid card is the simplicity: **they can be purchased online** (CC, PayPal etc.), directly on the Hotspot login page.

The system currently supports the following payment gateways:

1. PayPal Express Checkout
2. PayPal Website Payments Pro
3. PayPal Website Payments Standard
4. Netcash.co.za
5. Payfast.co.za
6. Authorize.Net
7. DPS Payment Express
8. 2Checkout

A typical Hotspot login screen is shown below.

Need instant access without registration?	
10 hours uptime	5.00 USD
500 MB	10.00 USD
2 days	10.00 USD

The Hotspot login page contains the following items:

1. **User name** and **password** fields
2. New account **registration link** (self registration)
3. **Instant Access Service** list

When a user decides to purchase an IAS, he has to click the appropriate IAS link and select the payment method. Completing the checkout the system generates a PIN code and password which can be used for Hotspot / PPP system authentication.

The **IAS templates** are definable in ACP. These are similar to regular prepaid card accounts, but generated on the fly and not in advance (by managers). In IAS template the super user sets the characteristics of accounts. When a user successfully purchases an IAS code, the system generates a new IAS account based on a predefined template

All IAS accounts require an associated service (like regular and card accounts). Various caps can be enabled: available online time, download, upload, total traffic etc.

You have to add the IAS HTTP server URL to **walled garden list** on the Hotspot server to grant access the Radius Manager directly from the Hotspot login page, **without authentication**. PayPal also should be added to walled garden in order to accept PayPal payments online. Internet access is required for Radius Manager server in order to communicate with the payment gateways.

On a Mikrotik NAS the following PayPal URLs should be added to walled garden list:

- [www.sandbox.paypal.com](http://www.sandbox.paypal.com) (for testing)
- [developer.paypal.com](http://developer.paypal.com) (for testing)
- [www.paypal.com](http://www.paypal.com) (for live system)
- and the address of Radius Manager server

On Mikrotik v2.9 enter the following walled garden entries for PayPal and Radius Manager server access.

```
/ip hotspot walled-garden add dst-host=":^www\\.paypal\\.com\\$" dst-port=443 action=allow

/ip hotspot walled-garden add dst-host=":^content\\.paypalobjects\\.com\\$" dst-port=443
action=allow

/ip hotspot walled-garden add dst-host="*.akamaiedge.net" action=allow
```

On Mikrotik v3+ the following walled garden entries are required:

```
/ip hotspot walled-garden add dst-host=":~^www\\.paypal\\.com\\$" dst-port=443 action=allow

/ip hotspot walled-garden add dst-host=":~^content\\.paypalobjects\\.com\\$" dst-port=443
action=allow

/ip hotspot walled-garden add dst-host="*.akamaiedge.net" action=allow
```

The described setup is country dependent, PayPal uses different servers in different countries. For detailed PayPal walled garden setup please visit the following page:

[https://cms.paypal.com/au/cgi-bin/?cmd=\\_render-content&content\\_ID=developer/howto\\_api\\_golivechecklist](https://cms.paypal.com/au/cgi-bin/?cmd=_render-content&content_ID=developer/howto_api_golivechecklist)

The URL of IAS purchase page is:

<http://yourhost/radiusmanager/buyias.php>

Please consult the appropriate part of the reference manual for setting up the IAS templates.

**WARNING!**

It is recommended to run Credit Card processing on a HTTPS layer. Install Radius Manager system on a SSL enabled WEB server if You want to accept payments online.

## Self registration

The self registration system helps You to create a **fully automated** Internet Service Provider management system. With this feature the customers can register themselves in a fully automated way. After a successful registration they can select services and purchase credits, like regular (manager registered) users.

The self registration link is accessible from the Hotspot login page. An example screenshot of **user name** self registration is available below.

**RADIUS MANAGER** *cable and wireless control*

Register account by user name Language: English

\* User name:  (4-32 characters)

\* Email address:

First name:

Last (family) name:

Address:

City:

ZIP:

Country:

State or province:

Phone number:  (International form, e.g. 496548156875)

Mobile number:  (International form, e.g. 496548156875)

VAT ID:

Initial prepaid service:

\* Fields are mandatory!

ATTENTION: PLEASE READ THESE TERMS CAREFULLY BEFORE USING THIS WEBSITE. BY USING THIS SITE YOU AGREE TO BE BOUND BY THESE TERMS AND CONDITIONS. IF YOU DO NOT ACCEPT THESE TERMS ("TERMS"), DO NOT USE THIS WEBSITE.

I accept the Terms & Conditions

Security code:

Register account

Date: 2013. 10. 15. | Version: 4.1.0 beta 13

When a user enters all the required information and accepted by the system, he will get redirected to



the User Control Panel login page

The advantages of self registration are:

1. Register users **without administrators**
2. The users can **purchase credits online**, using the online payment gateways

The new user registration URL or the Radius Manager server IP should be added to the **walled garden** in order to enable the self registration system.

The following self registration methods are supported:

1. Self registration by **user name**. The user name is freely definable.

The URL of the user name based registration is:

<http://yourhost/radiusmanager/reg.php>

2. Self registration by **mobile number**. The user name is the mobile phone number. The password is sent by an SMS.

The URL of the mobile number based registration is:

<http://yourhost/radiusmanager/reg.php?m=1>

### Account verification

Radius Manager self registration system has an advanced security measurement: **email** and **SMS** account **activation**.

Radius Manager calls a HTTP / SMS gateway to send a verification code to mobile phone. PPP / Hotspot login is disabled while user doesn't confirm the verification code.

The **activation** options (SMS, email) are configurable in **ACP / system settings**.

## Password recovery

DMA Radius Manager includes an automatized password recovery function: it delivers a password verification code by email or SMS.

The URL of the password recovery is:

<http://yourhost/radiusmanager/passwd.php>

Any registered user can access the URL above. The parameters are:

**User name** – The name of account.

**New password activation method** (email / SMS) – Select the activation code sending method.

**Email address** – Enter the registered email address if email verification mode has been selected.

**Mobile number** – Enter the registered mobile number if SMS verification mode has been selected. The number of sent SMS messages is limited.

Once the verification code has been delivered to the registered email address, the user has to click the received URL to request a new password. In a next step the system emails the new password to the same email address.

If SMS mode is selected and the verification code has been received, the user has to enter the activation code on the following screen. If the entered code is valid, the system will generate and send a new password to the same mobile number.

## REFERENCE



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# ADMINISTRATION CONTROL PANEL (ACP)

## Overview

The **Administration Control Panel** (ACP) is available for system administrators to configure the system parameters, manage NAS devices, users, IAS templates, services, generate prepaid cards and accomplish other common tasks.

The default ACP URL is:

<http://yourhost/radiusmanager/admin.php>

## Description of menus

### System / Home

Navigates to home page.

### System / System settings

This screen is used to define the global system parameters used by both the administration interface (ACP) and user interface (UCP).

- **General settings:**

**Disconnection method** (NAS / remote) – Select a disconnection method to use:

1. **NAS** – This disconnection mode is supported by **Chillispot** (DD-WRT), **Mikrotik** and **pfSense**. It has some drawbacks: it cannot control the total traffic accounting (on certain NAS devices, Mikrotik is supported from Radius Manager v 4.1), the daily quota and the special accounting. If You want to use some of the listed features, switch to Remote disconnection mode.

2. **Remote** – Remote disconnection method is supported by **Mikrotik**, **StarOS**, **Cisco** and **Chillispot**. It supports total traffic accounting, daily quota and special accounting.

On StarOS and Chillispot the remote disconnection has some limitations: **Simultaneous-use = 1** is required for every registered account. StarOS and Chillispot disconnects users based on user name and not on IP address. If the same user name has multiple online sessions, only one instance will be disconnected while the others will remain online. Pay attention to this.

Remote disconnection method is also required if You want to disconnect expired prepaid users if **special accounting** is enabled.

**NAS** disconnection mode consumes less resource and easier to configure Remote method, while **Remote disconnection** supports all Radius Manager features. **Rmpoller** should be running constantly in order to enable the Remote disconnection method.

**Zero credits upon service change** – The counters will reset when a scheduled service change occurs or the user selects a new service in UCP.

