Thalex Request-for-Quote Overview

October 2022

thalex

Better products.
Better execution.
Better trading.

Thalex Request-for-Quote
Overview

Introduction

Thalex offers a fully integrated request-for-quote (RFQ) functionality. An RFQ is a private auction for a single contract or combination of contracts, cleared through Thalex and resulting in regular open positions.

RFQ Creation

- The creating account must have sufficient margin to execute at least one side (buy or sell the total combination). Please see 'Margin requirements for RFQ creators' below.
- At least one leg must be long ("buy" / positive quantity).
- Each leg must have a non-zero quantity.
- Each leg must refer to an outright contract, and not to a combination instrument.
- Each quantity must conform to the regular minimum contract size and volume tick size of the corresponding contract.
- The creator of an RFQ is free to either buy or sell the combination.
- Any combination of instruments is allowed, regardless of underlying or expiration date.
- The leg quantities, by themselves or combined, must have a precision under 6 decimals (formal explanation below).
- The creation of RFQs is subject to fair use. RFQs may only be created with the intention to trade.

RFQ Acceptance

Upon acceptance of the RFQ by Thalex, the system will convert the RFQ to an equivalent combination, where:

i. leg quantities are changed such that each is an integer;
ii. an amount is deduced such that multiplying the amount with the leg quantities matches the requested quantities; and
iii. a volume tick size is deduced, allowing liquidity providers to quote part of the amount.

For example, take the following requested legs.

Instrument	Quantity
BTC-27MAY22-29000-C	10
BTC-27MAY22-32000-C	-10
BTC-PERPETUAL	-3.6

The system may derive from this an RFQ with the following legs, with the requested amount being 0.4 and volume tick size 0.004.

Instrument	Quantity
BTC-27MAY22-29000-C	25
BTC-27MAY22-32000-C	-25
BTC-PERPETUAL	-9

Please see Appendix 1 for the precision rule for calculating leg amounts.

RFQ Quoting

- An accepted RFQ will be valid for 5 minutes, during which designated liquidity providers may quote prices for the requested package (i.e., only designated liquidity providers can see open RFQs and send quotes).
- These liquidity providers can send any number of quotes, for either side, and for any amount.
- RFQ quotes are like regular orders, and may be inserted, amended, and deleted. They are also subject to cancel-on-disconnect on applicable connections.
- RFQ quotes must observe the volume tick size as requested. The tick size for price is always $0.01.
- Quotes are visible only to the creator of the RFQ, and only in the form of a single price on each side. The single displayed price is determined as follows:
- All quotes on that side are ordered in price-time priority;
  - Quote sizes are accumulated; the quote that completes the requested amount determines the price; and
  - If the total size of all quotes is less than the requested amount, the last (widest) quote determines the price.

RFQ Trading

- The creator of the RFQ has the option to trade once during the lifetime of the RFQ. When trading, the creator must specify the side (buy or sell) and a limit price. The actual trade price is determined like above, except those quotes outside the limit price are filtered out;
- The trade will only take place if at least 75% of the requested amount is available within the indicated limit price. The RFQ trades only at a single price. If multiple (partial) quotes are involved in the trade, each party will trade at the same price, regardless of the quote price;
- When the trade takes place, the RFQ will become inactive and cannot trade again. The RFQ, the traded amount and the trade price are published by Thalex as market data.
- If less than 75% of the requested amount is available within the limit price, no trade will take place. Only the creator is notified of the failed trade and the RFQ remains active.
- Please see Appendix 2 for examples on RFQ fills.

Margin requirements

RFQs are margined as atomic combination trades. The resulting position must not breach margin requirements or, if initial margin requirements are already breached, must reduce the risk exposure of the position.

Margin requirements for RFQ creators

- The creating account must have sufficient margin to fully trade the buy or sell side.
- If, while an RFQ is open, the creating account has insufficient margin to fully trade, the RFQ will be automatically cancelled by the system.
- To trade an RFQ, the creating account must have sufficient margin for the position that results from the trade at the requested side.

