



黑客派

# OpenWRT 通过 3G Modem 加 asterisk 将 GSM 通话转为 SIP

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原文链接: <https://hacpai.com/article/1577763032050>

来源网站: [黑客派](#)

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<p>本文主要实现 OpenWRT 系统通过 Huawei 3G Modem 加 asterisk 套件将 GSM 通话转为 SIP 通话</p>

```
<script async src="https://pagead2.googlesyndication.com/pagead/js/adsbygoogle.js"></script>
```

```
<!-- 黑客派PC帖子内嵌-展示 -->
```

```
<ins class="adsbygoogle" style="display:block" data-ad-client="ca-pub-5357405790190342" data-ad-slot="8316640078" data-ad-format="auto" data-full-width-responsive="true"></ins>
```

```
<script>
  (adsbygoogle = window.adsbygoogle || []).push({});
</script>
```

<p>安装 openwrt 下的 asterisk16 套件</p>

```
<pre><code class="language-bash highlight-chroma">opkg update
opkg install asterisk16-app-system asterisk16-chan-dongle asterisk16-pjsip asterisk16-codec
ulaw asterisk16-codec-alaw asterisk16-res-rtp-asterisk asterisk16-bridge-simple
</code></pre>
```

<p>调整 PJSIP 作为默认服务，并且新增几个 PJSIP 账户，用以测试内线通</p>

<p><code>/etc/asterisk/pjsip.conf</code></p>

```
<pre><code class="language-bash highlight-chroma"><span class="highlight-o">[</span>t
ansport-udp<span class="highlight-o">]</span>
<span class="highlight-nv">type</span><span class="highlight-o">=</span>transport
<span class="highlight-nv">protocol</span><span class="highlight-o">=</span>udp  <s
an class="highlight-p">;</span>udp,tcp,tls,ws,wss
<span class="highlight-nv">bind</span><span class="highlight-o">=</span>0.0.0.0
```

```
<span class="highlight-o">[</span>6003<span class="highlight-o">]</span>
```

```
<span class="highlight-nv">type</span><span class="highlight-o">=</span>end
oint
```

```
<span class="highlight-nv">transport</span><span class="highlight-o">=</span>
ransport-udp
```

```
<span class="highlight-nv">context</span><span class="highlight-o">=</span>fr
m-internal
```

```
<span class="highlight-nv">disallow</span><span class="highlight-o">=</span>all
```

```
<span class="highlight-nv">allow</span><span class="highlight-o">=</span>ulaw
```

```
<span class="highlight-nv">auth</span><span class="highlight-o">=</span>6003
auth
```

```
<span class="highlight-nv">aors</span><span class="highlight-o">=</span><spa
class="highlight-m">6003</span>
```

```
<span class="highlight-o">[</span>6003-auth<span class="highlight-o">]</span>
```

```
<span class="highlight-nv">type</span><span class="highlight-o">=</span>auth
```

```
<span class="highlight-nv">auth_type</span><span class="highlight-o">=</span>
serpass
```

```
<span class="highlight-nv">password</span><span class="highlight-o">=</span>
span class="highlight-m">6003</span>
```

```
<span class="highlight-nv">username</span><span class="highlight-o">=</span>
span class="highlight-m">6003</span>
```

```

<span class="highlight-o">[</span>6003<span class="highlight-o">]</span>
<span class="highlight-nv">type</span><span class="highlight-o">          =</span></span>aor
<span class="highlight-nv">max_contacts</span><span class="highlight-o">          =</s
an><span class="highlight-m">    1</span>

<span class="highlight-o">[</span>6004<span class="highlight-o">]</span>
<span class="highlight-nv">type</span><span class="highlight-o">          =</span></span>end
oint
<span class="highlight-nv">transport</span><span class="highlight-o">          =</span></span>
ransport-udp
<span class="highlight-nv">context</span><span class="highlight-o">          =</span></span>fr
m-internal
<span class="highlight-nv">disallow</span><span class="highlight-o">          =</span></span>all
<span class="highlight-nv">allow</span><span class="highlight-o">          =</span></span>ulaw
<span class="highlight-nv">auth</span><span class="highlight-o">          =</span></span>6004
auth
<span class="highlight-nv">aors</span><span class="highlight-o">          =</span></span><spa
class="highlight-m">6004</span>

<span class="highlight-o">[</span>6004-auth<span class="highlight-o">]</span>
<span class="highlight-nv">type</span><span class="highlight-o">          =</span></span>auth
<span class="highlight-nv">auth_type</span><span class="highlight-o">          =</span></span>
serpass
<span class="highlight-nv">password</span><span class="highlight-o">          =</span></span>
span class="highlight-m">6004</span>
<span class="highlight-nv">username</span><span class="highlight-o">          =</span></span>
span class="highlight-m">6004</span>

<span class="highlight-o">[</span>6004<span class="highlight-o">]</span>
<span class="highlight-nv">type</span><span class="highlight-o">          =</span></span>aor
<span class="highlight-nv">max_contacts</span><span class="highlight-o">          =</s
an><span class="highlight-m">    1</span>

