

No. 3: CDR File Contents

Questions are often asked about the content of the WTL CDR (Call Details Record). Each CDR contains 70 fields. The fields are defined below.

The CDRs are located in two directories on the switch depending upon the service:

Non-calling card service CDRs are located in /usr2/CDR directory

CDRs for calling cards are located in /usr2/DEBIT directory

CDRs are accumulated in a daily file with the name YYYYMMDD where YYYY is the year, MM the month and DD the day and are retained on the switch for 31 days.

The CDRs may also be exported (at a configurable interval) to an SQL database on a management PC for off-line processing by a 3rd party billing package.

There is no limit to the length of time CDRs may be retained in the SQL database.

The behaviour of the CDR depends on whether it reflects a normal voice call or a data call (associated with RADIUS support). Data call CDRs are defined at the end of this document.

Voice Call CDR format

Field	Name	Description	# of chars, type, fixed? [note]
1	CID	Company ID or provider ID if pre-paid service	8, A, Y
2	Unixtime	Time in seconds since 1970 (Unix time)	9, N, N
3	Duration	Duration of call in seconds; 0 if no connect	4, N, N
4	Switchunit	Switch # on which call originated: 5 digits, first 4 = node #, last digit = sw #	5, A, Y
5	Time	Time connect was started or time of disconnect if not connected	8, T, Y
6	Date	Date in DD.MM.YY (US format) or DD.MM.YYYY	10, D, Y
7	Jobnumber	Job number (for billing purposes. It is also an extra level of security - password - provided by the switch.)	19, A, N
8	PIN or CLI	CLI, PIN code or credit card number (depending upon service)	25, A, N
9	B-Number	Destination number (international format)	24, A, N
10	Outbound line	Out bound Line # (1 - N) per switch	3, N, N
11	Outbound carrier	Outbound carrier # on which call was placed	1, A, Y
12	Initial rate	Call rate in cents/minute (cents = 1/100 of currency unit)	5, N, N
13	Cost	Call cost in cents (cents = 1/100 of currency)	5, N, N

		unit)	
14	DNIS	Dialed Number Identification Source = City code + DDI (Direct Dial in Number) on which call was received	24, A, N
15	Operator number	Telephone number of operator for operator assisted calls. It contains the telephone number of the operator position for operator-assisted calls (debit service only). Although this field is currently unused for business service, it will be present as an empty field in the extended CDR of business calls.	20, A, N
16	Balance left	Balance in cents remaining on the account after the call	9, N, N
17	Inbound (A-Leg) carrier	For SCX calls (not reported in CDR file), this will be 0	4, N, N
18	Inbound line	According to PORT table	3, A, Y
19	Cause value	Disconnection cause value in INX format (ISDN cause=1512+ISDN cause), 0 if none	5, N, N
20	Transmit Medium Requirement (TMR)	This numeric parameter represents the type of call. It can take the following values: 0: the call is a speech only call (no fax or modem signals) 2: the call is a 64Kb/s unrestricted digital call 3: the call is an audio call. The audio signal can be speech, fax or modem and any other inband (0-3KHz) signal 6: the call is a 64Kb/s unrestricted "preferred" call. This is treated by the INX as a TMR 2 but with the possibility for a subsequent switch to fallback to an audio call quality. The CDR does not reflect whether the fallback has occurred or not.	1, N, Y
21	Duration of the A-leg connection	This field will be set for call-through and callback and represents the total connected time since beginning of call. If there are several CDRs recorded during the call (LCR attempts or joint call feature), they will all have this field set with increasing values. The duration is counted from the time the A-leg is connected, it does not include ringing time for direct or carrier select services where the inbound call is not connected before the B-leg leg is connected	8, N, N

