

Docker容器图形化界面显示

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Docker本身的工作模式是命令行的，但有时候我们会有在docker容器里运行一些图形界面的软件，或者要调用摄像头，输出图像等等一些需求，这个时候需要解决这个Docker可视化即界面显示的问题。

这里介绍Docker公司程序员Jessie Frazelle展示的图形界面镜像的方法，Jessie也开源了她展示的docker运行libreoffice软件的代码。

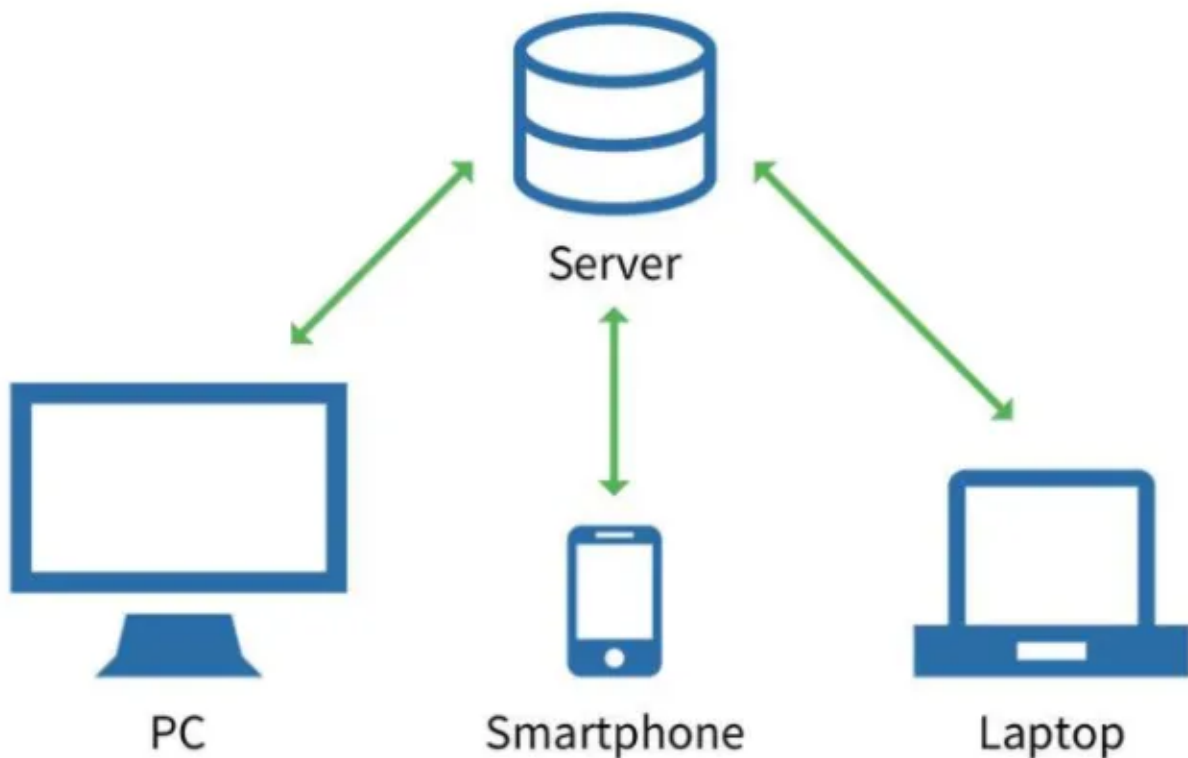
1.图形化原理介绍

简单原理上把docker镜像看做一台没配显示器的电脑，程序可以运行，但是没地方显示。

而linux目前的主流图像界面服务X11又支持客户端/服务端（Client/Server）的工作模式。

只要在容器启动的时候，将『unix:端口』或『主机名:端口』共享给docker，docker就可以通过端口找到显示输出的地方，和linux系统共用显示。

Client-Server Model



2.具体操作

Step1.在本地宿主机上安装x11界面服务

命令：

```
$ sudo apt-get install x11-xserver-utils
```

```
$ xhost +
```

这两句的作用是开放权限，允许所有用户，当然包括docker，访问X11的显示接口。

```
test01@test:~$ sudo apt-get install x11-xserver-utils
[sudo] password for test01:
Reading package lists... Done
Building dependency tree
Reading state information... Done
x11-xserver-utils is already the newest version (7.7+7build1).
x11-xserver-utils set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 40 not upgraded.
test01@test:~$ xhost +
access control disabled, clients can connect from any host
test01@test:~$
```

