Client

Queries

Params

message

```
Queries the parameters of the module.
GET "/dex/params" Proto Messages
Request:
message
QueryParamsRequest
{} Response:
message
QueryParamsResponse
// params holds all the parameters of this module. Params params =
1
[ ( gogoproto . nullable )
false ]; } Curl Command (testnet):
curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/params
LimitOrderTrancheUser
GET "/dex/limit_order_tranche_user/{address}/{tranche_key}" This query retrieves aLimitOrderTrancheUser by user address
and TrancheKey.
Proto Messages
Request:
message
QueryGetLimitOrderTrancheUserRequest
{ string address =
1; string tranche_key =
2;} Response:
message
QueryGetLimitOrderTrancheUserResponse
{ LimitOrderTrancheUser limit_order_tranche_user =
1
[ ( gogoproto . nullable )
=
true ]; }
```

```
LimitOrderTrancheUser
{ TradePairID trade_pair_id =
1; int64 tick_index_taker_to_maker =
2; string tranche_key =
3; string address =
4; string shares_owned =
5
[ ( gogoproto . moretags )
"yaml:\"shares_owned\"", ( gogoproto . customtype )
"github.com/cosmos/cosmos-sdk/types.Int", (gogoproto.nullable)
false, (gogoproto.jsontag)
"shares_owned" ] ; string shares_withdrawn =
6
[ ( gogoproto . moretags )
"yaml:\"shares_withdrawn\"", (gogoproto.customtype)
"github.com/cosmos/cosmos-sdk/types.Int", (gogoproto.nullable)
false, (gogoproto.jsontag)
"shares_withdrawn" ] ; string shares_cancelled =
[ ( gogoproto . moretags )
"yaml:\"shares_cancelled\"", (gogoproto.customtype)
"github.com/cosmos/cosmos-sdk/types.Int", (gogoproto.nullable)
false, (gogoproto.jsontag)
"shares_cancelled" ] ; LimitOrderType order_type =
8;} Arguments
```

- · QueryGetLimitOrderTrancheUserRequest
- · : Request message for the Limit Order Tranche User
- query.* address

•

- (string): The user address.
- tranche_key

•

• (string): The tranche key.

Sample Query

Curl Command (testnet):

curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/limit_order_tranche_user/ { address } / { tranche_key }

LimitOrderTrancheUserAll

GET "/dex/Neutron DEX/dex/limit_order_tranche_user" This query retrieves a list ofLimitOrderTrancheUser items.

Proto Messages

Request:

message

QueryAllLimitOrderTrancheUserRequest

{ cosmos . base . query . v1beta1 . PageRequest pagination =

1;} Response:

message

QueryAllLimitOrderTrancheUserResponse

{ repeated

LimitOrderTrancheUser limit order tranche user =

1

[(gogoproto . nullable)

=

true]; cosmos . base . query . v1beta1 . PageResponse pagination =

2; } Arguments

- QueryAllLimitOrderTrancheUserRequest
- · : Request message for theLimitOrderTrancheUserAll
- · query.* pagination

,

• (cosmos.base.query.v1beta1.PageRequest): Pagination options.

Sample Query

Curl Command (testnet):

curl https://rest-falcron.pion-1.ntrn.tech/dex/limit_order_tranche_user

LimitOrderTranche

GET "/dex/limit_order_tranche/{pairID}/{tokenIn}/{trancheKey}" This query retrieves aLimitOrderTranche by a tranche's key (pairID + tokenIn + tickIndex + trancheKey).

