MDS GLOBAL

CMP 8.21

Extracts Guide

Version 1.0

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ISO 22301 standard is applicable to MDS Global Business Operations.

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Version Control

Version	Issue Date	Author	Comments
Version 1.0	19 December 2025	MDS	CMP 8.21 Release - No changes since the last release.

Terms Used in this Document

For definitions and explanations of the terms, abbreviations and acronyms used in this document, please see the *CMP Glossary* document.

1.0 Introduction

The Converged Monetisation Platform (CMP) provides Data Warehouse (DWH) extracts and Customer Experience Platform (CXP) extracts. This guide describes the standard MDS Global extracts, the process for extraction, and the data extracted.

1. 1 Required Reading

This document assumes prior knowledge to the *CMP Overview* and *Operational Overview* documentation.

2.0 Data Warehouse Extracts

2. 1 Overview

The DWH extract is made up of separate outputs covering the lifecycle of the customer. All data is retrieved from the CMP database.

The DWH extract is produced by CMP batch process, comprising batch jobs such as the Unbilled Usage Analytics job, that can be run manually or scheduled using the CMP Administration Console. The following table lists the batch jobs, the parameters that they take, and the extracts that they produce:

Batch Job	Parameters	Extract
Account Analytics	Full/Partial*	"Account Analytics" on page 7
Agreement Analytics	Full/Partial	"Agreement Analytics" on page 9
Billed Usage Analytics	Invoice Run #	"Billed Usage Analytics" on page 10
Invoice Detail Analytics	Full/Partial	"Invoice Detail" on page 13
Payment Detail Analytics	Full/Partial	"Payment Details Analytics" on page 16
Prepaid Usage Analytics	Extract Date**	"Prepaid Usage" on page 18
Purchase Analytics	Full/Partial	"Purchase Analytics" on page 21
Statement Analytics	Full/Partial	"Statement Analytics" on page 23
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Subscription Service Analytics	Full/Partial	"Subscription Service" on page 28
Transaction Detail Analytics	Full/Partial	"Transaction Detail Analytics " on page 30
Unallocated Usage Analytics	Full/Partial	"Unallocated Usage Analytics" on page 34
Unbilled Usage Analytics	Extract Date	"Unbilled Usage Analytics" on page 31

* Full mode retrieves all records. Partial mode retrieves all new records since the job was last run. The job checks the interface batch header for the last record produced. If no record is found, it runs in Full mode.
** For jobs that take Extract Date as a parameter, the current date is used if no date is provided. The job retrieves records up to, but not including the Extract Date provided.

> For more information about these extract jobs, see the *CMP Batch Jobs and JSON Schemas Guide*. See also the jobs descriptions provided in the CMP Administration Console.

2. 2 Scheduling

In MDS Global Business Operations implementations, the MDS Application & Billing team is responsible for scheduling the process.

In licence-only or Business Operations Partner implementations, the party responsible for operating CMP must determine the most appropriate point in the daily batch schedule to run the extract.

2. 3 Flow

The start point for the extract is the submission of the process; either manually through the CMP Administration Console or automatically using the Console's scheduling function.

Error scenarios in the process can prevent the extract being produced. In such scenarios, the appropriate error is written to the operations message queue so that monitoring tools (such as Nimsoft) can trigger alerts/alarms. Administration Console probes can also be used as quality measures.

Successfully completed extracts are placed on the file system of the CMP server for collection by the consuming party (usually the service provider).

3.0 Data Warehouse Output Files

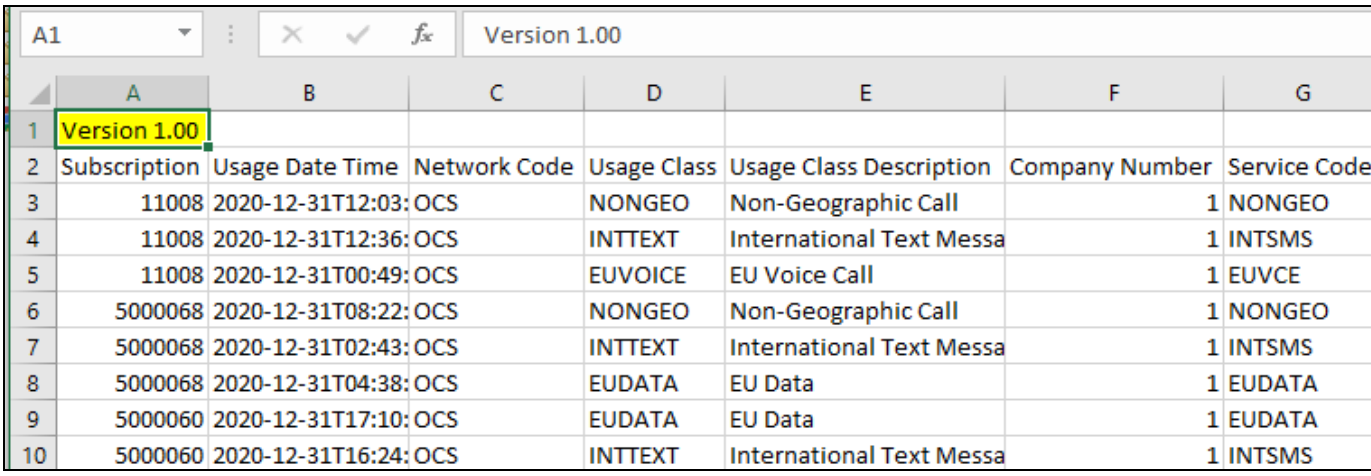
3. 1 Format

Files are comma delimited csv files. Character fields will be enclosed with quotation marks, for example"text".

If the extract is related to customer structure, for example Subscription, Account or Agreement, a file will always be produced, even if it consists of just two lines: the version number and a list of fields. This applies when extracts are run in both FULL or PARTIAL mode.

3. 2 Version Number

Output files always include a version number as the first line of the output. All output formats start at `Version 1.0`. Each time an extract batch job is updated and this affects the output format, the version number is incremented: `Version 1.1`, `Version 1,2` and so on. This enables customers to determine whether they are looking at the latest extracts:



A1 | Version 1.00

	A	B	C	D	E	F	G
1	Version 1.00						
2	Subscription	Usage Date Time	Network Code	Usage Class	Usage Class Description	Company Number	Service Code
3	11008	2020-12-31T12:03:	OCS	NONGEO	Non-Geographic Call	1	NONGEO
4	11008	2020-12-31T12:36:	OCS	INTTEXT	International Text Messa	1	INTSMS
5	11008	2020-12-31T00:49:	OCS	EUVOICE	EU Voice Call	1	EUVCE
6	5000068	2020-12-31T08:22:	OCS	NONGEO	Non-Geographic Call	1	NONGEO
7	5000068	2020-12-31T02:43:	OCS	INTTEXT	International Text Messa	1	INTSMS
8	5000068	2020-12-31T04:38:	OCS	EUDATA	EU Data	1	EUDATA
9	5000060	2020-12-31T17:10:	OCS	EUDATA	EU Data	1	EUDATA
10	5000060	2020-12-31T16:24:	OCS	INTTEXT	International Text Messa	1	INTSMS

3. 3 Collection

Extract files are placed in a predefined location on the file system of the CMP server. The consumer of the files needs to pull files via File Transfer Protocol (FTP), or where required, Secure File Transfer Protocol (SFTP).

A user profile is needed to access the file system.

3. 4 File Naming

The configurable file naming convention is as follows:

`<fileNamePrefix> - extract ID - partition ID - <fileNameSuffix>.csv`, where:

- <fileNamePrefix> = `DWHExtract`
- <fileNameSuffix> = a descriptive name of the extract

Example: `DWHExtract-55141-1-Unbilled_Usage_Analytics.csv`

3. 5 Housekeeping

The extract process does not perform housekeeping of the output directory on the CMP file system. An operational process needs to define what happens to files once they are collected.

Files can be deleted, renamed or moved to an archive folder.

3. 6 Systems Monitoring

Monitoring should be put in place to raise alerts if errors are found and/or if the success message is not output by a given time of day. The CMP Administration probes and alerts functions can be used to monitor quality and alert users.

4.0 Data Warehouse Data Dictionary

4. 1 Field Rules

The following rules apply for the Customer Data and Configuration Data extract fields in the "Customer Data Extracts" on the next page.

- All fields are comma (,) delimited with no leading or trailing record comma.
- Numeric amounts are not encased by quotation marks, for example `123`.
- Alphanumeric fields are not encased by quotation marks, for example ,`TARIFF`.
- Date/time fields are not encased by quotation marks, for example `2020-07-17T10:01:17+0100`.
- A non-monetary numeric amount is a straight forward character conversion. If the value is zero it is represented as `,0,`.
- For monetary amounts, an edit code is applied for formatting purposes:

12345.67	Debit amount
12345.67-	Credit amount
.00	Zero

Additionally if the amount is 0.67, the leading 0 is dropped and represented as .67 (or .67- if credit amount).

4. 2 Customer Data Extracts

The following extracts provide customer data such as account, agreement, subscription, service, and invoice details. Extracts also provide details on payments, billled and unbilled usage, prepaid usage, purchases and transactions.

4. 2. 1 Account Analytics

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Account Number	Y	Numeric	8,0	CMP Account Number
Company Number		Alphanumeric	3	CMP Company Number
Account Type Code		Alphanumeric	3	3-digit indicator of account type
Account Type Description		Alphanumeric	30	Text description of account type
Billing Media Code		Alphanumeric	6	The CMP code that indicates the type of billing media, for example, ONLINE (used for non-subscription invoicing)
Billing Media Code Description		Alphanumeric	30	Text description of the billing media, for example online billing, paper
Payment Type Code		Alphanumeric	6	CMP code that indicates the payment type associated with the account, for example, MANUAL
Payment Type Code Description		Alphanumeric	30	Text description of the payment type code, for example Manual Payment
Last Invoice Date		Numeric	25,0	Date last invoice created in CMP. YYYY-MM-DD HH:MM:SS format (used for non-subscription invoicing)
Next Expected Invoice Date		Numeric	25,0	The next expected invoice date in CMP. YYYY-MM-DD HH:MM:SS format (used for non-subscription invoicing)
Account in Query		Alphanumeric	1	Either 1=Yes or 0=No
Account Balance		Numeric	11,2	Amount to 2 decimal places, positive or negative
Amount Overdue		Numeric	11,2	Amount to 2 decimal places if populated, positive or negative
Amount Query		Numeric	11,2	Amount in query, positive or negative
Is Ignore CC Procedure		Alphanumeric	1	Either 1=Yes or 0=No
Account Name		Alphanumeric	60	Delivery Address Name
Address Line 1		Alphanumeric	40	First line of the address to which the bill is sent

Column Heading	Unique?	Type	Length	Details
Address Line 2		Alphanumeric	40	Second line of the address to which the bill is sent
Address Line 3		Alphanumeric	40	Third line of the address to which the bill is sent
Address Line 4		Alphanumeric	40	Fourth line of the address to which the bill is sent
Address Line 5		Alphanumeric	40	Fifth line of the address to which the bill is sent
Post Code		Alphanumeric	10	Post code of the address to which the bill is sent
Date Time Created		Numeric	25,0	Date record created in CMP. YYYY-MM-DD HH:MM:SS format
Created By		Alphanumeric	10	User ID of user who created the record
Date Time Changed		Numeric	25,0	Date record changed in CMP. YYYY-MM-DD HH:MM:SS format
Changed By		Alphanumeric	10	User ID of user who changed the record
Data Extract Date		Numeric	7,0	Date that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 2 Agreement Analytics

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Agreement Number	Y	Numeric	8,0	CMP Agreement Number
Account Number		Numeric	8,0	CMP Account Number
Bill Cycle		Numeric	2,0	Bill cycle day of the month
Billing Media		Alphanumeric	6	CMP code for the Billing media, for example, ONLINE, PAPER
Billing Media Description		Alphanumeric	30	Text description of the Billing media, for example, Online Billing
Billing Frequency		Numeric	2,0	The frequency of the billing, in months
Next Expected Invoice Date		Numeric	25,0	Date of next invoice as held on the Agreement file in CMP. YYYY-MM-DD HH:MM:SS format
First Invoice Date		Numeric	25,0	Date of first invoice. YYYY-MM-DD HH:MM:SS format
Last Invoice Date		Numeric	25,0	Date of last invoice. YYYY-MM-DD HH:MM:SS format
Last Invoice Run Number		Numeric	8,0	Last CMP run number
Date Time Created		Numeric	25,0	Date record created in CMP. YYYY-MM-DD HH:MM:SS format
Created By		Alphanumeric	10	User ID of user who created the record
Date Time Changed		Numeric	25,0	Date record changed in CMP. YYYY-MM-DD HH:MM:SS format
Changed By		Alphanumeric	10	User ID of user who created the record
Data Extract Date		Numeric	7,0	Date that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 3 Billed Usage Analytics

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Rated Usage Identifier	Y	Numeric		ID for the rated usage
Usage Date Time		Numeric	25,0	The date and time the usage took place. YYYY-MM-DD HH:MM:SS format
Usage Processed Date Time		Numeric	25,0	The date and time the usage records were processed. YYYY-MM-DD HH:MM:SS format
Usage External Identifier		Numeric		ID used by external third party for usage
Network Code		Alphanumeric	6,0	CMP code for the network
Usage Class		Alphanumeric	12,0	CMP code for the usage class, for example, DOMDATA
Usage Class Description		Alphanumeric	30,0	Text description of the Usage Class code, for example, Domestic Data
Company Number		Numeric	3	CMP ID number for the company
Service Code		Alphanumeric	6,0	CMP Code for the pricing service associated with the usage, for example, EUDATA
Service Description		Alphanumeric	30,0	Text description of the pricing service associated with the usage, for example, Euro Roaming Data
Service Group		Alphanumeric	6,0	The CMP Code for the group to which the service belongs, for example, USAGE
Service Group Description		Alphanumeric	30,0	Text description of the service group to which the service belongs, for example, Usage
Network Serial Number		Numeric	10,0	Serial number of the network associated with the usage
Subscription		Numeric	7,0	CMP subscription number
Destination		Alphanumeric		The dialled number, or for data, a text description
Usage Type		Numeric		CMP code for the usage type
Usage Type		Alphanumeric		Text description of the usage type

Column Heading	Unique?	Type	Length	Details
Description				
Invoice Number		Numeric		The number of the invoice that bills for this usage
Wholesale charge		Numeric	11,4	The wholesale charge of the usage, to 4 decimal places
Retail Charge		Numeric	11,4	The retail price of the usage, to 4 decimal places
Access Charge		Numeric	11,4	If there is an access charge for the usage, the amount to 4 decimal places
Service Charge		Numeric	11,4	If there is a charge for the service, the amount to 4 decimal places
Actual usage units		Numeric		The actual amount of usage consumed, in units
Billable Usage Units		Numeric		The amount of usage consumed, in units, that was invoiced for
Pre-paid Units		Numeric		The amount of prepaid usage that was consumed, in units
Pre-paid Duration		Numeric		The duration of the pre-paid usage
Pre-paid Retail Price		Numeric	11,4	The retail price of the pre-paid usage, to 4 decimal places
Generic String1		Alphanumeric		Generic string content
Generic String2		Alphanumeric		Generic string content
Generic String3		Alphanumeric		Generic string content
Generic String4		Alphanumeric		Generic string content
Generic String5		Alphanumeric		Generic string content
Generic String6		Alphanumeric		Generic string content
Generic String7		Alphanumeric		Generic string content
Generic String8		Alphanumeric		Generic string content
Generic String9		Alphanumeric		Generic string content
Generic String10		Alphanumeric		Generic string content
Generic Integer1		Numeric		Generic integer content
Generic Integer2		Numeric		Generic integer content
Generic Integer3		Numeric		Generic integer content
Generic Integer4		Numeric		Generic integer content

