



# RED HAT ENTERPRISE LINUX 8 IMAGE BUILDER

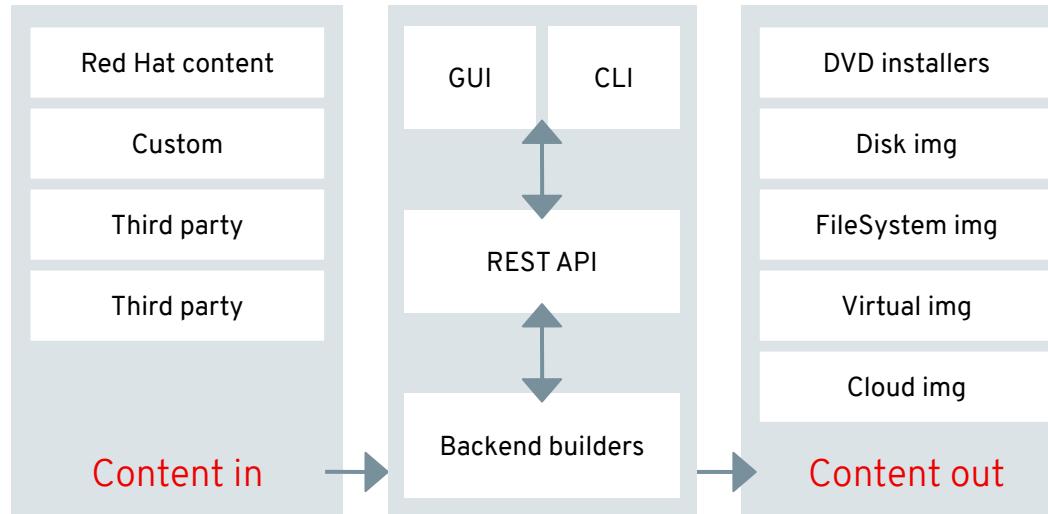
Jenn Giardino  
Senior interaction designer

Terry Bowling  
Sr. Technical product manager

May 2018

# IMAGE BUILDER

Tooling to enable automated creation of customized Red Hat® Enterprise Linux® OS images



# OUTPUT IMAGE TYPES

## Current Capabilities



Introduced in

**Red Hat Enterprise Linux 7**

- › Live Bootable ISO (.iso)
- › QEMU QCOW2 Image (.qcow2)
- › Raw Partitioned Disk Image (.img)
- › Ext4 File System Image (.img)



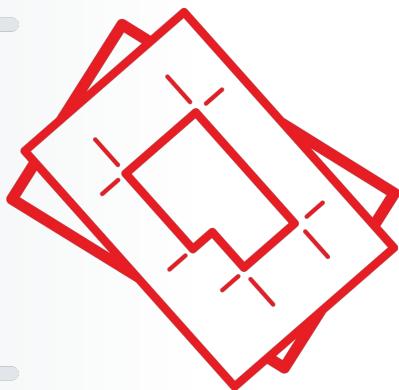
Introduced in

**Red Hat Enterprise Linux 8**

- › Amazon Machine Image (.ami)
- › Azure Disk Image (.vhdx)
- › VMware Virtual Machine Disk (.vmdk)
- › OpenStack (.qcow2)

