Instituto Politécnico Nacional

Escuela Superior de Cómputo

Redes de Computadoras

“Analizador de tramas”

Versión 1.- LLC

Alumno:

Hernández Rodríguez Armando Giovanni

Profesora:

M. en C. NIDIA ASUNCIÓN CORTEZ DUARTE

Grupo: 2CM15

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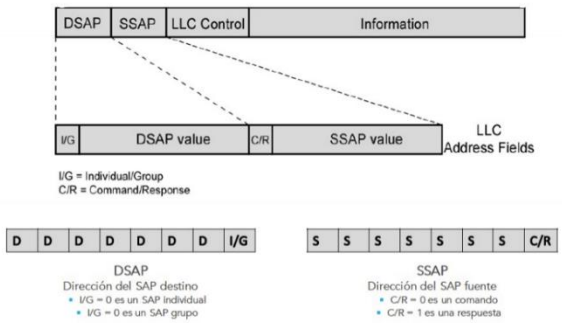
Introducción al protocolo LLC

Definición

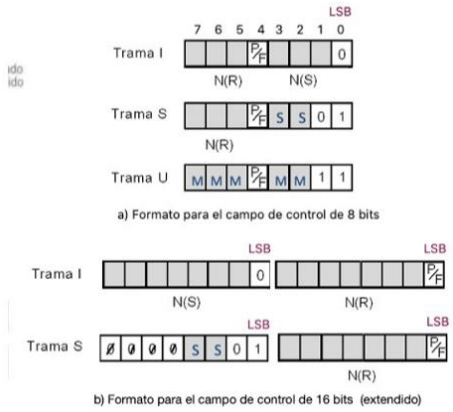
El control del enlace lógico (Logic Link Control) es el protocolo de enlace de las redes de área local, descrito en el estándar IEEE 802.2. LLC está basado en HDLC con formato de trama similar, además pueden estar orientados a conexión o sin conexión.

Cabecera



La cabecera LLC incluye dos campos de dirección de 8 bit, llamados Service Access Points o SAPs. El primer campo de 8 bits es el SAP destino y el siguiente el SAP origen. Luego se tiene un campo de control que dependiendo del tipo de trama puede ser de 8 o 16 bits. Y al último se tiene el campo de información.

Estructura de los campos de control de T-I, T-S y T-U



Al igual que en HDLC, LLC tiene tramas de información, supervisión y no numeradas.

Tramas I: Se utilizan para transmisión de datos y reconocimiento.

Tramas S: Se utilizan para el control de flujo y de control de errores

Tramas U: Se utilizan para el establecimiento, mantenimiento y terminación de conexión

Bit P/F

Cada trama tiene un bit P/F (sondeo / bit final). El bit de sondeo es parte de una trama de comando, mientras que el bit final solo ocurre en las tramas de respuesta. En general, los bits P/F tienen el estado 0. Solamente tiene significado cuando está activo.

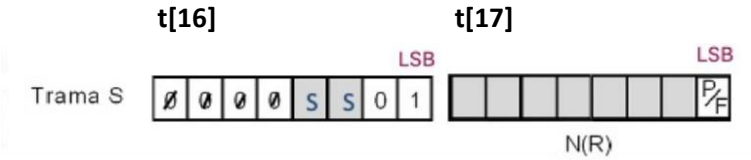
Campo SAPo

El LSB del SAPo permite saber si se trata de un comando o respuesta. Si C/R es 0 se trata de un comando, por otro lado si C/R es 1 entonces es una respuesta.

Explicación breve de los procesos de enmascaramiento

¿Como obtener el valor de los bits S?

Para obtener el valor de los bits S en la trama de supervisión, se utilizó un corrimiento a la derecha y un AND. Para ello, primero se ubicó la posición del arreglo unsigned char de la trama $t[]$ en donde se encontraban los bits S, en este caso $t[16]$ que corresponde al campo de control (CC) de la cabecera LLC



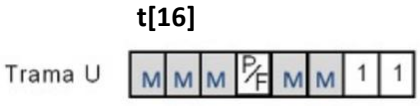
Luego a $t[16]$ se hizo el corrimiento de dos posiciones a la derecha y se aplicó la operación AND con el número 3 para apagar los demás bits (para que solo quede 000000SS). En la siguiente representación de los datos en bits se puede observar mejor:

	x	x	x	x	x	x	**S**	**S**	t[16]>>2
&	0	0	0	0	0	0	1	1	3
	0	0	0	0	0	0	**S**	**S**	

Finalmente se toma el valor de los bits S para obtener el comando correspondiente del arreglo $SS[]$.

