# Customize your OS with SUSE Studio

Dominik Bamberger

# Build your own OS!

Well, "Appliance" really.

# What for?

Development
Testing
Deployment
Shipping

# How does it work? Brace yourselves!

(It's a lightning talk after all.)





# Your software, everywhere!

Everywhere? Yes, everywhere. In the cloud, on a server, on a live CD. With SUSE Studio you can build it from your browser in just a few clicks.

Sign in or create an account

7378 builds this week!





#### **Actions**



Create new appliance...



# Your appliances @

#### **Private appliances**

openSUSE 12.1



#### small boot image for the kiosk

1 build, 148 MB 64-bit x86 edited Tuesday, 07 February 2012



#### server with kernel-ec2-base

1 build, 143 MB 64-bit x86 edited Tuesday, 28 February 2012



#### **Tumbleweed Server**

1 build, 209 MB 64-bit x86 edited Thursday, 22 March 2012



#### openSUSE 12.1 on EC2

# From the blog

SUSE Linux Enterprise 11 SP2 in SUSE Studio Last Monday SUSE announced the release of

SUSE Linux Enterprise 11 Service P...

Deploy to EC2 from SUSE Gallery

It's almost been a year since we launched our EC2 management page which ...

Read more...



See what others have made in the Gallery!

It's easy to download appliances others have shared in Gallery. You can even clone from shared appliances!

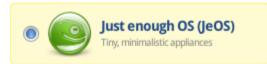
#### Get involved!

Participate in the forum, send us some nice feedback, or communicate with us using "social media".



# Choose a base template

#### openSUSE 12.1









**GNOME** desktop Base system + GNOME



**KDE 4 desktop** Base system + KDE 4



**Import** 

Use Kiwi or AutoYaST configuration file

#### SUSE Linux Enterprise 11 SP2







Minimal X Graphical system + IceWM



**GNOME** desktop SLED 11 SP2, with GNOME



KDE 4 desktop SLED 11 SP2, with KDE 4



**SLES for VMware** SLES 11 SP2, VMware branded



Import Use Kiwi or AutoYaST configuration file

SUSE Linux Enterprise 11 SP1









Minimal X Graphical system + IceWM



**GNOME** desktop





**KDE 4 desktop** 





**SLES for VMware** 



#### Railsberry OS

64-bit x86, based on openSUSE 12.1

140 MB download, 420 MB uncompressed/

Start

Software

Configuration

Files

Build

Share

Admin

Software information

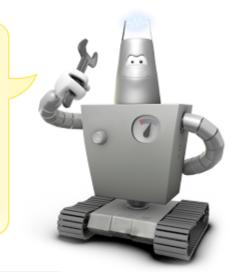
0 patterns selected 17 packages selected 172 total packages

# Welcome to SUSE Studio!

Configure your appliance using the tabs above.

When you're finally done making everything the way you want, visit the Build tab to generate your appliance.

But first, give your appliance a name! It will be used in the boot screen, and in several other places.



Appliance name: Railsberry OS

Switch to the Software tab to continue »



140 MB download, 420 MB uncompressed

Start

Software

Configuration

Files

Build

Share

Admin

#### Software information

0 patterns selected 17 packages selected 172 total packages

#### Software sources

openSUSE 12.1 Updates, openSUSE 12.1 OSS

Add repositories... 🔁 Upload RPMs...

#### Selected software

Packages: aaa base, bootsplash, branding-openSUSE, grub. hwinfo, iputils, kernel-default, netcfg, openssh, openSUSE-build-key, PolicyKit, polkit-default-privs. rpcbind, syslog-ng, sysvinit, vim, zypper ♣ Quick add...

