Ticketing Systems with RT

Network Startup Resource Center
## www.nsrc.org

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Typical Support Scenario

- Lots of email traffic requesting help, request for services, etc

- Archived as text without classification

- Very difficult to find current status or problem history

- Sometimes problems were forgotten or never resolved

- Difficult for another person to follow up on a problem that someone else started dealing with

Why Ticketing Systems?
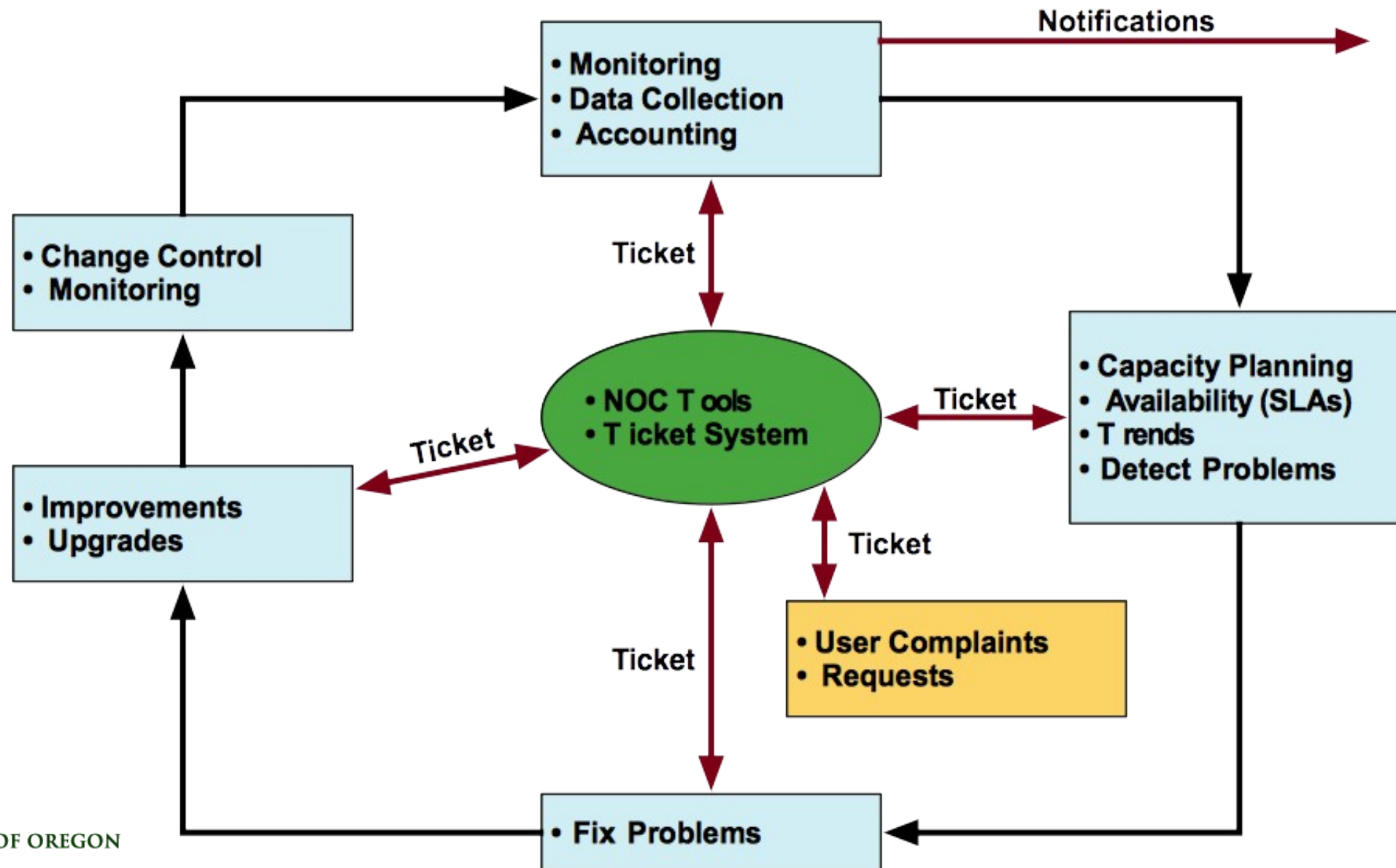
Ticketing Systems

Why are they important?