¿Como obtener el valor de los bits M?

Ahora bien, para obtener el valor de los bits M en la trama no numerada, se utilizaron corrimientos a la derecha, operaciones AND y OR. Como en la trama anterior, primero se ubicó la posición del arreglo de la trama $t[]$, la cual es la misma $t[16]$

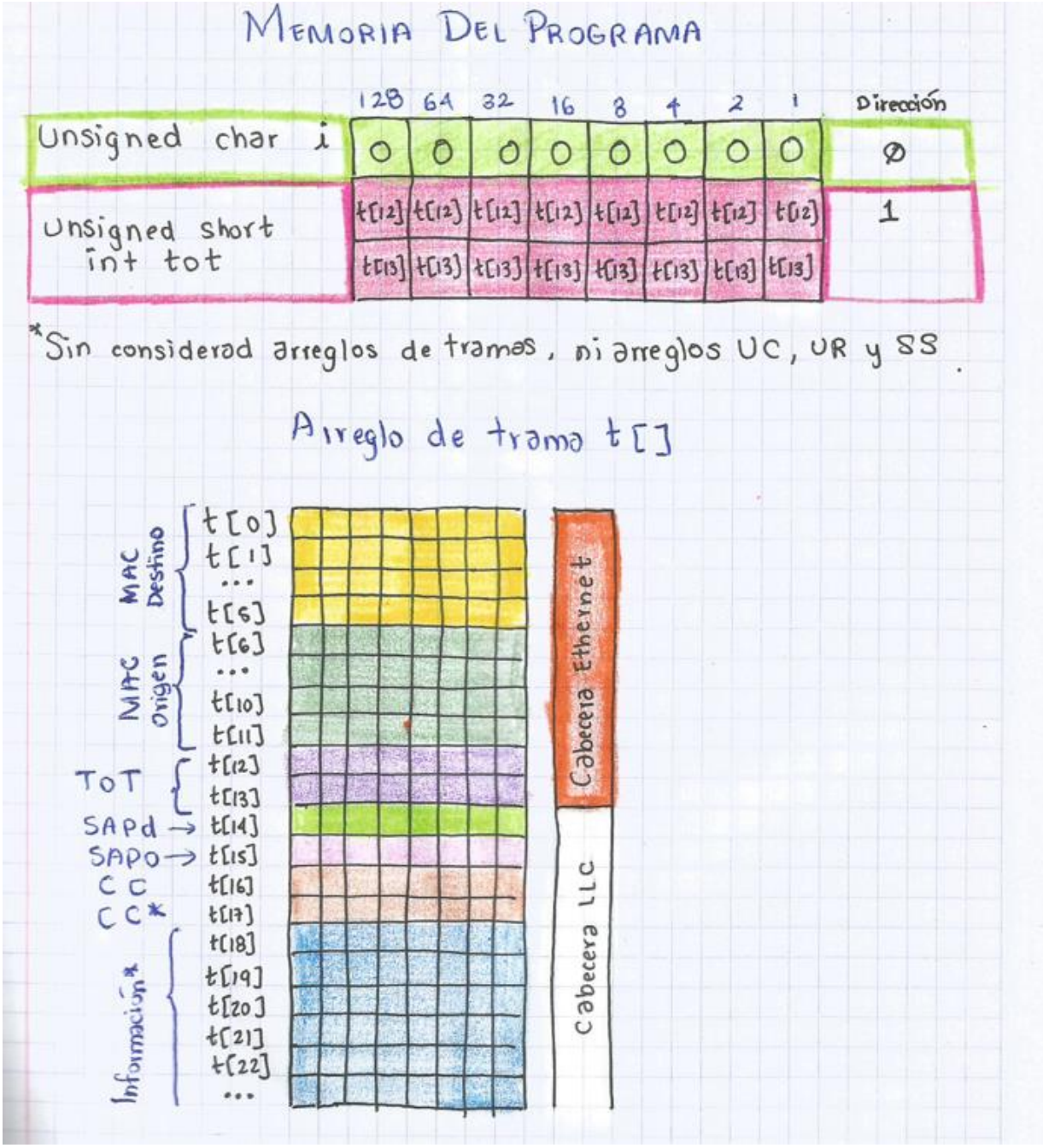


Luego a $t[16]$ se hizo el corrimiento de dos posiciones a la derecha y se aplicó la operación AND con el número 3 para apagar los demás bits (para que solo quede 000000MM). Este resultado se le concatenó (o se hizo un OR) con el corrimiento de tres posiciones a la derecha de $t[16]$ AND con el número 28 (para que quede 000MMM00, con el OR se obtendrá 000MMMMM). En la siguiente representación de los datos en bits se puede observar mejor:

	x	x	x	x	x	x	**M**	**M**	t[16]>>2
&	0	0	0	0	0	0	1	1	3
	0	0	0	0	0	0	**M**	**M**	
	x	x	x	**M**	**M**	**M**	x	x	t[16]>>3
&	0	0	0	1	1	1	0	0	28
	0	0	0	**M**	**M**	**M**	0	0	
	0	0	0	0	0	0	**M**	**M**	(t[16]>>2)&3
OR	0	0	0	**M**	**M**	**M**	0	0	(t[16]>>3)&28
	0	0	0	**M**	**M**	**M**	**M**	**M**	

