

# CMP 8.19

## **Billing Functionality Guide**

Version 1.0

Classification: **Customer Confidential**



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## Version Control

Version	Issue Date	Author	Comments
Version 1.0	06 June 2025	MDS	CMP 8.19 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

This document includes a high level description of the functional components of the CMP Billing Module which calculates charges, creates invoices, and outputs the bill data.

This document does not include low-level technical details or deployment information, and does not show individual screens or detailed user processes.

## 1.1 Required Reading

This document leads on from and assumes prior exposure to the *CMP Overview*, and *CMP Functional Overview* documents.

## 2.0 About CMP Billing

The CMP Billing Module is the process by which CMP creates invoices and other supporting information and generates the data used to format customer bills. The CMP **convergent billing**<sup>1</sup> engine generates customer invoices for accounting purposes, which are posted to the sales ledger. Applicable tax is applied to the calculated charges. The billing controls attached to a customer agreement determine the eligibility for billing in each invoice production run.

CMP handles a number of different charge types that cater for many types of service:

- One-off charges - Any one-off charge to be billed to the customer. These can be applied at any level of the customer hierarchy.
- Periodic charges - Recurring charges covering a configurable period. Periodic charges can be billed in advance or arrears. Charges for partial periods can be pro-rated. These charges can be applied at any level of the customer hierarchy.
- Unit-based charges - Driven by rated usage that has been loaded. These charges are always generated at the subscription level.



Rated usage charges are loaded by the Rated Usage job.

- External calculated charges - Driven by charge records that have been loaded.



Externally calculated non-usage charges are loaded by the Rated Charge job.

- Adjustments - A mechanism to apply an ad hoc credit or charge to an account. Adjustments provide the functionality to apply a goodwill credit or reverse an incorrect charge from a previous bill. Adjustments are raised at the Account level, and can either form part of the next cyclical bill or be applied independently to trigger an ad hoc bill or credit note.

Invoice data can also be extracted and transmitted to CXP (previously known as Spend Analyser), allowing customers to view and analyse their invoices online.

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<sup>1</sup>The CMP Billing Module can create a single converged bill from multiple service types, such as fixed line, mobile and broadband. These services are typically represented as individual subscriptions in CMP, which can be grouped under a single customer structure, allowing all charges to be consolidated into one or more invoices as required.

A [statement of account](#)<sup>1</sup> and [itemised bills](#)<sup>2</sup> can also be optionally produced by the Billing module. Both typically form part of the core bill data output. For complex customer structures they can be separated and sent to different departments within an organisation.

Customer billing is typically executed daily but can be scheduled according to operational requirements. The CMP Billing process comprises the following jobs:

- Invoice Production
- Statement Production
- Bill Print
- Invoice Posting
- General Ledger
- Usage Archiving

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 For more information see the *CMP Batch Job and JSON Schemas Guide*.

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## 2. 1 Billing Controls

The agreement entity of the CMP customer hierarchy contains the controls for the frequency, structure and content of customer bills.

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 For more information, see the ["Agreement" on page 7](#) topic.

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Key features of billing controls are:

### 2. 1. 1 Bill Cycle

The day of the month when cyclical bills are triggered. This can be configured as any day between 1 - 31 days. See also *Next Expected Invoice Date*.

CMP cyclical billing supports monthly billing based on any day (1-31) of the month. Where a cycle does not exist in a month (e.g. 31 in a month with 30 days) the customer is billed on the last day of the month. Bill cycles other than monthly can be set on a daily basis between 1-999 days.

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<sup>1</sup>A statement of account supplements an invoice showing balance information and the total amount due to be paid. The statement includes any balance brought forward, transactions since the last statement and the new invoice(s) from the latest invoice run.

<sup>2</sup>An itemised bill contains a full list of the usage units (calls, data, messaging and others) associated with an invoice. To determine whether an itemised bill is required, Invoice Print uses the Billing Media,Detail bill to Address settings, and the presence of an itemised billing service on the subscription. Regardless of this setting, all units for all subscriptions are copied from CMP to the JSON file. However, subscriptions that do not require an itemised bill are flagged accordingly.

Cyclical billing can be carried out on a daily, weekly, monthly, quarterly, bi-annual or annual basis and is set and managed via AgentView at Agreement level.

