

Net2ParkingServer

Manual 1.4

Beware: the Net2ParkingServer has been replaced
by the [Parking R2](#) application!

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Net2 Configuration

Conceptually

This application offers the possibility to restrict access to one or more areas, based on the number of parking lots allocated to a 'department' (or company). Upon arrival, the department counter is increased and access is granted until the allocated number is reached, after which further access will be denied. When an area is marked full for a department, at least one person must leave the area before access can be granted again.

The program logic is provided by a Windows Service, which (preferably) runs on the Paxton server. In this arrangement, the controllers giving access to a countable area no longer operate autonomously, but pass on access requests to this service. It is therefore necessary that the connection between controllers and Paxton server is present at all times.

From the applications point of view, each Net2 department represents a separate company. In the example below, the companies: 'Apple', 'Microsoft', 'IBM' and 'Google' share a common parking area.

(See image 1)

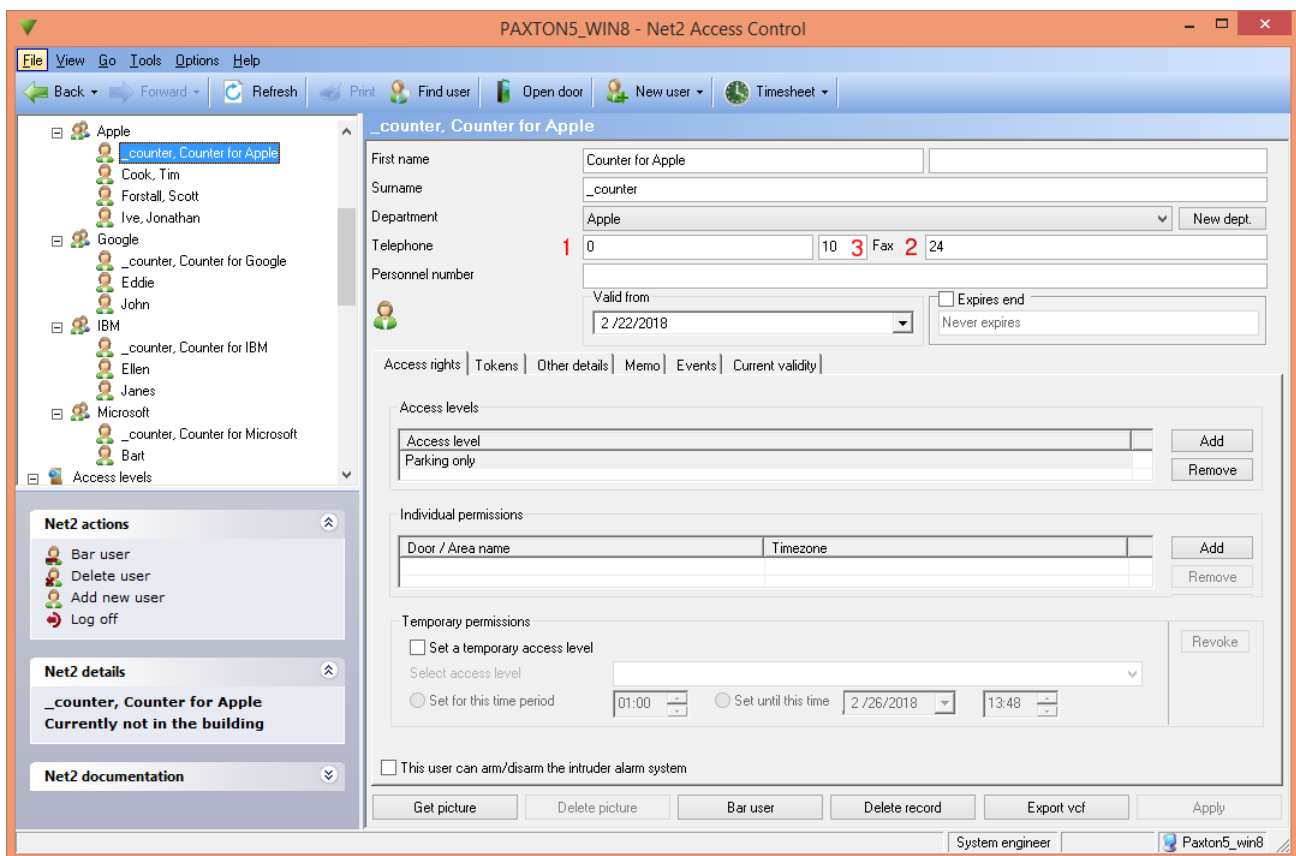


Image 1

_Counter user

The application determines on the basis of counting values (which are stored per department / company) whether or not employees have access to the parking area. A special 'employee', which will hold these counter values, must therefore be created for each company.

These special users must have the fixed surname "**_counter**". The first name of this "_counter" user is free to choose, but it is advisable to use a clear, descriptive, name. E.g. 'Counter for company XX',

Departments without such a '_counter' user are ignored by the application. Employees of such departments will normally never be granted access to the car park.

Counter values

For a '_counter' user, the field 'Telephone' (1) is used to store the number of already occupied parking lots. The field 'Fax' (2) is used to store the total number of authorised parking lots. These values can be changed manually at any time, even when the application is in operation.

If Net2Entry modules are used, the 'extension' field (3) must contain the Monitor ID that can be used to call the company concerned.

(See image 2)

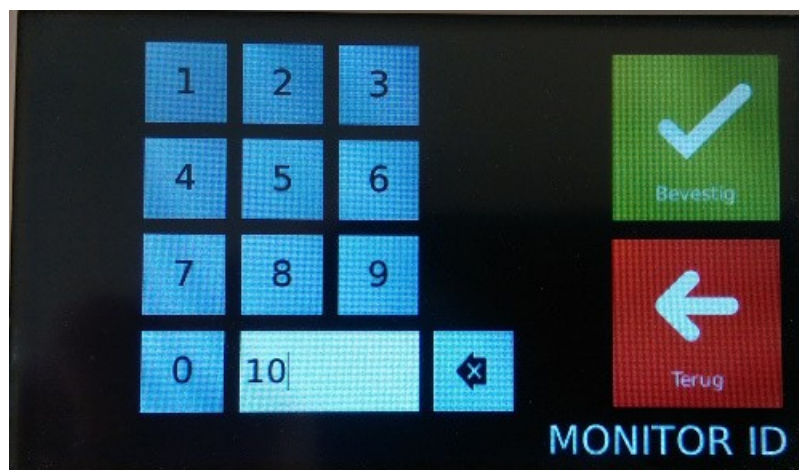


Image 2



The access level of the ‘_counter’ user

The ‘_counter’ user must be assigned an authorisation that gives access to the car park only.

(See image 3.)

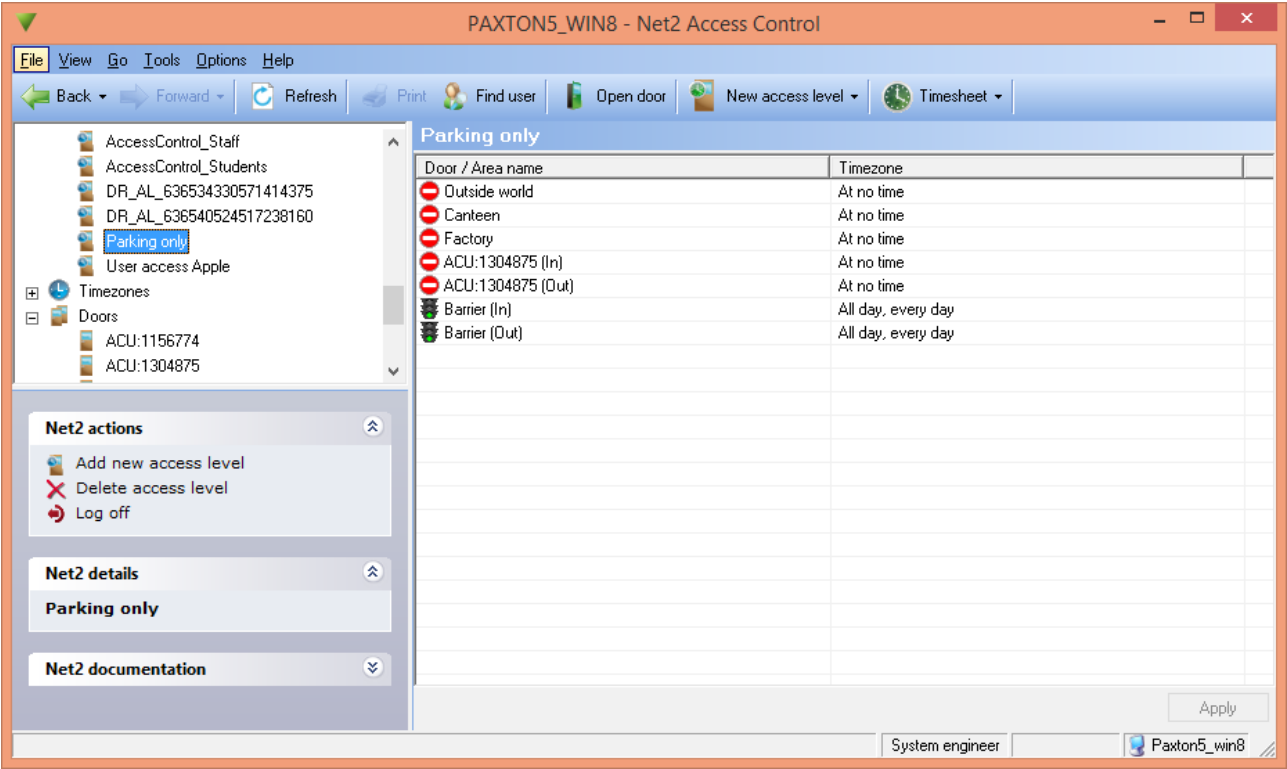


Image 3

The application uses this authorisation to determine which controllers give access to the car park. This authorisation can also restrict access to the car park to certain parts of the day. If, in the example above, the standard ‘*Working hours*’ schedule would have been assigned; access outside these ‘*Working hours*’ would always be denied.





