

In the Cloud with Kiwi

openSUSE Conference



Sweetening heterogeneous Linux
deployments

Introductions

David Duncan

- Sr. Manager, Partner Solutions Architect
 - Sr. Member of the Fedora Cloud WG
- Contributor and package maintainer in Fedora
- Chair of Fedora Cloud WG
 - Member of CentOS Hyperscale SIG
 - Member of CentOS Alternative Images SIG



Neal Gompa

- Open Source Advocate
- Contributor and package maintainer in Fedora and CentOS
- Member of Fedora Engineering Steering Committee (FESCO)
- Chair of Fedora Asahi and KDE SIGs
- Member of Fedora Workstation, Fedora Cloud, and Fedora Server WGs
- Co-chair of CentOS Hyperscale SIG
- Member of AlmaLinux Engineering Steering Committee (ALESCo)
- Member of CentOS Alternative Images SIG
- Member of KDE, e.V.
- Member of X.Org Foundation Board of Directors
- Co-host of the Sudo Show podcast
- Principal Consultant at Velocity Limitless

Kiwi



A flexible “appliance” image build tool from the openSUSE project

Straightforward and idiomatic
XML/YAML/JSON descriptions with script
hooks

Flexible

Builds almost any type of image

Provides an API to construct custom image
types

Automatically produced SBOM artifact logs

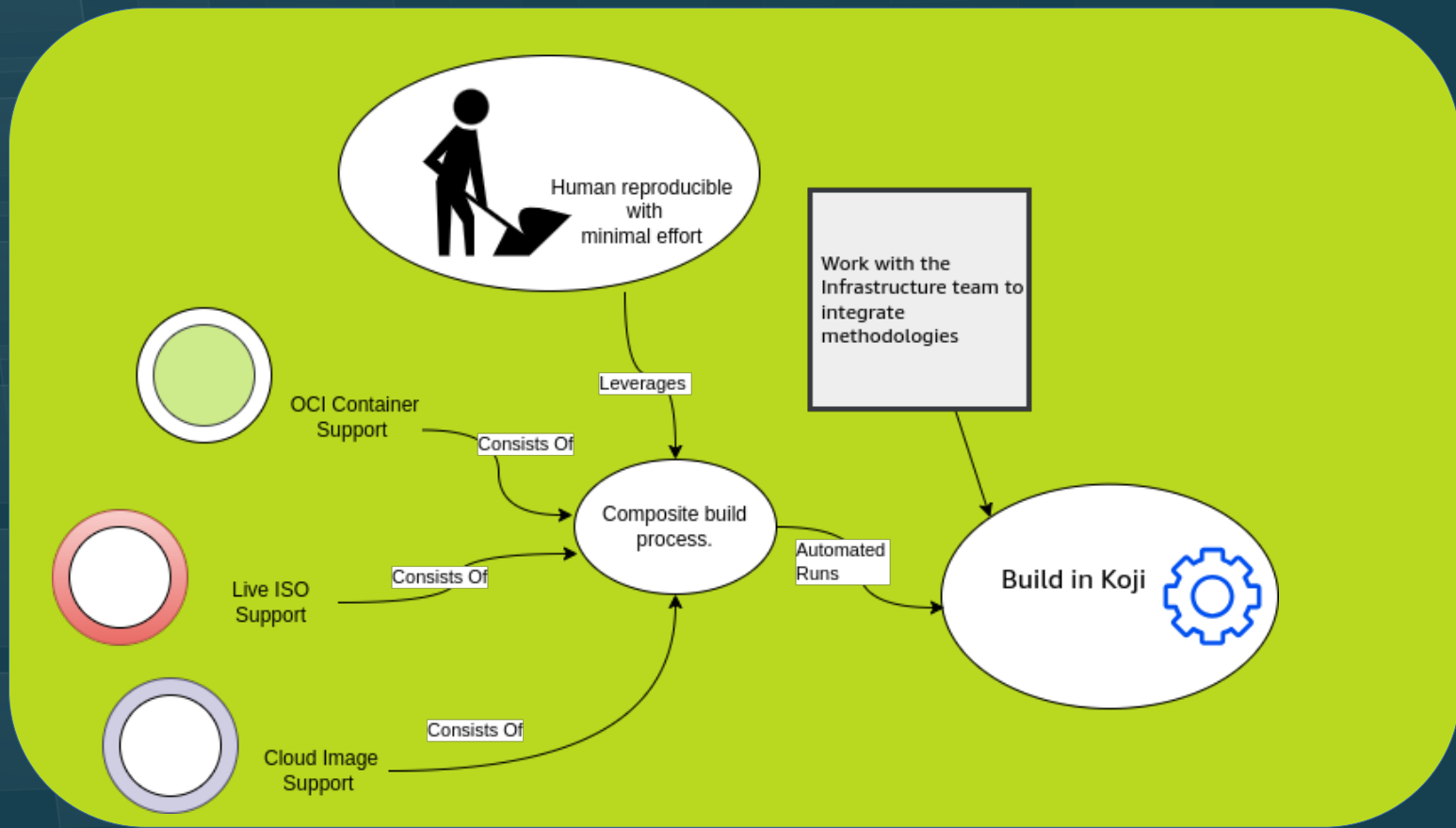
Free and Open Source Software (GPLv3+)