## Search for software

Q- Search packages & patterns

Show: All repositories

Your appliance

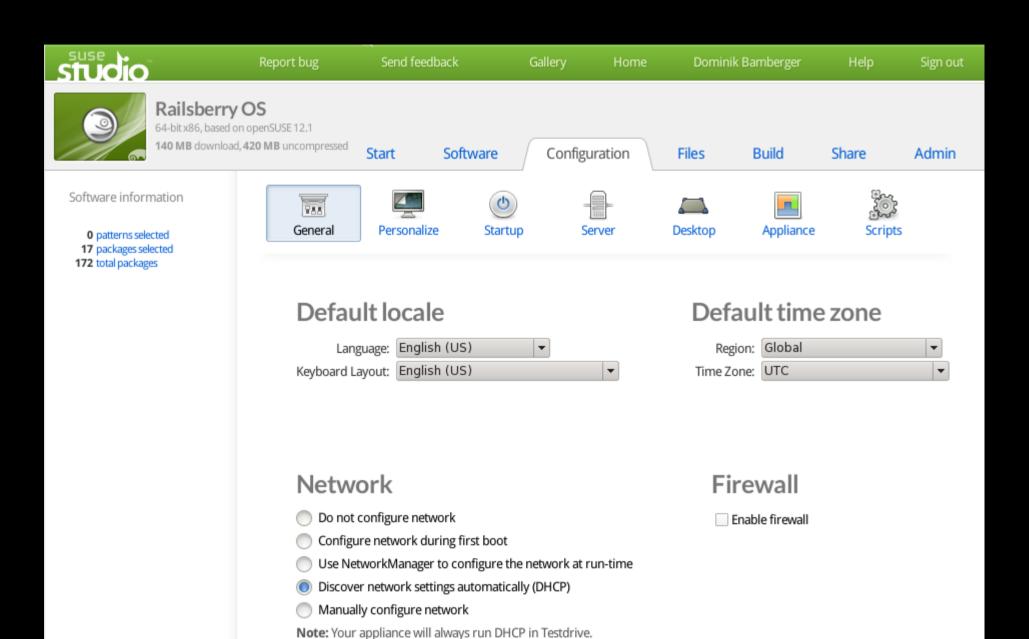


To be installed (172)



Selected (17)







#### Railsberry OS

64-bit x86, based on openSUSE 12.1

140 MB download, 420 MB uncompressed

Start Software Configuration

Files

Build

Share

Admin

#### Software information

0 patterns selected

17 packages selected

172 total packages

# YAA General













Appliance



Appliance logo



# Appliance background





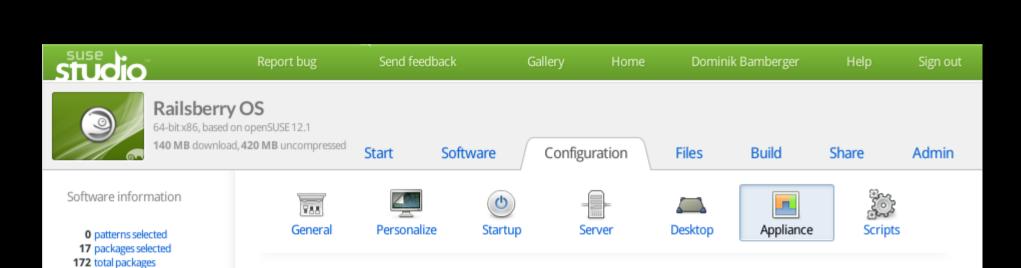


Upload new background...

### Preview







# Disk and memory

OVF, VMware, and Xen

Note: Memory has to be a multiple of 4.

Memory: 512 MB

EC2, OVF, VMware, and Xen

Disk size: 16 GB

### Disk image

Note: When first launched, a disk image will expand its filesystem to fill available space.

Swap partition: 512 MB



Start Software

Configuration

Files

Build

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Admin

#### Software information

suse

STUDIO

0 patterns selected 17 packages selected 172 total packages























# **Custom scripts**

Run commands specific to your appliance, at the end of build, or at boot time.

#### Run script at the end of the build

```
#!/bin/bash -e
2 #
3 # This script is executed at the end of appliance creation. Here you can do
4 # one-time actions to modify your appliance before it is ever used, like
5 # removing files and directories to make it smaller, creating symlinks,
6 # generating indexes, etc.
7 #
8 # The 'kiwi_type' variable will contain the format of the appliance (oem =
9 # disk image, vmx = VMware, iso = CD/DVD, xen = Xen).
10 #
11
12 # read in some variables
13 . /studio/profile
14
15 # read in KIWI utility functions
   . /.kconfig
17
18 #-----
19 # Prune extraneous files
```



Start Software

Configuration

Files

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Software information

0 patterns selected 17 packages selected 172 total packages

# Overlay files

Files added here will be copied into the appliance after packages are installed. Adding files is optional.

- Single files will be copied to the specified directory.
- Archives (.tar, .tar.gz, .tar.bz2, .tgz, or .zip) will be extracted into the directory specified. Permissions and hierarchy will
  be preserved. Using archives is a great way to add many files at one time.



lery Home

Dominik Bamberger

Build



Start Software

Configuration

Files

Share

Admin

#### Software information

patterns selected
 packages selected
 total packages

Version 0.0.2				
Default format:	USB stick / hard disk image ▼	<b>☆</b> Build		
Additional formats:	Live CD/DVD (.iso) VMware / VirtualBox / KVM (.vmdk) OVF virtual machine (.ovf) Xen guest Preload ISO (.iso) Hyper-V (.vhd) Amazon EC2 image Read more about formats	Mock build		
Configuration				
Version 0.0.1  Disk Image  Configuration	Installing software		0:40	×

Builds older than seven days may be deleted to free up space on our servers. But don't worry, you can rebuild them at any time.

