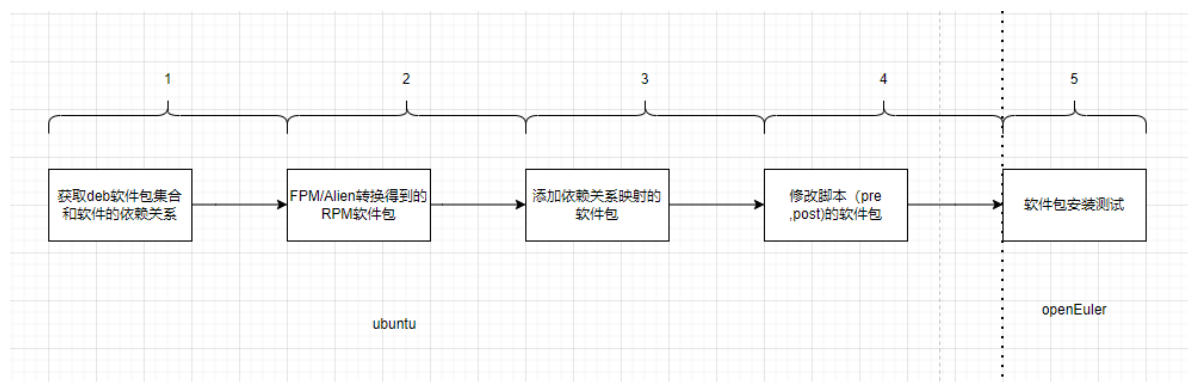


ubuntu迁移工具demo

目的

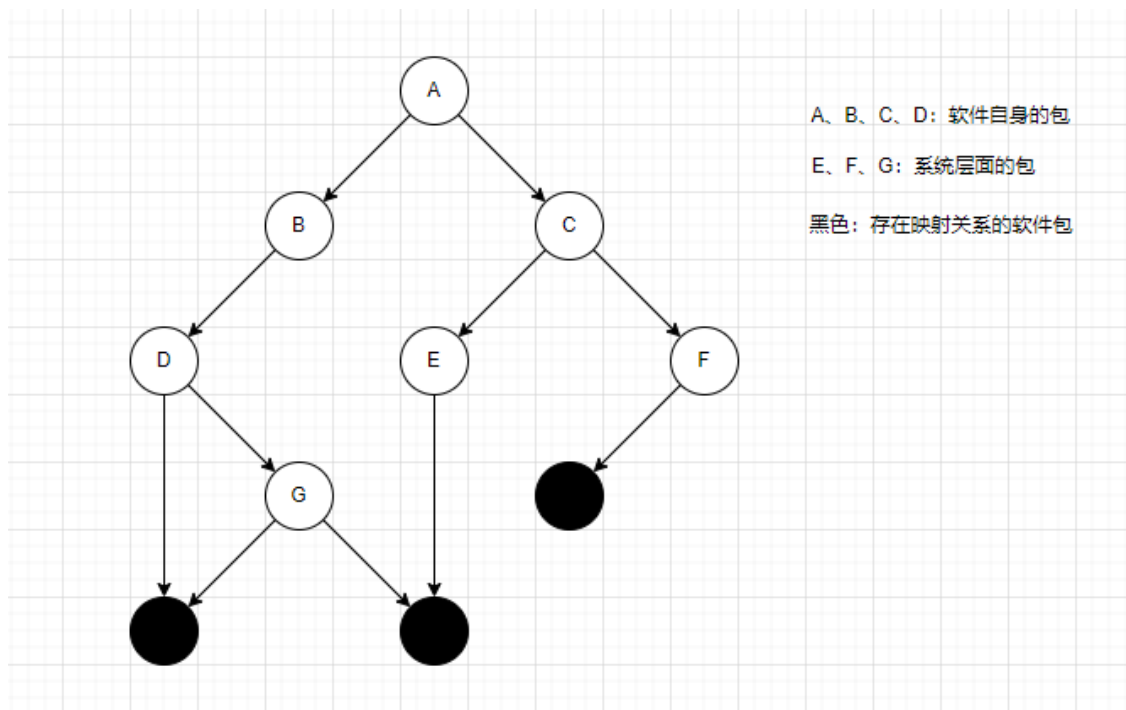
- 将ubuntu下的软件转换成openEuler下的软件，同时能够正常运行

流程图



步骤1（完成度80%）

- 获取软件的依赖关系(整个系统的依赖关系 + 目标软件的依赖关系)
 - 过滤 dpkg的数据库文件
 - 强连通分量缩点形成DAG图，给每一个依赖计算深度
- 确认需要转换的软件包



- 任意一个软件都可以找到一棵对应的依赖图
- 将存在映射关系的软件包 以及 白名单（与deb强相关的包，例如debconf, dpkg, debianutils）中的软件包，标黑色，一定能得到一个被黑色截断的图
- 根据依赖图重新组装软件的映射关系

- 获取deb软件包的集合
 - 手动输入强关联的包
 - wget获取系统层面的包

步骤2 (完成度100%)

AutoReq(未采用)

- fpm 控制require的参数

```
--[no-]rpm-autoreq      (rpm only) Enable RPM's AutoReq option
--[no-]rpm-autoprov     (rpm only) Enable RPM's AutoProv option
```

- [Maximum RPM: Taking the RPM Package Manager to the Limit](#)

```
#!/bin/sh
# note this works for both a.out and ELF executables
ulimit -c 0
filelist=`xargs -r file | fgrep executable | cut -d: -f1`
for f in $filelist; do
    ldd $f | awk '/=>/ { print $1 }'
done | sort -u | xargs -r -n 1 basename | sort -u
```

依赖关系的方向(往那个风格走?)

ubuntu

```
root@wangzheng-Virtual-Machine:~/rebuild/nginx# dpkg --info nginx-core_1.14.0-0ubuntu1.11_amd64.deb