# BLUEPRINTS

## Current Capabilities

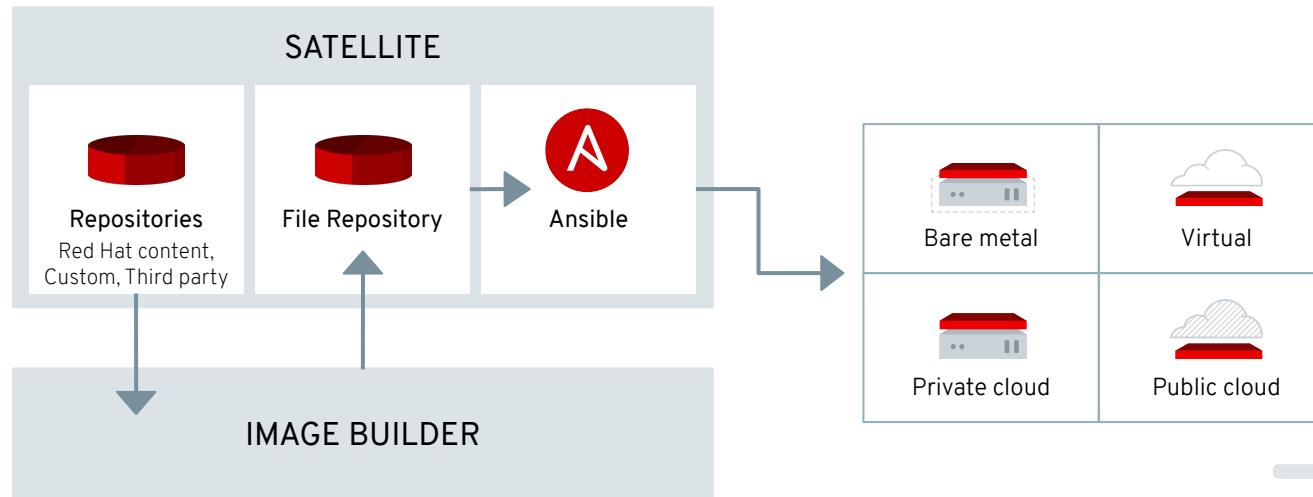


- Define Package List
- Define Hostname
- Create User (password and ssh keys)

# DEMO

# IMAGE BUILDER

## Integration with Red Hat Satellite



# FUTURE CAPABILITIES

Under consideration for inclusion in a future release



## Image types

- › Hyper-V
- › Google
- › IBM
- › Alibaba
- › more...

## Deployment and configuration options

- Pull source content from Red Hat Satellite/ Red Hat Subscription Management (available today)
- Publish images back to Red Hat Satellite for deployment
- More advanced configuration
- Pre vs. post image creation
- Ansible? Other management solutions?

# DOCUMENTATION

In 7.6 and 8.0

## Red Hat Enterprise Linux 7.6



### Installation Guide

Chapter 28: Building custom system  
Images with Composer »

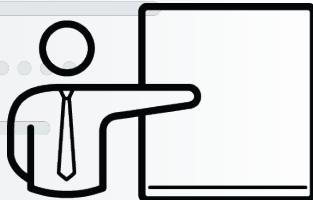
## Red Hat Enterprise Linux 8.0



### Installing and deploying Red Hat Enterprise Linux

Chapter 6: Building custom system  
images with Composer »

Try out **Image Builder** at one of these labs



**The definitive Red Hat Enterprise Linux 8 Beta hands-on lab**

- Wednesday, May 8, 1:00 p.m.-3:00 p.m.
- Thursday, May 9, 10:45 a.m.-12:45 p.m.

**Building a RHEL gold image for Microsoft Azure**

- Thursday, May 9, 2:00 - 4:00

Visit the **Red Hat Booth**



**Ecosystem Expo**  
Exhibit Hall A



**Take this survey** to share feedback about Image Builder.

<http://bit.ly/rhel2019>



Visit the User Experience Design team in the **Feedback Zone**.



**Ecosystem Expo**  
Exhibit Hall A

**Help Identify Top Tasks for Red Hat Enterprise Linux**

Got 5 minutes? Come talk to us and help identify the most important tasks in Red Hat Enterprise Linux!

**Sara**



# THANK YOU



[plus.google.com/+RedHat](https://plus.google.com/+RedHat)



[facebook.com/redhatinc](https://facebook.com/redhatinc)



[linkedin.com/company/red-hat](https://linkedin.com/company/red-hat)



[twitter.com/redhat](https://twitter.com/redhat)



[youtube.com/user/RedHatVideos](https://youtube.com/user/RedHatVideos)

# DEMO SCREENCAPS



Filter by Name...



Create Blueprint



example-atlas

Automatically Tuned Linear Algebra Software

Edit Blueprint

Create Image



example-development

A general purpose development image

Edit Blueprint

Create Image



example-http-server

An example http server with PHP and MySQL support.

Edit Blueprint

Create Image



web-development-server

Edit Blueprint

Create Image



[Back to Blueprints](#) > [example-http-server](#) > Edit Blueprint

1 Pending Change

[Commit](#)[Discard Changes](#)[Create Image](#)

## example-http-server

## Available Components

Filter By Name...

