

OpenTRS - Manual

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OpenTRS - Manual

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first draft

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i used my vacation to add some spice to the documentation

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Sibbi joined the team.

Dedication

This manual is dedicated to the nice folks of *Cafe Lucas*(<http://www.cafe-lucas.de/>) and *Enchilada*(<http://www.enchilada.de/>) (two restaurants in Nuernberg). Thanks for the happy hour! Today we hang out mostly in Frankfurt but we still remember the good times in Nuernberg.

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Foreword

About this Book

This is an alpha edition of this book. This version may contain glaring inconsistencies, missing sections, and other misfeatures indicative of a work in progress. But please do not hesitate to add every found mistake in our bugtracking tool at <http://bugs.otrs.org/>.

You will find the current HTML online version of this book at <http://otrs.org/docu/> or in PDF-format at <http://otrs.org/docu/manual.pdf>.

About OpenTRS

Many people do not have an idea what a trouble ticket system is and why you may need one. We will try to give you an idea about it in this document and want to refer to *RFC 1297* (<http://www.faqs.org/rfcs/rfc1297.html>):

RFC 1297

PURPOSES OF A NOC TROUBLE TICKET SYSTEM

A good Network Operations Trouble Ticket System should serve many purposes:

1) **SHORT-TERM MEMORY AND COMMUNICATION** ("Hospital Chart"). The primary purpose of the trouble ticket system is to act as short-term memory about specific problems for the NOC as a whole. In a multi-operator or multi-shift NOC, calls and problem updates come in without regard to who worked last on a particular problem. Problems extend over shifts, and problems may be addressed by several different operators on the same shift. The trouble ticket (like a hospital chart) provides a complete history of the problem, so that any operator can come up to speed on a problem and take the next appropriate step without having to consult with other operators who are working on something else, or have gone home, or are on vacation. In single-room NOCs, an operator may ask out loud if someone else knows about or is working on a problem, but the system should allow for more formal communication as well.

2) **SCHEDULING and WORK ASSIGNMENT**. NOCs typically work with many simultaneous problems with different priorities. An on-line trouble ticket system can provide real time (or even constantly displayed and updated) lists of open problems, sorted by priority. This would allow operators to sort their work at the beginning of a shift, and to pick their next task during the shift. It also would allow supervisors and operators to keep track of the current NOC workload, and to call in and assign additional staff as appropriate.

It may be useful to allow current priorities of tickets change according to time of day, or in response to timer alerts.

3) **REFERRALS AND DISPATCHING**. If the trouble ticket system is thoroughly enough integrated with a mail system, or if the system is used by Network Engineers as well as Network Operators, then some problems can be dispatched simply by placing the appropriate Engineer or Operator name in an "assigned to" field of the trouble ticket.

4) **ALARM CLOCK**. Typically, most of the time a trouble ticket is open, it is waiting for something to happen. There should almost always be a timer associated with every wait. If a ticket is referred to a phone company, there will be an escalation time before which the phone company is supposed to call back with an update on the problem. For tickets referred to remote site personnel, there may be other more arbitrary timeouts such as

"Monday morning". Tickets referred to local engineers or programmers should also have timeouts ("Check in a couple of days if you don't hear back from me"). A good trouble ticket system will allow a timeout to be set for each ticket. This alarm will generate an alert for that ticket at the appropriate time. Preferably, the system should allow text to be attached to that timer with a shorthand message about what the alert involves ("Remind Site: TT xxx") (The full story can always be found by checking the trouble ticket). These alerts should feed into the NOC's standard alert system.

The Alarm Clock can also assist (or enforce!) administrative escalation. An escalation timer could automatically be set based on the type of network, severity of the problem, and the time the outage occurred.

5) **OVERSIGHT BY ENGINEERS AND CUSTOMER/SITE REPRESENTATIVES**. NOCs frequently operate more than one network, or at least have people (engineers, customer representatives, etc) who are responsible for subsets of the total network. For these individual representatives, summaries of trouble tickets can be filtered by network or by node, and delivered electronically to the various engineers or site representatives. Each of these reports includes a summary of the previous day's trouble tickets for those sites, a listing of older trouble tickets still open, and a section listing recurrent problems. These reports allow the site reps to keep aware the current outages and trends for their particular sites. The trouble ticket system also allows network access to the details of individual trouble tickets, so those receiving the general reports can get more detail on any of their problems by referencing the trouble ticket number.

6) **STATISTICAL ANALYSIS**. The fixed-form fields of trouble tickets allow categorizations of tickets, which are useful for analyzing equipment and NOC performance. These include, Mean Time Between Failure and Mean Time to Repair reports for specific equipment. The fields may also be of use for generating statistical quality control reports,

which allow deteriorating equipment to be detected and serviced before it fails completely. Ticket breakdowns by network a NOC costs to be apportioned appropriately, and help in developing staffing and funding models. A good trouble ticket system should make this statistical information in a format suitable for spreadsheets and graphics programs.

7) **FILTERING CURRENT ALERTS.** It would be possible to use network status information from the trouble ticket system to filter the alerts that are displayed on the alert system. For instance, if node XXX is known to be down because the trouble ticket is

currently open on it, the alert display for that node could automatically be acknowledged. Trouble tickets could potentially contain much further information useful for expert system analysis of current network alert information.

8) **ACCOUNTABILITY ("CYA"), FACILITATING CUSTOMER FOLLOW-THROUGH, AND NOC IMAGE).**

Keeping user-complaint tickets facilitates the kind of follow through with end-users that generates happy clients (and good NOC image) for normal trouble-fixing situations. But also, by their nature, NOCs deal with crises; they occasionally find themselves with major outages, and angry users or administrators. The trouble ticket system documents the NOC's (and the rest of the organization's) efforts to solve problems in case of complaints.

Of course we added many features to the OpenTRS which are not mentioned in this RFC. And we will add many features.

Anyhow we are keen on your feedback. Please do not hesitate to send us an e-mail to <feedback@otrs.org>

Your OpenTRS core team

Chapter 1. Basics about a Trouble Ticket System

1.1. A simple example for a small Trouble Ticket System

What is a typical scenario for using OpenTRS?

Example: Bob is a manufacturer of VCRs and his customers often have problems to program the VCRs. So they send Bob an e-mail. Sometimes they send a second e-mail to show Bob how important their request is. They are wondering if Bob is alive and how fast he will answer. Bob is using a normal INBOX and reads his e-mails with pine, mutt or whatever e-mail client. Sometimes his two brothers Tim and Joe help him to answer the e-mails. They all use the same INBOX. Of course they have no clue that one customer wrote two e-mails and maybe Tim gives a different answer to the first e-mail than his brother Joe does for the second. So the client gets different information. Of course Bob has no client-history and no clue how much support he is offering. For the next VCR he is producing he has no feedback from his support. That is bad!

But Bob is a smart cookie so he installs OpenTRS. The e-mail from his customers are not anymore going to his personal INBOX but are routed to the OpenTRS account (normally called otrs). The OpenTRS account has some nifty procmail rules which pipe this e-mail messages to the system. The system answers the client a standard text which says that they received the e-mail and gives the client a Trouble Ticket Number (which is very important to trace the customers request). The client is happy because he knows that his valuable e-mail was received by Bob and his team. Anybody from Bob's team can open a webbrowser with the URL of the OpenTRS to have a look at the amount of received e-mails and to answer them. In case the customer Mr. Smith sent a question, Bob can answer it. Maybe Mr. Smith does not understand the question and sends a reply. But Bob is ill. Now even Tim can open this ticket and has access to the history of the ticket. He can read Bob's answer(s) and the original e-mail of Mr. Smith. Tim can answer to Mr. Smith and Mr. Smith even does not realize that he was handled by two different persons.

Of course this is just a very rough overview of the benefits of OpenTRS. Probably Bob receives some 100 e-mail messages a day which could be handled even without a Trouble Ticket System. But by the time you receive some 100000 or even just some 500 e-mails a day you will be happy to have a system which handles all the e-mails.

1.2. What is a trouble ticket in the OpenTRS?

Within the OpenTRS all trouble tickets are handled as normal e-mails. In case you want to attach something (e.g. a fax) it will be attached as an e-mail attachment. All tickets are stored on the harddrive in clear text format. The headers are stored in a database, too. The database is used to sort the tickets and to give quick access to them. For detailed information about this mechanism have a look in the source code.

1.3. What is a ticket queue?

For native english speaking folks this might be a bit funny but for non native speakers the term QUEUE does not make any sense at all. So we use this section to describe the idea and concept.

Normally a e-mail (and as described above a trouble ticket is stored as an e-mail) is stored in an INBOX. An INBOX is a large file and every new e-mail is just appended to the end of the INBOX. The e-mail client is parsing this file and sorts it as you want it (typically by date of receiving).

A queue is a mechanism to store many tickets within. As a user you do not know where the tickets are stored. You just know that a new ticket is e.g. in the RAW queue. An user (agent) can move a ticket from one queue to another. Why should he/she do this? You can use different queues to get more order and a better overview to your tickets. Let's assume you receive 200 e-mail messages (tickets) a day. And you have 3 teams of specialists. It doesn't make any sense to ask every specialist to read every ticket. It is a waste of time. So you have to create a fourth team which dispatches all the tickets in the INCOMING-QUEUE (or how ever you call this queue). The

dispatch instance will have a quick (quick!) look at every ticket and move it then to a special queue. The 3 teams of specialists read their special queues only.

Chapter 2. Install - The quick way.

2.1. Installing the rpm

This install way is intended for *SuSE Linux*(<http://www.suse.de/>) users. For other distributions please have a look at <http://www.otrs.org/>.

Install the otrs.rpm with YaST (YaST2) or rpm what ever you prefer. Please be aware of the fact that OpenTRS needs some Perl-Modules which are not installed by default in a typical SuSE installation. In case you use YaST you will not have troubles because YaST will tell you what packages have to be installed.

Once you installed the otrs.rpm in your system you have to reload the apache by `rcapache reload` to force him to reload the config file.

```
skywalker:~ # rcapache reload
PERL PHP4 Python Reload httpd                               done
```

Of course you have to have started the mysql database allready (please see the mysql docu for help). After that you have to start otrs with `rcotrs start`

```
skywalker:~ # rcotrs start
Starting OpenTRS
Starting mysql ... done.
Checking database connect... (It looks Ok!).
Checking otrs spool dir... done.
Starting httpd ... done.
```

2.2. installer.pl

The script/webpage <http://localhost/otrs/installer.pl> has to be visited now. It will help you to set up the database. Please doublecheck your database password.