Finalmente se toma el valor de los bits M para obtener el comando o respuesta correspondiente de los arreglos $UC[]$ o $UR[]$ según sea el caso.

Memoria del Programa



Captura de pantalla de la salida del programa (imprime tu nombre completo al inicio de la ejecución)

```
argio@DESKTOP-C3J0CAB MINGW64
$ gcc LLC.c -o LLC

argio@DESKTOP-C3J0CAB MINGW64
$ ./LLC
```

```
        <<<Escuela Superior de Cómputo>>>
Elaborado por: Hernández Rodríguez Armando Giovanni

--------------------------------------------------------------------------------

        Trama: 1

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 3 bytes


..:::Cabecera LLC:::..
T-U: SABME -p

--------------------------------------------------------------------------------

        Trama: 2

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 3 bytes


..:::Cabecera LLC:::..
T-U: UA -f

--------------------------------------------------------------------------------

        Trama: 3

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=0, -p

--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 4

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=0, -f

--------------------------------------------------------------------------------

        Trama: 5

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 18 bytes


..:::Cabecera LLC:::..
T-I, N(s)=0, N(r)=0, -p

--------------------------------------------------------------------------------

        Trama: 6

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 18 bytes


..:::Cabecera LLC:::..
T-I, N(s)=0, N(r)=1, -p

--------------------------------------------------------------------------------

        Trama: 7

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=1, -f

--------------------------------------------------------------------------------

        Trama: 8

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=1, -f

--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 9

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 172 bytes


..:::Cabecera LLC:::..
T-I, N(s)=1, N(r)=1
--------------------------------------------------------------------------------

        Trama: 10

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=2
--------------------------------------------------------------------------------

        Trama: 11

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 95 bytes


..:::Cabecera LLC:::..
T-I, N(s)=1, N(r)=2
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 12

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=2
--------------------------------------------------------------------------------

        Trama: 13

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 145 bytes


..:::Cabecera LLC:::..
T-I, N(s)=2, N(r)=2
--------------------------------------------------------------------------------

        Trama: 14

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=3
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 15

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 70 bytes


..:::Cabecera LLC:::..
T-I, N(s)=2, N(r)=3
--------------------------------------------------------------------------------

        Trama: 16

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=3
--------------------------------------------------------------------------------

        Trama: 17

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 126 bytes


..:::Cabecera LLC:::..
T-I, N(s)=3, N(r)=3
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 18

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=4
--------------------------------------------------------------------------------

        Trama: 19

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=4
--------------------------------------------------------------------------------

        Trama: 20

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 126 bytes


..:::Cabecera LLC:::..
T-I, N(s)=4, N(r)=4
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 21

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=5
--------------------------------------------------------------------------------

        Trama: 22

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=5
--------------------------------------------------------------------------------

        Trama: 23

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 18 bytes


..:::Cabecera LLC:::..
T-I, N(s)=5, N(r)=5, -p

--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 24

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=6, -f

--------------------------------------------------------------------------------

        Trama: 25

..:::Cabecera Ethernet:::..

MAC Destino: 03:00:00:00:00:01
MAC Origen: 00:04:ac:44:4d:02
Tamaño de cabecera LLC: 139 bytes


..:::Cabecera LLC:::..
--------------------------------------------------------------------------------

        Trama: 26

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 53 bytes


..:::Cabecera LLC:::..
T-I, N(s)=6, N(r)=5
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 27

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 53 bytes


..:::Cabecera LLC:::..
T-I, N(s)=5, N(r)=7
--------------------------------------------------------------------------------

        Trama: 28

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 18 bytes


..:::Cabecera LLC:::..
T-I, N(s)=7, N(r)=6, -p

--------------------------------------------------------------------------------

        Trama: 29

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=8, -f

--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 30

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 18 bytes


..:::Cabecera LLC:::..
T-I, N(s)=8, N(r)=6, -p

--------------------------------------------------------------------------------

        Trama: 31

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 4 bytes


..:::Cabecera LLC:::..
T-S: RR, N(r)=9, -f

--------------------------------------------------------------------------------

        Trama: 32

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:ae:ba
MAC Origen: 00:02:b3:9c:df:1b
Tamaño de cabecera LLC: 3 bytes


..:::Cabecera LLC:::..
T-U: DISC -p

--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------

        Trama: 33

..:::Cabecera Ethernet:::..

MAC Destino: 00:02:b3:9c:df:1b
MAC Origen: 00:02:b3:9c:ae:ba
Tamaño de cabecera LLC: 3 bytes


..:::Cabecera LLC:::..
T-U: UA -f

--------------------------------------------------------------------------------

        Trama: 34

..:::Cabecera Ethernet:::..

MAC Destino: ff:ff:ff:ff:ff:ff
MAC Origen: 00:23:8b:46:e9:ad
Tipo ARP

--------------------------------------------------------------------------------

        Trama: 35

..:::Cabecera Ethernet:::..

MAC Destino: 00:23:8b:46:e9:ad
MAC Origen: 00:1f:45:9d:1e:a2
Tipo ARP

--------------------------------------------------------------------------------

        Trama: 36

..:::Cabecera Ethernet:::..

MAC Destino: 00:1f:45:9d:1e:a2
MAC Origen: 00:23:8b:46:e9:ad
Tipo IP
```