Export your appliance's Kiwi configuration, for building your appliance locally. (For advanced users only)

Report bug

Send feedback

Gallery

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Dominik Bamberger

Help

Sign out



Start Software

Configuration

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#### Software information

0 patterns selected17 packages selected172 total packages

Default format:	USB stick / hard disk image ▼ Build		
Additional formats:	Live CD/DVD (.iso)  VMware / VirtualBox / KVM (.vmdk)  OVF virtual machine (.ovf)  Xen guest  Preload ISO (.iso)  Hyper-V (.vhd)  Amazon EC2 image  Read more about formats		
Configuration			
Version 0.0.1			
Disk Image	Copying filesystem into appliance	1:30	×

Builds older than seven days may be deleted to free up space on our servers. But don't worry, you can rebuild them at any time.

Export your appliance's Kiwi configuration, for building your appliance locally. (For advanced users only)

Report bug

Send feedback

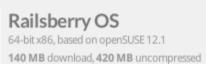
Gallery

lome

Dominik Bamberger

Help

Sign out



Start Software

Configuration

Files

Build \ Share

Admin

#### Software information

0 patterns selected17 packages selected172 total packages

Default format:	USB stick / hard disk image	▼ Build	
Additional formats:	Live CD/DVD (.iso) VMware / VirtualBox / KVM (.vmdk) OVF virtual machine (.ovf) Xen guest Preload ISO (.iso) Hyper-V (.vhd) Amazon EC2 image Read more about formats	Mock build	
Changelog Configura	ation		
ersion 0.0.1			
	148 MB, 559 MB uncompressed	■ Testdrive ◆ Download 🖏 View	files >

Builds older than seven days may be deleted to free up space on our servers. But don't worry, you can rebuild them at any time.

View MD5 checksums, for verification that your appliance's download was successful.

Export your appliance's Kiwi configuration, for building your appliance locally, (For advanced users only)

Ctrl-Alt-F1

Ctrl-Alt-F2

Ctrl-Alt-F3

Ctrl-Alt-F7

Alt-F1

Alt-F2

Ctrl-Alt-Del

Ctrl-Alt-Back

#### Keyboard layout:

English (US)



Connecting to Testdrive...



Test Drive 59:32

**Modified Files** 

Networking: off



BUILT WITH

Studio

Ctrl-Alt-F1

Ctrl-Alt-F2

Ctrl-Alt-F3

Ctrl-Alt-F7

Alt-F1

Alt-F2

Ctrl-Alt-Del

Ctrl-Alt-Back

Keyboard layout:

English (US)





Test Drive 59:08

Modified Files

Networking: off



Ctrl-Alt-F1 Ctrl-Alt-F2 Ctrl-Alt-F3

Alt-F1

Ctrl-Alt-F7

Alt-F2

Ctrl-Alt-Del

Keyboard layout:

English (US)



or FUA

1.5547841 ata2.00: configured for MWDMA2

1.5549671 sda: sda1

1.555150] sd 0:0:0:0: [sda] Attached SCSI disk

1.555474] scsi 1:0:0:0: CD-ROM QEMU QEMU DVD-ROM 0.12 PQ: 0 ANSI: 5

1.559636] Freeing unused kernel memory: 940k freed

1.561195] Write protecting the kernel read-only data: 10240k

[ 1.568227] Freeing unused kernel memory: 712k freed

1.5712721 Freeing unused kernel memory: 148k freed

Loading KIWI OEM Boot-System...

\_\_\_\_\_

Creating device nodes with udev udevd[250]: failed to execute '/sbin/ifup' '/sbin/ifup eth0 -o hotplug': No such file or directory

Boot logging started on /dev/tty1(/dev/console) at Fri Apr 20 07:53:35 2012 Boot-Logging enabled on /dev/tty3

0.4502391 Kernel logging enabled on: /dev/tty4

0.6141591 Including oem partition info file

[ 0.634172] Searching for boot device... [ 0.944071] Found boot device: /dev/sda

[ 2.073594] Repartition the disk according to real geometry [ parted ]

[ 2.517198] Repartition the disk according to real geometry [ parted ]

2.9153951 Set boot flag to partition ID: 1 [ /dev/sda ]

Information: You may need to update /etc/fstab.

