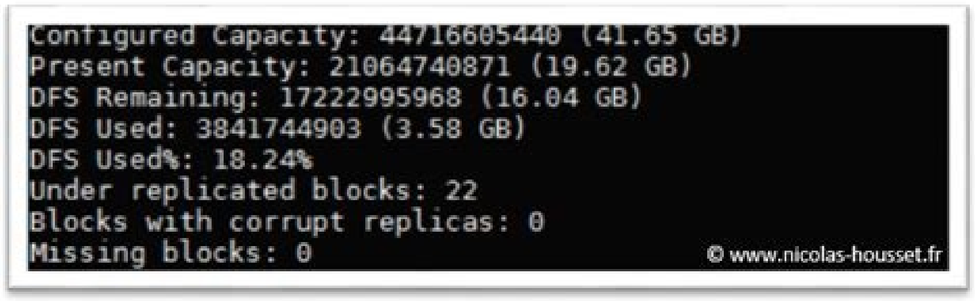
Hadoop dfsadmin report

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Live datanodes (2):

Name: [redacted] (master)
Hostname: master
Decommission Status : Normal
Configured Capacity: 67370528768 (62.74 GB)
DFS Used: 28672 (28 KB)
Non DFS Used: 21940924416 (20.43 GB)
DFS Remaining: 41976930304 (39.09 GB)
DFS Used%: 0.00%
DFS Remaining%: 62.31%
Configured Cache Capacity: 0 (0 B)
Cache Used: 0 (0 B)
Cache Remaining: 0 (0 B)
Cache Used%: 100.00%
Cache Remaining%: 0.00%
Xceivers: 1
Last contact: Wed May 08 02:28:55 PDT 2019
Last Block Report: Wed May 08 01:45:25 PDT 2019
Num of Blocks: 0


Name: [redacted] (slave)
Hostname: slave
Decommission Status : Normal
Configured Capacity: 67370528768 (62.74 GB)
DFS Used: 28672 (28 KB)
Non DFS Used: 11038052352 (10.28 GB)
DFS Remaining: 52879802368 (49.25 GB)
DFS Used%: 0.00%
DFS Remaining%: 78.49%
Configured Cache Capacity: 0 (0 B)
Cache Used: 0 (0 B)
Cache Remaining: 0 (0 B)
Cache Used%: 100.00%
Cache Remaining%: 0.00%
Xceivers: 1
Last contact: Wed May 08 02:28:58 PDT 2019
Last Block Report: Wed May 08 01:45:00 PDT 2019
Num of Blocks: 0
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hadoop@ubuntu-1:~$ hadoop dfsadmin -help
DEPRECATED: Use of this script to execute hdfs command is deprecated.
Instead use the hdfs command for it.

Hadoop dfsadmin is the command to execute DFS administrative commands.
The full syntax is:

hadoop dfsadmin [-report] [-safemode <enter | leave | get | wait>]
        [-saveNamespace]
        [-rollEdits]
        [-restoreFailedStorage true|false|check]
        [-refreshNodes]
        [-setQuota <quota> <dirname>...<dirname>]
        [-clrQuota <dirname>...<dirname>]
        [-setSpaceQuota <quota> -<dirname>...<dirname>]
        [-clrSpaceQuota <dirname>...<dirname>]
        [-refreshServiceAcl]
        [-refreshUserToGroupsMappings]
        [refreshSuperUserGroupsConfiguration]
        [-printTopology]
        [-refreshNamenodes datanodehost:port]
        [-deleteBlockPool datanodehost:port blockpoolId [force]]
        [-setBalancerBandwidth <bandwidth>]
        [-fetchImage <local directory>]
        [-allowSnapshot <snapshotDir>]
        [-disallowSnapshot <snapshotDir>]
        [-help [cmd]]

-report:        Reports basic filesystem information and statistics.

-safemode <enter|leave|get|wait>:  Safe mode maintenance command.
                Safe mode is a Namenode state in which it
                        1.  does not accept changes to the name space (read-only)
                        2.  does not replicate or delete blocks.
                Safe mode is entered automatically at Namenode startup, and
                leaves safe mode automatically when the configured minimum
                percentage of blocks satisfies the minimum replication
                condition.  Safe mode can also be entered manually, but then
                it can only be turned off manually as well.
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Big data hadoop job description. Why is hadoop used for big data. Why hadoop is used for big data analysis.

