



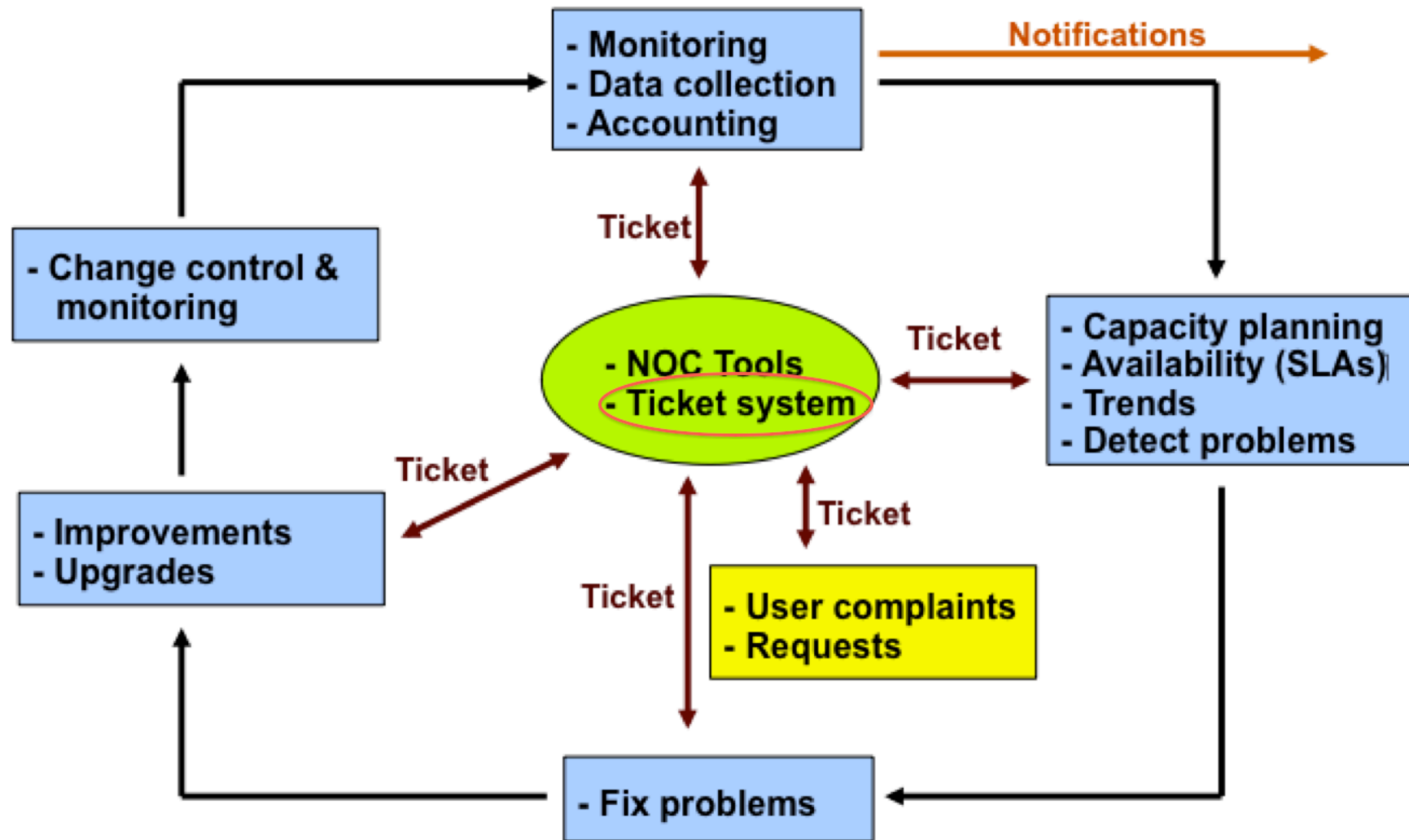
Network Management & Monitoring

Ticketing Systems with RT



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Why Ticketing Systems?