Actively developed and maintained

Friendly developers



Why Kiwi?



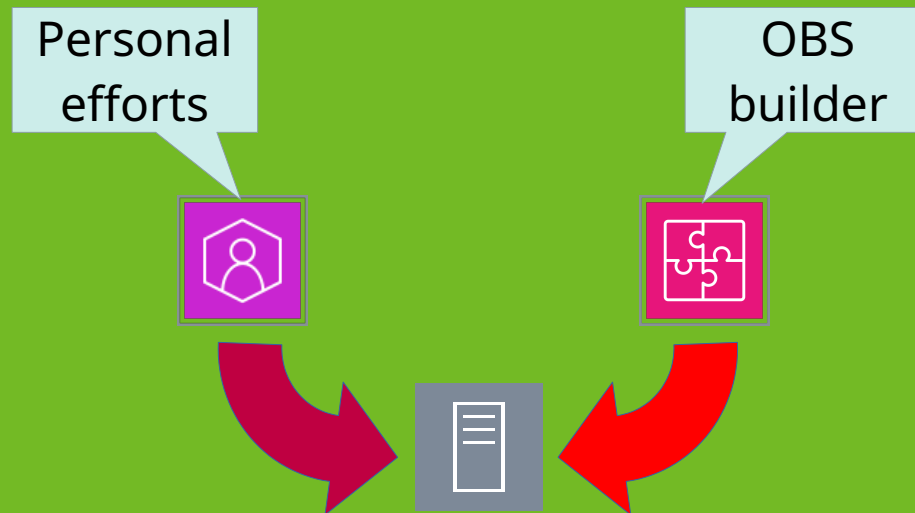
Balanced Review

- Support for WSL
 - Support for OCI Containers
 - Repeatable builds
 - Live Images
 - Composable builds
 - Ability to integrate with Other Editions and Spins
 - Active Support in the Working Group
- × Lack of API stability
 - × Lack of OCI Container build support.
 - × Missing support for ISOs
 - × Complicated to reproduce the build environment.

