CGM and PCS Information Guide V2.0

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Cboe Clear

Customer Gross Margining – Technical Overview

Background

Customer Gross Margining ("CGM") is a Commodity Futures Trading Commission ("CFTC") mandate that, pursuant to CFTC Regulation 39.13(g)(8)(i), requires a derivatives clearing organization ("DCO") to collect initial margin on a gross basis for each clearing member's customer account(s) equal to the sum of the initial margin amounts that would be required by the derivatives clearing organization for each individual customer within that account if each individual customer were a clearing member. Additionally, CFTC Regulation 39.13(c)(1)(i) requires DCOs to capture additional information, including legal entity identifiers to the extent that this information is available.

To satisfy these requirements, Cboe Clear U.S. LLC ("Cboe Clear US" or "CCUS") requires Futures Commission Merchant ("FCM") Clearing Members to submit a data file that identifies the positions of its customers each business day so that Cboe Clear US may calculate the appropriate margin. A business day is defined as any day on which the Clearinghouse is open for clearing; additional information can be found in the Cboe Clear US rulebook .

The CGM file should be in FIXML format, which is in line with standard industry practice.

Submission process and deadlines for PCS and CGM files

FCM Clearing Members must submit files by the following deadlines:

The Position Change Specification ("PCS") submission can either be uploaded to a Secure File Transfer Protocol (SFTP) site or a manual adjustment can be made via the Client Member Portal ("CMP") on the Position Adjustment page. File submissions can be made anytime; however, manual position adjustments can only be made after 4:30 pm CT. Please note, if any PCS changes are made, either by file submission or manual adjustment, after 7:30 pm CST the adjustment will be part of the morning adjustments; this will not impact the initial margin requirement calculations. For morning adjustments, adjustments must be submitted by 8:00 am CT the following business day. For a given contract, the latest submission either via file or the CMP Positions Adjustment screen, will be used when the PCS submission deadline is reached. If a PCS adjustment is not received, positions will not be netted.

The CGM submission deadline is 8:00 pm CT.

Please note the following, **CGM files should be sent after any PCS adjustments.** Should a PCS file or manual adjustment be received and processed after a CGM file has been sent, a new CGM file submission with the latest correct information will be required. If a new CGM file is not sent, the margined portfolio for the account specified on the files will only be based on the most recent PCS file received. See the Customer Gross Margin File vs. CCUS Position Reconciliation section below for complete details on the process for determining the margined portfolio used to calculate margin requirements. An exception for the need to resubmit CGM files applies to making morning after PCS adjustments. In such instances, the CGM positions used to compute margin requirements from the previous business day will be

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reprocessed to refresh the intraday CGM account position that is used for risk monitoring purposes by the Clearinghouse. Please note that the final snapshot of intraday CGM account positions will be used for end-of-day ("EOD") initial margin calculations if no CGM file is received.

SFTP Files Submission

Information related to SFTP credentials will be provided by the Clearing Membership Team once onboarding has been completed.

When logging into the SFTP site for the first time there will be two visible directories, an inbound and outbound directory. For the initial setup, the SFTP user will need to create two new directories within the inbound directory, one for PCS files and the other for CGM files. Please note, the naming convention for the directories should be in lower case, i.e., cgm or pcs.

PCS files should be delivered to the **Inbound/pcs** directory and CGM files should be delivered to the **Inbound/cgm** directory.

Once a file has been processed, the file will be moved to its respective processed directory, either **Inbound/pcs/processed** or **Inbound/cgm/processed**.

Interim and final reports may be downloaded from the outbound directory. PCS reports may be downloaded from **Outbound/pcs** and CGM files can be download from **Outbound/cgm**.

If you need assistance with the submission of the file, please contact the Clearing Operations Team via email clearus.operations@cboe.com

Position Change Submission File vs. CCUS End-of-Day Position

A PCS file must be submitted each business day by each FCM Clearing Member for all clearing accounts to notify the Clearinghouse of the open interest in each account. CCD uses this information to net down the EOD positions in each clearing account, leaving the clearing position that will be used as the basis for margin requirements subject to the following validations.

If the reported long position on the PCS file is greater than the EOD gross long or less than the EOD net position for a given contract, that entry on the file will not be used to net down the position for that contract and an updated file will need to be submitted or a manual open interest adjustment will need to be made in The Clearing System ("TCS"). Note, each position adjustment is assessed separately. TCS will process valid entries within a file, ultimately selecting the latest entry for an account's position. See the example below for details.

