

OTRS CVS - Manual

Martin Edenhofer

OTRS core team

martin@otrs.org

Stefan Wintermeyer

OTRS core team

stefan@otrs.org

Sebastian Wormser

OTRS core team

sibbi@sibbi.com

Robert Kehl

((otrs.de)) team

robert.kehl@otrs.de

OTRS CVS - Manual

by Martin Edenhofer, Stefan Wintermeyer, Sebastian Wormser, and Robert Kehl

Three Tables Beach Edition

Published 2003

Copyright © 2003 Martin Edenhofer and Stefan Wintermeyer

The copyright holders make no representation about the suitability of this document for any purpose. It is provided “as is” without expressed or implied warranty.

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.

Table of Contents

Foreword.....	i
1. Install OTRS.....	1
1.1. Installing the rpm on a SuSE Linux (the quick and easy way).....	1
1.2. Using the tar.gz file to install OTRS on any Linux/Unix platform.....	4
1.2.1. Install.....	4
1.2.2. Database.....	7
1.2.3. Webserver.....	8
1.3. Install OTRS on Microsoft Windows.....	10
1.3.1. otrs4win32 - The Automatic Installer.....	10
1.3.1.1. Download.....	10
1.3.1.2. Installation.....	10
1.3.1.3. Start The OTRS System.....	11
1.3.1.4. How To Stop The Servers (if ever...).....	12
1.3.1.5. Uninstallation Instructions.....	12
1.3.2. Upgrading.....	12
1.3.3. Step-by-Step: The Manual Installation.....	12
1.3.3.1. Needed Software.....	13
1.3.3.1.1. Install PERL.....	13
1.3.3.1.1.1. Install Additional PERL Packages.....	13
1.3.3.1.2. Installing The Webserver.....	13
1.3.3.1.2.1. Installing Apache.....	13
1.3.3.1.3. Install MySQL.....	13
1.3.3.1.4. Install OTRS.....	13
1.3.3.2. Configuration.....	14
1.3.3.2.1. Configuring Perl.....	14
1.3.3.2.2. Configuring Apache.....	15
1.3.3.2.3. Configuring MySQL.....	15
1.3.3.2.4. Configuring OTRS.....	16
1.3.3.2.4.1. CONFIG.PM.....	16
1.3.3.3. The First Start.....	17
1.3.3.3.1. System Email Addresses & POP3.....	17
1.3.3.3.2. No CRON Jobs on Apache.....	17
1.3.3.4. Done!.....	17
2. Basics about a Trouble Ticket System.....	19
2.1. A simple example for a small Trouble Ticket System.....	19
2.2. What is a trouble ticket in the OTRS?.....	19
2.3. What is a ticket queue?.....	19
3. First steps.....	21
3.1. Login as root and create a new account.....	21
3.2. Login with user privilege.....	22
4. Ticket topics.....	25
4.1. Answer ticket via email.....	25
4.2. Answer ticket via phone.....	25
4.3. Zoom ticket.....	26
4.4. History of ticket.....	26
4.5. Add note to ticket.....	26
4.6. Close ticket.....	27
4.7. Forward ticket.....	27
4.8. Ticket priority.....	28
4.9. Ticket print view.....	28
5. System-Email-Notifications.....	31
5.1. Agent-Notifications.....	31
5.1.1. new ticket.....	31
5.1.2. ticket follow up.....	31
5.1.3. new ticket in custom queue.....	31
5.1.4. ticket lock timeout.....	31
5.2. Customer-Notifications (min 1.1).....	31
5.2.1. ticket state.....	31
5.2.2. ticket owner.....	31
5.2.3. ticket queue.....	31

6. Auto-Response.....	33
6.1. Reply	33
6.2. Follow up	33
6.3. Reject	33
6.4. Closed -> new Ticket	33
7. Receiving emails.....	35
7.1. Via POP3 accounts - the easy way (PostMasterPOP3.pl).....	35
7.2. Via command line program and e. g. procmail (PostMaster.pl)	35
7.2.1. Fetching emails via POP3 or IMAP and fetchmail for PostMaster.pl	36
7.3. Filtering/dispatching by OTRS/Webinterface.....	36
7.4. Filtering/dispatching by OTRS/PostMaster modules (for more complex dispatching).....	36
7.5. Filtering/dispatching by Procmail (for more complex dispatching)	37
7.6. Example for filtering/dispatching by Procmail and a webform.....	39
8. Sending emails.....	41
8.1. Via Sendmail (default)	41
8.2. Via SMTP relay/smarthost (min. OTRS 1.1)	41
9. User.....	43
9.1. How it works	43
9.1.1. Admin-Interface	43
9.2. User Backend.....	43
9.3. User Auth Backend	43
9.3.1. Database (default)	43
9.3.2. LDAP	43
9.3.3. HTTPBasicAuth.....	44
9.3.4. Radius	44
10. Customer.....	47
10.1. How it works	47
10.1.1. Agent-Interface	47
10.1.2. Admin-Interface	47
10.1.3. Customer-Interface.....	47
10.2. Customer User Backend	47
10.2.1. Database (default)	47
10.2.2. LDAP	48
10.3. Customer Auth Backend	49
10.3.1. Database (default)	50
10.3.2. LDAP	50
10.3.3. HTTPBasicAuth.....	50
10.3.4. Radius	51
10.4. Customize Customer Self Registration	51
10.4.1. Template.....	51
10.4.2. Customer Map.....	51
10.4.3. Modify Customer Table	52
11. LDAP Integration	53
11.1. Active Directory.....	53
11.1.1. Preparations.....	53
11.1.2. Configuration	53
11.1.2.1. Configuration of Active Directory	53
11.1.2.2. OTRS LDAP options	53
11.1.3. Agent Authentication	53
11.1.4. Customer Authentication	54
11.1.5. Get Customer User Information.....	54
11.1.6. Tips & Tricks	55
11.1.6.1. Control who's let in.....	55
11.1.6.2. Config Example	56
12. Permissions	59
12.1. Group/User/Queue Permission	59
12.2. Module Permission - Agent/Admin Interface.....	59

13. Config File	61
13.1. TicketHook	61
13.2. FQDN	61
13.3. utf-8	61
13.4. Log	61
13.5. Check Email Options	62
13.6. Max. Postmaster email	62
13.7. Ticket number format	62
13.8. Database settings	63
13.9. ASP (Application Service Provider) options	63
13.10. Custom Queue	64
13.11. Ticket Free Text	64
13.12. QueueListType	64
13.13. Customer Panel	65
13.14. Session management	67
13.15. URL login and logout settings	67
13.16. agent area default settings	68
13.17. SpellChecker	69
13.18. Response Format (compose answer)	70
14. Cronjobs	71
14.1. How it works - setup	71
14.2. Default cronjobs	71
14.2.1. aaa_base	71
14.2.2. pending_jobs	71
14.2.3. postmaster	71
14.2.4. postmaster_pop3	71
14.2.5. unlock	71
14.2.6. session	72
14.2.7. rebuild_ticket_index	72
14.2.8. generic_agent-database	72
14.2.9. generic_agent	72
15. Generic-Agent	73
15.1. Web-Interface (preferred)	73
15.2. Config File (optional)	74
15.2.1. Examples	74
15.2.1.1. close spam tickets	75
15.2.1.2. delete tickets	76
15.2.1.3. move tickets from tricky to experts	76
15.2.1.4. send escalation notifications	76
15.2.1.5. move tickets from abc to experts and change priority	77
15.2.1.6. move escalation ticket to experts and execute CMD	77
15.2.1.7. delete all tickets with subject "VIRUS 32" in queue abc	78
16. Language translations	79
16.1. New translation files	79
16.2. Translation for Actions	80
16.3. Customizing Translations	81
17. Customize the frontend	83
17.1. The dtl syntax	83
17.2. Examples of dtl files	84
17.2.1. Motd.dtl	84
17.2.2. Login.dtl	84
17.2.3. Header.dtl	86
17.3. Create a new theme	86
18. Customize Ticket State (min. OTRS 1.1)	89
19. Customize Ticket Priority (min. OTRS 1.1)	91
20. Multi Hosting	93
20.1. Multi Group	93
20.2. Multi Setup	93

21. Performance Tuning	95
21.1. OTRS	95
21.1.1. TicketIndexModule	95
21.1.2. TicketStorageModule	95
21.2. Database	95
21.2.1. MySQL	96
21.2.2. PostgreSQL	96
21.3. Webserver	96
21.3.1. Preestablish database connections	96
21.3.2. Preloaded modules - startup.pl	96
21.3.3. Reload perl modules when updated on disk	96
21.3.4. Choosing the Right Strategy	96
21.3.5. mod_gzip	96
21.3.6. mod_dosevasive	97
22. The FAQ System	99
22.1. What are FAQs?	99
22.2. Preparations	99
22.3. Interfaces	99
22.4. FAQ Functions	99
22.4.1. FAQ Agent Functions	99
22.4.2. FAQ Functions for Customers	100
22.4.3. FAQ Functions for public FAQs	100
23. Troubleshooting	101
23.1. General problems with OTRS on SuSE Linux	101
23.1.1. SuSE Linux 8.0	101
23.1.2. SuSE Linux and Postfix	101
23.2. General problems with OTRS on Mandrake	101
23.2.1. Updating Your System	101
23.3. General problems with OTRS on other distributions (e.g. Redhat)	102
23.4. Problems with Apache	102
23.4.1. Internal Server Error	102
23.4.2. Error: Can't connect to database!	102
23.4.3. FreeBSD, PostgreSQL and Apache (install_driver(Pg) failed)	102
23.5. Problems with MySQL	102
23.5.1. Check the database connection	103
23.5.2. Access denied for user: 'otrs@localhost'	103
23.5.3. Lost root password of MySQL	103
23.5.4. http://localhost/otrs/installer.pl	103
23.6. Problems - misc	103
23.6.1. Problems with receiving emails	103
23.6.2. Lost root password of OTRS	103
24. Developer's guide	105
24.1. Coding Style Guide	105
24.1.1. Formatting	105
24.1.2. Naming	105
24.1.3. Code header	105
24.1.4. Misc	105
24.2. OTRS Framework	105
24.2.1. Core Modules	106
24.2.2. Web-Frontend-Handle	107
24.2.3. Web-Frontend-Modules	107
24.2.4. CMD Frontend	108
25. Developer's guide - Writing OTRS Modules	111
25.1. AgentInterface Notification Modules	111
25.2. CustomerInterface Notification Modules	112
25.3. Ticket Number Generator	112
25.4. Agent Auth Modules	114
25.5. Customer Auth Modules	116
25.6. Customer User Modules	116
25.7. PostMaster Filter Modules	116
25.8. Generic Agent Modules	117
25.9. Agent Ticket Permission Modules	118

25.10. Customer Ticket Permission Modules	118
26. FAQ.....	119
Glossary	123
A. Online resources	127
A.1. Homepage	127
A.2. Mailinglists	127
A.3. Bugtracking	127
B. The OTRS core team.....	129
B.1. Martin Edenhofer	129
B.2. Stefan Wintermeyer	129
B.3. Sebastian Wormser	129
B.4. Robert Kehl	129
C. Credits	131
D. RFC 1297	133
E. GNU Free Documentation License	135
0. PREAMBLE	135
1. APPLICABILITY AND DEFINITIONS	135
2. VERBATIM COPYING	135
3. COPYING IN QUANTITY	136
4. MODIFICATIONS	136
5. COMBINING DOCUMENTS.....	137
6. COLLECTIONS OF DOCUMENTS	137
7. AGGREGATION WITH INDEPENDENT WORKS	137
8. TRANSLATION	137
9. TERMINATION	138
10. FUTURE REVISIONS OF THIS LICENSE.....	138
How to use this License for your documents	138
Bibliography	139

List of Examples

7-1. .fetchmailrc	36
7-2. .procmailrc	38
11-1. Kernel/Config.pm - AuthModule	54
11-2. Kernel/Config.pm - AuthModule::LDAP settings	54
11-3. Kernel/Config.pm - AuthModule::LDAP::SearchUser settings	54
11-4. Kernel/Config.pm - Customer::AuthModule LDAP settings	54
11-5. Kernel/Config.pm - CustomerUser::LDAP settings	55
11-6. Kernel/Config.pm - GroupDN for Agents	55
11-7. Kernel/Config.pm - GroupDN for Customers	55
11-8. Kernel/Config.pm - AuthModule LDAP settings	56
13-1. Kernel/Config.pm - TicketHook	61
13-2. Kernel/Config.pm - FQDN	61
13-3. Kernel/Config.pm - utf-8	61
13-4. Kernel/Config.pm - LogModule	62
13-5. Kernel/Config.pm - CheckEmailAddresses	62
13-6. Kernel/Config.pm - CheckMXRecord	62
13-7. Kernel/Config.pm - PostmasterMaxEmails	62
13-8. Kernel/Config.pm - TicketNumberGenerator	63
13-9. Kernel/Config.pm - Database settings	63
13-10. Kernel/Config.pm - ChangeOwnerToEveryone	63
13-11. Kernel/Config.pm - Custom Queue	64
13-12. Kernel/Config.pm - TicketFree(Key Text)(1..8)	64
13-13. Kernel/Config.pm - QueueListType	65
13-14. Kernel/Config.pm - Customer Panel	65
13-15. Kernel/Config.pm - Session management	67
13-16. Kernel/Config.pm - URL login and logout settings	67
13-17. Kernel/Config.pm - agent area default settings	68
13-18. Kernel/Config.pm - SpellChecker	69
13-19. Kernel/Config.pm - SpellChecker - Agent Preferences	69
13-20. Kernel/Config.pm - SpellChecker - Must be spell checked	70
13-21. Kernel/Config.pm - ResponseFormat (unix_style)	70
13-22. Kernel/Config.pm - ResponseFormat (ms_style)	70
16-1. Kernel/Language/de.pm - Old file	79
16-2. Kernel/Language/fr.pm - New file	80
16-3. Kernel/Language/de_Calendar.pm	80
16-4. Kernel/Language/de_Custom.pm	81

Foreword

About this Book

This manual 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 and PDF online version of this book at <http://doc.otrs.org/> (<http://docu.otrs.org/>).

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

Your OTRS core team

PS. In case you are searching for commercial support and consulting for the OTRS, please have a look at the *((otrs.de)) homepage* (<http://www.otrs.de/>).

Chapter 1. Install OTRS

The described way of installing the OTRS is tested on a newly installed system. In case you have trouble to install it on your working system please try it with a new Linux installation. Most of the installation problems are caused by messy apache configurations and forgotten mysql database passwords. So please use a fresh system installation in case like this occurs.

We tried to keep the installation as easy as possible, but the OTRS is a very powerful and complex application which can not just be unpacked in some directory and used.

1.1. Installing the rpm on a SuSE Linux (the quick and easy way)

This section is a guide for installing OTRS on a SuSE Linux. We tested the SuSE Linux versions 7.3, 8.0, 8.1, 8.2, 9.0 and 9.1. Before starting the installation have a look at <http://otrs.org/> (<http://www.otrs.org/>) and check if a newer and better version of the rpm file is available. If so please download it and use the newer documentation and the newer rpm.

Install the otrs.rpm with YaST (YaST2) or on the command line with rpm (what ever you prefer). Please be aware of the fact that OTRS needs some Perl modules which are not installed by default in a typical SuSE installation. So it might be a good idea to use YaST to install the rpm because it will handle and solve all the dependencies.

In case you prefer the command line rpm way (you have to have installed the needed modules first otherwise rpm will ask you to do so):

```
ernie:~ # rpm -ivh /tmp/otrs.rpm
otrs #####
Check OTRS user (/etc/passwd)... otrs exists.

Next steps:

[SuSEconfig]
  Execute 'SuSEconfig' to configure the webserver.

[start Apache and MySQL]
  Execute 'rcapache restart' and 'rcmysql start' in case they don't run.

[install the OTRS database]
  Use a webbrowser and open this link:
  http://localhost/otrs/installer.pl

[OTRS services]
  Start OTRS 'rcotrs start-force' (rcotrs {start|stop|status|restart|start-force|stop-force}).

Have fun!

  Your OTRS Team
  http://otrs.org/

ernie:~ #
```

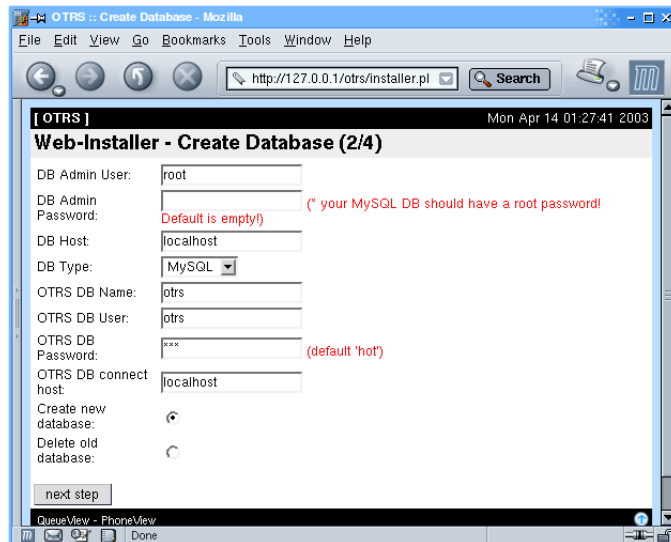
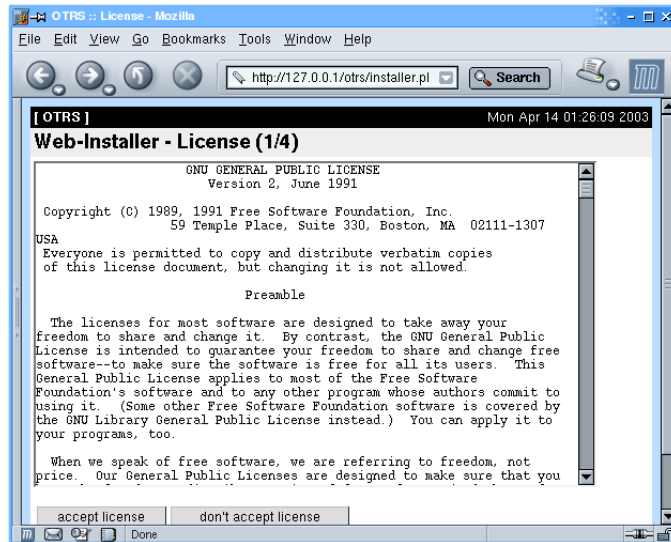
Know it's time to start SuSEconfig:

```
ernie:~ # SuSEconfig
Starting SuSEconfig, the SuSE Configuration Tool...
Running in full featured mode.
Reading /etc/sysconfig and updating the system...
Executing /sbin/conf.d/SuSEconfig.aaa_at_first...
Executing /sbin/conf.d/SuSEconfig.apache...
Including /opt/otrs/scripts/apache-httpd.include.conf
Executing /sbin/conf.d/SuSEconfig.bootsplash...
Executing /sbin/conf.d/SuSEconfig.ispell...
Executing /sbin/conf.d/SuSEconfig.perl...
Executing /sbin/conf.d/SuSEconfig.permissions...
Executing /sbin/conf.d/SuSEconfig.postfix...
Setting up postfix local as MDA...
Setting SPAM protection to "off"...
Executing /sbin/conf.d/SuSEconfig.profiles...
Finished.
```

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

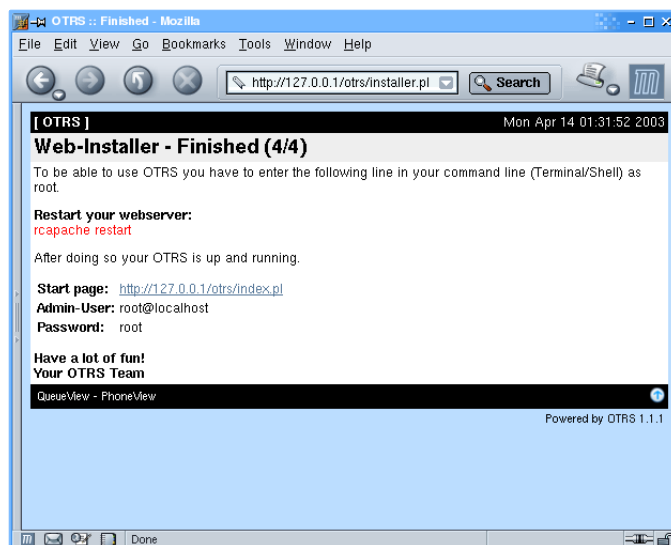
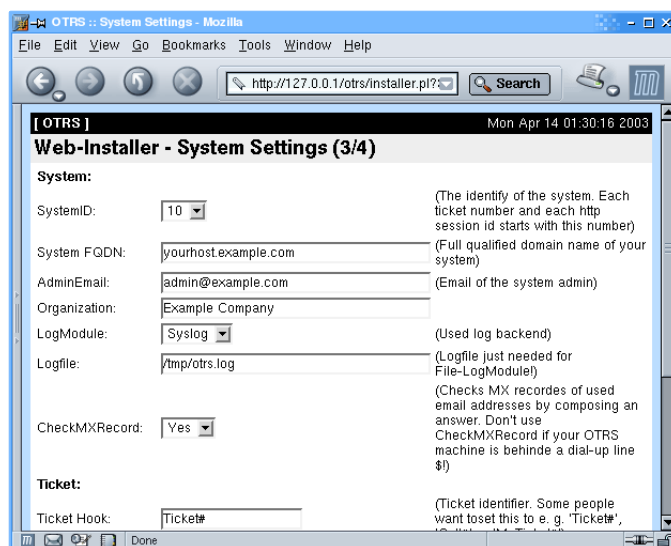
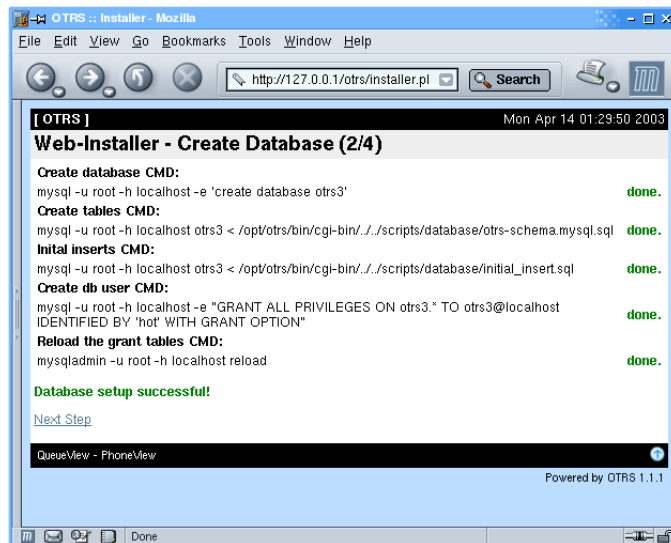
```
ernie:~ # rcapache restart
Shutting down httpd                               done
Starting httpd [ PERL ]                             done
ernie:~ #
```

Now you have to setup the databases. Please open <http://localhost/otrs/installer.pl> to do so.



Warning

It is not a good idea to keep using the default passwords. You are installing a very important piece of software and you do not want anybody to be able to hack your database just because you didn't change the default password!



OK, now it is time to fire up OTRS. Do so on the command line:

```
ernie:~ # rcotrs restart-force
Shutting down OTRS
  Disable /opt/otrs/bin/PostMaster.pl ... done.
no crontab for otrs
  Shutting down cronjobs ... failed!
Shutting down OTRS (completely)
  Shutting down Apache ... done.
  Shutting down MySQL ... done.
done

Starting OTRS (completely)
  Starting Apache ... done.
  Starting MySQL ... done.
Starting OTRS
  Checking Apache ... done.
  Checking MySQL ... done.
  Checking database connect... (It looks Ok!).
  Enable /opt/otrs/bin/PostMaster.pl ... done.
  Checking otrs spool dir... done.
  Creating cronjobs (source /opt/otrs/var/cron/*) ... done.

--> http://ernie.example.com/otrs/index.pl <--
done
done

ernie:~ #
```

Finished! Wasn't that a piece of cake? ;-)

You can use OTRS by opening the <http://ernie.example.com/otrs/index.pl> link.

1.2. Using the tar.gz file to install OTRS on any Linux/Unix platform

This section is a guide for installing OTRS on any Linux/Unix. Please use this way only in case you feel comfortable with it otherwise use the RPM. Before starting the installation have a look at <http://otrs.org/> (<http://www.otrs.org/>) and check if a newer and better version of the tar.gz file is available. If so please download it and use the newer documentation and the newer tar.gz.

1.2.1. Install

```
# --
# INSTALL description of OTRS
# Copyright (C) 2001-2004 Martin Edenhofer <martin+code@otrs.org>
# --
# $Id: install-cli.sgml,v 1.6 2005/08/04 10:51:51 cs 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.
# --

Software requirements?
=====

On all Perl-Platforms! You need:
* min. Perl5
* Database (e. g. MySQL, PostgreSQL)
* Webpserver (mod_perl isn't required but "very nice" to have)
* LDAPv2 compliant server (OpenLDAP for works fine, however LDAP isn't required)
* some CPAN-Module (DBI, DBD::mysql, Digest::MD5, MIME::Base64 (if Perl < 5.8), Net::DNS)
  for LDAP (Net::LDAP) and for stats (GD, GD::Text, GD::Graph, GD::Graph::lines,
  GD::Text::Align)

Installation:
=====
```

These few steps describe an OTRS installation incl. webserver and database settings. The OTRS user is "otrs" and the home (root) directory is /opt/otrs (of course you can choose another directory or/and OTRS user).

1. Install CPAN Modules (if needed):

 Note: use "bin/otrs.checkModules" to get an overview of all installed and required cpan modules.

a) Install the RPMs if your distribution provides RPMs for the required CPAN modules.

b) Install the required modules via CPAN shell (<http://www.cpan.org/>)
 perl -MCPAN -e shell;

```
...
install Digest::MD5
install Net::DNS
install MIME::Base64 (if Perl < 5.8)
...
```

if you plan to use an LDAP directory service you should install Net::LDAP

```
...
install Net::LDAP
...
and maybe the GD stuff (stats support, not required!)
...
install GD
install GD::Text
install GD::Graph
install GD::Graph::lines
install GD::Text::Align
...
```

2. Create user:

 Add user:

 \$shell: useradd -d /opt/otrs/ -c 'OTRS user' otrs

Add user to webserver group (if the webserver is not running with OTRS user):

 \$shell: usermod -G nogroup otrs

(SuSE=nogroup, Red Hat=apache)

3. Install tar.gz:

 \$shell: cd /opt/
 \$shell: tar -xvzf otrs-xxxx-xx-xx.tar.gz

4. Demo config files:

 There are several OTRS demo config files in \$OTRS_HOME/Kernel/*.dist and \$OTRS_HOME/Kernel/Config/*.dist. Make copies of all demo config files:

```
cp Kernel/Config.pm.dist Kernel/Config.pm

cd Kernel/Config/
for foo in *.dist; do cp $foo `basename $foo .dist`; done
```

Or if you are installing OTRS on a Windows system:

```
copy Kernel/Config.pm.dist Kernel/Config.pm

cd Kernel/Config/
copy *.dist *
```

5. Check if all needed modules are installed:

```
$shell:~> perl -cw /opt/otrs/bin/cgi-bin/index.pl
/opt/otrs/bin/cgi-bin/index.pl syntax OK
$shell:~> perl -cw /opt/otrs/bin/PostMaster.pl
/opt/otrs/bin/PostMaster.pl syntax OK
$shell:~>
```

If you get "syntax OK" it seems to be Ok. Go ahead.

6. Webserver:

[follow README.webserver]

7. File Permissions:

Set the file permissions with

```
"$HOME/bin/SetPermissions.sh <OTRS_HOME> <OTRS_USER> <WEBSERVER_USER> [OTRS_GROUP] [WEB_GROUP]"
```

e. g.

Webserver with OTRS user: "SetPermissions.sh /opt/otrs otrs otrs"

Webserver with wwwrun user (e. g. SuSE): "SetPermissions.sh /opt/otrs otrs wwwrun"

Webserver with apache user (e. g. Redhat): "SetPermissions.sh /opt/otrs otrs apache apache apache"

8. Database setup:

If you use MySQL, you can use the Web-Installer (<http://yourhost/otrs/installer.pl>).

Else follow README.database --> "DB - Setup Example".

9. Config file (\$HOME/Kernel/Config.pm):

If you used the Web-Installer, you can skip this point. If not,

set some Kernel::Config (\$HOME/Kernel/Config.pm) Options (FQDN, SystemID, TicketHook, Home, ...)

