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OpenScape Business V1

Description
Call data record transmission
Call data record structure

Version 1.0

Definitions

HowTo

A HowTo describes the configuration of an feature within the administration of the system. It addresses primarily trained administrators.

Tutorial

Within the tutorials procedures for installation, administration and operation of specific devices, applications or 3rd party systems, which are connected to the system, are described. The tutorial addresses primarily trained administrators.

Description

A description shows the implementation of interfaces, protocols and APIs or the interworking of specific components of OpenScape Business

Disclaimer

The information provided in this document contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.

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Date	Version	Changes
2013-09-14	0.1	Initial Creation

1 Overview

OpenScape Business internally records Call Related Data (CDR) for trunk lines. Recording can be enabled / disabled in general. The information depth and output format can be set within OpenScape Business system administration.

OpenScape Business transfers collected Call Data Records (CDR) in a file and in plain ASCII via Ethernet LAN with TCP/IP to an external computer for further processing.

2 OpenScape Business Call Data Recording

For every completed call and/or every incoming call, a call data record is created. The call data records are not numbered. A separate call data record is recorded for a new call segment (for example, as a result of transferring or forwarding to another subscriber).

Recording is not performed for:

- premature termination of the call attempt.
- call attempts that are not allowed (LCR, denied lists).

In the case of networked systems, the call detail record is saved at the system which caused the charges. Charges for internal network connections are not recorded.

The administrator can activate the following options within the system administration:

- Compressed output
- Suppress last four digits - The last four digits of the destination are suppressed.
- Log incoming calls
- Call Duration
- On Ringing - Start logging on beginning the call
- Output MSN - The used MSN is logged.
- Decimal format
- Display amounts instead of units
- Outgoing without connection
  For example, this gives the calling party proof that the destination station did not accept the attempted call (marked in the output log with the call time 00:00:00). This option applies to ISDN connections and to all subscribers.
- Output LCR number outgoing or dialed number incoming
  If this flag is activated, an additional phone number field is added to the call data record. It contains:
  - for an outgoing call: the LCR phone number that was actually sent to the exchange following conversion by LCR
  - for an incoming call: the internal phone number of the station required, that is, the first station dialed.

Remarks:

If call charges accrue before the call is set up (as occurs in Austria, for instance), these are recorded and irrespective of whether or not "Outgoing without connection" is set.

Call Detail Recording Central takes connections via QSIG trunks into account only if a trunk code has been configured for them.

Call charge pulses are converted into monetary amounts using the call charge factor that is set by the administrator as the currency amount per call charge unit/pulse.

2.1 Difference to HiPath 3000 CDRs

CDR field structure has been enhanced and field length of some fields has been enlarged.

Uncompressed format, which replaces unavailable field information and missing characters by blanks is no longer supported.

