

Danger in the Public Cloud

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March 20, 2015

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Introduction

- Business use of the Public Cloud
 - The Threat of Data Loss / Compromise
- Use Cases & Abuse Cases
- Private Resources Provide Protection
 - ownCloud as one alternative
 - Example
 - Quick Start



“The Cloud?”

- “The Cloud” = Your data, on someone else's servers
- “Public Cloud” = Services provided to the general public, at low / no cost, with non-negotiated terms of service & privacy policies
- Not to be confused with contracted cloud services (e.g., AWS, Azure)



Advantages of the Public Cloud

- Legitimate business need to store / move data
 - Multiple work locations
 - Multiple devices, including BYOD
 - Collaboration
- Ubiquitous, easy-to-use, and “free”
- Multi-platform support
- No worries about lost flash drives



Public Cloud Providers

- Lots of people have one, or more than one
- Google Drive, Dropbox, OneDrive, iCloud...
- Often “free”
 - (If it's free, are you the customer, or the product?)
- Accounts often created for personal use, but repurposed for business use



Use (abuse?) Case

- Bob creates a Dropbox account for personal use
- Bob shares folders with friends & family, and shares his password with Alice
- Bob uses the Dropbox account to sync business documents between his laptop, and his tablet
- Business data may now be exposed



Use (abuse?) Case #2

- Carol creates a Google Drive account for her Business Development department
- She shares folders with her staff, including Dave
- Dave leaves the company, IT deletes his accounts, but does not know about the Business Development Google Drive account
- Dave can still access Carol's shared folders



Hackers for Hire

The New York Times

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TECHNOLOGY

Need Some Espionage Done? Hackers Are for Hire Online

By MATTHEW GOLDSTEIN JANUARY 15, 2015 9:09 PM 51 Comments

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Hire the RIGHT hacker.

Hiring a hacker shouldn't be a difficult process, we believe that finding a trustworthy professional hacker for hire should be a worry free and painless experience. At Hacker's List we want to provide you with the best opportunity to find your ideal hacker and for professional hackers around the world to find you. Our hacker for hire review process makes it so that only the best hackers for hire are allowed to offer their services and expertise. Our strict review process ensures that we keep scammers and frauds away. We review every hacker for hire or professional hacker for hire service provider to ensure the highest quality. All the professional hacking companies, professional hackers for hire and freelance hackers for hire are required to maintain a high level of customer service and satisfaction. If a professional hacker for hire or freelance hacker for hire receives too many complaints, we remove them from our site and prevent them from rejoining. This allows the average person shopping for a trustworthy hacker for hire to choose from only the best talent around.

The home page of Hacker's List, a website that matches hackers with people looking for someone to delete embarrassing photos or retrieve a password.

A man in Sweden says he will pay up to \$20,000 to anyone who can



Hackers working “on spec”

- iCloud “naked celebrity” data breach
 - Brute force, weak passwords, security Qs
- 5 million Gmail address / password pairs
 - Validity not clear
- Dropbox credential dump
 - Denied by dropbox
- Credential re-use aggravates the threat



Data Security Questions

- What are the security requirements for the data?
 - Company confidential, proprietary
 - Customer data: HIPAA, FERPA, financial
 - Business partner data
 - Internal compartmentalized (e.g., HR, audit)
- Not all datasets require the same level of security



Public Cloud Weaknesses

- Personal accounts lack BPA, are not acceptable for HIPAA, FERPA protected data
- Co-mingling personal and business use on the same account promotes data loss
- Automated password recovery processes are highly vulnerable
- The big public cloud providers are hacker magnets



If You Must...