[ 5.100453] Activating swap space on /dev/sda2

[ 5.316721] Filesystem of OEM system is: ext3 -> /dev/sda1

5.3546241 Resize EXT3 filesystem to full partition space...

/dev/sda1: clean, 10710/35840 files, 95932/142848 blocks

Resizing the filesystem on /dev/sda1 to 656400 (4k) blocks.

Begin pass 1 (max = 16)

Extending the inode table XX



Test Drive 56:02

Modified Files

Networking: off



Ctrl-Alt-F1

Ctrl-Alt-F2

Ctrl-Alt-F3

Ctrl-Alt-F7

Alt-F1

Alt-F2

Ctrl-Alt-Del

Ctrl-Alt-Back

Keyboard layout:

English (US)





Test Drive 55:15

Modified Files

Networking: off

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-	$\Box$	10	d.	Т	m	$\sim$	m	$\sim$
	$\cup$	113	١Ľ.	1	111	a	×	ㄷ

Exclude paths containing:	/var/, /tmp/, /image/, cache					(leave empty to exclude nothing)
Include paths containing:	/					(leave empty to include everything)
Include change types:	🗶 Add	<b>≭</b> Modify	X Chmod	X Chown	🗶 Remove	
	Refresh C	hanges				
	Note: You	may need to r	run <b>sync</b> in you	ır testdrive for	filesystem cl	nanges to appear here.

# Changed files: 46, ordered by: time

Type	Path	Last changed	Size	Actions
add	/home/tux/some_file	50 seconds ago	0 Bytes	
add	/etc/ssh/ssh_host_rsa_key	3 minutes ago	1.6 KB	View, Download
add	/etc/ssh/ssh_host_ecdsa_key.pub	3 minutes ago	177 Bytes	View, Download
add	/etc/ssh/ssh_host_rsa_key.pub	3 minutes ago	397 Bytes	View, Download
add	/etc/ssh/ssh_host_ecdsa_key	3 minutes ago	227 Bytes	View, Download
add	/etc/ssh/ssh_host_key	3 minutes ago	980 Bytes	Download
add	/etc/ssh/ssh_host_dsa_key.pub	3 minutes ago	605 Bytes	Download
add	/etc/ssh/ssh_host_dsa_key	3 minutes ago	672 Bytes	View, Download
add	/etc/ssh/ssh_host_key.pub	3 minutes ago	645 Bytes	Download
modify	/etc/resolv.conf	3 minutes ago	815 Bytes	View, Diff, Download
add	/etc/yp.conf	3 minutes ago	779 Bytes	View, Download
modify	/etc/sysconfig/clock	3 minutes ago	979 Bytes	View, Diff, Download
modify	/etc/sysconfig/network/ifcfg-eth0	3 minutes ago	27 KB	View Diff Download



Test Drive 55:00

Modified Files

Networking: off

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emi	$\Box$	15	Зď.	Т	m	a	σ	
W-111		1 2	1.7	-		ч,	6	`-

Exclude paths containing:	/var/, /tmp	o/, /image/, ca	ache			(leave empty to exclude nothing)
Include paths containing:	/					(leave empty to include everything)
Include change types:	<b>≭</b> Add	<b>■</b> Modify	<b>≭</b> Chmod	X Chown	<b>X</b> Remove	
	Refresh C	hanges				
	Note: You	may need to r	run <b>sync</b> in you	ur testdrive for	filesystem cl	hanges to appear here.

# Changed files: 46, ordered by: time

	Туре	Path	Last changed	Size	Actions
×	add	/home/tux/some_file	50 seconds ago	0 Bytes	
	add	/etc/ssh/ssh_host_rsa_key	3 minutes ago	1.6 KB	View, Download
	add	/etc/ssh/ssh_host_ecdsa_key.pub	3 minutes ago	177 Bytes	View, Download
	add	/etc/ssh/ssh_host_rsa_key.pub	3 minutes ago	397 Bytes	View, Download
	add	/etc/ssh/ssh_host_ecdsa_key	3 minutes ago	227 Bytes	View, Download
	add	/etc/ssh/ssh_host_key	3 minutes ago	980 Bytes	Download
	add	/etc/ssh/ssh_host_dsa_key.pub	3 minutes ago	605 Bytes	Download
	add	/etc/ssh/ssh_host_dsa_key	3 minutes ago	672 Bytes	View, Download
	add	/etc/ssh/ssh_host_key.pub	3 minutes ago	645 Bytes	Download
	modify	/etc/resolv.conf	3 minutes ago	815 Bytes	View, Diff, Download
	add	/etc/yp.conf	3 minutes ago	779 Bytes	View, Download
	modify	/etc/sysconfig/clock	3 minutes ago	979 Bytes	View, Diff, Download
	modify	/etc/sysconfig/network/ifcfg-eth0	3 minutes ago	27 KB	View Diff Download