22	Telephone number in international format of A-leg leg when there is a callback	This field will only be set on the last CDR when the A-leg is disconnected and only if the A-leg is a callback call. It is intended to facilitate the collection of callback calls for accounting. Note that if the callback call fails, it is reported as a normal outbound call failure (the callback number is in the destination number field).	24, A, N
23	Number of busy lines on the A-leg carrier (field 17) at the time of the CDR time stamp (field 5 and 6)	This is the total number of busy lines (inbound or outbound calls, connected or progressing calls) on all lines to the carrier on the switch. In case of callback, the A-leg carrier is the carrier on which the callback call has been successfully placed.	4, N, N
24	Number of busy lines on the B-leg carrier at the time of the time stamp	This is the total number of busy lines (inbound or outbound calls, connected or progressing calls) on all lines to the carrier on the switch.	4, N, N
25	Total outbound call time in seconds	This is the time between the initial dialing and the disconnection of the B-leg. The duration of the dialing and ringing stage can be deduced by subtracting the B-leg connection time (field 3). The duration of the dialing stage alone cannot be deduced.	8, N, N
26	Disconnection origin	0 = the disconnection is initiated internally (timeout, balance expiry, ...) 1 = the disconnection is coming from the A-leg 2 = the disconnection is coming from the B-leg	1, N, Y
27	Type of PIN	Specifies content of CDR field 8 First letter: A for credit card call (when field 8 contains an Account Number) D debit number from DEBIT.DEBIT_NR (can be a ordinary debit number or a debit CLI (starts with letter 'O')) P pin code from PIN.PIN O CLI from PIN.PIN R redirecting number from PIN.PIN H H323 pin code from PIN.PIN	2, A, N

		I IP address from PIN.PIN formatted as xxx.xxx.xxx.xxx C CSTA from PIN.PIN formatted as SSSSSCCC where SSSSS is the switch name in 5 characters and CCC is the inbound line CSTA in 3 characters. Second letter: N if the PIN or DEBIT number has been created by the switch The field is appended with N if field 8 contains a newly created PIN or DEBIT record. This is used in services where the switch can generate PIN or DEBIT record by itself (REGISTER, RECHARGE) If field 8 is empty, field 27 will also be empty	
28	CLI	CLI of the call obtained from different sources: for C,O,D inbound carriers, replaced A-number from PIN.CLI according to PIN.CLIUSE. for callback service with PIN.CLIUSE=B or b, replaced A-number from PIN.CLI for tdial test calls, from -a option otherwise unconverted A-number from inbound call	16, A, N
29	B-Leg node number	When the B-leg carrier is a VoIP carrier, this field contains the node number to which the call has been sent. Empty otherwise.	5, A, N
30	PIN service code	When the call is authenticated by a PIN record, this field contains the PIN.SERVICE field: O for CLI based authentication on O,P carriers C for CLI based authentication on C carrier D for CSTA based authentication on D carrier H for PIN based authentication on DDI service H,U or on H carrier S for CLI based authentication on DDI service S I for CLI and DNIS based authentication on DDI service I B for DNIS based authentication on DDI service B	1, A, Y

		If the call is not authenticated by a PIN record, this field is empty	
31	A-leg rate	Initial A-leg rate or 0 if the A-leg is not charged. The A-leg rate does not change during the call.	6, N, N
32	A-leg cost	Total cost of A-leg or 0 if the A-leg is not charged.	9, N, N
33	Type of CDR	Indicates the position of the CDR in the call. 0 intermediate CDR, A-leg still in progress, B-leg disconnected 1 terminating CDR, A-leg and B-leg disconnected 2 intermediate CDR, callback A-leg disconnected 3 intermediate CDR, no A-leg or B-leg change, just updated balance 4 tdial test CDR 5 webconnect terminating CDR leg 1 6 webconnect terminating CDR leg 2 7 transit intermediate CDR (carrier V,W,X) 8 transit terminating CDR (carrier S,V,W,X) 9 TNS calls Note: when debit cards are used to recharge an account, a CDR will be created in debit CDR file with the balance of the recharging cards, There will be no A-leg and B-leg, just an updated balance. The type of CDR will be 3 with no A-leg and B-leg number, cost or rate. The company ID (field 1) will be set from the card being recharged (the active card), not the recharging card.	2, N, N
34	Type of balance	Indicates the type of balance in field 16 0 no balance is charged 1 debit balance is charged 2 pin balance is charged 3 company balance is charged	2, N, N
35	B-leg format	Indicates if the B-leg number in field 9 is in international format or not	2, N, N

