**oz使用文档**

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# 文档说明

## 本文档目的

* 本文档是在谢绍金的分享文档(oz)基础上对oz的实际操作做进一步介绍。

所以需要两篇文档结合阅读，文档地址

<http://doc.hz.netease.com/download/attachments/37299646/oz.pdf>

* 使用oz工具创建镜像的实际操作过程。
* 总结在使用的过程中出现的各种错误，方便排查。

## 

## 本文档要达成的目标

* 学会oz工具在debian系统下的初步操作.
* 本文档只是oz使用的初步，后续会进一步完善并充实本文档。

## 几点说明

* 目前oz在云计算环境下的虚拟机中无法成功运行。
* 尽量直接运行（非安装包）的方式运行，这样比较灵活，每个用户都可以有一套环境.
* 本文档并不包含tdl文件的高级用法.

# 安装包运行

要安装oz到系统目录，需要root权限。安装完毕之后，跟其他应用程序使用方式一样：非root用户也可以使用oz、可以使用oz命令的man手册。

## 代码下载

下载代码，并切换到对应分支.

hzsunzixiang@10-120-120-23:~/program$ git clone https://github.com/frots/oz.git

Cloning into 'oz'...

remote: Counting objects: 4927, done.

remote: Compressing objects: 100% (1824/1824), done.

remote: Total 4927 (delta 3055), reused 4927 (delta 3055)

Receiving objects: 100% (4927/4927), 2.84 MiB | 486 KiB/s, done.

Resolving deltas: 100% (3055/3055), done.

hzsunzixiang@10-120-120-23:~/program$ cd oz

hzsunzixiang@10-120-120-23:~/program/oz$ git branch -a

\* master

remotes/origin/HEAD -> origin/master

remotes/origin/debian-customize

remotes/origin/lxml

remotes/origin/master

remotes/origin/proxy

remotes/origin/win2k8customize

hzsunzixiang@10-120-120-23:~/program/oz$ git checkout debian-customize

Branch debian-customize set up to track remote branch debian-customize from origin.

Switched to a new branch 'debian-customize'

hzsunzixiang@10-120-120-23:~/program/oz$ git branch

\* debian-customize

master

## 安装

### 安装

oz安装方式为python程序的包安装方式。

<http://docs.python.org/2/install/>

hzsunzixiang@10-120-120-23:~/program/oz$ sudo python setup.py install

running install

running build

running build\_py

running build\_scripts

running install\_lib

…….

hzsunzixiang@10-120-120-23:~/program/oz$ oz-install -v

option -v not recognized

Usage: oz-install [OPTIONS] <tdl>

### 软件依赖

oz依赖若干安装包，在一个从未运行过libvirt、kvm、oz的系统上，需要安装一些安装包。否则运行oz命令行会失败。

在缺少一些安装包时，oz会给出提示，按照提示，安装python开头的安装包

root@debian:~/program# oz-install -h

Traceback (most recent call last):

  File "/usr/local/bin/oz-install", line 25, in <module>

    import oz.TDL

  File "/usr/local/lib/python2.7/dist-packages/oz/TDL.py", line 22, in <module>

    import libxml2

ImportError: No module named libxml2

root@debian:~/program/oz# aptitude install python-libxml2

其中安装包genisoimage在运行的过程中才会提示。

依赖的安装包大致有

python-libxml2

python-pycurl

python-libvirt

python-guestfs

python-m2crypto

genisoimage

## 运行方式

Oz的运行可以是任何用户，但要保证oz运行过程中所访问的文件权限适当，具体可以参考[第四部分](#_各种出错情况处理)内容.oz的各个命令可以参考man手册.

* 对于root用户，oz默认的oz.cfg配置文件位于/etc/oz/oz.cfg，非root默认配置文件位于~/.oz/oz.cfg，通过-c选项可以配置文件路径。如果文件路径不存在，需要手工创建。

配置文件中指定安装镜像存放目录、log存放目录；libvirt的配置等。

* oz的运行需要指定一个tdl文件，以指定安装的操作系统类型、原始镜像存放路径等.

## 实例演示

* 准备配置文件

其中特别注意可访问文件权限问题,具体参考[第四部分](#_各种出错情况处理)内容

hzsunzixiang@10-120-120-23:~/program/oz$ cat /etc/oz/oz.cfg

[paths]

output\_dir = /data/oz/images

data\_dir = /var/lib/oz

screenshot\_dir = /data/oz/screenshots

[libvirt]

uri = qemu:///system

#image\_type = qcow2

image\_type = raw

type = kvm

bridge\_name = virbr0

cpus = 4

memory = 4096

[cache]

original\_media = yes

modified\_media = no

jeos = no

[icicle]

safe\_generation = no

* 准备tdl文件

注意文件中对应的镜像（url或者目录）是存在的。

hzsunzixiang@10-120-120-23:~/program/oz$ cat examples/debian.tdl

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

<template>

<name>debian7\_x86\_64</name>

<description>debian7 x86\_64 template</description>

<disk>

<size>20</size>

</disk>

<os>

<name>Debian</name>

<version>7</version>

<arch>x86\_64</arch>

<rootpw>qwerty</rootpw>

<install type="iso">

<!--<iso>http://mirrors.sohu.com/debian-cd/7.3.0/amd64/iso-cd/debian-7.3.0-amd64-CD-1.iso</iso>-->

<iso>file:////home/hzsunzixiang/program/oz/images/debian-7.4.0-amd64-CD-1.iso</iso>

</install>

</os>

<packages>

<package name="openssh-server"/>

</packages>

<commands>

<command name="other"> <![CDATA[

sed-i'/^GRUB\_CMDLINE\_LINUX\_DEFAULT/s/="/="console=ttyS0 /' /etc/default/grub

update-grub

]]> </command>

</commands>

</template>

* 运行

hzsunzixiang@10-120-120-23:~/program/oz$oz-install -c /etc/oz/oz.cfg -d4 examples/debian.tdl

# oz.cfg可以放在任何有权限访问的目录下

# 直接运行

oz是python脚本语言开发，可以在不安装的情况下使用。

## 代码下载

下载代码，并切换到对应分支.

