

Cash Optimization Service Procedures of Nasdaq Clearing

Introduction

The Cash Optimization Service is a payment netting arrangement whereby amounts in a Permitted Currency across all Clearing Accounts or Integrated Trading and Clearing Accounts (“Clearing Accounts”) held (or administered) by a Clearing Member, Direct Pledging Customer or Direct Clearing Client (as defined in the Clearing Rules of Nasdaq Derivatives Markets) or an Account Holder (as defined in the Clearing Rules of Nasdaq Commodities) are netted for operational efficiency. These Procedures set out certain operational aspects of that Cash Optimization Service. The Procedures should be read in conjunction with the abovementioned rules, as applicable.

Capitalised terms used in these Cash Optimization Procedures, which are not otherwise defined herein, shall have the meaning as set out in such rules, as amended from time to time. Clearing Members, Direct Pledging Customers, Direct Clearing Clients and Account Holders are jointly referred to as “Participants” and each a “Participant”.

All times detailed in these Procedures refer to times in Sweden, unless expressly stated otherwise.

Contents

These Procedures cover the following:

1. Account Structure
2. The Process Flow for the Cash Optimization Service
3. Daily Cycle
4. Provision of Collateral

1. Account Structure

In the clearing system, a Participant will have the following accounts:

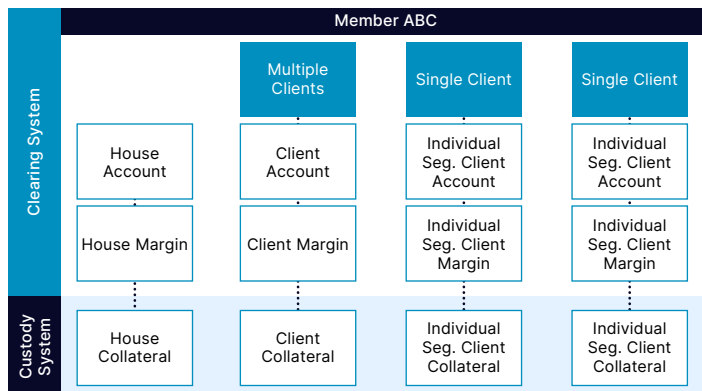
- Clearing Account: this account holds the open positions.
- Margin Requirement Account: this account summarises the margin requirements in respect of the Clearing Account
- Cash Settlement Account: this account summarises the Cash Settlement Amounts that arise in respect of the positions in the Clearing Account
- Cash Optimization Account: this account summarises the cash optimization transactions.

In the custody system, a Participant will have the following account:

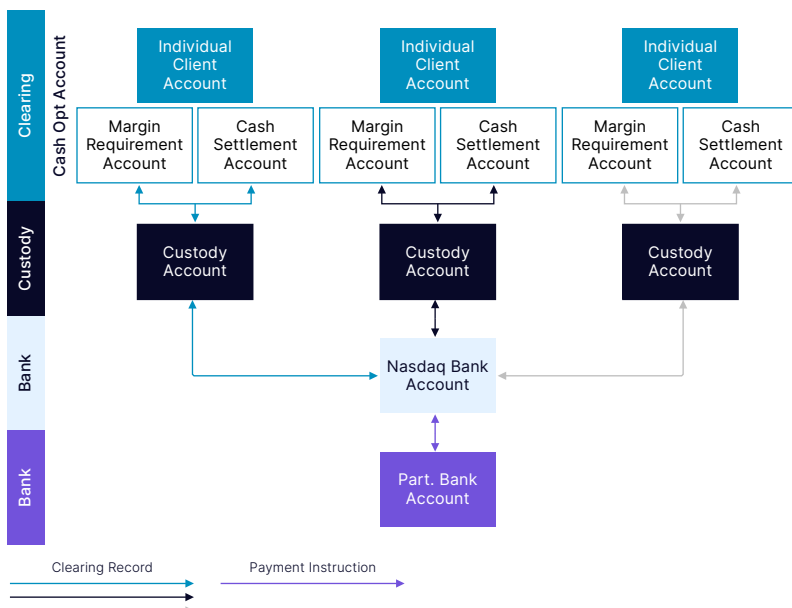
- Collateral Custody Account: this account records the Cash Collateral and Non-Cash Collateral that is held to cover margin requirements.

Each of the above is held on a segregated basis (e.g. as between a Clearing Member's House Account(s) and each of its Client Accounts and Customer Accounts).

