



# Linux Kernel Testing BOF

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Collaboration Summit @Santa Rosa



Kernel testing is everybody's  
business

- Jon Corbet

# Who am I

Tsugikazu Shibata, NEC

Project lead of LTSI

Member of CE Working group

Member of the board of the Linux Foundation

# Key activities of LTSI

## Long Term Support Initiative

- ❑ Providing a industry managed kernel and maintain Long Term
- ❑ Providing a common place for embedded industry to share information: Mailing list, Workshop ...
- ❑ Providing place to support upstream activity : Help industry developer

- LTSI had been started 2011 in Prague

# Expected people for this BoF

- People who are working for the products and/or services using Linux (kernel)
  - Sometimes become Linux developer and then becomes engineer using Linux
  - And taking care about testing and fixing problem (if it's happened)

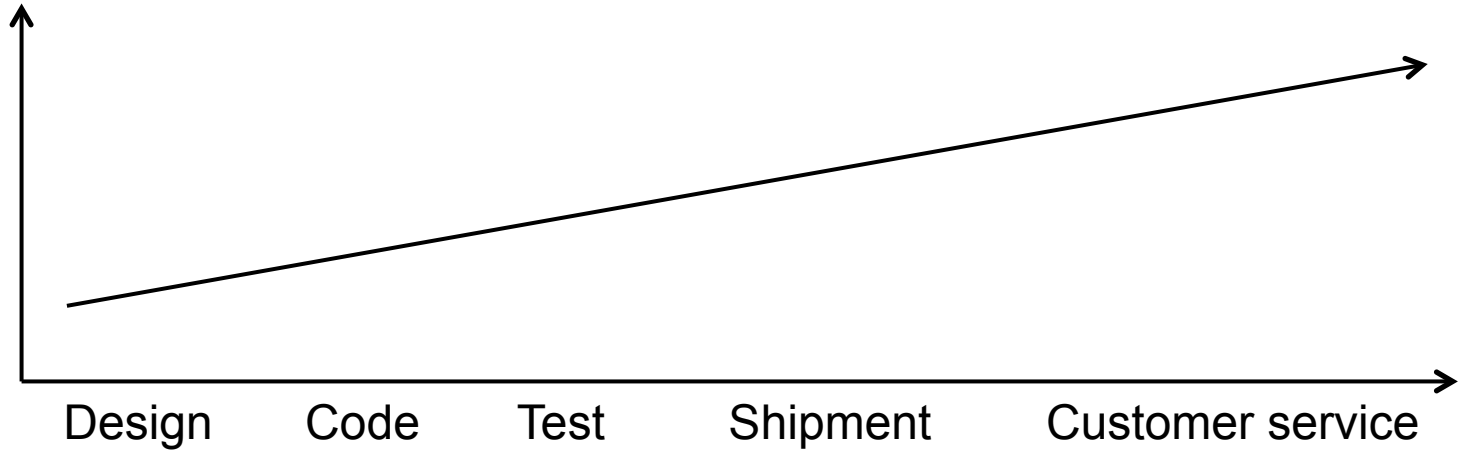
# Wikipedia says

- Software testing

A primary purpose of testing is to detect software failures so that defects may be discovered and corrected