.....
Depends: iproute2, libnginx-mod-http-geoip (= 1.14.0-0ubuntu1.11), libnginx-mod-http-image-filter (= 1.14.0-0ubuntu1.11), libnginx-mod-http-xslt-filter (= 1.14.0-0ubuntu1.11), libnginx-mod-mail (= 1.14.0-0ubuntu1.11), libnginx-mod-stream (= 1.14.0-0ubuntu1.11), nginx-common (= 1.14.0-0ubuntu1.11), libc6 (>= 2.27), libpcre3, libssl1.1 (>= 1.1.0), zlib1g (>= 1:1.1.4)
Provides: httpd, httpd-cgi, nginx
.....
```

```
root@wangzheng-Virtual-Machine:~/rebuild/nginx# dpkg -s libc6
Package: libc6
Status: install ok installed
Priority: required
Section: libs
Installed-Size: 11886
Maintainer: Ubuntu Developers <ubuntu-devel-discuss@lists.ubuntu.com>
Architecture: amd64
Multi-Arch: same
Source: glibc
```

```
Version: 2.27-3ubuntu1.6
Replaces: libc6-amd64
Depends: libgcc1
Suggests: glibc-doc, debconf | debconf-2.0, locales
Breaks: hurd (<< 1:0.5.git20140203-1), libtirpc1 (<< 0.2.3), locales (<< 2.27),
locales-all (<< 2.27), nscd (<< 2.27)
Conflicts: openrc (<< 0.27-2~)
```