Support of CDR file transmission via HTTPS protocol

No longer support of TFTP Client / Server transmission

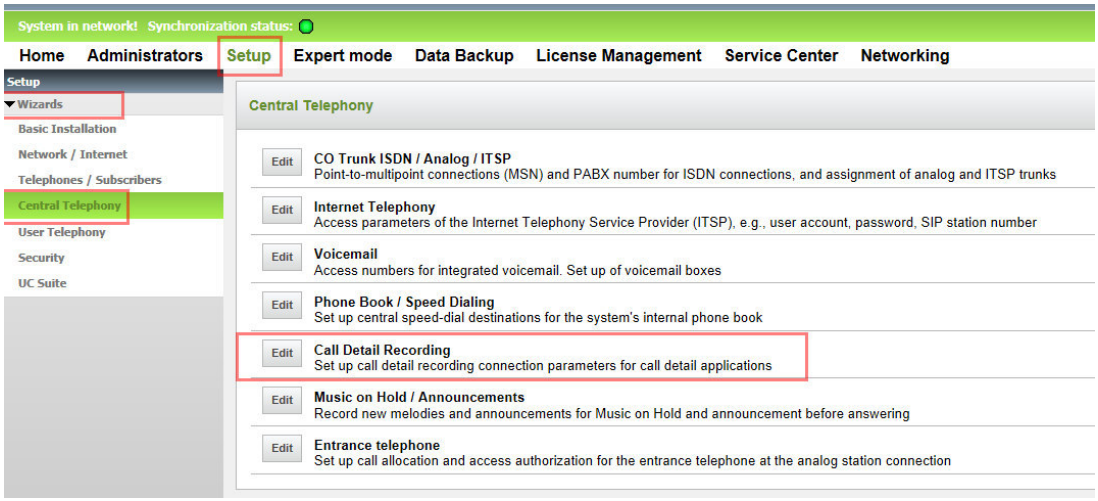
3 OpenScape Business Settings

3.1 Enabling / Disabling of Central Call Detail Recording

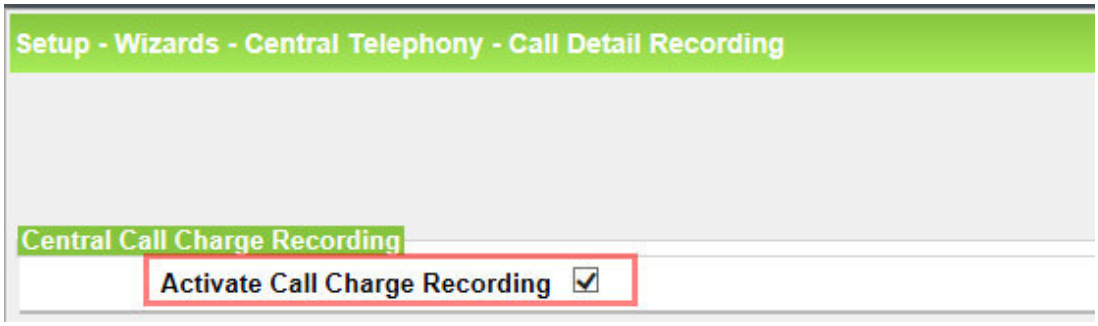
The Call Detail Recording wizard can be used to activate the central recording of call charges.

Log on to OpenScape Business Assistant.

Click Setup → Wizards > Central Telephony.



Click Edit to start the Call Detail Recording wizard.



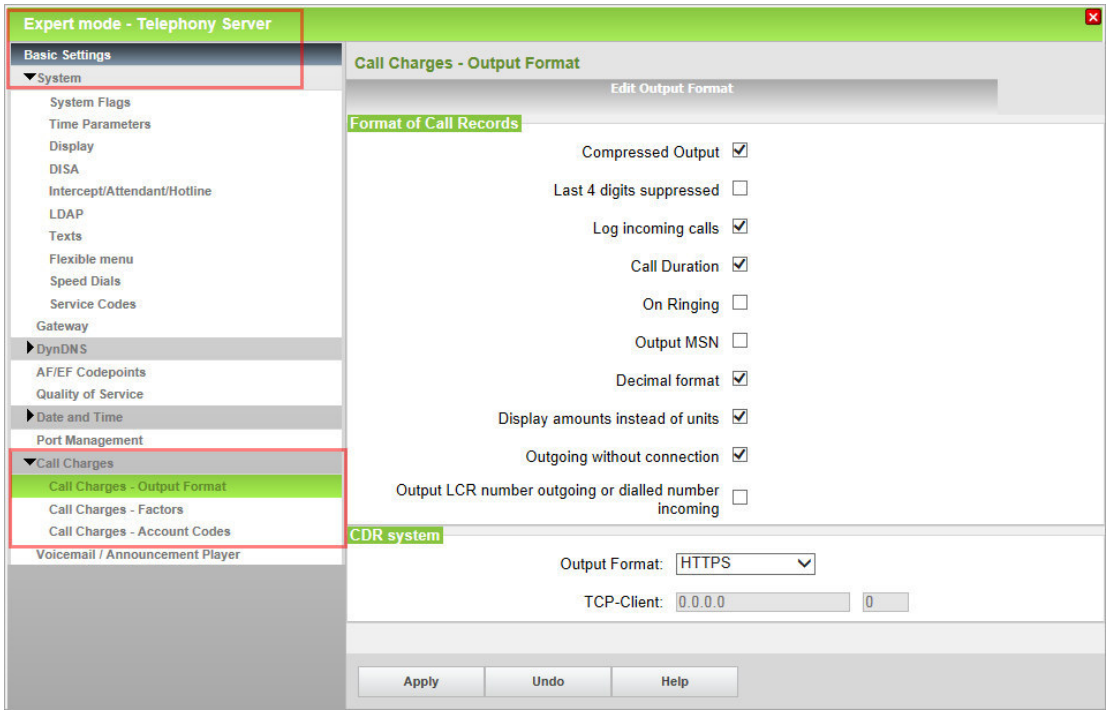
Click OK & Next followed by Finish.