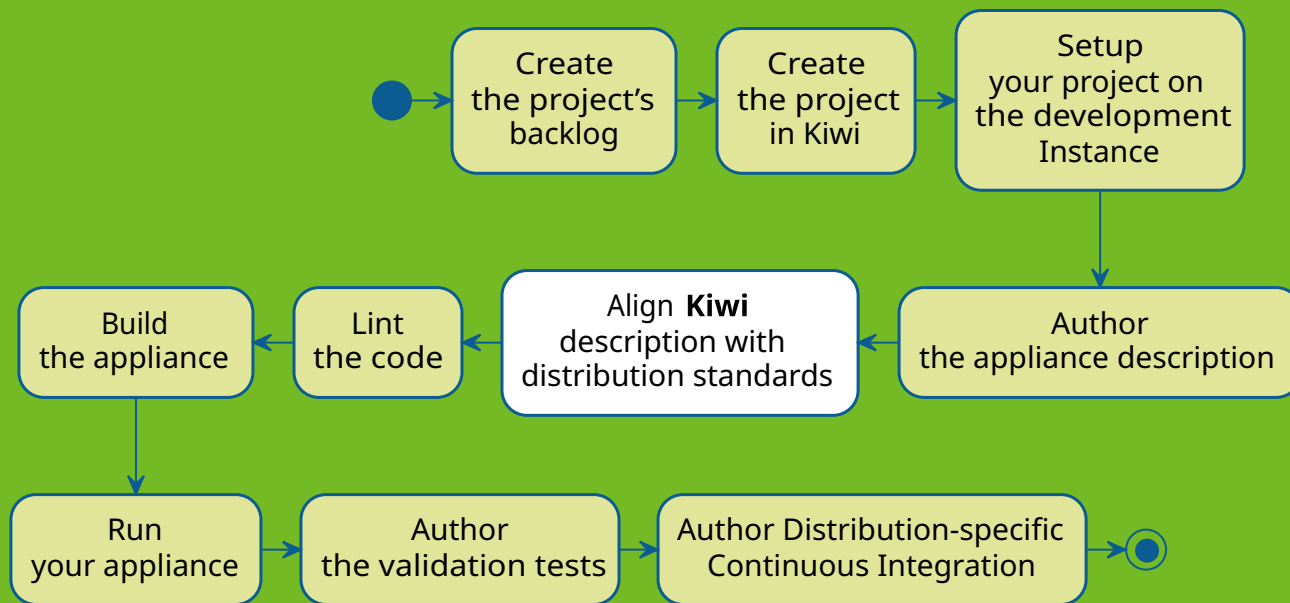


Solutions for builders and users alike

- Building using CI
- Exploring as a User