		B-leg number is unformatted B-leg number is formatted (processed by inrule1 table) and should be in international format.	
36	B-leg number heading	Content of ROUTE1.AREACODE field (ROUTE.AREACODE if slice routing is used) which has been used to route the B-leg. Empty if there was not B-leg or if the ROUTE1.AREACODE (ROUTE.AREACODE) field was empty. This is useful for statistical purposes to sort the calls by selected destinations without having to run pre-processing routines on the CDR. Note that the route table should have a meaningful list of destinations for this field to contain useful information, even if the routing is simple: all redundant route records can point to the same carriers.	16, A, N
37	B-leg post dial delay	Time is seconds between the end of dialling and the start of the ringing phase. The ringing phase starts when an Alerting (or equivalent) message is received from the B-leg. If no Alerting is received, the PDD ends when the call fails or is connected. Note that for calls with overlap sending, the dialling ends when the switch 1) detects a timeout on the incoming digits 2) detects a "end-of-dialling" signal from the inbound side 3) receives a Proceeding/Alerting/Connect message from the outbound side. In case 1, the timeout is counted as part of the PDD, in case 2, the PDD starts with the "end-of -dialling" signal, in case 3, the PDD will be 0 if an Alerting/Connect message is received.	8, N, N
38	CLI nature of address	Holds the CLI nature of address parameter received from the inbound carrier. It defines the type of number stored in field 28. Possible values: 0 unknown type of number 2 no CLI is provided	1, N, Y

		3 national number 4 international number	
39	B-leg routing ID	Content of ROUTE1.ROUTEID field (ROUTE.ROUTEID if slice routing is used) which has been used to route the B-leg. Empty if there was no B-leg or if the ROUTE1.ROUTEID (ROUTE.ROUTEID) field is empty. In case of indirect route (ROUTE_COD field used), this field holds the initial route ID, not the ROUTE_COD field.	6, A, N
40	A-leg zone	Content of RATE.C_CODE field used to rate the A-leg. Empty if the A-leg is not rated or if RATE.C_CODE field is empty.	16, A, N
41	A-leg rate ID	Content of RATE.RATE_ID field used to rate the A-leg. Empty if the A-leg is not rated or if RATE.RATE_ID field is empty. In case of indirect rating (RATE_CLI or RATE_COD used), this field holds the initial rate ID, not the RATE_CLI or RATE_COD.	6, A, N
42	B-leg zone	Content of RATE.C_CODE field used to rate the B-leg. Empty if the B-leg is not rated or if RATE.C_CODE field is empty.	16, A, N
43	B-leg rate ID	Content of RATE.RATE_ID field used to rate the B-leg. Empty if the B-leg is not rated or if RATE.RATE_ID field is empty. In case of indirect rating (RATE_CLI or RATE_COD used), this field holds the initial rate ID, not the RATE_CLI or RATE_COD.	6, A, N
44	Agent ID	Holds the agentid used for the call. Empty if no agentid was selected.	3,A,N
45	Call ID	Holds the call id assigned to the call by the switch software. This call id is a small number (1-9999) assigned cyclically by the switch and maintained for the entire duration of the A-leg. The call id is also used in the log file to tag all log entry of the call. The call id is unique per INX at a particular point of time but is not globally unique: two INX can have the same call id at the same time and the same call id can be reused every 10 minutes or so on a busy INX.	4,N,N

		This field can be useful for statistical purposes to link several CDR together: consecutive CDRs from the same calling card number having the same calling id field are chained CDR	
46	Batch ID	Holds the batch id of the card copied from DEBIT.BATCHID. Only set for debit calls, empty otherwise.	6,A,N
47	Caller Category	Holds the caller category as received from the inbound call data. It matches the SS7 definition for caller category: 10 : ordinary subscriber 15 : payphone For non-SS7 incoming calls, the caller category is set by default to 10 unless a payphone is detected via the PIN table in which case the caller category is set to 15. This field can be used to determine if the call was coming from a payphone or not.	2,N,N
48	Calling Card Status	Holds the debit card status as calculated by the switch at the start of the call. Copied from DEBIT.STATUS. It is the status of the card which number is in field 8. Can take the following values: - empty: for non-debit CDR - F : the card is active and has been used - Z : the card balance is below minimum - E : the card has expired - B : the card is blocked	1,A,Y
49	Expiration Date	Holds the expiration date of a credit card number as received from the SETUP message or the user. The format is normally MMY. This field is only used for credit card calls (field 27 = A)	6,A,Y
50	Validation Code	Holds the authentication result for credit card (field 27 = A) The following values are defined: 0 Passed 1 Validation unavailable 2 Invalid collect call 3 Invalid Account 4 Account Barred 5 Invalid Authorization Code	3,A,Y

