

# EIP-1559 Support

EIP-1559 is a new upgrade to the Ethereum network that changes how you pay for transactions. It introduces a base fee that varies depending on the network demand, and a priority fee that you can set to get faster confirmation. The base fee is burned, while the priority fee goes to the miner who includes your transaction in a block. Flashbots, starting from [mev-geth v1.10.5-mev-0.3.0](#), has integrated support for EIP-1559 transactions.

While users of the legacy transaction type don't need to make any configuration changes, they should be aware that it's now mandatory to include `gasPrice` that is at least equal to the base fee. Coinbase transfer can still be used to incentivize faster inclusion, but it cannot be used to bypass the base fee requirement.

## Legacy Transaction example

Below is an example of signing bundles with a legacy transaction:

```
const signedTransactions =
```

```
await flashbotsProvider . signBundle ( [ { signer : authSigner , transaction :
```

```
{ to :
```

```
"0xf1a54b075fb71768ac31b33fd7c61ad8f9f7dd18" , gasPrice :
```

```
10 , gasLimit :
```

```
33000 , chainId :
```

```
5 , value :
```

```
0 , } , } , ] ) ; The full amount of gasPrice will be consumed first to clear the base fee, and the remaining will be used as priority fee.
```

## EIP-1559 Transaction example

Below is an example of signing bundles with EIP-1559 transactions (note: `chainId` is a required attribute for 1559 or type2 transaction):

```
const block =
```

```
await provider . getBlock ( "latest" ) ; const maxBaseFeeInFutureBlock = FlashbotsBundleProvider .  
getMaxBaseFeeInFutureBlock ( block . baseFeePerGas ,
```

```
1 ) ; const priorityFee =
```

```
BigNumber . from ( 2 ) . pow ( 9 ) ; const signedTransactions =
```

```
await flashbotsProvider . signBundle ( [ { signer : authSigner , transaction :
```

```
{ to :
```

```
"0xf1a54b075fb71768ac31b33fd7c61ad8f9f7dd18" , type :
```

```
2 , maxFeePerGas : priorityFee . add ( maxBaseFeeInFutureBlock ) , maxPriorityFeePerGas : priorityFee , gasLimit :
```

```
33000 , chainId :
```

```
5 , value :
```

```
0 , } , } , ] ) ; Here the priorityFee is set to 2 Gwei, and the maxFeePerGas is set to be exactly equal to the max base fee in the next block plus the priority fee.
```

## FAQ

### Can a transaction specify `maxFeePerGas=0`

?

No, all transactions must have `maxFeePerGas` greater than or equal to `block.baseFeePerGas`, or they are not eligible for inclusion in a block.

## Can a transaction specify `maxPriorityFeePerGas=0`

Absolutely, although the builder will need some incentive to include this transaction. With a Flashbots bundle, you can incentivize a builder/validator to include your transactions with `block.coinbase.transfer()` payments OR via `maxPriorityFeePerGas`. You can also use both at the same time; the incentive is cumulative.

## Will reverting transactions still be discarded?

Flashbots still uses the same reverting transactions logic after EIP-1559: unless specified in `revertingTxHashes` in `eth_sendBundle`, a transaction that reverts invalidates an entire bundle and will not appear on chain.

However, with the new requirement for searchers to provide a gas price that meets the base fee for each transaction, successfully included bundle transactions may end up in the mempool following block re-organizations. If `gasPrice=0` is used, re-organized transactions are swiftly dropped from the gossip network, making it unlikely for them to appear in a future block unless reintroduced by another searcher. Transactions that pay at least the base fee will remain in the mempool and have a higher chance of appearing in future blocks, potentially conflicting with expectations regarding reverting transactions.

## How can I send a transaction from an account with 0 ETH, like one with a malicious sweeper

running against it?

We have a working example of how to accomplish this in our [Sponsored Transaction Github Repository](#), which has been updated to work with EIP-1559.

## Where can I learn more about EIP-1559?

[EIP-1559 Hackmd Cheat Sheet](#) [Edit this page](#) Last updated on Jan 30, 2024 [Previous Testnets](#) [Next Bundle Inclusion Troubleshooting](#)