- Track all events, failures and issues
- Focal point for help desk communication

Use it to track all communications

- Both internal and external

Events originating from the outside:

- customer complaints

Events originating from the inside:

- System outages (direct or indirect)
- Planned maintenance, upgrades, etc.

Ticketing Systems (Contd.)

- Use a ticket system to follow cases, including communication between the support staff

- Each case is considered a ticket

- Each ticket has a ticket number

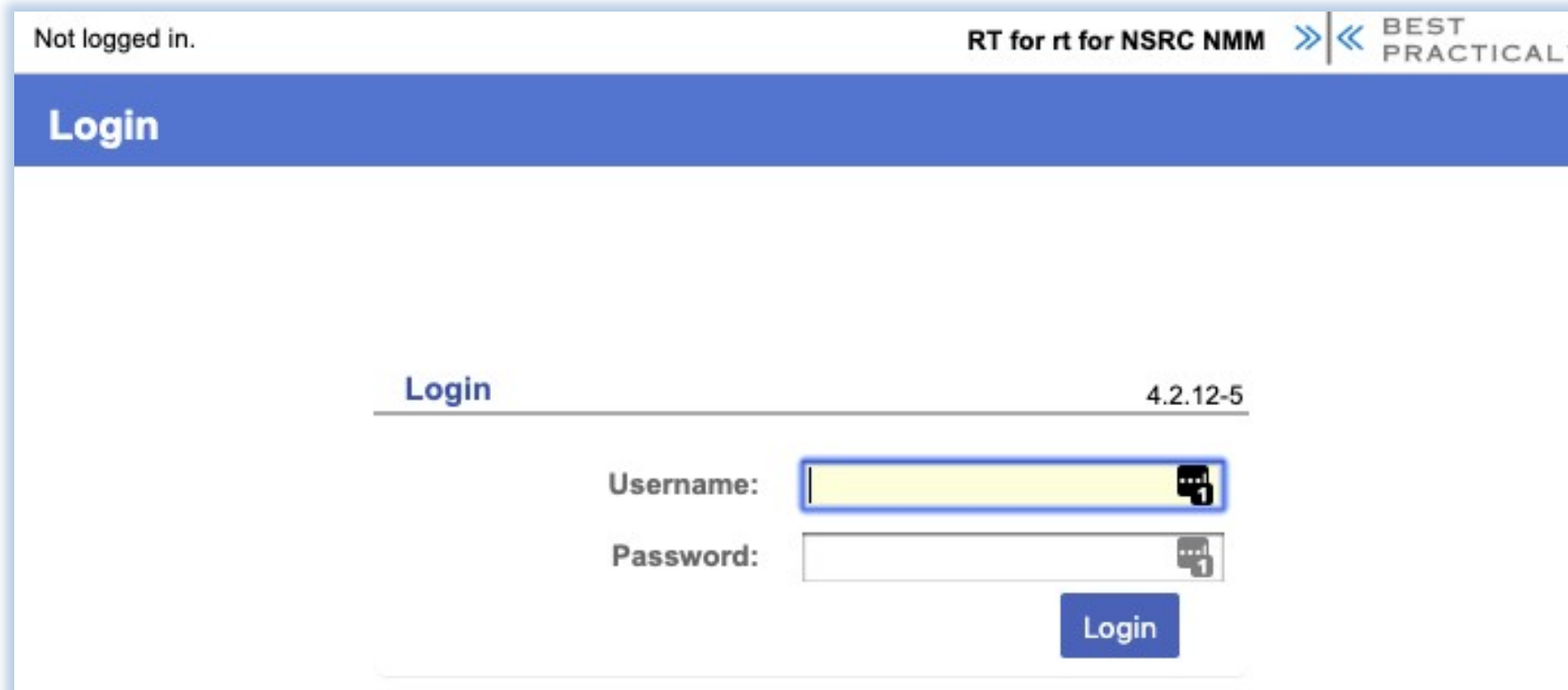- Each ticket goes through a similar life cycle:
  - *New – Open – … – Resolved*