```

```

</code></pre>
<script async src="https://pagead2.googlesyndication.com/pagead/js/adsbygoogle.js"></scr
pt>

```

```

<!-- 黑客派PC帖子内嵌-展示 -->

```

```

<ins class="adsbygoogle" style="display:block" data-ad-client="ca-pub-5357405790190342"
data-ad-slot="8316640078" data-ad-format="auto" data-full-width-responsive="true"></in
>
<script>
  (adsbygoogle = window.adsbygoogle || []).push({});
</script>
<p>新增分机拨打模板, </p>

```

```

<p><code>/etc/asterisk/extension.conf</code></p>
<pre><code class="language-bash highlight-chroma"><span class="highlight-o">[</span>f
om-internal<span class="highlight-o">]</span>
<span class="highlight-nv">exten</span> <span class="highlight-o">=</span>&gt; _Z.,1,D
al<span class="highlight-o">(</span>PJSIP/<span class="highlight-si">${</span><span class="highlight-nv">EXTEN</span><span class="highlight-si">}</span>,60,Trg<span class="hi
hlight-o">)</span>
<span class="highlight-nv">same</span> <span class="highlight-o">=</span>&gt; n,Han
up<span class="highlight-o">()</span>
</code></pre>
<p>用 asterisk 查看分机状态，拨打过程中 <code>pjsip show endpoints</code> 中显示的状态
从 <code>Not in use</code> 转换为 <code>In use</code></p>
<pre><code class="language-bash highlight-chroma">asterisk -rvvv
OpenWrt*CLI&gt; pjsip show contacts

```

Contact: not found render function for node [type=NodeHTMLEntity, Tokens=<]not found render function for node [type=NodeHTMLEntity, Tokens=<]Aor/ContactUri.....not found render function for node [type=NodeHTMLEntity, Tokens=>]not found render function for node [type=NodeHTMLEntity, Tokens=>]not found render function for node [type=NodeHTMLEntity, Tokens=<]not found render function for node [type=NodeHTMLEntity, Tokens=<]Hash...not found render function for node [type=NodeHTMLEntity, Tokens=>]not found render function for node [type=NodeHTMLEntity, Tokens=>]not found render function for node [type=NodeHTMLEntity, Tokens=<]not found render function for node [type=NodeHTMLEntity, Tokens=<]Statusnot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render function for node [type=NodeHTMLEntity, Tokens=>]not found render function for node [type=NodeHTMLEntity, Tokens=<]not found render function for node [type=NodeHTMLEntity, Tokens=<]RTT

```

<span class="highlight-o">=====  

===== </span>

```

Contact: 6001/sip:6001@192.168.234.127:53117<span class="highlight-p">;</span><span class="highlight-nv">transport</span><span class="highlight-o">=</span> 378e2d08b NonQual nan

Contact: 6001/sip:6001@192.168.234.127:53117<span class="highlight-p">;</span><span class="highlight-nv">transport</span><span class="highlight-o">=</span> 378e2d08b NonQual nan

Contact: 6003/sip:6003@192.168.234.158:49989<span class="highlight-p">;</span><span class="highlight-nv">transport</span><span class="highlight-o">=</span> 2ec100f65 NonQual nan

Contact: 6003/sip:6003@192.168.234.158:49989<span class="highlight-p">;</span><span class="highlight-nv">transport</span><span class="highlight-o">=</span> 2ec100f65 NonQual nan

Contact: 6004/sip:6004@192.168.104.11:5060 586381001a NonQual nan

Contact: 6004/sip:6004@192.168.104.11:5060 586381001a NonQual nan

Objects found: <span class="highlight-m">6</span>

OpenWrt\*CLI not found render function for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=>] pjsip show endpoints

Endpoint: not found render function for node [type=NodeHTMLEntity, Tokens=<]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]Endpoint/CID.....  
.....not found render function for node [type=NodeHTMLEntity, Tokens=>]not f  
und render function for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]State.....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]Channels.  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]

I/OAuth: not found render function for node [type=NodeHTMLEntity, Tokens=<]no  
found render function for node [type=NodeHTMLEntity, Tokens=<]AuthId/UserName.....  
.....not found render function for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]

Aor: not found render function for node [type=NodeHTMLEntity, Tokens=<]not found  
ender function for node [type=NodeHTMLEntity, Tokens=<]Aor.....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]MaxContact  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]

