

# UnoswapRouter

A router contract for executing token swaps on Unoswap-compatible decentralized exchanges:UniswapV3 ,UniswapV2 ,Curve .

## Derives

- [EthReceiver](#)
- [IUniswapV3SwapCallback](#)

## Functions

### unoswapToWithPermit

function

unoswapToWithPermit ( Address to , Address token , uint256 amount , uint256 minReturn , Address dex , bytes calldata permit )

external

returns ( uint256 returnAmount ) Swapsamount of the specifiedtoken for another token using Unoswap-compatible exchange's pool, with a minimum return specified byminReturn and permit-based approval.

#### Parameters:

Name	Type	Description
to	<a href="#">Address</a>	The address to receive the swapped tokens
token	<a href="#">Address</a>	The address of the token to be swapped
amount	uint256	The amount of tokens to be swapped
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	<a href="#">Address</a>	The address of the Unoswap-compatible exchange's pool
permit	bytes	A signed permit message for token approval

#### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap

### unoswap

function

unoswap ( Address token , uint256 amount , uint256 minReturn , Address dex )

external

returns ( uint256 returnAmount ) Swapsamount of the specifiedtoken for another token using an Unoswap-compatible exchange's pool, with a minimum return specified byminReturn .

#### Parameters:

Name	Type	Description
token	<a href="#">Address</a>	The address of the token to be swapped
amount	uint256	The amount of tokens to be swapped
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	<a href="#">Address</a>	The address of the Unoswap-compatible exchange's pool

#### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap

### unoswapTo

function

unoswapTo ( Address to , Address token , uint256 amount , uint256 minReturn , Address dex )

external

returns ( uint256 returnAmount ) Swapsamount of the specifiedtoken for another token using an Unoswap-compatible exchange's pool, sending the resulting tokens to theto address, with a minimum return specified byminReturn .

### Parameters:

Name Type Description to [Address](#) The address to receive the swapped tokens token [Address](#) The address of the token to be swapped amount uint256 The amount of tokens to be swapped minReturn uint256 The minimum amount of tokens to be received after the swap dex [Address](#) The address of the Unoswap-compatible exchange's pool

### Return values

Name Type Description returnAmount uint256 The actual amount of tokens received after the swap

## ethUnoswap

function

ethUnoswap ( uint256 minReturn , Address dex )

external

payable

returns ( uint256 returnAmount ) Swaps ETH for another token using an Unoswap-compatible exchange's pool, with a minimum return specified by minReturn . The function is payable and requires the sender to attach ETH. It is necessary to check if it's cheaper to use \_WETH\_NOT\_WRAP\_FLAG index Address (for example: for Curve pools).

### Parameters:

Name Type Description minReturn uint256 The minimum amount of tokens to be received after the swap dex [Address](#) The address of the Unoswap-compatible exchange's pool

### Return values

Name Type Description returnAmount uint256 The actual amount of tokens received after the swap

## ethUnoswapTo

function

ethUnoswapTo ( Address to , uint256 minReturn , Address dex )

external

payable

returns ( uint256 returnAmount )

{ Swaps ETH for another token using an Unoswap-compatible exchange's pool, sending the resulting tokens to the to address, with a minimum return specified by minReturn . The function is payable and requires the sender to attach ETH. It is necessary to check if it's cheaper to use \_WETH\_NOT\_WRAP\_FLAG index Address (for example: for Curve pools).

### Parameters:

Name Type Description to [Address](#) The address to receive the swapped tokens minReturn uint256 The minimum amount of tokens to be received after the swap dex [Address](#) The address of the Unoswap-compatible exchange's pool

### Return values

Name Type Description returnAmount uint256 The actual amount of tokens received after the swap

## unoswapToWithPermit2

function

unoswapToWithPermit2 ( Address to , Address token , uint256 amount , uint256 minReturn , Address dex , Address dex2 , bytes

calldata permit )

external

returns ( uint256 returnAmount ) Swapsamount of the specifiedtoken for another token using two Unoswap-compatible exchange pools (dex anddex2 ) sequentially, with a minimum return specified byminReturn and permit-based approval.