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Help Request with Tickets
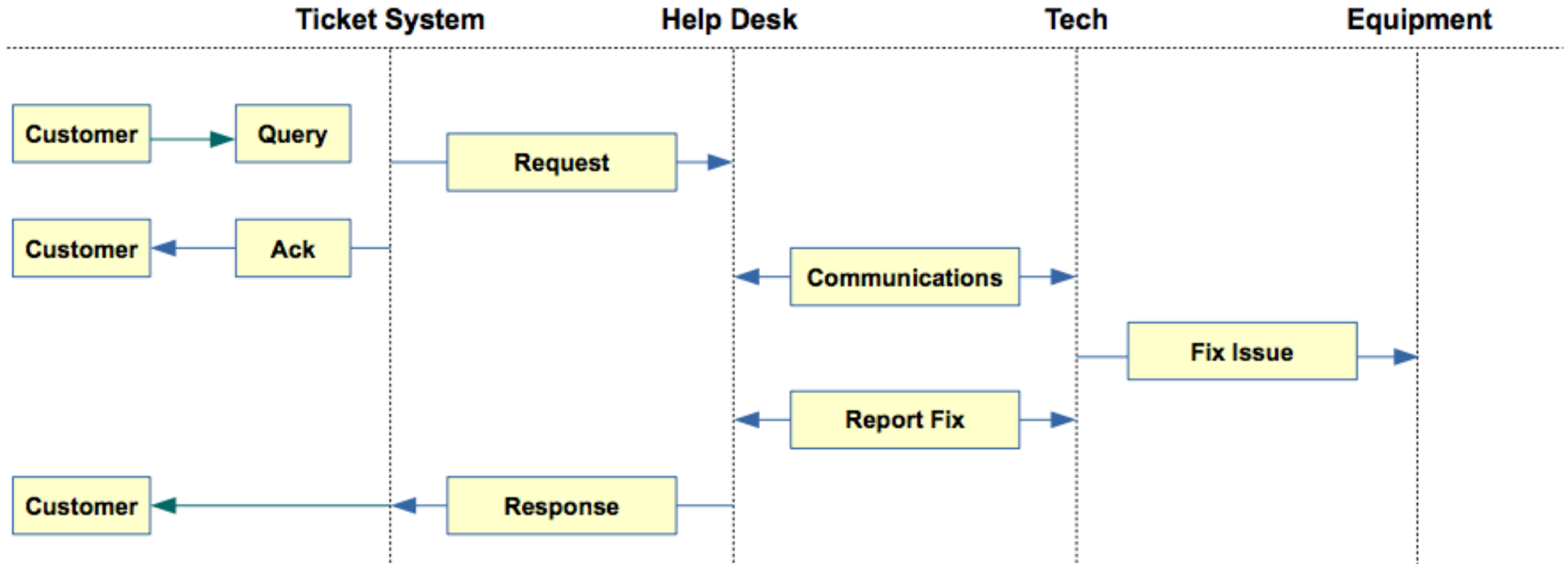
Request Tracker / Trac

RT
- Heavily used worldwide
- Can be customized to your location
- Somewhat difficult to install and configure
- Handles large-scale operations

Request Tracker

More Features (Marketing):

- Multiple search options: free text (simple) search, query builder, and advanced
- Full text search on message histories
- Full custom field support for any data you need to track
- Charts interface for visualizing ticket data
- Custom dashboards with key ticket information
- Schedule dashboards to be emailed to you or your co-workers
- Knowledge base
- Fine-grained rights and permissions
- Provides a REST API for integrations
- Automatic notifications based on message or other ticket updates
- RSS feeds of ticket activity based on any arbitrary search
- Email digests of activity by day, week, month, etc.
- Time tracking and task priority
- PGP and S/MIME support
- Translation into 25 + languages
- SLA automation and tracking
- Self-Service customer portal
- Command-Line interface

