OPC v3.0.0b OTRS PBX client module

Asterisk PBX Integration module

Administrator's Guide

Contents

Introduction

Add-on OTRS PBX client(OPC) is intended for helpdesk and call centers that use the OTRS system.

With the new Add-ons feature, you can immediately notify customers of the ticket number without filling fields on form.

Functions of the module:

- Informing agents about the call and the customer by CallerID

- Create a ticket with one click in the agent notification window

Functions of the module OPCv3.0.0b:

- Informing agents about the call and the customer by CallerID

- Create a ticket with one click in the agent's notification window

- Opening a new phone ticket by the agent notification window

- Using CallerID Categories

- CallerID blocking function

Features

Database type: MySQL

The OPC module uses the client-server architecture

The service runs on the OTRS server and uses TCP port 11010 to connect client applications.

Preparing Asterisk server for integration with OTRS

The AMI (Asterisk Manager Interface) interface is used to interact with Asterisk.
Connect to Asterisk server with full rights (sudo).
On the Asterisk server, create a user for connect to the AMI interface:

for general Asterisk versions:
Open the manager.conf file for editing
nano /etc/asterisk/manager.conf
Add the lines by replacing the value of "IP_address_OTRS" with the IP address of your OTRS server:
[otrs]
secret = SomePassword
deny=0.0.0.0/0.0.0.0
permit=IP_адрес_OTRS/255.255.255.255
read = system,call
write = system
writetimeout = 100

for some versions of Asterisk (13.1.x):
Create the otrs.conf file in the /etc/asterisk/manager.d/ directory:
nano /etc/asterisk/manager.d/otrs.conf
Add the lines by replacing the value of "IP_address_OTRS" with the IP address of your OTRS server:
[otrs]
secret = SomePassword
deny=0.0.0.0/0.0.0.0
permit=IP_адрес_OTRS/255.255.255.255
read = system,call
write = system
writetimeout = 100

After making the changes, restart Asterisk using the CLI:
asterisk -r
by executing the command:
core restart gracefully
After restarting, Asterisk server is ready to work with OPC module for OTRS.

For FreePBX, on the Asterisk Manager Users page, add the otrs user and connection permission for the IP address of the OTRS server, as shown in the example:

| Admin | Applications | Connectivity | Dashboard | Reports | Settings | UCP |

Asterisk Manager

Manager otrs

| General | Permissions |

Manager name ❓ | otrs

Manager secret ❓ | .... 👁

Deny ❓ | 0.0.0.0/0.0.0.0

Permit ❓ | 192.168.73.105/255.255.255.255

Write Timeout ❓ | 100 | milliseconds

In the permission settings check

- In the Read column: system, call

- In the column Write: system

| Admin | Applications | Connectivity | Dashboard | Reports | Settings | UCP |

Asterisk Manager

Manager otrs

| General | Permissions |

For information on individual permissions please see the Asterisk Manager Documentation

Permission	Read		Write	
system	Yes	No	Yes	No
call	Yes	No	Yes	No
log	Yes	No	Yes	No
verbose	Yes	No	Yes	No
command	Yes	No	Yes	No
agent	Yes	No	Yes	No
user	Yes	No	Yes	No
config	Yes	No	Yes	No
dtmf	Yes	No	Yes	No
reporting	Yes	No	Yes	No
cdr	Yes	No	Yes	No
dialplan	Yes	No	Yes	No
originate	Yes	No	Yes	No

Install the OPC package on the OTRS server

The OPCv3.0.0b package uses additional perl-libraries which are required to be installed:

AnyEvent

IO::Socket::Timeout

To install required perl-libraries on Ubuntu execute the command:

sudo apt-get install -y libplack-test-anyevent-perl libio-socket-timeout-perl

To install required perl-libraries on CentOS execute the command:

yum install perl-AnyEvent

yum install perl-IO-Socket-Timeout

To install required perl-libraries on FreeBSD execute the command

cpan AnyEvent

cpan IO::Socket::Timeout

The specified modules will be installed.

Next, install the opc_v3.0.0b_otrs6.opm package for OTRSv6 (opc_v3.0.0b_otrs5.opm for OTRSv5) via the OTRS web interface on the **Administration-> Package Manager** page.

After installing the package, restart the CRON service by running:

/opt/otrs/bin/Cron.sh restart otrs

The OPCv3.0.0b module is ready to use.

Configuring the OPCv3.0.0bmodule

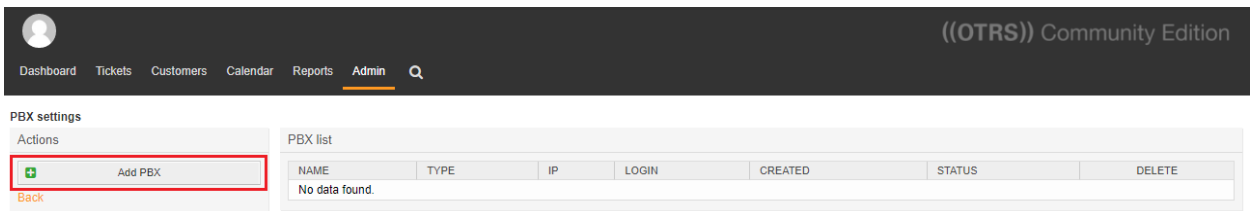The module is configured through the OTRS Web interface.