Proto Messages

Request:

message

```
Query GetLimit Order Tranche Request\\
{ string pair_id =
1; int64 tick_index =
2; string token_in =
3; string tranche_key =
4;} Response:
message
QueryGetLimitOrderTrancheResponse
{ LimitOrderTranche limit_order_tranche =
[ ( gogoproto . nullable )
true ]; }
message
LimitOrderTrancheKey
{ TradePairID trade_pair_id =
1; int64 tick_index_taker_to_maker =
2; string tranche_key =
3;}
message
LimitOrderTranche
{ LimitOrderTrancheKey key =
1; string reserves_maker_denom =
2
[ ( gogoproto . moretags )
"yaml:\"reserves_maker_denom\"", (gogoproto.customtype)
"github.com/cosmos/cosmos-sdk/types.Int", ( gogoproto . nullable )
false, (gogoproto.jsontag)
"reserves_maker_denom"]; string reserves_taker_denom =
3
[ ( gogoproto . moretags )
"yaml:\"reserves_taker_denom\"", ( gogoproto . customtype )
```

```
"github.com/cosmos/cosmos-sdk/types.Int", (gogoproto.nullable)
false, (gogoproto.jsontag)
"reserves_taker_denom"]; string total_maker_denom =
[ ( gogoproto . moretags )
"yaml:\"total_maker_denom\"", ( gogoproto . customtype )
"github.com/cosmos/cosmos-sdk/types.Int", (gogoproto.nullable)
false, (gogoproto.jsontag)
"total maker denom"]; string total taker denom =
5
[ ( gogoproto . moretags )
"yaml:\"total_taker_denom\"", ( gogoproto . customtype )
"github.com/cosmos/cosmos-sdk/types.Int", (gogoproto.nullable)
false, (gogoproto.jsontag)
"total taker denom"]; // expiration time is represented as an RFC 3339 formatted date. // LimitOrders with expiration time
set are valid as long as blockTime <= expiration time. // JIT orders also use expiration time to handle deletion, but
represent a special case. // All JIT orders have an expiration_time of 0001-01-01T00:00:00Z, and an exception is made to //
still treat these orders as live. Order deletion still functions the // same, and the orders will be deleted at the end of the block.
google . protobuf . Timestamp expiration_time =
[ ( gogoproto . stdtime )
true, (gogoproto.nullable)
true ] ; string price_taker_to_maker =
[ ( gogoproto . moretags )
```

```
"yaml:\"price_taker_to_maker\"", ( gogoproto . customtype )
"github.com/neutron-org/neutron/v2/utils/math.PrecDec", (gogoproto.nullable)
false, (gogoproto. jsontag)
"price taker to maker" ]; } Arguments
   · QueryGetLimitOrderTrancheRequest
     : Request message for the Limit Order Tranche
     query.* pairID
        o (string): The pair ID.
        tickIndex
        • (int64): The tick index.
        tokenIn
        (string): The input token.
        trancheKey
        • (string): The tranche key.
Sample Query
Curl Command (testnet):
curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/limit_order_tranche/ { pairID } / { tokenIn } / { tickIndex } / { trancheKey }
LimitOrderTrancheAll
GET "dex/limit_order_tranche/{pairID}/{tokenIn}" This query retrieves a list ofLimitOrderTranche items for a given pairID /
TokenIn combination.
Proto Messages
Request:
message
QueryAllLimitOrderTrancheRequest
{ string pair_id =
1; string token_in =
2; cosmos . base . query . v1beta1 . PageRequest pagination =
3;} Response:
message
QueryAllLimitOrderTrancheResponse
{ repeated
LimitOrderTranche limit_order_tranche =
[ ( gogoproto . nullable )
```

```
true ]; cosmos . base . query . v1beta1 . PageResponse pagination =
2;} Arguments

    QueryAllLimitOrderTrancheRequest

    : Request message for theLimitOrderTrancheAll
     query.* pairID
        • (string): The pair ID.
        tokenIn
        • (string): The input token.
        pagination
        • (cosmos.base.query.v1beta1.PageRequest): Pagination options.
Sample Query
Curl Command (testnet):
curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/limit_order_tranche/ { pairID } / { tokenIn }
UserDepositsAll
GET "/dex/user/deposits/{address}" This query retrieves a list ofDepositRecord items by user address.
Proto Messages
Request:
message
QueryAllUserDepositsRequest
{ string address =
1; cosmos . base . query . v1beta1 . PageRequest pagination =
2;} Response:
message
QueryAllUserDepositsResponse
{ repeated
DepositRecord deposits =
[ ( gogoproto . nullable )
true ]; cosmos . base . query . v1beta1 . PageResponse pagination =
2;} Arguments

    QueryAllUserDepositsRequest

    : Request message for theUserDepositsAll

   · query.* address
        • (string): The user address.
```

