



链滴

alluxio rpc analysis

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RPC communication

A class which extends parent class `AbstractThriftClient` will be a RPC client. They use the method `retryRPC` to invoke a PRC call, then `ServiceHandler`'s method which override `Service.Iface`'s abstract method will receive the calling.

To catch the exception during the calling from RPC client uniformly, it is a better way to use method `RpcUtils.call()` and provide a instance implements the abstract method `call` which defined in interface `RpcCallable` to handle the callback.

RPC call

RPC client invoke a RPC call to RPC service which is implemented by `serviceHandler` through `clientService`. There are three role in `Alluxio`, the call direction could be `Client->Master`, `Worker->Master`, `Client->Worker`.

The `ServiceHandler` implements `ClientService.Iface` which will called by RPC Client, usually `ServiceHandler` have a member to execute concrete operation on master or worker.

The following table shows six kind RPC call in `Alluxio`.

RPC Client	ClientService(thrift)	ServiceHandler
FileSystemMasterClient FileSystemMasterClientServiceHandler Client->Master	FileSystemMasterClientService FileSystemMaster	FileSystemMasterClientServiceHandler
FileSystemMasterClient' FileSystemMasterWorkerServiceHandler Worker->Master	FileSystemMasterWorkerService FileSystemMaster	FileSystemMasterWorkerServiceHandler
RetryHandlingBlockMasterClient BlockMasterClientServiceHandler Client->Master	BlockMasterClientService BlockMaster	BlockMasterClientServiceHandler
BlockMasterClient BlockMasterWorkerServiceHandler Worker->Master	BlockMasterWorkerService BlockMaster	BlockMasterWorkerServiceHandler
FileSystemWorkerClient FileSystemWorkerClientServiceHandler Client->Worker	FileSystemWorkerClientService FileSystemWorker	FileSystemWorkerClientServiceHandler

RetryHandlingBlockWorkerClient
lockWorkerClientServiceHandler
rker

BlockWorkerClientService
BlockWorker

Client->W

RPC method

master

- FileSystemMasterClientServiceHandler
 - checkConsistency
 - completeFile
 - createDirectory
 - createFile
 - free
 - getFileBlockInfoList
 - getNewBlockIdForFile
 - getStatus
 - getStatusInternal
 - getUfsAddress
 - listStatus
 - loadMetadata
 - mount
 - remove
 - rename
 - scheduleAsyncPersist
 - setAttribute
 - unmount
- FileSystemMasterWorkerServiceHandler
 - getFileInfo
 - getPinIdList
 - heartbeat
- BlockMasterClientServiceHandler
 - getWorkerInfoList
 - getCapacityBytes
 - getUsedBytes
 - getBlockInfo
- BlockMasterWorkerServiceHandler

- getWorkerId
 - registerWorker
 - heartbeat
 - commitBlock

worker

- BlockWorkerClientServiceHandler
 - accessBlock
 - cacheBlock
 - cancelBlock
 - lockBlock
 - promoteBlock
 - removeBlock
 - requestBlockLocation
 - requestSpace
 - unlockBlock
 - sessionHeartbeat
- FileSystemWorkerClientServiceHandler
 - cancelUfsFile
 - closeUfsFile
 - completeUfsFile
 - createUfsFile
 - openUfsFile
 - sessionHeartbeat