Conclusiones

Anteriormente no había trabajado a nivel de bits, sin embargo después de practicar con las operaciones bitwise (XNOR, AND, OR, complemento, corrimientos) he comprobado que se pueden elaborar algoritmos que consideren el gasto de memoria. Como programadores, en ocasiones olvidamos la memoria que podría llegar a ocupar nuestro programa, y sólo nos centramos en que funcione aunque se ocupen muchas variables y arreglos de forma indistinta, sin embargo con el desarrollo de esta práctica me quedó claro la importancia que tiene el análisis antes de realizar cualquier programa, pensar en las variables que se ocuparan y asignar el tipo de dato adecuado.

Pienso que los operadores binarios ofrecen muchas ventajas en el programa pues permiten hacer operaciones que si bien podrían hacerse con multiplicaciones, divisiones, sumas o restas, al realizar operaciones bit a bit se consume mucho menos memoria, además son increíblemente simples y generalmente más rápidas.

Finalmente la práctica me resultó interesante, me pareció retadora ya que me propuse usar las variables que menos se pudieran, el claro reflejo de esto es la memoria del programa en donde solo se ocuparon dos variables. Gracias a la explicación y análisis sobre cómo debía funcionar el programa visto en clase, pude comprender e implementar lo que se requería.

Código Fuente

```
#include<stdio.h>

unsigned char i = 0x00;

void analizaLLC(unsigned char T[]){
    char SS[][5] = {"RR", "RNR", "REJ", "SREJ"};
    char UC[][6] = {"UI", "SIM", "-", "SARM", "UP", "-", "-", "SABM", "DISC", "-", "-",
"SARME", "-", "-", "-", "SABME", "SNRM", "-", "-", "RSET", "-", "-", "-", "XID", "-", "-
", "-", "SNRME"}; // comandos - p
    char UR[][6] = {"UI", "RIM", "-", "DM", "-", "-", "-", "-", "RD", "-", "-", "-",
"UA", "-", "-", "-", "-", "FRMR", "-", "-", "-", "-", "-", "XID"}; // respuestas - f
    printf("\n\n..:::Cabecera LLC:::..."); //En LLC solo hay SABME T-U 1byte , T-S y T-I
2bytes
    switch(T[16] & 3){ //0000 0011 -> 3  xxxx xxxx & 0000 0011 -> {0, 1, 2, 3}={00-T-I,
01-T-S, 10 -T-I, 11-TU}
        case 0:
        case 2: //T-I
         printf("\nT-I, N(s)=%d, N(r)=%d",T[16]>>1, T[17]>>1);
        if(T[17]&1){
            if(T[15]&1){ printf(", -f\n"); }//LSB SAPo
            else{ printf(", -p\n"); }
        }
        break;

        case 1: //T-S
        printf("\nT-S: %s, N(r)=%d", SS[(T[16]>>2) & 3], T[17]>>1);
        //printf("\nSS: %s", SS[(T[16]>>2) & 3]); // 0xxxxss & 0000 0011 = 0000 00ss
        if(T[17]&1){ // p/f encendido?
            if(T[15]&1){ printf(", -f\n"); } //LSB SAPo
            else{ printf(", -p\n"); }
        }
        break;

        case 3: //T-U   MMMx MM11 T[16]
        //printf("\nT-U");
        //((T[16] >> 2) & 3) | ((T[16] >> 3) & 28)
        //((T[16] >> 2) & 3) | ((T[16] >> 3) << 2) {0, 1, 2,...,31}
        //printf("\nMMMMM: %s", ((T[16] >> 2) & 3) | ((T[16] >> 3) & 28));
        if(T[16]&16){// p-f = 1?
            if(T[15]&1){ printf("\nT-U: %s -f\n", UR[((T[16] >> 2) & 3) | ((T[16] >> 3)
& 28)] ); }//LSB SAPo
            else{ printf("\nT-U: %s -p\n", UC[((T[16] >> 2) & 3) | ((T[16] >> 3) & 28)]
); }
        }
        break;

    }
}

void analizaTrama(unsigned char t[]){