- pagination
 - (cosmos.base.query.v1beta1.PageRequest): Pagination options.

Sample Query

Curl Command (testnet): curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/user/deposits/ { address } LimitOrderTrancheUserAllByAddress

GET "/neutron/dex/user/limit_orders/{address}" This query retrieves a list ofLimitOrderTrancheUser items by user address.

Proto Messages Request: message QueryAllUserLimitOrdersRequest { string address = 1; cosmos . base . query . v1beta1 . PageRequest pagination = 2;} Response: message QueryAllUserLimitOrdersResponse { repeated

LimitOrderTrancheUser limit_orders =

[(gogoproto . nullable)

true]; cosmos . base . query . v1beta1 . PageResponse pagination =

2;} Arguments

- QueryAllUserLimitOrdersRequest
- : Request message for the UserLimitOrdersAll
- query.* address
- - (string): The user address.
 - pagination
 - (cosmos.base.query.v1beta1.PageRequest): Pagination options.

Sample Query

Curl Command (testnet):

curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/user/limit_orders/ { address }

TickLiquidityAll

GET "/neutron/dex/tick_liquidity/{pairID}/{tokenIn}" This query retrieves a list ofTickLiquidity items for a given pairID / TokenIn combination.

Proto Messages

Request:

message

QueryAllTickLiquidityRequest

{ string pair_id =

1; string token in =

```
3;} Response:
message
TickLiquidity
{ oneof liquidity { PoolReserves pool reserves =
1; LimitOrderTranche limit order tranche =
2;}}
message
QueryAllTickLiquidityResponse
{ repeated
TickLiquidity tick_liquidity =
[ ( gogoproto . nullable )
true ]; cosmos . base . query . v1beta1 . PageResponse pagination =
2;} Arguments
   · QueryAllTickLiquidityRequest
     : Request message for the Tick Liquidity All
     query.* pairID
         • (string): The pair ID.
         tokenIn

    (string): The input token.

         pagination
         • (cosmos.base.query.v1beta1.PageRequest): Pagination options.
Sample Query
Curl Command (testnet):
curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/tick_liquidity/ { pairID } / { tokenIn }
InactiveLimitOrderTranche
GET "/neutron/dex/filled_limit_order_tranche/{pairID}/{tokenIn}/{tickIndex}/{trancheKey}" This query retrieves an
inactiveLimitOrderTranche by a tranche's key (pairID + tokenIn + tickIndex + trancheKey).
Proto Messages
Request:
message
QueryGetInactiveLimitOrderTrancheRequest
{ string pair_id =
1; string token_in =
2; int64 tick_index =
3; string tranche key =
```

2; cosmos . base . query . v1beta1 . PageRequest pagination =

```
4;} Response:
message
QueryGetInactiveLimitOrderTrancheResponse
{ LimitOrderTranche inactive_limit_order_tranche =
1
[ ( gogoproto . nullable )
true ]; } Arguments

    QueryGetInactiveLimitOrderTrancheRequest

     : Request message for theInactiveLimitOrderTranche
     query.* pairID
        • (string): The pair ID.
        tokenIn
        o (string): The input token.
        tickIndex
        • (int64): The tick index.
        trancheKey
        (string): The tranche key.
Sample Query
Curl Command (testnet):
curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/filled_limit_order_tranche/ { pairID } / { tokenIn } / { tickIndex } / {
trancheKey }
InactiveLimitOrderTrancheAll
GET "/neutron/dex/filled_limit_order_tranche" This query retrieves a list of inactiveLimitOrderTranche items.
Proto Messages
Request:
message
QueryAllInactiveLimitOrderTrancheRequest
{ cosmos . base . query . v1beta1 . PageRequest pagination =
1;} Response:
message
QueryAllInactiveLimitOrderTrancheResponse
{ repeated
LimitOrderTranche inactive_limit_order_tranche =
[ ( gogoproto . nullable )
true ]; cosmos . base . query . v1beta1 . PageResponse pagination =
```