Margin requirements for liquidity providers

In order to insert or maintain an RFQ quote, sufficient margin must be available to support:

i. the position resulting from that quote if traded, plus
ii. any other quotes on the same RFQ and side with a more aggressive price.

Existing quotes that stop meeting this requirement are automatically cancelled by the system.

Market maker protection for liquidity providers

Multiple quotes on one side of a single RFQ may all trade at the same time. But immediately after such trade, all other quotes in all open RFQs for the liquidity provider are cancelled. With this protection function, it is not possible to be hit or lifted in multiple RFQs at the same time, unless a new quote insert happened to be in flight.

Market maker protection for RFQs does not in any way interact with market maker protection for mass quoting.

Trading Fees

RFQ trades are added to the system as regular trades on the legs, and normal fees apply.

- Spreads (buy one, sell another) in a single underlying are generally priced as a single leg only.
- Delta hedges are generally at no cost.

Reduction is applied only once (e.g., when buying a hedged call, the hedge is free, but when buying a hedged call spread, the spread is accounted as a single leg and the hedge is an added cost).

The above is a general rule of thumb. More precisely, a pair of legs is a candidate for fee reduction if:

- Both are in the same underlying.
- They are not 2 long options or 2 short options: a straddle has no fee reduction.
- The sum of delta is between -1 and 1: a hedged call has a fee reduction, but a call with a long future does not. Similarly, a pure synthetic has reduced fees, but a comparable pair where both the options are in the money, does not.

Appendix 1

Formal calculation of precision rule

The precision of leg amounts must be under 6 decimal digits. Thalex requires this to protect against absurdly large, derived combinations. An amount of 20 million contracts is fine (1 digit), but 20,000,000.123 (11 digits) is not. Similarly, it is fine to have one leg with 20 million contracts and another with 10 million contracts, but not to have one leg with 20 million contracts and another with 0.123 contracts.

To calculate the combined precision across multiple legs, the following procedure is followed:

1. Make a list of all leg amounts;
2. As long as any amount is fractional, multiply each number by 10;
3. Calculate the greatest common divisor (GCD) across all numbers;
4. Divide all numbers by the calculated GCD;
5. The precision is now the highest number in the list and must be under 1 million.

Examples:

- Leg amounts 20 million and 15 million; GCD is 5 million; remaining 4 and 3; precision is 4 (ok).
- Leg amounts 20 million and 0.001; adjusted to 20 billion and 1; GCD is 1; precision is 20 billion (rejected).
- Leg amounts 825.721 and 14.31; adjusted to 825721 and 14310; GCD is 1; precision is 825721 (ok).

The above is the formal restriction. A simpler verification is to sum all leg amounts; if the result has at most 6 decimals, then the precision is ok. This is an easy rule of thumb, but slightly restrictive. For example, one leg of 1.4 million and one leg of 2 has the sum 1,400,002 with 7 decimals (not ok), but the GCD algorithm will actually derive 700,000 and 1 (ok).

Appendix 2

RFQ Trading examples

Consider an RFQ with a requested amount of 4 and a volume tick size of 0.1. The creator has the intention to buy, hence will look at offers and not bids.

Scenario 1

Offers: 2 @ 100.1, 2 @ 100.3, 2 @ 100.5

Displayed quote: 4 @ 100.3

Request to trade buy @ 100.4: the RFQ trades 4 @ 100.3, and the first 2 quotes will fill.

Scenario 2

Offers: 2 @ 100.1, 1 @ 100.3, 2 @ 100.5

Displayed quote: 4 @ 100.5

Request to trade buy @ 100.4: the RFQ trades 3 @ 100.3 (75% – the last quote is outside the limit), and the first 2 quotes will fill.

Scenario 3

Offers: 2 @ 100.1, 1 @ 100.3, 2 @ 100.5

Displayed quote: 4 @ 100.5

Request to trade buy @ 100.5: the RFQ trades 4 @ 100.5; the first 2 quotes fill fully, and the last quote fills partially.

Scenario 4

Offers: 2 @ 100.1, 1 @ 100.3, 2 @ 100.5

Displayed quote: 4 @ 100.5

Request to trade buy @ 100.2: the RFQ does not trade since only 50% is available within the limit.