On the "Administration" page, in the " Communication & Notifications " block, click on the "Call Notification" link:

Go to the "Call notification settings" page. To add a new PBX, click the "PBX list":

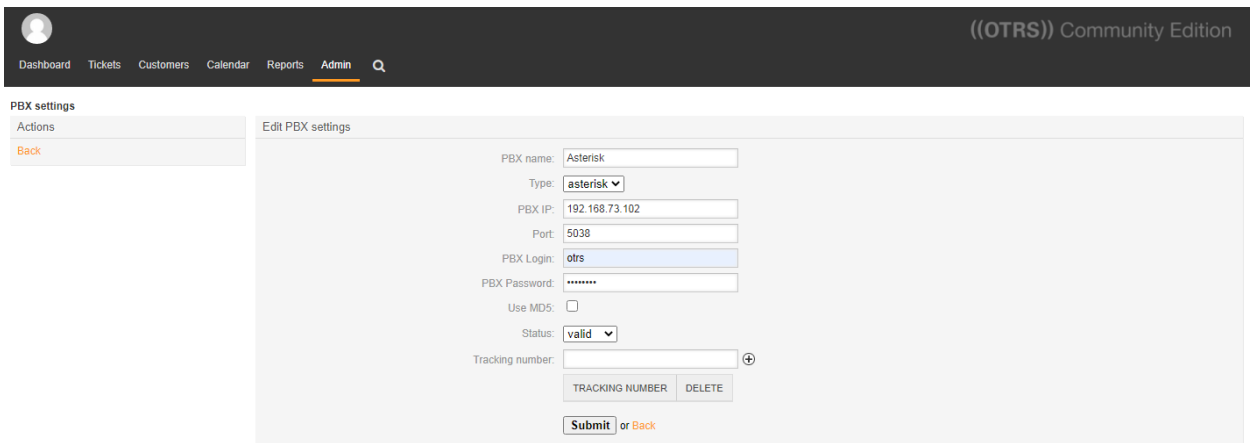On the PBX settings page, click the "Add PBX" button:

Configure the connection parameters to the PBX "Asterisk" and confirm the changes with the "Submit" button:
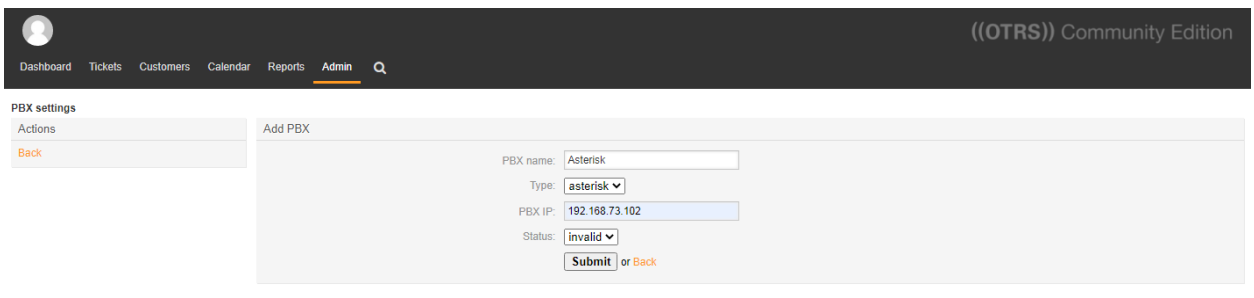
After adding the new PBX, you will go to the edit page.

In this section, add the PBX Login and PBX Password specified in the Asterisk AMI settings, set the status to valid:


The "Use MD5" option is used for MD5 authentication with password encryption for the case where the connection to the Asterisk server is not via a trusted network.
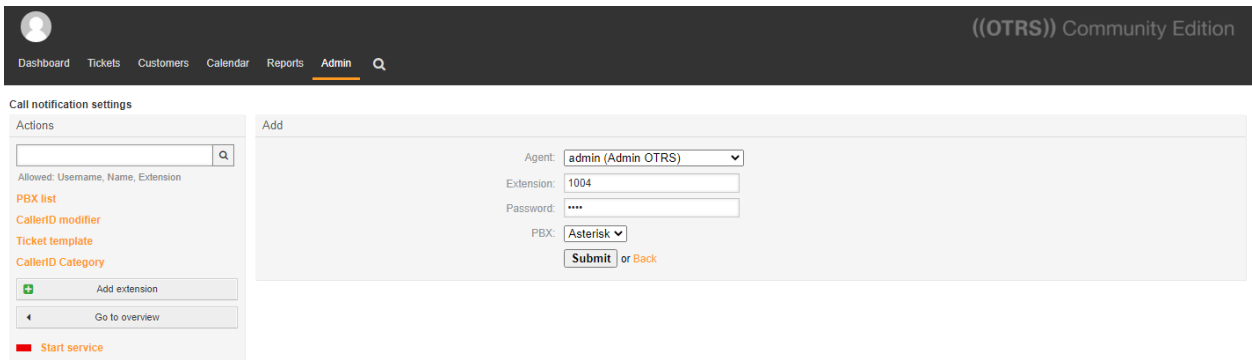
Setting agent extensions

On the "Call notification settings" page, fill in the extension numbers of agents and specify a password for connecting client applications.

To do this, click on the "Add extension" button:
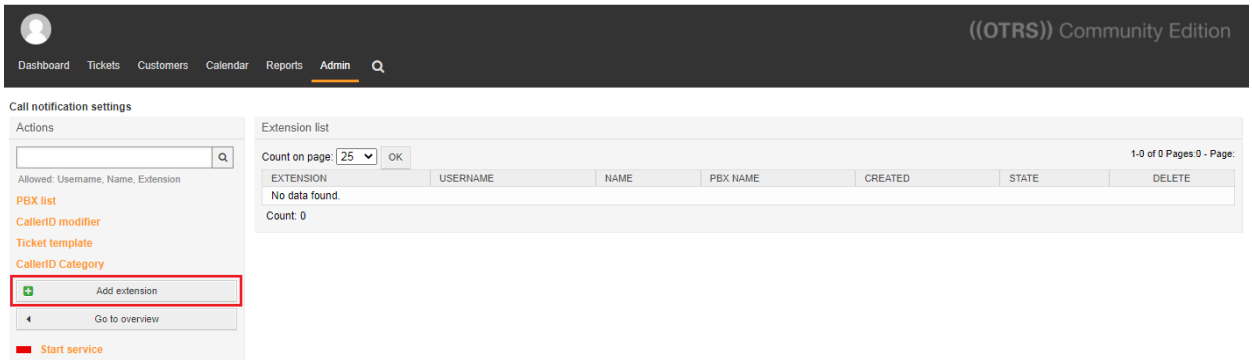
On the "Add" page, fill in the fields by extension number:

Each agent can be assigned several internal numbers(extensions), which this agent uses.

