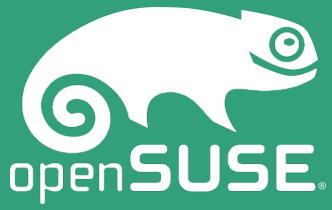

Build Your Image using KIWI. Customize what You want!

Let's rock with openSUSE and KIWI!

Rifki Affandi
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rifkiaz@opensuse.org/id

Let’s rock with openSUSE And KIWI

About Me

- openSUSE-ID
- openSUSE Member
- Mahasiswa
- FLOSS enthusiast

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Telegram : @rifkiaz

What is KIWI?

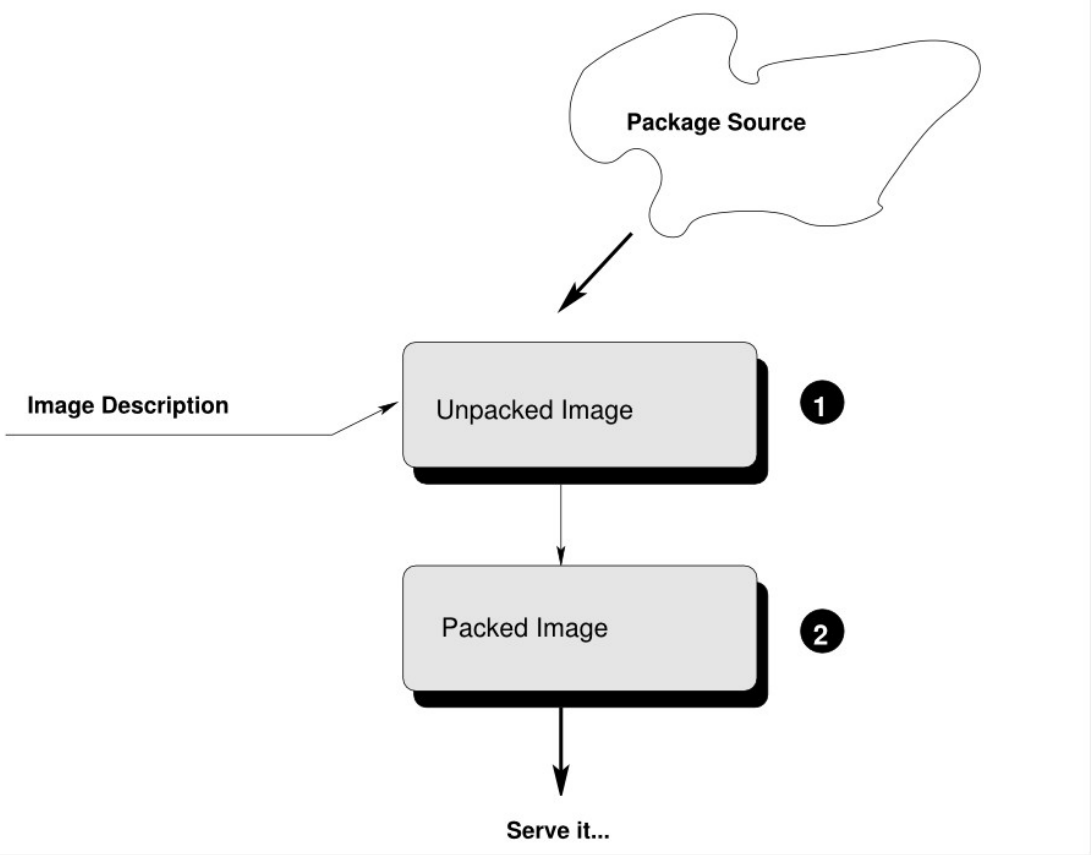
KIWI is…..