		6 Invalid PIN 7 Invalid Account Code 8 Invalid Account, No Retry 9-255 Reserved	
51	QOS A-leg coder	Holds the codec used on A-leg 0 The call is not VoIP or the codec could not be determined 1 Undefined 2 G711 uLaw 3 Undefined 4 G711 ALaw 5 V32 modem relay (deprecated) 6 G723.1 6.3kb/s 7 G726 32kb/s 8 G729 8kb/s 9 Undefined 10 Undefined 11 GSM full rate 12 G728 16kb/s 13 G723.1 5.3kb/s 14 Undefined 15 T38 fax relay 16 G711 fax/modem bypass Note: fax coders (15 and 16) indicates a change to fax mode during the call, it does not give any indication on the success or failure of the fax	2,N,Y
52	QOS A-leg RX packet loss ratio	Holds the fraction, expressed in multiple of 1/256, of the RTP packets sent by the peer that were never received. Note that if the switch does not receive any packet, this field will be 0.	3,N,Y
53	QOS A-leg RX packet jitter	Holds the average jitter, expressed in multiple of 0.125us, measured on the inbound RTP packets.	4,N,Y
54	QOS A-leg TX packet loss ratio	Holds the fraction, expressed in multiple of 1/256, of the RTP packets sent by the switch that the peer never received. This field will be 0 if we don't receive RTCP reports from the peer.	3,N,Y
55	QOS A-leg TX packet jitter	Holds the average jitter, expressed in multiple of 0.125us, which the peer measured on the RTP packets that it received. This field will be 0 if we don't receive RTCP reports from the peer.	3,N,Y

56	QOS B-leg coder	Holds the codec used on B-leg. See field 51 for a list of possible values	2,N,Y
57	QOS B-leg RX packet loss ratio	Holds the fraction, expressed in multiple of 1/256, of the RTP packets sent by the peer that were never received. Note that if the switch does not receive any packet, this field will be 0.	3,N,Y
58	QOS B-leg RX packet jitter	Holds the average jitter, expressed in multiple of 0.125us, measured on the inbound RTP packets.	4,N,Y
59	QOS B-leg TX packet loss ratio	Holds the fraction, expressed in multiple of 1/256, of the RTP packets sent by the switch that the peer never received. This field will be 0 if we don't receive RTCP reports from the peer.	3,N,Y
60	QOS B-leg TX packet jitter	Holds the average jitter, expressed in multiple of 0.125us, which the peer measured on the RTP packets that it received. This field will be 0 if we don't receive RTCP reports from the peer.	3,N,Y
61	Exact call duration	Holds the same information as in field 3 except that the duration is not rounded to the second (rounding threshold is configurable through switch software –XD option). The field is always provided with 2 decimals, even if the duration is 0 (presented as 0.00)	11,N,Y
62	IP address of caller	Holds the IP address of caller if the incoming call is VoIP. When provided, the IP address is always presented with 15 digits: XXX.XXX.XXX.XXX For data CDR, this is the IP address of the access router where the data session is established.	15,A,Y
63	Original DDI number	Holds the called address as received from the network before any conversion in the	23,A,Y

		switch software Note that for some protocols (only SIP at present), a conversion can take place in the wn kernel before the call is presented to the switch software.	
64	Original DDI nature of address	Holds the nature of address of the called address as received from the network before any conversion in the switch software. The value of this field follows the SS7 standard: 0 = unknown 1 = subscriber number 2 = unknown 3 = national number 4 = international number 5-111 = spare 112-126 = reserved for national use	3,N,Y
65	Total data transfer	Holds the amount of data (inbound+outbound) transferred during a data session up to the time of the CDR. The field is expressed in Kilobyte = 1024 bytes.	10,N,N
66	Total charged data transfer	Holds the amount of data (inbound+outbound) paid so far during a data session. It differs from field 65 because of predictive charging and the rounding of data transfer to the upper multiple of PROFILE.INC_DATA.	10,N,N
67	Original CLI number	Holds the calling address as received from the network before any conversion in the switch software Note that for some protocol (only SIP at present), a conversion can take place in the wn kernel before the call is presented to the switch software.	16,A,N
68	Original CLI nature of address	Holds the nature of address of the calling address as received from the network before any conversion in the switch software.	3,N,N

