

# Web Hob - Stage I design

## User feedback

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**Summary**

Status: completed  
Date: 01/12/2012 at 04:34:54  
Image files: **ext3** (8.5 MB) | **tar.bz2** (2.5 MB)

**Tasks**

Tasks run: 1468  
Errors: 0  
Warnings: 0

**Configuration**

Machine: atom-pc  
Base image: core-image-minimal  
Layers:  
• meta  
• meta-yocto  
• meta-yocto-bsp  
master: 1b0c0f290290f62fa773379eb3898442e538c4

**Build time**

Total build time: 00:34:25

**Package information**

Packages included: 30  
Total package size: 6.5 MB

**Image directory structure**

**CPU usage**

**Disk I/O**

**Tasks**

Filter:  Show:  succeeded  failed  previously built  
 estate succeeded  estate failed  estate missed

Task name	Recipe	Status	Log file
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	succeeded	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	previously built	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	estate succeed	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	failed	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	succeeded	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	previously built	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_compile	recipe-name	estate succeed	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	succeeded	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	previously built	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	estate succeed	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	succeeded	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	previously built	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	estate succeed	/the/path/to/the/log/file/for/this/item.log
cross-localedef-native-2.16r1-do_populate_sysroot	recipe-name	succeeded	/the/path/to/the/log/file/for/this/item.log

## 8 interviews

On 23rd and 24th January 2013 we organised 8 interviews with 9 volunteers to gather feedback on our initial designs for the stage 1 of Web Hob.

The scope of what we call "stage 1" of Web Hob includes functionality to analyse the output of a build.

Volunteers were recruited during ELC-E and through the Yocto Project mailing lists.

To facilitate the discussion, we created a static prototype that is available in the Yocto Project git repository:

<http://git.yoctoproject.org/cgit/cgit.cgi/yocto-webhob-design/plain/phase1-iteration1-prototype/index.html>

The interviews were conducted over the phone, using Skype (<http://www.skype.com>) and Team Viewer (<http://www.teamviewer.com>) for screen sharing.

We recorded the interviews using Silverback (<http://silverbackapp.com>) for further analysis.

## About this document

We received enormous amounts of very detailed feedback. Since including it all in this document would be impractical, we have extracted what we consider the most important points.

**cross-localedef-native-2.16r1-do\_populate\_sysroot**

Status: failed  
Recipe: python  
Type: python  
Work directory: /directory/where/this/task/was/run  
Code: /path/to/some/bozotic/script/file.py

**Error:** Quisque eget odio ac lectus vestibulum faucibus eget in metus. In pellentesque faucibus vestibulum. Nulla at nulla justo, eget. /path/to/some/bozotic/script/file.py, line 566

```
561 def incoming(boat, port):
562     """Open specified port and return file-like object"""
563     sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
564     # set SOL_SOCKET.SO_REUSEADDR=1 to reuse the socket if
565     # needed later without waiting for timeout (e.g. after it is closed)
566     sock.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
567     sock.bind((host, port))
568     sock.listen(0) # do not queue connections
569     request, addr = sock.accept()
570     return request.makefile("r", 0)
571     # /-- network ---
```

**2 warnings**

Quisque eget odio ac lectus vestibulum faucibus eget in metus. In pellentesque faucibus vestibulum. Nulla at nulla justo, eget. /path/to/some/bozotic/script/file.py, line 566

**Configuration**

**Summary**

Target system: i586-poky-linux  
Machine: qemux86  
Distro: poky  
Distro version: 1.3-snapshot-20130114

**Layers:**

- meta
- meta-yocto
- meta-yocto-bsp (master: 1b0c0f290290f62fa773379eb3898442e538c4)

**Key / Value pairs**

Key	Value	Description	Show in Summary
BB_NUMBER_THREADS	4	Parallelism option to control how much parallelism BitBake should use. This option determines how many tasks BitBake should run in parallel. For a quad-core machine, BB_NUMBER_THREADS = "4" would be appropriate.	<input type="checkbox"/>
PARALLEL_MAKE	-j4	Parallelism option to control how much parallelism BitBake should use. This option controls how many processes make should run in parallel when running compile tasks. For a quad-core machine, PARALLEL_MAKE = "-j4" would be appropriate.	<input type="checkbox"/>
MACHINE	qemux86	This sets the default machine to be qemux86 if no other machine is selected.	<input checked="" type="checkbox"/>

