

# Network Management & Monitoring

## Request Tracker (RT) Installation and Configuration

### Notes:

- Commands preceded with "\$" imply that you should execute the command as a general user - not as *root*.
- Commands preceded with "#" imply that you should be working as the *root* user.
- Commands with more specific command lines (e.g. "RTR-GW>" or "mysql>") imply that you are executing commands on remote equipment, or within another program.
- If a command line ends with "\ " this indicates that the command continues on the next line and you should treat this as a single line.

## Exercises

### Exercise 0

Log in to your PC or open a terminal window as the sysadm user.

### Exercise 1

Install the necessary packages for RT You should have mysql-server already, but we do the install just in case. This won't cause problems.

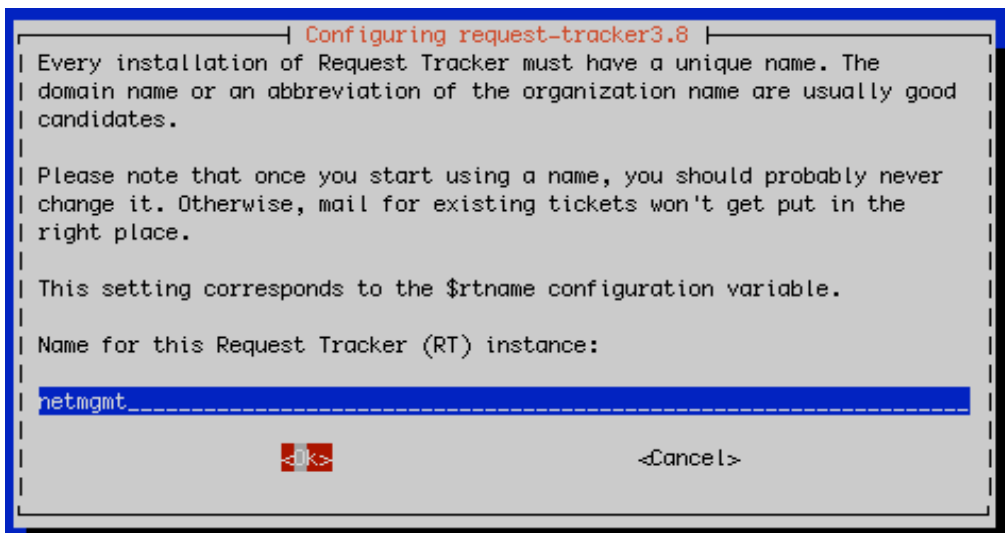
```
$ sudo apt-get install rt3.8-apache2
$ sudo apt-get install rt3.8-clients
$ sudo apt-get install rt3.8-db-mysql
$ sudo apt-get install request-tracker3.8
$ sudo apt-get install mutt
```

A quicker way to do this is to specify all the packages on a single line. (Hint, you can copy and paste this if you wish):

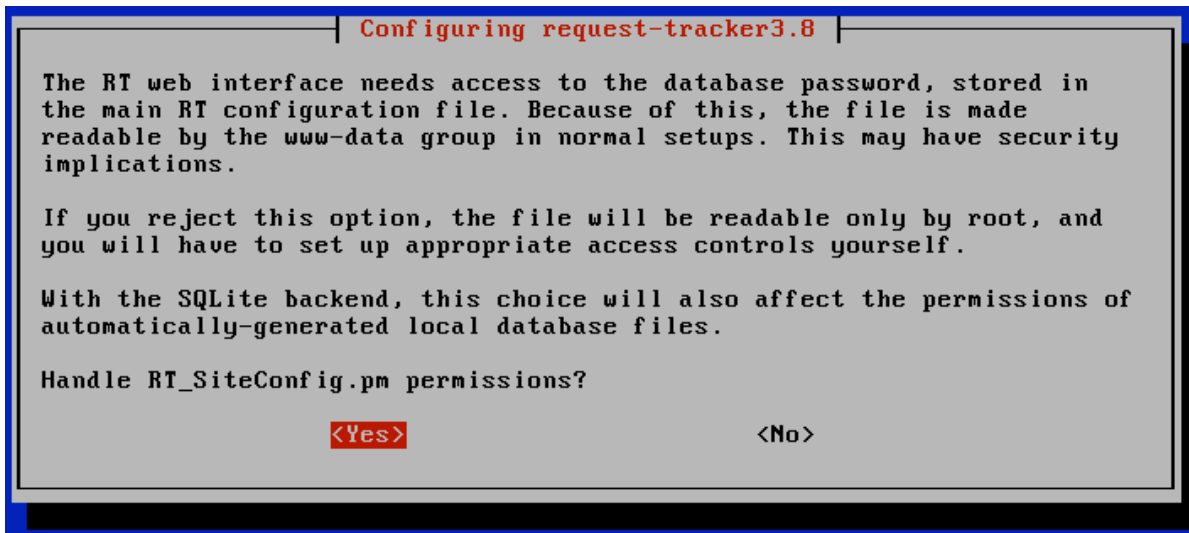
```
$ sudo apt-get install rt3.8-apache2 rt3.8-clients \
rt3.8-db-mysql request-tracker3.8 mutt
```

Respond "Yes" when prompted if you wish to install the packages.

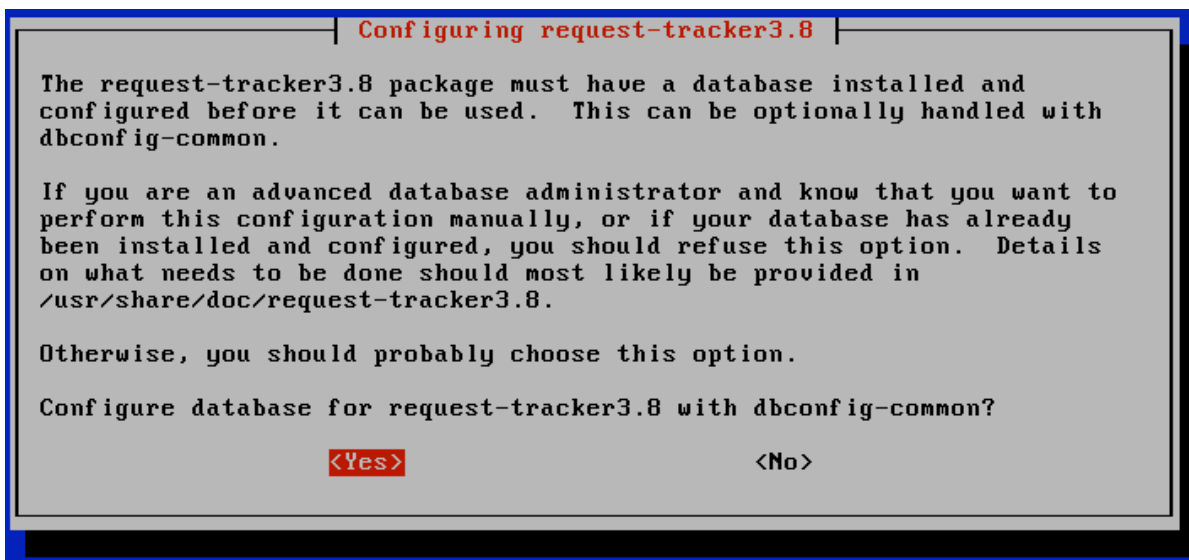
You will now be presented with several windows. Read the following instructions to see how to respond:



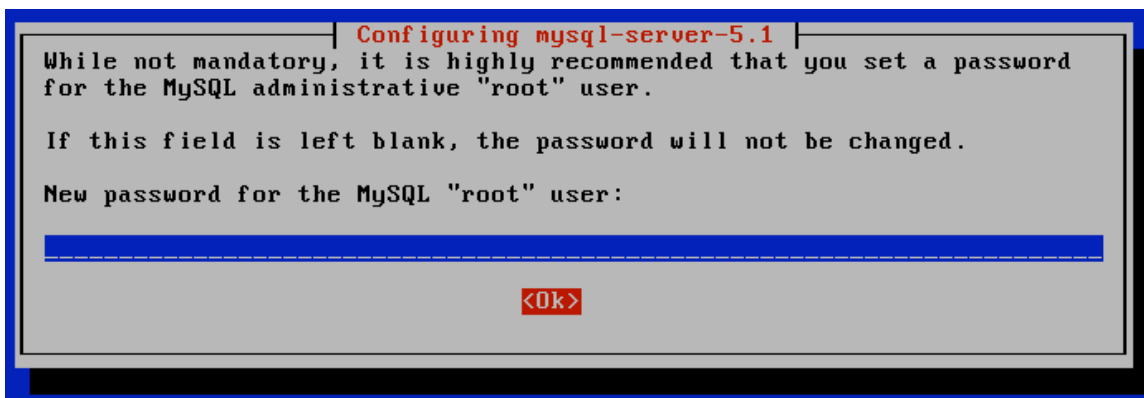
Use the name "netmgmt" for this instance of RT. (Do not use your machine name)



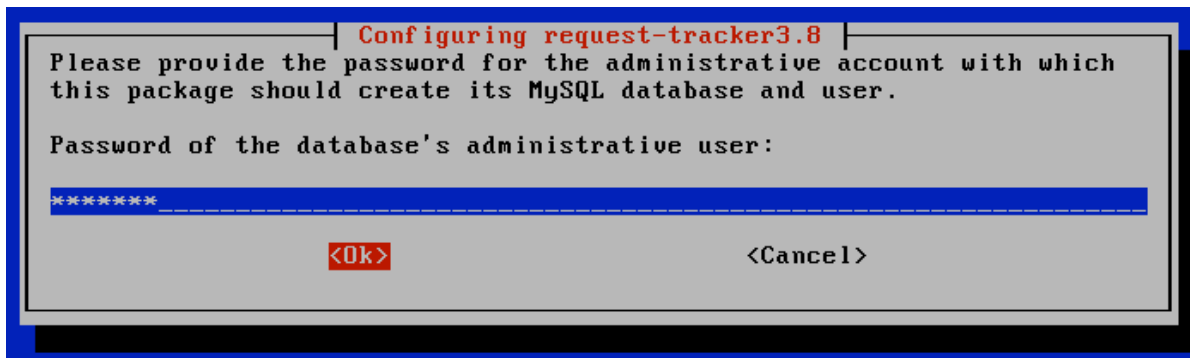
Choose “Yes” – Be aware of this issue. You may wish to manually go and change the permissions for the RT configuration file at a later time.



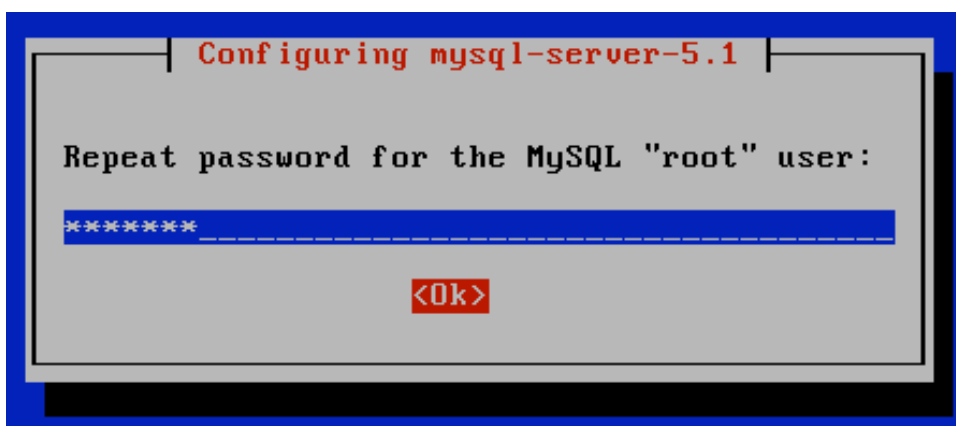
Choose “Yes”



If you see this prompt, then enter in your class password. If MySQL is already installed, then this screen will not be shown.



To keep our installation simple, please use the same password as you did for the MySQL “root” user. You will be prompted either one or two times more for the same password. Please enter it again and select “<OK>” to continue.



Enter the same password again.

At this point you have installed Request Tracker version 3.8. In order to access RT via the Apache web server you need to make one small change.

```
$ cd /etc/apache2/conf.d
$ sudo ln -s /etc/request-tracker3.8/apache2-speedycgi.conf .
$ sudo service apache2 reload
```

RT is now running and available on your machine.

## **Exercise 2**

### **RT Configuration: root User Password Change**

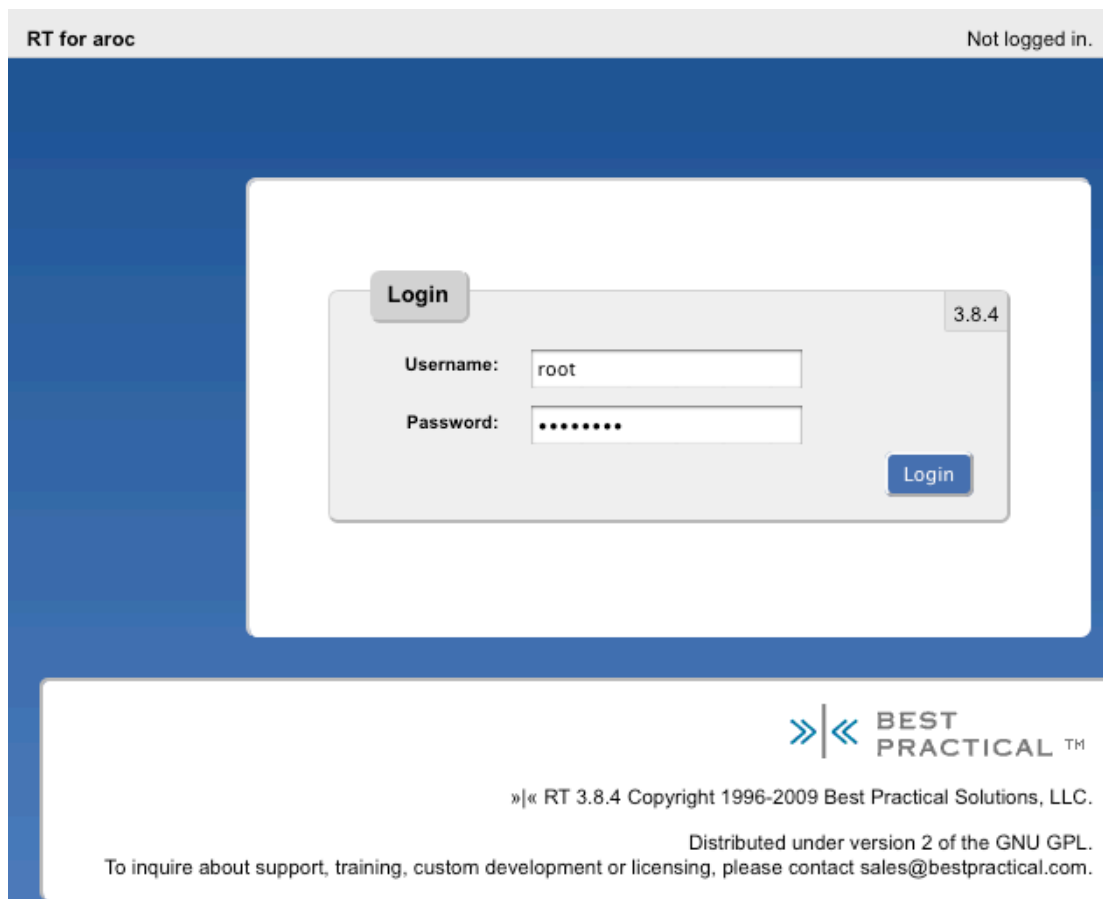
Open a web browser and point it to the IP address of the machine where you installed RT.