Linking agent extensions to Tracking numbers

Definition: "Tracking number" is the external DID of the support service number, which receives calls from customers.

The OPC module as the "Tracking number" uses the value of the Exten field received from the Asterisk server.

This version implements the ability to form groups of agent numbers for sending selective notifications by setting the flag of binding to the Tracking number.

This option allows you to use several different groups of agents, for example: helpdesk and managers, each of which uses its own assignment number independently of the other groups.

To link agent numbers, on the "PBX settings" page, click on the link on the destination number:

On the next page, set the flags for the desired agent extensions, as shown in the example:

Additional options:

The "**Ticket template**" option allows you to set an own ticket template for each tracking number.

"**Comment**" – displays the specified value in the client application window in the information field.

Definition of "Tracking number"

If you do not know the Exten DID number, to start, assign the "Tracking Number" - the symbol *****

In this case, all numbers from the Exten field will be tracked.

In the PIM module, each processed call is output to the CDR file named:

pim_cdr_YYYYMM.log

File output path: /opt/otrs/var/log

From this file you can determine which external Exten needs to track.

The file pim_cdr_YYYYMM.log contains 14 fields, the fields are separated by the symbol "|" (pipe) and have the following structure:

PBX_ID|Uniqueid|UnixTimeRing|UnixTimeAnswer|UnixTimeHangUp|CallStartTime|AnsweredExtension|Exten|CID|RingTime, sec|CallDuration, sec|Cause|CustomerUserLogin|TicketNumber

Description of fields:

#	Field Value		Description
1	PBX ID	-	PBX ID
2	Uniqueid	-	Unique Call ID
3	UnixTimeRing	-	Call ring, unixtime
4	UnixTimeAnswer	-	Call answer, unixtime
5	UnixTimeHangUp	-	Call end, unixtime
6	CallStartTime	-	Call Start time
7	AnsweredExtension	-	Answered subscriber (agent extension number)
8	Exten	-	Exten field (DID number)
9	CID	-	CallerID
10	RingTime, sec	-	Waiting time before answer, sec.
11	CallDuration, sec	-	Duration of conversation, sec.
12	Cause	-	Cause for hanging Q.931
13	CustomerUserLogin	-	CustomerUser login (if defined)
14	TicketNumber	-	Ticket number (if created)

The file pim_cdr_YYYYMM.log is output with rotation by month.

Customer User identification

The customer identification is based on the received CallerID.

When an incoming call arrives, searches by CallerID in the customer database for the "Phone", "Mobile", "Fax" fields set on the "Customer User Management" page:

You can specify several numbers separated by commas or space in each phone number field.

CallerID modification

If your ISP does not send CallerID in E.164 format (international number format), identification may be difficult or impossible.

This happens, for example, when the provider adds a national or international prefix to the CallerID.

To fix this issue, use the CallerID modification mode through the "CallerID modifier" page.

In this example, the prefix "0" is removed from CallerID. The modifier rule will be applied for CallerID starting with the prefix "0" and the length from 7 to 11 characters:

The "**Show modified CID**" option sets the modified CallerID for displaying the current rule in the client application.

CallerID category

For each CallerID you can add a category and a comment.

Adding is possible through the web interface or from the client application window.

CallerIDs can be assigned four status categories with the icon displayed in the client application window:
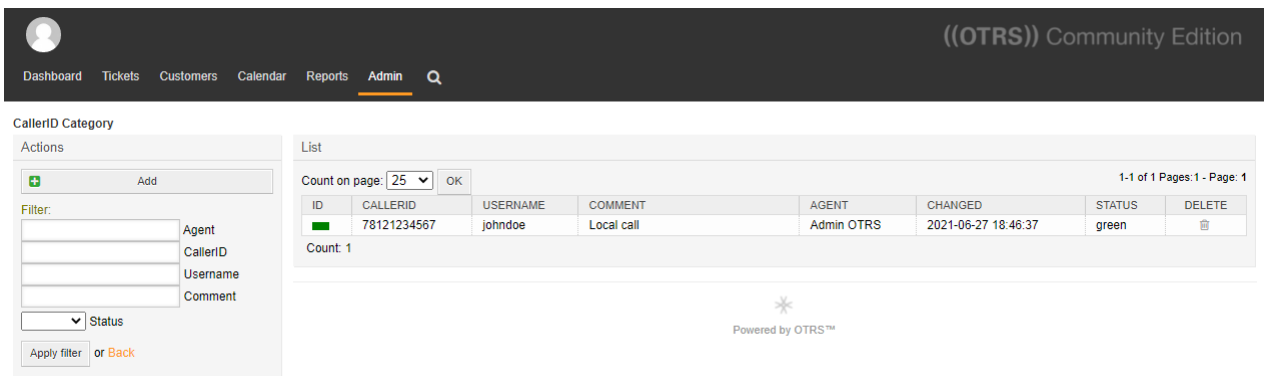
 - Neutral

 - Green

 - Yellow

 - Red

Web interface allows adding, editing and deleting the CallerID category:
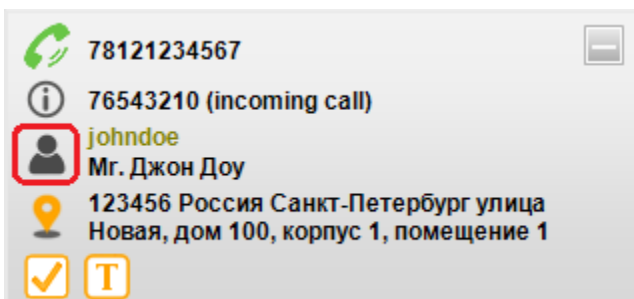
From the client application window you can add and edit categories.