Contact: not found render function for node [type=NodeHTMLEntity, Tokens=<]not  
found render function for node [type=NodeHTMLEntity, Tokens=<]Aor/ContactUri.....  
...not found render function for node [type=NodeHTMLEntity, Tokens=>]not found render f  
nction for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]Hash....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]Status  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]RTT  
></span>ms<span class="highlight-o"></span>..not found render  
function for node [type=NodeHTMLEntity, Tokens=>]not found render function for node [ty  
e=NodeHTMLEntity, Tokens=>]

Transport: not found render function for node [type=NodeHTMLEntity, Tokens=<]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]TransportId.....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]Type  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]

ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]cos  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]tos  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]BindAddress.....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]

Identify: not found render function for node [type=NodeHTMLEntity, Tokens=<]not  
found render function for node [type=NodeHTMLEntity, Tokens=<]Identify/Endpoint.....  
.....not found render function for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]

Match: not found render function for node [type=NodeHTMLEntity, Tokens=<]not f  
und render function for node [type=NodeHTMLEntity, Tokens=<]criteria.....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]

Channel: not found render function for node [type=NodeHTMLEntity, Tokens=<]n  
t found render function for node [type=NodeHTMLEntity, Tokens=<]ChannelId.....  
.....not found render function for node [type=NodeHTMLEntity, Tokens=>]not found ren  
er function for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]State.....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]Time.....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]

Exten: not found render function for node [type=NodeHTMLEntity, Tokens=<]not four  
render function for node [type=NodeHTMLEntity, Tokens=<]DialedExten.....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>] CLCID:  
ot found render function for node [type=NodeHTMLEntity, Tokens=<]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=<]ConnectedLineCID.....  
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct  
on for node [type=NodeHTMLEntity, Tokens=>]

<span class="highlight-o">=====  
===== </span>

Endpoint: <span class="highlight-m">6001</span> In use  
span class="highlight-m">1</span> of inf

InAuth: 6001-auth/6001

Aor: <span class="highlight-m">6001</span> <span class="high  
light-m">1</span>

Contact: 6001/sip:6001@192.168.234.127:53117<span class="highlight-p">;</span> transp  
78e2db08b NonQual nan

```

Transport: transport-udp      udp      <span class="highlight-m">0</span>      <span clas
="highlight-m">0</span> 0.0.0.0:5060
Channel: PJSIP/6001-00000005/AppDial      Up      00:00:04
Exten:      CLCID: <span class="highlight-s2">"6004"</span> not found render f
nction for node [type=NodeHTMLEntity, Tokens=<]not found render function for node [type
NodeHTMLEntity, Tokens=<]6004not found render function for
ode [type=NodeHTMLEntity, Tokens=>]not found render function for node [type=NodeHTM
Entity, Tokens=>]

Endpoint: <span class="highlight-m">6002</span>      Unavailabl
<span class="highlight-m">0</span> of inf
InAuth: 6002-auth/6002
Aor: <span class="highlight-m">6002</span>      <span class="hig
light-m">1</span>
Transport: transport-udp      udp      <span class="highlight-m">0</span>      <span clas
="highlight-m">0</span> 0.0.0.0:5060

Endpoint: <span class="highlight-m">6003</span>      Not in use
<span class="highlight-m">0</span> of inf
InAuth: 6003-auth/6003
Aor: <span class="highlight-m">6003</span>      <span class="hig
light-m">1</span>
Contact: 6003/sip:6003@192.168.234.158:49989<span class="highlight-p">;</span>transp
ec100f865 NonQual      nan
Transport: transport-udp      udp      <span class="highlight-m">0</span>      <span clas
="highlight-m">0</span> 0.0.0.0:5060

Endpoint: <span class="highlight-m">6004</span>      In use
<span class="highlight-m">1</span> of inf
InAuth: 6004-auth/6004
Aor: <span class="highlight-m">6004</span>      <span class="hig
light-m">1</span>
Contact: 6004/sip:6004@192.168.104.11:5060      586381001a NonQual      nan
Transport: transport-udp      udp      <span class="highlight-m">0</span>      <span clas
="highlight-m">0</span> 0.0.0.0:5060
Channel: PJSIP/6004-00000004/Dial      Up      00:00:04
Exten: <span class="highlight-m">6001</span>      CLCID: <span class="highlight-
2">""</span> not found render function for node [type=NodeHTMLEntity, Tokens=<]not fo
nd render function for node [type=NodeHTMLEntity, Tokens=<]6001
ot found render function for node [type=NodeHTMLEntity, Tokens=>]not found render funct
on for node [type=NodeHTMLEntity, Tokens=>]

Objects found: <span class="highlight-m">4</span>
</code></pre>

