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Escuela Superior de Cómputo

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Practica 3: Analizador LLC

**APUNTES DE LABORATORIO**

Formato de trama LLC (control de Enlace Lógico)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| DSAP  (1byte) | | SSAP  (1 byte) | | Control  (1 – 2 bytes) | Datos  (variable) |
| Dir. Destino  7 bits | I/R | Dir. Origen  7 bits | C/R |

Trama IEEE802.3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| MAC0  6bytes | MAC0  6 bytes | Longitud  2 bytes | LLC  3-4 bytes | Datos  Variable | CRC  9bytes |

Longitud/tipo 0 => 1500 => IEEE802.3 > 1500 => ETHERNET

Control

**Tramas I**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 |  |  |  | P/F |  |  |  |

**Trama S**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 |  |  | P/F |  |  |  |

00 = RR (Listo para recibir)

01 = REJ (Rechazo)

10 = RNR (No listo para recibir)

11 = SREJ (Rechazo Selectivo)

Código –

Trama S

**Trama U**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 |  |  | P/F |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | COMANDO | RESPUESTA |
| 00 | 001 | SNRM | - |
| 11 | 011 | SNRME | - |
| 11 | 000 | SARM | DM |
| 11 | 010 | SARME | - |
| 11 | 100 | SABM | - |
| 11 | 110 | SABME | - |
| 00 | 000 | UI | UI |
| 00 | 110 | - | UA |
| 00 | 010 | DISC | RD |
| 11 | 001 | RSET | - |
| 11 | 101 | XID | XID |

Código –

Trama U

SNRM = modo de tespuesta normal

SARM = Modo de respuesta asincrónico

SABM = Modo de respuesta asíncrono balanceado

UI = Informacion sin Numerar

UA = Ack sin numerar

XID = intercambio de ID

RSET = Reinicio

RD = Peticion de desconexión

DM = Modo de Desconexion

1

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 03 f0 f0 7f 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 43 05 90 6d

2

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 03 f0 f1 73 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 54 90 6d

3

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 04 f0 f0 01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 41 a3 90 6d

4

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 04 f0 f1 01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 f2 90 6d

5

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 12 f0 f0 00 01 0e 00 ff ef 19 8f bc 05 7f 00 23 00 7f 23 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 41 91 6d

6

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 12 f0 f0 00 03 0e 00 ff ef 17 81 bc 05 23 00 7f 00 23 7f 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 90 91 6d

7

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 04 f0 f1 01 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 df 91 6d

8

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 04 f0 f1 01 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 18 ac 92 6d

9

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 ac f0 f0 02 02 0e 00 ff ef 16 04 00 00 00 00 28 00 7f 23 ff 53 4d 42 72 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 82 09 00 77 00 02 50 43 20 4e 45 54 57 4f 52 4b 20 50 52 4f 47 52 41 4d 20 31 2e 30 00 02 4d 49 43 52 4f 53 4f 46 54 20 4e 45 54 57 4f 52 4b 53 20 33 2e 30 00 02 44 4f 53 20 4c 4d 31 2e 32 58 30 30 32 00 02 44 4f 53 20 4c 41 4e 4d 41 4e 32 2e 31 00 02 57 69 6e 64 6f 77 73 20 66 6f 72 20 57 6f 72 6b 67 72 6f 75 70 73 20 33 2e 31 61 00 02 4e 54 20 4c 4d 20 30 2e 31 32 00 00 fb 92 6d 86 df

10

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 04 f0 f1 01 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7b 93 6d

11

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 5f f0 f0 02 04 0e 00 ff ef 16 0c 00 00 28 00 28 00 23 7f ff 53 4d 42 72 00 00 00 00 80 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 82 09 11 05 00 02 02 00 01 00 68 0b 00 00 00 00 01 00 7f 07 00 80 03 02 00 00 00 e5 fe 29 25 7c c2 01 2c 01 08 08 00 7f 07 00 80 32 3e b9 3d 00 ca 93