An example of the basic structure is set out as follows:



An example of the structure including the Cash Optimization Account is set out as follows:



2. The Process Flow for the Cash Optimization Service

2.1 Parameters

There are certain parameters that a Participant may set in relation to the operation of the Cash Optimization Service. The parameters are set for each Margin Requirement Account. The parameters are as follows:

Direct Debit Currency for Margin

This specifies in which Permitted Currency direct debit instructions are created in respect of a Collateral Deficiency on the account. Possible values are either “margin currency” or “base currency”. By default the parameter will be set to “margin currency”.

Margin currency (Risk/Instrument currency in Cash Optimization report) is the currency in which a Margin Requirement is presented, which for the Financial Markets is the same currency as the traded instrument's currency or the Risk Currency, as elected by the Participant, and for the Commodities Markets, the Risk Currency. With the parameter set to margin currency, the Cash Optimization Service will optimize direct debit transactions on a currency by currency basis, taking into account the Currency Priority (see below).

Base currency is used to present the net total Collateral Surplus/Deficiency for an account in a single currency¹. With the Direct Debit Currency for Margin parameter set to “base currency”, the Cash Optimization Service will optimize direct debit transactions based on the selected Base Currency.

Currency Priority

Currency Priority specifies in which order relevant Permitted Currencies are prioritized for direct debit and credit of payments. The setting will, for example, decide in which currencies credits are created in case of the automatic repayment of a surplus or determine in which currency to create a direct debit should there be a bank holiday in respect of a particular currency. Unless elected by the Participant the Clearing House will use a default setting determined by the Clearing House in its discretion.

Callback Limit (or Cash Excess Amount)

The callback limit (or Cash Excess Amount) defines, per relevant Permitted Currency, an amount of Cash Collateral to be excluded from any automatic repayment. Such callback limits are always overridden by any requirement to pay a Cash Settlement Amount, meaning that Cash Collateral will be used to cover a requirement to pay a Cash Settlement Amount before the limit is evaluated.

Cash Collateral Limit

The Cash Collateral Limit defines, per Permitted Currency, an amount of Cash Collateral to be kept on the relevant Collateral Custody Account at all times, as a fixed buffer of Cash Collateral that cannot be used to cover the payment of Cash Settlement Amounts. A Cash Collateral Limit may be imposed by the Clearing House in accordance with the applicable Rules.

Cash Settlement Summary Level

The Cash Settlement Summary Level defines, per Margin Requirement Account, how Currency Cash Settlement Amounts are processed in the Cash Optimization Process, as further described in section 2.2 below. The Cash Settlement Summary Level is set by the Clearing House and can be changed at Participant request giving reasonable notice.

¹ The Base Currency can be set to any of the available Permitted Currencies.

2.2 Cash Optimization Process

Below follows a description step-by-step of the actions taken and calculations made by the Clearing House in the Cash Optimization Process. The first sub-section describes the process when Cash Settlement Summary Level: Margin Requirement Account applies and the second part describes the process when Cash Settlement Summary Level: Cash Optimization Account applies.

Cash Settlement Summary Level: Margin Requirement Account

On each Clearing House Business Day, at 9:30 CET, the Clearing House shall perform the following actions (when applicable using the foreign exchange rate as determined by the Clearing House in its reasonable discretion):

1. For each relevant Margin Requirement Account and related Collateral Custody Account, in each Permitted Currency in which the Participant holds positions and/or Collateral, the Clearing House will determine:
 - a. the Margin Requirement, calculated on the basis of margin requirements for the positions in that Permitted Currency (“Currency Margin Requirement”);
 - b. the aggregate Cash Settlement Amount in respect of the positions in that Permitted Currency (the “Currency Cash Settlement Amount”);
 - c. available Cash Collateral in the Permitted Currency (held in the relevant Custody Account) less any applicable Locked Currency Limit (“Available Cash Collateral”); and
 - d. the value of available Non-Cash Collateral (held in the relevant Custody Account) (valued in accordance with the Collateral List) (“Available Non-Cash Collateral”).
2. Where there is a Currency Cash Settlement Amount due to the Clearing House, any Available Cash Collateral in the same Permitted Currency will be used to cover such Currency Cash Settlement Amount and the value of the Currency Cash Settlement Amount due to the Clearing House and Available Cash Collateral shall be reduced accordingly.
3. The value of Available Non-Cash Collateral, Available Cash Collateral (reduced in accordance with step 2 above, if applicable), any Currency Cash Settlement Amount due to the Participant and the Currency Margin Requirement are aggregated for each Permitted Currency in respect of each Margin Requirement Account. The net result is the “Currency Surplus” or “Currency Deficiency” in that Permitted Currency, where:
 - Currency Surplus means the excess in the value of the Available Cash Collateral, the Available Non-Cash Collateral and the Currency Cash Settlement Amount due to the Participant over the Currency Margin Requirement; and
 - Currency Deficiency means the excess in the value of the Currency Margin Requirement over the Available Cash Collateral, the Available Non-Cash Collateral and the Currency Cash Settlement Amount due to the Participant.
4. Each Currency Surplus and Currency Deficiency shall be converted into Base Currency, using the Clearing House’s currency valuation process (as set out in the Collateral List), and aggregated to produce a net amount, being either a “Total Surplus”, if positive, or a “Total Deficiency”, if negative.
5. If there is a Total Deficiency and