10. First Login:

<http://yourhost/otrs/index.pl>

User: root@localhost

PW: root

--> goto AdminArea and set some config settings (UserAdd, Queues, ...).

Finished.

11. First Email:

pipe an email directly into \$OTRS_HOME/bin/Postmaster.pl

(e. g. 'cat /opt/otrs/doc/test-email-1.box | /opt/otrs/bin/PostMaster.pl').

12. Cronjobs for the OTRS user:

There are several OTRS default cronjobs in \$OTRS_HOME/var/cron/*.dist.

Make copies of all of the default cronjobs:

```
cd var/cron
```

```
for foo in *.dist; do cp $foo 'basename $foo .dist'; done
```

Or if you are installing OTRS on a Windows system:

```
cd var/cron
```

```
copy *.dist *.
```

Use \$OTRS_HOME/bin/Cron.sh {start|stop|restart} to start or stop this cronjobs

from \$OTRS_HOME/var/cron/* (.dist will be ignored).

>> Note: Install this cronjobs as OTRS user. <<

Notes:

=====

Also you should read the OTRS performance tuning chapter on our homepage:

<http://doc.otrs.org/cvs/en/html/performance-tuning.html>

For installation questions ask otrs@otrs.org (<http://lists.otrs.org/>).

Have a lot of fun.

Your OTRS Team

(January 2004 Frankfurt/Germany)

EOF

1.2.2. Database

```
# --
# README.database - database description of OTRS
# Copyright (C) 2001-2004 Martin Edenhofer <martin+code@otrs.org>
# --
# $Id: install-cli.sgml,v 1.6 2005/08/04 10:51:51 cs 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.
# --

Where can I find the database description files?
=====

XML:
====
$HOME_OTRS/scripts/database/otrs-schema.xml

The XML description files for torque which generate the SQL for your
target database e. g. MySQL, PostgreSQL, DB2, Oracle, ...)

More Infos: http://db.apache.org/torque/

MySQL:
-----
$HOME_OTRS/scripts/database/otrs-schema.mysql.sql

PostgreSQL:
-----
$HOME_OTRS/scripts/database/otrs-schema.postgresql.sql

Initial insert file:
=====
$HOME_OTRS/scripts/database/initial_insert.sql contains all needed standard
values. At first use the otrs-schema/*.sql and the insert this file.

DB - Setup Example (MySQL):
=====
Create OTRS database:
-----
shell> mysql -u root -p -e 'create database otrs'

Create the OTRS tables:
-----
shell> mysql -u root -p otrs < scripts/database/otrs-schema.mysql.sql

Insert initial data:
-----
shell> mysql -u root -p otrs < scripts/database/initial_insert.sql

Create an database user:
-----
```

```

shell> mysql -u root -p -e 'GRANT ALL PRIVILEGES ON otrs.* TO otrs@localhost IDENTIFIED BY "some-pass" WITH GR
Reload the grant tables of your mysql-daemon:
-----
shell> mysqladmin -u root -p reload

*****
*
* Change the DB-Settings (host, database, user and password) *
*
* $OTRS_HOME/Kernel/Config.pm
* [...]
* # Database
* # (The database name.)
* $Self->{Database} = 'otrs';
*
* # DatabaseUser
* # (The database user.)
* $Self->{DatabaseUser} = 'otrs';
*
* # DatabasePw
* # (The password of database user.)
* $Self->{DatabasePw} = 'some-pass';
* [...]
*
*****

EOF

```

1.2.3. Webserver

```

# --
# README.webserver - webserver description of OTRS
# Copyright (C) 2001-2004 Martin Edenhofer <martin+code@otrs.org>
# --
# $Id: install-cli.sgml,v 1.6 2005/08/04 10:51:51 cs 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.
# --

Which webserver is needed?
=====
I prefer the apache webserver (http://httpd.apache.org).

Configuration:
=====
"After" this steps, you will get the login page at
http://your-host/otrs/index.pl or http://your-host/otrs/installer.pl.

SuSE Linux:
=====
a) Install the RPM-Package (http://otrs.org/ - "rpm -i otrs-xxx.rpm").

b) The manual way:
   Use the "$OTRS_HOME/scripts/suse-httpd.include.conf" include config file.

   Add it to /etc/sysconfig/apache with HTTPD_CONF_INCLUDE_FILES
   [...]
   HTTPD_CONF_INCLUDE_FILES=/opt/otrs/scripts/suse-httpd.include.conf
   [...]

   Start SuSEconfig and restart the webserver (rcapache restart).

Or edit the httpd.conf directly:

```

```
=====
```

```
a)
```

```
*) Change the webserver user (normally wwwrun) to the OTRS user (otrs).
```

```
[...]
User wwwrun
[...]
User otrs
[...]
```

```
*) If you can't change the user and group of your webserver (system-wide),
because you have other applications running on this server, you can
also work with group permissions (more tricky).
```

```
Use "$HOME/bin/SetPermissions.sh <OTRS_HOME> <OTRS_USER> <WEBSEVER_USER> [OTRS_GROUP] [WEB_GROUP]"
e. g.
Webserver with otrs user: "SetPermissions.sh /opt/otrs otrs otrs"
Webserver with wwwrun user (e. g. SuSE): "SetPermissions.sh /opt/otrs otrs wwwrun"
Webserver with apache user (e. g. Redhat): "SetPermissions.sh /opt/otrs otrs apache"
```

```
b)
```

```
*)
```

```
Without mod_perl (just CGI):
```

```
=====
```

```
Add this to the cgi-bin stuff section in httpd.conf
```

```
[...]
Alias /otrs-web/ "/opt/otrs/var/httpd/htdocs/"
ScriptAlias /otrs/ "/opt/otrs/bin/cgi-bin/"
[...]
```

```
*)
```

```
With mod_perl (speed!):
```

```
=====
```

```
Add this to the mod_perl stuff section in httpd.conf
```

```
[...]
Alias /otrs-web/ "/opt/otrs/var/httpd/htdocs/"
Alias /otrs/ "/opt/otrs/bin/cgi-bin/"
```

```
<Location /otrs>
    SetHandler perl-script
    PerlHandler Apache::Registry
    Options ExecCGI
    PerlSendHeader On
    PerlSetupEnv On
</Location>
```

```
You may want to use a mod_perl startup script. Compiled modules on startup
(speed!)! Use the mod_perl startup script which comes with otrs
(scripts/apache-perl-startup.pl).
```

```
- Change the default startup script location of your httpd to
$OTRS_HOME/scripts/apache-perl-startup.pl in httpd.conf
[...]
# load all otrs modules
PerlRequire /opt/otrs/scripts/apache-perl-startup.pl
[...]
```

```
Edit the scripts/apache-perl-startup.pl script:
```

```
- Establish datababase connections on process startup (httpd).
```

```
[...]
use Apache ();
use Apache::DBI ();
Apache::DBI->connect_on_init('DBI:mysql:otrs', 'otrs', 'some-pass');
# Apache::DBI->connect_on_init($data_source, $username, $auth, \%attr)
[...]
```

```
- Change the otrs lib dir (if needed)!
```

```
[...]
```

```
# --
# set otrs lib path!
# --
use lib "/path/to/otrs/";
use lib "/path/to/otrs/Kernel/cpan-lib";
[...]
```

Nice! You will love mod_perl! , -)

PS: If you use mod_perl2 use the scripts/apache2-* scripts!

c)

Restart the webserver
=====

d)

Web-Installer
=====

http://yourhost/otrs/installer.pl

First login
=====

http://yourhost/otrs/index.pl
User: root@localhost
PW: root

EOF

1.3. Install OTRS on Microsoft Windows

This document describes the installation of the OTRS (<http://otrs.org>) on systems running *Microsoft Windows (Win32)*. It has been tested on Windows 2000 and XP and should run on Windows NT4 and 2003, too. Take care to keep your operating system up-to-date prior to installing. Please have a look at <http://windowsupdate.microsoft.com/> therefore.

Please note that we do not support 16-Bit-Windows Systems with this installer (e.g. Windows 98, 98SE, ME).

1.3.1. otrs4win32 - The Automatic Installer

We provide an automatic installer for your convenience that will install all of the needed software components for you on a fresh (!) and up-to-date Win32 system and strongly recommend it's use.

Important: The contained software versions are: OTRS 1.2.3 (<http://otrs.org/>), CRONw 1.4.1b (<http://cronw.sourceforge.net/>), Apache 2.0.47 (<http://httpd.apache.org/docs-2.0/>), MySQL 4.0.14 (<http://www.mysql.com/products/mysql/>), PHP 4.3.3 (<http://www.php.net/>), PEAR (<http://pear.php.net/>), Perl 5.8.0 (<http://www.perl.org/>), mod_php 4.3.3 (<http://www.php.net/manual/en/install.apache2.php>), mod_perl 1.99_10 (<http://perl.apache.org/>), mod_ssl 2.0.47 (<http://www.modssl.org/>), openssl 0.9.7b (<http://www.openssl.org/> (???)), PHPMYAdmin 2.5.1 (<http://www.phpmyadmin.net/>), Webalizer 2.01-10 (<http://www.mrunix.net/webalizer/>), Mercury MailTransport System v3.32 (http://www.pmail.com/overviews/ovw_mercury.htm), JpGraph 1.12.1 (<http://www.aditus.nu/jpgraph/>), FileZilla FTP Server 0.8.5 (<http://filezilla.sourceforge.net/>).

1.3.1.1. Download

Download the current release - you may use our <http://otrs.org/download> as a starting point. It's an executable .exe file, it's name follows this conventions: *otrs4win32-<OTRS-VERSION>-<STATUS>.exe*. You may also want to verify the corresponding md5 sum after download - find it besides the files on the servers. We herefore recommend md5-summer: <http://md5summer.org/>. Give it a try, it's a fine piece of GPL software.

1.3.1.2. Installation

Obtain administrative rights on your box by logging in as an administrator or by using "Run as...". Start the installer and follow the instructions. No reboot should be required afterwards.

Installation Issues

This release is suitable only for OTRS systems that are about to be freshly installed, ie. you are currently not encouraged to upgrade your existing OTRS installation. In fact, the installer does not provide any mechanism to do so - see the subsequent part of this documentation that refers to Upgrading.

1.3.1.3. Start The OTRS System

Make sure there are no other server applications running on the ports 25 (smtp), 80 (http), 443 (https), 3306 (MySQL). If so, find out, what servers they are and if they are supposed and/or required to run at this time on your machine. Examples were Microsoft's IIS webserver running silently in the background or the corresponding SMTP service. You'll have to shut them down to start OTRS.

To start your system's servers now, you may use the provided option on the finishing page of the installer dialogue labeled 'Run otrs4win32'. This does the same as the Start Menu entry 'Start All Servers' in the section "Services" (see below), namely executing the script 'all_startservices.bat' located in the root directory of otrs4win32. By default, all servers needed for OTRS are installed as services.

Please be so patient to wait a little while until Apache has completed the start up phase - this may last for a few minutes. Per default, the ApacheMonitor is started after the installer has run as well as WinMySQLAdmin, a monitor for MySQL - watch their symbols in the taskbar, they change from 'Red' to 'Green' when Apache and MySQL are ready to serve you:



ApacheMonitor and WinMySQLAdmin both show 'Red' - be patient...



Wait while Apache still shows 'Red' - MySQL might show 'Yellow' for a short time.



Apache still is not ready - but MySQL is.



Both are 'Green' now - you're on Go!

Please note that both monitor programs are only started automatically after the installation has finished. After a reboot you can start them via the Start Menu.

Visit <http://localhost/otrs/installer.pl> to complete the Web installer, which will create and populate the database. Afterwards you're guided to the login page: <http://localhost/otrs/index.pl>.

The customer frontend is here: <http://localhost/otrs/customer.pl>

This release is built upon ApacheFriends (<http://www.apachefriends.org/>)' XAMPP, and therefore you benefit from XAMPP's features, too. Visit <http://localhost/index.html> (include the filename!). This is XAMPP and its components - you'll find OTRS in the left-hand menu. Click on it to get to the informational page about OTRS.

There are some informational links in the Start Menu, f.e. to phpMyAdmin, WinMySQLAdmin and ApacheMonitor.

1.3.1.4. How To Stop The Servers (if ever...)

If you installed the servers as system services, you may use the system's service control area to stop them, although you don't need to, because they will be terminated at shutdown time properly. Additionally, they need not be shut down if you actually do not work in OTRS, but should be kept running to let the maintenance scripts perform their actions at their given times.

Regarding the Standalone versions of the servers: For Apache, you may simply close it's control window. To safely shut down MySQL, use it's Start Menu entry or issue the script **mysql_stop.bat**. Shut down Mercury via it's **file** menu or the keyboard shortcut **Alt-F4** when the Mercury window has the focus. Stop the CRONw service via the Start Menu or by issuing **net stop cron**.

1.3.1.5. Uninstallation Instructions

If you ever want to remove otrs4win32 from your box, simply stop all of the servers, uninstall all of their eventually installed services and delete the directory holding the application. For all this we provide an uninstaller, found in the installation directory. You may perform some of the required steps manually via the Start Menu, if you want to.

The uninstall process will guide you through what will be uninstalled. No Reboot should be required.

Additionally, it provides some means to actually *RE*install some aspects of the software. This were the service, the Start menu entries and the entries in Windows' Registry.

1.3.2. Upgrading

These instructions are for people upgrading their otrs4win32 installation from 1.1.3 or prior to 1.2.0:

- Stop Apache and MySQL (see "Administration" in the OTRS Start Menu)
- Backup everything (database, Kernel/Config.pm, Kernel/Config/GenericAgent.pm, var/*)
- Make sure that you have backed up everything :-)
- If possible try this install on a separate machine
- Install the new release into the same location.
 - Please note: the OTRS themes between 1.1 and 1.2 are *_not_* compatible (don't use the old theme!)
- Restart Apache and MySQL (see the Start Menu for help).
- Update the database changes via phpMyAdmin: <http://localhost/phpmyadmin>.
 - Choose the 'otrs' database via the dropdown menu on the left.
 - Click the tab 'SQL' on the right.
 - Click 'Browse' and choose the file `C:\otrs\otrs\scripts\DBUpdate-to-1.2.mysql.sql`
 - Click OK.
- Alternatively, you may execute the following via the command line:

```
C:\> cd /d C:\otrs
C:\otrs> mysql\bin\mysql.exe -f -u root otrs < otrs\scripts\DBUpdate-to-1.2.mysql.sql
```

Do not worry about the error messages, you can update all previous version with this script and in the most cases your database has already the most changes!

- Please be so kind to post any bugs on <http://bugs.otrs.org/>

1.3.3. Step-by-Step: The Manual Installation

This section of the installation instruction set deals step-by-step with installing OTRS manually on systems running Win32. Of course we do recommend the usage of our otrs4win32 Installer. It is much easier to use!

1.3.3.1. Needed Software

You will need three main components on your system, a webserver (Apache (<http://apache.org/>)), a database (MySQL (<http://www.mysql.com/>)) and the programming language Perl (<http://www.perl.org/>).

The whole installation will assumingly take place on drive D:, but you may install wherever you like, for sure. All you have to do is replace every occurrence of *D:* or *d:* with your choice, f.e. *c:\Programs*. It is **no** good idea to have spaces in the installation path, so *c:\program Files\otrs* won't be a lucky choice.

1.3.3.1.1. Install PERL

Download *Perl, Version 5.6.1 build 633* from <http://www.activestate.com/Products/Download/Download.plex?id=ActivePerl>. We recommend choosing the MSI version.

Install Perl using the default values to *D:\Perl*.

1.3.3.1.1.1. Install Additional PERL Packages

Download the OTRS-Win32-Perl-Packages in one file (<ftp://ftp.otrs.org/pub/otrs/misc/win32/OTRS-Win32-Perl-Packages.zip>) (coming via FTP from *ftp.otrs.org*) and unpack it into *D:\Perl*, preserving directory structure.

1.3.3.1.2. Installing The Webserver

OTRS requires a webserver to run. You may choose the one of your choice, it will probably run on every perl-enabled webserver. We tested it on Sambar (<http://www.sambar.org>) 5.2 & above (<http://sambar.robertkehl.de>) and on Apache (<http://httpd.apache.org/>), both 1.3 (<http://httpd.apache.org/docs/>) and 2.0 (<http://httpd.apache.org/docs-2.0/>). *mod_perl* is only available for Apache. Currently, only *mod_perl-1.0* on Apache 1.3.27 is covered in these instructions.

1.3.3.1.2.1. Installing Apache

Download the Apache (<http://www.apache.org>) of your choice (1.3.27 (http://www.apache.org/dist/httpd/binaries/win32/apache_1.3.27-win32-x86-no_src.msi) and/or 2.0.43 (http://www.apache.org/dist/httpd/binaries/win32/apache_2.0.43-win32-x86-no_ssl.msi)) and install it/them. We recommend you choose **D:\Apache** as root for **both** versions. The resulting directory structure will be:

```
D:\Apache\          --- home of both
D:\Apache\Apache\   --- home of Apache 1.3
D:\Apache\Apache2\  --- home of Apache 2.0
```

Tip: You may install both 1.3 and 2.0 on the very same machine, they can both be running and may both be used at the same time, if you like to. All you have to do is to ensure they are not configured to run on the same port. The second installation willing to start on port 80 won't succeed in doing so. So configure Apache 1.3 to run on port 80, Apache 2.0 to run on port 81. You could even configure the Sambar webserver (see different section in this manual) to run on port 82, if you'd like to, or choose your own port configuration. Surely one webserver running one version would be enough - the rest is for geeks ;)

1.3.3.1.3. Install MySQL

Download MySQL from <http://www.mysql.com/downloads/> and install it in *D:\mysql*, under Win 2000/XP as a service, too. Start it. Not thoroughly tested in this manual installation procedure is MySQL Version 4.0 - but as it is included in the automatic installer you may give this version a try instead of the older 3.23.

For a more comfortable configuration interface We recommend installing phpMyAdmin from <http://www.phpmyadmin.net>, too, location: *D:\mysql\phpMyAdmin*. This will require PHP (<http://www.php.net>) to be installed, which always is a very good idea.

We change the password for root later.

1.3.3.1.4. Install OTRS

Last but not least - the beast!

Download OTRS as a tarball (.tar.gz): <http://otrs.org/download> and unzip it to *d:*, preserving the directory structure. A directory called **otrs** will be created on *D:*

1.3.3.2. Configuration

1.3.3.2.1. Configuring Perl

We now patch our Perl because it doesn't suit our needs in the default installation, there are some so called "packages" missing. You did download them above, didn't you?

Open a command box and enter this:

```
C:\>cd /d D:\Perl\packages
```

```
D:\Perl\packages>install.bat
[...returned output snipped...]
```

The install routine places the file `mod_perl.so` in `\Apache\Apache\modules`. By the time of this writing, you will have to manually adjust the path in `install.bat`, if you installed Apache in another place or copy `mod_perl.so` manually to your Apache's modules directory.

Your Perl should now look like this or even better:

```
D:\Perl\packages>ppm query
[...returned output shortened...]
Archive-Tar      [0.072    ]
Authen-SASL      [2.03     ]
Compress-Zlib    [1.16     ]
Convert-ASN1     [0.16     ]
DBD-Mysql        [1.2200   ]
DBI              [1.27     ]
Digest           [1         ]
Digest-HMAC      [1.01     ]
Digest-MD2       [2         ]
Digest-MD4       [1.1       ]
Digest-MD5       [2.20     ]
Digest-SHA1      [2.01     ]
File-CounterFile [0.12     ]
Font-AFM         [1.18     ]
GD               [1.27.2   ]
GDGraph          [1.32     ]
GDTextUtil       [0.80     ]
HTML-Parser      [3.26     ]
HTML-Tagset      [3.03     ]
HTML-Tree        [3.11     ]
IO-Socket-SSL    [0.92     ]
IO-stringy       [2.108    ]
MD5              [2.02     ]
MIME-Base64      [2.12     ]
MIME-tools       [5.411a   ]
MailTools        [1.58     ]
Net-DNS          [0.33     ]
Net_SSLeay.pm    [1.22     ]
PPM              [2.1.6    ]
SOAP-Lite        [0.55     ]
Storable         [1.0.12   ]
Test-Simple      [0.47     ]
Tk               [800.023  ]
URI              [1.19     ]
XML-Parser       [2.27     ]
XML-Simple       [1.06     ]
libnet           [1.12     ]
libwin32         [0.19.1   ]
libwww-perl      [5.64     ]
```

```
mod_perl          [1.27_01-dev]
perl-ldap         [0.26      ]
```

You may now delete the files in D:\Perl\packages, if you want to, but you don't have to.

That's it for Perl.

1.3.3.2.2. Configuring Apache

In the following, We will refer to 'Apache' only, the process is the same for both versions 1.3 and 2.0.

Open Apache's configuration file **httpd.conf**, it is located in **d:\Apache\Apache\conf**. Append these lines to the end of the file, adjust them to your needs:

```
# uncomment the following two for Apache2!
LoadModule perl_module modules/mod_perl.so
AddModule mod_perl.c

### added for OTRS (http://otrs.org/)

<IfModule mod_alias.c>
    Alias /otrs/ "d:/otrs/bin/cgi-bin/"
    Alias /otrs-web/ "d:/otrs/var/httpd/htdocs/"
    PerlModule Apache::Registry
</IfModule>

<Location /otrs>
    Options ExecCGI
    Order deny,allow
    Deny from all
    allow from 127.0.0.1

    SetHandler cgi-script
    ScriptInterpreterSource registry

    <IfModule mod_perl.c>
        SetHandler perl-script
        PerlHandler Apache::Registry
        PerlSendHeader On
    </IfModule>

</Location>

# load all otrs modules
PerlRequire d:/otrs/scripts/apache-perl-startup.pl

# MaxRequestsPerChild (so no apache child will be to big!)
#MaxRequestsPerChild 400
# depends on your RAM
```

Take a little time to configure the rest of httpd.conf, too. Open d:\otrs\scripts\apache-perl-startup.pl and change these lines:

```
1:
#! D:/Perl/bin/perl
10,11:
use lib "d:/otrs/";
use lib "d:/otrs/Kernel/cpan-lib";
38,39:
#use Kernel::System::AuthSession::IPC;
use Kernel::System::AuthSession::DB;
46,47:
#use Kernel::System::Log::SysLog;
use Kernel::System::Log::File;
```

That's it for Apache. We will restart Apache later.

1.3.3.2.3. Configuring MySQL

Secure your MySQL by providing good passwords for the users `@%`, `root@%` und `root@localhost`. This can easily be done via *phpMyAdmin*.

Let's fill the database. You can do this via the command line, as show here (output not shown):

```
C:\>cd /d d:\mysql
D:\mysql>mysql -u root -p password -e 'create database otrs'
D:\mysql>mysql -u root -p password otrs < d:\otrs\scripts\database\otrs-schema.mysql.sql
D:\mysql>mysql -u root -p password otrs < d:\otrs\scripts\database\initial_insert.sql
D:\mysql>mysql -u root -p -e 'GRANT ALL PRIVILEGES ON otrs.* TO otrs@localhost IDENTIFIED BY "some-pass" WITH
D:\mysql>mysqladmin -u root -p password reload
```

We recommend using *phpMyAdmin* under <http://localhost/phpMyAdmin> instead of working on the command line.

You create the database right on the start screen. Now you click the tab "SQL", and enter

`d:\otrs\scripts\database\otrs-schema.mysql.sql` in the textfield labeled "or File:". Click OK. If all went ok, enter

`d:\otrs\scripts\database\initial_insert.sql` and click OK.

Now commit this command:

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

That's it for MySQL, which we provided with the database `otrs`, its corresponding tables and the user `otrs@localhost`.

1.3.3.2.4. Configuring OTRS

1.3.3.2.4.1. CONFIG.PM

Now you teach OTRS s.th. about you. First create your configuration file:

```
C:\>cd /d d:\otrs\Kernel
D:\otrs\bin>copy Config.pm.dist Config.pm
```

Despite your settings concerning FQDN etc., you set the following in `d:\otrs\Kernel\Config.pm`:

```
# -----#
# Sendmail
# -----#
$Self->{'SendmailModule'} = 'Kernel::System::Email::SMTP';
$Self->{'SendmailModule::Host'} = 'smtp-server.of.your.provider';
$Self->{'SendmailModule::AuthUser'} = 'smtp-username';
$Self->{'SendmailModule::AuthPassword'} = 'smtp-password';
# -----#
# directories
# -----#
$Self->{Home} = 'd:/otrs';
$Self->{CounterLog} = '<OTRS_CONFIG_Home>/var/log/TicketCounter.log';
$Self->{ArticleDir} = '<OTRS_CONFIG_Home>/var/article';
$Self->{StatsPicDir} = '<OTRS_CONFIG_Home>/var/pics/stats';
$Self->{TemplateDir} = '<OTRS_CONFIG_Home>/Kernel/Output';
$Self->{TempDir} = '<OTRS_CONFIG_Home>/var/tmp';
# -----#
# LogModule
# -----#
$Self->{LogModule} = 'Kernel::System::Log::File';
# -----#
# own config settings
# config settings taken from Kernel/Config/Defaults.pm
# -----#
$Self->{SessionUseCookie} = 0;
$Self->{SessionModule} = 'Kernel::System::AuthSession::DB';
```

A note about your FQDN: This is the called *Full Qualified Domain Name* of your PC, just like your IP adress it's unique across the universe ...ah... internet, of course. If you're using a dial-up line to connect to the internet, your FQDN will always be a different one each time you dial anew. This is indeed ok for OTRS, but it's not nice if exim announces itself with a wrong name. It can lead to difficulties in mail delivery.

To solve this problem you can use so called *Dynamic DNS services* like <http://www.dyndns.org/>. By using a client such as *DirectUpdate* (<http://www.directupdate.net/>) you submit your IP adress to *dyndns.org* each times it changes and can thereby obtain a FQDN, for example *gogos-pc.home-ip.net*. You can even forward your domain <http://www.thisismydomain.com/> to your home PC. If you got further questions concerning Dynamic DNS services, don't hesitate to ask (<mailto:otrs-win32@robertkehl.de?subject=Dynamic%20DNS>) - but now back to OTRS :)

1.3.3.3. The First Start

(Re-)Start your Apache installation(s) using the Apache monitor, proabably located in your task bar. Sometimes it's a good idea to restart the whole box.

Now see OTRS in action for the first time. Call <http://localhost/otrs/index.pl> in your favourite browser.

The user name is "root@localhost", the password is "root", both without the quotes.

Important: It's a *very good* idea to exactly *now* change the above password on <http://localhost/otrs/index.pl?Action=AdminUser>

1.3.3.3.1. System Email Addresses & POP3

You set your system email addresses here: <http://localhost/otrs/index.pl?Action=AdminSystemAddress>. These are the addresses your customers lateron use to reach your OTRS.

You create POP3 accounts for each system email here: <http://localhost/otrs/index.pl?Action=AdminPOP3>

Your OTRS is now ready, you can start! Have a look around the interface and work on the test ticket provided.

Now write an email to one of the system email addresses. Enter this in your browser, it provides the email to OTRS. <http://localhost/obin/PostMasterPOP3.pl>. We will later automate this.

Your email will be visible in the queue *Raw* - that's here: <http://localhost/otrs/index.pl?Action=AgentQueueView>. Answer this first inquiry.

Tip: It is *NO* good idea to use one of the System Email Addresses to address the system, this will produce failures.

1.3.3.3.2. No CRON Jobs on Apache

Please note that Apache cannot CRON. You may therefore want to visit <http://cronw.sourceforge.net/> for a Perl-based CRON solution for 32-Bit Windows that runs as a system service. The webserver Sambar (<http://sambar.robertkehl.de/?page=whatis>) has a built-in cron-service besides loads of other functionalities and can also be configured to serve OTRS.

1.3.3.4. Done!

Congratulations, you hopefully were successful in installing OTRS on Win32!

If s.th. still is not as clear as it should be or if you are getting nothing more than error messages instead of the interface of OTRS, don't hesitate to mail otrs-win32@robertkehl.de (<mailto:otrs-win32@robertkehl.de>). Hopefully you get a ticket back :-)

We would be more enlightened if you'd send some success stories!

Have fun using your OTRS on Windows32!