Example: If the EOD gross position for a given contract was long five lots and short four lots, the valid minimum and maximum long positions that could be reported on the PCS file would be one lot and five lots, respectively.

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If a CGM file is received and the gross long and gross short positions for each contract in the file are less than what is recorded internally, inclusive of any PCS adjustments, the difference will be assigned to a "Naked" CGM account. If the total quantity represented in the CGM file is greater than the position recorded internally, CGM quantities will be used for margining.

Please note, that CMP displays one CGM account named "Naked" which is the gross position for all EOD positions greater than what is represented on the corresponding CGM file. This Naked account will be margined as an omnibus account and no spread offsets will be applied.

Calculation of customer margins at the intraday settlement cycle

CCUS does not require FCM Clearing Members to submit a CGM position file at the intraday settlement cycle. Therefore, CCUS will evaluate the risk exposure of the customer positions of the FCM on a net basis across all customers both at the EOD clearing cycle and at the intraday clearing cycle. The actual customer-origin gross margin requirement at the intraday cycle is determined as the gross margin requirement from the previous day's EOD cycle, plus any amount by which the overall net risk exposure has increased. Accordingly, there is no requirement to submit an intraday CGM position file and the customer-origin margin requirement at intraday will be either the same as it was at the previous EOD, or a larger value if the overall customer risk exposure calculated on a net basis has increased.

File Submission

Naming Convention and Details of CGM File

Naming Convention of CGM File

The file naming convention is as follows.
FileType_CMF_YYYYMMDD_FileNumber.xml where:

- FileType = **CGM**
- CMF = Clearing Firm ID
- YYYYMMDD = Represents clearing business date
- FileNumber = "01," "02," etc.

If you need assistance with the submission of the file, please contact the Clearing Operations Team via email clearus.operations@cboe.com.

Details on the CGM file via FIXML

The file should be formatted with a heading such as:
<?xml version="1.0"?>

The file should be terminated with trailing tags such as:
<FIXML>
  <Batch>

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The following page displays a data sample and formatting for a FIXML Position Maintenance Request message from start to finish.

```
<?xml version="1.0"?>
<FIXML>
  <Batch>
    <PosMntReq Actn="1" AdjTyp="4" BizDt="2023-04-25" ReqID="SmOp3ECpBpLEErJB"
SetSesID="EOD" TxnTm="2023-04-27T18:55:35Z" TxnTyp="4">
      <Pty ID="DCO" R="21"/>                                  //Cboe Clear US value is CCDB
      <Pty ID="LEI" R="7"/>
      <Pty ID="CGM Name" R="24">
        <Sub ID="Origin" Typ="26"/>                           // Where: 1=Customer; 2=House
        <Sub ID="Customer Account Name" Typ="5"/>
        <Sub ID="Email" Typ="8"/>
        <Sub ID="Phone Number" Typ="7"/>
        <Sub ID="Account Type" Typ="41"/>
        <Sub ID="Omnibus Account Number" Typ="42"/>
        <Sub ID="Country of origin" Typ="31"/>
        <Sub ID="Company address" Typ="6"/>
        <Sub ID="Contact person of Company" Typ="9"/>
        <Sub ID="Office Code" Typ="24"/>
      </Pty>
      <Pty ID="CFTC Reportable Number" R="52"/>
      <Pty ID="Exchange member ID" R="1"/>
      <Pty ID="DCM" R="22"/>                                  //Cboe Digital's value is XCBD
      <Pty ID="clearing_member_firm" R="4"/>
      <Instrmt Exch="XCBD" ID="BTCM23" MMY="20230630" SecTyp="FUT"/>
      <Qty Long="0" Short="2" Typ="TQ"/>
    </PosMntReq>
  </Batch>
</FIXML>
```

Field explanations

Actn = The type of adjustment where the value remains static and will always be 1.
AdjTyp = Customer specific submission where the value remains static and will always be 4
BizDt = Clearing business date in the form of YYYYMMDD
ReqID = Position maintenance request message
SetSesID=Settlement cycle
TxnTm=Submission time in UTC format, YYYY MMDDTHH:MM:SSZ
TxnTyp = Position specification where the value remains static and will always be 4

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Naming Convention and Details of PCS File

Naming Convention of PCS File

The file naming convention is as follows.
FileType_CMF_YYYYMMDD_FileNumber.xml where:

- FileType = **PCS**
- CMF = Clearing Firm ID
- YYYYMMDD = Represents clearing business date
- FileNumber = “01,” “02,” etc.