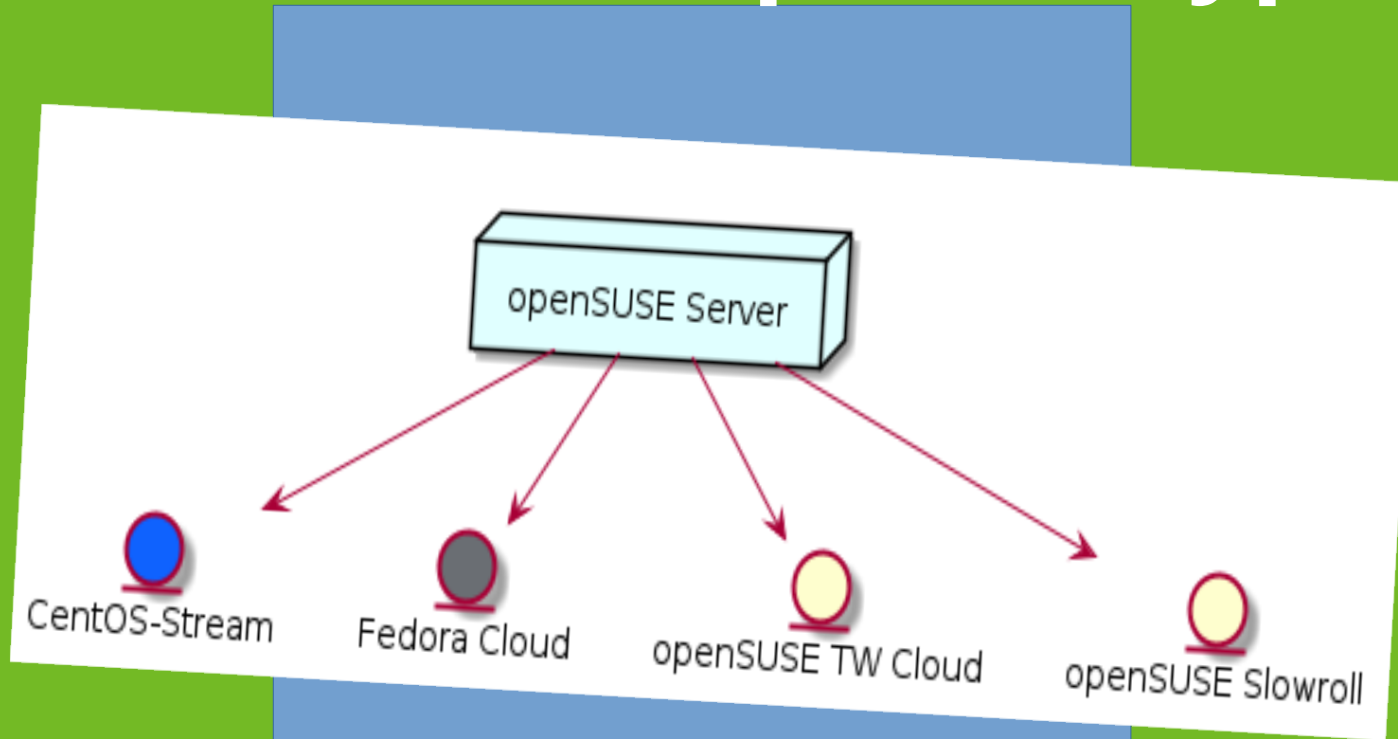
Process Review



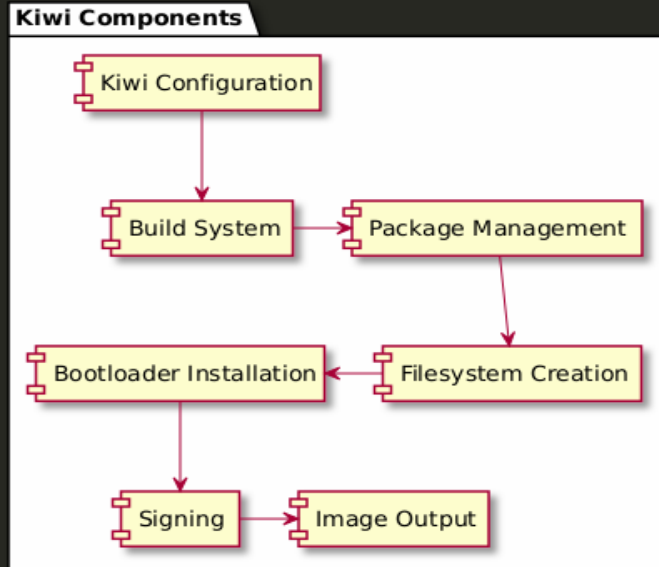
<https://pagure.io/fedora-kiwi-descriptions>



