Linux平台上利用3G模块进行拨号上网

1. 拨号步骤

1. 分别建立以下文件/etc/ppp/gprs-connect-chat，/etc/ppp/peers/gprs，/etc/ppp/chap-secrets，和/etc/ppp/ppp-off；

2. 连接设备，在dev目录下查看是否有文件ttyACM0或者ttyACM1等；

3.在命令行中输入命令pppd call gprs进行连接。

1. 具体实施过程

1.建立相关文件

默认情况在/etc/ppp/目录下建立文件gprs-connect-chat，内容如下（每个参数解释在ppp-howto中有详细解释。它是在ppp底层会话的时候给chat进程的参数，每行是一个“期望/发送”的组合序列。当出现一些经典的错误如： "LCP: timeout sendingConfig-Requests" ，"serial line is not 8 bit clean...",“serial line is looped back”等，去参看方式2提到的两个文档，或者google。）

    #vi /etc/ppp/gprs-connect-chat

    TIMEOUT 15

    ABORT '\nBUSY\r'

    ABORT '\nNO ANSWER\r'

    ABORT '\nRINGING\r\n\r\nRINGING\r'

    #’’ AT

    #'OK-+++\c-OK' ATH0

    TIMEOUT 40

    ‘’ \rAT //注意是2个单引号

    OK ATS0=0 //

    OK ATE0V1

OK AT+CGDCONT=1,"IP","CMNET" //设置isp接入网关为中国移动的cmnet

 OK ATDT\*99\*\*\*1# //中国移动gprs的接入号吗

    CONNECT ‘’

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    建立文件/etc/ppp/peers/gprs，它的作用是给pppd进程提供配置参数（详见man 8 pppd的输出内容，如果出现问题这个将是非常重要的参考页），内容如下：

    #vi /etc/ppp/peers/gprs

    # Usage: root>pppd call gprs

    /dev/s3c2410\_serial1 //改成自己的端口名

    115200 //改成自己串口波特率

    nocrtscts //无硬件流控

    modem //这个参数使得pppd进程将等待模块发回的CD (Carrier Detect)信号，与local真好相反

    #noauth // 无认证方式

    debug //把调试信息输出到/var/log/messages，在调试成功后去掉它，以减少垃圾的产生。

    nodetach //表示不要让pppd启动之后转为后台进程

#hide-password

#以下的3个参数一般不可少

    usepeerdns //使用服务器端协商的DNS就可以设置参数usepeerdns

    noipdefault //不使用默认IP就可以加入参数noipdefault

    defaultroute //表示把服务器指定的服务器IP地址作为默认路由

    user smsong //设置接入的用户名，在chap-secrets或者pap-secets中使用

    0.0.0.0:0.0.0.0 //本地和远端的ip都设为0使得接入的isp分配本地的ip地址

    ipcp-accept-local //表示接受服务器分配的本机IP地址,也就是isp给自己分配动态的IP地址

    #ipcp-accept-remote //表示接受服务器指定的服务器IP地址

    #lcp-echo-failure 12 //当连续12次没有收到发出的ＬＣＰ回声请求时，就认为服务器端已不再响应，退出执行，次数可灵活决定。

    #lcp-echo-interval 3

    noccp //不需要压缩控制协议，有可能对端不需要，根据自己的isp的情况

    #novj

    #novjccomp

    persist //保证在连接断开的情况下不退出，并尝试重新打开连接

    connect '/usr/sbin/chat -s -v -f /etc/ppp/gprs-connect-chat'

    //pppd调用chat会话进程接入对端isp，启动对端的pppd，然后本地pppd与对端的pppd一起进行协商网络参数和chap/pap认证，成功后，再进行ncp层的ip的分配。

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    #vi /etc/ppp/chap-secrets

    # Secrets for authentication using CHAP

    # client server secret IP addresses

    ####### redhat-config-network will overwrite this part!!! (begin) ##########

    ####### redhat-config-network will overwrite this part!!! (end) ############

smsong \* 123456 \*

    chap-secrets是用于chap认证的密码文件，smsong为用户名，123456为密码

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    在建立了ppp0连接以后可以使用ctrl+c或者下面的脚本程序ppp-off断开ppp连接

    #vi /etc/ppp/ppp-off

    #!/bin/sh

    ######################################################################

    #

    # Determine the device to be terminated.

    #

    if [ "$1" = "" ]; then

     DEVICE=ppp0

    else

     DEVICE=$1

    fi

    ######################################################################

    #

    # If the ppp0 pid file is present then the program is running. Stop it.

    if [ -r /var/run/$DEVICE.pid ]; then

     kill -INT `cat /var/run/$DEVICE.pid`

    #

    # If the kill did not work then there is no process running for this

    # pid. It may also mean that the lock file will be left. You may wish

    # to delete the lock file at the same time.

     if [ ! "$?" = "0" ]; then

     rm -f /var/run/$DEVICE.pid

     echo "ERROR: Removed stale pid file"

     exit 1

     fi

    #

    # Success. Let pppd clean up its own junk.

     echo "PPP link to $DEVICE terminated."

     exit 0

    fi

    #

    # The ppp process is not running for ppp0

    echo "ERROR: PPP link is not active on $DEVICE"

    exit 1

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2.连接网络

做好上面的配置以后，输入命令：pppd call gprs，连接网络。

（注意如果你的gprs这个文件不在/etc/ppp/peers/目录下，给出标注路径给pppd）

    [root@localhost ppp\_scripts]# pppd call gprs

    timeout set to 15 seconds

    abort on (\nBUSY\r)

    abort on (\nNO ANSWER\r)

    abort on (\nRINGING\r\n\r\nRINGING\r)

    timeout set to 40 seconds

    send (^MAT^M^M)

    expect (OK)