3.2 Configure Information Depth and Output Format

Log on to OpenScape Business Assistant with the Expert profile.

1. Click Telephony Server > Basic Settings in the navigation tree.
2. Click Basic Settings > Call Charges > Call Charges -
3. For each parameter enter the desired value
4. Click Apply followed by OK.

More information about configuration can be retrieved from the OpenScape Business administrator documentation.



Note:

HTTPS is the default protocol for CDR output. It ensures privacy of CDR transmission by data encryption. HTTPS transmission is also supported by external applications like:

- Accounting Manager
- Teledata Office V4

4 Transfer of CDR

OpenScape Business supports two different kind of CDR transmission.

On one hand the transmission as a file, which contains all CDRs collected within the internal storage via secure HTTPS is supported. On the other hand transmission of every single CDR record at the moment of its occurrence via an unsecure TCP/IP socket connection is supported.

Please note:

If data transmission via TCP/IP is activated:

- CRD records are not stored within OpenScape Business and cannot be retrieved via a file transfer when switched to HTTPS afterwards.
- Separate measures must be used within the network to secure the data transmission.

4.1 Transmission via HTTPS

CRD transmission of OpenScape Business uses Ethernet LAN interface with HTTPS. In case of OpenScape Business X3, X5 or X8 with or without a UC-Booster the system is addressed via the IP address of the main board and port 443 (default) for HTTPS. In case of OpenScape Business S the system is addressed via the IP address of the computer on which the OpenScape Business SW is operated.

Example: https://ip-address/xyz

https://ip-address:443/xyz

For CDR download a user login for the Administration Portal of OpenScape Business is required.

4.1.1 Download Request

The file download request is defined as:

HTTP header:	Request method = GET
URL:	https://***ip-adress***/management/portlet
Parameter:	portlet=hipath-accountingdownload::HiPathAccountingDownloadPortlet
	entity=accounting
	action=get
	username=**user**
	password=**password**

Example:
https://192.148.108.151/management/portlet/?portlet=hipath-accountingdownload::HiPathAccountingDownloadPortlet&entity=accounting&action=get&username=administrator@system&password=01*Test!

4.1.2 Download Response

HTTP header:	ContentType = "text/plain"
	attachment filename = "**file-name**"
	data= content of the charging file

response-code	**meaning**
SC_OK(200)	successful
SC_BAD_REQUEST(400)	Parameter missing in request
SC_UNAUTHORIZED(401)	Logon failed of wrong username/password
SC_INTERNAL_SERVER_ERROR(500)	Internal Error

4.1.3 DeleteRequest

After successful transmission of a CDR file, the CDRs within OpenScape Business should be deleted in order to avoid doublets. The delete request is defined as:

HTTP header:	Request method = POST
URL:	https://***ip-adress***/management/portlet
Parameter:	portlet=hipath-accountingdownload::HiPathAccountingDownloadPortlet
	entity=accounting
	action=delete
	username=**user**
	password=**password**