1 - 50 of 7971

&lt;

1

of 160

&gt;

[aajohan-comfortaa-fonts](#)

Modern style true type font

[abattis-cantarell-fonts](#)

Cantarell, a Humanist sans-serif font family

[abrt](#)

Automatic bug detection and reporting tool

[abrt-addon-cpp](#)

abrt's C/C++ addon

[abrt-addon-coredump-helper](#)

abrt's /proc/sys/kernel/core\_pattern helper

[abrt-addon-kerneloops](#)

abrt's kerneloops addon

[abrt-addon-pstoreoops](#)

abrt's pstore oops addon

[abrt-addon-vmcore](#)

abrt's vmcore addon

[abrt-addon-xorg](#)

abrt's Xorg addon

[abrt-cli](#)

Virtual package to make easy default installation on non-graphical environments

[abrt-cli-ng](#)

abrt's improved command line interface

[abrt-console-notification](#)

ABRT - Advanced Bug Reporting Tool

## Blueprint Components

Name

Filter By Name...



Selected Components 8

Dependencies 128

[httpd](#)

Apache HTTP Server

Version 2.4.35

Release 6.el8+2089+57a79027

[mod\\_ssl](#)

SSL/TLS module for the Apache HTTP Server

Version 2.4.35

Release 6.el8+2089+57a79027

[openssh-server](#)

An open source SSH server daemon

Version 7.8p1

Release 3.el8

[php](#)

PHP scripting language for creating dynamic web sites

Version 7.2.11

Release 1.el8+2002+9409c40c

[php-mysqlnd](#)

A module for PHP applications that use MySQL databases

Version 7.2.11

Release 1.el8+2002+9409c40c

[postgresql](#)

PostgreSQL client programs

Version 10.5

Release 1.el8+1546+27ad5f8e

[rsync](#)

A program for synchronizing files over a network

Version 3.1.3

Release 4.el8



[Back to Blueprints](#) > [example-http-server](#) > Edit Blueprint

1 Pending Change

[Commit](#)[Discard Changes](#)[Create Image](#)

## example-http-server

## Available Components

Filter By Name...

1 - 50 of 7971

&lt;

1

of 160

&gt;

[aajohan-comfortaa-fonts](#)

Modern style true type font

[+](#) [abattis-cantarell-fonts](#)

Cantarell, a Humanist sans-serif font family

[+](#) [abrt](#)

Automatic bug detection and reporting tool

[+](#) [abrt-addon-cpp](#)

abrt's C/C++ addon

[+](#) [abrt-addon-coredump-helper](#)

abrt's /proc/sys/kernel/core\_pattern helper

[+](#) [abrt-addon-kerneloops](#)

abrt's kerneloops addon

[+](#) [abrt-addon-pstoreoops](#)

abrt's pstore oops addon

[+](#) [abrt-addon-vmcore](#)

abrt's vmcore addon

[+](#) [abrt-addon-xorg](#)

abrt's Xorg addon

[+](#) [abrt-cli](#)

Virtual package to make easy default installation on non-graphical environments

[+](#) [abrt-cli-ng](#)

abrt's improved command line interface

## Blueprint Components

Name [Filter by Name...](#)

A

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

Selected Components 8

Dependencies 128

[httpd](#)

Apache HTTP Server

Version 2.4.35

Release 6.el8+2089+57a79027

[...](#) [mod\\_ssl](#)

SSL/TLS module for the Apache HTTP Server

Version 2.4.35

Release 6.el8+2089+57a79027

[...](#) [openssh-server](#)

An open source SSH server daemon

Version 7.8p1

Release 3.el8

[...](#) [php](#)

PHP scripting language for creating dynamic web sites

Version 7.2.11

Release 1.el8+2002+9409c40c

[View](#)  
[Remove](#)[...](#) [php-mysqlnd](#)

A module for PHP applications that use MySQL databases

Version 7.2.11

Release 1.el8+2002+9409c40c

[...](#) [postgresql](#)

PostgreSQL client programs

Version 10.5

Release 1.el8+1546+27ad5f8e

[...](#) [rsync](#)

A program for synchronizing files over a network

Version 3.1.3

Release 4.el8

[...](#)

[Back to Blueprints](#) > [example-http-server](#) > Edit Blueprint

3 Pending Changes

[Commit](#)[Discard Changes](#)[Create Image](#)

## example-http-server

## Available Components

nodejs

Name: nodejs [X](#) [Clear All Filters](#)1 - 5 of 5 [<](#) [1](#) of 1 [>](#)