IBM BigInsights: What is the significance of Non DFS Used value in the hadoop dfsadmin -report output? Following is a sample output of hadoop dfsadmin -report command Name: 9.30.252.40:1019 (bivm.ibm.com) Hostname: bivm.ibm.com Decommission Status : Normal Configured Capacity: 104480407552 (97.30 GB) DFS Used: 938303488 (894.84 MB) Non DFS Used: 22106976090 (20.59 GB) DFS Remaining: 81435127974 (75.84 GB) DFS Used%: 0.90% DFS Remaining%: 77.94% Configured Cache Capacity: 0 (0 B) Cache Used: 0 (0 B) Cache Remaining: 0 (0 B) Cache Used%: 100.00% Cache Remaining%: 0.00% Xceivers: 7 NonDFS used is calculated using following formula nonDFSUsed = capacity - dfsUsed - remaining; Applying the formula we get , Non DFS Used = 104480407552 - 938303488 - 81435127974 = 22106976090 The Non DFS Used value does not represent the true disk space usage by non hadoop files instead its an indicative value which is derived using the given formula. [{"Product":{"code":"SSCRJT","label":"IBM Db2 Big SQL"},"Business Unit":{"code":"BU059","label":"IBM Software w\/o TPS"},"Component":"Open Source Tools","Platform":[{"code":"PF016","label":"Linux"}],"Version":"3.0;3.0.0.2;4.0.0;3.0.0.1;4.1.0","Edition":"Enterprise Edition;Basic Edition;Community Edition;Quick Start Edition","Line of Business":{"code":"LOB10","label":"Data and AI"}}] Instantly share code, notes, and snippets. You can’t perform that action at this time. You signed in with another tab or window. Reload to refresh your session. You signed out in another tab or window. Reload to refresh your session. hdfs dfsadmin -report outputs a brief report on the overall HDFS filesystem. It’s a userful command to quickly view how much disk is available, how many datanodes are running, and so on. Run the command with sudo -u hdfs prefixed to ensure you don’t get a permission denied error. CDH4 runs the namenode as the hdfs user by default. However if you have changed the sudo -u hdfs hdfs dfsadmin -report You will see output similar to: Configured Capacity: 247241674752 (230.26 GB) Present Capacity: 221027041280 (205.85 GB) DFS Remaining: 221026717696 (205.85 GB) DFS Used: 323584 (316 KB) DFS Used%: 0% Under replicated blocks: 0 Blocks with corrupt replicas: 0 Missing blocks: 0 ---------- Datanodes available: 1 (1 total, 0 dead) Live datanodes: Name: 127.0.0.1:50010 (localhost) Hostname: freshstart Decommission Status : Normal Configured Capacity: 247241674752 (230.26 GB) DFS Used: 323584 (316 KB) Non DFS Used: 26214633472 (24.41 GB) DFS Remaining: 221026717696 (205.85 GB) DFS Used%: 0% DFS Remaining%: 89.4% Last contact: Sat Jul 14 18:07:18 PDT 2012 hdfs dfsadmin -report outputs a brief report on the overall HDFS filesystem. It’s a useful command to quickly view how much disk is available, how many DataNodes are running, corrupted blocks etc. Note: This article explains the disk space calculations as seen by the HDFS. Command: Run the command with sudo -u hdfs prefixed to ensure you don't get a permission denied error. sudo -u hdfs hdfs dfsadmin -reportYou will see an output similar to:Configured Capacity: 270082531328 (251.53 GB) Present Capacity: 190246318080 (177.18 GB) DFS Remaining: 143504465920 (133.65 GB) DFS Used: 46741852160 (43.53 GB) DFS Used%: 24.57% Under replicated blocks: 0 Blocks with corrupt replicas: 0 Missing blocks: 0 Missing blocks (with replication factor 1): 0 ---------- Live datanodes (4): Name: 123.45.678.910:50010 (kharearpit4.local) Hostname: kharearpit4.local Rack: /rack4 Decommission Status : Normal Configured Capacity: 20063055872 (18.69 GB) DFS Used: 40960 (40 KB) Non DFS Used: 5971144704 (5.56 GB) DFS Remaining: 14091870208 (13.12 GB) DFS Used%: 0.00% DFS Remaining%: 70.24% Configured Cache Capacity: 0 (0 B) Cache Used: 0 (0 B) Cache Remaining: 0 (0 B) Cache Used%: 100.00% Cache Remaining%: 0.00% Xceivers: 2 Last contact: Sun Apr 23 19:57:56 UTC 2017 Name: 123.45.678.909:50010 (kharearpit3.local) Hostname: kharearpit3.local Rack: /rack3 Decommission Status : Normal Configured Capacity: 83339825152 (77.62 GB) DFS Used: 15580618752 (14.51 GB) Non DFS Used: 22774845440 (21.21 GB) DFS Remaining: 44984360960 (41.89 GB) DFS Used%: 18.70% DFS Remaining%: 53.98% Configured Cache Capacity: 0 (0 B) Cache Used: 0 (0 B) Cache Remaining: 0 (0 B) Cache Used%: 100.00% Cache Remaining%: 0.00% Xceivers: 2 Last contact: Sun Apr 23 19:57:58 UTC 2017 Name: 123.45.678.908:50010 (kharearpit1.local) Hostname: kharearpit1.local Rack: /rack1 Decommission Status : Normal Configured Capacity: 83339825152 (77.62 GB) DFS Used: 15580672000 (14.51 GB) Non DFS Used: 31497687040 (29.33 GB) DFS Remaining: 36261466112 (33.77 GB) DFS Used%: 18.70% DFS Remaining%: 43.51% Configured Cache Capacity: 0 (0 B) Cache Used: 0 (0 B) Cache Remaining: 0 (0 B) Cache Used%: 100.00% Cache Remaining%: 0.00% Xceivers: 2 Last contact: Sun Apr 23 19:57:58 UTC 2017 Name: 123.45.678.907:50010 (kharearpit2.local) Hostname: kharearpit2.local Rack: /rack2 Decommission Status : Normal Configured Capacity: 83339825152 (77.62 GB) DFS Used: 15580520448 (14.51 GB) Non DFS Used: 19592536064 (18.25 GB) DFS Remaining: 48166768640 (44.86 GB) DFS Used%: 18.70% DFS Remaining%: 57.80% Configured Cache Capacity: 0 (0 B) Cache Used: 0 (0 B) Cache Remaining: 0 (0 B) Cache Used%: 100.00% Cache Remaining%: 0.00% Xceivers: 2 Last contact: Sun Apr 23 19:57:58 UTC 2017 This article aims at explaining the concepts of Configured Capacity, Present Capacity, DFS Used, DFS Remaining, Non DFS Used, in HDFS. The diagram below clearly explains these output space parameters assuming HDFS as a single disk.A detailed explanation of these parameters are as follows: 1. Configured CapacityIt is the total capacity available to HDFS for storage. It is calculated as follows: Configured Capacity = Total Disk Space - Reserved Space Reserved space is the space which is allocated for OS level operations. Reserved space can be configured using the parameter dfs.datanode.du.reserved which can be added/updated from hdfs-site.xml. Replication factor is irrelevant in the case of Configured Capacity. 