



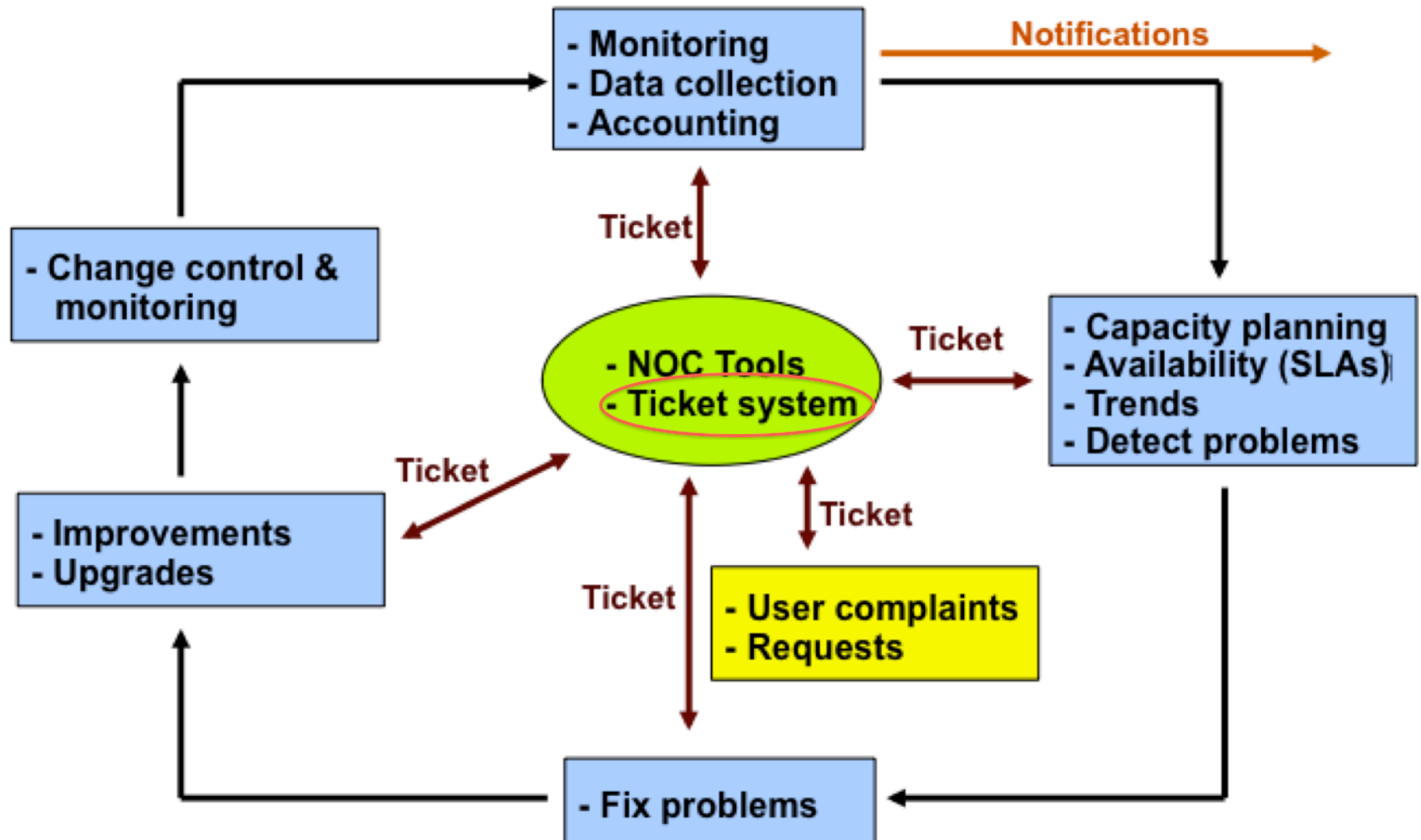
Network Management & Monitoring

Ticketing Systems with RT



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Why Ticketing Systems?