**Hide limits in user list view (performance)** – Hide the traffic details in user list view to speed up the listing.

**Add new NAS to all services** – Enable all available NASs in new service.

**Add new manager to all services** – Make the new service available for all managers.

- **Billing and payments:**

**Currency** – Set the default system currency.

**VAT percent** – Define the global VAT percent.

**Day to renew postpaid accounts** – Select a day to renew all postpaid accounts.

**Beginning day of the billing period** – The beginning day of the monthly postpaid invoice.

**Grace period** – Grace period for postpaid accounts. The deadline is calculated using the following formula: **invoice payment option = current date + grace period**. The account will be disabled automatically if the invoice has not been paid within the grace period.

**Disable accounts due to unpaid invoices** – Disable RADIUS and UNIX accounts if the money transfer has not been realized until the deadline.

**Disable accounts due to expired contract** – Disable RADIUS and UNIX accounts if the contract has expired.

**Available payment gateways** (internal / PayPal Website Payments Standard / PayPal Website Payments Pro / PayPal Express Checkout / Netcash (Sage Pay) / Payfast / Authorize.net / DPS Payment Express / 2Checkout) – Enable the selected payment gateways.

- **Account settings:**

**Enable self registration** – Enable account self registration.

**Name self registration requires** (SMS activation / Email activation) – Select the activation method for name based self registered accounts.

**Mobile self registration requires** (SMS activation) – Select the activation method for mobile number based self registered accounts.

**Self registration mandatory fields** (first name / last name / address / city / ZIP / country / state or province / phone / mobile / email / VAT ID) – Required fields to complete the self registration.

**Self registration allows** (duplicate email address / duplicate mobile number) – Enable duplicate email addresses and / or mobile numbers for self registered accounts.

**IAS mandatory fields** (email / mobile) – Select the mandatory fields for IAS purchase.

**IAS registration allows** (duplicate email address / duplicate mobile number) – Enable duplicate email addresses and / or mobile numbers for IAS accounts.

**Self registration default sim-use** – Default sim-use value for self registered accounts.

**IAS accounts require SMS verification** – Force SMS verification for IAS users.

**Lock first seen MAC address** – The first detected MAC address will be locked to accounts.

**Enable user data edit (UCP)** – Allow editing the personal details in UCP.

**Enable service change (UCP)** (never / only when expired / any time) – Controls the service selection in User Control Panel.

**Enable password change (UCP)** – Enable changing the password in UCP.

**Enable voucher redemption (UCP)** – Enable the Redeem voucher option in UCP.

**Enable credit purchase (UCP)** – Enable the Purchase credits option in UCP.

- **Account synchronization**

**Synchronize Linux accounts** – If checked, the system will create / edit / delete regular Linux accounts in sync with RADIUS users. This feature is useful if You want to synchronize a Linux account based email server (sendmail, postfix etc.) with Radius Manager.

**Disk quota management** – If checked, the disk quota will be set automatically for newly registered Linux users (prerequisites are to enable the disk quotas and create the disk quota template Linux user).

**Disk quota template user** – The name of the Linux disk quota template user.

**Synchronize account on** (Localhost / Remote host using RSH) – Remote Linux host synchronization method.

**Remote Linux host** – IP address or DNS name of remote host.

- **Notifications:**

**Notify manager upon self registration (email)** – New user registration notifications are sent to system administrator.

**Welcome message (email)** – Send welcome email to new users.

**Welcome message (SMS)** – Send welcome SMS to new users.

**New service activated (email)** – Send email when a new service has been activated.

**Account renewal notification (email)** – Sending email when an account has been renewed.

**Account expiry (email)** – Sending email alert to user when the account is going to expire.

**Account expiry (SMS)** – Sending SMS alert to user when the account is going to expire.

**Alert level** (fixed value / percentage) – Select a warning system to use.

**Download alert** – The remaining download MB or percentage to send an alert.

**Upload alert** – The remaining upload MB or percentage to send an alert.

**Total traffic alert** – The remaining total MB or percentage to send an alert.

**Online time alert** – The remaining online time or percentage to send an alert.

**Expiry alert** – The remaining days to send an alert.

## System / Logout

Log out the current user.

## Users / List users

List the registered accounts with traffic and time limits. You can select certain users, select all users and clear the selection. The following actions are available for the selected users:

- **Enable** – Enable accounts.
- **Disable** – Disable accounts. Disabled users cannot authenticate (PPP / Hotspot) and can't access the mailbox accounts. They can still log into User Control Panel.
- **Delete** – Delete the selected RADIUS and Linux accounts.
- **Disconnect** – Disconnect selected users or restart cable modems.

You can **sort the list** clicking the **arrows** in the header. Click the **hash symbol (#)** in the header to open the **column selector**.

## Users / List users / Edit user

Edit a user.

**Enable** – Enable the account.

**Verified** – The account is verified.

**Email alerts** – Enable email alerts.

**SMS alerts** – Enable SMS alerts.

**Alert sent** – An account expiry alert has been sent (email).

**Password** – Password entry field.

**Confirm password** – Enter the same password again.



**Change password** – Initiate a password change.

**MAC address CM** – MAC address of cable modem. Required by DOCSIS accounts.

**IP address mode CM** (IP pool / static IP) – Used IP address mode for cable modem. **IP pool** mode automatically assigns a free IP to CM, while in **Static IP** mode You can set the CM IP address manually.

**MAC address CPE** – MAC address of CPE device (LAN / WLAN card). When enabled, the system will check the user name, password and the MAC address of the CPE upon login.

It is necessary to complete this field if You want to assign a **static IP** to a **DOCSIS CPE**.

Some WLAN devices (depending on the configuration – see MAC cloning) will not emit the real MAC address of the WLAN card. You have to configure the CPE properly in order to use this feature.

**Allow this MAC only** – Enable MAC address checking.

**IP address mode CPE** (NAS pool or DHCP / IP pool / static IP) – CPE IP address mode. The address will be determined automatically if **NAS pool or DHCP** is selected. In **IP pool** mode RADIUS server assigns the IP address to CPE, using the RADIUS IP pools. When **Static IP** is selected the predefined static IP address will be assigned to CPE.

The **MAC** address should be set in order to use the **DOCSIS CPE** static IP mode.

**Simultaneous use** – How many concurrent sessions are allowed for the current user (simultaneous logins with a same user name). Leave this field empty or enter 0 for unlimited number of concurrent sessions.

**First name** – First name of the user.

**Last (family) name** – Last (family) name of the user.

**Company name** – Company name.

**Address** – Postal address of the user.

**City** – City of the user.

**ZIP** – ZIP code of the user.

**Country** – Country of the user.

**State** – State of the user.

**Phone number** – Phone number of the user.

**Mobile number** – Mobile number of the user.

**Email address** – Email address for notifications. If You don't specify the email address, the system will construct it automatically: **[username]@[domain]**, where *domain* is defined in *system\_cfg.php* and in *radiusmanager.cfg*.

**VAT ID** – VAT number.

**Service** – Associated service name.

**Download limit** – The available download Bytes.

**Upload limit** – The available upload Bytes.

**Total limit** – The available total Bytes (DL + UL).

**Account expiry** – Account expiration date (YYYY-MM-DD).

**Available online time** – Available online time (HH:MM:SS).

**Deposit** – Available money deposit for the user (internal balance).

**Contract ID** – Contract identification code.

**Contract valid till** – Contract validity date.

**Geolocation (lat., long.)** – GPS coordinates of user.

**Comment** – Optional comment.

**Language** – User language.

**User group** – User group..

**Account owner** – Owner of current account.

**Password activation SMS sent** – How many times the user tried to retrieve the password.

**Account verification SMS sent** – How many times was the verification code sent.

**Verification code failed** – This counter increases every time when a user enters a wrong verification code.

**PIN code failed** – This counter increases every time when a user enters a wrong PIN code to refill his account.

**Custom RADIUS attributes** – Define custom RADIUS attributes which will be sent in RADIUS authentication responses.

### **Users / List users / Edit user / Traffic report**

Here You can check the traffic report of the current user.

### **Users / List users / Edit user / Connection report**

List TCP / UDP connections of the current user (if CTS module is available and enabled).