Beginner's Help: Command Boxes: Throughout this document, we will need to enter commands directly into the system quite often. We do this in a so called *command box*. Other names are *command line*, *(DOS) prompt* or *shell*. Here is how to invoke a command box on Windows:

Click *Start*, then *Execute* and enter **cmd** in the dialogue box popping up. Hit **Return** on your keyboard or click *OK*. A (usually black) box appears - if it doesn't, you're not on a 32-bit system. The box will be showing something similar to this:

```
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.
```

```
C:\>
```

You may now enter commands such as

```
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.
```

```
C:\>cd /d d:\otrs\bin\cgi-bin
```

```
D:\otrs\bin\cgi-bin>dir
```

```
Datenträger in Laufwerk D: ist Aurelia
Datenträgernummer: C8F1-F408
```

```
Verzeichnis von D:\otrs\bin\cgi-bin
```

```
20.01.03  00:20          <DIR>          .
20.01.03  00:20          <DIR>          ..
08.06.02  23:37             10 .cvsignore
18.01.03  02:14             20 .htaccess
09.01.03  16:06          20.734 customer.pl
09.01.03  16:06          19.014 index.pl
03.01.03  17:17           4.203 installer.pl
03.01.03  17:17           5.450 pic.pl
           6 Datei(en)           49.431 Bytes
           2 Verzeichnis(se),   9.825.726.464 Bytes frei
D:\otrs\bin\cgi-bin>
```

This will bring you to your OTRS executable directory and show it's contents. The `/d` switch tells Windows to also change the drive letter, if necessary, i.e. to directly switch to the given directory, even over partition boundaries.

Please note that this is a *sample output only*, and it's from my box, a german Windows 2000 installation, as you see. It will probably (hopefully!) look different on your box.

You can customize the appearance of command boxes by clicking in the upper left corner of the window and choosing **Properties**. This were esp. useful for the default colors and sizes of your command boxes.

It will help if you get a little bit comfortable with command boxes and working from the command line in general. Search with Google for help with command lines (<http://www.google.com/search?num=100&newwindow=1&q=%22command+line%22+%22learning+resources%22+windows>).

Chapter 2. Basics about a Trouble Ticket System

2.1. A simple example for a small Trouble Ticket System

What is a typical scenario for using OTRS?

Example: Bob is a manufacturer of VCRs and his customers often have problems programming 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 OTRS. The e-mail from his customers are not anymore going to his personal INBOX but are routed to the OTRS account (normally called otrs). The OTRS account has some nifty procmail rules which pipe these e-mail messages to the system. The system answers the client with 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 OTRS 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 OTRS. 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.

2.2. What is a trouble ticket in the OTRS?

Within the OTRS 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.

2.3. 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 an 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).

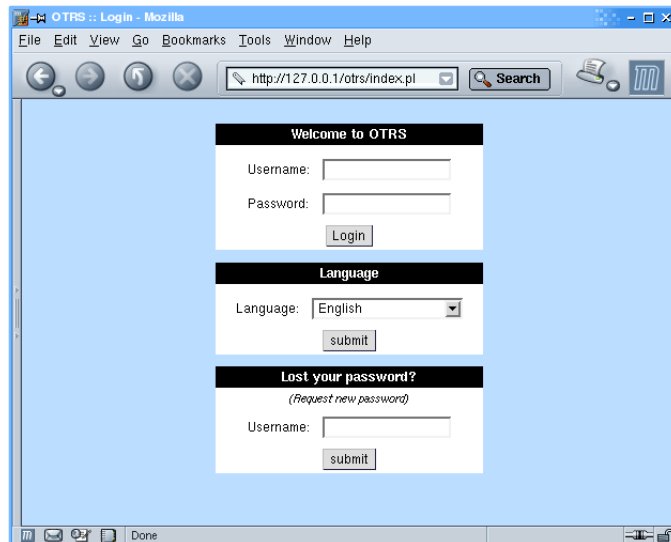
A queue is a mechanism to store many tickets within. As a user you do not know where the tickets are stored. You just know that a new ticket is e.g. in the RAW queue. A user (agent) can move a ticket from one queue to another. Why should he/she do this? You can use different queues to get more order 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 3. First steps

3.1. Login as root and create a new account

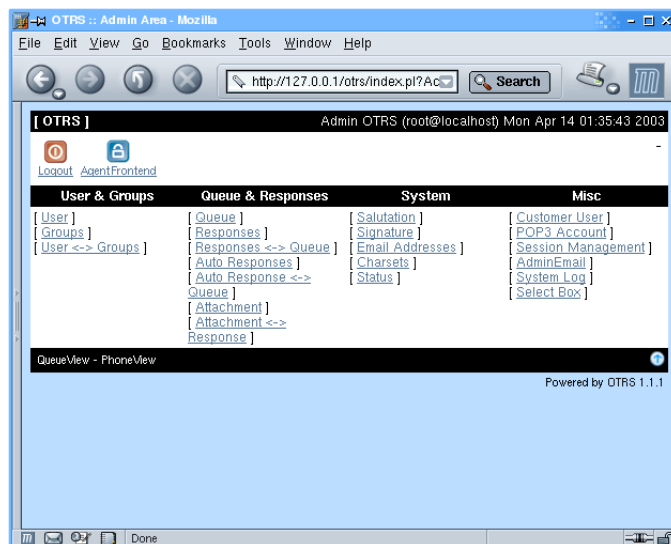
Let's presume that you have an installed OTRS system on your system and of course you do not want to waste too much time and see results quickly.

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 OTRS 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 useful stuff here. Browse around and give it a try. But for now we want to create a new user at once.

OTRS :: User add - Mozilla

File Edit View Go Bookmarks Tools Window Help

http://127.0.0.1/otrs/index.pl?Ac

[User Management]

Change user settings: root@localhost (1) [change](#)

Add user:

Login: skywalker

Salutation: Mr

Firstname: Anakin

Lastname: Skywalker

Password: *****

Email: skywalker@otrs.org

Valid: valid

Comment:

Language: English

Charset: iso-8859-15

Theme: Standard

QueueView refresh time: off

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

OTRS :: User & Groups Management - Mozilla

File Edit View Go Bookmarks Tools Window Help

http://127.0.0.1/otrs/index.pl?Ac

User & Groups

User & Groups	Queue & Responses	System	Misc
[User]	[Queue]	[Salutation]	[Customer User]
[Groups]	[Responses]	[Signature]	[POP3 Account]
[User <-> Groups]	[Responses <-> Queue]	[Email Addresses]	[Session Management]
	[Auto Responses]	[Charsets]	[AdminEmail]
	[Auto Response <-> Queue]	[Status]	[System Log]
	[Attachment]		[Select Box]
	[Attachment <-> Response]		

[User <-> Group Management]

Change User settings: User: skywalker (id=2)

Group	ro	rw
admin	<input type="checkbox"/>	<input type="checkbox"/>
stats	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
users	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

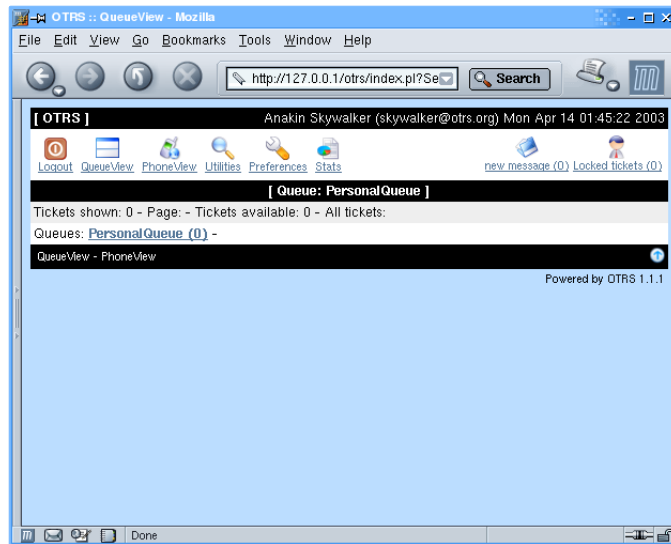
[submit](#)

QueueView - PhoneView

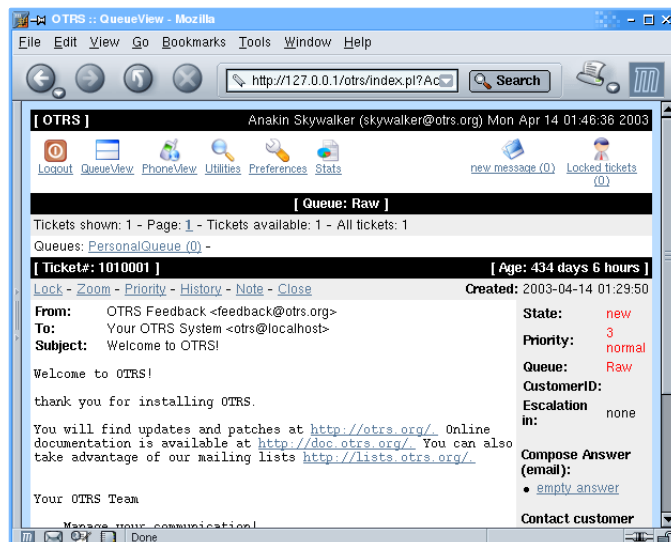
3.2. Login with user privilege

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:



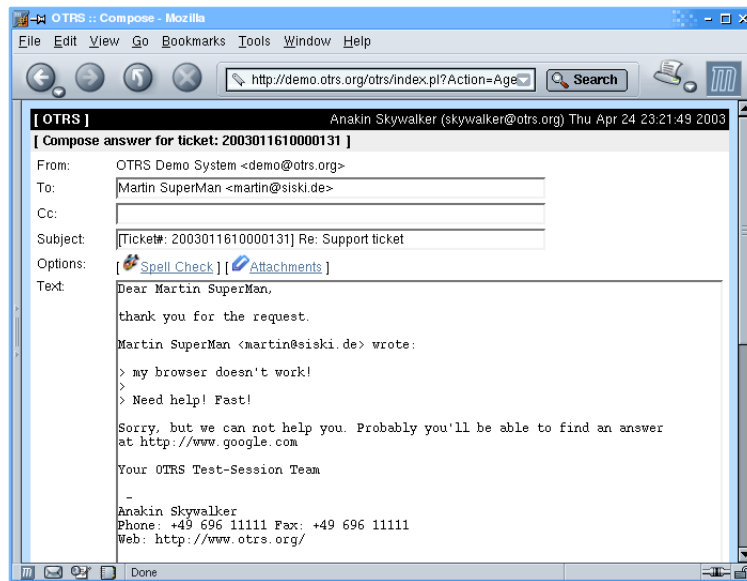
Between the second and third black bar (in this example) the user has access to the different queues. He/she can browse the queue by simply clicking on the link with the queue name.



Chapter 4. Ticket topics

4.1. Answer ticket via email

It's quite simple 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!



The screenshot shows the OTRS Compose screen in a Mozilla browser window. The address bar shows the URL <http://demo.otrs.org/otrs/index.pl?Action=Age>. The page title is "OTRS :: Compose - Mozilla". The main content area displays the "Compose answer for ticket: 2003011610000131" form. The form includes fields for "From:", "To:", "Cc:", "Subject:", and "Options:". The "Text:" field contains the following content:

Dear Martin SuperMan,
thank you for the request.
Martin SuperMan <martin@siski.de> wrote:
> my browser doesn't work!
>
> Need help! Fast!
Sorry, but we can not help you. Probably you'll be able to find an answer
at <http://www.google.com>
Your OTRS Test-Session Team
-
Anakin Skywalker
Phone: +49 696 11111 Fax: +49 696 11111
Web: <http://www.otrs.org/>

4.2. Answer ticket via phone

It's quite simple 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, ...).



The screenshot shows the OTRS Phone call screen in a Mozilla browser window. The address bar shows the URL <http://demo.otrs.org/otrs/index.pl?Action=Age>. The page title is "OTRS :: Phone call - Mozilla". The main content area displays the "Phone call: 2003011610000131" form. The form includes fields for "Subject:", "Options:", and "Text:". The "Text:" field contains the following content:

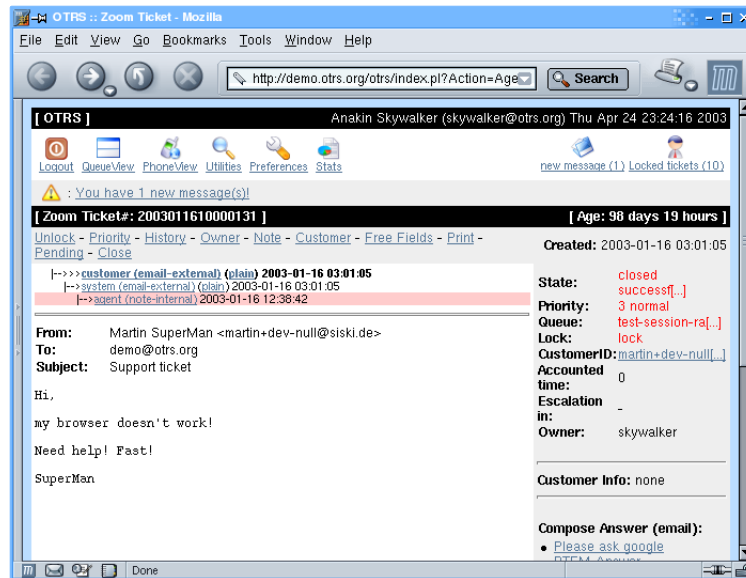
Customer called

Below the text field, there are several dropdown menus and checkboxes:

- Next ticket state: closed successful
- Pending Date (for pending* states): 04 - 25 - 2003 - 23 - 23
- Is the ticket: Yes

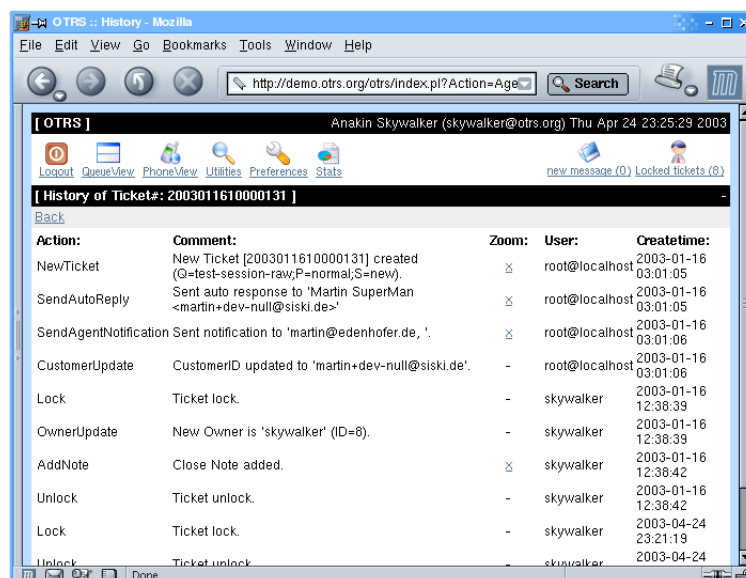
4.3. Zoom ticket

Zoom ticket is a detailed 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.



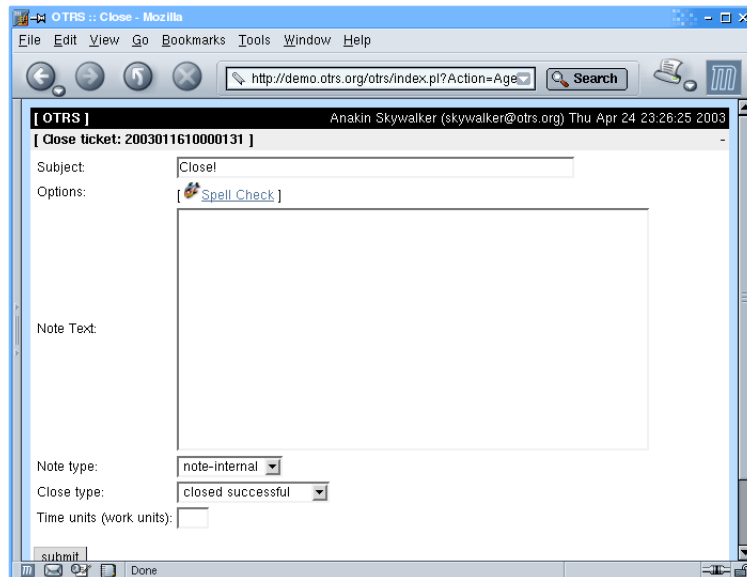
4.4. History of ticket

The ticket history shows you all actions on this ticket.



4.5. Add note to ticket

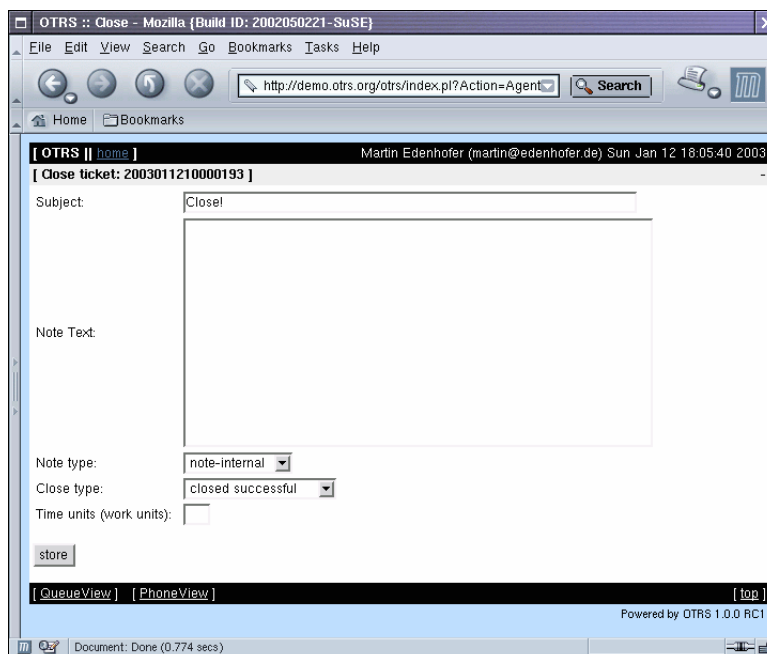
Each agent is able to add notes to tickets. Maybe he/she isn't sure to give a qualified answer. And you can select the type of note (internal, external, ...). the customer gets not notification about a new note.



The screenshot shows a Mozilla browser window titled "OTRS :: Close - Mozilla". The address bar displays "http://demo.otrs.org/otrs/index.pl?Action=Age". The page header shows "Anakin Skywalker (skywalker@otrs.org) Thu Apr 24 23:26:25 2003". The main content area is titled "[Close ticket: 2003011610000131]". It contains a "Subject:" field with the text "Close!", an "Options:" section with a "Spell Check" link, and a large "Note Text:" text area. Below the text area are two dropdown menus: "Note type:" set to "note-internal" and "Close type:" set to "closed successful". There is also a "Time units (work units):" input field. At the bottom left is a "submit" button. The status bar at the bottom shows "Done".

4.6. Close ticket

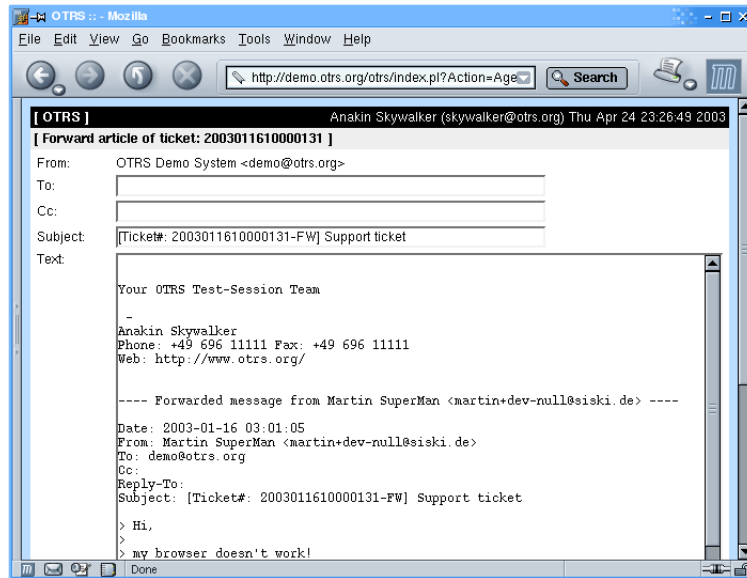
Close Tickets.



The screenshot shows a Mozilla browser window titled "OTRS :: Close - Mozilla (Build ID: 2002050221-SuSE)". The address bar displays "http://demo.otrs.org/otrs/index.pl?Action=Agent". The page header shows "Martin Edenhofer (martin@edenhofer.de) Sun Jan 12 18:05:40 2003". The main content area is titled "[Close ticket: 2003011210000193]". It contains a "Subject:" field with the text "Close!", a large "Note Text:" text area, and two dropdown menus: "Note type:" set to "note-internal" and "Close type:" set to "closed successful". There is also a "Time units (work units):" input field. At the bottom left is a "store" button. Below the form are links for "[QueueView]" and "[PhoneView]", and a "[top]" link. The footer indicates "Powered by OTRS 1.0.0 RC1". The status bar at the bottom shows "Document: Done (0.774 secs)".

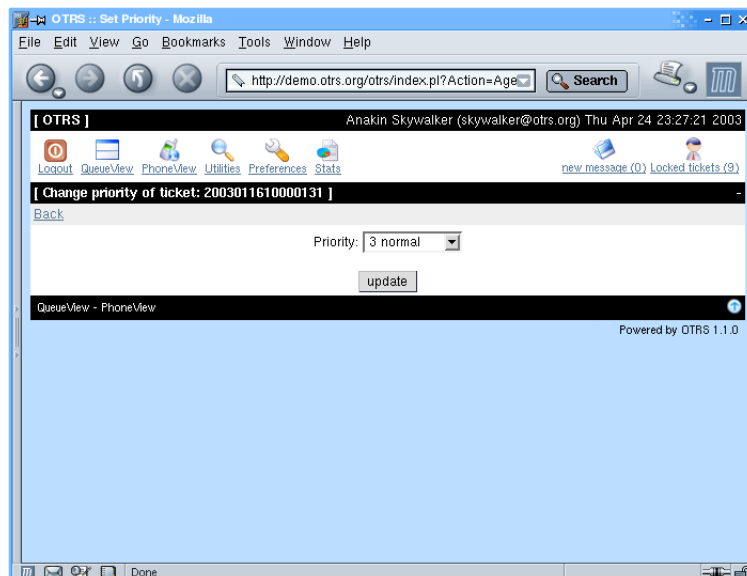
4.7. Forward ticket

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



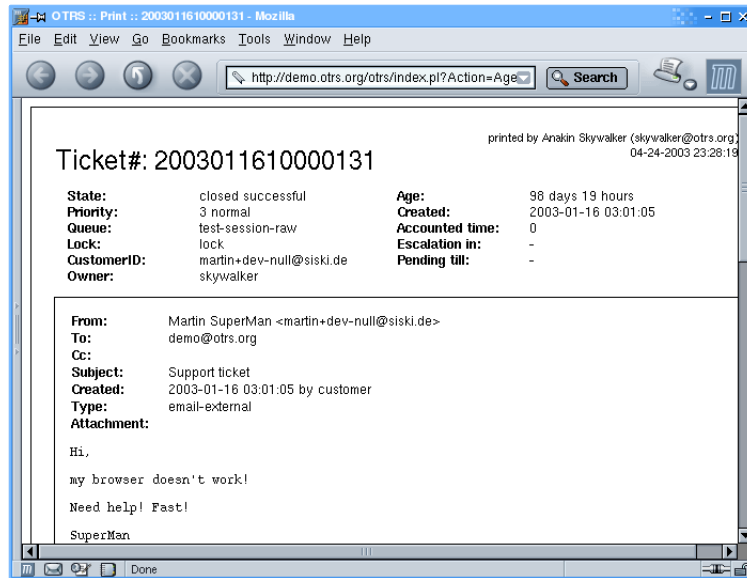
4.8. Ticket priority

Set the ticket priority if necessary.



4.9. Ticket print view

The ticket print view.



Chapter 5. System-Email-Notifications

This chapter will show you more details about the system notifications for agents and customers.

5.1. Agent-Notifications

An agent can get notifications about 'new ticket', 'ticket follow up', 'ticket in custom queue' and 'ticket lock timeout'. In order to get notifications select the queues you want (named 'custom queues') in the agent interface -- Preferences -- Select your custom queues. The notification text can be defined in Kernel/Config.pm.

Important: The agent gets just notifications about changes to the 'custom queues'.

5.1.1. new ticket

Notification to the agent about new created tickets in a queue.

5.1.2. ticket follow up

Notification to the agent about a follow up for a ticket which is owned by the agent.

5.1.3. new ticket in custom queue

Notification to the agent if a ticket is moved to one of the 'custom queues'.

5.1.4. ticket lock timeout

Notification to the agent if the OTRS system unlocked an unanswered ticket.

5.2. Customer-Notifications (min 1.1)

There are three types of (auto) customer notifications to give more transparency to the customer. These notifications (if used or not) can be defined for each queue (admin area). The notification text can be defined in Kernel/Config.pm.

5.2.1. ticket state

The customer (sender) gets automatically a notification if the ticket state has changed.

5.2.2. ticket owner

The customer (sender) gets automatically a notification if the ticket owner has changed.

5.2.3. ticket queue

The customer (sender) gets automatically a notification if the ticket queue has changed.

Chapter 6. Auto-Response

This chapter will show you more details about the auto responses to customers after customer actions. Of course auto-response need to be configured via the Admin Interface and for each queue.

6.1. Reply

Used if a new ticket is created the customer (sender) gets the following auto-response.

A normal reply auto-response should contain something like that:

Thanks for your e-mail. A new ticket has been created.

You wrote:
<OTRS_CUSTOMER_EMAIL[6]>

Your e-mail will be answered by a human asap

Have fun with OTRS! :-)

Your OTRS Team

6.2. Follow up

Used if the customer wrote a follow up via email or Customer Interface.

A normal follow up auto-response should contain something like that:

Thanks for your follow up e-mail

You wrote:
<OTRS_CUSTOMER_EMAIL[6]>

Your e-mail will be answered by a human asap.

Have fun with OTRS!

Your OTRS Team

6.3. Reject

Used if the customer wrote a follow up and the follow up is rejected (because the ticket is closed and not possible to reopen).

A normal reject auto-response should contain something like that:

Thanks for your follow up e-mail

You wrote:
<OTRS_CUSTOMER_EMAIL[6]>

Important: Sorry but we can't process your follow up because your ticket is closed. Please create a new ticket.

Have fun with OTRS!

Your OTRS Team

6.4. Closed -> new Ticket

Used if the customer wrote a follow up and the follow up is rejected and a new ticket is created (because the ticket is closed and not possible to reopen).

A normal closed -> new ticket auto-response should contain something like that:

Thanks for your follow up e-mail

You wrote:

<OTRS_CUSTOMER_EMAIL[6]>

Important: Sorry but we can't process your follow up because your ticket is closed. A new ticket has been created automatically.

Have fun with OTRS!

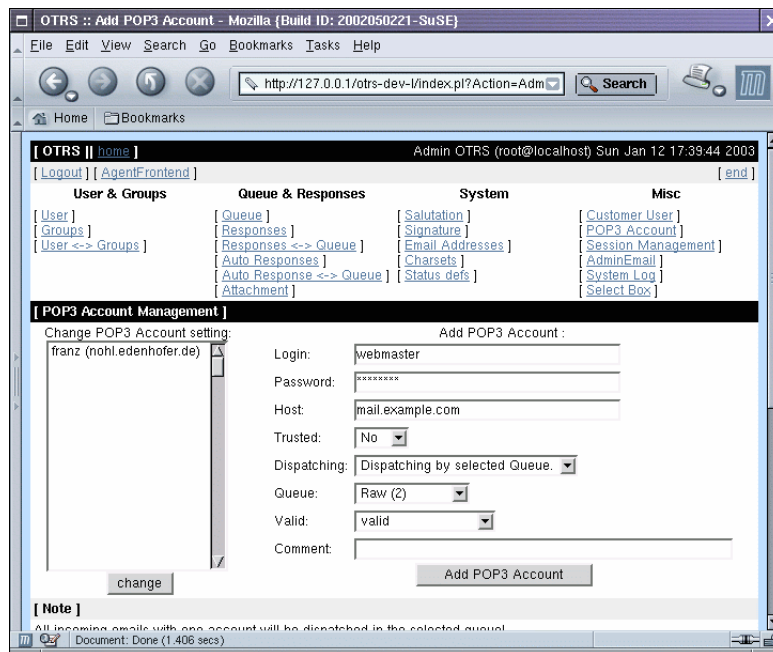
Your OTRS Team

Chapter 7. Receiving emails

7.1. Via POP3 accounts - the easy way (PostMasterPOP3.pl)

OTRS is able to receive emails from POP3 accounts.