Software Configuration

Files

Build

Share

Admin

Softwareinformation

**0** patterns selected **17** packages selected **172** total packages

# Overlay files

Files added here will be copied into the appliance after packages are installed. Adding files is optional.

- Single files will be copied to the specified directory.
- Archives (.tar, .tar.gz, .tar.bz2, .tgz, or .zip) will be extracted into the directory specified. Permissions and hierarchy will be preserved. Using archives is a great way to add many files at one time.

	Name	Directory	Extract Size Owner/Group Permissions				
	some_file	/home/tux/			tux / users	rw-rr	+
Select all / Select none		Disable	Enable	Move / Rename	Edit details	Remove	
Up	load file Add	from the Web (URL)					

Report bug

Send feedback

Gallery

Home

Dominik Bamberger

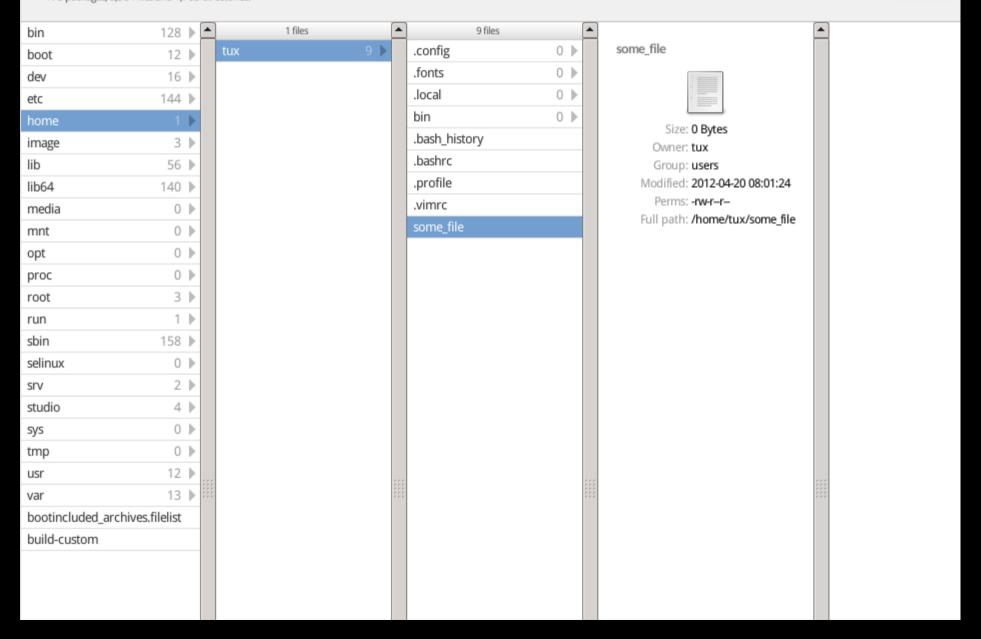
elp

Sign out

Search

#### Railsberry\_OS.x86\_64-0.0.2.raw

178 packages, 8,364 files and 1,705 directories.



Report bug

Gallery

Home

Dominik Bamberger

Help

Sign out



Start

Send feedback

Software

Configuration

Files

Build

Share Admin

Software information

0 patterns selected17 packages selected172 total packages

# Appliance summary

Description:

It's \_so\_ easy to build your own OS.

If you don't try this yourselves, you probably won't believe it.

This is just a plain appliance for presentation purposes.

Basic formatting: \*bold\*, \_italic\_, +underline+, @code@. More options...

Website: http:

http://railsberry.com/

Tags

Railsberry Krakow Presentation

Certify this appliance

Save summary

# Share with everyone

Available: Version 0.0.1 ▼

Add

Version 0.0.2

Release notes:

Initial release to get something out on SUSE Gallery.



Create new appliance...



studio

# Railsberry OS



Published by Dominik Bamberger Homepage at http://railsberry.com/

Based on openSUSE 12.1 64-bit x86

It's so easy to build your own OS. If you don't try this yourselves, you probably won't believe it.