Column Heading	Unique?	Type	Length	Details
Audit Timestamp		Numeric	25,0	The date and time of audit. YYYY-MM-DD HH:MM:SS format
Audit User		Alphanumeric		User name of user who last changed data
Usage Direction		Alphanumeric	2,0	The code for the usage direction, either MO or MT
Mobile Country Code		Numeric	3,0	3-digit mobile telephone code for the country associated with the usage, for example 234 for United Kingdom
Country Name		Alphanumeric	30,0	The name of the country associated with the mobile code, e.g. Ireland for code 272
Mobile Network Operator		Numeric	3,0	The mobile telephone number code for the network operator associated with the usage e.g. 15 for Vodaphone
Mobile Network Operator Name		Alphanumeric	30,0	The name of the network operator associated with the mobile network operator code
Discount Value		Numeric	11,4	The value of any discount applied to the billed usage
Data Extract Date		Numeric	7,0	Date and time this extract was created. YYYY-MM-DD format

4. 2. 4 Invoice Detail

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
InvoiceNumber	Y	Numeric	8,0	CMP Invoice Number
Invoice TaxDate		Numeric	7	Invoice date for the invoice the invoice detail line is associated with
Statement Number		Numeric	8,0	The CMP ID number for the statement associated with this invoice
AccountNumber		Numeric	8,0	CMP Account Number
TariffCode		Alphanumeric	6,0	CMP Tariff Code associated with the subscription
TariffDescription		Alphanumeric	30,0	Text description of the Tariff Code associated with the sub-scription
Servicecode		Alphanumeric	6	Service Code
ServiceDescription		Alphanumeric	30	CMP Service Description
Service Category Code		Alphanumeric	1	The category code for the ser-vice: A= Unit B = Sales Ledger D = Subscription Serial Number E = Invoice Adjustments T =Account Service 5 = Subscription Service 9 = Discount F = Sales Order Processing
Service Category Description		Alphanumeric	30,0	The text description of the ser-vice category as represented by the category code above
Sales Ledger Adjustment		Alphanumeric	Yes or No	Whether there is a Sales Ledger Adjustment
SubscriptionNumber		Numeric	8,0	Subscription Number
NetworkCode		Alphanumeric	6	Network relating to Service Code
NetworkDescription		Alphanumeric	30	CMP Network Description

Column Heading	Unique?	Type	Length	Details
TotalNumberofCalls		Numeric	5,0	Number of Calls Invoiced
TotalDuration		Numeric	9,0	Duration of Calls Invoiced
TotalServiceUnits		Numeric	11,0	Number of units Invoiced
IdChargeStartDate		Numeric	7,0	Service Charge Start Date YYYY-MM-DD format
IdChargeEndDate		Numeric	7,0	Service Charge End Date YYYY-MM-DD format
IDNetAmount		Numeric	11,2	Net Amount of Invoice Line, positive or negative
IDTaxAmount		Numeric	13,4	VAT Amount of Invoice Line, positive or negative
ChargeTaxCode		Alphanumeric	10	Charged Tax Code
Charge TaxDescription		Alphanumeric	30	CMP Description of Charge Tax Code
taxRate		Numeric	5,2	Charged Tax Rate
ChargetoNominal Code		Alphanumeric	29	Nominal Code
ChargetoNominal Description		Alphanumeric	30	Description associated with the Charge to Nominal Code
IDLineComment1		Alphanumeric	78	Free text field 1
IDLineComment2		Alphanumeric	78	Free text field 2
IDLineComment3		Alphanumeric	78	Free text field 3
PaymentType		Alphanumeric	6	Code identifying the payment type the customer was on at the time of the invoice
PaymentTypeDescription		Alphanumeric	30	Description of the payment type the customer was on at the time of the invoice
DateTimeCreated		Numeric	7,0	Date Invoice Created in CMP YYYY-MM-DD HH:MM:SS format
DateTimeChanged		Numeric	7,0	Date record changed in CMP. YYYY-MM-DD HH:MM:SS format

Column Heading	Unique?	Type	Length	Details
CreatedbyDISEUserID		Alphanumeric	10	User ID of user who created the record
ChangedByDISEUserID		Alphanumeric	10	User ID of user who created the record
DateExtractDate		Numeric	7,0	Date that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 5 Payment Details Analytics

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Account Number	Y	Numeric	8,0	CMP Account Number
Payment Identifier	Y	Numeric		ID number of the payment
Payment Amount		Numeric	11,2	Amount of payment, to 2 decimal places
Payment Date Time		Numeric	25,0	Date and time that payment was processed. YYYY-MM-DD HH:MM:SS format
Payment Status		Alphanumeric	1	Status of the payment, for example, S=Success
Payment Status Description		Alphanumeric	25	Description of the Payment Status, for example, Success
Payment Type		Alphanumeric	6	Payment type code associated with the payment, for example, MANUAL
Reason Code		Alphanumeric	4	Reason code associated with the payment, for example, SET
Reason Description		Alphanumeric	30	Text Description of the Reason Code, for example, Settled
Payment Source		Alphanumeric	1	Code for the payment source, for example, O=Online Payment, B = Prepaid Balance
Payment Source Description		Alphanumeric	30, 0	Text description of the payment source, for example, Online Payment, Prepaid Balance
External Reference		Alphanumeric	15,0	Reference number for payment used by external third party
SPUniqueIdentifier		Alphanumeric	10,0	Unique identifier for the SP
AuditTimestamp		Numeric	25,0	Date and time of audit. YYYY-MM-DD HH:MM:SS format
Error Code		Alphanumeric	4	If applicable, the error code associated with a payment error
Error Description		Alphanumeric	30	If applicable, the description of the error associated with the payment
Data Extract Date		Numeric	7,0	Date that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 6 Prepaid Usage

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Prepaid Usage Identifier	Y	Numeric		The ID number of the pre-paid usage
Usage Date Time		Numeric	25,0	The date and time of the prepaid usage. YYYY-MM-DD HH:MM:SS format
Usage Processed Date Time		Numeric	25,0	The date and time that the prepaid usage was processed. YYYY-MM-DD HH:MM:SS format
Usage External Identifier		Alphanumeric		The reference used by an external third party to identify the prepaid usage, for example, MEF:1594969511695:87
Network Code		Alphanumeric	6,0	The CMP code for the network associated with the usage, e.g. OCS
Usage Class		Alphanumeric	12,0	CMP code for the usage class, for example, DOMDATA
Usage Class Description		Alphanumeric	30,0	Text description of the Usage Class code, for example, Domestic Data
Company Number		Alphanumeric	3	The numerical ID of the company
Service Code		Alphanumeric	6,0	CMP Code for the pricing service associated with the usage, for example, EUDATA
Service Code Description		Alphanumeric	30,0	Text description of the pricing service associated with the usage, for example, Euro Roaming Data
Service Group Code		Alphanumeric	6	The CMP Code for the group to which the service belongs, for example, USAGE

Column Heading	Unique?	Type	Length	Details
Service Group Code Description		Alphanumeric	30	Text description of the service group to which the service belongs, for example, Usage
Network Serial Number		Alphanumeric	25	As stored in CMP. Typically a mobile number or landline CLI as stored in Managed Serial Number 1.0
Subscription Number		Numeric	8	CMP Subscription number
Destination				
Usage Type		Alphanumeric		CMP code for the usage type
Usage Type Description		Alphanumeric		Text description of the usage type
Wholesale Charge		Numeric	11, 4	Wholesale price of the usage
Retail Charge		Numeric	11, 4	Retail price
Access Charge		Numeric	11, 4	Monetary value of access charge
Service Charge		Numeric	11, 4	Monetary value of service charge
Actual Usage Units		Numeric	7,0	Actual units of usage consumed
Billable Usage Units		Numeric	7,0	Billable units of usage
Generic String 1 - Generic String 10 (10 columns)		Alphanumeric		Generic String values
Generic Integer 1 - Generic Integer 4 (4 columns)		Integer		Generic Integer values
Audit Timestamp		Numeric	25,0	YYYY-MM-DD HH:MM:SS format
Audit User		Alphanumric	50	ID of user who changed the record
Data Extract Date		Numeric	7,0	Date that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 7 Purchase Analytics

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Purchase Identifier	Y	Numeric		The ID number of the purchase
Account Number	Y	Numeric	8,0	CMP Account Number
Purchase Timestamp		Numeric	25,0	The date and time of the purchase. DD-MM-YYYY HHMMSS format
Purchase Status		Char	10,0	The status of the purchase: • COMPLETE • INPROGRESS • ERROR
Purchase Type		Alphanumeric	8,0	The type of purchase, for example: • PREPAID • POSTPAID • BALANCE
Salesperson Number		Numeric	8,0	Numeric ID of the salesperson who processed the purchase
Salesperson Name		Alphanumeric	50, 0	The name of the salesperson
Sales Channel Code		Alphanumeric	6,0	The code of the sales channel
Sales Channel Description		Alphanumeric	30,0	Text description of the sales channel
Reason Code		Alphanumeric	4,0	The code for the reason for the purchase
Event Number		Numeric	9,0	The number of the workflow event for the purchase
Receipt Requested		Char	5	Whether a receipt was requested. Either TRUE or FALSE
Customer Level		Alphanumeric	1	The level at which the info is stored and the level description:GROUP, CORPORATE, ACCOUNT, SUBSCRIPTION or AGREEMENT
Customer Reference		Alphanumeric	60,0	Unique reference for the customer. This is tied to the Customer Level, for example, if the customer level is Account, the reference is the CMP Account Number; if the level is Subscription, the reference is the Subscription Number, and so on
Product Type		Alphanumeric	7	Whether the product is a bolt-on, top-up

Column Heading	Unique?	Type	Length	Details
				or voucher-based top-up package. Currently only the *Package* product type is supported
Product Code		Alphanumeric	6,0	The CMP product code. If the purchase is a voucher top-up, the product code will contain the voucher number
Product Code Description		Alphanumeric	30,0	The description of the product. This is also the voucher number
Audit User		Alphanumeric	50	ID of user who changed the record
Audit Process		Alphanumeric	12	The CMP code for the process that last changed the record, e.g. ADDPURCHS
Audit Timestamp		Numeric	25,0	Date/time the record changed in CMP. YYYY-MM-DD HH:MM:SS format
Data Extract Date		Numeric	7,0	Date that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 8 Statement Analytics

Column Heading	Unique?	Type	Length	Details
Statement Number	Yes	Numeric	8	The CMP ID number for the statement
Group Code		Alphanumeric	6	The CMP code for the group associated with the statement
Corporate Code		Alphanumeric	6	The CMP code the corporate associated with the statement
Statement Date		Numeric	10	The date on the statement in DD/MM/YYYY format
Account Number		Numeric	8	The CMP account number associated with the statement
Total Statement Invoices		Numeric	8	The total of invoices associated with the statement
Total Debits This Statement		Numeric	11,2	The monetary total of all debits in the statement, to two decimal places
Total Credits This Statement		Numeric	11,2	The monetary total of all credits in the statement, to two decimal places
Total Transactions This Statement		Numeric	11,2	The total number of transactions in the statement
Opening Balance		Numeric	11,2	The opening monetary balance of the statement, to two decimal places
Closing Balance		Numeric	11,2	The closing monetary balance of the statement, to two decimal places
Previous Closing Balance		Numeric	11,2	The closing balance for the statement before this one for the customer, to two decimal places
Date Created		Numeric	7,0	The date the extract was created. YYYY-MM-DD format
Created By		Alphanumeric	10	User ID of user who created the record
Date Changed		Numeric	7,0	The date the extract was last changed. YYYY-MM-DD format
Changed By		Alphanumeric	10	User ID of user who last changed the record
Data Extract Date		Numeric	7,0	Date that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 9 Subscription Analytics

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Subscription Number	Y	Numeric	8,0	CMP Subscription Number
User Name		Alphanumeric	50,0	CMP Subscription Username
Account Number		Numeric	8,0	CMP Account Number
Company Number		Alphanumeric	3	CMP Company Number
Agreement Number		Numeric	8,0	CMP Agreement Number
Group Code		Alphanumeric	6,0	CMP Group Code
Group Description		Alphanumeric	30,0	Text description of the CMP Group Code
Corporate Code		Alphanumeric	6,0	CMP Corporate Code
Corporate Description		Alphanumeric	30,0	Text description of the Corporate Code
Price Plan Code		Alphanumeric	6,0	CMP Price Plan Code associated with the subscription, for example, PAYG
Price Plan Description		Alphanumeric	30,0	Text description of the Price Plan Code associated with the subscription, for example, Pay As You Go Plan
Tariff Code		Alphanumeric	6,0	CMP Tariff Code associated with the subscription
Tariff Description		Alphanumeric	30,0	Text description of the Tariff Code associated with the subscription
Package Code		Alphanumeric	6,0	CMP Package Code associated with the subscription , for example, PAYG
Package Description		Alphanumeric	30,0	Text description of the Package Code associated with the subscription, e.g. Pay As You Go Base Package
Network Code		Alphanumeric	6,0	CMP Network Code for network associated with the subscription
Network Description		Alphanumeric	30,0	Text description of the CMP Network Code associated with the subscription
Network Serial Number 1		Alphanumeric	25	As stored in CMP. Typically a mobile number or landline CLI as stored in Managed Serial Number 1
Network Serial Number 2		Alphanumeric	25	This value varies by CMP implementation/environment. In mobile imple-

Column Heading	Unique?	Type	Length	Details
				mentations this is typically a SIM related serial number
Network Serial Number 3		Alphanumeric	25	This value varies by CMP implementation/environment. In mobile implementations this is typically a SIM related serial number
Network Serial Number 4		Alphanumeric	25	This value varies by CMP implementation/environment. In mobile implementations this is typically a SIM related serial number
Network Serial Number 5		Alphanumeric	25	This value varies by CMP implementation/environment
Delivery Address Name		Alphanumeric	40	The name for the delivery address in CMP
Address Line 1		Alphanumeric	40	As stored in CMP
Address Line 2		Alphanumeric	40	As stored in CMP
Address Line 3		Alphanumeric	40	As stored in CMP
Address Line 4		Alphanumeric	40	As stored in CMP
Address Line 5		Alphanumeric	40	As stored in CMP
Post Code		Alphanumeric	10	As stored in CMP
Connected Date		Numeric	25,0	Date Connected in CMP. YYYY-MM-DD format
Disconnected Date		Numeric	25,0	Date Disconnected in CMP. YYYY-MM-DD format. "0" if not disconnected
Subscription Status		Alphanumeric	6,0	First, Normal, Final
Connected Reason		Alphanumeric	4,0	Reason the Sub was Connected (Code), for example, CR
Connected Reason Description		Alphanumeric	30,0	Reason the Sub was Connected (Text Description), for example, Customer Request
Disconnection Reason		Alphanumeric	4,0	Reason the Sub was Disconnected (Code)

Column Heading	Unique?	Type	Length	Details
Disconnection Reason Description		Alphanumeric	30,0	Reason the Sub was Disconnected (Description)
Contract Start Date		Numeric	25,0	Contract Start Date in CMP. YYYY-MM-DD format
Contract Expiry Date		Numeric	25,0	Contract Start Date in CMP. YYYY-MM-DD format
Contract Term		Numeric	3,0	Contract term (months)
Contract Number		Alphanumeric	12	Contract Number for Agreement
Date of Birth		Numeric	25,0	YYYY-MM-DD format
Date Time Created		Numeric	25,0	Date record created in CMP. YYYY-MM-DD HH:MM:SS format
Created By		Alphanumeric	10	User ID of user who created the record
Date Time Changed		Numeric	25,0	Date record changed in CMP. YYYY-MM-DD HH:MM:SS format
Changed By		Alphanumeric	10	User ID of user who last changed the record
Salesperson Number		Numeric	8,0	Numeric ID of the salesperson who processed the purchase
Salesperson Name		Alphanumeric	50, 0	The name of the salesperson
Data Extract Date		Numeric	7,0	Date that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 10Subscription Features