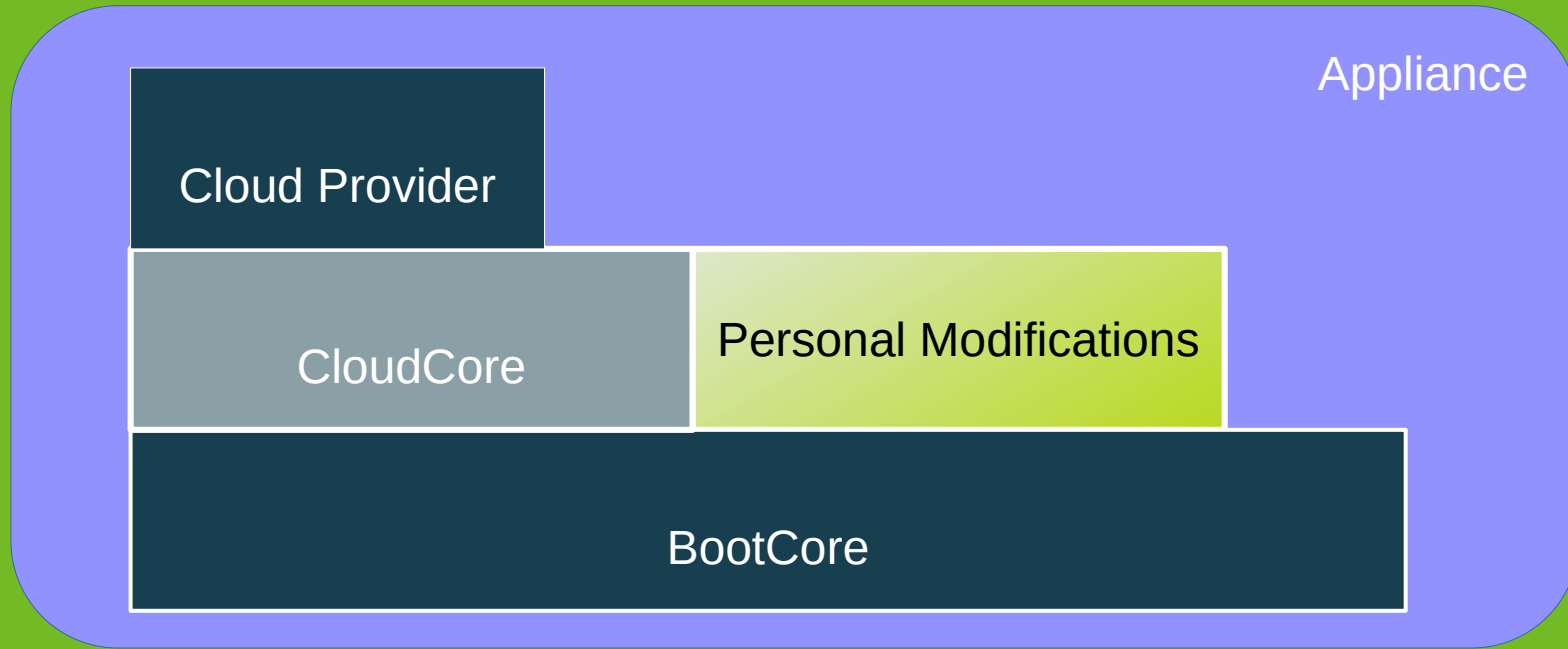
Build Multiple OS Types



Component Review



Under the Hood: Definitions



<https://pagure.io/fedora-kiwi-descriptions>



Under the Hood:

Conan-Kudo committed 2 weeks ago 1 parent 9508d70 commit d08e2db

Showing 3 changed files with 77 additions and 0 deletions. Whitespace Ignore whitespace Split Unified

Filter changed files

- VARIANTS.md
- config.xml
- variants
 - container.xml

VARIANTS.md

```
@@ -2,4 +2,5 @@
2 2
3 3 * Base Cloud Edition for clouds (image type: `oem`, image profiles:
4 4 * Base-Generic`/`Base-AmazonEC2`/`Base-Azure`/`Base-GCE`)
5 5 * KDE Cloud Workstation (image type: `oem`, image profiles: `KDE-
6 6 * Base-Generic`)
```