-  **nodejs** [+](#)  
JavaScript runtime
-  **nodejs-devel** [+](#)  
JavaScript runtime - development headers
-  **nodejs-docs** [+](#)  
Node.js API documentation
-  **nodejs-nodemon** [+](#)  
Simple monitor script for use during development of a node.js app
-  **nodejs-packaging** [+](#)  
RPM Macros and Utilities for Node.js Packaging

## Blueprint Components

Name [Filter by Name...](#) [A](#) [C](#)

Selected Components 6

Dependencies 117

 <b>httpd</b> Apache HTTP Server	Version 2.4.35	Release 6.el8+2089+57a79027	<a href="#">...</a>
 <b>mod_ssl</b> SSL/TLS module for the Apache HTTP Server	Version 2.4.35	Release 6.el8+2089+57a79027	<a href="#">...</a>
 <b>openssh-server</b> An open source SSH server daemon	Version 7.8p1	Release 3.el8	<a href="#">...</a>
 <b>postgresql</b> PostgreSQL client programs	Version 10.5	Release 1.el8+1546+27ad5f8e	<a href="#">...</a>
 <b>rsync</b> A program for synchronizing files over a network	Version 3.1.3	Release 4.el8	<a href="#">...</a>
 <b>tmux</b> A terminal multiplexer	Version 2.7	Release 1.el8	<a href="#">...</a>

[Back to Blueprints](#) > [example-http-server](#) > Edit Blueprint

3 Pending Changes

[Commit](#)[Discard Changes](#)[Create Image](#)

:

## example-http-server

## Available Components

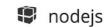
nodejs

Name: nodejs [X](#) [Clear All Filters](#)

1 - 5 of 5 &lt; 1 &gt;

-  **nodejs** [+](#)  
JavaScript runtime
-  **nodejs-devel** [+](#)  
JavaScript runtime - development headers
-  **nodejs-docs** [+](#)  
Node.js API documentation
-  **nodejs-nodemon** [+](#)  
Simple monitor script for use during development of a node.js app
-  **nodejs-packaging** [+](#)  
RPM Macros and Utilities for Node.js Packaging

## Component Details

[Back to example-http-server](#)[Add](#) [X](#)

## Component Options

Version

\* (latest version)

[Details](#)

Dependencies 41

## JavaScript runtime

Node.js is a platform built on Chrome's JavaScript runtime for easily building fast, scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient, perfect for data-intensive real-time applications that run across distributed devices.

Type	RPM
Version	10.11.0
Release	2.el8+2021+27085a9b
URL	<a href="http://nodejs.org/">http://nodejs.org/</a>

[Back to Blueprints](#) > [example-http-server](#) > Edit Blueprint

4 Pending Changes

[Commit](#)[Discard Changes](#)[Create Image](#)

## example-http-server

## Available Components

nodejs

Name: nodejs [X](#) [Clear All Filters](#)1 - 5 of 5 [<](#) [1](#) of 1 [>](#)

 <b>nodejs</b>	JavaScript runtime	<a href="#">-</a>
 <b>nodejs-devel</b>	JavaScript runtime - development headers	<a href="#">+</a>
 <b>nodejs-docs</b>	Node.js API documentation	<a href="#">+</a>
 <b>nodejs-nodemon</b>	Simple monitor script for use during development of a node.js app	<a href="#">+</a>
 <b>nodejs-packaging</b>	RPM Macros and Utilities for Node.js Packaging	<a href="#">+</a>

## Blueprint Components

Name [Filter by Name...](#) [A](#) [C](#)

Selected Components 7

Dependencies 121

 <b>httpd</b>	Apache HTTP Server	Version 2.4.35	Release 6.el8+2089+57a79027	<a href="#">...</a>
 <b>mod_ssl</b>	SSL/TLS module for the Apache HTTP Server	Version 2.4.35	Release 6.el8+2089+57a79027	<a href="#">...</a>
 <b>nodejs</b>	JavaScript runtime	Version 10.11.0	Release 2.el8+2021+27085a9b	<a href="#">...</a>
 <b>openssh-server</b>	An open source SSH server daemon	Version 7.8p1	Release 3.el8	<a href="#">...</a>
 <b>postgresql</b>	PostgreSQL client programs	Version 10.5	Release 1.el8+1546+27ad5f8e	<a href="#">...</a>
 <b>rsync</b>	A program for synchronizing files over a network	Version 3.1.3	Release 4.el8	<a href="#">...</a>
 <b>tmux</b>	A terminal multiplexer	Version 2.7	Release 1.el8	<a href="#">...</a>