### Users / List users / Edit user / Add credits

Add prepaid credits and generate the invoice. For monthly accounts select the **credit addition mode** (normal or additional). Select the **payment mode** (cash payment or bank transfer) and enter the **amount**. The total price is calculated automatically upon entering the amount. You can also change the total price manually if You want to offer a discount. You can define a **remark text** (which will be printed on the invoice) and an **internal comment**. Negative amount can be used to cancel any incorrect invoice.

Reverse calculation is also available if You check the **Lock unit price** and **Lock amount** checkboxes.

Clicking the **Next** button the confirmation screen will appear. You can review and modify the credit data before confirming the payment. The modification of data is controllable by the **Allow discount prices** flag in ACP / Edit manager form.

Clicking the **Finish** button You will get informed about a successful payment. You can view and print the invoice using the WEB browser's print function.

### Users / List users / Edit user / Add deposit

This function increases the user's internal balance and generates the invoice. Select the **payment mode** (cash or bank transfer), enter the **gross price**, the **remark text** (printed on the invoice) and the internal comment (not printed on the invoice). A negative amount can be used to cancel an incorrect invoice. Once the payment has been confirmed You can print the invoice from your WEB browser.

### Users / List users / Edit user / Postpaid billing

Postpaid billing is a semi automated function for mass generating postpaid monthly invoices (the period is definable freely, but one month period is strongly recommended).

The following postpaid billing methods are supported:

1. **Traffic based billing** (MegaBytes): The price is calculated using the download, upload or total traffic.
2. **Online time based billing** (classic dial-up): The price is based on the used online time.
3. **Monthly billing**: The price calculation formula is: **total price = monthly base fee + added traffic**.

The calculation parameters are definable in service definition.

First You have to enter the billing period (**from** and **to** date).

Clicking **Next** button will open a confirmation screen where You can select the **payment method**, enter the **item description** (which will be printed on the invoice), edit the calculated **net** and **gross prices** and enter an **internal comment** and **remark text**.

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### Users / List users / Edit user / List invoices

You can list the invoices for the current user. The available invoice types are:

- C** – Cash payment
- T** – Bank transfer
- O** – Online payment
- I** – Internal transfer
- P** - Prepaid card

You can also view the internal balance, the remaining traffic and time. The total transactions are calculated using the following formula:

$$TOTAL\ TRANSACTIONS = COMPLETED\ TRANSACTIONS + PENDING\ TRANSACTIONS$$

Internal transactions are not included in the sum. Credit refills with cards are not included in the sum.

### Users / List users / Edit user / Change service

With this function administrators can assign new services to users. Two parameters are required: the **new service name** and the **date** when the service change should occur.

You can change the prepaid service on a same day multiple times, but daily only one postpaid service can be assigned to a certain user.

### Users / List users / Edit user / Service history

This list is used to overview the service changes. You can see the request date, the user name, the schedule date and the requested service name. If the **Status** flag shows “**completed**”, the service has been changed successfully. You can click the **cancel** link to cancel a scheduled change.

### Users / List users / Edit user / Service history

Click this option to view the RADIUS authentication log.

### Users / List users / Edit user / Disconnect

Disconnects the current user from NAS (if POD is enabled in NAS) or restarts the DOCSIS compatible cable modem.

### Users / List users / Edit user / Delete user

Delete the current account from the system.

## Users / Find users

On this screen You can select the filtering criteria of user list view and initiate direct user editing.

- **Filter parameters:**

**User name or MAC** – Name of the user. You can search for all supported account types.

**Account type** (Regular / MAC / DOCSIS / classic prepaid card / instant access service / Mikrotik access list / StarOS access list) – Select the account type You want to include in the user list.

**Service type** (any / prepaid / postpaid / email / access list entry) – Select the service type You want to include in the user list.

**Account status** (any / active / expired / enabled / disabled) – Select the status of accounts You are looking for.

**Usage information** (any / used / unused) – Display all users, or who have, or who don't have an accounting information in the system.

**Group** – Search users by group.

**Owner** – Search users by account owner.

**Service name** – Search users by service name.

**MAC address CM** – Search the MAC address of cable modem.

**MAC address CPE** – Search for MAC address of CPE.

**Static CPE IP** – Search users by static CPE IP address.

**First name** – First name of user.

**Last (family) name** – Last name of user.

**Company name** – Company name.

**Address** – Postal address.

**City** – City name.

**ZIP** – ZIP code.

**Country** – Country name.

**State** – State name.

**Phone number** – Search for phone number.

**Mobile number** – Search for mobile number.

**Email** – Enter the email address You are looking for.

**Contract ID** – Search for contract identification code.

**Contract expiry** – List users based on contract expiry date.

**Registration period** – List users registered in the given period.

**Comment** – Filter the comments.

- **Edit user:**

**User name, MAC, PIN** – You can access the **edit user** screen for regular, Hotspot MAC, DOCSIS and prepaid card users.

## Users / New user

Register a new account. The parameters are:

**User name or MAC address** – Set the name for regular user or a MAC address for Hotspot MAC account. Mikrotik accepts MAC addresses in `xx:xx:xx:xx:xx:xx` format, while StarOS requires `xxxxxxxxxxxx` format. The allowed characters are definable in `system_cfg.php`.

**Enabled** – Enable the account.

**Account type** (Regular / Hotspot MAC / DOCSIS / Mikrotik ACL / StarOS ACL) – Select the type of the new account:

- **Regular** users have username and password.
- **MAC** users have user name only (it is the MAC address of the LAN / WLAN card). The Mikrotik Hotspot system will automatically log on Hotspot MAC users without requesting the user name and password.
- **DOCSIS** is used by DOCSIS cable modems.
- **Mikrotik ACL** is used to allow the connection for a specific WLAN CPE (Mikrotik AP).
- **StarOS ACL** is used to allow the connection for a specific WLAN CPE using (StarOS AP).

**Password** – Password entry field.

**Confirm password** – Enter the same password again.

**MAC address CM** – MAC address of cable modem. Required by DOCSIS accounts.

**IP address mode CM** (IP pool / static IP) – Used IP address mode for cable modem. **IP pool** mode automatically assigns a free IP to CM, while in **Static IP** mode You can set the CM IP address manually.

**MAC address CPE** – MAC address of CPE device (LAN / WLAN card). When enabled, the system will check the user name, password and the MAC address of the CPE upon login.

It is necessary to complete this field if You want to assign a **static IP** to a **DOCSIS CPE**.

Some WLAN devices (depending on the configuration – see MAC cloning) will not emit the real MAC address of the WLAN card. You have to configure the CPE properly in order to use this feature.

**Allow this MAC only** – Enable MAC address checking.

**IP address mode CPE** (NAS pool or DHCP / IP pool / static IP) – CPE IP address mode. The address will be determined automatically if **NAS pool or DHCP** is selected. In **IP pool** mode RADIUS server assigns the IP address to CPE, using the RADIUS IP pools. When **Static IP** is selected the predefined static IP address will be assigned to CPE.

The **MAC** address should be set in order to use the **DOCSIS CPE** static IP mode.

**Simultaneous use** – How many concurrent sessions are allowed for the current user (simultaneous logins with a same user name). Leave this field empty or enter 0 for unlimited number of concurrent sessions.

**First name** – First name of the user.

**Last (family) name** – Last (family) name of the user.

**Company name** – Company name.

**Address** – Postal address of the user.

**City** – City of the user.

**ZIP** – ZIP code of the user.

**Country** – Country of the user.

**State** – State of the user.

**Phone number** – Phone number of the user.

**Mobile number** – Mobile number of the user.

**Email address** – Email address for notifications. If You don't specify the email address, the system will construct it automatically: **[username]@[domain]**, where *domain* is defined in *system\_cfg.php* and in *radiusmanager.cfg*.