Configure your POP3 accounts via the admin interface (POP3 Account).



Execute bin/PostMasterPOP3.pl and all emails will be fetched to your OTRS system.

There is also an example cronjob (var/cron/postmaster_pop3.dist) which execute your bin/PostMasterPOP3.pl every 10 minutes (see also chapter cronjobs).

7.2. Via command line program and e. g. procmail (PostMaster.pl)

OTRS is able to receive emails via a command line programm (bin/PostMaster.pl).

That means emails will be shown in your OTRS system if the MDA (mail delivery agent, e. g. procmail) pipes the emails into bin/PostMaster.pl.

To test the bin/PostMaster.pl on your command line (without MDA) use:

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

If the email is shown in the QueueView then your setup works fine.

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

To configure procmail for that (requires a procmail configured MTA (e. g. sendmail, postfix, exim or qmail)) use the ~otrs/.procmailrc and modify/add the following.

```
SYS_HOME=$HOME
PATH=/bin:/usr/bin:/usr/local/bin
# --
# Pipe all email into the PostMaster process.
# --
:0 :
| $SYS_HOME/bin/PostMaster.pl
```

All emails sent to the local otrs user will be piped into bin/PostMaster.pl and then shown in your QueueView.

7.2.1. Fetching emails via POP3 or IMAP and fetchmail for PostMaster.pl

In order to get e-mails from your mail server via a POP3 or IMAP mailbox to the **OTRS machine/local otrs account and to procmail** use fetchmail (<http://www.tuxedo.org/~esr/fetchmail/>). Note: A working SMTP configuration on the OTRS machine is a condition.

Example 7-1. .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")!

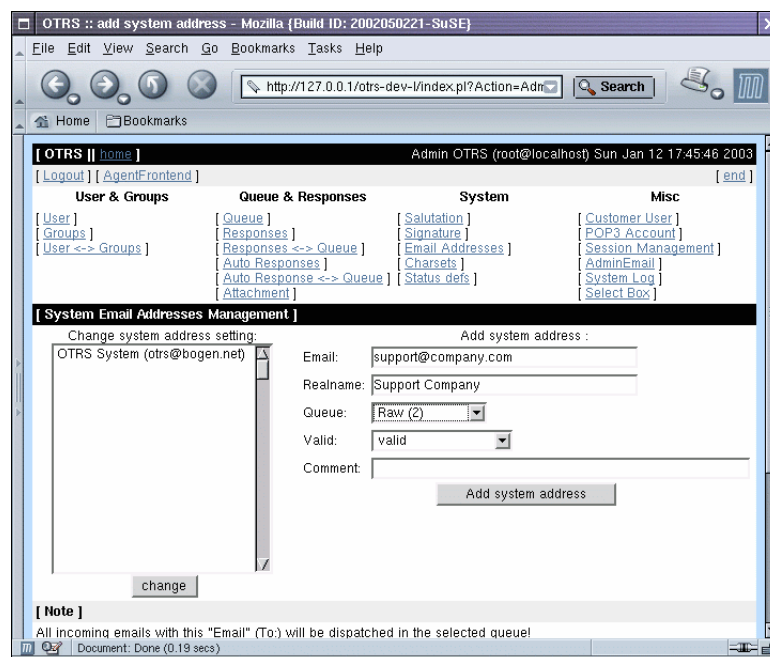
So if "fetchmail -a" is executed (maybe via cron), all e-mails will be forwarded to the local otrs account.

7.3. Filtering/dispatching by OTRS/Webinterface

OTRS is able to dispatch incoming emails via "To" and "Cc" address. Configurable via admin interface.

Example

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



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

7.4. Filtering/dispatching by OTRS/PostMaster modules (for more complex dispatching)

If you use the PostMaster.pl or PostMasterPOP3.pl method, the you can modify X-OTRS header with the OTRS/PostMaster filter modules.

For example you can set the priority or the queue of an ticket with the PostMaster filter modules.

There are some default filter modules:

Note: The job name (e. g. `$Self->{'PostMaster::PreFilterModule'}->{'JobName'}`) needs to be unique!

`Kernel::System::PostMaster::Filter::Match` is a default module to match on some email header (e. g. From, To, Subject, ...) and then to set new email header (e. g. X-OTRS-Ignore: yes or X-OTRS-Queue: spam).

```
Kernel/Config.pm
[...]
# Job Name: 1-Match
# (block/ignore all spam email with From: noreply@)
$Self->{'PostMaster::PreFilterModule'}->{'1-Match'} = {
    Module => 'Kernel::System::PostMaster::Filter::Match',
    Match => {
        From => 'noreply@',
    },
    Set => {
        'X-OTRS-Ignore' => 'yes',
    },
};
# Job Name: 2-Match
# (sort emails with From: sales@example.com and Subject: **ORDER**
# into queue 'Order')
$Self->{'PostMaster::PreFilterModule'}->{'2-Match'} = {
    Module => 'Kernel::System::PostMaster::Filter::Match',
    Match => {
        To => 'sales@example.com',
        Subject => '**ORDER**',
    },
    Set => {
        'X-OTRS-Queue' => 'Order',
    },
};
[...]
```

`Kernel::System::PostMaster::Filter::CMD` is a default module to pipe the email into an external cmd and if the result on STDOUT is true, then set new email header (e. g. X-OTRS-Ignore: yes or X-OTRS-Queue: spam).

```
Kernel/Config.pm
[...]
# Job Name: 5-SpamAssassin
# (SpamAssassin example setup, ignore spam emails)
$Self->{'PostMaster::PreFilterModule'}->{'5-SpamAssassin'} = {
    Module => 'Kernel::System::PostMaster::Filter::CMD',
    CMD => '/usr/bin/spamassassin | grep -i "X-Spam-Status: yes"',
    Set => {
        'X-OTRS-Ignore' => 'yes',
    },
};
[...]
```

Of course, it's also possible to develop own PostMaster filter modules.

There is also a list of all usable X-OTRS header in `doc/X-OTRS-Headers.txt`.

7.5. Filtering/dispatching by Procmail (for more complex dispatching)

If you use the `PostMaster.pl` method, then you can add X-OTRS header to the email and `PostMaster.pl` will use this header by piping the email into `PostMaster.pl`.

The X-OTRS-Queue Mail-Header

The X-OTRS-Queue Mail-Header is parsed by OTRS and OTRS 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 procmailrc 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 7-2. .procmailrc

```
# --
# .procmailrc - procmailrc of the OTRS user
# Copyright (C) 2001-2002 Martin Edenhofer (martin+code at otrs.org)
# --
# $Id: receiving_email.sgml,v 1.2 2004/09/04 22:26:39 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 procmailx man-page for more examples.

There is also a list of all usable X-OTRS header in doc/X-OTRS-Headers.txt.

7.6. Example for filtering/dispatching by Procmail and a webform

This is an example for a webform to generate an email for OTRS. You will find this perl script in \$OTRS_HOME/scripts/webform.pl

You have a Topic, From, Email, Subject and Message field.

Change the config settings for the webform:

```
# --
# web form options
# --
my $Ident = 'ahfiw2Fw32r230ddd12foeo3r';
# sendmail location and options
my $Sendmail = '/usr/sbin/sendmail -t -i -f ';
# email where the emails of the form will send to
my $OTRSEmail = 'otrs-system@example.com';
# topics and dest. queues
my %Topics = (
    # topic => OTRS queue
    'Info' => 'info',
    'Support' => 'support',
    'Bugs' => 'bugs',
    'Sales' => 'sales',
    'Billing' => 'billing',
    'Webmaster' => 'webmaster',
);
```

Take care, that your used \$OTRSEmail and the used OTRS queues exists in your OTRS system.

Now, change the OTRS .procmailrc from:

```
# --
# 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-'

to:

# --
# Remove all X-OTRS Header (allow this only for trusted email)
# just not emails with "X-OTRS-Ident: ahfiw2Fw32r230ddd12foeo3r" header!
# --
:0 fhw :
* !^X-OTRS-Ident: ahfiw2Fw32r230ddd12foeo3r
| grep -vi '^X-OTRS-'
```

If a email is generated by the webform.pl and sent to the \$OTRSEmail it will be dispatched to the topic=>queue.

Chapter 8. Sending emails

8.1. Via Sendmail (default)

OTRS is able to send out emails via Sendmail (e. g. Sendmail (<http://www.sendmail.org/>), Postfix (<http://www.postfix.org/>), Qmail (<http://www.qmail.org>) or Exim (<http://www.exim.org>)). The default configuration to use Sendmail should work out of the box.

There are the following config options for Kernel/Config.pm:

```
# SendmailModule
# (Where is sendmail located and some options.
# See 'man sendmail' for details.)
$Self->{'SendmailModule'} = 'Kernel::System::Email::Sendmail';
$Self->{'SendmailModule::CMD'} = '/usr/sbin/sendmail -t -i -f ';
```

8.2. Via SMTP relay/smarthost (min. OTRS 1.1)

OTRS is able to send out emails via SMTP (Simple Mail Transfer Protocol / RFC 821 (<http://www.ietf.org/rfc/rfc821.txt>)). Mostly used on non unix platforms (e. g. win32).

There are the following config options for Kernel/Config.pm:

```
# SendmailModule
$Self->{'SendmailModule'} = 'Kernel::System::Email::SMTP';
$Self->{'SendmailModule::Host'} = 'mail.example.com';
$Self->{'SendmailModule::AuthUser'} = "";
$Self->{'SendmailModule::AuthPassword'} = "";
```


Chapter 9. User

This chapter will show you more details about the system users (agents).

9.1. How it works

You need system users (agents) to deal with all the tickets.

9.1.1. Admin-Interface

Edit your system user via the Admin-Interface.

9.2. User Backend

There is no existing user backend. At the moment the OTRS user need to be in the otrs database.

User backends (for DB and LDAP) are planned for OTRS 2.0.

9.3. User Auth Backend

9.3.1. Database (default)

The default user auth backend is the otrs database.

```
[Kernel/Config.pm]
# This is the auth. module against the otrs db
$Self->{'AuthModule'} = 'Kernel::System::Auth::DB';
[...]
```

9.3.2. LDAP

If there is a LDAP tree available with your users then you can use the user LDAP auth backend. This module is just read only (means it can't write to your LDAP tree - this should just be possible for your tree manager) so you can't create or update user via the Admin-Interface.

```
[Kernel/Config.pm]
# This is an example configuration for an LDAP auth. backend.
# (take care that Net::LDAP is installed!)
$Self->{'AuthModule'} = 'Kernel::System::Auth::LDAP';
$Self->{'AuthModule::LDAP::Host'} = 'ldap.example.com';
$Self->{'AuthModule::LDAP::BaseDN'} = 'dc=example,dc=com';
$Self->{'AuthModule::LDAP::UID'} = 'uid';

# Check if the user is allowed to auth in a posixGroup
# (e. g. user needs to be in a group xyz to use otrs)
# $Self->{'AuthModule::LDAP::GroupDN'} = 'cn=otrsallow,ou=posixGroups,dc=example,dc=com';
# $Self->{'AuthModule::LDAP::AccessAttr'} = 'memberUid';

# The following is valid but would only be necessary if the
# anonymous user do NOT have permission to read from the LDAP tree
$Self->{'AuthModule::LDAP::SearchUserDN'} = "";
$Self->{'AuthModule::LDAP::SearchUserPw'} = "";

# in case you want to add always one filter to each ldap query, use
# this option. e. g. AlwaysFilter => '(mail=*)' or AlwaysFilter => '(objectclass=user)'
# $Self->{'AuthModule::LDAP::AlwaysFilter'} = "";

# in case you want to add a suffix to each login name, then
```

```

# you can use this option. e. g. user just want to use user but
# in your ldap directory exists user@domain.
#   $Self->{'AuthModule::LDAP::UserSuffix'} = '@domain.com';

# Net::LDAP new params (if needed - for more info see perldoc Net::LDAP)
#   $Self->{'AuthModule::LDAP::Params'} = {
#       port => 389,
#       version => 3,
#   };
#   [...]

```

LDAP entries shall conform to the PosixAccount and inetOrgPerson schema. An example entry might look like:

```

dn: uid=lester,ou=user,dc=example,dc=com
objectClass: top
objectClass: account
objectClass: posixAccount
objectClass: organizationalPerson
objectClass: inetOrgPerson
objectClass: officePerson
uid: lester
cn: Lester Adamas
userPassword: {crypt}X5/DBrWPOQQaI
gecos: Lester
loginShell: /bin/csh
uidNumber: 10
gidNumber: 10
homeDirectory: /home/lester
sn: Adams
givenName: Lester
mail: lester@example.com
preferredLanguage: fr
comment: technical support

```

Please note, that in version 1.x you have to create a db entry for the ldap user. This is done automatically on first login in versions > 1.1.x.

This will be the config option to map the LDAP attributes to database. Default is:

```

# UserSyncLDAPMap
# (map if agent should create/synced from LDAP to DB after login)
$Self->{UserSyncLDAPMap} = {
    # DB -> LDAP
    Firstname => 'givenName',
    Lastname => 'sn',
    Email => 'mail',
};

```

9.3.3. HTTPBasicAuth

If you a "single sign on" solution, use http basic authentication (for all your systems) and use the HTTPBasicAuth module (no otrs login is required!).

```

[Kernel/Config.pm]
# This is the auth. module against $ENV{REMOTE_USER} (apache
# http-basic-auth)
$Self->{'AuthModule'} = 'Kernel::System::Auth::HTTPBasicAuth';
# Note:
# If you use this module, you should use as fallback the following
# config settings if user isn't login through apache ($ENV{REMOTE_USER})
$Self->{LoginURL} = 'http://host.example.com/not-authorized-for-otrs.html';
$Self->{LogoutURL} = 'http://host.example.com/thanks-for-using-otrs.html';
# [...]

```

9.3.4. Radius

Authentication against a radius server.

```
[Kernel/Config.pm]
# This is example configuration to auth. agents against a radius server
$Self->{'AuthModule'} = 'Kernel::System::Auth::Radius';
$Self->{'AuthModule::Radius::Host'} = 'radiushost';
$Self->{'AuthModule::Radius::Password'} = 'radiussecret';
[...]
```


Chapter 10. Customer

OTRS is able to deal with various pieces of customer information (i.e. login, email, phone). This information can be shown in the Agent-Interface and can be used for the Customer-Interface (users and auth).

10.1. How it works

The used/shown customer information is freely configurable (see backend), but there are three required options: UserLogin, UserEmail and UserCustomerID.

10.1.1. Agent-Interface

If you want to show the customer user information (e. g. company, name, email, ...) in your Agent-Interface use the following config options.

```
[Kernel/Config.pm]
# ShowCustomerInfo*
# (show customer user info on Compose (Phone and Email), Zoom and Queue view)
$Self->{ShowCustomerInfoCompose} = 1;
$Self->{ShowCustomerInfoZoom} = 1;
$Self->{ShowCustomerInfoQueue} = 0;
[...]
```

10.1.2. Admin-Interface

Edit your customer user information via the Admin-Interface (<http://yourhost/otrs/index.pl?Action=AdminCustomerUser>).

10.1.3. Customer-Interface

The customer information for the Customer-Interface (<http://yourhost/otrs/customer.pl>) is used for the login and auth.

10.2. Customer User Backend

There are two existing customer user backends, DB and LDAP. Of course if you have an existing customer repository (e. g. SAP, ...) it's possible to write an own backend.

Note: It's also possible to define more the one "CustomerUser" config option. You just need to add a number between 1 and 10. For example "CustomerUser1".

10.2.1. Database (default)

This is an example for a database backend.

```
[Kernel/Config.pm]
# CustomerUser
# (customer user database backend and settings)
$Self->{CustomerUser} = {
    Name => 'Database Source',
    Module => 'Kernel::System::CustomerUser::DB',
    Params => {
        # if you want to use an external database, add the
        # required settings
        DSN => 'DBI:odbc:yourdsn',
        DSN => 'DBI:mysql:database=customerdb;host=customerdbhost',
        User => "",
        Password => "",
        Table => 'customer_user',
    },
},
```

```

# customer uniq id
CustomerKey => 'login',
# customer #
CustomerID => 'customer_id',
CustomerValid => 'valid_id',
CustomerUserListFields => ['login', 'first_name', 'last_name', 'email'],
CustomerUserSearchFields => ['login', 'last_name', 'customer_id'],
CustomerUserSearchPrefix => "",
CustomerUserSearchSuffix => '*',
CustomerUserPostMasterSearchFields => ['email'],
CustomerUserNameFields => ['salutation', 'first_name', 'last_name'],
#   AdminSetPreferences => 1,
#   ReadOnly => 1,
Map => [
  # note: Login, Email and CustomerID needed!
  # var, frontend, storage, shown, required, storage-type, http-link
  [ 'UserSalutation', 'Salutation', 'salutation', 1, 0, 'var' ],
  [ 'UserFirstname', 'Firstname', 'first_name', 1, 1, 'var' ],
  [ 'UserLastname', 'Lastname', 'last_name', 1, 1, 'var' ],
  [ 'UserLogin', 'Username', 'login', 1, 1, 'var' ],
  [ 'UserPassword', 'Password', 'pw', 0, 1, 'var' ],
  [ 'UserEmail', 'Email', 'email', 0, 1, 'var' ],
#   [ 'UserEmail', 'Email', 'email', 1, 1, 'var', '$Env{"CGIHandle"}?Action=\\
AgentCompose&ResponseID=1&TicketID=$Data{"TicketID"}&ArticleID=$Data{"ArticleID"}' ],
  [ 'UserCustomerID', 'CustomerID', 'customer_id', 0, 1, 'var' ],
  [ 'UserComment', 'Comment', 'comment', 1, 0, 'var' ],
  [ 'ValidID', 'Valid', 'valid_id', 0, 1, 'int' ],
],
};
[...]
```

If you want to customize your customer user information, change (add) you table columns e. g.

```
ALTER TABLE customer_user ADD phone VARCHAR (250);
```

And add your new column to your CustomerUser MAP array in Kernel/Config.pm like:

```

# var, frontend, storage, shown, required, storage-type, http-link
[ 'UserPhone', 'Phone', 'phone', 1, 0, 'var' ],
```

Of course you will be able to maintain all this customer user information via the Admin-Interface.

MultiCustomerIDs: It's also possible to have more the one customer id for one customer. E. g. one customer needs to see all ticket from other customers.

Add a new database row and put the customer ids in it (like "CustomerID1, CustomerID2, CustomerID3").

```
ALTER TABLE customer_user ADD customer_ids VARCHAR (250);
```

And add your new column to your CustomerUser MAP array in Kernel/Config.pm like:

```

# var, frontend, storage, shown, required, storage-type, http-link
[ 'UserCustomerIDs', 'CustomerIDs', 'customer_ids', 1, 0, 'var' ],
```

Of course you will be able to maintain all this customer user information via the Admin-Interface.

10.2.2. LDAP

If you have an existing LDAP tree with your customer users then you will be able to use this LDAP tree in your OTRS system.

This is an example for a LDAP backend.

```

[Kernel/Config.pm]
# CustomerUser
# (customer user ldap backend and settings)
$Self->{CustomerUser} = {
  Name => 'LDAP Source',
  Module => 'Kernel::System::CustomerUser::LDAP',
  Params => {
    # ldap host
```

```

Host => 'bay.csuhayward.edu',
# ldap base dn
BaseDN => 'ou=seas,o=csuh',
# search scope (one|sub)
SSCOPE => 'sub',
# The following is valid but would only be necessary if the
# anonymous user does NOT have permission to read from the LDAP tree
UserDN => "",
UserPw => "",
# in case you want to add always one filter to each ldap query, use
# this option. e. g. AlwaysFilter => '(mail=*)' or AlwaysFilter => '(objectclass=user)'
AlwaysFilter => "",
# Net::LDAP new params (if needed - for more info see perldoc Net::LDAP)
Params => {
    port => 389,
    version => 3,
},
},
# customer uniq id
CustomerKey => 'uid',
# customer #
CustomerID => 'mail',
CustomerUserListFields => ['uid', 'cn', 'mail'],
CustomerUserSearchFields => ['uid', 'cn', 'mail'],
CustomerUserSearchPrefix => "",
CustomerUserSearchSuffix => '*',
CustomerUserPostMasterSearchFields => ['mail'],
CustomerUserNameFields => ['givenname', 'sn'],
AdminSetPreferences => 0,
Map => [
    # note: Login, Email and CustomerID needed!
    # var, frontend, storage, shown, required, storage-type
    [ 'UserSalutation', 'Title', 'title', 1, 0, 'var' ],
    [ 'UserFirstname', 'Firstname', 'givenname', 1, 1, 'var' ],
    [ 'UserLastname', 'Lastname', 'sn', 1, 1, 'var' ],
    [ 'UserLogin', 'Username', 'uid', 1, 1, 'var' ],
    [ 'UserEmail', 'Email', 'mail', 1, 1, 'var' ],
    [ 'UserCustomerID', 'CustomerID', 'mail', 0, 1, 'var' ],
    [ 'UserPhone', 'Phone', 'telephonenumber', 1, 0, 'var' ],
    [ 'UserAddress', 'Address', 'postaladdress', 1, 0, 'var' ],
    [ 'UserComment', 'Comment', 'description', 1, 0, 'var' ],
],
};
[...]
```

If you want to customize your customer user information, add your new item (or remove it if not needed) to your CustomerUser MAP array in Kernel/Config.pm like:

```

# var, frontend, storage, shown, required, storage-type, http-link
[ 'UserOrganisation', 'Organisation', 'ou', 1, 0, 'var' ],
```

MultiCustomerIDs: It's also possible to have more the one customer id for one customer. E. g. one customer needs to see all ticket from other customers.

Just find a field for the customer ids in your ldap tree and put the customer ids in it (like "CustomerID1, CustomerID2, CustomerID3").

And add your new column to your CustomerUser MAP array in Kernel/Config.pm like:

```

# var, frontend, storage, shown, required, storage-type, http-link
[ 'UserCustomerIDs', 'CustomerIDs', 'second_customer_ids', 1, 0, 'var' ],
```

Of course you will need to put the customer ids in it by your ldap admin.

10.3. Customer Auth Backend

10.3.1. Database (default)

The default customer auth backend is the otrs database with your customer user which are created via the Admin-Interface or Customer-Interface (Create Account).

```
[Kernel/Config.pm]
# This is the auth. module against the otrs db
$Self->{'Customer::AuthModule'} = 'Kernel::System::CustomerAuth::DB';
[...]
```

10.3.2. LDAP

If there is a LDAP tree available with your customer users then you can use the customer LDAP auth backend. This module is just read only (means it can't write to your LDAP tree - this should just be possible for your tree manager) so you can't create customer user via the Admin- or Customer-Interface.

```
[Kernel/Config.pm]
# This is an example configuration for an LDAP auth. backend.
# (take care that Net::LDAP is installed!)
$Self->{'Customer::AuthModule'} = 'Kernel::System::CustomerAuth::LDAP';
$Self->{'Customer::AuthModule::LDAP::Host'} = 'ldap.example.com';
$Self->{'Customer::AuthModule::LDAP::BaseDN'} = 'dc=example,dc=com';
$Self->{'Customer::AuthModule::LDAP::UID'} = 'uid';

# Check if the user is allowed to auth in a posixGroup
# (e. g. user needs to be in a group xyz to use otrs)
# $Self->{'Customer::AuthModule::LDAP::GroupDN'} = 'cn=otrsallow,ou=posixGroups,dc=example,dc=com';
# $Self->{'Customer::AuthModule::LDAP::AccessAttr'} = 'memberUid';

# The following is valid but would only be necessary if the
# anonymous user do NOT have permission to read from the LDAP tree
$Self->{'Customer::AuthModule::LDAP::SearchUserDN'} = "";
$Self->{'Customer::AuthModule::LDAP::SearchUserPw'} = "";

# in case you want to add always one filter to each ldap query, use
# this option. e. g. AlwaysFilter => '(mail=*)' or AlwaysFilter => '(objectclass=user)'
# $Self->{'Customer::AuthModule::LDAP::AlwaysFilter'} = "";

# in case you want to add a suffix to each customer login name, then
# you can use this option. e. g. user just want to use user but
# in your ldap directory exists user@domain.
# $Self->{'Customer::AuthModule::LDAP::UserSuffix'} = '@domain.com';

# Net::LDAP new params (if needed - for more info see perldoc Net::LDAP)
# $Self->{'Customer::AuthModule::LDAP::Params'} = {
#     port => 389,
#     version => 3,
# };
[...]
```

10.3.3. HTTPBasicAuth

If you a "single sign on" solution for your customers, use http basic authentication (for all your systems) and use the HTTPBasicAuth module (no otrs login is required!).

```
[Kernel/Config.pm]
# This is the auth. module against $ENV{REMOTE_USER} (apache
# http-basic-auth)
$Self->{'Customer::AuthModule'} = 'Kernel::System::CustomerAuth::HTTPBasicAuth';
# Note:
# If you use this module, you should use as fallback the following
```



```
# config settings if user isn't login through apache ($ENV{REMOTE_USER})
$Self->{CustomerPanelLoginURL} = 'http://host/not-authorized-for-otrs.html';
$Self->{CustomerPanelLogoutURL} = 'http://host/thanks-for-using-otrs.html';
[...]
```

10.3.4. Radius

Authentication against a radius server.

```
[Kernel/Config.pm]
# This is example configuration to auth. agents against a radius server
$Self->{'Customer::AuthModule'} = 'Kernel::System::Auth::Radius';
$Self->{'Customer::AuthModule::Radius::Host'} = 'radiushost';
$Self->{'Customer::AuthModule::Radius::Password'} = 'radiussecret';
[...]
```

10.4. Customize Customer Self Registration

It's possible to customize the self registration of new customers via the customer.pl. So you can add more optional or required fields (like address, location, ...).

In our example we want to add a required "address" field.

10.4.1. Template

Edit your "Kernel/Output/HTML/Standard/CustomerCreateAccount.dtl" and add your wanted fields. We want an "address" field, so add:

```
[...]
<tr>
  <td>$Text{"Address"}: </td>
  <td><input type="text" name="Address" value="$Data{"UserAddress"}" size="35" maxlength="50"></td>
</tr>
[...]
```

10.4.2. Customer Map

You need also to add an "address" entry to you customer source map so add to your Kernel/Config.pm the "CustomerUser" (customer source map) from Kernel/Config/Defaults.pm and add the "address" option. Then the "CustomerUser" config option should look like that:

```
[Kernel/Config.pm]
$Self->{CustomerUser} = {
  Name => 'Internal Customers',
  Module => 'Kernel::System::CustomerUser::DB',
  Params => {
    Table => 'customer_user',
  },
  Map => [
    # note: Login, Email and CustomerID needed!
    # var, frontend, storage, shown, required, storage-type, link
    [ 'UserSalutation', 'Salutation', 'salutation', 1, 0, 'var' ],
    [ 'UserFirstname', 'Firstname', 'first_name', 1, 1, 'var' ],
    [ 'UserLastname', 'Lastname', 'last_name', 1, 1, 'var' ],
    # our new option
    [ 'UserAddress', 'Address', 'address', 1, 1, 'var' ],
    [ 'UserLogin', 'Username', 'login', 1, 1, 'var' ],
    [ 'UserPassword', 'Password', 'pw', 0, 1, 'var' ],
    [ 'UserEmail', 'Email', 'email', 1, 1, 'var' ],
  ]
}
```

```
[ 'UserCustomerID', 'CustomerID', 'customer_id', 1, 1, 'var' ],
[ 'UserComment', 'Phone', 'comment', 1, 0, 'var' ],
[ 'ValidID', 'Valid', 'valid_id', 0, 1, 'int' ],
],
Key => 'login',
CustomerID => 'customer_id',
};
[...]
```

10.4.3. Modify Customer Table

We also need to add a new column to our "customer_user" table.

