Lucid 相机在 Linux 系统下使用

1 安装要求

README for Arena SDK for Linux
The Arena SDK documentation includes a section called "Initial Configuration in Linux". Please review this section before proceeding.

Arena SDK requires the following dependencies:
- g++ 5 or higher
- make
- libx264-dev and libx265-dev if using the Save API

Installing Arena SDK for Linux:
1. Extract the tarball to your desired location:
    $ tar -xvzf ArenaSDK_Linux.tar.gz
    where ArenaSDK_Linux.tar.gz is the tarball name.

2. Run the Arena_SDK.conf file
    $ cd /path/to/ArenaSDK_Linux
    $ sudo sh Arena_SDK.conf
    This will make the Arena SDK shared library files accessible by the run-time linker (ld.so or ld-linux.so).
Examples:
A precompiled version of the examples, including IpConfigUtility, are located in ArenaSDK_Linux/precompiledExamples.

- C++ examples are located in ArenaSDK_Linux/Examples/Arena. C examples are located in ArenaSDK_Linux/Examples/ArenaC. The Arena or ArenaC folders contain a Makefile that can be used to compile each example.

- Upon successful compilation, the compiled binaries will be placed into ArenaSDK_Linux/OutputDirectory/Linux/x64Release.

2 **使用 sysctl 接口设置 linux 用于接收缓冲区的内存量到 32MB**。

--a)单次设置:

sudo sysctl -w net.core.rmem_max=33554432
net.core.rmem_default=33554432

--b)系统重启后永久保存:

把下面两行添加到/etc/sysctl.conf 文件中。

net.core.rmem_max = 33554432
net.core.rmem_default = 33554432

使用如下命令打开文件再添加。

sudo gedit /etc/sysctl.conf

--c)系统重启后用下面命令确认:

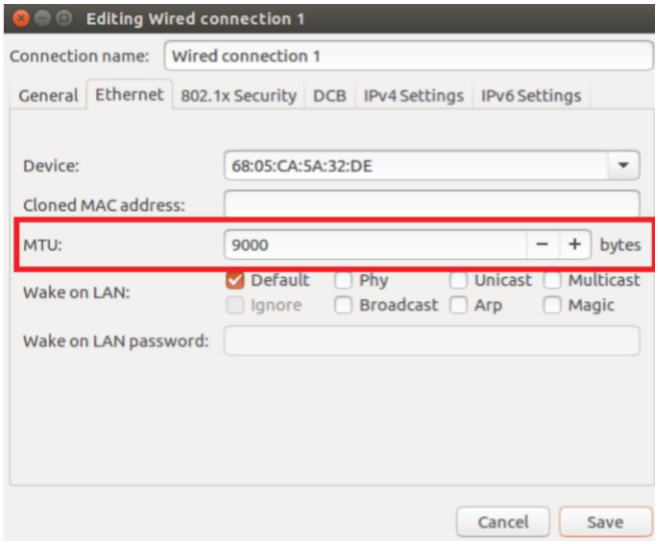
sudo sysctl -a|grep -e net.core.rmem

或

```
$ sudo sh -c "echo 'net.core.rmem_default=33554432 >> /etc/sysctl.conf"
$ sudo sh -c "echo 'net.core.rmem_max=33554432 >> /etc/sysctl.conf"
$ sudo sysctl -p
```