- Evaluate your security requirements
- Don't re-purpose personal accounts
- Don't use your personal credentials
 - E-mail addresses
 - Passwords
- Avoid “discoverable” answers to security questions
- Review access frequently



Use Case – Proposal Team

- Ed, of ABC, Inc., wants to bid a “stretch” job
- Ed gets consultants Felicity, George, and Heather to work on the proposal
- ABC, Inc., needs to provide collaboration facilities, while limiting Felicity, George, and Heather's access to ABC's proprietary data
- Ed needs a fast solution



Use Case – Startup IPO

- A startup, DEF, Inc., is quietly getting ready to go public
- Core group of executives, attorneys, and investment bankers are preparing financial statements and filings
- Work-in-progress very closely held, secret even from other employees



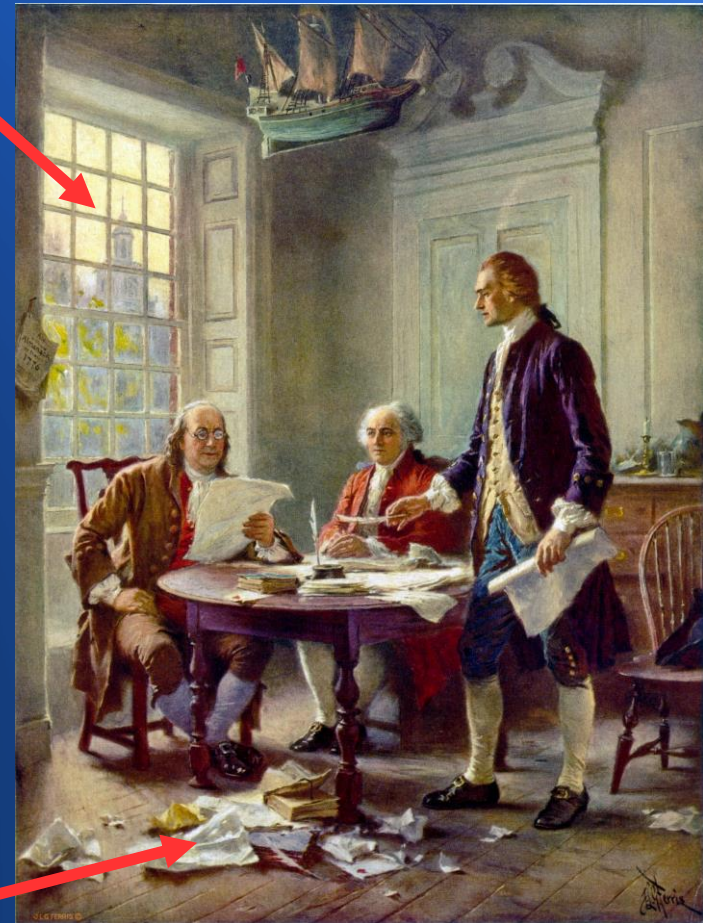
Use Case – Revolutionaries

- Tom, Ben, and John are plotting to overthrow a tyrant, and institute new government
- Secure storage & collaboration facilities required for reference material, working papers, resolutions
- Data compromise might mean death by hanging



Meeting the Need

- Requirements
 - Business
 - Security
- Develop
 - Facilities
 - Procedures
 - Training



Secured Facilities



- Control your facilities & services
- One size does not fit all
 - Large scale products not for everybody
- ownCloud is one solution

What is ownCloud?

- Server data storage, file sync, collaboration apps
 - Written in PHP
 - Runs in a LAMP stack (or on Windows server)
- Scalable in operation
 - Supports external data stores, optionally encrypted
- Scalable for evaluation, deployment
 - Open Source AGPL or Enterprise



ownCloud Screen Shots

- From my private server, behind my firewall
- ownCloud 7 pre-built appliance
 - OpenSUSE Linux
 - Old, low-end PC, re-purposed
- New user group created for illustration