		The value of this field follows the SS7 standard: 0 = unknown 1 = subscriber number 2 = unknown 3 = national number 4 = international number 5-111 = spare 112-126 = reserved for national use	
69	A-leg VoIP call ID	Holds the call ID of the A-leg VoIP call. This field is empty for non-VoIP A-leg carriers. For SIP calls, the call ID is formatted as <id>@<host>. Currently this field is only provided for SIP A-leg carriers.	80,A,N
70	B-leg VoIP call ID	Holds the call ID of the B-leg VoIP call. This field is empty for non-VoIP B-leg carriers. For SIP calls, the call ID is formatted as <id>@<host>. Currently this field is only provided for SIP B-leg carriers. Note: this field is shorter than field 69 because the current version of the wn kernel generates short call ID but it may change in future version. The target size of this field for all database application should be 80.	26,A,N

Notes:

- Fields 23 and 24 will be set to -1 if the corresponding carrier is unknown or if the carrier activity has not been recorded at the time of the CDR timestamp. This will be the case for the second CDR of 800-calls (the CDR which records the A-leg information).
- The number reported in fields 23 and 24 may or may not include the current call for which the CDR is recorded. It depends on the service and the call scenario.
- If the A-leg and B-leg carriers are the same, field 23 and 24 will be identical.
- The *getcdr* and *getlog* applications can retrieve the new CDR format but cannot search on the new fields.
 - Previous versions of the CDR file format were shorter. A parameter, *Dboptions.parm16*, is used to set the CDR format version desired.

- If the SW_VOIP_CHECK feature is enabled for this switch, each time this service is used it will be registered in the CDR file with the correct time length just as if it had passed through the direct trunk.

Data Call CDR Format

The Data CDR was introduced to reflect cost applied on RADIUS data sessions. A CDR is generated at the end of the session with the total session details (data transfer and cost). In case of predictive charging, an operational CDR is also generated whenever the user balance is charged at the start or during the session. Most fields have the same content/meaning as for voice calls with the following exceptions:

2	Call UNIX time	The time of the start of the session (when the RADIUS Access-Request message was received).	16,A,N
3	B-leg connection duration	The value of the Acct-Session-Time RADIUS attribute when it is present in the message that triggers the CDR.	
5	Call time	Time of the start of the session (when the RADIUS Access-Request message was received).	
7	Job code	Session ID obtained from the RADIUS attribute Acct-Session-Id. The session is uniquely identified with the combination of this field and the field 62 that contains the IP address of the access router. Both values form the search key in the session table.	
8	Pin code	Attribute value that was used to find the PIN record: Calling-Station-Id or User-Name	
9	B-leg telephone number	The network name to which the user logged on; it is taken unchanged from Called-Station-Id.	
12	initial B-leg rate	The cost per Megabyte charged on the session. Setup cost is not included.	
13	cost of the call	The total cost of the session, including setup cost. For data session update CDR (predictive charging in use), this is the cost applied on the balance as pre-charge at the time of the CDR, not including previous pre-charge.	
14	DDI	DDI used to service the call. formatted as DDI + <IP_Address_of_RADIUS	

		_client_as_XXX.XXX.XXX.XXX>. The IP address of RADIUS client is the IP address of the originator of the RADIUS message, not to be confused with the IP address of the access router in field 62.	
16	Balance left	The exact balance at the end of the CDR after all cost applied	
21	Partial A-leg connection duration	The duration of the session measured by the switch (difference in second between the time of the CDR and the initial session creation time).	
22	A-leg callback number	The MSRN number if CLI-based rating is used.	
26	Disconnection flag	For data session end CDR, a value of 0 means that the switch disconnected or rejected the session. A value of 1 means the session ended normally. For data session update CDR, this is field is not meaningful and will be 0.	
28	CLI	The content of the Calling-Station-Id attribute.	
33	Type of CDR	19 Data session update CDR: PIN/COMP balance updated because of predictive charging or setup cost. Field 13 is the cost applied. 20 Data session end CDR: PIN/COMP balance updated based on total session data consumption. Field 13 is the total session cost (including setup cost). Note that a session that has been rejected will generate a CDR of this type with 0 duration, cost and data transfer (fields 65 and 66).	