

SLAC's Experience with the RT Request Tracker

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SLAC SCCS

HEPiX – April, 2006

Background & Motivation

- Unix requests: ‘unix-admin’ mailing list
- “database” is mail archive
- Need application to thread email, with a real DB, with search functionality
- Continue to provide email interface for users (and solvers); also want web, CLI
- SLAC’s helpdesk uses Remedy – not really suitable for our needs

RT(3) – BestPractical.com


- Looked at a number of alternatives, selected RT3 from BestPractical.com (others: Jitterbug, Roundup, OTRS, Keystone)
- Free, with source
- Email, web and CL interfaces
- Customizable: through web, or in source code (perl)
- Active user community, active developers; used at (at least) one other HEP lab

RT at a glance - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

https://www-rt.slac.stanford.edu/rt3/

BBRHome SysGrpDocs Google eBooks RT me Hot Seat Monitoring

SLAC  SCCS

Preferences | Logout
Logged in as bartelt

RT for SLAC New ticket in admin-mtg Search

Home RT at a glance

Tickets

RTFM

Tools

Configuration

Preferences

Approval

Statistics

Using RT

X 10 highest priority tickets I own...				
#	Subject	Priority	Queue	Status
34387	www7	80	unix-admin	open
40108	Perl update plans?	80	unix-admin	open
42343	FW: [RHSA-2006:0199-01] Critical: mozilla security update	67	unix-admin	open
43544	lyx problem	40	unix-admin	open
44026	FW: [RHSA-2006:0266-01] Important: gnupg security update	26	unix-admin	open
33021	RT bug: error in Ticket_Overlay.pm when adding URL reference with a leading space	20	RT	open
23183	apache/cgi stuff	0	Projects	open

X My 10 top tickets...				
#	Subject	Queue	Status	Created
42550	ApacheServerTokenNotSet	Scans-Security	open	6 weeks ago
41272	python 2.4.2	unix-admin	open	2 months ago
35990	need a machine or two for The Written Word	unix-admin	open	4 months ago
34387	www7	unix-admin	open	5 months ago
32630	Czar list again unavailable	www-admin	new	6 months ago

X Quick search			
Queue	New	Open	Stall
admin-mtg	9	5	2
ChangeLog	0	0	0
Incident	0	2	1
installation	2	10	0
Internal	0	0	0
mail-admin	1	7	0
Monitoring	26	9	0
PrivilegeRequests	1	5	1
Projects	2	9	2
raid	0	0	0
RT	9	10	3
Scans-Security	2	45	0
Security	9	21	4
SpaceRequests	1	3	0
Tech-Coord	2	2	0
test2	3	1	0
unix-admin	26	173	52
www-admin	63	38	1

Don't refresh this page. Go!

https://www-rt.slac.stanford.edu/rt3/ www-rt.slac.stanford.edu

Workflow

- Requestor sends email to unix-admin
- Goes to RT unix-admin queue; RT sends autoreply, and forwards message to queue's "Watchers"
- During business hours, "hotseat" person will solve or assign ticket to an "owner" (or another watcher may grab it)
- Hotseat or solver may add comments (not sent to requestors) or correspondence (which is); change queue, other fields


Open, Unowned Tickets

Found 7 tickets - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

https://www-rt.slac.stanford.edu/rt3/Search/Results.html?Order=DESC&Query=%2

BBrHome SysGrpDocs Google eBooks RT me Hot Seat Monitoring

SLAC  SCCS

Preferences | Logout
Logged in as bartelt

RT for SLAC New ticket in admin-mtg Search

Home Found 7 tickets

Tickets
New Query
Query Builder
Advanced
[Show Results](#)

Assets

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Using RT

#	Subject Requestors	Status Created	Queue Told	Owner Last Updated	Priority Time Left
44519	Site failing ACDC Critical tests PROD_SLAC --ISSUE=1677 goc@opensciencegrid.org	new 17 min ago	unix-admin	Nobody 17 min ago	20 0
44518	Setting Site Status in ACDC goc@opensciencegrid.org	new 55 min ago	unix-admin	Nobody 55 min ago	20 0
44517	Please configure nettest4 with the standard linux stuff cal@SLAC.Stanford.EDU	new 55 min ago	unix-admin	Nobody 55 min ago	20 0
44516	Executing an OpenMPI code on mpitestq dineshg@scorec.rpi.edu	new 90 min ago	unix-admin	Nobody 90 min ago	20 0
44512	AFS Space Request Form cecchi@fe.infn.it	new 5 hours ago	SpaceRequests	Nobody 5 hours ago	40 0
44508	Job 744590 "on" noma0437 gpdf@SLAC.Stanford.EDU	open 17 hours ago	unix-admin 116 min ago	Nobody 116 min ago	20 0
44467	AFS Space Request Form pruvot@slac.stanford.edu	open 25 hours ago	SpaceRequests 6 hours ago	Nobody 6 hours ago	40 0