3 设置 MTU Jumbo packet 以及网口的 IP 地址和 receive buffer

-a . **配置网卡 MTU：system settings ->network**

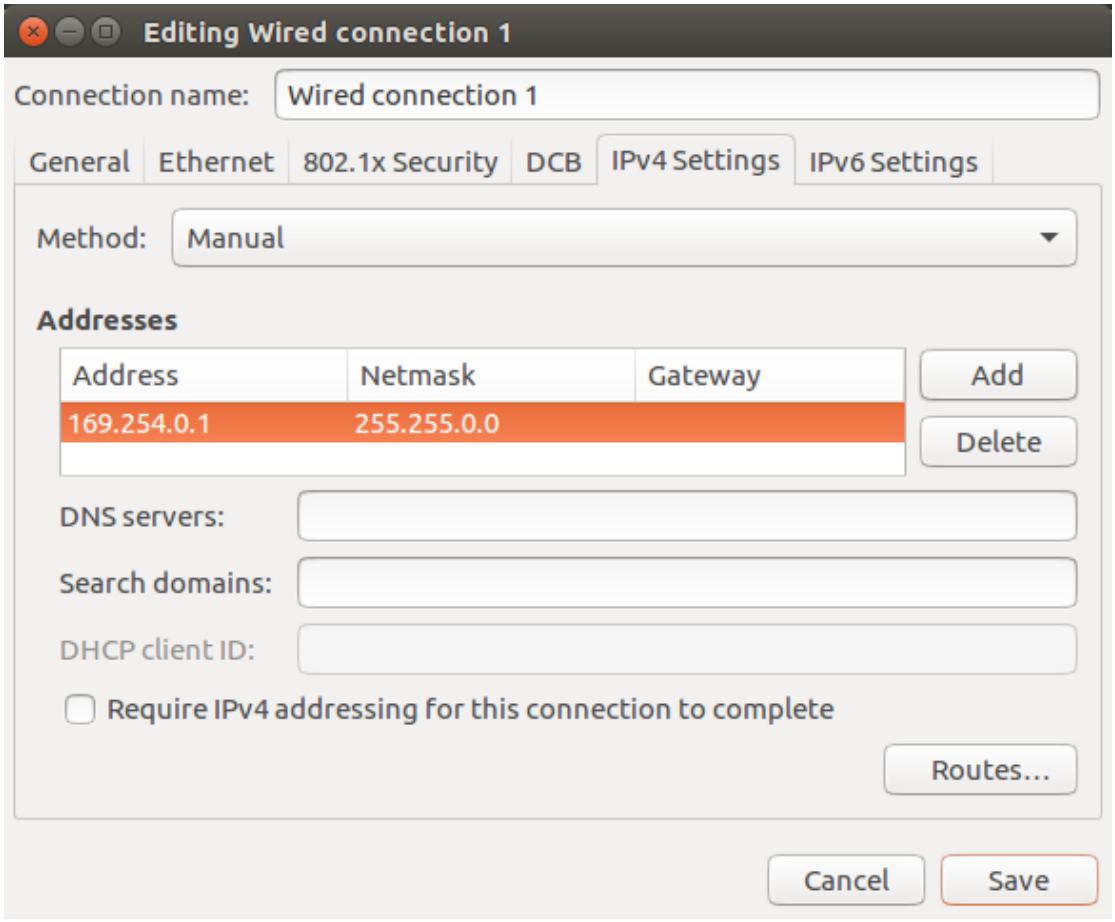


-b .使用命令 sudo ifconfig enp1s0 mtu 9000（enp1s0 是网络连接的名称，可用 ifconfig-a 先查询）

-c 重启电脑后使用命令 ifconfig -a 确认

```
compaliot1@compaliot1-desktop:~$ ifconfig -a
enp1s0    Link encap:Ethernet  HWaddr 3c:42:7e:b0:0c:7e
          UP BROADCAST MULTICAST  MTU:9000  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
          Memory:81400000-8147ffff
```

-d 设置网口的 IP 地址



Alternately you can try the following command:

$ sudo ifconfig enp1s0 169.254.0.1 netmask 255.255.0.0 mtu 9000

-e **设置网卡的 receive buffer（有些网卡不支持）**

$ sudo ethtool -g enp0s8
Ring parameters for enp0s8:
Pre-set maximums:
RX: 4096
RX Mini: 0
RX Jumbo: 0
TX: 4096

Current hardware settings:
RX: 256
RX Mini: 0
RX Jumbo: 0
TX: 256

$ sudo ethtool -G enp0s8 rx 4096

4 设置相机的 IP

设置相机的 IP 地址的原则是要求与网卡的 IP 地址在同一个网段。如：网卡的 IP 地址是 169。254.0.1，子网掩码是 255.255.0.0，则相机的 IP 地址可以设置为 169.254.0.x（x 除 1 以外），子网掩码是 255.255.0.0。

Forcing an IP Address on the Camera with IP Config Utility

The following command shows how to force an IP address on a camera with the MAC address of 1C:0F:AF:00:00:01:

```
$ ./IpConfigUtility /force -m 1C0FAF000001 -a 192.168.0.10 -s 255.255.0.0 -g 0.0.0.0
```

Setting Up Persistent IP or DHCP on the Camera with IP Config Utility

Arena SDK provides a simple command-line utility named IP Config Utility to configure your camera's IP address.