```

```
            printf("\n-----------------------------------------------------------------------
------------------");
        printf("\n\n\tTrama: %d\n", i+1);
        printf("\n..:::Cabecera Ethernet:::..\n");
        printf("\nMAC Destino: %.2x:%.2x:%.2x:%.2x:%.2x:%.2x", t[0], t[1], t[2], t[3],
t[4], t[5]);
        printf("\nMAC Origen: %.2x:%.2x:%.2x:%.2x:%.2x:%.2x", t[6], t[7], t[8], t[9],
t[10], t[11]);

        unsigned short int tot = (t[12]<<8) | t[13]; // 2bytes

        if(tot<1500){

            printf("\nTama%co de cabecera LLC: %d bytes\n", 164, tot);
            analizaLLC(t);
        }
        else{
            if(tot == 2048){
                printf("\nTipo IP\n");
            }
            else if(tot == 2054){
                printf("\nTipo ARP\n");
            }
            else{
                printf("\nTipo: %.2x.%.2x\n", t[12], t[13]);
            }
        }

}

int main(){

    printf("\n\t<<<Escuela Superior de C%cmputo>>>\nElaborado por: Hern%cndez Rodr%cguez
Armando Giovanni\n", 162, 160, 161);

    unsigned char t[][256]=
        {   // 16 columnas x fila

        {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x03,0xf0,0xf0,

0x7f,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x43,0x05,0x90,0x6d},
//trama1

        {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x03,0xf0,0xf1,

0x73,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