Page 1 of 1

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Update multiple tickets
Bookmarkable link
spreadsheet | RSS | Work offline

Done www-rt.slac.stanford.edu

Close-up: One Ticket

SLAC  SCS

Logged in as **bartelt**

RT for SLAC New ticket in **admin-mtg** Search

Home **#44516: Executing an OpenMPI code on mpitestq**
[Reply](#) | [Resolve](#) | [Open](#) | [Take](#) | [Comment](#) | [Delete](#) | [Extract Article](#) | [Stall](#)

Tickets
New Query
Query Builder
Advanced

Show Results
<< First
< Prev
Next >
Last >>

#44516
[Display](#)
History
Basics
Dates
People
Links
Jumbo

Assets
RTFM
Tools
Configuration

X Ticket metadata

X The Basics...
Id: **44516**
Status: **new**
Left: **0 min**
Priority: **20/80**
Queue: **unix-admin**

X Custom Fields...
Hostname: ● *(no value)*
Project: ● *(no value)*

X Dates...
Created: **Tue Mar 28 08:49:12 2006**
Last Contact: **Not set**
Updated: **Tue Mar 28 08:49:17 2006** by **dineshg@scorec.rpi.edu**

X People...
Owner: **Nobody**
Requestors: **dineshg@scorec.rpi.edu**
Cc:
AdminCc:

X History Display mode: [\[Brief headers\]](#) [\[Full headers\]](#)

Tue Mar 28 08:49:12 2006 **dineshg@scorec.rpi.edu - Ticket created** [\[Reply\]](#) [\[Comment\]](#)

Subject: Executing an OpenMPI code on mpitestq
Date: Tue, 28 Mar 2006 11:49:04 -0500
To: unix-admin@slac.stanford.edu
From: Dinesh Godavarty <dineshg@scorec.rpi.edu>

Download (untitled)
text/plain 457b

Hello,

I am running an openMPI based executable on the mpitestq. I submit an interactive job as
bsub -I -q mpitestq -a openmpi -n 10 -J om3p omega3p tdr.o3p

Done www-rt.slac.stanford.edu

Assign Owner, Add Comment

SLAC Logged in as **bar**

New ticket in admin-mtg

Update ticket #44516 (Executing an OpenMPI code on mpitestq)

[Reply](#) | [Resolve](#) | [Open](#) | [Take](#) | [Comment](#) | [Delete](#) | [Extract Article](#) | [Stall](#)

Update Ticket

Status: Owner: Worked: minutes

Update Type:

Subject:

Cc:
*(Sends a carbon-copy of this update to a comma-delimited list of email addresses. Does **not** change who will receive future updates.)*

Bcc:
*(Sends a blind carbon-copy of this update to a comma-delimited list of email addresses. Does **not** change who will receive future updates.)*

Attach:

Message: Search for RTFM articles matching
Include RTFM article:

Alf, can you answer this?
thanks

Solver's Actions

- Owner can correspond with requestor
- Add comments
- Comments or correspondence may quote a previous message in the ticket
- When solved, change status to “Resolved”
- “closing” the ticket. (“Deleted”, “Rejected”)

Close-up: Queues

X Quick search			
Queue	New	Open	Stall
admin-mtg	8	5	2
ChangeLog	0	0	0
Incident	0	2	1
installation	5	11	0
Internal	0	0	0
mail-admin	0	12	0
Monitoring	19	10	0
PrivilegeRequests	0	4	1
Projects	2	9	2
raid	0	0	0
RT	9	10	3
Scans-Security	3	47	0
Security	9	21	4
SpaceRequests	0	2	0
Tech-Coord	0	5	1
test2	4	1	0
unix-admin	30	172	50
www-admin	80	41	1