【备注】：xhost + 每次重新开机，需要在本机操作一次。

Step2. 在启动docker容器时，添加选项如下：

-v /tmp/.x11-unix:/tmp/.x11-unix \ #共享本地unix端口

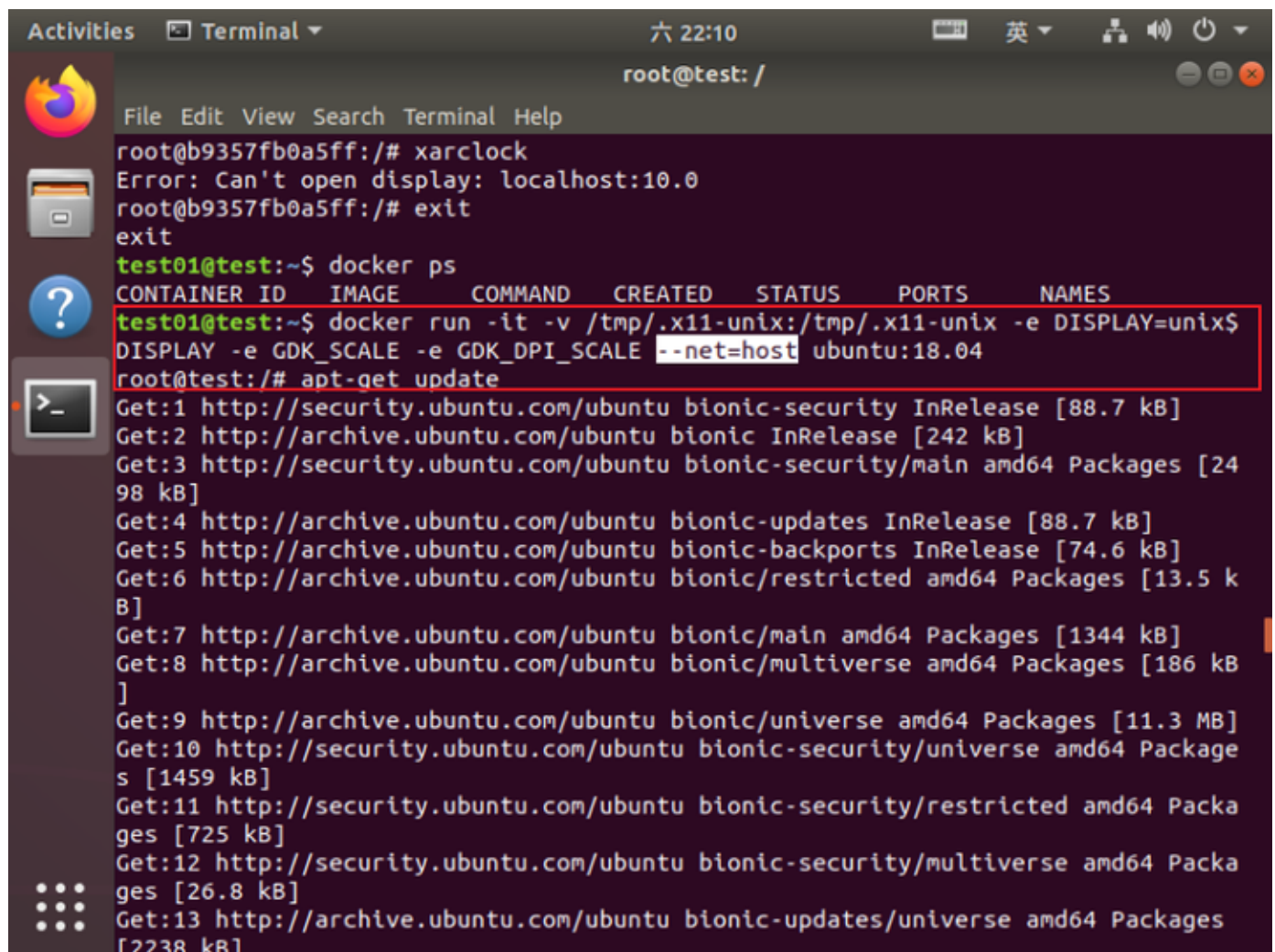
-e DISPLAY=unix\$DISPLAY \ #修改环境变量DISPLAY