# A example of product development process

Cost of fix a defect

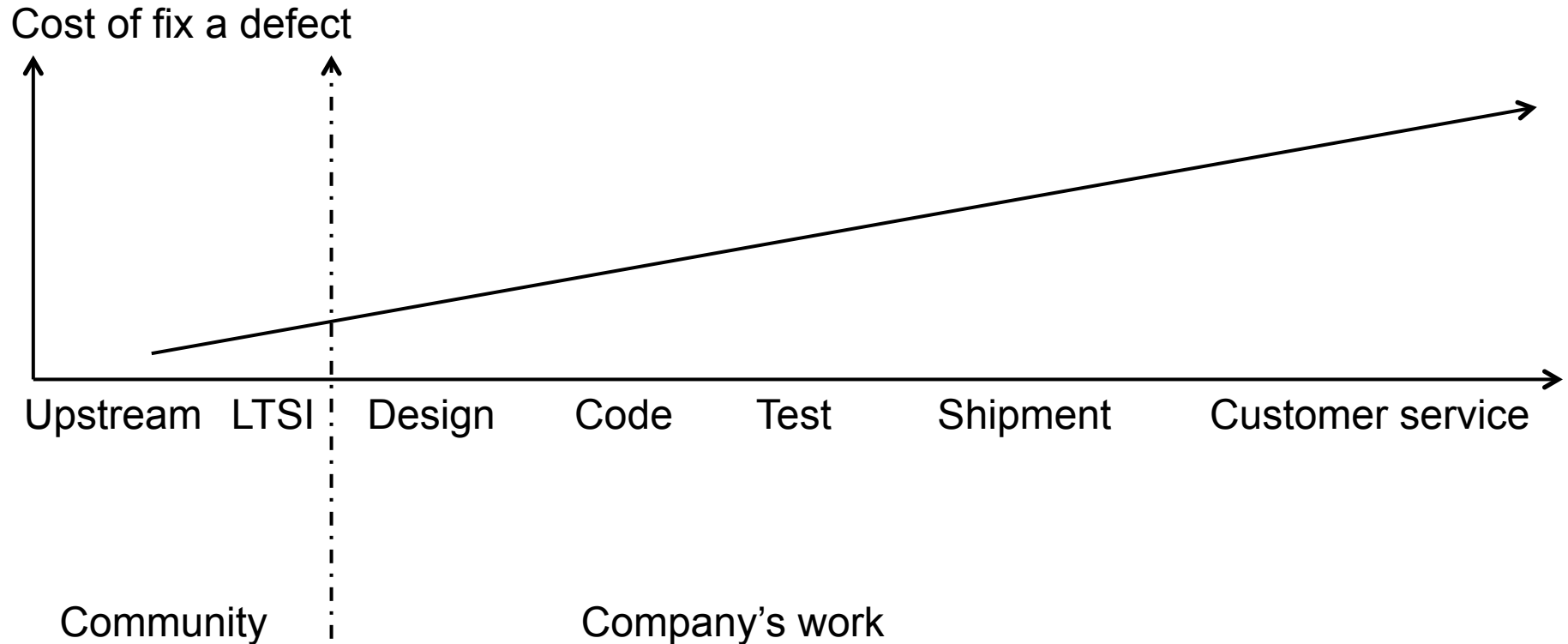


# Software Engineering people says

- Defects can be fixed with lower cost in earlier phase. The earlier phase, the better.
- In case of Open Source, what is the earlier phase?



# A example of product development process



# Community tests

Testing activities in the community:

- Selftest: Shuah Khan is leading in upstream
- LTSI has automated test infrastructure

# LTSI Test environment

The screenshot shows the Bitbucket interface for the repository 'cogentembedded/jta-public'. The top navigation bar includes 'Features' and 'Pricing' links, and the user is logged in as 'owner/repository'. The repository overview shows it was last updated on 2014-07-31, has 9 branches, 0 tags, 0 forks, and 1 watcher. The main content area displays the repository's README, which is titled 'Jenkins-based Test Automation' and contains instructions for software requirements and installation. A sidebar on the left provides navigation options like 'Clone', 'Compare', 'Fork', 'Source', 'Commits', 'Branches', 'Pull requests', 'Issues', 'Wiki', and 'Downloads'. A promotional banner for unlimited private and public hosted repositories is visible on the right, along with a 'Recent activity' section showing the latest commits.

Bitbucket Features Pricing owner/repository English Sign up Log in

cogentembedded  
jta-public

ACTIONS

- Clone
- Compare
- Fork

NAVIGATION

- Overview
- Source
- Commits
- Branches
- Pull requests
- Issues
- Wiki
- Downloads

## Overview

Last updated	2014-07-31	9	0
Language	—	Branches	Tags
Access level	Read	0	1
		Forks	Watcher

### Jenkins-based Test Automation

0. Software requirements  
-----  
Debian Wheezy 64-bit.

1. Installing  
-----  
run ./debian\_install.sh under root, asnwer simple questions.  
It will install all the needed packages.  
Install toolchains for needed platforms to /home/jenkins/tools and add them to tools.  
See jta-guide.pdf for details.