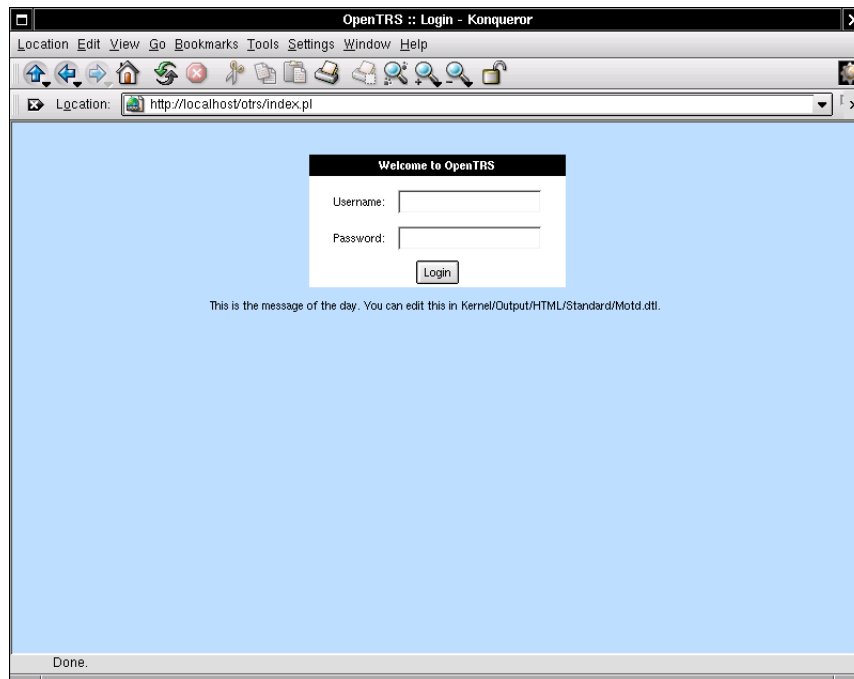
The screenshot shows a web browser window titled "http://localhost:8042/otrs/installer.pl - Konqueror". The address bar shows "http://localhost/otrs/installer.pl". The page content is titled "OpenTRS" and "Web-Installer (create database)". It contains several input fields for database configuration:

- DB Admin User:
- DB Admin Password:
- DB Host:
- DB Type:
- OpenTRS DB Name:
- OpenTRS DB User:
- OpenTRS DB Password:
- OpenTRS DB connect host:

Below the fields are two radio buttons: "Create new database:" (selected) and "Delete database:". A "submit" button is at the bottom. At the very bottom of the page, there are links: "[QueueAnsicht]", "[PhoneAnsicht]", and "[hoch]". The status bar at the bottom says "Loading complete".

2.3. index.pl

Then fire up your favorite webbrowser and have a look at <http://localhost/otrs/index.pl>. index.pl is your central starting point.



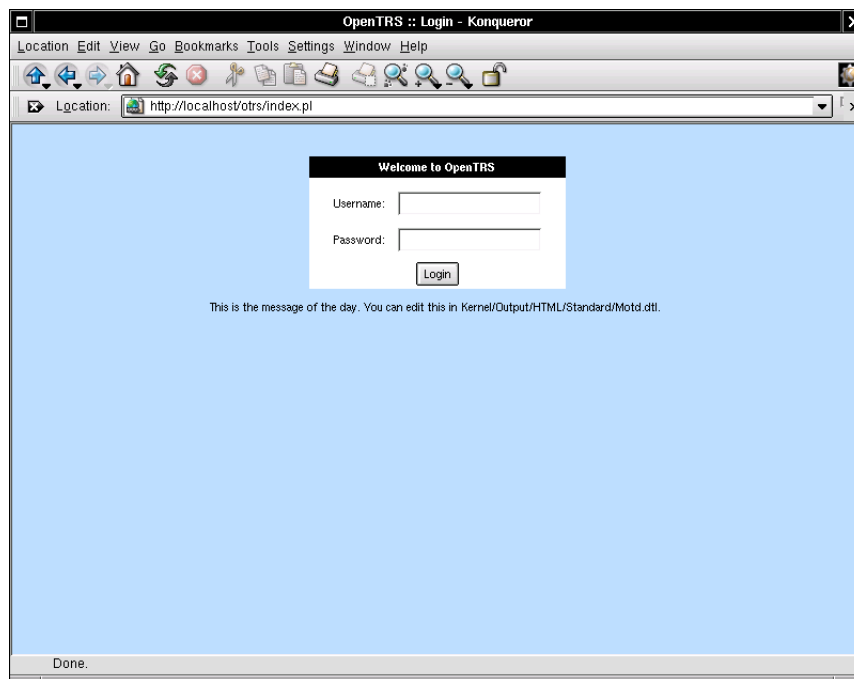
In case you have problems to install OpenTRIS please have a look into the trouble-shooting section.

Chapter 3. First steps

3.1. Login as root and create a new account

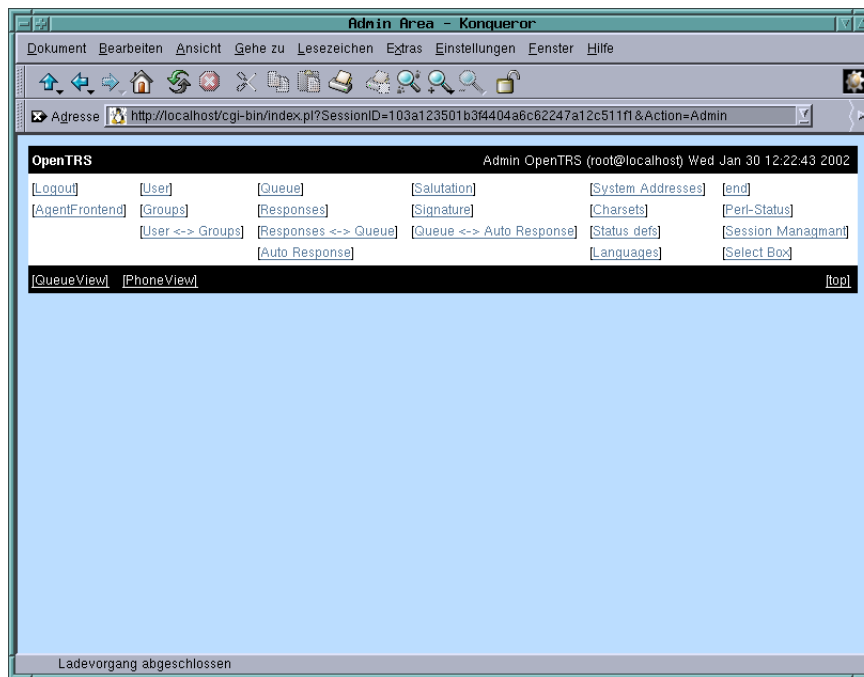
Let's presume that you have an installed OpenTRS system on your system and of course you do not want to waste too much time and see results quickly.

First you have to start your favourite webbrowser and have a look at <http://localhost/otrs/index.pl>

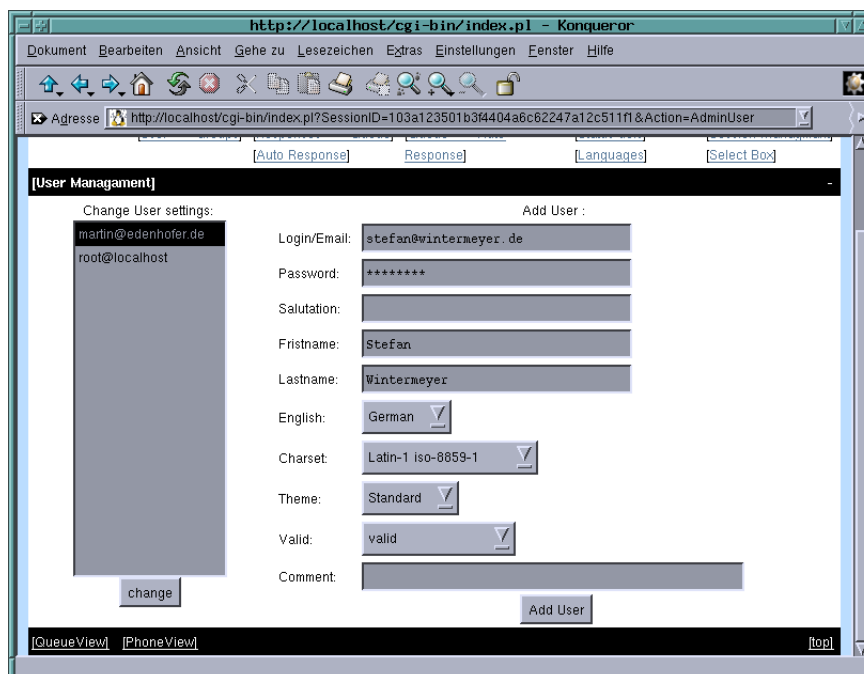


Login as root@localhost who by default has assigned the password root. Please change this in the admin part asap (of course it is totally independent from your normal linux root account).

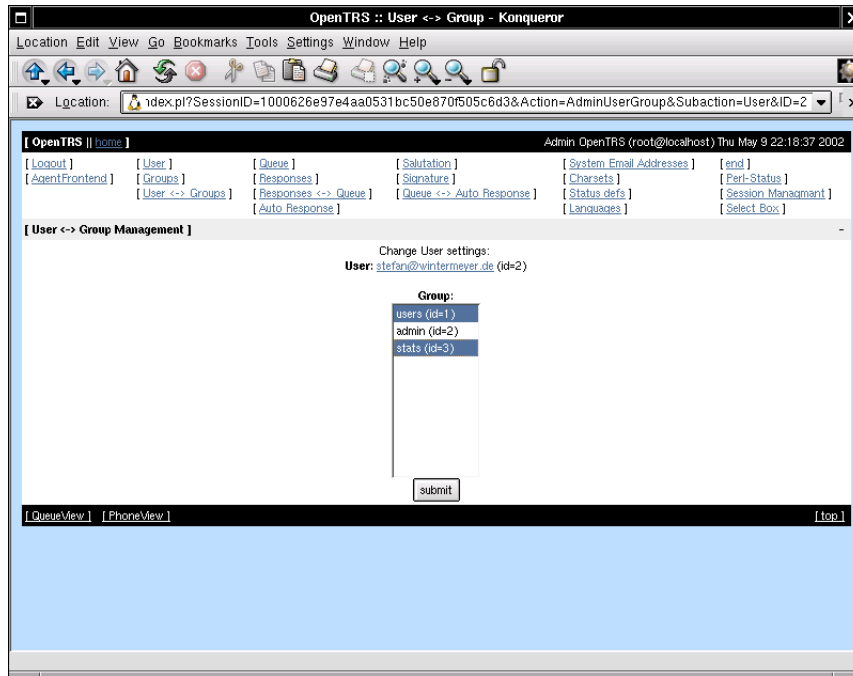
You are the root user of OpenTRS now. That means that you can do everything! You have the power, you are admin of the system. Normally you will not want to work as root and of course you need an account for all agents. So the first thing is to go into the admin interface.



The admin interface is the central of your power. You can create and delete users, groups, queues and all sort of usefull stuff here. Browse around and give it a try. But for now we want to create a new user at once.