[Back to Blueprints](#) > [example-http-server](#) > Edit Blueprint

4 Pending Changes

[Commit](#)[Discard Changes](#)[Create Image](#)

⋮

## example-http-server

## Available Components

nodejs

Name: nodejs [X](#) [Clear All Filters](#)

1 - 5 of 5 &lt; 1 &gt;

-  **nodejs**  
JavaScript runtime -
-  **nodejs-devel**  
JavaScript runtime - development headers +
-  **nodejs-docs**  
Node.js API documentation +
-  **nodejs-nodemon**  
Simple monitor script for use during development of a node.js app +
-  **nodejs-packaging**  
RPM Macros and Utilities for Node.js Packaging +

## Blueprint Components

Name [Filter by Name...](#) ↓↑ ↻ CActive Filters: **name: npm** [X](#) [Clear All Filters](#)Selected Components 0 Dependencies 1

Version 6.4.1

Release 1.10.11.0.2.el8+2021+27085a9b

[Back to Blueprints](#) > [example-http-server](#) > Edit Blueprint

4 Pending Changes

[Commit](#)[Discard Changes](#)[Create Image](#) 

## example-http-server

## Available Components

nodejs

Name: nodejs  [Clear All Filters](#)

1 - 5 of 5

&lt;

1

**nodejs**

JavaScript runtime

**nodejs-devel**

JavaScript runtime - development headers

**nodejs-docs**

Node.js API documentation

**nodejs-nodemon**

Simple monitor script for use during development of a node.js app

**nodejs-packaging**

RPM Macros and Utilities for Node.js Packaging

Changes Pending Commit  Only changes to selected components are shown.

## Blueprint: example-http-server

## Pending Changes (most recent first)

Added **nodejs-\***Removed **php-mysqld-7.2.\***Removed **php-7.2.\***Changes made in a previous session Added **postgresql-\***[Close](#)[Commit](#)**basesystem**

The skeleton package which defines a simple Red Hat Enterprise Linux system

Version 11

Release 5.el8

**bash**

The GNU Bourne Again shell

Version 4.4.19

Release 6.el8

**brotli**

Lossless compression algorithm

Version 1.0.6

Release 1.el8

**bzip2-libs**

Libraries for manipulation using bzip2

Version 1.0.6

Release 26.el8



[Back to Blueprints](#) > [example-http-server](#) > Edit Blueprintexample-http-server: Blueprint changes are committed. [X](#)

## example-http-server

## Available Components

nodejs

Name: nodejs [X](#) [Clear All Filters](#)1 - 5 of 5 [<](#) [1](#) of 1 [>](#)

	<b>nodejs</b> JavaScript runtime	<a href="#">-</a>
	<b>nodejs-devel</b> JavaScript runtime - development headers	<a href="#">+</a>
	<b>nodejs-docs</b> Node.js API documentation	<a href="#">+</a>
	<b>nodejs-nodemon</b> Simple monitor script for use during development of a node.js app	<a href="#">+</a>
	<b>nodejs-packaging</b> RPM Macros and Utilities for Node.js Packaging	<a href="#">+</a>

## Blueprint Components

Name [Filter by Name...](#) [A](#) [C](#)Selected Components [7](#)Dependencies [121](#)

	<b>httpd</b> Apache HTTP Server	Version 2.4.35	Release 6.el8+2089+57a79027	<a href="#">...</a>
	<b>mod_ssl</b> SSL/TLS module for the Apache HTTP Server	Version 2.4.35	Release 6.el8+2089+57a79027	<a href="#">...</a>
	<b>nodejs</b> JavaScript runtime	Version 10.11.0	Release 2.el8+2021+27085a9b	<a href="#">...</a>
	<b>openssh-server</b> An open source SSH server daemon	Version 7.8p1	Release 3.el8	<a href="#">...</a>
	<b>postgresql</b> PostgreSQL client programs	Version 10.5	Release 1.el8+1546+27ad5f8e	<a href="#">...</a>
	<b>rsync</b> A program for synchronizing files over a network	Version 3.1.3	Release 4.el8	<a href="#">...</a>
	<b>tmux</b> A terminal multiplexer	Version 2.7	Release 1.el8	<a href="#">...</a>

[Back to Blueprints](#) > [example-http-server](#)[Edit Blueprint](#) [Create Image](#) [⋮](#)

## example-http-server

An example http server with PHP and MySQL support.