**All packages**

Package name	Recipe	Size
base-files	base-files-3.0.14-r72	244.0 KB
base-passwd	base-passwd-3.5.26-r0	0 B
busybox	busybox-1.20.2-r2	569.0 KB
busybox-hwclock	busybox-1.20.2-r2	16.0 KB
busybox-sylog	busybox-1.20.2-r2	20.0 KB
busybox-udhcp	busybox-1.20.2-r2	32.0 KB
eglibc	eglibc-2.16-r15-armv20093	3.0 MB
initscripts	initscripts-1.0-r137	160.0 KB
kernel-base	linux-yocto-3.4.11-g11-a201-0d9fa	0 KB
kernel-module-cfbcopyarea	linux-yocto-3.4.11-g11-a201-0d9fa	36.0 KB
kernel-module-cfbfillrect	linux-yocto-3.4.11-g11-a201-0d9fa	36.0 KB
kernel-module-cfbimgblt	linux-yocto-3.4.11-g11-a201-0d9fa	32.0 KB
kernel-module-uvesafb	linux-yocto-3.4.11-g11-a201-0d9fa	64.0 KB
kmoud	kmoud-9-r0.0	112.0 KB
libkmod	kmoud-9-r0.0	104.0 KB
modules-initscripts	modules-initscripts-1.0-r6	16.0 KB
netbase	netbase-5.0-r0	76.0 KB
packagegroup-core-boot	packagegroup-core-boot-1.0-r10	0 B
pcutils-ids	pcutils-3.1.10-r0	204.0 KB
sysvinit	sysvinit-2.88daf-r7	208.0 KB
sysvinit-libtab	sysvinit-libtab-2.88daf-r9	12.0 KB
sysvinit-csdf	sysvinit-2.88daf-r7	28.0 KB

**All packages**

Package name	Depends on	Recommends
base-files		
base-passwd		
busybox	• update-rc.d • eglibc	• busybox-sylog • busybox-udhcp
busybox-hwclock		
busybox-sylog	• update-alternatives-eworth	
busybox-udhcp		
eglibc		
initscripts	• update-alternatives-eworth	
kernel-base		
kernel-module-cfbcopyarea	• kernel-3.4.11-yocto-standard • update-modules	
kernel-module-cfbfillrect	• kernel-3.4.11-yocto-standard • update-modules	
kernel-module-cfbimgblt	• kernel-3.4.11-yocto-standard • update-modules	
kernel-module-uvesafb	• kernel-3.4.11-yocto-standard • kernel-module-cfbcopyarea • kernel-module-cfbfillrect	

**Package information**

All packages → busybox

Name	Size
bin	569.0 KB
etc	8.2 KB

**Package information**

All packages → busybox

**Tiny versions of many common UNIX utilities in a single small executable**

Recipe: busybox-1.20.2-r4  
Brought in by: packagegroup-core-boot  
Depends on: update-rc.d | eglibc  
Recommends: busybox-sylog | busybox-udhcp

**Description**

Busybox contains tiny versions of many common UNIX utilities into a single small executable. It provides minimalist replacements for most of the utilities you usually find in GNU/Linux, FreeBSD, etc. The utilities in Busybox generally have fewer options than the full featured GNU utilities; however, the options that are included provide the expected functionality and behave very much like their GNU counterparts. Busybox provides a tiny complete POSIX environment for any small or embedded system.

Busybox homepage | Busybox bug tracker

## In general, the feedback was positive.

All volunteers seemed to understand the prototype structure and the information presented on the different screens. **Useful** was the term most used to define the prototype content.