```

```
105
106 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x54,0x90,0x6d},
107 //trama2
108
109         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x04,0xf0,0xf0,
110
111 0x01,0x01,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
112
113 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
114
115 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x41,0xa3,0x90,0x6d},
116 //trama3
117
118         {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x04,0xf0,0xf1,
119
120 0x01,0x01,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
121
122 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
123
124 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xf2,0x90,0x6d},
125 //trama4
126
127         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x12,0xf0,0xf0,
128
129 0x00,0x01,0x0e,0x00,0xff,0xef,0x19,0x8f,0xbc,0x05,0x7f,0x00,0x23,0x00,0x7f,0x23,
130
131 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
132
133 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x41,0x91,0x6d},
134 //trama5
135
136         {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x12,0xf0,0xf0,
137
138 0x00,0x03,0x0e,0x00,0xff,0xef,0x17,0x81,0xbc,0x05,0x23,0x00,0x7f,0x00,0x23,0x7f,
139
140 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
141
142 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x90,0x91,0x6d},
143 //trama6
144
145         {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x04,0xf0,0xf1,
146
147 0x01,0x03,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
148
149 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
150
151 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xdf,0x91,0x6d},
152 //trama7
153
154         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x04,0xf0,0xf1,
155
156 0x01,0x03,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
157
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158
159 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
160
161 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x18,0xac,0x92,0x6d},
162 //trama8
163
164         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0xac,0xf0,0xf0,
165
166 0x02,0x02,0x0e,0x00,0xff,0xef,0x16,0x04,0x00,0x00,0x00,0x00,0x28,0x00,0x7f,0x23,
167
168 0xff,0x53,0x4d,0x42,0x72,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
169
170 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x82,0x09,
171
172 0x00,0x77,0x00,0x02,0x50,0x43,0x20,0x4e,0x45,0x54,0x57,0x4f,0x52,0x4b,0x20,0x50,
173
174 0x52,0x4f,0x47,0x52,0x41,0x4d,0x20,0x31,0x2e,0x30,0x00,0x02,0x4d,0x49,0x43,0x52,
175
176 0x4f,0x53,0x4f,0x46,0x54,0x20,0x4e,0x45,0x54,0x57,0x4f,0x52,0x4b,0x53,0x20,0x33,
177
178 0x2e,0x30,0x00,0x02,0x44,0x4f,0x53,0x20,0x4c,0x4d,0x31,0x2e,0x32,0x58,0x30,0x30,
179
180 0x32,0x00,0x02,0x44,0x4f,0x53,0x20,0x4c,0x41,0x4e,0x4d,0x41,0x4e,0x32,0x2e,0x31,
181
182 0x00,0x02,0x57,0x69,0x6e,0x64,0x6f,0x77,0x73,0x20,0x66,0x6f,0x72,0x20,0x57,0x6f,
183
184 0x72,0x6b,0x67,0x72,0x6f,0x75,0x70,0x73,0x20,0x33,0x2e,0x31,0x61,0x00,0x02,0x4e,
185
186 0x54,0x20,0x4c,0x4d,0x20,0x30,0x2e,0x31,0x32,0x00,0x00,0xfb,0x92,0x6d,0x86,0xdf},
187 //trama9
188
189         {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x04,0xf0,0xf1,
190
191 0x01,0x04,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
192
193 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
194
195 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x7b,0x93,0x6d},
196 //trama10
197
198         {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x5f,0xf0,0xf0,
199
200 0x02,0x04,0x0e,0x00,0xff,0xef,0x16,0x0c,0x00,0x00,0x28,0x00,0x28,0x00,0x23,0x7f,
201
202 0xff,0x53,0x4d,0x42,0x72,0x00,0x00,0x00,0x00,0x80,0x00,0x00,0x00,0x00,0x00,0x00,
203
204 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x82,0x09,
205
206 0x11,0x05,0x00,0x02,0x02,0x00,0x01,0x00,0x68,0x0b,0x00,0x00,0x00,0x00,0x01,0x00,
207
208 0x7f,0x07,0x00,0x80,0x03,0x02,0x00,0x00,0x00,0xe5,0xfe,0x29,0x25,0x7c,0xc2,0x01,
209
210
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211
212 0x2c,0x01,0x08,0x08,0x00,0x7f,0x07,0x00,0x80,0x32,0x3e,0xb9,0x3d,0x00,0xca,0x93},
213 //trama11
214
215         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x04,0xf0,0xf1,
216
217 0x01,0x04,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
218
219 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
220
221 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x7c,0x94,0x6d},
222 //trama12
223
224         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x91,0xf0,0xf0,