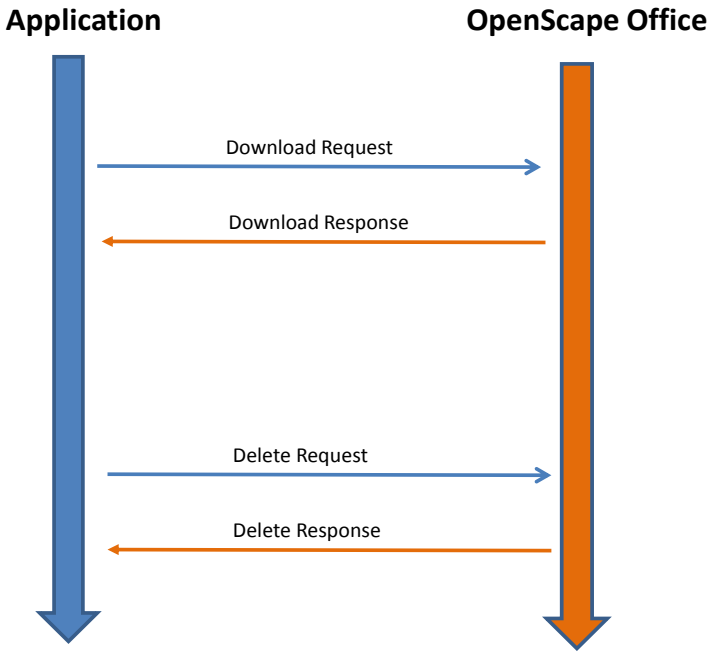
Example:

https://192.148.108.151/management/portlet/?portlet=hipath-accountingdownload::HiPathAccountingDownloadPortlet&entity=accounting&action=delete&username=administrator@system&password=01*Test!

4.1.4 DeleteResponse

response-code	**meaning**
SC_OK(200)	successful
SC_BAD_REQUEST(400)	Parameter missing in request
SC_UNAUTHORIZED(401)	Logon failed of wrong username/password
SC_INTERNAL_SERVER_ERROR(500)	Internal Error

4.1.5 Sequence Chart



The application gets the accounting data by sending a Download Request to a OpenScape Business system. The header of the Download Response includes the name of the accounting file, the data stream includes the content of this file.

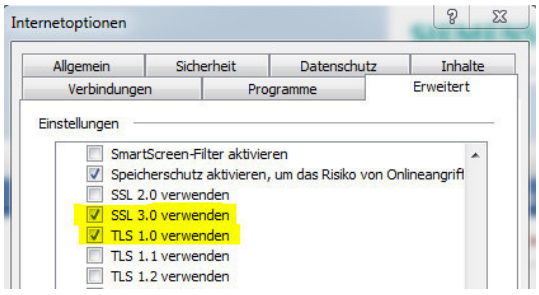
If there is no charging information available at the OpenScape Business the data stream is empty. This will result in an accounting file which is also empty.

To complete the Download the application should send a DeleteRequest to the OpenScape Business system. If the Download fails the application can repeat the Download by sending a new DownloadRequest.

Note:

To define the start time of the CDR recording it is recommended to perform a GET and a DELETE request before recording call data.

When using a Microsoft Windows based application TLS V1 and SSL V3 protocol must be enabled. Enabling can be done within the settings of the Internet Explorer.