-e GDK_SCALE \ #这两个是与显示效果相关的环境变量，没有细究

-e GDK_DPI_SCALE

完整命令：

```
docker run -it -v /tmp/.x11-unix:/tmp/.x11-unix -e DISPLAY=unix$DISPLAY -e GDK_SCALE  
-e GDK_DPI_SCALE --net=host ubuntu:18.04 /bin/bash
```



The screenshot shows a terminal window with the following content:

```
Activities Terminal
六 22:10
root@test: /
File Edit View Search Terminal Help
root@b9357fb0a5ff:/# xarclock
Error: Can't open display: localhost:10.0
root@b9357fb0a5ff:/# exit
exit
test01@test:~$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS   NAMES
test01@test:~$ docker run -it -v /tmp/.x11-unix:/tmp/.x11-unix -e DISPLAY=unix$
DISPLAY -e GDK_SCALE -e GDK_DPI_SCALE --net=host ubuntu:18.04
root@test:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:2 http://archive.ubuntu.com/ubuntu bionic InRelease [242 kB]
Get:3 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [24
98 kB]
Get:4 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic/restricted amd64 Packages [13.5 k
B]
Get:7 http://archive.ubuntu.com/ubuntu bionic/main amd64 Packages [1344 kB]
Get:8 http://archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [186 k
B]
Get:9 http://archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [11.3 MB]
Get:10 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Package
s [1459 kB]
Get:11 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packa
ges [725 kB]
Get:12 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packa
ges [26.8 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages
[2238 kB]
```

【备注】：

如果不加--net=host，可能会出现一下问题。

Error: cannot open display: localhost:10.0

cannot open display: unix:0

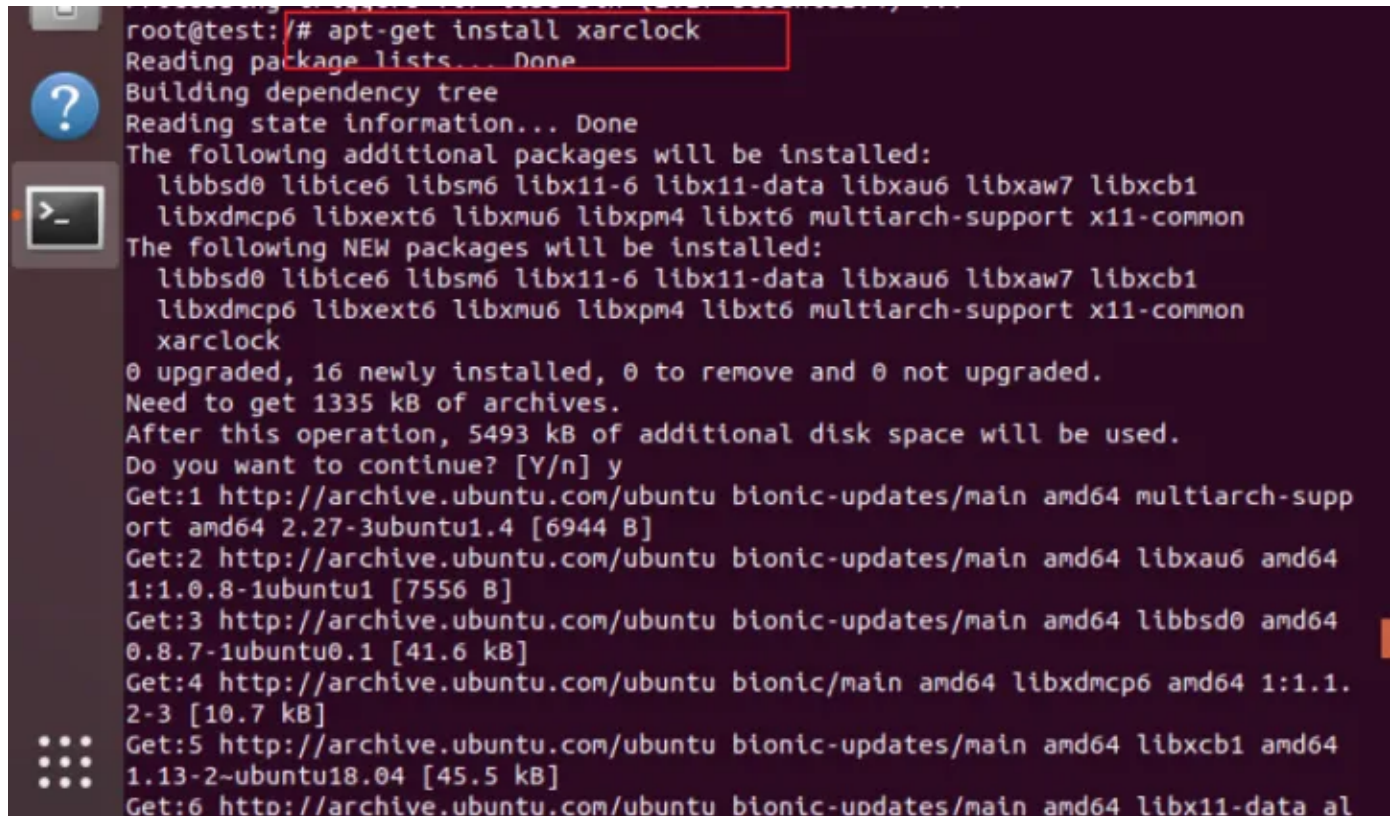
```
root@c8c1f8c5dd40:/home# xarclock
Error: Can't open display: unixlocalhost:10.0
```

