libfaster API Documentation

Development Version

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Examples

Faster has examples...

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5.1 Class List

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Namespace Documentation

6.1 faster Namespace Reference

libfaster main namespace

Classes

- class _workerFdd
- class _workerFdd< T * >
- class _workerIFdd
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- class fastComm
- class fastCommBuffer
- class fastContext

  Framework context class.
- class fastScheduler
- class fastSettings

  Context Configuration Class.
- class fastTask
- class fdd
- class fdd< T * >
- class fddBase
- class fddCore
- class fddStorage
- class fddStorage< T * >
- class fddStorageBase
- class fddStorageCore
- class groupedFdd
- class hasher
- class hasher< double >
- class hasher< float >
- class hasher< std::string >
- class hdfsEngine
- class hdfsFile
- class iFddCore
- class indexedFdd
- class indexedFdd< K, T * >

- class indexedFddStorage
- class indexedFddStorage< K, T * >
- class indexedFddStorageCore
- class procstat
- class worker
- class workerFdd
- class workerFddBase
- class workerFddCore
- class workerFddGroup
- class workerIFdd
- class workerIFddCore

Typedefs

- typedef unsigned int **fddType**
- typedef unsigned int **fddOpType**

Partition function definitions

- template<typename T >
  using **onlineFullPartFuncP** = int(*)(T &input)
- template<typename K , typename T >
  using **IonlineFullPartFuncP** = int(*)(K &key, T &input)

Not Indexed FFDs function pointer types

- template<typename T , typename U >
  using **mapFunctionP** = U(*)(T &input)
- template<typename T , typename L , typename U >
  using **lmapFunctionP** = std::pair< L, U >(*)(T &input)
- template<typename T , typename U >
  using **PmapFunctionP** = std::pair< U, size_t >(*)(T &input)
- template<typename T , typename L , typename U >
  using **lPmapFunctionP** = std::tuple< L, U, size_t >(*)(T &input)
- template<typename T , typename U >
  using **bulkMapFunctionP** = void(*)(U *output, T *input, size_t size)
- template<typename T , typename L , typename U >
  using **lbulkMapFunctionP** = void(*)(L *outKey, U *output, T *input, size_t size)
- template<typename T , typename U >
  using **PbulkMapFunctionP** = void(*)(U *output, size_t *outputDataSizes, T *input, size_t size)
- template<typename T , typename L , typename U >
  using **lPbulkMapFunctionP** = void(*)(L *outKey, U *output, size_t *outputDataSizes, T *input, size_t size)
- template<typename T , typename U >
  using **flatMapFunctionP** = std::deque< U >(*)(T &input)
- template<typename T , typename L , typename U >
  using **lflatMapFunctionP** = std::deque< std::pair< L, U >>(*)(T &input)
- template<typename T , typename U >
  using **PflatMapFunctionP** = std::deque< std::pair< U, size_t >>(*)(T &input)
- template<typename T , typename L , typename U >
  using **lPflatMapFunctionP** = std::deque< std::tuple< L, U, size_t >>(*)(T &input)
- template<typename T , typename U >
  using **bulkFlatMapFunctionP** = void(*)(U *&output, size_t &outputSize, T *input, size_t size)
- template<typename T , typename L , typename U >
  using **lbulkFlatMapFunctionP** = void(*)(L *&outKey, U *&output, size_t &outputSize, T *input, size_t size)

- template<typename T , typename U >
  using **PbulkFlatMapFunctionP** = void(∗)(U ∗&output, size_t ∗&outputDataSizes, size_t &outputSize, T ∗input, size_t size)
- template<typename T , typename L , typename U >
  using **lPbulkFlatMapFunctionP** = void(∗)(L ∗&outKey, U ∗&output, size_t ∗&outputDataSizes, size_t &outputSize, T ∗input, size_t size)
- template<typename T >
  using **reduceFunctionP** = T(∗)(T &a, T &b)
- template<typename T >
  using **bulkReduceFunctionP** = T(∗)(T ∗input, size_t size)

Pointer FDD function pointer types

- template<typename T , typename U >
  using **mapPFunctionP** = U(∗)(T ∗input, size_t size)
- template<typename T , typename L , typename U >
  using **lmapPFunctionP** = std::pair< L, U >(∗)(T ∗input, size_t size)
- template<typename T , typename U >
  using **PmapPFunctionP** = std::pair< U, size_t >(∗)(T ∗input, size_t size)
- template<typename T , typename L , typename U >
  using **lPmapPFunctionP** = std::tuple< L, U, size_t >(∗)(T ∗input, size_t size)
- template<typename T , typename U >
  using **bulkMapPFunctionP** = void(∗)(U ∗output, T ∗∗input, size_t ∗inputDataSizes, size_t size)
- template<typename T , typename L , typename U >
  using **lbulkMapPFunctionP** = void(∗)(L ∗outKey, U ∗output, T ∗∗input, size_t ∗inputDataSizes, size_t size)
- template<typename T , typename U >
  using **PbulkMapPFunctionP** = void(∗)(U ∗output, size_t ∗outputDataSizes, T ∗∗input, size_t ∗inputDataSizes, size_t size)
- template<typename T , typename L , typename U >
  using **lPbulkMapPFunctionP** = void(∗)(L ∗outKey, U ∗output, size_t ∗outputDataSizes, T ∗∗input, size_t ∗inputDataSizes, size_t size)
- template<typename T , typename U >
  using **flatMapPFunctionP** = std::deque< U >(∗)(T ∗&input, size_t size)
- template<typename T , typename L , typename U >
  using **lflatMapPFunctionP** = std::deque< std::pair< L, U >>(∗)(T ∗&input, size_t size)
- template<typename T , typename U >
  using **PflatMapPFunctionP** = std::deque< std::pair< U, size_t >>(∗)(T ∗&input, size_t size)
- template<typename T , typename L , typename U >
  using **lPflatMapPFunctionP** = std::deque< std::tuple< L, U, size_t >>(∗)(T ∗&input, size_t size)
- template<typename T , typename U >
  using **bulkFlatMapPFunctionP** = void(∗)(U ∗&output, size_t &outputSize, T ∗∗input, size_t ∗inputDataSizes, size_t size)
- template<typename T , typename L , typename U >
  using **lbulkFlatMapPFunctionP** = void(∗)(L ∗&outKey, U ∗&output, size_t &outputSize, T ∗∗input, size_t ∗inputDataSizes, size_t size)
- template<typename T , typename U >
  using **PbulkFlatMapPFunctionP** = void(∗)(U ∗&output, size_t ∗outputDataSizes, size_t &outputSize, T ∗∗input, size_t ∗inputDataSizes, size_t size)
- template<typename T , typename L , typename U >
  using **lPbulkFlatMapPFunctionP** = void(∗)(L ∗&outKey, U ∗&output, size_t ∗outputDataSizes, size_t &outputSize, T ∗∗input, size_t ∗inputDataSizes, size_t size)
- template<typename T >
  using **PreducePFunctionP** = std::pair< T ∗, size_t >(∗)(T ∗a, size_t sizeA, T ∗b, size_t sizeB)
- template<typename T >
  using **PbulkReducePFunctionP** = std::pair< T ∗, size_t >(∗)(T ∗∗input, size_t ∗inputDataSizes, size_t size)

IFDD function pointer types

- template<typename K , typename T >
  using **updateIFunctionP** = void(∗)(K &inKey, T &input)
- template<typename K , typename T >
  using **updateByKeyIFunctionP** = void(∗)(K &inKey, std::vector< T ∗ > &input)
- template<typename K , typename T , typename L , typename U >
  using **ImapIFunctionP** = std::pair< L, U >(∗)(const K &inKey, T &input)
- template<typename K , typename T , typename U >
  using **mapIFunctionP** = U(∗)(const K &inKey, T &input)
- template<typename K , typename T , typename L , typename U >
  using **IPmapIFunctionP** = std::tuple< L, U, size_t >(∗)(const K &inKey, T &input)
- template<typename K , typename T , typename U >
  using **PmapIFunctionP** = std::pair< U, size_t >(∗)(const K &inKey, T &input)
- template<typename K , typename T , typename L , typename U >
  using **ImapByKeyIFunctionP** = std::pair< L, U >(∗)(const K &inKey, std::vector< T ∗ > &input)
- template<typename K , typename T , typename U >
  using **mapByKeyIFunctionP** = U(∗)(const K &inKey, std::vector< T ∗ > &input)
- template<typename K , typename T , typename L , typename U >
  using **IPmapByKeyIFunctionP** = std::tuple< L, U, size_t >(∗)(const K &inKey, std::vector< T ∗ > &input)
- template<typename K , typename T , typename U >
  using **PmapByKeyIFunctionP** = std::pair< U, size_t >(∗)(const K &inKey, std::vector< T ∗ > &input)
- template<typename K , typename T , typename L , typename U >
  using **IbulkMapIFunctionP** = void(∗)(L ∗outKey, U ∗output, K ∗inKey, T ∗input, size_t size)
- template<typename K , typename T , typename U >
  using **bulkMapIFunctionP** = void(∗)(U ∗output, K ∗inKey, T ∗input, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **IPbulkMapIFunctionP** = void(∗)(L ∗outKey, U ∗output, size_t ∗outputDataSizes, K ∗inKey, T ∗input, size_t size)
- template<typename K , typename T , typename U >
  using **PbulkMapIFunctionP** = void(∗)(U ∗output, size_t ∗outputDataSizes, K ∗inKey, T ∗input, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **IflatMapIFunctionP** = std::deque< std::pair< L, U >>(∗)(K inKey, T &input)
- template<typename K , typename T , typename U >
  using **flatMapIFunctionP** = std::deque< U >(∗)(K inKey, T &input)
- template<typename K , typename T , typename L , typename U >
  using **IPflatMapIFunctionP** = std::deque< std::tuple< L, U, size_t >>(∗)(K inKey, T &input)
- template<typename K , typename T , typename U >
  using **PflatMapIFunctionP** = std::deque< std::pair< U, size_t >>(∗)(K inKey, T &input)
- template<typename K , typename T , typename L , typename U >
  using **IbulkFlatMapIFunctionP** = void(∗)(L ∗&outKey, U ∗&output, size_t &outputSize, K ∗inKey, T ∗input, size_t size)
- template<typename K , typename T , typename U >
  using **bulkFlatMapIFunctionP** = void(∗)(U ∗&output, size_t &outputSize, K ∗inKey, T ∗input, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **IPbulkFlatMapIFunctionP** = void(∗)(L ∗&outKey, U ∗&output, size_t ∗&outputDataSizes, size_t &outputSize, K ∗inKey, T ∗input, size_t size)
- template<typename K , typename T , typename U >
  using **PbulkFlatMapIFunctionP** = void(∗)(U ∗&output, size_t ∗&outputDataSizes, size_t &outputSize, K ∗inKey, T ∗input, size_t size)
- template<typename K , typename T >
  using **IreduceIFunctionP** = std::pair< K, T >(∗)(const K &keyA, T &a, const K &keyB, T &b)
- template<typename K , typename T >
  using **IreduceByKeyIFunctionP** = std::pair< K, T >(∗)(const K &keyA, T ∗a, size_t sizeA, const K &keyB, T ∗b, size_t sizeB)
- template<typename K , typename T >
  using **IbulkReduceIFunctionP** = std::pair< K, T >(∗)(K ∗key, T ∗input, size_t size)

Pointer IFDD function pointer types

- template<typename K , typename T , typename L , typename U >
  using **ImapIPFunctionP** = std::pair< L, U >(∗)(K inKey, T ∗input, size_t size)