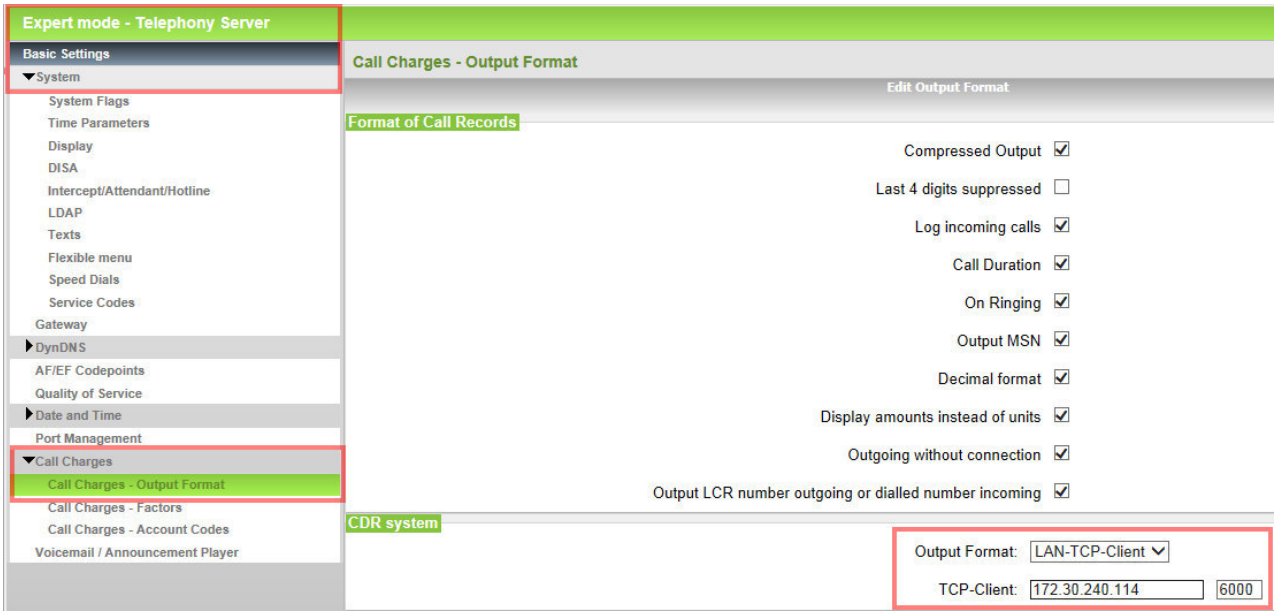


4.2 Transmission via TCP / IP client

When transmitting data to a TCP / IP client, OpenScape Business sends a call record to the corresponding client system when the record was generated in the system. Within this transmission mode, the following must be ensured:

- The TCP / IP client system must accept and process the records in order to avoid loss of data, because OpenScape Business does no longer store the CDRs internally
- The data encoding is ASCII and must be protected from unauthorized eavesdropping by appropriate measures.

Transmission of CDRs to a TCP Client system has to be enabled within the administration portal of OpenScape Business. After selection of the transmission mode IP address and port number of the TPC / IP client can be entered.

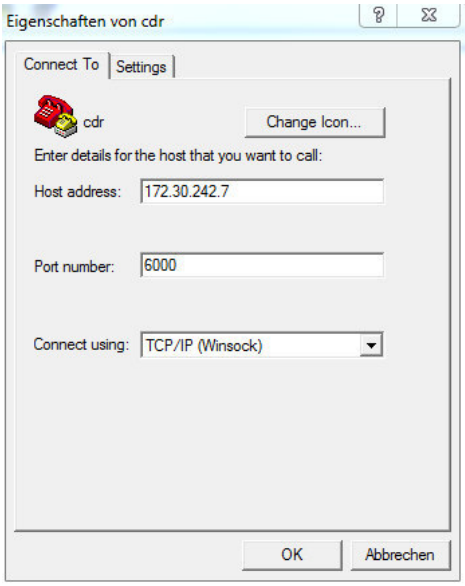


Within a TCP IP client the IP address of the OpenScape Business system has to be configured.

4.2.1 Connection Test

The connection can be test with an appropriate TCP / IP client SW e.g. HyperTerminal

Within the HyperTerminal setting (File -> properties) the IP address of OpenScape Business, the configured transmission port and the kind of connection (TCP/IP WinSock) have to be entered .



Afterwards “wait for a call” has to be enabled within the “calls” menue. The received CDRs are now displayed in plain text.