 franklinb

 ●●●●●●●●

☐ remember

Log in

ownCloud – web services under your control



Apps

Ben Franklin

+

 Add Group

Everyone

20

congress

20

Username

Password


Groups

Create

Search Users and Groups

	Username	Full Name	Password	Groups	Quota
J	adamsj	John Adams	.....	congress	Default
S	adamss	Samuel Adams	.....	congress	Default
J	bartlettj	Josiah Bartlett	.....	congress	Default
S	chases	Samuel Chase	.....	congress	Default
A	clarka	Abraham Clark	.....	congress	Default
W	floydw	William Floyd	.....	congress	Default
B	franklinb	Ben Franklin	.....	congress	Default
L	halll	Lyman Hall	.....	congress	Default
B	harrisonb	Benjamin Harrison	.....	congress	Default
J	hartj	John Hart	.....	congress	Default
F	hopkinsonf	Francis Hopkinson	.....	congress	Default
S	hopkinss	Stephen Hopkins	.....	congress	Default
T	jefferson	Thomas Jefferson	.....	congress	Default
R	leerh	Richard Henry Lee	.....	congress	Default
R	morrisr	Robert Morris	.....	congress	Default
J	mortonj	John Morton	.....	congress	Default
C	rodneyc	Caesar Rodney	.....	congress	Default
B	rushb	Benjamin Rush	.....	congress	Default
R	stocktonr	Richard Stockton	.....	congress	Default
J	witherspoonj	Jonathan Witherspoon	.....	congress	Default




Files



Thomas Jefferson


All files

Shared with you

Shared with others

Shared by link



New



Name

documents

23 kB


22 hours ago


Federalist Papers

Ben Franklin

0 kB

2 days ago


License

root

29 kB

5 minutes ago

music


3.6 MB

2 days ago

photos

663 kB


2 days ago


Common Sense.pdf

Ben Franklin

272 kB


2 days ago


Declaration Opening.odt

Shared

31 kB


22 hours ago


List of Injuries.odt

John Adams

36 kB

10 hours ago



ownCloudUserManual.pdf

1.7 MB

2 days ago

5 folders and 4 files

6.3 MB

Deleted files


Files ▾


Page: 1 of 21

100%

Thomas Jefferson ▾


Comm on Sense by Thomas Paine

<http://www.usahistory.org/paine/commonsense/singlehtml.htm>



Thomas Paine
"These are the times that try men's souls"

Common Sense
By Thomas Paine



Published in 1776, *Common Sense* challenged the authority of the British government and the royal monarchy. The plain language that Paine used spoke to the common people of America and was the first work to openly ask for independence from Great Britain.

[Polish Translation](#)
[Swedish Translation](#)

Introduction to the Third Edition

Perhaps the sentiments contained in the following pages, are not YET sufficiently fashionable to procure them general favour; a long habit of not thinking a thing WRONG, gives it a superficial appearance of being RIGHT, and raises at first a formidable outcry in defense of custom. But the tumult soon subsides. Time makes more converts than reason. As a long and violent abuse of power, is generally the Means of calling the right of it in question (and in Matters too which might never have been thought of, had not the Sufferers been aggravated into the inquiry) and as the King of England hath undertaken in his OWN RIGHT, to support the Parliament in what he calls THEIRS, and as the good people of this country are grievously oppressed by the combination, they have an undoubted privilege to inquire into the pretensions of both, and equally to reject the usurpation of either. In the following sheets, the author hath studiously avoided every thing which is personal among ourselves. Compliments as well as censure to individuals make no part thereof. The wise, and the worthy, need not the triumph of a pamphlet; and those whose sentiments are injudicious, or unfriendly, will cease of themselves unless too much pains are bestowed upon their conversion. The cause of America is in a great measure the cause of all mankind. Many circumstances hath, and will arise, which are not local, but universal, and through which the principles of all Lovers of Mankind are affected, and in the Event of which, their Affections are interested. The laying a Country desolate with Fire and Sword, declaring War against the natural rights of all Mankind, and extirpating the Defenders thereof from the Face of the Earth, is the Concern of every Man to whom Nature hath given the Power of feeling; of which Class, regardless of Party Censure, is the AUTHOR.

P. S. The Publication of this new Edition hath been delayed, with a View of taking notice (had it been necessary) of any Attempt to refute the Doctrine of Independence: As no Answer hath yet appeared, it is now presumed that none will, the Time needful for getting such a Performance ready for the Public being considerably past. Who the Author of this Production is, is wholly unnecessary to the Public, as the Object for Attention is the DOCTRINE ITSELF, not the MAN. Yet it may not be unnecessary to say, That he is unconnected with any Party, and under no sort of Influence public or private, but the influence of reason and principle.

