

转 使用WinPcap编程

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创建一个使用 `wpcap.dll` 的应用程序

用 Microsoft Visual C++ 创建一个使用 `wpcap.dll` 的应用程序，需要按以下步骤：

- 在每一个使用了库的源程序中，将 `pcap.h` 头文件包含(include)进来。
- 如果你在程序中使用了WinPcap中提供给Win32平台的特有的函数，记得在预处理中加入 `WPCAP` 的定义。
- 如果你的程序使用了WinPcap的远程捕获功能，那么在预处理定义中加入 `HAVE_REMOTE`。 **不要** 直接把`remote-ext.h`直接加入到你的源文件中去。
- 设置VC++的链接器(Linker)，把 `wpcap.lib` 库文件包含进来。 `wpcap.lib` 可以在WinPcap中找到。
- 设置VC++的链接器(Linker)，把 `ws2_32.lib` 库文件包含进来。这个文件分布于C的编译器，并且包含了Windows的一些socket函数。本教程中的一些范例程序，需要它。

记住以下几点：



- 要添加一个预处理定义，你需要打开 *Project* 菜单，选择 *Settings*，然后选择 *C/C++* 选项卡，在 *General* 类下，你必须在 *Preprocessor Definitions* 下的文本框中添加定义。
- 要在一个VC++6.0工程中，添加一个新的库，你必须打开 *Project* 菜单，选择 *Settings*，然后选择 *Link* 选项卡，然后把新库的名字添加到 *Object/Library modules* 下的文本框中
- 要向VC++6.0中添加一个新的库所在的路径，你必须打开 *Tool* 菜单，选择 *Options*，然后选择 *Directories* 选项卡，在 *Show directories* 下拉框中选择 *Library files*，并且将新的路径添加到 *Directories* 中去
- 要向VC++6.0中添加一个新的包含文件所在的路径，你必须打开 *Tool* 菜单，选择 *Options*，然后选择 *Directories* 选项卡，在 *Show directories* 下拉框中选择 *Include files*，并且将新的路径添加到 *Directories* 中去

范例程序

我们一共了一些范例程序来显示WinPcap API的用法。这些程序的源代码，以及编译运行这些代码所需的所有文件，都可以在 Developer's Pack找到。作为教程，在这里，我们提供了浏览器式的代码：这样，在每个函数和变量之间的跳转会比较方便。更多完整的范例程序，请参阅 WinPcap 教程。

Packet Dump

这个程序会依据命令行参数，从网络适配器，或是从文件来读取数据包。如果没有提供源，那么程序会显示出所有可用的适配器，你可以选其中一个。当捕获过程开始，程序会打印数据包的时间戳，长度，原始内容。一旦被编译了，那么它将能运行于所有的Win32平台，当然，它也可以被编译成Unix平台的程序。

```
[cpp]  
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29.  * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
30.  * OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
31.  *
32.  */
33.
34.
35. #include <stdlib.h>
36. #include <stdio.h>
37.
```

[illegible]

```

129.     {
130.         fprintf(stderr, "\nError opening source: %s\n", errbuf);
131.         return -1;
132.     }
133. }
134.
135. /* Read the packets */
136. while((res = pcap_next_ex( fp, &header, &pkt_data)) >= 0)
137. {
138.
139.     if(res == 0)
140.         /* Timeout elapsed */
141.         continue;
142.
143.     /* print pkt timestamp and pkt len */
144.     printf("%ld:%ld (%ld)\n", header->ts.tv_sec, header->ts.tv_usec, header->len);
145.
146.     /* Print the packet */
147.     for (i=1; (i < header->caplen + 1) ; i++)
148.     {
149.         printf("%.2x ", pkt_data[i-1]);
150.         if ( (i % LINE_LEN) == 0) printf("\n");
151.     }
152.
153.     printf("\n\n");
154. }
155.
156. if(res == -1)
157. {
158.     fprintf(stderr, "Error reading the packets: %s\n", pcap_geterr(fp));
159.     return -1;
160. }
161.
162. return 0;
163. }