2. Present CapacityIt is the total amount of storage space which is actually available for storing the files after allocating some space for metadata and open-blocks (Non DFS Used space). So, the difference of Configured Capacity and Present Capacity is used for storing file system metadata and other information. When DataNodes sends report to the NameNode, it also has a Present Capacity parameter which is sent to the NameNode for the NameNode to track it and aggregate it from all the DataNodes, which gets displayed when hdfs dfsadmin -report command is run. Thus, Present Capacity may vary and it depends on the usage of other Non-HDFS directories, however, Configured Capacity remains same until you add/remove volume/disks from the HDFS. 3. DFS UsedIt is the storage space that has been used up by HDFS. In order to get the actual size of the files stored in HDFS, divide the 'DFS Used' by the replication factor. The replication factor can be found in the hdfs-site.xml config file configured under dfs.replication parameter. So if the DFS Used is 90 GB, and your replication factor is 3, the actual size of your files in HDFS will be 90/3 = 30 GB. 4. DFS RemainingIt is the amount of storage space still available to the HDFS to store more files. If you have 90 GB remaining storage space, that mean you can still store up to 90/3 = 30 GB of files without exceeding your Configured Capacity and assuming replication factor is 3. So after understanding DFS Used and DFS Remaining we can say that: Present Capacity = DFS Used + DFS Remaining 5. Non DFS UsedNon DFS used is any data in the filesystem of the data node(s) that isn't in \dfs.datanode.data.dir. The term 'Non DFS Used' means that "How much of Configured Capacity is being occupied for Non DFS Use".Non DFS Used = Configured Capacity - DFS Remaining - DFS UsedVALIDATING THE OUTPUT Present Capacity = Sum of [DFS Used + DFS Remaining] for all the Data Nodes In the output shared above after running the command, we have 4 DataNode Present Capacity = [40KB + 13.12 GB] + [14.51 GB + 41.89 GB] + [14.51 GB + 33.77 GB] + [14.51 GB + 44.86 GB] = 177.18 GBThis is what we got when we ran the command.Configured Capacity = Sum of Configured Capacity for all the Data Nodes = 18.69 GB + 77.62 GB + 77.62 GB + 77.62 GB = 251.55 GB Another way for checking the Configured Capacity is,Configured Capacity = Present Capacity + Non DFS Used on all the Data Nodes = 177.18 GB + [5.56 GB + 21.21 GB + 29.33 GB + 18.25 GB] = 251.53 GB All HDFS commands are invoked by the bin/hdfs script. Running the hdfs script without any arguments prints the description for all commands. Usage: hdfs [SHELL_OPTIONS] COMMAND [GENERIC_OPTIONS] [COMMAND_OPTIONS] Hadoop has an option parsing framework that employs parsing generic options as well as running classes. COMMAND_OPTIONS Description SHELL_OPTIONS The common set of shell options. These are documented on the Commands Manual page. GENERIC_OPTIONS The common set of options supported by multiple commands. See the Hadoop Commands Manual for more information. COMMAND COMMAND_OPTIONS Various commands with their options are described in the following sections. The commands have been grouped into User Commands and Administration Commands. Commands useful for users of a hadoop cluster. Usage: hdfs classpath [--glob |--jar |-h |--help] COMMAND_OPTION Description --glob expand wildcards --jar path write classpath as manifest in jar named path -h, --help print help Prints the class path needed to get the Hadoop jar and the required libraries. If called without arguments, then prints the classpath set up by the command scripts, which is likely to contain wildcards in the classpath entries. Additional options print the classpath after wildcard expansion or write the classpath into the manifest of a jar file. The latter is useful in environments where wildcards cannot be used and the expanded classpath exceeds the maximum supported command line length. Usage: hdfs dfs [COMMAND [COMMAND_OPTIONS]] Run a filesystem command on the file system supported in Hadoop. The various COMMAND_OPTIONS can be found at File System Shell Guide. Usage: hdfs envvars display computed Hadoop environment variables. Usage: hdfs fetchdt COMMAND_OPTION Description --webservice NN_Url Url to contact NN on (starts with http or https) --renewer name Name of the delegation token renewer --cancel Cancel the delegation token --renew Renew the delegation token. Delegation token must have been fetched using the –renewer name option. --print Print the delegation token token_file_path File path to store the token into. Gets Delegation Token from a NameNode. See fetchdt for more info. Usage: hdfs fsck [-list-corruptfileblocks | [-move | -delete | -openforwrite] [-files [-blocks [-locations | -racks | -replicaDetails | -upgradedomains]]] [-includeSnapshots] [-showprogress] [-storagepolicies] [-maintenance] [-blockId] [-replicate] COMMAND_OPTION Description path Start checking from this path. -delete Delete corrupted files. -files Print out files being checked. -files -blocks Print out the block report -files -blocks -locations Print out locations for every block. -files -blocks -racks Print out network topology for data-node locations. -files -blocks -replicaDetails Print out each replica details. -files -blocks -upgradedomains Print out upgrade domains for every block. -includeSnapshots Include snapshot data if the given path indicates a snapshottable directory or there are snapshottable directories under it. -list-corruptfileblocks Print out list of missing blocks and files they belong to. -move Move corrupted files to /lost+found. -openforwrite Print out files opened for write. -showprogress Deprecated. A dot is print every 100 files processed with or without this switch. -storagepolicies Print out storage policy summary for the blocks. -maintenance Print out maintenance state node details. -blockId Print out information about the block. -replicate Initiate replication work to make mis-replicated blocks satisfy block placement policy. Runs the HDFS filesystem checking utility. See fsck for more info. Usage: hdfs getconf -namenodes hdfs getconf -secondaryNameNodes hdfs getconf -backupNodes hdfs getconf -journalNodes hdfs getconf -includeFile hdfs getconf -excludeFile hdfs getconf -nnRpcAddresses hdfs getconf -confKey [key] COMMAND_OPTION Description -namenodes gets list of namenodes in the cluster. -secondaryNameNodes gets list of secondary namenodes in the cluster. -backupNodes gets list of backup nodes in the cluster. -journalNodes gets list of journal nodes in the cluster. -includeFile gets the include file path that defines the datanodes that can join the cluster. -excludeFile gets the exclude file path that defines the datanodes that need to decommissioned. -nnRpcAddresses gets the namenode rpc addresses -confKey [key] gets a specific key from the configuration Gets configuration information from the configuration directory, post-processing. Usage: hdfs groups [username ...] Returns the group information given one or more usernames. Usage: hdfs httpfs Run HttpFS server, the HDFS HTTP Gateway. Usage: hdfs lsSnapshottableDir [-help] COMMAND_OPTION Description -help print help Get the list of snapshottable directories. When this is run as a super user, it returns all snapshottable directories. Otherwise it returns those directories that are owned by the current user. Usage: hdfs jmxget [-localVM ConnectorURL | -port port | -server mbeanserver | -service service] COMMAND_OPTION Description -help print help -localVM ConnectorURL connect to the VM on the same machine -port mbean server port specify mbean server port, if missing it will try to connect to MBean Server in the same VM -server specify mbean server (localhost by default) -service NameNode|DataNode specify jmx service. NameNode by default. Dump JMX information from a service. Usage: hdfs oev [OPTIONS] -i INPUT_FILE -o OUTPUT_FILE COMMAND_OPTION Description -i,--inputFile arg edits file to process, xml (case insensitive) extension means XML format, any other filename means binary format -o,--outputFile arg Name of output file. If the specified file exists, it will be overwritten, format of the file is determined by -p option COMMAND_OPTION Description -f,--fix-txids Renumber the transaction IDs in the input, so that there are no gaps or invalid transaction IDs. -h,--help Display usage information and exit -r,--recover When reading binary edit logs, use recovery mode. This will give you the chance to skip corrupt parts of the edit log. -p,--processor arg Select which type of processor to apply against image file, currently supported processors are: binary (native binary format that Hadoop uses), xml (default, XML format), stats (prints statistics about edits file) -v,--verbose More verbose output, prints the input and output filenames, for processors that write to a file, also output to screen. On large image files this will dramatically increase processing time (default is false). Hadoop offline edits viewer. See Offline Edits Viewer Guide for more info. Usage: hdfs oiv [OPTIONS] -i INPUT_FILE COMMAND_OPTION Description -i|--inputFile input file Specify the input fsimage file (or XML file, if ReverseXML processor is used) to process. COMMAND_OPTION Description -o,--outputFile output file Specify the output filename, if the specified output processor generates one. If the specified file already exists, it is silently overwritten. (output to stdout by default) If the input file is an XML file, it also creates an .md5. -p,--processor processor Specify the image processor to apply against the image file. Currently valid options are Web (default), XML, Delimited, FileDistribution and ReverseXML. -addr address Specify the address(host:port) to listen. (localhost:5978 by default). This option is used with Web processor. -maxSize size Specify the range [0, maxSize] of file sizes to be analyzed in bytes (128GB by default). This option is used with FileDistribution processor. -step size Specify the granularity of the distribution in bytes (2MB by default). This option is used with FileDistribution processor. -format Format the output result in a human-readable fashion rather than a number of bytes. (false by default). This option is used with FileDistribution processor. -delimiter arg Delimiting string to use with Delimited processor. -t,--temp temporary dir Use temporary dir to cache intermediate result to generate Delimited outputs. If not set, Delimited processor constructs the namespace in memory before outputting text. -h,--help Display the tool usage and help information and exit. Hadoop Offline Image Viewer for image files in Hadoop 2.4 or up. See Offline Image Viewer Guide for more info. Usage: hdfs oiv_legacy [OPTIONS] -i INPUT_FILE -o OUTPUT_FILE COMMAND_OPTION Description -i,--inputFile input file Specify the input fsimage file to process. -o,--outputFile output file Specify the output filename, if the specified output processor generates one. If the specified file already exists, it is silently overwritten. COMMAND_OPTION Description -p|--processor processor Specify the image processor to apply against the image file. Valid options are Ls (default), XML, Delimited, Indented, FileDistribution and NameDistribution. -maxSize size Specify the range [0, maxSize] of file sizes to be analyzed in bytes (128GB by default). This option is used with FileDistribution processor. -step size Specify the granularity of the distribution in bytes (2MB by default). This option is used with FileDistribution processor. -format Format the output result in a human-readable fashion rather than a number of bytes. (false by default). This option is used with FileDistribution processor. -skipBlocks Do not enumerate individual blocks within files. This may save processing time and outfile file space on namespaces with very large files. The Ls processor reads the blocks to correctly determine file sizes and ignores this option. -printToScreen Pipe output of processor to console as well as specified file. On extremely large namespaces, this may increase processing time by an order of magnitude. -delimiter arg When used in conjunction with the Delimited processor, replaces the default tab delimiter with the string specified by arg. -h|--help Display the tool usage and help information and exit. Hadoop offline image viewer for older versions of Hadoop. See oiv_legacy Command for more info. Usage: hdfs snapshotDiff Determine the difference between HDFS snapshots. See