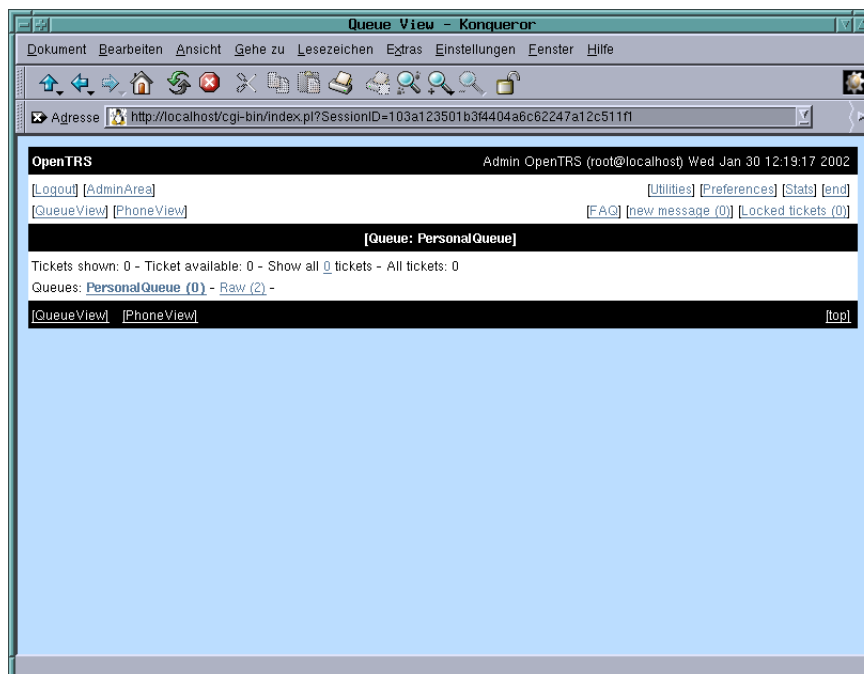


Now add the new user to the 'users' and 'stats' group or some other groups.

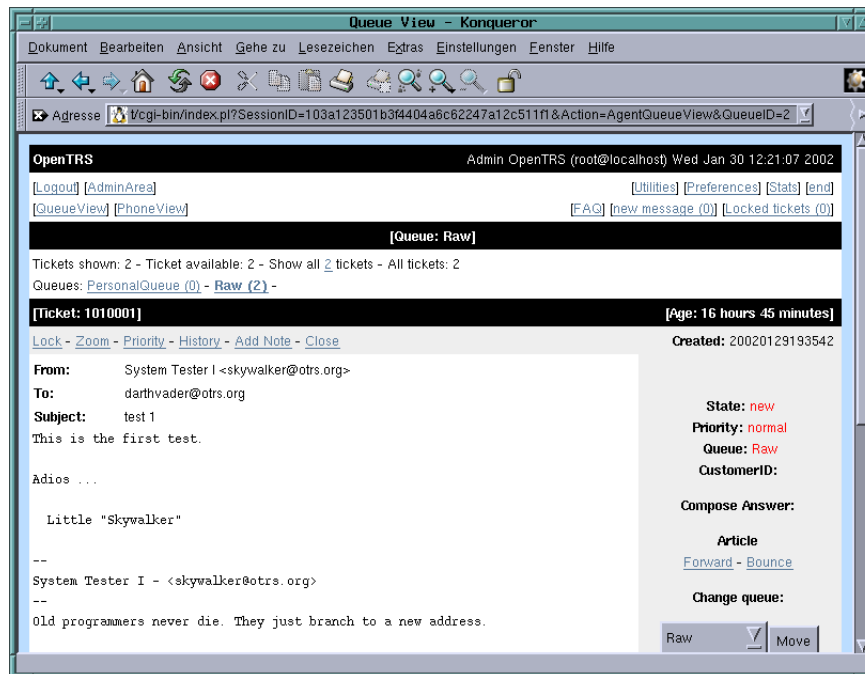


3.2. Login with user privilege

After you created the new user we ask you to logout and to login again as this new user. After login in he/she will see the following screen:



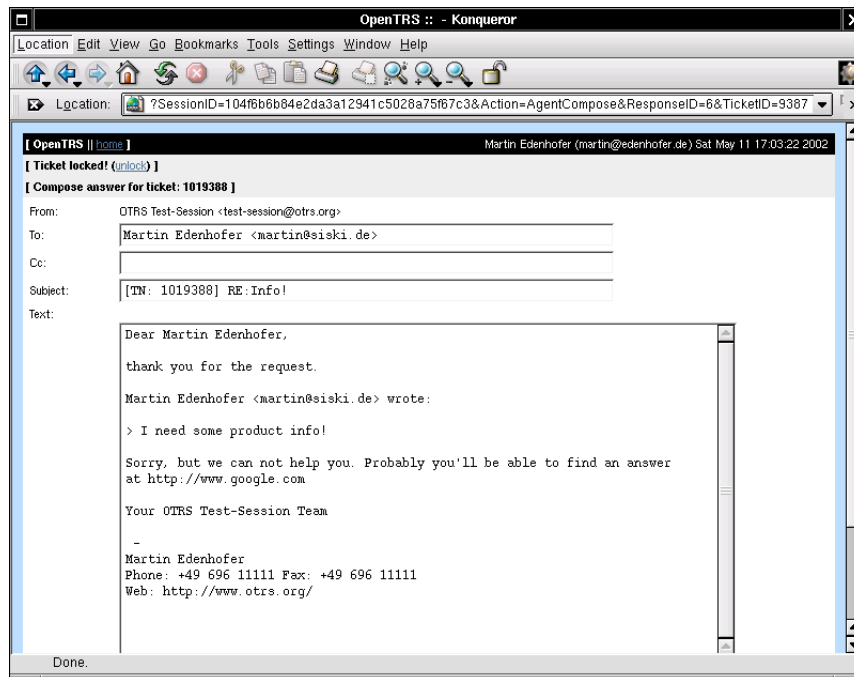
Between the second and third black bar (in this example) the user has access to the different queues. He/she can browse the queue by simply clicking on the link with the queue name.



Chapter 4. Ticket topics

4.1. Answer ticket via email

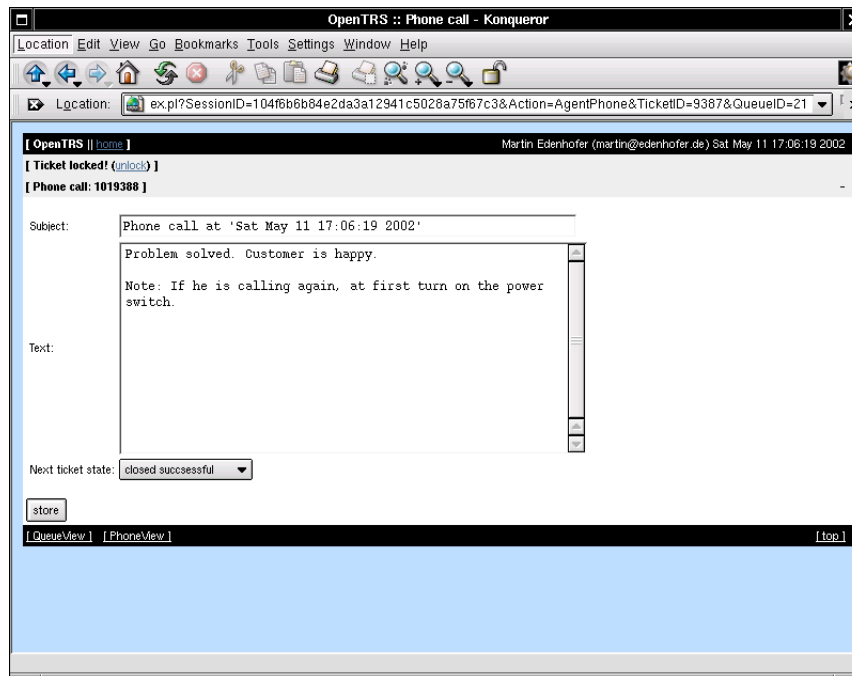
It's quite simply to answer tickets via email. Goto the QueueView or TicketZoom and click on one of the listed items under "Compose Answer (email)". A new screen will be opened, the compose screen. The cool thing is, that the compose screen includes the item-standard answer!



4.2. Answer ticket via phone

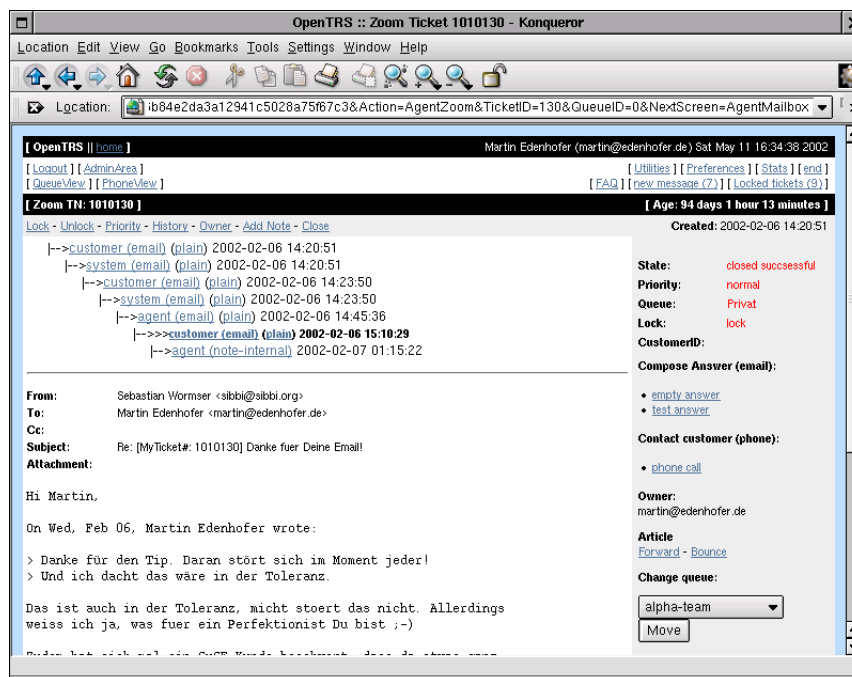
It's quite simply to answer tickets via phone. Just click on "phone call" (near Contact customer (phone)). A new

screen will be opened. Write down the phone notes and select new ticket type (open, closed, ...).



