C H A P T E R 5

QoS Metrics in CDRs

Revised: May 14, 2012, OL-24995-02

This chapter describes the metrics that can be collected and stored in the call detail records created by the Cisco BTS 10200 softswitch. The system collects the metrics post-call through a best-effort mechanism. The available metrics can be collected from the originating and/or terminating endpoints. If the defined wait period for receiving metrics from the endpoints is exceeded, then the corresponding fields within the CDR are NULL filled for any information not collected. Also, if the reporting endpoints do not support any of the listed metrics, then those too are NULL filled.

Currently the BTS 10200 supports QoS metrics collection from endpoints controlled through NCS/MGCP protocols. The BTS 10200 supports both RTCP and RTCP-XR based metrics, and these metrics are reported if supported by the endpoints associated with the call.

Many of the metrics peered between the two endpoints by RTP, RTCP, or RTCP-XR are gathered from both the local and remote sides of the originating and terminating endpoints. Only a concise set of these metrics is reported in the CDRs produced by the Cisco BTS 10200. If the reporting BTS 10200 controls both endpoints of the call, then only the "local" metrics of each endpoint are stored in the CDR. If only one of the endpoints is controlled by the reporting BTS 10200, then the local metrics for that endpoint and the remote metrics for the other endpoint as peered to the endpoint controlled by the BTS 10200 are stored in the corresponding CDR.

Table 5-1 lists the metrics that can be collected per call along with information on how to best leverage the data collected.

Table 5-1   Call Termination Cause Values and Definitions

Name Termination	Category	MGCP Field	RTCP Field	RTCP-XR Field	Peer Reporting	Valid Range	Units Type
Codec Type	Basic Mandatory	CDC			No		Enum
Codec Framesize	Basic Mandatory	FRSZ			No	0–65535	Bytes
Possible Dead Connection Detection	Basic Mandatory	DCD			No	0=timed out 1=good	Enum

Table 5-1   *Call Termination Cause Values and Definitions (continued)*

Name Termination	Category	MGCP Field	RTCP Field	RTCP-XR Field	Peer Reporting	Valid Range	Units Type
Cumulative Packets Sent	Basic Mandatory	PS, RPS	Sender's Packet Count		Yes	0–4,294, 967,295	Packets
Cumulative Octets Sent	Basic Mandatory	OS, ROS	Sender's Octet Count		No	0–4,294, 96295	Octets
Cumulative Packets Received	Basic Mandatory	PR			No	0–4,294, 967, 295	Packets
Cumulative Octets Received	Basic Mandatory	OR			No	0–4,294, 967,295	Octets
Concealed Seconds	Basic Mandatory	CNS			No	0–65535	Seconds
Severely Concealed Seconds	Basic Mandatory	SCS			No	0–65535	Seconds
Average Inter-Arrival Jitter	Basic Mandatory	JI, RJI	IAJ		Yes	0–536,870, 912	Milliseconds
Jitter Buffer Mode	Basic Mandatory	JBA			Yes	0-3	Type
Average MOS LQK	Basic Mandatory	MLK			Yes	10–50,127	Mos
Average Transmission Delay (old latency field)	Basic Mandatory	LA			No	0–65535	Milliseconds
Average Network Packet Round Trip Time	RTCP Detailed	RTD		Round Trip Delay	Yes	0–65535	Milliseconds
Cunmulative Packet Loss Count	RTCP Mandatory	PL, RPL	Cumulative Number of Packets Lost		Yes	0–16,717, 215	Packets
Cumulative Packet Loss Rate	RTCP Detailed	NLR	Fraction Lost	Loss Rate	Yes	0–255	Ratio

Table 5-1   Call Termination Cause Values and Definitions (continued)

Name Termination	Category	MGCP Field	RTCP Field	RTCP-XR Field	Peer Reporting	Valid Range	Units Type
Average End System Delay	RTCP-XR Mandatory	ESD		End System Delay	Yes	0,1–65535	Milliseconds
Cumulative Jitter Buffer Packet Discard Count	RTCP-XR Detailed	JDR		Discard Rate	Yes	0–16,717, 215	Packets
Average MOS R Factor	RTCP-XR Mandatory	RCQ		R Factor	Yes	0–100,127	Mos
Average MOS LQR	RTCP-XR Mandatory	MLQ		MOS LQ	Yes	10–50,127	Mos
IP Address	RTCP-XR Mandatory	IPAS, IPAD			No		Dotted Decimal
Address Type	RTCP-XR Mandatory	IPTS, IPTD			No	string	
RTP Port	RTCP-XR Mandatory	RTUS, RTUD			No		Port number
Negotiated Codec	RTCP-XR Mandatory	VCD			No	string	
R Factor Listening Quality	RTCP-XR Mandatory	RLQ		R Factor	Yes	0–100, 127	Mos