**VAT ID** – VAT number.

**Service** – Associated service name.

**Download limit** – The available download Bytes.

**Upload limit** – The available upload Bytes.

**Total limit** – The available total Bytes (DL + UL).

**Account expiry** – Account expiration date (YYYY-MM-DD).

**Available online time** – Available online time (HH:MM:SS).

**Deposit** – Available money deposit for the user (internal balance).

**Contract ID** – Contract identification code.

**Contract valid till** – Contract validity date.

**Geolocation (lat., long.)** – GPS coordinates of user.

**Comment** – Optional comment.

**Language** – User language.

**User group** – User group..

**Custom RADIUS attributes** – Define custom RADIUS attributes which will be sent in RADIUS authentication responses.

### Users / List user groups

List the available user groups. You can select multiple groups and delete more groups at once. The default group cannot be deleted. Click the group name to edit the parameters.

### Users / New user group

Define a new user group. The parameters are:

**Group name** – Enter the group name.

**Description** – Optional description.

### Users / Edit user group

Edit the selected user group. The available parameters are:

**User group name** – Enter the group name.

**Description** – Optional description.

Click the **delete** link to delete the selected user groups.

### Services / List services

List the available service plans. You can select certain services, select or deselect all services. The following actions are available for the selected services:

**Enable** – Enable the selected services.



**Disable** – Disable the selected services. Disabled services are not listed in service selectors.

**Delete** – Delete the selected services. The default service cannot be deleted. If an already assigned service has been deleted, the default service will be assigned instead of it.

### Services / List services / Edit service

Use this option to edit a service.

- **Basic parameters:**

**Service name** – Define the service name.

**Description** – Enter the service description, printed on prepaid cards.

**Enable** – Enable the service. Disabled services are not assignable to users.

**Available in UCP** – Enable listing the service in UCP.

**Type of service** (prepaid regular / prepaid card or IAS / postpaid / email / access list entry) – Select the service type. **Prepaid regular** services can be assigned to prepaid regular users. **Prepaid card services or IAS** services can be assigned to classic prepaid cards and IAS templates. **Postpaid** services can be assigned to postpaid users. **Email** accounts cannot be used for PPP / Hotspot authentication; they are intended for Linux mailbox synchronization. **Access list** entries can be used with Mikrotik and StarOS to allow connection for specific CPEs.

**Limit download** – Enable the capping the download traffic.

**Limit upload** – Enable the capping the upload traffic.

**Limit total traffic** – Enable the capping the total traffic (download + upload).

**Limit expiration** – Expiration date capping.

**Limit online time** – Online time capping.

**Data rate (DL / UL)** – Defines the download and upload data rate in **kbps** (0 = unlimited data rate).

**Cisco policy map (DL)** – Cisco download policy map name.

**Cisco policy map (UL)** – Cisco upload policy map.

**Download quota per day** – Daily download traffic in MegaBytes. Zero value disables the feature.

**Upload quota per day** – Daily upload traffic in MegaBytes. Zero value disables the feature.

**Total quota per day** – Daily total traffic in MegaBytes. Zero value disables the feature.

**Time quota per day** – Daily online time in HH:MM:SS format. Zero value disables the feature.

**Enable burst mode** – Check this option to enable the burst mode.

**Burst limit (DL / UL)** – Burst limit for download and upload. This is the peak data rate the user can achieve. Burst limit is always greater or equal than the nominal data rate.

**Burst threshold (DL / UL)** – Threshold for download and upload. If the user exceeds this limit for a predefined time, the data rate will be reduced to the nominal value (as set in **Data rate**). Enter higher burst limit than the nominal data rate.

**Burst time (DL / UL)** – Timeout after the limitation will begin if the client exceeds the threshold.

**Priority** – Priority of packets.

**IP pool name** – Select a specified IP pool via **Framed-Pool** RADIUS attribute. It is a Mikrotik and Cisco specific feature.

**Next disabled service** – Next service to use with disabled accounts.

**Next expired service** – Selector for next expired service. It is activated if the master service has expired.

It is very useful if a user account has expired, but You want to grant Internet access on reduced data rate. Register a new, uncapped service with reduced data rate and select it from this dropdown list.

**Next daily service** – Selector for next daily service. Exceeding the daily quota activates the next daily service.

**Ignore static IP** – Ignore the static CPE IP assigned in **Edit user** form.

**Custom RADIUS attributes** – User definable RADIUS attributes. The system sends custom attributes in *Access-accept* message.

**Generate TFTP boot file** – Generate DOCSIS compliant TFTP boot file. The TFTP file template is located in *config* directory.

**Advanced CM configuration** – Custom TFTP boot file.

**Allowed NASs** – The service is available on the select NAS devices only.

**Available for managers** – The service is available for the selected managers only.

- **Price definitions:**

**Postpaid price calculation** (downloaded traffic / uploaded traffic / online time) – Select the traffic and / or time used in price calculation.

**Monthly account** – Enable monthly account mode. It is required for auto renewal.

**Automatic renewal** – Enable automatic account renewal (required by both prepaid and postpaid mode).

Postpaid monthly accounts are renewed on a **specific day**. The day is selectable in ACP / System settings.

Prepaid monthly accounts are checked **every day at midnight** and renewed if:

1. The account is **expired**
2. The account has **enough deposit** to cover the service renewal fee

**Carry over remaining MBs** – Do not reset the the traffic counters upon auto renewal.

**Reset counters if date has expired** – Add new credits to zero balance if an account has been expired (date) .

**Enable additional credits** – Enables additional credit mode for monthly accounts.

**Net unit price** – The price of one unit without VAT.

**Gross unit price** – The price of one unit with VAT.

**Net additional unit price** – This filed is used by monthly accounts. Users can purchase additional credits if the date is expired, but the account has no more available traffic left. VAT is not included.

**Gross additional unit price** – Same as Net additional price, but with added VAT.

**Date addition mode** (reset expiration date / prolong expiration date / prolong expiration date with correction) – Determines how to add days to an account. **Reset expiration date** always adds new days or months to the current date. It is used mainly by combined packages (1 month + x MB). **Prolong expiration date** adds days to the current expiration date. **Prolong expiration date with correction** adds days to the current expiration date as available in the user profile, but it will use the current date if expiration date is in the past.

**Time addition mode** (reset online time / prolong online time) – Select how to add online time for an account: always **add to zero** or **add to remaining value**.

**Traffic addition mode** (reset traffic counters / additive) – Select how to add traffic for an account: always **add to zero** or **add to remaining value**.

**Expiration date unit** (days / months) – Defines the amount of one date unit (days or months).

**Online time unit** (minutes / hours) – Defines the amount of one time unit.

**Download traffic unit** – Defines the amount of one download traffic unit.

**Upload traffic unit** – Defines the amount of one upload traffic unit.

**Total traffic unit** – Defines the amount of one total traffic unit (download + upload).

**Initial expiration date** – Defines the initial expiration. Used by self registration and auto renewal.

**Initial online time amount** – Defines the initial online time. Used by self registration and auto renewal.

**Initial download traffic amount** – Defines the initial download traffic. Used by self registration and auto renewal.

**Initial upload traffic amount** – Defines the initial upload traffic users. Used by self registration and auto renewal.

**Initial total traffic amount** – Defines the initial total traffic.Used by self registration and auto renewal.

**Minimal base amount** – Defines the minimal base amount what users can purchase.

**Additional traffic unit** – Defines the additional traffic unit in MB.

**Minimal additional amount** – Defines the minimal additional amount what users can purchase.

**Special accounting** and **dynamic data rates** are also available in the service plan. You can click the **Edit** link to invoke the appropriate editor.

Use the **Delete service** to delete the current service.

### Services / Edit service / Special accounting editor

With special accounting system You can create services with reduced or free accounting periods. You can easily create a nightly service where only 50% traffic or time is logged.

Clicking the **edit** link under the special accounting on **Edit service** screen the editor window will open.

Here You can register, update and delete the special accounting intervals. Click the pencil icon to open the edit form.

In the edit form You can set the **start** and **end time** of the interval, the **ratio** (time, download, upload), select **days** of week and **enable** or **disable** the authentication in the specified interval.

Click the update button to store the changes.

### Services / Edit service / Dynamic data rate editor

In **Dynamic data rate editor** You can define special intervals when a custom data rate will apply. The data rate change is made on the fly, **without** reconnecting the user, with the help of Mikrotik API.

Clicking the **edit** link under the special data rates on **Edit service** screen the editor window will open.

Here You can create, update and delete the special data rate intervals. Click the pencil icon to open the edit form.