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Subscription Number	Y	Numeric	8,0	CMP Subscription Number
Feature Code	Y	Alphanumeric	6.0	Unique CMP code for the feature, for example, LOSTBR
Feature Description		Alphanumeric	30, 0	Text description of the CMP feature code, for example,Lost Phone Bar
Feature Enabled		Numeric	1	Whether the feature is enabled. Either 1=Yes or 0=No
Feature Barred		Numeric	1	Whether the feature is enabled. Either 1=Yes or 0=No
Feature Activity Pending		Numeric	1	Is any activity pending for the feature? Either 1=Yes or 0=No
Date Time Created		Numeric	25,0	Date record created in CMP. YYYY-MM-DD HH:MM:SS format
Created By		Alphanumeric	10	User ID of user who created the record
Date Time Changed		Numeric	7,0	Date record changed in CMP. YYYY-MM-DD HH:MM:SS format
Changed By		Alphanumeric	10	User ID of user who created the record
Data Extract Date		Numeric	7,0	Date that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 11Subscription Service

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Subscription Number	Y	Numeric	8,0	CMP Subscription Number
Company Number	Y	Alphanumeric	3,0	CMP Company Number
Service Code	Y	Alphanumeric	6,0	CMP Service Code, for example, LINECH
Service Description		Alphanumeric	30,0	Text description of the Service Code, for example, Line Charge
Subscription Service Effective Date	Y	Numeric	25,0	The date and time from which the service is effective. YYYY-MM-DD HH:MM:SS format
Package Code		Alphanumeric	6,0	CMP Package Code, for example, PAYG
Package Code Description		Alphanumeric	30,0	Text description of Package Code, e.g. Pay As You Go Base Package
Recurring Charge		Alphanumeric	1,0	Either 1=Yes or 0=No
Price Number of Days		Numeric	3,0	How many days the service charge covers
Price Number of Months		Numeric	3,0	How many months the service charge covers
Subscription Service Expiry Date		Numeric	25,0	The date and time that the subscription service expires, if populated. YYYY-MM-DD HH:MM:SS format
Service Price		Numeric	11,2	Price to 2 decimal places, positive or negative
Invoiced Up To Date		Numeric	25,0	Date the service is invoiced up to. YYYY-MM-DD HH:MM:SS format .
Invoice this Service		Alphanumeric	1	Either 1=Yes or 0=No
Billing Offset		Numeric	2,0	1 = Monthly , 3 = Quarterly, 12 =Yearly, and so on
Date Time Created		Numeric	25,0	Date and time the record was created in CMP. YYYY-MM-DD HH:MM:SS format
Created By		Alphanumeric	10	User ID of user who created the record
Date Time Changed		Numeric	25,0	Date and time the recordwas last changed in CMP. YYYY-MM-DD

Column Heading	Unique?	Type	Length	Details
				HH:MM:SS format
Changed By		Alphanumeric	10	User ID of user who changed the record
Data Extract Date		Numeric	7,0	Date and time that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 12Transaction Detail Analytics

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Transaction Identifier	Y	Numeric		ID number of the transaction
Transaction Type		Alphanumeric	8,0	CMP Code for the transaction type
Transaction Reference		Numeric		Reference number for transaction
Transaction Date		Numeric	25,0	Batch Date and Time in CMP. YYYY-MM-DD format
Remark		Alphanumeric	30	Description of payment or comment, for example "DD Payment"
Account Number	Y	Numeric	8,0	CMP Account Number
Gross Amount		Numeric	11,2	Gross amount of the transaction, to 2 decimal places, positive or negative
Statement Reference		Numeric		Reference number for statement associated with the transaction
External Reference		Numeric		External reference for the transaction used by third parties
Reason		Numeric	6,0	Reason code for the transaction
General Ledger Reference		Alphanumeric		Reference to transaction that appears in the General Ledger
Audit Timestamp		Numeric	25,0	Date and time that the record was produced in CMP. YYYY-MM-DD HH:MM:SS format
Audit User		Alphanumric	50	ID of user who changed the record
Data Extract Date		Numeric	7,0	Date and time that the data above was extracted from CMP. YYYY-MM-DD format

4. 2. 13Unbilled Usage Analytics

Data is only considered up to midnight of the previous day. This is to ensure a common cut-off date across all Data Warehouse output.

Column Heading	Unique?	Type	Length	Details
Subscription	Y	Numeric	7,0	CMP number for the subscription associated with the usage
Usage Date Time		Numeric	25,0	The date and time the usage took place. YYYY-MM-DD HH:MM:SS format
Network Code		Alphanumeric	6,0	CMP code for the network
Usage Class		Alphanumeric	12,0	CMP code for the usage class, for example, DOMDATA
Usage Class Description		Alphanumeric	30,0	Text description of the Usage Class code, for example, Domestic Data
Company Number		Numeric	3	CMP ID number for the company
Service Code		Alphanumeric	6,0	CMP Code for the pricing service associated with the usage, for example, EUDATA
Service Description		Alphanumeric	30,0	Text description of the pricing service associated with the usage, for example, Euro Roaming Data
Network Serial Number		Numeric	10,0	Serial number of the network associated with the usage
Destination		Numeric		The dialled number
Actual Usage Units		Numeric		The actual amount of usage consumed, in units
Billed Usage Units		Numeric		The amount of usage consumed, in units, that was invoiced for.
Wholesale Charge		Numeric	11,4	The wholesale charge of the usage to 4 decimal places.
Retail Charge		Numeric	11,4	The retail price of the usage to 4 decimal places.
Usage Status		Alphanumeric		The status of the usage
Usage Type		Numeric	1	CMP code for the usage type
Usage Type Description		Alphanumeric	30,0	Text description of the usage type
Service Group		Alphanumeric	6,0	The CMP Code for the group to which the service belongs, for example, USAGE

Column Heading	Unique?	Type	Length	Details
Service Group Description		Alphanumeric	30,0	Text description of the service group to which the service belongs, for example, Usage
Display on Invoice?		Alphanumeric		Whether to display the usage on the bill
Pre-paid Units		Numeric		The amount of prepaid usage that was consumed, in units
Pre-paid Duration		Numeric		The duration of the pre-paid usage
Pre-paid Retail Price		Numeric	11,4	The retail price of the pre-paid usage, the amount to 4 decimal places
Usage Processed Date Time		Numeric	12,0	The date and time the usage records were processed. YYYY-MM-DD HH:MM:SS format
Access Charge		Numeric	11,4	If there is an access charge for the usage, the amount to 4 decimal places
Service Charge		Numeric	11,4	If there is a charge for the service, the amount to 4 decimal places
Usage Direction		Alphanumeric	2,0	The code for the usage direction, either MO or MT
Mobile Country Code		Numeric	3,0	3-digit mobile telephone code for the country associated with the usage, for example 234 for United Kingdom
Country Name		Alphanumeric	30,0	The name of the country associated with the mobile code, for example, Ireland for code 272
Mobile Network Operator		Numeric	3,0	The mobile telephone number code for the network operator associated with the usage, for example, 15 for Vodaphone
Mobile Network Operator Name		Alphanumeric	30,0	The name of the network operator associated with the mobile network operator code
Audit Timestamp		Numeric	25,0	The date and time of audit. YYYY-MM-DD HH:MM:SS format
Audit User		Alphanumeric		User name of user who last changed data
Discount Value		Numeric	11,4	The value of any discount applied to the unbilled usage
Data Extract Date		Numeric	7,0	Date and time this extract was created. YYYY-MM-DD format

4. 2. 14Unallocated Usage Analytics

Column Heading	Unique?	Type	Length	Details
Batch Identifier	Y	Numeric		ID number for the batch job
Detail Sequence		Numeric	1,0	
Usage Type		Numeric	1	CMP code for the usage type
Usage Type Description		Alphanumeric	30,0	Text description of the usage type
Usage Date Time		Numeric	25,0	The date and time the usage took place. YYYY-MM-DD HH:MM:SS format
Subscription Number		Numeric	7,0	CMP number for the subscription associated with the usage
Network Serial Number		Numeric	10,0	Serial number of the network associated with the usage
Dialled Number		Alphanumeric	18	Dialled Number
Actual usage units		Numeric		The actual amount of usage consumed, in units
Billable Usage Units		Numeric		The amount of usage consumed, in units, that can be invoiced for
Usage Classification		Alphanumeric	12,0	CMP code for the usage class, for example, DOMDATA
Usage Classification Description		Alphanumeric	30,0	Text description of the Usage Class code, for example, Domestic Data
Wholesale charge		Numeric	11,4	The wholesale charge of the usage, to 4 decimal places.
Retail Charge		Numeric	11,4	The retail price of the usage, to 4 decimal places.
Access Retail Charge		Numeric	11,4	If there is an access charge for the usage, the amount to 4 decimal places
Service Retail Charge		Numeric	11,4	If there is a charge for the service, the amount to 4 decimal places
Audit Timestamp		Numeric	25,0	The date and time of audit. YYYY-MM-DD HH:MM:SS format
Audit User		Alphanumeric		User name of user who last changed data
Data Extract Date		Numeric	7,0	Date and time this extract was cre-

Column Heading	Unique?	Type	Length	Details
				ated. YYYY-MM-DD format

4.0 CXP Extracts

Customer Experience Platform, or CXP, is a self-service app that allows you to manage your own accounts.

Data is extracted from the CMP database and made available in a format that can be directly imported into CXP. The batch jobs used to extract CMP data include Hierarchy Analytics and Invoice Analytics that are available for each bill run.

The SABRE Analyser Extract job is designed so that two separate Extracts are produced from CMP in a format that can be directly imported into CXP.

4. 3 About extract files

All data extracts received by CXP are in the form of sets of variable width CSV (Comma-separated value) files with TAB delimitation between record fields. Data is in a plain text format using a single encoding scheme as agreed with CXP prior to an environment deployment. For example, Unicode or ASCII.

4. 4 Extract file set naming convention

The following naming convention applies for extract files that are delivered as individual .dat files. The naming convention uses a base name combined with a series of prefixes to create unique file names. Each element of the name is separated with a dash character (-).

This format allows the various elements of the file name to be parsed by using a dash as a delimiter.

Extract files can be delivered individually as .dat files, or they can be grouped together and delivered as a single .zip file.

Zip file naming convention

The following naming convention applies when the set of individual extract files are grouped together and delivered as one .zip file. The naming convention uses a base name combined with a series of prefixes to create unique file names. Each element of the name is separated with a dash character (-).

This format allows the various elements of the file name to be parsed by using a dash as a delimiter.

4. 5 Extract file set

Extract files and their use are shown in the table below.

Batch Job	Extract file	Description
Hierarchy Analytics file set:		
	org_load_control.dat	Controls various elements of the customer hierarchy loading process. It is polled for by the customer hierarchy data loader when it is looking for extracts to load. It contains a single load control record.
	organisation.dat	Contains a record for each organisation to be created or updated in the CXP database.
	org_structure.dat	Contains a record for each organisation hierarchy node to be added or updated in the CXP database. Each node record will contain the ID of its parent node allowing whole hierarchies to be described as a series of parent /child relationships.
	org_node_attribute.dat	Contains descriptive attributes for each hierarchy node. Each record will contain a single attribute for a node and the number of attributes that any one hierarchy node can have is potentially unlimited. It will only be necessary to populate this file with attributes that need to be added or changed.
Invoice Analytics file set:		
	invoice_load_control.dat	Controls various elements of the invoice loading process. It is polled for by the invoice data loader when it is looking for extracts to load. It contains a single load control record.
	invoice.dat	Contain a header record for each invoice in the extract set.
	invoice_line.dat	Contains a record for each charge line associated with an invoice in the extract set.
	usage_item.dat	Contains a record for each charge line sub item (for example, a phone call) associated with invoice lines in the current extract set.
	delivery_address.dat	Contains a list of the delivery addresses associated with the invoices in the current extract set.
	inc_usage_alloc.dat	Contains a record for each inclusive usage allocation utilised by usage items in the current extract data set. Usage items can be discounted by inclusive usage schemes. Such schemes are known as bundles.

Batch Job	Extract file	Description
	inc_usage_units.dat	Contains records that indicate how much of an inclusive usage allocation was consumed by a usage item.
	statement.dat	Contains account statement header for selected hierarchy nodes associated with invoices in the current extract.
	statement_trans.dat	Contains details of each monetary transaction that occurred between the time of the opening and closing balances on statements in the current extract.
	Hierarchy_Node_Check.dat	Contains a list of all of the hierarchy nodes associated with invoice elements in the current invoice extract set. Each node record also contains the ID of its parent node. This data is used to ensure that all invoice extract data elements can be successfully attached to a valid organisation unit hierarchy within the CXP database.

4. 6 External table definitions

The CXP database uses database objects called external tables to define a data loading interface specification.

The columns in the external table definitions map directly to the delimited data in the extract file set, one external table per extract file.

This section contains descriptions of the formats of each external table used by the invoice load interface. This information can be used to directly drive the population of the associated delimited extract files to which the external tables map.

For more information about these extract jobs, see the *CMP Batch Jobs and JSON Schemas Guide*. See also the jobs descriptions provided in the CMP Administration Console.

4.0 Organisation Load Control Interface Table

This extract file interface is used to control various elements of the customer hierarchy loading process. There is only a single record in this file per extract. The record format includes an effective date for use when building organisation unit snapshots and a series of extract file record counts for validation purposes. Data loaded via this interface is primarily bound for the HIERARCHY_LOAD and DATA_LOAD CXP Admin schema tables.

External table name	Schema	Mapped file
Org_Load_Control_Interface	Staging	org_load_control.dat

Organisation load control interface table fields

Column Heading	Type	Length	Description
EXTERNAL_DATA_ SOURCE_ID	VarChar2	40	An identifier for the instance of the CRM database from which the hierarchy data has been extracted.
EXTRACT_ID	VarChar2	40	A unique identifier for the current extract. This value will usually be derived by the CRM from a sequence that it controls and tracks.
ORG_LOAD_CONTROL _COUNT	Integer		Number of records in the Org_Load_Control extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
ORGANISATION_ COUNT	Integer		Number of records in the Organisation extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
ORGANISATION_ STRUCTURE_COUNT	Integer		Number of records in the organisation_structure extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
ORG_NODE_ ATTRIBUTE_COUNT	Integer		Number of records in the org_node_attribute extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
HIERARCHY_ EFFECTIVE_DATE	Date		Date on which the hierarchy structure described within the current extract is true. yyyymmddhh24miss format .
EXTRACTION_ TIMESTAM	Date		Date and time that the extract file set was generated. yyyymmddhh24miss format.

4.0 Organisation Interface Table

This extract file interface handles records for each organisation to be created or updated in the CXP database.

Data loaded via this interface is primarily bound for the ORGANISATION and ORGANISATION_DATA_SOURCE CXP Admin schema tables.

External table name	Schema	Mapped file
organisation _Interface	Staging	organisation.dat

Organisation interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ ORGANISATION_ ID	VarChar2	40	Identifier signifying the owner of an organisation unit hierarchy. The organisation provides a way to collectively group organisation units together to allow the sharing of such things as filter sets and address books. It is important to note that EXTERNAL_ORGANISATION_ID is considered to apply universally, spanning all potential data source feeds. That is to say that if the same EXTERNAL_ ORGANISATION_ID value is fed in to a CXP environment for customers from two different data sources, then those two customers and their hierarchies will be considered to be part of the same organisation and by assigned the same ORGANISATION_ID. Membership of an organisation then grants users that can access hierarchy nodes belonging to that organisation, the ability to share public resources such as address books that are stored against the organisation. If you are running an environment where customers from different data sources will never need to be associated under a common organisation, then it is highly recommended that you ensure that the EXTERNAL_ORGANISATION_ID values sent to CXP are truly unique (by appending the EXTERNAL_DATA_ SOURCE_ID to them for example).
ORGANISATION_ NAME	VarChar2	100	User friendly name for the current organisation.
CURRENCY_ CODE	VarChar2	40	A code indicating the currency used by all of the invoices associated with the current organisation and data source combination (where the data source for all of the data in the extract is held in the 'org_load_control.dat' extract file).