openEuler

```
[root@localhost nginx_rpm]# rpm -q --requires glibc
/usr/sbin/glibc_post_upgrade.x86_64
basesystem
config(glibc) = 2.28-49.oe1
glibc-common = 2.28-49.oe1
glibc-langpack = 2.28-49.oe1
ld-linux-x86-64.so.2()(64bit)
ld-linux-x86-64.so.2(GLIBC_2.2.5)(64bit)
ld-linux-x86-64.so.2(GLIBC_2.3)(64bit)
libcNS.so()(64bit)
libGB.so()(64bit)
libISOIR165.so()(64bit)
libJIS.so()(64bit)
libJISX0213.so()(64bit)
libKSC.so()(64bit)
.....
```

```
[root@localhost nginx_rpm]# rpm -q --provides glibc
bundled(gnu lib)
config(glibc) = 2.28-49.oe1
glibc = 2.28-49.oe1
glibc(x86-64) = 2.28-49.oe1
ld-linux-x86-64.so.2()(64bit)
ld-linux-x86-64.so.2(GLIBC_2.2.5)(64bit)
ld-linux-x86-64.so.2(GLIBC_2.3)(64bit)
ld-linux-x86-64.so.2(GLIBC_2.4)(64bit)
ldconfig
libBrokenLocale.so.1()(64bit)
libBrokenLocale.so.1(GLIBC_2.2.5)(64bit)
libcNS.so()(64bit)
libGB.so()(64bit)
libISOIR165.so()(64bit)
libJIS.so()(64bit)
libJISX0213.so()(64bit)
libKSC.so()(64bit)
libSegFault.so()(64bit)
libanl.so.1()(64bit)
libanl.so.1(GLIBC_2.2.5)(64bit)
```

步骤3 (完成度100%)

现状

- 假设前提
 - json文件中的映射关系完全正确，且对于依赖关系映射A: B，一定有A <= B
 - 映射关系都是 1对1
 - 不考虑 **依赖关系的版本限制**，而且依赖关系仅限制在 pre-depends和depends
- 根据步骤1得到的依赖图，重新组装依赖关系
 - G、F：直接根据映射关系替换依赖
 - A、B、C：用转换后的rpm包的名字替换依赖关系
- 映射关系使用的之前按照 so对应得出来的映射关系，和一部分手动添加的映射关系

```
root@wangzheng-Virtual-Machine:~/rebuild/nginx_rpm# rpm -qpR nginx-core-1.14.0-0ubuntu1.11.x86_64.rpm
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
glibc
iproute
libnginx-mod-http-geoip
libnginx-mod-http-image-filter
libnginx-mod-http-xslt-filter
libnginx-mod-mail
libnginx-mod-stream
libpcre3
nginx-common
openssl-libs
rpmLib(CompressedFileNames) <= 3.0.4-1
rpmLib(PayloadFilesHavePrefix) <= 4.0-1
zlib
```

```
root@wangzheng-Virtual-Machine:~/rebuild/nginx# dpkg --info nginx-core_1.14.0-0ubuntu1.11_amd64.deb | grep Depends
Depends: iproute2, libnginx-mod-http-geoip (= 1.14.0-0ubuntu1.11), libnginx-mod-http-image-filter (= 1.14.0-0ubuntu1.11), libnginx-mod-http-xslt-filter (= 1.14.0-0ubuntu1.11), libnginx-mod-mail (= 1.14.0-0ubuntu1.11), libnginx-mod-stream (= 1.14.0-0ubuntu1.11), nginx-common (= 1.14.0-0ubuntu1.11), libc6 (>= 2.27), libpcre3, libssl1.1 (>= 1.1.0), zlib1g (>= 1:1.1.4)
```

计划

- 遍历ubuntu的软件包，根据每个软件提供的二进制脚本和so文件，去openEuler下过滤
- 得到的结果可能是一对多的形式
- 版本限制有没有必要加进去？
 - 因为经过映射之后，deb的version 变成了 rpm的 version + release

步骤4（完成度0%）转换后spec中存在不兼容脚本

情况分类

- openEuler中存在相同的功能，但名字不同，--flag存在不同

```
mysql-server-5.7-5.7.40-0ubuntu0.18.04.1.x86_64.rpm