A Few Others

Bugzilla: http://www.bugzilla.org/

Cerberus: http://www.cerberusweb.com/

Eticket: http://www.eticketsupport.com/

Itracker: http://www.itracker.org/

Jutda Helpdesk: http://www.jutdahelpdesk.com/

Mystic: http://www.hulihanapplications.com/projects/mystic

OTRS   http://otrs.org/

OsTicket: http://osticket.com/

Simple Ticket: http://www.simpleticket.net/

Trouble Ticket Express: http://www.troubleticketexpress.com/

RT: Request Tracker

http://bestpractical.com/rt/

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Essential Functionality

- Several interfaces

  - Web, CLI, e-mail, etc.

- Multiuser

  - At different levels: admin, general user, guest

- Authentication and authorization

- Event history

- Handles dependencies

- Notifications

RT: Advantages

- Open source and free

- Heavily used and tested

- Very active development

- Flexible

- Web interface or control via email

- Backend databases (MySQL, Postgresql, Oracle, SQLite)

RT: Disadvantages

- A bit tricky to install the first time...
  - Most distributions have packages that make installation a bit easier:
    - ✓ Red Hat, Fedora, SuSE, Debian, Ubuntu, FreeBSD, etc.
- It's powerful, so you'll need to spend some time learning how it works
- Support for tracking service level agreements (SLAs) is basic

Users

- Anyone who interacts with RT is a "user"
- root – Administrator with full privileges
- Privileged user (staff) – Staff who are able to operate on tickets
  - ✓ Has a password and can log in to the system
  - ✓ Less powerful than root
- Normal user (guest) – may only be able to see the status of his/her tickets
  - ✓ May or may not be able log into the system
- Nobody – default *owner* of new tickets

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Groups

- Different users have different privilege levels
- Assigning privileges to each user would be time consuming
- Easier approach: create groups of users, and assign privileges to groups
- Groups useful for other purposes as well

People (Watchers, Actors)

- Each ticket has a set of people associated with it
- Requestor: who requested support
    - Usually a customer (network user)
    - But for internal tasks, requestor can be a member of the support team
- Owner: member of the support team who is responsible for the ticket at present
    - Owner of a ticket can change over its lifetime
    - Privileged users can take / assign ownership

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People (Watchers, Actors) (2)

- cc : who gets copies of all communications between staff and requestor (*responses*)
    - Will see the communications, but may not be privileged to perform actions on tickets
    - e.g. : the requestors boss
- admincc: who gets copies of *responses* as well as internal communications between staff while working on a ticket (*comments*)
    - e.g. : manager of the support team

Modify people related to ticket #733

New ticket in   [Tasks ⌄]   [Search...]

Display   History   Basics   **People**   Dates   Links   Jumbo   Reminders   Actions ⌄   ☆   ⏱

⌃ Modify people related to ticket #733

New watchers

Find people whose

[Username ⌄] [matches ⌄] [   ] [Go!]

Find groups whose

[Name ⌄] [matches ⌄] [   ] [Go!]

Add new watchers:

Type	Email
[- ⌄]	"Anton Berezin" <tobez@tobez.org>
[- ⌄]	"Phil Regnauld" <regnauld@nsrc.org>
[- ⌄]	[ ]
[- ⌄]	[ ]
[- ⌄]	[ ]

People

Owner: [Nobody in particular ⌄]

Current watchers

(Check box to delete)

☐ **Requestors:**   • ☐ philip (Philip Smith)

☐ **Cc:**   • *none*

☐ **Admin Cc:**   • *none*

⌃ Modify who receives mail for ticket #733

The checked users may receive email related to this ticket depending on the action taken. Uncheck users to stop sending email to them about this ticket.