[Details](#)[Selected Components](#)[Images](#)

**Description** An example http server with PHP and MySQL support. [🔗](#)

**Hostname** [🔗](#)

If no hostname is provided, the hostname will be determined by the OS.

**Users**

	Full name	User name	Server administrator	Password	SSH key	<a href="#">⋮</a>
	gary	gary	✓		✓ gary@krustykrab.com	<a href="#">🔗</a> <a href="#">⋮</a>

[Create User Account](#)

[Back to Blueprints](#) > [example-http-server](#)[Edit Blueprint](#) [Create Image](#) [⋮](#)

## example-http-server

An example http server with PHP and MySQL support.

[Details](#)[Selected Components](#)[Images](#)

**Description** An example http server with PHP and MySQL support. [🔗](#)

**Hostname**

squidward



Valid characters for hostname are letters from a to z, the digits from 0 to 9, and the hyphen (-). A hostname may not start with a hyphen.

**Users**

Full name	User name	Server administrator	Password	SSH key	⋮
gary	gary	✓		✓ gary@krustykrab.com	

[Create User Account](#)

[Back to Blueprints](#) > [example-http-server](#)[Edit Blueprint](#)[Create Image](#)

## example-http-server

An example http server

[Details](#)[Selected Components](#)[Images](#)

Description An example http server

Hostname squidward 

Users 

Full name

gary

[Create User Account](#)

### Create User Account

The fields marked with \* are required.

Full name

\* User name

The user name can only consist of letters from a-z, digits, dots, dashes and underscores.

Role  Server administrator

Password

Confirm password

SSH key

Paste the contents of your public SSH key file here.

[Cancel](#)[Create](#)

[Back to Blueprints](#) > [example-http-server](#)[Edit Blueprint](#)[Create Image](#)

## example-http-server

An example http server with PHP and MySQL support.

[Details](#)[Selected Components](#)[Images](#)

Description An example http server with PHP and MySQL support.

Hostname squidward

Users

Full name	User name	Server administrator	Password	SSH key	
gary	gary	✓		✓ gary@krustykrab.com	
SpongeBob SquarePants	ssquarepants		✓		

[Create User Account](#)

Back to Blueprints &gt; example-http-server

Edit Blueprint Create Image

example-http-server An example http server

Details

Selected Components

Images

Description An example http server

Hostname squidward

Users

Full name

gary

gary

SpongeBob SquarePants

ssquarepants

Create User Account

## Create Image

Blueprint

example-http-server

## \* Image Type

- ✓ Amazon Machine Image Disk (.ami)
- Ext4 File System Image (.img)
- Live Bootable ISO (.iso)
- OpenStack Image (.qcow2)
- Raw Partitioned Disk Image (.img)
- QEMU QCOW2 Image (.qcow2)
- TAR Archive (.tar)
- Azure Disk Image (.vhdx)
- VMware Virtual Machine Disk (.vmdk)

SSH key

gary@krustykrab.com



[Back to Blueprints](#) > [example-http-server](#)

## example-http-server

An example http server with PHP and MySQL support.

[Details](#)[Selected Components](#)[Images](#)

Description An example http server with PHP and MySQL support. 

Hostname squidward 

Users

Full name	User name	Server administrator	Password	SSH key	
gary	gary	✓		✓ gary@krustykrab.com	 
SpongeBob SquarePants	ssquarepants		✓		 

[Create User Account](#)

[Back to Blueprints](#) > [example-http-server](#)[Edit Blueprint](#) [Create Image](#) [...](#)

## example-http-server

An example http server with PHP and MySQL support.

[Details](#) [Selected Components](#) [Images](#)

 <a href="#">example-http-server-ver0.0.31-qcow2</a> Based on Version 0.0.31	Date Created Wed Apr 24 2019	Type qcow2	 Pending	<a href="#">Stop</a>
 <a href="#">example-http-server-ver0.0.23-live-iso</a> Based on Version 0.0.23	Date Created Mon Apr 08 2019	Type live-iso	 Complete	<a href="#">Download</a> <a href="#">...</a>
 <a href="#">example-http-server-ver0.0.2-vmdk</a> Based on Version 0.0.2	Date Created Wed Jan 23 2019	Type vmdk	 Complete	<a href="#">Download</a> <a href="#">...</a>