Here You can define the **start** and **end time** of the interval, the **data rate** (download, upload) and the **burst** mode. You can also select **days** of week for the current interval.

Click the update button to store the changes.

In the next paragraph You will find detailed description how to configure the Mikrotik API in order to use the special data rate system.

### Configuring the Mikrotik API

Use Winbox to configure the API service in Mikrotik.

- **Enable** the **API** service in Mikrotik (IP / Services, port 8728).
- **Register** the **API user** in Mikrotik (user name “*api*” is recommended) . Radius Manager will use this user to log into Mikrotik to change the data rate on the fly.
- Enter the **same user** name and **password** in ACP / Edit NAS and enable the API.

If API is enabled and configured properly, You will see in the Winbox log how the API user logs in and out in every 1-5 minutes (depending on *radiusmanager.cfg*).

API is available in **Mikrotik v 3** or newer versions. Older versions are not capable of controlling the data rate on the fly.

### Special data rate restrictions

Do not add “-1” suffix to user names, otherwise the system will not be able to identify the simple dynamic queues and the special data rate feature will not function properly.

### Services / New service

Use this function to register a new service.

- **Basic parameters:**

**Service name** – Define the service name.

**Description** – Enter the service description, printed on prepaid cards.

**Enable** – Enable the service. Disabled services are not assignable to users.

**Available in UCP** – Enable listing the service in UCP.

**Type of service** (prepaid regular / prepaid card or IAS / postpaid / email / access list entry) – Select the service type. **Prepaid regular** services can be assigned to prepaid regular users. **Prepaid card services or IAS** services can be assigned to classic prepaid cards and IAS templates. **Postpaid** services can be assigned to postpaid users. **Email** accounts cannot be used for PPP / Hotspot authentication; they are intended for Linux mailbox synchronization. **Access list** entries can be used with Mikrotik and StarOS to allow connection for specific CPEs.

**Limit download** – Enable the capping the download traffic.

**Limit upload** – Enable the capping the upload traffic.

**Limit total traffic** – Enable the capping the total traffic (download + upload).

**Limit expiration** – Expiration date capping.

**Limit online time** – Online time capping.

**Data rate (DL / UL)** – Defines the download and upload data rate in **kbps** (0 = unlimited data rate).

**Cisco policy map (DL)** – Cisco download policy map name.

**Cisco policy map (UL)** – Cisco upload policy map.

**Download quota per day** – Daily download traffic in MegaBytes. Zero value disables the feature.

**Upload quota per day** – Daily upload traffic in MegaBytes. Zero value disables the feature.

**Total quota per day** – Daily total traffic in MegaBytes. Zero value disables the feature.

**Time quota per day** – Daily online time in HH:MM:SS format. Zero value disables the feature.

**Enable burst mode** – Check this option to enable the burst mode.

**Burst limit (DL / UL)** – Burst limit for download and upload. This is the peak data rate the user can achieve. Burst limit is always greater or equal than the nominal data rate.

**Burst threshold (DL / UL)** – Threshold for download and upload. If the user exceeds this limit for a predefined time, the data rate will be reduced to the nominal value (as set in **Data rate**). Enter higher burst limit than the nominal data rate.

**Burst time (DL / UL)** – Timeout after the limitation will begin if the client exceeds the threshold.

**Priority** – Priority of packets.

**IP pool name** – Select a specified IP pool via **Framed-Pool** RADIUS attribute. It is a Mikrotik and Cisco specific feature.

**Next disabled service** – Next service to use with disabled accounts.

**Next expired service** – Selector for next expired service. It is activated if the master service has expired.

It is very useful if a user account has expired, but You want to grant Internet access on reduced data rate. Register a new, uncapped service with reduced data rate and select it from this dropdown list.

**Next daily service** – Selector for next daily service. Exceeding the daily quota activates the next daily service.

**Ignore static IP** – Ignore the static CPE IP assigned in **Edit user** form.

**Custom RADIUS attributes** – User definable RADIUS attributes. The system sends custom attributes in *Access-accept* message.

**Generate TFTP boot file** – Generate DOCSIS compliant TFTP boot file. The TFTP file template is located in *config* directory.

**Advanced CM configuration** – Custom TFTP boot file.

**Allowed NASS** – The service is available on the select NAS devices only.

**Available for managers** – The service is available for the selected managers only.

- **Price definitions:**

**Postpaid price calculation** (downloaded traffic / uploaded traffic / online time) – Select the traffic and / or time used in price calculation.

**Monthly account** – Enable monthly account mode. It is required for auto renewal.

**Automatic renewal** – Enable automatic account renewal (required by both prepaid and postpaid mode).

Postpaid monthly accounts are renewed on a **specific day**. The day is selectable in ACP / System settings.

Prepaid monthly accounts are checked **every day at midnight** and renewed if:

1. The account is **expired**
2. The account has **enough deposit** to cover the service renewal fee

**Carry over remaining MBs** – Do not reset the the traffic counters upon auto renewal.

**Reset counters if date has expired** – Add new credits to zero balance if an account has been expired (date) .

**Enable additional credits** – Enables additional credit mode for monthly accounts.

**Net unit price** – The price of one unit without VAT.

**Gross unit price** – The price of one unit with VAT.

**Net additional unit price** – This filed is used by monthly accounts. Users can purchase additional credits if the date is expired, but the account has no more available traffic left. VAT is not included.

**Gross additional unit price** – Same as Net additional price, but with added VAT.

**Date addition mode** (reset expiration date / prolong expiration date / prolong expiration date with correction) – Determines how to add days to an account. **Reset expiration date** always adds new days or months to the current date. It is used mainly by combined packages (1 month + x MB). **Prolong expiration date** adds days to the current expiration date. **Prolong expiration date with correction** adds days to the current expiration date as available in the user profile, but it will use the current date if expiration date is in the past.

**Time addition mode** (reset online time / prolong online time) – Select how to add online time for an account: always **add to zero** or **add to remaining value**.

**Traffic addition mode** (reset traffic counters / additive) – Select how to add traffic for an account: always **add to zero** or **add to remaining value**.

**Expiration date unit** (days / months) – Defines the amount of one date unit (days or months).

**Online time unit** (minutes / hours) – Defines the amount of one time unit.

**Download traffic unit** – Defines the amount of one download traffic unit.

**Upload traffic unit** – Defines the amount of one upload traffic unit.

**Total traffic unit** – Defines the amount of one total traffic unit (download + upload).

**Initial expiration date** – Defines the initial expiration. Used by self registration and auto renewal.

**Initial online time amount** – Defines the initial online time. Used by self registration and auto renewal.

**Initial download traffic amount** – Defines the initial download traffic. Used by self registration and auto renewal.

**Initial upload traffic amount** – Defines the initial upload traffic users. Used by self registration and auto renewal.

**Initial total traffic amount** – Defines the initial total traffic. Used by self registration and auto renewal.

**Minimal base amount** – Defines the minimal base amount what users can purchase.

**Additional traffic unit** – Defines the additional traffic unit in MB.

**Minimal additional amount** – Defines the minimal additional amount what users can purchase.

## Services / Scheduled changes

Use this function to list the scheduled service changes. You can see the **request date**, the **user name**, the **schedule date**, the requested **service name** and **who have requested** the service change.



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## Services / Service change history

This list is used to check the activated services. You can see the **request date**, the **user name**, the **schedule date**, the **requested service** name and **who have requested** the service change.

The status can be **scheduled**, **completed** or **cancelled**.

## Managers / List managers

Using this option You can list the managers registered in the system. You can select certain managers, select and deselect all managers. The following actions are available with the selected managers:

**Enable** – Enable the selected managers.

**Disable** – Disable the selected managers. Disabled managers cannot log into ACP.

**Delete** – Delete the selected managers. The default manager (admin) cannot be deleted.

## Managers / List managers / Edit manager

Use this function to edit the manager details.