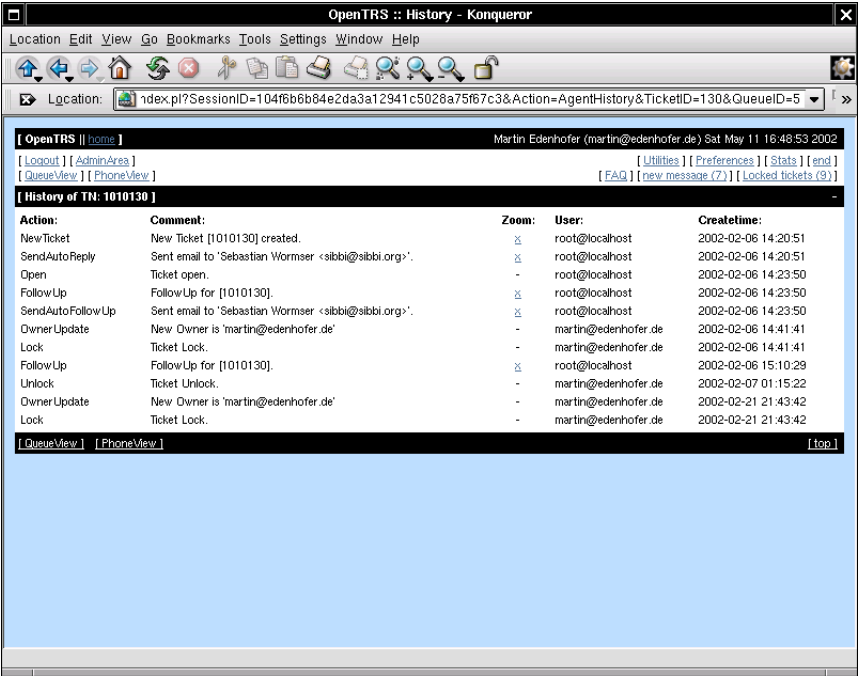
4.3. Zoom ticket

Zoom ticket is a detail view of one ticket. The screenshot shows you the ticket data (State, Priority, the Queue of the ticket, the Lock state, Owner and the article tree. Article tree means the whole communication thread.



4.4. History of ticket

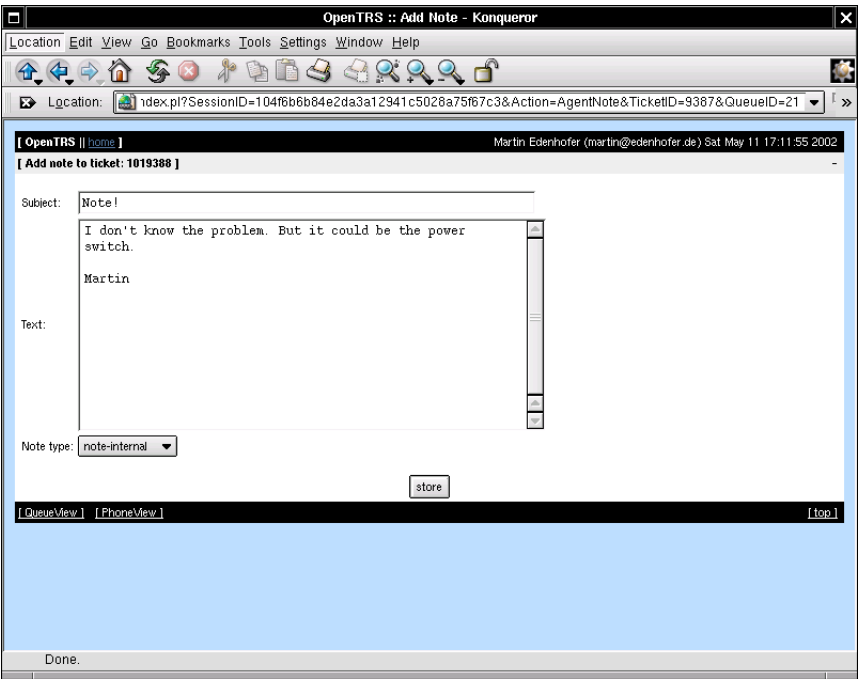
The ticket history shows you all actions on this ticket.



4.5. Add note to ticket

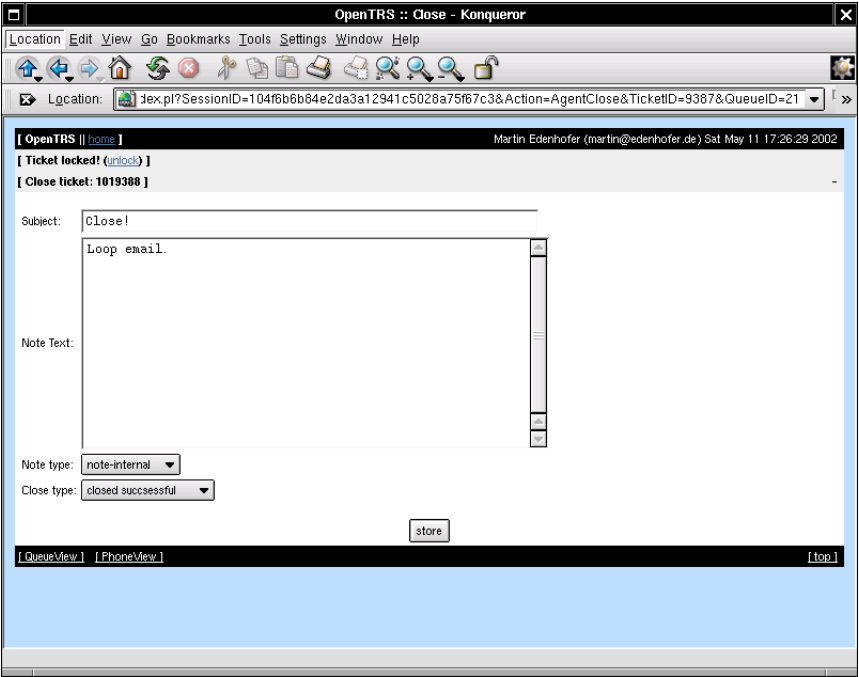
Each agent is able to add notes to tickets. Maybe he/she isn't sure to give a qualified answer. And you can select

the type of note (internal, external, ...).



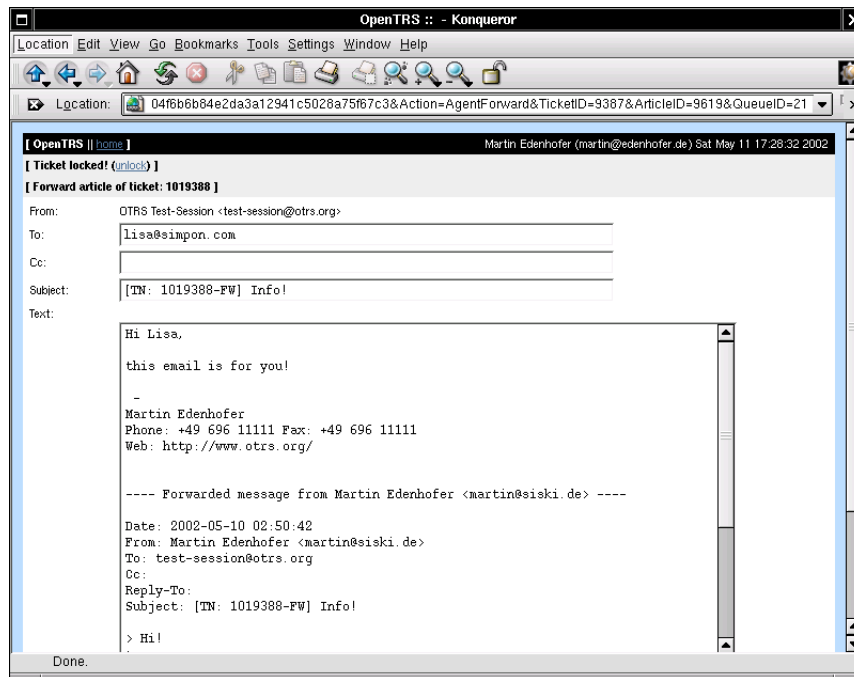
4.6. Close ticket

Close Tickets.



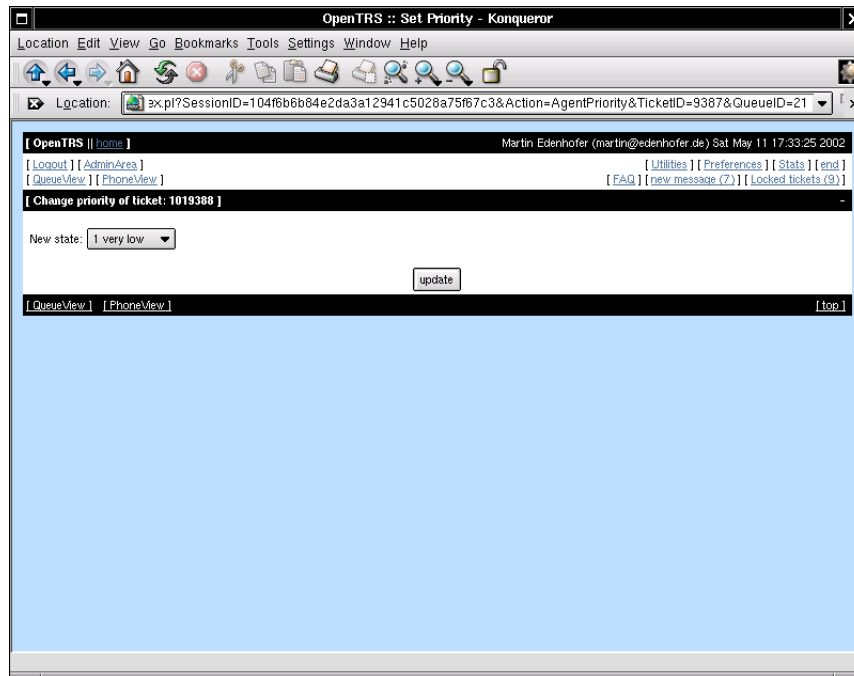
4.7. Forward ticket

Forward tickets if the email wasn't for your OpenTRS system.



4.8. Ticket priority

Set the ticket priority if necessary.



Chapter 5. First Ticket

5.1. How can somebody write e-mails to the OpenTRS?

The default installation will accept e-mails to the e-mail address <otrs@localhost>. This is good to start a little playing. Use your favourite e-mail client and send an e-mail to this address (of course you have to be on this system). Or you can have a look in the admin section of OpenTRS to add different e-mail addresses like <info@foo.org>. But please take care that these e-mails will be delivered to the **local otrs account** (to the ~otrs/.procmailrc(<http://www.procmal.org/>))! In case you are not familiar with the configuration of your sendmail or postfix have a look in the man-pages or send an e-mail to the mailinglist <otrs@otrs.org>.

Ok, ok, ... we show you two simple examples.

5.1.1. Config of fetchmail

In order to get email via a pop3 mailbox and SMTP to the **local otrs account** use fetchmail(<http://www.tuxedo.org/~esr/fetchmail/>).

Example 5-1. .fetchmailrc

```
#poll (mailserver) protocol POP3 user (user) password (password) is (localuser)
poll mail.example.com protocol POP3 user joe password mama is otrs
```

Don't forget to set the .fetchmailrc to 710 ("chmod 710 .fetchmailrc")!