To open the category window, click on the user icon in the client window:
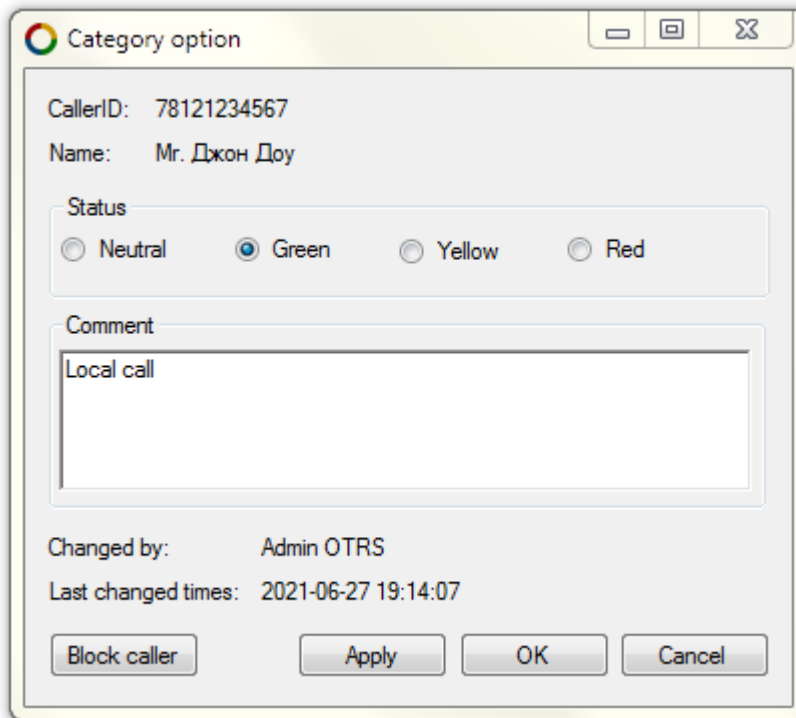
Add category status and comment:

The client window will display this icon and comment on hover:
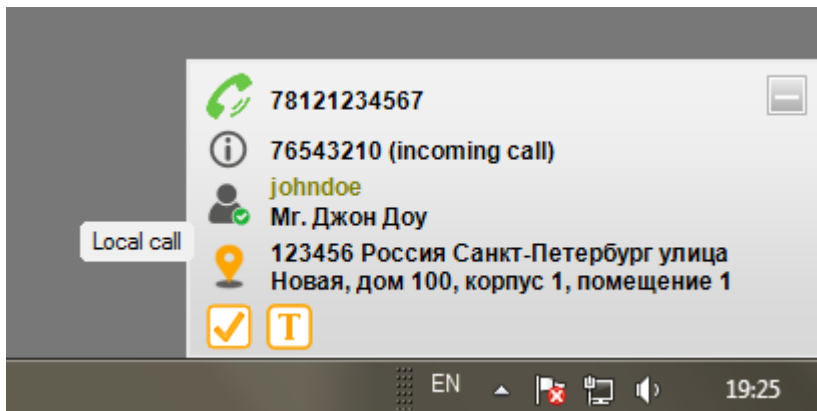
CallerID blocking

From the client category window, you can block the caller's number in case such calls are undesirable.

Locking is performed by pressing the button:
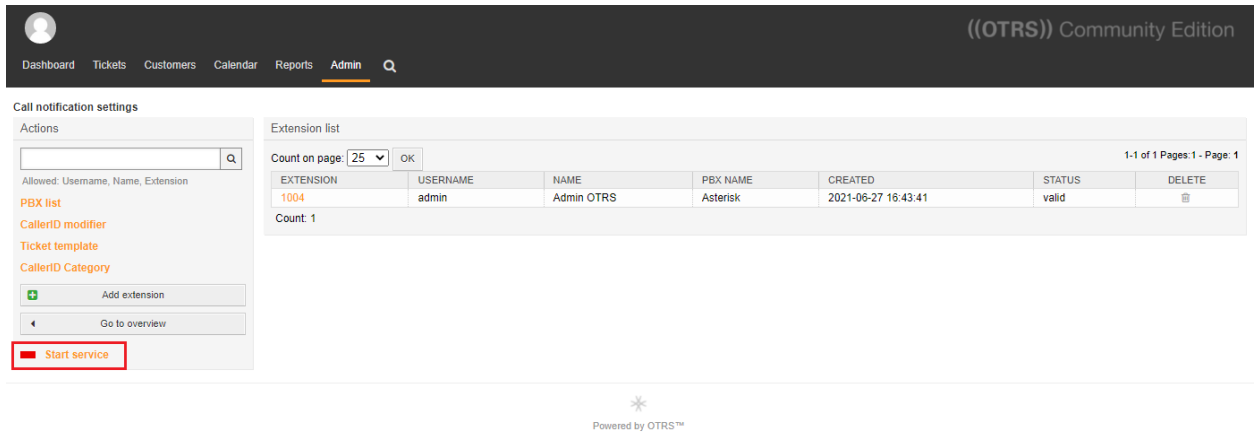
"Block caller"

The operation will add CallerID to the Asterisk database - blacklist

Removing CallerID numbers is possible through the Admin-Blacklist web page if you are using FreePBX, or through the Asterisk CLI: database del blacklist blocked_CallerID

Starting the service

Start the PIM service by clicking on the "Call notification settings" link "**Start service**":

The indicator on the left shows 3 states:

     - Service is stopped

     - Service starts, waiting

     - Service started

Note:

The service starts on CRON and runs for up to 1 minute.

After a successful start, the service will go into the "running" state.

