

task16

姓名: 吕东航 学号: 3120104529 专业: 计科

课程名称: Embedded System

实验时间: 2015-3-27 实验地点: 曹西-501 指导老师: 翁恺

一、实验目的和要求

配置 Acadia 或 RPi 或 WRTnode 的 NTP 客户端，从网络服务器获得时间

二、主要仪器设备

硬件

Acadia 或 RPi 或 WRTnode 板一块; (本实验采用树莓派二代)

5V/1A 电源一个;

microUSB 线一根;

USB-TTL 串口线一根 (FT232RL 芯片或 PL2303 芯片);

PC 一台;

以太网线一根

Micro SD 一张/两张

U 盘 一个

软件

PC 上的 USB-TTL 串口线配套的驱动程序;

PC 上的串口终端软件, 如 minicom、picocom、putty 等;

PC 上的 SSH 软件, 如 putty 等。

三、操作方法与实验步骤

首先下载 ntp 客户端

```
COM4 - PuTTY
root@raspberrypi:/# sudo apt-get install ntpdate
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  liblockfile-bin liblockfile1 lockfile-progs
The following NEW packages will be installed:
  liblockfile-bin liblockfile1 lockfile-progs ntpdate
0 upgraded, 4 newly installed, 0 to remove and 25 not upgraded.
Need to get 122 kB of archives.
After this operation, 409 kB of additional disk space will be used.
Do you want to continue [Y/n]? Y
Get:1 http://mirrordirector.raspbian.org/raspbian/ wheezy/main liblockfile-bin a
rmhf 1.09-5 [17.9 kB]
Get:2 http://mirrordirector.raspbian.org/raspbian/ wheezy/main liblockfile1 armh
f 1.09-5 [14.4 kB]
Get:3 http://mirrordirector.raspbian.org/raspbian/ wheezy/main ntpdate armhf 1:4
.2.6.p5+dfsg-2+deb7u3 [79.0 kB]
Get:4 http://mirrordirector.raspbian.org/raspbian/ wheezy/main lockfile-progs ar
mf 0.1.17 [10.6 kB]
Fetched 122 kB in 24s (4,902 B/s)
Selecting previously unselected package liblockfile-bin.
(Reading database ... 77067 files and directories currently installed.)
Unpacking liblockfile-bin (from .../liblockfile-bin_1.09-5_armhf.deb) ...
```

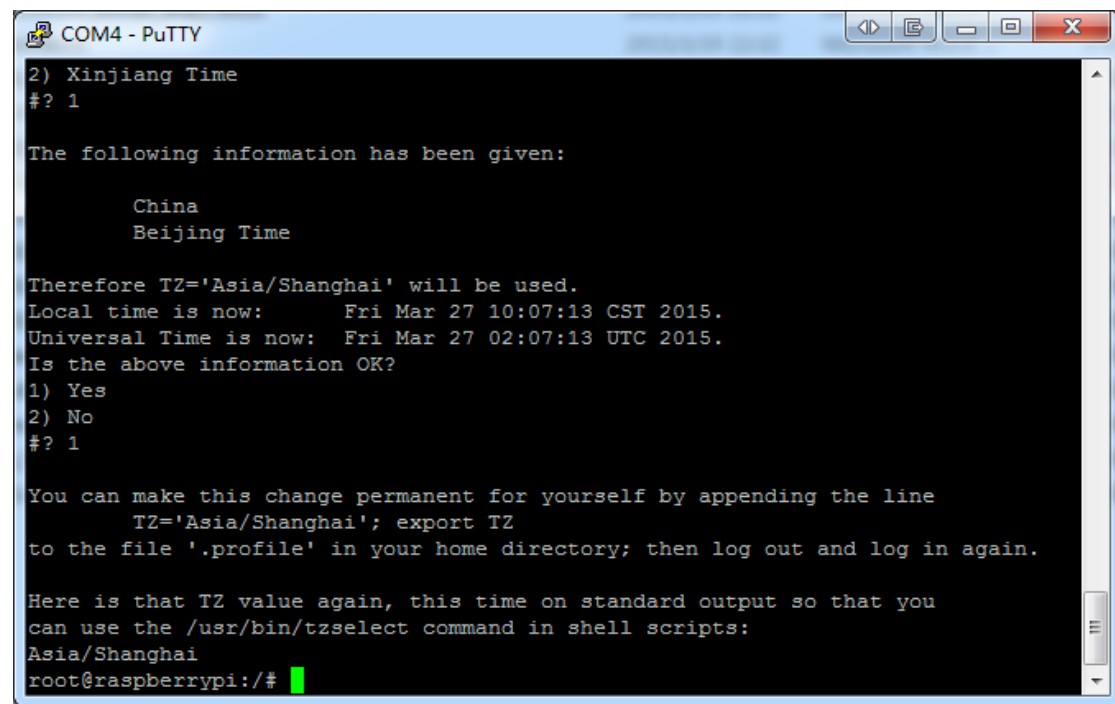
输入 tzselect 命令选择时区:

```
COM4 - PuTTY
root@raspberrypi:/# tzselect
Please identify a location so that time zone rules can be set correctly.
Please select a continent or ocean.
1) Africa
2) Americas
3) Antarctica
4) Arctic Ocean
5) Asia
6) Atlantic Ocean
7) Australia
8) Europe
9) Indian Ocean
10) Pacific Ocean
11) none - I want to specify the time zone using the Posix TZ format.
#? 5
```