## 运行

在不安装的情况下可以直接运行。

示例如下

hzsunzixiang@10-120-120-23:~/program/oz$ ./oz-install -c ./oz.cfg -d4 examples/debian.tdl

# 各种出错情况处理

## 网桥配置

如果安装过程中报如下错误，可以按照提示把default网桥启动起来。

Traceback (most recent call last):

  File "/usr/local/bin/oz-install", line 150, in <module>

    netdev, diskbus, macaddress)

  File "/usr/local/lib/python2.7/dist-packages/oz/GuestFactory.py", line 96, in guest\_factory

    diskbus, macaddress)

  File "/usr/local/lib/python2.7/dist-packages/oz/Fedora.py", line 106, in get\_class

    output\_disk, macaddress)

  File "/usr/local/lib/python2.7/dist-packages/oz/Fedora.py", line 44, in \_\_init\_\_

    macaddress)

  File "/usr/local/lib/python2.7/dist-packages/oz/RedHat.py", line 47, in \_\_init\_\_

    url\_allowed, macaddress)

  File "/usr/local/lib/python2.7/dist-packages/oz/Guest.py", line 1421, in \_\_init\_\_

    url\_allowed, macaddress)

  File "/usr/local/lib/python2.7/dist-packages/oz/Guest.py", line 225, in \_\_init\_\_

    self.connect\_to\_libvirt()

  File "/usr/local/lib/python2.7/dist-packages/oz/Guest.py", line 125, in connect\_to\_libvirt

    self.\_discover\_libvirt\_bridge()

  File "/usr/local/lib/python2.7/dist-packages/oz/Guest.py", line 108, in \_discover\_libvirt\_bridge

    raise oz.OzException.OzException("Could not find a libvirt bridge. Please run 'virsh net-start default' to start the default libvirt network, or see http://github.com/clalancette/oz/wiki/Oz-Network-Configuration for more information")

oz.OzException.OzException: Could not find a libvirt bridge. Please run 'virsh net-start default' to start the default libvirt network, or see http://github.com/clalancette/oz/wiki/Oz-Network-Configuration for more information

## 文件权限

* 无文件访问权限

DEBUG:oz.Guest.DebianGuest:libvirt bridge name is virbr0

DEBUG:oz.Guest.DebianGuest:Libvirt type is kvm

Traceback (most recent call last):

File "/usr/local/bin/oz-install", line 150, in <module>

netdev, diskbus, macaddress)

File "/usr/local/lib/python2.7/dist-packages/oz/GuestFactory.py", line 96, in guest\_factory

diskbus, macaddress)

File "/usr/local/lib/python2.7/dist-packages/oz/Debian.py", line 823, in get\_class

macaddress)

File "/usr/local/lib/python2.7/dist-packages/oz/Debian.py", line 41, in \_\_init\_\_

macaddress)

File "/usr/local/lib/python2.7/dist-packages/oz/Guest.py", line 1421, in \_\_init\_\_

url\_allowed, macaddress)

File "/usr/local/lib/python2.7/dist-packages/oz/Guest.py", line 255, in \_\_init\_\_

oz.ozutil.mkdir\_p(self.icicle\_tmp)

File "/usr/local/lib/python2.7/dist-packages/oz/ozutil.py", line 472, in mkdir\_p

os.makedirs(path)

File "/usr/lib/python2.7/os.py", line 157, in makedirs

mkdir(name, mode)

OSError: [Errno 13] Permission denied: '/var/lib/oz/icicletmp/debian7\_x86\_64'

遇到这种错误，只需解决对应的文件权限问题即可.

## 安装超时

* 安装过程中，如果镜像比较大，特别是创建raw格式的镜像，可能会发生超时。错误信息如下：

INFO:oz.Guest.DebianGuest:Cleaning up guest named debian7\_x86\_64

INFO:oz.Guest.DebianGuest:Cleaning up after install

Traceback (most recent call last):

File "./oz-install", line 162, in <module>

libvirt\_xml = guest.install(timeout, force\_download)

File "/home/hzsunzixiang/program/oz/oz/Debian.py", line 169, in install

self.initrdfname, self.cmdline)

File "/home/hzsunzixiang/program/oz/oz/Guest.py", line 1701, in \_do\_install

self.\_wait\_for\_install\_finish(dom, timeout)

File "/home/hzsunzixiang/program/oz/oz/Guest.py", line 812, in \_wait\_for\_install\_finish

raise oz.OzException.OzException("Timed out waiting for install to finish. %s" % (screenshot\_text))

oz.OzException.OzException: Timed out waiting for install to finish. Check screenshot at /home/data/oz/screenshots1/debian7\_x86\_64-1394445580.62.ppm for more detail

* 查看其帮助，有调整其超时时间的选项。

-t <timeout>

Terminate the installation of the guest in timeout secondsrather than the oz default. This value should be increased if runningon slow storage or running multiple oz-install operations on the samemachine.

Please note that there is a separate termination action that occurs if300 seconds elapses with no disk activity to the operating system.This timer value is not configurable.

* 如果指定了-t选项仍然超时，就需要修改源码了。

hzsunzixiang@10-120-120-23:~/program/oz$ grep inactivity\_timeout=300 oz/Guest.py

inactivity\_timeout=300):

把默认值300改为一个较大的值，譬如3600.

## 其他错误

运行过程中还可能出现其他错误，一般都有提示，可以按提示做相应操作。