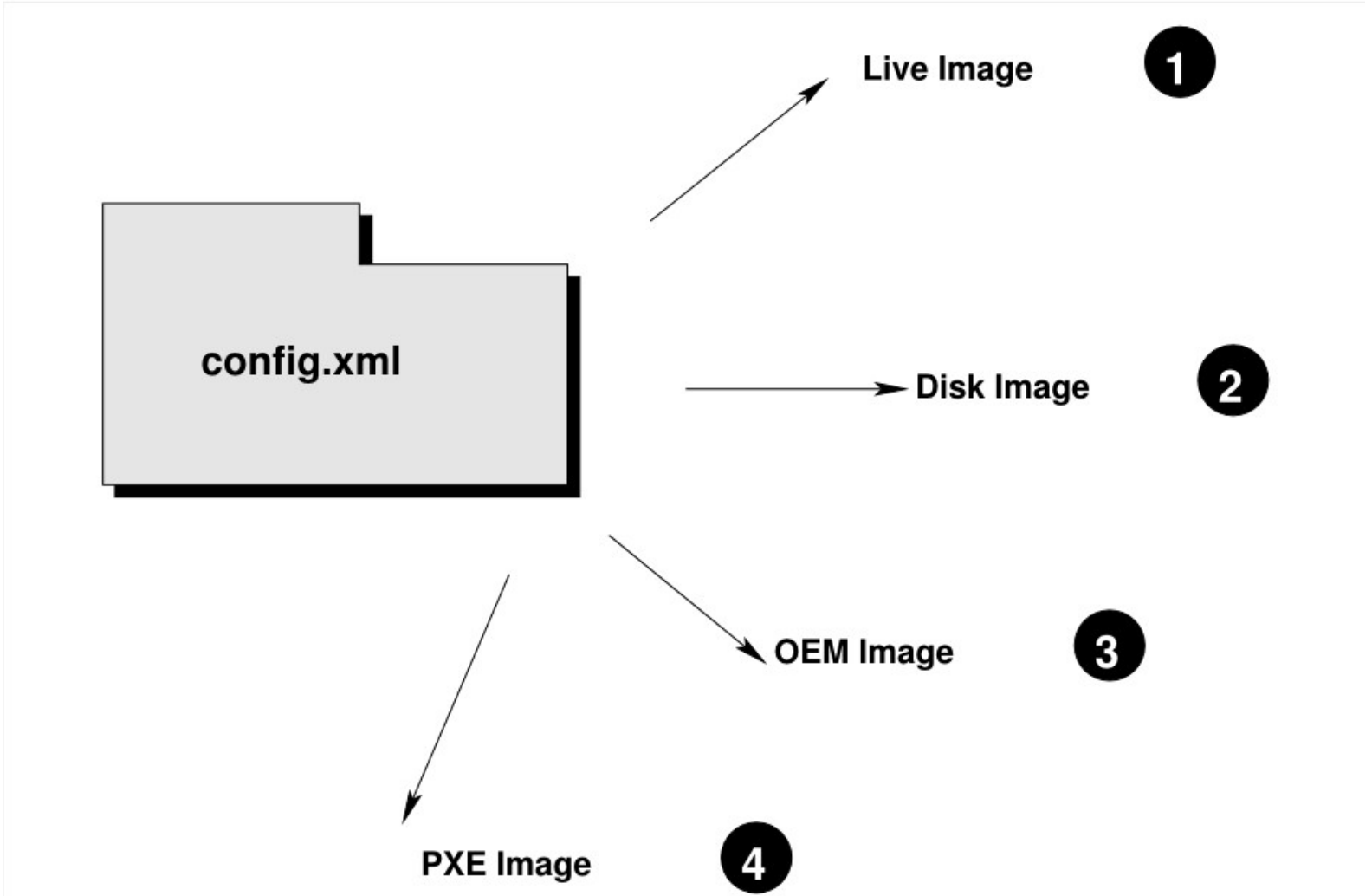
KIWI is a command line tool, written in Perl, for building images for Linux. It supports a variety of image formats. KIWI is used as a back-end for the appliance builder SUSE Studio. It is also used to build images in the openSUSE Build Service, among them images for all SUSE products.