For example open the link (trailing “/” is *required*):

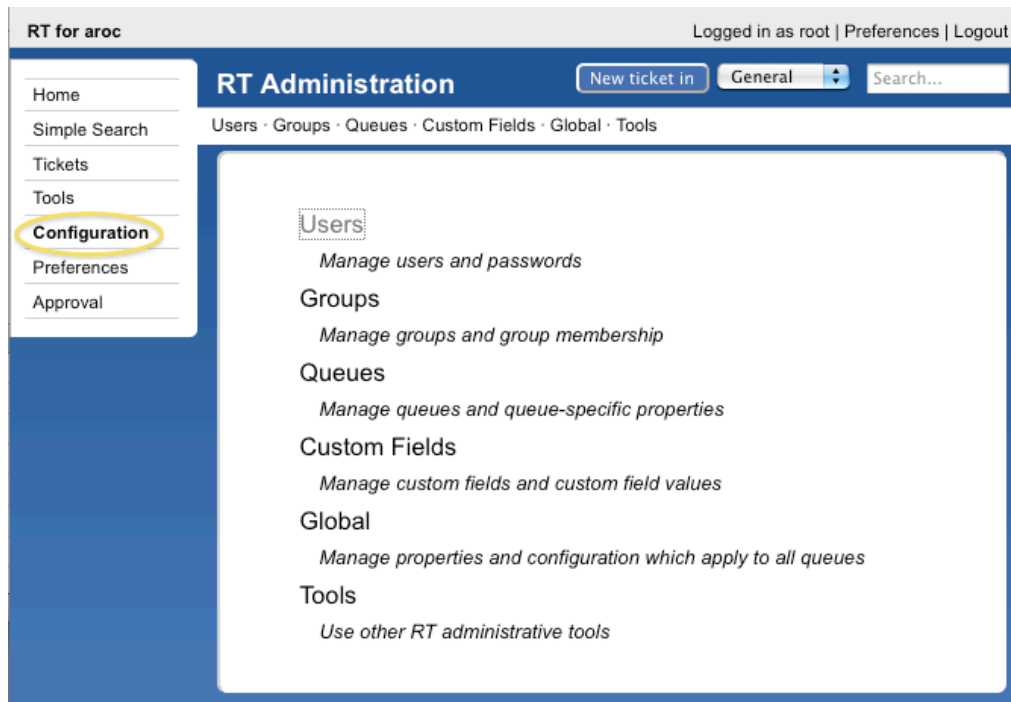
<http://pcN.ws.nsrc.org/rt/>

You will now see the opening RT screen. You should log in using the default username and password for a new installation.

Login as user “root” and password of “password”



Once you have logged in let's update the password for the root RT user. To do this click on **Configuration** in the left menu, then click on the **Users** entry.



Once you've clicked on **Users** you should see a screen like the one below:

RT for aroc Logged in as root | Preferences | Logout

Select a user New ticket in General Search...

Select · Create

### Privileged users

Select a user:

#	Name	RealName	EmailAddress
12 root		Enoch Root	root@localhost ( Download as a tab-delimited file )

Find all users whose User Id matches

Include disabled users in search.

Go!

Click on the **root** entry and you will now see a detail screen for this user:

RT for aroc Logged in as root | Preferences | Logout

Modify the user root New ticket in General Search...

Basics · History · Memberships · RT at a glance

#### Identity

Username: root (required)  
Email: root@localhost  
Real Name: Enoch Root  
Nickname:  
Unix login: root  
Language: [dropdown]  
Extra info:

#### Location

Organization:  
Address1:  
Address2:  
City:  
State:  
Zip:  
Country:

#### Phone numbers

Home:  
Work:  
Mobile:  
Pager:

#### Access control

Let this user access RT  
 Let this user be granted rights  
New Password:  
Retype Password:

#### Custom Fields

Change the password for the root user to the administrative password that you are using in class. Once you have done this press the **Save Changes** button at the bottom of the screen (not visible in our screen capture). You'll see this at the top of the page if all goes well:

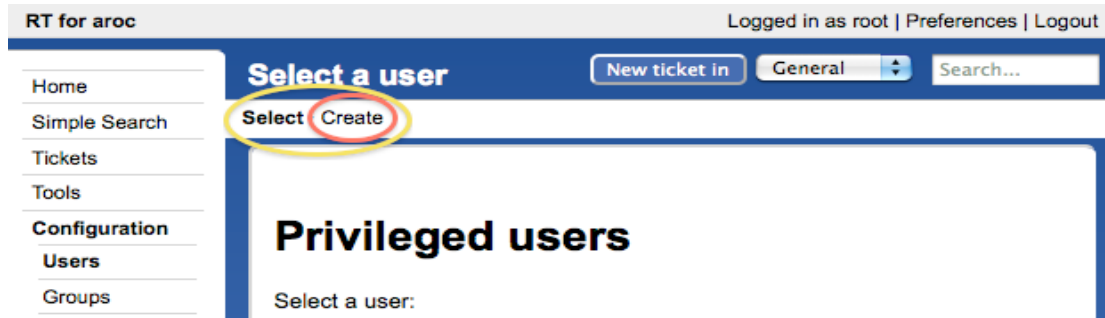
Results

- Password changed

### Exercise 3

#### RT Configuration: Create a User

You should already be logged in to RT as the “root” user. If not, log back in as root.



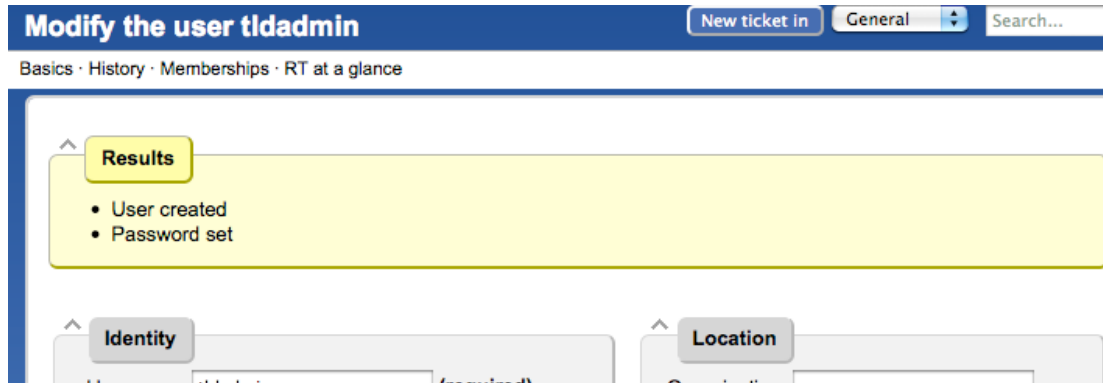
On the left of the screen click **Configuration** → **Users** and then click on the **Create** item in the upper-left of the screen.

You will now be presented with the following dialogue. Fill in the fields, and make sure the checkbox "Let this user be granted rights" is checked.

A screenshot of the 'Create a new user' form in the RT interface. The form is divided into several sections: 'Identity', 'Location', 'Access control', and 'Phone numbers'. The 'Identity' section contains fields for Username (sysadm), Email (sysadm@localhost), Real Name (System Admin), Nickname, Unix login, and Language. The 'Location' section contains fields for Organization, Address1, Address2, City, State, Zip, and Country. The 'Access control' section has two checked checkboxes: 'Let this user access RT' and 'Let this user be granted rights'. Below these are fields for 'New Password' and 'Retype Password', both containing six dots. The 'Phone numbers' section has fields for Home, Work, Mobile, and Pager. A red arrow points to the 'Let this user be granted rights' checkbox. The 'Create' button in the top-left of the form is circled in yellow.