- template<typename K , typename T , typename U >
  using **mapIPFunctionP** = U(*)(K inKey, T *input, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **lPmapIPFunctionP** = std::tuple< L, U, size_t >(*)(K inKey, T *input, size_t size)
- template<typename K , typename T , typename U >
  using **PmapIPFunctionP** = std::pair< U, size_t >(*)(K inKey, T *input, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **lmapByKeyIPFunctionP** = std::pair< L, U >(*)(const K &inKey, std::vector< std::pair< T *, size_t >>)
- template<typename K , typename T , typename U >
  using **mapByKeyIPFunctionP** = U(*)(const K &inKey, std::vector< std::pair< T *, size_t >>)
- template<typename K , typename T , typename L , typename U >
  using **lPmapByKeyIPFunctionP** = std::tuple< L, U, size_t >(*)(const K &inKey, std::vector< std::pair< T *, size_t >>)
- template<typename K , typename T , typename U >
  using **PmapByKeyIPFunctionP** = std::pair< U, size_t >(*)(const K &inKey, std::vector< std::pair< T *, size_t >>)
- template<typename K , typename T , typename L , typename U >
  using **lbulkMapIPFunctionP** = void(*)(L *outKey, U *output, K *inKey, T **input, size_t *inputDataSizes, size_t size)
- template<typename K , typename T , typename U >
  using **bulkMapIPFunctionP** = void(*)(U *output, K *inKey, T **input, size_t *inputDataSizes, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **lPbulkMapIPFunctionP** = void(*)(L *outKey, U *output, size_t *outputDataSizes, K *inKey, T **input, size_t *inputDataSizes, size_t size)
- template<typename K , typename T , typename U >
  using **PbulkMapIPFunctionP** = void(*)(U *output, size_t *outputDataSizes, K *inKey, T **input, size_t *inputDataSizes, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **lflatMapIPFunctionP** = std::deque< std::pair< L, U >>(*)(T *&input, size_t size)
- template<typename K , typename T , typename U >
  using **flatMapIPFunctionP** = std::deque< U >(*)(T *&input, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **lPflatMapIPFunctionP** = std::deque< std::tuple< L, U, size_t >>(*)(T *&input, size_t size)
- template<typename K , typename T , typename U >
  using **PflatMapIPFunctionP** = std::deque< std::pair< U, size_t >>(*)(T *&input, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **lbulkFlatMapIPFunctionP** = void(*)(L *&outKey, U *&output, size_t &outputSize, K *inKey, T **input, size_t *inputDataSizes, size_t size)
- template<typename K , typename T , typename U >
  using **bulkFlatMapIPFunctionP** = void(*)(U *&output, size_t &outputSize, K *inKey, T **input, size_t *inputDataSizes, size_t size)
- template<typename K , typename T , typename L , typename U >
  using **lPbulkFlatMapIPFunctionP** = void(*)(L *&outKey, U *&output, size_t *outputDataSizes, size_t &outputSize, K *inKey, T **input, size_t *inputDataSizes, size_t size)
- template<typename K , typename T , typename U >
  using **PbulkFlatMapIPFunctionP** = void(*)(U *&output, size_t *outputDataSizes, size_t &outputSize, K *inKey, T **input, size_t *inputDataSizes, size_t size)
- template<typename K , typename T >
  using **lPreduceIPFunctionP** = std::tuple< K, T *, size_t >(*)(K keyA, T *a, size_t sizeA, K keyB, T *b, size_t sizeB)
- template<typename K , typename T >
  using **lPreduceByKeyIPFunctionP** = std::tuple< K, T *, size_t >(*)(K keyA, T **a, size_t *dataSizesA, size_t sizeA, K keyB, T **b, size_t *dataSizesB, size_t sizeB)
- template<typename K , typename T >
  using **lPbulkReduceIPFunctionP** = std::tuple< K, T *, size_t >(*)(K *key, T **input, size_t *inputDataSizes, size_t size)

Grouped FDDs function pointer types

- template<typename K >
  using **updateByKeyG2FunctionP** = void(∗)(const K &key, std::vector< void ∗ > &a, std::vector< void ∗ > &b)
- template<typename K >
  using **updateByKeyG3FunctionP** = void(∗)(const K &key, std::vector< void ∗ > &a, std::vector< void ∗ > &b, std::vector< void ∗ > &c)
- template<typename K >
  using **bulkUpdateG2FunctionP** = void(∗)(K ∗keyA, void ∗a, size_t na, K ∗keyB, void ∗b, size_t nb)
- template<typename K >
  using **bulkUpdateG3FunctionP** = void(∗)(K ∗keyA, void ∗a, size_t na, K ∗keyB, void ∗b, size_t nb, K ∗keyC, void ∗c, size_t nc)
- template<typename K , typename To >
  using **mapByKeyG2FunctionP** = To(∗)(const K &key, std::vector< void ∗ > &a, std::vector< void ∗ > &b)
- template<typename K , typename To >
  using **mapByKeyG3FunctionP** = To(∗)(const K &key, std::vector< void ∗ > &a, std::vector< void ∗ > &b, std::vector< void ∗ > &c)
- template<typename K , typename Ko , typename To >
  using **lmapByKeyG2FunctionP** = std::pair< Ko, To >(∗)(const K &key, std::vector< void ∗ > &a, std↩ ::vector< void ∗ > &b)
- template<typename K , typename Ko , typename To >
  using **lmapByKeyG3FunctionP** = std::pair< Ko, To >(∗)(const K &key, std::vector< void ∗ > &a, std↩ ::vector< void ∗ > &b, std::vector< void ∗ > &c)
- template<typename K , typename To >
  using **flatMapByKeyG2FunctionP** = std::deque< To >(∗)(const K &key, std::vector< void ∗ > &a, std↩ ::vector< void ∗ > &b)
- template<typename K , typename To >
  using **flatMapByKeyG3FunctionP** = std::deque< To >(∗)(const K &key, std::vector< void ∗ > &a, std↩ ::vector< void ∗ > &b, std::vector< void ∗ > &c)
- template<typename K , typename Ko , typename To >
  using **lflatMapByKeyG2FunctionP** = std::deque< std::pair< Ko, To >>(∗)(const K &key, std::vector< void ∗ > &a, std::vector< void ∗ > &b)
- template<typename K , typename Ko , typename To >
  using **lflatMapByKeyG3FunctionP** = std::deque< std::pair< Ko, To >>(∗)(const K &key, std::vector< void ∗ > &a, std::vector< void ∗ > &b, std::vector< void ∗ > &c)
- template<typename K , typename To >
  using **bulkFlatMapG2FunctionP** = std::deque< To >(∗)(K ∗keyA, void ∗a, size_t na, K ∗keyB, void ∗b, size_t nb)
- template<typename K , typename To >
  using **bulkFlatMapG3FunctionP** = std::deque< To >(∗)(K ∗keyA, void ∗a, size_t na, K ∗keyB, void ∗b, size_t nb, K ∗keyC, void ∗c, size_t nc)
- template<typename K , typename Ko , typename To >
  using **lbulkFlatMapG2FunctionP** = std::deque< std::pair< Ko, To >>(∗)(K ∗keyA, void ∗a, size_t na, K ∗keyB, void ∗b, size_t nb)
- template<typename K , typename Ko , typename To >
  using **lbulkFlatMapG3FunctionP** = std::deque< std::pair< Ko, To >>(∗)(K ∗keyA, void ∗a, size_t na, K ∗keyB, void ∗b, size_t nb, K ∗keyC, void ∗c, size_t nc)

Enumerations

- enum **dFuncName** : char {
  NewWorkerDL = 0x01, **NewWorkerSDL** = 0x02, **DiscardWorkerDL** = 0x03, **GetTypeDL** = 0x04, **GetKeyTypeDL** = 0x05, **SetDataDL** = 0x06, **SetDataRawDL** = 0x07, **GetLineSizesDL** = 0x08, **GetFddItemDL** = 0x09, **GetKeysDL** = 0x0a, **GetDataDL** = 0x0b, **GetSizeDL** = 0x0c, **ItemSizeDL** = 0x0d, **BaseSizeDL** = 0x0e, **SetSizeDL** = 0x0f, **DeleteItemDL** = 0x10, **ShrinkDL** = 0x11, **InsertDL** = 0x12, **InsertListDL** = 0x13, **PreapplyDL** = 0x14, **CollectDL** = 0x15, **GroupByKeyDL** = 0x16, **CountByKeyDL** = 0x17, **ExchangeDataByKeyDL** = 0x18, **GetKeyLocationDL** = 0x19, **GetUKeysDL** = 0x1a, **SetUKeysDL** = 0x1b, **GetKeyMapDL** = 0x1c, **SetKeyMapDL** = 0x1d, **WriteToFileDL** = 0x1e }

- enum **commMode** { **Local**, **Mesos** }
- enum **msgTag** : int {
  MSG_TASK, **MSG_CREATEFDD**, **MSG_CREATEIFDD**, **MSG_CREATEGFDD**,
  MSG_DISCARDFDD, **MSG_FDDSETDATAID**, **MSG_FDDSETDATA**, **MSG_FDDSET2DDATAID**,
  MSG_FDDSET2DDATASIZES, **MSG_FDDSET2DDATA**, **MSG_READFDDFILE**, **MSG_WRITEFDDFILE**,
  MSG_FILENAME, **MSG_COLLECT**, **MSG_FDDDATAID**, **MSG_FDDDATA**,
  MSG_TASKRESULT, **MSG_FDDINFO**, **MSG_FDDSETIDATAID**, **MSG_FDDSETIDATA**,
  MSG_FDDSETIKEYS, **MSG_FDDSET2DIDATAID**, **MSG_FDDSET2DIDATASIZES**, **MSG_FDDSET2DID↩ATA**,
  MSG_FDDSET2DIKEYS, **MSG_KEYOWNERSHIPSUGEST**, **MSG_MYKEYOWNERSHIP**, **MSG_MYKEY↩COUNT**,
  MSG_IFDDDATAID, **MSG_IFDDDATAKEYS**, **MSG_IFDDDATA**, **MSG_COLLECTDATA**,
  MSG_KEYMAP, **MSG_DISTKEYMAP**, **MSG_GROUPBYKEYDATA**, **MSG_FINISH** }
- enum **fileMode** : int { **R** = O_RDONLY, **W** = O_WRONLY, **CR** = O_RDONLY | O_CREAT, **CW** = O_WRONLY | O_CREAT }

Functions

- procstat **getProcStat** ()
- fddType **decodeType** (size_t typeCode)
- const std::string **decodeOptype** (fddOpType op)
- const std::string **decodeOptypeAb** (fddOpType op)
- template<typename T >
  double **mean** (std::vector< T > v)
- template<typename T >
  double **max** (std::vector< T > v)
- template<typename T >
  double **sum** (std::vector< T > v)
- template<typename T >
  double **stdDev** (std::vector< T > v, double mean)
- workerFddBase * **newWorkerSDL** (unsigned long int id, fddType type, size_t size)
- void **discardWorkerDL** (workerFddBase *fdd)
- fddType **getTypeDL** (workerFddBase *fdd)
- fddType **getKeyTypeDL** (workerFddBase *fdd)
- void **setDataDL** (workerFddBase *fdd, void *keys, void *data, size_t *lineSizes, size_t size)
- void **setDataRawDL** (workerFddBase *fdd, void *keys, void *data, size_t *lineSizes, size_t size)
- size_t * **getLineSizesDL** (workerFddBase *fdd)
- void * **getFddItemDL** (workerFddBase *fdd, size_t address)
- void * **getKeysDL** (workerFddBase *fdd)
- void * **getDataDL** (workerFddBase *fdd)
- size_t **getSizeDL** (workerFddBase *fdd)
- size_t **itemSizeDL** (workerFddBase *fdd)
- size_t **baseSizeDL** (workerFddBase *fdd)
- void **setSizeDL** (workerFddBase *fdd, size_t s)
- void **deleteItemDL** (workerFddBase *fdd, void *item)
- void **shrinkDL** (workerFddBase *fdd)
- void **insertDL** (workerFddBase *fdd, void *k, void *v, size_t s)
- void **insertListDL** (workerFddBase *fdd, void *v)
- void **preapplyDL** (workerFddBase *fdd, unsigned long int id, void *func, fddOpType op, workerFddBase *dest, fastComm *comm)
- void **collectDL** (workerFddBase *fdd, fastComm *comm)
- void **exchangeDataByKeyDL** (workerFddBase *fdd, fastComm *comm)
- void * **getKeyLocationsDL** (workerFddBase *fdd)
- void * **getUKeysDL** (workerFddBase *fdd)
- void **setUKeysDL** (workerFddBase *fdd, void *uk)
- void * **getKeyMapDL** (workerFddBase *fdd)
- void **setKeyMapDL** (workerFddBase *fdd, void *km)
- void **writeToFileDL** (workerFddBase *fdd, void *path, size_t procId, void *sufix)