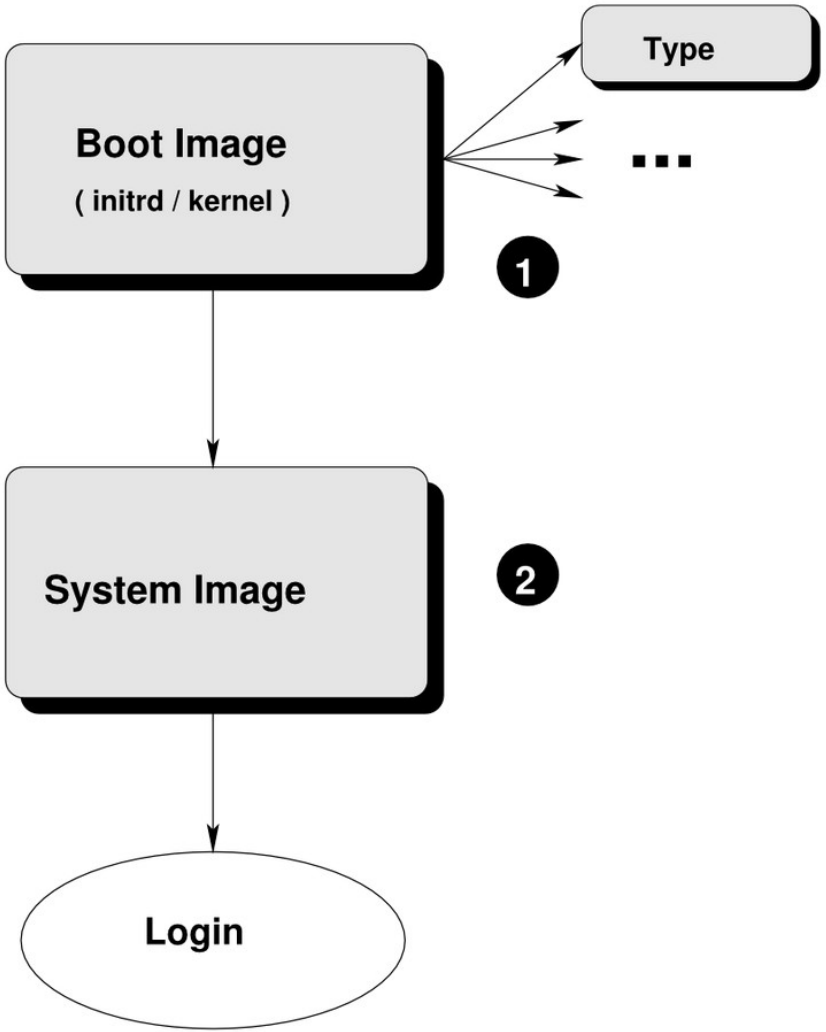
KIWI Support for

- ISO
- Live CD/DVD
- PXEBoot
- Hard disk
- USB
- Amazon EC2(.ami)
- Docker
- Google Cloud Format(..gce)
- PXEBoot
- KVM/Qemu (.qcow2)
- Open Virtualization Format (.ovf)
- Etc

Workflow KIWI

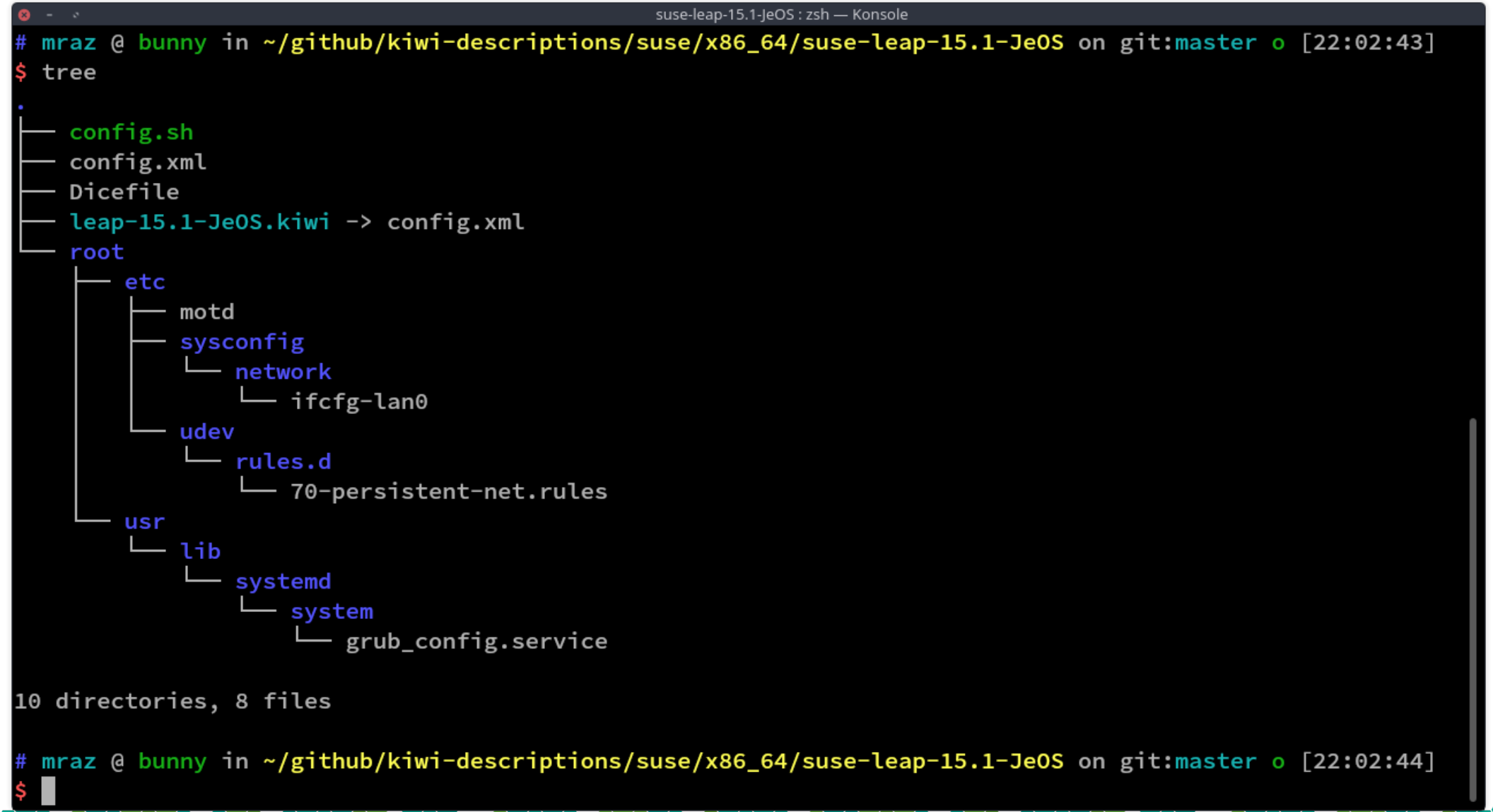



Live Image
1
config.xml
Disk Image
2
OEM Image
3
PXE Image
4


Type
...
Boot Image
(initrd / kernel)
1
System Image
2
Login

What We Need?