To update the status of the indicator, click on the indicator icon.

Configuring client application

Client applications are installed on workstations with Windows.

The minimum requirements are the installed package of Microsoft: NET Framework 4 and higher.

In the application settings window, fill in the settings fields as shown in the example:
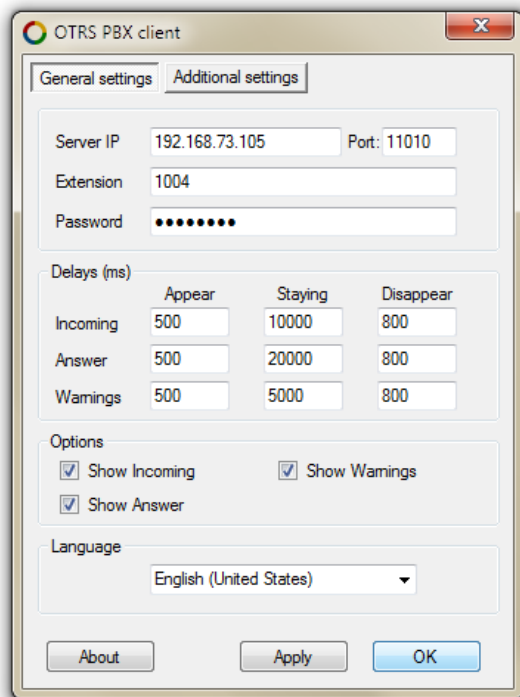
Description of fields:

Server IP – IP address of the OTRS server; **Port** – Server TCP port, default: 11010

Extension – Agent extension

Password – Password of the agent on the OTRS page "Call notification settings"

Delays (ms) block

You can change the time of appearance, display and disappearance of the notification window for events:

Incoming – notification of an incoming call

Answer – notification of answering a call

Warnings – warning notices

Delays time is set in milliseconds.

Options block

In this block, you can turn off notifications in message classes by removing the desired flag.

Language – Selecting the language of the user interface.

On the **Additional settings** tab, specify the address of the OTRS server in the **Web path and T-Link** field.

In the **CID-Link** field, specify the preferred Search Engine.

The CallerID info in the **CID-Link** and **T-Link** field sets via the tag: <PIM_CID>

For Google search engine, use CID-Link:

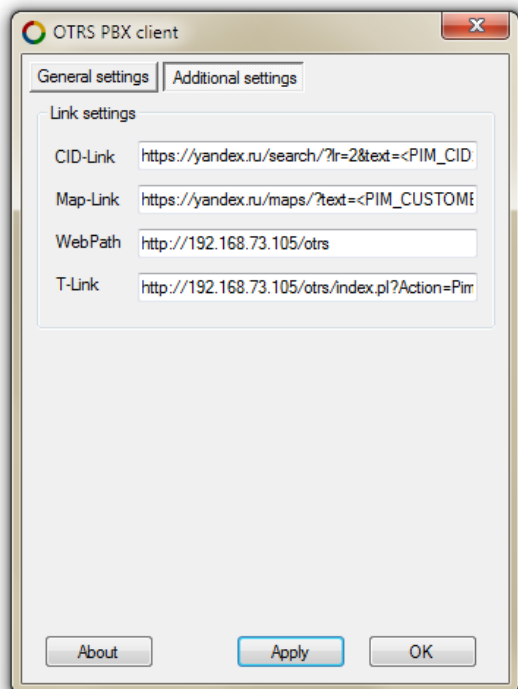https://www.google.com/search?q=<PIM_CID>

For Yandex search engine, use CID-Link:

https://www.yandex.ru/search/?lr=2&text=<PIM_CID>

Map-Link – link to a geolocation search engine.

The location is sets via the tag: <PIM_CUSTOMER_UserLocation>

Example of the **Additional settings** tab:

Close client application

When you click the OK button [OK] or close button [X], application is minimized to the system tray and continues to work.

To end the application, right-click the application icon ○ in the tray and click Exit:
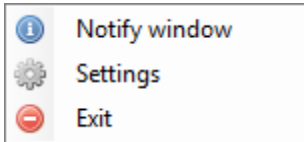
Sample notifications:

Warnings:

Incoming call information:
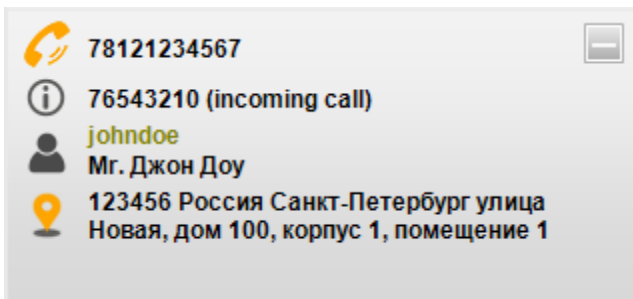
Note: Clicking on the CallerID link (**CID-Link**) will open a search result in a new browser window