The access levels for the employees

In principle, **no employee** may have an authorisation that gives access to the car park. This means that all existing authorisations must be checked in advance and possibly adapted. This must be done manually within the Net2 client application (*).

(See image 4)

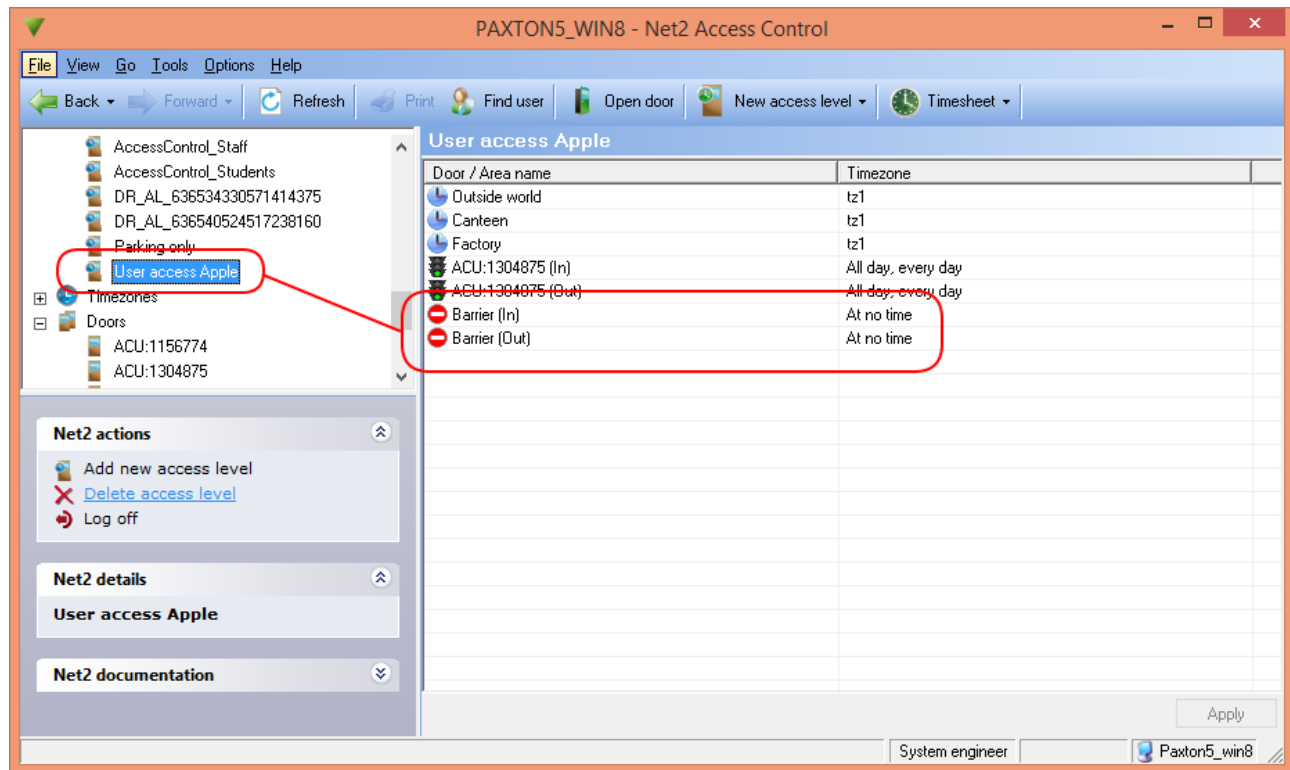


Image 4

(*)Employees may never be connected to the standard "No access" access level. Employees associated with this access level will always be denied access! If necessary, create a new access level based on the template: "Create a new blank access level", and then link this access level to all persons who may have access to the parking area only. The name of this access level is not relevant.



Installation

The Net2ParkingServer application is installed using a single Windows Installation file (*.msi). The entire installation consists of a 'Manager' application, which is specifically designed for the configuring of the actual service and the service responsible for the access management itself.

(See image 5.)

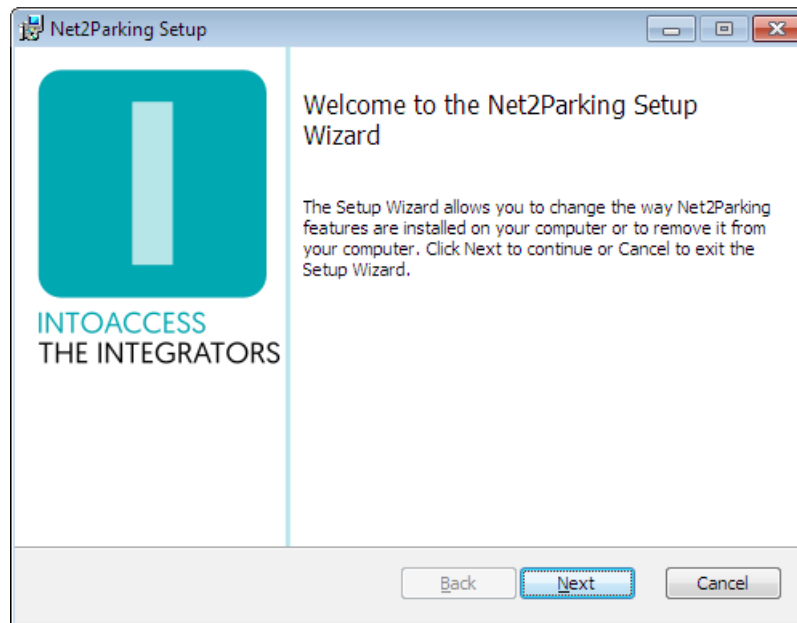


Image 5

Configuration / Management

Configuring the Net2ParkingServer application must be done using the supplied 'Manager application' (Net2ParkingService Manager). This application will show a 'splash' screen a few seconds at start up and then settle itself in the system tray in the lower right corner of the taskbar.

(See image 6.)

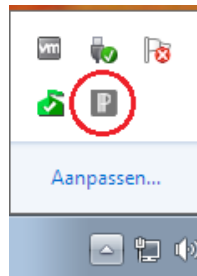


Image 6

A click with the right-mouse button will open the main menu.

(See image 7.)

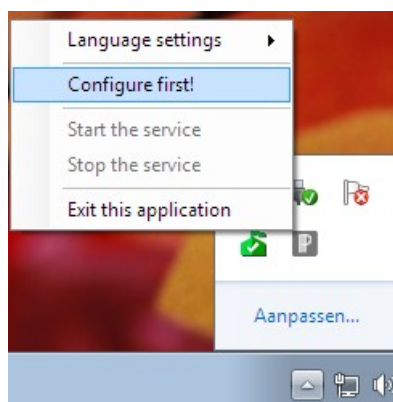


Image 7

The possibility exists that the application will initially show a Dutch language menu, this can be adjusted by selecting 'English' in the menu option: 'Taal instellingen' (Language settings).

As long as the application is not yet configured, the Start- and Stop- service menu options are not active. First select the menu option: '*Configure first!*'.



Setup the Net2 connection

The application opens with the screen that allows you to enter the Net2 connection parameters.

(See image 8.)

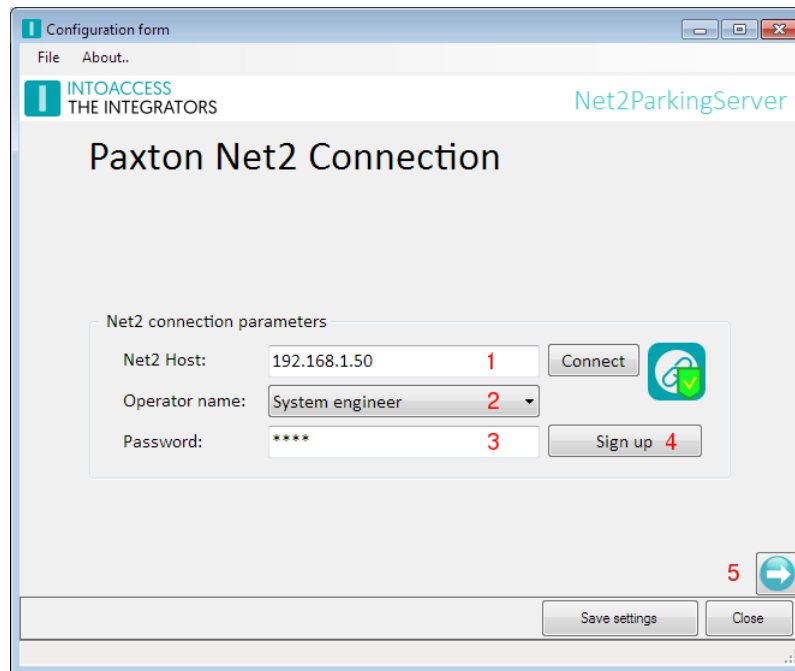


Image 8

- First, enter the (IP) address of the PC on which the Paxton Net2 server is running. This may be the IP address or the network name of the machine concerned. If the application is installed on the same machine as Net2, you can use the text *"localhost"* as address. (1).
- After entering the address, click on 'connect'. Next, the application will first try to establish a connection to the Net2 server and, if it has been successful, retrieve a list of all Net2 'operators'. These are then displayed in the drop-down list.
- Choose an operator (2) and then enter the password. The default password for the 'System engineer' operator, 'net2', is preconfigured. (3).