    ^M^M

    OK

     -- got it

    send (ATS0=0^M^M)

    expect (OK)

    ^M

    AT^M

    OK

     -- got it

    send (ATE0V1^M^M)

    expect (OK)

    ^M

    ^M^M

    OK

     -- got it

    send (AT+CGDCONT=1,"IP","CMNET"^M^M)

    expect (OK)

    ^M

    ATS0=0^M^M

    OK

     -- got it

    send (ATDT\*99\*\*\*1#^M^M)

    expect (CONNECT)

    ^M

    ^M^M

    OK^M

    ATE0V1^M^M

    OK^M

    ^M

    OK^M

    ^M

    OK^M

    ^M

    OK^M

    ^M

    CONNECT

     -- got it

    send (^M)

    Serial connection established.

    using channel 20

    Using interface ppp0

    Connect: ppp0 /dev/ttyS0

    Warning - secret file /etc/ppp/pap-secrets has world and/or group access

    sent [LCP ConfReq id=0x1 ]

    rcvd [LCP ConfRej id=0x1 ]

    sent [LCP ConfReq id=0x2 ]

    rcvd [LCP ConfAck id=0x2 ]

    rcvd [LCP ConfReq id=0x1 ]

    sent [LCP ConfAck id=0x1 ]

    rcvd [CHAP Challenge id=0x1 , name = ""]

    Warning - secret file /etc/ppp/chap-secrets has world and/or group access

    sent [CHAP Response id=0x1 , name = "smsong"]

    rcvd [CHAP Success id=0x1 ""]

    CHAP authentication succeeded

    CHAP authentication succeeded

    sent [CCP ConfReq id=0x1 ]

    sent [IPCP ConfReq id=0x1 ]

    rcvd [LCP ProtRej id=0x1 80 fd 01 01 00 0c 1a 04 78 00 18 04 78 00]

    Protocol-Reject for 'Compression Control Protocol' (0x80fd) received

    rcvd [IPCP ConfReq id=0x1]

    sent [IPCP ConfNak id=0x1 ]

    rcvd [IPCP ConfRej id=0x1 ]

    sent [IPCP ConfReq id=0x2 ]

    rcvd [IPCP ConfReq id=0x2]

    sent [IPCP ConfAck id=0x2]

    rcvd [IPCP ConfNak id=0x2 ]

    sent [IPCP ConfReq id=0x3 ]

    rcvd [IPCP ConfAck id=0x3 ]

    Could not determine remote IP address: defaulting to 10.64.64.64

    local IP address 10.144.202.159

    remote IP address 10.64.64.64

    primary DNS address 211.138.200.69

    secondary DNS address 211.103.13.101

    Script /etc/ppp/ip-up started (pid 4578)

Script /etc/ppp/ip-up finished (pid 4578), status = 0x0

     使用ctrl+c可以断开连接，这样一般不太好测试是不是连接上了（遇有开发不上的控制台只有一个的原因），可以去掉/etc/ppp/peers/gprs文件中的nodetach参数，要用ping，你需要将eth0即网口给禁用掉，这样ping才会通过ppp0端口寻找路由连接外网。

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    可以用命令tail -f /var/log/messages看到日志：

    Mar 20 20:55:55 localhost pppd[4557]: pppd 2.4.4 started by root, uid 0

    Mar 20 20:55:56 localhost chat[4558]: timeout set to 15 seconds

    Mar 20 20:55:56 localhost chat[4558]: abort on (\nBUSY\r)

    Mar 20 20:55:56 localhost chat[4558]: abort on (\nNO ANSWER\r)

    Mar 20 20:55:56 localhost chat[4558]: abort on (\nRINGING\r\n\r\nRINGING\r)

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3.设置和检测上网功能

 [root@localhost ~]# ifconfig

    ppp0 Link encap:Point-to-Point Protocol

    inet addr:10.144.202.159 P-t-P:10.64.64.64 Mask:255.255.255.255

    UP POINTOPOINT RUNNING NOARP MULTICAST MTU:1500 Metric:1

    RX packets:5 errors:0 dropped:0 overruns:0 frame:0

   TX packets:6 errors:0 dropped:0 overruns:0 carrier:0

   collisions:0 txqueuelen:3

   RX bytes:62 (62.0 b) TX bytes:98 (98.0 b)

    [root@localhost ~]# ifconfig eth0 down

     禁用以太网接口eth0，使得不和ppp0接口使用时候的路由冲突

    [root@localhost ~]# ping 211.136.20.203

    PING 211.136.20.203 (211.136.20.203) 56(84) bytes of data.

    64 bytes from 211.136.20.203: icmp\_seq=1 ttl=247 time=3379 ms

    64 bytes from 211.136.20.203: icmp\_seq=2 ttl=247 time=2388 ms

    64 bytes from 211.136.20.203: icmp\_seq=3 ttl=247 time=2892 ms

**如果你只能ping纯的ip地址，而不能解析域名，这个时候你可能需要将/etc/ppp/resolv.conf（内容被新获得的dns取代）内容拷贝到/etc/resolv.conf中或者做一个到/etc/resolv.conf的链接。这样就可以ping域名和在浏览器中打开网页啦**。

[root@localhost ~]# ping www.baidu.com

    PING www.a.shifen.com (202.108.22.5) 56(84) bytes of data.

    64 bytes from 202.108.22.5: icmp\_seq=1 ttl=50 time=3142 ms

    64 bytes from 202.108.22.5: icmp\_seq=2 ttl=50 time=3348 ms

    64 bytes from 202.108.22.5: icmp\_seq=3 ttl=50 time=2796 ms

    64 bytes from 202.108.22.5: icmp\_seq=4 ttl=50 time=3632 ms

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