- a. if the relevant Margin Requirement Account is set to Direct Debit Currency for margin: “margin currency”, the following applies:
 - i. No payments are made to the Participant regardless of any Currency Surplus in any Permitted Currency;
 - ii. The Clearing House determines the amount in the Permitted Currency with the highest priority available (according to the applicable Currency Priority) equal to the lowest amount necessary to reduce to zero either of (a) the Currency Deficiency in that Permitted Currency or (b) the Total Deficiency converted to the relevant Permitted Currency.
 - iii. If the Total Deficiency is not reduced to zero in step ii. above, the Clearing House determines an amount in the next available Permitted Currency in priority equal to the lowest amount necessary to reduce to zero either of (a) the Currency Deficiency in that Permitted Currency or (b) the remaining Total Deficiency converted to the relevant Permitted Currency. This step is repeated for each available Permitted Currency according to the Currency Priority.
 - iv. If the Total Deficiency is not reduced to zero when step iii. has been repeated for each available Permitted Currency according to the Currency Priority, the Clearing House will determine the amount in the Permitted Currency with the highest priority available equal to the remaining Total Deficiency and aggregate such amount with the amount determined in step ii. above.
- b. if the relevant Margin Requirement Account is set to Direct Debit Currency: “base currency”, the Clearing House determines an amount in the Base Currency equal to the Total Deficiency.

For the purposes of this Step 5, any amounts are determined disregarding any FX haircut. If a Permitted Currency is unavailable, e.g. in the event of a bank holiday, no determination will be made in that Permitted Currency and the Clearing House will move on to the next currency in priority according to the Currency Priority, if any.

6. If there is a Total Surplus, the Clearing House determines, in each relevant Permitted Currency following the Currency Priority, an amount equal to the lowest of (i) total held Cash Collateral in that Permitted Currency less any Cash Excess Amount or Cash Collateral Limit; (ii) the Currency Surplus in the Permitted Currency; and (iii) the Total Surplus converted to the relevant Permitted Currency.

The foregoing shall not apply to the extent the Margin Requirement in respect of the Margin Requirement Account is positive.

7. The Clearing House shall determine the net amount due to the Clearing House or the Participant, as applicable, for each Permitted Currency in respect of each Margin Requirement Account as (a) the aggregate of the amount of any Currency Cash Settlement Amount due to the Clearing House (as reduced in step 2 if applicable) and any amount determined to be due to the Clearing House in step 5 or (b) any amount determined to be due to the Participant in step 6.
8. If more than one Margin Requirement Account is linked to the same Cash Optimization Account, the Clearing House shall aggregate the amounts determined in accordance with step 7 for each such Margin Requirement Account.
9. For each relevant Cash Optimization Account and in each relevant Permitted Currency, the Clearing House shall, following the determinations set out in step 7 and step 8, produce a Payments Report and call by direct debit for such net amount determined to be due to the Clearing House and shall credit such net amount determined to be due to the Participant.

Please note that if a Permitted Currency is not available, e.g. in the event of a bank holiday, the Clearing House will not be able to make or receive payments in that Permitted Currency and that Permitted Currency will be excluded, where appropriate, from the determinations made above.