225
226 0x04,0x04,0x0e,0x00,0xff,0xef,0x16,0x0c,0x00,0x00,0x28,0x00,0x28,0x00,0x7f,0x23,
227
228 0xff,0x53,0x4d,0x42,0x73,0x00,0x00,0x00,0x00,0x10,0x00,0x00,0x00,0x00,0x00,0x00,
229
230 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x82,0x09,
231
232 0x0d,0x75,0x00,0x5d,0x00,0x68,0x0b,0x02,0x00,0x00,0x00,0x7f,0x07,0x00,0x80,0x00,
233
234 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x01,0x00,0x00,0x00,0x20,0x00,0x00,0x00,0x45,
235
236 0x53,0x43,0x4f,0x4d,0x00,0x57,0x69,0x6e,0x64,0x6f,0x77,0x73,0x20,0x34,0x2e,0x30,
237
238 0x00,0x57,0x69,0x6e,0x64,0x6f,0x77,0x73,0x20,0x34,0x2e,0x30,0x00,0x04,0xff,0x00,
239
240 0x00,0x00,0x02,0x00,0x02,0x00,0x17,0x00,0x20,0x00,0x5c,0x5c,0x50,0x52,0x4f,0x47,
241
242 0x59,0x44,0x45,0x53,0x41,0x5c,0x49,0x50,0x43,0x24,0x00,0x49,0x50,0x43,0x00,0x00},
243 //trama13
244
245         {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x04,0xf0,0xf1,
246
247 0x01,0x06,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
248
249 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
250
251 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x32,0x95,0x6d},
252 //trama14
253
254         {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x46,0xf0,0xf0,
255
256 0x04,0x06,0x0e,0x00,0xff,0xef,0x16,0x0c,0x00,0x00,0x28,0x00,0x28,0x00,0x23,0x7f,
257
258 0xff,0x53,0x4d,0x42,0x73,0x00,0x00,0x00,0x00,0x90,0x00,0x00,0x00,0x00,0x00,0x00,
259
260 0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x03,0xc0,0x00,0x00,0x00,0x00,0x82,0x09,
261
262 0x03,0x75,0x00,0x29,0x00,0x00,0x00,0x00,0x00,0x02,0xff,0x00,0x00,0x00,0x04,0x00,
263
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264
265 0x49,0x50,0x43,0x00,0x00,0x81,0x95,0x6d,0x86,0xcb,0x94,0x6d,0x86,0x0d,0x09,0x0e},
266 //trama15
267
268         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x04,0xf0,0xf1,

    0x01,0x06,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

    0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

    0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x20,0x96,0x6d},
    //trama16

         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x7e,0xf0,0xf0,

    0x06,0x06,0x0e,0x00,0xff,0xef,0x16,0x0c,0x00,0x00,0x28,0x00,0x28,0x00,0x7f,0x23,

    0xff,0x53,0x4d,0x42,0x25,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

    0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x03,0xc0,0x00,0x00,0x00,0x00,0x82,0x0a,

    0x0e,0x20,0x00,0x00,0x00,0x08,0x00,0x00,0x10,0x00,0x00,0x00,0x00,0x88,0x13,0x00,

    0x00,0x00,0x00,0x20,0x00,0x4c,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x2d,0x00,0x5c,

    0x50,0x49,0x50,0x45,0x5c,0x4c,0x41,0x4e,0x4d,0x41,0x4e,0x00,0x68,0x00,0x57,0x72,

    0x4c,0x65,0x68,0x44,0x7a,0x00,0x42,0x31,0x36,0x42,0x42,0x44,0x7a,0x00,0x01,0x00,

    0x00,0x10,0xff,0xff,0xff,0xff,0x45,0x53,0x43,0x4f,0x4d,0x00,0x00,0x6f,0x96,0x6d},
    //trama17

         {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x04,0xf0,0xf1,

    0x01,0x08,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

    0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

    0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xbe,0x96,0x6d},
    //trama18

         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x04,0xf0,0xf1,

    0x01,0x08,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

    0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

    0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x5d,0x97,0x6d},
    //trama19

         {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x7e,0xf0,0xf0,

    0x08,0x08,0x0e,0x00,0xff,0xef,0x16,0x0c,0x00,0x00,0x28,0x00,0x28,0x00,0x7f,0x23,
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0xff,0x53,0x4d,0x42,0x25,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x03,0xc0,0x00,0x00,0x00,0x00,0x02,0x0b,
0x0e,0x20,0x00,0x00,0x00,0x08,0x00,0x00,0x10,0x00,0x00,0x00,0x00,0x88,0x13,0x00,
0x00,0x00,0x00,0x20,0x00,0x4c,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x2d,0x00,0x5c,
0x50,0x49,0x50,0x45,0x5c,0x4c,0x41,0x4e,0x4d,0x41,0x4e,0x00,0x68,0x00,0x57,0x72,
0x4c,0x65,0x68,0x44,0x7a,0x00,0x42,0x31,0x36,0x42,0x42,0x44,0x7a,0x00,0x01,0x00,
0x00,0x10,0x00,0x00,0x00,0x80,0x45,0x53,0x43,0x4f,0x4d,0x00,0x00,0xac,0x97,0x6d},
//trama20
        {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x04,0xf0,0xf1,
0x01,0x0a,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xfb,0x97,0x6d},
//trama21
        {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x04,0xf0,0xf1,