Ticketing Systems

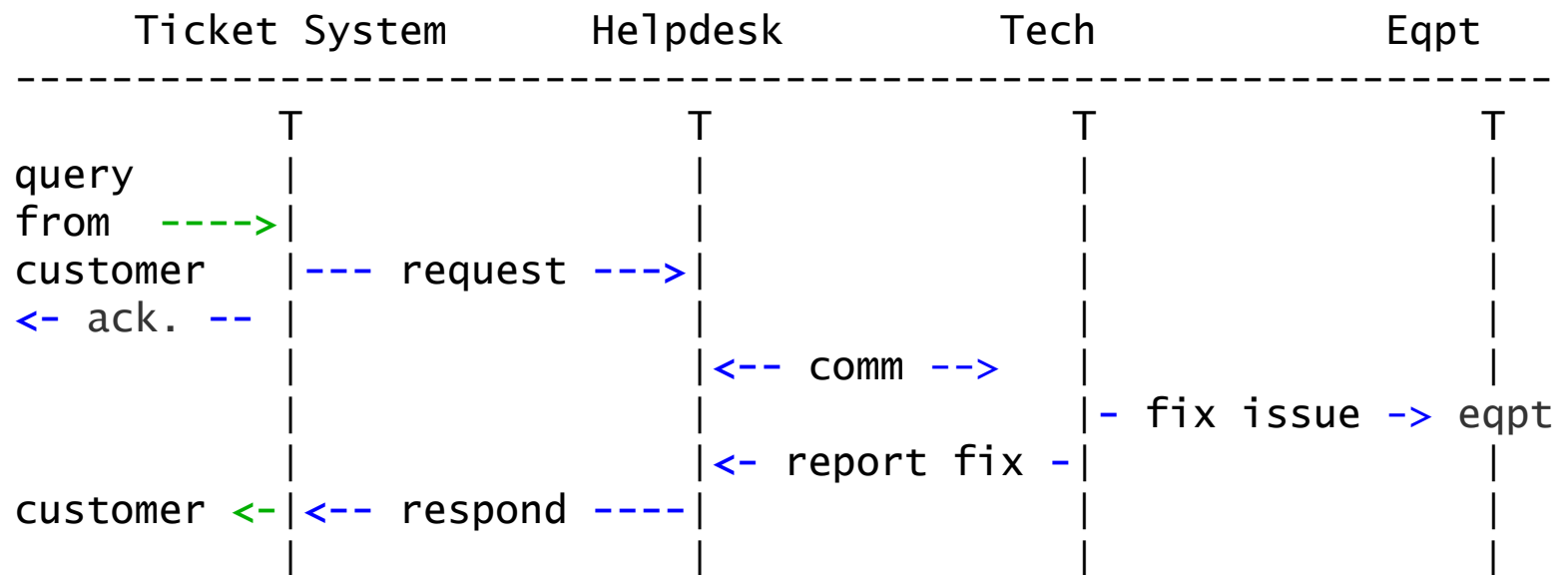
- Why are they important?
 - Track all events, failures and issues
- Focal point for help desk communication
- Use it to track all communications
 - Both internal and external
- Events originating from the outside:
 - customer complaints
- Events originating from the inside:
 - System outages (direct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

[Home](#) [Tickets](#) [Tools](#) [Logged in as root](#) RT for netmgmt << BEST PRACTICAL

RT at a glance [New ticket in](#) [General](#)

Edit

^ 10 highest priority tickets I own

Edit

^ 10 newest unowned tickets

| # | Subject | Queue | Status | Created | |
|---|-------------|-------|--------|-------------|------|
| 3 | Missing cat | net | new | 4 hours ago | Take |
| 2 | Missing cat | net | new | 5 hours ago | Take |

Edit

^ Bookmarked Tickets

Edit

^ Quick ticket creation

Subject:

Queue: [General](#) Owner: [Me](#)

Requestors:

Content:

Create

^ My reminders

^ Quick search

| Queue | new | open | stalled |
|---------|-----|------|---------|
| General | - | - | - |
| net | 2 | - | - |

Edit

^ Dashboards

Edit

^ Refresh

Don't refresh this page.

Go!

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
- Initiate 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 | Take |
|---|-------------------------|---------|--------|------------|------|
| 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:

(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

Operating System: (no value) 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...
 - 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.

Problem Classification: *Queues*



- **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
 - “*scripts*” are “snippets of Perl code”
 - Chapter 6 of the O’ Reilly “*RT Essentials*” book
 - Details on how to use Scripts:
<http://requesttracker.wikia.com/wiki/Scrip>

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

Useful references:

- <http://requesttracker.wikia.com/wiki/Extensions>
- <http://bestpractical.com/rt/extensions.html>

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>
- Extensions
<http://requesttracker.wikia.com/wiki/Extensions>
<http://bestpractical.com/rt/extensions.html>
- Scripts
<http://requesttracker.wikia.com/wiki/Scrip>
<http://requesttracker.wikia.com/wiki/ScripAction>