12

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 04 f0 f1 01 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7c 94 6d

13

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 91 f0 f0 04 04 0e 00 ff ef 16 0c 00 00 28 00 28 00 7f 23 ff 53 4d 42 73 00 00 00 00 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 82 09 0d 75 00 5d 00 68 0b 02 00 00 00 7f 07 00 80 00 00 00 00 00 00 00 00 01 00 00 00 20 00 00 00 45 53 43 4f 4d 00 57 69 6e 64 6f 77 73 20 34 2e 30 00 57 69 6e 64 6f 77 73 20 34 2e 30 00 04 ff 00 00 00 02 00 02 00 17 00 20 00 5c 5c 50 52 4f 47 59 44 45 53 41 5c 49 50 43 24 00 49 50 43 00 00

14

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 04 f0 f1 01 06 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 32 95 6d

15

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 46 f0 f0 04 06 0e 00 ff ef 16 0c 00 00 28 00 28 00 23 7f ff 53 4d 42 73 00 00 00 00 90 00 00 00 00 00 00 00 00 00 00 00 00 00 00 03 c0 00 00 00 00 82 09 03 75 00 29 00 00 00 00 00 02 ff 00 00 00 04 00 49 50 43 00 00 81 95 6d 86 cb 94 6d 86 0d 09 0e

16

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 04 f0 f1 01 06 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 20 96 6d

17

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 7e f0 f0 06 06 0e 00 ff ef 16 0c 00 00 28 00 28 00 7f 23 ff 53 4d 42 25 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 03 c0 00 00 00 00 82 0a 0e 20 00 00 00 08 00 00 10 00 00 00 00 88 13 00 00 00 00 20 00 4c 00 00 00 00 00 00 00 2d 00 5c 50 49 50 45 5c 4c 41 4e 4d 41 4e 00 68 00 57 72 4c 65 68 44 7a 00 42 31 36 42 42 44 7a 00 01 00 00 10 ff ff ff ff 45 53 43 4f 4d 00 00 6f 96 6d

18

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 04 f0 f1 01 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 be 96 6d

19

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 04 f0 f1 01 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 5d 97 6d

20

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 7e f0 f0 08 08 0e 00 ff ef 16 0c 00 00 28 00 28 00 7f 23 ff 53 4d 42 25 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 03 c0 00 00 00 00 02 0b 0e 20 00 00 00 08 00 00 10 00 00 00 00 88 13 00 00 00 00 20 00 4c 00 00 00 00 00 00 00 2d 00 5c 50 49 50 45 5c 4c 41 4e 4d 41 4e 00 68 00 57 72 4c 65 68 44 7a 00 42 31 36 42 42 44 7a 00 01 00 00 10 00 00 00 80 45 53 43 4f 4d 00 00 ac 97 6d

21

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 04 f0 f1 01 0a 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 fb 97 6d

22

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 04 f0 f1 01 0a 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 4a 98 6d

23

00 02 b3 9c ae ba 00 02 b3 9c df 1b 00 12 f0 f0 0a 0b 0e 00 ff ef 14 00 00 00 28 00 00 00 7f 23 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 99 98 6d

24

00 02 b3 9c df 1b 00 02 b3 9c ae ba 00 04 f0 f1 01 0d 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 45 99 6d

25

03 00 00 00 00 01 00 04 ac 44 4d 02 00 8b f0 f0 03 2c 00 ff ef 08 00 00 00 00 00 00 00 42 34 20 20 20 20 20 20 20 20 20 20 20 20 20 1b 49 42 4d 53 45 52 56 45 52 20 20 20 20 20 20 00 ff 53 4d 42 25 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 11 00 00 06 00 00 00 00 00 00 00 00 00 e8 03 00 00 00 00 00 00 00 00 06 00 56 00 03 00 01 00 01 00 02 00 17 00 5c 4d 41 49 4c 53 4c 4f 54 5c 42 52 4f 57 53 45 00 09 04 33 17 00 00 00 9b 99 6d 86 99 98