config.xml

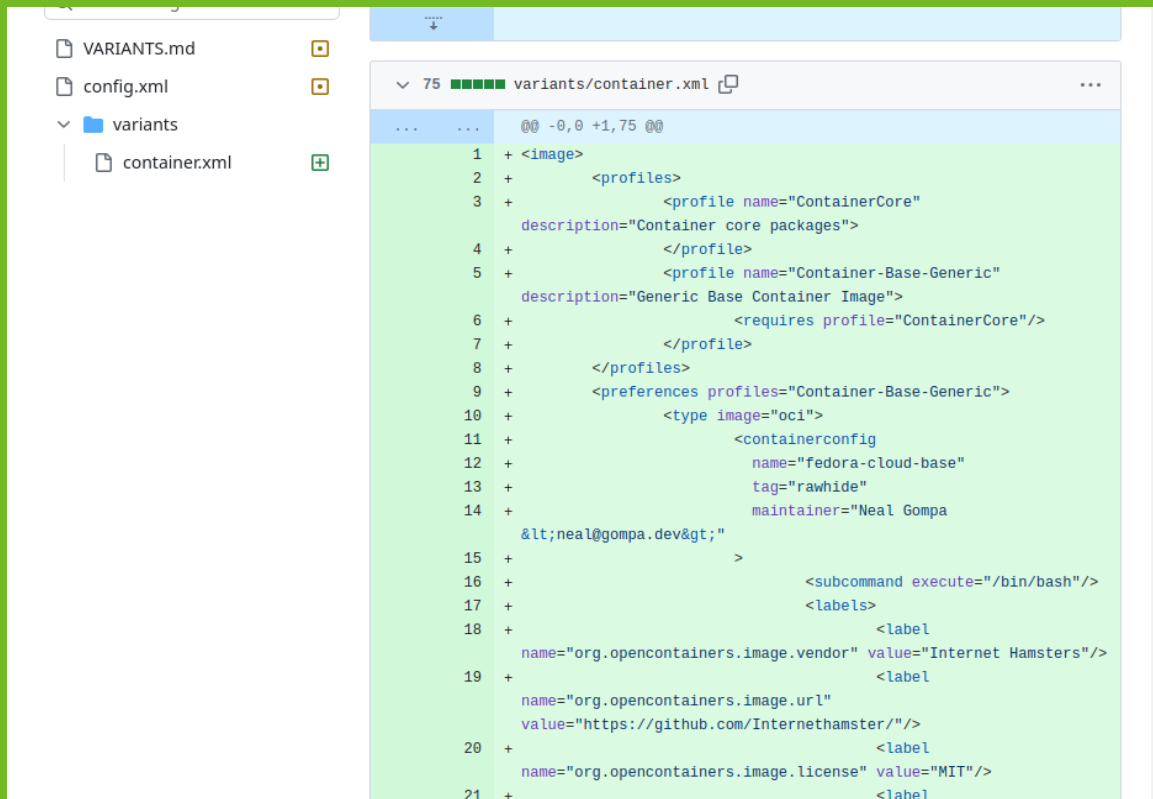
```
@@ -20,6 +20,7 @@
20 20 <include from="this:///fedora-kiwi-
21 21 descriptions/components/desktops/kde.xml"/>
22 22 <include from="this:///fedora-kiwi-
23 23 descriptions/components/users.xml"/>
24 24 <include from="this:///variants/base.xml"/>
25 25 <include from="this:///variants/container.xml"/>
26 26 <include from="this:///variants/workstation.xml"/>
27 27 <packages type="bootstrap">
28 28 <package name="basesystem"/>
29 29 </packages>
30 30 </include>
```

variants/container.xml

<https://github.com/Internethamster/fedora-cloud-images-kiwi/commit/d08e2db002d8410d6d3642eb713e8b4850acf067>



Under the Hood:



```
1 + <image>
2 +   <profiles>
3 +     <profile name="ContainerCore"
4 +       description="Container core packages">
5 +     </profile>
6 +     <profile name="Container-Base-Generic"
7 +       description="Generic Base Container Image">
8 +       <requires profile="ContainerCore"/>
9 +     </profile>
10 +   </profiles>
11 +   <preferences profiles="Container-Base-Generic">
12 +     <type image="oci">
13 +       <containerconfig
14 +         name="fedora-cloud-base"
15 +         tag="rawhide"
16 +         maintainer="Neal Gomba
17 +         &lt;neal@gompa.dev&gt;"
18 +       >
19 +         <subcommand execute="/bin/bash"/>
20 +         <labels>
21 +           <label
22 +             name="org.opencontainers.image.vendor" value="Internet Hamsters"/>
23 +           <label
24 +             name="org.opencontainers.image.url"
25 +             value="https://github.com/Internethamster/">
26 +           <label
27 +             name="org.opencontainers.image.license" value="MIT"/>
28 +           <label
```