So if "fetchmail -a" is executed (maybe via cron), all emails will be forwarded to the local otrs account.

5.1.2. Config of sendmail in SuSE Linux

Lets presume you have a plain SuSE Linux installation with sendmail as a default Mail Transfer Agent and you want to set up a OpenTRS e-mail account for the e-mail address <info@example.com>. All you have to do is to add a line to your /etc/mail/virtusertable file.

Example 5-2. /etc/mail/virtusertable

```
# /etc/mail/virtusertable
#
# Description:
#
# A domain-specific form of aliasing, allowing multiple virtual
# domains to be hosted on one machine.
#
# Examples:
#
#info@foo.com          foo-info
#info@bar.com          bar-info
#joe@bar.com           error:nouser No such user here
#jax@bar.com           error:D.S.N:unavailable Address invalid
#@baz.org              jane@example.net
#
#
info@example.com       otrs
support@example.com    otrs
```

That's it (we actually added a second e-mail address with the name <support@example.com>! You have to run SuSEconfig.

```
skywalker:~ # SuSEconfig
Starting SuSEconfig, the SuSE Configuration Tool...
Running in quick mode.
Reading /etc/rc.config and updating the system...
Executing /sbin/conf.d/SuSEconfig.aaa_at_first...
Executing /sbin/conf.d/SuSEconfig.hostname...
Executing /sbin/conf.d/SuSEconfig.inittab...
Executing /sbin/conf.d/SuSEconfig.pam...
Executing /sbin/conf.d/SuSEconfig.sendmail...
Rebuilding /etc/mail/virtusertable.db.
Executing /sbin/conf.d/SuSEconfig.yppclient...
Finished.
```

Reload sendmail (just to be sure).

```
skywalker:~ # rcsendmail reload
Reload service sendmail                               done
```

Now all incoming e-mail to info@example.com will be delivered to the local user otrs.

Every e-mail message to the user otrs will be handled by the procmail-rule of otrs which pipes the e-mail to the system. You will find the e-mail in the RAW queue.

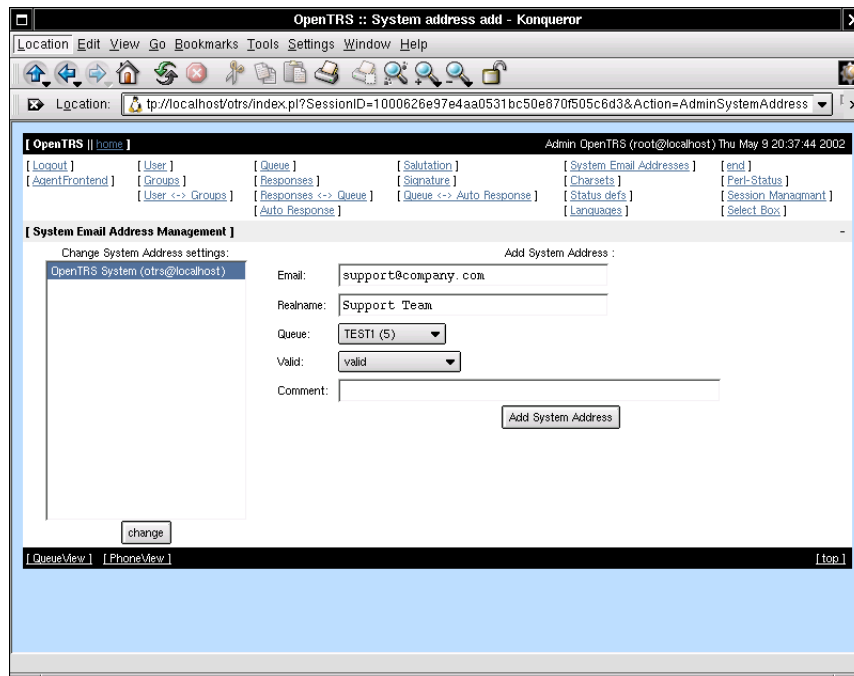
Chapter 6. Dispatching of incoming email

6.1. With OpenTRS

OpenTRS is able to dispatch incoming emails via "To" address. Configurable via admin interface.

Example

Add a new system email address (AdminArea --> System Email Addresses).



In this case, all incoming emails (with To: support@company.com) will be dispatched to the TEST1 queue.

6.2. With procmail (for more complex dispatching)

Procmail is a very common e-mail filter in the Linux environment. It will be probably installed on your system. If not have a look at the *procmail homepage* (<http://www.procmail.org/>).

The X-OTRS-Queue Mail-Header

The X-OTRS-Queue Mail-Header is parsed by OpenTRS and OpenTRS will pipe these e-mails direct in this queue. Procmail and fromail can be used to create a powerful dispatcher tool.

Examples

The following examples are copied from the procmailex man-page. Feel free to have a look into it (actually it is quite a good idea). Of course we changed the wording a bit (to fit it into the queueing idea).

Sort out all mail coming from the scuba-dive mailing list into the scuba queue.

```
:0 fhw :
* ^TOscuba
| formail -I "X-OTRS-Queue: scuba"
```

Forward all mail from peter about compilers into the william queue.

```
:0 fhw :
* ^From.*peter
* ^Subject:.*compilers
| formail -I "X-OTRS-Queue: william"
```

And here a last example, the whole .procmailrc.

Example 6-1. .procmailrc

```
# --
# .procmailrc - procmailrc of the OpenTRS user
# Copyright (C) 2001-2002 Martin Edenhofer (martin+code at otrs.org)
# --
# $Id: procmail.sgml,v 1.4 2002/05/12 18:53:06 martin Exp $
# --
# This software comes with ABSOLUTELY NO WARRANTY. For details, see
# the enclosed file COPYING for license information (GPL). If you
# did not receive this file, see http://www.gnu.org/licenses/gpl.txt.
# --

SYS_HOME=$HOME

PATH=/bin:/usr/bin:/usr/local/bin
MONTHFOLDER='date +%Y-%m'
YEARFOLDER='date +%Y'
LOGFILE=$SYS_HOME/var/log/procmail-$MONTHFOLDER.log
VERBOSE=on

# --
# Remove all X-OTRS Header (allow this only for trusted email)
# e. g. from *@example.com
# --
:0 fhw :
* !^From.*@example.com
| grep -vi '^X-OTRS-'

# --
# Examples for queue presorting.
# --

:0 fhw :
* ^List-Id:.*OpenAntiVirus
| formail -I "X-OTRS-Queue: OpenAntiVirus"

:0 fhw :
* ^Sender:.*example.com
| formail -I "X-OTRS-Queue: example"

:0 fhw :
* TO:.*BUGTRAQ
| formail -I "X-OTRS-Queue: BUGTRAQ"

# --
# Backup of all incoming emails.
# It's always better to have a backup of all incoming emails!
# --
:0 c :
$SYS_HOME/var/INBOX.Backup.$MONTHFOLDER

# --
# Pipe all email into the PostMaster process.
# --
:0 :
```

```
| $SYS_HOME/bin/PostMaster.pl

# --
# spool all the rest (which the PostMaster.pl can't process!)
# If the database is down or the PostMaster.pl exit was not '0'!
# --
:0 :
$SYS_HOME/var/spool/.

# --
# end of .procmailrc
# --
```

Please have a look into the procmailex man-page for more examples.

Chapter 7. Config File

The config file (Kernel/Config.pm) is quite simple to read. So you should have any problems. But just in case we will describe some features in this chapter.

7.1. TicketHook

You can configure the value of the TicketHook which is the first part of the subject of each e-mail (e.g. [MyTicket: 007]).

Example 7-1. Kernel/Config.pm - TicketHook

```
[...]
# TicketHook
# (To set the Ticket identifier. Some people want to
# set this to e. g. 'Call#', 'MyTicket#' or 'TN'.)
$Self->{TicketHook} = 'Ticket#',
[...]
```

7.2. FQDN

The OpenTRS full qualified domain name. Will be used for email messages id's.

Example 7-2. Kernel/Config.pm - FQDN

```
[...]
# FQDN
# (Full qualified domain name of your system.)
$Self->{FQDN} = 'yourhost.example.com';
[...]
```

7.3. Max. Postmaster email

OpenTRS is able to send automatically email replay. So it's possible to create an email loop (of course we check bulk headers but other some strange systems not!).

Example 7-3. Kernel/Config.pm - MaxPostMasterEmails

```
[...]
# MaxPostMasterEmails
# (Max post master daemon email to own email-address a day.
# Loop-Protection!)
$Self->{MaxPostMasterEmails} = 20;
[...]
```

7.4. Database settings

Example 7-4. Kernel/Config.pm - Database settings

```
[...]
# DatabaseHost
```

```

# (The database host.)
$Self->{DatabaseHost} = 'localhost';

# Database
# (The database name.)
$Self->{Database} = 'otrs';

# DatabaseUser
# (The database user.)
$Self->{DatabaseUser} = 'otrs';

# DatabasePw
# (The password of database user.)
$Self->{DatabasePw} = 'some-pass';

# DatabaseDSN
# (The database DSN for MySQL ==> more: "man DBD:mysql")
$Self->{DatabaseDSN} = "DBI:mysql:database=$Self->{Database};host=$Self->{DatabaseHost}";

# (The database DSN for PostgreSQL ==> more: "man DBD:Pg")
#$Self->{DatabaseDSN} = "DBI:Pg:dbname=$Self->{Database}";
[...]
```

7.5. Move into any queue

Should the agent be able to move tickets into queue which it isn't member of the group (Helpfully if you use OpenTRS in ASP (Application Service Provider) mode).

Example 7-5. Kernel/Config.pm - Move into any queue

```

[...]
```

```

# MoveIntoAllQueues
# (Possible to move in all queue? Not only queue which
# the own groups) [1|0]
$Self->{MoveIntoAllQueues} = 1;
[...]
```

7.6. Custom Queue

Some people want to set the "Custom Queue" name (The queue of your favorite queues).

Example 7-6. Kernel/Config.pm - Custom Queue

```

[...]
```

```

# CustomQueue
# (The name of custom queue.)
$Self->{CustomQueue} = 'PersonalQueue';
[...]
```

7.7. Agent notification

If there is a new ticket or a follow up for a ticket, OpenTRS will inform the agent(s).