Variables

- const int **BUFFER_INITIAL_SIZE** = 512∗1024

6.1.1 Detailed Description

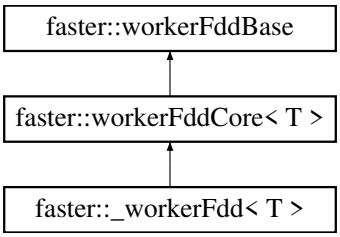
libfaster main namespace

Chapter 7

Class Documentation

7.1 faster::_workerFdd< T > Class Template Reference

Inheritance diagram for faster::_workerFdd< T >:



Public Member Functions

- **_workerFdd** (unsigned int ident, fddType t)
- **_workerFdd** (unsigned int ident, fddType t, size_t size)
- void **setData** (T *data, size_t size)
- void **setData** (void *d UNUSED, size_t size UNUSED)
- void **setData** (void *d UNUSED, size_t *lineSizes UNUSED, size_t size UNUSED)
- void **setData** (void *k UNUSED, void *d UNUSED, size_t *lineSizes UNUSED, size_t size UNUSED)
- void **setDataRaw** (void *data, size_t size) override
- void **setDataRaw** (void *data UNUSED, size_t *listSizes UNUSED, size_t size UNUSED) override
- size_t * **getLineSizes** ()
- void **insert** (void *k, void *in, size_t s)
- void **insertI** (void *in)
- void **insert** (T &in)
- void **insert** (T *in UNUSED, size_t s UNUSED)
- void **insert** (std::deque< T > &in)
- void **insert** (std::deque< std::pair< T *, size_t >> &in UNUSED)
- void **apply** (void *func, fddOpType op, workerFddBase *dest, fastCommBuffer &buffer)
- void **collect** (fastComm *comm) override
- template<typename U >
  void **map** (workerFddBase *dest, mapPFunctionP< T, U > mapFunc)
- template<typename U >
  void **map** (workerFddBase *dest, PmapPFunctionP< T, U > mapFunc)

- template<typename L , typename U >
  void **map** (workerFddBase *dest, ImapPFunctionP< T, L, U > mapFunc)
- template<typename L , typename U >
  void **map** (workerFddBase *dest, IPmapPFunctionP< T, L, U > mapFunc)
- template<typename U >
  void **bulkMap** (workerFddBase *dest, bulkMapPFunctionP< T, U > bulkMapFunc)
- template<typename U >
  void **bulkMap** (workerFddBase *dest, PbulkMapPFunctionP< T, U > bulkMapFunc)
- template<typename L , typename U >
  void **bulkMap** (workerFddBase *dest, IbulkMapPFunctionP< T, L, U > bulkMapFunc)
- template<typename L , typename U >
  void **bulkMap** (workerFddBase *dest, IPbulkMapPFunctionP< T, L, U > bulkMapFunc)
- template<typename U >
  void **flatMap** (workerFddBase *dest, flatMapPFunctionP< T, U > flatMapFunc)
- template<typename U >
  void **flatMap** (workerFddBase *dest, PflatMapPFunctionP< T, U > flatMapFunc)
- template<typename L , typename U >
  void **flatMap** (workerFddBase *dest, IflatMapPFunctionP< T, L, U > flatMapFunc)
- template<typename L , typename U >
  void **flatMap** (workerFddBase *dest, IPflatMapPFunctionP< T, L, U > flatMapFunc)
- template<typename U >
  void **bulkFlatMap** (workerFddBase *dest, bulkFlatMapPFunctionP< T, U > bulkFlatMapFunc)
- template<typename U >
  void **bulkFlatMap** (workerFddBase *dest, PbulkFlatMapPFunctionP< T, U > bulkFlatMapFunc)
- template<typename L , typename U >
  void **bulkFlatMap** (workerFddBase *dest, IbulkFlatMapPFunctionP< T, L, U > bulkFlatMapFunc)
- template<typename L , typename U >
  void **bulkFlatMap** (workerFddBase *dest, IPbulkFlatMapPFunctionP< T, L, U > bulkFlatMapFunc)

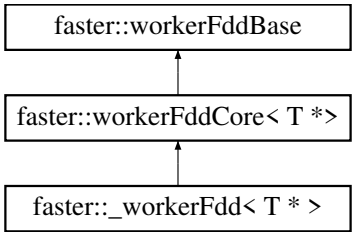
Additional Inherited Members

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerFdd.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/_workerFdd.cpp
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerPFdd.cpp

7.2 faster::_workerFdd< T * > Class Template Reference

Inheritance diagram for faster::_workerFdd< T * >:



Public Member Functions

- **_workerFdd** (unsigned int ident, fddType t)
- **_workerFdd** (unsigned int ident, fddType t, size_t size)
- void **setData** (T **data, size_t *lineSizes, size_t size)
- void **setData** (void *d UNUSED, size_t size UNUSED)
- void **setData** (void *data UNUSED, size_t *lineSizes UNUSED, size_t size UNUSED)
- void **setData** (void *k UNUSED, void *d UNUSED, size_t *lineSizes UNUSED, size_t size UNUSED)
- void **setDataRaw** (void *data UNUSED, size_t size UNUSED) override
- void **setDataRaw** (void *data, size_t *lineSizes, size_t size) override
- size_t * **getLineSizes** ()
- void **insert** (void *k, void *in, size_t s)
- void **insertI** (void *in)
- void **insert** (T &in)
- void **insert** (T *&in, size_t s)
- void **insert** (std::deque< T > &in)
- void **insert** (std::deque< std::pair< T *, size_t > > &in)
- void **apply** (void *func, fddOpType op, workerFddBase *dest, fastCommBuffer &buffer)
- void **collect** (fastComm *comm) override

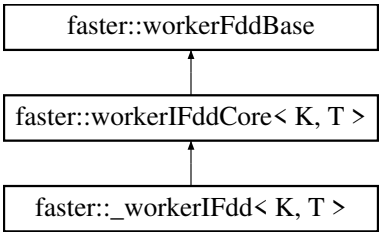
Additional Inherited Members

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerFdd.h

7.3 faster::_workerIFdd< K, T > Class Template Reference

Inheritance diagram for faster::_workerIFdd< K, T >:



Public Member Functions

- **_workerIFdd** (unsigned int ident, fddType kt, fddType t)
- **_workerIFdd** (unsigned int ident, fddType kt, fddType t, size_t size)
- void **setData** (K *keys, T *data, size_t size)
- void **setData** (void *keys, void *data, size_t size)
- void **setData** (void *keys, void *data, size_t *lineSizes UNUSED, size_t size)
- void **setDataRaw** (void *keys, void *data, size_t size) override
- void **setDataRaw** (void *keys UNUSED, void *data UNUSED, size_t *lineSizes UNUSED, size_t size UNUSED) override
- size_t * **getLineSizes** ()

- void **insert** (void *k, void *in, size_t s)
- void **insertI** (void *in)
- void **insert** (K &key, T &in)
- void **insert** (std::deque< std::pair< K, T > > &in)
- void **apply** (void *func, fddOpType op, workerFddBase *dest, fastCommBuffer &buffer)
- void **collect** (fastComm *comm) override
- template<typename L , typename U >
  void **map** (workerFddBase *dest, ImapIPFunctionP< K, T, L, U > mapFunc)
- template<typename L , typename U >
  void **map** (workerFddBase *dest, IPmapIPFunctionP< K, T, L, U > mapFunc)
- template<typename U >
  void **map** (workerFddBase *dest, mapIPFunctionP< K, T, U > mapFunc)
- template<typename U >
  void **map** (workerFddBase *dest, PmapIPFunctionP< K, T, U > mapFunc)
- template<typename L , typename U >
  void **bulkMap** (workerFddBase *dest, IbulkMapIPFunctionP< K, T, L, U > bulkMapFunc)
- template<typename L , typename U >
  void **bulkMap** (workerFddBase *dest, IPbulkMapIPFunctionP< K, T, L, U > bulkMapFunc)
- template<typename U >
  void **bulkMap** (workerFddBase *dest, bulkMapIPFunctionP< K, T, U > bulkMapFunc)
- template<typename U >
  void **bulkMap** (workerFddBase *dest, PbulkMapIPFunctionP< K, T, U > bulkMapFunc)
- template<typename L , typename U >
  void **flatMap** (workerFddBase *dest, IflatMapIPFunctionP< K, T, L, U > flatMapFunc)
- template<typename L , typename U >
  void **flatMap** (workerFddBase *dest, IPflatMapIPFunctionP< K, T, L, U > flatMapFunc)
- template<typename U >
  void **flatMap** (workerFddBase *dest, flatMapIPFunctionP< K, T, U > flatMapFunc)
- template<typename U >
  void **flatMap** (workerFddBase *dest, PflatMapIPFunctionP< K, T, U > flatMapFunc)
- template<typename L , typename U >
  void **bulkFlatMap** (workerFddBase *dest, IbulkFlatMapIPFunctionP< K, T, L, U > bulkFlatMapFunc)
- template<typename L , typename U >
  void **bulkFlatMap** (workerFddBase *dest, IPbulkFlatMapIPFunctionP< K, T, L, U > bulkFlatMapFunc)
- template<typename U >
  void **bulkFlatMap** (workerFddBase *dest, bulkFlatMapIPFunctionP< K, T, U > bulkFlatMapFunc)
- template<typename U >
  void **bulkFlatMap** (workerFddBase *dest, PbulkFlatMapIPFunctionP< K, T, U > bulkFlatMapFunc)

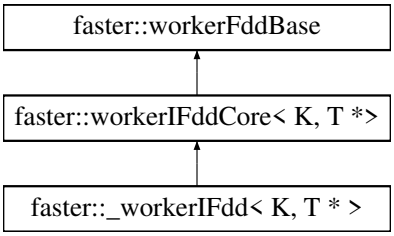
Additional Inherited Members

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerIFdd.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerIFdd.cpp
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerIFddDependent.cpp
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerIPFdd.cpp
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerIPFddDependent.cpp

7.4 faster::_workerIFdd< K, T * > Class Template Reference

Inheritance diagram for faster::_workerIFdd< K, T * >:



Public Member Functions

- **_workerIFdd** (unsigned int ident, fddType kt, fddType t)
- **_workerIFdd** (unsigned int ident, fddType kt, fddType t, size_t size)
- void **setData** (K *keys, T **data, size_t *lineSizes, size_t size)
- void **setData** (void *keys UNUSED, void *data UNUSED, size_t size UNUSED)
- void **setData** (void *keys, void *data, size_t *lineSizes, size_t size)
- void **setDataRaw** (void *keys UNUSED, void *data UNUSED, size_t size UNUSED) override
- void **setDataRaw** (void *keys, void *data, size_t *lineSizes, size_t size) override
- size_t * **getLineSizes** ()
- void **insert** (void *k, void *in, size_t s)
- void **insertI** (void *in)
- void **insert** (K &key, T *&in, size_t s)
- void **insert** (std::deque< std::tuple< K, T *, size_t > > &in)
- void **apply** (void *func, fddOpType op, workerFddBase *dest, fastCommBuffer &buffer)
- void **collect** (fastComm *comm) override