```
%pre -p /bin/sh
.....
creating mysql group if he isn't already there
if ! getent group mysql >/dev/null; then
 # Adding system group: mysql.
 addgroup --system mysql >/dev/null
fi

creating mysql user if he isn't already there
if ! getent passwd mysql >/dev/null; then
 # Adding system user: mysql.
 adduser \
 --system \
 --disabled-login \
 --ingroup mysql \
 --no-create-home \
 --home /nonexistent \
 --gecos "MySQL Server" \
 --shell /bin/false \
 mysql >/dev/null
fi
.....
```


```

- openEuler中不存在的，与debian体系下dpkg相关的命令

```
mysql-common-5.8+1.0.4-1.noarch.rpm


```


```


```

```
lsb-base-9.20170808ubuntu1-1.noarch.rpm


```


```


```

数据统计

- 样本: `/var/cache/apt/archives/` 下485个包的 'preinst', 'postinst', 'postrm', 'prerm'
- 分别检索 `dpkg` 软件包提供的命令行 被调用次数

命令行	出现次数
dpkg	131
dpkg-maintscript-helper	32
dpkg-query	3
dpkg-statoverride	18
update-alternatives	93

- 命令行覆盖

```
dpkg --compare-versions
dpkg --print-architecture
dpkg --assert-multi-arch
dpkg -L
```

```
dpkg -s

dpkg-statoverride --list
dpkg-statoverride --remove
dpkg-statoverride --update --add

dpkg-maintscript-helper rm_conffile
dpkg-statoverride --remove
dpkg-query -f

update-alternatives --remove
update-alternatives --install
update-alternatives --quiet --remove
update-alternatives --remove-all
update-alternatives --auto
```

- 命令行解释

`dpkg-statoverride`命令用于Debian Linux中覆盖文件的所有权和模式，让`dpkg`于包安装时使得文件所有权与模式失效。

命令：

```
--add <所有者> <用户组> <权限位> <文件名>
                                在数据库中加入一个新的 <路径>。
--remove <文件名>              将 <路径> 从数据库中删除。
--list [<glob 模式>]          列出当前数据库中的 override 条目。
```

选项：

```
--admindir <目录>             设置 statoverride 文件的目录。
--update                       立即更新 <路径> 的权限。
--force                       就算没有通过自检，也强制执行操作。
--quiet                       安静模式，输出尽可能少的信息。不显示输出信息。
--help                       显示本帮助信息。
--version                     显示版本信息。
```

`dpkg-maintscript-helper rm_conffile`

Note: This can be replaced in most cases by the
"remove-on-upgrade" flag in DEBIAN/conffiles (since dpkg 1.20.6),
see deb-conffiles(5).

If a conffile is completely removed, it should be removed from disk, unless the user has modified it. If there are local modifications, they should be preserved. If the package upgrades aborts, the newly obsolete conffile should not disappear.

All of this is implemented by putting the following shell snippet in the preinst, postinst and postrm maintainer scripts:

```
dpkg-maintscript-helper rm_conffile \
    conffile prior-version package -- "$@"
```

conffile is the filename of the conffile to remove.

Current implementation: **in** the preinst, it checks **if** the conffile was modified and renames it either to conffile.dpkg-remove (if not modified) or to conffile.dpkg-backup (if modified). In the postinst, the latter file is renamed to conffile.dpkg-bak and kept **for** reference as it contains user modifications but the former will be removed. If the package upgrade aborts, the postrm reinstalls the original conffile. During purge, the postrm will also delete the .dpkg-bak file kept up to now.

用法: `update-alternatives` [`<选项>` ...] `<命令>`

命令:

```
--install <链接> <名称> <路径> <优先级>
[--slave <链接> <名称> <路径>] ...
    在系统中加入一组候选项。

--remove <名称> <路径>    从 <名称> 替换组中去除 <路径> 项。
--remove-all <名称>      从替换系统中删除 <名称> 替换组。
--auto <名称>             将 <名称> 的主链接切换到自动模式。
--display <名称>          显示关于 <名称> 替换组的信息。
--query <名称>            机器可读版的 --display <名称>。
--list <名称>             列出 <名称> 替换组中所有的可用候选项。
--get-selections           列出主要候选项名称以及它们的状态。
--set-selections           从标准输入中读入候选项的状态。
--config <名称>           列出 <名称> 替换组中的可选项，并就使用其中
                           哪一个，征询用户的意见。

--set <名称> <路径>       将 <路径> 设置为 <名称> 的候选项。
--all                     对所有可选项一一调用 --config 命令。
```