**Enable** – Enable the current manager.

**Password** – Enter a new password. The Allowed characters are defined in *system\_cfg.php*.

**Confirm password** – Enter the same password again.

**Change password** – Click to enable changing the password.

**First name** – First name of manager.

**Last (family) name** – Family name of manager.

**Company name** – Company name.

**Address** – Postal address.

**City** – City name.

**ZIP** – ZIP code.

**Country** – Select a country.

**State** – Select a state.

**Phone number** – Enter the phone number.

**Mobile number** – Enter the mobile number.

**Email** – Enter the email address.

**VAT ID** – Enter the VAT identifier.

**Language** – Select the manager language.

**Comment** – Optional comment.

**Permissions:**

- **List users** – Can list users.
- **Register users** – Can register new users.
- **Edit users** – Can edit basic user data (name, address etc.).
- **Edit privileged user data** – Allows editing privileged fields (credits, static IP).
- **Delete users** – Can delete users.
  
- **List managers** – Can list managers.
- **Register managers** – Can register new managers.
- **Edit managers** – Can edit managers.
- **Delete managers** – Can delete managers.
  
- **List services** – Can list services.
- **Register services** – Can register new services.
- **Edit services** – Can edit services.
- **Delete services** – Can delete services.
  
- **Billing functions** – Can generate invoices.
- **Allow negative balance** – Can refill prepaid accounts even if the reseller account is in negative balance.
- **Allow discount prices** – Can form the service price freely (discount).
- **Enable canceling invoices** – Enable canceling invoices (enter negative amount in **Add credits** form to cancel an invoice).
  
- **Access invoices** – Can access invoicing functions.
- **Access all invoices** – Can access all invoices not only the own ones.
- **Shown invoice totals** – Display the totals in List invoices view.
- **Edit invoices** – Can enter the payment date for postpaid invoices.
  
- **Access all users** – Can access all users in the system.
- **List online users** – Can list online users.
- **Disconnect users** – Can disconnect users.
  
- **Card system and IAS** – Can access prepaid card and IAS system.
- **Connection report** – Can access CTS functions.
- **Overall traffic report** – Can access traffic report.
- **Maintain APs** – Can access AP functions.

Click the **Update manager** button to store the manager data.

### **Managers / List managers / Edit manager / Financial information**

Here You can see the account balance of current manager.

**Available balance** – The balance of current manager. This field is read only.

**Amount** – Enter the amount to credit or debit the manager.

**Payment type** (cash / bank transfer) – Select the payment type.

### Managers / New manager

Use this function to register a new manager.

**Enable** – Enable the current manager.

**Password** – Enter a new password. The Allowed characters are defined in *system\_cfg.php*.

**Confirm password** – Enter the same password again.

**Change password** – Click to enable changing the password.

**First name** – First name of manager.

**Last (family) name** – Family name of manager.

**Company name** – Company name.

**Address** – Postal address.

**City** – City name.

**ZIP** – ZIP code.

**Country** – Select a country.

**State** – Select a state.

**Phone number** – Enter the phone number.

**Mobile number** – Enter the mobile number.

**Email** – Enter the email address.

**VAT ID** – Enter the VAT identifier.

**Language** – Select the manager language.

**Comment** – Optional comment.

#### Permissions:

- **List users** – Can list users.
- **Register users** – Can register new users.
- **Edit users** – Can edit basic user data (name, address etc.).

- **Edit privileged user data** – Allows editing privileged fields (credits, static IP).
- **Delete users** – Can delete users.
  
- **List managers** – Can list managers.
- **Register managers** – Can register new managers.
- **Edit managers** – Can edit managers.
- **Delete managers** – Can delete managers.
  
- **List services** – Can list services.
- **Register services** – Can register new services.
- **Edit services** – Can edit services.
- **Delete services** – Can delete services.
  
- **Billing functions** – Can generate invoices.
- **Allow negative balance** – Can refill prepaid accounts even if the reseller account is in negative balance.
- **Allow discount prices** – Can form the service price freely (discount).
- **Enable canceling invoices** – Enable canceling invoices (enter negative amount in **Add credits** form to cancel an invoice).
  
- **Access invoices** – Can access invoicing functions.
- **Access all invoices** – Can access all invoices not only the own ones.
- **Shown invoice totals** – Display the totals in List invoices view.
- **Edit invoices** – Can enter the payment date for postpaid invoices.
  
- **Access all users** – Can access all users in the system.
- **List online users** – Can list online users.
- **Disconnect users** – Can disconnect users.
  
- **Card system and IAS** – Can access prepaid card and IAS system.
- **Connection report** – Can access CTS functions.
- **Overall traffic report** – Can access traffic report.
- **Maintain APs** – Can access AP functions.

Click the **Add manager** button to store the new manager data.

## NAS / List NAS

List the registered NAS (Network Access Server) devices.

## NAS / Edit NAS

Clicking the NAS name in the list You can edit it's parameters:

**NAS name** – Name of the NAS.

**IP address** – IP address of the NAS.

**Type** (Mikrotik / StarOS / Chillispot / Cisco / pfSense / other) – Type of the NAS.

**Secret** – The RADIUS secret for NAS.

**Password** – StarOS password.

**Enable Mikrotik API** – Enable Mikrotik API. It is required by the **dynamic data rate** system.

**API user name** – Mikrotik API user name.

**API password** – Mikrotik API password.

**Cisco bandwidth support** (None / Rate limit / Policy map) – Select a Cisco bandwidth control method.

**Description** – Optional comment.

### **NAS / New NAS**

Register a new NAS in the system. The available fields are:

**NAS name** – Name of the NAS.

**IP address** – IP address of the NAS.

**Type** (Mikrotik / StarOS / Chillispot / Cisco / pfSense / other) – Type of the NAS.

**Secret** – The RADIUS secret for NAS.

**Password** – StarOS password.

**Enable Mikrotik API** – Enable Mikrotik API. It is required by the **dynamic data rate** system.

**API user name** – Mikrotik API user name.

**API password** – Mikrotik API password.

**Cisco bandwidth support** (None / Rate limit / Policy map) – Select a Cisco bandwidth control method.

**Description** – Optional comment.

### **AP / List access points**

List the registered Access points (AP) in the system.

### **AP / Edit access point**

Clicking the AP name in the list You can edit the following parameters:

**Enable** – Enable the AP. The system reads information from an active AP only (SNMP or API).

**Name** – Enter the name of the AP.

**IP address** – Enter the IP address of the AP.

**Access mode** (SNMP / Mikrotik API) – Select the access mode. **SNMP** supports only **wireless signal level**, but the access is more stable and faster than Mikrotik API. **Mikrotik API** supports **wireless signal level**, **CCQ** and **SNR**, but the setup is complicated. The recommended access mode is SNMP.

**SNMP community** – Enter the SNMP community string as defined in the AP. Required by SNMP mode.

**API username** – Enter the Mikrotik API user name. Required by Mikrotik API mode.

**API password** – Enter the Mikrotik API password. Required by Mikrotik API mode.

**Description** – Optional description.

### AP / New access point

Register new access point. The available parameters are:

**Enable** – Enable the AP. The system reads information from an active AP only (SNMP or API).

**Name** – Enter the name of the AP.

**IP address** – Enter the IP address of the AP.

**Access mode** (SNMP / Mikrotik API) – Select the access mode. **SNMP** supports only **wireless signal level**, but the access is more stable and faster than Mikrotik API. **Mikrotik API** supports **wireless signal level**, **CCQ** and **SNR**, but the setup is complicated. The recommended access mode is SNMP.

**SNMP community** – Enter the SNMP community string as defined in the AP. Required by SNMP mode.

**API username** – Enter the Mikrotik API user name. Required by Mikrotik API mode.

**API password** – Enter the Mikrotik API password. Required by Mikrotik API mode.

**Description** – Optional description.

### CMTS / List CMTS

List all registered CMTS devices in the system.

---

### CMTS / Edit CMTS

You can edit the following CMTS parameters:

**Name** – Name of the CMTS.

**IP address** – IP address of the CMTS.

**SNMP community** – The SNMP community string as defined in the CMTS.

**Description** – Optional description.

### CMTS / New CMTS

Use this function to define a new CMTS. The parameters are:

**Name** – Name of the CMTS.

**IP address** – IP address of the CMTS.

**SNMP community** – The SNMP community string as defined in the CMTS.

**Description** – Optional description.

### IP pools / List pools

List the available IP pools.