Use the same password for “sysadm” as you are using in class. **Be sure you check “Let this user be granted rights”**. Once done, scroll down the page and click on the **Create** button (bottom right).

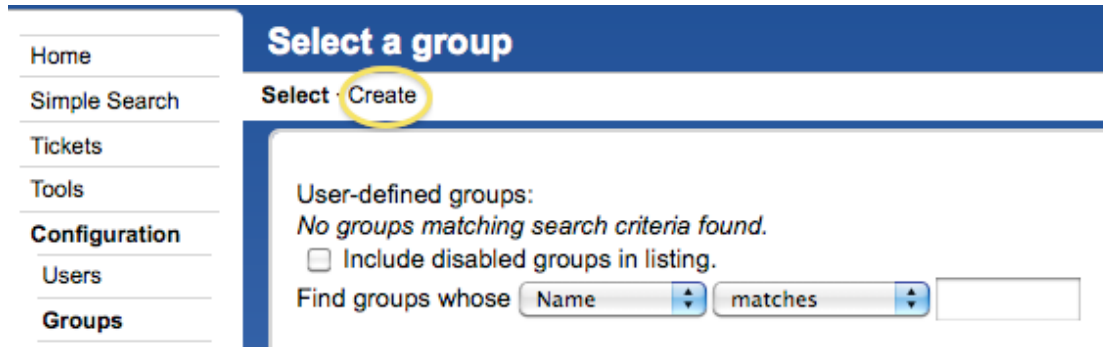
You should see this:



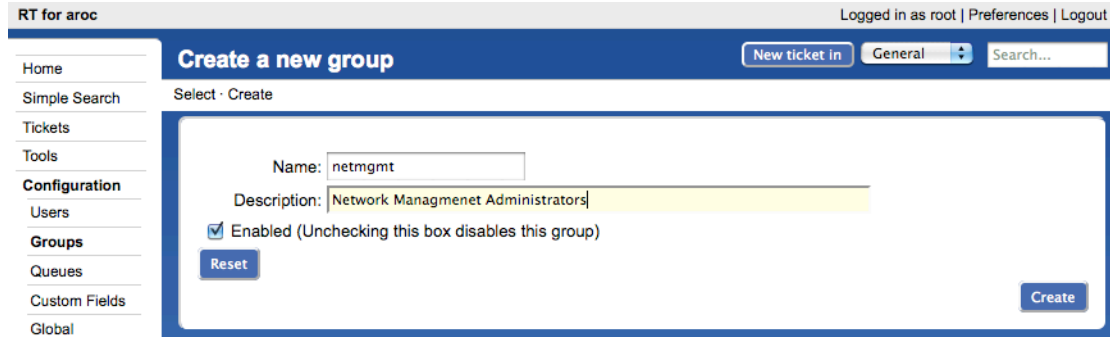
## Exercise 4

### RT Configuration: Create a Group

1. Click on **Configuration** (left menu), then **Groups** (middle of screen).
2. Click on **Create** (top menu)



3. Fill in the name: "**netmgmt**", and add a description, then click on "**Create**"



You should see the following result (next page):

RT for aroc Logged in as root | Preferences | Logout

**Modify the group netmgmt** New ticket in General Search...

Basics · Members · Group Rights · User Rights · History

**Results**

- Group netmgmt: Description changed from (no value) to 'Network Managemet Administrators' by root

Name:

Description:

Enabled (Unchecking this box disables this group)

## Exercise 5

### RT Configuration: Add Members to a Group

4. Click on **Configuration** (left menu), then **Groups** (center menu)
5. Click on "netmgmt" (the group you just created)
6. Click on **Members** (top menu)

RT for aroc Logged in as root | Preferences | Logout

**Modify the group netmgmt** New ticket in General Search...

Basics · **Members** · Group Rights · User Rights · History

Name:

Description:

Enabled (Unchecking this box disables this group)

7. In the "Add members" list (right), select the user you created in step 3. This is the "sysadm" user, with the description "System Admin.":

RT/Admin/Edit the group netmgmt New ticket in General Search...

Basics · **Members** · Group Rights · User Rights · History

**Editing membership for group netmgmt**

**Current members**  
(No members)

**Add members**

**Users**

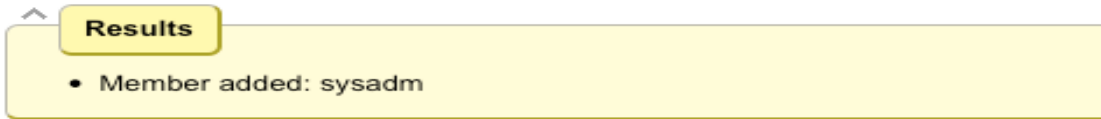
- Enoch Root
- System Admin**

**Groups**

(Check box to delete)



You should see this:



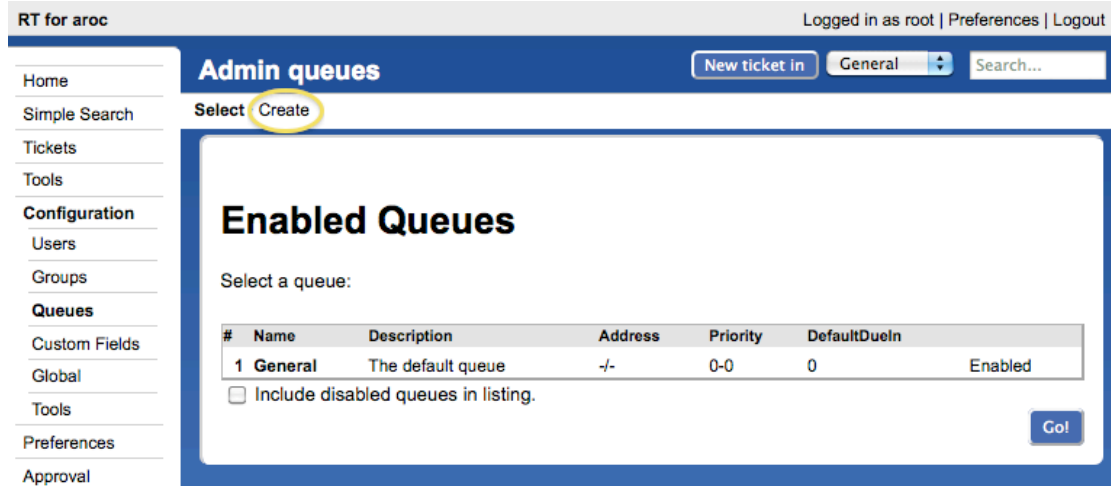
Results

- Member added: sysadm

## Exercise 6

### RT Configuration: Create a New Queue

1. Click on **Configuration** (left menu), then **Queues** (center menu)
2. Click on **Create** (top menu)



RT for aroc Logged in as root | Preferences | Logout

Admin queues New ticket in General Search...