This operator **must have** 'System engineer' rights. The application will check for this and complain if the chosen operator doesn't meet this requirement.

- Then click on the 'Sign up' button (4). If the connection can be set up, a message is displayed and the 'arrow button' (5) at the bottom right of the window becomes active.

The application will try to give an appropriate error message if something goes wrong in this process.





The basic settings

On this page you can specify a number of basic configuration parameters.
(See image 9.)

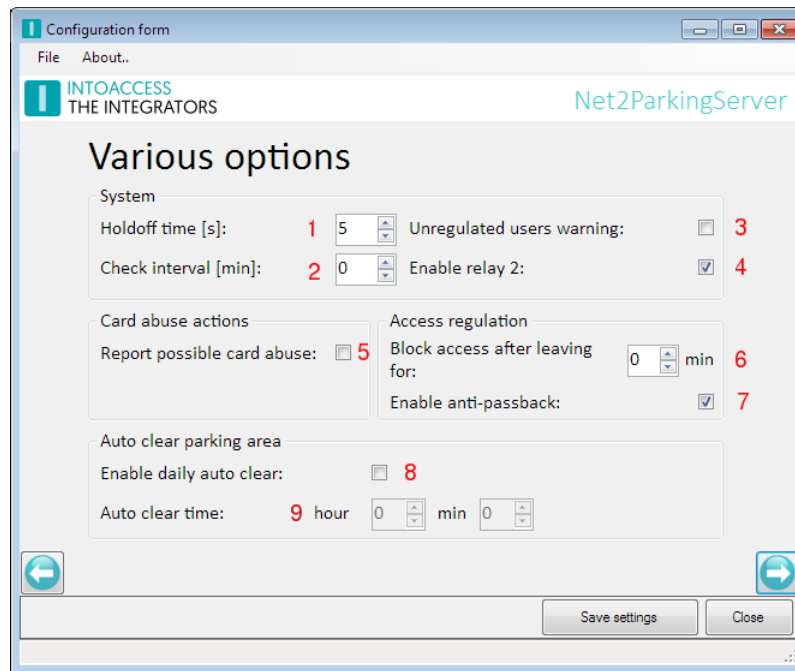


Image 9.

In the 'System' section you can:

- Set the time, within which the system will ignore a 2nd request of the same card. (1)
- Set the interval time at which the system will check for configuration errors (*1). The application will send an e-mail message when it detects such a configuration error. (2) (See also the section 'E-Mail setup'). A value of '0' minutes means that no intermediate checks will be carried out. Depending on the setting at (3), the application will check the configuration at start-up only.
(*1) The most important check concerns the number of people who have access to the parking area beyond the control of the application.
- Indicate whether relay 2 should be activated for a number of seconds if someone is refused access. A signal transmitter (e.g. a red light) connected to this relay can then be used to provide feedback to the person concerned. (also see Hardware modifications)

Under the heading 'Card abuse actions' you can:

- Set whether alleged card abuse should be reported. (5) Abuse is considered, among other things, the multiple offering of the same card at the exit barrier. By offering a card several times at the exit, it is (ostensibly) possible to create free parking spaces. The application can send an email to the administrator if this behaviour is observed..



Under the heading 'Access regulation' you can:

- Specify whether an employee should have no longer access to the parking for 'x' time after leaving. (6)
- Whether or not a strict anti-passback policy must be pursued. When this is the case, an access request will be refused if the card owner is already marked as administratively 'inside'. (7)

Under the heading 'Auto clear parking area' you can specify whether all counting values should be reset daily at a certain time.





Setup the loop – I/O relation

On this page, possible vehicle detection loops in the road surface can be linked to a Paxton I/O controller input. Also it can be specified to which access location they should be linked..

(See image 10.)

The presence of loops in the road surface is optional. If there are no loops available, select the option: "** Not connected **" in the I/O board dropdown list. However, the usage of loops is highly recommended; it significantly increases the reliability of the vehicle counting.

Contact IntoAccess if there are loops present and it is not possible/desired to pair them to a Paxton I/O controller. In most cases it will be possible to adapt the application in such a way that the loop statuses can be read in a different way (= custom implementation).

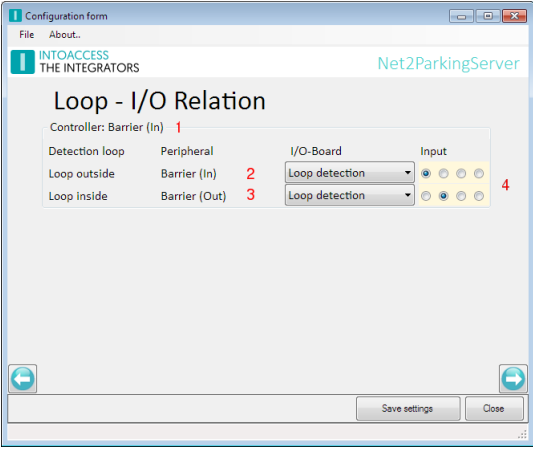


Image 10

For each access location (1) found, it is possible to configure the loop both for the outside-as for the inside. In this example, only one access location is configured (Barrier(in) and Barrier(out)).

If there are no Paxton I/O boards detected, the page below will be shown. (See image 11.)

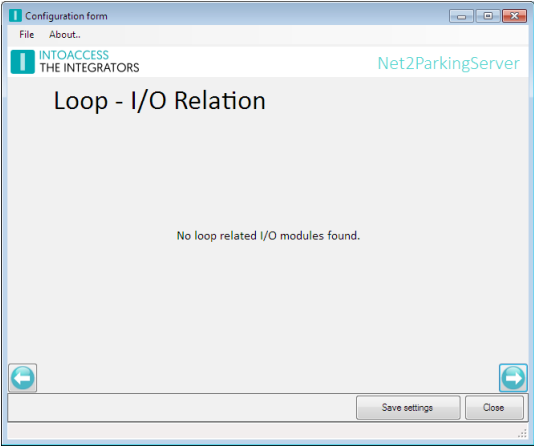


Image 11





Setup the Department – I/O relation

This page offers the possibility to setup the (optional) granting of access via 'external contacts'. For instance a third party intercom installation. (See image 12.)

For each department (company) (1) it can be specified which I/O input (4) must be linked to which access location. (2/3).

In the example below, a pulse on input 3 of I/O board 'Granting access' will open the barrier (in) and will increase the counting value for company 'IBM' by 1.

A pulse on input 4 of I/O board 'Granting access' will open the barrier (out) and will decrease the counting value for company 'IBM' by 1.

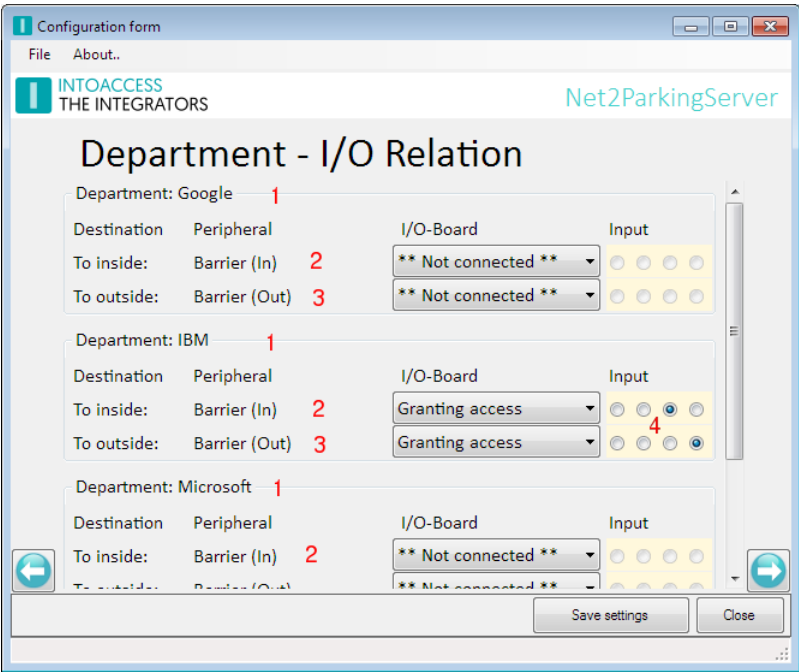


Image 12



Net2Entry Setup

The Net2Entry modules can be setup in such a way that access can be granted, both via the built-in card reader as via the Intercom installation.

(See image 13.)

