
PPP Quick Reference Guide

2006-11-14

1. LCP

7E FF03 C021 Code(1) ID(1) Len(2) Option(?) CRC(2) 7E

7E is the flag
FF03 is the Address & Control field.

Code	01 Config-Request 02 Config-ACK 03 Config-NACK 05 Terminate-Request 06 Terminate-ACK
ID	It changes whenever a new LCP-Config-Request is sent. When peer B sending a LCP-Config-ACK to peer A, it copies the ID field of LCP-Config-Request from peer A.
Len	It counts the total number of bytes from the Code field to the Option field. In Big Endian format. For example, if the total number of bytes is 8, then the field of Len is 0008
CRC	It checks the bytes after the flag(7E) and before the CRC field.

Option

01 04	MRU
03 04 C023	Authentication(PAP)
05 06	Magic Number
08 02	Address&Control Compression
07 02	Protocol Compression

Examples:

1. LCP-Config-Request
7E FF03 C021 01 55 000C 03 04 C023 01 04 0200 xxxx 7E
Or:
7E FF03 C021 01 57 000C 03 04 C023 01 04 05DC xxxx 7E

2. LCP-Config-NACK
7E FF03 C021 03 56 00 08 01 04 05DC xxxx 7E

3. LCP-Config-ACK
7E FF03 C021 02 57 000C 03 04 C023 01 04 05DC xxxx 7E

4. LCP-Terminate-Request
7E FF03 C021 05 78 0004 xxxx 7E

5. LCP-Terminate-ACK
7E FF03 C021 06 78 0004 xxxx 7E

Note: xxxx is the CRC field of two bytes.

2. Authentication (using PAP)

7E FF03 C023 Code(1) ID(1) Len(2) UIDLen(1) UID(?) PWDLen(1) PWD(?) CRC(2) 7E
7E FF03 C023 Code(1) ID(1) Len(2) MsgLen(1) Msg(?) CRC(2) 7E

Code	01 Request 02 ACK 03 NAK
Len	The number of bytes from Code field to PWD field
UIDLen	The length of UID, max 255
UID	User IDentification, in ASCII
PWDLen	The length of PWD, max 255
PWD	PassWorD for UID
MsgLen	The length of Msg, max 255
Msg	Message for ACK or NAK, in ASCII

Examples: UID = 'ABC', PWD = 'abc'
1. Authentication-Request
7E FF03 C023 01 34 000C 03 414243 03 616263 xxxx 7E

2. Authentication-NACK
7E FF03 C023 03 34 0011 0C 626164 20 70617373776f7264 xxxx 7E

3. Authentication-ACK
7E FF03 C023 02 37 0010 0B 70617373776f7264 20 4F4B xxxx 7E

3. IPCP

7E FF03 8021 Code(1) ID(1) Len(2) 03 IPConfigLen(1) Addr(?) CRC(2) 7E

Code	01 Config-Request 02 Config-ACK 03 Config-NACK 05 Terminate-Request 06 Terminate-ACK
Addr	IP address. If all bytes are zeros, then the sender wants the other side to decide an address.
IPConfigLen	2 + Length of the IP address, usually 6

Examples: IP="192.168.1.1" = C0A80101
1. IPCP-Config-Request
7E FF03 8021 01 23 000A 03 06 C0A80101 xxxx 7E

2. IPCP-Config-NACK
7E FF03 8021 03 23 000A 03 06 C0A80101 xxxx 7E

3. IPCP-Config-ACK
7E FF03 8021 02 24 000A 03 06 C0A80101 xxxx 7E

4. IPCP-Terminate-Request
7E FF03 8021 05 44 0004 xxxx 7E
5. IPCP-Terminate-ACK
7E FF03 8021 06 44 0004 xxxx 7E

4. Sending IP Packets

7E FF03 0021 IPPacket CRC(2) 7E

IPPacket the IP packet you want to send

Example:
7E FF03 0021
4500001C000140000A1180F6C0A80101C0A8010205AA0011000832BE
4898 7E

Note: The IP packet in this example is copied from the Homework Problem 6.

5. A sample session of PPP

Peer A	Peer B
LCP-Config-Request	
	LCP-Config-Request
	LCP-Config-NACK
LCP-Config-Request	
	LCP-Config-ACK
LCP-Config-ACK	
Authentication-Request	
	Authentication-NACK
	Authentication-Request
Authentication-Request	
	Authentication-ACK
Authentication-ACK	
IPCP-Config-Request	
	IPCP-Config-ACK
	IPCP-Config-Request
IPCP-Config-ACK	
Sending-IP-Packets	
	Sending-IP-Packets
LCP-Terminate-Request	
	LCP-Terminate-ACK

Note: No need to exchange IPCP-Terminate packets before LCP-Terminate packets