- Folder and any file (kiwi-description)
- Internet connection
- Coffe
- Pray

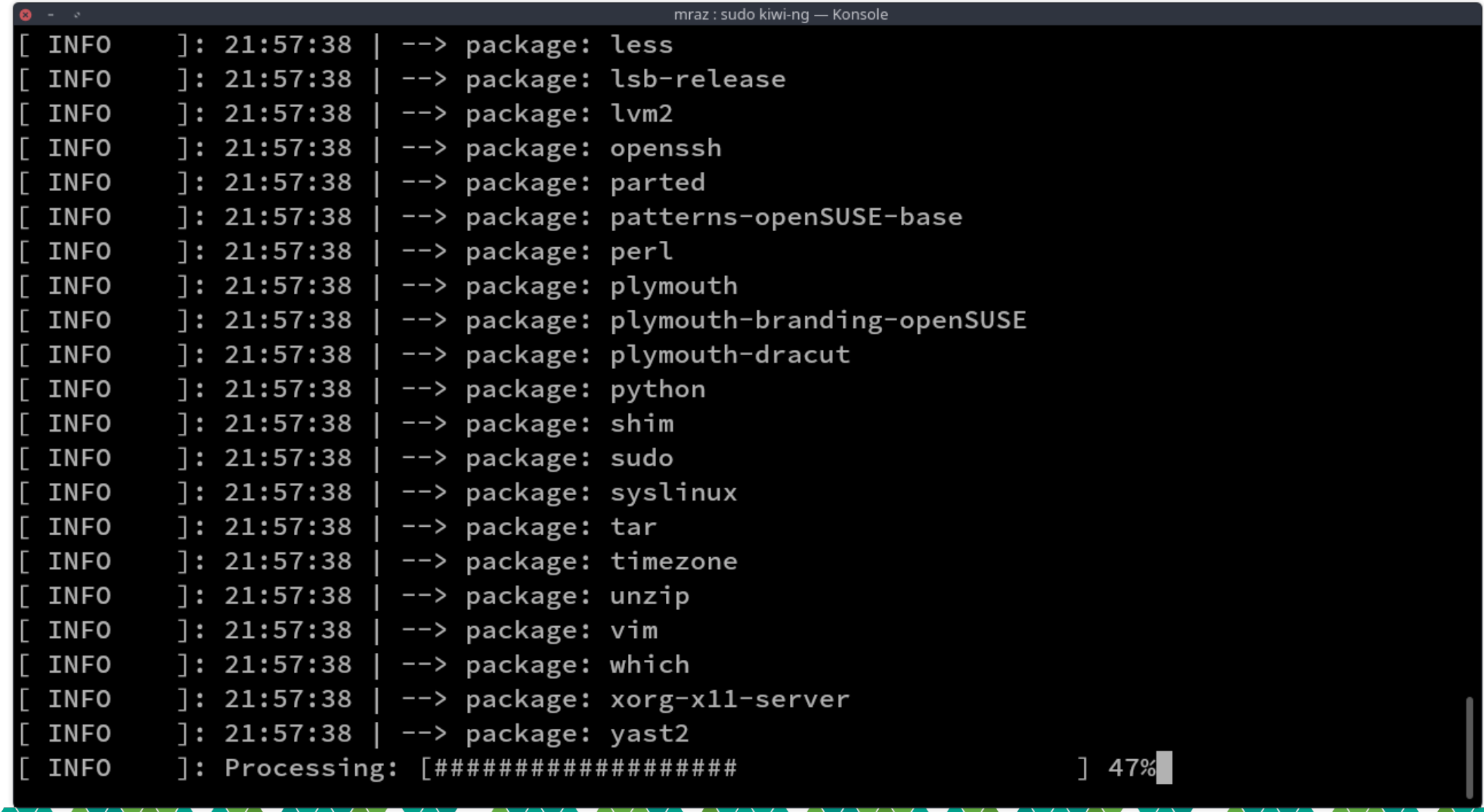

suse-leap-15.1-JeOS : zsh — Konsole
# mraz @ bunny in ~/github/kiwi-descriptions/suse/x86_64/suse-leap-15.1-JeOS on git:master o [22:02:43]
$ tree
.
├── config.sh
├── config.xml
├── Dicefile
├── leap-15.1-JeOS.kiwi -> config.xml
└── root
    ├── etc
    │   ├── motd
    │   ├── sysconfig
    │   │   └── network
    │   │   └── ifcfg-lan0
    │   └── udev
    │   └── rules.d
    │   └── 70-persistent-net.rules
    └── usr
        └── lib
            └── systemd
                └── system
                    └── grub_config.service
10 directories, 8 files
mraz @ bunny in ~/github/kiwi-descriptions/suse/x86_64/suse-leap-15.1-JeOS on git:master o [22:02:44]
$