2. Usage

HTTPS https://bitbucket.org/cogentembedd

Unlimited private and public hosted repositories. Free for small teams!  
Sign up for free

Recent activity

- 2 commits  
Pushed to cogentembedded/jta-public  
7cfe53 jobs: FE: add renesas jobs for te...  
38e2fef tests: add renesas tests (backend)  
4da · 2014-08-01
- 1 commit  
Pushed to cogentembedded/jta-public  
828393b tests: exit 1 -> build error for buil...  
4da · 2014-07-26
- 1 commit  
Pushed to cogentembedded/jta-public  
1074c60 scripts: add build\_failed function ...

You can down load from:

<https://bitbucket.org/cogentembedded/jta-public/>

# LTSI Automated tests result

The screenshot displays the Test Automation Framework web interface. At the top, there are logos for COGEMBEDDED, THE LINUX FOUNDATION, LONG TERM SUPPORT INITIATIVE, and RENESAS. The main content area is titled "Test Automation Framework" and includes a navigation sidebar on the left with options like "New Test", "People", "Test Run History", "Edit Dashboard", "Manage Jenkins", "Scripter", and "Exclusion administration". Below the sidebar, there are sections for "Test Run Queue" (showing "No test runs in the queue.") and "Targets Status" (listing various targets and their status, such as "1 Idle" for "Master", "henninger", "koelsch", and "minnow").

The central part of the interface shows a "0. History" tab with sub-tabs for "Benchmarks", "Functional", "LTSI-3\_10", "all", and "batch runs". Below this is a table titled "Latest tests runs" with the following columns: Test, Run, Time, Platform SDK, and Device.

Test	Run	Time	Platform SDK	Device
<a href="#">Functional.LTSI-3_10.a</a>	🔴 #4	Aug 20, 2014 11:54:35 PM		henninger
<a href="#">Functional.LTSI-3_10.a</a>	🔴 #3	Aug 20, 2014 11:48:31 PM		henninger
<a href="#">Functional.LTSI-3_10.a</a>	🔴 #2	Aug 20, 2014 11:45:44 PM		henninger
<a href="#">Functional.LTSI-3_10.a</a>	🔴 #1	Aug 20, 2014 11:43:53 PM		henninger
<a href="#">Functional.LTSI-3_10.usb-function</a>	🔴 #36			
<a href="#">Functional.bzip2</a>	🟢 #8			
<a href="#">Functional.cmt</a>	🔴 #2			
<a href="#">Functional.LTSI-3_10.c.cmt</a>	🔴 #1			
<a href="#">Functional.LTSI-3_10.ceu</a>	🔴 #11			
<a href="#">Functional.LTSI-3_10.c.arch.timer</a>	🔴 #4			
<a href="#">Functional.LTSI-3_10.c.arch.timer</a>	🔴 #3			
<a href="#">Functional.bzip2</a>	🟢 #7			
<a href="#">Functional.bzip2</a>	🟢 #6	Aug 20, 2014 10:22:34 PM		minnow

A yellow callout box is overlaid on the bottom right of the screenshot, containing the text: "28 benchmarks and 33 test programs are integrated in test environment".

# Points of discussion

1. Joining Community's testing
  - How about push the companies' in-house tests into the community
2. What kind of tests can be pushed back
3. Fixing defects found in in-house tests

# 1. Joining community testing

- Companies have number of test packages and push back to community may be beneficial
  - Earlier the better
  - No need to spend cost
- Community test would be
  - Simple, Automated
  - Take not too much time to run

## 2. What kind of tests can be pushed back

- Basic tests
- Driver tests
- Others?

### 3. Fixing defects found in in-house tests

- In-house patch VS send patches to upstream
- Sending patch to upstream is the best way but...



# You can participate LTSI

- Follow on Twitter account:

@LinuxLTSI



**LinuxLTSI**

@LinuxLTSI

*LTSI stands for Long-Term Support Initiative. A group of CE Working Group of the Linux Foundation to provide Long-Term and stable Linux for Industry*

- Web:

<http://ltsi.linuxfoundation.org>

- Mailing list:

<https://lists.linuxfoundation.org/mailman/listinfo/ltsi-dev>

- Git tree :

<http://git.linuxfoundation.org/?p=ltsi-ernel.git;a=summary>

# THANK YOU

