PPP Quick Reference Guide

October 26, 1991

Frame format

Flag	Addr	Ctrl	Protocol	Data	FCS	Flag
7E	FF	03				7E

All values shown are in hexadecimal. Address and control bytes are omitted in non-LCP frames if Address-and-Control-Field-Compression is negotiated. If the first byte of the Protocol field is zero, it is omitted in non-LCP frames if Protocol-Field-Compression is negotiated. On asynchronous links, special characters (flags, escapes and control characters selected in the negotiated remote Async-Control-Character-Map) between the flags are replaced by an escape (7D) and the original byte with bit 6 inverted (exclusive-OR'ed with 20).

Protocol Values

A Network Control Protocol (NCP) is used to establish a connection for the associated data transfer protocol.

Protocol	Value	NCP Value
Internet Protocol (IP)	0021	8021
OSI Network Layer	0023	8023
Xerox NS IDP	0025	8025
DECnet Phase IV	0027	8027
Appletalk	0029	8029
Novell IPX	002B	802B
VJ Compressed TCP/IP	002D	
VJ Uncompressed TCP/IP	002F	
Bridging PDU	0031	8031
Stream Protocol (ST-II)	0033	8033
Banyan Vines	0035	8035
reserved until 1993	0037	
DNA System Console	0221	
Digital Customer Use	0223	
DNA Diagnostics	0225	
DNA Naming Service	0227	
DNA Time Service	0229	
DNA Load/Dump	022B	
DNA Experimental Use	022D	
DNA Communications Test	022F	
Luxcom	0231	
Sigma Network Systems	0233	
Shiva Compressed NCP	0235	
Shiva Uncompressed NCP	0237	
Link Control Protocol (LCP)		C021
Password Auth. Protocol (PAP)		C023
Challenge Handshake Authentication Protocol (CHAP)		C223
Shiva Password Auth. Protocol		C423

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Key

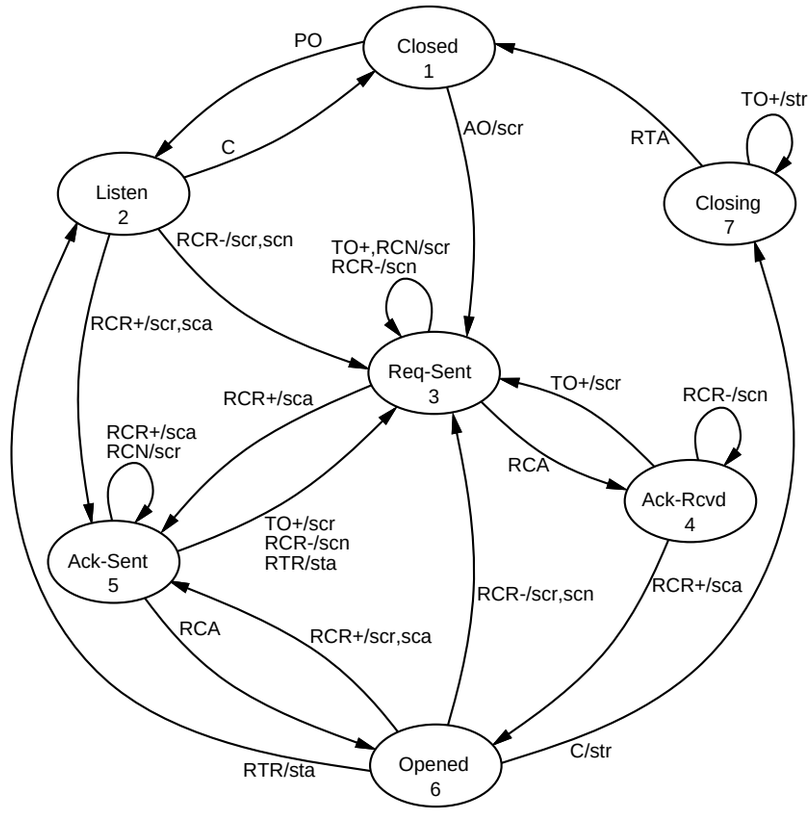
Events

AO	active-open
PO	passive-open
C	close
D	lower layer down
TO+	timeout with counter > 0
TO-	timeout with counter expired
RCR+	receive good Configure-Request
RCR-	receive bad Configure-Request
RCA	receive Configure-Ack
RCN	receive Configure-Nak or -Reject
RTR	receive Terminate-Request
RTA	receive Terminate-Ack
RUC	receive unknown code
RCJ	receive Code-Reject
RER	receive Echo-Request

Actions

scr	send Configure-Request
sca	send Configure-Ack
scn	send Configure-Nak or -Reject
str	send Terminate-Request
sta	send Terminate-Ack
ser	send Echo-Reply
scj	send Code-Reject

Simplified State Diagram



State Transition Table

	State						
	1	2	3	4	5	6	7
Event	Closed	Listen	Req-Sent	Ack-Rcvd	Ack-Sent	Opened	Closing
AO	scr/3	scr/3	3	4	5	6	scr/3
PO	2	2	3	4	5	6	7
C	1	1	7**	7**	str/7	str/7	7
D	1	2	2	2	2	2	1*
TO+	1	2	scr/3	scr/3	scr/3	6	str/7
TO-	1	2	2	2	2	6	1*
RCR+	sta/1	scr,sca/5	sca/5	sca/6	sca/5	scr,sca/5	7
RCR-	sta/1	scr,scn/3	scn/3	scn/4	scn/3	scr,scn/3	7
RCA	sta/1	sta/2	4	scr/3	6	scr/3	7
RCN	sta/1	sta/2	scr/3	scr/3	scr/5	scr/3	7
RTR	sta/1	sta/2	sta/3	sta/3	sta/3	sta/2	sta/7
RTA	1	2	3	3	3	scr/3	1*
RUC	scj/1	scj/2	scj/2	scj/2	scj/2	scj/2	scj/7
RCJ	1	2	2	2	2	2	1*
RER	sta/1	sta/2	3	4	5	ser/6	7

State transitions are of the form ''state'', ''action/new-state'' or ''action,action/new-state''.

* If Passive-Open has occurred since Close, go to Listen (2) instead

** Set the restart counter to zero