The following command shows all connected cameras:

```
$ ./IpConfigUtility /list

[index] MAC             IP              SUBNET          GATEWAY               IP CONFIG
[0]     1C0FAF000001    169.254.101.0   255.255.0.0     0.0.0.0               DHCP= 1 Persistent Ip= 1 LLA = 1
```

The following commands show how to enable and set a persistent IP address on a camera with the MAC address of 1C:0F:AF:00:00:01:

```
$ ./IpConfigUtility /config -m 1C0FAF000001 -p true
$ ./IpConfigUtility /persist -m 1C0FAF000001 -p true -a 192.168.0.10 -s 255.255.0.0 -g 0.0.0.0
```

The following commands show how to enable persistent IP and set a persistent IP address on a camera listed at index 0:

```
$ ./IpConfigUtility /config -i 0 -p true
$ ./IpConfigUtility /persist -i 0 -p true -a 192.168.0.10 -s 255.255.0.0 -g 0.0.0.0
```

The following command shows how to enable DHCP on a camera listed at index 0:

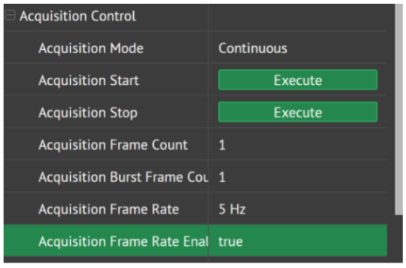
```
$ ./IpConfigUtility /config -i 0 -d true
```

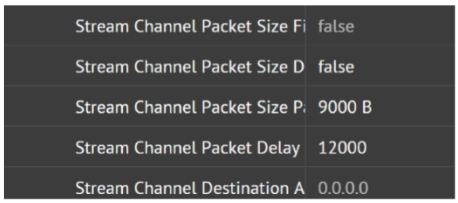
The following commands show how to enable persistent IP and DHCP and set a persistent IP address on a camera listed at index 0:

```
$ ./IpConfigUtility /config -i 0 -p true -d true
$ ./IpConfigUtility /persist -i 0 -p true -a 192.168.0.10 -s 255.255.0.0 -g 0.0.0.0
```

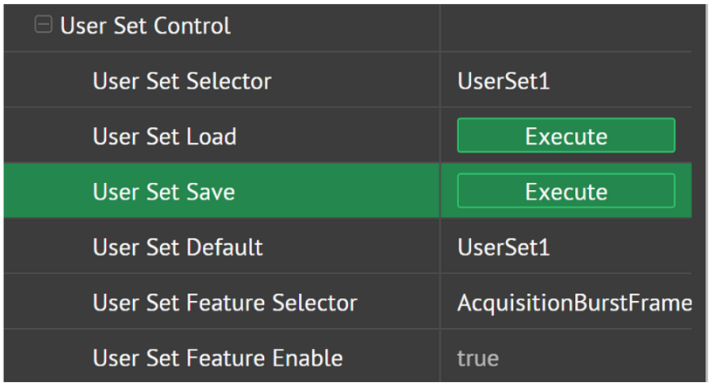
5 相机设置（linux 下没有 GUI 界面）

packet size 为 9000， packet delay 为 12000， framerate 为 5fps.





保存相机设置至 UserSet1, 也可以通过 code 的形式导入。



6 代码里增加 packetresend 和 StreamAutoNegotiatePacketSize

Arena::SetNodeValue<bool>(pDevice->GetTLStreamNodeMap(),"StreamAutoNegotiatePacketSize",true);

Packet Resend 设置：

Arena::SetNodeValue<bool>(pDevice->GetTLStreamNodeMap(),"StreamPacketResendEnable",true)

有必要时增加 packetdelay，目的是降低丢包

GenApi::CIntegerPtr pDeviceStreamChannelPacketDelay =

pDevice->GetNodeMap()->GetNode("GevSCPD");

pDeviceStreamChannelPacketDelay->SetValue(4000);

7 运行程序

找到程序所在路径，用相应的命令执行即可。

1 进入到所需要编译的 demo 路径，用 make 命令对所需要的 demo 进行编译；

2 编译成功后，可以在相应的路径下找到生成的 exe 文件，用 sudo ./程序名称，

进行运行即可。