Cash Settlement Summary Level: Cash Optimization Account

On each Clearing House Business Day, at 9:30 CET, the Clearing House shall perform the following actions (when applicable using the foreign exchange rate as determined by the Clearing House in its reasonable discretion):

1. The Clearing House will make the determinations set out in step 1. under Cash Settlement Summary Level: Margin Requirement Account.
2. The value of Available Non-Cash Collateral, Available Cash Collateral and the Currency Margin Requirement are aggregated for each Permitted Currency in respect of each Margin Requirement Account. The net result is the "Currency Surplus*" or "Currency Deficiency*" in that Permitted Currency, where:
 - Currency Surplus* means the excess in the value of the Available Cash Collateral and the Available Non-Cash Collateral over the Currency Margin Requirement; and
 - Currency Deficiency* means the excess in the value of the Currency Margin Requirement over the Available Cash Collateral and the Available Non-Cash Collateral.
3. Each Currency Surplus* and Currency Deficiency* shall be converted into Base Currency, using the Clearing House's currency valuation process (as set out in the Collateral List), and aggregated to produce a net amount, being either a "Total Surplus*", if positive, or a "Total Deficiency*", if negative.
4. If there is a Total Deficiency* and
 - a. if the relevant Margin Requirement Account is set to Direct Debit Currency for margin: "margin currency", the following applies:
 - i. The Clearing House determines the amount in the Permitted Currency with the highest priority available (according to the applicable Currency Priority) equal to the lowest amount necessary to reduce to zero either of (a) the Currency Deficiency* in that Permitted Currency or (b) the Total Deficiency* converted to the relevant Permitted Currency.
 - ii. If the Total Deficiency* is not reduced to zero in step i. above, the Clearing House determines an amount in the next available Permitted Currency in priority equal to the lowest amount necessary to reduce to zero either of (a) the Currency Deficiency* in that Permitted Currency or (b) the remaining Total Deficiency* converted to the relevant Permitted Currency. This step is repeated for each available Permitted Currency according to the Currency Priority.
 - iii. If the Total Deficiency* is not reduced to zero when step ii. has been repeated for each available Permitted Currencies according to the Currency Priority, the Clearing House will determine the amount in the Permitted Currency with the highest priority available equal to the remaining Total Deficiency* and aggregate such amount with the amount determined in step i. above.
 - b. if the relevant Margin Requirement Account is set to Direct Debit Currency: "base currency", the Clearing House determines an amount in the Base Currency equal to the Total Deficiency*.

For the purposes of this Step 4, any amounts are determined disregarding any FX haircut. If a Permitted Currency is unavailable, e.g. in the event of a bank holiday, no determination will be made in that Permitted Currency and the Clearing House will move on to the next currency in priority according to the Currency Priority, if any.

5. If there is a Total Surplus*, the Clearing House determines, in each relevant Permitted Currency following the Currency Priority, an amount equal to the lowest of (i) total held Cash Collateral in that Permitted Currency less any Cash Excess Amount or Cash Collateral Limit; (ii) the Currency Surplus* in the Permitted Currency; and (iii) the Total Surplus* converted to the relevant Permitted Currency.

The foregoing shall not apply to the extent the Margin Requirement in respect of the Margin Requirement Account is positive.

6. The Clearing House shall determine the net amount due to the Clearing House or the Participant, as applicable, for each Permitted Currency in respect of each Margin Requirement Account as the aggregate of (a) the amount of any Currency Cash Settlement Amount due to the Clearing House or the Participant, respectively, and (b) any amount determined to be due to the Clearing House in step 4 or any amount determined to be due to the Participant in step 5, respectively.
7. If more than one Margin Requirement Account is linked to the same Cash Optimization Account, the Clearing House shall aggregate the amounts determined in accordance with step 6 for each such Margin Requirement Account.
8. For each relevant Cash Optimization Account and in each relevant Permitted Currency, the Clearing House shall, following the determinations set out in step 6 and step 7, produce a Payments Report and call by direct debit for such net amount determined to be due to the Clearing House and shall credit such net amount determined to be due to the Participant.

Please note that if a Permitted Currency is not available, e.g. in the event of a bank holiday, the Clearing House will not be able to make or receive payments in that Permitted Currency and that Permitted Currency will be excluded, where appropriate, from the determinations made above.

3. Daily Cycle

The Clearing House undertakes a daily cycle of events, with respect to the calculation of Margin Requirements, Collateral valuation and calls, on each Clearing House Business Day, as follows.