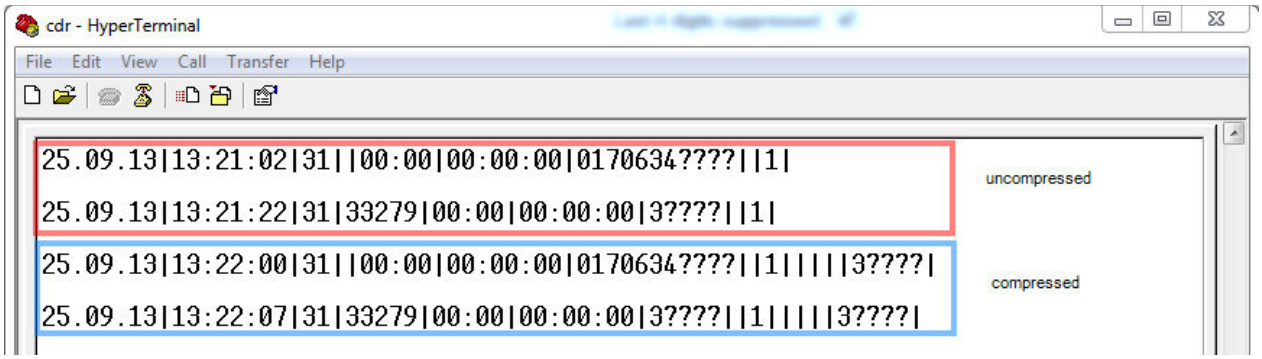


Figure: Test of CDR output with HyperTerminal

Within the example the last 4 digits of the dialed or received external station number are suppressed. The first two lines (red frame) show CDRs in uncompressed format. Line 3 and4 (blue frame) show CDR in compressed format

5 CDR structure and output format

An OpenScape Business CDR contains several fields for specific data of the call. The field sequence is country specific. Differences to the general field sequence exist in the US version of OpenScape Business. Content of some fields is configurable within the Administration Portal. Two data record formats are available within OpenScape Business for data transmission.

5.1 Compressed Format

The compressed format comprises 14 (17 for US) fields. Data within the Compressed Format are delimited by the "|" sign. The field content is filled with the appropriate information of the call. If information for a field is missing, the field delimiter follows directly to the delimiter of the previous field. The end of a CDR is indicated by CR LF (carriage return, line feed). Coding is done in ASCII 8-Bit in general

Example: Compressed Format (14 fields)

```
20.06.12|13:11:35|201|3338|00:02|00:00:07|0123456789||1||||||
```

5.2 Uncompressed Format

The Uncompressed format comprises 9 fields. Data within the Uncompressed Format are delimited by the "|" sign. The field content is filled with the appropriate information of the call. If information for a field is missing, the field delimiter follows directly to the delimiter of the previous field. In case of a file output the first line contains a header which indicates the content of the fields. The end of a CDR is indicated by CR LF (carriage return, line feed). Coding is done in ASCII 8-Bit in general. Example: Uncompressed Format (9 fields) with header line:

```
Date|Time|Ln|St#|Ring|Duration|Number|Call-Fees|I|
25.09.13|13:07:22|1|100||00:00:08|2108196420|0,06|2|
```

Note:

- In case that data output format is switched from compressed to uncompressed format within the Administration Portal of open scape business and in case that file transfer via HTTPS is chosen, it is recommended to initialize the CDR output file. This can be done by retrieving the existing CDR data file and deleting the CDR file within the system by sending the appropriate HTTPS request.
- The uncompressed format cannot be processed by the Accounting Manager of OpenScape Business

5.3 Common CDR-field sequence (w/o US)

Field-position	Max. Field Length (Bytes)	Description
1	8	Date (at end of call)
2	8	Time (at end of call)
3	3	Number of seized trunk
4	16	Internal station number
5	5	Alert time for incoming call

6	8	Duration of the connection
7	Max. 25	Dialed or received external station number
8	11	Call charge unit / Amount
9	2	Additional information (such as incoming call, outgoing call, transferred call, conference, DISA, call setup charges)
10	Max. 11	Account code
11	Max. 11	Used MSN: Only for a point-to-multipoint connection
12	5	CO access code or LCR access code
13	2	LCR route used, dial rule
14	25	Dialed or received station number: (optional depending on configuration)