A customer's billing date defaults to the first cycle date available after their connection date. The bill cycle date can be changed at any time via AgentView.

Any changes to the Bill cycle will apply to all subscriptions attached to the agreement.

In a real-time charging (RTC) environment, when a post-paid subscription's bill cycle day is changed, the external RTC system creates new allowance and spend cap records that take effect at the start of the subscription's new bill cycle. These new records must be synchronised with CMP records in order to allow for real-time enquiry of allowance and spend cap balances from CMP. Following a bill cycle change, new records generated by the RTC system are stored in CMP. When the new records are due to come into effect, the Bill Cycle Change batch job is triggered to update CMP allowance and spend cap records to refer to the new records.

For more information, see the [CMP Batch Jobs and JSON Schemas Guide](#).

## 2. 1. 2 Invoice Frequency

The number of days or months between bills.

## 2. 1. 3 Next Expected Invoice Date

This is the date the Agreement becomes eligible for invoicing and is a key factor in the selection criteria used by CMP to determine when to generate a bill for a subscriber. Each time the subscriber is billed, the bill cycle and invoice frequency are used to set the Next Expected Invoice Date to the appropriate future date. CMP automatically adjusts for short months.

## 2. 1. 4 Consolidation Level

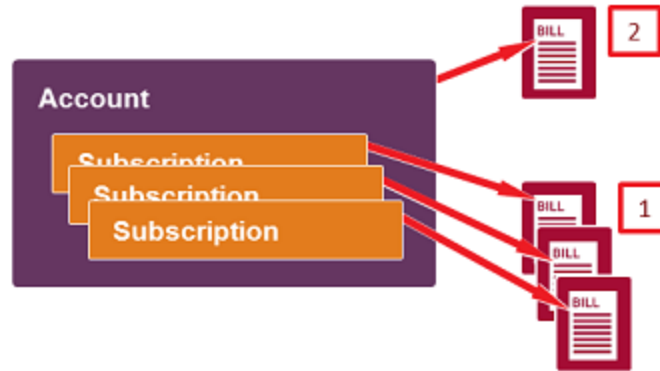
The level of the hierarchy at which charges should be grouped for billing. This ultimately determines how many bills are produced for the subscriber and where the debt sits on the customer hierarchy.

Agreements can be logged at the Account level or higher in the CMP customer hierarchy. The level at which the agreement is logged determines the options available for consolidating charges into bills.

### 2.1.4.1 Account Level

Agreements logged at Account level can have Subscription-level or Account-level consolidation.

1. Subscription-level consolidation results in individual bills for each Subscription linked to the Agreement.
2. Account-level consolidation results in a single bill containing the charges for all Subscriptions below that Account entity that are linked to the Agreement.

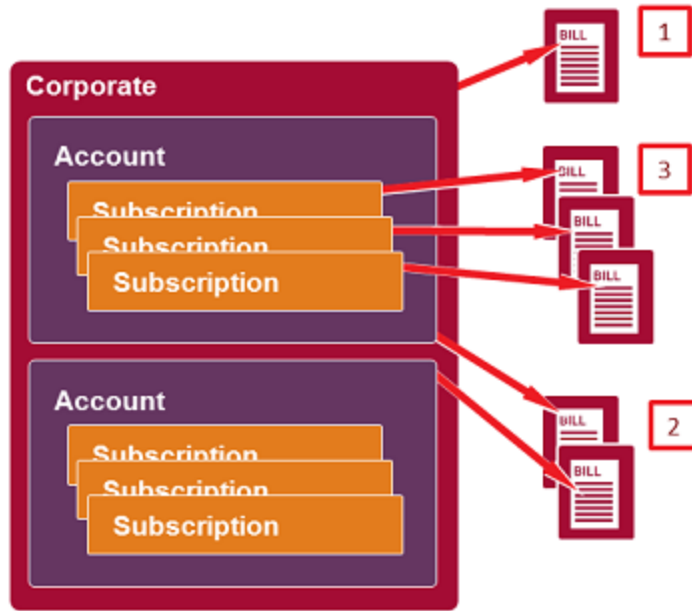


*Account-level Logging*

### 2.1.4.2 Corporate level

Agreements logged at Corporate level can have consolidation at the Subscription, Account or Corporate level.

