



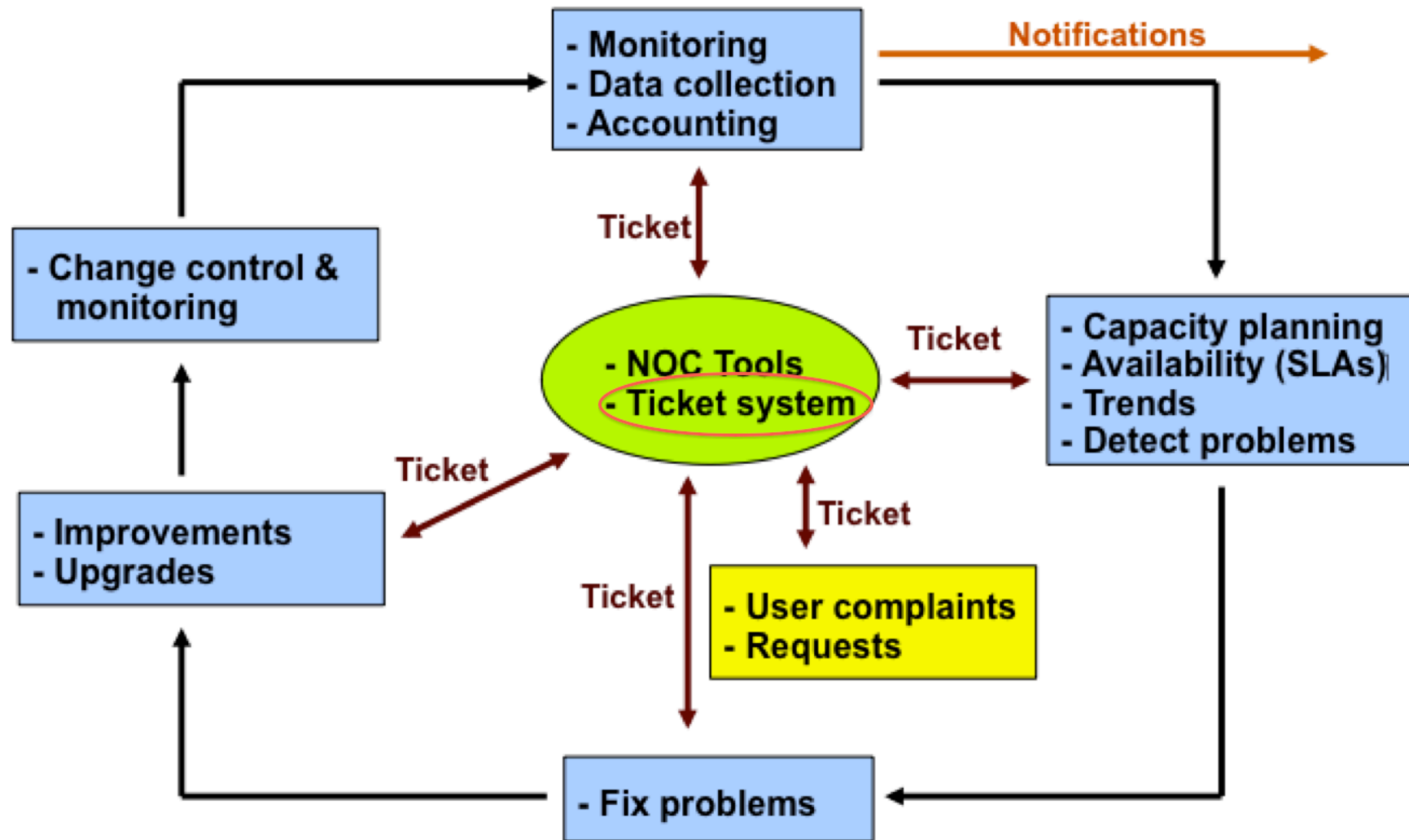
# Network Management & Monitoring

## Ticketing Systems with RT



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# Why Ticketing Systems?