This is just a plain appliance for presentation purposes.

0 comments

#### Version 0.0.2

Updated about an hour ago

- Edit appliance...
- Certify appliance...
- Clone appliance...

#### Testdrive



#### Release notes

Media

Download

Initial release to get something out on SUSE Gallery.

Tags

View all appliances published by Dominik Bamberger

Presentation, Krakow, Railsberry

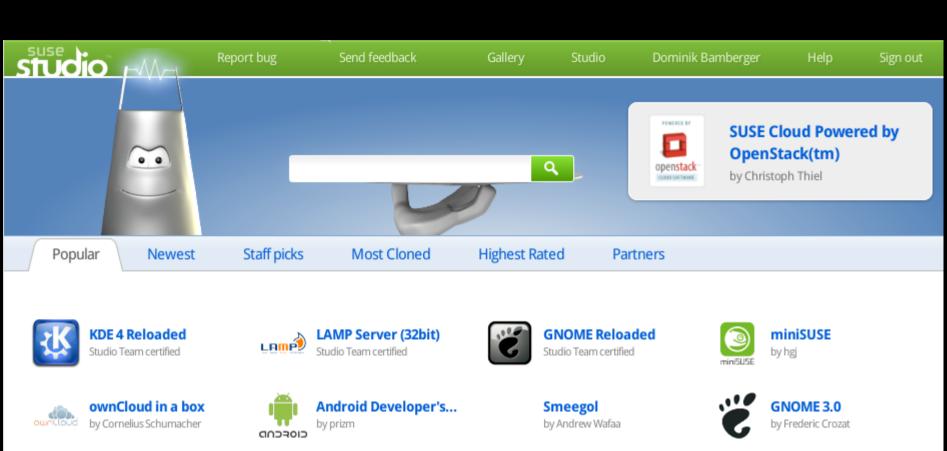
**Technical Details** 

Appliance configuration

Security summary

Admin tools

Add to featured





Upstream OS 7





BrowserBox by Jacob Rask



**SUSE Cloud Powere...** by Christoph Thiel





openSUSE-Medical\_...
openSUSE medical certified



PJS VMware Open Vi... by P Shoaf

View all popular



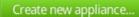
Run your own SUSE Studio

Take control of appliance building! Check out



Create new appliance...







suse

#### BrowserBox ★★★★



Published by Jacob Rask Based on openSUSE 11.4 32-bit x86 Homepage at http://my.opera.com/browserbox/

BrowserBox is a an appliance for web developers and QA's to do cross browser testing. It includes 20 versions of 12 different browsers.

Tired of downloading and installing lots of browsers everywhere you need to do your work? Try BrowserBox! :)

#### INCLUDED BROWSERS

- · Android Browser 4.0 (2.2) (WebKit 533.1) through the Android SDK
- Arora 0.11.0 (WebKit 533.3)
- Google Chrome 7.0.517.44 (WebKit 534.7)
- Mozilla Firefox 2.0.0.20 (Gecko 20081217)
- Mozilla Firefox 3.0.19 (Gecko 2010031218)
- Mozilla Firefox 3.6.15 (Gecko 20110303)
- Mozilla Firefox 4.0.1 (Gecko 2010101)
- Mozilla Firefox Mobile (Fennec) 4.0.1 (Gecko 20110415)
- . Microsoft Internet Explorer 6.0 (Trident) installation script, runs in Wine
- . Microsoft Internet Explorer 7.0 (Trident) installation script, runs in Wine
- KDE Kongueror 4.6 (KHTML 4.6.0)
- Lynx 2.8.7 (libwww-FM 2.14)
- Opera 9.64 (Presto 2.1.1)
- Opera 10.10 (Presto 2.2)
- Opera 10.63 (Presto 2.6.30)
- Opera 11.11 (Presto 2.8.131)
- Opera Mini 4.3 (Presto/2.5.25 on server) runs in MicroEmulator 2.0.4
- Opera Mini 6 (Presto/2.5.25 on server) runs in MicroEmulator 2.0.4
- Opera Mobile 11 (Presto 2.5.28)
- Apple Safari 5.0.1 (WebKit 533.18.1) installation script, runs in Wine

#### KNOWN ISSUES

#### Version 0.3.1

Updated 10 months ago

- Edit appliance...
- Certify appliance...
- Clone appliance...

#### Testdrive



#### Tags

cross-browser, browser testing, web development, browsers

#### Older releases

Version 0.3.0 - 407 days old Version 0.2.2 - 545 days old Version 0.2.1 - 552 days old Version 0.2.0 - 587 days old Version 0.1.4 - 594 days old





Create new appliance...