### IP pools / Edit pool

Edit the following parameters of the IP pool:

**Pool name** – Enter the IP pool name.

**First IP** – Set the first address of the IP pool.

**Last IP** – Set the last address of the IP pool.

**Next pool** – Select the next pool (cascaded pool).

**Description** – Optional description.

### IP pools / New pool

Define new IP pool. The parameters are:

**Type** (DOCSIS / RADIUS) – Select the IP pool type. **DOCSIS** is used by **CMTS** only, while **RADIUS**

is required by **RADIUS IP pool** support.

**Pool name** – Enter the IP pool name.

**First IP** – Set the first address of the IP pool.

**Last IP** – Set the last address of the IP pool.

**Next pool** – Select the next pool (cascaded pool).

**Description** – Optional description.

## Financials / Find invoices

Filter and list the invoices. The filter parameters are:

**From date** – Enter a date from where You want to list the invoices.

**To date** – Enter a date to which You want to list the invoices.

**From invoice number** – Starting invoice number.

**To invoice number** – Ending invoice number.

**Payment gateway transaction ID** – Find the online payment gateway transaction ID.

**Issued by** – User account / manager name who has issued the invoice.

**Issued to** – User account name who has received the invoice.

**Account owner** – Manager name who owns the accounts.

**Comment** – Search comments.

**Type** (all transactions / only invoices) – Select the records to display.

**Postpaid payment status** (any / unpaid / Grace period expired) – Select which postpaid invoices to show.

**Transaction of** (users / managers) – List transactions of users and managers (resellers).

**Payment type** (cash / bank transfer / internal transfer / credit refill with card / PayPal Website Payments Standard / PayPal Website Payments Pro / PayPal Express Checkout / Netcash / Authorize.net / DPS Payment Express / 2Checkout / Payfast) – Payment method filter.

In invoice list You can display and print any invoice **clicking the icon** in the Action column.

Click the invoice number to **edit the invoice**. The available fields are:

**Payment completed on** – Enter the date when the money transfer has been realized. It is used to disable the users due to unpaid invoice (if option is enabled in System settings).



**Comment** – An internal, optional comment.

## Financials / Generate postpaid invoices

A classic batch billing function for postpaid accounts. You can generate and print thousands of invoices in two steps.

First, enter the billing parameters:

**From date** – Beginning of billing period.

**To date** – End of billing period.

**User group** – Generate invoices for the selected group only.

**Include inactive accounts** – Generate invoices for inactive accounts.

**Include disabled accounts** – Generate invoices for disabled accounts.

**Payment type** (Cash / Bank transfer) – Select the payment type.

After confirmation the system will begin to generate the invoices for all postpaid users matching the preset criteria. Once the operation has been completed, You can browse and print the generated invoices in **ACP / Financials / Find invoices** menu.

## Card system / List card series

List the available Refill and Classic Prepaid card series. CSV and PDF export is available.

**CSV export** can be used to transfer the complete card serie to a 3rd party printing application.

**PDF export** feature generates A4 sheets. PDF export is perfect for smaller series. You can customize the amount of PIN codes per page, the position, the typeface, the font size, the background picture etc. in *system\_cfg.php*.

You can select certain serie, select and deselect all card series. The available operations are:

**Revoke series** – Disable the selected series.

**Activate series** – Enable the selected series.

**Delete series** – Delete the selected series.

### WARNING!

**Deleting** cards is **not recommended**. When You generate a new serie the system can **reassign** the old, deleted **PIN code** again. Pay attention to this. Use the **Revoke series** instead of deleting the cards.

## Card system / List classic prepaid cards

List the classic prepaid cards registered in the system.

## Card system / List refill cards

List the available refill cards.

## Card system / Find refill cards

Find refill cards using the following parameters:

**PIN** – PIN code of refill card.

**Series** – Serie number of refill card.

**Activated by** – Name of the user who has activated the refill card.

**Activated on** – Date of activation.

**Status** (any / active / expired / revoked) – Select the status of the cards to list.

## Card system / Generate cards

Select this function to generate scratch cards. The parameters are:

**Card type** (classic prepaid / refill) – There are two card types available:

- 1. Classic prepaid cards** – They has predefined traffic and / or online time limits. Users can authenticate (Hotspot, PPP) using the card PIN code and password.
- 2. Refill cards** – They have a value only. Users cannot authenticate with refill cards. They are used to refill regular accounts in UCP.

**Quantity** – The number of cards to generate. Enter an amount what your system can handle easily. On fast server You can generate millions of cards in one step without getting a PHP timeout error.

**Gross card value** – Enter the value of card with VAT (this will be the final price of the card).

**Valid till** – Enter the expiration date. After this date nobody can use the card serie.

**Prefix** – Prefix for card serie.

**PIN length** – Ente the length of generated PIN codes.

**Password length** – The password length is definable for each card serie. Only Classic prepaid cards have password. Blank passwords are allowed, but not recommended.

**SMS verification required** – Force user identity verification by SMS (secret code is sent to mobile phone upon activation).

**User group** – The generated cards will belong to the selected group.

**Associated service** – Select the service used by the generated classic prepaid cards.

**Download limit** – Download limit for classic prepaid cards.

**Upload limit** – Upload limit for classic prepaid cards.

**Total limit** – Total traffic limit for classic prepaid cards.

**Online time limit** – Online time limit for classic prepaid cards.

**Expiration** (Defined by valid till / Calculated from card activation) – Select the account expiration mode. If “**Defined by valid till**” is selected, the account will expire on the date specified by the “**Valid till**” field. If You choose “**Calculated from card activation**”, the generated cards will expire after a predefined time which is calculated from the first use of the card.

**Available time from card activation** – Sets the time amount for “**Calculated from card activation**” option.

**Simultaneous use** – Defines how many concurrent connections are allowed for a certain **Classic prepaid** card. For regular use enter 1. Enter 2 if You are using pfSense, otherwise the reauthentication function will not work.

## Card system / Card statistics

Display the card statistics.

## IAS / List IAS users

List all IAS users available in the system.

## IAS / List IAS templates

Use this option to list the Instant Access Service templates available in the system. Click the IAS template name to edit the parameters.

## IAS / Edit IAS template

Edit the IAS template. The available parameters are:

**IAS template name** – Instant Access Service template name.

**Enable IAS** – Enable the IAS template. Only enabled IAS services can be purchased.

**Price** – Gross price of IAS.

**Service name** – Associated service.

**Download limit** – IAS download limit.

**Upload limit** – IAS upload limit.

**Total limit** – IAS total limit.

**Expiration** – Expiration date for IAS (fixed date).

**Online time limit** – Available online time for IAS.

**Expiration** (Defined by expiration date / Calculated from account activation) – Select the IAS expiration method.

**Available time from account activation** – Defines the available time calculated from the IAS activation.

**Simultaneous use** – Defines how many concurrent connections are allowed for a certain IAS account. For regular use enter 1. Enter 2 if You are using pfSense, otherwise the reauthentication function will not work.

### **IAS / New IAS template**

Define new IAS template. The fields are:

**IAS template name** – Instant Access Service template name.

**Enable IAS** – Enable the IAS template. Only enabled IAS services can be purchased.

**Price** – Gross price of IAS.

**Service name** – Associated service.

**Download limit** – IAS download limit.

**Upload limit** – IAS upload limit.

**Total limit** – IAS total limit.

**Expiration** – Expiration date for IAS (fixed date).

**Online time limit** – Available online time for IAS.

**Expiration** (Defined by expiration date / Calculated from account activation) – Select the IAS expiration method.

**Available time from account activation** – Defines the available time calculated from the IAS activation.

**Simultaneous use** – Defines how many concurrent connections are allowed for a certain IAS

account. For regular use enter 1. Enter 2 if You are using pfSense, otherwise the reauthentication function will not work.

### Reports / Online users

Display the online user list. The available actions are:

**Disconnect** – Remotely disconnect the selected users from a NAS.

**Close sessions** – Close the selected sessions, without disconnecting the users.

You can **sort the list** clicking the **arrows** in the header. Click the **hash symbol (#)** in the header to open the **column selector**.

### Reports / Registered cable modems

List the registered cable modems. This list is updated in every 5 minutes (controlled by a cron job).