Philadelphia, February 14, 1776

Of the Origin and Design of Government in General, with Concise Remarks on the English Constitution

SOME writers have so confounded society with government, as to leave little or no distinction between them; whereas they are not only different, but have different origins. Society is produced by our wants, and government by our wickedness; the former promotes our happiness POSITIVELY by uniting our affections, the latter NEGATIVELY by restraining our vices. The one encourages intercourse, the other creates distinctions. The first is a patron, the



Files ▾

- Files
- Activity
- Documents
- Pictures
- Calendar
- Contacts

New

Name ▲	Size	Modified
documents	23 kB	22 hours ago
Federalist Papers	Ben Franklin 0 kB	2 days ago
License	root 29 kB	5 minutes ago
music	3.6 MB	2 days ago
photos	663 kB	2 days ago
Common Sense.pdf	Ben Franklin 272 kB	2 days ago
Declaration Opening.odt	Shared 31 kB	22 hours ago
List of Injuries.odt	John Adams 36 kB	10 hours ago
ownCloudUserManual.pdf	1.7 MB	2 days ago
5 folders and 4 files	6.3 MB	

Deleted files



of Liberty

List of Injuries.odt

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He has refused his assent to laws, the most wholesome and necessary for the public good.

He has forbidden his governors to pass laws of immediate and pressing importance, unless suspended in their operation till his assent should be obtained; and, when so suspended, he has utterly neglected to attend to them.

He has refused to pass other laws for the accommodation of large districts of people, unless those people would relinquish the right of representation in the legislature, a right inestimable to them, and formidable to tyrants only.

He has

He has called together legislative bodies at places unusual uncomfortable, and distant from the depository of their public records, for the sole purpose of fatiguing them into compliance with his measures.

He has dissolved representative houses repeatedly, for opposing, with manly firmness, his invasions on the rights of the people.

He has refused for a long time, after such dissolutions, to cause others to be elected; whereby the legislative powers, incapable of annihilation, have returned to the people at large for their exercise; the state remaining, in the mean time, exposed to all the dangers of invasions from without and convulsions within.

He has endeavored to prevent the population of these states; for that purpose obstructing the laws for naturalization of foreigners; refusing to pass others to encourage their migration hither, and raising the conditions of new appropriations of lands.

He has obstructed the administration of justice, by refusing his assent to laws for establishing judiciary powers.

He has made judges dependent on his will alone, for the tenure of their offices, and the amount and payment of their salaries.

He has erected a multitude of new offices, and sent hither swarms of officers to harass our people and eat out their substance.

He has kept among us, in times of peace, standing armies, without the consent of our legislatures.

He has affected to render the military independent of, and superior to, the civil power.

He has combined with others to subject us to a jurisdiction foreign to our Constitution and unacknowledged by our laws, giving his assent to their acts of pretended legislation:

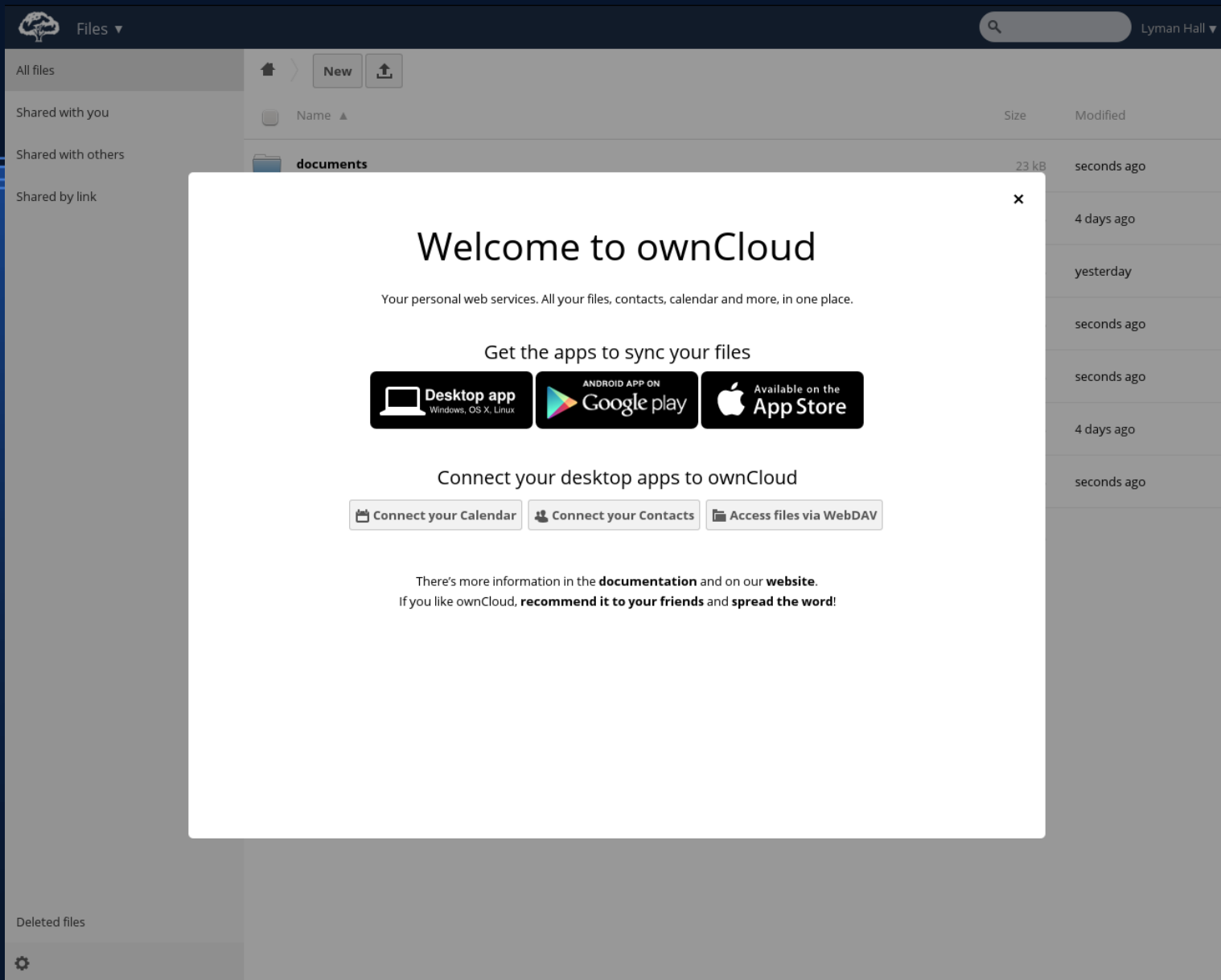
For quartering large bodies of armed troops among us;

For protecting them, by a mock trial, from punishment for any murders which they should commit on

Thomas Jefferson

John Adams





ownCloud: low bar to entry

- Open Source development, licensing
 - Evaluate, initial deploy with AGPL @ \$0.00
 - Mobile apps at nominal cost
 - Buy enterprise support if needed
- Quick start
 - Configurable “appliances” available
 - < 1 hour to build, load & go
 - Virtual or physical



ownCloud Quick Start

- Start at <http://www.owncloud.org>
- Navigate through
 - “Documentation”
 - “Administration Manual”
 - “Installation”
 - “ownCloud Appliances”
- Select SUSE Studio, or Amahi



ownCloud in a box – SUSE Gallery - Mozilla Firefox

File Edit View History Bookmarks Tools Help


ownCloud in a box – SUS... x +

https://susestudio.com/a/TadMax/owncloud-in-a-box

suse studio

Send feedback Gallery Studio Joe Levy Help Sign out

Create new appliance...

 **ownCloud in a box** ★★★★★

Published by [Cornelius Schumacher](#) Based on [openSUSE 13.2](#) 32-bit x86 Homepage at <http://owncloud.org>

ownCloud in a box packages ownCloud as an appliance, so you can easily run it in a virtual environment, as a live system or install it on a disk.




Run the appliance, go to [http://\[yourservername\]](http://[yourservername]), and follow the instructions there.

Also remember to change the root password of the system after the appliance has booted.

One note about the versioning of the appliance: The major version of the appliance follows the major version of ownCloud. The minor versions are not directly related. See the release notes for what exact minor version is included in the appliance.