T	
19:25	Commencement of the end of day clearing process. The Clearing House calculates Cash Settlement Amounts and produces End of Day Margin Determinations (" End of Day Calculations ").
Approximately 21:30	The result of the End of Day Calculations is available to Participants through the CMS System.
T+1	
07:00	The Clearing House produces reports, based on the results of the End of Day Calculations, which are made available to Participants through the Clearing System and the CMS System.
09:30	Collateral Receipt Cut-Off Time. The final calculation for the Cash Optimization Process is undertaken by the Clearing House.
Approximately 09:45	Direct debit payment instructions are sent to the Approved Settlement Banks. The Participants must ensure that the necessary balance is available on the relevant Settlement Bank Account for the direct debit. If any direct debit transaction fails, any call backs of Collateral will be stopped.
11:00	End of Day Margin Delivery Time. The obligations pursuant to the End of Day Margin Determination shall be met. The applicable Margin Requirement is evaluated against the value of posted Collateral.
14:00	Credit payment instructions are sent to the Approved Settlement Banks.

4. Provision of Collateral

4.1 Posting Collateral

a. Cash Collateral

A Participant may provide Cash Collateral, in any Permitted Currency, to a designated Clearing House bank account. When providing such Cash Collateral, each Participant must provide the relevant Collateral Custody Account number as per the Clearing House's instructions.

Cash Collateral shall only be deemed posted to the Clearing House when the Clearing House receives confirmation from the Approved Settlement Bank that:

- i. the Cash Collateral; and
- ii. the relevant Collateral Custody Account number, have been received by the Approved Settlement Bank.

Timing - Cash Collateral may be provided to the Clearing House at any time during the Clearing House Opening Hours when the relevant Approved Settlement Bank is open.

b. Securities

A Participant may provide eligible securities to a Custody Account through a Central Securities Depository ("CSD"), International Central Securities Depository ("ICSD") or Custodian Bank connected to the Clearing House.

A Participant, or its Settlement Agent, must - apart from instructing the CSD/ICSD directly - instruct the Clearing House through the CMS System about the transfer of eligible securities. The Clearing House will then create a corresponding settlement instruction and send it to the CSD/ICSD/Custodian Bank to match the Participant's instruction.

Settlement instructions to CSDs/ICSDs should always be sent according to Local Market Practice. When the settlement instruction has settled in the CSD/ICSD, the Clearing House will receive confirmation of settlement from the CSD/ICSD/Custodian Bank.

Securities transferred to the Clearing House should be transferred through matching transactions i.e. deliver free and receive free messages. The CSD's/ICSD's settlement cycles as well as matching settlement instructions determine when the transfer instruction settles.

Securities are registered on the designated Custody Account and are pledged to the Clearing House. Participants can subscribe to settlement status and confirmations through the CMS System. Settlement status and settlement confirmations can also be viewed in the CMS System.

Timing - Eligible securities can be posted at any time while the CMS System and the applicable CSD/ICSD are open.

- #### c. European Union Allowances and EI-certs may be provided as Collateral as further set out in the Collateral List and elsewhere in the applicable Clearing Rules.

4.2 Call Back of Collateral

a. Cash Collateral

Participants can make a Cash Collateral call back request. Cash call back requests can be made through the CMS System. A call back can only be made as follows:

D

07:00 – 11:00 Participants request call back through the CMS System (all requests will be pending until the End of Day Margin Delivery Time).

11:00 – 15:00 Call back requests are processed from 11:00 until 15:00 (“**Currency Cut-off Time**”).

Any call back requests after the Currency Cut-Off Time will not be allowed by the CMS System to be submitted.

The available Collateral Surplus is determined taking into account any pending call back.

D+1

Before 13:00 The bank account associated with the Collateral Custody Account in question is credited.

b. Securities

Participants can make a securities call back request. A call back of securities can be made through the CMS System. A call back can only be made as follows:

D

07:00 – 11:00 Participants request call back through the CMS System (all requests will be pending until the End of Day Margin Delivery Time)

11:00 – Call back requests are processed from 11:00 until the time the relevant CSD or CSD/ICSD Cut off Time ICSD closes (“**CSD/ICSD Cut off Time**”).

The available Collateral Surplus is determined taking into account any pending call back.

Any call back requests entered into the CMS System after the CSD/ICSD Cut-Off Time, will move settlement day to the next available business day.

Participants, or their settlement agent, must instruct the CSD/ICSD of an approved securities call back through a free-of-payment (FoP) settlement instruction. The Clearing House will send a corresponding settlement instruction to the CSD/ICSD/Custodian Bank to settle the securities call back transaction.

When matched the securities call back will be settled in the next possible CSD/ICSD settlement cycle.

Securities call back settlement instructions are made to the CSD/ICSD defined in the instrument SSI provided by the Participant for the custody account applicable to the securities call back.

c. European Union Allowances and EI-certs may be subject to call backs as further set out in the Collateral List and elsewhere in the applicable Clearing Rules.