# Ticketing Systems

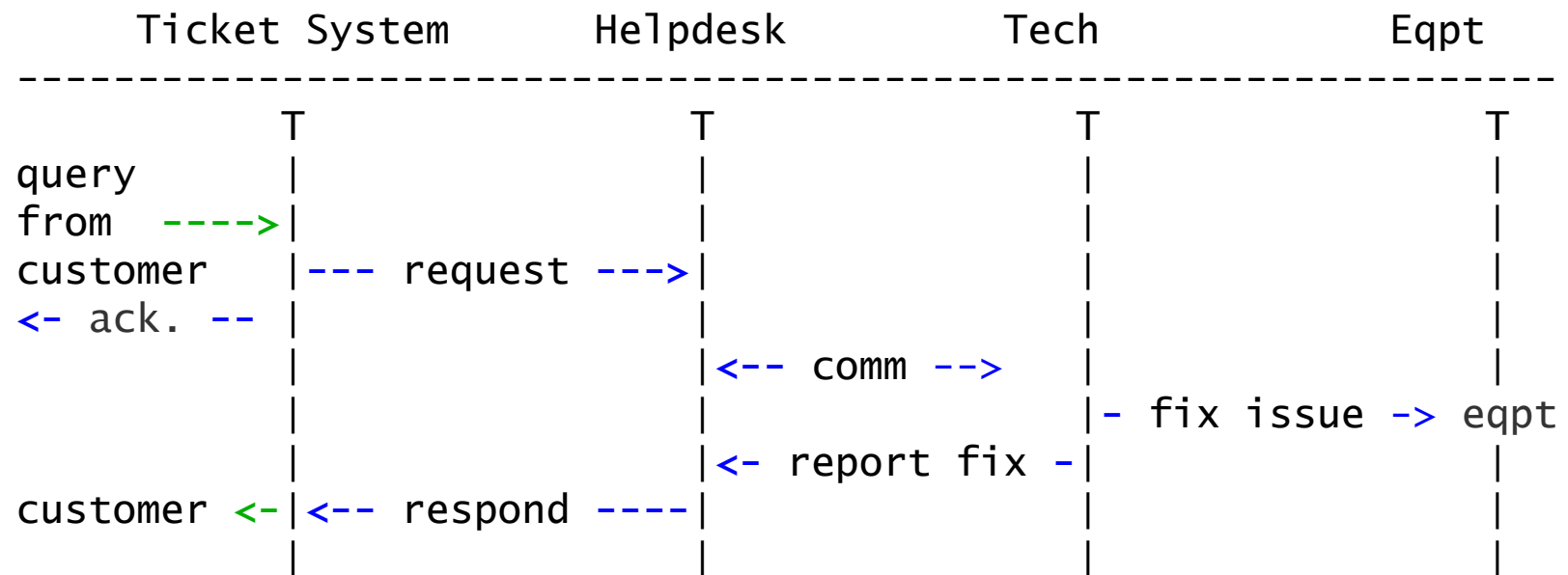
- Why are they important?
  - Track all events, failures and issues
- Focal point for help desk communication
- Use it to track all communications
  - Both internal and external
- Events originating from the outside:
  - customer complaints
- Events originating from the inside:
  - System outages (direct or indirect)
  - Planned maintenance, upgrades, etc.

# Ticketing Systems cont.

- Use ticket system to follow each case, including internal communication between technicians
- Each case is assigned a case number
- Each case goes through a similar life cycle:
  - *New*
  - *Open*
  - ...
  - *Resolved*
  - *Closed*

# Ticketing Systems cont.

## 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.



## trac



- A hybrid system that includes a wiki and project management features.
- Ticketing system not as robust as rt, but works well for web-only ticket interface.
- Often used for "trac"king group projects.
- Used for this course:

<http://noc.ws.nsrc.org/wiki/>

# 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** (Open source Ticket Request System)  
<http://otrs.org/>
- **osTicket**  
<http://osticket.com/>
- **Simple Ticket**  
<http://www.simpleticket.net/>
- **Trouble Ticket Express**  
<http://www.troubleticketexpress.com/open-source-software.html>



# RT: Request Tracker

<http://bestpractical.com/rt/>



# What's it Look Like?\*

The screenshot displays the RT web interface in a Mozilla Firefox browser window. The page title is "RT at a glance - Mozilla Firefox (Build 2008061004)". The browser address bar shows "RT for example.com". The user is logged in as "root" and can access "Preferences" or "Logout".

The main navigation menu on the left includes: Home, Simple Search, Tickets, Tools, Configuration, Preferences, and Approval.