Additional Inherited Members

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerIFdd.h

7.5 faster::fastComm Class Reference

Public Member Functions

- **fastComm** (int &argc, char **argv)
- int **getProcId** ()
- int **getNumProcs** ()
- fastCommBuffer & **getResultBuffer** ()
- fastCommBuffer * **getSendBuffers** ()
- bool **isDriver** ()
- void **probeMsgs** (int &tag, int &src)
- void **waitForReq** (int numReqs)
- void **joinAll** ()

- void **joinSlaves** ()
- template<typename T >
  size_t **getSize** (T *data UNUSED, size_t *ds UNUSED, size_t s)
- template<typename T >
  size_t **getSize** (std::vector< T > *data, size_t *ds UNUSED, size_t s)
- template<typename T >
  size_t **getSize** (T **data UNUSED, size_t *ds, size_t s)
- size_t **getSize** (std::string *data, size_t *ds UNUSED, size_t s)
- void **sendTask** (fastTask &task)
- void **recvTask** (fastTask &task)
- void **sendTaskResult** ()
- void * **recvTaskResult** (unsigned long int &tid, unsigned long int &sid, size_t &size, size_t &time, procstat &stat)
- void **sendCreateFDD** (unsigned long int id, fddType type, size_t size, int dest)
- void **recvCreateFDD** (unsigned long int &id, fddType &type, size_t &size)
- void **sendCreateIFDD** (unsigned long int id, fddType kType, fddType tType, size_t size, int dest)
- void **recvCreateIFDD** (unsigned long int &id, fddType &kType, fddType &tType, size_t &size)
- void **sendCreateFDDGroup** (unsigned long int id, fddType keyType, std::vector< unsigned long int > &members)
- void **recvCreateFDDGroup** (unsigned long int &id, fddType &keyType, std::vector< unsigned long int > &members)
- void **sendDiscardFDD** (unsigned long int id)
- void **recvDiscardFDD** (unsigned long int &id)
- template<typename T >
  void **sendFDDSetData** (unsigned long int id, int dest, T *data, size_t size)
- template<typename T >
  void **sendFDDSetData** (unsigned long int id, int dest, T **data, size_t *lineSizes, size_t size)
- template<typename K , typename T >
  void **sendFDDSetIData** (unsigned long int id, int dest, K *keys, T *data, size_t size)
- template<typename K , typename T >
  void **sendFDDSetIData** (unsigned long int id, int dest, K *keys, T **data, size_t *lineSizes, size_t size)
- void **recvFDDSetData** (unsigned long int &id, void *&data, size_t &size)
- void **recvFDDSetData** (unsigned long int &id, void *&data, size_t *&lineSizes, size_t &size)
- template<typename K , typename T >
  void **recvFDDSetIData** (unsigned long int &id, K *&keys, T *&data, size_t &size)
- template<typename K , typename T >
  void **recvFDDSetIData** (unsigned long int &id, K *&keys, T *&data, size_t *&lineSizes, size_t &size)
- template<typename T >
  void **sendFDDData** (unsigned long int id, int dest, T *data, size_t size)
- template<typename K , typename T >
  void **sendIFDDData** (unsigned long int id, int dest, K *keys, T *data, size_t size)
- void **recvFDDData** (unsigned long int &id, void *data, size_t &size)
- void **recvIFDDData** (unsigned long int &id, void *keys, void *data, size_t &size)
- template<typename T >
  void **sendFDDDataCollect** (unsigned long int id, T *data, size_t size)
- template<typename T >
  void **sendFDDDataCollect** (unsigned long int id, T **data, size_t *dataSizes, size_t size)
- template<typename K , typename T >
  void **sendFDDDataCollect** (unsigned long int id, K *keys, T *data, size_t size)
- template<typename K , typename T >
  void **sendFDDDataCollect** (unsigned long int id, K *keys, T **data, size_t *dataSizes, size_t size)
- template<typename T >
  void **decodeCollect** (T &item)
- template<typename T >
  void **decodeCollect** (std::pair< T *, size_t > &item)

- template<typename K , typename T >
  void **decodeCollect** (std::pair< K, T > &item)
- template<typename K , typename T >
  void **decodeCollect** (std::tuple< K, T *, size_t > &item)
- template<typename T >
  void **recvFDDDataCollect** (std::vector< T > &ret)
- void **sendReadFDDFile** (unsigned long int id, std::string filename, size_t size, size_t offset, int dest)
- void **recvReadFDDFile** (unsigned long int &id, std::string &filename, size_t &size, size_t &offset)
- void **sendWriteFDDFile** (unsigned long int id, std::string &path, std::string &sufix)
- void **recvWriteFDDFile** (unsigned long int &id, std::string &path, std::string &sufix)
- void **sendFDDInfo** (size_t size)
- void **recvFDDInfo** (size_t &size, int &src)
- void **sendFileName** (std::string path)
- void **recvFileName** (std::string &filename)
- void **sendCollect** (unsigned long int id)
- void **recvCollect** (unsigned long int &id)
- void **sendFinish** ()
- void **recvFinish** ()
- void **bcastBuffer** (int src, int i)
- template<typename K >
  void **sendKeyMap** (unsigned long tid, std::unordered_map< K, int > &keyMap)
- template<typename K >
  void **recvKeyMap** (unsigned long tid, std::unordered_map< K, int > &keyMap)
- template<typename K >
  void **distributeKeyMap** (std::unordered_map< K, int > &localKeyMap, std::unordered_map< K, int > &keyMap)
- template<typename K >
  void **sendCogroupData** (unsigned long tid, std::unordered_map< K, int > &keyMap, std::vector< bool > &flags)
- template<typename K >
  void **recvCogroupData** (unsigned long tid, std::unordered_map< K, int > &keyMap, std::vector< bool > &flags)
- bool **isSendBufferFree** (int i)
- void **sendGroupByKeyData** (int i)
- void * **recvGroupByKeyData** (int &size)
- template<typename T >
  void **sendDataUltraPlus** (int dest, T *data, size_t *lineSizes UNUSED, size_t size, int tag, fastCommBuffer &b UNUSED, MPI_Request *request)
- template<typename T >
  void **sendDataUltraPlus** (int dest, std::vector< T > *data, size_t *lineSizes UNUSED, size_t size, int tag, fastCommBuffer &b UNUSED, MPI_Request *request)

Public Attributes

- const size_t **maxMsgSize** = 15000

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fastComm.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/fastComm.cpp

7.6 faster::fastCommBuffer Class Reference

Public Member Functions

- **fastCommBuffer** (size_t s)
- void **setBuffer** (void *buffer, size_t s)
- void **reset** ()
- char * **data** ()
- char * **pos** ()
- char * **pos** (size_t pos)
- size_t **size** ()
- size_t **free** ()
- void **advance** (size_t pos)
- void **grow** (size_t s)
- void **print** ()
- template<typename T >
  void **write** (T &v, size_t s)
- template<typename T >
  void **writePos** (const T &v, size_t s, size_t pos)
- template<typename T >
  void **writePos** (const T &v, size_t pos)
- template<typename T >
  void **writeSafe** (T *v, size_t s)
- template<typename T >
  void **write** (T *v, size_t s)
- template<typename T >
  void **write** (T v)
- void **write** (std::string i)
- void **write** (std::vector< std::string > v)
- template<typename T >
  void **write** (std::vector< T > v)
- template<typename K , typename T >
  void **write** (std::pair< K, T > p)
- template<typename K , typename T >
  void **write** (std::tuple< K, T, size_t > t)
- void **write** (procstat &s)
- void **writePos** (procstat &s, size_t pos)
- void **read** (procstat &s)
- void **advance** (procstat &s)
- template<typename T >
  void **read** (T &v, size_t s)
- template<typename T >
  void **read** (T *v, size_t s)
- template<typename T >
  void **read** (T &v)
- template<typename T >
  void **readVec** (std::vector< T > &v, size_t s)
- void **read** (std::vector< std::string > &v)
- void **readString** (std::string &v, size_t s)
- template<typename T >
  void **read** (std::vector< T > &v)
- void **read** (std::string &s)
- template<typename K , typename T >
  void **read** (std::pair< K, T > &p)

- template<typename K , typename T >
  void **read** (std::tuple< K, T, size_t > &t)
- template<typename T >
  fastCommBuffer & **operator**<< (T v)
- template<typename T >
  fastCommBuffer & **operator**>> (T &v)

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fastCommBuffer.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/fastCommBuffer.cpp

7.7 faster::fastContext Class Reference

`#include <fastContext.h>`

7.7.1 Description

Framework context class.

The context manages communication, scheduler and start Workers. A context is needed to create datasets!

Public Member Functions

- fastContext (int argc=0, char **argv=NULL)
  fastContext default constructor
- fastContext (const fastSettings &s, int argc, char **argv)
  fastContext constructor with custom settings
- ~fastContext ()
  fastContext destructor
- void registerFunction (void *funcP)
  Register a user custom function in the context.
- void registerFunction (void *funcP, const std::string name)
  Register a user custom function in the context.
- template<class T >
  void registerGlobal (T *varP)
  Gegisters a primitive global varible to be used inside used defined functions in distributted environment.
- template<class T >
  void registerGlobal (T **varP, size_t s)
  Gegisters a global array to be used inside used defined functions in distributted environment.
- template<class T >
  void registerGlobal (std::vector< T > *varP)
  Gegisters a global Vector to be used inside used defined functions in distributted environment.
- void startWorkers ()
  Start worker machines computation.
- bool isDriver ()
  Checks for the driver process.
- void calibrate ()

Performs a microbenchmark to do dynamic load balancing (UNUSED)

- template<typename T >
  fdd< T > * onlineFullPartRead (std::string path, onlineFullPartFuncP< T > funcP)

  Reads a file with online parsing and partition (NOT IMPLEMENTED)
- template<typename K , typename T >
  indexedFdd< K, T > * **onlineFullPartRead** (std::string path, IonlineFullPartFuncP< K, T > funcP)
- template<typename K , typename T >
  indexedFdd< K, T > * **onlinePartRead** (std::string path, IonlineFullPartFuncP< K, T > funcP)
- template<typename K , typename T >
  indexedFdd< K, T > * **onlineRead** (std::string path, IonlineFullPartFuncP< K, T > funcP)
- int **numProcs** ()
- void **printInfo** ()
- void **printHeader** ()
- void **updateInfo** ()

7.7.2 Constructors and Destructors

7.7.2.1 fastContext()

```
faster::fastContext::fastContext (
            int argc = 0,
            char ** argv = NULL )
```

fastContext default constructor

Parameters

argc	- number of arguments from main
argv	- arguments from main

7.7.3 Member Function Documentation

7.7.3.1 isDriver()

```
bool faster::fastContext::isDriver ( )
```

Checks for the driver process.

Returns

- true if the process is the driver process

7.7.3.2 onlineFullPartRead()

```
template<typename T >
fdd<T>* faster::fastContext::onlineFullPartRead (
            std::string path,
            onlineFullPartFuncP< T > funcP )
```

Reads a file with online parsing and partition (NOT IMPLEMENTED)

Template Parameters

T	- Dataset type

Parameters

path	- Input file path
funcP	- partition function pointer of types ::faster::onlineFullPartFuncP or ::faster::lonlineFullPartFuncP

Returns

- a dataset of ::faster::fdd<t> type and faster::indexedFdd<K,T>

7.7.3.3 registerFunction() [1/2]

```
void faster::fastContext::registerFunction (
            void * funcP )
```

Register a user custom function in the context.

Registering a user custom functions is necessary in order to pass it as parametes to FDD functions like **map** and **reduce**.

Parameters

funcP	- Function pointer to a user defined function.

7.7.3.4 registerFunction() [2/2]

```
void faster::fastContext::registerFunction (
            void * funcP,
            const std::string name )
```

Register a user custom function in the context.