4.0 Organisation Structure Interface Table

This extract file interface handles records for each organisation hierarchy node to be added or updated in the CXP database. Each child node record contains the ID of its parent node allowing hierarchies to be described as a series of parent /child relationships. Data loaded via this interface is primarily bound for the ORGANISATION_UNIT and ORGANISATION_UNIT_SNAPSHOT CXP Admin schema tables.

External table name	Schema	Mapped file
org_structure_Interface	Staging	org_structure.dat

Organisation structure interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ ORGANISATION_I	VarChar2	40	The Identifier of the organisation to which the organisation unit depicted by the current record belongs.
EXTERNAL_ ORGANISATION_ UNIT_ID	VarChar2	40	Unique identifier denoting an organisation unit element within a customer's organisation unit hierarchy.
ORGANISATION_ UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides. There is an assumption that EXTERNAL_ORGANISATION_ID values are only unique at the level within the hierarchy indicated. Therefore a level 1 node with an identifier of 'ABC' is considered to be a different node to a level 2 node with identifier 'ABC'.
EXTERNAL_ORG_ UNIT_TYPE	VarChar2	40	Denotes the sub type of the current customer hierarchy element, within its level. This value allows the various types of organisation unit to be differentiated from one another for the purposes of icon assignment in tree views and reporting.
EXTERNAL_ PARENT_ORG_ UNIT_ID	VarChar2	40	dentifier denoting the parent organisation unit of the current organisation unit within the organisation unit hierarchy. Note: Every EXTERNAL_PARENT_ORG_UNIT_ID referenced here must also be represented as an EXTERNAL_ ORGANISATION_UNIT_ID on a different record in the 'org_ structure.dat' extract file associated with the current extract file set. This effectively means that organisation hierarchies must be shown complete from the Lowest node represented by an 'org_structure.dat' extract file upwards.
PARENT_ORG_ UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the parent organisation unit resides.
ORG_UNIT_ DEACTIVATION_ DATE	Date		Used to differentiate between active and inactive (disconnected/deactivated) organisation units. Active organisation units are those with a NULL deactivation date. Inactive organisation units are those with an actual date value, representing the date of deactivation. Whilst it is generally assumed that once an organisation unit has deactivated, then it will not reactivate, the deactivation date can be reset by passing a NULL value here to remove the deactivation date stored in the database.
ALIAS_1	VarChar2	40	Alternative description or code used to identify the current organisation hierarchy element. Used in displays to help the user more readily identify organisation unit elements.
ALIAS_2	VarChar2	40	Alternative description or code used to identify the current organisation hierarchy element. Used in displays to help the user more readily identify organisation unit elements.

4.0 Organisation Node Attribute Interface Table

This extract file interface handles records that contain descriptive attributes for each hierarchy node. Each record contains a single attribute for a node and the number of attributes that any one hierarchy node can have is potentially unlimited. It is only necessary to pass in data via this interface when an organisation unit has attributes that need to be added or changed. Data loaded via this interface is primarily bound for the ORG_UNIT_ATTRIBUTE_SNAPSHOT CXP Admin schema tables.

External table name	Schema	Mapped file
org_node_attribute_Interface	Staging	org_node_attribute.dat

Organisation node attribute interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ORGANISATION_UNIT_ID	VarChar2	40	Unique identifier denoting the organisation unit element to which the attribute information on this record belongs.
ORGANISATION_UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the organisation unit resides.
ATTRIBUTE_NUMBER	Integer		Identifier for the current attribute. Used by the application when retrieving the attribute value for display.
ATTRIBUTE_TYPE	VarChar2	40	The type of data represented by the attribute value (TEXT or NUMERIC).
ATTRIBUTE_VALUE	VarChar2	100	A piece of custom data associated with an organisation unit.

4.0 Invoice Load Control Interface Table

This extract file interface is used to control various elements of the invoice loading process. There is only a single record in this file per extract. The record format includes an indication of how many invoice extract file sets make up an extract, an optional dependent hierarchy extract ID and a series of extract file record counts for validation purposes. Data loaded via this interface is primarily bound for the LOAD_CONTROL and DATA_LOAD CXP Admin schema tables.

External table name	Schema	Mapped file
invoice_load_control_Interface	Staging	invoice_load_control.dat

Invoice load control interface table fields

Column Heading	Type	Length	Description
EXTERNAL_DATA_SOURCE_ID	VarChar2	40	An identifier for the instance of the CRM database from which the hierarchy data has been extracted.
EXTRACT_ID	VarChar2	40	A unique identifier for the current extract. This value will usually be derived by the CRM from a sequence that it controls and tracks.
SET NUMBER	Integer		Identifies data as belonging to a given source database extract set (a sub division within an extract operation allowing multi-threading of the extract job, but not the load job).
NUMBER_OF_SETS_IN_EXTRACT	Integer		The total number of extract sets that the extract has been divided into for extraction convenience. This value allows the data loader to recognise when all of the extract sets have been loaded in for an extract so that reconciliation operations can be carried out.
INVOICE_LOAD_CONTROL_COUNT	Integer		Number of records in the invoice_load_control.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
INVOICE_COUNT	Integer		Number of records in the invoice.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
INVOICE_LINE_COUNT	Integer		Number of records in the invoice_line.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
USAGE_ITEM_COUNT	Integer		Number of records in the usage_item.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
DELIVERY_ADDRESS_COUNT	Integer		Number of records in the delivery_address.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
INC_USAGE_ALLOC_COUNT	Integer		Number of records in the inc_usage_alloc.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
INC_USAGE_UNITS_COUNT	Integer		Number of records in the inc_usage_units.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
STATEMENT_COUNT	Integer		Number of records in the statement.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
STATEMENT_TRANS_COUNT	Integer		Number of records in the statement_trans.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
HIERARCHY_NODE_CHECK _COUNT	Integer		Number of records in the Hierarchy_Node_Check.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.

Column Heading	Type	Length	Description
INVOICE_DATE	Date		The financial date associated with each and every invoice in the current extract. This is the date printed on the invoice, the date used to apply tax and is generally the date from which the invoice due date is calculated. Note that every invoice in the extract will have the same invoice date/time. Invoices from different dates/-times should be separated out into different sets or extracts. DATE_FORMAT DATE MASK "yyyymmddhh24miss".
INVOICE_PRODUCTION_ID	VarChar2	40	The identifier used by the CRM for the invoice production run used to create the invoices in the current extract. This value is used to aid data load reconciliation operations.
HIERARCHY_EFFECTIVE_DATE	Date		This date/time is used to synchronise the invoice extract with the effective set of organisation unit hierarchies with which it is associated. That is to say that the date/time here represents a point in time at which the hierarchy structures presented in the invoice extract's 'hierarchy_node_check.dat' extract file can be found in the database in their entirety (all parent/child relationships match) and are effective on this date/time. Notice that each extract set supports only a single hierarchy effective date. Invoices associated with different hierarchy dates should be separated out into different sets or extracts. If an invoice data load is dependent on a customer hierarchy extract data load, then the date/time here would match the hierarchy effective date of the corresponding hierarchy extract (or at least represent a date/time somewhere between the date/time of the desired extract and that of a hierarchy extract that supersedes it). DATE_FORMAT DATE MASK "yyyymmddhh24miss"
EXTRACTION_TIMESTAMP	Date		Date and time that the extract file set was generated. DATE_FORMAT DATE MASK "yyyymmddhh24miss"
DEPENDENT_ON_HIERARCHY_EXTRACT	VarChar2	40	When invoices are loaded, the various elements of the invoice (header, lines, usage, etc) are attached to the organisation units that own them in the organisation unit hierarchy. Customer hierarchy building operations are carried out by a spate data loader (customer hierarchy data loader). If an attempt is made to load invoices for which all owning hierarchy elements have not been previously loaded, then the data load will fail (the invoice extract data will be rejected). The DEPENDENT_ON_HIERARCHY_EXTRACT field allows the invoice data loader to be told that it must check that a particular customer hierarchy extract has been loaded first, before attempting to load the invoices for in this invoice extract. In this way the loading of customer hierarchy data and invoice data can be coordinated to prevent invoice extract rejection. If the invoice loader sees that a prerequisite of loading an invoice extract set is to first load a given customer hierarchy extract, then it will delay loading the invoice set until that has been done.

4.0 Invoice Interface Table

This extract file interface handles header records for each invoice in the extract set. Note that every invoice in the current extract file set must have the same invoice date. If it is required to load invoices with several different dates, then multiple extract file sets are required, one for each individual invoice date. Data loaded via this interface is primarily bound for the INVOICE CXP Admin schema table.

External table name	Schema	Mapped file
Invoice_Interface	Staging	invoice.dat

Invoice interface table fields

Column Heading	Type	Length	Description
EXTERNAL _ INVOICE_ID	VarChar2	40	Unique invoice identifier as used by the originating CRM data base.
EXTERNAL_ ORGANISATION_ UNIT_ID	VarChar2	40	Unique identifier denoting the CRM name for the organisation unit that owns the invoice.
ORGANISATION_ UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides. There is an assumption that EXTERNAL_ORGANISATION_UNIT_ID values are only unique at the level within the hierarchy that are indicated to be at. Therefore, for example, a node with an identifier of 'ABC' at level 1 is considered to be a different node to a node with identifier 'ABC' at level 2.
EXTERNAL_ DELIVERY_ ADDRESS_ID	VarChar2	40	A CRM derived delivery address identifier. This value provides a link to the delivery_address.dat extract file record that contains the details of the current invoice's delivery address.
EXTERNAL _ STATEMENT _ID	VarChar2	40	The CRM derived identifier for the statement produced along-side the current invoice.
INVOICE_ DESCRIPTION	VarChar2	100	A textual description for the current invoice. For example 'ongoing monthly invoice', final invoice' etc.
INVOICE_DUE_ DATE	Date		Date that the invoice becomes due for payment. DATE_ FORMAT DATE MASK "yyyymmddhh24miss"
PREVIOUS_ INVOICE_DATE	Date		Date of the previous invoice for the current organisation unit. This value is used to check for gaps in the invoice history of each customer. Missing invoices represent a risk because they might hide organisation unit hierarchy changes that have not been reflected in the database and thus open up the pos-sibility of data corruption (attaching invoices to the wrong ver-sion of an organisation unit hierarchy node). When missing invoices are detected, the data loader will refuse to load the extract and flag up a warning. To load the extract, either the missing invoices need to be loaded first, or the data loader needs to be run in a special override mode. DATE_FORMAT DATE MASK "yyyymmddhh24miss"
BILLING_ FREQUENCY	VarChar2	40	This value is only required for on cycle invoices. It can be left NULL for off cycle invoices. BILLING_FREQUENCY is an enumerated type. Possible values would include: Daily WeeklyMonthly Quarterly Yearly
PAYMENT_TYPE	VarChar2	40	The payment type that is expected to be used to pay off this invoice. This value is usually derived from the payment scheme the customer has registered to use with the CRM.
INVOICE_FORMAT	VarChar2	40	An indication of the billing format used to produce the original invoice. One of the elements used to determine the formatting of invoices by CXP.
TAXATION_	VarChar2	40	The market area (geographical or other) with which the cur-

Column Heading	Type	Length	Description
DOMAIN			rent invoice is associated. One of the elements used to determine the formatting of invoices by CXP.
Locale	VarChar2	12	A set of preference information related to the invoice's language, environment and/or cultural conventions. When combined with the preferences associated with the application user, the Locale is used to determine the formatting of invoices by CXP.
ATTRIBUTE_1	VarChar2	100	Customisable invoice data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_2	VarChar2	100	Customisable invoice data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_3	VarChar2	100	Customisable invoice data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.

4.0 Invoice Line Interface Table

This extract file interface handles the charge line records belonging to the invoices in the extract set. Data loaded via this interface is primarily bound for the INVOICE_LINE CXP Admin schema table.

External table name	Schema	Mapped file
Invoice_Line_Interface	Staging	invoice_line.dat

Invoice line interface table fields

Column Heading	Type	Length	Description
EXTERNAL _ INVOICE_ID	VarChar2	40	The CRM derived identifier of the invoice to which the current invoice line belongs.
EXTERNAL_ INVOICE_LINE_ID	VarChar2	40	CRM derived identifier for the current invoice line within its invoice. For example, a line number or similar.
EXTERNAL_ ORGANISATION_ UNIT_ID	VarChar2	40	Unique identifier denoting the CRM name for the organisation unit that owns the current invoice line.
ORGANISATION_ UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
CHARGE_ DESCRIPTION	VarChar2	100	A textual description of the service being charged for by the current invoice line. Note: This field maps to INVOICE_LINE_ DESCRIPTION in the Lavastorm Spend Analyzer database
CHARGE_GROUP	VarChar2	40	A name for a logical grouping of invoice line charges. This grouping can be used to drive data selection and collection in reports over invoice charge data.
CHARGE_SUB_ GROUP	VarChar2	40	A name for a logical grouping of invoice lines within a charge group. Again, this grouping can be used to drive data selection and collection in reports over invoice charge data.
CHARGE_START_ DATE	Date		The date/time on which the charged for service began. DATE_FORMAT DATE MASK "yyyymmddhh24miss"
CHARGE_END_ DATE	Date		The date/time on which the charged for service ended.
AMOUNT	Number	14,4	This value represents a monetary contribution made to the total invoice charge by this invoice line. There are two main categories of invoice line (see the invoice_line_category interface field). - If the invoice line is a tax line then the charge amount represents the tax associated with the charges for the current organisation unit and tax code. - If the invoice line is NOT a tax line, then the charge amount represents a net value (not inclusive of a tax component).
TAX_RATE	Number	14,4	The rate of tax that has been applied to a net charge type invoice line amount, or the rate of tax relevant to a tax type invoice line.
TAX_CODE	VarChar2	40	The identifying code for tax generated from a net charge type invoice line, or the code for the tax being shown on a tax type invoice line.
TAX_CODE_ DESCRIPTION	VarChar2	100	A user readable description for the tax code.
BILLED QUANTITY	Integer		The billed quantity of billable units consumed by the services charged for by the current invoice line. This can differ from the gross quantity for various reasons, such as inclusive quantity discount schemes.
UNIT_OF_ MEASURE	VarChar2	40	The unit of measure that qualifies the gross and billed quantity.

Column Heading	Type	Length	Description
UNIT_OF_ MEASURE_ CATEGORY	VarChar2	40	The categorisation for the unit of measure used on the current record. It allows records to be grouped together for reporting purposes. For example, inclusion of all charges that have a particular unit of measure category. Note that the unit of measure and unit of measure category combination given must be one of the valid combinations configured within the CXP database. Note that it is possible for any particular unit of measure value to be used in conjunction with different unit of measure categories (it is not a one to one relationship). The category supplied acts to place a record in that category for reporting and analysis.
INVOICE_LINE_ CATEGORY	VarChar2	40	An enumerated type. Tax lines have a category of 'TAX'. Other lines currently default to an open category with a NULL value and are all deemed to be non-tax lines.
ATTRIBUTE_1	VarChar2	300	Customisable invoice line data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_2	VarChar2	300	Customisable invoice line data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by
ATTRIBUTE_3	VarChar2	300	Customisable invoice line data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by
TAX_LINE	Number		'1' (Yes/True) or '0' (No/False). Is the current invoice line a dedicated tax line?
SERVICE_TYPE	VarChar2	100	Defines the type of service that is being charged for by the current invoice line and used to differentiate the invoice line for reporting purposes (e.g. for report inclusion, exclusion, sorting and grouping).
NETWORK_TYPE	VarChar2	100	The type of the network, the use of whose services resulted in the raising of the current invoice line charge and used to differentiate the invoice line for reporting purposes (e.g. for report inclusion, exclusion, sorting and grouping).
RECURRING_ CHARGE	Number		'1' (Yes/True) or '0' (No/False). Is the current invoice line a recurring charge applied to the customer’s invoice every billing cycle, as part of their contract for example?
NET_OF_TAX_ SUMMARY	Number	14,4	This value applies to tax lines only. - If the invoice line is a tax line then the net of tax summary amount represents the total net value of charges associated with the current organisation unit and tax code. - If the invoice line is NOT a tax line, then this value should be left empty.