Example 7-7. Kernel/Config.pm - Agent notification

```
[...]
# -----#
# notification stuff                                     #
# -----#
# notification sender
$Self->{NotificationSenderName} = 'OpenTRS Notification Master';
$Self->{NotificationSenderEmail} = 'otrs@'.$Self->{FQDN};

# new ticket
$Self->{NotificationSubjectNewTicket} = 'New ticket notification! (<OTRS_CUSTOMER_SUBJECT[10]>';
$Self->{NotificationBodyNewTicket} = "
Hi,

there is a new ticket!

<snip>
<OTRS_CUSTOMER_EMAIL[6]>
<snip>

http://$Self->{FQDN}/otrs/index.pl?Action=AgentZoom=<OTRS_TICKET_ID>

Your OpenTRS Notification Master

";

# follow up
$Self->{NotificationSubjectFollowUp} = 'You got follow up! (<OTRS_CUSTOMER_SUBJECT[10]>)';
$Self->{NotificationBodyFollowUp} = "
Hi <OTRS_USER_FIRSTNAME>,

you got a follow up!

<snip>
<OTRS_CUSTOMER_EMAIL[6]>
<snip>

http://$Self->{FQDN}/otrs/index.pl?Action=AgentZoom=<OTRS_TICKET_ID>

Your OpenTRS Notification Master

";
[...]
```

7.8. Session management

The OpenTRS session management.

Example 7-8. Kernel/Config.pm - Session management

```
[...]
# -----#
# session settings                                     #
# -----#

# SessionDriver
# (How should be the session-data stored? [sql|fs]
# Advantage of sql is that you can split the
# Frontendserver from the DB-Server. fs is faster.)
$Self->{SessionDriver} = 'sql';
```

```

# SessionCheckRemoteIP
# (If the application is used via a proxy-farm then the
# remote ip address is mostly different. In this case,
# turn of the CheckRemoteID. ) [1|0]
$Self->{SessionCheckRemoteIP} = 1;

# SessionDeleteIfNotRemoteID
# (Delete session if the session id is used with an
# invalied remote IP?) [0|1]
$Self->{SessionDeleteIfNotRemoteID} = 1;

# SessionMaxTime
# (Max valid time of one session id in second (8h = 28800).)
$Self->{SessionMaxTime} = 28800;

# SessionDeleteIfTimeToOld
# (Delete session's witch are requested and to old?) [0|1]
$Self->{SessionDeleteIfTimeToOld} = 1;
[...]
```

7.9. agent area default settings

Example 7-9. Kernel/Config.pm - agent area default settings

```

[...]
```

```

# -----#
# agent area default settings                                #
# -----#

# ViewableTickets
# (The default viewable tickets a page.)
$Self->{ViewableTickets} = 25;

# ViewableTicketLines
# (Max viewable ticket lines in the QueueView.)
$Self->{ViewableTicketLines} = 18;

# ViewableTicketLinesZoom
# (Max viewable ticket lines in the QueueZoom.)
$Self->{ViewableTicketLinesZoom} = 6000;

# MaxLimit
# (Max viewable tickets a page.)
$Self->{MaxLimit} = 150;

# RefreshOptions
# (Refresh option list for preferences)
$Self->{RefreshOptions} = {
    " => 'off',
    2  => ' 2 minutes',
    5  => ' 5 minutes',
    7  => ' 7 minutes',
    10 => '10 minutes',
    15 => '15 minutes',
};

# Highlight*
# (Set the age and the color for highlighting of old queue
# in the QueueView.)
```

```

# highlight age1 in min
$Self->{HighlightAge1} = 1440;
$Self->{HighlightColor1} = 'orange';
# highlight age2 in min
$Self->{HighlightAge2} = 2880;
$Self->{HighlightColor2} = 'red';

# -----#
# AgentUtil                                     #
# -----#

# default limit for Tn search
$Self->{SearchLimitTn} = 20;

# default limit for Txt search
$Self->{SearchLimitTxt} = 20;

# viewable ticket lines by search util
$Self->{ViewableTicketLinesBySearch} = 15;

# -----#
# Ticket stuff                                     #
# (Viewable tickets in queue view)                 #
# -----#
# ViewableLocks
# default: ['unlock', 'tmp_lock']
$Self->{ViewableLocks} = ['unlock', 'tmp_lock'];

# ViewableStats
# default: ['open', 'new']
$Self->{ViewableStats} = ['open', 'new'];

# ViewableSenderTypes
# default: ['customer']
$Self->{ViewableSenderTypes} = ['customer'];
[...]
```


Chapter 8. Language translations

The OpenTRS webfrontend supports different frontend languages. The language translation files are located under Kernel/Language/*.pm.

8.1. New translation files

If you want to translate OpenTRS in a new language, you have to do five steps:

- Copy an existing translation file (e. g. Kernel/Language/German.pm) and translate each line.
- Change the package name (z. g. "package Kernel::Language::German;" to "package Kernel::Language::French;") and translate the words.
- Add the new translation file to Kernel/Language.pm (e. g. use Kernel::Language::French;) around line 20.
- Add the new language translation to the system via the admin interface (AdminArea ->> Language).
- Send the new translation file to feedback at otrs.org - Thanks!

Now you can select the new language in your preferences screen.

Example 8-1. Kernel/Language/German.pm - Old file

```
# --
# German.pm - provides german language translation
# Copyright (C) 2001-2002 Martin Edenhofer (martin+code at otrs.org)
# --
# $Id: language-translation.sgml,v 1.2 2002/05/11 16:36:25 martin Exp $
# --
# This software comes with ABSOLUTELY NO WARRANTY. For details, see
# the enclosed file COPYING for license information (GPL). If you
# did not receive this file, see http://www.gnu.org/licenses/gpl.txt.
# --
package Kernel::Language::German;

use strict;

use vars qw($VERSION);
$VERSION = '$Revision: 1.2 $';
$VERSION =~ s/^\.*:\s(\d+\.\d+)\s.*$/$1/;

# --
sub Data {
    my $Self = shift;
    my %Param = @_ ;

    # some common words
    $Self->{Lock} = 'Ziehen';
    $Self->{Unlock} = 'Freigeben';
    $Self->{unlock} = 'freigeben';
    $Self->{Zoom} = 'Inhalt';
    $Self->{History} = 'History';
    $Self->{'Add Note'} = 'Notiz anheften';

    [...]
}
```

To:

Example 8-2. Kernel/Language/French.pm - New file

```

# --
# French.pm - provides french language translations
# Copyright (C) 2002 Martin Scherbaum (maddin at exsuse.de)
# --
# $Id: language-translation.sgml,v 1.2 2002/05/11 16:36:25 martin Exp $
# --
# This software comes with ABSOLUTELY NO WARRANTY. For details, see
# the enclosed file COPYING for license information (GPL). If you
# did not receive this file, see http://www.gnu.org/licenses/gpl.txt.
# --
package Kernel::Language::French;

use strict;

use vars qw($VERSION);
$VERSION = '$Revision: 1.2 $';
$VERSION =~ s/^\.*:\s(\d+\.\d+)\s.*$/$1/;

# --
sub Data {
    my $Self = shift;
    my %Param = @_ ;

    # some common words
    $Self->{Lock} = 'Tirer';
    $Self->{Unlock} = 'Rendre';
    $Self->{unlock} = 'rendre';
    $Self->{Zoom} = 'Contenu';
    $Self->{History} = 'Histoire';
    $Self->{'Add Note'} = 'Ajouter commentaire';

[...]
```

Chapter 9. Customize the frontend

It's possible to customize the frontend independently from OpenTRS releases. How? It's quite simply. The magic key is dtl (Dynamic Template Language). All frontend masks are located under `~otrs/Kernel/Output/HTML/<THEME>/*.dtl`. Default is the "Standard" Theme.

So you have the power to customize each OpenTRS side like you want! Or to create new themes.

9.1. The dtl syntax

Comment

Comment is a simple '#'.

```
# --  
# this is a comment  
# --
```

Set a variable

```
<dtl set $Data{"Test1"} = "German">
```

Note: `$Data{"xyz"}` exists only the current dtl file and `$Env{"xyz"}` exists the whole dtl files. New: `$Config{"xyz"}` is not read only anymore and exists the whole program! (2002-05-22 / 0.5 BETA5)

Print a variable

To print a variable on the screen, use simply:

```
$Data{"xyz"} or $Env{"xyz"}
```

Text translations

```
$Text{"This should be translated"}
```

Take care, that the translation exists in the `"$HOME_OTRS/Kernel/Language/*.pm"` files. If there isn't a translation, the given text will be shown.

Condition

```
<dtl if ($Text{"Lock"} eq "Lock") { $Data{"FrontendLanguage"} = "English"; }>
```

It's only possible to store things into `$Data{"xyz"}` and `$Env{"xyz"}`.

Get a config option - \$Config{}

```
$Config{"Sendmail"}
```

Common environment variables - \$Env{}

```
$Env{"SessionID"} --> the current session id  
$Env{"Time"} --> the current time e. g. 'Thu Dec 27 16:00:55 2001'  
$Env{"CGIHandle"} --> the current CGI handle e. g. 'index.pl'
```

```

$Env{"UserCharset"} --> the current site charset e. g. 'iso-8859-1'
$Env{"Baselink"} --> the baselink --> index.pl?SessionID=...
$Env{"UserFirstname"} --> e. g. Dirk
$Env{"UserLastname"} --> e. g. Hohndel
$Env{"UserLogin"} --> e. g. mgg@x11.org
$Env{"Action"} --> the current action
$Env{"Subaction"} --> the current subaction

```

System calls

To get the output of a system command use:

```

# execute system call
<dtl system-call $Data{"uptime"} = "uptime">

# print
$Data{"uptime"}

or

# execute system call
<dtl system-call $Data{"procinfo"} = "procinfo | head -nl ">

# print
$Data{"procinfo"}

```

Examples

```

# set variable
<dtl set $Data{"Test1"} = "English">

# print variable
Echo: $Data{"Test1"}

# condition
<dtl if ($Text{"Lock"} ne "Lock") { $Data{"Test2"} = "Not English!"; }>

# print result
Result: $Data{"Test1"}

or

# translation test
Lock: $Text{"Lock"}

# config options
Sendmail: $Config{"Sendmail"}

```

9.2. Examples of dtl files

9.2.1. Motd.dtl

If you want to customize this file use the `~otrs/Kernel/Output/HTML/Standard/Motd.dtl` file.

```

<p>
This is the message of the day. You can edit this in Kernel/Output/HTML/Standard/Motd.dtl.