Answer:
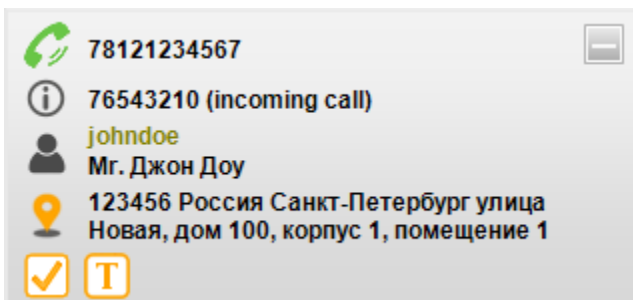
Answer options:
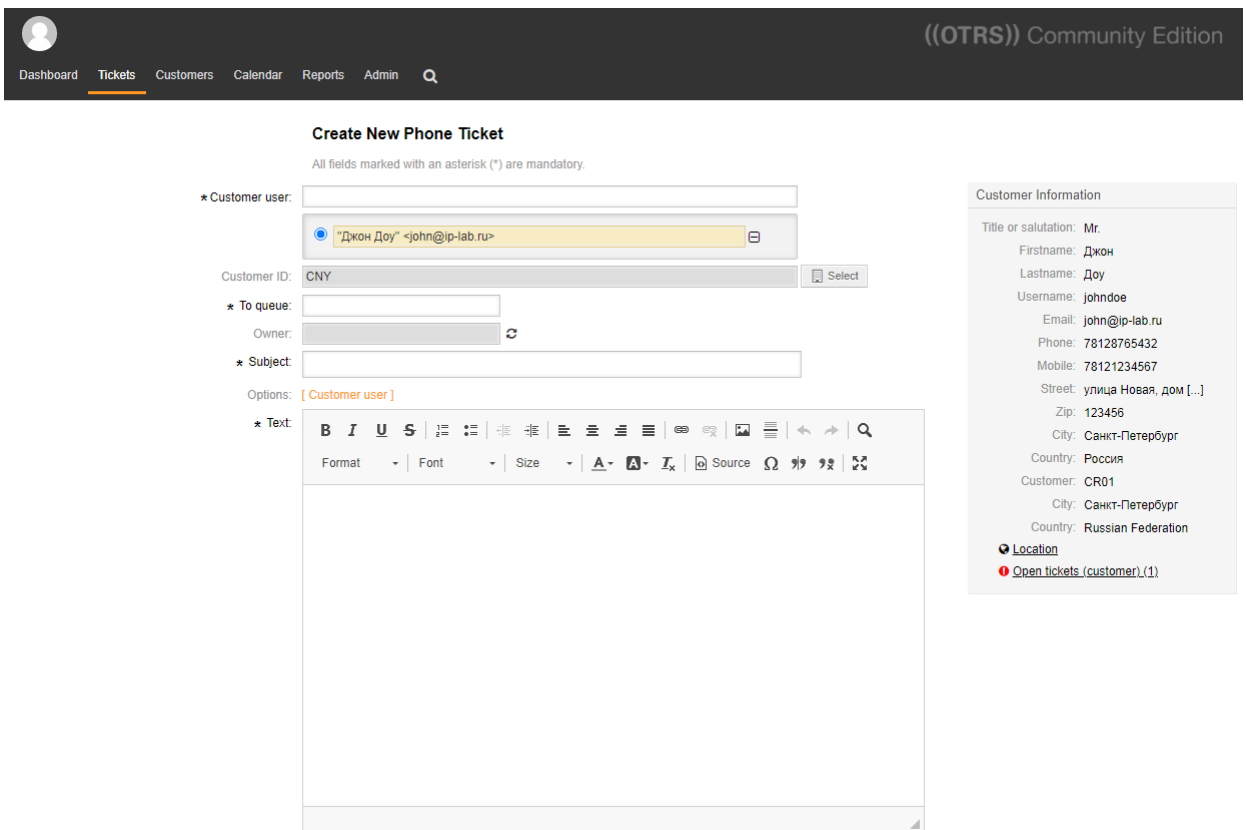
Clicking on the "**OK**" button ☑ will create a ticket, with its number in the notification window:

By click the button "**T-Link**" 🆃 a new phone ticket window will open:

If there is a match for the CallerID in the customer user DB, the customer field will be filled in automatically.

Setting up with LDAP customer backend

The PIM module also supports LDAP customer directories.

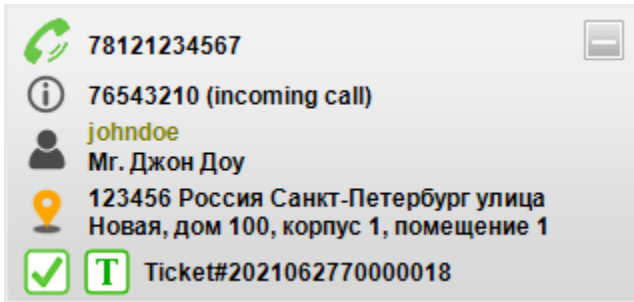The standard OTRS interface is used to connect to the LDAP database in the Kernel/Config.pm file.

In general, you do not need to change it.

For proper operation, it is required to place customers in the Windows AD security group, for example, "OTRS_Customers" and apply the filter in Config.pm.

For example, for the otrsdc.Inc domain, the filter entry will be as follows:

 AlwaysFilter => '(&(objectclass=user)(memberof=CN=OTRS_Customers,CN=Users,DC=otrsdc,DC=inc))',

The customer search in the PIM module is performed by the fields 'UserPhone', 'UserHomePhone', 'UserFax', 'UserMobile'. To identify the customer, at least one of these fields must be filled.

Updating LDAP data for customers occurs every 60 minutes. To immediately get LDAP changes, you need restart the PIM service.

Example of user fields in AD:

The "General" tab:
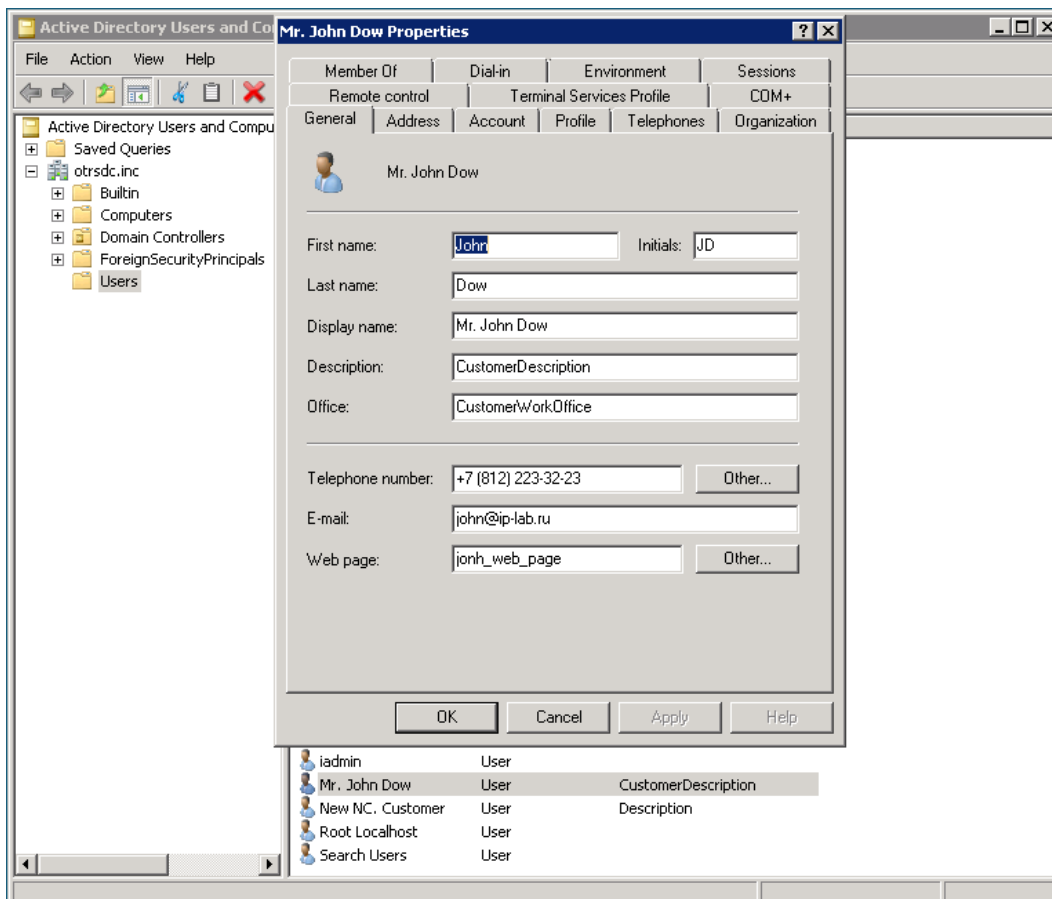
The "Phones" tab:
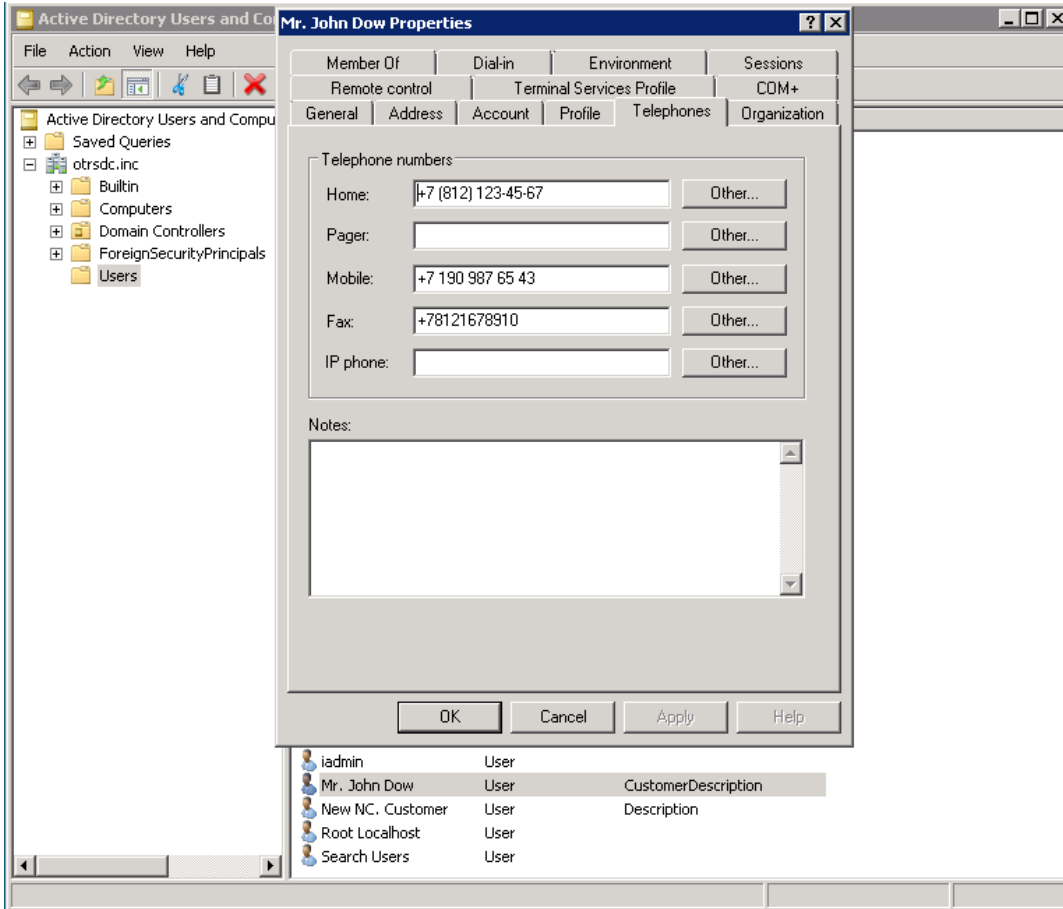
The "Address" tab:
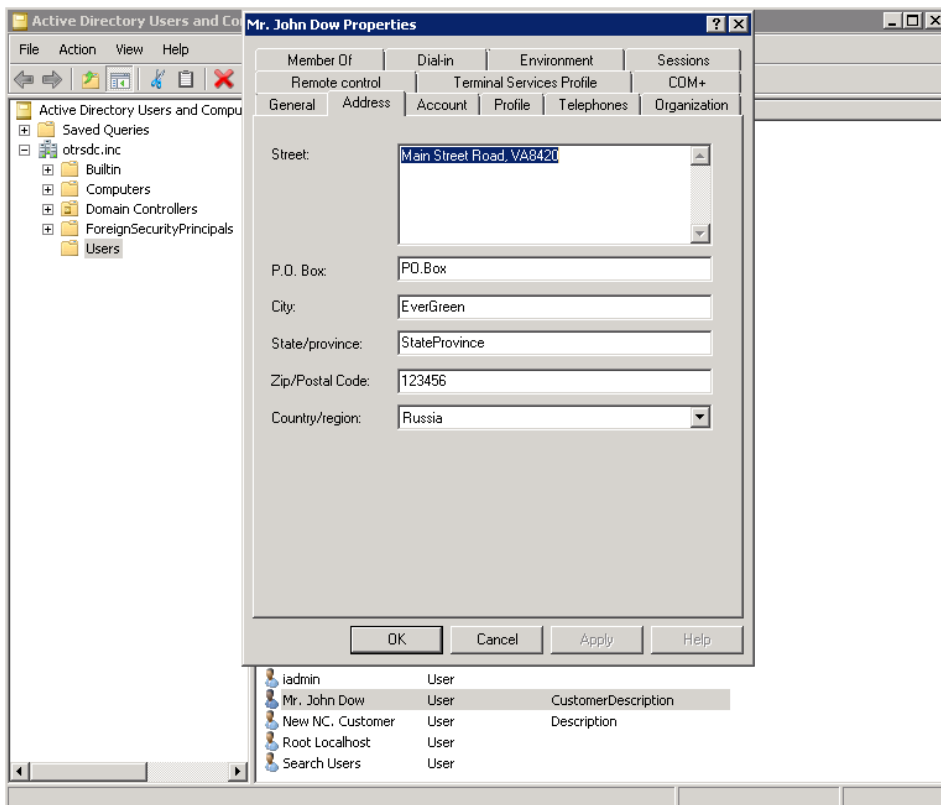
Example of part of the Config.pm file of LDAP data for customers:

```
$Self->{CustomerUser} = {
        Module => 'Kernel::System::CustomerUser::LDAP',
        Params => {
        Host => '10.10.12.11',
        BaseDN => 'dc=otrsdc,dc=inc',
        SSCOPE => 'sub',
        UserDN => 'root@otrsdc.inc',
        UserPw => 'SomePassword',
        AlwaysFilter => '(&(objectclass=user)(memberof=CN=OTRS_Customers,CN=Users,DC=otrsdc,DC=inc))',
        SourceCharset => 'utf-8',
        DestCharset => 'utf-8',
},

    CustomerKey => 'sAMAccountName',
    CustomerID => 'mail',
    CustomerUserListFields => ['sAMAccountName', 'givenName', 'sn', 'mail'],
    CustomerUserSearchFields => ['sAMAccountName', 'givenName', 'sn', 'mail'],
    CustomerUserSearchPrefix => '',
    CustomerUserSearchSuffix => '*',
    CustomerUserSearchListLimit => 250,
    CustomerUserPostMasterSearchFields => ['mail'],
    CustomerUserNameFields => ['givenname', 'sn'],

    Map => [
      [ 'UserInitials', 'Initials', 'initials', 1, 0, 'var' ],
      [ 'UserFullname', 'Full name', 'cn', 1, 0, 'var' ],
      [ 'UserFirstname', 'Firstname', 'givenName', 1, 1, 'var' ],
      [ 'UserLastname', 'Lastname', 'sn', 1, 1, 'var' ],
      [ 'UserLogin', 'Login', 'sAMAccountName', 1, 1, 'var' ],
      [ 'UserEmail', 'Email', 'mail', 1, 1, 'var' ],
      [ 'UserCustomerID', 'CustomerID', 'mail', 0, 1, 'var' ],
      [ 'UserPhone', 'Phone', 'telephonenumber', 1, 0, 'var' ],
      [ 'UserFax','Fax', 'facsimiletelephonenumber', 1, 0, 'var' ],