5.4 CDR field sequence (for US only)

Field-position	Max. Field Length (Bytes)	Description
1	8	Date (at end of call)
2	8	Time (at end of call)
3	3	Number of seized trunk
4	16	Internal station number
5	5	Ring duration of incoming call
6	8	Duration of the connection
7	Max. 25	Dialed or received external station number
8	11	Call charge unit / Amount
9	2	Additional information (such as incoming call, outgoing call, transferred call, conference, DISA, call setup charges)
10	Max. 11	Account code
11	Max. 11	Used MSN: Only for a point-to-multipoint connection
12	5	CO access code or LCR access code
13	2	LCR route used, dial rule
14 (US)	2	PRI Nodal Service (US only)
15 (US)	1	PWI WATS-Band (US only)
16 (US)	3	PRI CIC (US only)
17 (US)	25	Dialed or received station number: (optional depending on configuration)

6 CDR field description

6.1 Field 1: Date

Field #	Max # of Characters	Description
1	8	Date (at end of call): **DD.MM.YY** DD = day: value range 01 ... 31, MM = month: value range 01 ... 12, YY = year: value range 00 ... 99

6.2 Field 2: Time

Field #	Max # of Characters	Description
2	8	Time at the end of a call segment or an unanswered incoming call: **hh:mm:ss** hh = hours: value range 00 ... 23, mm = minutes: value range 00 ... 59, ss = seconds: value range 00 ... 59

6.3 Field 3: Trunk Number

Field #	Max # of Characters	Description
3	3	Trunk: trunk number **nnn** nnn value range 1 ... 250

6.4 Field 4: Station Number

Field #	Max # of Characters	Description
4	16	Stations: internal station number (sometimes full qualified) **nnnnnnnnnnnnnnn** nnn...nnn value range 0000000000000000 ... 9999999999999999. For unanswered calls, this is the last station called (e.g., a hunt group, call forwarding, call forwarding–no answer). For group calls, this is the last station entered. For answered calls, the station that accepted the call is shown. A programmed SNO prefix (with networking only) is not output. The internal station number may be preceded by a max. 7-digit node number If the total resulting from the node number and the station number is greater than sixteen, only the last sixteen digits of the number are output.

6.5 Field 5: Alert Time

Field #	Max # of Characters	Description
5	5	Alert Time fot incoming call : **mm:ss** mm = minutes: value range 00 – 59 ss= seconds: value range 00 - 59) The display occurs for all incoming calls, provided the output of the ring duration has been configured in the system. If a counter overflow occurs (duration > 59:59), “59:59” is output. A change in date or time during system operation can result in this situation. In the case of an incoming call to a busy station, the ring duration is "00:00".

6.6 Field 6: Call Duration

Field #	Max # of Characters	Description
6	8	Duration of the call or call segment: **hh:mm:ss** hh = hours: value range 00 ... 23, mm = minutes: value range 00 ... 59, ss = seconds: value range 00 ... 59) If a connection has not been established for an incoming call, 8 blanks are output here. If a counter overflow occurs (duration > 23:59:59), “23:59:59” is output.

6.7 Field 7: Dialed / Received Number

Field #	Max # of Characters	Description
7	25	Dialed or received external station number (if available): **nnnnnnnnnnnnnnnnnnnnnnnnn** n = dialed or received character: value range 0 ... 9, *, #, ?) The output occurs for incoming and outgoing calls, to the extent available. For outgoing calls, the dialed call number or, if available, the call number transmitted via COLP, is displayed. If the data protection function is enabled, the last four digits dialed are replaced by "????" If no station number information is available, 25 blanks are output

6.8 Field 8: Charging information

Field #	Max # of Characters	Description
8	11	Call charge pulses for a call segment: **ddddddddddd** d = digit: value range 0 ... 9 You can select either call charge pulses or call charge amounts. Call charge pulses are converted into monetary amounts using the call charge factor that is defined by the administrator as the currency amount (including any applicable surcharges) per call charge unit/pulse. The following applies when setting the call charge factor: • With calculation detail: call charge factor = 100% + any applicable surcharge • Without calculation detail: call charge factor = amount/unit + any applicable surcharge The system records the call charges with or without a surcharge depending on the calculation detail: The output always occurs whenever call charges accrue for the call segment (e.g., even for transferred calls).