2; } Arguments

- QueryAllInactiveLimitOrderTrancheRequest
- : Request message for theInactiveLimitOrderTrancheAll
- query.* pagination

• (cosmos.base.query.v1beta1.PageRequest): Pagination options.

Sample Query

Curl Command (testnet):

curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/filled limit order tranche

PoolReservesAll

GET "/neutron/dex/pool_reserves/{pairID}/{tokenIn}" This query retrieves a list ofPoolReserves items for a given pairID /

TokenIn combination. **Proto Messages** Request: message QueryAllPoolReservesRequest { string pair_id = 1; string token_in = 2; cosmos . base . query . v1beta1 . PageRequest pagination = 3;} Response: message QueryAllPoolReservesResponse { repeated PoolReserves pool_reserves = [(gogoproto . nullable) true]; cosmos . base . query . v1beta1 . PageResponse pagination = 2;} Arguments QueryAllPoolReservesRequest

- : Request message for the Pool Reserves All
- query.* pairID
- (string): The pair ID.
 - tokenIn
 - (string): The input token.
- pagination
 - (cosmos.base.query.v1beta1.PageRequest): Pagination options.

Sample Query

Curl Command (testnet):

curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/pool_reserves/ { pairID } / { tokenIn }

PoolReserves

Request:

message

QueryEstimateMultiHopSwapRequest

GET "/neutron/dex/pool_reserves/{pairID}/{tokenIn}/{tickIndex}/{fee}" This query retrieves aPoolReserves by PoolReservesKey (PairID+TokenIn+TickIndex+Fee). **Proto Messages** Request: message QueryGetPoolReservesRequest { string pair_id = 1; string token_in = 2; int64 tick index = 3; uint64 fee = 4;} Response: message QueryGetPoolReservesResponse { PoolReserves pool_reserves = [(gogoproto . nullable) true]; } Arguments QueryGetPoolReservesRequest : Request message for thePoolReserves query.* pairID • (string): The pair ID. tokenIn • (string): The input token. tickIndex • (int64): The tick index. • fee o (uint64): The fee. Sample Query Curl Command (testnet): curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/pool_reserves/ { pairID } / { tokenIn } / { tickIndex } / { fee } QueryEstimateMultiHopSwap GET "/neutron/dex/estimate_multi_hop_swap" Queries the simulated result of a multihop swap **Proto Messages**

```
{ string creator =
1; string receiver =
2; repeated
MultiHopRoute routes =
3; string amount_in =
[ ( gogoproto . moretags )
"yaml:\"amount_in\"", ( gogoproto . customtype )
"github.com/cosmos/cosmos-sdk/types.Int", (gogoproto.nullable)
false, (gogoproto.jsontag)
"amount_in" ] ; string exit_limit_price =
5
[ ( gogoproto . moretags )
"yaml:\"exit_limit_price\"", (gogoproto.customtype)
"github.com/neutron-org/neutron/v2/utils/math.PrecDec", (gogoproto.nullable)
false, (gogoproto.jsontag)
"exit_limit_price"];
// If pickBestRoute == true then all routes are run and the route with the // best price is chosen otherwise, the first successful
route is used. bool pick_best_route =
6;}
message
MultiHopRoute
{ repeated
string hops =
1;} Response:
message
QueryEstimateMultiHopSwapResponse
{ cosmos . base . v1beta1 . Coin coin_out =
[ ( gogoproto . nullable )
```

```
false, (gogoproto.customtype)
"github.com/cosmos/cosmos-sdk/types.Coin", ( gogoproto . jsontag )
"coin_out"];} Arguments

    QueryEstimateMultiHopSwapRequest

     : Request message for the Estimate MultiHopSwap
   · query.* creator
         o (string): creator.
         receiver
         (string): receiver.

    MultiHopRoute

         • ([]MultiHopeRoute): Array of possible routes.

    AmountIn

    (sdk.Int): Amount of TokenIn to swap.

    ExitLimitPrice

         • (sdk.Dec): Minimum price that must be satisfied for a route to succeed.

    PickBestRoute

         • (bool): When true, all routes are run and the route with the best price is used.
Sample Query
Curl Command (testnet):
curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/estimate_multi_hop_swap
EstimatePlaceLimitOrder
GET "/neutron/dex/estimate_place_limit_order" Queries the simulated result of a limit order placement.
Proto Messages
Request:
message
QueryEstimatePlaceLimitOrderRequest
{ string creator =
1; string receiver =
2; string token_in =
3; string token_out =
4; int64 tick_index_in_to_out =
5; string amount_in =
6
[ ( gogoproto . moretags )
```

```
"yaml:\"amount_in\"", ( gogoproto . customtype )
"github.com/cosmos/cosmos-sdk/types.Int", (gogoproto.nullable)
false, (gogoproto.jsontag)
"amount_in"]; LimitOrderType order_type =
7;
// expirationTime is only valid iff orderType == GOOD_TIL_TIME. google . protobuf . Timestamp expiration_time =
[ ( gogoproto . stdtime )
true, (gogoproto.nullable)
true ] ; string maxAmount_out =
[ ( gogoproto . moretags )
"yaml:\"max_amount_out\"", ( gogoproto . customtype )
"github.com/cosmos/cosmos-sdk/types.Int", (gogoproto.nullable)
true, (gogoproto.jsontag)
"max_amount_out"];} enum
LimitOrderType { GOOD_TIL_CANCELLED =
0; FILL_OR_KILL =
1; IMMEDIATE_OR_CANCEL =
2; JUST_IN_TIME =
3; GOOD_TIL_TIME =
4;} Response:
message
QueryEstimatePlaceLimitOrderResponse
{ // Total amount of coin used for the limit order // You can derive makerLimitInCoin using the equation: totalInCoin = //
swapInCoin + makerLimitInCoin cosmos . base . v1beta1 . Coin total_in_coin =
[ ( gogoproto . moretags )
```

```
"yaml:\"total_in_coin\"", (gogoproto.nullable)
false, (gogoproto.customtype)
"github.com/cosmos/cosmos-sdk/types.Coin", (gogoproto.jsontag)
"total_in_coin"];
// Total amount of the token in that was immediately swapped for swapOutCoin cosmos . base . v1beta1 . Coin
swap_in_coin =
2
[ ( gogoproto . moretags )
"yaml:\"swap_in_coin\"", ( gogoproto . nullable )
false, (gogoproto.customtype)
"github.com/cosmos/cosmos-sdk/types.Coin", (gogoproto.jsontag)
"swap_in_coin"];
// Total amount of coin received from the taker portion of the limit order // This is the amount of coin immediately available in
the users account after // executing the limit order. It does not include any future proceeds from the // maker portion which
will have withdrawn in the future cosmos . base . v1beta1 . Coin swap out coin =
[ ( gogoproto . moretags )
"yaml:\"swap_out_coin\"", ( gogoproto . nullable )
false, (gogoproto.customtype)
"github.com/cosmos/cosmos-sdk/types.Coin", (gogoproto.jsontag)
"swap out coin" ]; } Arguments

    QueryEstimatePlaceLimitOrderRequest

   · : Request message for the Estimate Place Limit Order
   · query.* Creator

    string (sdk.AccAddress): Account from which TokenIn is debited.

    Receiver
```

string (sdk.AccAddress): Account to which TokenOut is credited or that will be allowed to withdraw or cancel a

maker order.

