Ticketing Systems and Documentation

APRICOT 2009
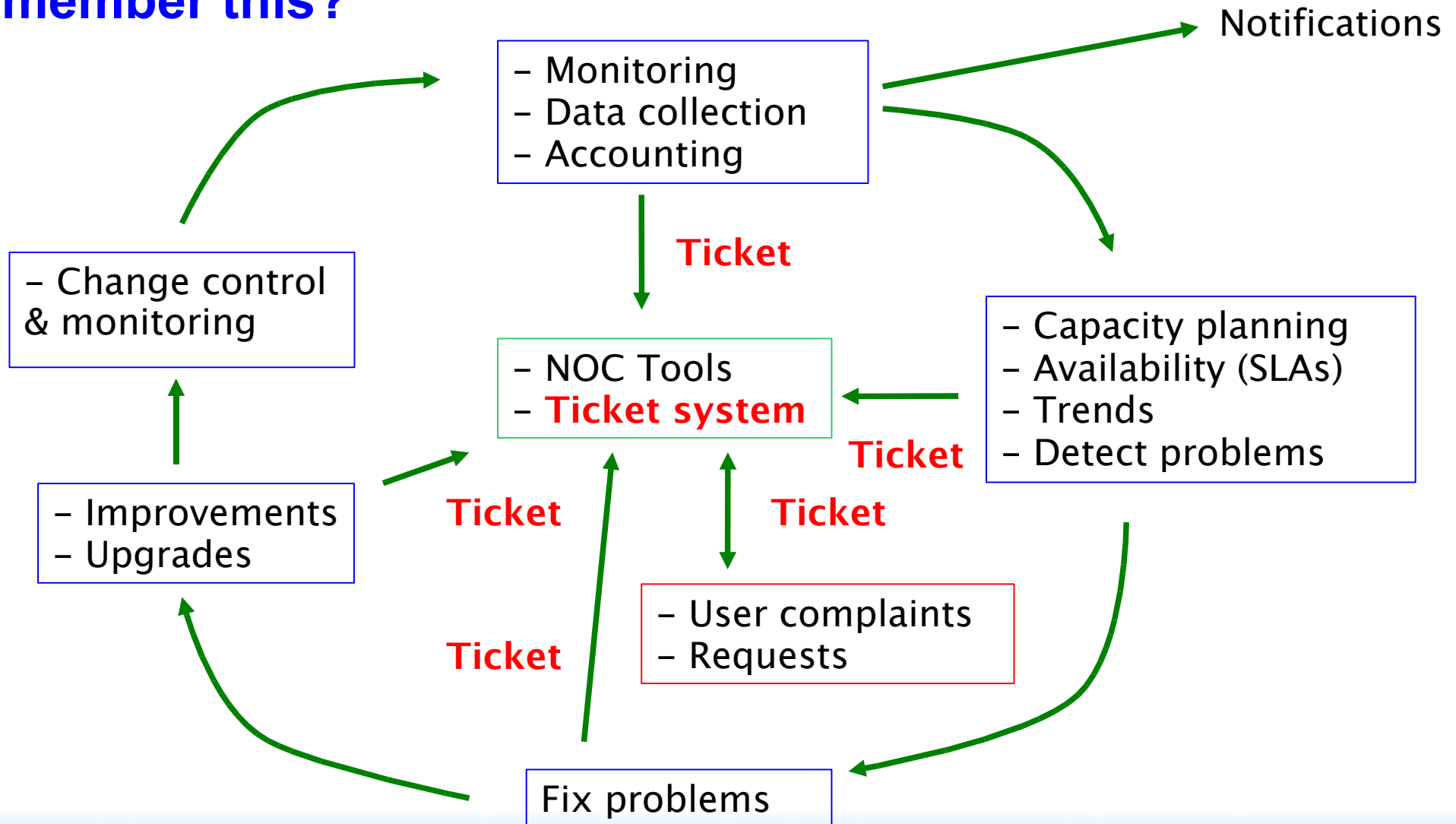### February 20 – Manila, Philippines
Hervey Allen

Why Ticketing Systems?