the HDFS Snapshot Documentation for more information. Usage: hdfs version Prints the version. Commands useful for administrators of a hadoop cluster. Usage: hdfs balancer [-policy] [-threshold] [-exclude [-f |]] [-include [-f |]] [-source [-f |]] [-blockpools] [-idleiterations] [-runDuringUpgrade] [-asService] COMMAND_OPTION Description -policy datanode (default): Cluster is balanced if each datanode is balanced. blockpool: Cluster is balanced if each block pool in each datanode is balanced. -threshold Percentage of disk capacity. This overwrites the default threshold. -exclude -f | Excludes the specified datanodes from being balanced by the balancer. -include -f | Includes only the specified datanodes to be balanced by the balancer. -source -f | Pick only the specified datanodes as source nodes. -blockpools The balancer will only run on blockpools included in this list. -idleiterations Maximum number of idle iterations before exit. This overwrites the default idleiterations(5). -runDuringUpgrade Whether to run the balancer during an ongoing HDFS upgrade. This is usually not desired since it will not affect used space on over-utilized machines. -asService Run Balancer as a long running service. -h|--help Display the tool usage and help information and exit. Runs a cluster balancing utility. An administrator can simply press Ctrl-C to stop the rebalancing process. See Balancer for more details. Note that the blockpool policy is stricter than the datanode policy. Besides the above command options, a pinning feature is introduced starting from 2.7.0 to prevent certain replicas from getting moved by balancer/mover. This pinning feature is disabled by default, and can be enabled by configuration property “dfs.datanode.block-pinning.enabled”. When enabled, this feature only affects blocks that are written to favored nodes specified in the create() call. This feature is useful when we want to maintain the data locality, for applications such as HBase regionserver. If you want to run Balancer as a long-running service, please start Balancer using -asService parameter with daemon-mode. You can do this by using the following command: hdfs --daemon start balancer -asService, or just use sbin/start-balancer.sh script with parameter -asService. Usage: hdfs cacheadmin [-addDirective -path -pool [-force] [-replication] [-ttl]] hdfs cacheadmin [-modifyDirective -id [-path] [-force] [-replication] [-pool] [-ttl]] hdfs cacheadmin [-listDirectives [-stats] [-path] [-pool] [-id]] hdfs cacheadmin [-removeDirective] hdfs cacheadmin [-removeDirectives -path] hdfs cacheadmin [-addPool [-owner] [-group] [-mode] [-limit] [-maxTtl]] hdfs cacheadmin [-modifyPool [-owner] [-group] [-mode] [-limit] [-maxTtl]] hdfs cacheadmin [-removePool] hdfs cacheadmin [-listPools [-stats] []] hdfs cacheadmin [-help] See the HDFS Cache Administration Documentation for more information. Usage: hdfs crypto -createZone -keyName -path hdfs crypto -listZones hdfs crypto -provisionTrash -path hdfs crypto -help See the HDFS Transparent Encryption Documentation for more information. Usage: hdfs datanode [-regular | -rollback | -rollingupgrade rollback] COMMAND_OPTION Description -regular Normal datanode startup (default). -rollback Rollback the datanode to the previous version. This should be used after stopping the datanode and distributing the old hadoop version. -rollingupgrade rollback Rollback a rolling upgrade operation. Runs a HDFS datanode. Usage: hdfs dfsadmin [-report [-live] [-dead] [-decommissioning] [-enteringmaintenance] [-inmaintenance]] hdfs dfsadmin [-safemode enter | leave | get | wait | forceExit] hdfs dfsadmin [-saveNamespace [-beforeShutdown]] hdfs dfsadmin [-rollEdits] hdfs dfsadmin [-restoreFailedStorage true |false |check] hdfs dfsadmin [-refreshNodes] hdfs dfsadmin [-setQuota ...] hdfs dfsadmin [-clrQuota ...] hdfs dfsadmin [-setSpaceQuota [-storageType] ...] hdfs dfsadmin [-clrSpaceQuota [-storageType] ...] hdfs dfsadmin [-finalizeUpgrade] hdfs dfsadmin [-rollingUpgrade [| |]] hdfs dfsadmin [-upgrade [query | finalize] hdfs dfsadmin [-refreshServiceAcl] hdfs dfsadmin [-refreshUserToGroupsMappings] hdfs dfsadmin [-refreshSuperUserGroupsConfiguration] hdfs dfsadmin [-refreshCallQueue] hdfs dfsadmin [-refresh [arg1..argn]] hdfs dfsadmin [-reconfig] hdfs dfsadmin [-printTopology] hdfs dfsadmin [-refreshNamenodes datanodehost:port] hdfs dfsadmin [-getVolumeReport datanodehost:port] hdfs dfsadmin [-deleteBlockPool datanode-host:port blockpoolId [force]] hdfs dfsadmin [-setBalancerBandwidth] hdfs dfsadmin [-getBalancerBandwidth] hdfs dfsadmin [-fetchImage] hdfs dfsadmin [-allowSnapshot] hdfs dfsadmin [-disallowSnapshot] hdfs dfsadmin [-shutdownDatanode [upgrade]] hdfs dfsadmin [-evictWriters] hdfs dfsadmin [-getDatanodeInfo] hdfs dfsadmin [-metasave filename] hdfs dfsadmin [-triggerBlockReport [-incremental] [-namenode]] hdfs dfsadmin [-listOpenFiles [-blockingDecommission] [-path]] hdfs dfsadmin [-help [cmd]] COMMAND_OPTION Description -report [-live] [-dead] [-decommissioning] [-enteringmaintenance] [-inmaintenance] Reports basic filesystem information and statistics, The dfs usage can be different from “du” usage, because it measures raw space used by replication, checksums, snapshots and etc. on all the DNs. Optional flags may be used to filter the list of displayed DataNodes. -safemode enter|leave|get|wait|forceExit Safe mode maintenance command. Safe mode is a Namenode state in which it 1. does not accept changes to the name space (read-only) 2. does not replicate or delete blocks. Safe mode is entered automatically at Namenode startup, and leaves safe mode automatically when the configured minimum percentage of blocks satisfies the minimum replication condition. If Namenode detects any anomaly then it will linger in safe mode till that issue is resolved. If that anomaly is the consequence of a deliberate action, then administrator can use -safemode forceExit to exit safe mode. The cases where forceExit may be required are 1. Namenode metadata is not consistent. If Namenode detects that metadata has been modified out of band and can cause data loss, then Namenode will enter forceExit state. At that point user