```

</p>

9.2.2. Login.dtl

This is an example of the login screen. If you want to customize this screen use the `~otrs/Kernel/Output/HTML/<THEME>/Login.dtl` file.

```
# --
# http headers
# --
Content-Type: text/html; charset=$Env{"UserCharset"};
X-Powered-By: OpenTRS - Open Ticket Request System (http://otrs.org)

# --
# html comment
# --

<!-- OpenTRS: Copyright 2002, OpenTRS Project. This Software is under the GPL. -->
<!--           Web: http://otrs.org/ - Lists: http://lists.otrs.org/           -->
<!--           GNU Public License: http://www.gnu.org/licenses/gpl.txt       -->

# --
# set some html variables
# --
<dtl set $Env{"BGCOLOR"} = "#BBDDFF">
<dtl set $Env{"BGTableColor0"} = "#000000">
<dtl set $Env{"BGTableColor1"} = "#FFFFFF">
<dtl set $Env{"BGTableColor2"} = "#EEEEEE">
<dtl set $Env{"FontColor0"} = "#000000">
<dtl set $Env{"FontColor1"} = "#FFFFFF">
<html>
<head>
    <title>OpenTRS :: $Text{"$Data{"Title"}}</title>
</head>
<!-- end header -->
<body bgcolor="$Env{"BGCOLOR"}" text="$Env{"FontColor0"}">

<center>

<p>
<font color="red">$Data{"Message"}</font>
</p>

<p>
<form action="$Env{"CGIHandle"}" method="post" enctype="application/x-www-form-urlencoded">
<input type="hidden" name="Action" value="Login">

<table border="0" cellspacing="0" cellpadding="3" width="240">
<tr bgcolor="$Env{"BGTableColor0"}">
    <td align="center"><font color="$Env{"FontColor1"}"><b>$Text{"Welcome to OpenTRS"}</b></font></td>
</tr>
<tr>
    <td align="center" bgcolor="$Env{"BGTableColor1"}">
        <table cellspacing="8" cellpadding="2">
            <tr>
                <td>Username:</td>
                <td><input type="text" name="User" value="$Data{"User"}" size="18"></td>
            </tr>
            <tr>
                <td>Password:</td>
```

```

        <td><input type="password" name="Password" size="18"></td>
    </tr>
</table>
<input type="submit" value="$Text{"Login"}">
</td>
</tr>
</table>
</form>
</p>

# --
# Message of the day data!
# --
$Data{"Motd"}

</center>

</body>
</html>

```

9.2.3. Header.dtl

This is the default HTML header of each OpenTRS sides. If you want to customize this screen use the `~otrs/Kernel/Output/HTML/<THEME>/Login.dtl`

```

# --
# http headers
# --
Content-Type: text/html; charset=$Env{"UserCharset"};

# --
# html comment
# --

<!-- OpenTRS: Copyright 2002, OpenTRS Project. This Software is under the GPL. -->
<!--      Web: http://otrs.org/ - Lists: http://lists.otrs.org/      -->
<!--      GNU Public License: http://www.gnu.org/licenses/gpl.txt  -->
# --
# set some html variables
# --
<dtl set $Env{"BGColor"} = "#BDDFF">
<dtl set $Env{"BGTableColor0"} = "#000000">
<dtl set $Env{"BGTableColor1"} = "#FFFFFF">
<dtl set $Env{"BGTableColor2"} = "#EEEEEE">
<dtl set $Env{"FontColor0"} = "#000000">
<dtl set $Env{"FontColor1"} = "#FFFFFF">
<dtl set $Env{"Box0"} = "[ ">
<dtl set $Env{"Box1"} = "]">
# --
# check refresh
# --
<dtl if ($Data{"Refresh"} ne "") { $Data{"MetaHttpEquiv"} = "<meta http-equiv='refresh' content='$Data{"Refresh"}'>" }
# --
<html>
<head>
    <title>OpenTRS :: $Text{"$Data{"Title"}"}</title>
</head>
<!-- end header -->

```

9.3. Create a new theme

To create a new theme, create a new theme directory (`mkdir ~otrs/Kernel/Output/HTML/NewTheme/`). Copy an existing theme into the new directors (`cp ~otrs/Kernel/Output/HTML/Standart/*.dtl ~otrs/Kernel/Output/HTML/NewTheme/`).

Modify the dtl files like you want.

Add a new database entry for this theme. You have to do this via SQL.

```
shell:~> mysql -u root -p some-pass otrs
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 1 to server version: 3.23.48-log

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql> INSERT INTO theme
->      (theme, valid_id, create_by, change_by, change_time)
->      VALUES
->      ('NewTheme', 1, 1, 1, current_timestamp);
mysql>
```

Ready. Goto the preferences page and change your theme.

Chapter 10. Troubleshooting

We split this section into different parts per distribution. Of course you can set up your own system with your own linux system. But please understand that we can not provide any support for that. OpenTRS is much to complicated and has to many links to other components of the system that we are lucky to have access to mechanisms like RPM. We will try to support as many platforms as possilbe but time is a valuable resource. ;-)

10.1. General problems with OpenTRS on SuSE Linux

The very first step should be a visit to <http://www.suse.de/de/support/download/updates/> which is the page where you can find the latest patches and updates for your SuSE Linux. Please check especialy for fixes about Apache, MySQL, Perl and of course OpenTRS. YaST2 users should be able to use the Yast Online Update mechanism. Otherwise download the rpm files and deinstall the old package with "rpm --nodeps -e otrs" and install them th new with "rpm -i foo.rpm"

The second step should be a visit to the *OpenTRS Homepage*(<http://www.otrs.org/>). We will provide the very latest fixes and howtos there.

The third step is writing an e-mail to the developer team of OpenTRS. We will be more than happy to provide you with any support you need.

10.1.1. SuSE Linux 8.0

Unfortantely the otrs.rpm which is on the SuSE 8.0 distribution is a buggy one (it was not a SuSE mistake). Please download the newest version from our Homepage(<http://www.otrs.org/>) and install it with YaST or manually by

```
# deinstall old package
shell> rpm --nodeps -e otrs
# install new package
shell> rpm -i new-otrs.rpm
```

10.1.2. SuSE Linux and Postfix

Postfix isn't configured with Procmail out of the box. You have to enable Procmail in /etc/postfix/main.cf:

```
[...]
mailbox_command = /usr/bin/procmail
[...]
```

And to restart the Postfix daemon (rcpostfix restart).

10.2. General problems with OpenTRS on other distributions (e.g. Redhat)

Frankly we have not tried to install it on a Redhat yet. It should be a problem but there is no ready to use RPM. We are working on it. Same for other distributions.

10.3. Problems with Apache

Most people who have problems with the Apache did build their own very special Apache. Of course you are welcome to do so but in case you run into trouble we suggest to your the vanilla version which is provided by your favorite distribution.

10.3.1. Internal Server Error

In this case check the syntax of the index.pl file to find the error:

```
shell:~ # cd ~otrs
```

It's important to be in the \$HOME of the otrs user.

```
shell:/opt/OpenTRS # perl -cw bin/cgi-bin/index.pl
bin/cgi-bin/index.pl syntax OK
shell:/opt/OpenTRS #
```

If you get an error message, in most cases you have to install missing perl modules from CPAN(<http://www.cpan.org/>).

Install CPAN modules via cpan shell:

```
shell:~ # perl -MCPAN -e shell;
-- (may you have to configure cpan first) --

cpan shell -- CPAN exploration and modules installation (v1.59_54)
ReadLine support enabled

cpan> install Digest::MD5
[installing Digest::MD5 module]
cpan>
```

Check the perl syntax again (perl -cw bin/cgi-bin/index.pl) and install further missing modules if necessary.

10.3.2. Error: Can't connect to database!

If your browser get the message "Error: Can't connect to database!" after you changed the database settings, restart the webserver. mod_perl reads the ~otrs/Kernel/Config.pm only on startup.

If the "Error: Can't connect to database!" message is still there, check the error log of your webserver (e. g. /var/log/httpd/error_log).

10.4. Problems with MySQL

Please doublecheck all passwords. Mostly people setup the system with a wrong password. In this case it is the easiest way to re-setup the system.

10.4.1. Check the database connect

To check the database connect use '~otrs/bin/CheckDB.pl'. Is the output "It looks Ok!", you don't have problems with MySQL. If not, read the error message.

10.4.2. Access denied for user: 'otrs@localhost'

Check the password in Kernel/Config.pm for the database user. If you don't know the database password for the database otrs user, set it new:

```
shell> mysql -u root -p
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 37 to server version: 3.23.48-log

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql> GRANT ALL PRIVILEGES ON otrs.* TO otrs@localhost IDENTIFIED BY "yourpw" WITH GRANT OPTION;
mysql>
```

and change it in Kernel/Config.pm.

10.4.3. Lost root password of MySQL

Follow: http://www.mysql.com/documentation/mysql/bychapter/manual_Problems.html#Resetting_permissions

10.4.4. <http://localhost/otrs/installer.pl>

If you want to set up the otrs database again, you can call the setup program by browsing to <http://localhost/otrs/installer.pl>.

Note: Just for SuSE Linux RPMs.

10.5. Problems - misc

10.5.1. Problems with receiving emails

If everything is working, but you can't see the incoming emails, check if the ~otrs/bin/PostMaster.pl program is working correctly. Pipe an example email through the PorstMaster.pl. There are two example emails in the default OpenTRS package (~otrs/doc/test-email-*.box or /usr/share/doc/packages/otrs/test-email-*.box).

Example:

```
shell:~ # cat /usr/share/doc/packages/otrs/test-email-1.box | /opt/OpenTRS/bin/PostMaster.pl
shell:~ #
```

May there is an error message, then you have to fix it. If not and you see this email in the postmaster queue, the procmail program isn't configured with your MTA (check the MTA log file, e. g /var/log/mail) or the \$HOME of the otrs user isn't correct (check \$HOME and \$HOME/.procmailrc).

10.5.2. Lost root password of OpenTRS

I lost the root password of OpenTRS ("Login failed! Your username or password was entered incorrectly.").

Reset of the OpenTRS root password:

```
shell:~ # mysql -u root -p otrs
mysql> UPDATE system_user SET pw='roK20XGbWESM' where login='root@localhost';
mysql>
```

And the password of user 'root@localhost' will be 'root'. The password is crypted like 'man 3 crypt' with crypt().

Chapter 11. FAQ

1. I installed the otrs.rpm from SuSE 8.0. But it doesn't work. Why?

The rpm is buggy (which is not a SuSE mistake). Please visit our website(<http://www.otrs.org/>) and download the newest rpm. You can install the rpm with YaST or manually

```
rpm -Uvh otrs.rpm
```

2. What is OpenTRS?

OpenTRS is a Ticket Request System with many features to manage customer telephone calls and e-mails.

3. What stands OpenTRS for?

Open Trouble-Ticket Request System.

4. What does OpenTRS cost?

Nothing, it's GPL(<http://www.gnu.org/copyleft/gpl.txt>).

5. This document refers to agents. What is an agent in the context of OpenTRS?

An Agent is a human being who works with the system. User would be an alternative term.

Geeks: Of course a script could act like an agent. Feel free to do so!

6. Can OpenTRS receive email?

Yes, (with MIME support).

The \$HOME/bin/PostMaster.pl program receives the emails and sorts the email to the right ticket or queue.

7. Can OpenTRS send email?

Yes. Autoresponders per queue or per X-Header and standard responders via mouse click.

Note: You can add/delete/modify the system email addresses at AdminView::System.

8. Fulltext Index Searching?

Yes.

9. Is OpenTRS multi user and multi group able?

Of course.

10. Is it possible to use different domains?

Yes, you can use different emails 'support@yourdomain.com', 'sales@yourdomain.com' and different domains 'marketing@clientdomain.com' with one system!

