Modular Infrastructure Design with Messaging

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Overview of Fedora Infrastructure

- Build Server (Koji)

- Source Control (CVS)

- Ownership Database (PkgDB)

- Bug Database (bugzilla)

- QA System (autoqa)

Walkthrough of a Build

- Commit of a change (CVS)
  - Check of ACLs (generated by cron of pkgdb)
  - Email to alias (generated by cron of pkgdb)
- Request Build in Koji
  - Email to owner listed in Koji (set by cron of pkgdb)

What if we want to change something?

- Change email address for a Packager
  - Touch PkgDB
  - Cron pull to update email alias
- Change ownership of a package
  - Touch PkgDB
  - Cron pull to update email alias
  - Cron pull to update CVS ACLs
  - Cron pull to update Koji

What if we wanted to add functionality?

- How to notify the QA system?
  - Add code to koji to poke autoqa?
  - Create a procmail script?
  - Listen to RSS?
  - Reporting back?
- How to notify Bugzilla?
  - Add code to CVS to poke bugzilla?
  - Add code to koji to poke bugzilla?
  - procmail?

What if we want to replace something?

- Replace CVS with git?
  - Rewrite all interaction bits
  - Touch multiple systems

What if there was a better way?

- Unified Message Bus
  - Pass messages between applications
  - Pass messages between computer systems
  - Multiple language bindings
  - Multiple platform support
  - Multiple ways to exchange
    - Broadcast
    - Client / Server
  - Durable

Walkthrough of a Build

- Commit of a change (CVS)
  - Message put on bus of change
    - Listener of change generates email
    - Listener of change creates rss
    - Listener of change modifies bugzilla
- Request Build in Koji
  - Message put on bus of build
    - Listener of change generates email
    - Lilstener of change creates rss
    - Listener of change modifies bugzilla

Making changes with a Bus

- Change email address of a Maintainer
  - Touch PackageDB
    - Message on bus of change
      - Alias generation script reacts to message
- Change ownership of a package
  - Touch PackageDB
    - Message on bus of change
      - Alias generation script reacts to message
      - ACL generation script reacts to message
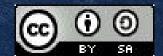   - Buildsystem listener reacts to message

AutoQA?

- Add a listener to the bus to react to messages
- Report QA results on bus
- Add listeners to the bus to react to QA messages and touch other systems

Bugzilla?

- Add a listener to the bus that reacts to messages and frobs bugzilla

Replace CVS?

- Only have to modify the listeners and teach new SCM to put messages on the bus

Other Problems to solve

- Config Management refreshes
- Dashboard of activity

Questions?