## The concepts of "project", "build" and "image" as organizing principles were generally understood.

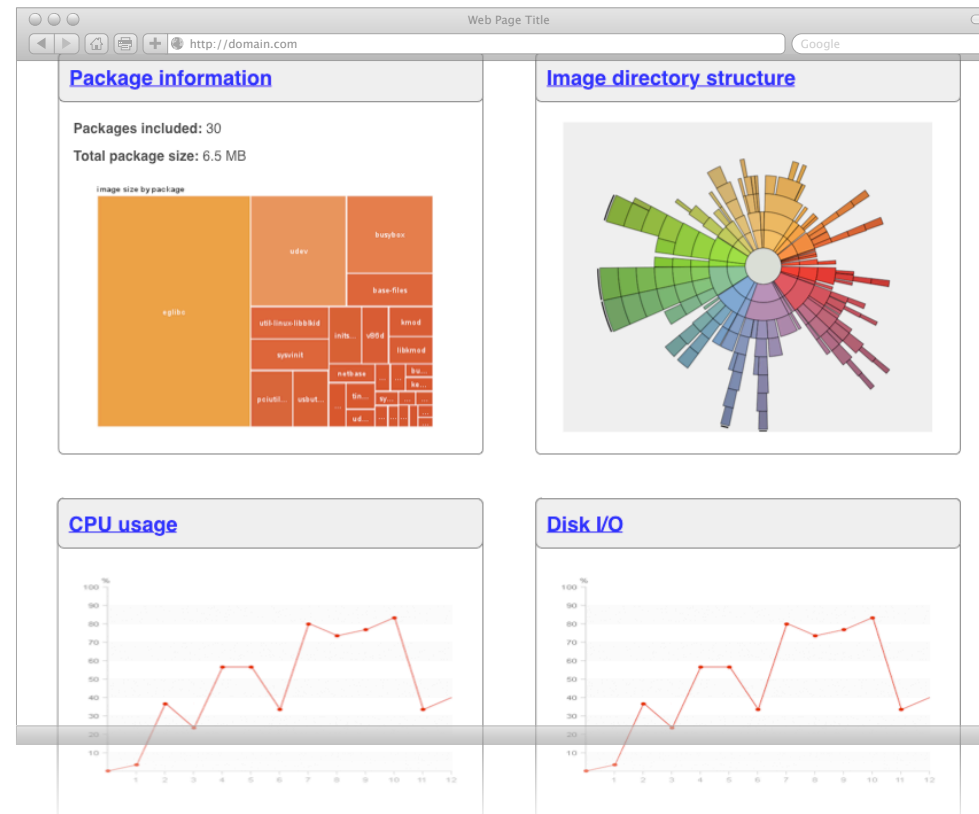
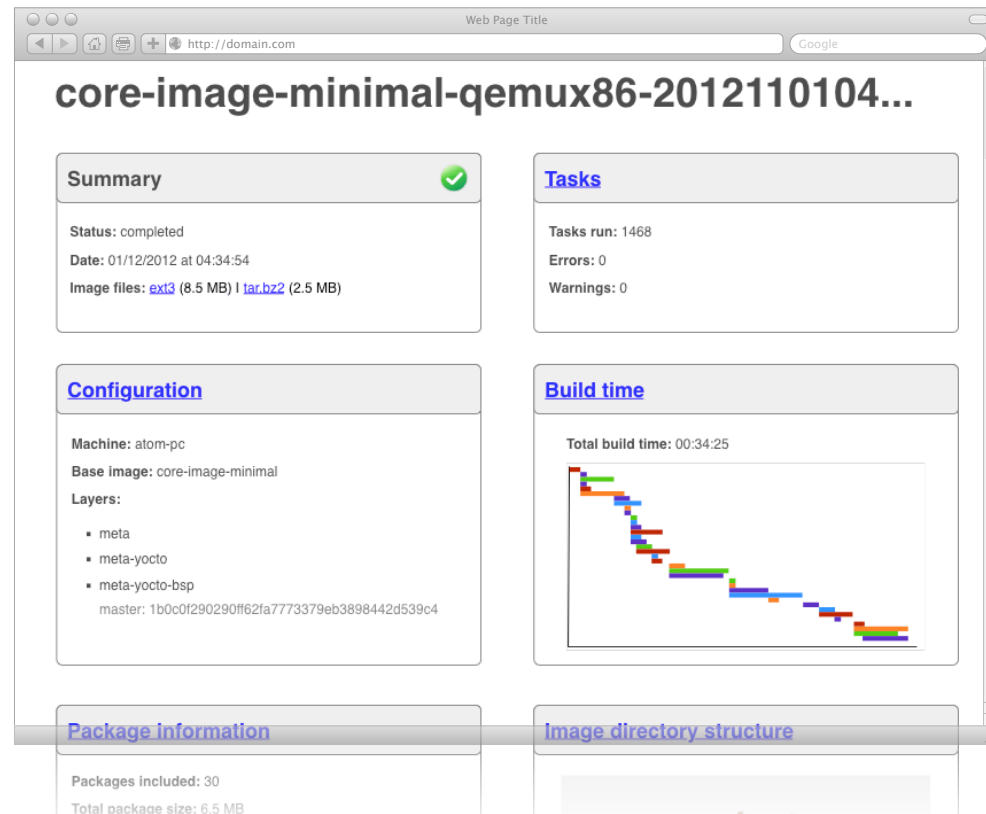
However, their definition varied considerably between volunteers. "Projects" were described in terms of target architectures, customers, git branches and even git commits. "Builds" in terms of completion time stamp, target architecture, one or more BitBake targets, image files, etc. The term "image" seems to be used interchangeably to refer to BitBake targets (base images) and build output (image files). As a result of these differences, volunteers were keen on filtering and customization capabilities to personalize the information displayed on each screen to match their particular needs.