亚洲

```
Please select a country.
1) Afghanistan      18) Israel           35) Palestine
2) Armenia           19) Japan            36) Philippines
3) Azerbaijan        20) Jordan           37) Qatar
4) Bahrain           21) Kazakhstan       38) Russia
5) Bangladesh        22) Korea (North)    39) Saudi Arabia
6) Bhutan            23) Korea (South)    40) Singapore
7) Brunei            24) Kuwait           41) Sri Lanka
8) Cambodia          25) Kyrgyzstan       42) Syria
9) China             26) Laos             43) Taiwan
10) Cyprus           27) Lebanon          44) Tajikistan
11) East Timor       28) Macau            45) Thailand
12) Georgia          29) Malaysia         46) Turkmenistan
13) Hong Kong        30) Mongolia         47) United Arab Emirates
14) India            31) Myanmar (Burma)  48) Uzbekistan
15) Indonesia        32) Nepal            49) Vietnam
16) Iran             33) Oman             50) Yemen
17) Iraq            34) Pakistan
#? 9
```

中国



```
COM4 - PuTTY
2) Xinjiang Time
#? 1

The following information has been given:

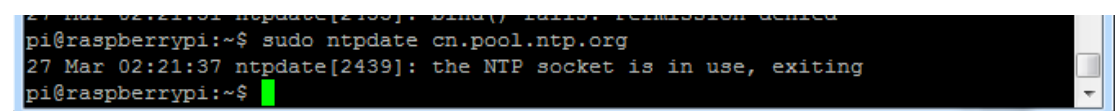
    China
    Beijing Time

Therefore TZ='Asia/Shanghai' will be used.
Local time is now:      Fri Mar 27 10:07:13 CST 2015.
Universal Time is now:  Fri Mar 27 02:07:13 UTC 2015.
Is the above information OK?
1) Yes
2) No
#? 1

You can make this change permanent for yourself by appending the line
    TZ='Asia/Shanghai'; export TZ
to the file '.profile' in your home directory; then log out and log in again.

Here is that TZ value again, this time on standard output so that you
can use the /usr/bin/tzselect command in shell scripts:
Asia/Shanghai
root@raspberrypi:/#
```

北京



```
pi@raspberrypi:~$ sudo ntpdate cn.pool.ntp.org
27 Mar 02:21:37 ntpdate[2439]: bind() failed: permission denied
pi@raspberrypi:~$ sudo ntpdate cn.pool.ntp.org
27 Mar 02:21:37 ntpdate[2439]: the NTP socket is in use, exiting
pi@raspberrypi:~$
```

输入 ntpdate 命令设置自动对时



```
pi@raspberrypi:~$ date
Fri Mar 27 10:30:43 CST 2015
pi@raspberrypi:~$
```

最后输入 date 发现自动对时成功。

四、实验结果与分析

实验成功，截图见第三部分。

五、讨论、心得

这次试验比较简单，没有遇到太大的问题。一开始输入 date 命令时区总是 utc，后来在 raspi-config 里面重新设置一遍就正常了。