1. Corporate-level consolidation results in a single bill containing the charges for all Subscriptions below that Corporate entity that are linked to the Agreement.
2. Account-level consolidation results in separate bills for each Account below the Corporate entity that has Subscriptions linked to the Agreement.
3. Subscription-level consolidation results in individual bills for each Subscription linked to the Agreement.

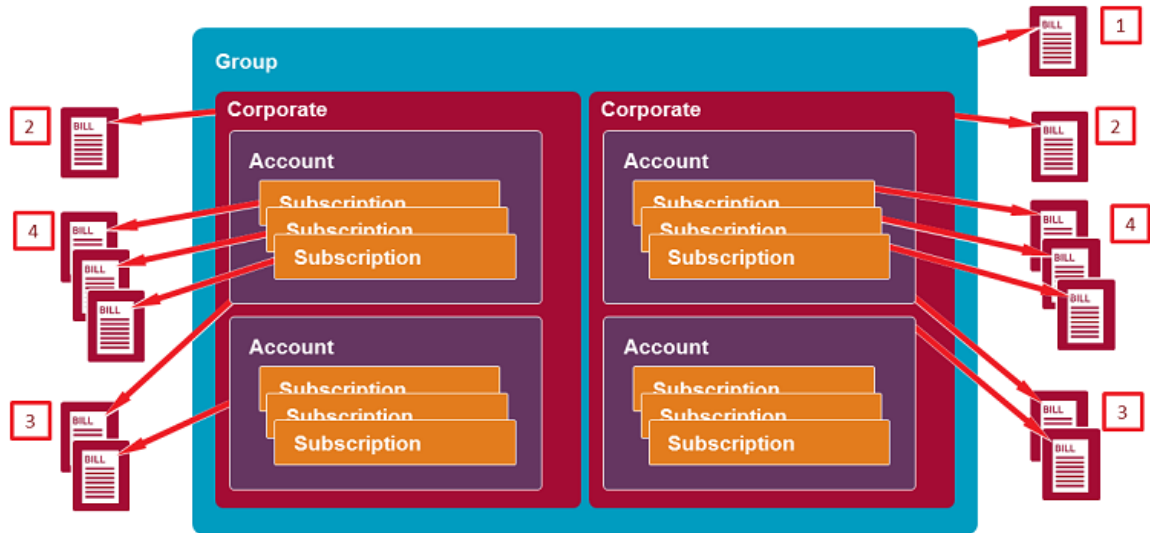


*Corporate Level Logging*

### 2.1.4.3 Group level

Agreements logged at Group level can have consolidation at the Subscription, Account, Corporate or Group level consolidation.

1. Group-level consolidation results in a single bill containing the charges for all Subscriptions below that Group entity that are linked to the Agreement.
2. Corporate-level consolidation results in separate bills for each Corporate below the Group entity that has Subscriptions linked to the Agreement.
3. Account-level consolidation results in separate bills for each Account below the Corporate entity that has Subscriptions linked to the Agreement.
4. Subscription-level consolidation results in individual bills for each Subscription linked to the Agreement.



*Group Level Logging*

### 2. 1. 5 Billing Media

The media and format to be used outside of CMP for the bills produced, for example e-billing, Braille or audio.

### 2. 1. 6 First/Final invoice controls

Govern when first and final bills are produced, either on the normal bill cycle, or a configurable number of days after connection or disconnection.

First and final invoice controls allow first and/or final invoices to be sent on the cycle day or sent off cycle. For example:

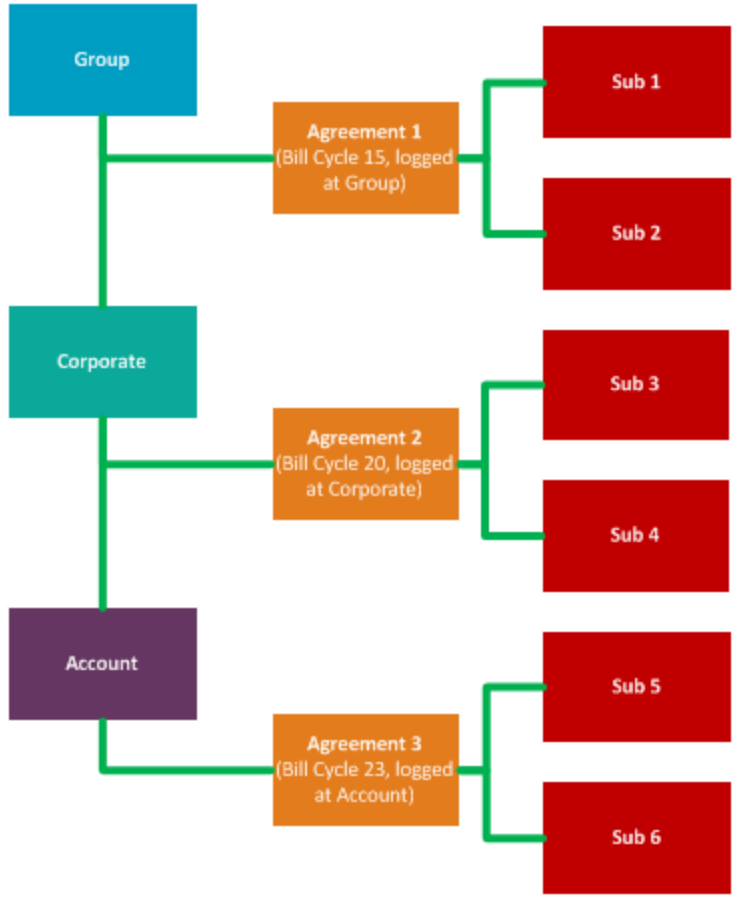
- It is common for a service provider to send a first bill in the next bill run after connection, to get early sight of a customer’s willingness to pay.
- Final bills are typically sent a small number of days after disconnection rather than waiting until a customer’s next cycle.

Where first/final bills are set to be triggered off cycle, a configurable number of days delay can be set from connection/disconnection respectively. This is configured against a Subscriber’s Tariff.

### 2. 1. 7 Agreement

The CMP Agreement controls how an Account and its Subscriptions are billed. The Agreement controls when the bill is sent, where the bill is sent to, and what the bill looks like.

An Agreement can be created at Group, Corporate or Account level within a CMP hierarchy. It is possible to have multiple Agreements in a CMP hierarchy, for example:



*Multiple Agreements in a CMP Hierarchy*

- An Account has zero, one or more Subscriptions
- An Agreement applies to zero, one or more Subscriptions
- An Account has zero, one or more Agreements
- An Agreement applies to one Account (which may be a group or corporate posting account).

If the billing requirements of each Subscription are the same, they can be linked to the same Agreement.

If the billing requirements are different between Subscriptions on the same Account, the required Subscriptions can be linked to different Agreements.

## 2.2 Invoice Production

Invoice Production is responsible for producing invoice charges. This includes:

- Generating charges - Items such as monthly line rental, and usage.
- Applying credits - For example if the subscription has been overcharged and is due

money back.

- Applying discounts - Discounts (if configured) are applied to services and/or usage.

Invoice Production can produce two types of invoices depending on what needs to be billed:

- Subscription invoice - an invoice containing all subscription related charges including but not restricted to usage (calls, data, messaging) services, account level services, termination fees, and discounts.

An agreement controls when and how subscription Invoices are produced.

- Non-Subscription invoice - an invoice containing one or more charges related to a subscription, for example sales ledger adjustments and account level charges.

An account controls when and how non-subscription Invoices are produced.

Subscription invoicing and/or non-subscription invoicing are typically scheduled to run together on each bill cycle. It is possible to run them independently.

The following types of invoices are produced:

- FIRST: Produced shortly after subscription connection and includes only non-usage advance charges.
- NORMAL: The cyclical subscription invoice that contains both usage and non-usage charges.
- FINAL: Produced when the subscription has terminated and may result in a credit back to the subscription when charges have been paid in advance.

Invoice Production involves:

- Selecting subscriptions for invoicing
- Subscription invoicing
- Non-subscription invoicing
- Tax Calculation.

## 2.2.1 Selecting Subscriptions for Invoicing

Subscriptions are selected for invoicing if they are either due to be billed or have requested an off-cycle bill.