## Volunteers were satisfied with the set of build metrics presented.

Configuration details, task information and package dependencies were the most appreciated metrics.

## Experience, team size and job role determine which metrics and features are of interest.

Build time, CPU and disk usage information were most appreciated by volunteers focused on optimising the performance of the Yocto Project tools. Less experienced volunteers and consultants asked for sharing features to help getting / providing support. Volunteers working on bigger teams requested user administration and permission management features.



## "Build dashboard" page

The goal of this page is to provide an overview of the outcome of a build. Find it at:

<http://git.yoctoproject.org/cgi/cgit.cgi/yocto-webhob-design/plain/phase1-iteration1-prototype/Build%20Dashboard.html>

## Feedback

1. Volunteers identified **3 types of information** on this page:

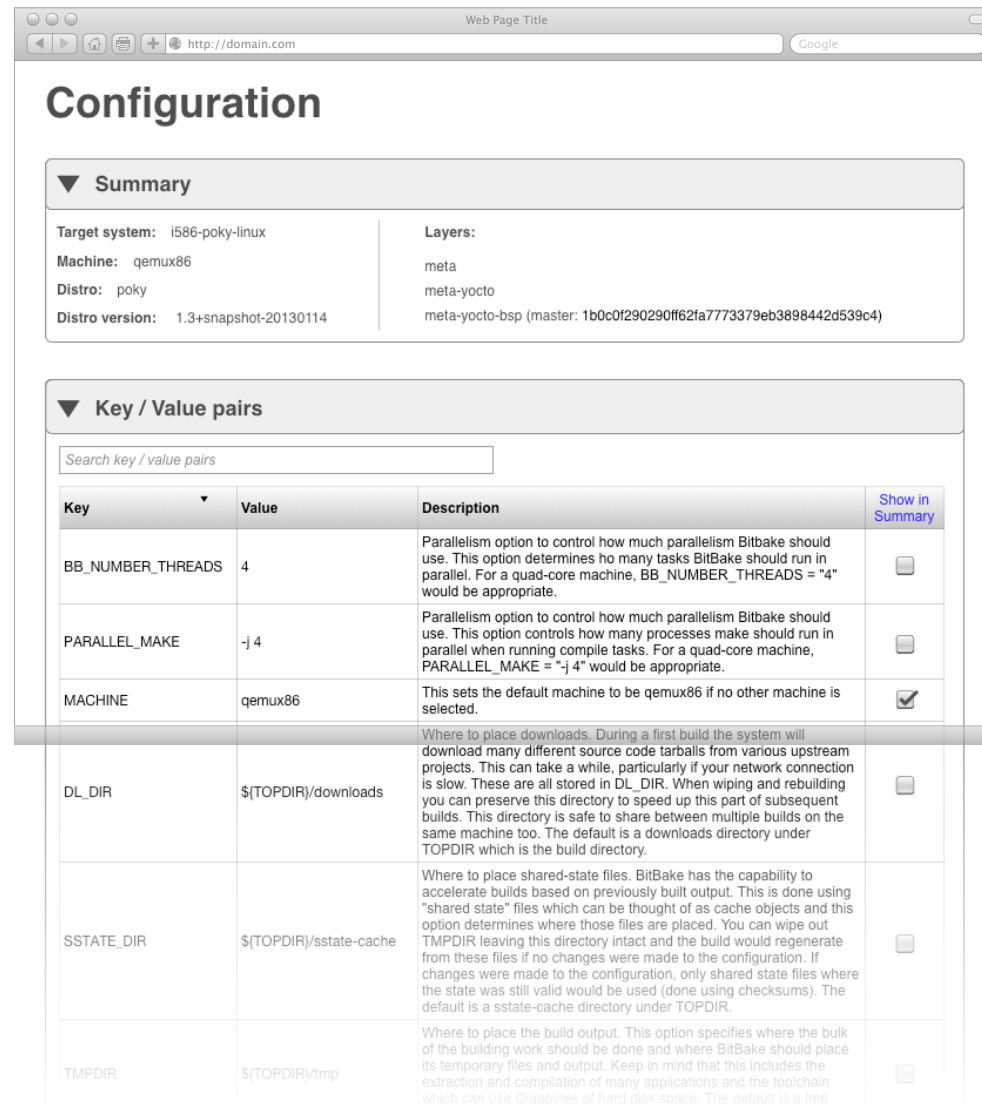
- Information on **what was built**: this included the "Summary" and "Configuration" sections
- Debugging** information: this included "Tasks", "Package information" and "Image directory structure".
- Optimisation** information: this included "Time", "CPU usage" and "Disk I/O".