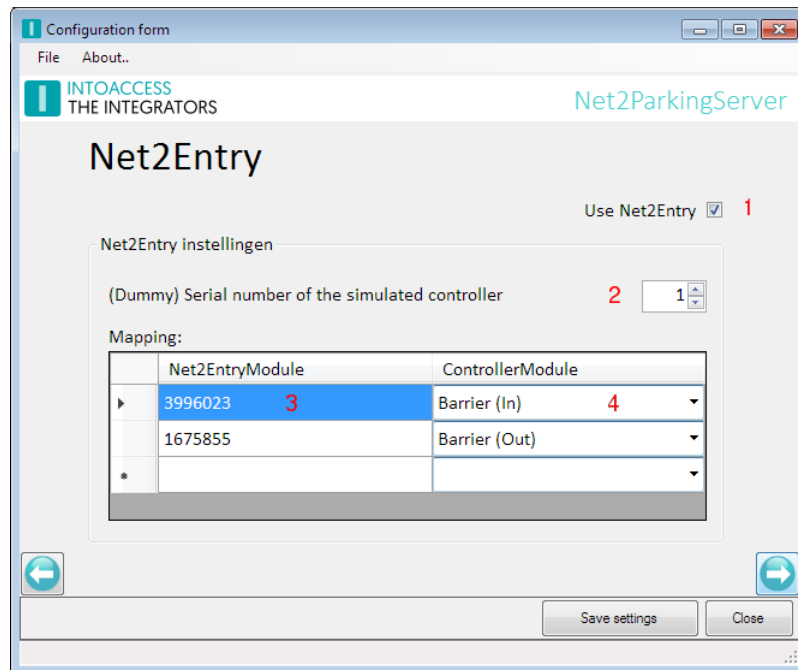


Image 13.

- First, select the check mark at (1) if Net2Entry modules are to be used.
- The (dummy) serial number '1' which can be set at (2) will do most of the time. Change this value in consultation with an IntoAccess employee only.
- At (3) the serial number of the Net2Entry module must be specified. Unfortunately, these numbers are not known within Paxton and must therefore be entered manually. The corresponding number can be found at the back of the module.

(See image 14.)



Image 14.

- At (4) the location can be selected at which the application will give access .

Setup of a Net2Entry module

On the Net2Entry module itself, in the 'Installers settings' section, the control unit serial number must be set. Normally this is the place where the serial number of the connected Paxton ACU has to be entered. In this case, however, you must enter the '*Dummy serial number of the simulated controller*' as configured at (2) in the section above.

(See image 15.)



Image 15.

Before this number can be entered, the current configuration data **must be saved first!** To do so, press the 'Save settings' button in the Manager application. This is necessary because the Net2Entry module will not be able to find the application/controller otherwise.

The E-mail setup

This page (See image16.) offers the possibility to configure the application in such a way that possible problems can be reported via e-mail. This is important because the application runs as a 'Windows Service' and therefore does not have the ability to display messages on the screen.

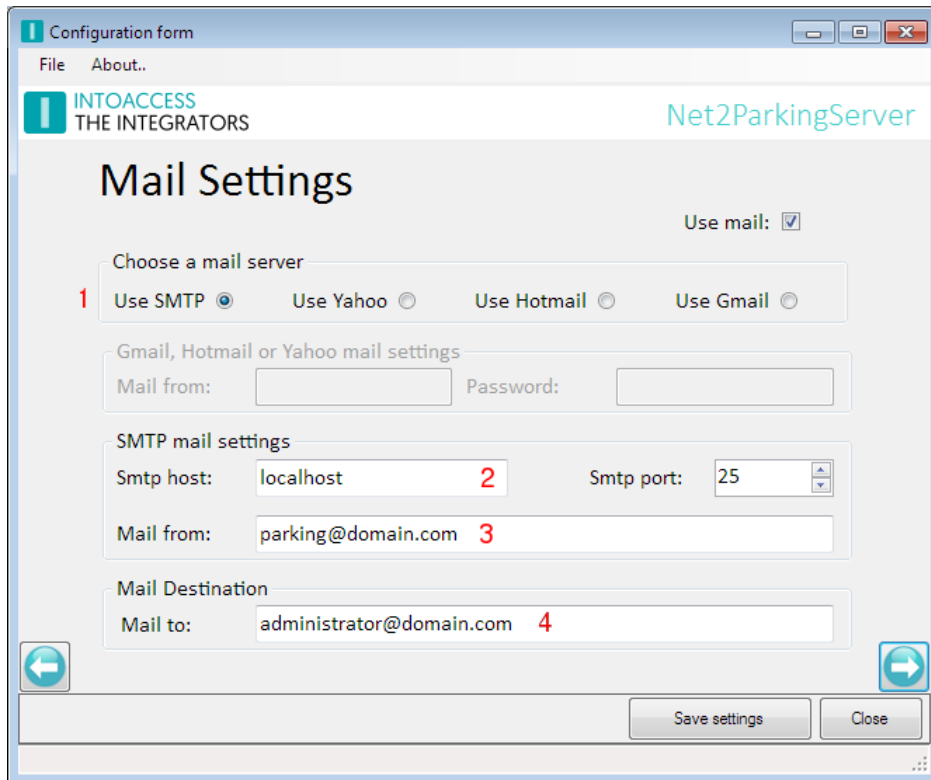


Image 16

The application can utilize an SMTP server (1), or a Webmail account for sending email messages. If you need to deploy a Webmail account, it is preferable to create a separate account for it. The security rules must be set to a minimum for such account.

When using SMTP

- Enter the IP address of the SMTP server at (2);
- At (3) enter the senders email address;
- At (4), enter which person(s) should all be kept informed. Multiple email addresses can be specified, separated by a semi-colon.

When using Yahoo, Hotmail of Gmail

These webmail services may impose additional conditions on automated use. Read the conditions of use for this.

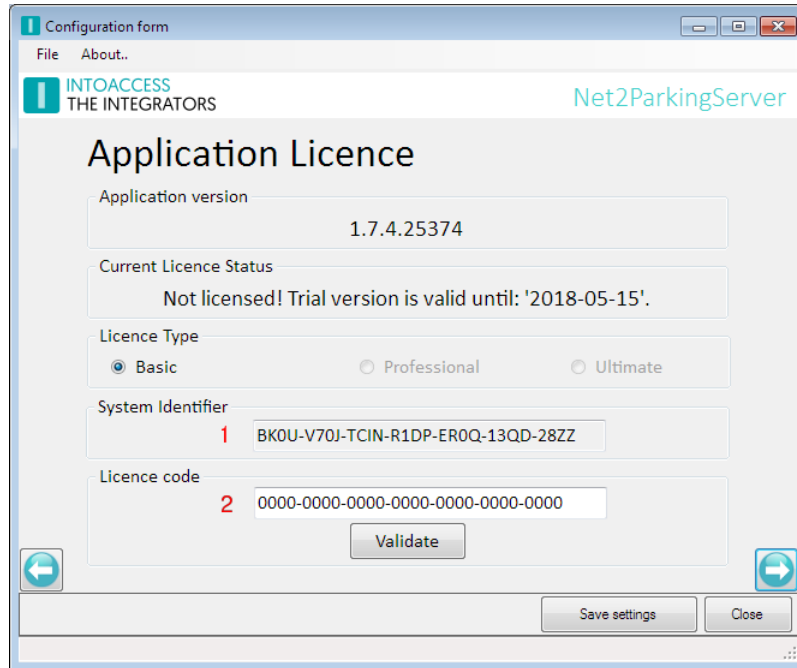
For Gmail, it is recommended that you create a separate account and adapt the security requirements for this account to the desired usage. In principle, a username and password should suffice for all these web accounts.

Licence and System identifier

This page offers the possibility to enter the licence code. (2)

(See image 17.)

If you wish to order this application, you'll be asked for the code shown under the heading 'System Identifier'. (1).



The screenshot shows a window titled "Configuration form" with a menu bar containing "File" and "About..". The window has a header with the INTOACCESS logo and "THE INTEGRATORS" on the left, and "Net2ParkingServer" on the right. The main section is titled "Application Licence". It contains several fields and buttons:

- Application version:** A text box containing "1.7.4.25374".
- Current Licence Status:** A text box containing "Not licensed! Trial version is valid until: '2018-05-15'".
- Licence Type:** Three radio buttons: "Basic" (selected), "Professional", and "Ultimate".
- System Identifier:** A text box containing "1 BK0U-V70J-TCIN-R1DP-ER0Q-13QD-28ZZ". The "1" is a red label.
- Licence code:** A text box containing "2 0000-0000-0000-0000-0000-0000". The "2" is a red label.
- Buttons:** A "Validate" button is located below the licence code field. At the bottom right, there are "Save settings" and "Close" buttons.

Image 17.

The setup evaluation

This page offers the possibility to evaluate all settings as they have been set so far. The checks carried out here assumes that all necessary Net2 modifications have been completed also (*).

(See image 18.)

