

Hadoop 分布式文件系统操作

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1 基本命令

操作 Hadoop 分布式文件系统 HDFS 的基本命令是 `hdfs`，命令行参数如下：

```
$ hdfs
Usage: hdfs [--config confdir] COMMAND
      where COMMAND is one of:

  dfs                run a filesystem command on the file systems supported in Hadoop.
  namenode -format    format the DFS filesystem
  secondarynamenode   run the DFS secondary namenode
  namenode            run the DFS namenode
  journalnode         run the DFS journalnode
  zkfc                run the ZK Failover Controller daemon
  datanode            run a DFS datanode
  dfsadmin            run a DFS admin client
  haadmin             run a DFS HA admin client
  fsck                run a DFS filesystem checking utility
  balancer            run a cluster balancing utility
  jmxget              get JMX exported values from NameNode or DataNode.
  oiv                 apply the offline fsimage viewer to an fsimage
  oev                 apply the offline edits viewer to an edits file
  fetchdt             fetch a delegation token from the NameNode
  getconf             get config values from configuration
  groups              get the groups which users belong to

                        Use -help to see options
```

`hdfs` 命令的子功能很多，如 `dfs` 处理一般文件系统命令，`fsck` 检查文件系统完整性，`dfsadmin` 用于文件系统管理。

本教程着重向用户介绍 HDFS 的一般用法，以 `dfs` 子命令为主要内容。HDFS 的管理在其他文档介绍。

```
$ hdfs dfs
Usage: hadoop fs [generic options]
      [-cat [-ignoreCrc] <src> ...]
      [-chgrp [-R] GROUP PATH...]
      [-chmod [-R] <MODE[,MODE]... | OCTALMODE> PATH...]
      [-chown [-R] [OWNER][:[GROUP]] PATH...]
      [-copyFromLocal <localsrc> ... <dst>]
      [-copyToLocal [-ignoreCrc] [-crc] <src> ... <localdst>]
      [-count [-q] <path> ...]
```

```

[-cp <src> ... <dst>]
[-df [-h] [<path> ...]]
[-du [-s] [-h] <path> ...]
[-expunge]
[-get [-ignoreCrc] [-crc] <src> ... <localdst>]
[-getmerge [-nl] <src> <localdst>]
[-help [cmd ...]]
[-ls [-d] [-h] [-R] [<path> ...]]
[-mkdir [-p] <path> ...]
[-moveFromLocal <localsrc> ... <dst>]
[-moveToLocal <src> <localdst>]
[-mv <src> ... <dst>]
[-put <localsrc> ... <dst>]
[-rm [-f] [-r|-R] [-skipTrash] <src> ...]
[-rmdir [--ignore-fail-on-non-empty] <dir> ...]
[-setrep [-R] [-w] <rep> <path/file> ...]
[-stat [format] <path> ...]
[-tail [-f] <file>]
[-test [-ezd] <path>]
[-text [-ignoreCrc] <src> ...]
[-touchz <path> ...]
[-usage [cmd ...]]

```

Generic options supported are

```

-conf <configuration file>      specify an application configuration file
-D <property=value>             use value for given property
-fs <local|namenode:port>       specify a namenode
-jt <local|jobtracker:port>     specify a job tracker
-files <comma separated list of files> specify comma separated files to be copied to the map re
-libjars <comma separated list of jars> specify comma separated jar files to include in the cla
-archives <comma separated list of archives> specify comma separated archives to be unarchived

```

The general command line syntax is

```
bin/hadoop command [genericOptions] [commandOptions]
```

1.1 复制和移动文件

1.1.1 从本地向 HDFS 复制文件 `copyFromLocal`

格式如下：

```
$ hdfs dfs -copyFromLocal <localsrc> ... <dst>
```

复制单个文件:

```
$ hdfs dfs -copyFromLocal hello.txt /user/jianwen/  
$ hdfs dfs -ls /user/jianwen/  
Found 1 items  
-rw-r--r--  3 jianwen hadoop          15 2013-11-21 11:21 /user/jianwen/hello.txt
```

复制文件夹:

```
$ hdfs dfs -copyFromLocal junkdir /user/jianwen/  
hdfs dfs -ls /user/jianwen/junkdir  
Found 1 items  
-rw-r--r--  3 jianwen hadoop          15 2013-11-21 11:23 /user/jianwen/junkdir/hello.txt
```

1.1.2 从 HDFS 向本地复制文件 `copyToLocal`

格式:

```
$ hdfs dfs -copyToLocal [-ignoreCrc] [-crc] <src> ... <localdst>
```

用法与 `copyFromLocal`。

1.1.3 移动 `moveFromLocal` 和 `moveToLocal`

1.2 删除文件 `rm` 和 `rmr`

1.3 查看文件内容

1.3.1 `cat`

```
hdfs dfs -cat /user/jianwen/hello.txt
```

1.3.2 tail

2 管理员命令

3 使用 alias 简化命令

```
alias hls='hdfs dfs -ls'
alias hcat='hdfs dfs -cat'
alias hrm='hdfs dfs -rm'
alias hrmdir='hdfs dfs -rmdir'
alias hcpr='hdfs dfs -copyFromLocal'
alias hcpl='hdfs dfs -copyToLocal'
alias hmkdir='hdfs dfs -mkdir'
alias hdu='hdfs dfs -du'
alias hdf='hdfs dfs -df'
```

4 参考资料

- “Hadoop MapReduce Tutorial v1.2.1” http://hadoop.apache.org/docs/r1.2.1/mapred_tutorial.html
- “HDFS File System Shell Guide v1.2.1” http://hadoop.apache.org/docs/r1.2.1/file_system_shell.html