4.0 Usage Item Interface Table

This extract file interface handles the usage item (itemised breakdown) records belonging to the invoices in the extract set.

This extract file will contain a record for each charge line sub item, such as a phone call, associated with invoice lines in the current extract set.

Data loaded via this interface is primarily bound for the USAGE_ITEM CXP Admin schema table.

External table name	Schema	Mapped file
usage_item_Interface	Staging	usage_item.dat

Usage item interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ USAGE_ITEM_ID	VarChar2	40	This value is used for reference with the inclusive usage data within the current extract. It must be unique within the extract, but is preferably unique to the usage item within the CRM.
EXTERNAL _ INVOICE_ID	VarChar2	40	The CRM derived identifier of the invoice to which the current usage item line belongs.
EXTERNAL_ INVOICE_LINE_ID	VarChar2	40	CRM derived identifier for the current invoice line to which the current usage item line belongs.
EXTERNAL_ ORGANISATION_ UNIT_ID	VarChar2	40	Unique identifier denoting the CRM name for the organ-isation unit that owns the current invoice line.
ORGANISATION_ UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
USAGE_ITEM_ DESCRIPTION	VarChar2	100	A textual description of the current usage item. As standard, for telecoms call data, CXP takes this to be the number dialled.
USAGE_ITEM_ START_DATE_ TIME	Date		The date and time on which the current usage charge began. DATE_FORMAT DATE MASK "yyyymmddhh24miss
USAGE_ITEM_ END_DATE_TIME	Date		The date and time on which the current usage charge ended. DATE_FORMAT DATE MASK "yyyymmddhh24miss"
GROSS_QUANTITY	Integer		The total number of billable units consumed by the current usage record.
INCLUSIVE_ QUANTITY	Integer		The number of billable units of the current usage record absorbed by an inclusive usage allocation (i.e. the units dis-counted from the gross quantity prior to rating).
BILLED_QUANTITY	Integer		The number of units of the current usage record actually rated and billed.
UNIT_OF_ MEASURE	VarChar2	40	The unit of measure that qualifies the gross, inclusive and billed quantity.
UNIT_OF_ MEASURE_ CATEGORY	VarChar2	40	The categorisation for the unit of measure used on the cur-rent record. It allows records to be grouped together for reporting purposes. for example, inclusion of all charges that have a particular unit of measure category. Note: The unit of measure and unit of measure category combination given must be one of the valid combinations configured within the CXP database. Note: It is possible for any particular unit of measure value to be used in conjunction with different unit of measure categories (it is not a one to one relationship). The category supplied acts to place a record in that category for reporting and analysis.
GROSS_VALUE	NUMBER	(14,4)	The total monetary value of the current usage record before any inclusive bundles and discounts are applied.
INCLUSIVE_VALUE	NUMBER	(14,4)	The monetary value of the current usage record absorbed by an inclusive usage bundle allocation. Store as a positive

Column Heading	Type	Length	Description
			value.
DISCOUNT_VALUE	NUMBER	(14,4)	The monetary value of discounts applied to the current usage record. Store as a positive value.
BILLED_VALUE	NUMBER	(14,4)	The billed monetary value of the current usage item record after any inclusive bundles and discounts have been applied. Billed value = gross value – inclusive value – discount value
CUSTOMER_ COST_CENTRE	VarChar2	40	An identifier allowing the charges from the current usage record to be attributed to a division within a business organ-isation. Optional.
INCLUSIVE_ USAGE_STATUS	VarChar2	40	Text description describing how inclusive usage schemes have operated on the current usage item. Optional.
TAX_CHARGED	Number		'1' (Yes/True) or '0' (No/False). Is this usage item subject to taxation? Optional.
ATTRIBUTE_1	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_2	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_3	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_4	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_5	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_6	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_7	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_8	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.

Column Heading	Type	Length	Description
ATTRIBUTE_9	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_10	VarChar2	40	Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ITEM_TYPE	VarChar2	100	Used to apply a type to the usage item to differentiate it for reporting purposes (e.g. for report inclusion, exclusion, sorting and grouping).

4.0 Delivery Address Interface Table

This extract file interface handles the delivery address records associated with the invoices in the current extract set.

Data loaded via this interface is primarily bound for the CONTACT_DETAILS CXP Admin schema table.

External table name	Schema	Mapped file
delivery_address_Interface	Staging	delivery_address.dat

Delivery address interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ DELIVERY_ ADDRESS_ID	VarChar2	40	Unique delivery address identifier as used by the originating CRM data base.
TITLE	VarChar2	40	Addressee's title (Mr, Mrs, and so on).
FIRST_NAME	VarChar2	40	Addressee's forename.
MIDDLE_NAME	VarChar2	40	Addressee's middle name.
SURNAME	VarChar2	40	Addressee's surname.
JOB_TITLE	VarChar2	40	Addressee's job title (used as required in a business address)
COMPANY_NAME	VarChar2	100	The company name used on a corporate type customer's address.
ADDRESS_LINE_1	VarChar2	40	First geographical address line.
ADDRESS_LINE_2	VarChar2	40	Second geographical address line.
ADDRESS_LINE_3	VarChar2	40	Third geographical address line.
ADDRESS_LINE_4	VarChar2	40	Fourth geographical address line.
ADDRESS_LINE_5	VarChar2	40	Fifth geographical address line.
ADDRESS_LINE_6	VarChar2	40	Sixth geographical address line.
POSTAL_CODE	VarChar2	40	Geographical post code or zip code.
TELEPHONE_ NUMBER	VarChar2	40	Contact telephone number (optional for a pure delivery address).
ALTERNATIVE_ TELEPHONE_ NUMBER	VarChar2	40	Secondary contact telephone number (optional for a pure delivery address).
FAX_NUMBER	VarChar2	40	Contact fax number (optional for a pure delivery address).
ADDRESS_TYPE	VarChar2	40	Gives an indication of the nature of the current address and what it is used for. An address can represent different things such as an invoicing address or straight customer contact details. For invoice delivery address purposes this value can take values such as 'Business' or 'Personal' to give an indication of the kind of addressee involved.

4.0 Inclusive Usage Allocations Interface Table

This extract file interface handles the details of the inclusive usage allocations utilised by usage items associated with the invoices in the current extract set.

It is possible for usage items to be discounted by inclusive usage schemes (bundles). This extract file contains a record for each inclusive usage allocation utilised by usage items in the current extract data set

Data loaded via this interface is primarily bound for the INC_USAGE_INVOICE_ SUMMARY and INC_USAGE_ALLOCATION_SNAPSHOT CXP Admin schema tables.

External table name	Schema	Mapped file
inc_usage_alloc_Interface	Staging	inc_usage_alloc.dat

Inclusive usage allocations interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ INC_ USAGE_ALLOC_ID	VarChar2	40	Unique inclusive usage allocation discount scheme identifier as used by the originating CRM data base.
EXTERNAL_ ORGANISATION_ UNIT_ID	VarChar2	40	Unique identifier denoting the CRM name for the organisation unit that owns the current inclusive usage allocation.
ORGANISATION_ UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
INC_USAGE_ ALLOC_NAME	VarChar2	40	A name for the inclusive usage scheme in use on the current record. This value can be used to hold a CRM specific code for the scheme.
INC_USAGE_ ALLOC_ DESCRIPTION	VarChar2	100	A user friendly description for the inclusive usage scheme in use on the current record.
QUANTITY_ BROUGHT_ FORWARD	NUMBER (14,4)		The number of allocation units carried into the current allocation from previous allocations.
QUANTITY_ ALLOCATED	NUMBER (14,4)		The total number of units available to the current discount allocation when it was first created.
QUANTITY_USED	NUMBER (14,4)		The number of allocation units used up at the time of billing.
QUANTITY_ UNUSED	NUMBER (14,4)		The number of allocation units remaining.
QUANTITY_ CARRIED_ FORWARD	NUMBER (14,4)		The number of allocation units that will be carried over to future allocations.
UNIT_OF_ MEASURE	VarChar2	40	The unit of measure that qualifies the various quantities used on the current allocation record.
UNIT_OF_ MEASURE_ CATEGORY	VarChar2	40	The categorisation for the unit of measure used on the current record. It allows records to be grouped together for reporting purposes. For example, inclusion of all charges that have a particular unit of measure category. Note: The unit of measure and unit of measure category combination given must be one of the valid combinations configured within the CXP database. Note: It is possible for any particular unit of measure value to be used in conjunction with different unit of measure categories (it is not a one to one relationship). The category supplied acts to place a record in that category for reporting and analysis.
ATTRIBUTE_1	VarChar2	100	Customisable inclusive usage allocation data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.

Column Heading	Type	Length	Description
ATTRIBUTE_2	VarChar2	100	Customisable inclusive usage allocation data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_3	VarChar2	100	Customisable inclusive usage allocation data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.

4.0 Inclusive Usage Units Interface Table

This extract file interface handles the inclusive usage unit records that indicate how many inclusive usage allocation units have been consumed by usage items in the current extract set.

Note that it is possible for an individual usage item to be discounted by none, one, or many inclusive usage schemes.

Each record indicates how much of an inclusive usage allocation was consumed by a usage item.

The association between inc_usage_units.dat records and the corresponding usage_item.dat record is made via the EXTERNAL_USAGE_ITEM_ID field.

Data loaded via this interface is primarily bound for the INCLUSIVE_USAGE_ITEM CXP Admin schema table.

External table name	Schema	Mapped file
inc_usage_units_Interface	Staging	inc_usage_units.dat

Inclusive usage units interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ USAGE_ITEM_ ID	VarChar2	40	This Value is used for reference with usage item data (see usage_ item_Interface). It is used to associate the current inclusive usage units record with the usage item record that it has discounted.
EXTERNAL_ INC_USAGE_ ALLOC_ID	VarChar2	40	Unique inclusive usage allocation discount scheme identifier as used by the originating CRM data base. This value indicates which allocation the current inclusive usage unit record has acquired its units from to discount a usage item.
EXTERNAL _ INVOICE_ID	VarChar2	40	The CRM derived identifier of the invoice to which the usage item discounted by the current inclusive usage item record belongs.
INCLUSIVE_ QUANTITY	NUMBER (14,4)		The number of allocation units used up when discounting the associated usage item record.
UNIT_OF_ MEASURE	VarChar2	40	The unit of measure that qualifies the inclusive quantity value.
UNIT_OF_ MEASURE_ CATEGORY	VarChar2	40	The categorisation for the unit of measure used on the current record. It allows records to be grouped together for reporting purposes. For example, inclusion of all charges that have a particular unit of measure category. Note: The unit of measure and unit of measure category combination given must be one of the valid combinations configured within the CXP database. Note: It is possible for any particular unit of measure value to be used in conjunction with different unit of measure categories (it is not a one to one relationship). The category supplied acts to place a record in that category for reporting and analysis.

4.0 Statement Interface Table

This extract file interface handles header records for each statement in the extract set.

Data loaded via this interface is primarily bound for the STATEMENT CXP Admin schema table.

External table name	Schema	Mapped file
Statement_Interface	Staging	statement.dat

Statement interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ STATEMENT_ID	VarChar2	40	Unique statement identifier as used by the originating CRM data base.
EXTERNAL_ ORGANISATION_ UNIT_ID	VarChar2	40	Unique identifier denoting the CRM name for the organisation unit that owns the current statement. This will be a posting account against charges are levied and for which the opening balance on the current statement is applicable.
ORGANISATION_ UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
EXTERNAL_ DELIVERY_ ADDRESS_ID	VarChar2	40	A CRM derived delivery address identifier. This value provides a link to the delivery_address.dat extract file record that contains the details of the current statement's delivery address.
OPENING_ BALANCE	NUMBER (14,4)		The amount due (closing balance) brought forward from the previous statement period. Note: To calculate the closing balance for the statement period you would do the following calculation: Closing balance = Opening Balance + Transaction total. The queried total can then be used to adjust the customer's outstanding balance for credit control pursuit purposes.
TRANSACTION_ TOTAL	NUMBER (14,4)		The total value of the transactions associated with the statement owner, raised since the previous statement was produced. This value is generated from the total of invoice, payment and adjustment transactions generated this period (since the last statement). Following the basic rules of accounting, if the transaction total is a net credit to the account it should be a negative value and if it is a net debit to the account is should be a positive value. Example: When calculating this value: A PAYMENT should be a negative value if it credits the account. An ADJUSTMENT that credits the account should be a negative value, one that debits the account a positive value. An INVOICE total should generally be a positive value (to debit the account), but this depends on the nature of the invoice.
QUERIED_TOTAL	NUMBER (14,4)		This value represents the total of any charges that are in dispute by the customer. Queried amounts place a credit against an account whilst the disputed charges are investigated. This credit is designed to give the customer the benefit of the doubt and prevent create control activity from acting against their account. QUERIED_TOTAL should be a negative amount if a charge is in dispute (i.e. the queried amount acts as a credit on the account).
STATEMENT_TEXT	VarChar2	100	Textual Information associated with the current statement.
STATEMENT_ DATE	Date		Statement production date. The date at which the calculated closing balance for the current statement is correct. DATE_

Column Heading	Type	Length	Description
			FORMAT DATE MASK "yyyymmddhh24miss"

4.0 Statement Transation Interface Table

This extract file interface handles the statement transaction records belonging to each statement in the extract set.

When a statement transaction represents an invoice already loaded CXP, an Invoice_ transaction record is generated in the database that bridges between the statement transaction and the corresponding invoice.

Data loaded via this interface is primarily bound for the STATEMENT_TRANSACTION and INVOICE_TRANSACTION CXP Admin schema table.

External table name	Schema	Mapped file
Statement_Interface	Staging	statement.dat

Statement transaction interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ STATEMENT_ID	VarChar2	40	CRM derived statement Identifier for the statement to which the current statement transaction belongs.
EXTERNAL_ STATEMENT_ TRANS_ID	VarChar2	40	Unique statement transaction identifier as used by the originating CRM data base. This value will generally represent the identifier for a document/transaction entry in the CRM's ledger.
EXTERNAL_ ORGANISATION_ UNIT_ID	VarChar2	40	Unique identifier denoting the CRM name for the organisation unit that owns the current statement transaction.
ORGANISATION_ UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
TRANSACTION_ AMOUNT	NUMBER (14,4)		The monetary value of the current transaction. Transactions can be in one of three categories and should follow the basic rules of accountancy according to category: A PAYMENT should be a negative value if it credits the account. An ADJUSTMENT that credits the account should be a negative value, one that debits the account a positive value. An INVOICE total should generally be a positive value (to debit the account), but this depends on the nature of the invoice.
TRANSACTION_ TEXT	VarChar2	100	Textual Information associated with the current statement transaction. For example, a note against the transaction in the ledger.
TRANSACTION_ CATEGORY	VarChar2	40	Transactions can be in one of three categories: Invoice, Payment, or Adjustment.
TRANSACTION_ DATE	Date		The date of the transaction. DATE_FORMAT DATE MASK "yyyymmddhh24miss
EXTERNAL _ INVOICE_ID	VarChar2	40	Used if the transaction refers to an invoice. This value is used by the database to create a bridge between statement transactions and invoices.

4.0 Hierarchy Node Check Interface Table

This extract file interface is used to validate that all invoice components in the invoice extract can be successfully attached to hierarchy nodes already stored in the CXP database.

The hierarchy_node_check.dat extract file must contain a record for every hierarchy node that is associated with invoicing data in the extract.

Each hierarchy_node_check.dat record must correspond with an existing organisation_unit_snapshot table record in the database and that organisation_unit_snapshot record must be effective on the invoice date used within the current invoice extract.

To correspond with an organisation unit snapshot record, the parent and child nodes included on the hierarchy_node_check.dat record must both match

If an effective match cannot be found for any records in the hierarchy_node_check.dat file, then the current extract file set is rejected.