(*)See chapter: "Net2 configuration"

The application checks the following:

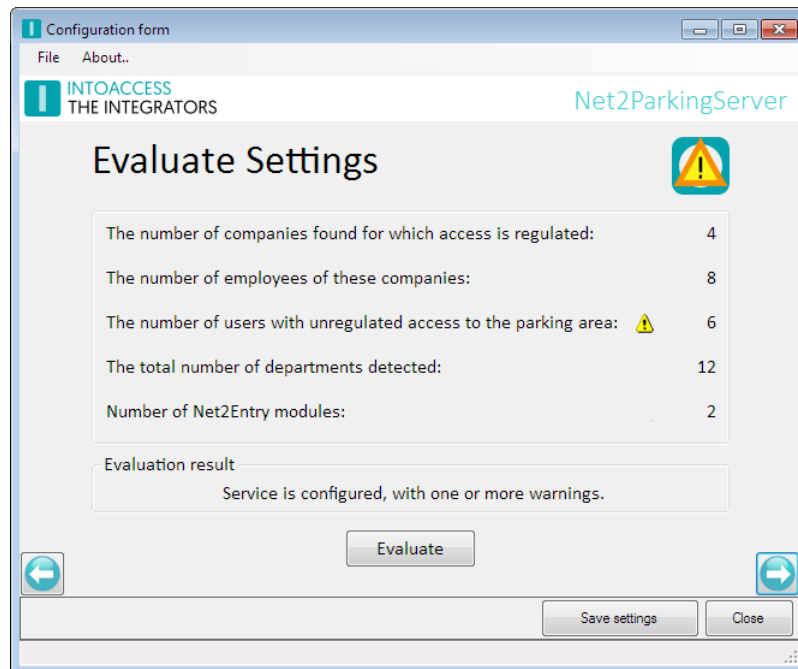


Image 18.

- The number of companies for which a '_counter' user has been found. The service won't be able to start if no companies are found.
- The total number of employees having access to the parking area.
- The number of employees who have, beyond the control of the application, access to the parking area. A number > 0 indicates that there are employees who's access level grants them access to the parking area. A mouse click on the yellow triangle shows an overview of all employees concerned.
- The total number of departments/companies found.
- The number of Net2Entry modules configured. It is checked whether these modules can be accessed via the network.

The application will refuse to start the service when the application detects a serious problem and access to the next page is prohibited.

Setting up and viewing the Logging

This page (See image19) offers the possibility to view the last (max. 500) lines from the log file. The application logs very detailed which actions it conducts. You have the option to filter and highlight text from the logs. When filtering, only log lines containing the filter text are shown. When highlighting, the matching text will be highlighted with a yellow colour. Select the checkbox to enable/disable the filter or highlight. If you want the logs to be updated automatically, which can be helpful when the service is running, you can check the checkbox at 'automatically'. Any new logs will be added to the log overview every five seconds.

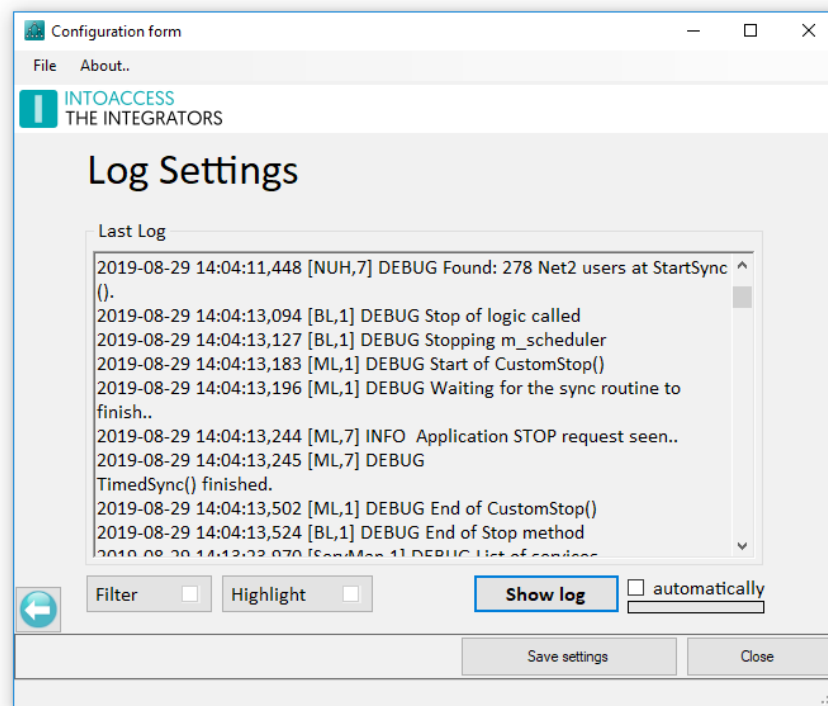


Image 19

Especially if a 'problem' occurs, the log file can contain very important information.

(Also for you as end user!)

Lines in this log file all have the same format:

- *Date-time [name,id] DEBUG | INFO | WARN | ERROR log message.*

Pay particular attention to WARN and/or ERROR messages. These usually give a clear indication of what exactly goes wrong.

The log file itself is located in the folder: c:\IntoAccess\Logging\Net2ParkingServer\.

Starting and stopping of the Service

This last page (See images 20/21) offers the possibility to start and stop the actual service.

The current status of the service, is indicated by both the icon as the text. It is advisable to always start and stop the Parking service via this application. This manager application will show a "coloured" icon (See image 22) in the bottom right corner if the service is running and a "grey" icon if the service is stopped. (See image 6)

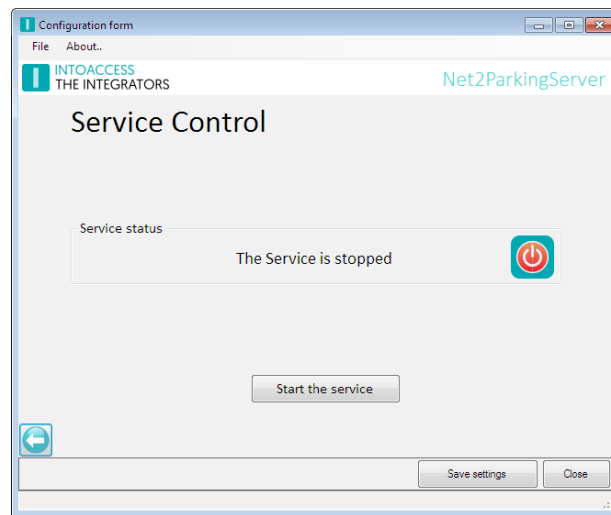


Image 20

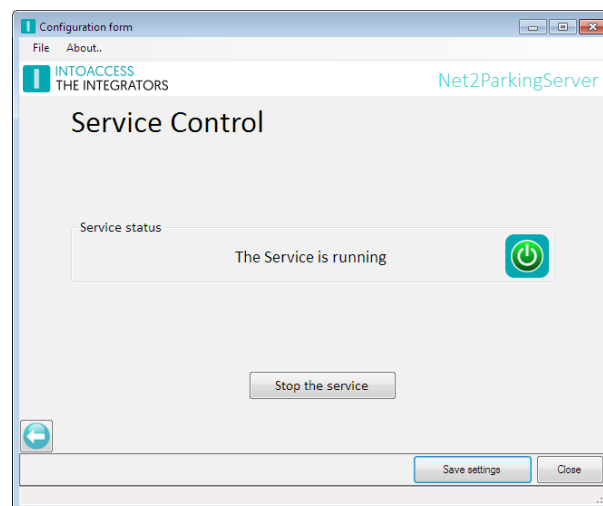


Image 21



Image 22

Switching full lamps

The Net2ParkingServer offers the possibility to control external devices when reaching the full state. A typical application for this, is a full lamp at the entrance of a parking.

This functionality requires, depending on the number of lamps, the presence of one or more Paxton Net2 I/O modules. Per I/O module, a maximum of 4 lamps can be controlled.

A full lamp can signal in several ways. The simplest way is lighting it up for 'x' seconds when someone tries to gain access to an area that is full.

Another option is to switch a full lamp on and keep it lit until space becomes available again. The application is designed as such, that it will also signal full lamps when counter values are manually changed. (e.g. by changing the 'Phone' field value of a particular '_counter' user) For such manual changes, keep in mind that there is a maximum delay of 10 [s] before seeing the light state change, after changing a counter value.

Configuring full lamps

The full signal configuration, is done using the Net2 'Triggers and Actions' feature. For each department/company a separate trigger must be defined. Below you will find the required steps, to create triggers that activate a full lamp during 'x' seconds when full.

Temporarily lighting a full lamp

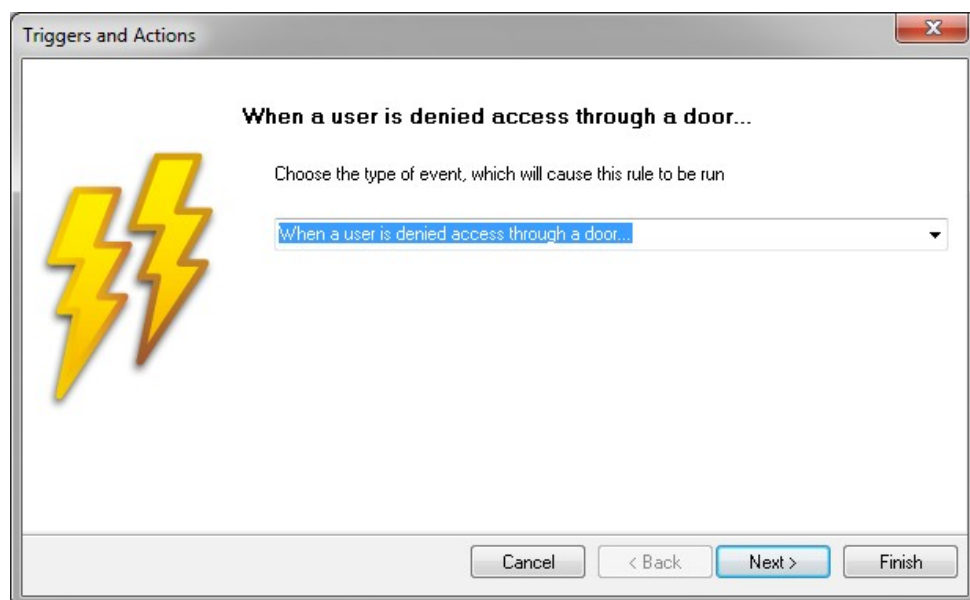


Image 23

A trigger must be defined, that is activated when “When a user is denied access through a door...”.