`<链接>` 是指向 `/etc/alternatives/<名称>` 的符号链接。(如 `/usr/bin/pager`)

`<名称>` 是该链接替换组的主控名。(如 `pager`)

`<路径>` 是候选项目标文件的位置。(程序的实际路径)(如 `/usr/bin/less`)

`<优先级>` 是一个整数，在自动模式下，这个数字越高的选项，其优先级也就越高。

选项:

```
--altdir <目录>          改变候选项目录。
--admindir <目录>        设置 statoverride 文件的目录。
--log <文件>             改变日志文件。
--force                  就算没有通过自检，也强制执行操作。
--skip-auto              在自动模式中跳过设置正确候选项的提示
                           (只与 --config 有关)
--verbose                启用详细输出。
--quiet                  安静模式，输出尽可能少的信息。不显示输出信息。
--help                  显示本帮助信息。
--version                显示版本信息。
```

- [Linux中使用update-alternatives切换默认程序](#)

想法

- 自动化适配脚本
- 直接在openEuler上安装dpkg, 手动适配部分脚本
- 不解决, 直接删除, 留作风险, 让用户自己解决

步骤5（完成度0%）

- 暂未安装测试

结果展示

nginx

- 输入业务相关的包

```
✓ nginx
  ≡ libnginx-mod-http-geoip_1.14.0-0ubuntu1.11_amd64.deb
  ≡ libnginx-mod-http-image-filter_1.14.0-0ubuntu1.11_amd64.deb
  ≡ libnginx-mod-http-xslt-filter_1.14.0-0ubuntu1.11_amd64.deb
  ≡ libnginx-mod-mail_1.14.0-0ubuntu1.11_amd64.deb
  ≡ libnginx-mod-stream_1.14.0-0ubuntu1.11_amd64.deb
  ≡ nginx_1.14.0-0ubuntu1.11_all.deb
  ≡ nginx-common_1.14.0-0ubuntu1.11_all.deb
  ≡ nginx-core_1.14.0-0ubuntu1.11_amd64.deb
```

- 运行py文件

```
root@wangzheng-Virtual-Machine:~/rebuild# python3 rebuild.py -s nginx
--2023-01-06 16:56:16-- https://mirrors.tools.huawei.com/ubuntu/pool/main/p/pcrc3/libpcrc3_8.39-9ubuntu0.1_amd64.deb
Resolving mirrors.tools.huawei.com (mirrors.tools.huawei.com)... 7.223.219.40, 7.223.219.58, 7.223.199.227, ...
Connecting to mirrors.tools.huawei.com (mirrors.tools.huawei.com)|7.223.219.40|:443... connected.
WARNING: cannot verify mirrors.tools.huawei.com's certificate, issued by 'CN=HWIT Enterprise CA 1':
  Unable to locally verify the issuer's authority.
HTTP request sent, awaiting response... 200 OK
Length: 230760 (225K) [application/octet-stream]
Saving to: '/root/rebuild/nginx/libpcrc3_8.39-9ubuntu0.1_amd64.deb'

libpcrc3_8.39-9ubuntu0.1_amd64.deb      100%[=====]
2023-01-06 16:56:17 (8.20 MB/s) - '/root/rebuild/nginx/libpcrc3_8.39-9ubuntu0.1_amd64.deb' saved [230760/230760]

--2023-01-06 16:56:17-- https://mirrors.tools.huawei.com/ubuntu/pool/main/l/lsb/lsb-base_9.20170808ubuntu1_all.deb
Resolving mirrors.tools.huawei.com (mirrors.tools.huawei.com)... 7.223.219.40, 7.223.219.58, 7.223.199.227, ...
Connecting to mirrors.tools.huawei.com (mirrors.tools.huawei.com)|7.223.219.40|:443... connected.
WARNING: cannot verify mirrors.tools.huawei.com's certificate, issued by 'CN=HWIT Enterprise CA 1':
  Unable to locally verify the issuer's authority.
HTTP request sent, awaiting response... 200 OK
Length: 12460 (12K) [application/octet-stream]
Saving to: '/root/rebuild/nginx/lsb-base_9.20170808ubuntu1_all.deb'

lsb-base_9.20170808ubuntu1_all.deb    100%[=====]
2023-01-06 16:56:17 (259 MB/s) - '/root/rebuild/nginx/lsb-base_9.20170808ubuntu1_all.deb' saved [12460/12460]

Created package {path=>"/root/rebuild/libpcrc3_work/libpcrc3-8.39-9ubuntu0.1.x86_64.rpm"}
Force flag given. Overwriting package at /root/rebuild/libpcrc3_work/libpcrc3-8.39-9ubuntu0.1.x86_64.rpm {:level=>:warn}
Created package {path=>"/root/rebuild/libpcrc3_work/libpcrc3-8.39-9ubuntu0.1.x86_64.rpm"}
Created package {path=>"/root/rebuild/lsb-base_work/lsb-base-9.20170808ubuntu1-1.noarch.rpm"}
```