#### Parameters:

Name	Type	Description
token	<a href="#">Address</a>	The address to receive the swapped tokens
amount	uint256	The amount of tokens to be swapped
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	<a href="#">Address</a>	The address of the first Unoswap-compatible exchange's pool
dex2	<a href="#">Address</a>	The address of the second Unoswap-compatible exchange's pool
permit	bytes	A signed permit message for token approval

#### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through both pools

### unoswap2

function

unoswap2 ( [Address](#) token , uint256 amount , uint256 minReturn , [Address](#) dex , [Address](#) dex2 )

external

returns ( uint256 returnAmount ) Swapsamount of the specifiedtoken for another token using two Unoswap-compatible exchange pools (dex anddex2 ) sequentially, with a minimum return specified byminReturn .

#### Parameters:

Name	Type	Description
token	<a href="#">Address</a>	The address of the token to be swapped
amount	uint256	The amount of tokens to be swapped
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	<a href="#">Address</a>	The address of the first Unoswap-compatible exchange's pool
dex2	<a href="#">Address</a>	The address of the second Unoswap-compatible exchange's pool

#### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through both pools

### unoswapTo2

function

unoswapTo2 ( [Address](#) to , [Address](#) token , uint256 amount , uint256 minReturn , [Address](#) dex , [Address](#) dex2 )

external

returns ( uint256 returnAmount ) Swapsamount of the specifiedtoken for another token using two Unoswap-compatible exchange pools (dex anddex2 ) sequentially, sending the resulting tokens to theto address, with a minimum return specified byminReturn .

#### Parameters:

Name	Type	Description
to	<a href="#">Address</a>	The address to receive the swapped tokens
token	<a href="#">Address</a>	The address of the token to be swapped
amount	uint256	The amount of tokens to be swapped
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	<a href="#">Address</a>	The address of the first Unoswap-compatible exchange's pool
dex2	<a href="#">Address</a>	The address of the second Unoswap-compatible exchange's pool

#### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through both pools

### ethUnoswap2

function

ethUnoswap2 ( uint256 minReturn , [Address](#) dex , [Address](#) dex2 )

external

payable

returns ( uint256 returnAmount ) Swaps ETH for another token using two Unoswap-compatible exchange pools (dex anddex2 ) sequentially, with a minimum return specified byminReturn . The function is payable and requires the sender to attach ETH. It is necessary to check if it's cheaper to use \_WETH\_NOT\_WRAP\_FLAG index Address (for example: for Curve pools).

#### Parameters:

Name	Type	Description
minReturn	uint256	The minimum amount of tokens to be received after the swap
Address		The address of the first Unoswap-compatible exchange's pool
dex2	Address	The address of the second Unoswap-compatible exchange's pool

#### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through both pools

### ethUnoswapTo2

function

ethUnoswapTo2 ( Address to , uint256 minReturn , Address dex , Address dex2 )

external

payable

returns ( uint256 returnAmount )

{ Swaps ETH for another token using two Unoswap-compatible exchange pools (dex anddex2 ) sequentially, sending the resulting tokens to theto address, with a minimum return specified byminReturn . The function is payable and requires the sender to attach ETH. It is necessary to check if it's cheaper to use \_WETH\_NOT\_WRAP\_FLAG index Address (for example: for Curve pools).

#### Parameters:

Name	Type	Description
to	Address	The address to receive the swapped tokens
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	Address	The address of the first Unoswap-compatible exchange's pool
dex2	Address	The address of the second Unoswap-compatible exchange's pool

#### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through both pools

### unoswapToWithPermit3

function

unoswapToWithPermit3 ( Address to , Address token , uint256 amount , uint256 minReturn , Address dex , Address dex2 , Address dex3 , bytes

calldata permit )

external

returns ( uint256 returnAmount ) Swapsamount of the specifiedtoken for another token using three Unoswap-compatible exchange pools (dex ,dex2 , anddex3 ) sequentially, with a minimum return specified byminReturn and permit-based approval.

#### Parameters:

Name	Type	Description
to	Address	The address to receive the swapped tokens
token	Address	The address of the token to be swapped
amount	uint256	The amount of tokens to be swapped
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	Address	The address of the first Unoswap-compatible exchange's pool
dex2	Address	The address of the second Unoswap-compatible exchange's pool
dex3	Address	The address of the third Unoswap-compatible exchange's pool
permit	bytes	A signed permit message for token approval

#### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through all three pools

## unoswap3

function

unoswap3 ( Address token , uint256 amount , uint256 minReturn , Address dex , Address dex2 , Address dex3 )

external

returns ( uint256 returnAmount ) Swaps amount of the specified token for another token using three Unoswap-compatible exchange pools (dex ,dex2 , and dex3 ) sequentially, with a minimum return specified by minReturn .

