

Interfaces

Mainnet Access

Chainlink Data Streams is available on Arbitrum Mainnet and Arbitrum Sepolia.

Talk to an expert

[Contact us](#) to talk to an expert about integrating Chainlink Data Streams with your applications.

Data Streams require several interfaces in order to retrieve and verify reports.

- Automation interfaces:* [StreamsLookupCompatibleInterface](#)
- [ILogAutomation](#)
- Data Streams interfaces:* IVerifierProxy
- IReportHandler

In the current code example for using Data Streams with Automation, these interfaces are specified in the example itself. Imports for these interfaces will be available in the future.

```
// SPDX-License-Identifier:
MITPragmasolidity"0.8.16;import(Common)from"@chainlink/contracts/src/v0.8/libraries/Common.sol";import(StreamsLookupCompatibleInterface)from"@chainlink/contracts/src/v0.8/automation/interfaces
feeds/interfaces/IRewardManager.sol";import{IVerifierFeeManager}from"@chainlink/contracts/src/v0.8/lo-
feeds/interfaces/IVerifierFeeManager.sol";import{IERC20}from"@chainlink/contracts/src/v0.8/vendor/openzeppelin-solidity/v4.8.0/contracts/interfaces/IERC20.sol";/ * THIS IS AN EXAMPLE
CONTRACT THAT USES UN-AUDITED CODE FOR DEMONSTRATION PURPOSES. * DO NOT USE THIS CODE IN PRODUCTION. /// Custom interfaces for IVerifierProxy and
IFeeManagerInterfaceIVerifierProxy(functionverify(bytescalldatapayload,bytescalldataparameterPayload)externalpayablereturns(bytesmemoryverifierResponse);function_s_feeManager()externalviewretur
The feed ID the report has data foruint32validFromTimestamp;/// Earliest timestamp for which price is applicableuint32observationsTimestamp;/// Latest timestamp for which price is
applicableuint192nativeFee;/// Base cost to validate a transaction using the report, denominated in the chain's native token (WETH/ETH)uint192linkFee;/// Base cost to validate a transaction using the
report, denominated in LINKuint32expiresAt;/// Latest timestamp where the report can be verified onchainint192price;/// DON consensus median price, carried to 8 decimal
placesstructPremiumReport{bytes32feedId;/// The feed ID the report has data foruint32validFromTimestamp;/// Earliest timestamp for which price is applicableuint32observationsTimestamp;/// Latest
timestamp for which price is applicableuint192nativeFee;/// Base cost to validate a transaction using the report, denominated in the chain's native token (WETH/ETH)uint192linkFee;/// Base cost to
validate a transaction using the report, denominated in LINKuint32expiresAt;/// Latest timestamp where the report can be verified onchainint192price;/// DON consensus median price, carried to 8
decimal placesint192bid;/// Simulated price impact of a buy order up to the X% depth of liquidity utilisationint192ask;/// Simulated price impact of a sell order up to the X% depth of liquidity
utilisation}structQuote{addressquoteAddress;eventPriceUpdate(int192indexedprice);IVerifierProxypublicverifier;addresspublicFEE_ADDRESS;stringpublicconstantDATASTREAMS_FEEDLABEL="feedI
This example reads the ID for the basic ETH/USD price report on Arbitrum Sepolia./// Find a complete list of IDs at https://docs.chain.link/data-streams/stream-idsstring[]publicfeedIds=
["0x00027bbaff688c906a3e20a34fe951715d1018d262a5b66e38eda027a674cd1b"];constructor(address_verifier){verifier=IVerifierProxy(_verifier);}/// This function uses revert to convey call
information./// See https://eips.ethereum.org/EIPS/eip-3668#rationale for details.functioncheckLog(Logcalldatalog,bytesmemory)externalreturns(boolupkeepNeeded,bytesmemoryperformData)
{revertStreamsLookup(DATASTREAMS_FEEDLABEL,feedIds,DATASTREAMS_QUERYLABEL,log.timestamp,"");}/// The Data Streams report bytes is passed here./// extraData is context data from
feed lookup process./// Your contract may include logic to further process this data./// This method is intended only to be simulated offchain by Automation./// The data returned will then be passed by
Automation into performUpkeepfunctioncheckCallback(bytes[]calldatavalues,bytescalldataextraData)externalpurereturns(bool,bytesmemory){return(true,abi.encode(values,extraData));}/// function will be
performed onchainfunctionperformUpkeep(bytescalldataperformData)external{/// Decode the performData bytes passed in by CL Automation./// This contains the data returned by your implementation in
checkCallback().(bytes[]memorysignedReports,bytesmemoryextraData)=abi.decode(performData,(bytes[],bytes));bytesmemoryunverifiedReport=signedReports[0];(./ bytes32[3] reportContextData
"/bytesmemoryreportData)=abi.decode(unverifiedReport,(bytes32[3],bytes));/// Report verification feesIFeeManager feeManager=IFeeManager(address(verifier.s_feeManager()));IRewardManager
rewardManager=IRewardManager(address(feeManager.i_rewardManager()));addressfeeTokenAddress=feeManager.i_linkAddress();
(Common.Assetmemoryfee,)=feeManager.getFeeAndReward(address(this),reportData,feeTokenAddress);/// Approve rewardManager to spend this contract's balance in
feesIERC20(feeTokenAddress).approve(address(rewardManager),fee.amount);/// Verify the reportbytesmemoryverifiedReportData=verifier.verify(unverifiedReport,abi.encode(feeTokenAddress));///
Decode verified report data into BasicReport structBasicReportmemoryverifiedReport=abi.decode(verifiedReportData,(BasicReport));/// Log price from reportemitPriceUpdate(verifiedReport.price);///
Store the price from the reportlast_retrieved_price=verifiedReport.price;fallback()externalpayable{}
```

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