



APPENDIX E

Defined Cause Codes

Revised: May 31, 2010, OL-12777-12

For reference purposes, defined cause codes are listed in [Table E-1](#) through [Table E-7](#).

Table E-1 Cisco BTS 10200 Softswitch Defined Cause Codes—Normal Events

Generic Cause Code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
Normal Event			
1. [Note 1]	1. Unallocated number	1. Unallocated (Unassigned) number	N/A
2.	2. No route to specified transit network	2. No route to specified transit network	N/A
3. [Note 1]	3. No route to destination	3. No route to destination	N/A
4. [Note 2]	N/A	6. Channel unacceptable	
5. [Note 3]	N/A	7. Call awarded and being delivered in an established channel	
6.	16. Normal clearing	16. Normal call clearing	N/A
7.	17. User busy	17. User busy	401. Phone is already off hook
	—	—	402. Phone is already on hook
8.	18. No user responding	18. No user responding	Notified event
9.	19. User alerting, no answer	19. User alerting, no answer	Notified event
10. [Usr->Nw]	21. Call rejected	21. Call rejected	
11. [Note 1]	22. Number changed	22. Number changed	

Table E-1 Cisco BTS 10200 Softswitch Defined Cause Codes—Normal Events (continued)

Generic Cause Code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
12. ¹	26. Misrouted call to a ported number	N/A	
13. [Note 3]	N/A	26. Nonselected user clearing	
14. ²	27. Query on Release (QoR) number not found (No procedures for US networks)		
15.	27. Destination out of order	27. Destination out of order	520
16. [Note 1]	28. Address incomplete	28. Invalid number format (incomplete number)	N/A
17. [nw->usr]		29. Facility rejected	N/A
18. [Note 4]		30. Response to STATUS ENQUIRY	N/A
			500. The transaction could not be executed because the endpoint is unknown
19. [Note 5]	31. Unspecified (default)	31. Unspecified (default)	

1. ANSI Standard cause only

2. ANSI Standard cause only

Table E-2 Cisco BTS 10200 Softswitch Defined Cause Codes—Network Resource Unavailable

Generic Cause Code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
Network resource unavailable			
31.	34. No Circuit available	34. No circuit/channel available	
32.		38. Network out of order	Can not reach MGW, network interface down
33.	41. Temporary failure	41. Temporary failure	400. Transaction not completed due to transient error
34.	42. Switching congestion	42. Switching equipment congestion	N/A
35. [Note 6]	43. Access information discarded ¹	43. Access information discarded	

Table E-2 Cisco BTS 10200 Softswitch Defined Cause Codes—Network Resource Unavailable

Generic Cause Code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
36.	Circuit Reservation Rejected (CMJ)	44. Requested circuit/channel not available	501.Endpoint not ready
37.	47. Resource unavailable (default)	47. Resource unavailable, unspecified	502. Endpoint does not have sufficient resource

1. ANSI standard cause value

Table E-3 Cisco BTS 10200 Softswitch Defined Cause Codes—Service Or Option Not Available

Generic Cause Code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
Service or option not available			
41.	57. Bearer capability not authorized	57. Bearer capability not authorized	N/A
42.	58. Bearer capability not presently available	58. Bearer capability not presently available	N/A
43.	63. Service/Option not available (default)	63. Service or option not available, unspecified	N/A

Table E-4 Cisco BTS 10200 Softswitch Defined Cause Codes—Service/Option Not Implemented

Generic Cause Code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
Service/option not implemented			
51.	65. Bearer capability not implemented	65. Bearer capability not implemented	N/A
52.		66. Channel type not implemented	N/A
53.		69. Requested facility not implemented	N/A
54.		70. Only restricted digital information bearer capability is available	N/A
55.	79. Service/Option not implemented (default)	79. Service or option not implemented, unspecified	N/A

Table E-5 Cisco BTS 10200 Softswitch Defined Cause Codes—Invalid Message

Generic cause code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
Invalid message (local significance only)			
61.		81. Invalid call reference value	516
62.		82. Identified channel does not exist	500. Unknown endpoint
63.		83. A suspended call exists, but this call identity does not	
64.		84. Call identity in use	
65.		85. No call suspended	
66.		86. Call having the requested call identity has been cleared	402. The phone is already on hook
67.	88. Incompatible destination	88. Incompatible destination	
68.	91. Invalid transit network selection	91. Invalid transit network selection	
69.	95. Invalid message (default)	95. Invalid message, unspecified	
70.		96. Mandatory information element is missing	
71.		97. Message type nonexistent or not implemented	

Table E-6 Cisco BTS 10200 Softswitch Defined Cause Codes—Protocol Error

Generic Cause Code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
Protocol error (local significance only)			
81.	97. Message type nonexistent or not implemented	98. Message not compatible with call state or message type nonexistent or not implemented or 41 Temporary failure	

Table E-6 Cisco BTS 10200 Softswitch Defined Cause Codes—Protocol Error (continued)

Generic Cause Code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
82.	99. Parameter not existent or implemented—discarded	99. Information element nonexistent or not implemented or 41 Temporary failure	
83.		100. Invalid information element contents	
84.	101. Parameter not existent or implemented—passed on	101. Message not compatible with call state or 41 Temporary failure	
85.	102. Recovery on timer expiry	102. Recovery on time expiry	
86.	111. Protocol error (default)	111. Protocol error, unspecified or 41 Temporary failure	510. Protocol Error was detected

Table E-7 Cisco BTS 10200 Softswitch Defined Cause Codes—Interworking

Generic Cause Code	SS7 A.2.4.3/GR-905-CORE	ISDN TABLE I.2/Q.931	MGCP
Interworking			
91.	127. interworking—unspecified (default)	127. Interworking, unspecified	

The numbered notes are listed below:

1. If, following the receipt of a SETUP message or during overlap sending, the network determines that the call information received from the user is invalid, (for example, an invalid number), then the network follows the procedures for a cause such as one of the following:
#1—Unassigned (unallocated) number
#3—No route to destination
#22—Number changed
#28—Invalid number format (incomplete number)
2. The SETUP message can specify the channel identification information element (IE) for B-channel selection preference indicating preferred channel and alternative channel. If there is no B-channel available for the given criteria, this cause code is sent.
3. In the case of call offering, where multiple terminating exchanges are served with SETUP messages and they in turn respond back with CONNECT messages, the network sends a RELEASE message to the selected users with the cause code call awarded and being delivered in an established channel (#7), and with cause code nonselected user clearing (#26).
4. Upon receipt of a STATUS ENQUIRY message, the receiver responds with a STATUS message, reporting the current call state (the current state of an active call or a call in progress, or the null state if the call reference does not relate to an active call or to a call in progress) and cause #30, as a response to the STATUS ENQUIRY.

5. The terminating exchange can interpret an unspecified cause code as normal clearing (#16), and the originating exchange during the call setup procedure can interpret it as call rejected (#21).
6. IEs with a length exceeding the maximum length are treated as an IE with content error. But for access IEs (for example, a user to user information element or a called-party subaddress IE), cause #43, access information discarded, is used instead of cause No. 100, invalid IE contents.