External table name	Schema	Mapped file
hierarchy_node_check_Interface	Staging	hierarchy_node_check.dat

Hierarchy node check interface table fields

Column Heading	Type	Length	Description
EXTERNAL_ ORGANISATION_ UNIT_ID	VarChar2	40	Unique identifier denoting an organisation unit element within a customer's organisation unit hierarchy.
ORGANISATION_ UNIT_LEVEL	Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
EXTERNAL_PARENT_ ORG_UNIT_ID	VarChar2	40	Identifier denoting the parent organisation unit of the current organisation unit within the organisation unit hierarchy. If the current organisation unit has no parent (it is at the top of its hierarchy) then the parent value will be NULL.
PARENT_ORG_UNIT_ LEVEL	Integer		The level within the organisation unit hierarchy, at which the parent organisation unit resides.

4.0 Configuring CXP Extracts

Once all invoice data has been posted to the ledgers, CMP can optionally produce a set of extracts containing customer invoice and hierarchical data for each bill run. These extracts are then used by the CXP Data Loader to load the extracted invoice and hierarchy data into the CXP database. This allows customers to view electronic versions of their invoices via CXP instead or as well as paper bills being produced.

The following steps describe how to configure and run the CXP extracts.

4. 6. 1 1. Define the sabre-analyser-extract properties

Navigate to System Configuration > Modules > Sabre Server > sabre- analyser-extract, and define the properties as required.

4. 6. 2 2. Define the extract supplement

To supplement extract data populated in CMP some additional configuration is required in the Analyser Extract Supplement (C4JWREP) file.

- Unit of Measure Category

  CXP requires that all unit of measure values be categorised. The Supplement Record of type *U* is used to categorise the unit of measure values in the invoice extract.

  The following configuration is required for Supplement Type *U* – Unit of Measure Category.

Cross Reference Key 1	Supplement value 1
Roaming Duration	VOICE
DMINS	VOICE
Seconds	VOICE
KB	DATA
N/A	N/A
Items	ORDERS
Text	MESSAGE
Weekend minutes	VOICE
Minutes	VOICE
Picture messages	MESSAGE
O2 Mobile minutes	VOICE
Duration	VOICE
Traveller minutes	VOICE

Messages	MESSAGE
Text messages	MESSAGE
Trafficline minutes	OTHER
Volume	DATA
Value	MONETARY
UK Fixed and Mobile minutes	VOICE
Free calls to the office	VOICE
Other UK mobile minutes	VOICE
Unlimited Landline allowance	VOICE
Unlimited Offpeak allowance	VOICE
Group Conferencing minutes	OTHER
Not Defined	N/A

- Network Description

  Discrepancies may exist between the Network Type Descriptions stored within CMP and those configured in CXP. The Supplement Record of type *N* can be used to avoid issues when loading extracts into Spend Analyser.

  The following configuration is required for Supplement Type *N* – Network Type Description.

Cross Reference Key 1	Supplement value 1
B	BREATHE
BBAND	O2 Broadband
CANL	O2 Mobile (CANL)
CDIG	O2 Mobile (CDIG)
FIXED	O2 Fixed Line
I	Internet
MAAS3	MaaS360
MWAN	Managed Networks
NGN	NGN Telemarketing
O	Orange Network Services
O2PSDO	Data / Voice Link
P	Personal Numbers
PNB	Personal Numbers FW
SWITCH	O2 Switched Circuit
V	Vodafone
VANL	Vodafone Analogue
VDIG	Vodafone Digital
MLL	Mobile Landline VOIP
SIPT	SIP Trunking
O2SERV	O2 Services
HVOICE	Hosted Voice

M2M	Machine to Machine
HSD001	High Speed Datalink
O2SERV1	O2 Services
MDM	Mobile Device Management

4. 6. 3 3. Run the Hierarchy Analytics job

CMP allows for information to be extracted from its database and made available for third party analysis.

Hierarchy information changes over time, for example subscriptions can move to different accounts, or accounts to a different corporate. While CMP stores only the current hierarchy, it is important that a historical view of the hierarchy is also available.

This job gathers the customer hierarchy information (subscription, account, corporate and group) that was in effect at the time of the most recent billing process.

This job is typically scheduled to run once per day after a billing process.

Please note that the Hierarchy Extract for a particular invoice run should always be requested prior to the equivalent Invoice Extract for that run to ensure that any account hierarchies which have not been previously invoiced are loaded into SA prior to their invoices. Failure to do this will result in an error when loading the invoice extract into CXP.

Once the SABRE Analyser Extract has been started and is actively running, it can process any number of requests for extracts. If the SABRE Analyser Extract job is stopped e.g. due to a machine IPL or if its subsystem has been ended, then it will not be able to process any requests to produce a set of extracts. In this situation it will be necessary to restart the SABRE Analyser Extract job.

4. 6. 4 4. Run the Invoice Analytics job

It is important to note that the Hierarchy Extract job must always be executed prior to the Invoice Extract job for a particular invoice run.

CMP allows for information to be extracted from its database and made available for third party analysis.

This job gathers details of invoices generated during the most recent billing process.

This job is typically scheduled to run once per day after a billing process.

For more information about these extract jobs, see the *CMP Batch Jobs and JSON Schemas Guide*. See also the jobs descriptions provided in the CMP Administration Console.

4. 6. 5 Invoice Analytics

This extract file interface handles records for each organisation to be created or updated in the CXP database.

Extract files in this set and their use are shown below.

- invoice_load_control.dat

  Controls various elements of the invoice loading process. It is polled for by the invoice data loader when it is looking for extracts to load. It contains a single load control record.

  Invoice load control interface table

  This extract file interface is used to control various elements of the invoice loading process. There is only a single record in this file per extract. The record format includes an indication of how many invoice extract file sets make up an extract, an optional dependent hierarchy extract ID and a series of extract file record counts for validation purposes. Data loaded via this interface is primarily bound for the LOAD_CONTROL and DATA_LOAD Lavastorm Spend Analyzer Admin schema tables.

  Invoice load control interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_DATA_SOURCE_ID	Y	VarChar	40	An identifier for the instance of the CRM database from which the hierarchy data has been extracted.
EXTRACT_ID		VarChar	40	A unique identifier for the current extract. This value will usually be derived by the CRM from a sequence that it controls and tracks.
SET NUMBER		Integer		Identifies data as belonging to a given source database extract set (a sub division within an extract operation allowing multi-threading of the extract job, but not the load job).
NUMBER_OF_SETS_IN_EXTRACT		Integer		The total number of extract sets that the extract has been divided into for extraction convenience. This value allows the data loader to recognise when all of the extract sets have been loaded in for an extract so that reconciliation operations can be carried out.
INVOICE_LOAD_CONTROL_COUNT				Number of records in the invoice_load_control.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
INVOICE_COUNT				Number of records in the invoice.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
INVOICE_LINE_COUNT		Numeric		Number of records in the invoice_line.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
USAGE_ITEM_COUNT		Numeric		Number of records in the usage_item.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
DELIVERY_ADDRESS_COUNT				Number of records in the delivery_address.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
INC_USAGE_ALLOC_COUNT				Number of records in the inc_usage_alloc.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
INC_USAGE_UNITS_COUNT				Number of records in the inc_usage_units.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.

Column Heading	Unique?	Type	Length	Description
STATEMENT_COUNT				Number of records in the statement.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
STATEMENT_TRANS_COUNT				Number of records in the statement_trans.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
HIERARCHY_NODE_CHECK _COUNT				Number of records in the Hierarchy_Node_Check.dat extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
INVOICE_DATE				The financial date associated with each and every invoice in the current extract. This is the date printed on the invoice, the date used to apply tax and is generally the date from which the invoice due date is calculated. Note that every invoice in the extract will have the same invoice date/time. Invoices from different dates/-times should be separated out into different sets or extracts. DATE_FORMAT DATE MASK "yyyymmddhh24miss".
INVOICE_PRODUCTION_ID			40	The identifier used by the CRM for the invoice production run used to create the invoices in the current extract. This value is used to aid data load reconciliation operations.
HIERARCHY_EFFECTIVE_DATE				This date/time is used to synchronise the invoice extract with the effective set of organisation unit hierarchies with which it is associated. That is to say that the date/time here represents a point in time at which the hierarchy structures presented in the invoice extract's 'hierarchy_node_check.dat' extract file can be found in the database in their entirety (all parent/child relationships match) and are effective on this date/time. Notice that each extract set supports only a single hierarchy effective date. Invoices associated with different hierarchy dates should be separated out into different sets or extracts. If an invoice data load is dependent on a customer hierarchy extract data load, then the date/time here would match the hierarchy effective date of the corresponding hierarchy extract (or at least represent a date/time somewhere between the date/time of the desired extract and that of a

Column Heading	Unique?	Type	Length	Description
				hierarchy extract that supersedes it). DATE_FORMAT DATE MASK "yyyymmddhh24miss"
EXTRACTION_TIMESTAMP				Date and time that the extract file set was generated. DATE_FORMAT DATE MASK "yyyymmddhh24miss"
DEPENDENT_ON_HIERARCHY_EXTRACT				When invoices are loaded, the various elements of the invoice (header, lines, usage, etc) are attached to the organisation units that own them in the organisation unit hierarchy. Customer hierarchy building operations are carried out by a spate data loader (customer hierarchy data loader). If an attempt is made to load invoices for which all owning hierarchy elements have not been previously loaded, then the data load will fail (the invoice extract data will be rejected). The DEPENDENT_ON_HIERARCHY_EXTRACT field allows the invoice data loader to be told that it must check that a particular customer hierarchy extract has been loaded first, before attempting to load the invoices for in this invoice extract. In this way the loading of customer hierarchy data and invoice data can be coordinated to prevent invoice extract rejection. If the invoice loader sees that a prerequisite of loading an invoice extract set is to first load a given customer hierarchy extract, then it will delay loading the invoice set until that has been done.

- invoice.dat

  Contain a header record for each invoice in the extract set.

  Invoice interface table

  This extract file interface handles header records for each invoice in the extract set. Note that every invoice in the current extract file set must have the same invoice date. If it is required to load invoices with several different dates, then multiple extract file sets are required, one for each individual invoice date. Data loaded via this interface is primarily bound for the INVOICE Lavastorm Spend Analyzer Admin schema table.

  Invoice interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL _ INVOICE_ID	Y	VarChar	40	Unique invoice identifier as used by the originating CRM data base.
EXTERNAL_ ORGANISATION_ UNIT_ID		VarChar	40	Unique identifier denoting the CRM name for the organisation unit that owns the invoice.
ORGANISATION_ UNIT_LEVEL		Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides. There is an assumption that EXTERNAL_ORGANISATION_UNIT_ID values are only unique at the level within the hierarchy that are indicated to be at. Therefore, for example, a node with an identifier of 'ABC' at level 1 is considered to be a different node to a node with identifier 'ABC' at level 2.
EXTERNAL_ DELIVERY_ ADDRESS_ID		Integer		(40 CHAR) A CRM derived delivery address identifier. This value provides a link to the delivery_address.dat extract file record that contains the details of the current invoice's delivery address.
EXTERNAL _ STATEMENT _ID				(40 CHAR) The CRM derived identifier for the statement produced alongside the current invoice.
INVOICE_ DESCRIPTION				(100 CHAR) A textual description for the current invoice. For example 'ongoing monthly invoice', final invoice' etc.
INVOICE_DUE_ DATE		Numeric		Date that the invoice becomes due for payment. DATE_FORMAT DATE MASK "yyyymmddhh24miss"
PREVIOUS_ INVOICE_DATE		Numeric		Date of the previous invoice for the current organisation unit. This value is used to check for gaps in the invoice history of each customer. Missing invoices represent a risk because they might hide organisation unit hierarchy changes that have not been reflected in the database and thus open up the possibility of data corruption (attaching invoices to the wrong version of an organisation unit hierarchy node). When missing invoices are detected, the data loader will refuse to load the extract and flag up a warning. To load the extract, either the missing invoices need to be loaded first, or the data loader needs to be run in a special override mode. DATE_FORMAT DATE MASK

Column Heading	Unique?	Type	Length	Description
				"yyyymmddhh24miss"
BILLING_ FREQUENCY				(40 CHAR) This value is only required for on cycle invoices. It can be left NULL for off cycle invoices. BILLING_FREQUENCY is an enumerated type. Possible values would include: Daily WeeklyMonthly Quarterly Yearly
PAYMENT_TYPE				(40 CHAR) The payment type that is expected to be used to pay off this invoice. This value is usually derived from the payment scheme the customer has registered to use with the CRM.
INVOICE_FORMAT				(40 CHAR) An indication of the billing format used to produce the original invoice. One of the elements used to determine the formatting of invoices by Lavastorm Spend Analyzer.
TAXATION_ DOMAIN				(40 CHAR), The market area (geographical or other) with which the current invoice is associated. One of the elements used to determine the formatting of invoices by Lavastorm Spend Analyzer.
Locale				(12 CHAR) A set of preference information related to the invoice's language, environment and/or cultural conventions. When combined with the preferences associated with the application user, the Locale is used to determine the formatting of invoices by Lavastorm Spend Analyzer
ATTRIBUTE_1				(100 CHAR) Customisable invoice data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by Lavastorm Spend Analyzer.
ATTRIBUTE_2				(100 CHAR) Customisable invoice data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by Lavastorm Spend Analyzer.
ATTRIBUTE_3			40	(100 CHAR) Customisable invoice data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise

Column Heading	Unique?	Type	Length	Description
				directly supported by Lavastorm Spend Analyzer.

- invoice_line.dat

  Contains a record for each charge line associated with an invoice in the extract set.

  Invoice line interface table

  This extract file interface handles the charge line records belonging to the invoices in the extract set. Data loaded via this interface is primarily bound for the INVOICE_LINE Lavastorm Spend Analyzer Admin schema table.

  Invoice line interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL _ INVOICE_ID	Y	VarChar	40	The CRM derived identifier of the invoice to which the current invoice line belongs.
EXTERNAL_ INVOICE_LINE_ID		VarChar	40	CRM derived identifier for the current invoice line within its invoice. For example, a line number or similar.
EXTERNAL_ ORGANISATION_ UNIT_ID				Unique identifier denoting the CRM name for the organisation unit that owns the current invoice line.
ORGANISATION_ UNIT_LEVEL		Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
CHARGE_ DESCRIPTION				A textual description of the service being charged for by the current invoice line. Note: This field maps to INVOICE_LINE_ DESCRIPTION in the Lavastorm Spend Analyzer database
CHARGE_GROUP				A name for a logical grouping of invoice line charges. This grouping can be used to drive data selection and collection in reports over invoice charge data.
CHARGE_SUB_ GROUP		Numeric		A name for a logical grouping of invoice lines within a charge group. Again, this grouping can be used to drive data selection and collection in reports over invoice charge data.
CHARGE_START_ DATE		Numeric		The date/time on which the charged for service began. DATE_FORMAT DATE MASK "yyyymmddhh24miss"
CHARGE_END_ DATE				The date/time on which the charged for service ended.
AMOUNT				(14,4) This value represents a monetary contribution made to the total invoice charge by this invoice line. There are two main categories of invoice line (see the invoice_line_ category interface field). - If the invoice line is a tax line then the charge amount represents the tax associated with the charges for the current organisation unit and tax code. - If the invoice line is NOT a tax line, then the charge amount represents a net value (not inclusive of a tax component).
TAX_RATE				(14,4) The rate of tax that has been applied to a net charge type invoice line amount, or the rate of tax relevant to a tax type invoice

Column Heading	Unique?	Type	Length	Description
				line.
TAX_CODE				(40 CHAR), The identifying code for tax generated from a net charge type invoice line, or the code for the tax being shown on a tax type invoice line.
TAX_CODE_ DESCRIPTION				A user readable description for the tax code.
BILLED QUANTITY				The billed quantity of billable units consumed by the services charged for by the current invoice line. This can differ from the gross quantity for various reasons, such as inclusive quantity discount schemes.
UNIT_OF_ MEASURE				The unit of measure that qualifies the gross and billed quantity.
UNIT_OF_ MEASURE_ CATEGORY			40	The categorisation for the unit of measure used on the current record. It allows records to be grouped together for reporting purposes. For example, inclusion of all charges that have a particular unit of measure category. Note that the unit of measure and unit of measure category combination given must be one of the valid combinations configured within the Lavastorm Spend Analyzer database. Note that it is possible for any particular unit of measure value to be used in conjunction with different unit of measure categories (it is not a one to one relationship). The category supplied acts to place a record in that category for reporting and analysis.
INVOICE_LINE_ CATEGORY				An enumerated type. Tax lines have a category of 'TAX'. Other lines currently default to an open category with a NULL value and are all deemed to be non-tax lines.
ATTRIBUTE_1				Customisable invoice line data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by Lavastorm Spend Analyzer.
ATTRIBUTE_2				Customisable invoice line data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by

Column Heading	Unique?	Type	Length	Description
ATTRIBUTE_3				Customisable invoice line data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by
TAX_LINE				'1' (Yes/True) or '0' (No/False). Is the current invoice line a dedicated tax line?
SERVICE_TYPE				Defines the type of service that is being charged for by the current invoice line and used to differentiate the invoice line for reporting purposes (e.g. for report inclusion, exclusion, sorting and grouping).
NETWORK_TYPE				The type of the network, the use of whose services resulted in the raising of the current invoice line charge and used to differentiate the invoice line for reporting purposes (e.g. for report inclusion, exclusion, sorting and grouping).
RECURRING_ CHARGE				'1' (Yes/True) or '0' (No/False). Is the current invoice line a recurring charge applied to the customer's invoice every billing cycle, as part of their contract for example?
NET_OF_TAX_ SUMMARY				This value applies to tax lines only. - If the invoice line is a tax line then the net of tax summary amount represents the total net value of charges associated with the current organisation unit and tax code. - If the invoice line is NOT a tax line, then this value should be left empty.