Select Create

### Enabled Queues

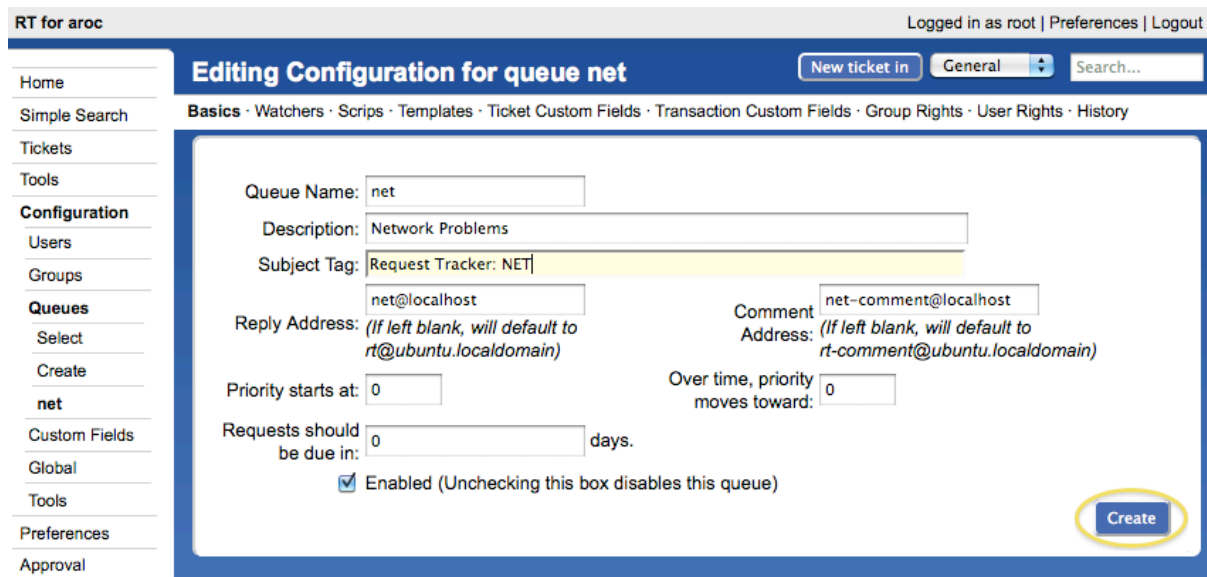
Select a queue:

#	Name	Description	Address	Priority	DefaultDueln	
1	General	The default queue	-/-	0-0	0	Enabled

Include disabled queues in listing.

Go!

1. Fill in the fields. Let's use the following values:  
**Queue Name:** net  
**Description:** Network Problems  
**Subject Tag:** Request Tracker: NET  
**Reply Address:** net@localhost  
**Comment Address:** net-comment@localhost



RT for aroc Logged in as root | Preferences | Logout

### Editing Configuration for queue net

Basics · Watchers · Scripts · Templates · Ticket Custom Fields · Transaction Custom Fields · Group Rights · User Rights · History

Queue Name: net

Description: Network Problems

Subject Tag: Request Tracker: NET

Reply Address: net@localhost

Comment Address: net-comment@localhost

Priority starts at: 0

Over time, priority moves toward: 0

Requests should be due in: 0 days.

Enabled (Unchecking this box disables this queue)

Create

2. Click on **Create**:

## Results

- Queue created
- Queue net: Description changed from (no value) to "Network Problems"
- Queue net: CorrespondAddress changed from (no value) to "net@localhost"
- Queue net: CommentAddress changed from (no value) to "net-comment@localhost"
- Queue net: SubjectTag changed to [RT NET]

If your Request Tracker box has a fully qualified domain name you can use this instead of "localhost".

## Exercise 7

### RT Configuration: Give Rights to our Group on the Queue

1. Click on **Configuration** (left menu), then **Queues** (center menu).
2. Click on "**net**" (the queue that you just created).
3. Click on "**Group Rights**" (top menu).

RT for aroc Logged in as root | Preferences | Logout

**Editing Configuration for queue** New ticket in **General** Search...

Home  
Simple Search  
Tickets  
Tools  
**Configuration**  
Users  
Groups  
**Queues**  
Select  
Create  
**net**  
Custom Fields  
Global  
Tools  
Preferences  
Approval

Basics · Watchers · Scripts · Templates · Ticket Custom Fields · Transaction Custom Fields · **Group Rights** · User Rights · History

Queue Name:

Description:

Subject Tag:

Reply Address:  (If left blank, will default to rt@ubuntu.localdomain)

Comment Address:  (If left blank, will default to rt-comment@ubuntu.localdomain)

Priority starts at:

Over time, priority moves toward:

Requests should be due in:  days.

Enabled (Unchecking this box disables this queue)

**Save Changes**

The following menu is pretty long and complex. Here is what you should do:

In the "Everyone" Group, on the right side under **New Rights** select these three items. Use the CTRL key (or Apple key on a Macintosh) to select multiple items:

- **CreateTicket**
- **ReplyToTicket**
- **SeeQueue**
- **ShowTicket**

In the **netmgmt** Group select everything except for the choice "no value" – You can use the shift key to do this. Once this is done, press the **Modify Groups Rights** button on the bottom right of the page.

## System groups

Everyone

Current rights	New rights
(Check box to revoke right) <input type="checkbox"/> CreateTicket <input type="checkbox"/> ReplyToTicket <input type="checkbox"/> SeeQueue <input type="checkbox"/> ShowTicket	StealTicket TakeTicket Watch WatchAsAdminCc (no value)

Unprivileged

Current rights	New rights
No rights granted.	StealTicket TakeTicket Watch WatchAsAdminCc (no value)

Privileged

Current rights	New rights
No rights granted.	StealTicket TakeTicket Watch WatchAsAdminCc (no value)

## Roles

Requestor

Current rights	New rights
No rights granted.	StealTicket TakeTicket Watch WatchAsAdminCc (no value)

Owner

Current rights	New rights
No rights granted.	StealTicket TakeTicket Watch WatchAsAdminCc (no value)

Cc

Current rights	New rights
No rights granted.	StealTicket TakeTicket Watch WatchAsAdminCc (no value)

AdminCc

Current rights	New rights
No rights granted.	StealTicket TakeTicket Watch WatchAsAdminCc (no value)

## User defined groups

netmgmt

Current rights	New rights
No rights granted.	StealTicket TakeTicket Watch WatchAsAdminCc (no value)

Reset

Modify Group Rights

You will see a bunch of this (next page):

## Results

- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted
- Right Granted

and all the rights that the Group “netmgmt” now has on the NET queue (bottom of page):

## User defined groups

netmgmt

### Current rights

*(Check box to revoke right)*

- AdminQueue
- AssignCustomFields
- CommentOnTicket
- CreateTicket
- DeleteTicket
- ForwardMessage
- ModifyACL
- ModifyCustomField
- ModifyQueueWatchers
- ModifyScripts
- ModifyTemplate
- ModifyTicket
- OwnTicket
- ReplyToTicket
- SeeCustomField
- SeeQueue
- ShowACL
- ShowOutgoingEmail
- ShowScripts
- ShowTemplate
- ShowTicket
- ShowTicketComments
- StealTicket
- TakeTicket
- Watch
- WatchAsAdminCc