Details on the PCS file via FIXML

The file should be formatted with a heading such as:
<?xml version="1.0" encoding="UTF-8"?>

The file should be terminated with trailing tags such as:
<FIXML>
<Batch>

```
<PosMntReq ReqID="1" TxnTyp="4" Actn="1" BizDt="2004-07-21" TxnTm="2004-07-21T17:00:49Z" AdjTyp="3" SetSesID="EOD">
<Pty ID="DCM" R="22" />                                  //Cboe Digital’s value is XCBD
<Pty ID="Exchange member ID" R="1">
<Sub ID="Origin" Typ="26" />                             // Where: 1=Customer; 2=House
</Pty>
<Instrmt Exch=" XCBD" CFI="FXXXSX" ID="BTCU23" MMY="20230929" />
<Qty Long="134" Typ="TQ" />
</PosMntReq>
</Batch>
</FIXML>
```

Field explanations

ReqID = Position maintenance request message
TxnTyp = Position specification where the value remains static and will always be 4
Actn = The type of adjustment where the value remains static and will always be 1.
BizDt = Clearing business date in the form of YYYYMMDD
SetSesID=Settlement cycle
TxnTm=Submission time in UTC format, YYYY MMDDTHH:MM:SSZ
AdjTyp = PCS submission where the value remains static and will always be 3
SetSesID = Settlement cycle

Notable Items

There are two variations to note:

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- Both the CGM and PCS files are able to process either a product code, i.e., BTC, or the contract code, i.e., BTCM23 as the Instrmt ID value.
- The PCS file may accept either a CFI or SecTyp code.

Please choose the appropriate value that best suits the business need.

Omnibus Accounts and CGM Position Reporting

The CGM file format supports fully disclosed, partially disclosed, or entirely non-disclosed omnibus accounts. An entirely non-disclosed omnibus account is an omnibus account with no detail child accounts. A fully disclosed omnibus account is an omnibus account with detail accounts, and the sum of the child account positions is equal to the omnibus account positions. A partially disclosed omnibus account is a child account(s), but the sum of the positions in detail accounts is less than the positions in the omnibus account. If the sum of the positions in child accounts is greater than that submitted for the omnibus account, then the position in the omnibus account will be effectively increased to reflect the actual sum of the positions reported in the child accounts. The calculation of the margin requirement for an omnibus account are calculated as the sum of the requirements for each disclosed child account and the remaining non-disclosed positions are margined without recognizing any risk offsets. The total requirement for the omnibus account is then the sum of the portfolio requirements for the disclosed child accounts and the non-disclosed positions. In other words, to receive spread offsets within omnibus accounts, position data for the underlying child accounts must be provided along with the omnibus account information.

Customer Gross Margin File vs. CCUS Position Reconciliation

Each business day, Cboe Clear US will compare the positions, submitted by each FCM Clearing Member, to positions as they are known in TCS. CGM file long positions and short positions are totaled separately at the contract level after adjustments from PCS files as well as other post-trade adjustments. A reconciliation process is completed, and the results are reported in a CGM Balancing file, which is made available in each clearing FCM Clearing Member's "Outgoing" folder on the secure FTP site. In the case that submitted CGM gross positions do not match the PCS-adjusted positions in TCS, the omnibus account's margined long and short positions will each be determined by either the CGM OI > PCS-Adjusted OI or the CGM OI < PCS-Adjusted OI scenario, as described below.

- If the submitted gross long and/or short position is greater than the clearing gross long and/or short position, the omnibus account will be margined based on the long/short positions in the CGM file.
- If the submitted gross position in the CGM file is less than the PCS-adjusted gross clearing position, the difference between the CGM longs/shorts and clearing longs/shorts is placed in a Naked CGM account, respectively.
    - Any Naked CGM account is included in the omnibus account's total IM requirement in the same way as a CGM account included on the FCM Clearing Member's file.

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See the section titled Gross Position Source in Appendix A for the complete logic around how the gross position is determined for margin purposes based on the presence of CGM and PCS files as well as how the gross position per the PCS file relates to the cumulative gross position per the CGM file.