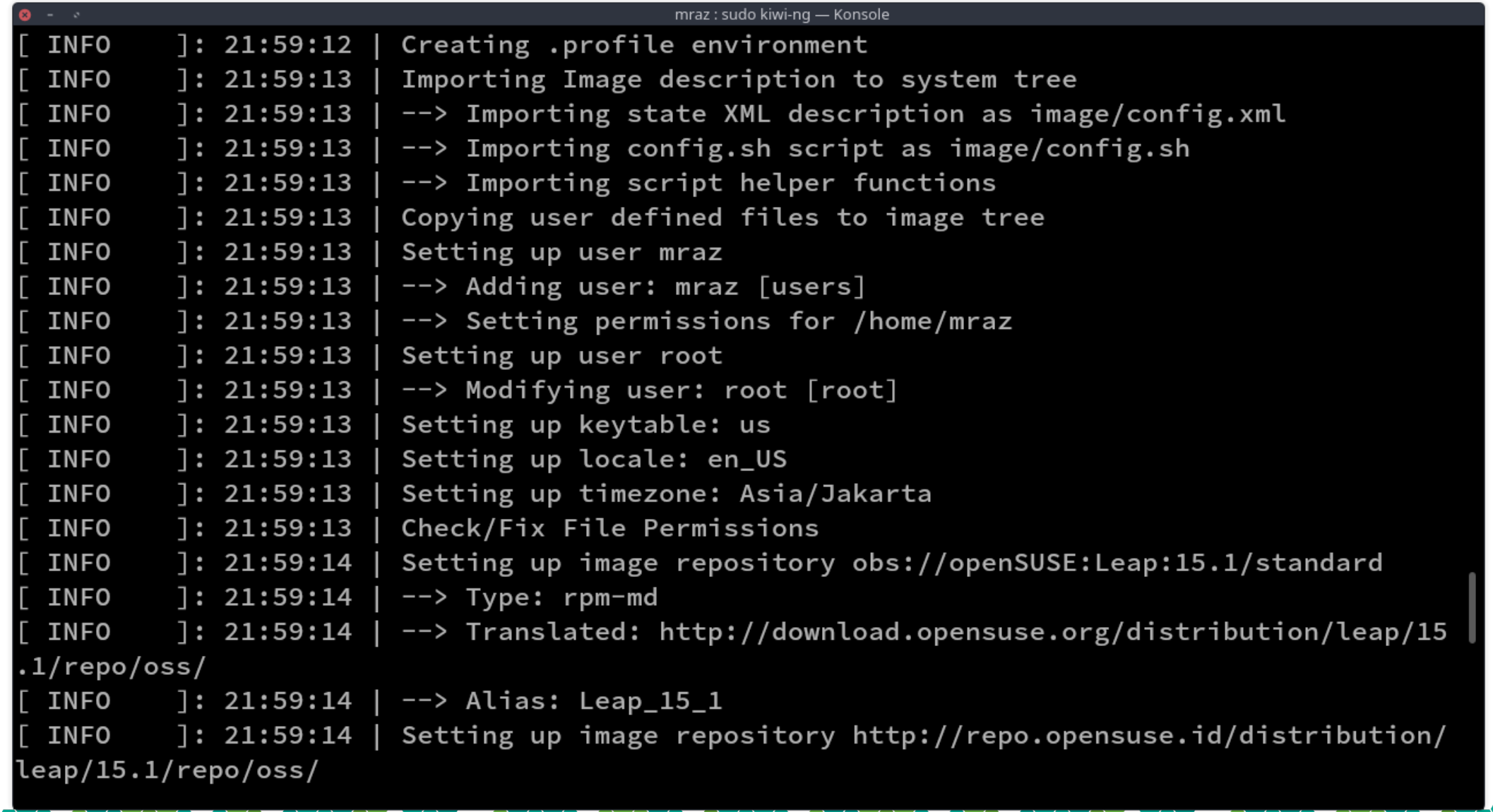
```xml
<?xml version="1.0" encoding="utf-8"?>

<image schemaversion="6.8" name="openSUSE-LimeJeOS-Leap-15.1">
    <description type="system">
        <author>Rifki Affandi</author>
        <contact>rifkiaz@opensuse.org</contact>
        <specification>
            Leap 15.1 JeOS, is a small text based image
        </specification>
    </description>
    <preferences>
        <type image="iso" primary="true" flags="overlay" hybrid="true" firmware="efi" kernelcmdline="splash" hybridpersistent_filesystem="ext4" hybridpersistent="true" mediache
        <version>15.1</version>
        <packagemanager>zypper</packagemanager>
        <locale>en_US</locale>
        <keytable>us</keytable>
        <timezone>Asia/Jakarta</timezone>
        <rpm-excludedocs>true</rpm-excludedocs>
        <rpm-check-signatures>false</rpm-check-signatures>
        <bootsplash-theme>openSUSE</bootsplash-theme>
        <bootloader-theme>openSUSE</bootloader-theme>
    </preferences>
    <preferences>
        <type image="vmx" filesystem="ext4" bootloader="grub2" kernelcmdline="splash" firmware="efi"/>
        <type image="oem" filesystem="ext4" initrd_system="dracut" installiso="true" bootloader="grub2" kernelcmdline="splash" firmware="efi">
            <oemconfig>
                <oem-systemsize>4048</oem-systemsize>
                <oem-swap>true</oem-swap>
                <oem-device-filter>/dev/ram</oem-device-filter>
                <oem-multipath-scan>false</oem-multipath-scan>
            </oemconfig>
            <machine memory="1000" guestOS="suse" HWversion="4">
                <vmdisk id="0" controller="ide"/>
                <vmnic driver="e1000" interface="0" mode="bridged"/>
            </machine>
        </type>
    </preferences>
    <users>
    <user password="1521" home="/home/mraz" name="mraz" groups="users" pwdformat="plain"/>
        <user password="152103" home="/root" name="root" groups="root" pwdformat="plain"/>
    </users>
    <repository type="rpm-md" alias="kiwi" priority="1">
        <source path="obs://Virtualization:Appliances:Builder/openSUSE_Leap_15.1"/>
    </repository>
    <repository type="rpm-md" alias="Leap_15_1" imageinclude="true">
        <source path="obs://openSUSE:Leap:15.1/standard"/>
    </repository>
    <repository type="rpm-md" alias="repo-opensuse-id-oss" imageinclude="true" priority="1">
        <source path="http://repo.opensuse.id/distribution/leap/15.1/repo/oss/"/>
```