```





```

>
</code> </pre>
<p>由于 3G modem 还没到货，所以目前先更新到这里，等到货后继续配置。 </p>
<p>12 月 27 号收货，继续更，用到的型号是 Huawei K3765.</p>
<p> </p>
<p> <br> K3765 3G modem</p>
<p>在 openwrt 下配置 dongle 设备，请结合实际数据配置</p>
<p><code>/etc/asterisk/dongle.conf</code> </p>
<pre> <code class="language-bash highlight-chroma" > <span class="highlight-o" >[</span>
eneral<span class="highlight-o" >]</span>
<span class="highlight-nv" >interval</span> <span class="highlight-o" >=</span> <span clas
="highlight-m" >20</span>
<span class="highlight-o" >[</span>defaults<span class="highlight-o" >]</span>
<span class="highlight-nv" >context</span> <span class="highlight-o" >=</span> dongle-in
<span class="highlight-nv" >group</span> <span class="highlight-o" >=</span> <span class
"highlight-m" >0</span>
<span class="highlight-nv" >exten</span> <span class="highlight-o" >=</span> +862022221
34
<span class="highlight-o" >[</span>dongle0<span class="highlight-o" >]</span>
<span class="highlight-nv" >imei</span> <span class="highlight-o" >=</span> <span class=
highlight-m" >123451234512345</span>
</code> </pre>
<p>通过 asterisk 控制台查一下设备状态， </p>
<pre> <code class="language-bash highlight-chroma" >asterisk -rvvv
RiWifi*CLI>&#x26; dongle show devices
ID      Group State  RSSI Mode Submode Provider Name  Model  Firmware  IMEI
      IMSI      Number
dongle0 <span class="highlight-m" >0</span> Free  <span class="highlight-m" >16
/span> <span class="highlight-m" >3</span> <span class="highlight-m" >3</span> F
FFFFFFFFFFFF K3765 11.126.03.04.521 <span class="highlight-m" >123451234512345</sp
n> <span class="highlight-m" >123451234512345</span> Unknown
</code> </pre>
<p>接下来新增呼出、呼入的分机配置</p>
<p><code>/etc/asterisk/extensions.conf</code> </p>
<pre> <code class="language-bash highlight-chroma" > <span class="highlight-o" >[</span>
om-internal<span class="highlight-o" >]</span>
<span class="highlight-nv" >exten</span> <span class="highlight-o" >=</span> &#x26; _1.,1,D
al<span class="highlight-o" >(</span>Dongle/g0/<span class="highlight-si" >${</span><sp
n class="highlight-nv" >EXTEN</span> <span class="highlight-p" >:</span><span class="hig
hlight-nv" >1</span> <span class="highlight-si" >}</span><span class="highlight-o" >)</span>
<span class="highlight-p" >;</span></span>呼出设置，结合实际，我这边是加了<span class="highligh
-s2" >"1" </span>这个前缀，例如我的 SIP 分机要拨打 10011,那么拨号就是 <span class="highligh
-m" >110011</span>
<span class="highlight-o" >[</span>dongle-in<span class="highlight-o" >]</span>
<span class="highlight-nv" >exten</span> <span class="highlight-o" >=</span> &#x26; +8620
2221234,1,Dial<span class="highlight-o" >(</span>IAX2/6010,60,Trg<span class="highlight-
"></span><span class="highlight-p" >;</span></span>呼入设置，我这边就是配置成所有呼叫直接转到
AX-6010 分机，复杂点的可以做 IVR，号码本，不过只有一路的电话就不需要搞这么复杂了。
</code> </pre>
<script async src="https://pagead2.googlesyndication.com/pagead/js/adsbygoogle.js" > </scr
pt>
<!-- 黑客派PC帖子内嵌-展示 -->

```

```
<ins class="adsbygoogle" style="display:block" data-ad-client="ca-pub-5357405790190342" data-ad-slot="8316640078" data-ad-format="auto" data-full-width-responsive="true"></in
>
<script>
  (adsbygoogle = window.adsbygoogle || []).push({});
</script>
<p>最后，拨号测试</p>
<p>呼入测试</p>
<p></p>
<p></p>
<p>呼出测试</p>
<p></p>
<p></p>
<p>refer: <a href="https://link.hacpai.com/forward?goto=https%3A%2F%2Fwww.ppuu.org%
F2019%2F12%2Fopenwrt-asterisk-dongle-gsm-to-sip%2F" target="_blank" rel="nofollow ugc
">https://www.ppuu.org/2019/12/openwrt-asterisk-dongle-gsm-to-sip/</a></p>
```