```
mysql> ALTER TABLE customer_user ADD address VARCHAR (200);
Query OK, 0 rows affected (0.21 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql>
```

That's all, restart your webserver (if you use mod_perl), go to your <http://otrs.example.com/otrs/customer.pl> page and test it.

Chapter 11. LDAP Integration

OTRS is capable of using an LDAP directory as source in several places. The following HowTo describes the use of an Active Directory server together with OTRS. The example may serve for the basic understanding of binding against an LDAP server, too.

11.1. Active Directory

This section will explain how to integrate OTRS with Microsoft's Active Directory using its LDAP features to provide authentication for both helpdesk staff and users, as well as information for the customer user backend.

We make the assumption that OTRS is running on a Linux server and that you know how to work with Microsoft Active Directory and its admin tools.

Naming of particular products or brands should not be seen as endorsements.

You are strongly recommended to take a backup of your system before major installation and backups at regular intervals.

11.1.1. Preparations

The only non standard requirement for the OTRS server is that the Perl module Net::LDAP is installed. This module can be downloaded from <http://ldap.perl.org/>

It is also a good idea to first create a user in OTRS using the standard DB authentication mechanism. If you configure LDAP/AD authentication before you have created any users, you won't be able to log on. Create a user that you give admin rights to and which corresponds to the username listed in Active Directory.

In order to use the LDAP facility of OTRS against Windows Active Directory, one would have to have at least one Active Directory (hereby referred to as AD) Controller. The AD controller must also be a Global Catalog server in order to allow authentication against the AD tree.

One can use Active Directory running on both Windows 2000 and Windows 2003.

Details needed during configuration of OTRS and LDAP.

- Hostname of your AD server
- Base DN of your Active Directory tree
- Username and password that will handle LDAP lookups (AD does not allow anonymous LDAP lookups)

11.1.2. Configuration

11.1.2.1. Configuration of Active Directory

Create a new user in AD using "AD Users and Computers". The user will only need to be a normal user with "Domain User" membership. If a domain policy exists which enforces a password change on a regular basis, configure this users Account settings to "Password Never Expires".

11.1.2.2. OTRS LDAP options

OTRS provides three different ways of using LDAP.

- Authenticate Agent users
- Authenticate Customer users
- Get customer User information

The two customer modules are best used together, or a lot of manual work is needed. This howto will only cover the two used together.

11.1.3. Agent Authentication

Use your favorite editor to edit the Config.pm file of your OTRS installation. This file is usually located at <OTRS_HOME>/Kernel/Config.pm.

Start by adding:

Example 11-1. Kernel/Config.pm - AuthModule

```
$Self->{'AuthModule'} = 'Kernel::System::Auth::LDAP';
```

This will change the authentication module and use LDAP.

Next, add the following three lines:

Example 11-2. Kernel/Config.pm - AuthModule::LDAP settings

```
$Self->{'AuthModule::LDAP::Host'} = '[AD_server]';
$Self->{'AuthModule::LDAP::BaseDN'} = '[base_dn]';
$Self->{'AuthModule::LDAP::UID'} = 'sAMAccountName';
```

Replace [AD_server] with the hostname or IP address of your AD domain controller.. i.e.: w2kad.example.com.

Replace [base_dn] with the Distinguish Name of your AD forest. This follows the syntax of "dc=example, dc=com".

An easy way to find the [base_dn] is by looking at the name which "AD Users and Computers" shows when you view the AD tree structure. It will show the domainname as "example.com" or "subdomain.example.com" according to how your AD forest was first set up. To transfer that to a Base DN syntax, the above examples will become "dc=example, dc=com" and "dc=subdomain, dc=example, dc=com".

If you still can't find your base DN of your AD forest, you can use tools like LDIFDE (found on your AD controller) or ADSI Edit (found on the W2K Support Kit CD/Resource Kit CD).

As Active Directory uses a different account object than a normal LDAP tree, we have to use specify "sAMAccountName" for the UID object throughout the configuration.

Next you will need to specify the login account used to communicate with the AD. This is done by configuring the following settings:

Example 11-3. Kernel/Config.pm - AuthModule::LDAP::SearchUser settings

```
$Self->{'AuthModule::LDAP::SearchUserDN'} = '[user_dn]';
$Self->{'AuthModule::LDAP::SearchUserPw'} = '[password]';
```

Replace [user_dn] with the full DN of your selected AD/OTRS config user. Follow standard LDAP syntax. The full DN will differ depending on which container you have added the user using "AD Users and Computers". If you placed it in the existing "Users" container, the syntax will be "cn=FirstName Lastname, cn=Users, [base_dn]". If one is unsure about the complete DN for this user, run LDIFDE.EXE on your AD controller and search for the user.

Replace [password] with the password you selected for this account.

11.1.4. Customer Authentication

The configuration of the authentication module for customers (end users) is specified by the following parameters:

Example 11-4. Kernel/Config.pm - Customer::AuthModule LDAP settings

```
$Self->{'Customer::AuthModule'} = 'Kernel::System::CustomerAuth::LDAP';
$Self->{'Customer::AuthModule::LDAP::Host'} = '[AD_server]';
$Self->{'Customer::AuthModule::LDAP::BaseDN'} = '[base_dn]';
$Self->{'Customer::AuthModule::LDAP::UID'} = 'sAMAccountName';
$Self->{'Customer::AuthModule::LDAP::SearchUserDN'} = '[user_dn]';
$Self->{'Customer::AuthModule::LDAP::SearchUserPw'} = '[password]';
```

Replace [AD_server] with the full hostname or IP address of your AD domain controller.. i.e.: w2kad.example.com.

Replace [base_dn] with the DN of where your customer users are location in the AD tree. If all customer users are located under a "People" container, specify that as the base_dn for Customer Auth, ie. "ou=People, dc=example, dc=com". If you have users in multiple containers, you may want to add multiple LDAP sources. Feel free to use \$Self->{CustomerUser1} throughout \$Self->{CustomerUser10}.

Replace [user_dn] with your selected OTRS/AD user and [password] with its corresponding password.

11.1.5. Get Customer User Information

The customer user information configuration consists of a configuration setting similar to this:

Example 11-5. Kernel/Config.pm - CustomerUser::LDAP settings

```
$Self->{CustomerUser} = {
  Module => 'Kernel::System::CustomerUser::LDAP',
  Params => {
    Host => '[AD_server]',
    BaseDN => '[base_dn]',
    SSCOPE => 'sub',
    UserDN => '[user_dn]',
    UserPw => '[password]',
  },
  CustomerKey => 'sAMAccountName',
  CustomerID => '[customer_id]',
  CustomerUserListFields => ['sAMAccountName', 'cn', 'mail'],
  CustomerUserSearchFields => ['sAMAccountName', 'cn', 'mail'],
  CustomerUserPostMasterSearchFields => ['mail'],
  CustomerUserNameFields => ['givenname', 'sn'],
  Map => [
    # note: Login, Email and CustomerID needed!
    # var, frontend, storage, shown, required, storage-type
    #   [ 'UserSalutation', 'Title', 'title', 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' ],
    #   [ 'UserAddress', 'Address', 'postaladdress', 1, 0, 'var' ],
    #   [ 'UserComment', 'Comment', 'description', 1, 0, 'var' ],
  ],
};
```

Replace [AD_server] with the name or IP address of your AD controller.

Replace [base_dn] with the location of your users using LDAP syntax, ie. "ou=People, dc=example, dc=com".

Replace [user_dn] and [password] as usual.

Replace [customer_id] with the id you want to show your users as: A usual selection here is 'mail' or 'o'.

CustomerUserListFields can be changed to specify how you want the Customers listed when creating/working tickets. With the default setting above, the customer will be listed as: "username Lastname email@address"

If you want to only list email addresses, just remove the other two entries and leave "'mail'". You can also add other fields to this list if you know the LDAP attribute name of the fields.

CustomerUserSearchFields has the same options as CustomerUserListFields. When creating a new ticket and using the "Search Customer" function, the listed fields will be searched according to your criteria. Add the attribute 'o' here to allow entering an organization's name to list all customer user from that organization, provided the information is present in LDAP/AD.

11.1.6. Tips & Tricks

11.1.6.1. Control who's let in

Prevent customer users and agents from logging on to the front-end when you have a large AD structure where agents and end users are located in the same OU's. You do so by creating a posixGroup somewhere and fill it with either the UID or the DN of the wanted members.

Example 11-6. Kernel/Config.pm - GroupDN for Agents

```
$Self->{'AuthModule::LDAP::GroupDN'} = 'cn=otrsallow_A, ou=posixGroups, dc=example, dc=com';
$Self->{'AuthModule::LDAP::AccessAttr'} = 'memberUid';
##$Self->{'AuthModule::LDAP::UserAttr'} = 'UID';
$Self->{'AuthModule::LDAP::UserAttr'} = 'DN';
```

Example 11-7. Kernel/Config.pm - GroupDN for Customers

```
$Self->{'Customer::AuthModule::LDAP::GroupDN'} = 'cn=otrsallow_C, ou=posixGroups, dc=example, dc=com';
$Self->{'Customer::AuthModule::LDAP::AccessAttr'} = 'memberUid';
#$Self->{'Customer::AuthModule::LDAP::UserAttr'} = 'UID';
$Self->{'Customer::AuthModule::LDAP::UserAttr'} = 'DN';
```

11.1.6.2. Config Example

This is a complete example of how OTRS can be configured to authenticate both agents and customers, as well as provide info on customers via LDAP. The database settings are maintained.

Settings used:

- Windows AD Controller: w2kad.example.com
- Windows OTRS Lookup User: otrs (Full Name: OTRS Service)
- Windows OTRS user Password: secret
- Windows OTRS Lookup user DN: cn=OTRS Service, ou=People, dc=example, dc=com
- Windows Domain: example.com
- Windows LDAP Base DN: dc=example, dc=com
- Windows Users Container: People
- Windows Users LDAP DN: ou=People, dc=example, dc=com
- Windows Agents LDAP DN: ou=People, dc=example, dc=com

Example 11-8. Kernel/Config.pm - AuthModule LDAP settings

```
#-----
# Start of Example Config
$Self->{'AuthModule'} = 'Kernel::System::Auth::LDAP';
$Self->{'AuthModule::LDAP::Host'} = 'w2kad.example.com';
$Self->{'AuthModule::LDAP::BaseDN'} = 'dc=example, dc=com';
$Self->{'AuthModule::LDAP::UID'} = 'sAMAccountName';

$Self->{'AuthModule::LDAP::SearchUserDN'} = '';
$Self->{'AuthModule::LDAP::SearchUserPw'} = 'secret';

# This is an example configuration for an LDAP auth. backend.
# (take care that Net::LDAP is installed!)
$Self->{'Customer::AuthModule'} = 'Kernel::System::CustomerAuth::LDAP';
$Self->{'Customer::AuthModule::LDAP::Host'} = 'w2kad.example.com';
$Self->{'Customer::AuthModule::LDAP::BaseDN'} = 'ou=People, dc=example, dc=com';
$Self->{'Customer::AuthModule::LDAP::UID'} = 'sAMAccountName';

# The following is valid but would only be necessary if the
# anonymous user do NOT have permission to read from the LDAP tree
$Self->{'Customer::AuthModule::LDAP::SearchUserDN'} = 'cn=OTRS Service, ou=People, dc=example, dc=com';
$Self->{'Customer::AuthModule::LDAP::SearchUserPw'} = 'secret';

# CustomerUser
# (customer user database backend and settings)
$Self->{'CustomerUser'} = {
    Name => 'Datenbank',
    Module => 'Kernel::System::CustomerUser::DB',
    Params => { Table => 'customer_user',
        # to use an external database
        DSN => 'DBI:odbc:yourdsn',
        DSN => 'DBI:mysql:database=customerdb:host=customerdbhost',
        User => '', Password => '',
    },
    # customer uniq id
    CustomerKey => 'login',
    CustomerID => 'customer_id',
    CustomerValid => 'valid_id',
    CustomerUserListFields => ['first_name', 'last_name', 'email'],
```

```

#       CustomerUserListFields => ['login', 'first_name', 'last_name', 'customer_id', 'email'],
       CustomerUserSearchFields => ['login', 'last_name', 'customer_id'],
       CustomerUserSearchPrefix => "",
       CustomerUserSearchSuffix => '*',
       CustomerUserSearchListLimit => 250,
       CustomerUserPostMasterSearchFields => ['email'],
       CustomerUserNameFields => ['salutation', 'first_name', 'last_name'],
#       ReadOnly => 1,
       Map => [
           # note: Login, Email and CustomerID needed!
           # var, frontend, storage, shown, required, storage-type, http-link
           [ 'UserSalutation', 'Salutation', 'salutation', 1, 0, 'var' ],
           [ 'UserFirstname', 'Firstname', 'first_name', 1, 1, 'var' ],
           [ 'UserLastname', 'Lastname', 'last_name', 1, 1, 'var' ],
           [ 'UserLogin', 'Login', 'login', 1, 1, 'var' ],
           [ 'UserPassword', 'Password', 'pw', 0, 1, 'var' ],
           [ 'UserEmail', 'Email', 'email', 0, 1, 'var' ],
           [ 'UserCustomerID', 'CustomerID', 'customer_id', 0, 1, 'var' ],
           [ 'UserComment', 'Comment', 'comments', 1, 0, 'var' ],
           [ 'ValidID', 'Valid', 'valid_id', 0, 1, 'int' ],
       ],
    ];

# CustomerUser1
# (customer user ldap backend and settings)
$Self->{CustomerUser1} = {
    Module => 'Kernel::System::CustomerUser::LDAP',
    Params => {
        # ldap host
        Host => 'w2kad.example.com',
        # ldap base dn
        BaseDN => 'ou=People, dc=example, dc=com',
        # search scope (one|sub)
        SSCOPE => 'sub',
        # The following is valid but would only be necessary if the
        # anonymous user does NOT have permission to read from the LDAP tree
        UserDN => 'cn=OTRS Service, ou=People, dc=example, dc=com',
        UserPw => 'secret',
        AlwaysFilter => "",
        SourceCharset => 'utf-8',
        DestCharset => 'iso-8859-1',
    },
    # customer uniq id
    CustomerKey => 'sAMAccountName',
    # customer #
    CustomerID => 'mail',
    CustomerUserListFields => ['sAMAccountName', 'cn', 'mail'],
    CustomerUserSearchFields => ['sAMAccountName', 'cn', 'mail'],
    CustomerUserSearchPrefix => "",
    CustomerUserSearchSuffix => '*',
    CustomerUserSearchListLimit => 250,
    CustomerUserPostMasterSearchFields => ['mail'],
    CustomerUserNameFields => ['givenname', 'sn'],
    Map => [
        # note: Login, Email and CustomerID needed!
        # var, frontend, storage, shown, required, storage-type
        [ 'UserSalutation', 'Title', 'title', 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' ],
        [ 'UserAddress', 'Address', 'postaladdress', 1, 0, 'var' ],
        [ 'UserComment', 'Comment', 'description', 1, 0, 'var' ],
    ],
};

# End example config
#-----

```


Chapter 12. Permissions

This chapter will show you more details about OTRS permission.

12.1. Group/User/Queue Permission

You will be able to handle different groups of users with different permissions (e. g. only read ticket in a queue or one group should not have ro/rw access to a queue).

Group permissions are "ro" (read only access to the ticket), "move_into" (permissions to move tickets into this queue), "create" (permissions to create tickets in this queue), "owner" (permissions to change the ticket owner), "priority" (permissions to change the ticket priority) and "rw" (full read and write access to the ticket).

You can put users to groups and for each queue one group (user-group-queue).

Example: If you want only read ticket in a queue or one group should not have ro/rw access to a queue) you need to:

- a) create otrs-groups
- b) put the groups of users into your otrs-groups
(you have a ro/rw option)
- c) split/sort your otrs-queue to the otrs-groups

There is a config option if 'ro' queues should be shown in QueueView.

```
Kernel/Config.pm
[...]
# QueueViewAllPossibleTickets
# (show all ro and rw queues - not just rw queues)
$Self->{QueueViewAllPossibleTickets} = 0;
[...]
```

12.2. Module Permission - Agent/Admin Interface

It's possible to grant permissions to a module in Kernel/Modules/*.pm. For example a group of users should be able to edit responses (modular default answers). Normally you need to be in the 'admin' group to do so.

How it works:

- a) create a new otrs-group named 'responses'
- b) put the group of users rw into this otrs-group
- c) add to Kernel/Config.pm

```
[...]
$Self->{'Module::Permission'}->{'AdminResponse'} = 'responses';
[...]
```
- d) add a link to the Agent Interface e. g. in Kernel/Output/HTML/*AgentNavigationBar.dtl

```
[...]
<a href="$Env{'Baselink'}Action=AdminResponse">Response</a>
[...]
```
- e) restart the webserver if you use mod_perl

After this all users in group 'responses' are able to access the AdminResponse module and to edit the responses.

It's also possible to add more than one group (by perl array):

```
[Kernel/Config.pm]
$Self->{'Module::Permission'}->{'AdminResponse'} = ['admin', 'responses'];
[...]
```


Chapter 13. Config File

OTRS has many config options. There are two config files. Kernel/Config.pm and Kernel/Config/Defaults.pm.

Kernel/Config/Defaults.pm is the default config file which should not be changed. You will find all possible config options in this file. Is quite simple to read.

Kernel/Config.pm.dist is the example file for Kernel/Config.pm (custom config file) which must be copied (cp Kernel/Config.pm.dist Kernel/Config.pm).

How it works! The Kernel/Config/Defaults.pm (default config settings) is loaded at first, then the Kernel/Config.pm (custom config file). So if you want to change the default config settings, copy (copy and paste) the needed options from Kernel/Config/Defaults.pm into Kernel/Config.pm and change the values like you want.

Now we will describe some config features in this chapter (of course not all!).

13.1. 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 13-1. Kernel/Config.pm - TicketHook

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

Note: Don't use only 2-character like 'TN', because MS Outlook is replacing "TN: 54968797" with "RE: 54968797" (any 2-character with :) and then you will run in trouble.

13.2. FQDN

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

Example 13-2. Kernel/Config.pm - FQDN

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

13.3. utf-8

OTRS is able to store and work with unicode utf-8. Just set the default charset to utf-8 and OTRS works in force utf-8 mode (frontend and backend).

Example 13-3. Kernel/Config.pm - utf-8

```
[...]
# default charset
# (default frontend charset - "utf-8" is a multi charset for all possible
# charsets - e. g. "iso-8859-1" is also possible for single charset)
# [default: iso-8859-1]
# $Self->{DefaultCharset} = 'iso-8859-1';
$Self->{DefaultCharset} = 'utf-8';
[...]
```

13.4. Log

The OTRS log method.

Example 13-4. Kernel/Config.pm - LogModule

```
[...]
# -----#
# log settings                                     #
# -----#

# LogModule
# (log backend module)
$Self->{LogModule} = 'Kernel::System::Log::SysLog';
# $Self->{LogModule} = 'Kernel::System::Log::File';

# param for LogModule Kernel::System::Log::File (required!)
# $Self->{'LogModule::LogFile'} = '/tmp/otrs.log';
# param if the date (yyyy-mm) should be added as suffix to
# logfile [0|1]
# $Self->{'LogModule::LogFile::Date'} = 0;
[...]
```

13.5. Check Email Options

There are two options to check the used emails in the OTRS frontend.

Example 13-5. Kernel/Config.pm - CheckEmailAddresses

```
[...]
# CheckEmailAddresses
# (Check syntax of used email addresses)
$Self->{CheckEmailAddresses} = 1;
[...]
```

Example 13-6. Kernel/Config.pm - CheckMXRecord

```
[...]
# CheckMXRecord
# (Check mx records of used email addresses)
$Self->{CheckMXRecord} = 1;
[...]
```

Disable this if you use OTRS in a network without external DNS lookup. Or you can't send emails via the agent interface.

13.6. Max. Postmaster email

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

Example 13-7. Kernel/Config.pm - PostmasterMaxEmails

```
[...]
# PostmasterMaxEmails
# (Max post master daemon email to own email-address a day.
# Loop-Protection!) [default: 40]
$Self->{PostmasterMaxEmails} = 40;
[...]
```

13.7. Ticket number format

You can choose between four different OTRS formats. AutoIncrement is default.

Example 13-8. Kernel/Config.pm - TicketNumberGenerator

```
[...]
# TicketNumberGenerator
#
# Kernel::System::Ticket::Number::AutoIncrement (default) --> auto increment
#   ticket numbers "SystemID.Counter" like 1010138 and 1010139.
#
# Kernel::System::Ticket::Number::Date --> ticket numbers with date
#   "Year.Month.Day.SystemID.Counter" like 200206231010138 and 200206231010139.
#
# Kernel::System::Ticket::Number::DateChecksum --> ticket numbers with date and
#   check sum the counter will be rotated daily (my favorite)
#   "Year.Month.Day.SystemID.Counter.CheckSum" like 2002070110101520 and 2002070110101535.
#
# Kernel::System::Ticket::Number::Random -->
#   random ticket numbers "SystemID.Random" like 100057866352 and 103745394596.

$Self->{TicketNumberGenerator} = 'Kernel::System::Ticket::Number::AutoIncrement';
[...]
```

You can also create a new (your own) module. The module needs just two functions (the whole abstraction). "CreateTicketNr()" to generate a new ticket number and "GetTNByString()" to get a ticket number by string.

A nice example is the Kernel::System::Ticket::Number::Random

(<http://otrs.org/cgi-bin/cvsweb.cgi/otrs/Kernel/System/Ticket/Number/Random.pm>) module.

13.8. Database settings

Example 13-9. 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}";
[...]
```

13.9. ASP (Application Service Provider) options

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

Example 13-10. Kernel/Config.pm - ChangeOwnerToEveryone

```
[...]
# ChangeOwnerToEveryone -> useful for ASP
# (Possible to change owner of ticket ot everyone) [0|1]
$Self->{ChangeOwnerToEveryone} = 0;
[...]
```

13.10. Custom Queue

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

Example 13-11. Kernel/Config.pm - Custom Queue

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

13.11. Ticket Free Text

It's possible to set tags to tickets like Key:Product and Value:Pizza. If a ticket free text is set, then it will be shown in the zoom and queue view. It's possible to set up to 8 Key:Value Tags for each ticket. Of course, it's possible to use it in ticket search or generic agent.

If you want, set default values for this. If you don't set default values, the the agent can set this tags free.

Example 13-12. Kernel/Config.pm - TicketFree(Key|Text)(1..8)

```
[...]
# ----- #
# TicketFreeText                               #
# (define free text options for frontend)       #
# ----- #
$Self->{"TicketFreeKey1"} = {
    " => '- ',
    'Product' => 'Product',
};
$Self->{"TicketFreeText1"} = {
    " => '- ',
    'PC' => 'PC',
    'Notebook' => 'Notebook',
    'LCD' => 'LCD',
    'Phone' => 'Phone',
};
$Self->{"TicketFreeKey2"} = {
    " => '- ',
    'Support' => 'Support',
};
[...]
```

13.12. QueueListType

Do configure the queue selection in your system. Options are 'tree' (which is default) and 'list'.

Tree:

```
QueueA
  Queue1
  Queue2
  Queue3
QueueB
  Queue1
```

```

Queue-a
Queue-b
Queue-c
Queue-d
Queue2
Queue-a
Queue-b
QueueC
Queue1
Queue2

```

List:

```

QueueA
QueueA::Queue1
QueueA::Queue2
QueueA::Queue3
QueueB
QueueB::Queue1
QueueB::Queue2

```

Example 13-13. Kernel/Config.pm - QueueListType

```

[...]
# QueueListType
# (show queues in system as tree or as list) [tree|list]
$self->{QueueListType} = 'tree';
[...]

```

13.13. Customer Panel

There are config option for the customer panel (<http://host/otrs/customer.pl>).

Example 13-14. Kernel/Config.pm - Customer Panel

```

[...]
# CustomerGroupSupport (0 = compat. to OTRS 1.1 or lower)
# (if this is 1, then you need to set the group <-> customer user
# relations (ro/rw)! http://host/otrs/index.pl?Action=AdminCustomerUserGroup
# otherway, each user is ro/rw in each group!)
$self->{CustomerGroupSupport} = 0;

# CustomerGroupAlwaysGroups
# (if CustomerGroupSupport is true and you don't want to manage
# each customer user for this groups, then put the groups
# for all customer user in there)
$self->{CustomerGroupAlwaysGroups} = ['users', 'info'];

# ----- #
# login and logout settings
# ----- #
# CustomerPanelLoginURL
# (If this is anything other than "", then it is assumed to be the
# URL of an alternate login screen which will be used in place of
# the default one.)
$self->{CustomerPanelLoginURL} = "";
# $self->{CustomerPanelLoginURL} = 'http://host.example.com/cgi-bin/login.pl';

# CustomerPanelLogoutURL
# (If this is anything other than "", it is assumed to be the URL
# of an alternate logout page which users will be sent to when they
# logout.)
$self->{CustomerPanelLogoutURL} = "";
# $self->{CustomerPanelLogoutURL} = 'http://host.example.com/cgi-bin/login.pl';

```

```

# CustomerPanelLostPassword
# (use lost password feature)
$Self->{CustomerPanelLostPassword} = 1;

# CustomerPanelCreateAccount
# (use create customer account self feature)
$Self->{CustomerPanelCreateAccount} = 1;

# CustomerPriority
# (If the customer can set the ticket priority)
$Self->{CustomerPriority} = 1;
# CustomerDefaultPriority
# (default priority of new customer tickets)
$Self->{CustomerDefaultPriority} = '3 normal';

# CustomerNextScreenAfterNewTicket
# $Self->{CustomerNextScreenAfterNewTicket} = 'CustomerZoom';
$Self->{CustomerNextScreenAfterNewTicket} = 'CustomerTicketOverView';

# CustomerPanelSelectionType
# (To: selection type. Queue => show all queues, SystemAddress => show all system
# addresses;) [Queue|SystemAddress]
$Self->{CustomerPanelSelectionType} = 'Queue';
# $Self->{CustomerPanelSelectionType} = 'SystemAddress';

# CustomerPanelSelectionString
# (String for To: selection.)
# use this for CustomerPanelSelectionType = Queue
# $Self->{CustomerPanelSelectionString} = 'Queue: <Queue> - <QueueComment>';
$Self->{CustomerPanelSelectionString} = '<Queue>';
# use this for CustomerPanelSelectionType = SystemAddress
# $Self->{CustomerPanelSelectionString} = '<Realname> <<Email>> - Queue: <Queue> - <QueueComment>';

# CustomerPanelOwnSelection
# (If this is in use, "just this selection is valid" for the CustomMessage.)
# $Self->{CustomerPanelOwnSelection} = {
#     # QueueID => String
#     '1' => 'First Queue!',
#     '2' => 'Second Queue!',
# };

# ----- #
# notification email about new password #
# ----- #
$Self->{CustomerPanelSubjectLostPassword} = 'New OTRS Password!';
$Self->{CustomerPanelBodyLostPassword} = "
Hi <OTRS_USERFIRSTNAME>,

you or someone impersonating you has requested to change your OTRS
password.

New Password: <OTRS_NEWPW>

<OTRS_CONFIG_HttpType>://<OTRS_CONFIG_FQDN>/<OTRS_CONFIG_ScriptAlias>customer.pl

Your OTRS Notification Master
";
# ----- #
# notification email about new account #
# ----- #
$Self->{CustomerPanelSubjectNewAccount} = 'New OTRS Account!';
$Self->{CustomerPanelBodyNewAccount} = "
Hi <OTRS_USERFIRSTNAME>,

you or someone impersonating you has created a new OTRS account for
you (<OTRS_USERFIRSTNAME> <OTRS_USERLASTNAME>).

Login: <OTRS_USERLOGIN>
Password: <OTRS_USERPASSWORD>

<OTRS_CONFIG_HttpType>://<OTRS_CONFIG_FQDN>/<OTRS_CONFIG_ScriptAlias>customer.pl

```



```

Your OTRS Notification Master
";

[...]

```

13.14. Session management

The OTRS session management.

Example 13-15. Kernel/Config.pm - Session management

```

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

# SessionModule (replace old SessionDriver!!!)
# (How should be the session-data stored?
# Advantage of DB is that you can split the
# Frontendserver from the DB-Server. fs is faster.)
$Self->{SessionModule} = 'Kernel::System::AuthSession::DB';
# $Self->{SessionModule} = 'Kernel::System::AuthSession::FS';
# $Self->{SessionModule} = 'Kernel::System::AuthSession::IPC';

# 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
# invalid 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;

# SessionUseCookie
# (Should the session management use html cookies?
# It's more comfortable to send links ==> if you have a valid
# session, you don't have to login again.) [0|1]
# Note: If the client browser disabled html cookies, the system
# will work as usual, append SessionID to links!
$Self->{SessionUseCookie} = 1;

# SessionUseCookieAfterBrowserClose
# (store cookies in browser after closing a browser) [0|1]
$Self->{SessionUseCookieAfterBrowserClose} = 0;
[...]