- 得到结果（业务本身软件 + 系统差异软件 + 安装脚本）

```

v nginx_rpm
  ≡ libnginx-mod-http-geoip-1.14.0-0ubuntu1.11.x86_64.rpm
  ≡ libnginx-mod-http-image-filter-1.14.0-0ubuntu1.11.x86_64.rpm
  ≡ libnginx-mod-http-xslt-filter-1.14.0-0ubuntu1.11.x86_64.rpm
  ≡ libnginx-mod-mail-1.14.0-0ubuntu1.11.x86_64.rpm
  ≡ libnginx-mod-stream-1.14.0-0ubuntu1.11.x86_64.rpm
  ≡ libpcre3-8.39-9ubuntu0.1.x86_64.rpm
  ≡ lsb-base-9.20170808ubuntu1-1.noarch.rpm
  $ nginx_install.sh
  ≡ nginx-1.14.0-0ubuntu1.11.noarch.rpm
  ≡ nginx-common-1.14.0-0ubuntu1.11.noarch.rpm
  ≡ nginx-core-1.14.0-0ubuntu1.11.x86_64.rpm

```

- nginx_install.sh(目的是确定软件包的安装顺序, 处于依赖树更底层的软件包应该优先被安装)

```

rpm -ivh libpcre3-8.39-9ubuntu0.1.x86_64.rpm
rpm -ivh lsb-base-9.20170808ubuntu1-1.noarch.rpm
rpm -ivh nginx-common-1.14.0-0ubuntu1.11.noarch.rpm
rpm -ivh libnginx-mod-http-geoip-1.14.0-0ubuntu1.11.x86_64.rpm
rpm -ivh libnginx-mod-http-image-filter-1.14.0-0ubuntu1.11.x86_64.rpm
rpm -ivh libnginx-mod-http-xslt-filter-1.14.0-0ubuntu1.11.x86_64.rpm
rpm -ivh libnginx-mod-mail-1.14.0-0ubuntu1.11.x86_64.rpm
rpm -ivh libnginx-mod-stream-1.14.0-0ubuntu1.11.x86_64.rpm
rpm -ivh nginx-core-1.14.0-0ubuntu1.11.x86_64.rpm
rpm -ivh nginx-1.14.0-0ubuntu1.11.noarch.rpm