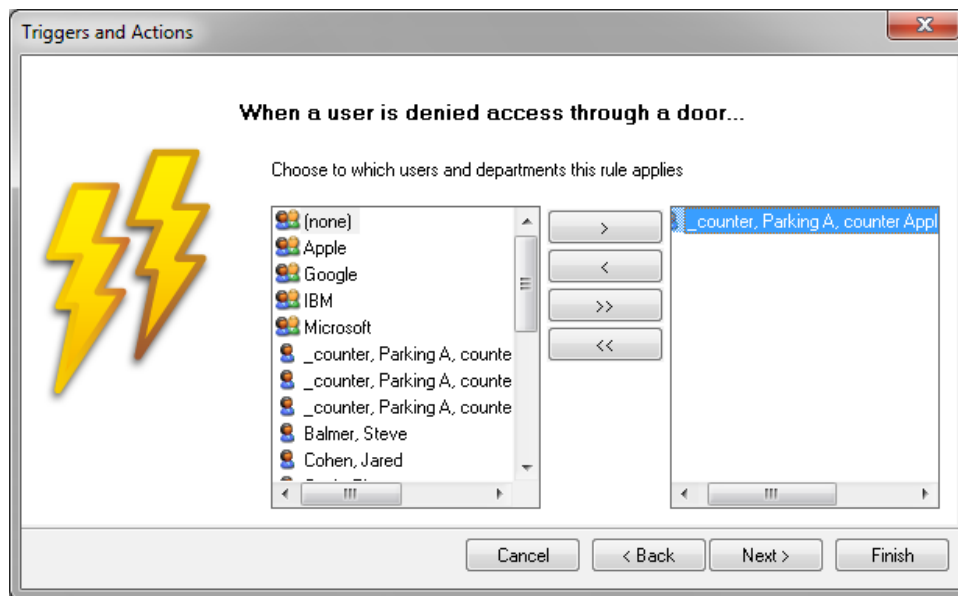


Image 24

The second step, is to link the trigger to the 'special' user of the company the full signalling should apply to.

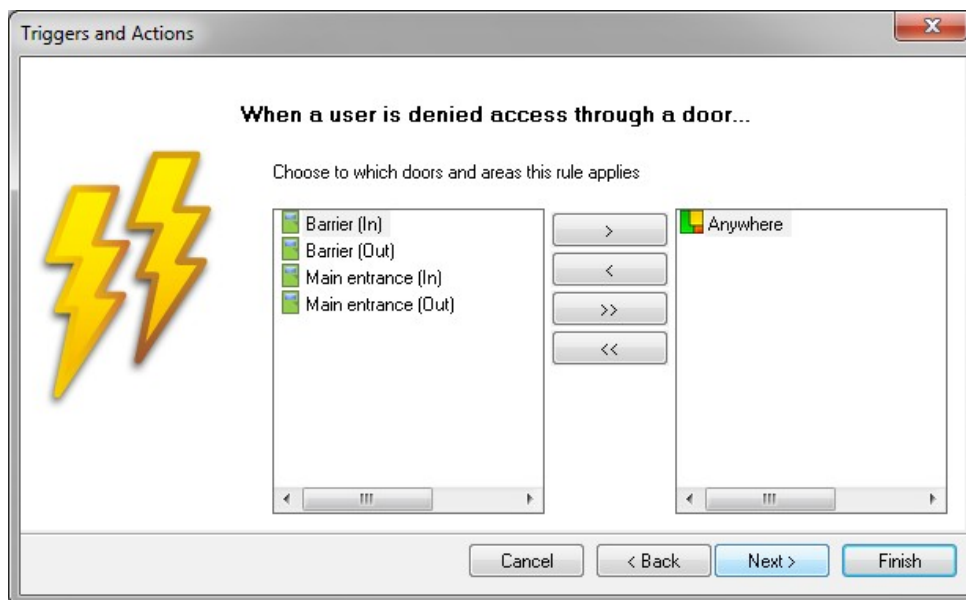


Image 25

The third step typically is the selection "Anywhere".





Image 26

The fourth step is to select when this rule should be active. Select “All day, every day”.



Image 27

The fifth step is to select the time delay between trigger and action. Select “No delay”.





Image 28

The sixth step, is to select the action to perform. Select “Affect relay”.

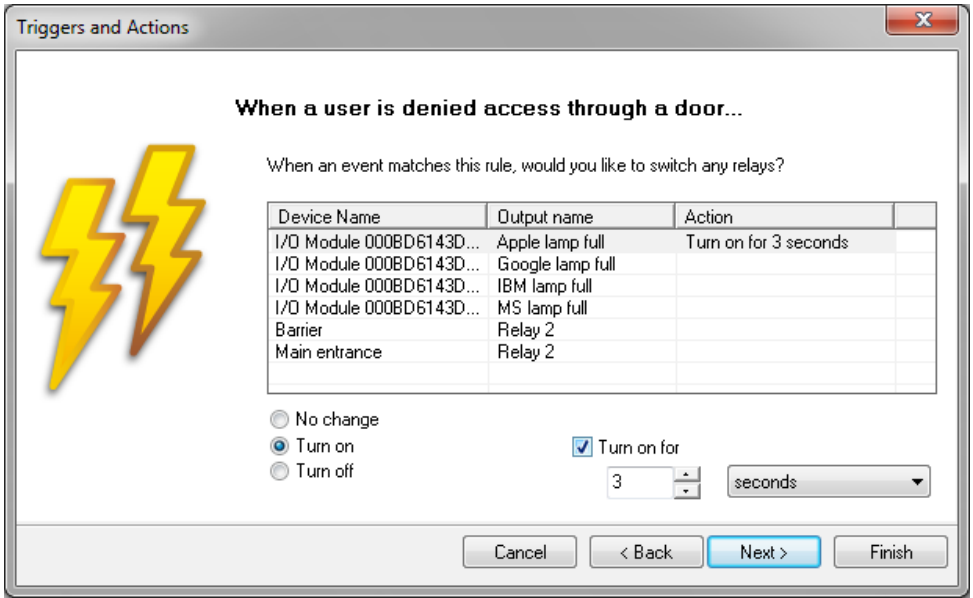


Image 29

The seventh step is to define the right module relay and the time to turn it on.

Note: If the lamp should stay on while there is no space left, make sure that the option “Turn on for” is unchecked.





Image 30

The final step is to clearly name the trigger.





Permanently lighting a full lamp

If the full lamp should stay on while there is no space for the given company, a set of two 'Triggers and Actions' must be defined.

The first trigger is identical to temporarily lighting a full lamp, only unchecking the "Turn on for" option.

The second trigger must take care of switching off the full lamp, when space becomes available again.



Image 31

The first step is to create a trigger that is activated "When a user is granted access through a door...".

De second up to the sixth step are identical to the earlier defined trigger;

2. 'Link to special user';
3. 'Anywhere';
4. 'All day, every day';
5. 'No delay';
6. 'Affect relay'.



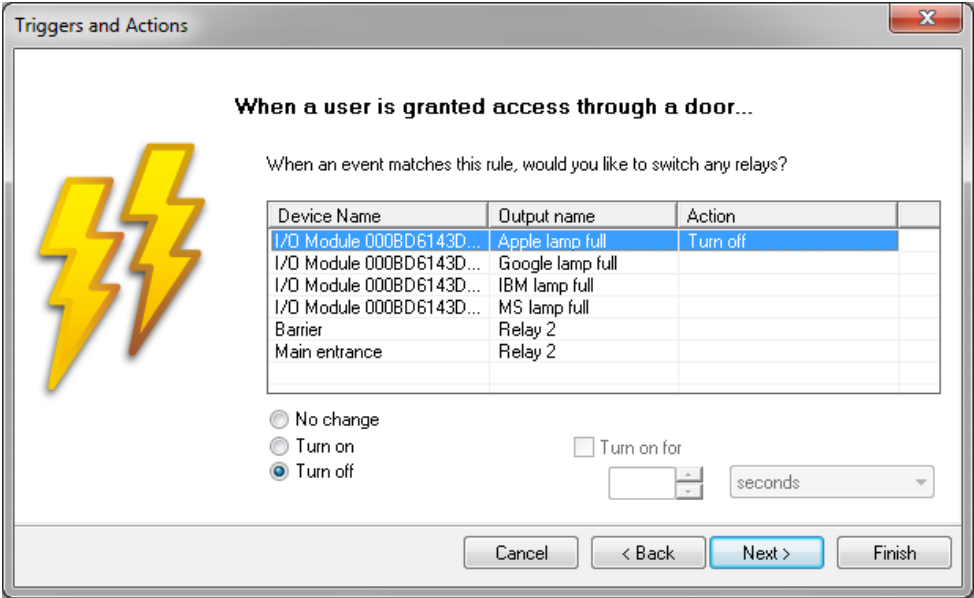


Image 32

At the seventh step, the correct module relay must be set to turn off.
And the final step is giving it a proper name again..