```

数据包过滤器

这是一个更加完整的使用libpcap的范例程序，它显示了如何创建和设置过滤器，如何把捕获保存到磁盘。这个程序在Win32和Unix平台下都能编译。Pcap_filter(pf.exe)是一个通用的数据包过滤程序：它的输入参数有数据包的源(可以是物理接口，或是一个文件)，过滤器和一个输出文件。它会从源获取数据包，并对它们进行过滤，如果它们符合过滤器的要求，就把它们保存到输出文件，直到按下Ctrl+C，或者整个文件处理完毕。Pcap_filter不但可以根据一个特定的过滤器，来堆处理网络中的数据，而且可以从已经保存过的文件中提取数据包。输入和输出文件的格式都是libpcap兼容的格式，比如，WinDump, tcpdump和其他许多网络工具。

```

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29.  * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
30.  * OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
31.  *
32.  */
33.
34.
35. #include <stdlib.h>
36. #include <stdio.h>
37.
38. #include <pcap.h>
39.
40. #define MAX_PRINT 80
41. #define MAX_LINE 16
42.
43.
44. void usage();

```

```

45.
46.
47. void main(int argc, char **argv)
48. {
49.     pcap_t *fp;
50.     char errbuf[PCAP_ERRBUF_SIZE];
51.     char *source=NULL;
52.     char *ofilename=NULL;
53.     char *filter=NULL;
54.     int i;
55.     pcap_dumper_t *dumpfile;
56.     struct bpf_program fcode;
57.     bpf_u_int32 NetMask;
58.     int res;
59.     struct pcap_pkthdr *header;
60.     const u_char *pkt_data;
61.
62.     if (argc == 1)
63.     {
64.         usage();
65.         return;
66.     }
67.
68.     for(i=1;i < argc; i+= 2)
69.     {
70.
71.         switch (argv[i] [1])
72.         {
73.             case 's':
74.             {
75.                 source=argv[i+1];
76.             };
77.             break;
78.
79.             case 'o':
80.             {
81.                 ofilename=argv[i+1];
82.             };
83.             break;
84.
85.             case 'f':
86.             {
87.                 filter=argv[i+1];
88.             };
89.             break;
90.         }
91.     }
92.
93.     // open a capture from the network
94.     if (source != NULL)
95.     {
96.         if ( (fp= pcap_open(source,
97.                             1514 /*snaplen*/,
98.                             PCAP_OPENFLAG_PROMISCUOUS /*flags*/,
99.                             20 /*read timeout*/,
100.                             NULL /* remote authentication */,
101.                             errbuf)
102.             ) == NULL)
103.         {
104.             fprintf(stderr, "\nUnable to open the adapter.\n");
105.             return;
106.         }
107.     }
108.
109.     else usage();
110.
111.     if (filter != NULL)
112.     {
113.         // We should loop through the adapters returned by the pcap_findalldevs_ex()
114.         // in order to locate the correct one.
115.         //
116.         // Let's do things simpler: we suppose to be in a C class network ;-)
117.         NetMask=0xffffffff;
118.
119.         //compile the filter
120.         if(pcap_compile(fp, &fcode, filter, 1, NetMask) < 0)
121.         {
122.             fprintf(stderr, "\nError compiling filter: wrong syntax.\n");
123.             return;
124.         }
125.
126.         //set the filter
127.         if(pcap_setfilter(fp, &fcode)<0)
128.         {
129.             fprintf(stderr, "\nError setting the filter\n");
130.             return;
131.         }
132.     }
133.
134.
135.     //open the dump file
136.     if (ofilename != NULL)

```

```

136.     if (outfile != NULL)
137.     {
138.         dumpfile= pcap_dump_open(fp, outfile);
139.
140.         if (dumpfile == NULL)
141.         {
142.             fprintf(stderr, "\nError opening output file\n");
143.             return;
144.         }
145.     }
146.     else usage();
147.
148.     //start the capture
149.     while((res = pcap_next_ex( fp, &header, &pkt_data)) >= 0)
150.     {
151.
152.         if(res == 0)
153.             /* Timeout elapsed */
154.             continue;
155.
156.         //save the packet on the dump file
157.         pcap_dump((unsigned char *) dumpfile, header, pkt_data);
158.
159.     }
160. }
161.
162.
163. void usage()
164. {
165.
166.     printf("\nnpf - Generic Packet Filter.\n");
167.     printf("\nUsage: npf -s source -o output_file_name [-f filter_string]\n\n");
168.     exit(0);
169. }

```

原文地址：<http://www.ferrisxu.com/WinPcap/html/index.html>

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