      [ 'UserHomePhone','Home phone', 'homephone', 1, 0, 'var' ],
      [ 'UserMobile', 'Mobile', 'mobile', 1, 0, 'var' ],
      [ 'UserZip', 'Zip', 'postalcode', 1, 0, 'var' ],
      [ 'UserCountry', 'Country', 'co', 1, 0, 'var' ],
      [ 'UserCity', 'City', 'l', 1, 0, 'var' ],
      [ 'UserStreet', 'Street', 'streetAddress', 1, 0, 'var' ],
      [ 'UserOffice', 'Office', 'physicalDeliveryOfficeName', 1, 0, 'var' ],
      [ 'UserDepartment' , 'Department' , 'department' , 1 , 1 , 'var' , '' , 0 ] ,
      [ 'UserDescription' , 'Description' , 'description' , 1 , 0 , 'var' , '' , 0 ] ,
    ],
};
```

Trouble shooting

The server part of the module is executed on the scripts pim_chat.pl and pim_asterisk.pl, scripts are located in the path /opt/otrs/var.

The scripts are started by CRON and are checked once a minute.

In case of startup problems, check that the scripts are in the CRON job by running the command:

crontab -l -u otrs

There should be these lines:

*/1 * * * * $HOME/var/pim_chat.pl >> /dev/null

*/1 * * * * $HOME/var/pim_asterisk.pl >> /dev/null

Additional information about errors and events is output to the following log files:

pim_chat_log_YYYYMM.log – PIM server module messages

pim_ast_log_YYYYMM.log – Asterisk connector messages

pim_cdr_ YYYYMM.log – CDR information output

pim_set_bl_ YYYYMM.log – CallerID Blocking Module messages

Log files output path: /opt/otrs/var/log

The log files are rotated by the month.

Feedback

If you need additional information or have any suggestions, comments on the modules or you find a bug in the package OPCv3.0.0b, write to us to the email address on the website http://ip-lab.ru/ on the "Contact Us" page.