311 comments

Download Downloaded 53606 times Cloned 4448 times

 Physical  Virtual  Cloud

Release notes

Updated ownCloud to version 8.0.0 and openSUSE to version 13.2.

Changelog from ownCloud:

Version 8.0.0 Feb 9th 2015

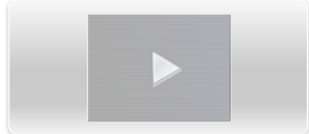
Favorites

- Federated cloud (Server 2 Server Sharing, Version 2)
- Improved apps management page
- Improved updater app
- Improved search
- Direct download support, Broker
- More fine grain storage configuration
- Provisioning API will be released as part of the community edition
- Apps can now specify their dependencies in info.xml

Version 8.0.0
Updated 4 days ago

[Clone appliance...](#)

Testdrive



Older releases

- [Version 7.0.5](#) - 57 days old
- [Version 7.0.2](#) - 127 days old
- [Version 7.0.1](#) - 195 days old
- [Version 6.0.5](#) - 230 days old
- [Version 6.0.4](#) - 287 days old
- [Version 6.0.2](#) - 353 days old
- [Version 6.0.1](#) - 405 days old
- [Version 6.0.0](#) - 431 days old
- [Version 5.0.12](#) - 522 days old
- [Version 5.0.11](#) - 570 days old
- [Version 5.0.7](#) - 608 days old
- [Version 5.0.6](#) - 636 days old
- [Version 5.0.5](#) - 658 days old
- [Version 5.0.1](#) - 690 days old
- [Version 4.5.15](#) - 725 days old
- [Version 4.5.11](#) - 749 days old
- [Version 4.5.8](#) - 766 days old
- [Version 4.5.7](#) - 805 days old
- [Version 4.5.6](#) - 808 days old
- [Version 4.5.5](#) - 816 days old
- [Version 4.5.4](#) - 844 days old



Tree of Liberty v1_0 - SUSE Studio - Mozilla Firefox

File Edit View History Bookmarks Tools Help

ownCloud in a box - SUS... x Tree of Liberty v1_0 - SU... x

https://susestudio.com/appliance/edit/1353462

suse studio

Send feedback Gallery Home Joe Levy Help Sign out

Tree of Liberty v1_0

32-bit x86, based on openSUSE 13.2

280 MB download, 960 MB uncompressed

Start Software Configuration Files Build Share

Software information

0 patterns selected

60 packages selected

268 total packages

Messages

Error: For building preload USB images you need to install grub2.

Add grub2

Take notes

Appliance name:

Switch to the **Software** tab to continue »

Help | Gallery | Forum | Send feedback | Logos & badges | Jobs

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Start Software Configuration Files Build Share

Software information

0 patterns selected
61 packages selected
271 total packages

Messages

Error: For building preload USB images you need to install grub2.
[Add grub2](#)

Software changes

Added python Undo

Added 3 package, totaling 23.6 MB
[View details...](#)

[Take notes](#)

Software sources

[openSUSE 13.2 Updates](#), [openSUSE 13.2 OSS](#)

[Add repositories...](#) [Upload RPMs...](#)

Selected software





Packages: [aaa_base](#), [aaa_base-extras](#), [apache2](#), [apache2-mod_php5](#), [branding-openSUSE](#), [cryptsetup](#), [curl](#), [dhcpcd](#), [dracut](#), [fillup](#), [gio-branding-openSUSE](#), [glibc-locale](#), [grub](#), [grub2](#), [hashalot](#), [hwinfo](#), [insserv-compat](#), [iputils](#), [kbd](#), [kernel-default](#), [kmod-compat](#), [lvm2](#), [mingetty](#), [netcfg](#), [net-tools](#), [nfs-client](#), [nscd](#), [openssh](#), [openssh-askpass](#), [openSUSE-build-key](#), [openSUSE-release](#), [permissions](#), [php5-ctype](#), [php5-curl](#), [php5-dom](#), [php5-fileinfo](#), [php5-gd](#), [php5-iconv](#), [php5-json](#), [php5-ldap](#), [php5-mbstring](#), [php5-sqlite](#), [php5-xmlwriter](#), [php5-zip](#), [php5-zlib](#), [polkit-default-privs](#), [procps](#), [python](#), [rpcbind](#), [rpm](#), [rpm-build](#), [rungetty](#), [shadow](#), [SuSEfirewall2](#), [sysconfig](#), [syslog-ng](#), [systemd-sysvinit](#), [tar](#), [traceroute](#), [vim](#), [zypper](#)