Remember this?

Notifications

- Monitoring
- Data collection
- Accounting

Ticket

- Change control & monitoring

- NOC Tools
- **Ticket system**

- Capacity planning
- Availability (SLAs)
- Trends
- Detect problems

Ticket

- Improvements
- Upgrades

Ticket

Ticket

- User complaints
- Requests
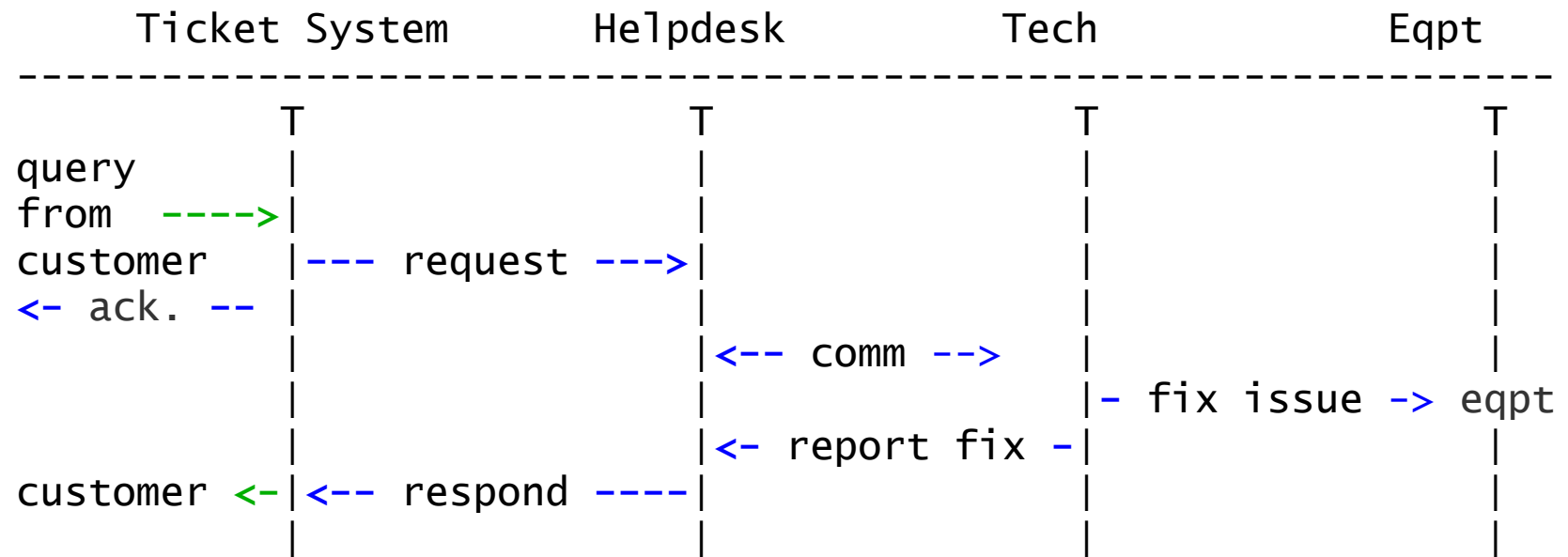
Ticket

Fix problems

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

- 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

```
        Ticket System        Helpdesk          Tech              Eqpt
----------------------------------------------------------------------------
             T                   T                T                 T
query        |                   |                |                 |
from  ---->|                     |                |                 |
customer  |--- request --->|                      |                 |
<- ack. -- |                     |                |                 |
           |                     |<-- comm -->    |                 |
           |                     |                |- fix issue -> eqpt
           |                     |<- report fix -|                  |
customer <-|<-- respond ----|                     |                 |
           |                     |                |                 |
```

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.

