**NAME**

sortLocatedBlocks – Sort the located blocks

**SYNOPSIS**

import org.apache.hadoop.hdfs.server.blockmanagement.DatanodeManager

public void sortLocatedBlocks(final String targethost,

final List<LocatedBlock> locatedblocks, final boolean useStorage)

**DESCRIPTION**

HDFS에 저장된 파일을 구성하는 여러 located block으로 이루어진 LocatedBlocks의 각각의 LocatedBlock을 정렬하는 함수.

정렬에 storage type을 사용할 것인지에 관하여, useStorage 값이 0일 경우 사용하지 않고, 1일 경우 사용함

@param targethost Name of host node where data will be read

@param locatedblocks A list of located blocks consisting the target file

@param useStorage use storage type for sort or not

**RETURN VALUES**

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**NAME**

sortByStorage – Sort nodes array by storage bandwidth

**SYNOPSIS**

import org.apache.hadoop.net.NetworkTopology

public void sortByStorage(Node reader, LocatedBlock b, int activeLen);

**DESCRIPTION**

LocatedBlock의 node list를 storage bandwidth 값에 따라 정렬하는 함수

@param reader Node where data will be read

@param b Available LocatedBlock with the requested data

@param activeLen Number of active nodes at the front of the array

**RETURN VALUES**

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**NAME**

getWeightByStorage – integer weight를 반환(reader와 node의 거리, storage의 빠른 정도에 따른 weight)

**SYNOPSIS**

import org.apache.hadoop.net.NetworkTopology

protected int getWeightByStorage(Node reader, Node node, StorageType storageType);

**DESCRIPTION**

LocatedBlock의 정렬을 위하여 호출되는 함수

데이터를 읽는 reader와 node의 거리와 해당 node에 사용된 저장장치에 따라 정렬에 사용될 weight를 설정하여 반환

**RETURN VALUES**

Returns an integer weight. A lower value signifies that a node is closer and faster.

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**NAME**

setSpeedRate – set speed rate between two storage devices

**SYNOPSIS**

import org.apache.hadoop.net.NetworkTopology

public void setSpeedRate(int speedRate);

**DESCRIPTION**

speedRate는 HDFS에서 사용하는 storage policy 중 heterogeneous 환경을 지원하는 policy를 위한 값으로, 서로 다른 두 종류의 storage device 간의 bandwidth 비율을 나타낸다.

setSpeedRate를 통하여 DFSInputStream 내부의 LocatedBlock의 정렬에 사용될 speedRate 값을 설정할 수 있다.

**RETURN VALUES**

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**NAME**

getSpeedRate – get speed rate between two storage devices

**SYNOPSIS**

import org.apache.hadoop.net.NetworkTopology

public int getSpeedRate();

**DESCRIPTION**

speedRate는 HDFS에서 사용하는 storage policy 중 heterogeneous 환경을 지원하는 policy를 위한 값으로, 서로 다른 두 종류의 storage device 간의 bandwidth 비율을 나타낸다.

getSpeedRate를 통하여 DFSInputStream 내부의 LocatedBlock의 정렬에 사용될 speedRate 값의 설정 값을 return 받는다.

**RETURN VALUES**

getSpeedRate returns a integer which means the speed rate between two storage devices.

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