0x01,0x0a,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x4a,0x98,0x6d},
//trama22
        {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x12,0xf0,0xf0,
0x0a,0x0b,0x0e,0x00,0xff,0xef,0x14,0x00,0x00,0x00,0x28,0x00,0x00,0x00,0x7f,0x23,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x01,0x99,0x98,0x6d},
//trama23
        {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x04,0xf0,0xf1,
0x01,0x0d,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x45,0x99,0x6d},
//trama24
        {0x03,0x00,0x00,0x00,0x00,0x01,0x00,0x04,0xac,0x44,0x4d,0x02,0x00,0x8b,0xf0,0xf0,
```

```
0x03,0x2c,0x00,0xff,0xef,0x08,0x00,0x00,0x00,0x00,0x00,0x00,0x42,0x34,0x20,
0x20,0x20,0x20,0x20,0x20,0x20,0x20,0x20,0x20,0x20,0x20,0x1b,0x49,0x42,0x4d,
0x53,0x45,0x52,0x56,0x45,0x52,0x20,0x20,0x20,0x20,0x20,0x20,0x00,0xff,0x53,0x4d,
0x42,0x25,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x11,0x00,0x00,
0x06,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xe8,0x03,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x06,0x00,0x56,0x00,0x03,0x00,0x01,0x00,0x01,0x00,0x02,0x00,
0x17,0x00,0x5c,0x4d,0x41,0x49,0x4c,0x53,0x4c,0x4f,0x54,0x5c,0x42,0x52,0x4f,0x57,
0x53,0x45,0x00,0x09,0x04,0x33,0x17,0x00,0x00,0x00,0x9b,0x99,0x6d,0x86,0x99,0x98},
//trama25
        {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x35,0xf0,0xf0,
0x0c,0x0a,0x0e,0x00,0xff,0xef,0x16,0x04,0x00,0x00,0x00,0x00,0x28,0x00,0x7f,0x23,
0xff,0x53,0x4d,0x42,0x71,0x00,0x00,0x00,0x00,0x00,0x01,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x03,0xc0,0x00,0x00,0x00,0x00,0x01,0x50,
0x00,0x00,0x00,0x45,0xf1,0x99,0x6d,0x86,0x45,0x99,0x6d,0x86,0x1f,0x09,0x52,0x5b},
//trama26
        {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x35,0xf0,0xf0,
0x0a,0x0e,0x0e,0x00,0xff,0xef,0x16,0x0c,0x00,0x00,0x28,0x00,0x28,0x00,0x23,0x7f,
0xff,0x53,0x4d,0x42,0x71,0x00,0x00,0x00,0x00,0x80,0x01,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x03,0xc0,0x00,0x00,0x00,0x00,0x01,0x50,
0x00,0x00,0x00,0x00,0x40,0x9a,0x6d,0x86,0x9b,0x99,0x6d,0x86,0x20,0x09,0x75,0x5b},
//trama27
        {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x12,0xf0,0xf0,
0x0e,0x0d,0x0e,0x00,0xff,0xef,0x14,0x00,0x00,0x00,0x28,0x00,0x00,0x00,0x7f,0x23,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x8f,0x9a,0x6d},
//trama28
        {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x04,0xf0,0xf1,
```

```
0x01,0x11,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xde,0x9a,0x6d},
//trama29
        {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x12,0xf0,0xf0,
0x10,0x0d,0x0e,0x00,0xff,0xef,0x18,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x7f,0x23,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x2d,0x9b,0x6d},
//trama30
        {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x04,0xf0,0xf1,
0x01,0x13,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x7c,0x9b,0x6d},
//trama31
        {0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x03,0xf0,0xf0,
0x53,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0xcb,0x9b,0x6d},
//trama32
        {0x00,0x02,0xb3,0x9c,0xdf,0x1b,0x00,0x02,0xb3,0x9c,0xae,0xba,0x00,0x03,0xf0,0xf1,
0x73,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,
0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x77,0x9c,0x6d},
//trama33


        {0xff,0xff,0xff,0xff,0xff,0xff,0x00,0x23,0x8b,0x46,0xe9,0xad,0x08,0x06,0x00,0x04,
0x08,0x00,0x06,0x04,0x00,0x01,0x00,0x23,0x8b,0x46,0xe9,0xad,0x94,0xcc,0x39,0xcb,
                0x00,0x00,0x00,0x00,0x00,0x00,0x94,0xcc,0x39,0xfe },
                                ///TRAMA a
```

```
        {0x00,0x23,0x8b,0x46,0xe9,0xad,0x00,0x1f,0x45,0x9d,0x1e,0xa2,0x08,0x06,0x00,0x01,
//TRAMA b

0x08,0x00,0x06,0x04,0x00,0x02,0x00,0x1f,0x45,0x9d,0x1e,0xa2,0x94,0xcc,0x39,0xfe,

0x00,0x23,0x8b,0x46,0xe9,0xad,0x94,0xcc,0x39,0xcb,0x00,0x00,0x00,0x00,0x00,0x00,
                0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00 },


        {0x00,0x1f,0x45,0x9d,0x1e,0xa2,0x00,0x23,0x8b,0x46,0xe9,0xad,0x08,0x00,0x46,0x00,
// TRAMA c

0x80,0x42,0x04,0x55,0x34,0x11,0x80,0x11,0x6b,0xf0,0x94,0xcc,0x39,0xcb,0x94,0xcc,

0x67,0x02,0xaa,0xbb,0xcc,0xdd,0x04,0x0c,0x00,0x35,0x00,0x2e,0x85,0x7c,0xe2,0x1a,

0x01,0x00,0x00,0x01,0x00,0x00,0x00,0x00,0x00,0x00,0x03,0x77,0x77,0x77,0x03,0x69,

0x73,0x63,0x05,0x65,0x73,0x63,0x6f,0x6d,0x03,0x69,0x70,0x6e,0x02,0x6d,0x78,0x00,
                0x00,0x1c,0x00,0x01}
        };

    for(i=0; i<36; i++){
                analizaTrama(t[i]);
    }
    return 0;
}
```