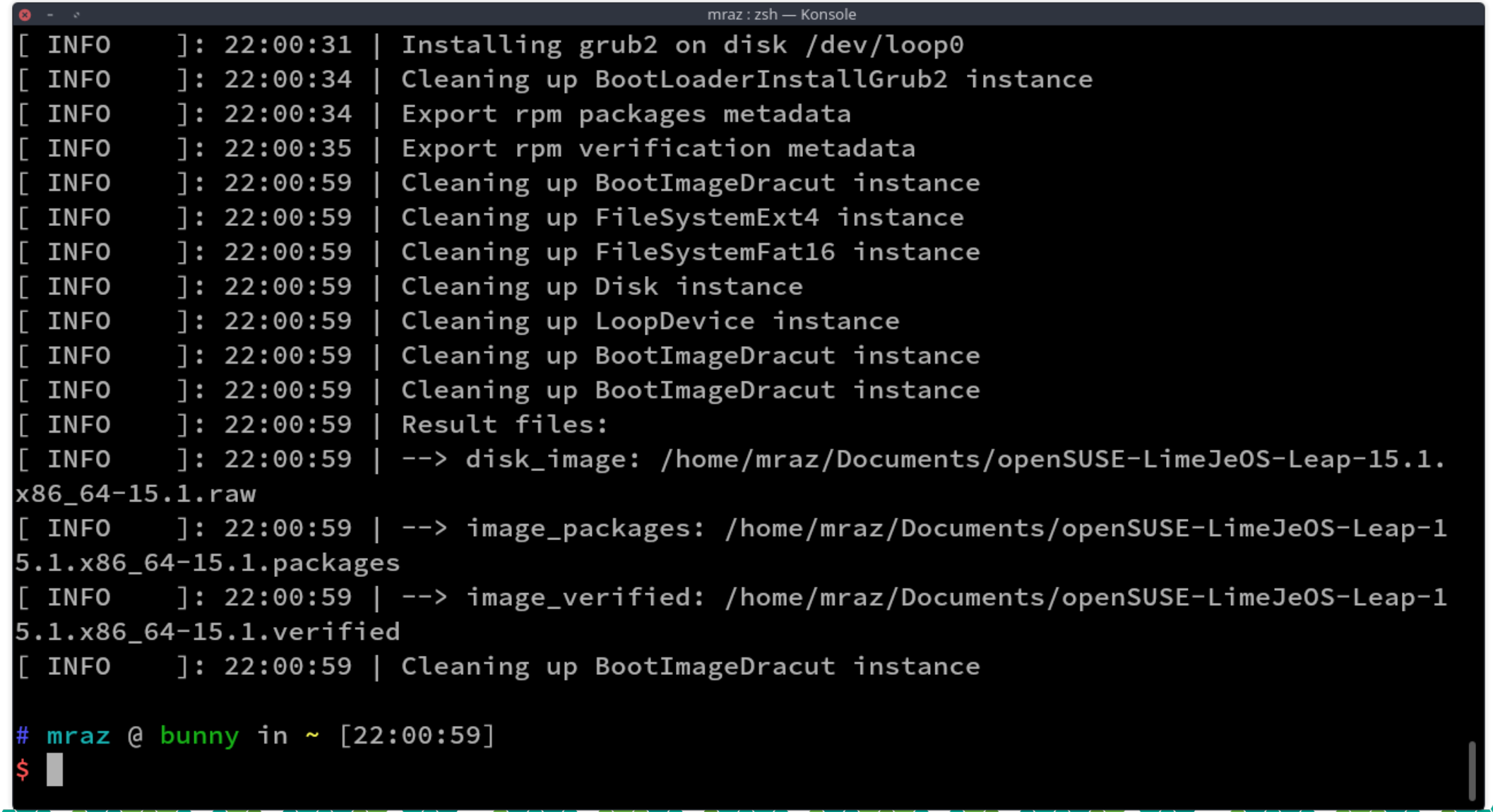
Process Build Image using KIWI (ISO and RAW)