☑ **All recipients**

☑ andrew (Andrew Kirkpartick)
☑ hans (Hans Kuhn)
☑ hervey (Hervey Allen)
☑ mhernan (Miguel Hernandez)
☑ philip (Philip Smith)
☑ regnauld (Phil Regnauld)

If you've updated anything above, be sure to   [Save Changes]

Updates / Transactions

- When a ticket is being worked on, there will updates or transactions (usually via email)
- Communications between requestor and RT (staff) are called *replies*
- Sometimes staff need to talk internally while working on a ticket
  - These are called *comments*
  - Requestors don't get copies of these

Ticket States

- **New:** The ticket has been received by RT, but not acted upon in any way
  - RT notifies (via email) someone* of new tickets
- **Open:** Ticket is being acted upon
- **Stalled:** Progress on the ticket is stalled for some reason
  - It will hopefully come back to open state
- **Resolved:** Problem has been solved
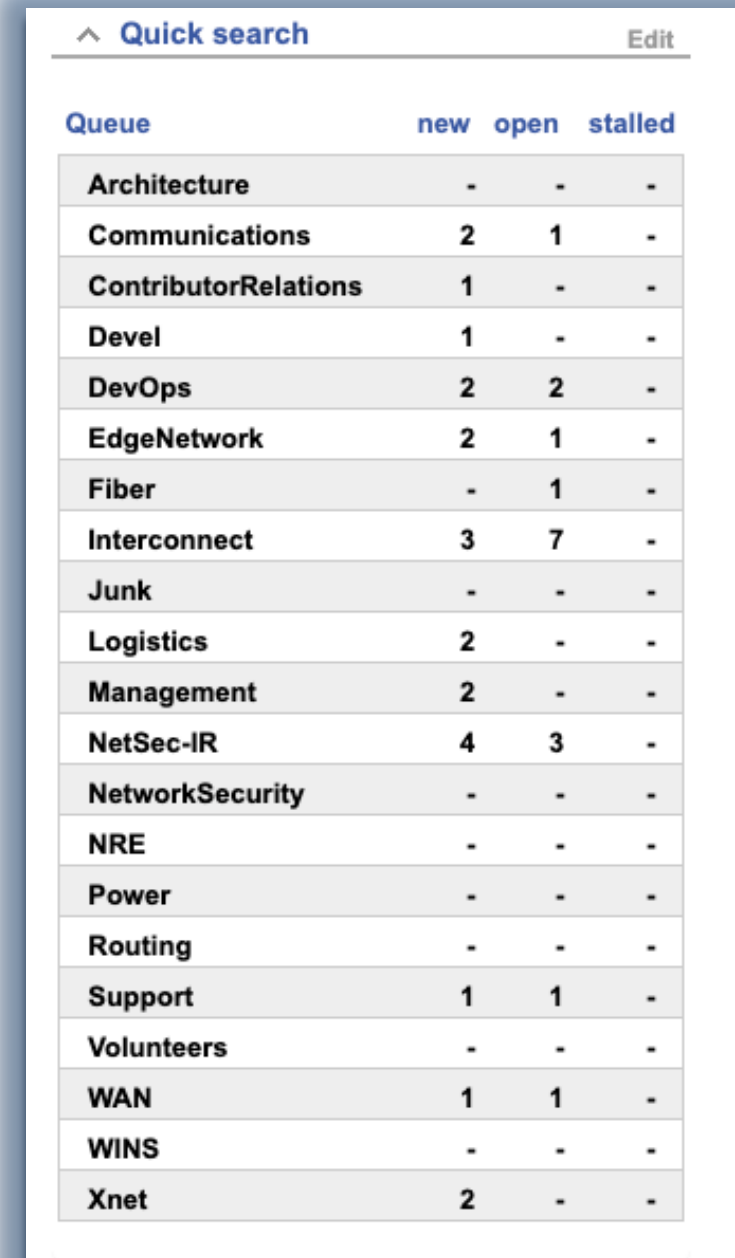 - No further action necessary
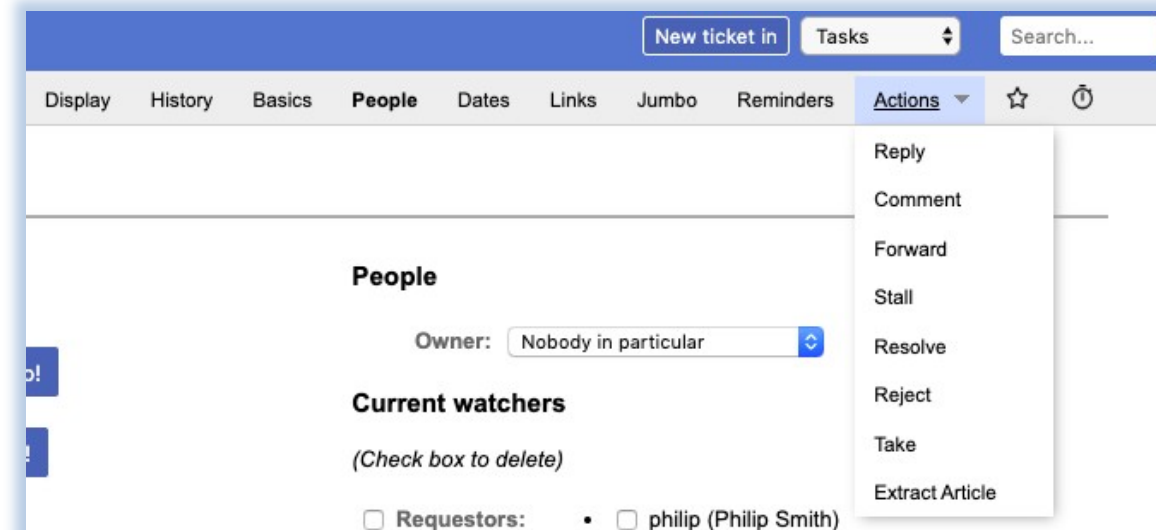
Ticket States ctd.