```

- 验证软件包的依赖关系

- 转换后

```

root@wangzheng-Virtual-Machine:~/rebuild/nginx_rpm# rpm -qpR libpcre3-8.39-9ubuntu0.1.x86_64.rpm
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
glibc
rpmlib(CompressedFileNames) <= 3.0.4-1
rpmlib(PayloadFilesHavePrefix) <= 4.0-1

root@wangzheng-Virtual-Machine:~/rebuild/nginx_rpm# rpm -qpR nginx-core-1.14.0-0ubuntu1.11.x86_64.rpm
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
/bin/sh
glibc

```

```
iproute
libnginx-mod-http-geoip
libnginx-mod-http-image-filter
libnginx-mod-http-xslt-filter
libnginx-mod-mail
libnginx-mod-stream
libpcre3
nginx-common
openssl-libs
rpmLib(CompressedFileNames) <= 3.0.4-1
rpmLib(PayloadFilesHavePrefix) <= 4.0-1
zlib
```

- 转换前

```
root@wangzheng-Virtual-Machine:~/rebuild/nginx# dpkg --info libpcre3_8.39-9ubuntu0.1_amd64.deb | grep Depends
Depends: libc6 (>= 2.14)

root@wangzheng-Virtual-Machine:~/rebuild/nginx# dpkg --info nginx-core_1.14.0-0ubuntu1.11_amd64.deb | grep Depends
Depends: iproute2, libnginx-mod-http-geoip (= 1.14.0-0ubuntu1.11), libnginx-mod-http-image-filter (= 1.14.0-0ubuntu1.11), libnginx-mod-http-xslt-filter (= 1.14.0-0ubuntu1.11), libnginx-mod-mail (= 1.14.0-0ubuntu1.11), libnginx-mod-stream (= 1.14.0-0ubuntu1.11), nginx-common (= 1.14.0-0ubuntu1.11), libc6 (>= 2.27), libpcre3, libssl1.1 (>= 1.1.0), zlib1g (>= 1:1.1.4)
```