When Invoice Production is initialised, CMP identifies customers with an agreement specifying they are due to be billed, based on the **Next Expected Invoice Date**. A view of the usage data for these customers is taken and stored. Invoice Production creates bills for customers based on this view. Any usage data recorded after the data snapshot but before Invoice Production generates the specific customer invoice, will be picked up and used when that customer is next invoiced.

The data snapshot is built using specific selection criteria;

- For Subscription invoicing
  - If the **Next Expected Invoice Date** on the agreement is equal to the date of billing, subscriptions associated to that agreement will be billed.
  - If a subscription has been connected or disconnected, the agreement is checked to see if a First Invoice or Final Invoice should be created, irrespective of the agreement's **Next Expected Invoice Date**.
- For Non-Subscription invoicing
  - A check is made against all non-subscription charges to identify if the **Bill Immediately** flag is set to identify the start date for the charge.
  - If no agreement number is specified, the account associated with the charge is used to retrieve information on when and how to bill.

Subscriptions are excluded from invoicing if:

- They are not connected
- Already have had their final invoice produced
- Have been explicitly excluded from invoicing, pending review
- Are in a [pre-activated state](#)<sup>1</sup>.

## 2.2.2 Subscription Invoicing

After Invoice Production identifies the invoices to produce, and stores a view of usage data, Subscription invoicing begins. Subscription invoicing is responsible for billing all subscription-level charges and credits.

All charges are applied against a service code. This code is used to:

- Show what the charge relates to
- Drive how the charge is categorised for accounting purposes
- Drive how the charge is displayed on the bill through the concept of a service group.

A recurring service can be configured to charge in advance or in arrears and to prorate when applied or expired. Invoice Production handles any required pro rata calculations for fractions of a monthly charge. CMP collates charges for usage and events against services. It maps each usage classification to a unit type service, which groups charges on the bill.

CMP creates invoice lines based on the chosen consolidation level where charges or credits exist.

An Invoice Header record is created for each agreement in the supplied range. The Invoice Header includes, but is not limited to, the Invoice Number, Invoice Date, and Account Number. Invoice Detail records are created under the associated Invoice Header for each charge applied to the invoice.


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<sup>1</sup> A pre-activated subscription is one that resides in CMP database but is not currently assigned to a real customer.

Once all charges have been calculated for a subscription and invoice details have been created, the values in the fields Last Invoice Date and Next Expected Invoice Date for the Agreement and the Billed Up To setting for Services are updated.

Invoice Production continues to create invoices, updating and adding records until all subscription related charges that were due to be billed are processed.

The Billing module then moves on to non-subscription invoicing.

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-  Multi-thread subscription invoicing ensures Invoice Production runs efficiently, splitting subscription related charges into threads.
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### 2. 2. 3 Non-Subscription Invoicing

Non-subscription invoicing involves billing all non-subscription related charges such as Sales Ledger Adjustments. CMP creates invoice lines based on services for any identified non-agreement driven charges.

As soon as a non-subscription related charge is raised, a *pending* invoice header record and *pending* invoice detail record are created for that specific charge.

At the time of billing, records are taken from the pending invoice header and pending invoice detail files and moved to an actual invoice header and invoice detail lines. Once moved, the records are removed from the pending invoice header and detail files.

A non-subscription charge can either produce its own invoice or be added to an existing invoice:

- Where a non-subscription charge(s) is to be added to an existing invoice, a new invoice detail record is created under an existing invoice header.
- Where a non-subscription invoice is to be created for the non-subscription charge (s) a new invoice header record and invoice detail record(s) are created.

To identify how a non-subscription charge should be invoiced, CMP checks the related agreement number and how the **Bill Immediately** flag has been set. Further checks are carried out if required:

Agreement Number Identified?	Bill Immediately?	Result
Yes	Yes	<p>An invoice is produced during the next bill run irrespective of the Next Expected Invoice Date on the Agreement, providing non-subscription invoicing is running. However, the Agreement is checked to identify how non-subscription charge(s) that are to be billed immediately, are consolidated:</p> <ul style="list-style-type: none"> <li>• If an invoice has already been created at the required consolidation level, the non-subscription charge is added to that existing invoice header as a new invoice detail record.</li> <li>• If no invoice header exists at the required level, a new invoice header and invoice detail record are created. If any non-subscription charges are subsequently identified at the same required level, they are added to the existing invoice header as a new invoice detail record.</li> </ul>
Yes	No	<p>The agreement is checked to identify how non-subscription charges are to be consolidated and the Next Expected Invoice date is checked for when to bill.</p> <p>If the Next Expected Invoice date is the current day the non-subscription charge will be billed. If the Next Expected Invoice date is not the current date the non-subscription charge will remain in the pending invoice header and detail files until the required bill date.</p> <p>The agreement is checked to identify how non-subscription charge(s) that are to be billed are consolidated:</p> <ul style="list-style-type: none"> <li>• If an invoice has already been created at the required consolidation level, the non-subscription charge is added to that existing invoice header as a new invoice detail record.</li> <li>• If no invoice header exists at the required level, a new invoice header and invoice detail record are created. If any non-Subscription charges are subsequently identified at the same required level, they are added to the existing invoice header as a new invoice detail record.</li> </ul>
No	Yes	<p>A new invoice is produced during the next bill run. As no agreement number has been identified, the CMP Account where the non-subscription charge has been raised is checked to identify whether the non-subscription charges should be consolidated:</p>

Agreement Number Identified?	Bill Immediately?	Result
		<ul style="list-style-type: none"> <li>• If the <b>Consolidate Non-Subscription Invoice</b> flag is set to <b>Yes</b>, all non-subscription charges billed in the same billing run are added to the same invoice header, resulting in one invoice being produced.</li> <li>• If the <b>Consolidate Non-Subscription Invoice</b> flag is set to <b>No</b>, an invoice header (and an invoice detail record) are created for each non-subscription charge (each non-subscription charge produces its own invoice).</li> </ul>
No	No	<p>As the Non-Subscription Charge is set to not <b>Bill Immediately</b> and no agreement number has been specified, the CMP account where the non-subscription charge has been raised is checked to identify the Non-subscription <b>Next Expected Invoice</b> date and whether the non-subscription charges should be consolidated.</p> <ul style="list-style-type: none"> <li>• If the <b>Next Expected Invoice</b> date is the current day the non-subscription charge will be billed. If the <b>Next Expected Invoice</b> date is not the current date the non-subscription charge will remain in the pending invoice header and detail files until the required bill date.</li> <li>• If the <b>Consolidate Non-Subscription Invoice</b> flag is set to <b>Yes</b>, all non-subscription charges billed in the same billing run are added to the same invoice header, resulting in one invoice being produced. If the <b>Consolidate Non-Subscription Invoice</b> flag is set to <b>No</b>, an invoice header (and an invoice detail record) are created for each non-subscription charge (each non-subscription charge produces its own invoice).</li> </ul>

### 2.2.4 Tax Calculation

Service configuration also drives how the associated revenue is reported in the ledgers and the tax rate applied to the charge. Tax is calculated against the sum of all charges for a tax code. CMP handles Include, Exclusive, Exempt and Account Override for tax.

Invoice Production is responsible for creating an Invoice Tax Breakdown record per VAT code appearing on an invoice.

For each Tax Breakdown record, the Invoice Number, Tax Code, Tax Rate, Net Amount, Tax Amount values are stored. The Invoice Header is updated with the total number of Tax Breakdown lines for each invoice.

Once all tax lines have been created in the Invoice Tax Breakdown database file, Invoice Production terminates successfully, allowing Invoice Print to be initiated.

## 2.3 Statement Production

A statement of account supplements an invoice showing balance information and the total amount due to be paid. The statement includes any balance brought forward, transactions since the last statement and the new invoice(s) from the latest invoice run.

Statement Production is responsible for identifying and producing statements, calculating the customer's closing balance for their account and updating their payment due date.

A statement in CMP is a snapshot of the transactions - invoices, adjustments and payments - that have been posted to the sales ledger for a given account. Once a statement is produced, those transactions are always associated with that statement. A statement is not an invoice. An invoice has a tax aspect to it, whereas a statement consists of an opening balance, closing balance, amount in query and transactions on an account at a particular point in time.

Statement Production calculates the following:

- An opening balance - An opening balance is derived from the last statement closing balance, if one existed otherwise the opening balance is zero.
- A closing balance - Closing balance is opening balance plus any charges this period.
- A list of transactions.