can either restart Namenode with correct metadata files or forceExit (if data loss is acceptable).2. Rollback causes metadata to be replaced and rarely it can trigger safe mode forceExit state in Namenode. In that case you may proceed by issuing -safemode forceExit. Safe mode can also be entered manually, but then it can only be turned off manually as well. -saveNamespace [-beforeShutdown] Save current namespace into storage directories and reset edits log. Requires safe mode. If the “beforeShutdown” option is given, the NameNode does a checkpoint if and only if no checkpoint has been done during a time window (a configurable number of checkpoint periods). This is usually used before shutting down the NameNode to prevent potential fsimage/editlog corruption. -rollEdits Rolls the edit log on the active NameNode. -restoreFailedStorage true|false|check This option will turn on/off automatic attempt to restore failed storage replicas. If a failed storage becomes available again the system will attempt to restore edits and/or fsimage during checkpoint. ‘check’ option will return current setting. -refreshNodes Re-read the hosts and exclude files to update the set of Datanodes that are allowed to connect to the Namenode and those that should be decommissioned or recommissioned. -setQuota ... See HDFS Quotas Guide for the detail. -clrQuota ... See HDFS Quotas Guide for the

detail. -setSpaceQuota [-storageType] ... See HDFS Quotas Guide for the detail. -clrSpaceQuota [-storageType] ... See HDFS Quotas Guide for the detail. -finalizeUpgrade Finalize upgrade of HDFS. Datanodes delete their previous version working directories, followed by Namenode doing the same. This completes the upgrade process. -rollingUpgrade [|||] See Rolling Upgrade document for the detail. -upgrade query|finalize Query the current upgrade status.Finalize upgrade of HDFS (equivalent to -finalizeUpgrade). -refreshServiceAcl Reload the service-level authorization policy file. -refreshUserToGroupsMappings Refresh user-to-groups mappings. -refreshSuperUserGroupsConfiguration Refresh superuser proxy groups mappings -refreshCallQueue Reload the call queue from config. -refresh [arg1..argn] Triggers a runtime-refresh of the resource specified by on . All other args after are sent to the host. -reconfig Starts reconfiguration or gets the status of an ongoing reconfiguration, or gets a list of reconfigurable properties. The second parameter specifies the node type. -printTopology Print a tree of the racks and their nodes as reported by the Namenode -refreshNamenodes datanodehost:port For the given datanode, reloads the configuration files, stops serving the removed block-pools and starts serving new block-pools. -getVolumeReport datanodehost:port For the given datanode, get the volume report. -deleteBlockPool datanode-host:port blockpoolId [force] If force is passed, block pool directory for the given blockpool id on the given datanode is deleted along with its contents, otherwise the directory is deleted only if it is empty. The command will fail if datanode is still serving the block pool. Refer to refreshNamenodes to shutdown a block pool service on a datanode. -setBalancerBandwidth Changes the network bandwidth used by each datanode during HDFS block balancing. is the maximum number of bytes per second that will be used by each datanode. This value overrides the dfs.datanode.balance.bandwidthPerSec parameter. NOTE: The new value is not persistent on the DataNode. -getBalancerBandwidth Get the network bandwidth(in bytes per second) for the given datanode. This is the maximum network bandwidth used by the datanode during HDFS block balancing. -fetchImage Downloads the most recent fsimage from the NameNode and saves it in the specified local directory. -allowSnapshot Allowing snapshots of a directory to be created. If the operation completes successfully, the directory becomes snapshottable. See the HDFS Snapshot Documentation for more information. -disallowSnapshot Disallowing snapshots of a directory to be created. All snapshots of the directory must be deleted before disallowing snapshots. See the HDFS Snapshot Documentation for more information. -shutdownDatanode [upgrade] Submit a shutdown request for the given datanode. See Rolling Upgrade document for the detail. -evictWriters Make the datanode evict all clients that are writing a block. This is useful if decommissioning is hung due to slow writers. -getDatanodeInfo Get the information about the given datanode. See Rolling Upgrade document for the detail. -metasave filename Save Namenode’s primary data structures to filename in the directory specified by hadoop.log.dir property. filename is overwritten if it exists. filename will contain one line for each of the following1. Datanodes heart beating with Namenode2. Blocks waiting to be replicated3. Blocks currently being replicated4. Blocks waiting to be deleted -triggerBlockReport [-incremental] [-namenode] Trigger a block report for the given datanode. If ‘incremental’ is specified, it will be otherwise, it will be a full block report. If ‘-namenode ’ is given, it only sends block report to a specified namenode. -listOpenFiles [-blockingDecommission] [-path] List all open files currently managed by the NameNode along with client name and client machine accessing them. Open files list will be filtered by given type and path. Add -blockingDecommission option if you only want to list open files that are blocking the DataNode decommissioning. -help [cmd] Displays help for the given command or all commands if none is specified. Runs a HDFS dfsadmin client. Usage: hdfs dfsrouter Runs the DFS router. See Router for more info. Usage: hdfs dfsrouteradmin [-add [-readonly] [-faulttolerant] [-order HASH|LOCAL|RANDOM|HASH_ALL] -owner -group -mode] [-update [ ] [-readonly true|false] [-faulttolerant true|false] [-order HASH|LOCAL|RANDOM|HASH_ALL] -owner -group -mode] [-rm] [-ls [-d]] [-getDestination] [-setQuota -nsQuota -ssQuota] [-setStorageTypeQuota -storageType] [-clrQuota] [-clrStorageTypeQuota] [-safemode enter | leave | get] [-nameservice disable | enable] [-getDisabledNameservices] [-refresh] [-refreshRouterArgs [arg1..argn]] [-refreshSuperUserGroupsConfiguration] [-refreshCallQueue] COMMAND_OPTION Description -add source nameservices destination Add a mount table entry or update if it exists. -update source nameservices destination Update a mount table entry attributes. -rm source Remove mount point of specified path. -ls [-d] path List mount points under specified path. Specify -d parameter to get detailed listing. -getDestination path Get the subcluster where a file is or should be created. -setQuota path -nsQuota nsQuota -ssQuota ssQuota Set quota for specified path. See HDFS Quotas Guide for the quota detail. -setStorageTypeQuota path -storageType storageType stQuota Set storage type quota for specified path. See HDFS Quotas Guide for the quota detail. -clrQuota path Clear quota of given mount point. See HDFS Quotas Guide for the quota detail. -clrStorageTypeQuota path Clear storage type quota of given mount point. See HDFS Quotas Guide for the quota detail. -safemode enter leave get Manually set the Router entering or leaving safe mode. The option get will be used for verifying if the Router is in safe mode state. -nameservice disable enable nameservice Disable/enable a name service from the federation. If disabled, requests will not go to that name service. -getDisabledNameservices Get the name services that are disabled in the federation. -refresh Update mount table cache of the connected router. refreshRouterArgs [arg1..argn] To trigger a runtime-refresh of the resource specified by on . For example, to enable white list checking, we just need to send a refresh command other than restart the router server. -refreshSuperUserGroupsConfiguration Refresh superuser proxy groups mappings on Router. -refreshCallQueue Reload the call queue from config for Router. The commands for managing Router-based federation. See Mount table management for more info. Usage: hdfs diskbalancer [-plan -fs] [-execute] [-query] [-cancel] [-cancel -node] [-report -node | [,...]] [-report -node -top] COMMAND_OPTION Description -plan Creates a diskbalancer plan -execute Executes a given plan on a datanode -query Gets the current diskbalancer status from a datanode -cancel Cancels a running plan -report Reports the volume information from datanode(s) Runs the diskbalancer CLI. See HDFS Diskbalancer for more information on this command. Usage: hdfs ec [generic options] [-setPolicy -policy -path] [-getPolicy -path] [-unsetPolicy -path] [-listPolicies] [-addPolicies -policyFile] [-listCodecs] [-enablePolicy -policy] [-disablePolicy -policy] [-removePolicy -policy] [-verifyClusterSetup -policy ...] [-help [cmd ...]] COMMAND_OPTION Description -setPolicy Set a specified ErasureCoding policy to a directory -getPolicy Get ErasureCoding policy information about a specified path -unsetPolicy Unset an ErasureCoding policy set by a previous call to “setPolicy” on a directory -listPolicies Lists all supported ErasureCoding policies -addPolicies Add a list of erasure coding policies -listCodecs Get the list of supported erasure coding codecs and coders in system -enablePolicy Enable an ErasureCoding policy in system -disablePolicy Disable an ErasureCoding policy in system -removePolicy Remove an ErasureCoding policy from system -verifyClusterSetup Verify if the cluster setup can support a list of erasure coding policies Runs the ErasureCoding CLI. See HDFS ErasureCoding for more information on this command. Usage: hdfs haadmin -transitionToActive [--forceactive] hdfs haadmin -transitionToStandby hdfs haadmin -transitionToObserver hdfs haadmin -failover [--forcefence] [--forceactive] hdfs haadmin -getServiceState hdfs haadmin -getAllServiceState hdfs haadmin -checkHealth hdfs haadmin -help COMMAND_OPTION Description -checkHealth check the health of the given NameNode -failover initiate a failover between two NameNodes -getServiceState determine whether the given NameNode is Active or Standby -getAllServiceState returns the state of all the NameNodes -transitionToActive transition the state of the given NameNode to Active (Warning: No fencing is done) -transitionToStandby transition the state of the given NameNode to Standby (Warning: No fencing is done) -transitionToObserver transition the state of the given NameNode to Observer (Warning: No fencing is done) -help [cmd] Displays help for the given command or all commands if none is specified. See HDFS HA with NFS or HDFS HA with QJM for more information on this command. Usage: hdfs journalnode This command starts a journalnode for use with HDFS HA with QJM. Usage: hdfs mover [-p | -f] COMMAND_OPTION Description -f Specify a local file containing a list of HDFS files/dirs to migrate. -p Specify a space separated list of HDFS files/dirs to migrate. Runs the data migration utility. See Mover for more details. Note that, when both -p and -f options are omitted, the default path is the root directory. In addition, a pinning feature is introduced starting from 2.7.0 to prevent certain replicas from getting moved by balancer/mover. This pinning feature is disabled by default, and can be enabled by configuration property “dfs.datanode.block-pinning.enabled”. When enabled, this feature only affects blocks that are written to favored nodes specified in the create() call. This feature is useful when we want to maintain the data locality, for applications such as HBase regionserver. Usage: hdfs namenode [-backup] | [-checkpoint] | [-format [-clusterid cid] [-force] [-nonInteractive]] | [-upgrade [-clusterid cid] [-renameReserved]] | [-upgradeOnly [-clusterid cid] [-renameReserved]] | [-rollback] | [-rollingUpgrade] | [-importCheckpoint] | [-initializeSharedEdits] | [-bootstrapStandby [-force] [-nonInteractive] [-skipSharedEditsCheck]] | [-recover [-force]] | [-metadataVersion] COMMAND_OPTION Description -backup Start backup node. -checkpoint Start checkpoint node. -format [-clusterid cid] Formats the specified NameNode. It starts the NameNode, formats it and then shut it down. Will throw NameNodeFormatException if name dir already exist and if reformat is disabled for cluster. -upgrade [-clusterid cid] [-renameReserved] Namenode should be started with upgrade option after the distribution of new Hadoop