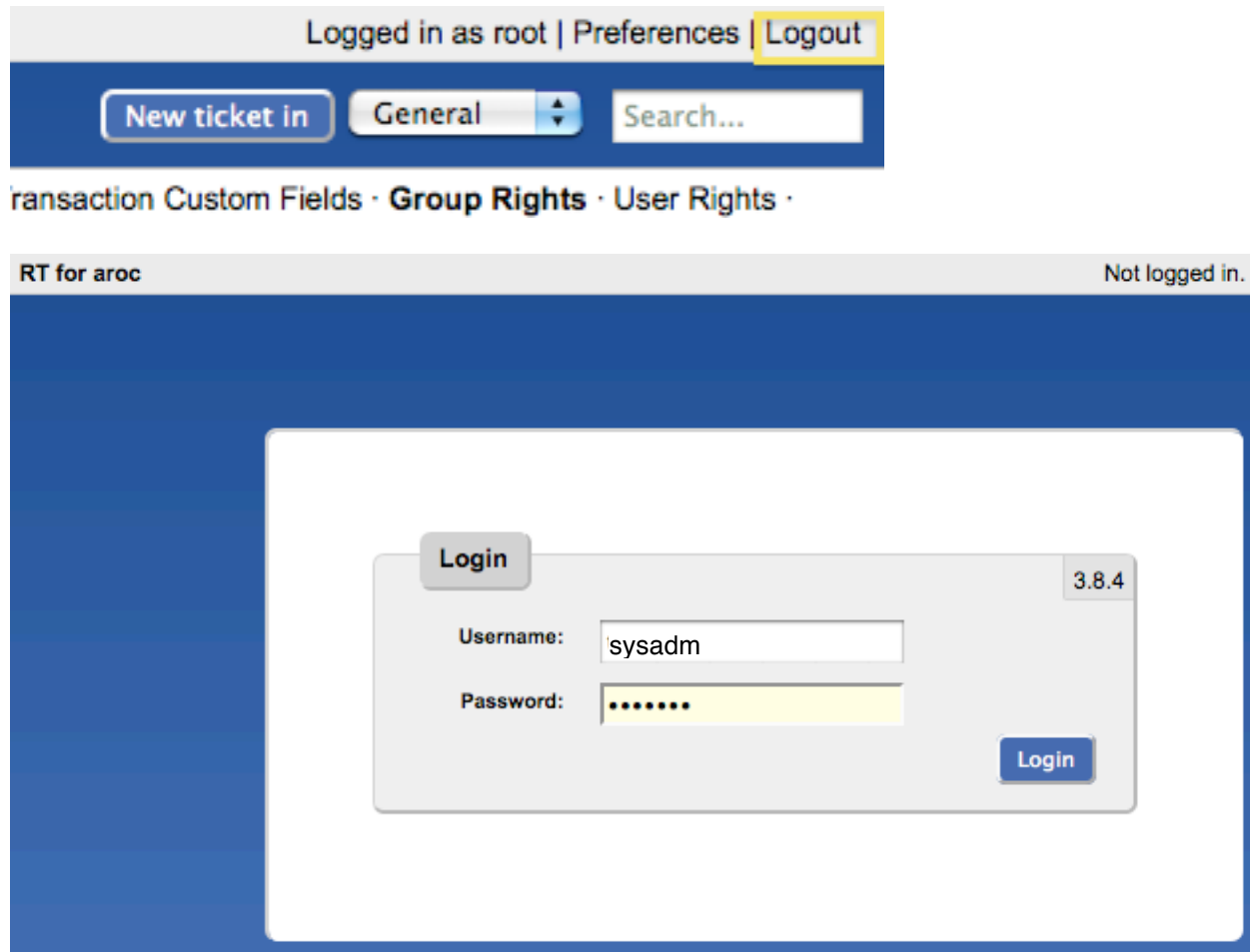
### New rights

(no value)

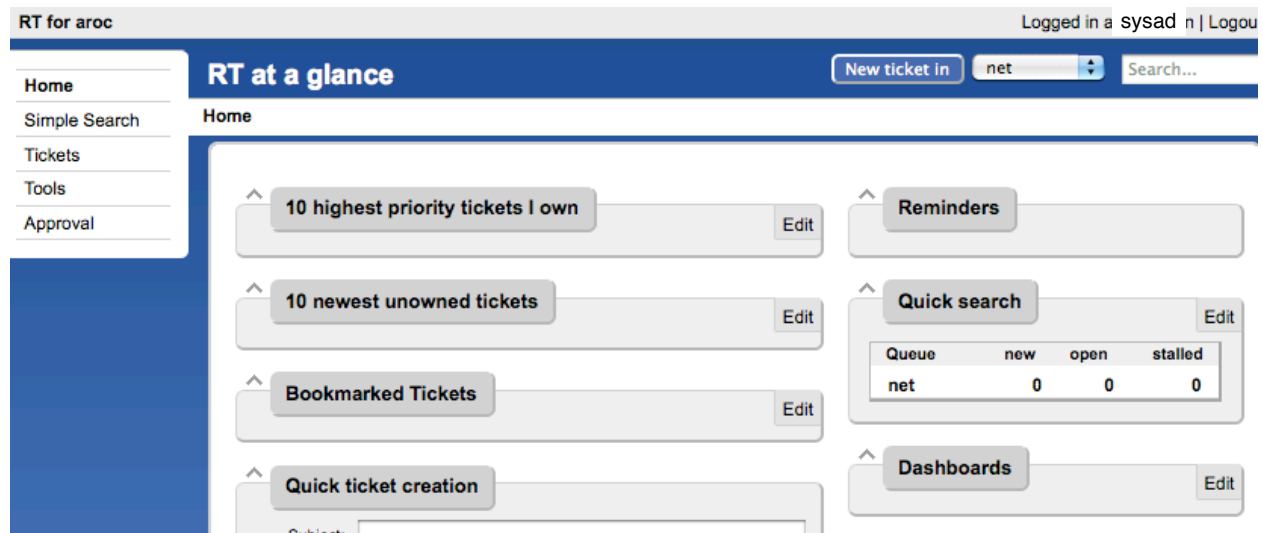
## Exercise 8

### RT Configuration: Log in as sysadm

Log out of RT and log back in as the sysadm user you have created.



You should see this:



At this point RT has been properly configured for initial operation. Now we must configure email properly to talk with our new “net” queue in RT.

## **Exercise 9**

### **RT Configuration: Email**

RT will work with the MTA (Mail Transfer Agent) of your choice. In our case we are using Postfix configured to run as an MTA for an “Internet Site” – that is, to deliver email locally and remotely using SMTP.

Edit the file `/etc/aliases`

Add the following two lines at the end of the file (copy and paste!):

```
net-comment: "|/usr/bin/rt-mailgate --queue net --action comment --url http://localhost/rt/"
net:         "|/usr/bin/rt-mailgate --queue net --action correspond --url http://localhost/rt/"
```

Save the file and exit, then run the command:

```
$ sudo newaliases
```

## **Exercise 10**

### **RT Configuration: Create an Email and Tickets**

Let’s create an email and send it to the RT “net” queue. Do this as the sysadm user (not as root!):

If root:

```
# su - sysadm
```

```
$ echo "Problem with my router" | mail -s "Router problem" net@localhost
```

Now check that you have received email:

```
$ mutt -f /var/mail/sysadm
```

You should see an email from Request Tracker acknowledging that your ticket has been created. If you do not take these steps, and then send the mail again:

```
$ sudo touch /var/mail/sysadm
```

```
$ sudo chown sysadm:mail /var/mail/sysadm
```

## **Exercise 11**

### **RT Configuration: View, Reply, Resolve, Reopen Tickets in Request Tracker**

Go back to your web browser where you are logged in to RT as the sysadm user and click on the ticket in the main view page (what you see when you first log in):

RT at a glance

Home

Simple Search

Tickets

Tools

Approval

10 highest priority tickets I own

Reminders

10 newest unowned tickets

#	Subject	Queue	Status	Created	Take
2	Problem with router	net	new	3 min ago	Take

Quick search

Queue	new	open	stalled
net	1	0	0

You will see a bunch of information about the ticket. Scroll to the bottom of the page. Here you can **Reply** to the ticket:

History

Brief headers — Full headers

# Thu Apr 22 18:45:52 2010 tldadmin@ubuntu.localdomain - Ticket created

Subject: Router problem

To: net@localhost

Date: Thu, 22 Apr 2010 18:45:49 -0700 (PDT)

From: tldadmin@ubuntu.localdomain (AROC Class User)

Problem with my router

Download (untitled) / with headers  
text/plain 23b

# Thu Apr 22 18:45:53 2010 RT\_System - Outgoing email recorded

Show

Go ahead and type in a reply, set the **Status** of the ticket to **Resolved** (upper-right drop-down menu), and then click on **Update Ticket** (bottom-right):

Update ticket #1 (Router problem)

New ticket in net Search...