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If there are open amounts in query on the account, these are excluded from the balance calculations. In a corporate scenario, CMP allows for suppression of statements at lower levels in a CMP hierarchy and for them to be consolidated at either corporate account or group account.

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## 2.4 Bill Print

Once invoice and statement details have been generated, they must be organised in a manner that is convenient for printing by a third party print bureau. The Bill Print produces an encrypted file that contains subscription invoice charges and statement information. Bill Print organises the invoice and statement details into logical documents that correspond to the artefacts generated by the print bureau. The print bureau collects the file and uses it to generate actual invoices and statements according to subscribers' needs, for example large font or audio files.

Each encrypted file that Bill Print produces has a header section with global data and can include a series of containers known as envelopes. Each envelope represents:

- A distinct document address - for example delivery address or email address.
- Type - for example original or copy.
- Format - for example Braille or large font.

An envelope can contain any of the following sections:

- **Statement**

A statement is optional for an account. If included, it shows an opening balance, closing balance and a breakdown of transactions (payments and adjustments) for the account at that point in time.

- **Invoice**

An Invoice represents a subscriber's charges for the current billing period. The invoice is broken into two sections:

- Account Charges - for example sales ledger adjustments and hardware orders.
- Subscription Charges - for example monthly line rental and usage.

- **Detailed Bill**

A Detailed Bill shows a breakdown of a subscriber's usage in the current billing period and the baskets from which the usage was consumed. A basket can be:

- money - for example £5.00
- kilobytes - for example 1GB of data
- minutes - 1000 texts



For more detailed information on the files produced, see *Bill Print* in the *CMP Batch Jobs and JSON Schemas Guide*.

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CMP allows the same subscriber to have multiple addresses - for example, the invoice could be sent to one address and the detailed bill to another. This is represented in the file as two distinct envelopes.

Bill Print also handles Copy Requests, where a subscriber rings the Call Centre and requests a copy of a previously issued invoice, detailed bill or a statement. These also result in the creation of distinct envelopes.

Agents can also request a reprint of a bill from within AgentView. This allows agents to request a reprint of a bill on the customer's behalf to which a charge can be applied. The reprinted bill is sent to the address on the original invoice, and can be in a different billing media format to that of the original invoice.

When Bill Print completes successfully, the encrypted JSON file is created in a secure location. An adapter is responsible for taking the file to the print bureau.

## 2.4.1 Bill Formatting

The billing files generated by the Bill Print process are used to generate the physical and/or electronic bills that are sent out to end customers and made available through the self-care applications and CMP GUI. As an additional optional component, MDS Global can provide a Billing Formatting solution to generate the PDF bill for distribution and enquiries.

If the customer chooses to include this option, the billing files are automatically sent to the Billing Formatting system at the end of the invoice production and print process. The format of the PDF bills is fully customisable to meet the specific needs of the Digital Service Provider including branding, styling and layout. The Bill Format Designer provides a graphical, flow-based user interface to enable data manipulation and formatting to render the bill data within the defined presentation template. MDS Global can provide an example presentation template to use as the basis for the operator-specific bill format.

Once the PDF bills have been generated the Bill Formatting system can automatically email the bills out to end customers based on the email address provided in the bill file. The formatting process also supports generation of PDF bills for printing or distribution in other media types such as Braille or audio.

## 2.5 Invoice Posting

Every subscription in CMP is part of an account. The account balance needs to reflect the activity that happens throughout an account's lifecycle - for example invoices produced, payments received, or refunds issued.

When invoices are produced, they need to be posted into the Sales Ledger, the ledger system that consists of all the invoices and payments relating to an account, so that a subscription's account balance reflects the invoice just produced.

Invoice Posting extracts invoice data, which will then be posted to the ledger system. Invoice Posting takes the output from Invoice Production and posts invoice details and charges to the Sales Ledger thus updating customer Account Balances. The value of an invoice is included as a debit against the customer's account balance and shown in AgentView.

After the number of days specified by the account's payment terms has elapsed, payment of the invoice becomes due.

Extract, response and error files are produced in JSON format and an adapter has been developed for third party financials software, should the customer's CMP deployment be integrated with such software.

