



## Whitepaper

# Using UMTS/GPRS devices together with IGEL Universal Desktop LX/OS

Version 1.00

Blog: [blog.cloud-client.info](http://blog.cloud-client.info)

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## **Task**

Sometimes it's required to use a Thin Client on a moving vehicle or at locations where no regular network (WiFi or Ethernet) is available. By default IGEL offers no UMTS/GPRS support with their Universal Desktop OS or LX OS but it can be done....

## **Requirements**

- 1) An IGEL Universal Desktop LX or OS based device, I've used a UD3 with Firmware 4.11.100 and Advanced Feature Set. I can't guarantee that other version will work in the same way!
- 2) A UMTS/GPRS USB Modem (I've tested a Huawei E220 USB Modem, this device is very common [http://en.wikipedia.org/wiki/Huawei\\_E220](http://en.wikipedia.org/wiki/Huawei_E220)). I can't guarantee that other devices will work, please remember that this is not an official IGEL feature!

## **Please Note**

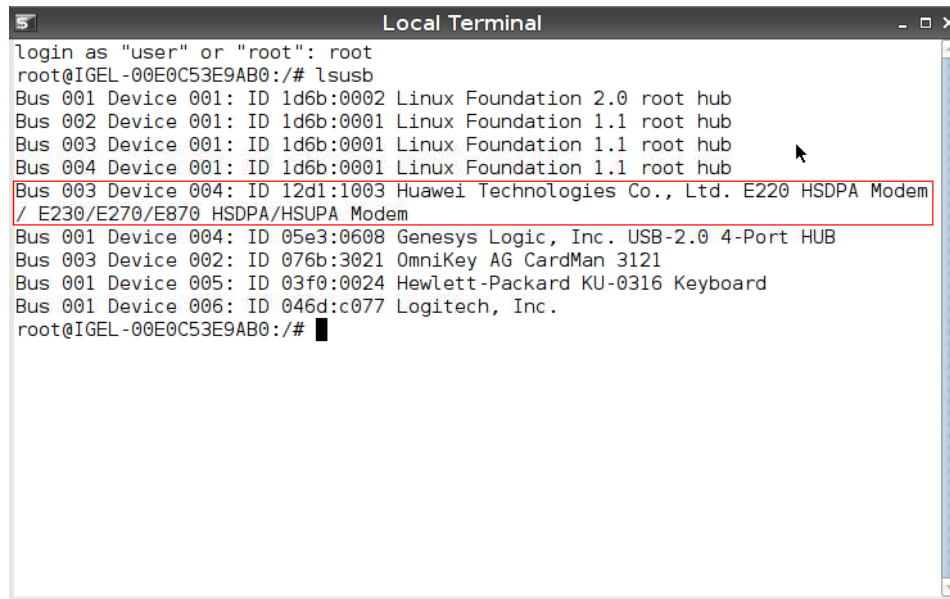
Before using an update in a production environment you should ALWAYS test the system in a test environment to make sure that everything is working fine. Do never roll out a new firmware or configurations without a test in advance!

I've not tested the ARM based IGEL UD2 Multimedia!

## Preparing the Client

If you're using different devices, you need to do this for every device type one time. I recommend to use only one device type like the Huawei E220, this will be much easier to deploy. All other configuration can be done thru the IGEL UMS, but for this you need to work local on a client.

First of all create a terminal session (IGEL Setup->Accessories->Terminals) and start the session, login as "root" user. Now we need to pick up the device Product ID (PID) and Vendor ID (VID), so type in "lsusb".



```
Local Terminal
login as "user" or "root": root
root@IGEL-00E0C53E9AB0:/# lsusb
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
Bus 002 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
Bus 003 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
Bus 004 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
Bus 003 Device 004: ID 12d1:1003 Huawei Technologies Co., Ltd. E220 HSDPA Modem
/ E230/E270/E870 HSDPA/HSUPA Modem
Bus 001 Device 004: ID 05e3:0608 Genesys Logic, Inc. USB-2.0 4-Port HUB
Bus 003 Device 002: ID 076b:3021 OmniKey AG CardMan 3121
Bus 001 Device 005: ID 03f0:0024 Hewlett-Packard KU-0316 Keyboard
Bus 001 Device 006: ID 046d:c077 Logitech, Inc.
root@IGEL-00E0C53E9AB0:/#
```

You can see the device details in the red square (upper screenshot), the Vendor ID is 12D1 and the Product ID is 1003. Please verify this in advance, you need the correct PID and VID for the setup and it will not work if this is wrong!