- **Rejected:** The ticket is not our problem.
  - ✓ But records about the ticket stays in the RT database

- **Deleted:** The ticket does not belong on the system
  - ✓ However, records about the ticket stay in the system

- If you want to completely get rid of a ticket, you can **shred** it
  - ✓ Removes all database entries related to it

Queues

Queues are a way to classify the tickets
- ✓ based on the nature of the request
- ✓ based on the actions required
- ✓ ....

Queue	new	open	stalled
Architecture	-	-	-
Communications	2	1	-
ContributorRelations	1	-	-
Devel	1	-	-
DevOps	2	2	-
EdgeNetwork	2	1	-
Fiber	-	1	-
Interconnect	3	7	-
Junk	-	-	-
Logistics	2	-	-
Management	2	-	-
NetSec-IR	4	3	-
NetworkSecurity	-	-	-
NRE	-	-	-
Power	-	-	-
Routing	-	-	-
Support	1	1	-
Volunteers	-	-	-
WAN	1	1	-
WINS	-	-	-
Xnet	2	-	-

^ **Quick search** Edit

Thank you SciNet

Problem Classification: Queues

- ✓ **Services:** DNS, IP addresses, Radius, LDAP
- ✓ **Security:** Attacks, incident response, scans, abuse, etc.
- ✓ **Sytems:** Email accounts, passwords, etc.
- ✓ **Networking:** Network Services Group
- ✓ **Help Desk:** Those who deal with end-users

Components

- **Register** an event (i.e., ticket creation)

- **Assign** an owner

- **Assign** interested parties (watchers)

- **Maintain** change history

- **Inform** interested parties of each change

- **Initiate** activities based on status or priority

Scrips (actions)

Create automatic actions for queues

- *scrips* are "snippets of Perl code"
- Help automate things inside RT
- Take action X when condition Y occurs
  - ✓ when a staff member responds to a ticket owned by nobody, make her the owner of ticket
  - ✓ page everyone when the priority of a ticket becomes level X

Scrips (actions) ctd.

- Chapter 6 of O'Reilly "*RT Essentials*" book

- Details on how to use Scrips:
  http://requesttracker.wikia.com/wiki/Scrip

- See "Extensions" at the end of this presentation.