```

13.15. URL login and logout settings

Example 13-16. Kernel/Config.pm - URL login and logout settings

```
[...]
# -----#
# URL login and logout settings                                #
# -----#

# LoginURL
# (If this is anything other than "", then it is assumed to be the
# URL of an alternate login screen which will be used in place of
# the default one.)
$Self->{LoginURL} = "";
#   $Self->{LoginURL} = 'http://host.example.com/cgi-bin/login.pl';

# LogoutURL
# (If this is anything other than "", it is assumed to be the URL
# of an alternate logout page which users will be sent to when they
# logout.)
$Self->{LogoutURL} = "";
#   $Self->{LogoutURL} = 'http://host.example.com/cgi-bin/login.pl';
[...]
```

13.16. agent area default settings

Example 13-17. 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'"];

# ViewableStateType
# (see http://yourhost/otrs/index.pl?Action=AdminState -> StateType)
$Self->{ViewableStateType} = ['new', 'open', 'pending'];

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

13.17. SpellChecker

The OTRS is able to use a spell checker like `ispell` (<http://fmg-www.cs.ucla.edu/fmg-members/geoff/ispell.html>) or `aspell` (<http://aspell.sourceforge.net/>).

Example 13-18. Kernel/Config.pm - SpellChecker

```

[...]
```

```

# SpellChecker
# (If ispell or aspell is available, then we will provide a spelling
# checker)
#
$Self->{SpellChecker} = "";
$Self->{SpellChecker} = '/usr/bin/ispell';
$Self->{SpellCheckerDictDefault} = 'english';

# SpellCheckerIgnore
# (A list of ignored words.)
$Self->{SpellCheckerIgnore} = ['www', 'webmail', 'https', 'http', 'html'];
[...]
```

Possible agent dictionaries.

Example 13-19. Kernel/Config.pm - SpellChecker - Agent Preferences

```

[...]
```

```

$Self->{PreferencesGroups}->{SpellDict} = {
    Colum => 'Other Options',
    Label => 'Spelling Dictionary',
    Desc => 'Select your default spelling dictionary.',
    Type => 'Generic',
    Data => {
        # installed dict catalog (check your installed catalogues,
        # e. g. deutsch ==> german!)
        # dict => frontend
        'english' => 'English',
        'deutsch' => 'Deutsch',
    }
}
```

```

    },
    PrefKey => 'UserSpellDict',
    Activ => 1,
  };
[ ...]

```

Maybe you want that the answer to the customer must be spell checked.

Example 13-20. Kernel/Config.pm - SpellChecker - Must be spell checked

```

# FrontendNeedSpellCheck
# (compose message must be spell checked)
$Self->{FrontendNeedSpellCheck} = 0;

```

13.18. Response Format (compose answer)

The OTRS is able to configure the format of std. responses by composing answers in the agent interface.

Example 13-21. Kernel/Config.pm - ResponseFormat (unix_style)

```

[ ...]
# unix_style (default)
$Self->{ResponseFormat} = '$Data{"Salutation"}
$Data{"OrigFrom"} $Text{"wrote"}:
$Data{"Body"}

$Data{"StdResponse"}

$Data{"Signature"}
';
[ ...]

```

If you want to change it to ms-style use the following

Example 13-22. Kernel/Config.pm - ResponseFormat (ms_style)

```

[ ...]
# ms_style
$Self->{ResponseFormat} = '$Data{"Salutation"}

$Data{"StdResponse"}

$Data{"Signature"}

$Data{"OrigFrom"} $Text{"wrote"}:
$Data{"Body"}

';
[ ...]

```

Chapter 14. Cronjobs

OTRS needs a few system cronjobs to unlock tickets with lock timeouts, send reminder notifications and some other stuff.

14.1. How it works - setup

There are several OTRS default cronjobs in `$OTRS_HOME/var/cron/*.dist`. Make copies of all of the default cronjobs:

```
cd var/cron
for foo in *.dist; do cp $foo `basename $foo .dist`; done
```

Or if you are installing OTRS on a Windows system:

```
cd var/cron
copy *.dist *
```

Use `$OTRS_HOME/bin/Cron.sh {start|stop|restart}` to start or stop this cronjobs from `$OTRS_HOME/var/cron/*` (.dist will be ignored).

Note: Install this cronjobs as OTRS user.

14.2. Default cronjobs

14.2.1. aaa_base

Defined the email address of the OTRS admin which receive all cron error reports.

```
MAILTO="root@localhost"
```

14.2.2. pending_jobs

Processed every hour all reached "pending auto" tickets.

```
45 * * * * $HOME/bin/PendingJobs.pl >> /dev/null
```

14.2.3. postmaster

Cleanup at 00:10 of all unprocessed emails which are received via procmail.

```
10 0 * * * $HOME/bin/otrs.cleanup >> /dev/null
```

14.2.4. postmaster_pop3

Fetch emails via PostMasterPOP3.pl every 10 minutes.

```
*/10 * * * * $HOME/bin/PostMasterPOP3.pl >> /dev/null
```

14.2.5. unlock

Unlock every hour old locked tickets.

```
35 * * * * $HOME/bin/UnlockTickets.pl --timeout >> /dev/null
```

14.2.6. session

Delete every six hours old session ids from database, filesystem or RAM.

```
55 */6 * * * * $HOME/bin/DeleteSessionIDs.pl --expired >> /dev/null
```

14.2.7. rebuild_ticket_index

Rebuild of ticket index every day (needed for Kernel::System::Ticket::IndexAccelerator::StaticDB - see also chapter "Performance Tuning").

```
01 01 * * * * $HOME/bin/RebuildTicketIndex.pl >> /dev/null
```

14.2.8. generic_agent-database

Execute GenericAgent.pl with database jobs every 10 minutes (see also chapter "Generic-Agent").

```
*/10 * * * * $HOME/bin/GenericAgent.pl -c db >> /dev/null
```

14.2.9. generic_agent

Execute GenericAgent.pl with Kernel/Config/GenericAgent.pm config file every 20 minutes (see also chapter "Generic-Agent").

```
*/20 * * * * $HOME/bin/GenericAgent.pl >> /dev/null
```

Chapter 15. Generic-Agent

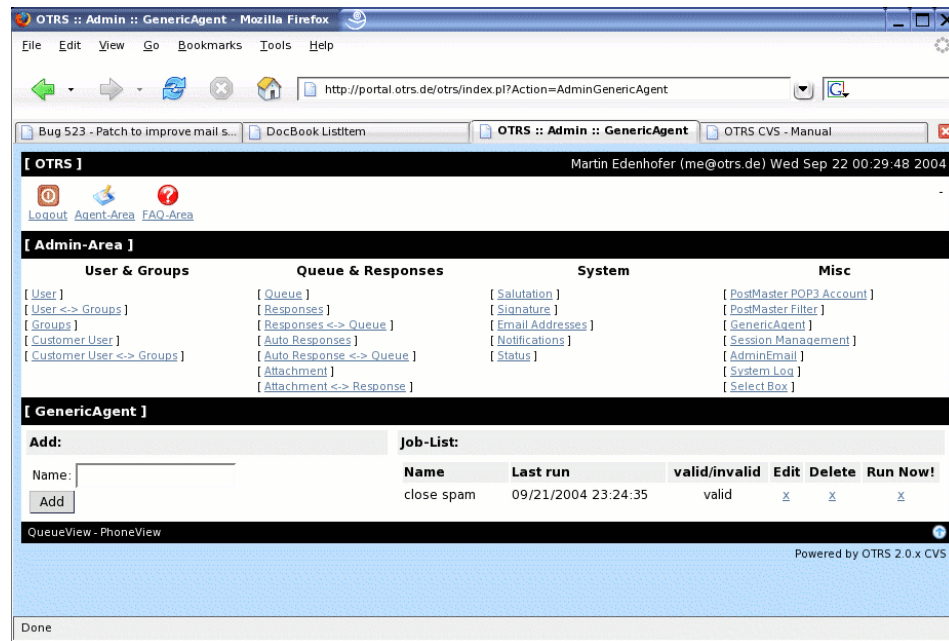
The Generic-Agent (bin/GenericAgent.pl) is a command line program (executed by cron) wich can do some actions (like move, add note, set state, set owner) on tickets.

Note: It's also possible to write own generic agent modules to do some actions (see chapter "Writing OTRS Modules" for examples).

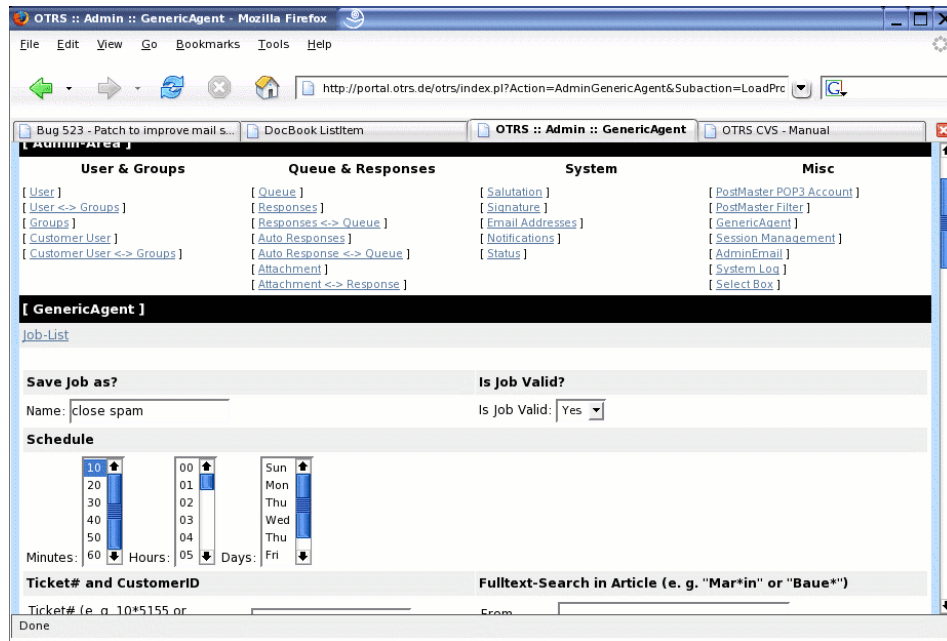
15.1. Web-Interface (preferred)

OTRS 1.3 or higher comes with an web interface to configure jobs for the generic agent.

Admin - GenericAgent Job-Overview



Admin - GenericAgent Job-Edit



15.2. Config File (optional)

Kernel/Config/GenericAgent.pm is the default config file which must be copied (cp Kernel/Config/GenericAgent.pm.dist Kernel/Config/GenericAgent.pm).

It's also possible to use different config files. For example, copy the "cp Kernel/Config/GenericAgent.pm.examples Kernel/Config/GenericAgentFileB.pm" and rename the package name in the new file:

```
[...]
package Kernel::Config::GenericAgentFileB;
[...]
```

Execute the bin/GenericAgent.pl with option "-c Kernel::Config::GenericAgentFileB" and the new config file (Kernel/Config/GenericAgentFileB.pm) will be used.

15.2.1. Examples

Now we want to go through a few examples. There is also an example config file (Kernel/Config/GenericAgent.pm.examples).

Here are all possible options:

```
'name of job' => {
    # get all tickets with these properties
    TicketNumber => '200%01',
    Queue => 'system queue',
    States => ['new', 'open'],
    Priorities => ['1 very low', '2 low', '3 normal'],
    Locks => ['unlock'],
    From => '%spam@example.com%',
    To => '%support@example.com%',
    Cc => '%client@example.com%',
    TicketFreeKey1 => 'Product',
    TicketFreeText1 => 'adasd',
    TicketFreeKey2 => 'Product',
    TicketFreeText2 => 'adasd',
    Subject => '%VIRUS 32%',
    Body => '%VIRUS 32%',
    CustomerID => '123',
    CustomerUserLogin => 'uid123',
    # tickets older than 60 minutes
```



```

TicketCreateTimeOlderMinutes => 60,
# tickets newer then 60 minutes
TicketCreateTimeNewerMinutes => 60,
# tickets with create time older then ...
TicketCreateTimeOlderDate => '2004-01-19 00:00:01',
# tickets with create time newer then ...
TicketCreateTimeNewerDate => '2004-01-09 23:59:59',

# or escalation tickets
Escalation => 1,

# new ticket properties (no option is required, use just the options
# which should be changed!)
New => {
    # new queue
    Queue => 'new system queue',
    # possible states (closed successful|closed unsuccessful|open|new|removed)
    State => 'closed successful',
    # new priority
    Priority => '3 normal',
    # new ticket free text
    TicketFreeKey1 => 'Product123',
    TicketFreeText1 => 'adasd123',
    # new ticket owner (if needed)
    Owner => 'root@localhost',
    # set customer id and customer user
    CustomerID => '123',
    CustomerUserLogin => 'usd213',
    # if you want to add a Note
    Note => {
        From => 'GenericAgent',
        Subject => 'Your subject!',
        Body => 'Some comment!',
        ArticleType => 'note-internal', # note-internal|note-external|note-report
    },
    # your program (/path/to/your/program) will be executed like
    # "/path/to/your/program $TicketNumber $TicketID" ARG[0] will
    # be the ticket number and ARG[1] the ticket id
    CMD => '/path/to/your/program',
    # DELETE ticket from database and filesystem
    Delete => 1,
},

```

15.2.1.1. close spam tickets

If you get spam tickets in your system and you want spend much time on it, create a queue (named spam) and just move the spam tickets into this queue. If the bin/GenericAgent.pl runs, all open tickets in the queue spam will be closed by the bin/GenericAgent.pl.

Example for Kernel/Config/GenericAgent.pm

```

[...]
# --
# [name of job] -> close all tickets in queue spam
# --
'close spam' => {
    # get all tickets with this properties
    Queue => 'spam',
    States => ['new', 'open'],
    Locks => ['unlock'],
    # new ticket properties (no option is required, use just the options
    # which should be changed!)
    New => {
        # new queue
        Queue => 'spam',
        # possible states (closed successful|closed unsuccessful|open|new|removed)
        State => 'closed successful',
        # new ticket owner (if needed)
        Owner => 'root@localhost',
    },

```

```

        # if you want to add a Note
        Note => {
            From => 'GenericAgent',
            Subject => 'spam!',
            Body => 'Closed by GenericAgent.pl because it is spam!',
        },
    },
},
[...]
```

15.2.1.2. delete tickets

If you want to delete (means delete ticket from database and filesystem) a ticket from a queue use this.

Example for Kernel/Config/GenericAgent.pm

```

[...]
```

```

# --
# [name of job] -> close and delete all tickets in queue delete
# --
'delete' => {
    # get all tickets with this properties
    Queue => 'delete',
    States => ['new', 'open'],
    Locks => ['unlock'],
    # new ticket properties (no option is required, use just the options
    # witch should be changed!)
    New => {
        # DELETE!
        Delete => 1,
    },
},
[...]
```

15.2.1.3. move tickets from tricky to experts

Moved ticket from tricky to experts queue and add note.

Example for Kernel/Config/GenericAgent.pm

```

[...]
```

```

# --
# [name of job] -> move all tickets from tricky to experts
# --
'move tickets from tricky to experts' => {
    # get all tickets with this properties
    Queue => 'tricky',
    States => ['new', 'open'],
    Locks => ['unlock'],
    # new ticket properties
    New => {
        Queue => 'experts',
        Note => {
            From => 'GenericAgent',
            Subject => 'Moved!',
            Body => 'Moved from "tricky" to "experts" because it was not possible to find a sollution!',
            ArticleType => 'note-internal', # note-internal|note-external|note-report
        },
    },
},
[...]
```

15.2.1.4. send escalation notifications

Send escalation notifications to agents which subscribed to the custom queue of the ticket.

Example for Kernel/Config/GenericAgent.pm

```
[...]
# --
# [name of job] -> send escalation notifications
# --
'send escalation notifications' => {
    Escalation => 1,
    # new ticket properties
    New => {
        Module => 'Kernel::System::GenericAgent::NotifyAgentGroupOfCustomQueue',
    },
},
[...]
```

15.2.1.5. move tickets from abc to experts and change priority

Moved ticket from abc with priority "3 normal" to experts queue and change priority to "4 high".

Example for Kernel/Config/GenericAgent.pm

```
[...]
# --
# [name of job] -> move all tickets from abc to experts and change priority
# --
'move all abc priority "3 normal" tickets to experts and change priority'=> {
    # get all tickets with this properties
    Queue => ['abc'],
    States => ['new', 'open'],
    Locks => ['unlock'],
    Priorities => ['3 normal'],
    # new ticket properties
    New => {
        Queue => 'experts',
        Priority => '4 high',
        TicketFreeKey1 => 'ProductSkill',
        TicketFreeText1 => 'Expert required!',
    },
},
[...]
```

15.2.1.6. move escalation ticket to experts and execute CMD

If there is a escalation ticket, move it to experts and execute a command.

Example for Kernel/Config/GenericAgent.pm

```
[...]
# --
# [name of job] -> move all tickets from xyz to experts
# --
'move escalation ticket to experts and execute CMD' => {
    # get all tickets with this properties
    Queue => 'xyz',
    Escalation => 1,
    # new ticket properties
    New => {
        Queue => 'experts',
        # your program (/path/to/your/program) will be executed like
        # "/path/to/your/program $TicketNumber $TicketID" ARG[0] will
        # be the ticket number and ARG[1] the ticket id
        CMD => '/path/to/your/program',
    },
},
[...]
```

```
[...]
```

15.2.1.7. delete all tickets with subject "VIRUS 32" in queue abc

Delete all tickets with subject "VIRUS 32" in queue abc.

Example for Kernel/Config/GenericAgent.pm

```
[...]
    'delete all tickets with subject "VIRUS 32" in queue abc' => {
        # get all tickets with this properties
        Queue => 'abc',
    #     From => '%spam@example.com%',
    #     To => '%support@example.com%',
    #     Cc => '%client@example.com%',
        Subject => '%VIRUS 32%',
    #     Body => '%testing case 1245%',
        # new ticket properties
        New => {
            # DELETE!
            Delete => 1,
        },
    },
[...]
```

Chapter 16. Language translations

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

Beginning with release 1.3, translations are multi-layered.

1. Kernel/Language/\$Locale.pm - default, this file is read first.
2. Kernel/Language/\$Locale_\$Action.pm - translations for add-on modules like Calender. Overrides the precedent.
3. Kernel/Language/\$Locale_Custom.pm - your own translations/additions. You may override any definition of the previous files.

16.1. New translation files

If you want to translate OTRS into a new language, you have to follow these five steps:

- Take the current German translation (Kernel/Language/de.pm) from CVS (<http://cvs.otrs.org/>).
- Change the package name (z. g. "package Kernel::Language::de;" to "package Kernel::Language::fr;") and translate each word/sentence.
- Add the new language translation to the system via adding "\$Self->{DefaultUsedLanguages}->{fr} = 'French';" to your Kernel/Config.pm.
- If you use mod_perl, restart your webserver and you will have the new language.
- Send the new translation file to feedback at otrs.org - Thanks!

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

Example 16-1. Kernel/Language/de.pm - Old file

```
# --
# Kernel/Language/de.pm - provides de language translation
# Copyright (C) 2002-2003 Martin Edenhofer xxxxxxxxxxxxxxxxxxxxxxxx
# --
# $Id: language-translation.sgml,v 1.3 2004/09/21 20:48:02 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::de;

use strict;

use vars qw($VERSION);
$VERSION = '$Revision: 1.3 $';
$VERSION =~ s/^\.*:\s(\d+\.\d+)\s.*$/$1/;

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

    # $$START$$
    # Last translation Fri Jan 3 20:39:15 2003 by

    # possible charsets
    $Self->{Charset} = ['iso-8859-1', 'iso-8859-15', ];
    # date formats (%A=WeekDay;%B=LongMonth;%T=Time;%D=Day;%M=Month;%Y=Year;)
    $Self->{DateFormat} = '%D.%M.%Y %T';
    $Self->{DateFormatLong} = '%A %D %B %T %Y';
    $Self->{DateInputFormat} = '%D.%M.%Y - %T';

    %Hash = (
        # Template: AAABase
        ' 2 minutes' => ' 2 Minuten',
```

```

' 5 minutes' => ' 5 Minuten',
' 7 minutes' => ' 7 Minuten',
'10 minutes' => '10 Minuten',
'15 minutes' => '15 Minuten',
'AddLink' => 'Link hinzufügen',
'AdminArea' => 'AdminBereich',
'all' => 'alle',
'All' => 'Alle',
'Attention' => 'Achtung',
[...]
```

To:

Example 16-2. Kernel/Language/fr.pm - New file

```

# --
# Kernel/Language/fr.pm - provides fr language translation
# Copyright (C) 2002 Bernard Choppy xxxxxxxxxxxxxxxxxxxxxxxx
# Copyright (C) 2002-2003 Nicolas Goralski xxxxxxxxxxxxxxxxxxxxxxxx
# --
# $Id: language-translation.sgml,v 1.3 2004/09/21 20:48:02 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::fr;

use strict;

use vars qw($VERSION);
$VERSION = '$Revision: 1.3 $';
$VERSION =~ s/^\.*:\s(\d+\.\d+)\s.*\$/\$/l;
# --
sub Data {
    my $Self = shift;
    my %Param = @_;
    my %Hash = ();

    # $$START$$
    # Last translation Fri Jan  3 20:40:04 2003 by

    # possible charsets
    $Self->{Charset} = ['iso-8859-1', 'iso-8859-15', ];
    # date formats (%A=WeekDay;%B=LongMonth;%T=Time;%D=Day;%M=Month;%Y=Year;)
    $Self->{DateFormat} = '%D.%M.%Y %T';
    $Self->{DateFormatLong} = '%A %D %B %T %Y';
    $Self->{DateInputFormat} = '%D.%M.%Y - %T';

    %Hash = (
    # Template: AAABase
    ' 2 minutes' => ' 2 minutes',
    ' 5 minutes' => ' 5 minutes',
    ' 7 minutes' => ' 7 minutes',
    '10 minutes' => '10 minutes',
    '15 minutes' => '15 minutes',
    'AddLink' => 'Ajouter un lien',
    'AdminArea' => 'Zone d\'administration',
    'all' => 'tout',
    'All' => 'Tout',
    'Attention' => 'Attention',
    [...]
```

16.2. Translation for Actions

The Actions file may override the default values coming from Kernel/Language/\$Locale.pm, though it is meant to contain translations for a specific module and is therefore in use only when the module is loaded.

Example 16-3. Kernel/Language/de_Calendar.pm

```
# --
package Kernel::Language::de_Calendar;
# --
use strict;

use vars qw($VERSION);
$VERSION = '$Revision: 1.3 $';
$VERSION =~ s/^\$.*:\W(.*)\W.+?$/\1/;

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

    # $$START$$

    $Self->{Translation}->{'Calendar'} = 'Termine';

    # $$STOP$$
}
# --
1;
```

16.3. Customizing Translations

This file is read at last, so you may override any of the settings coming from the previous files. You may also add your own, new translations as well.

Example 16-4. Kernel/Language/de_Custom.pm

```
# --
package Kernel::Language::de_Custom;
# --
use strict;

use vars qw($VERSION);
$VERSION = '$Revision: 1.3 $';
$VERSION =~ s/^\$.*:\W(.*)\W.+?$/\1/;

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

    # $$START$$

    # Re-Definitions
    $Self->{Translation}->{'Lock'} = 'Bearbeiten';
    $Self->{Translation}->{'Unlock'} = 'Freigeben';

    # Additions
    $Self->{Translation}->{'Model#'} = 'Modell-Nr.';
    $Self->{Translation}->{'spare part number'} = 'Ersatzteil-Nummer';

    # $$STOP$$
}
# --
1;
```


Chapter 17. Customize the frontend

It's possible to customize the frontend independently from OTRS 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 OTRS site the way you want to! You may even create completely new themes.

17.1. The dtl syntax

Comment

Comment is a simple '#'.

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

Set a variable

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

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

Print a variable

To print a variable on the screen, simply use:

```
$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 text will be shown as given.

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{"UserIsGroup[users]"} = Yes --> user groups (useful for own links)
$Env{"UserIsGroup[admin]"} = Yes
$Env{"Action"} --> the current action
```

```
$Env{"Subaction"} --> the current subaction
```

Include a other dtl file - \$Include{}

To include the css.dtl file:

```
$Include{"css"}
```

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"}
```

17.2. Examples of dtl files

17.2.1. 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 it in Kernel/Output/HTML/Standard/Motd.dtl.
</p>
```

17.2.2. 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: OTRS - Open Ticket Request System (http://otrs.org)

# --
# html comment
# --

<!-- OTRS: Copyright 2002, OTRS 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"} = "#BDDDFD">
<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>OTRS :: $Text{"$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>$Text{"Welcome to OTRS"}</b></font></td>
</tr>
<tr>
  <td align="center" bgcolor=$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>

```

17.2.3. Header.dtl

This is the default HTML header of every OTRS site. 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
# --

<!-- OTRS: Copyright 2002, OTRS 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">
<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>OTRS :: $Text{"$Data{"Title"}}</title>
</head>
<!-- end header -->

```

17.3. 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 -psome-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_time, create_by, change_time, change_by)
->      VALUES

```

```
mysql>      ->      ('NewTheme', 1, current_timestamp, 1, current_timestamp, 1);
```

Ready. Goto the preferences page and change your theme.

If you want to use your new theme as default theme (login, ...), add the following config option to your Kernel/Config.pm.

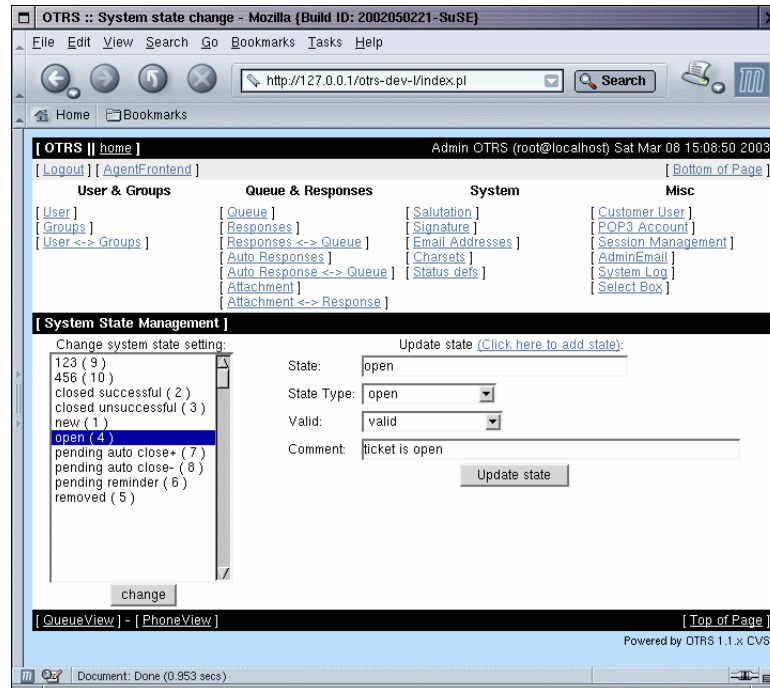
```
$Self->{DefaultTheme} = 'NewTheme';
```


Chapter 18. Customize Ticket State (min. OTRS 1.1)

It's possible to change or add ticket states. There are two important options, state-name and state-type.

- The default state-types are 'new', 'open', 'closed', 'pending reminder', 'pending auto' and 'removed'.
- Each state needs to have a name (state-name) and a type (state-type). The name is free settable.

Use the Admin-Interface (Status defs) if you want to change or add ticket states.



Take care that you also update some config options if you changed/rename the state "new". Add to you Kernel/Config.pm:

```
[...]
# PostmasterDefaultState
# (The default state of new tickets.) [default: new]
$Self->{PostmasterDefaultState} = 'new';

# CustomerDefaultState
# (default state of new customer tickets)
$Self->{CustomerDefaultState} = 'new';
[...]
```

Take care that you also update some config options if you changed/rename the state "open". Add to you Kernel/Config.pm:

```
[...]
# default phone new state
$Self->{PhoneDefaultNewNextState} = 'open';

# PostmasterFollowUpState
# (The state if a ticket got a follow up.) [default: open]
$Self->{PostmasterFollowUpState} = 'open';
[...]
```


Chapter 19. Customize Ticket Priority (min. OTRS 1.1)

If you want to customize the system ticket priorities follow the next steps (there is no existing webfrontend).

- Get the current priorities:

```
mysql> select id, name from ticket_priority;
```

```
+-----+-----+
| id | name          |
+-----+-----+
| 1  | 1 very low   |
| 2  | 2 low        |
| 3  | 3 normal     |
| 4  | 4 high       |
| 5  | 5 very high  |
+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql>
```

Important: The "id" gives the order of the priority. -=> 1 = min, 5 (or higher) = highest

The number in front of the priority name is to show the order correctly in the webinterface.

- Update the priorities via SQL. e. g.