**Action:** we should explore rearranging the information on this page according to the above classification.

2. Volunteers had different preferences regarding data **visualisation styles**: both the treemap used to present package size and the sunburst diagram used to present the image directory structure proved contentious.

**Action:** we should consider providing different visualisation alternatives to choose from, and even the ability to remove visualisations altogether to generate a more compact dashboard.





## "Configuration" page

The goal of this page is to provide information about the configuration applied to the build, including all key / value pairs. Find it at:

<http://git.yoctoproject.org/cgi/cgit.cgi/yocto-webhob-design/plain/phase1-iteration1-prototype/Configuration.html>

## Feedback

1. Volunteers want to see which .conf file the key / value pairs are coming from.

**Action:** add table column for .conf file.

2. Volunteers want to see which key / value pairs have been overridden.

**Action:** design an effective presentation for overridden key / value pairs.

3. Volunteers want to customise the information displayed on this page, both on the "Summary" section and the "Key / Value pairs" table.

**Action:** provide content customisation and filtering capabilities.

4. Background information about key / value pairs was perceived as useful, but also as taking too much space on the page.

**Action:** explore more efficient ways of presenting background information about key / value pairs.

Web Page Title | http://domain.com | Total package size: 6.5 MB

## Package information

All packages

Search packages

Package name	Recipe	Size
base-files	base-files-3.0.14-r72	244.0 KB
base-passwd	base-passwd-3.5.26-r0	0 B
busybox	busybox-1.20.2-r2	568.0 KB
busybox-hwclock	busybox-1.20.2-r2	16.0 KB
busybox-syslog	busybox-1.20.2-r2	20.0 KB
busybox-udhcp	busybox-1.20.2-r2	32.0 KB
eglibc	eglibc-2.16-r15+svnr20393	3.0 MB
initscripts	initscripts-1.0.r137	160.0 KB
kernel-base	linux-yocto-3.4.11+git1+a201...0d9fa	0 KB
kernel-module-cfbcopyarea	linux-yocto-3.4.11+git1+a201...0d9fa	36.0 KB
kernel-module-ctbfillrect	linux-yocto-3.4.11+git1+a201...0d9fa	36.0 KB
kernel-module-ctbimgbit	linux-yocto-3.4.11+git1+a201...0d9fa	32.0 KB
kernel-module-uvesafb	linux-yocto-3.4.11+git1+a201...0d9fa	64.0 KB
kmod	kmod-9-r0.0	112.0 KB
libkmod	kmod-9-r0.0	104.0 KB
modutils-initscripts	modutils-initscripts-1.0-r6	16.0 KB
netbase	netbase-5.0-r0	76.0 KB
packagegroup-core-boot	packagegroup-core-boot-1.0-r10	0 B
pciutils-ids	pciutils-3.1.10-r0	204.0 KB
sysvinit	sysvinit-2.88dsf-r7	208.0 KB
sysvinit-inittab	sysvinit-inittab-2.88dsf-r9	12.0 KB
sysvinit-pidof	sysvinit-2.88dsf-r7	28.0 KB
tinylogin	tinylogin-1.4-r9	64.0 KB
udev	udev-164-r17	900.0 KB
udev-extraconf	udev-extraconf-1.0-r6	44.0 KB
update-alternatives-cworth	opkg-0.1.8+svnr633-r10.7	20.0 KB
update-modules	update-modules-1.0-r13	20.0 KB
update-rc.d	update-rc.d-0.7-r4	20.0 KB
usbutils-ids	usbutils-006-r0	172.0 KB