Ticketing Systems

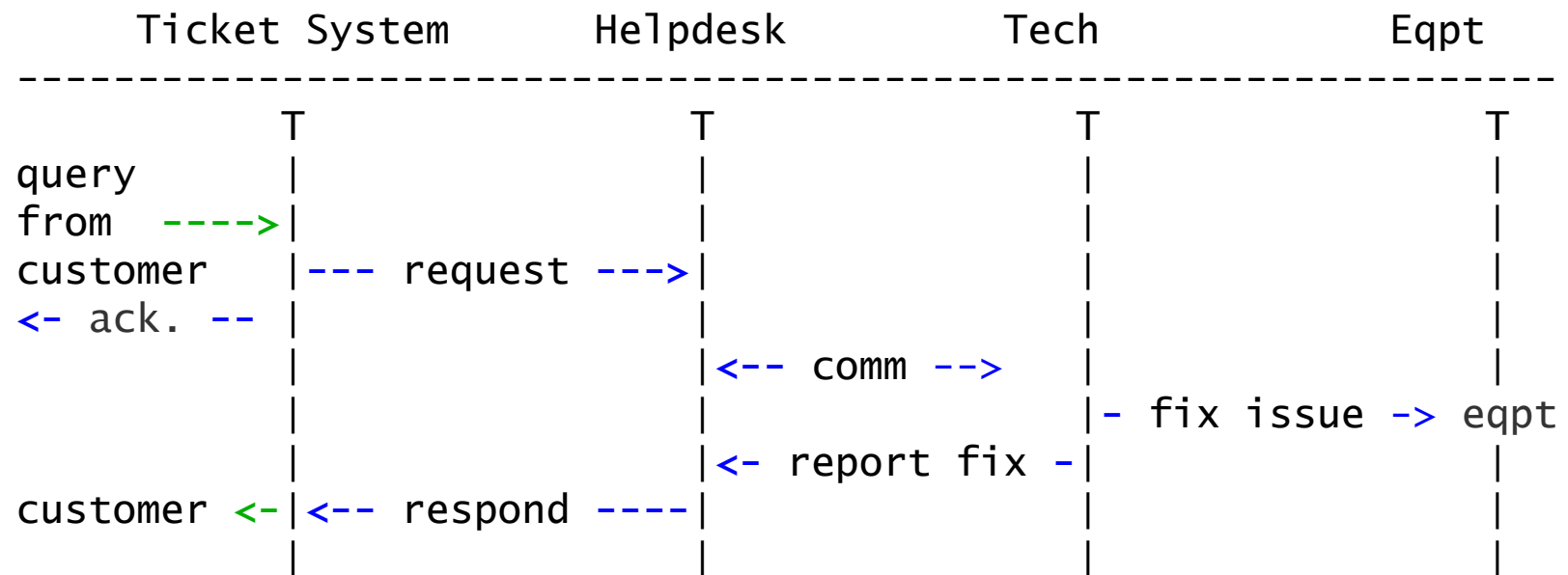
- Why are they important?
 - Track all events, failures and issues
- Focal point for help desk communication
- Use it to track all communications
 - Both internal and external
- Events originating from the outside:
 - customer complaints
- Events originating from the inside:
 - System outages (direct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

RT at a glance - Mozilla Firefox (Build 2008061004)

RT for example.com Logged in as root | Preferences | Logout

RT at a glance [New ticket in] [General] [Search]

Home
Simple Search
Tickets
Tools
Configuration
Preferences
Approval

10 highest priority tickets I own [Edit]

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

10 newest unowned tickets [Edit]

#	Subject	Queue	Status	Created	
3	Obtain Series-C funding	General	new	16 min ago	Take

Bookmarked Tickets [Edit]

#	Subject	Priority	Queue	Status
1	Office has run out of coffee	0	General	(pending 1 other ticket) ★

Quick ticket creation

Subject:

Queue: [General] Owner: [root]

Content:

[Create]

Reminders [Edit]

Quick search [Edit]

Queue	new	open	stalled
General	3	0	0

Dashboards [Edit]

Name	Subscription
SLA Performance	daily at 06:00

Refresh

Don't refresh this page. [Go!]

*Version 3.8

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	Take

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:

(Sends a carbon-copy of this update to a comma-delimited list of email addresses. These people will receive future updates.)

Admin Cc:

(Sends a carbon-copy of this update to a comma-delimited list of administrative email addresses. These people will receive future updates.)

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

(no value)

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

- 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>