# etherpad

Published by James Mason Based on openSUSE 11.4 32-bit x86 Homepage at http://etherpad.org/

#### Collaborate on documents in really real-time

- · Online word-processor with formatting options
- · Letter by letter collaboration
- Color-coded edits
- Infinite Undo
- · History Playback
- Import HTML, Word, RTf
- · Export as HTML, Word, PDF
- Change Zoom

Etherpad 1.1 release. See https://github.com/ether/pad/tree/releases-1.1 for source/documentation.

Etherpad is configured via /etc/pad.conf.

For convenient testdriving, etherpad is currently configured behind a pound reverse proxy; it is configured via /etc/pound.cfg.

This is the first successful release with version 1.1. Future releases will focus on reducing unnecessary development bloat, providing a firstboot 'setup' interface, and offering more a more robust front-end web server.

15 comments =



Cloned 26 times



Media

Download



Downloaded 178 times



#### Version 1.2.0

Updated 10 months ago

- Edit appliance...
- Certify appliance...
- Clone appliance...

#### Testdrive



Tags collaboration, etherpad, server, appliance, turnkey

Older releases Version 1.1.1 - 379 days old



View all appliances published by James Mason





Manage EC2 credentials | Use Amazon's console

# Upload your appliances to Amazon EC2



## Your appliances in the cloud

openSUSE 11.4 AMI-v2.0.1 64-bit x86 edit appliance				
2.0.1 US West (Oregon) ami-688b0658 Uploaded	Micro	-	Launch	×
2.0.1 US East (N. Virginia) ami-d226debb Uploaded	Micro	-	Launch	×
2.0.1 Asia Pacific (Singapore) ami-6a7d0538 Uploaded	Micro	-	Launch	×
2.0.1 EU West (Ireland) ami-982e1fec Uploaded	Micro	-	Launch	×
2.0.1 US West (N. California) ami-dd471598 Uploaded	Micro	•	Launch	×
2.0.1 Asia Pacific (Tokyo) ami-903e9491 Uploaded	Micro	•	Launch	×
openSUSE 11.4 AMI-v2.0.1 32-bit x86 edit appliance				
2.0.1 US West (Oregon) ami-6c8b065c Uploaded	Micro	•	Launch	×





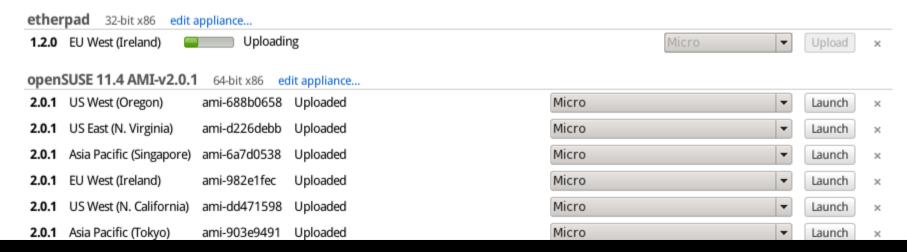
Manage EC2 credentials | Use Amazon's console

#### Upload your appliances to Amazon EC2



♥ Uploading and running your appliance in Amazon's EC2 cloud service will incur costs. Read Amazon's price list for details.

### Your appliances in the cloud







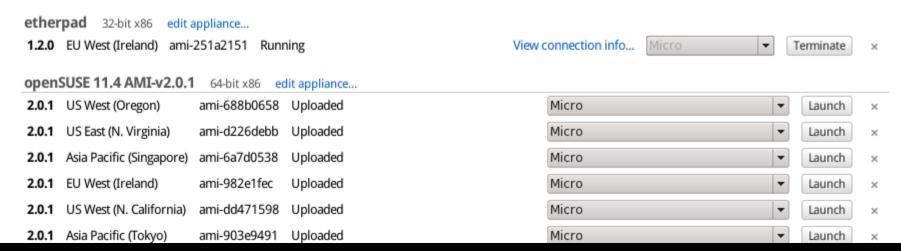
Manage EC2 credentials | Use Amazon's console

#### Upload your appliances to Amazon EC2



Ploading and running your appliance in Amazon's EC2 cloud service will incur costs. Read Amazon's price list for details.