11. Can I use OpenTRS only with SuSE Linux?

No, but we developed it on a SuSE Linux and frankly we did not do much testing on a Redhat, Debian, ...

But we will provide additional installation informations on <http://www.otrs.org/>. And we are more than happy to receive some feedback from you about how you installed OpenTRS on other platforms.

12. What software will be needed?

Minimum: Perl5(<http://www.perl.com/>) (with a few CPAN(<http://www.cpan.org/>) modules, more: INSTALL), MySQL(<http://www.mysql.com>) and Apache(<http://www.apache.org>).

13. How stable is OpenTRS?

Please be aware of the fact that you are dealing with a beta-version. New versions are announced on <http://www.otrs.org/>. But never the less it is quite a stable system and you shouldn't run in any trouble. But we can not guarentee it!

14. What hardware do I need?

We suggest an IBM s390. *SCNR* ;-)

Some of our test enviroments are Pentium II 300 with 64 MB RAM and they do a pretty good job. Of course the more RAM and the faster the CPU the better.

15. How does OpenTRS scale?

This is depending on the hardware and the enviroment you are using. At the moment OpenTRS is a one box system. With little work you can set up a webserver-cluster and you can split the database to a seperate box. We are planing to support some sort of clustering mechanism. But this is not the highest priority for the development.

16. Can I use my nice Oracle or DB2?

At the moment we only support MySQL(<http://www.mysql.com>) as a database. Frankly we do trust in a MySQL(<http://www.mysql.com>) as much as in a DB2 (for this application). Anybody how is willing to send some time to port it to other databases is more than welcome to the OpenTRS team!

Note: The code is designed to support different databases!

17. Which programming language is used?

Perl(<http://www.perl.com/>) OO, SQL and dtl.

18. What is the default admin account?

User: root@localhost Password: root

19. Works OpenTRS with mod_perl(<http://perl.apache.org/>)?

Of course.

20. Is it possible to customize OpenTRS?

Of course. You can customize OpenTRS like you want. Take advantage of the dtl (dynamic template language) to customize the OpenTRS frontend release independently (more: README.dtl)!

21. Can I install OpenTRS on a Windows box?

Theoraticly yes, but we are not the big windows gurus and haven't ever tried to set up a Windows box with an Apache(<http://www.apache.org>), Perl(<http://www.perl.com>) and MySQL(<http://www.mysql.com>).

22. I did everything the right way, but it does not work. Why?

Do not panic!

We tried our very best to make a simple and smooth installation procedure. But of course as with any old style open source project we know how to install our software and sometimes we forget to update our documentation. Please do not hesitate do send us an e-mail!!!

23. How can I become a part of the OpenTRS developer community?

Welcome! Anybody who is willing to help us and has the time is more than welcome. Please send us an e-mail.

24. I do like the OpenTRS but would feel more comfortable by using a commercial product.

We can not help you. Sorry.

25. I can't delete a user or a queue. Why?

OpenTRS is working with database id references. If you would delete a user (or queue, ...) from the database, you delete the reference info. Important infos like owner or queue.

Set the data record to invalid and the record is still visible (e. g. for ticket history, ...) but not active for the application.

26. What browser do I need?

OpenTRS is working with the most browser such lynx, w3m, Netscape, Mozilla, IE and Konqueror (You don't need Java Script or Java Applets!).

27. Do you support the RFC 1297?

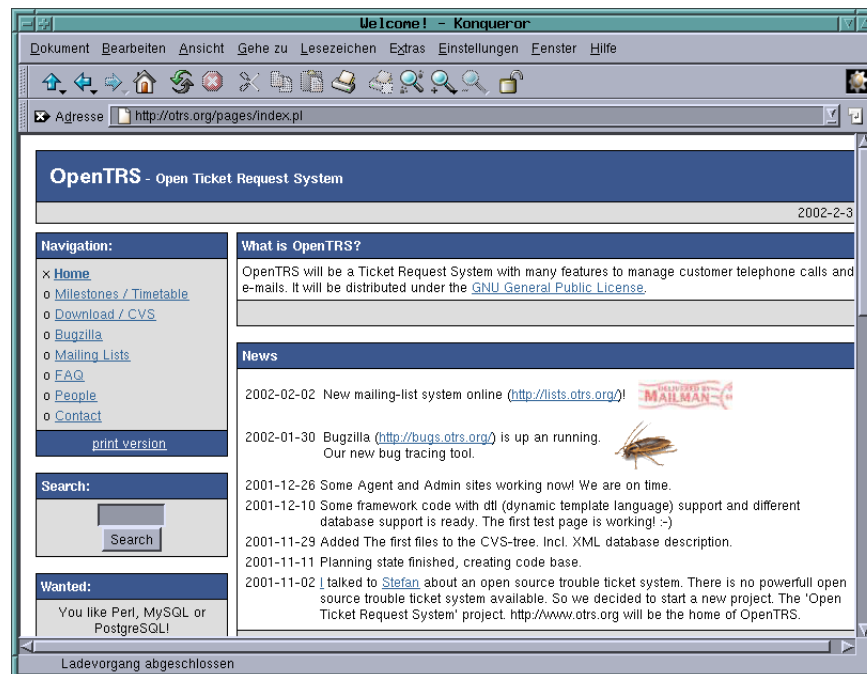
Yes, OpenTRS supports this RFC.

Appendix A. Online resources

We try to support you with the very last information about OpenTRS and give you a good way to provide us with your feedback.

A.1. OpenTRS Homepage

Our homepage can be found at <http://www.otrs.org/>.



A.2. Mailinglists

We provide three major mailinglists. `<announce@otrs.org>` is a low traffic announcement mailinglist. To subscribe it visit <http://lists.otrs.org/>.

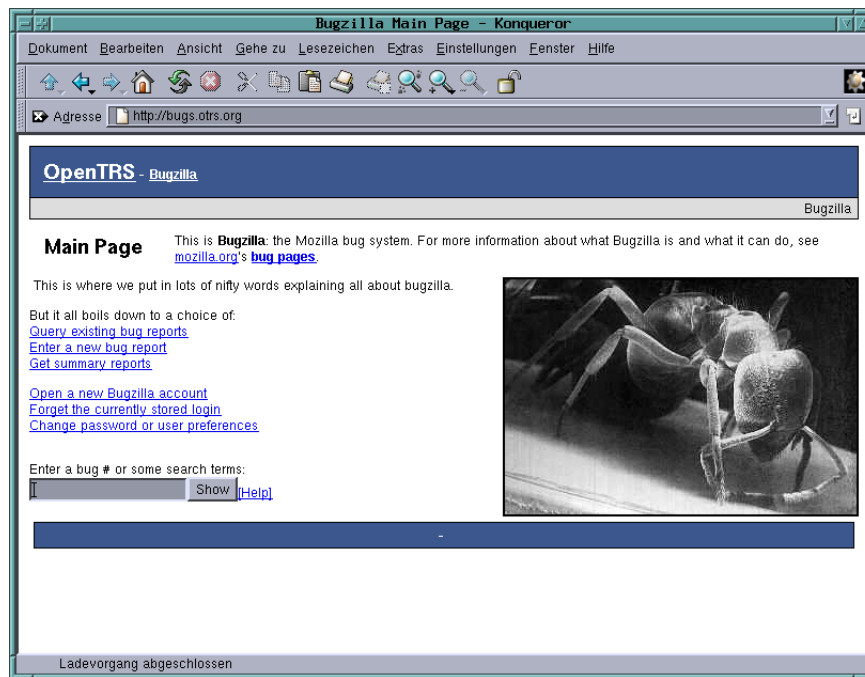
The second mailinglist is `<otrs@otrs.org>`. It is a medium to high traffic list with all sorts of questions and support to the product. To subscribe it visit <http://lists.otrs.org/>.

The third mailinglist is `<dev@otrs.org>`. It is a medium to high traffic list. The OpenTRS developers discuss various design and implementation issues here. To subscribe it visit <http://lists.otrs.org/>.

A.3. Bugtracking

Real geeks don't need a bugtracking tool! ;-)

Just kidding. To submit bugs visit <http://bugs.otrs.org/>. We know sometimes bugzilla isn't that comfortable but right know it is the best bug tracking system we've found.



By reporting bugs you do help us very much. We appreciate your help!

Appendix B. The OpenTRS core team

OpenTRS was created in the third or fourth quarter of the year 2001 (nobody remembers the exact date). In those glory days the core team consisted of Martin Edenhofer and Stefan Wintermeyer.

B.1. Martin Edenhofer

> >

E-Mail: [<martin@otrs.org>](mailto:martin@otrs.org)
Homepage: <http://martin.edenhofer.de/>

Without Martin the otrs wouldn't exist. He is a brilliant coder. We will insert some more information about Martin sometime. He is just to shy. ;-)

B.2. Stefan Wintermeyer

> >

E-Mail: [<stefan@otrs.org>](mailto:stefan@otrs.org)
Homepage: <http://www.wintermeyer.de/>

Here is his "official" vita (German version only):

Stefan Wintermeyer arbeitet seit dem ersten ZX81 Selbstbausatz mit Computern. 1994 kam seine Leidenschaft für Linux dazu, die ihn schließlich 1998 zur SuSE Linux AG brachte. Als Vice President Support der SuSE Linux AG setzte er sich für eine größere Verbreitung und Benutzerfreundlichkeit von Linux ein und unterstützt konsequent echte Linuxlösungen im unternehmerischen Einsatz. Aus seinem Engagement bei der SuSE Linux AG blieb ihm die Vorliebe für die gleichnamige Distribution. Seit Juni 2001 arbeitet er bei der Lufthansa Systems in Frankfurt und betreut dort den Einsatz von Linux in verschiedenen Projekten. Stefan Wintermeyer setzt sich nachhaltig für die Verwendung offener Standards ein und propagiert Linux als das Betriebssystem für Server und Thin Clients.

B.3. Sebastian Wormser

> >

E-Mail: [<sibbi@sibbi.com>](mailto:sibbi@sibbi.com)
Homepage: <http://sibbi.org/>
joined the team: 01.05.2002

We are very happy that Sebastian Wormser (Sibbi) finally joined our team. We have worked on a commercial trouble ticket system in the past (the stts at SuSE(<http://www.suse.de/>) - IBM Case Study on SuSE(<http://www.ibm.com/software/success/cssdb.nsf/CS/NAVO-56G3KU?OpenDocument=software>) / German Linux magazin(<http://www.linux-magazin.de/ausgabe/2001/04/stts/stts.html>)). So it is sort of a reunion but for an open source and total new (probably better) version.

Appendix C. Credits

As most open source projects we have to thank many people for there help. This is a non-complete list of those folks:

Martin Scherbaum, Carsten Gross, Harald Müller, Stefan Schmidt, Milisav Radmanic, Uli Hecht, Norman Walsh, Heiko Baumann, Atif Ghaffar, Pablo Ruiz Garcia

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Version 1.1, March 2000

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