RT: Request Tracker

http://bestpractical.com/rt/

What's it Look Like?

Topics

- What is a ticket management system
  - Necessities and advantages
  - Common functionalities

- Practice with RT (Request Tracker)
  - Global configuration
  - Create users
  - Create queues
  - Assign actions to the queues
  - Create message filters

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, gues
- 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

Example: Why Used at the UO?

- Lots of email traffic requesting help, services, etc.

- Archived as text without classification

- Very difficult to find current status or problem history.

- Sometimes problems were forgotten or never resolved.

RT: Advantages

- Open source and free
- Heavily used and tested
- Very active development
- Quite flexibile
- Web interface and via email

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:

    - Gentoo, Debian, FreeBSD, etc.

Problem Classification: Queues

- RT allows you to create queues so that problems are classified by type:
    - **Services:** DNS, IP addresses, Radius, LDAP
    - **Connectivity:** Communications infrastructure problems
    - **Security:** Attacks, scans, abuse, etc.
    - **Systems:** Email accounts, passwords, etc
    - General help

Site Configuration

- You'll see this in the installation exercises. Edit the file /etc/requestrackNN/RT_SiteConfig.pm and edit the variables as needed. For example:

  - **$rtname:**   Short name for the install
  - **$Organization:**   Long name for the instllation
  - **$CorrespondAddress:** default address for correspondence: rt@DOMAIN.FQDN
  - **$CommentAddress:**   default address for comments: rt-comment@DOMAIN.FQDN
  - **$Timezone:**   (Eg. 'US/Eastern') – possibly autoconfigured
  - **$WebBaseURL:**   "http://DOMAIN.FQDN" - might want "https"
  - **$WebPath:**   "/rt"

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

Email Gateway Configuration

- ## Example using *sendmail* and rt-mailgate

  ```
  ln -s /usr/local/rt3/bin/rt-mailgate rt-mailgate
  ```

- ## Add the necessary aliases

  ```
  # vi /etc/aliases

  rt: "|rt-mailgate --queue general --action correspond --url
     http://localhost.localdomain/"

  rt-comment: "|rt-mailgate --queue general --action comment --url
     http://localhost.localdomain/"

  # newaliases
  ```

- ## Check the configuration

  ```
  # echo "testing rt" | mail -s "test" rt@localhost
  ```

User Creation

- Create a userid for each member of your NOC team.

- Assign privileges to each user.

Create Groups

- Create groups of users:
  - Administering privileges by group is more efficient that 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

Scrips (actions)

- For each queue create automatic actions
  - There is a group of scrips 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

http://trac.edgewall.org/

What's it Look Like?

What's it Do?

<u>Software Configuration Management</u>

- wiki for collaboration

- Interface to subversion for change management.

- Timeline for milestones, progress reports, etc.

- Ticketing system

- Integration with email

Installation

You can create a fairly complex trac project...

- Multiple trac environment configuration.
- Authentication via trac not Apache.
- trac user admin via web interface.
- write-protected for anonymous users.
- Ability to add subversion later.
- Aztech calendar plug-in.

trac: Some Details

- **Let's look at the wiki...**
- **Let's look at the ticketing system...**
- **Let's look at different user views...**
- Then we'll install.

Sample Trac Projects

An open project:

http://ws.edu.isoc.org/trac/afnog08/

Class web server:

http://noc.mgmt.conference.apricot.net/trac/netmanage

Fully available live demo:

http://www.hosted-projects.com/trac/TracDemo/Demo

Available installation cookbook:

http://nsrc.org/workshops/2009/apricot/presos/trac-install-cookbook.txt

Suggested Trac Exercises

Let's do the following:

1.) Install (use the available *cookbook*)

2.) Review the install

3.) If time, do a few more exercises:

- Allow *anonymous* user to see tickets. (add TICKET_VIEW and REPORT_VIEW permissions)

- Find a plugin you want and install.