### Parameters:

Name	Type	Description
token	<a href="#">Address</a>	The address of the token to be swapped
amount	uint256	The amount of tokens to be swapped
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	<a href="#">Address</a>	The address of the first Unoswap-compatible exchange's pool
dex2	<a href="#">Address</a>	The address of the second Unoswap-compatible exchange's pool
dex3	<a href="#">Address</a>	The address of the third Unoswap-compatible exchange's pool

### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through all three pools

## unoswapTo3

function

unoswapTo3 ( Address to , Address token , uint256 amount , uint256 minReturn , Address dex , Address dex2 , Address dex3 )

external

returns ( uint256 returnAmount ) Swaps amount of the specified token for another token using three Unoswap-compatible exchange pools (dex ,dex2 , and dex3 ) sequentially, sending the resulting tokens to the to address, with a minimum return specified by minReturn .

### Parameters:

Name	Type	Description
to	<a href="#">Address</a>	The address to receive the swapped tokens
token	<a href="#">Address</a>	The address of the token to be swapped
amount	uint256	The amount of tokens to be swapped
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	<a href="#">Address</a>	The address of the first Unoswap-compatible exchange's pool
dex2	<a href="#">Address</a>	The address of the second Unoswap-compatible exchange's pool
dex3	<a href="#">Address</a>	The address of the third Unoswap-compatible exchange's pool

### Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through all three pools

## ethUnoswap3

function

ethUnoswap3 ( uint256 minReturn , Address dex , Address dex2 , Address dex3 )

external

payable

returns ( uint256 returnAmount ) Swaps ETH for another token using three Unoswap-compatible exchange pools (dex ,dex2 , and dex3 ) sequentially, with a minimum return specified by minReturn . The function is payable and requires the sender to attach ETH. It is necessary to check if it's cheaper to use \_WETH\_NOT\_WRAP\_FLAG index Address (for example: for Curve pools).

### Parameters:

Name	Type	Description
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	<a href="#">Address</a>	The address of the first Unoswap-compatible exchange's pool
dex2	<a href="#">Address</a>	The address of the second Unoswap-compatible exchange's pool
dex3	<a href="#">Address</a>	The address of the third Unoswap-compatible exchange's pool

## Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through all three pools

## ethUnoswapTo3

function

ethUnoswapTo3 ( Address to , uint256 minReturn , Address dex , Address dex2 , Address dex3 )

external

payable

returns ( uint256 returnAmount )

{ Swaps ETH for another token using three Unoswap-compatible exchange pools (dex ,dex2 , anddex3 ) sequentially, sending the resulting tokens to theto address, with a minimum return specified byminReturn . The function is payable and requires the sender to attach ETH. It is necessary to check if it's cheaper to use \_WETH\_NOT\_WRAP\_FLAG index Address (for example: for Curve pools).

## Parameters:

Name	Type	Description
to	<a href="#">Address</a>	The address to receive the swapped tokens
minReturn	uint256	The minimum amount of tokens to be received after the swap
dex	<a href="#">Address</a>	The address of the first Unoswap-compatible exchange's pool
dex2	<a href="#">Address</a>	The address of the second Unoswap-compatible exchange's pool
dex3	<a href="#">Address</a>	The address of the third Unoswap-compatible exchange's pool

## Return values

Name	Type	Description
returnAmount	uint256	The actual amount of tokens received after the swap through all three pools

## uniswapV3SwapCallback

function

uniswapV3SwapCallback ( int256 amount0Delta , int256 amount1Delta , bytes )

external See {IUniswapV3SwapCallback-uniswapV3SwapCallback} Called by UniswapV3 pool during the swap operation initiated by UniswapRouter's methods with UniswapV3. This callback function ensures the proper transfer of tokens based on the swap's configuration. It handles the transfer of tokens by either directly transferring the tokens from the payer to the recipient, or by using a secondary permit contract to transfer the tokens if required by the pool. It verifies the correct pool is calling the function and uses inline assembly for efficient execution and to access low-level EVM features. [Edit this page](#)  
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