The main content area is titled "RT at a glance" and features several sections:

- 10 highest priority tickets I own**: A table showing tickets with their subject, priority, queue, and status. The first ticket is "Office has run out of coffee" with priority 0 in the General queue, pending 1 other ticket.
- 10 newest unowned tickets**: A table showing tickets with their subject, queue, status, and creation time. The first ticket is "Obtain Series-C funding" in the General queue, new, created 16 min ago.
- Bookmarked Tickets**: A table showing tickets with their subject, priority, queue, and status. The first ticket is "Office has run out of coffee" with priority 0 in the General queue, pending 1 other ticket.
- Quick ticket creation**: A form for creating a new ticket, including fields for Subject, Queue (set to General), Owner (set to root), and Content.
- Reminders**: A section for setting reminders.
- Quick search**: A table showing search results for the General queue, with 3 new, 0 open, and 0 stalled tickets.
- Dashboards**: A table showing dashboard subscriptions, including "SLA Performance" with a daily subscription at 06:00.
- Refresh**: A section for refreshing the page, with a "Don't refresh this page" option and a "Go!" button.

# Ticket Management Systems

- Why do we use the term “ticket”?
- In order to resolve a problem...
  - Who wants what?
  - Who's going to work on this?
  - When did they ask, when was it done?
  - How much time did it take (billing, hours)?
  - What's left to do?
  - Everything is summarized and presented in a simple and intuitive manner.



# Applications

- User support
- Security problem management
- Issue Tracking / Incident Management

# 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

# Components

- Register an event (i.e., ticket creation)
- Assign an owner
- Assign interested parties
- Maintain change history
- Inform interested parties of each change
- Initiative activities based on status or priority

# 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.

# Critical Issues and Tickets

Home Tickets Tools Logged in as jesse RT for example.com BEST PRACTICAL

RT at a glance

New ticket in General Search...

10 highest priority tickets I own

#	Subject	Priority	Queue	Status
1	Office has run out of coffee!	0	Office	(pending 1 other ticket)
2	Order more coffee	0	Office	(pending 2 other tickets)

10 newest unowned tickets

#	Subject	Queue	Status	Created
3	Obtain Series-C funding	General	new	52 sec ago

Bookmarked Tickets

#	Subject	Priority	Queue	Status
4	Evaluate responses to RFP for coffee roasts	0	General	new

Quick ticket creation

Subject:

Queue: General Owner: Me

Requestors: sales@bestpractical.com

Content:

Create

Home Tickets Tools Logged in as jesse RT for example.com BEST PRACTICAL

Create a new ticket

New ticket in General Search...

Basics Details

Create a new ticket

Requestors: sales@bestpractical.com

Cc:

Admin Cc:

Subject: Office has run out of coffee!

Describe the issue below:

The worst has happened.

There is no coffee to be found anywhere in the office.

Productivity is at an all-time low!

Attach:  Browse... Add More Files

Create

Basics

Queue: Office

Status: new

Owner: Nobody in particular

Operating System: Epiphany, Filterfresh, Linux, Mac OS X

# RT: Advantages

- Open source and free
- Heavily used and tested
- Very active development
- Flexible
- Web interface or control via email
- Backend database (MySQL, Postgresql, Oracle, SQLite)



# RT: Disadvantages

- A bit tricky to install the first time...
- It's powerful, so you'll need to spend some time learning how it works.
  - Most distributions have packages that make installation a bit easier:
    - Red Hat, Fedora, SuSE, Debian, Ubuntu, FreeBSD, etc.

# Problem Classification: *Queues*

RT allows you to create queues so that problems are classified by type, groups, etc.:



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

# Web Server 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](mailto: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 each queue
  - Different between AdminCC and CC
- Don't forget to create email *aliases* for each queue

# rt-mailgate

A critical component of RT. The 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.

# Scripts (actions)

## For each queue create automatic actions

- There is a group of scripts that apply to all queues.
  - Possible to customize per queue or globally
  - “*scrips*” are “snippets of Perl code”



# Extensions

You can 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

<http://wiki.bestpractical.com/index.cgi?Extensions>

# References

- *Best Practical* Web site  
<http://bestpractical.com/rt>
- *RT Essentials*. Dave Rolsky et al. O'Reilly Media, Inc.
- Contributions to RT:  
<http://requesttracker.wikia.com/wiki/Contributions>