Registering a user custom functions is necessary in order to pass it as parametes to FDD functions like **map** and **reduce**.

Parameters

funcP	- Function pointer to a user defined function.
name	- Custom name to registered funciton.

7.7.3.5 registerGlobal() [1/3]

```
template<class T >
```

```
void faster::fastContext::registerGlobal (
            T * varP )
```

Gegisters a primitive global varible to be used inside used defined functions in distributted environment.

Template Parameters

T	- Type of the global variable to be registered

Parameters

varP	- Global variable to be registered

7.7.3.6 registerGlobal() [2/3]

```
template<class T >
void faster::fastContext::registerGlobal (
            T ** varP,
            size_t s )
```

Gegisters a global array to be used inside used defined functions in distributted environment.

Template Parameters

T	- Type of the global array to be registered

Parameters

varP	- Global array to be registered
s	- Size of the array

7.7.3.7 registerGlobal() [3/3]

```
template<class T >
void faster::fastContext::registerGlobal (
            std::vector< T > * varP )
```

Gegisters a global Vector to be used inside used defined functions in distributted environment.

Template Parameters

T	- Type of the global vector to be registered

Parameters

varP	- Global vector to be registered

7.7.3.8 startWorkers()

```
void faster::fastContext::startWorkers ( )
```

Start worker machines computation.

When this function is called, the driver processes and works processes diverge from execution. While the Driver process starts to execute user code, the worker processes start to waiting for tasks. Then workers should exit short after this function is called.

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fastContext.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/fastContext.cpp

7.8 faster::fastScheduler Class Reference

Public Member Functions

- **fastScheduler** (unsigned int numProcs, std::vector< std::string > *funcName)
- fastTask * **enqueueTask** (fddOpType opT, unsigned long int idSrc, unsigned long int idRes, int funcId, size_t size, std::vector< std::tuple< void *, size_t, int > > &globalTable)
- fastTask * **enqueueTask** (fddOpType opT, unsigned long int id, size_t size, std::vector< std::tuple< void *, size_t, int > > &globalTable)
- void **taskProgress** (unsigned long int id, unsigned long int pid, size_t time, procstat &stat)
- void **taskFinished** (unsigned long int id, size_t time)
- void **setCalibration** (std::vector< size_t > time)
- void **printProcstats** (fastTask *task)
- void **printTaskInfo** ()
- void **printTaskInfo** (size_t task)
- void **printHeader** ()
- void **updateTaskInfo** ()
- bool **dataMigrationNeeded** ()
- std::vector< std::deque< std::pair< int, long int > > > **getDataMigrationInfo** ()
- std::vector< size_t > **getAllocation** (size_t size)
- void **setAllocation** (std::vector< size_t > &alloc, size_t size)

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fastScheduler.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/fastScheduler.cpp

7.9 faster::fastSettings Class Reference

```
#include <fastContext.h>
```

7.9.1 Description

Context Configuration Class.

Throught the fastSetting Class, the programmer can change default framework settings. like ...

Public Member Functions

- fastSettings ()

  fastSetting default constructor
- fastSettings (const fastSettings &s UNUSED)

  fastSetting dummy constructor
- void allowDataBalancing ()

  Enables dynamic load balancing.

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fastContext.h

7.10 faster::fastTask Class Reference

Public Attributes

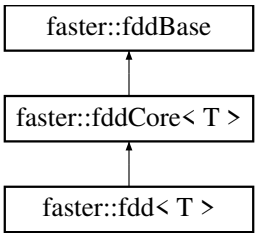
- unsigned long int **id**
- unsigned long int **srcFDD**
- unsigned long int **destFDD**
- fddOpType **operationType**
- int **functionId**
- size_t **size**
- void * **result**
- size_t **resultSize**
- size_t **workersFinished**
- std::vector< size_t > **times**
- size_t **duration**
- std::shared_ptr< std::vector< double > > **allocation**
- std::vector< procstat > **procstats**
- std::vector< std::tuple< void *, size_t, int > > **globals**

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fastTask.h

7.11 faster::fdd< T > Class Template Reference

Inheritance diagram for faster::fdd< T >:



Public Member Functions

- **fdd** (fastContext &c)
- **fdd** (fastContext &c, size_t s, const std::vector< size_t > &dataAlloc)
- **fdd** (fastContext &c, size_t s)
- **fdd** (fastContext &c, T *data, size_t size)
- **fdd** (fastContext &c, std::vector< T > &dataV)
- **fdd** (fastContext &c, const char *fileName)
- void **assign** (std::vector< T > &data)
- void **assign** (T *data, size_t size)
- template<typename U >
  fdd< U > * **map** (mapFunctionP< T, U > funcP)
- template<typename U >
  fdd< U > * **map** (PmapFunctionP< T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **map** (ImapFunctionP< T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **map** (IPmapFunctionP< T, L, U > funcP)
- template<typename U >
  fdd< U > * **bulkMap** (bulkMapFunctionP< T, U > funcP)
- template<typename U >
  fdd< U > * **bulkMap** (PbulkMapFunctionP< T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkMap** (IbulkMapFunctionP< T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkMap** (IPbulkMapFunctionP< T, L, U > funcP)
- template<typename U >
  fdd< U > * **flatMap** (flatMapFunctionP< T, U > funcP)
- template<typename U >
  fdd< U > * **flatMap** (PflatMapFunctionP< T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **flatMap** (IflatMapFunctionP< T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **flatMap** (IPflatMapFunctionP< T, L, U > funcP)
- template<typename U >
  fdd< U > * **bulkFlatMap** (bulkFlatMapFunctionP< T, U > funcP)
- template<typename U >
  fdd< U > * **bulkFlatMap** (PbulkFlatMapFunctionP< T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkFlatMap** (IbulkFlatMapFunctionP< T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkFlatMap** (IPbulkFlatMapFunctionP< T, L, U > funcP)

- T **reduce** (reduceFunctionP< T > funcP)
- T **bulkReduce** (bulkReduceFunctionP< T > funcP)
- std::vector< T > **collect** ()
- fdd< T > * **cache** ()

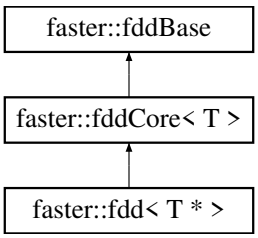
Additional Inherited Members

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fastContext.h
- /home/mtcs/pesquisa/faster/faster.git/src/include/fdd.h

7.12 faster::fdd< T * > Class Template Reference

Inheritance diagram for faster::fdd< T * >:



Public Member Functions

- **fdd** (fastContext &c)
- **fdd** (fastContext &c, size_t s, const std::vector< size_t > &dataAlloc)
- **fdd** (fastContext &c, size_t s)
- **fdd** (fastContext &c, T *data[ ], size_t dataSizes[ ], size_t size)
- template<typename U >
  fdd< U > * **map** (mapPFunctionP< T, U > funcP)
- template<typename U >
  fdd< U > * **map** (PmapPFunctionP< T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **map** (ImapPFunctionP< T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **map** (IPmapPFunctionP< T, L, U > funcP)
- template<typename U >
  fdd< U > * **bulkMap** (bulkMapPFunctionP< T, U > funcP)
- template<typename U >
  fdd< U > * **bulkMap** (PbulkMapPFunctionP< T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkMap** (IbulkMapPFunctionP< T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkMap** (IPbulkMapPFunctionP< T, L, U > funcP)
- template<typename U >
  fdd< U > * **flatMap** (flatMapPFunctionP< T, U > funcP)

- template<typename U >
  fdd< U > * **flatMap** (PflatMapPFunctionP< T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **flatMap** (IflatMapPFunctionP< T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **flatMap** (IPflatMapPFunctionP< T, L, U > funcP)
- template<typename U >
  fdd< U > * **bulkFlatMap** (bulkFlatMapPFunctionP< T, U > funcP)
- template<typename U >
  fdd< U > * **bulkFlatMap** (PbulkFlatMapPFunctionP< T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkFlatMap** (IbulkFlatMapPFunctionP< T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkFlatMap** (IPbulkFlatMapPFunctionP< T, L, U > funcP)
- std::vector< T > **reduce** (PreducePFunctionP< T > funcP)
- std::vector< T > **bulkReduce** (PbulkReducePFunctionP< T > funcP)
- std::vector< std::pair< T *, size_t > > **collect** ()
- fdd< T * > * **cache** ()

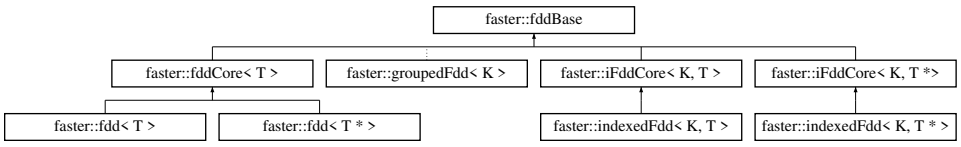
Additional Inherited Members

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fdd.h

7.13 faster::fddBase Class Reference

Inheritance diagram for faster::fddBase:



Public Member Functions

- void **setSize** (size_t &s)
- size_t **getSize** ()
- int **getId** ()
- const std::vector< size_t > & **getAlloc** ()
- fddType **tType** ()
- fddType **kType** ()
- bool **isCached** ()
- virtual void **discard** ()=0
- virtual bool **isGroupedByKey** ()=0
- virtual void **setGroupedByKey** (bool gbk)=0

Protected Attributes

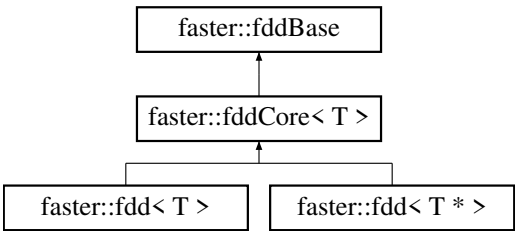
- fddType **_kType**
- fddType **_tType**
- unsigned long int **id**
- unsigned long int **totalBlocks**
- unsigned long int **size**
- std::vector< size_t > **dataAlloc**
- bool **cached**

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fddBase.h

7.14 faster::fddCore< T > Class Template Reference

Inheritance diagram for faster::fddCore< T >:



Public Member Functions

- void **discard** ()
- void **writeToFile** (std::string &path, std::string &sufix)
- void * **getKeyMap** ()
- void **setKeyMap** (void *keyMap UNUSED)
- bool **isGroupedByKey** ()
- void **setGroupedByKey** (bool gbk UNUSED)

Protected Member Functions

- **fddCore** (fastContext &c)
- **fddCore** (fastContext &c, size_t s, const std::vector< size_t > &dataAlloc)
- fddBase * **_map** (void *funcP, fddOpType op, fddBase *newFdd)
- template<typename L , typename U >
  indexedFdd< L, U > * **mapI** (void *funcP, fddOpType op)
- template<typename U >
  fdd< U > * **map** (void *funcP, fddOpType op)

Protected Attributes

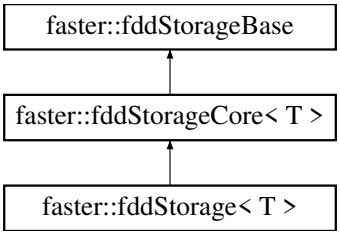
- fastContext * **context**

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fdd.h

7.15 faster::fddStorage< T > Class Template Reference

Inheritance diagram for faster::fddStorage< T >:



Public Member Functions

- **fddStorage** (size_t s)
- **fddStorage** (T *data, size_t s)
- void **setData** (T *data, size_t s)
- void **setDataRaw** (void *data, size_t s)
- void **setSize** (size_t s) override
- void **insert** (T &item)
- void **grow** (size_t toSize)
- void **shrink** ()