6.9 Field 9: Additional information about Call

Field #	Max # of Characters	Description
9	2	Information element: additional information Value range: 0 – 9 Meaning: 1 = Incoming connection (Voice / 3.1 kHz Audio Call) 2 = Outgoing connection (Voice / 3.1 kHz Audio Call) 3 = Incoming connection (Other Services) 4 = Outgoing connection (Other Services) 5 = Incoming connection, routed 6 = Outgoing connection, routed 7 = int/ext/ext conference with incoming connection / transit through external transfer 8 = Conference with outgoing connection / Transit through external transfer 9 = Outgoing connection via call forwarding to external destination 0 = Call information (caller list) is output immediately on receiving an incoming call (the output can be suppressed). This can be used, for instance, for a database search from a PC. In cases where multiple stations are called, a separate line is output for each individual station (without ring duration, call duration, call charge information). +20 = Offset as a code for call setup charges (connection setup without call duration) +30 = Offset as a code for a follow-up data record in the case of • a call duration > 24 h. • contiguous call segments with the same line/station number (e.g., after transferring a call or clearing a conference). +40 = Offset for a data record with transit code (by an extension in the subsystem). Can occur in combination with offset +30. +50 = Offset as a code for DISA calls +70 = combination of offsets +30 and +40

6.10 Field 10: Account / Project Code (PKZ)

Field #	Max # of Characters	Description
10	11	Account Code (ACC) ***aaaaaaaaaaa*** a digit of ACC, Value range 0..9 There are max. 11 characters output. This value corresponds to the value of the account code entered by the user for this interview. If no account code was entered, the field is empty.

6.11 Field 11: Used MSN (Multiple Subscriber Number

Field #	**Max # of Characters**	**Description**
11	11	MSN ***mmmmmmmmmmm*** *m digit of* MSN value range 0..9 The output occurs if the user has programmed an MSN key. For outgoing connections of a MULAP subscriber, the call number of the seized MULAP is displayed.

6.12 Field 12: Line Access Code

Field #	**Max # of Characters**	**Description**
12	5	CO access code or LCR access code *bbbbb* b digit of Access Codes: value range 0..9

6.13 Field 13: LCR Route

Field #	**Max # of Characters**	**Description**
13	2	LCR – Route used, dial rule *rr*: *rr* Index of LCR route Value range *1..254*

6.14 Field 14 (17 for US): Dialed / received station number

Field #	Max # of Characters	Description
14 (17 US)	25	Dialed or received station number: (optional depending on configuration): **nnnnnnnnnnnnnnnnnnnnnnnnn** n = dialed or received character: value range 0 ... 9 The output occurs for incoming and outgoing calls, if activated. For outgoing calls, the station number actually sent to the Exchange (following LCR conversion if required) is displayed. For incoming calls, the internal station number for the desired station, i.e., the first station dialed, is displayed.

6.15 Field 14 (US): PRI Nodal Service

Field #	Max # of Characters	Description
14	2	PRI Nodal Service

6.16 Field 15 (US): PWI WATS Band

Field #	Max # of Characters	Description
15	1	PWI WATS-Band

6.17 Field 16 (US): PRI CIC

Field #	Max # of Characters	Description
16	3	PRI CIC

6.18 End of CDR

Field #	Max # of Characters	Description
	2	End of Line control character **CR LF** Carriage Return CR, Line Feed LF

About Unify

Unify is one of the world's leading communications software and services firms, providing integrated communications solutions for approximately 75 percent of the Fortune Global 500. Our solutions unify multiple networks, devices and applications into one easy-to-use platform that allows teams to engage in rich and meaningful conversations. The result is a transformation of how the enterprise communicates and collaborates that amplifies collective effort, energizes the business, and enhances business performance. Unify has a strong heritage of product reliability, innovation, open standards and security.

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