

# BoF: Fuego improvements

---



Hola, soy Fuego\*

\*こんにちは、フエゴです。

**Daniel Sangorrín,**  
IoT technology center, TOSHIBA  
Linux Jamboree, 2 Dec 2016  
Nakano Sunplaza (Japan)

# Background

---



Fuego は知らない方、  
つまんないかも。

- **Fuego**

- **(Jenkins + scripts + tests) > Docker**

- <http://bird.org/fuego/FrontPage>

- **This talk assumes you are familiar with Fuego.**

- **Goal**

- **Show a few improvements.**
- **Discuss Fuego's roadmap and priorities.**

- **これからの Fuego、どうなるんだろう。**

# Index

---



多すぎっ!

- **A few improvements**

- Reducing installation time
- Avoid re-cloning fuego-core
- Solving the “chown” hell
- Solving the “ln -s” hell

- **Discussion time**

- Maintainable Jenkins upgrades
- A common test output format
- Unforking AGL-JTA
- Integration with kernel-ci
- Testplans
- Test packaging: git vs tarballs
- Fuego summit
- Others:

- Unit tests, Releases, Work status/priorities, Test rating, Documentation format

# Reducing installation time

---



- **Armhf toolchain installation ⇒ optional**
  - **Not useful for real development**
    - You need to install a proper SDK
  - **Moved instructions to a script**
- **Download from the closest server**
  - **<http://httpredir.debian.org/debian>**
- **Avoid re-cloning fuego-core**
  - **Let's discuss about tarballs vs git later.**

AGL-JTA の方も  
同じことやっ取るね

# Avoid re-cloning fuego-core

---



これで開発は  
楽になる。

- **Problem**

- **Increases installation time (tarballs)**
- **Inconvenient for development**
  - Can't use host's powerful tools (meld, kate)
- **The naming is confusing**
  - Cloned to /home/jenkins/fuego

- **Solution**

- **Volume-mount host's fuego-core to /fuego-core**
  - And get rid of /home/jenkins! :O

# Solving the “chown” hell

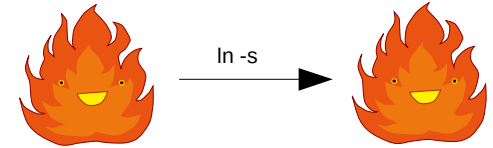
ダメです



```
dsl@host$ ls -l fuego/userdata/  
drwxrwxr-x  9 messagebus dsl 4096 11月 24 18:01 buildzone  
drwxrwxr-x  6 messagebus dsl 4096 11月 24 11:35 conf  
drwxrwxr-x 11 messagebus dsl 4096 11月 29 15:10 logs
```

- There is a mess with file ownership
  - /userdata becomes chown'ed by 'jenkins' user
    - Which happens to be 'messagebus' on Ubuntu
  - Files copied from docker to host are root owned
- Solution:
  - Add user 'jenkins' with your user's UID/GID
    - Volume mounts are jenkins-owned inside docker

# Solving the “ln -s” hell



```
/home/jenkins# ls -l
lrwxrwxrwx 1 jenkins root 19 Dec 1 02:18 buildzone -> /userdata/buildzone
lrwxrwxrwx 1 jenkins root 14 Dec 1 02:18 logs -> /userdata/logs
lrwxrwxrwx 1 jenkins root 35 Dec 1 02:18 overlays -> /home/jenkins/fuego/engine/overlays
lrwxrwxrwx 1 jenkins root 34 Dec 1 02:18 scripts -> /home/jenkins/fuego/engine/scripts
```

- **Lots of confusing links and path variables**
  - **They are not needed.**
  - **Makes code harder to read.**
- **Solution**
  - **All paths should be relative to 3 variables**
    - **JENKINS\_HOME (/var/lib/jenkins)**
    - **FUEGO\_CORE (/fuego-core)**
    - **USERDATA (/userdata)**

# Index

---



参加しようぜ!

- A few improvements
  - Reducing installation time
  - Avoid re-cloning fuego-core
  - Solving the “chown” hell
  - Solving the “ln -s” hell
- Discussion time
  - **Maintainable Jenkins upgrades**
  - **A common test output format**
  - **Unforking AGL-JTA**
  - **Integration with kernel-ci**
  - **Testplans**
  - **Test packaging: git vs tarballs**
  - **Fuego summit**
  - **Others:**
    - **Unit tests, Releases, Work status/priorities, Test rating, Documentation format**