Image size by package

Web Page Title | http://domain.com | Total package size: 6.5 MB

## Package information

All packages

Search packages

Package name	Depends on	Recommends
base-files		
base-passwd		
busybox	• update-rc.d • eglibc	• busybox-syslog • busybox-udhcp
busybox-hwclock		
busybox-syslog	• update-alternatives-cworth	
busybox-udhcp		
eglibc		
initscripts	• update-alternatives-cworth	
kernel-base		
kernel-module-cfbcopyarea	• kernel-3.4.24-yocto-standard • update-modules	
kernel-module-ctbfillrect	• kernel-3.4.24-yocto-standard • update-modules	
kernel-module-ctbimgbit	• kernel-3.4.24-yocto-standard • update-modules	
kernel-module-uvesafb	• kernel-3.4.24-yocto-standard	
kmod	• eglibc • libkmod • update-alternatives-cworth	
libkmod	• eglibc	
modutils-initscripts	• update-rc.d	

### "Package information" page

The goal of this page is to provide information about package size and dependencies. Find it at:

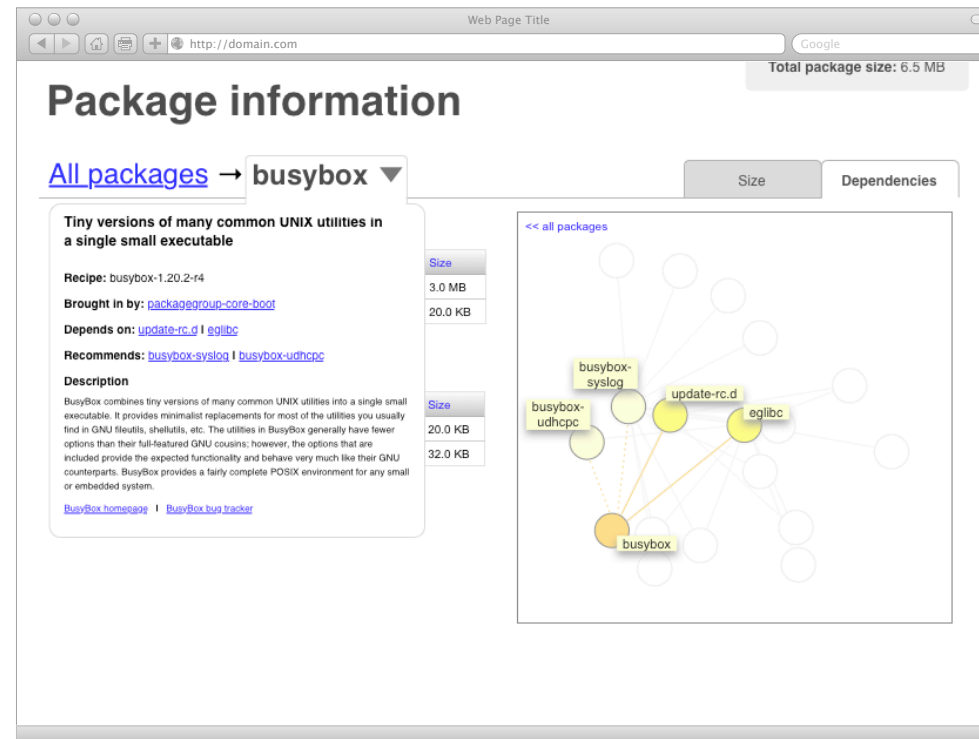
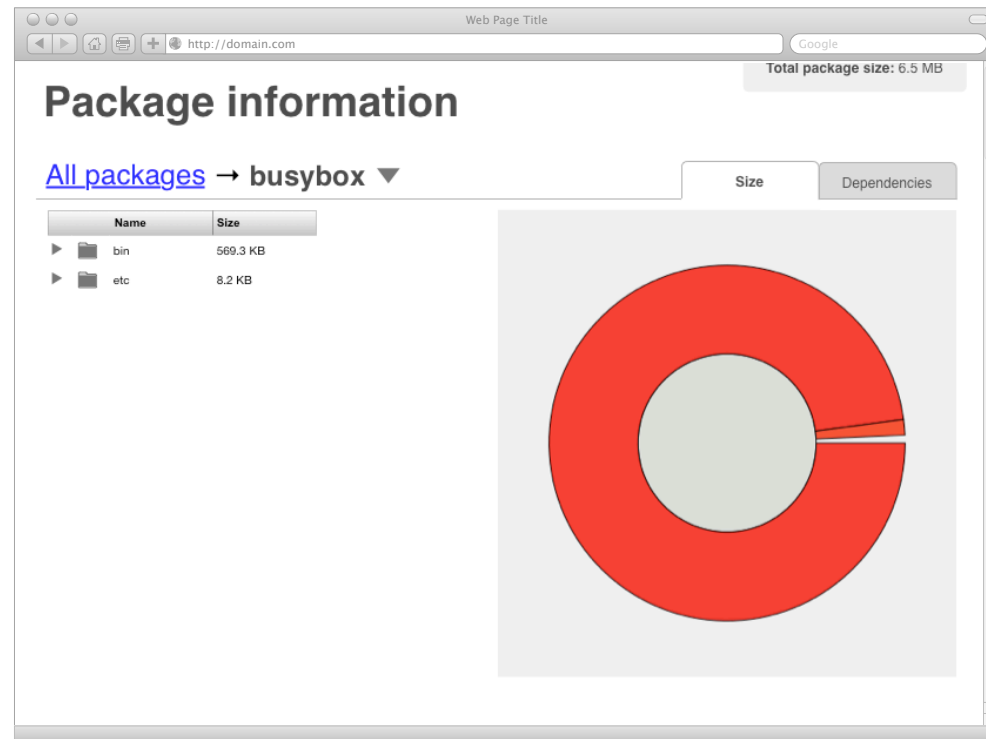
<http://git.yoctoproject.org/cgit/cgit.cgi/yocto-webhob-design/plain/phase1-iteration1-prototype/Configuration.html>

### Feedback

1. Package dependencies presented as an interactive network diagram was the most valued prototype feature.
2. Volunteers would like the ability to "turn off" the "recommends" information.
3. Volunteers wanted to see package size expressed as a percentage over total.
4. Volunteers would like to see information about all packages built from recipes, and not only the ones deployed in the image.