Hardware modifications

This chapter describes the hardware modifications, that can be of use in combination with the Parking server.

Standard card reader

When using a standard card reader, the controller will deny access first, before the Parking server grants access anyway. This can be somewhat confusing for card users, because of the red led signal they initially see.

To prevent this, relay 2 of a controller can be used to properly signal the red led. This option needs to be checked when configuring the application. (see The basic settings)

The schematic below, shows how this should be wired.

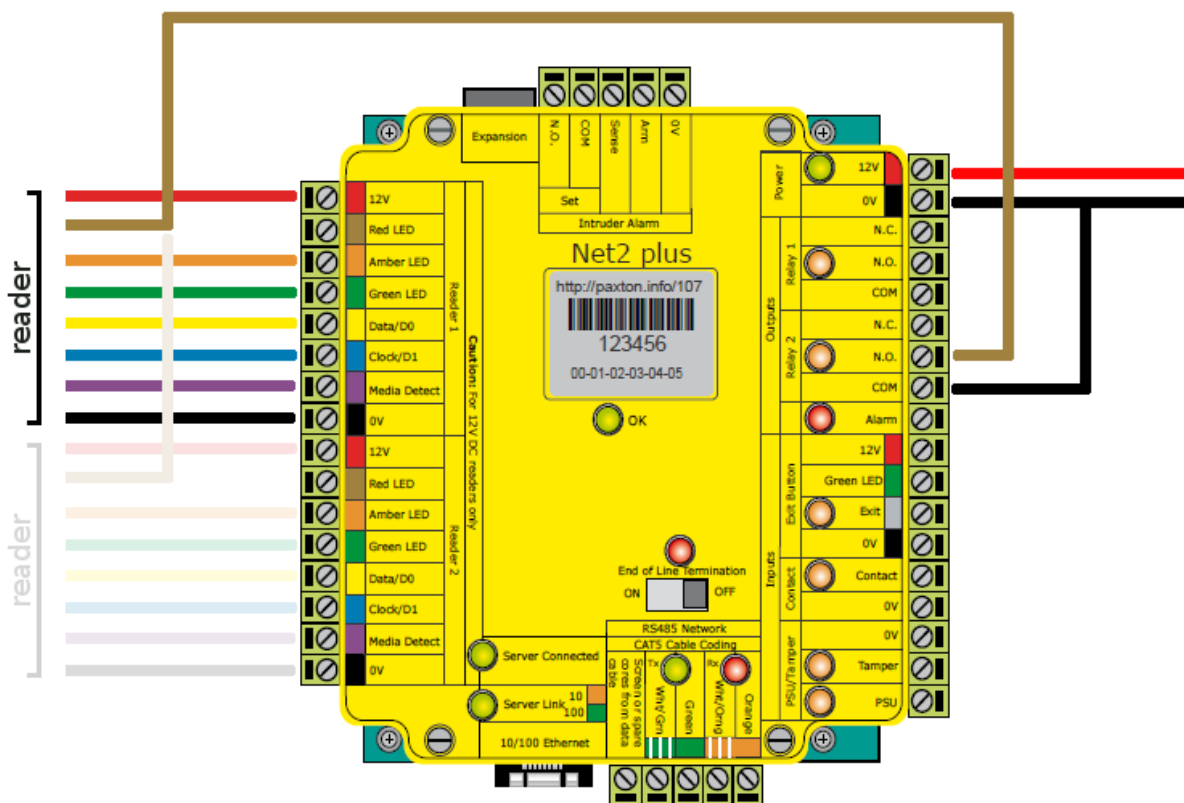


Image 33

Note: Unfortunately there is only one additional relay available on a standard controller. This means that for bidirectional access, the red leds have to be connected in parallel to relay 2.



Parking Client

This chapter describes the separate client application, that can optionally be installed for use at a reception desk or the parking entrance. This application has its own (*.msi) installation file and communicates directly with Net2.

Installation

When you install the Net2ParkingClient.msi file and have sufficient rights, the dialog window as display below will be visible. You can see which version you are about to install.

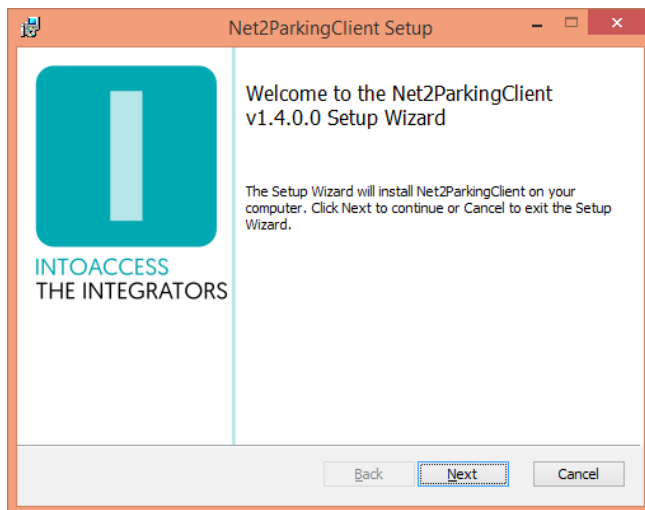


Image 34

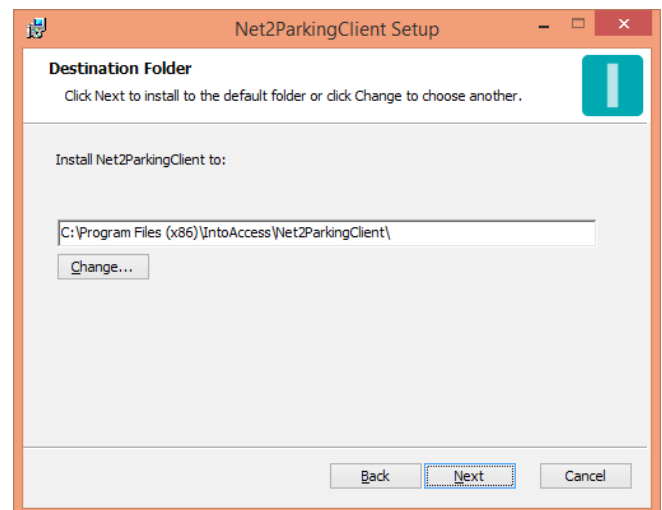


Image 35

After clicking on the “next” button, you can optionally choose an alternative installation folder, but the default is typically fine.

Usage

After successfully installing the software, you can start the Net2ParkingClient application.

The application will initially require you to enter the ip address or host name of the PC where Net2 has been installed. The default 'localhost' value can only be used if you have installed the client software on the Net2 PC, so in most cases it will have to be altered. The next time you run the application however, it will remember the address/name you entered before.

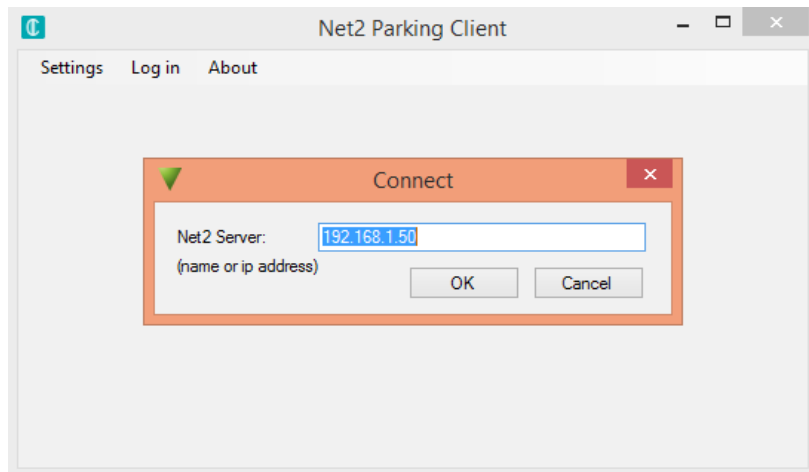


Image 36

If the connection to Net2 was successful, you can log on using a “Net2 operator” account that already existed or was created using the standard Net2 software.