 TokenIn (string): Token being "sold". TokenOut • (string): Token being "bought". TickIndex • (int64): Limit tick for a limit order, specified in terms of TokenIn to TokenOut. AmountIn • (sdk.Int): Amount of TokenIn to be traded. OrderType • (orderType): Type of limit order to be used. Must be one of: GOOD_TIL_CANCELLED, FILL_OR_KILL, IMMEDIATE_OR_CANCEL, JUST_IN_TIME, or GOOD_TIL_TIME. ExpirationTime • (time.Time): Expiration time for order. Only valid for GOOD_TIL_TIME limit orders. Curl Command (testnet): curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/estimate_place_limit_order **PoolRequest** GET "/neutron/dex/pool/{pair_id}/{tick_index}/{fee}" Queries a pool by pair, tick and fee **Proto Messages** Request: message QueryPoolRequest { string pair_id = 1; int64 tick_index = 2 ; uint64 fee = 3;} Response: message Pool { uint64 id = 1; PoolReserves lower_tick0 = 2; PoolReserves upper_tick1 = 3;} message QueryPoolResponse { Pool pool = [(gogoproto . nullable)

```
true ]; } Arguments

    QueryPoolRequest

   · : Request message for the Pool Request
   · query.* pairID
         • (string): The pair ID.
         tickIndex
         • (int64): The tick index.
         • fee
         (uint64): fee.
Curl Command (testnet):
curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/pool/ { pair_id } / { tick_index } / { fee }
PoolRequestByID
GET "/neutron/dex/pool/{pool_id}" Queries a pool by ID
Proto Messages
Request:
message
QueryPoolByIDRequest
{ uint64 pool_id =
1;} Response:
message
QueryPoolResponse
{ Pool pool =
[ ( gogoproto . nullable )
true ]; } Arguments

    QueryPoolByIDRequest

   · : Request message for the Pool Request By ID
   • query.* id
         o (uint64): Pool ID.
Curl Command (testnet):
curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/pool/ { pool_id }
GetPoolMetadata
GET "/neutron/dex/pool_metadata/{id}" Queries a PoolMetadata by ID
```

Proto Messages: Request:

message

QueryGetPoolMetadataRequest

```
{ uint64 id =
1;} Response:
message
PoolMetadata
{ uint64 id =
1; int64 tick =
2 ; uint64 fee =
3; PairID pair_id =
4;} message
PairID
{ string token0 =
1; string token1 =
2;}
message
QueryGetPoolMetadataResponse
{ PoolMetadata Pool_metadata =
1
[ ( gogoproto . nullable )
false ]; } Arguments
   • QueryGetPoolMetadataRequest
   • : Request message for theGetPoolMetadata
   • query.* id
        • (uint64): Pool ID.
curl /neutron/dex/pool_metadata/ { id }
GetALLPoolMetadata
GET "/neutron/dex/pool_metadata" Queries a list of PoolMetadata items
Proto Messages:
Request:
message
QueryAllPoolMetadataRequest
{ cosmos . base . query . v1beta1 . PageRequest pagination =
1;} Response:
message
QueryAllPoolMetadataResponse
{ repeated
PoolMetadata pool_metadata =
```

```
[ ( gogoproto . nullable )
=
false ] ; cosmos . base . query . v1beta1 . PageResponse pagination =
```

- QueryAllPoolMetadataRequest
- : Request message for the GetALL Pool Metadata
- query.* pagination

2;} Arguments

• (cosmos.base.query.v1beta1.PageRequest): Pagination options.

Curl Command (testnet):

curl https://rest-falcron.pion-1.ntrn.tech/neutron/dex/pool_metadata Previous Messages Next Overview