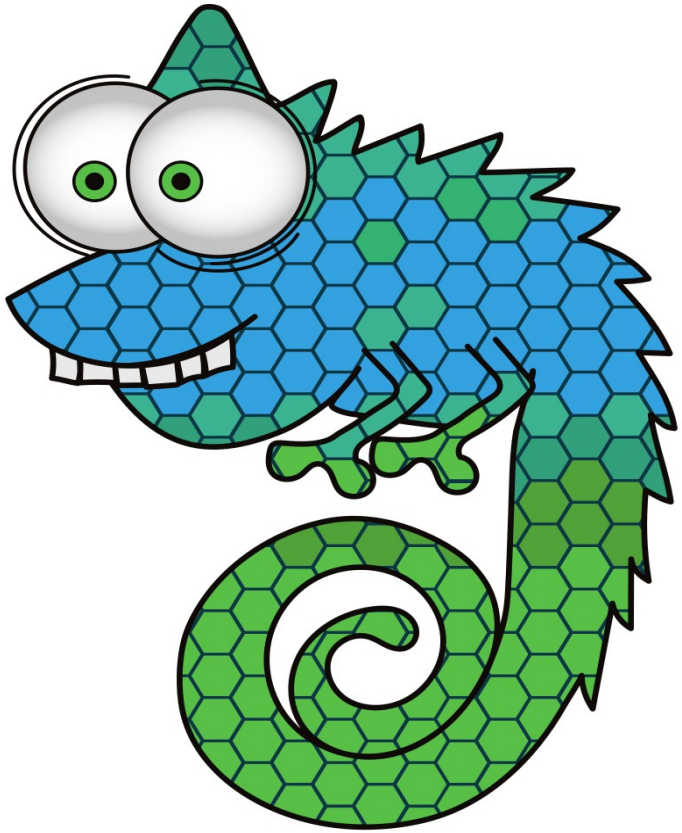
mraz : sudo kiwi-ng — Konsole

```
$ sudo kiwi-ng --type vmx system build \
--description /home/mraz/github/kiwi-descriptions/suse/x86_64/suse-leap-15.1-JeOS \
--target-dir /home/mraz/Documents
[sudo] password for root:
[ INFO    ]: 21:56:42 | Loading XML description
[ INFO    ]: 21:56:42 | --> loaded /home/mraz/github/kiwi-descriptions/suse/x86_64/suse-l
[ INFO    ]: 21:56:42 | --> Selected build type: vmx
[ INFO    ]: 21:56:42 | Preparing new root system
[ INFO    ]: 21:56:42 | Setup root directory: /home/mraz/Documents/build/image-root
[ INFO    ]: 21:56:42 | Setting up repository obs://Virtualization:Appliances:Builder/ope
[ INFO    ]: 21:56:42 | --> Type: rpm-md
[ INFO    ]: 21:56:42 | --> Priority: 1
[ INFO    ]: 21:56:45 | --> Translated: http://download.opensuse.org/repositories/Virtual
[ INFO    ]: 21:56:45 | --> Alias: kiwi
[ INFO    ]: 21:56:45 | Setting up repository obs://openSUSE:Leap:15.1/standard
[ INFO    ]: 21:56:45 | --> Type: rpm-md
[ INFO    ]: 21:56:46 | --> Translated: http://download.opensuse.org/distribution/leap/15
[ INFO    ]: 21:56:46 | --> Alias: Leap_15_1
[ INFO    ]: 21:56:46 | Setting up repository http://repo.opensuse.id/distribution/leap/1
[ INFO    ]: 21:56:46 | --> Type: rpm-md
[ INFO    ]: 21:56:46 | --> Priority: 1
[ INFO    ]: 21:56:46 | --> Translated: http://repo.opensuse.id/distribution/leap/15.1/re
```


