Modular Infrastructure Design with Messaging

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LinuxFest Northwest 2009
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
    – Listener 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?