Reports available on SFTP Site

For both CGM and PCS adjustments, the results will be documented in reports made available on the FCM's SFTP site. There are a number of files that will be uploaded to the FCM folder and below are the naming conventions and explanation of each of the reports. The reports for CGM and PCS will follow the structure provided in the appendices.

- CGM intermediate report: REPORT_file_name.csv
  - After uploading a CGM file in the specified format, it will undergo processing to generate an intermediate report. This report allows the FCM to see how TCS has handled the data and indicates any processing errors, and if necessary, the FCM can submit an updated version. The report indicates preliminary adjustments that will take place once the submission deadline is reached.
- CGM intermediate report (reprocessed): REPORT_file_name_REPROCESSED.csv
  - If a PCS morning adjustment is made, the CGM positions used to compute margin requirements from the previous business day will be reprocessed to produce this file. The report indicates preliminary adjustments that will take place once the submission deadline is reached.
- CGM Final Report: FINAL_CGM_REPORT_YYYYMMDD_YYYYMMDDhhmmss.csv
  - This report will indicate the position adjustments that TCS has applied after submission deadline, and it will show the positions that TCS will use for EOD margin calculations as well as intra-day risk management.
- PCS intermediate report: REPORT_file_name.csv
  - After uploading a PCS file in the specified format, it will undergo processing to generate an intermediate report. The report indicates preliminary adjustments that will take place once the submission deadline is reached, and adjustments are applied in the system.
- PCS manual adjustment report: MANUAL_ADJ_REPORT_YYYYMMDDhhmmss.csv
  - Report generated for any manual position adjustments made through CMP. The report indicates preliminary adjustments that will take place once the submission deadline is reached.
- PCS Final Report: FINAL_PCS_REPORT_C_YYYYMMDD_YYYYMMDDhhmmss.csv
  - This report will indicate the position adjustments that TCS has applied after the submission deadline, and it will show the positions that TCS will use for open interest reporting.

Positions in Delivery

When submitting a PCS adjustment for financially settled contracts the day before expiration, please ensure the file includes the netting of expired contracts. If necessary, morning adjustments for expired contracts can be made until 8AM CT the day of expiration; it is important to note that a CGM file will not be required for expired contracts if a PCS adjustment is made the day of expiration.

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Firm CGM Margin Calculation Results

Margin calculation results are made available in a csv file that is delivered to each FCM Clearing Member's "Outgoing" FTP directory. The naming convention of the margin results files is "SPNSUM_YYMMDD_timestamp.csv.

For margin-related information please contact the Cboe Clear US Risk Department at clearus.risk@cboe.com

Appendices

Appendix A CGM Report

The following table describes the columns that are present in the CGM Balancing file that is created after CGM information is processed. The file is delivered to the FCM's SFTP and to the Clearing Operations SFTP.

Position	Field Name	Description
1	Date	Trade date
2	Firm Number	Firm code
3	Account Number	The FCM Account number. The naming convention is a combination of the firm code and account type.
4	Account Name	Clearing Member Name
5	Origin	Specifies whether the order is placed by a customer (1=Customer) or if the FCM is placing an order for its own house account (2=House). The Clearing Membership Team populates the value once the account is created.
6	Gross Position Source	An explanation is provided in the table below.
7	Contract	Contract Symbol which is a combination of product code, expiry month and expiry year [PPPMYY]. For example, BTCU23.
8	CGM Account Number / Name / Type	CGM Account Identifiers e.g., ABC123 / Non-Clearing FCM, LLC / Omnibus /
9	CGM Parent Account	If a parent CGM omnibus account number is provided on the submission
10	Clearing Gross Long	FCM's gross long positions in the contract above
11	Clearing Gross Short	FCM's gross short positions in the contract above
12	CGM Gross Long	CGM account's gross long position
13	CGM Gross Short	CGM account's gross position
14	Customer Account Balancing (CAB) Gross Long	The long quantity in a Naked CGM Account when the total of the CGM account long positions is less than the clearing account's gross long position based on the PCS file by contract.
15	CAB Gross Short	The short quantity in a Naked CGM Account when the total of the CGM account short positions is less