- usage_item.dat

  Contains a record for each charge line sub item (for example, a phone call) associated with invoice lines in the current extract set.

  This extract file interface handles the usage item (itemised breakdown) records belonging to the invoices in the extract set.

  This extract file will contain a record for each charge line sub item, such as a phone call, associated with invoice lines in the current extract set.

  Data loaded via this interface is primarily bound for the USAGE_ITEM Lavastorm Spend Analyzer Admin schema table.

  Usage item interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_ USAGE_ITEM_ID	Y	VarChar	40	This value is used for reference with the inclusive usage data within the current extract. It must be unique within the extract, but is preferably unique to the usage item within the CRM.
EXTERNAL _ INVOICE_ID		VarChar	40	The CRM derived identifier of the invoice to which the current usage item line belongs.
EXTERNAL_ INVOICE_LINE_ID		VarChar		CRM derived identifier for the current invoice line to which the current usage item line belongs.
EXTERNAL_ ORGANISATION_ UNIT_ID		VarChar		Unique identifier denoting the CRM name for the organisation unit that owns the current invoice line.
ORGANISATION_ UNIT_LEVEL		Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
USAGE_ITEM_ DESCRIPTION		VarChar		A textual description of the current usage item. As standard, for telecoms call data, Lavastorm Spend Analyzer takes this to be the number dialled.
USAGE_ITEM_ START_DATE_ TIME		Numeric		The date and time on which the current usage charge began. DATE_FORMAT DATE MASK "yyyymmddhh24miss
USAGE_ITEM_ END_DATE_TIME		Numeric		The date and time on which the current usage charge ended. DATE_FORMAT DATE MASK "yyyymmddhh24miss"
GROSS_ QUANTITY		Integer		The total number of billable units consumed by the current usage record.
INCLUSIVE_ QUANTITY		Integer		The number of billable units of the current usage record absorbed by an inclusive usage allocation (i.e. the units discounted from the gross quantity prior to rating).
BILLED_QUANTITY		Integer		The number of units of the current usage record actually rated and billed.
UNIT_OF_ MEASURE				(40 CHAR), The unit of measure that qualifies the gross, inclusive and billed quantity.
UNIT_OF_ MEASURE_ CATEGORY				The categorisation for the unit of measure used on the current record. It allows records to be grouped together for reporting purposes. for example, inclusion of all charges that have a particular unit of meas-

Column Heading	Unique?	Type	Length	Description
				ure category. Note: The unit of measure and unit of measure category combination given must be one of the valid combinations configured within the Lavastorm Spend Analyzer database. Note: It is possible for any particular unit of measure value to be used in conjunction with different unit of measure categories (it is not a one to one relationship). The category supplied acts to place a record in that category for reporting and analysis.
GROSS_VALUE		NUMBER (14,4)		The total monetary value of the current usage record before any inclusive bundles and discounts are applied.
INCLUSIVE_ VALUE		NUMBER (14,4)		The monetary value of the current usage record absorbed by an inclusive usage bundle allocation. Store as a positive value.
DISCOUNT_VALUE		NUMBER (14,4)		The monetary value of discounts applied to the current usage record. Store as a positive value.
BILLED_VALUE		NUMBER (14,4)		The billed monetary value of the current usage item record after any inclusive bundles and discounts have been applied. Billed value = gross value – inclusive value – discount value
CUSTOMER_ COST_CENTRE				An identifier allowing the charges from the current usage record to be attributed to a division within a business organisation. Optional.
INCLUSIVE_ USAGE_STATUS				Text description describing how inclusive usage schemes have operated on the current usage item. Optional.
TAX_CHARGED				'1' (Yes/True) or '0' (No/False). Is this usage item subject to taxation? Optional.
ATTRIBUTE_1				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by Lavastorm Spend Analyzer.
ATTRIBUTE_2				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise dir-

Column Heading	Unique?	Type	Length	Description
				ectly supported by Lavastorm Spend Analyzer.
ATTRIBUTE_3				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by Lavastorm Spend Analyzer.
ATTRIBUTE_4				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_5				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_6				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_7				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_8				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_9				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ATTRIBUTE_10				Customisable usage item data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by CXP.
ITEM_TYPE				Used to apply a type to the usage item to differentiate it for reporting purposes (e.g.

Column Heading	Unique?	Type	Length	Description
				for report inclusion, exclusion, sorting and grouping).

- delivery_address.dat

  Contains a list of the delivery addresses associated with the invoices in the current extract set.

  This extract file interface handles the delivery address records associated with the invoices in the current extract set.

  Data loaded via this interface is primarily bound for the CONTACT_DETAILS Lavastorm Spend Analyzer Admin schema table.

  Delivery address interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_DELIVERY_ADDRESS_ID	Y	VarChar	40	Unique delivery address identifier as used by the originating CRM data base.
TITLE		VarChar	40	Addressee's title (Mr, Mrs, and so on).
FIRST_NAME		VarChar		Addressee's forename.
MIDDLE_NAME		VarChar		Addressee's middle name.
SURNAME		VarChar		Addressee's surname.
JOB_TITLE		VarChar		Addressee's job title (used as required in a business address)
COMPANY_NAME		VarChar		The company name used on a corporate type customer's address.
ADDRESS_LINE_1		VarChar		First geographical address line.
ADDRESS_LINE_2		VarChar		Second geographical address line.
ADDRESS_LINE_3		VarChar		Third geographical address line.
ADDRESS_LINE_4		VarChar		Fourth geographical address line.
ADDRESS_LINE_5		VarChar		Fifth geographical address line.
ADDRESS_LINE_6		VarChar		Sixth geographical address line.
POSTAL_CODE				Geographical post code or zip code.
TELEPHONE_NUMBER				Contact telephone number (optional for a pure delivery address).
ALTERNATIVE_TELEPHONE_NUMBER				Secondary contact telephone number (optional for a pure delivery address).
FAX_NUMBER				Contact fax number (optional for a pure delivery address).
ADDRESS_TYPE				Gives an indication of the nature of the current address and what it is used for. An address can represent different things such as an invoicing address or straight customer contact details. For invoice delivery address purposes this value can take values such as 'Business' or 'Personal' to give an indication of the kind of addressee involved.

- inc_usage_alloc.dat

  Contains a record for each inclusive usage allocation utilised by usage items in the current extract data set.

  This extract file interface handles the details of the inclusive usage allocations utilised by usage items associated with the invoices in the current extract set.

It is possible for usage items to be discounted by inclusive usage schemes (bundles). This extract file contains a record for each inclusive usage allocation utilised by usage items in the current extract data set

Data loaded via this interface is primarily bound for the INC_USAGE_INVOICE_SUMMARY and INC_USAGE_ALLOCATION_SNAPSHOT Lavastorm Spend Analyzer Admin schema tables.

Inclusive usage allocations interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_ INC_ USAGE_ALLOC_ID	Y	VarChar	40	Unique inclusive usage allocation discount scheme identifier as used by the originating CRM data base.
EXTERNAL_ ORGANISATION_ UNIT_ID		VarChar	40	Unique identifier denoting the CRM name for the organisation unit that owns the current inclusive usage allocation.
ORGANISATION_ UNIT_LEVEL		Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
INC_USAGE_ ALLOC_NAME		VarChar		A name for the inclusive usage scheme in use on the current record. This value can be used to hold a CRM specific code for the scheme.
INC_USAGE_ ALLOC_ DESCRIPTION		VarChar		A user friendly description for the inclusive usage scheme in use on the current record.
QUANTITY_ BROUGHT_ FORWARD		NUMBER (14,4)		The number of allocation units carried into the current allocation from previous allocations.
QUANTITY_ ALLOCATED		NUMBER (14,4)		The total number of units available to the current discount allocation when it was first created.
QUANTITY_USED		NUMBER (14,4)		The number of allocation units used up at the time of billing.
QUANTITY_ UNUSED		NUMBER (14,4)		The number of allocation units remaining.
QUANTITY_ CARRIED_ FORWARD		NUMBER (14,4)		The number of allocation units that will be carried over to future allocations.
UNIT_OF_ MEASURE		VarChar		The unit of measure that qualifies the various quantities used on the current allocation record.
UNIT_OF_ MEASURE_ CATEGORY		VarChar		The categorisation for the unit of measure used on the current record. It allows records to be grouped together for reporting purposes. For example, inclusion of all charges that have a particular unit of measure category. Note: The unit of measure and unit of measure category combination given must be one of the valid combinations configured within the Lavastorm Spend Analyzer database. Note: It is

Column Heading	Unique?	Type	Length	Description
				possible for any particular unit of measure value to be used in conjunction with different unit of measure categories (it is not a one to one relationship). The category supplied acts to place a record in that category for reporting and analysis.
ATTRIBUTE_1		VarChar		Customisable inclusive usage allocation data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by Lavastorm Spend Analyzer.
ATTRIBUTE_2				Customisable inclusive usage allocation data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by Lavastorm Spend Analyzer.
ATTRIBUTE_3				Customisable inclusive usage allocation data element. This field is usually used to hold a value specific to the original CRM data base's billing profile, which is not otherwise directly supported by Lavastorm Spend Analyzer.

- inc_usage_units.dat

  Contains records that indicate how much of an inclusive usage allocation was consumed by a usage item.

  This extract file interface handles the inclusive usage unit records that indicate how many inclusive usage allocation units have been consumed by usage items in the current extract set.

  Note that it is possible for an individual usage item to be discounted by none, one, or many inclusive usage schemes.

  Each record indicates how much of an inclusive usage allocation was consumed by a usage item.

  The association between inc_usage_units.dat records and the corresponding usage_item.dat record is made via the EXTERNAL_USAGE_ITEM_ID field.

  Data loaded via this interface is primarily bound for the INCLUSIVE_USAGE_ITEM Lavastorm Spend Analyzer Admin schema table.

  Inclusive usage units interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_ USAGE_ ITEM_ID	Y	VarChar	40	This Value is used for reference with usage item data (see usage_item_Interface). It is used to associate the current inclusive usage units record with the usage item record that it has discounted.
EXTERNAL_ INC_USAGE_ ALLOC_ID		VarChar	40	Unique inclusive usage allocation discount scheme identifier as used by the originating CRM data base. This value indicates which allocation the current inclusive usage unit record has acquired its units from to discount a usage item.
EXTERNAL _ INVOICE_ID		VarChar		The CRM derived identifier of the invoice to which the usage item discounted by the current inclusive usage item record belongs.
INCLUSIVE_ QUANTITY		NUMBER (14,4)		The number of allocation units used up when discounting the associated usage item record.
UNIT_OF_ MEASURE		VarChar		The unit of measure that qualifies the inclusive quantity value.
UNIT_OF_ MEASURE_ CATEGORY		VarChar		The categorisation for the unit of measure used on the current record. It allows records to be grouped together for reporting purposes. For example, inclusion of all charges that have a particular unit of measure category. Note: The unit of measure and unit of measure category combination given must be one of the valid combinations configured within the Lavastorm Spend Analyzer database. Note: It is possible for any particular unit of measure value to be used in conjunction with different unit of measure categories (it is not a one to one relationship). The category supplied acts to place a record in that category for reporting and analysis.

- statement.dat

  Contains account statement header for selected hierarchy nodes associated with invoices in the current extract.

  This extract file interface handles header records for each statement in the extract set.

  Data loaded via this interface is primarily bound for the STATEMENT Lavastorm Spend Analyzer Admin schema table.

  Statement interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_ STATEMENT_ID	Y	VarChar	40	Unique statement identifier as used by the originating CRM data base.
EXTERNAL_ ORGANISATION_ UNIT_ID		VarChar	40	Unique identifier denoting the CRM name for the organisation unit that owns the current statement. This will be a posting account against charges are levied and for which the opening balance on the current statement is applicable.
ORGANISATION_ UNIT_LEVEL		Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
EXTERNAL_ DELIVERY_ ADDRESS_ID		VarChar		A CRM derived delivery address identifier. This value provides a link to the delivery_ address.dat extract file record that contains the details of the current statement's delivery address.
OPENING_ BALANCE		NUMBER (14,4)		The amount due (closing balance) brought forward from the previous statement period. Note: To calculate the closing balance for the statement period you would do the following calculation: Closing balance = Opening Balance + Transaction total. The queried total can then be used to adjust the customer's outstanding balance for credit control pursuit purposes.
TRANSACTION_ TOTAL		NUMBER (14,4)		The total value of the transactions associated with the statement owner, raised since the previous statement was produced. This value is generated from the total of invoice, payment and adjustment transactions generated this period (since the last statement). Following the basic rules of accounting, if the transaction total is a net credit to the account it should be a negative value and if it is a net debit to the account is should be a positive value. Example: When calculating this value: A PAYMENT should be a negative value if it credits the account. An ADJUSTMENT that credits the account should be a negative value, one that debits the account a positive value. An INVOICE total should generally be a positive value (to debit the account), but this depends on the nature of the invoice.

Column Heading	Unique?	Type	Length	Description
QUERIED_TOTAL		NUMBER (14,4)		This value represents the total of any charges that are in dispute by the customer. Queried amounts place a credit against an account whilst the disputed charges are investigated. This credit is designed to give the customer the benefit of the doubt and prevent create control activity from acting against their account. QUERIED_TOTAL should be a negative amount if a charge is in dispute (i.e. the queried amount acts as a credit on the account).
STATEMENT_TEXT				Textual Information associated with the current statement.
STATEMENT_DATE				Statement production date. The date at which the calculated closing balance for the current statement is correct. DATE_FORMAT DATE MASK "yyyym-mddhh24miss"

- statement_trans.dat

  Contains details of each monetary transaction that occurred between the time of the opening and closing balances on statements in the current extract.

  This extract file interface handles the statement transaction records belonging to each statement in the extract set.

  When a statement transaction represents an invoice already loaded into Lavastorm Spend Analyzer, an Invoice_transaction record is generated in the database that bridges between the statement transaction and the corresponding invoice.

  Data loaded via this interface is primarily bound for the STATEMENT_TRANSACTION and INVOICE_TRANSACTION Lavastorm Spend Analyzer Admin schema table.