3.测试是否可以显示软件图形界面

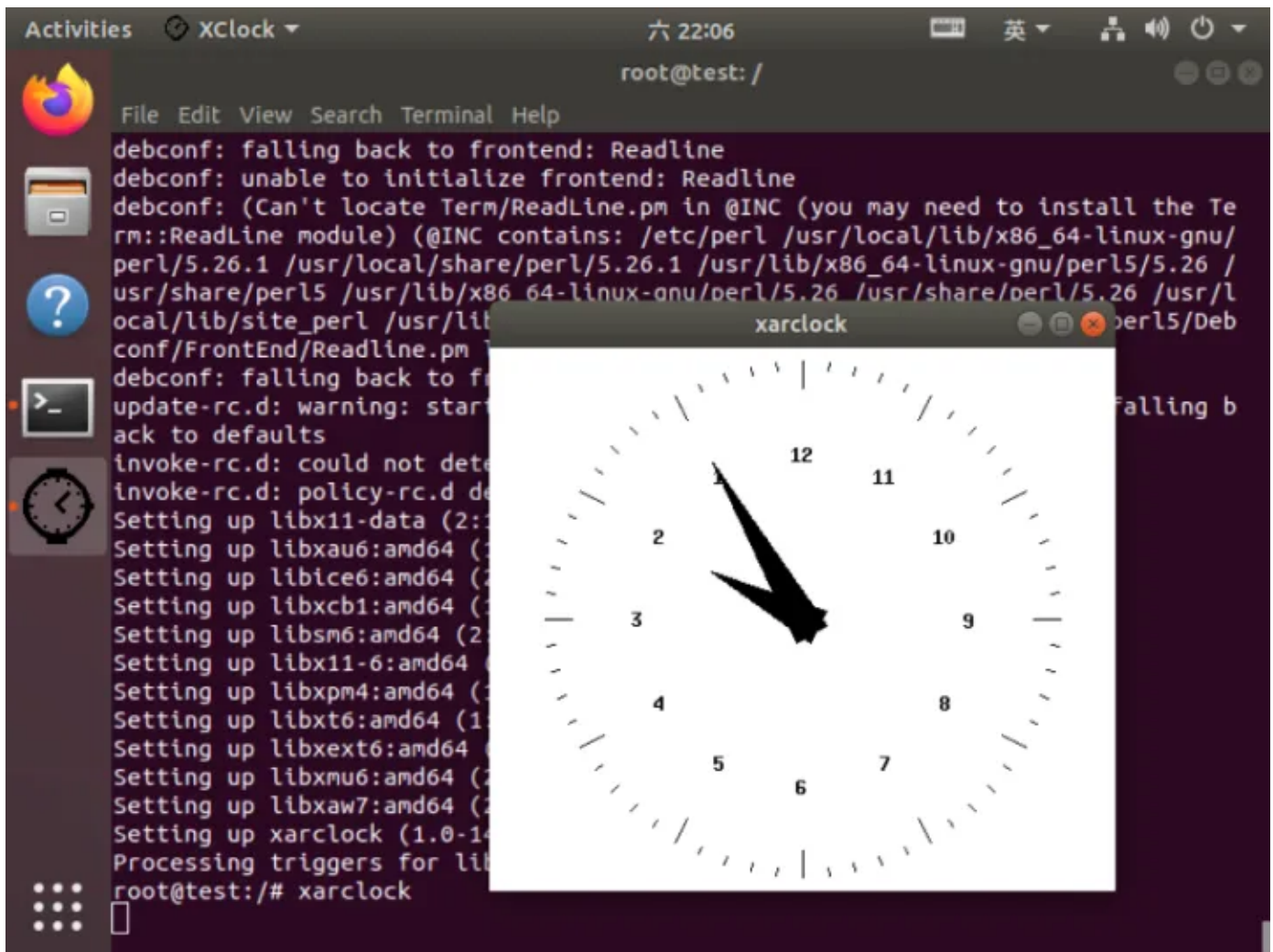
采用一个显示时钟的小程序xclock进行测试。

`sudo apt-get install xarclock` #安装这个小程序

`xarclock` #运行，如果配置成功，会显示出一个小时表动画

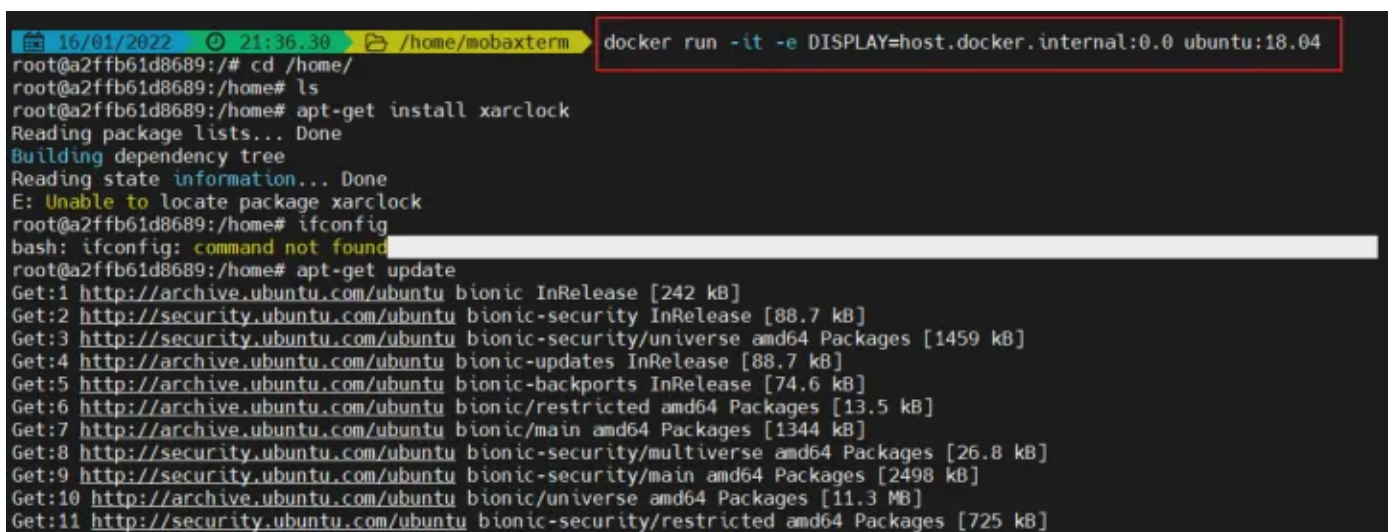


```
root@test: /# apt-get install xarclock
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libbsd0 libice6 libsm6 libx11-6 libx11-data libxau6 libxaw7 libxcb1
  libxdmcp6 libxext6 libxmu6 libxpm4 libxt6 multiarch-support x11-common
The following NEW packages will be installed:
  libbsd0 libice6 libsm6 libx11-6 libx11-data libxau6 libxaw7 libxcb1
  libxdmcp6 libxext6 libxmu6 libxpm4 libxt6 multiarch-support x11-common
  xarclock
0 upgraded, 16 newly installed, 0 to remove and 0 not upgraded.
Need to get 1335 kB of archives.
After this operation, 5493 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 multiarch-sup
ort amd64 2.27-3ubuntu1.4 [6944 B]
Get:2 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libxau6 amd64
1:1.0.8-1ubuntu1 [7556 B]
Get:3 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libbsd0 amd64
0.8.7-1ubuntu0.1 [41.6 kB]
Get:4 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxdmcp6 amd64 1:1.1.
2-3 [10.7 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libxcb1 amd64
1.13-2~ubuntu18.04 [45.5 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libx11-data al
```

4.Win for gui的方法

命令: `docker run -it -e DISPLAY=host.docker.internal:0.0 ubuntu:18.04`



执行一些图形化软件显示。

原文链接:

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mp.weixin.qq.com/s/7btzSqDGxNanRfBn...



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