## Configuration Files

You need to create and deploy two configuration files, these configuration files needs to be located in the subfolders of /etc but this folder is not writable by default so we have to do a trick.

Open the IGEL Universal Management Suite console and create a new profile like “UMTS Configuration”, open the profile and browse to System->Firmware Customization->Custom Commands->Network Commands->Custom Command Network Initialization and activate this. Copy and modify the text below from the left field and insert the text in Custom Command Network Initialization.

<pre>modprobe usbserial vendor=0x12d1 product=0x1003 echo "hide-password" &gt; /etc/ppp/peers/umts echo "noauth" &gt;&gt; /etc/ppp/peers/umts echo "connect \"/usr/sbin/chat -f /etc/chatscripts/ppp\""" &gt;&gt; /etc/ppp/peers/umts echo "debug" &gt;&gt; /etc/ppp/peers/umts echo "/dev/ttyUSB0" &gt;&gt; /etc/ppp/peers/umts echo "460800" &gt;&gt; /etc/ppp/peers/umts echo "defaultroute" &gt;&gt; /etc/ppp/peers/umts echo "noipdefault" &gt;&gt; /etc/ppp/peers/umts echo "noccp" &gt;&gt; /etc/ppp/peers/umts echo "nobsdcomp" &gt;&gt; /etc/ppp/peers/umts echo "user \"USER\""" &gt;&gt; /etc/ppp/peers/umts echo "password \"PASS\""" &gt;&gt; /etc/ppp/peers/umts echo "usepeerdns" &gt;&gt; /etc/ppp/peers/umts echo "connect-delay 10000" &gt;&gt; /etc/ppp/peers/umts echo "ABORT BUSY ABORT 'NO CARRIER' ABORT VOICE ABORT 'NO DIALTONE' ABORT 'NO DIAL TONE' ABORT 'NO ANSWER' ABORT DELAYED" &gt; /etc/chatscripts/ppp echo "# modeminit" &gt;&gt; /etc/chatscripts/ppp echo "" 'ATZ'" &gt;&gt; /etc/chatscripts/ppp echo "TIMEOUT 5" &gt;&gt; /etc/chatscripts/ppp echo "OK AT+CPIN?" &gt;&gt; /etc/chatscripts/ppp echo "" 'READY-AT+CPIN=PIN-' "" &gt;&gt; /etc/chatscripts/ppp echo "TIMEOUT 20" &gt;&gt; /etc/chatscripts/ppp echo "" 'OK' 'AT+cgdcont=1,\"IP\", \"APN\""" &gt;&gt; /etc/chatscripts/ppp echo "" 'OK' 'ATDT*xx#" &gt;&gt; /etc/chatscripts/ppp echo "CONNECT \d\c" &gt;&gt; /etc/chatscripts/ppp echo "# end" &gt;&gt; /etc/chatscripts/ppp</pre>	<p>12d1= Device Vendor ID (VID) 1003= Device Product ID (PID)</p> <p>Might be changed to ttyUSB1 or higher!</p> <p>USER= Username required by Provider PASS= Password required by Provider</p> <p>PIN= SIM Card PIN</p> <p>APN= APN, as example for Swisscom gprs.swisscom.ch or German Telekom internet.t- tmobile *xx#= Phone number to dial, typical *99# but check with your provider</p>
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The script will create the two required files in the /etc folder each time the network is started (device reboot or command “/etc/init.d/network restart”), using this way allows also to fully configure the device thru the IGEL Universal Management Suite in a simple way. I also recommend to not set a pin for the SIM card, this has created some issues during my test.

## Start and Stop the connection

To start the connection you can use the following commands:

pon umts : pon umts will start the connection and after some time you should be able to determine the connection named ppp(no) thru the command "ifconfig".

pppd call umts nodetach: This will also start the connection but provide also some error messages-

poff: Stops or redial a connection, see also poff -h for available options.

The commands can be used in different ways, like a custom application or started thru an terminal session.

## Troubleshooting & Support

- 1) It could be that this will not work for you or you need to modify the script mentioned on page 4, please note: cloud-client.info will not support this at all. You can check different websites for provider related settings or configuration samples... **We will not do this for you!**
- 2) Play also around with the /dev/ttyUSB0 configuration, depending on the connected devices the modem could be using an other port.
- 3) I've tested only the Huawei E220, other devices might work but I can't guarantee it: same statement like 1)
- 4) This is no IGEL Feature, IGEL will not support this in any way... Don't try it!