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		than the clearing account's gross short position based on the PCS file by contract.
16	File Ref	The file name provided when file is uploaded to SFTP site
17	Error Message	If an error occurs, an error message will be captured in this field

Gross Position Source

The following table describes the scenarios in which different values will be reported in the Gross Position Source field in the CGM Balancing File. Notably, for purposes of the PCS File Status and CGM File Status fields below, when a PCS File Status or CGM File Status indicates "Received" the assumption is that the file was received and able to be successfully processed by the Clearinghouse. Additionally, references to "EOD Position" in the CGM Position Reconciliation field consider whether a PCS file was received. Specifically, if a PCS file was received and successfully processed, then the EOD Position will have been netted down in accordance with the quantities included on the PCS file while if a PCS file was not received then the EOD Position will either be the CGM File when one is received or the CGM Intraday position, which will be based on the Gross/Net designation of CGM account numbers passed on orders directly or mapped from the Customer Account Reference.

PCS File Status	CGM File Status	CGM Position Reconciliation	Gross Position Source Value*
Received	Received	EOD Position = Cumulative CGM Position	CGM File – No Adjustment
Missing	Received	EOD Position = Cumulative CGM Position	CGM File – No PCS File
Received	Received	EOD Long Position > Cumulative CGM Long Position	PCS File – Naked Long Qty Added
Missing	Received	EOD Long Position > Cumulative CGM Long Position	CGM Intraday – Naked Long Qty Added
Received	Received	EOD Long Position < Cumulative CGM Long Position	CGM File – CGM Long Qty Exceed PCS File**
Missing	Received	EOD Long Position < Cumulative CGM Long Position	CGM File – CGM Long Qty Exceed CGM Intraday**
Received	Received	EOD Short Position > Cumulative CGM Short Position	PCS File – Naked Short Qty Added
Missing	Received	EOD Short Position > Cumulative CGM Short Position	CGM Intraday – Naked Short Qty Added
Received	Received	EOD Short Position < Cumulative CGM Short Position	CGM File – CGM Short Qty Exceed PCS File**
Missing	Received	EOD Short Position < Cumulative CGM Short Position	CGM File – CGM Short Qty Exceed CGM Intraday**
Received	Missing	N/A	PCS File – No CGM File
Missing	Missing	N/A	Intraday CGM – No PCS or CGM Files

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*To the extent that multiple conditions are true, e.g., EOD Long Position is greater than the Cumulative CGM Long Position and EOD Short Position is greater than the Cumulative CGM Short Position, then multiple Gross Position Source Values will be reported as follows: “PCS File – Naked Long Qty Added | PCS File – Naked Short Qty Added”.

**In these scenarios, the gross position as represented by the CGM portfolios used to calculate the SPAN component of a clearing account’s initial margin requirement (Cumulative CGM Position) will be greater than the EOD Position regardless of the source of the EOD Position.

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Appendix B PCS Report

The following table describes the columns that are present in the PCS report that is created after PCS information is processed. The file is delivered to the FCM's SFTP and to the Clearing Operations SFTP.

Position	Field Name	Description
1	Date	Trade date
2	Firm Number	Firm code
3	Account Number	Account Type
4	Account Name	Clearing Member Name
5	Origin	Specifies whether the order is placed by a customer (1=Customer) or if the FCM is placing an order for its own house account (2=House). The Clearing Membership Team populates the value once the account is created.
6	Exchange	The exchange code.
7	Product	Product code
8	Product Suffix	Indicates whether the contract is a future or option.
9	Contract	Exchange contract Symbol which is a combination of product code, expiry month and expiry year [PPPMYY]. For example, BTCU23.
10	Submission Type	Description of PCS submission: PCS File Manual Submission
11	Gross Long	The EOD gross long position that is documented in TCS.
12	Gross Short	The EOD gross short position that is documented in TCS.
13	Qty Submitted	The long quantity submitted by the FCM.
14	Gross Long Adj	The EOD adjusted gross long position after netting down based on the quantity included for the contract.
15	Gross Short Adj	The EOD gross short position the clearinghouse knows from TCS.
16	File Ref	The file name provided when file is uploaded to SFTP site.
17	Time Processed	The time the file was processed.
18	Time Applied	The time at which the actual adjustments took place for the file PCS submission.
19	Status	Field will indicate whether the file submitted is valid or if an error occurred.
20	Error Message	If an error occurs, an error message will be captured in this field

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