# Maintainable Jenkins upgrades

---



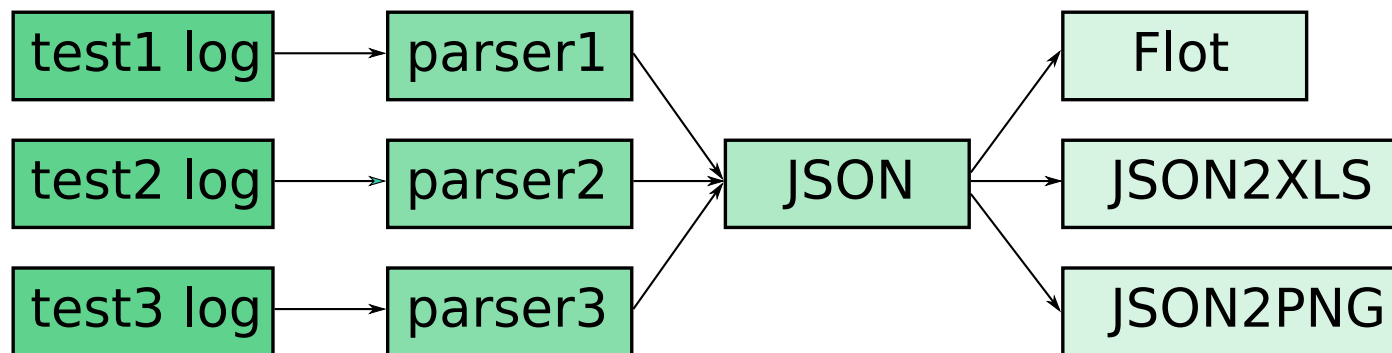
- **Lessons from upgrading Jenkins to version 2.19.3\***
  - **Install jobs, plugins and nodes programmatically**
    - `jenkins-cli.jar -s http://localhost:8080/fuego help`
    - Use a template to generate all jobs/\*/config.xml
  - **Install only those plugins that are essential**
    - Make sure they are very popular and stable
    - Do not store binaries on git
  - **Be specific when you modify some file**
    - Do not replace whole files (use sed)
      - ♦ e.g.: `/etc/default/jenkins`, `/var/lib/jenkins/config.xml`, `frontend-install/jenkins-updates/en_US mess`
  - **Avoid interface decluttering or style modifications**
  - **Avoid groovy scripts**

\*still on-going work

# A common test output format



- **Need to agree on a common output format**
  - **AGL-JTA is using a XML format**
  - **Kernel-ci uses per-test JSON schemas**
  - **TAP was suggested by Victor Rodriguez**
- **Proposal**
  - **Use a single generic JSON schema**



# Unforking AGL-JTA

---

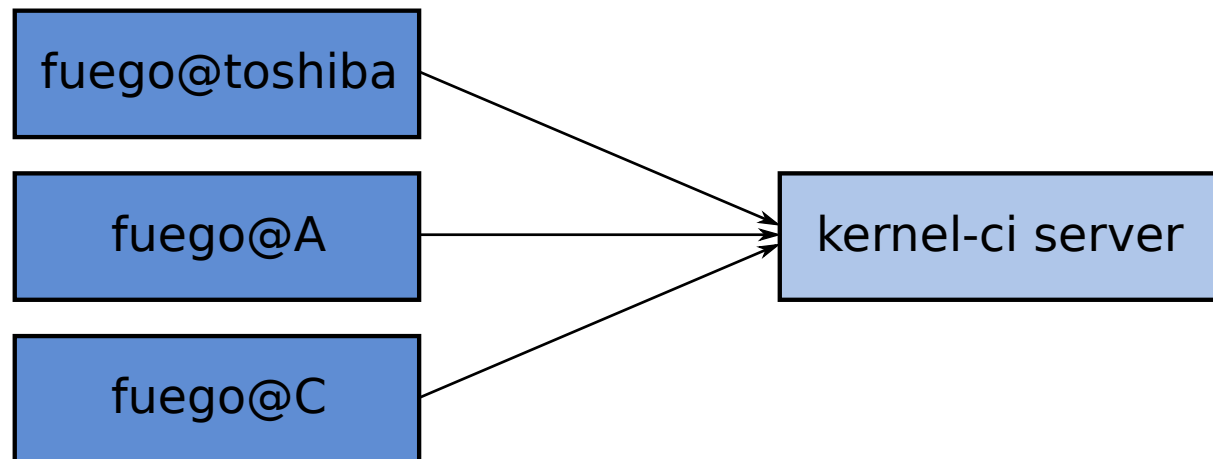


- **Fuego is still a proof-of-concept**
  - **Lots of work to do.**
  - **Let's work together!**
- **Useful code in AGL-JTA**
  - **Add result links per test executed**
  - **Log parsing into HTML (but not JSON..)**
- **Jamboree 58-1 / LTSI mailing list**
  - **AGL-JTA seems to be willing to close the gap**
    - **Any news on that?**

# Integration with kernel-ci



- **Add kernel-ci build tests to Fuego (easy)**
  - **For boot tests we'll need Lava or Pyboot**
  - **What about 0day performance tests?**
- **Short-term: use a kernel-ci server**
- **Long-term: modify kernel-ci for other tests**
  - **Option: or add Rest-API to Fuego**



# Testplans

---



- **Requirement**
  - **Targets need different parameters for each test**
- **Testplans**
  - **Nobody is using them as far as I know**
  - **They are not associated to the board files**
    - **People starting to write their own variables**
- **Proposal**
  - **Default**
    - **Tests should figure out the parameters by themselves**
  - **Otherwise**
    - **Create a new job, tie it to the board and modify parameters**
    - **Specify parameters through the Node interface**

# Test packaging: git vs tarballs

---



- **Tests, like any source code, get updated**
  - **Updating tarballs is not scalable**
    - Shall we use/mirror git repositories?
    - Easy to attach tags or commit ids to JSON

# Fuego summit

---



- **Shall we create a Fuego summit?**
- **Meet at ELC or some future Linux event?**
- **Tim: report from Linux Plumbers conference**

# Other topics

---



- Fuego release engineering
  - **Unit tests**
  - **Using a single repository?**
- Fuego work status and priorities
- Rating tests: how to promote best practices
- Documentation format
  - **LaTeX, Wiki, Markdown (hoge.md)**
    - **Avoiding LaTeX might save us installation time**
- Remove sshd from docker
- Improve network-related tests
- Remove maintain inotify link
- Use names for containers instead of container id