redis

- 结果相似

相关命令

```
rpm -qpR
dpkg -I | grep Depends
```

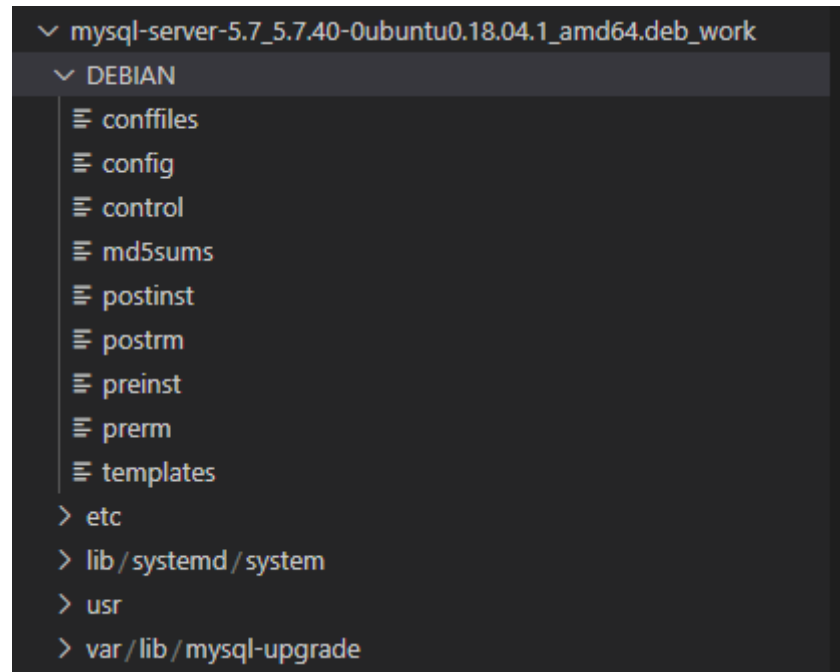
全局对比

以nginx-core为例子

deb	转换后的rpm
Package: nginx-core	Name : nginx-core
Source: nginx	
Version: 1.14.0-0ubuntu1.11	Version : 1.14.0
	Release : 0ubuntu1.11
Architecture: amd64	Architecture: x86_64
	Install Date: (not installed)
Section: httpd	Group : httpd
Maintainer: Ubuntu Developers ubuntu-devel-discuss@lists.ubuntu.com	
Installed-Size: 1176	Size : 1160302
	License : unknown
	Signature : (none)
	Build Date : 2023年01月10日 星期二 15时20分10秒
	Build Host : wangzheng-Virtual-Machine
	Relocations : /
	Packager : root@wangzheng-Virtual-Machine
	Vendor : none
	URL : http://nginx.net
	Summary : nginx web/proxy server (standard version)

deb	转换后的rpm
<p>Depends: iproute2, libnginx-mod-http-geoip (= 1.14.0-0ubuntu1.11), libnginx-mod-http-image-filter (= 1.14.0-0ubuntu1.11), libnginx-mod-http-xslt-filter (= 1.14.0-0ubuntu1.11), libnginx-mod-mail (= 1.14.0-0ubuntu1.11), libnginx-mod-stream (= 1.14.0-0ubuntu1.11), nginx-common (= 1.14.0-0ubuntu1.11), libc6 (>= 2.27), libpcre3, libssl1.1 (>= 1.1.0), zlib1g (>= 1:1.1.4)</p>	<p>Requires: /bin/sh Requires: /bin/sh Requires: /bin/sh Requires(pre): /bin/sh Requires(post): /bin/sh Requires(preun): /bin/sh Requires(postun): /bin/sh Requires: /bin/sh Requires: glibc Requires: iproute Requires: libnginx-mod-http-geoip Requires: libnginx-mod-http-image-filter Requires: libnginx-mod-http-xslt-filter Requires: libnginx-mod-mail Requires: libnginx-mod-stream Requires: libpcre3 Requires: nginx-common Requires: openssl-libs #Requires: rpmllib(CompressedFileNames) <= 3.0.4-1 #Requires: rpmllib(PayloadFilesHavePrefix) <= 4.0-1 Requires: zlib</p>
Suggests: nginx-doc (= 1.14.0-0ubuntu1.11)	
Conflicts: nginx-extras, nginx-full, nginx-light	
Breaks: nginx (<< 1.4.5-1)	
Provides: httpd, httpd-cgi, nginx	<p>Provides: httpd Provides: httpd-cgi Provides: nginx Provides: nginx-core = 1.14.0-0ubuntu1.11 Provides: nginx-core(x86-64) = 1.14.0-0ubuntu1.11</p>
Priority:	
Homepage:	
Description:	Description:

RPM/DEB目录结构



```
[root@localhost ~]# tree rpmbuild/
rpmbuild/
├── BUILD
├── BUILDROOT
├── RPMS
│   ├── noarch
│   │   ├── 1sb-base-9.20170808ubuntu1-1.noarch.rpm
│   │   └── nginx-common-1.14.0-0ubuntu1.11.noarch.rpm
│   └── x86_64
│       └── libpcre3-8.39-9ubuntu0.1.x86_64.rpm
├── SOURCES
├── SPECS
│   ├── libnginx-mod-http-geoip-1.14.0-0ubuntu1.11.x86_64.SPEC
│   ├── libnginx-mod-http-image-filter-1.14.0-0ubuntu1.11.x86_64.SPEC
│   ├── libnginx-mod-http-xslt-filter-1.14.0-0ubuntu1.11.x86_64.SPEC
│   ├── libnginx-mod-mail-1.14.0-0ubuntu1.11.x86_64.SPEC
│   ├── libnginx-mod-stream-1.14.0-0ubuntu1.11.x86_64.SPEC
│   ├── nginx-1.14.0-0ubuntu1.11.noarch.SPEC
│   ├── nginx-common-1.14.0-0ubuntu1.11.noarch.SPEC
│   └── nginx-core-1.14.0-0ubuntu1.11.x86_64.SPEC
└── SRPMS
```