```
mysql> UPDATE ticket_priority SET name = '3 default' WHERE id = 3;
```

And the "normal" priority will be in future named "3 default".

- Take care that you also update the default priority (if you changed the name) in your Kernel/Config.pm

```
[...]
# PostmasterDefaultPriority
# (The default priority of new tickets.) [default: '3 normal']
$self->{PostmasterDefaultPriority} = '3 default';
[...]
# default phone priority
$self->{PhoneDefaultPriority} = '3 default';
[...]
# CustomerDefaultPriority
# (default priority of new customer tickets)
$self->{CustomerDefaultPriority} = '3 default';
[...]
```


Chapter 20. Multi Hosting

OTRS is able to manage different groups and domains.

20.1. Multi Group

This is an example setup for one company with a helpdesk, sales and billing department. Each department should not see tickets of the other department. This means nobody from helpdesk should have access to the billing tickets. Nobody the one department can access to a queue of the others.

Add the following to Kernel/Config.pm

```
# ChangeOwnerToEveryone -> useful for ASP
# (Possible to change owner of ticket ot everyone) [0|1]
$Self->{ChangeOwnerToEveryone} = 0;

# ShowCustomerSelection
# (show customer selection in phone and change customer view
# - disable this for ASP!) [0|1]
$Self->{ShowCustomerSelection} = 0;
```

System email addresses (1/2): You need to add new system email addresses for each department (e. g. helpdesk@example.com, sales@example.com and billing@example.com). Note: You can't set the right queue because you need to create the queue at first - this will be done later.

Groups: Add a new group for each department. In our case add a group helpdesk, sales and billing.

Queue: Add queue for each department (take care of the naming - e. g. group-topic). In our case add queue helpdesk-raw, helpdesk-products, sales-raw, sales-products, billing-raw and billing-claim and set the group of each queue to the right.

System email addresses (2/2): Update your new system email addresses (e. g. helpdesk@example.com, sales@example.com and billing@example.com) with the right queue. Note: Of course you need to make sure that the added system email addresses are routed into your system (e. g. via admin interface -> POP3 accounts - see chapter "Receiving emails")

User: Add the users and put each user into the wanted group. Means sales users to the sales group, helpdesk users to the helpdesk group and billing users to the billing group.

Note: If you add one user of the departments to the admin group, then the user can change all settings of the system. Means the user can also add/modify user/response/... of the other groups. -> Normally this admin changes should be done by an admin.

Your multi group setup is ready.

20.2. Multi Setup

If you want a live and a test system or you want to host more the one OTRS systems on one machine you have to make sure that each OTRS has a unique SystemID.

Add the following to each Kernel/Config.pm

```
# SystemID
# (The identify of the system. Each ticket number and
# each http session id starts with this number)
```

```
$Self->{SystemID} = n;
```

where n is a reasonable low integer that is unique across the system! Also note that you cannot run more than one OTRS System through mod_perl-1 (one httpd). In case you want more the one OTRS System on one machine with mod_perl-1, start a new httpd on an other ip-address or port. mod_perl-2 can handle this with one httpd.

Note: If you use the "scripts/apache-perl-startup.pl" for mod_perl, change the "use lib" directory (e. g. /opt/otrs or /opt/otrs2)!

Chapter 21. Performance Tuning

An exhaustive list of various techniques you might want to use to get the most performance possible out of your OTRS system: configuration, coding, memory use and more.

21.1. OTRS

There are several options to improve the performance via OTRS.

21.1.1. TicketIndexModule

You have two backend modules for the ticket index.

Kernel/Config.pm

```
[...]
    $Self->{TicketIndexModule} = 'Kernel::System::Ticket::IndexAccelerator::RuntimeDB';
[...]
```

- Kernel::System::Ticket::IndexAccelerator::RuntimeDB (default), generate each queue view on the fly from the ticket table. You will not have performance trouble until having about 60.000 tickets (till 6.000 open tickets) in your system.
- Kernel::System::Ticket::IndexAccelerator::StaticDB, the most powerful module, it should be used above 80.000 tickets (more than 6.000 open tickets) - use an extra ticket_index table, works like a view. Use bin/RebuildTicketIndex.pl for an initial index build.

21.1.2. TicketStorageModule

You have two backend modules for the ticket/article storage .

Kernel/Config.pm

```
[...]
    $Self->{TicketStorageModule} = 'Kernel::System::Ticket::ArticleStorageDB';
[...]
```

- Kernel::System::Ticket::ArticleStorageDB (default), store attachments and co in the database. Note: Don't use it for larger setups.

Pro: If your webserver user isn't the otrs user, use this module to avoid file permission problems.

Contra: It's not really nice to store attachments in your database. Take care that your database is able to store large objects. E.g. MySQL (config) "set-variable = max_allowed_packet=8M" to store 8 MB objects (default is 2M).

- Kernel::System::Ticket::ArticleStorageFS, store attachments and co in local file system. Note: Use it for larger setups.

Pro: Faster!

Contra: Your webserver user should be the otrs user (file system permissions!).

Note: If you use OTRS 1.2 or higher, the you can switch from one to the other backend on the fly.

21.2. Database

This depends on the database you are using. If you're having trouble, read the documentation for your database or ask your database admin.

21.2.1. MySQL

If you use MySQL table type MyISAM (which is default) and have deleted a large part of a table or if you have made many changes to a table with variable-length rows (tables that have VARCHAR, BLOB or TEXT columns) you need to defragment the datafile (tables) with the "optimize" command.

You should try it if mysqld needs a lot of your CPU time. Optimize table ticket, ticket_history and article.

```
mysql>optimize table ticket;
mysql>optimize table ticket_history;
mysql>optimize table article;
```

21.2.2. PostgreSQL

PostgreSQL is best tuned by modifying the postgresql.conf file in your PostgreSQL data directory. For advice on how to do this, see these articles: <http://www.varlena.com/varlena/GeneralBits/Tidbits/perf.html>
http://www.varlena.com/varlena/GeneralBits/Tidbits/annotated_conf_e.html If performance is still not satisfactory, we suggest that you join the PostgreSQL Performance mailing list and ask questions there. The folks on the PostgreSQL list are very friendly and can probably help <http://www.postgresql.org/lists.html>.

21.3. Webserver

Of course you should use mod_perl (<http://perl.apache.org/>). It's much faster (~ * 100) than pure cgi. But needs more RAM. So your httpd with mod_perl will be about 16 MB (~10MB shared).

21.3.1. Preestablish database connections

You can have the database connections being established on process startup (httpd). This saves also time (see README.webserver).

21.3.2. Preloaded modules - startup.pl

Use the scripts/apache-perl-startup.pl startup script for preloaded/precompiled perl modules on your mod_perl webserver to be faster and smaller (see README.webserver).

21.3.3. Reload perl modules when updated on disk

Per default Apache::StatINC (mod_perl1) or Apache::Reload (mod_perl2) is used in scripts/apache-httpd.include.conf. Disable it and you will get 8 % more speed. But remember to restart the webserver if you change the Kernel/Config.pm or any other modules!

21.3.4. Choosing the Right Strategy

If you have a really large installation (over 1000 new tickets a day and over 40 Agents) it is a good idea to read "Choosing the Right Strategy" (<http://perl.apache.org/docs/1.0/guide/strategy.html>).

21.3.5. mod_gzip

Anyway, if your bandwidth is a little bit small use mod_gzip (http://www.schroepl.net/projekte/mod_gzip/). If you have a html page with 45k, mod_gzip compresses it. The page will be about 7k. That's really nice.

21.3.6. mod_dosevasive

If you want to block http DoS (Denail of Service) attacks, use mod_dosevasive. (<http://www.nuclearelephant.com/projects/dosevasive/>).

Chapter 22. The FAQ System

22.1. What are FAQs?

'FAQ' is the abbreviation of 'Frequently Asked Question(s)'. The longer you run your OTRS system, the sooner you will get the impression of spending a lot of time by sending out the same answers to the same questions again and again.

To provide you with a mean to solve this puzzle, we integrated an FAQ database in OTRS (min. 1.2.x). Now your customers might find the answer before overloading your support team. When they contact you at last, you are able to provide a broad knowledge in a structurized way from within your OTRS installation. Your agents have more time to do something productive.

22.2. Preparations

The FAQ database need not be activated in any way, but you must be a member of the 'faq' group to be able to work on it. Do so before proceeding, or you won't be able to see anything of the following.

To have full control over the FAQ section, ie. to be able to post new FAQ entries, give yourself 'rw' rights, resp. to some designated agents. One needs at least 'ro' rights to be able to read the FAQs. Your customers need the 'ro' right, too.

22.3. Interfaces

Agent: The Agent logs into the FAQ section via the FAQ icon in OTRS menu bar (if the admin has placed one there), or via this link: <http://localhost/otrs/index.pl?Action=FAQ>. If there is no icon pointing towards the FAQ area, it might be you are no member of the 'faq' group, ie. you're missing 'ro' rights in this group at least.

Agents with 'rw' rights are able to see all types of FAQs, including the 'internal' ones.

Customer: Your customers can view the FAQs then via a similar entry in their menu bar, which points to <http://localhost/otrs/customer.pl?Action=CustomerFAQ>.

Customers can view the public and the customer FAQs. The latter own the state type 'external' to be distinguished from the 'public' FAQs.

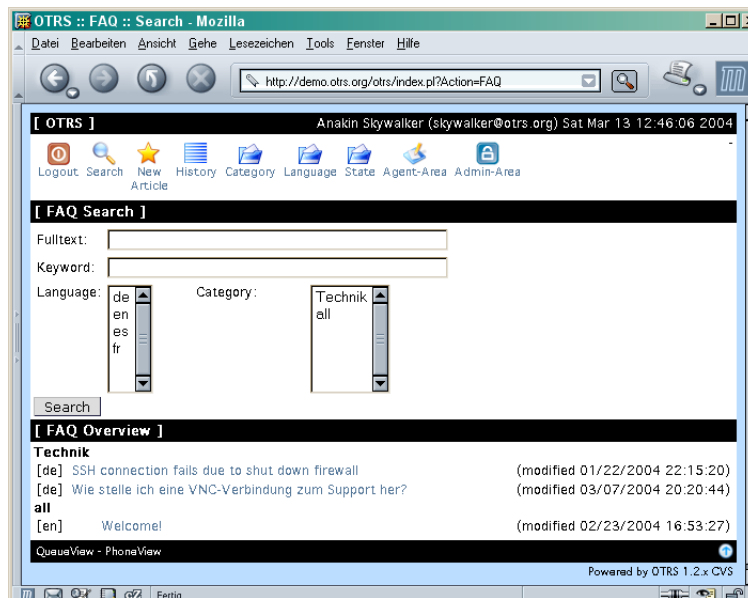
Everyone (depends on your webserver configuration, though), may use <http://localhost/otrs/faq.pl> to at least view the public FAQs.

22.4. FAQ Functions

22.4.1. FAQ Agent Functions

Despite the well-known icons for logging out of OTRS and accessing the Agent- and Admin-Areas, the FAQ-Area bears the

following functions that enable you to maintain the FAQs.



Most of the different functions allow to be work with in an intuitive manner. A brief description of each one follows.

- **Search:** You may perform a search over all FAQ entries using a free text or keyword search, combined with a set of languages and categories.

You may also select a specific entry from an overview of all available FAQs, as shown underneath the search section.

- **New article:** Here you compose new articles, ie. new FAQ entries.
- **History:** The complete history let's you see who has submitted/changed which FAQ entry and when.
- **Category:** To distinguish certain areas of knowledge, you may use categories. Imagine having a list of Categories reflecting your product portfolio, for example.
- **Language:** You define which languages are used in the FAQs here.
- **State:** You may define more than the three initial FAQ states 'internal', 'external' and 'public'.

22.4.2. FAQ Functions for Customers

Your customers are able to search the FAQ, very similar to the agent's search. They may select a specific entry from the overview of the available FAQs, too.

22.4.3. FAQ Functions for public FAQs

What applies for your customers, applies to public FAQs, too: They can be searched and there is a list of them to choose from, despite you need not login to <http://localhost/otrs/faq.pl> to view them. Again, this depends on your webserver's configuration, too.

Public FAQs are also included in the customers' view and search capabilities.

Chapter 23. 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. OTRS is much too 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 possible but time is a valuable resource. ;-)

23.1. General problems with OTRS 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 especially for fixes about Apache, MySQL, Perl and of course OTRS. 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 the new one with "rpm -i foo.rpm"

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

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

23.1.1. SuSE Linux 8.0

Unfortunately 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
```

23.1.2. 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
[...]
```

Restart the Postfix daemon afterwards via 'rcpostfix restart'.

23.2. General problems with OTRS on Mandrake

OTRS works as expected on a Mandrake system, at least when using release 9.1 or 9.2. As we do not provide a ready-to-use RPM right now, you will have to follow the documentational steps for a manual installation using the tarball.

23.2.1. Updating Your System

Before considering installing OTRS on a Mandrake system, you are strongly encouraged to use Mandrake's software package management to update your system to the most recent available version. You may find a convenient GUI in Mandrake's Control Center, or issue these commands as the superuser via the command line:

```
shell:~ # urpmi.update --update --auto --auto-select
shell:~ # urpmi --update --auto-select
```

This requires you have your update_source set up properly. To use GWDG.de as your standard update_source, issue s.th. like the following, substituting <rel> with your release version:

```
shell:~ # urpmi.addmedia update_source ftp://ftp.gwdg.de/pub/linux/mandrake/updates/<rel>/RPMS
```

23.3. General problems with OTRS on other distributions (e.g. Redhat)

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

23.4. 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.

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

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;
-- (you may 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.

23.4.2. 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).

23.4.3. FreeBSD, PostgreSQL and Apache (install_driver(Pg) failed)

Everything is working fine just if I want to use the web interface I get always: [...] Software error: install_driver(Pg) failed: [Thu Sep 19 16:52:18 2002] index.pl: [Thu Sep 19 16:52:18 2002] index.pl: Can't load '/usr/local/lib/perl5/site_perl/5.005/i386-freebsd/auto/DBD/Pg/Pg.so' for module DBD::Pg: Shared object "libpq.so.2" not found at /usr/libdata/perl/5.00503/DynaLoader.pm line 169. [Thu Sep 19 16:52:18 2002] index.pl: [Thu Sep 19 16:52:18 2002] index.pl: [Thu Sep 19 16:52:18 2002] index.pl: [Thu Sep 19 16:52:18 2002] index.pl: at (eval 124) line 3 Perhaps a required shared library or dll isn't installed where expected at /usr/local/otrs/bin/cgi-bin/../../Kernel/System/DB.pm line 67 [...]

To solve this problem, you can tell the Apache httpd.conf to include the environmental variable LD_LIBRARY_PATH=/usr/local/pgsql/lib. Put the following line into httpd.conf "SetEnv LD_LIBRARY_PATH usr/local/pgsql/lib". Now restart your webserver (see <http://lists.otrs.org/pipermail/otrs/2002-September/000248.html>).

23.5. 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.

23.5.1. Check the database connection

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

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

Check the password for the database user in Kernel/Config.pm. If you don't know the database password for the database otrs user (any more), 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>
```

Reload the grant tables of your mysql-daemon:

```
$shell> mysqladmin -u root -p reload
```

(or restart your mysql-daemon) and change the new otrs password in Kernel/Config.pm.

Note: If you use mod_perl, restart the webserver, because mod_perl is reading the perlcode (incl. Kernel/Config.pm) on startup.

23.5.3. Lost root password of MySQL

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

23.5.4. 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.

23.6. Problems - misc

23.6.1. 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 PostMaster.pl. There are two example emails in the default OTRS 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/otrs/bin/PostMaster.pl
shell:~ #
```

If there is an error message, then you will 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).

23.6.2. Lost root password of OTRS

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

Reset of the OTRS root password:

```
shell:~ # mysql -u root -p otrs
mysql> UPDATE system_user SET pw='roK20XGbWEsSM' 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 24. Developer's guide

This chapter will show you more details about writing common OTRS Modules.

24.1. Coding Style Guide

In order to preserve the consistent development of OTRS project we have set up a few guidelines regarding style.

24.1.1. Formatting

TAB: We use 4 spaces.

Braces examles:

```
if ($Condition) {
    Foo();
}
else {
    Bar();
}

while ($Condition == 1) {
    Foo();
}
```

24.1.2. Naming

Names and comments are written in English.

Variables, Objects and Methods must be descriptive nouns or noun phrases with the first letter uppercase (e. g. '@TicketIDs' or '\$Output' or 'BuildQueueView()').

24.1.3. Code header

Attach the following header to each source file.

```
# --
# (file name) - a short decription what it does.
# Copyright (C) (year) (name of author) (email of author)
# --
# $Id: developer-guide.sgml,v 1.2 2004/03/28 11:13:47 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.
```

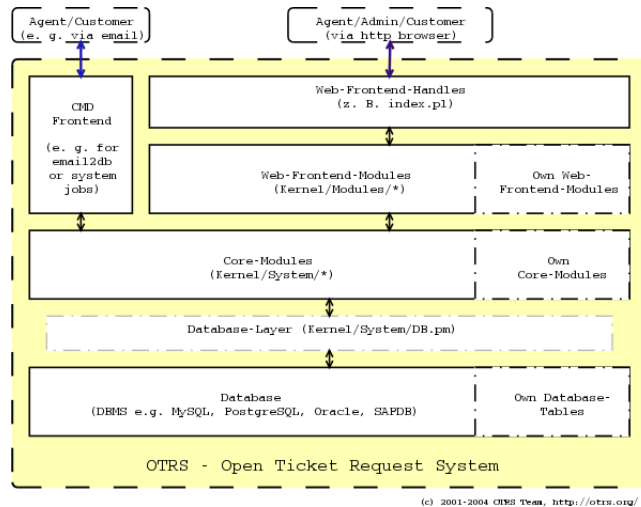
24.1.4. Misc

All things depending on <http://www.perl.com/CPAN-local/doc/manual/html/pod/perlstyle.html>.

You can also use 'pb' the 'Perl Beautifier', <http://www.arachnoid.com/lutusp/ftp/cgi/pb.txt>. It's really nice. ;-)

24.2. OTRS Framework

The OTRS framework is modular. The following picture shows the OTRS layer architecture.



24.2.1. Core Modules

Core modules are located under `$OTRS_HOME/Kernel/System/*`. This layer is for the logical work. These modules are to handle system routines like "lock ticket" and "create ticket".

The main core modules are: Log (`Kernel::System::Log`), Ticket (`Kernel::System::Ticket`), Auth (`Kernel::System::Auth`), User (`Kernel::System::User`), Email (`Kernel::System::Email`). For more see <http://dev.otrs.org/>.

An example for a core module is this:

```
# --
# Kernel/System/Backend.pm - a simple backend module
# Copyright (C) 2001-2004 Martin Edenhofer martin+code@otrs.org
# --
# $Id: developer-guide.sgml,v 1.2 2004/03/28 11:13:47 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::System::Backend;

use strict;

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

# --
sub new {
    my $Type = shift;
    my %Param = @_;

    # allocate new hash for object
    my $Self = {};
    bless ($Self, $Type);

    # get needed objects
    foreach (qw(ConfigObject LogObject)) {
        $Self->{$_} = $Param{$_} || die "Got no $_!";
    }
}
```



```

# system variable
$Self->{ConfigParam} = $Self->{ConfigObject}->Get('ConfigParam');

return $Self;
}
# --
sub Check {
    my $Self = shift;
    my %Param = @_;
    # check needed stuff
    foreach (qw(Text)) {
        if (!$Param{$_}) {
            $Self->{LogObject}->Log(Priority => 'error', Message => "Need $_!");
            return;
        }
    }
    # do some thinks

    return 1;
}
# --
sub Convert {
    my $Self = shift;
    my %Param = @_;
    # check needed stuff
    foreach (qw(Text)) {
        if (!$Param{$_}) {
            $Self->{LogObject}->Log(Priority => 'error', Message => "Need $_!");
            return;
        }
    }
    # do some thinks

    return $Param{Text};
}
# --
1;

```

24.2.2. Web-Frontend-Handle

This is the interface between the browser, webserver and the Web-Frontend-Modules. A Web-Frontend-Module can be used via the http-link "<http://localhost/otrs/index.pl?Action=Modul>".

24.2.3. Web-Frontend-Modules

Web-Frontend-Modules are located under "\$OTRS_HOME/Kernel/Modules/*.pm". There are two public functions in there. `new()` and `Run()` which are used from the Web-Frontend-Handle (e. g. `index.pl`).

"`new()`" is used to create an Web-Frontend-Module object. The Web-Frontend-Handle gives basic framework object to the Web-Frontend-Module.

For example `ParamObject` (to get formular params), `DBObject` (to use existing database connects), `LayoutObject` (to use templates and other html layout functions), `ConfigObject` (to access config settings), `LogObject` (to use the framework log system), `UserObject` (to get the user functions from the current user), `GroupObject` (to get the group functions).

For more info of this core modules see <http://dev.otrs.org/>.

An example of an Web-Frontend-Module could look like this:

```

# --
# Kernel/Modules/Test.pm - a simple test module
# Copyright (C) 2001-2004 Martin Edenhofer martin+code@otrs.org
# --
# $Id: developer-guide.sgml,v 1.2 2004/03/28 11:13:47 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::Modules::Test;

use strict;

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

# --
sub new {
    my $Type = shift;
    my %Param = @_;

    # allocate new hash for object
    my $Self = {};
    bless ($Self, $Type);

    # get common objects
    foreach (keys %Param) {
        $Self->{$_} = $Param{$_};
    }

    # check all needed objects
    foreach (qw(ParamObject DBObject LayoutObject ConfigObject LogObject)) {
        die "Got no $_" if (!$Self->{$_});
    }

    return $Self;
}
# --
sub Run {
    my $Self = shift;
    my %Param = @_;

    # get params
    $Param{TestParam} = $Self->{ParamObject}->GetParam(Param => 'TestParam');

    # get test page header
    my $Output = $Self->{LayoutObject}->Header(Title => 'Test Page');

    # get test page
    $Output .= $Self->{LayoutObject}->Output(TemplateFile => 'Test', Data => \%Param);

    # get test page footer
    $Output .= $Self->{LayoutObject}->Footer();

    # return test page
    return $Output;
}
# --
1;

```

This module need to be saved under "Kernel/Modules/Test.pm" and can be used via "http://host/otrs/index.pl?Action=Test".

There are HTML templates for header, footer and other things. The templates are located under "Kernel/Output/HTML/\$Theme/*.dtl". For example under "Kernel/Output/HTML/Standard/*.dtl".

So it's easy to create an site. If you want to use an template use the following in your Web-Frontend-Module:

```
$Output .= $Self->{LayoutObject}->Output(TemplateFile => 'Test', Data => \%Param);
```

The "LayoutObject" is used with the "TemplateFile" (for the template file name) and the Data (in this case with the %Param hash) params.

24.2.4. CMD Frontend

The CMD Frontend is like the Web-Frontend-Handle and the Web-Frontend-Module in one (just without the LayoutObject) and is using the core modules to do some actions in the system.

An example for an CMD Frontend is the following:

```
# --
# bin/UnlockTickets.pl - to unlock tickets
# Copyright (C) 2002-2004 Martin Edenhofer martin+code@otrs.org
# --
# $Id: developer-guide.sgml,v 1.2 2004/03/28 11:13:47 martin Exp $
# --
# This program is free software; you can redistribute it and/or modify
# it under the terms of the GNU General Public License as published by
# the Free Software Foundation; either version 2 of the License, or
# (at your option) any later version.
#
# This program is distributed in the hope that it will be useful,
# but WITHOUT ANY WARRANTY; without even the implied warranty of
# MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
# GNU General Public License for more details.
#
# You should have received a copy of the GNU General Public License
# along with this program; if not, write to the Free Software
# Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
# --

# use ../ as lib location
use File::Basename;
use FindBin qw($RealBin);
use lib dirname($RealBin);
use lib dirname($RealBin)."/Kernel/cpan-lib";

use strict;

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

# use Date::Pcalc
use Date::Pcalc qw(Delta_Days Add_Delta_Days Day_of_Week Day_of_Week_Abbreviation);
# use otrs backend modules
use Kernel::Config;
use Kernel::System::Log;
use Kernel::System::DB;
use Kernel::System::Ticket;
use Kernel::System::User;
use Kernel::System::State;
use Kernel::System::Lock;

my $Debug = 0;

# --
# create common objects
# --
my %CommonObject = ();
$CommonObject{ConfigObject} = Kernel::Config->new();
$CommonObject{LogObject} = Kernel::System::Log->new(
    LogPrefix => 'OTRS-UnlockTickets',
    %CommonObject,
);
$CommonObject{DBObject} = Kernel::System::DB->new(%CommonObject);
$CommonObject{TicketObject} = Kernel::System::Ticket->new(%CommonObject);
$CommonObject{UserObject} = Kernel::System::User->new(%CommonObject);
$CommonObject{StateObject} = Kernel::System::State->new(%CommonObject);
$CommonObject{LockObject} = Kernel::System::Lock->new(%CommonObject);
# --
# get system variables
# --
my @UnlockStateIDs = $CommonObject{StateObject}->StateGetStatesByType(
    Type => 'Unlock',
```

```

        Result => 'ID',
    );
my @ViewableLockIDs = $CommonObject{LockObject}->LockViewableLock(Type => 'ID');
# --
# check args
# --
print "UnlockTickets.pl Revision $VERSION - unlock tickets\n";
print "Copyright (c) 2001-2004 Martin Edenhofer email\@otrs.org\n";
# --
# unlock all tickets
# --
my @TicketIDs = $CommonObject{TicketObject}->GetLockedTickets();
foreach (@TicketIDs) {
    print " Unlocking ticket id $_ ...";
    if ($CommonObject{TicketObject}->SetLock(
        TicketID => $_,
        Lock => 'unlock',
        UserID => 1,
    ) ) {
        print " done.\n";
    }
    else {
        print " failed.\n";
    }
}
exit (0);

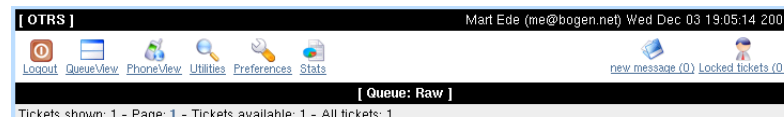
```

Chapter 25. Developer's guide - Writing OTRS Modules

This chapter will show you more details about writing common OTRS Modules.

25.1. AgentInterface Notification Modules

With agent notification modules you can inform agents about new infos. A normal navigation looks like that:



Example of a simple notification module, save it under Kernel/Output/HTML/NotificationMotd.pm.

```
# --
# Kernel/Output/HTML/NotificationMotd.pm - message of the day
# Copyright (C) 2003 Hans Mueller mail@example.com
# --
# $Id: developer-guide-custom-modules.sgml,v 1.6 2004/04/23 08:21:17 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::Output::HTML::NotificationMotd;

use strict;

# --
sub new {
    my $Type = shift;
    my %Param = @_;

    # allocate new hash for object
    my $Self = {};
    bless ($Self, $Type);

    # get needed objects
    foreach (qw(ConfigObject LogObject DBObject LayoutObject UserID)) {
        $Self->{$_} = $Param{$_} || die "Got no $_!";
    }
    return $Self;
}

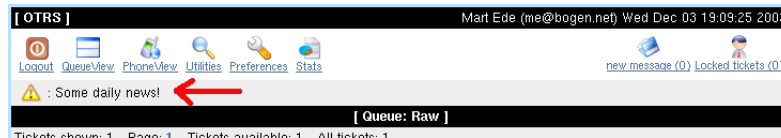
# --
sub Run {
    my $Self = shift;
    my %Param = @_;
    return $Self->{LayoutObject}->Notify(Info => 'Some daily news!');
}

# --
1;
```

To use this module, add the following to the Kernel/Config.pm and restart your webserver (if you use mod_perl).

```
# Frontend::NotifyModule - module name (50-Motd)
$Self->{'Frontend::NotifyModule'}->{'50-Motd'} = {
    Module => 'Kernel::Output::HTML::NotificationMotd',
};
```

The result will be a notification box in your agent interface:



Normally you want to put more intelligence into your notification module. This kind of modules are useful for escalation infos.