Display · History · Basics · Dates · People · Links · Reminders · Jumbo

Open · Take · Comment · Reply · Resolve · ☆

Status: resolved

Owner: Nobody (Unchanged)

Worked:  Minutes

Update Type: Reply to requestors

Subject: Router problem

One-time Cc:

One-time Bcc:

Attach:  Browse... Add More Files

Message:

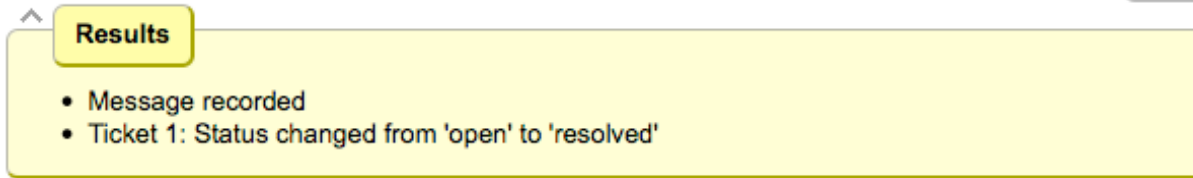
On Thu Apr 22 18:45:52 2010, tldadmin@ubuntu.localdomain wrote:  
> Problem with my router

It's fixed!

Your friendly network administrator.

Update Ticket

You should see this

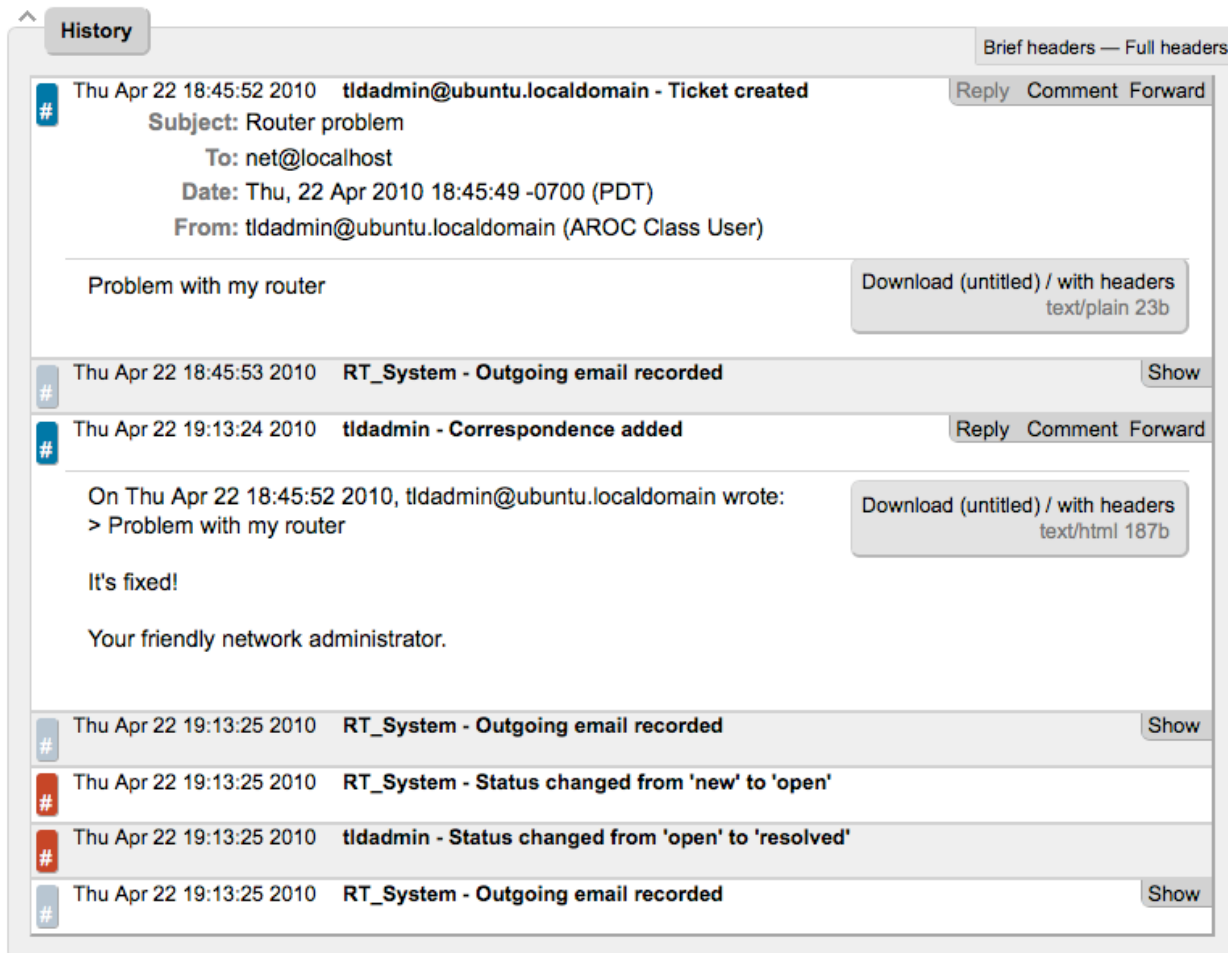


**Results**

- Message recorded
- Ticket 1: Status changed from 'open' to 'resolved'

The ticket is currently “Resolved,” but you can either reopen the ticket via the RT web interface at any time, or if the original ticket creator (sysadm in this case) replies to the email you just sent, then the ticket will be reopened.

View the history at the bottom of the page to see that the ticket is currently closed:



**History** Brief headers — Full headers

Thu Apr 22 18:45:52 2010 **tldadmin@ubuntu.localdomain - Ticket created** Reply Comment Forward

**Subject:** Router problem  
**To:** net@localhost  
**Date:** Thu, 22 Apr 2010 18:45:49 -0700 (PDT)  
**From:** tldadmin@ubuntu.localdomain (AROC Class User)

Problem with my router Download (untitled) / with headers text/plain 23b

Thu Apr 22 18:45:53 2010 **RT\_System - Outgoing email recorded** Show

Thu Apr 22 19:13:24 2010 **tldadmin - Correspondence added** Reply Comment Forward

On Thu Apr 22 18:45:52 2010, tldadmin@ubuntu.localdomain wrote:  
> Problem with my router Download (untitled) / with headers text/html 187b

It's fixed!

Your friendly network administrator.

Thu Apr 22 19:13:25 2010 **RT\_System - Outgoing email recorded** Show

Thu Apr 22 19:13:25 2010 **RT\_System - Status changed from 'new' to 'open'**

Thu Apr 22 19:13:25 2010 **tldadmin - Status changed from 'open' to 'resolved'**

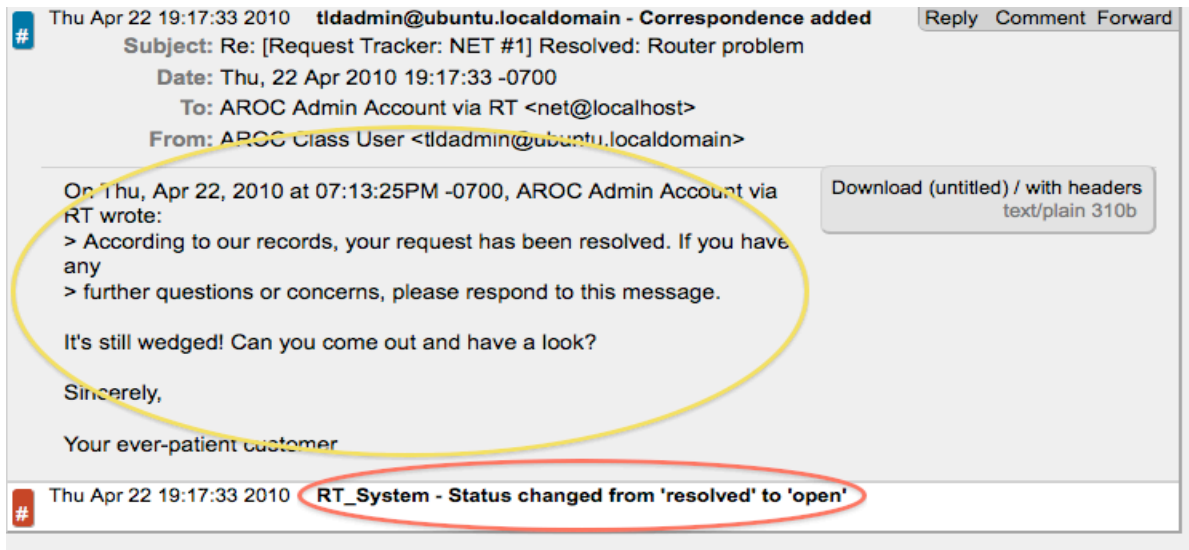
Thu Apr 22 19:13:25 2010 **RT\_System - Outgoing email recorded** Show