<https://github.com/Internethamster/fedora-cloud-images-kiwi/commit/d08e2db002d8410d6d3642eb713e8b4850acf067>



Unified Description



 **Pharaoh_Atem / multidistro-cloud-kiwi-descriptions**

 Source

 Stats

 Overview

 Files

 Commits

 Branches

 Forks

 Releases

Files

 main /  kiwi-desc

	centos
	fedora
	opensuse-leap
	opensuse-tumbleweed
	platforms

https://code.opensuse.org/Pharaoh_Atem/multidistro-cloud-kiwi-descriptions



main / kiwi-desc / opensuse-tumbleweed / config.xml

Edit

Fork and Edit

Blob

Blame

History

Raw

```
1 <?xml version="1.0" encoding="utf-8"?>
2
3 <image schemaversion="7.4" name="openSUSE-Tumbleweed-Cloud-Appliance">
4   <description type="system">
5     <author>Neal Gomba</author>
6     <contact>ngomba@opensuse.org</contact>
7     <specification>openSUSE Tumbleweed Cloud Appliance</specification>
8   </description>
9   <preferences>
10     <version>0.0.0</version>
11     <packagemanager>dnf</packagemanager>
12     <locale>en_US</locale>
13     <keytable>us</keytable>
14     <timezone>UTC</timezone>
15     <rpm-check-signatures>true</rpm-check-signatures>
16     <release-version>tumbleweed</release-version>
17   </preferences>
18   <repository type="rpm-md" alias="opensuse-tumbleweed-oss" sourcetype="baseurl" arch="x86_64">
19     <source path="https://download.opensuse.org/tumbleweed/repo/oss/">
20       <signing key="file:///usr/share/distribution-gpg-keys/opensuse/RPM-GPG-KEY-openSUSE-Tumbleweed">
21       </source>
22     </repository>
23     <repository type="rpm-md" alias="opensuse-tumbleweed-oss" sourcetype="baseurl" arch="aarch64">
24       <source path="https://download.opensuse.org/ports/aarch64/tumbleweed/repo/oss/">
25         <signing key="file:///usr/share/distribution-gpg-keys/opensuse/RPM-GPG-KEY-openSUSE-Tumbleweed">
26         </source>
27       </repository>
28       <include from="this:../platforms/cloud/generic.xml"/>
29       <include from="this:../platforms/cloud/suse.xml"/>
30       <include from="this:../platforms/vagrant/generic.xml"/>
31       <include from="this:../platforms/vagrant/suse.xml"/>
```



[Overview](#)[Files](#)[Commits](#)[Branches](#)[Forks](#)[Releases](#)

Files

Branch: main

main / kiwi-desc / platforms / cloud / generic.xml

Fork and EditBlobBlameHistoryR

```
1 <image>
2   <profiles>
3     <profile name="Azure" description="Azure Guest Image"/>
4     <profile name="AWSEC2" description="AWS EC2 HVM Guest Image"/>
5   </profiles>
6   <users profiles="Azure,AWSEC2">
7     <!-- The password here does not matter, it will be erased in config.sh -->
8     <user name="root" groups="root" password="linux" home="/root" pwdformat="plain" />
9   </users>
10  <preferences profiles="Azure" arch="x86_64,aarch64">
11    <type image="oem" format="vhd-fixed" formatoptions="force_size"
12      filesystem="btrfs" btrfs_root_is_subvolume="true" btrfs_set_default_volume="false" fsmount
13      kernelcmdline="no_timer_check console=tty1 console=ttyS0,115200n8 earlyprintk=ttyS0 syste
14      devicepersistency="by-uuid"
15      bootpartition="false" efipartsize="100" firmware="uefi"
16      rootfs_label="cloud"
17    >
18    <bootloader name="grub2" console="serial" timeout="0"/>
19    <systemdisk>
```

Q&R!

(No SLA on Answers)