Note: queue names,
numbers, are all links

Installation details

- Use RedHat (first: RH9; now RHEL 3)
- Initially used RT 3.0.10; now 3.4.2
- Apache 1.3.x with mod_perl
- Locally installed perl with extra modules
- MySQL 4.0.x (from MySQL rpms),
accessible only from localhost
- RT also supports Oracle and PostgreSQL;
or fastCGI instead of mod_perl

Authentication

- Email is unauthenticated
- Unprivileged RT users created from incoming email
- Solvers authenticate through the web:
apache mod_auth_pam => AFS
- Experimentation with Krb5 auth (not prod)
- Problems (more later)
 - Multiple user entries
 - The “losing authentication” problem

Basic Configuration

- Establish **queues** for different types of requests; **groups** to manage solvers' privileges; **scrips** and **templates** for automation: autoreplies, email to **watchers**, etc.
- Email to single account: procmail script forwards to **rt-mailgate**, setting basic parameters based on incoming address; rt-mailgate forwards to http

Procmail excerpts (1)

```
QUEUE=unix-admin
ACTION=correspond
FROM=`$FORMAIL -rt -xTo:`
# This makes mail to admin-log a comment instead of correspondence.
:0
* ^(To|Cc): .*admin-log
* !^(To|Cc): .*unix-admin
{ ACTION=comment }
# This puts ranger, swatch, and root messages in a special queue.
:0 E
* ^From:.*(ranger|swatch|root)
{ QUEUE=Monitoring
  ACTION=comment }
```


Procmail excerpts (2)

```
# Put the ticket into RT. The --subject is a locally-added  
# option to echo the subject with ticket number back.
```

```
SUBJECT=`/usr/etc/systems/rt-mailgate \  
  --subject --queue $QUEUE --action $ACTION \  
  --url https://webscs01.slac.stanford.edu/rt3/ 2>&1`
```

```
# Everything not handled by RT, put into incoming.
```

```
:0 E  
/var/spool/mail/unix-admin-incoming
```

Backup

- Nightly mysqldump of DB to local file; then copied to AFS (cronjob)
- Config files, local mods: tar file in AFS (manual); move to CVS ?
- Also have second machine for test & development; can be used as backup, in case of hardware failure

Query Builder

- Construct complicated database queries
- Choose display ordering, etc.
- Save query in DB and/or as bookmark

Query Builder

X Add Criteria

Aggregator: AND OR

id	less than	
Subject	matches	
Queue	is	-
Status	is	-
Owner	is	-
Requestor EmailAddress	contains	
-	belongs to	-
Created	Before	
Time Worked	less than	
Priority	less than	
HasMember	is	
Project	contains	-
Hostname	contains	

Add additional criteria Add

X Query

```
Owner = 'bartel'  
AND Status != 'resolved'  
AND Queue != 'Projects'  
AND Status != 'rejected'
```

^ v < > And/Or
Delete

X Saved searches

Privacy: My saved searches

Description:
Save

Load saved search:
My saved searches Load

X Display Columns

Add Columns:

id
Status
ExtendedStatus
Subject
QueueName
OwnerName

Format:

Link: -
Title:
Size: -
Style: -

Show Columns:

id
Subject
Status
QueueName

^ v Delete

Order by: id
Descending

Rows per page: 50

Do the Search Search

Customization

- GUI tweaks: ***\$RT/local/html/*** overrides ***\$RT/share/html/*** - other hooks, too
- Add-ons (some recently installed by Chuck) :
 - RTFM (RT FAQ manager)
 - Asset Manager
 - Rights Matrix
 - Statistics
 - Color-coding
 - Priority aging (backed out for now...)
 - Paging

Asset Manager

Browser address bar: <https://webscs02.slac.stanford.edu/rt3/AssetTracker/index.html>

Navigation: BBrHome | SysGrpDocs | Google | eBooks | RT me | Hot Seat | Monitoring

RT test server

Preferences | Logout
Logged in as bartelt

RT for SLAC New asset of type: Desktop Search

- Home
- Tickets
- Assets**
 - New Query
 - Query Builder
 - Advanced
- Tools
- Configuration
- Preferences
- Approval
- Search: new me
- Search: new hotseat
- Search: Monitoring
- Search: Unassigned
- Statistics
- Using RT