mraz : sudo kiwi-ng — Konsole
[INFO]: 21:57:38 | --> package: less
[INFO]: 21:57:38 | --> package: lsb-release
[INFO]: 21:57:38 | --> package: lvm2
[INFO]: 21:57:38 | --> package: openssh
[INFO]: 21:57:38 | --> package: parted
[INFO]: 21:57:38 | --> package: patterns-openSUSE-base
[INFO]: 21:57:38 | --> package: perl
[INFO]: 21:57:38 | --> package: plymouth
[INFO]: 21:57:38 | --> package: plymouth-branding-openSUSE
[INFO]: 21:57:38 | --> package: plymouth-dracut
[INFO]: 21:57:38 | --> package: python
[INFO]: 21:57:38 | --> package: shim
[INFO]: 21:57:38 | --> package: sudo
[INFO]: 21:57:38 | --> package: syslinux
[INFO]: 21:57:38 | --> package: tar
[INFO]: 21:57:38 | --> package: timezone
[INFO]: 21:57:38 | --> package: unzip
[INFO]: 21:57:38 | --> package: vim
[INFO]: 21:57:38 | --> package: which
[INFO]: 21:57:38 | --> package: xorg-x11-server
[INFO]: 21:57:38 | --> package: yast2
[INFO]: Processing: [####################   ] 47%


mraz : sudo kiwi-ng — Konsole
[INFO]: 21:59:12 | Creating .profile environment
[INFO]: 21:59:13 | Importing Image description to system tree
[INFO]: 21:59:13 | --> Importing state XML description as image/config.xml
[INFO]: 21:59:13 | --> Importing config.sh script as image/config.sh
[INFO]: 21:59:13 | --> Importing script helper functions
[INFO]: 21:59:13 | Copying user defined files to image tree
[INFO]: 21:59:13 | Setting up user mraz
[INFO]: 21:59:13 | --> Adding user: mraz [users]
[INFO]: 21:59:13 | --> Setting permissions for /home/mraz
[INFO]: 21:59:13 | Setting up user root
[INFO]: 21:59:13 | --> Modifying user: root [root]
[INFO]: 21:59:13 | Setting up keytable: us
[INFO]: 21:59:13 | Setting up locale: en_US
[INFO]: 21:59:13 | Setting up timezone: Asia/Jakarta
[INFO]: 21:59:13 | Check/Fix File Permissions
[INFO]: 21:59:14 | Setting up image repository obs://openSUSE:Leap:15.1/standard
[INFO]: 21:59:14 | --> Type: rpm-md
[INFO]: 21:59:14 | --> Translated: http://download.opensuse.org/distribution/leap/15
.1/repo/oss/
[INFO]: 21:59:14 | --> Alias: Leap_15_1
[INFO]: 21:59:14 | Setting up image repository http://repo.opensuse.id/distribution/
leap/15.1/repo/oss/


mraz : zsh — Konsole
[INFO]: 22:00:31 | Installing grub2 on disk /dev/loop0
[INFO]: 22:00:34 | Cleaning up BootLoaderInstallGrub2 instance
[INFO]: 22:00:34 | Export rpm packages metadata
[INFO]: 22:00:35 | Export rpm verification metadata
[INFO]: 22:00:59 | Cleaning up BootImageDracut instance
[INFO]: 22:00:59 | Cleaning up FileSystemExt4 instance
[INFO]: 22:00:59 | Cleaning up FileSystemFat16 instance
[INFO]: 22:00:59 | Cleaning up Disk instance
[INFO]: 22:00:59 | Cleaning up LoopDevice instance
[INFO]: 22:00:59 | Cleaning up BootImageDracut instance
[INFO]: 22:00:59 | Cleaning up BootImageDracut instance
[INFO]: 22:00:59 | Result files:
[INFO]: 22:00:59 | --> disk_image: /home/mraz/Documents/openSUSE-LimeJeOS-Leap-15.1.
x86_64-15.1.raw
[INFO]: 22:00:59 | --> image_packages: /home/mraz/Documents/openSUSE-LimeJeOS-Leap-1
5.1.x86_64-15.1.packages
[INFO]: 22:00:59 | --> image_verified: /home/mraz/Documents/openSUSE-LimeJeOS-Leap-1
5.1.x86_64-15.1.verified
[INFO]: 22:00:59 | Cleaning up BootImageDracut instance
mraz @ bunny in ~ [22:00:59]
$



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