

```

1  // SPDX-License-Identifier: MIT
2  // OpenZeppelin Contracts (last updated v4.7.0) (proxy/beamon/BeaconProxy.sol)
3
4  pragma solidity ^0.8.0;
5
6  import "./IBeacon.sol";
7  import "../Proxy.sol";
8  import "../ERC1967/ERC1967Upgrade.sol";
9
10 /**
11  * @dev This contract implements a proxy that gets the implementation address for
12  * each call from an {UpgradeableBeacon}.
13  *
14  * The beacon address is stored in storage slot
15  * `uint256(keccak256('eip1967.proxy.beacon')) - 1`, so that it doesn't
16  * conflict with the storage layout of the implementation behind the proxy.
17  *
18  * _Available since v3.4._
19  */
20 contract BeaconProxy is Proxy, ERC1967Upgrade {
21     /**
22      * @dev Initializes the proxy with `beacon`.
23      *
24      * If `data` is nonempty, it's used as data in a delegate call to the
25      * implementation returned by the beacon. This
26      * will typically be an encoded function call, and allows initializing the
27      * storage of the proxy like a Solidity
28      * constructor.
29      *
30      * Requirements:
31      *
32      * - `beacon` must be a contract with the interface {IBeacon}.
33      */
34     constructor(address beacon, bytes memory data) payable {
35         _upgradeBeaconToAndCall(beacon, data, false);
36     }
37
38     /**
39      * @dev Returns the current beacon address.
40      */
41     function _beacon() internal view virtual returns (address) {
42         return _getBeacon();
43     }
44
45     /**
46      * @dev Returns the current implementation address of the associated beacon.
47      */
48     function _implementation() internal view virtual override returns (address) {
49         return IBeacon(_getBeacon()).implementation();
50     }
51
52     /**
53      * @dev Changes the proxy to use a new beacon. Deprecated: see
54      * {_upgradeBeaconToAndCall}.
55      *
56      * If `data` is nonempty, it's used as data in a delegate call to the
57      * implementation returned by the beacon.
58      *
59      * Requirements:
60      *
61      * - `beacon` must be a contract.
62      * - The implementation returned by `beacon` must be a contract.
63      */
64     function _setBeacon(address beacon, bytes memory data) internal virtual {
65         _upgradeBeaconToAndCall(beacon, data, false);
66     }
67 }

```