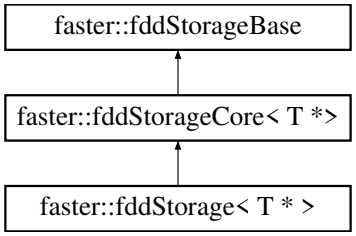
Additional Inherited Members

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerFdd.h
- /home/mtcs/pesquisa/faster/faster.git/src/include/fddStorage.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/fddStorage.cpp

7.16 faster::fddStorage< T * > Class Template Reference

Inheritance diagram for faster::fddStorage< T * >:



Public Member Functions

- **fddStorage** (size_t s)
- **fddStorage** (T ∗∗data, size_t ∗lineSizes, size_t s)
- void **setData** (T ∗∗data, size_t ∗lineSizes, size_t s)
- void **setDataRaw** (void ∗data, size_t ∗lineSizes, size_t s)
- void **setSize** (size_t s) override
- void **insert** (T ∗&item, size_t s)
- size_t ∗ **getLineSizes** ()
- void **grow** (size_t toSize)
- void **shrink** ()

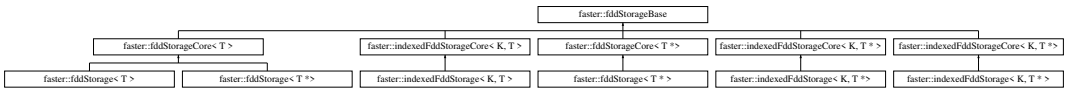
Additional Inherited Members

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fddStorage.h

7.17 faster::fddStorageBase Class Reference

Inheritance diagram for faster::fddStorageBase:



Public Member Functions

- virtual void **grow** (size_t toSize)=0
- size_t **getSize** ()
- virtual void **setSize** (size_t s UNUSED)

Protected Attributes

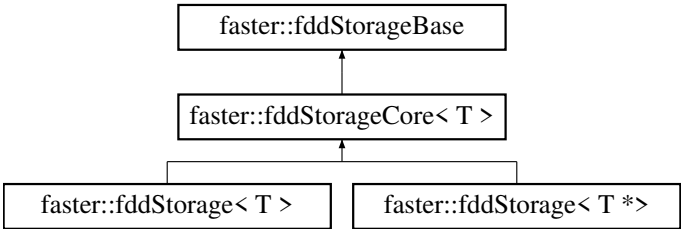
- size_t **size**
- size_t **allocSize**

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fddStorageBase.h

7.18 faster::fddStorageCore< T > Class Template Reference

Inheritance diagram for faster::fddStorageCore< T >:



Public Member Functions

- **fddStorageCore** (size_t s)
- T * **getData** ()
- void **setSize** (size_t s UNUSED)
- T & **operator[ ]** (size_t ref)

Protected Attributes

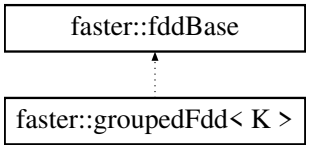
- T * **localData**

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fddStorage.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/fddStorage.cpp

7.19 faster::groupedFdd< K > Class Template Reference

Inheritance diagram for faster::groupedFdd< K >:



Public Member Functions

- template<typename T , typename U >
  groupedFdd (fastContext *c, iFddCore< K, T > *fdd0, iFddCore< K, U > *fdd1, system_clock::time_point &start)
- template<typename T , typename U , typename V >
  groupedFdd (fastContext *c, iFddCore< K, T > *fdd0, iFddCore< K, U > *fdd1, iFddCore< K, V > *fdd2, system_clock::time_point &start)
- groupedFdd< K > * **cache** ()
- groupedFdd< K > * **updateByKey** (updateByKeyG2FunctionP< K > funcP)
- groupedFdd< K > * **updateByKey** (updateByKeyG3FunctionP< K > funcP)
- groupedFdd< K > * **bulkUpdate** (bulkUpdateG2FunctionP< K > funcP)
- groupedFdd< K > * **bulkUpdate** (bulkUpdateG3FunctionP< K > funcP)
- template<typename Ko , typename To >
  indexedFdd< Ko, To > * **mapByKey** (lmapByKeyG2FunctionP< K, Ko, To > funcP)
- template<typename Ko , typename To >
  indexedFdd< Ko, To > * **mapByKey** (lmapByKeyG3FunctionP< K, Ko, To > funcP)
- template<typename To >
  fdd< To > * **mapByKey** (mapByKeyG2FunctionP< K, To > funcP)
- template<typename To >
  fdd< To > * **mapByKey** (mapByKeyG3FunctionP< K, To > funcP)
- template<typename Ko , typename To >
  indexedFdd< Ko, To > * **flatMapByKey** (lflatMapByKeyG2FunctionP< K, Ko, To > funcP)
- template<typename Ko , typename To >
  indexedFdd< Ko, To > * **flatMapByKey** (lflatMapByKeyG3FunctionP< K, Ko, To > funcP)
- template<typename To >
  fdd< To > * **flatMapByKey** (flatMapByKeyG2FunctionP< K, To > funcP)
- template<typename To >
  fdd< To > * **flatMapByKey** (flatMapByKeyG3FunctionP< K, To > funcP)
- void **discard** ()
- template<typename Ko , typename To >
  indexedFdd< Ko, To > * **bulkFlatMap** (lbulkFlatMapG2FunctionP< K, Ko, To > funcP)
- template<typename Ko , typename To >
  indexedFdd< Ko, To > * **bulkFlatMap** (lbulkFlatMapG3FunctionP< K, Ko, To > funcP)
- template<typename To >
  fdd< To > * **bulkFlatMap** (bulkFlatMapG2FunctionP< K, To > funcP)
- template<typename To >
  fdd< To > * **bulkFlatMap** (bulkFlatMapG3FunctionP< K, To > funcP)
- bool **isGroupedByKey** ()
- void **setGroupedByKey** (bool gbk UNUSED)

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/groupedFdd.h

7.20 faster::hasher< K > Class Template Reference

Public Member Functions

- **hasher** (int spectrum)
- int **get** (K key)

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/hasher.h

7.21 faster::hasher< double > Class Template Reference

Public Member Functions

- **hasher** (int spectrum)
- int **get** (double key)

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/hasher.h

7.22 faster::hasher< float > Class Template Reference

Public Member Functions

- **hasher** (int spectrum)
- int **get** (float key)

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/hasher.h

7.23 faster::hasher< std::string > Class Template Reference

Public Member Functions

- **hasher** (int spectrum)
- int **get** (std::string key)

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/hasher.h

7.24 faster::hdfsEngine Class Reference

Public Member Functions

- bool **isReady** ()
- bool **isConnected** ()
- faster::hdfsFile **open** (std::string path, fileMode mode)
- void **close** (faster::hdfsFile &f)
- void **del** (std::string path)
- bool **exists** (std::string path)

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/hdfsEngine.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/hdfsEngine.cpp

7.25 faster::hdfsFile Class Reference

Public Member Functions

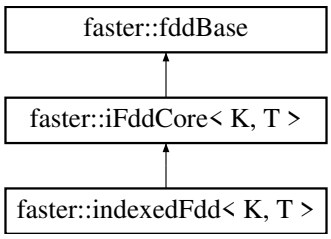
- **hdfsFile** (void *fs, std::string &path, fileMode mode)
- void **close** ()
- size_t **read** (char *v, size_t n)
- size_t **write** (char *v, size_t n)
- size_t **seek** (size_t offset)
- size_t **readLine** (char *v, size_t n, char sep)
- std::vector< std::deque< int > > **getBlocksLocations** ()
- void **del** ()

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/hdfsEngine.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/hdfsEngine.cpp

7.26 faster::iFddCore< K, T > Class Template Reference

Inheritance diagram for faster::iFddCore< K, T >:



Public Member Functions

- template<typename U >
  groupedFdd< K > * **cogroup** (iFddCore< K, U > *fdd1)
- template<typename U , typename V >
  groupedFdd< K > * **cogroup** (iFddCore< K, U > *fdd1, iFddCore< K, V > *fdd2)
- std::unordered_map< K, size_t > **countByKey** ()
- indexedFdd< K, T > * **groupByKey** ()
- void **discard** ()
- void **writeToFile** (std::string path, std::string sufix)
- bool **isGroupedByKey** ()
- void **setGroupedByKey** (bool gbk)
- void **setGroupedByMap** (bool gbm)

Protected Member Functions

- **iFddCore** (fastContext &c)
- **iFddCore** (fastContext &c, size_t s, const std::vector< size_t > &dataAlloc)
- std::unordered_map< K, std::tuple< size_t, int, size_t > > * **calculateKeyCount** (std::vector< std::pair< void *, size_t > > &result)
- std::unordered_map< K, int > **calculateKeyMap** (std::unordered_map< K, std::tuple< size_t, int, size_t >> &count)
- void **update** (void *funcP, fddOpType op)
- fddBase * **_map** (void *funcP, fddOpType op, fddBase *newFdd, system_clock::time_point &start)
- template<typename U >
  fdd< U > * **map** (void *funcP, fddOpType op)
- template<typename L , typename U >
  indexedFdd< L, U > * **mapI** (void *funcP, fddOpType op)
- indexedFdd< K, T > * **groupByKeyMapped** ()
- indexedFdd< K, T > * **groupByKeyHashed** ()

Protected Attributes

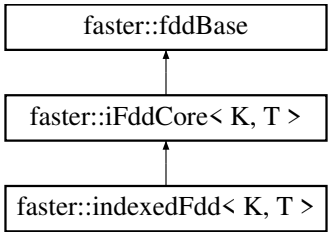
- bool **groupedByKey**
- bool **groupedByMap**
- fastContext * **context**

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/groupedFdd.h
- /home/mtcs/pesquisa/faster/faster.git/src/include/indexedFdd.h

7.27 faster::indexedFdd< K, T > Class Template Reference

Inheritance diagram for faster::indexedFdd< K, T >:



Public Member Functions

- **indexedFdd** (fastContext &c)
- **indexedFdd** (fastContext &c, size_t s, const std::vector< size_t > &dataAlloc)
- **indexedFdd** (fastContext &c, size_t s)
- **indexedFdd** (fastContext &c, K *keys, T *data, size_t size)
- **indexedFdd** (fastContext &c, std::string)
- indexedFdd< K, T > * **update** (updateIFunctionP< K, T > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **map** (ImapIFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **map** (IPmapIFunctionP< K, T, L, U > funcP)
- template<typename U >
  fdd< U > * **map** (mapIFunctionP< K, T, U > funcP)
- template<typename U >
  fdd< U > * **map** (PmapIFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **mapByKey** (ImapByKeyIFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **mapByKey** (IPmapByKeyIFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  fdd< U > * **mapByKey** (mapByKeyIFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  fdd< U > * **mapByKey** (PmapByKeyIFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkMap** (IbulkMapIFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkMap** (IPbulkMapIFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  fdd< U > * **bulkMap** (bulkMapIFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  fdd< U > * **bulkMap** (PbulkMapIFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **flatMap** (IflatMapIFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **flatMap** (IPflatMapIFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  fdd< U > * **flatMap** (flatMapIFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  fdd< U > * **flatMap** (PflatMapIFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkFlatMap** (IbulkFlatMapIFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkFlatMap** (IPbulkFlatMapIFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  fdd< U > * **bulkFlatMap** (bulkFlatMapIFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  fdd< U > * **bulkFlatMap** (PbulkFlatMapIFunctionP< K, T, U > funcP)
- std::pair< K, T > **reduce** (IreduceIFunctionP< K, T > funcP)
- std::pair< K, T > **bulkReduce** (IbulkReduceIFunctionP< K, T > funcP)
- std::vector< std::pair< K, T > > **collect** ()
- indexedFdd< K, T > * **cache** ()

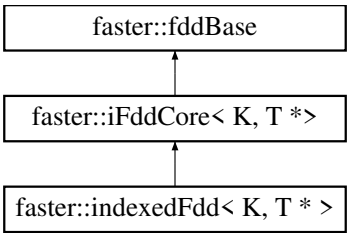
Additional Inherited Members

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/fastContext.h
- /home/mtcs/pesquisa/faster/faster.git/src/include/indexedFdd.h