[Quick add...](#)




Search for software

Show: All repositories

Your appliance

 **To be installed** (271)  **Selected** (61)  **Banned** (0)  **Recommended** (66)

All available software

 **All packages** (21755)  **All patterns** (0)  **Uploaded RPMs** (0)



Tree of Liberty v1_0 - SUSE Studio - Mozilla Firefox

File Edit View History Bookmarks Tools Help

ownCloud in a box - SUS... Tree of Liberty v1_0 - SU... +

https://susestudio.com/appliance/edit/1353462#/configuration

SUSE studio Send feedback Gallery Home Joe Levy Help Sign out

Tree of Liberty v1_0
32-bit x86, based on openSUSE 13.2
290 MB download, 990 MB uncompressed

Start Software Configuration Files Build Share

Software Information
0 patterns selected
61 packages selected
271 total packages

Messages
Error: For building preload USB images you need to install grub2.
[Add grub2](#)

Software changes
Added python [Undo](#)
Added 3 package, totaling 23.6 MB
[View details...](#)

General Personalize Startup Server Desktop Appliance Scripts

Default locale
Language: English (US)
Keyboard Layout: English (US)

Default time zone
Region: USA
Time Zone: Eastern (New York)

Network
☐ Do not configure network
☐ Use NetworkManager to configure the network at run-time
☐ Discover network settings automatically (DHCP)
☒ Manually configure network
Hostname: Faraday
IP Address: 192.168.5.31
Netmask: 255.255.255.0
Route: 192.168.5.2
Nameservers (separated by commas): 192.168.5.2

Firewall
☒ Enable firewall
☒ Open SSH port (22)
☒ Open HTTP ports (80, 443)

Users and groups
Login UID (optional) Password Group Home directory Shell

Note: Your appliance will always run DHCP in Testdrive.

Take notes



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General Personalize Startup Server Desktop Appliance Scripts

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Messages
Error: For building preload USB images you need to install grub2.
[Add grub2](#)

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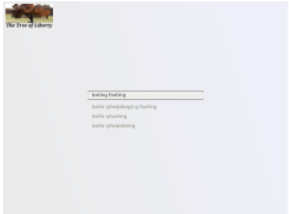
Appliance logo

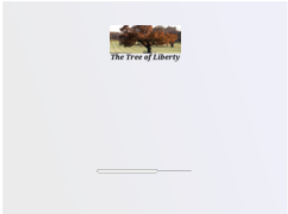

[Upload new logo...](#)


Appliance background


[Upload new background...](#)

Preview


Boot selection (grub)


Boot


Console

[Take notes](#)




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ownCloud in a box – SUS... x Tree of Liberty v1_0 – SU... x

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Start Software Configuration Files **Build** Share

Software information

0 patterns selected
61 packages selected
271 total packages

Software changes
Added grub2 Undo

Version

Default format: Build


Additional formats:

- ☐ Live CD / DVD (.iso)
- ☐ Preload ISO (.iso)
- ☐ VMware Workstation / VirtualBox (.vmdk)
- ☐ OVF Virtual Machine / ESXi (.ovf)
- ☐ Xen guest (.img)
- ☐ Hyper-V Virtual Hard Disk (.vhd)
- ☐ SUSE Cloud / OpenStack / KVM (.qcow2)





[Read more about formats...](#)

[Changelog...](#) [Configuration...](#)

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

 Take notes

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Licensing

- ownCloud is released under two licenses
 - GNU Affero General Public License v3
 - ownCloud's “Enterprise” license
- AGPL imposes downstream license requirements
 - Rarely a burden



Thank you for coming!

- Questions?
- <http://www.owncloud.org>
- joelevy@computer.org