  Statement transaction interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_ STATEMENT_ID	Y	VarChar	40	CRM derived statement Identifier for the statement to which the current statement transaction belongs.
EXTERNAL_ STATEMENT_ TRANS_ID		VarChar	40	Unique statement transaction identifier as used by the originating CRM data base. This value will generally represent the identifier for a document/transaction entry in the CRM's ledger.
EXTERNAL_ ORGANISATION_ UNIT_ID				Unique identifier denoting the CRM name for the organisation unit that owns the current statement transaction.
ORGANISATION_ UNIT_LEVEL		Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
TRANSACTION_ AMOUNT		NUMBER (14,4)		The monetary value of the current transaction. Transactions can be in one of three categories and should follow the basic rules of accountancy according to category: A PAYMENT should be a negative value if it credits the account. An ADJUSTMENT that credits the account should be a negative value, one that debits the account a positive value. An INVOICE total should generally be a positive value (to debit the account), but this depends on the nature of the invoice.
TRANSACTION_ TEXT				Textual Information associated with the current statement transaction. For example, a note against the transaction in the ledger.
TRANSACTION_ CATEGORY				Transactions can be in one of three categories: Invoice, Payment, or Adjustment.
TRANSACTION_ DATE				The date of the transaction. DATE_ FORMAT DATE MASK "yyyym-mddhh24miss
EXTERNAL _ INVOICE_ID				Used if the transaction refers to an invoice. This value is used by the database to create a bridge between statement transactions and invoices.

- Hierarchy_Node_Check.dat

  Contains a list of all of the hierarchy nodes associated with invoice elements in the current invoice extract set. Each node record also contains the ID of its parent node. This data is used to ensure that all invoice extract data elements can be suc-

cessfully attached to a valid organisation unit hierarchy within the Lavastorm Spend Analyzer database.

This extract file interface is used to validate that all invoice components in the invoice extract can be successfully attached to hierarchy nodes already stored in the Lavastorm Spend Analyzer database.

The hierarchy_node_check.dat extract file must contain a record for every hierarchy node that is associated with invoicing data in the extract.

Each hierarchy_node_check.dat record must correspond with an existing organisation_unit_snapshot table record in the database and that organisation_unit_snapshot record must be effective on the invoice date used within the current invoice extract.

To correspond with an organisation unit snapshot record, the parent and child nodes included on the hierarchy_node_check.dat record must both match

If an effective match cannot be found for any records in the hierarchy_node_check.dat file, then the current extract file set is rejected.

Hierarchy node check interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_ ORGANISATION_ UNIT_ID	Y	VarChar	40	Unique identifier denoting an organisation unit element within a customer's organisation unit hierarchy.
ORGANISATION_ UNIT_LEVEL		Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides.
EXTERNAL_ PARENT_ORG_ UNIT_ID				Identifier denoting the parent organisation unit of the current organisation unit within the organisation unit hierarchy. If the current organisation unit has no parent (it is at the top of its hierarchy) then the parent value will be NULL.
PARENT_ORG_ UNIT_LEVEL				The level within the organisation unit hierarchy, at which the parent organisation unit resides.

4. 6. 6 Hierarchy Analytics

Hierarchy information changes over time, for example subscriptions can move to different accounts, or accounts to a different corporate. While CMP stores only the current hierarchy, it is important that a historical view of the hierarchy is also available. This job gath-

ers the customer hierarchy information (subscription, account, corporate and group) that was in effect at the time of the most recent billing process.

This extract file interface handles records for each organisation to be created or updated in the CXP database.

A request to create a Hierarchy Extract takes the following optional parameter: **invoice.run.number**.

This allows the user to specify the invoice run that is to be extracted. If no invoice.run-.number is specified, the latest invoice run is used.

Please note that the Hierarchy Extract for a particular invoice run should always be requested prior to the equivalent Invoice Extract for that run to ensure that any account hierarchies which have not been previously invoiced are loaded into CXP prior to their invoices. Failure to do this will result in an error when loading the invoice extract into CXP.

When the job completes successfully, extract files have been sent via FTP to CXP servers.

This job is typically scheduled to run once per day after a billing process.

Extract files in this set and their use are shown below.

- org_load_control.dat

  Controls various elements of the customer hierarchy loading process. It is polled for by the customer hierarchy data loader when it is looking for extracts to load. It contains a single load control record.

  Organisation load control interface table

  This extract file interface is used to control various elements of the customer hierarchy loading process. There is only a single record in this file per extract. The record format includes an effective date for use when building organisation unit snapshots and a series of extract file record counts for validation purposes. Data loaded via this interface is primarily bound for the HIERARCHY_LOAD and DATA_LOAD CXP Admin schema tables.

  Organisation load control interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_DATA_ SOURCE_ID	Y	VarChar	40	An identifier for the instance of the CRM database from which the hier-archy data has been extracted.
EXTRACT_ID		VarChar	40	A unique identifier for the current extract. This value will usually be derived by the CRM from a sequence that it controls and tracks.
ORG_LOAD_ CONTROL _COUNT		Integer		Number of records in the Org_Load_ Control extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
ORGANISATION_ COUNT		Integer		Number of records in the Organisation extract file. Used to confirm that the contents of that extract file have been successfully delivered without trun-cation.
ORGANISATION_ STRUCTURE_COUNT				Number of records in the organisation_ structure extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
ORG_NODE_ ATTRIBUTE_COUNT				Number of records in the org_node_ attribute extract file. Used to confirm that the contents of that extract file have been successfully delivered without truncation.
HIERARCHY_ EFFECTIVE_DATE		Numeric		Date on which the hierarchy structure described within the current extract is true. YYYY-MM-DD HH:MM:SS format
EXTRACTION_ TIMESTAM		Numeric		Date and time that the extract file set was generated. YYYY-MM-DD HH:MM:SS format

- organisation.dat

  Contain a record for each organisation to be created or updated in the CXP data-base.

  Organisation interface table

  This extract file interface handles records for each organisation to be created or updated in the CXP database.

  Data loaded via this interface is primarily bound for the ORGANISATION and ORGANISATION_DATA_SOURCE CXP Admin schema tables.

Organisation interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_ORGANISATION_ID	Y	VarChar	40	(40 CHAR) Identifier signifying the owner of an organisation unit hierarchy. The organisation provides a way to collectively group organisation units together to allow the sharing of such things as filter sets and address books. It is important to note that EXTERNAL_ORGANISATION_ID is considered to apply universally, spanning all potential data source feeds. That is to say that if the same EXTERNAL_ORGANISATION_ID value is fed in to a Lavastorm Spend Analyzer environment for customers from two different data sources, then those two customers and their hierarchies will be considered to be part of the same organisation and by assigned the same ORGANISATION_ID. Membership of an organisation then grants users that can access hierarchy nodes belonging to that organisation, the ability to share public resources such as address books that are stored against the organisation. If you are running an environment where customers from different data sources will never need to be associated under a common organisation, then it is highly recommended that you ensure that the EXTERNAL_ORGANISATION_ID values sent to Lavastorm Spend Analyzer are truly unique (by appending the EXTERNAL_DATA_SOURCE_ID to them for example).
ORGANISATION_NAME		VarChar	100	User friendly name for the current organisation.
CURRENCY_CODE		VarChar	40	A code indicating the currency used by all of the invoices associated with the current organisation and data source combination (where the data source for all of the data in the extract is held in the 'org_load_control.dat' extract file).

- org_structure.dat

Contain a record for each organisation hierarchy node to be added or updated in the CXP database. Each node record will contain the ID of its parent node allowing whole hierarchies to be described as a series of parent /child relationships.

Organisation structure interface table

This extract file interface handles records for each organisation hierarchy node to be added or updated in the Lavastorm Spend Analyzer database. Each child node record contains the ID of its parent node allowing hierarchies to be described as a series of parent /child relationships. Data loaded via this interface is primarily bound for the ORGANISATION_UNIT and ORGANISATION_UNIT_SNAPSHOT Lavastorm Spend Analyzer Admin schema tables.

Organisation structure interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_ ORGANISATION_I	Y	VarChar	40	The Identifier of the organisation to which the organisation unit depicted by the current record belongs.
EXTERNAL_ ORGANISATION_ UNIT_ID		VarChar	40	Unique identifier denoting an organisation unit element within a customer's organisation unit hierarchy.
ORGANISATION_ UNIT_LEVEL		Integer		The level within the organisation unit hierarchy, at which the current organisation unit resides. There is an assumption that EXTERNAL_ ORGANISATION_ID values are only unique at the level within the hierarchy indicated. Therefore a level 1 node with an identifier of 'ABC' is considered to be a different node to a level 2 node with identifier 'ABC'.
EXTERNAL_ORG_ UNIT_TYPE		VarChar	40	Denotes the sub type of the current customer hierarchy element, within its level. This value allows The various types of organisation unit to be differentiated from one another for the purposes of icon assignment in tree views and reporting.
EXTERNAL_ PARENT_ORG_ UNIT_ID		VarChar	40	dentifier denoting the parent organisation unit of the current organisation unit within the organisation unit hierarchy. Note: Every EXTERNAL_ PARENT_ORG_UNIT_ID referenced here must also be represented as an EXTERNAL_ORGANISATION_UNIT_ ID on a different record in the 'org_ structure.dat' extract file associated with the current extract file set. This effectively means that organisation hierarchies must be shown complete from the Lowest node represented by an 'org_structure.dat' extract file upwards.
PARENT_ORG_ UNIT_LEVEL		Integer		The level within the organisation unit hierarchy, at which the parent organisation unit resides.
ORG_UNIT_ DEACTIVATION_ DATE		Numeric		Used to differentiate between active and inactive (disconnected/deactivated) organisation

Column Heading	Unique?	Type	Length	Description
				units. Active organisation units are those with a NULL deactivation date. Inactive organisation units are those with an actual date value, representing the date of deactivation. Whilst it is generally assumed that once an organisation unit has deactivated, then it will not reactivate, the deactivation date can be reset by passing a NULL value here to remove the deactivation date stored in the database.
ALIAS_1		AlphaNumeric	40	Alternative description or code used to identify the current organisation hierarchy element. Used in displays to help the user more readily identify organisation unit elements.
ALIAS_2		AlphaNumeric	40	Alternative description or code used to identify the current organisation hierarchy element. Used in displays to help the user more readily identify organisation unit elements.

- org_node_attribute.dat

  Contains descriptive attributes for each hierarchy node. Each record will contain a single attribute for a node and the number of attributes that any one hierarchy node can have is potentially unlimited. It will only be necessary to populate this file with attributes that need to be added or changed.

  Organisation node attribute interface table

  This extract file interface handles records that contain descriptive attributes for each hierarchy node. Each record contains a single attribute for a node and the number of attributes that any one hierarchy node can have is potentially unlimited. It is only necessary to pass in data via this interface when an organisation unit has attributes that need to be added or changed. Data loaded via this interface is primarily bound for the ORG_UNIT_ATTRIBUTE_SNAPSHOT Lavastorm Spend Analyzer Admin schema tables.

  Organisation node attribute interface table fields

Column Heading	Unique?	Type	Length	Description
EXTERNAL_ ORGANISATION_UNIT_ ID	Y	VarChar	40	Unique identifier denoting the organisation unit element to which the attribute information on this record belongs.
ORGANISATION_UNIT_ LEVEL		Integer		The level within the organisation unit hierarchy, at which the organisation unit resides.
ATTRIBUTE_NUMBER		Integer		Identifier for the current attribute. Used by the application when retrieving the attribute value for display.
ATTRIBUTE_TYPE		VarChar	40	The type of data represented by the attribute value (TEXT or NUMERIC).
ATTRIBUTE_VALUE			100	A piece of custom data associated with an organisation unit.

Extract files can be delivered individually as .dat files, or they can be grouped together and delivered as a single .zip file.

4.0 Configuring CXP Extracts

Once all invoice data has been posted to the ledgers, CMP can optionally produce a set of extracts containing customer invoice and hierarchical data for each bill run. These extracts are then used by the CXP Data Loader to load the extracted invoice and hierarchy data into the CXP database. This allows customers to view electronic versions of their invoices via CXP instead or as well as paper bills being produced.

The following steps describe how to configure and run the CXP extracts.

4. 6. 1 1. Define the sabre-analyser-extract properties

Navigate to System Configuration > Modules > Sabre Server > sabre- analyser-extract, and define the properties as required.

4. 6. 2 2. Define the extract supplement

To supplement extract data populated in CMP some additional configuration is required in the Analyser Extract Supplement (C4JWREP) file.

- Unit of Measure Category

  CXP requires that all unit of measure values be categorised. The Supplement Record of type *U* is used to categorise the unit of measure values in the invoice extract.

  The following configuration is required for Supplement Type *U* – Unit of Measure Category.

Cross Reference Key 1	Supplement value 1
Roaming Duration	VOICE
DMINS	VOICE
Seconds	VOICE
KB	DATA
N/A	N/A
Items	ORDERS
Text	MESSAGE
Weekend minutes	VOICE
Minutes	VOICE
Picture messages	MESSAGE
O2 Mobile minutes	VOICE
Duration	VOICE
Traveller minutes	VOICE

Messages	MESSAGE
Text messages	MESSAGE
Trafficline minutes	OTHER
Volume	DATA
Value	MONETARY
UK Fixed and Mobile minutes	VOICE
Free calls to the office	VOICE
Other UK mobile minutes	VOICE
Unlimited Landline allowance	VOICE
Unlimited Offpeak allowance	VOICE
Group Conferencing minutes	OTHER
Not Defined	N/A

- Network Description

  Discrepancies may exist between the Network Type Descriptions stored within CMP and those configured in CXP. The Supplement Record of type *N* can be used to avoid issues when loading extracts into Spend Analyser.

  The following configuration is required for Supplement Type *N* – Network Type Description.

Cross Reference Key 1	Supplement value 1
B	BREATHE
BBAND	O2 Broadband
CANL	O2 Mobile (CANL)
CDIG	O2 Mobile (CDIG)
FIXED	O2 Fixed Line
I	Internet
MAAS3	MaaS360
MWAN	Managed Networks
NGN	NGN Telemarketing
O	Orange Network Services
O2PSDO	Data / Voice Link
P	Personal Numbers
PNB	Personal Numbers FW
SWITCH	O2 Switched Circuit
V	Vodafone
VANL	Vodafone Analogue
VDIG	Vodafone Digital
MLL	Mobile Landline VOIP
SIPT	SIP Trunking
O2SERV	O2 Services
HVOICE	Hosted Voice

M2M	Machine to Machine
HSD001	High Speed Datalink
O2SERV1	O2 Services
MDM	Mobile Device Management

4. 6. 3 3. Run the Hierarchy Analytics job

CMP allows for information to be extracted from its database and made available for third party analysis.

Hierarchy information changes over time, for example subscriptions can move to different accounts, or accounts to a different corporate. While CMP stores only the current hierarchy, it is important that a historical view of the hierarchy is also available.

This job gathers the customer hierarchy information (subscription, account, corporate and group) that was in effect at the time of the most recent billing process.

This job is typically scheduled to run once per day after a billing process.

Please note that the Hierarchy Extract for a particular invoice run should always be requested prior to the equivalent Invoice Extract for that run to ensure that any account hierarchies which have not been previously invoiced are loaded into SA prior to their invoices. Failure to do this will result in an error when loading the invoice extract into CXP.

Once the SABRE Analyser Extract has been started and is actively running, it can process any number of requests for extracts. If the SABRE Analyser Extract job is stopped e.g. due to a machine IPL or if its subsystem has been ended, then it will not be able to process any requests to produce a set of extracts. In this situation it will be necessary to restart the SABRE Analyser Extract job.

4. 6. 4 4. Run the Invoice Analytics job

It is important to note that the Hierarchy Extract job must always be executed prior to the Invoice Extract job for a particular invoice run.

CMP allows for information to be extracted from its database and made available for third party analysis.

This job gathers details of invoices generated during the most recent billing process.

This job is typically scheduled to run once per day after a billing process.

For more information about these extract jobs, see the *CMP Batch Jobs and JSON Schemas Guide*. See also the jobs descriptions provided in the CMP Administration Console.