7.28 faster::indexedFdd< K, T * > Class Template Reference

Inheritance diagram for faster::indexedFdd< K, T * >:



Public Member Functions

- **indexedFdd** (fastContext &c)
- **indexedFdd** (fastContext &c, size_t s, const std::vector< size_t > &dataAlloc)
- **indexedFdd** (fastContext &c, size_t s)
- **indexedFdd** (fastContext &c, K *keys, T **data, size_t *dataSizes, size_t size)
- template<typename L , typename U >
  indexedFdd< L, U > * **map** (ImapIPFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **map** (IPmapIPFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  fdd< U > * **map** (mapIPFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  fdd< U > * **map** (PmapIPFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **mapByKey** (ImapByKeyIPFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **mapByKey** (IPmapByKeyIPFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  fdd< U > * **mapByKey** (mapByKeyIPFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  fdd< U > * **mapByKey** (PmapByKeyIPFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkMap** (IbulkMapIPFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkMap** (IPbulkMapIPFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  fdd< U > * **bulkMap** (bulkMapIPFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  fdd< U > * **bulkMap** (PbulkMapIPFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **flatMap** (IflatMapIPFunctionP< K, T, L, U > funcP)

- template<typename L , typename U >
  indexedFdd< L, U > * **flatMap** (IPflatMapIPFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  fdd< U > * **flatMap** (flatMapIPFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  fdd< U > * **flatMap** (PflatMapIPFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkFlatMap** (IbulkFlatMapIPFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  indexedFdd< L, U > * **bulkFlatMap** (IPbulkFlatMapIPFunctionP< K, T, L, U > funcP)
- template<typename L , typename U >
  fdd< U > * **bulkFlatMap** (bulkFlatMapIPFunctionP< K, T, U > funcP)
- template<typename L , typename U >
  fdd< U > * **bulkFlatMap** (PbulkFlatMapIPFunctionP< K, T, U > funcP)
- std::vector< std::pair< K, T > > **reduce** (IPreduceIPFunctionP< K, T > funcP)
- std::vector< std::pair< K, T > > **bulkReduce** (IPbulkReduceIPFunctionP< K, T > funcP)
- std::vector< std::tuple< K, T *, size_t > > **collect** ()
- indexedFdd< K, T * > * **cache** ()

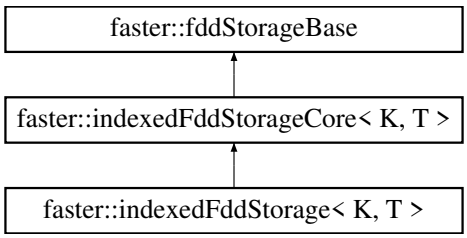
Additional Inherited Members

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/indexedFdd.h

7.29 faster::indexedFddStorage< K, T > Class Template Reference

Inheritance diagram for faster::indexedFddStorage< K, T >:



Public Member Functions

- **indexedFddStorage** (size_t s)
- **indexedFddStorage** (K *keys, T *data, size_t s)
- void **setData** (K *keys, T *data, size_t s)
- void **setDataRaw** (void *keys, void *data, size_t s)
- void **setSize** (size_t s) override
- void **insert** (K key, T &item)
- void **insertRaw** (void *d, size_t s)
- void **grow** (size_t toSize)
- void **shrink** ()

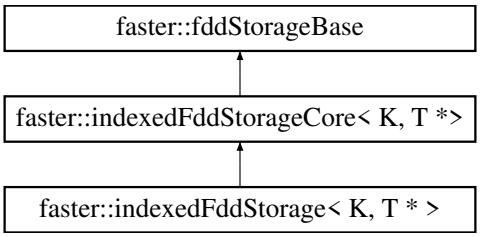
Additional Inherited Members

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerIFdd.h
- /home/mtcs/pesquisa/faster/faster.git/src/include/indexedFddStorage.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/indexedFddStorage.cpp

7.30 faster::indexedFddStorage< K, T * > Class Template Reference

Inheritance diagram for faster::indexedFddStorage< K, T * >:



Public Member Functions

- **indexedFddStorage** (size_t s)
- **indexedFddStorage** (K *keys, T **data, size_t *lineSizes, size_t s)
- void **setData** (K *keys, T **data, size_t *lineSizes, size_t s)
- void **setDataRaw** (void *keys, void *data, size_t *lineSizes, size_t s)
- void **setSize** (size_t s) override
- void **insert** (K key, T *&item, size_t s)
- void **insertRaw** (void *d, size_t s)
- size_t * **getLineSizes** ()
- void **grow** (size_t toSize)
- void **shrink** ()

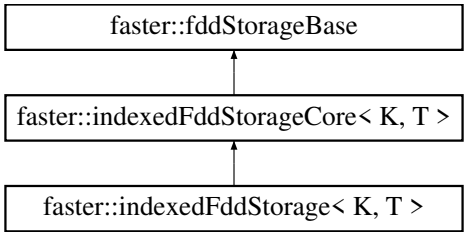
Additional Inherited Members

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/indexedFddStorage.h

7.31 faster::indexedFddStorageCore< K, T > Class Template Reference

Inheritance diagram for faster::indexedFddStorageCore< K, T >:



Public Member Functions

- **indexedFddStorageCore** (size_t s)
- T ∗ **getData** ()
- K ∗ **getKeys** ()
- void **setSize** (size_t s UNUSED)
- T & **operator[ ]** (size_t ref)
- void **sortByKey** ()

Protected Attributes

- T ∗ **localData**
- K ∗ **localKeys**

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/indexedFddStorage.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/indexedFddStorage.cpp

7.32 faster::procstat Class Reference

Public Attributes

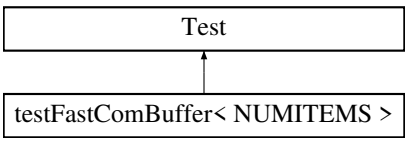
- double **ram**
- long unsigned **utime**
- long unsigned **stime**

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/misc.h

7.33 testFastComBuffer< NUMITEMS > Class Template Reference

Inheritance diagram for testFastComBuffer< NUMITEMS >:



Public Member Functions

- template<typename T >
  void **comp** (T &a, T &b)
- template<typename T >
  void **comp** (std::pair< T, T > &a, std::pair< T, T > &b)
- template<typename T >
  void **comp** (std::tuple< T, T, T, T > &a, std::tuple< T, T, T, T > &b)
- template<typename T >
  void **comp** (std::vector< T > &a, std::vector< T > &b)
- void **comp** (std::vector< std::string > &a, std::vector< std::string > &b)
- template<typename T >
  void **testWrite** (T &val, const char *result, int size)

Protected Member Functions

- virtual void **SetUp** ()
- virtual void **TearDown** ()

Protected Attributes

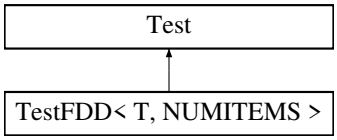
- faster::fastCommBuffer **buff**

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/tests/gtest-fastCommBuffer.cpp

7.34 TestFDD< T, NUMITEMS > Class Template Reference

Inheritance diagram for TestFDD< T, NUMITEMS >:



Protected Member Functions

- virtual void **SetUp** ()
- virtual void **TearDown** ()

Protected Attributes

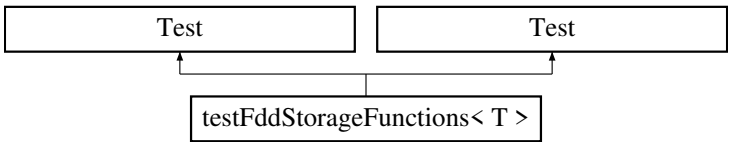
- fastContext **fc**
- vector< T > **localData**
- fdd< T > * **data** = NULL

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/tests/gtest-fdd.cpp

7.35 testFddStorageFunctions< T > Class Template Reference

Inheritance diagram for testFddStorageFunctions< T >:



Protected Member Functions

- virtual void **SetUp** ()
- virtual void **TearDown** ()
- virtual void **SetUp** ()
- virtual void **TearDown** ()

Protected Attributes

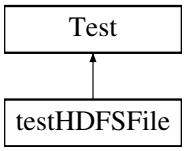
- faster::fddStorage< T > **storage**
- std::vector< T > **rawData**
- faster::indexedFddStorage< K, T > **storage**
- std::vector< T > **rawKeys**

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/tests/gtest-fddStorage.cpp
- /home/mtcs/pesquisa/faster/faster.git/src/tests/gtest-indexedFddStorage.cpp

7.36 testHDFSFile Class Reference

Inheritance diagram for testHDFSFile:



Public Attributes

- faster::hdfsEngine **fs**

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/tests/gtest-hdfsEngine.cpp

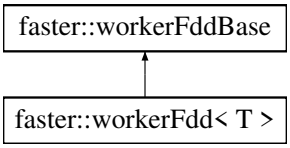
7.37 faster::worker Class Reference

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/worker.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/worker.cpp
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerCreate.cpp
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerICreate.cpp
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerRun.cpp

7.38 faster::workerFdd< T > Class Template Reference

Inheritance diagram for faster::workerFdd< T >:



Public Member Functions

- **workerFdd** (fddType t)
- **workerFdd** (fddType kt, fddType t)
- **workerFdd** (unsigned long int ident, fddType t)
- **workerFdd** (unsigned long int ident, fddType t, size_t size)
- **workerFdd** (unsigned long int ident, fddType kt, fddType t)
- **workerFdd** (unsigned long int ident, fddType kt, fddType t, size_t size)
- fddType **getType** ()
- fddType **getKeyType** ()
- void * **getItem** (size_t address)
- void * **getKeys** ()
- void * **getData** ()
- size_t **getSize** ()
- size_t **itemSize** ()
- size_t **baseSize** ()
- void **setSize** (size_t s)
- void **deleteItem** (void *item)
- void **shrink** ()
- void **setData** (void *d, size_t size)
- void **setData** (void *d, size_t *lineSizes, size_t size)
- void **setData** (void *k, void *d, size_t size)
- void **setData** (void *k, void *d, size_t *lineSizes, size_t size)
- void **setDataRaw** (void *data, size_t size) override
- void **setDataRaw** (void *data, size_t *lineSizes, size_t size)
- void **setDataRaw** (void *k, void *d, size_t s)
- void **setDataRaw** (void *k, void *d, size_t *l, size_t s)
- size_t * **getLineSizes** ()
- void **insert** (void *k, void *in, size_t s)
- void **insertI** (void *in)

- void **apply** (void *func UNUSED, fddOpType op UNUSED, workerFddBase *dest UNUSED, fastCommBuffer &comm UNUSED)
- void **preapply** (unsigned long int id, void *func, fddOpType op, workerFddBase *dest, fastComm *comm) override
- void **collect** (fastComm *comm) override
- void **groupByKey** (fastComm *comm)
- void **countByKey** (fastComm *comm)
- void **exchangeDataByKey** (fastComm *comm)
- std::vector< std::vector< void * > > * **getKeyLocations** ()
- void * **getUKeys** ()
- void **setUKeys** (void *uk)
- void * **getKeyMap** ()
- void **setKeyMap** (void *km)
- void **writeToFile** (void *path, size_t procId, void *sufix)

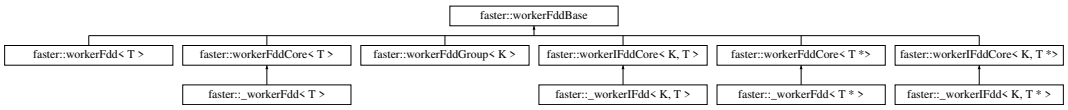
Additional Inherited Members

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerFdd.h
- /home/mtcs/pesquisa/faster/faster.git/src/include/workerFdd.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerFddWrapper.cpp