The available actions are:

**Restart CM** – Restart the selected cable modems.

You can **sort the list** clicking the **arrows** in the header. Click **hash symbol (#)** in the header to open the **column selector**.

### Reports / Overall traffic report

Display traffic report for all users.

### Reports / Find traffic data

Filter the traffic details using the following parameters:

**User name** – Search by user name.

**Framed IP address** – Search by IP address.

**Calling station ID** – Search by MAC address.

**NAS** – Search by NAS.

**AP** – Search by Access Point name.

**In selected interval only** – Enable this checkbox to use the specified traffic interval.

**From date** – Beginning of interval.

**To date** – End of interval.

You can also leave all fields blank or combine them. Joker character is not allowed.

### **Reports / Traffic summary**

Use this function to overview the used traffic for all users in a given period. The generated report is CSV exportable.

**From** – Beginning date of report.

**To** – Ending date of report.

**NAS** – Filter by NAS.

**AP** – Filter by Access Point.

### **Reports / Connection report**

Filter and display the connection details. Parameters are:

**User name** – Name of the user.

**Source IP and port** – Source IP address and port of the connection.

**Destination IP and port** – Destination IP address and port of the connection.

**Protocol** (any / TCP / UDP) – Select the used protocol.

**From date** – Beginning date of list.

**To date** – Ending date of list.

**From time** – Beginning time of list.

**To time** – Ending time of list.

### **Reports / Authentication log**

Filter and display the RADIUS authentication log. The filter parameters are:

**User name** – Show log for this user only.

**NAS name** – Show log for this NAS only.

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## Reports / Last syslog events

Display the last 50 system log events.

## Reports / Browse syslog

Browse all system log events.

## Reports / System informations

Display license information, registration and module details.

## Reports / System statistics

Display the account statistics.

## Tools / Bulk email

Use this function to send bulk emails to all registered users. If the email address isn't specified for a certain user, the system will construct the email address from the **user name** and the **default domain name** (as defined in *system\_cfg.php*).

The available fields are:

**Group** – Only the selected group will receive the message.

**Subject** – Subject of message.

**Message** – Text of message.

## Tools / Bulk SMS

Use this function to send bulk SMS to all registered users.

The available fields are:

**Group** – Only the selected group will receive the message.

**Message** – Text of message.

## Tools / Start RADIUS server

Select this option to start the RADIUS server.

**Tools / Stop RADIUS server**

Select this option to stop the RADIUS server.

**Tools / Restart RADIUS server**

Select this option to restart the RADIUS server.

**Tools / Rebuild clients.conf**

Synchronize *raddb/clients.conf* with the registered NAS devices.

**Tools / Start DHCP server**

Select this option to start the DHCP server.

**Tools / Stop DHCP server**

Select this option to stop the DHCP server.

**Tools / Restart DHCP server**

Select this option to restart the DHCP server.

**Tools / Rebuild dhcpd.conf**

Synchronize */etc/dhcpd.conf* with the registered CM accounts.







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# USER CONTROL PANEL (UCP)

## Overview

The **User Control Panel** (UCP) is available for regular users to check the traffic details, personal data, invoices etc.

The default URL of UCP is:

<http://yourhost/radiusmanager/user.php>

## Description of menus

### Home

Navigate to home page. An account overview is available here.

### Traffic report

Users can check their traffic details in a well organized form.

### List invoices

Users can examine the invoices.

### Change password

With this function users can change the password (both UCP and Internet access). They have to enter the old password and the new password two times to complete the operation.

### Redeem voucher

Users can enter the refill card PIN code to increase the internal balance. After three unsuccessful attempts the system disables the function.

### Purchase credits

Users can purchase credits with internal balance or any available online payment gateway. Clicking the **Purchase service** the system will show the current service details. The users have to enter the amount of units and click the **Next** button.

After selecting the payment mode and completing the order the system updates the account balance

immediately. The new credit data will be available on the home page.

**Monthly combined accounts** are special case: only one combined month can be purchased at once. If a monthly combined account has not expired yet (date), users can purchase additional MegaBytes only.

### **Change service**

Users can choose which prepaid service to use. They can select a new service form the list. After confirmation the system will change the service immediately.

### **Edit account**

With this function users can edit their personal details (if enabled in ACP / System settings). The available fields are:

**First name** – First name of the user.

**Last (family) name** – Last name of the user.

**Address** – Address of the user.

**City** – City of the user.

**ZIP** – ZIP code of the user.

**Country** – Country of the user.

**State** – State of the user.

**Phone** – Phone number.

**Mobile** – Mobile number.

**Email** – Email address.

**Company** – Company name.

**VAT id** – VAT identification number.

**Language** – Select the used language.

### **Logout**

Logs out the current user from the UCP.





## **APPENDICES**





## Customizing the invoice form

Invoice form customization is a very easy procedure. An UTF-8 compatible HTML or text editor is required. The file name of the invoice is *invoice\_tpl.htm*, the logo image name is *invoice-logo.gif*.

The following tags can be used on the invoice form:

- **{MANAGERNAME}** – Manager who has generated the invoice.
- **{FULLNAME}** – Full name of customer.
- **{USERNAME}** – User name of customer.
- **{ADDRESS}** – Address of customer.
- **{CITY}** – City of customer.
- **{ZIP}** – ZIP code of customer.
- **{COUNTRY}** – Country of customer.
- **{STATE}** – State of customer.
- **{PHONE}** – Phone number of customer.
- **{MOBILE}** – Mobile number of customer.
- **{VATID}** – VAT identifier of customer.
- **{INVID}** – Invoice number.
- **{YEAR1}** – Invoice creation year.
- **{MONTH1}** – Invoice creation month.
- **{DAY1}** – Invoice creation day.
- **{YEAR2}** – Payment option year.
- **{MONTH2}** – Payment option month.
- **{DAY2}** – Payment option day.
- **{SERVICE}** – Service name.
- **{AMOUNT}** – Amount of sold service.
- **{NETPRICE}** – Unit price without VAT.
- **{VATPERCENT}** – VAT in percents.
- **{PRICE}** – The price of service without VAT.
- **{VAT}** – VAT amount.
- **{TOTALPRICE}** – Total price with or without VAT.
- **{CURRENCY}** – Currency code.
- **{PAYMODE}** – Payment mode (cash or money transfer).
- **{REMARK}** – Remark field.
- **{GWTRANSID}** – Online payment gateway transaction id.

## Email templates

Radius Manager can send various email notifications for users and managers. The messages are sent in plain text format, HTML is not supported. The following email templates are available in *lang* directory:

- **mailaccrenewed\_tpl.txt** – The user receives this email after his account has been renewed.
- **mailaccnewfail\_tpl.txt** – The user receives this email after an unsuccessful auto renewal.
- **mailaccverify\_tpl.txt** – This template is used for account activation.
- **mailforgotpsw\_tpl.txt** – Verification email for password recovery.
- **mailiasreg\_tpl.txt** – Sent for managers when a new IAS account has been registered.
- **mailnewpsw\_tpl.txt** – Email message containing the new password.
- **mailselfreg\_tpl.txt** – Notifies managers about new self registered accounts.
- **mailsrvchg\_tpl.txt** – This email is sent upon changing the current service.
- **mailwarnexp\_tpl.txt** – Alert message sent when an account is going to expire (date).
- **mailwarntraff\_tpl.txt** – Alert message sent when an account is going to expire (traffic, online time).
- **mailwelcomeuser\_tpl.txt** – Welcome message for new users.

You can customize the templates with any UTF-8 compatible text editor.

## SMS templates

Radius Manager can send various SMS notifications for users. The messages are sent in plain text format. The following SMS templates are available in *lang* directory:

- **smsaccverify\_tpl.txt** – Template used for account activation.
- **smspsw\_tpl.txt** – SMS message containing the new password.
- **smspswact\_tpl.txt** – Verification SMS for password recovery.
- **smsselfregact\_tpl.txt** – Self registered account activation code.
- **smswarnexp\_tpl.txt** – Alert message sent when an account is going to expire (date).
- **smswarntraff\_tpl.txt** – Alert message sent when an account is going to expire (traffic, online time).
- **smswelcomeuser\_tpl.txt** – Welcome message for new users.

You can customize the templates with any UTF-8 compatible text editor.

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