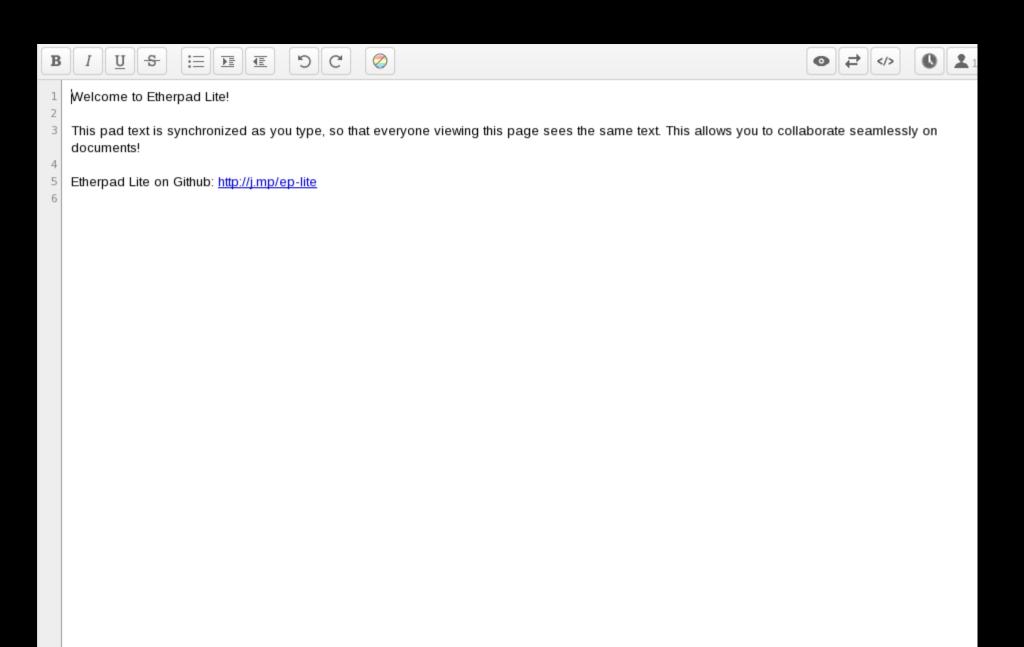
# Your appliances in the cloud

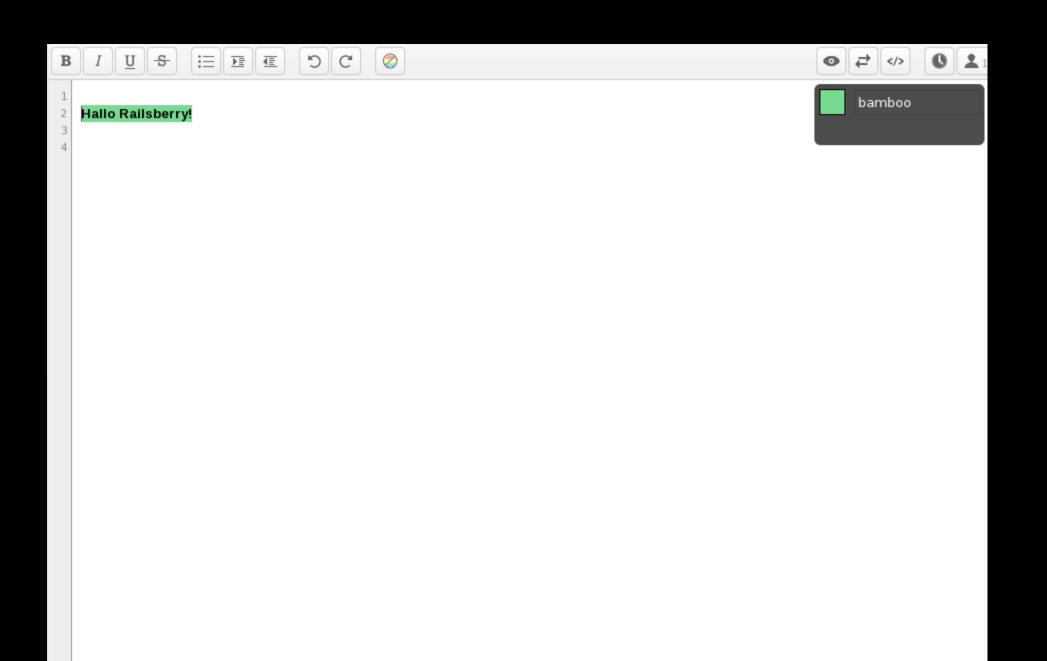


# New Pad

or create/open a Pad with the name\_

ок





# Try it yourselves: http://susestudio.com

(It's free!)

# And of course... We're hiring!

http://www.suse.com/company/careers/