**Action:** add the information requested on 3 and 4 to the packages table, together with content filtering and customisation functions.





## Feedback

1. The information about package files was perceived as useful, especially by volunteers with less experience with the Yocto Project.
2. Volunteers requested package background information (recipe, description, license, description, etc) to be visible by default.

**Action:** change page layout to accommodate package background information.

## We received numerous feature requests:

- I want to export data
- I want to create users and give them different access rights
- I want real time information about builds in progress
- I want a notifications system that sends me an email when certain events happen
- I want to view and edit the source files
- I want to edit values directly from the Configuration page
- I want integration with bug tracking and testing tools
- I want to be able to build on multiple servers from a single instance of Web Hob, see and select which server I'd like to use for a project and / or build
- I want to see detailed information about recipes
- I want to share information (for example, about errors to get support)
- I want to rerun individual tasks and subsets of tasks
- I want to compare information between builds
- I want to configure Web Hob to remove old builds automatically
- I want to customise the way Web Hob looks
- I want to specify configuration parameters for projects, which will be inherited by all builds within a project. I want to override the project configuration at the build level.

If you have questions or comments about this document, or would like to volunteer to provide feedback on upcoming design work, contact Belén at:

[belen.barros.pena@intel.com](mailto:belen.barros.pena@intel.com)