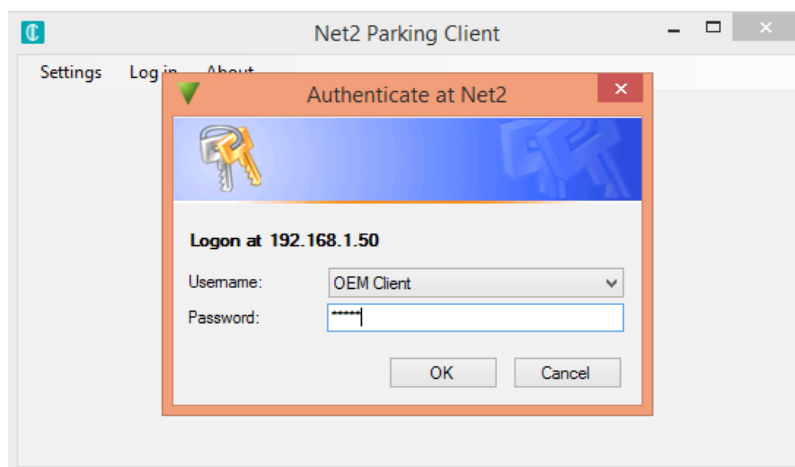


Image 37

Accounts that usually already exist are “System engineer” and “OEM Client”. Both have the maximum rights that come with the “System engineer” role, but the latter can not be used to log on to the standard Net2 client (but you can to the Net2ParkingClient). This characteristic makes it a safe choice for a reception desk, that is required to allow people in and out of the the parking.



After logging on, you will see a screen that could possibly look a bit like this:

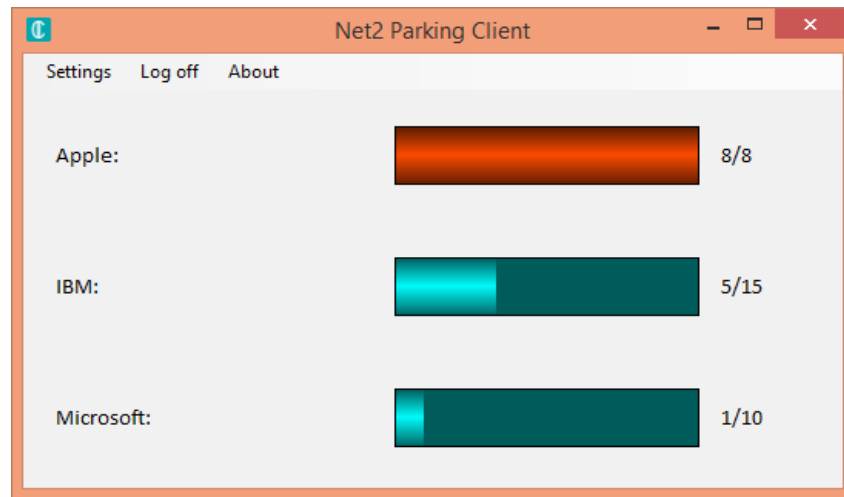


Image 38

What you will see exactly, depends on the `_counter` user definitions that were made in Net2. If no `_counters` are defined yet, you will only see a message that these definitions are missing.

When correctly configured, a visual presentation will be displayed of the parking occupation, divided by company. The company sequence is alphabetically and the size of the "occupation bars" is dynamically tuned to the size of the window.

A line is made up of the following elements:

- Company/department name: The 'first name' of the `_counter` users;
- Occupation bar: When not full yet, it's blue; when full, the color changes to red;
- Current/max occupation: the currently present / maximum allowed number;

Under *Settings* you can select a **language** (the options being Dutch, French or English) and an alternative **font** to be used in the main window. The application will attempt to use the available screen space as good a possible for the selected font size. The final setting is to use a **full screen** (F11) presentation. After selecting this option, the complete screen will be used and even the menu option will no longer be visible. You can exit this mode by using the *escape* key.

The remaining menu options are Log on/off and About. Using the first option you can (depending on you actual connection state) log on or off, with the second option you will see some application information.



Control options

When you log on as an operator without the “System engineer” role, the application can only be used to view.. When you do have sufficient rights however, you will also be allowed to control a few things. When clicking on an occupation bar, a pop-up menu will appear:

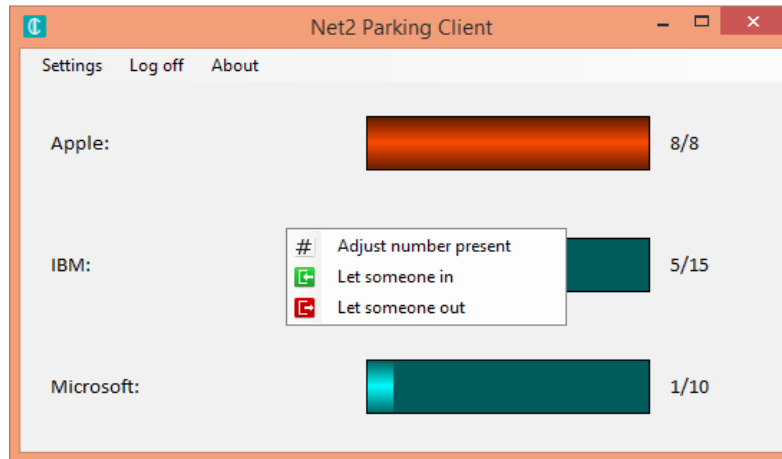


Image 39

Adjust number present: If for some reason, the number presented no longer matches with the actual situation on the parking, you can correct it here.

Let someone in: With this option you can allow access to the parking for a specific company. When there are multiple entry points, you will first have to select the correct location. If there is only one option, the default one will be correct and you only have to confirm it by pressing the OK button. The barrier will then open and the counter increased.

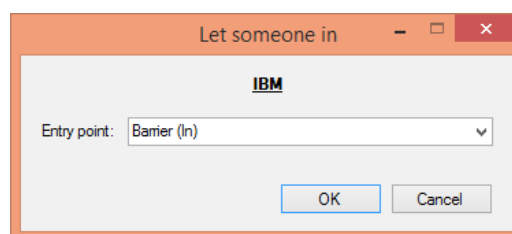


Image 40

Note: if there is no space remaining for this company, this option is greyed out.

Let someone out: With this option you can allow someone of the given company to exit the parking. When there are multiple exit points, you will first have to select the right location here also. The barrier will then open and the counter decreased.



Configuration

The client application offers some configuration option, so the application behaviour can be adjusted to work in multiple situations.

Command line options

By providing command line options, you can have the application log on automatically and switch straight to full screen. This can be useful for an information display near the entrance of a parking.

- /f : full screen
- /h <net2 server address> : Net2 server to connect to
- /u <user name> : Net2 operator name
- /p <password> : Net2 password
- /c <companyA;companyB> : List of names of the companies to be displayed, separated by a semi colon (;). If no match is found, all are displayed.
- /e <reader1;reader2> : List of exit reader names, separated by a semi colon (;).

Sample where only IBM is displayed:

Net2ParkingClient.exe /h 172.28.240.159 /u "System engineer" /p net2 /c "IBM"

Configuration file

The application behaviour can also be changed by altering the configuration file *Net2ParkingClient.exe.config*, that can be found in the installation folder.

This XML file has two relevant sections, which you can (carefully) change manually using notepad. You will most likely need administrator rights to do so.

Configure the counters to show

```
<applicationSettings>
  <Net2ParkingClient.Properties.Settings>
    <setting name="CounterIds" serializeAs="String">
      <!--
      By setting the value to a comma separated list of counter id's, you can select
      which companies should be visible to the user. If value is not set, all companies are
      displayed.
      <value>4945</value>
      -->
      <value />
    </setting>
    <setting name="ExitReaderNames" serializeAs="String">
      <value>Barrier Out);Speed gate(Out)</value>
    </setting>
  </Net2ParkingClient.Properties.Settings>
</applicationSettings>
```





By default 'value' is unset, which causes all counters to be displayed. By providing a comma separated list of `_counter` user database id's however, you can select which counters to show..

How to you get the `_counter` user database id's?

You can find these in the log file that is produced by the Net2ParkingClient. When you already have successfully connected the application to Net2, the counter id's found will have been written to the log file. This log file is typically located here:

c:\IntoAccess\Net2ParkingClient\Net2ParkingClient.log

The lines you are looking for look like this:

```
2018-06-19 09:56:33,263 [Net2ParkingClient.Model.Net2XS,1] DEBUG Authentication succeeded
2018-06-19 09:56:33,637 [Net2ParkingClient.View.MainForm,1] INFO Counter #29: 'Apple' (Department 3)
2018-06-19 09:56:33,637 [Net2ParkingClient.View.MainForm,1] INFO Counter #27: 'IBM' (Department 1)
2018-06-19 09:56:33,637 [Net2ParkingClient.View.MainForm,1] INFO Counter #28: 'Microsoft' (Department 2)
```

Note: these values will most likely be different for you.

By (for example) setting `<value>28,29</value>`, only Microsoft and Apple will be visible.

Configure control options

When an operator has the “System engineer” role, by default all control options are available:

- Adjust number present (*allowcounterchange*)
- Let someone in (*allowenter*)
- Let someone out (*allowexit*)

Since that is not always desired, this can be altered per counter (see previous chapter on how to obtain the counter ids). If no definition is made, all options are allowed.

```
<AllowanceConfiguration>
<!--
  Each Allowance entry is setting for the supplied counterid
  The settings for counterid="" are the default settings for each not defined counterid
  <Allowance counterid="4945" allowcounterchange="false" allowenter="true" allowexit="true" />
  <Allowance counterid="4946" allowcounterchange="false" allowenter="false" allowexit="true" />
-->
</AllowanceConfiguration>
```

By entering (for example) the following line:

```
<Allowance counterId="27" allowcounterchange="false" allowenter="false" allowexit="true"/>
```

It will only be possible for IBM to let someone out. The other options will not even be visible.





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