7.39 faster::workerFddBase Class Reference

Inheritance diagram for faster::workerFddBase:



Public Member Functions

- **workerFddBase** (unsigned int ident, fddType t)
- virtual fddType **getType** ()=0
- virtual fddType **getKeyType** ()=0
- virtual void **setData** (void *, size_t)=0
- virtual void **setData** (void *, size_t *, size_t)=0
- virtual void **setData** (void *, void *, size_t)=0
- virtual void **setData** (void *, void *, size_t *, size_t)=0
- virtual void **setDataRaw** (void *, size_t)=0
- virtual void **setDataRaw** (void *, size_t *, size_t)=0
- virtual void **setDataRaw** (void *, void *, size_t)=0
- virtual void **setDataRaw** (void *, void *, size_t *, size_t)=0
- virtual void * **getItem** (size_t)=0
- virtual void * **getKeys** ()=0
- virtual void * **getData** ()=0
- virtual size_t **getSize** ()=0
- virtual size_t * **getLineSizes** ()=0

- virtual void **setSize** (size_t s)=0
- virtual size_t **itemSize** ()=0
- virtual size_t **baseSize** ()=0
- virtual void **deleteItem** (void *item)=0
- virtual void **shrink** ()=0
- virtual void **insertI** (void *v)=0
- virtual void **insert** (void *k, void *v, size_t s)=0
- virtual void **preapply** (unsigned long int id, void *func, fddOpType op, workerFddBase *dest, fastComm *comm)=0
- virtual void **apply** (void *func, fddOpType op, workerFddBase *dest, fastCommBuffer &buffer)=0
- virtual void **collect** (fastComm *comm)=0
- virtual void **exchangeDataByKey** (fastComm *comm)=0
- virtual std::vector< std::vector< void * > > * **getKeyLocations** ()=0
- virtual void * **getUKeys** ()=0
- virtual void **setUKeys** (void *uk)=0
- virtual void * **getKeyMap** ()=0
- virtual void **setKeyMap** (void *km)=0
- virtual void **writeToFile** (void *path, size_t procId, void *sufix)=0

Protected Attributes

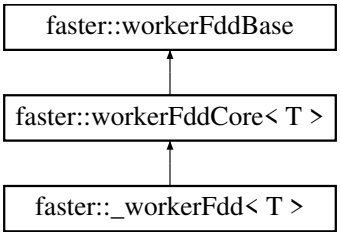
- unsigned long int **id**
- fddType **type**
- fddType **keyType**

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/workerFddBase.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerFddBase.cpp

7.40 faster::workerFddCore< T > Class Template Reference

Inheritance diagram for faster::workerFddCore< T >:



Public Member Functions

- **workerFddCore** (unsigned int ident, fddType t)
- **workerFddCore** (unsigned int ident, fddType t, size_t size)
- void **setData** (void *k UNUSED, void *d UNUSED, size_t size UNUSED)
- void **setDataRaw** (void *keys UNUSED, void *data UNUSED, size_t size UNUSED) override
- void **setDataRaw** (void *keys UNUSED, void *data UNUSED, size_t *lineSizes UNUSED, size_t size UNUSED) override
- fddType **getType** () override
- fddType **getKeyType** () override
- T & **operator[ ]** (size_t address)
- void * **getItem** (size_t address)
- void * **getKeys** () override
- void * **getData** () override
- size_t **getSize** () override
- size_t **itemSize** () override
- size_t **baseSize** () override
- void **setSize** (size_t s)
- void **deleteItem** (void *item) override
- void **shrink** ()
- void **writeToFile** (void *path, size_t procId, void *sufix)
- void **preapply** (unsigned long int id, void *func, fddOpType op, workerFddBase *dest, fastComm *comm)

Protected Member Functions

- void **exchangeDataByKey** (fastComm *comm UNUSED)
- void * **getUKeys** ()
- void **setUKeys** (void *uk UNUSED)
- void * **getKeyMap** ()
- void **setKeyMap** (void *km UNUSED)
- std::vector< std::vector< void * > > * **getKeyLocations** ()

Protected Attributes

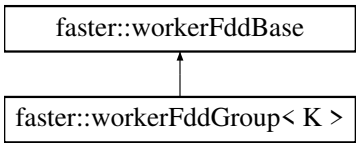
- fddStorage< T > * **localData**

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerFdd.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerFddCore.cpp

7.41 faster::workerFddGroup< K > Class Template Reference

Inheritance diagram for faster::workerFddGroup< K >:



Public Member Functions

- **workerFddGroup** (unsigned long int id, fddType keyT, std::vector< workerFddBase *> &members)
- fddType **getType** ()
- fddType **getKeyType** ()
- void **setData** (void *d UNUSED, size_t s UNUSED)
- void **setData** (void *d UNUSED, size_t *ds UNUSED, size_t s UNUSED)
- void **setData** (void *k UNUSED, void *d UNUSED, size_t s UNUSED)
- void **setData** (void *k UNUSED, void *d UNUSED, size_t *ds UNUSED, size_t s UNUSED)
- void **setDataRaw** (void *d UNUSED, size_t s UNUSED)
- void **setDataRaw** (void *d UNUSED, size_t *ds UNUSED, size_t s UNUSED)
- void **setDataRaw** (void *k UNUSED, void *d UNUSED, size_t s UNUSED)
- void **setDataRaw** (void *k UNUSED, void *d UNUSED, size_t *ds UNUSED, size_t s UNUSED)
- void * **getItem** (size_t UNUSED p)
- void * **getKeys** ()
- void * **getData** ()
- size_t **getSize** ()
- size_t * **getLineSizes** ()
- void **setSize** (size_t s UNUSED)
- size_t **itemSize** ()
- size_t **baseSize** ()
- void **deleteItem** (void *item UNUSED)
- void **shrink** ()
- void **insertI** (void *v UNUSED)
- void **insert** (void *k UNUSED, void *v UNUSED, size_t s UNUSED)
- void **apply** (void *func, fddOpType op, workerFddBase *dest, fastCommBuffer &buffer)
- void **preapply** (unsigned long int id, void *func, fddOpType op, workerFddBase *dest, fastComm *comm)
- void **collect** (fastComm *comm UNUSED)
- void * **getUKeys** ()
- void **setUKeys** (void *uk)
- void * **getKeyMap** ()
- void **setKeyMap** (void *km)
- void **writeToFile** (void *path UNUSED, size_t procId UNUSED, void *sufix UNUSED)

Additional Inherited Members

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/workerFddGroup.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerFddGroup.cpp

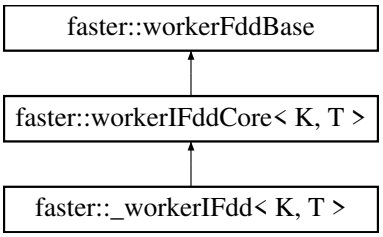
7.42 faster::workerIFdd< K, T > Class Template Reference

The documentation for this class was generated from the following file:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerFdd.h

7.43 faster::workerIFddCore< K, T > Class Template Reference

Inheritance diagram for faster::workerIFddCore< K, T >:



Public Member Functions

- **workerIFddCore** (unsigned int ident, fddType kt, fddType t)
- **workerIFddCore** (unsigned int ident, fddType kt, fddType t, size_t size)
- fddType **getType** () override
- fddType **getKeyType** () override
- void **setData** (void *data UNUSED, size_t size UNUSED)
- void **setData** (void *data UNUSED, size_t *ls UNUSED, size_t size UNUSED)
- void **setDataRaw** (void *data UNUSED, size_t size UNUSED) override
- void **setDataRaw** (void *data UNUSED, size_t *lineSizes UNUSED, size_t size UNUSED) override
- T & **operator[ ]** (size_t address)
- void * **getItem** (size_t address)
- void * **getData** () override
- void * **getKeys** ()
- size_t **getSize** () override
- size_t **itemSize** () override
- size_t **baseSize** () override
- void **setSize** (size_t s)
- void **deleteItem** (void *item) override
- void **shrink** ()
- std::vector< std::vector< T * > > **findKeyInterval** (K *keys, T *data, size_t fddSize)
- void **preapply** (unsigned long int id, void *func, fddOpType op, workerFddBase *dest, fastComm *comm)
- bool **onlineReadStage3** (std::deque< std::vector< std::pair< K, T >>> &q2, omp_lock_t &q2lock)
- bool **onlinePartReadStage3** (std::unordered_map< K, int > &localKeyMap, fastComm *comm, void *funcP, std::deque< std::vector< std::pair< K, T >>> &q2, omp_lock_t &q2lock)
- void **onlineFullPartRead** (fastComm *comm, void *funcP)
- void **onlinePartRead** (fastComm *comm, void *funcP)
- void **onlineRead** (fastComm *comm)
- void **groupByKey** (fastComm *comm)
- void **groupByKeyHashed** (fastComm *comm)
- void **countByKey** (fastComm *comm)
- void **exchangeDataByKey** (fastComm *comm)
- bool **exchangeDataByKeyHashed** (fastComm *comm)
- void **exchangeDataByKeyMapped** (fastComm *comm)
- std::vector< std::vector< void * > > * **getKeyLocations** ()
- void * **getUKeys** ()
- void **setUKeys** (void *uk)
- void * **getKeyMap** ()
- void **setKeyMap** (void *km)
- void **writeToFile** (void *path, size_t procId, void *sufix)

Protected Member Functions

- K * **distributeOwnership** (fastComm *comm, K *uKeys, size_t cSize)
- void **sendPartKeyCount** (fastComm *comm)
- std::unordered_map< K, size_t > **recvPartKeyMaxCount** (fastComm *comm, std::unordered_map< K, std::pair< size_t, std::deque< int >> > &keyPPMaxCount)
- std::unordered_map< K, size_t > **recvPartKeyCount** (fastComm *comm)
- std::unordered_map< K, size_t > **distributedMaxKeyCount** (fastComm *comm, std::unordered_map< K, std::pair< size_t, std::deque< int >> > &keyPPMaxCount)
- bool **EDBKsendDataAsync** (fastComm *comm, int owner, K &key, T &data, std::vector< size_t > &data↩Size)
- bool **sendPending** (fastComm *comm, std::vector< std::deque< std::pair< K, T > > > &pendingSend, std::vector< size_t > &dataSize)
- void **flushDataSend** (fastComm *comm, std::vector< size_t > &dataSize)
- bool **EDBKSendData** (fastComm *comm, std::vector< size_t > &dataSize)
- bool **EDBKSendDataHashed** (fastComm *comm, size_t &pos, std::vector< bool > &deleted, std::vector< size_t > &dataSize, std::deque< std::pair< K, T > > &recvData, std::vector< std::deque< std::pair< K, T > > > &pendingSend, bool &dirty)
- bool **EDBKRecvData** (fastComm *comm, size_t &pos, size_t &posLimit, std::vector< bool > &deleted, std↩::deque< std::pair< K, T > > &recvData, int &peersFinised, bool &dirty)
- void **EDBKFinishDataInsert** (std::vector< bool > &deleted, std::deque< std::pair< K, T > > &recvData, size_t &pos)
- void **EDBKShrinkData** (std::vector< bool > &deleted, size_t &pos)
- void **findMyKeys** (int numProcs, int Id)
- void **findMyKeysByHash** (int numProcs)

Protected Attributes

- indexedFddStorage< K, T > * **localData**
- std::shared_ptr< std::vector< K > > **uKeys**
- std::shared_ptr< std::unordered_map< K, int > > **keyMap**
- std::vector< std::vector< void * > > **keyLocations**
- bool **groupedByKey**
- bool **groupedByHash**

The documentation for this class was generated from the following files:

- /home/mtcs/pesquisa/faster/faster.git/src/include/_workerIFdd.h
- /home/mtcs/pesquisa/faster/faster.git/src/libfaster/workerIFddCore.cpp

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