## 2.6 General Ledger

In CMP, the account balance is held in a ledger system known as the Sales Ledger, which consists of all the invoices and payments relating to a particular account. The ledger system also includes a General Ledger, where the amounts due and payments received are allocated to various General Ledger accounts, depending on how a company wants to organise its financials. A general ledger is a set of numbered accounts that a business uses to keep track of its financial transactions and to prepare financial reports. Each account is a unique record summarising each type of asset, liability, equity, revenue and expense.

The General Ledger job creates a batch detailing the daily breakdown of all payment, invoice, purchase and bond redemption information (along with an associated nominal code) for a particular calendar month.

General Ledger extracts the following based on the job run period:

- Payments - The payments nominal code is specified at the top of the Payments section in the General Ledger JSON output. The following breakdown exists within the Payments section of the JSON output:
  - Recurring - covers both successful and failed (reversals) recurring payment records accumulated by payment type (Direct Debit, VISA, etc) for each day within the job run period. Failed recurring payments will appear as two records in the extract, one for the original payment and one for the reversal. These transactions may appear on separate days and in separate extracts based on when the payment was drawn and the reversal occurred.
  - Non-recurring - covers only successful one-off payments for each day within the job run period.
  - Online - covers only successful online payments for each day within the job run period.
  - Bond - covers only successful bond payments for each day within the job run period.
  - Refund - covers only successful refund payments for each day within the job run period.
  - Prepaid Balance - covers only successful payments from a prepaid balance for each day within the job run period.
- Invoices - The invoices nominal codes are specified at the top of the Invoices section in the General Ledger JSON output.
  - Summary of tax - creates a record for each distinct day and tax rate. If there are multiple tax rates separate totals are accumulated for each tax rate.
  - Summary of the nominal charges - accumulates a total per day per nominal code.
- Bond redemptions - a bond redemption summary record is created totalling bond redemptions for each day within the job run period. Zero totals for a day are not

reported. The bond redemptions nominal code is specified at the top of the Bond Redemptions section in the General Ledger JSON output.

- Purchases - a purchases summary record is created for each purchase type (pre-paid, postpaid or balance) totalling purchases for each day within the job run period. Zero totals for a day are not reported. The purchases nominal code is specified at the top of the Purchases section in the General Ledger JSON output for each purchase type.

## 2.7 Spend Analyzer Extract

Spend Analyzer is an e-billing and analytics tool that provides the ability to understand and control spending and service utilisation. It provides the ability to view invoices and analyse spend over invoice line and usage information. Spend Analyzer enables users to present a combined online view of products and services, reducing billing complexity.

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 Spend Analyzer Data Loader to load the extracted invoice and hierarchy data into the Spend Analyzer database. This allows customers to view electronic versions of their invoices via Spend Analyzer instead, or as well as paper bills being produced.

The relevant Java batch jobs are Hierarchy Analytics and Invoice Analytics.

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 For more information, see the *CMP Batch Jobs and JSON Schemas Guide*.

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## 2.8 Calls Management and Usage Archiving

Usage records that have been successfully billed are moved from the Unbilled file to a Calls Management Archive file. A separate Calls Management Archive file is created for each discrete invoice run.

Once invoiced, billed usage records are viewable in AgentView from the **Invoice Details** screen. Invoice Details can also be retrieved via CMP Web Services.

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 The relevant job is Usage Archiving. For more information, see the *CMP Batch Jobs and JSON Schemas Guide*.

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## 2.9 Invoice Reversal

In AgentView, you can reverse a full or partial invoice or invoice line, if:


- The invoice or invoice line has not previously been reversed.
- The invoice amount or invoice line amount is not equal to zero.

When you reverse an invoice or invoice line:

- An invoice or invoice line with a positive value results in a credit back to the customer.
- An invoice or invoice line with a negative value results in a charge back to a customer.

Full and partial invoice reversal takes place in the **Account Summary** screen in the **Financials > Transactions** lower panel, where the right-click options allow you to **Reverse Full Invoice** or **Reverse Part Invoice**.

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 See the *AgentView Online Help* for step-by-step instructions.

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When selected, the reversal option generates the invoice reversal workflow event at account level. The workflow event contains Workflow Event Sales Ledger Adjustment records for every invoice detail line and adjusts the amounts accordingly - if the original value was positive, the adjustment is negative and vice versa.