Default notification modules are (Kernel/Config.pm):

```
# agent interface notification module to check the used charset
$Self->{'Frontend::NotifyModule'}->{'1-CharsetCheck'} = {
    Module => 'Kernel::Output::HTML::NotificationCharsetCheck',
};

# agent interface notification module to check the admin user id
# (don't work with user id 1 notification)
$Self->{'Frontend::NotifyModule'}->{'2-UID-Check'} = {
    Module => 'Kernel::Output::HTML::NotificationUIDCheck',
};

# show online agents
$Self->{'Frontend::NotifyModule'}->{'3-ShowAgentOnline'} = {
    Module => 'Kernel::Output::HTML::NotificationAgentOnline',
};

# show online customers
$Self->{'Frontend::NotifyModule'}->{'4-ShowCustomerOnline'} = {
    Module => 'Kernel::Output::HTML::NotificationCustomerOnline',
};
```

25.2. CustomerInterface Notification Modules

With customer notification modules you can inform customer about new infos in the navigation header. It's the same as AgentInterface Notification Modules.

Default notification modules are (Kernel/Config.pm):

```
# show online agents
$Self->{'CustomerFrontend::NotifyModule'}->{'1-ShowAgentOnline'} = {
    Module => 'Kernel::Output::HTML::NotificationAgentOnline',
};
```

25.3. Ticket Number Generator

If you want to create a own ticket number format, just create a own ticket number module.

The modules are located under "Kernel/System/Ticket/Number/*.pm". For default modules see "Config-File" -> "Ticket number format".

A example of a simple ticket number module, save it under Kernel/System/Ticket/Number/Simple.pm. You just need 2 functions, CreateTicketNr() and GetTNByString():

```
# --
# Ticket/Number/Simple.pm - a ticket number auto increment generator
# Copyright (C) 2003 Hans Mueller mail@example.com
# --
# 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.
# --
# Note:
# available objects are: ConfigObject, LogObject and DBObject
#
```

```

# Generates auto increment ticket numbers like ss.... (e. g. 1010138, 1010139, ...)
# --

package Kernel::System::Ticket::Number::Simple;

use strict;

use vars qw($VERSION);
$VERSION = '$Revision: 1.6 $';
$VERSION =~ s/^\$.*:\W(.*)\W.+?$/\1/;

sub CreateTicketNr {
    my $Self = shift;
    my $JumpCounter = shift || 0;
    # get needed config options
    my $CounterLog = $Self->{ConfigObject}->Get('CounterLog');
    my $SystemID = $Self->{ConfigObject}->Get('SystemID');
    my $MinSize = 5;
    my $Count = 0;
    if (-f $CounterLog) {
        open (COUNTER, "< $CounterLog") || die "Can't open $CounterLog: $!";
        my $Line = <COUNTER>;
        ($Count) = split(/:/, $Line);
        close (COUNTER);
        if ($Self->{Debug} > 0) {
            $Self->{LogObject}->Log(
                Priority => 'debug',
                Message => "Read counter from $CounterLog: $Count",
            );
        }
    }
    # count auto increment ($Count++)
    $Count++;
    $Count = $Count + $JumpCounter;
    # write new count
    if (open (COUNTER, "> $CounterLog")) {
        flock (COUNTER, 2) || warn "Can't set file lock ($CounterLog): $!";
        print COUNTER $Count . "\n";
        close (COUNTER);
        if ($Self->{Debug} > 0) {
            $Self->{LogObject}->Log(
                Priority => 'debug',
                Message => "Write counter: $Count",
            );
        }
    }
    else {
        $Self->{LogObject}->Log(
            Priority => 'error',
            Message => "Can't write $CounterLog: $!",
        );
        die "Can't write $CounterLog: $!";
    }
    # pad ticket number with leading '0' to length $MinSize (config option)
    while (length($Count) < $MinSize) {
        $Count = "0".$Count;
    }
    # create new ticket number
    my $Tn = $SystemID . $Count;
    # Check ticket number. If exists generate new one!
    if ($Self->CheckTicketNr(Tn=>$Tn)) {
        $Self->{LoopProtectionCounter}++;
        if ($Self->{LoopProtectionCounter} >= 1000) {
            # loop protection
            $Self->{LogObject}->Log(
                Priority => 'error',
                Message => "CounterLoopProtection is now $Self->{LoopProtectionCounter}!".
                    " Stopped CreateTicketNr(!)",
            );
            return;
        }
    }
}

```

```

        # create new ticket number again
        $Self->{LogObject}->Log(
            Priority => 'notice',
            Message => "Tn ($Tn) exists! Creating new one.",
        );
        $Tn = $Self->CreateTicketNr($Self->{LoopProtectionCounter});
    }
    return $Tn;
}
# --
sub GetTNByString {
    my $Self = shift;
    my $String = shift || return;
    # get needed config options
    my $SystemID = $Self->{ConfigObject}->Get('SystemID');
    my $TicketHook = $Self->{ConfigObject}->Get('TicketHook');
    my $TicketDivider = $Self->{ConfigObject}->Get('TicketDivider') || ':';
    my $MinSize = 5;
    my $MaxSize = $MinSize + 5;
    # check ticket number
    if ($String =~ /^$TicketHook:+. {0,1}($SystemID\d{$MinSize,$MaxSize})\-FW/i) {
        return $1;
    }
    else {
        if ($String =~ /^$TicketHook:+. {0,1}($SystemID\d{$MinSize,$MaxSize})/i) {
            return $1;
        }
        else {
            return;
        }
    }
}
# --
1;

```

To use this module, add the following to the Kernel/Config.pm and restart your webserver (if you use mod_perl).

```
$Self->{TicketNumberGenerator} = 'Kernel::System::Ticket::Number::Simple';
```

Now your ticket number module will be used.

25.4. Agent Auth Modules

There are several agent authentication modules (DB, LDAP and HTTPBasicAuth) which comes with OTRS. It's also possible to develop your own authentication modules.

The agent authentication modules are located under Kernel/System/Auth/*.pm. To configure it see under chapter "User" -> "User Auth Backend".

A example of a simple agent auth module, save it under Kernel/System/Auth/Simple.pm. You just need 3 functions, new(), GetOption() and Auth(). If Auth() is true, the the authentication is valid:

```

# --
# Kernel/System/Auth/Simple.pm - provides the db authentication
# Copyright (C) 2001-2004 Martin Edenhofer martin+code at otrs.org
# --
# 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.
# --
# Note:
# available objects are: ConfigObject, LogObject and DBObject
# --

package Kernel::System::Auth::Simple;

use strict;

# --

```



```

sub new {
    my $Type = shift;
    my %Param = @_;

    # allocate new hash for object
    my $Self = {};
    bless ($Self, $Type);

    # check needed objects
    foreach (qw(LogObject ConfigObject DBObject)) {
        $Self->{$_} = $Param{$_} || die "No $_!";
    }

    # Debug 0=off 1=on
    $Self->{Debug} = 0;

    return $Self;
}
# --
sub GetOption {
    my $Self = shift;
    my %Param = @_;
    # check needed stuff
    if (!$Param{What}) {
        $Self->{LogObject}->Log(Priority => 'error', Message => "Need What!");
        return;
    }
    # module options
    my %Option = (
        PreAuth => 0,
    );
    # return option
    return $Option{$Param{What}};
}
# --
sub Auth {
    my $Self = shift;
    my %Param = @_;
    # check needed stuff
    if (!$Param{User}) {
        $Self->{LogObject}->Log(Priority => 'error', Message => "Need User!");
        return;
    }
    # get params
    my $User = $Param{User} || "";
    my $Pw = $Param{Pw} || "";
    my $RemoteAddr = $ENV{REMOTE_ADDR} || 'Got no REMOTE_ADDR env!';
    my $UserID = "";
    my $GetPw = "";
    # sql query
    my $SQL = "SELECT pw, user ".
        " FROM ".
        " users ".
        " WHERE ".
        " user = '$User'";
    $Self->{DBObject}->Prepare(SQL => $SQL);
    while (my @RowTmp = $Self->{DBObject}->FetchrowArray()) {
        $GetPw = $RowTmp[0];
        $UserID = $RowTmp[1];
    }

    my $Salt = $GetPw;
    $Salt =~ s/^(...)*$/1/;
    my $CryptedPw = crypt($Pw, $Salt);

    # just a note
    if (!$Pw) {
        $Self->{LogObject}->Log(
            Priority => 'notice',
            Message => "User: $User without Pw!!! (REMOTE_ADDR: $RemoteAddr)",
        );
    }
}

```

```

        return;
    }
    # login note
    elsif (((GetPw)&&($User)&&($UserID)) && $CryptedPw eq $GetPw) {
        $Self->{LogObject}->Log(
            Priority => 'notice',
            Message => "User: $User logged in (REMOTE_ADDR: $RemoteAddr).",
        );
        return $User;
    }
    # just a note
    elsif (($UserID) && ($GetPw)) {
        $Self->{LogObject}->Log(
            Priority => 'notice',
            Message => "User: $User with wrong Pw!!! (REMOTE_ADDR: $RemoteAddr)"
        );
        return;
    }
    # just a note
    else {
        $Self->{LogObject}->Log(
            Priority => 'notice',
            Message => "User: $User doesn't exist or is invalid!!! (REMOTE_ADDR: $RemoteAddr)"
        );
        return;
    }
}
# --
1;

```

25.5. Customer Auth Modules

It's the same as "Agent Auth Modules" but the module location is `Kernel/System/CustomerAuth/*.pm`.

25.6. Customer User Modules

...

25.7. PostMaster Filter Modules

See also chapter "PostMaster". This example will sort emails from "email@example.com" into queue "Some::System::Queue" and will set some ticket free text.

For all X-Header options see "doc/X-OTRS-Headers.txt".

A example of a simple postmaster filter module, save it under `Kernel/System/PostMaster/Filter/Simple.pm`. You just need 2 functions, `new()` and `Run()`:

```

# --
# Kernel/System/PostMaster/Filter/Simple.pm - sub part of PostMaster.pm
# Copyright (C) 2001-2003 Martin Edenhofer <martin+code otrs.org>
# --
# $Id: developer-guide-custom-modules.sgml,v 1.6 2004/04/23 08:21:17 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::System::PostMaster::Filter::Simple;

use strict;

```

```

use vars qw($VERSION);
$VERSION = '$Revision: 1.6 $';
$VERSION =~ s/^\.*:\s(\d+\.\d+)\s.*$/\d/;

# --
sub new {
    my $Type = shift;
    my %Param = @_;

    # allocate new hash for object
    my $Self = {};
    bless ($Self, $Type);

    $Self->{Debug} = $Param{Debug} || 0;

    # get needed objects
    foreach (qw(ConfigObject LogObject DBObject)) {
        $Self->{$_} = $Param{$_} || die "Got no $_!";
    }

    return $Self;
}
# --
sub Run {
    my $Self = shift;
    my %Param = @_;
    if ($Param{GetParam}->{From} =~ /email@example.com/i) {
        $Param{GetParam}->{'X-OTRS-Queue'} = 'Some::System::Queue';
        $Param{GetParam}->{'X-OTRS-TicketKey1'} = 'Planet';
        $Param{GetParam}->{'X-OTRS-TicketValue1'} = 'Sun';
    }
    return 1;
}
# --
1;

```

25.8. Generic Agent Modules

See also chapter "GenericAgent".

This module will notify the current ticket owner.

A example of a simple generic agent module, save it under Kernel/System/GenericAgent/Simple.pm. You just need 2 functions, new() and Run(). Run() will be get the ticket id:

```

# --
# Kernel/System/GenericAgent/Simple.pm - generic agent notifications
# Copyright (C) 2001-2004 Martin Edenhofer <martin+code otrs.org>
# --
# $Id: developer-guide-custom-modules.sgml,v 1.6 2004/04/23 08:21:17 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::System::GenericAgent::Simple;

use strict;
use Kernel::System::User;
use Kernel::System::Email;

use vars qw(@ISA $VERSION);
$VERSION = '$Revision: 1.6 $';
$VERSION =~ s/^\.*:\s\W(\.*)\W.+$$/\d/;

# --
sub new {

```

```
my $Type = shift;
my %Param = @_;

# allocate new hash for object
my $Self = {};
bless ($Self, $Type);

# check needed objects
foreach (qw(DBObject ConfigObject LogObject TicketObject)) {
    $Self->{$_} = $Param{$_} || die "Got no $_!";
}

$Self->{UserObject} = Kernel::System::User->new(%Param);
$Self->{EmailObject} = Kernel::System::Email->new(%Param);

return $Self;
}
# --
sub Run {
    my $Self = shift;
    my %Param = @_;

    my %Ticket = $Self->{TicketObject}->GetTicket(%Param);

    my %User = $Self->{UserObject}->GetUserData(UserID => $Ticket{UserID});
    if ($User{UserEmail}) {
        $Self->{EmailObject}->Send(
            To => $User{UserEmail},
            Subject => "[${Ticket{TicketNumber}}] Ticket Notification!",
            Body => "Hi $User{Firstname}, some info ... about ${Ticket{'TicketNumber'}}".
            Loop => 1,
        );
    }

    return 1;
}
# --
1;
```

25.9. Agent Ticket Permission Modules

...

25.10. Customer Ticket Permission Modules

...

Chapter 26. FAQ

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

The default SuSE 8.0 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 OTRS?

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

3. What stands OTRS for?

Open Trouble-Ticket Request System.

4. What does OTRS 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 OTRS?

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. How can I delete a user, who is no longer needed? (asked by Andreas Haase - Wed, 21 Aug 2002 11:17:01 +0200 (CEST))

OTRS 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.

7. Can OTRS 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.

8. Can OTRS 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.

9. Fulltext Index Searching?

Yes.

10. Is OTRS multi user and multi group able?

Yes, of course.

11. 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!

12. Can I use OTRS 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 information on <http://www.otrs.org/>. And we are more than happy to receive some feedback from you about how you installed OTRS on other platforms.

13. 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>).

But again, your are on the safe side by using SuSE Linux. It will provide you with all the needed stuff.

14. How stable is OTRS?

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 guarantee it!

15. 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.

16. How does OTRS scale and how big can it become?

This is depending on the hardware and the enviroment you are using. At the moment OTRS 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.

There are OTRS installations which handle 20,000 tickets (e-mails) a day and don't show any sign of stress.

17. Can I use my nice Oracle or DB2?

At the moment we only support MySQL (<http://www.mysql.com/>) as the default database and additionally PostGreSQL (<http://www.postgresql.org/>). Frankly we do trust in the two as much as in a DB2 (for this application). Anybody who is willing to spend some time to port it to other databases is more than welcome to the OTRS team!

Note: The code is designed to support different databases!

18. Which programming language is used?

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

19. What is the default admin account?

User: root@localhost Password: root

Of course it is a very good idea to change this default password!

20. Does OTRS work with mod_perl (<http://perl.apache.org/>)?

Of course.

21. Is it possible to customize OTRS?

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

22. Can I install OTRS on a Windows box?

Yes, we provide a step-by-step installation guide for manually setting up OTRS, as well as an automated installer.

23. How can I become a part of the OTRS 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 OTRS but would feel more comfortable by using a commercial product.

There is commercial support for otrs provided by ((otrs.de)).

25. What browser do I need?

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

26. Is it possible to generate my own ticket number format?

Yes it's possible. You can choose between four different OTRS formats. AutoIncrement ("SystemID.Counter" e. g. 1010138 or 1010139), Date ("Year.Month.Day.SystemID.Counter" e. g. 200206231010138 or 200206231010139), Random ("SystemID.Random" e. g. 100057866352 or 103745394596) and my favorite one DateChecksum ("Year.Month.Day.SystemID.Counter.CheckSum" e. g. 2002070110101520 and 2002070110101535).

Further it's possible to create a own ticket number format (like you want). See the OTRS documentation.

27. Do you support the RFC 1297?

Yes, OTRS supports this RFC.

28. Can I add my own ticket states?

Yes, but be carefully with the existing states (OTRS needs basic states).

29. More then one OTRS on one machine?

Yes, you can do that. Just install the second, third, ... in different paths (e.g. /opt/otrs01, /opt/otrs02, /opt/otrs03, ...). And configure the webserver like README.webserver.

30. Which changes are made to my system when using the otrs4win32 installer?

MySQL requires it's configuration file to be in the 'Windows' directory, the Start Menu entries are located somewhere in your profile. No other file outside the root directory holding all files will be written or even modified. Your system's registry will only be touched when installing some or all of the servers as a system service.

31. What about the services' installations on Win32?

We wanted to provide an installation that doesn't change much in the target system's configuration. Although a service installation dives deep into the system, we won't let you do this on your own. We decided to install any service during the installation procedure needed for OTRS to run.

32. Why should I install the servers as system services at all on Win32?

We strongly recommend this when using OTRS. It is very convenient to have the servers running in the background without any annoying control windows. Additionally, no user has to be logged in on the machine when services are used!

33. Is it wise to keep all files under one directory on Win32?

There is nothing wrong with that. Some of you do not even think about those circumstances, but: There are people out there to be taken seriously when saying a mail server should reside on it's own partition, a database server should store on a RAID, a busy webserver requires a mirrored partition and so on. *You're absolutely right* - go on, use Windows' facilities to build all of these and other scenarios. The keywords are *Dynamic Disks* and *DFS* here. In other words, you may certainly move the subdirectories of the root directory of otrs4win32 to partitions, RAIDs or whatever you like and you are hereby encouraged to. You just have to configure your box to do it. Feel free to contact us if you need assistance with generally setting up the Windows operating system on your box.

Glossary

This glossary covers OTRS terms.

User Groups

Agent

The person who works on the tickets.

Admin

Each Agent who is (rw) in the 'admin' group is admin.

Customer

The problem reporter.

Web Interface

Agent Interface

Web Interface (<http://example.com/otrs/index.pl>) for the agent to work on the tickets.

Admin Interface

Web Interface (<http://example.com/otrs/index.pl?Action=Admin>) for the admin to do the admin jobs.

Customer Interface

Web Interface (<http://example.com/otrs/customer.pl>) for the customer to create, view and send follow ups for tickets.

Agent Interface

Mailbox

Overview of all agent locked tickets.

Phone View

A screen to create tickets.

Queue View

Overview of all 'open' and 'unlocked' tickets sorted by queue. Sort order of each queue is priority then age.

Ticket History

A detail view (each action, e. g. move, lock, ...) of a ticket.

Ticket Zoom

A detail view (each article) of a ticket.

You have n new message(s)!

New messages in agent locked tickets where the last article isn't written by the agent (e. g. by customer or other agent). The new message notify will go if last article is written by the agent (helps the agent to show what customer needs to be contacted).

Ticket

Ticket Number

Uniq ticket number. Reference for agent and customer. It's possible to change the ticket number format.

Ticket Age

Age of the ticket.

Ticket Status

Ticket states are e.g 'new' or 'open'. It's also possible to change/add/remove ticket states via the Admin Interface.

Ticket Priority

How important a ticket is, ticket priorities are e.g '3 normal' or '4 high'. It's also possible to change/add/remove ticket priorities (see doc).

Ticket Lock

A Ticket is 'locked' or 'unlocked'. That means it's locked for an agent who want's to work on it. At this time it's not writable for other agents! If an agent locks a ticket then the owner will be updated to the current agent automatically.

Ticket Owner

The current owner of the ticket. Owner isn't equal Lock!

Ticket CustomerID

The CustomerID of the customer. Default is the email address.

Ticket CustomerUser

The CustomerUser (the sender). Default is the email address.

Ticket Escalation Time

If an escalation time is set for a queue (Admin Interface -> Queue) and a ticket is open and not answered then just this ticket will be shown. No other ticket is accessible via QueueView.

Ticket Free Text

It's possible to set tags to tickets like Key:Product and Value:Pizza. If a ticket free text is set, then it will be shown in the zoom and queue view. It's possible to set up to 8 Key:Value Tags for each ticket. Of course, it's possible to use it in ticket search or generic agent. See also chapter "Config File" for ticket free text config options.

Article

The parts of a ticket (requests, notes, answers) are articles.

Article Type

The article types:

email-external: email between customer and agent

email-internal: email between agents e. g. for feedback (_not_ shown in customer interface)

email-notification-ext: email notification to customer

email-notification-int: email notification to agent (_not_ shown in customer interface)

phone: phone note

webrequest: request from the customer web interface

note-internal: note just shown for agents (agent to agent - _not_ shown in customer interface)

note-external: note shown for agent and customer (should _not_ be used as communication between customer and agent!)

note-report (note used for reporting - should be used by monitoring tools like Nagios (<http://www.nagios.org/>))

[not used at this moment: fax, sms]

Article Sender Type

The creator of the article ('agent', 'customer' or 'system').

Response

Modular default answers for Agent Interface (to write faster answers). Configurable per queue.

Auto-Response

Automatically generated responses after customer created a new ticket or wrote a follow up. Configurable per queue.

Appendix A. Online resources

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

A.1. Homepage

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



A.2. Mailinglists

We provide six major mailinglists. You must be subscribed to post to any of them.

The first is <announce at otrs.org>. It is a low traffic list for announcements of new OTRS releases and security issues.

The second mailinglist is <otrs at otrs.org>. It is a medium to high traffic list with all sorts of questions and support to the product.

The third mailinglist is <otrs-de at otrs.org>. It is a medium to high traffic list with all sorts of questions and support in German to the product.

The fourth mailinglist is <dev at otrs.org>. It is a medium to high traffic list. The OTRS developers discuss various design and implementation issues here.

The fifth mailinglist is <i18n at otrs.org>. It is a low traffic list for internationalization and localization questions. If you are or want to become a translator of the OTRS project or have any problems with one of our applications in an international environment, this is the right place.

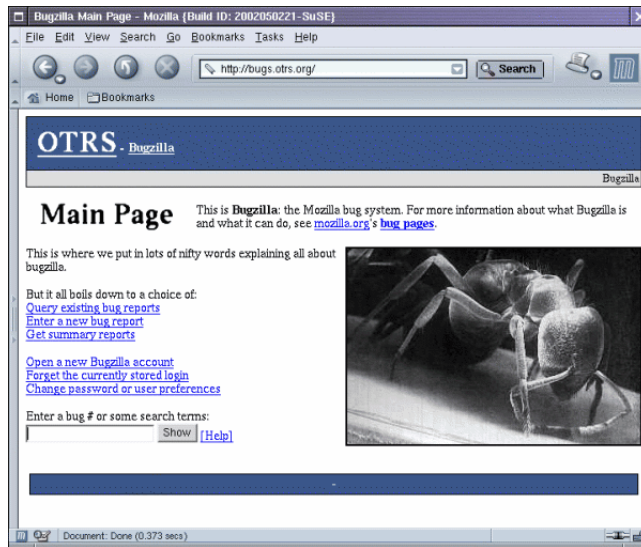
The sixth mailinglist is <cvb-log at otrs.org>. It is a very high traffic list. CVS commits notifications.

To subscribe 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 OTRS core team

OTRS 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/>

So much to say but unfortunately no time to find the right words. ;-)

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>) / 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.

B.4. Robert Kehl

E-Mail: [<robert.kehl@otrs.de>](mailto:robert.kehl@otrs.de)
Homepage: <http://www.robertkehl.de/>
joined the team: 01.09.2003

Robert is the father of the win32 port of OTRS. He spent many weeks, tried totally different ways and finally came up with a brilliant otrs4win32 installer.

Appendix C. Credits

As most open source projects we have to thank many people for their 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, Dan Rau, Christoph Kaulich, Mark Jackson, Diane Shieh, Bernard Choppy, Carl Bailey, Phil Davis, Edwin D. Vinas, Lars Müller, Bryan Fullerton, Vladimir Gerdjikov, Fred van Dijk, Sebastien Guilbaud, Wiktor Wodecki, Arnold Ligtoet, Antti Kämäräinen, Nicolas Goralski, Robert Kehl, Gilberto Cezar de Almeida, Jorge Becerra, Eddie Urenda, Stella Power, Andreas Haase, Reiner Keller, Covert Jake, Moshe Leibovitch, Bjoern Jacke, Remo Catelotti, Alfons Obermeyer, Michael Rech, Torsten Werner;

And of course there are always people who give a very special extra support to the project. Here they are:

- Robert Kehl, who has created the Win32 installer by himself. Thank you Robert!
- The OTRS mailinglists are a great source of ideas and give everybody very good support. Thank you guys for helping us!

mirrors

The project pretty soon reached a point where our ftp server didn't have enough bandwidth to serve the demand. Here is a list of people who rescued us by setting up mirrors. We appreciate your help!

Nils Jeppe (mirror Hamburg), Bryan Fullerton (ftp.samurai.com), Eberhard Moenkeberg (ftp.gwdg.de)

Appendix D. RFC 1297

Many people do not have an idea what a trouble ticket system is and why you may need one. The *RFC 1297* (<http://www.faqs.org/rfcs/rfc1297.html>) is a good start to get an overview.

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.

—RFC 1297

Of course we added many features to the OTRS 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 OTRS core team

Appendix E. GNU Free Documentation License

Version 1.1, March 2000

Copyright (C) 2000 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

0. PREAMBLE

The purpose of this License is to make a manual, textbook, or other written document "free" in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

1. APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you".

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (For example, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, whose contents can be viewed and edited directly and straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup has been designed to thwart or discourage subsequent modification by readers is not Transparent. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML designed for human modification. Opaque formats include PostScript, PDF, proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

2. VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or

control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

3. COPYING IN QUANTITY

If you publish printed copies of the Document numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a publicly-accessible computer-network location containing a complete Transparent copy of the Document, free of added material, which the general network-using public has access to download anonymously at no charge using public-standard network protocols. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

4. MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

- A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.
- B. List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has less than five).
- C. State on the Title page the name of the publisher of the Modified Version, as the publisher.
- D. Preserve all the copyright notices of the Document.
- E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.
- F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.
- G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.
- H. Include an unaltered copy of this License.
- I. Preserve the section entitled "History", and its title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.
- J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.
- K. In any section entitled "Acknowledgements" or "Dedications", preserve the section's title, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

M. Delete any section entitled "Endorsements". Such a section may not be included in the Modified Version.

N. Do not retitle any existing section as "Endorsements" or to conflict in title with any Invariant Section.

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section entitled "Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties--for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

5. COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections entitled "History" in the various original documents, forming one section entitled "History"; likewise combine any sections entitled "Acknowledgements", and any sections entitled "Dedications". You must delete all sections entitled "Endorsements."

6. COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

7. AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, does not as a whole count as a Modified Version of the Document, provided no compilation copyright is claimed for the compilation. Such a compilation is called an "aggregate", and this License does not apply to the other self-contained works thus compiled with the Document, on account of their being thus compiled, if they are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one quarter of the entire aggregate, the Document's Cover Texts may be placed on covers that surround only the Document within the aggregate. Otherwise they must appear on covers around the whole aggregate.

8. TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License provided that you also include the original English version of this License. In case of a disagreement between the translation and the original English version of this License, the original English version will prevail.

9. TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided for under this License. Any other attempt to copy, modify, sublicense or distribute the Document is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

10. FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <http://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation.

How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

Copyright (c) YEAR YOUR NAME. Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.1 or any later version published by the Free Software Foundation; with the Invariant Sections being LIST THEIR TITLES, with the Front-Cover Texts being LIST, and with the Back-Cover Texts being LIST. A copy of the license is included in the section entitled "GNU Free Documentation License".

If you have no Invariant Sections, write "with no Invariant Sections" instead of saying which ones are invariant. If you have no Front-Cover Texts, write "no Front-Cover Texts" instead of "Front-Cover Texts being LIST"; likewise for Back-Cover Texts.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

Bibliography

Ben Laurie and Peter Laurie, 1999, O'Reilly, *Apache. Das umfassende Referenzwerk.*, 3897211270.

Bryan Costales and Eric Allman, 1997, O'Reilly, *sendmail*, 1565922220.

Richard Blum, 2001, SAMS, *Postfix*, 0672321149.

Eric Rescorla, 2000, Addison Wesley, *SSL and TLS*, 0201615983.

iX, Heise Verlage, "Winnetou und Old SSLeay", Holger Reif, 1998, page 128.

George Reese, Tim King, and Randy Jay Yarger, 2002, O'Reilly, *Managing & Using MySQL (2nd Edition)*, 0596002114.

Illiad, 1999, O'Reilly, *User Friendly*, 1565926730.