version. -upgradeOnly [-clusterid cid] [-renameReserved] Upgrade the specified NameNode and then shutdown it. -rollback Rollback the NameNode to the previous version. This should be used after stopping the cluster and distributing the old Hadoop version. -rollingUpgrade See Rolling Upgrade document for the detail. -importCheckpoint Loads image from a checkpoint directory and save it into the current one. Checkpoint dir is read from property dfs.namenode.checkpoint.dir -initializeSharedEdits Format a new shared edits dir and copy in enough edit log segments so that the standby NameNode can start up. -bootstrapStandby [-force] [-nonInteractive] [-skipSharedEditsCheck] Allows the standby NameNode’s storage directories to be bootstrapped by copying the latest namespace snapshot from the active NameNode. This is used when first configuring an HA cluster. The option -force or -nonInteractive has the same meaning as that described in namenode -format command. -skipSharedEditsCheck option skips edits check which ensures that we have enough edits already in the shared directory to start up from the last checkpoint on the active. -recover [-force] Recover lost metadata on a corrupt filesystem. See HDFS User Guide for the detail. -metadataVersion Verify that configured directories exist, then print the metadata versions of the software and the image. Runs the namenode. More info about the upgrade and rollback is at Upgrade Rollback. Usage: hdfs nfs3 This command starts the NFS3 gateway for use with the HDFS NFS3 Service. Usage: hdfs portmap This command starts the RPC portmap for use with the HDFS NFS3 Service. Usage: hdfs secondarynamenode [-checkpoint [force]] | [-format] | [-geteditsize] COMMAND_OPTION Description -checkpoint [force] Checkpoints the SecondaryNameNode if EditLog size >= fs.checkpoint.size. If force is used, checkpoint irrespective of EditLog size. -format Format the local storage during startup. -geteditsize Prints the number of uncheckpointed transactions on the NameNode. Runs the HDFS secondary namenode. See Secondary Namenode for more info. Usage: hdfs storagepolicies [-listPolicies] [-setStoragePolicy -path -policy] [-getStoragePolicy -path] [-unsetStoragePolicy -path] [-satisfyStoragePolicy -path] [-isSatisfierRunning] [-help] Lists out all/Gets/sets/unsets storage policies. See the HDFS Storage Policy Documentation for more information. Usage: hdfs zkfc [-formatZK [-force] [-nonInteractive]] COMMAND_OPTION Description -formatZK Format the Zookeeper instance. -force: formats the znode if the znode exists. -nonInteractive: formats the znode aborts if the znode exists, unless -force option is specified. -h Display help This command starts a Zookeeper Failover Controller process for use with HDFS HA with QJM. Useful commands to help administrators debug HDFS issues. These commands are for advanced users only. Usage: hdfs debug verifyMeta -meta [-block] COMMAND_OPTION Description -block block-file Optional parameter to specify the absolute path for the block file on the local file system of the data node. -meta metadata-file Absolute path for the metadata file on the local file system of the data node. Verify HDFS metadata and block files. If a block file is specified, we will verify that the checksums in the metadata file match the block file. Usage: hdfs debug computeMeta -block -out COMMAND_OPTION Description -block block-file Absolute path for the block file on the local file system of the data node. -out output-metadata-file Absolute path for the output metadata file to store the checksum computation result from the block file. Compute HDFS metadata from block files. If a block file is specified, we will compute the checksums from the block file, and save it to the specified output metadata file. NOTE: Use at your own risk! If the block file is corrupt and you overwrite it’s meta file, it will show up as ‘good’ in HDFS, but you can’t read the data. Only use as a last measure, and when you are 100% certain the block file is good. Usage: hdfs debug recoverLease -path [-retries] COMMAND_OPTION Description [-path path] HDFS path for which to recover the lease. [-retries num-retries] Number of times the client will retry calling recoverLease. The default number of retries is 1. Recover the lease on the specified path. The path must reside on an HDFS file system. The default number of retries is 1. Usage: hdfs debug verifyEC -file COMMAND_OPTION Description [-file EC-file] HDFS EC file to be verified. Verify the correctness of erasure coding on an erasure coded file. Usage: hdfs dfsadmin -fs COMMAND_OPTION Description -fs child fs mount link URI Its a logical mount link path to child file system in ViewFS world. This uri typically formed as src mount link prefixed with fs.defaultFS. Please note, this is not an actual child file system uri, instead its a logical mount link uri pointing to actual child file system Example command usage: hdfs dfsadmin -fs hdfs://nn1 -safemode enter In ViewFsOverloadScheme, we may have multiple child file systems as mount point mappings as shown in ViewFsOverloadScheme Guide. Here -fs option is an optional generic parameter supported by dfsadmin. When users want to execute commands on one of the child file system, they need to pass that file system mount mapping link uri to -fs option. Let’s take an example mount link configuration and dfsadmin command below. Mount link: fs.defaultFS hdfs://MyCluster1 fs.viewfs.mounttable.MyCluster1./user hdfs://MyCluster2/user hdfs://MyCluster2/user mount link path: /user mount link uri: hdfs://MyCluster1/user mount target uri for /user: hdfs://MyCluster2/user --> If user wants to talk to hdfs://MyCluster2/, then they can pass -fs option (-fs hdfs://MyCluster1/user) Since /user was mapped to a cluster hdfs://MyCluster2/user, dfsadmin resolve the passed (-fs hdfs://MyCluster1/user) to target fs (hdfs://MyCluster2/user). This way users can get the access to all hdfs child file systems in ViewFsOverloadScheme. If there is no -fs option provided, then it will try to connect to the configured fs.defaultFS cluster if a cluster running with the fs.defaultFS uri.

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