Asset Tracker

X Quick search				
	Asset Type	production	spare	all
Desktop		1240	2	1242
Servers		2418	0	2418
Storage		337	0	337
all		3995	2	3997

X 10 Most recently updated assets...				
Name	Description	Type	Status	
bbr-xfer01	(No description)	Servers	production	
kan002	(No description)	Servers	retired	
coma008	(No description)	Servers	production	
noma0357	(No description)	Servers	production	
noma0090	(No description)	Servers	production	
tori0123	(No description)	Servers	production	
opi08rfs00	(No description)	Desktop	production	
noma0301	(No description)	Servers	production	
sysdev13	(No description)	Desktop	production	
mccelog-mgt	(No description)	Desktop	production	

Installation Tickets

- Installation Queue tickets have children tickets automatically created
 - Order status
 - Power
 - Network
 - Rack
 - Arrays
 - DNS
 - OS Install

#43980: install 3 new replacement infrastructure license servers

[Reply](#) | [Resolve](#) | [Steal](#) | [Comment](#) | [Delete](#) | [Extract Article](#) | [Stall](#)

X Ticket metadata

X The Basics...

Id: **43980**
Status: **open**
Left: **0 min**
Priority: **27 / 80**
Queue: **installation**

X Custom Fields...

Hostname: ● **license1**
● **license2**
● **license3**

Project: ● **Infra**

Order Status: ● **(no value)**

Power: ● **Completed**

Network: ● **Completed**

Rack: ● **Completed**

Arrays: ● **(no value)**

DNS: ● **Required**

OS Install: ● **Required***

X Dates...

Created: **Tue Mar 14 15:20:51 2006**
Last Contact: **Mon Mar 20 10:05:40 2006**
Updated: **Tue Mar 21 10:19:25 2006 by george**

X People...

Owner: **randym <randy@slac.stanford.edu>**
Requestors: **randym <randy@slac.stanford.edu>**
Cc:
AdminCc: **randym <randy@slac.stanford.edu>**
yangw@SLAC.Stanford.EDU
yzkopf <yzkopf@SLAC.Stanford.EDU>

Custom fields, children tickets

Parent Installation Ticket - Links

X Links...

Depends on:
Depended on by:
Parents:
Children:

- **43981: Power::install 3 new replacement infrastructure license servers [resolved]**
- **43982: Network::install 3 new replacement infrastructure license servers [new]**
- **43983: Rack::install 3 new replacement infrastructure license servers [resolved]**
- **43984: DNS::install 3 new replacement infrastructure license servers [open]**
- **43985: OS::install 3 new replacement infrastructure license servers [new]**

Refers to:
Referred to by:

Links to children

Suitable for limited projects

[any ticket can have links to related tickets or other URLs]

Results, Impressions, etc.

- Solvers generally like; takes some getting use to. Interface is (mostly) *logical* if not always *intuitive*. Threading & searching are huge improvement over old mailbox.
- Requestors also generally fine with it; some complaints about number of emails; interactions with BaBar's HyperNews
- Much less likely to lose track of requests
- Adopted by **www-admin** & **mail-admin**
- Approaching 50k tickets

Problems...

- Apache/browser authentication problem (intermittent; not solved; Krb5 ?)
- Broke HyperNews threading in 3.0; fixed in 3.4 (now respects *In-Reply-To* header)
- Poor interaction with HelpDesk's Remedy system (tech-coords, main-tech use both)
- Multiple userids; email v. web autocreation
- Can't unmerge merged tickets
- No version control for scrips & templates

Dec. 29th Email Explosion

- One incoming spoof; one autoreply to spoofed address = mailing list (obsolete)
- Forwarded to other lists; one in particular forwarded to dozens of more lists
- 100s of “no permission”, autoreplies, bouncing around, generated complaints
- CTB tried to fix; RDC pulled plug
- Fixes: `$RedistributeAutoGeneratedMessages=0`
and more filtering at procmail & in RT

BestPractical.com provides

- User & Devel mailing lists (lots of traffic)
- Wiki (useful)
- Training
- Support contracts

Future of RT at SLAC

- Would like single problem/request reporting/tracking system for SCCS: RT or something else?
- Open RT Web interface to users
(single sign-on web ?)
- Deploy enhanced CLI from DESY ?
- RT 3.6.x (improved custom fields, other per-user customization)