If you went back to your terminal session as the sysadm user and typed:

```
$ mutt -f /var/mail/sysadm
```

and responded to the email generated from Request Tracker, then your ticket status will change. You can see this by reloading the RT web page for the ticket and viewing the history at the bottom of the page:



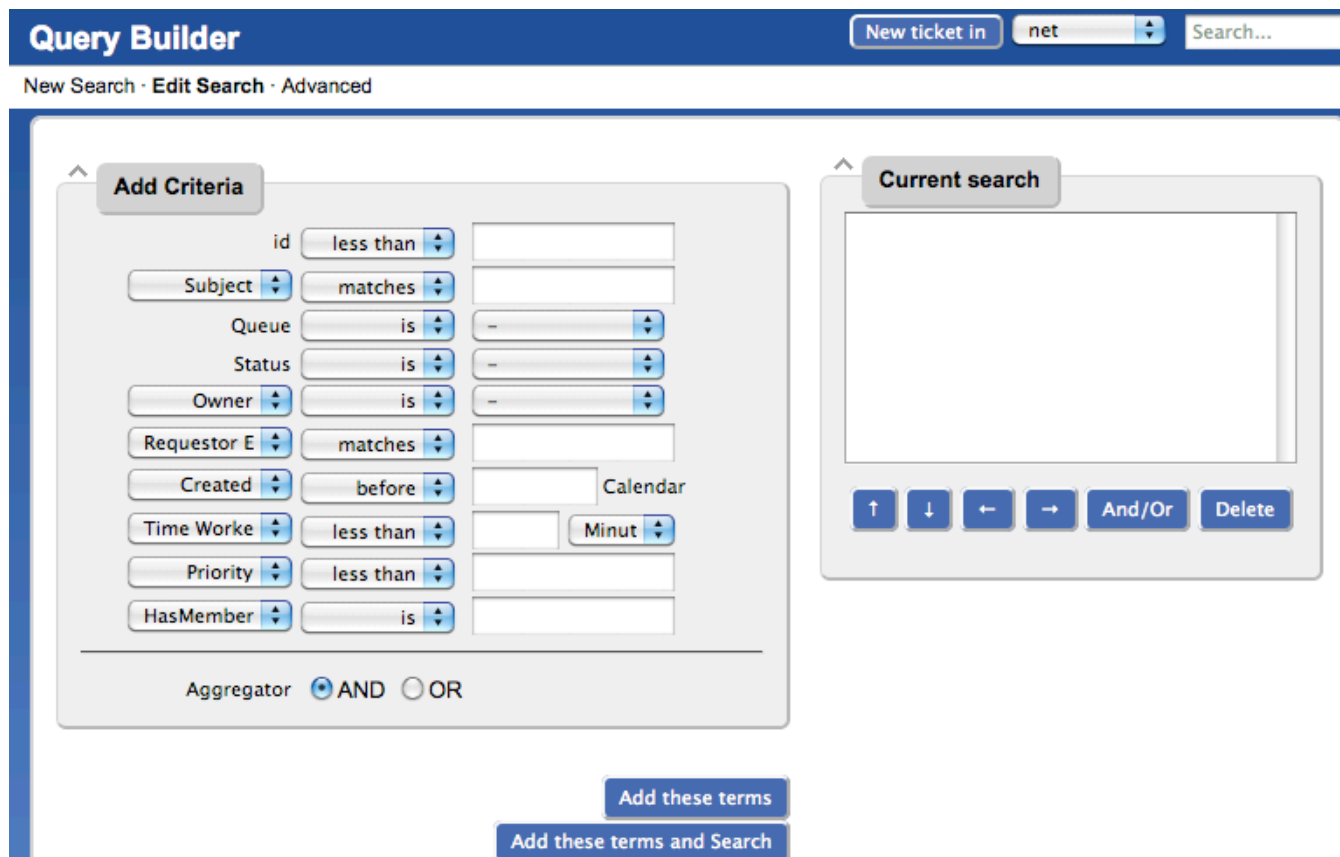


You now have a functioning RT instance with email integration. A bit later we will extend the use of RT by integrating it with other Network Monitoring software using the `rt-mailgate` facility that we have already configured in the `/etc/aliases` file.

## Exercise 12

### Finding a ticket once it's closed.

After a ticket has been resolved or closed may notice that it disappears from your Queue. Actually finding a closed ticket requires a few steps. First, click on Tickets and you will see a screen like this:



If you are going to search for items in a queue and there are already items in the “Current search” box, then you should delete the items from the “Current search” box first. Next in the “Add Criteria” box in the “Queue” choice select the “net” queue from the drop-down menu (see below):

The screenshot shows the 'Query Builder' interface. At the top, there's a navigation bar with 'New Search', 'Edit Search', 'Advanced', 'Show Results', 'Bulk Update', and 'Graph'. Below this, there's a search bar with 'New ticket in' and a dropdown menu set to 'net', followed by a 'Search...' button. The main area is divided into two panels: 'Add Criteria' and 'Current search'. In the 'Add Criteria' panel, the 'Queue' field is set to 'net'. In the 'Current search' panel, the search criteria is 'Queue = 'net''. Below these panels are two buttons: 'Add these terms' and 'Add these terms and Search', both of which are circled in red.

Click on “Add these terms” or “Add these terms and Search” – If you just do “Add these terms” then go to the bottom of the page and click on “Update format and Search” – RT will keep the search terms until you delete them at a later time.

The screenshot shows the 'Display Columns' section. It has three main areas: 'Add Columns:', 'Format:', and 'Show Columns:'. The 'Add Columns:' list includes 'id', 'QueueName', 'Subject', 'Status', 'ExtendedStatus', and 'UpdateStatus'. The 'Format:' section has fields for 'Link:', 'Title:', 'Size:', and 'Style:'. The 'Show Columns:' list includes 'id', 'Subject', 'Status', and 'QueueName'. Below these sections are three buttons: 'Add these terms', 'Add these terms and Search', and 'Update format and Search'. The 'Update format and Search' button is circled in red.

And the results of your search will look something like this and you will be able to view tickets that have been closed, resolved, etc.:

## Found 2 tickets

[New ticket in](#)

net

[New Search](#) · [Edit Search](#) · [Advanced](#) · **[Show Results](#)** · [Bulk Update](#) · [Graph](#)[Spreadsheet](#) · [RSS](#) · [iCal](#) · [Editable text](#)

#	Subject Requestors	Status Created	Queue Told	Owner Last Updated	Priority Time Left
1	Router problem sysadm@noc.ws.nsrc.org	resolved 33 min ago	net 29 min ago	Nobody 29 min ago	0
2	Router problem sysadm@noc.ws.nsrc.org	resolved 28 min ago	net 26 min ago	Nobody 26 min ago	0

bar

chart by

Status