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RT Configuration

Two Options
- Virtualhost: http://rt.host.fqdn
- Subdirectory: http://host.fqdn/rt/

Root user ('root')
- Change the default password on first login ('password')
- Assign the complete email for the root account:
  root@host.fqdn
- Assign all user rights: Global -> User Rights

User Creation

- Create a userid for each member of your team

- Assign privileges to each user
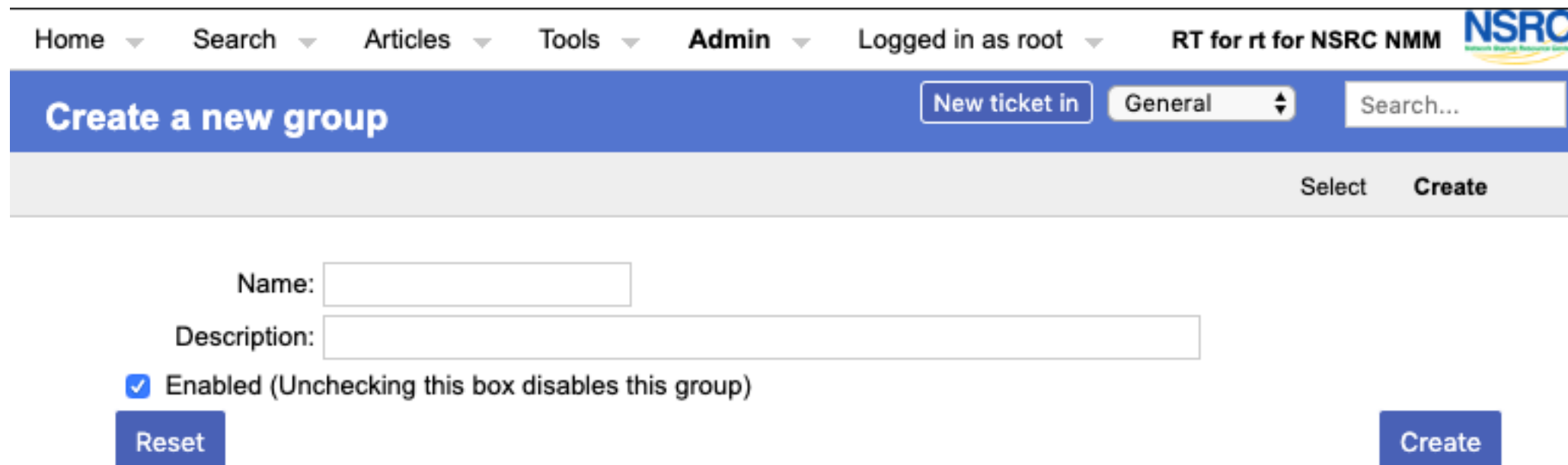
Create Groups

Create groups of users:
  –Administering privileges by group is more efficient than doing so for each user.

Create Queues

Create queues for problem categories:

For example
- *Security*
- *Accounts*
- *Connectivity*

Assign users to groups and groups to each queue
- Different between AdminCC and CC
- Don't forget to create email *aliases* for each queue

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rt-mailgate

rt-mailgate facility lets us:

- – Define virtual users on the RT server that correspond to ticket queues in RT.
- – Allow third-party software (Nagios, Cacti, Smokeping, etc.) to automatically generate tickets in specified queues via email.
- – Provide a simple interface through which end-users can communicate with your support organization via RT.
- – More details at https://www.bestpractical.com/docs/rt/4.0/rt-mailgate.html

Extensions

Extend the functionality of RT. For example:

- Send daily emails to remind users of tickets that have not been "taken"
- Send daily emails to each user reminding them of their pending tickets.
- Periodically increment ticket priority
- You can execute commands via email

Find extensions here:

https://metacpan.org/search?q=RT%3A%3AExtension&search_type=modules

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References

Best Practical Web site

http://bestpractical.com/rt

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- Contributions to RT:
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- Extensions
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  http://bestpractical.com/rt/extensions.html
- Scrips
  http://requesttracker.wikia.com/wiki/Scrip
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