

# Hadoop Releases

## Table of contents

1 Download.....	4
2 News.....	4
2.1 20 February, 2014: Release 2.3.0 available .....	4
2.2 11 December, 2013: Release 0.23.10 available .....	4
2.3 15 October, 2013: Release 2.2.0 available.....	4
2.4 23 September, 2013: Release 2.1.1-beta available.....	5
2.5 25 August, 2013: Release 2.1.0-beta available.....	5
2.6 23 August, 2013: Release 2.0.6-alpha available .....	5
2.7 1 Aug, 2013: Release 1.2.1 (stable) available .....	6
2.8 8 July, 2013: Release 0.23.9 available .....	6
2.9 6 June, 2013: Release 2.0.5-alpha available .....	6
2.10 5 June, 2013: Release 0.23.8 available .....	6
2.11 13 May, 2013: Release 1.2.0 available .....	6
2.12 25 April, 2013: Release 2.0.4-alpha available .....	7
2.13 18 April, 2013: Release 0.23.7 available .....	7
2.14 15 February, 2013: Release 1.1.2 available .....	7
2.15 14 February, 2013: Release 2.0.3-alpha available .....	7
2.16 7 February, 2013: Release 0.23.6 available .....	7
2.17 1 December, 2012: Release 1.1.1 available .....	8
2.18 28 November, 2012: Release 0.23.5 available .....	8
2.19 15 October, 2012: Release 0.23.4 available .....	8
2.20 13 October, 2012: Release 1.1.0 available .....	8
2.21 12 October, 2012: Release 1.0.4 available .....	8
2.22 9 October, 2012: Release 2.0.2-alpha available .....	9

2.23	17 September, 2012: Release 0.23.3 available .....	9
2.24	26 July, 2012: Release 2.0.1-alpha available .....	9
2.25	23 May, 2012: Release 2.0.0-alpha available .....	9
2.26	16 May, 2012: Release 1.0.3 available .....	10
2.27	3 Apr, 2012: Release 1.0.2 available .....	10
2.28	10 Mar, 2012: Release 1.0.1 available .....	10
2.29	27 Feb, 2012: release 0.23.1 available .....	10
2.30	27 December, 2011: release 1.0.0 available .....	11
2.31	10 December, 2011: release 0.22.0 available .....	11
2.32	11 Nov, 2011: release 0.23.0 available .....	12
2.33	17 Oct, 2011: release 0.20.205.0 available .....	12
2.34	5 Sep, 2011: release 0.20.204.0 available .....	12
2.35	11 May, 2011: release 0.20.203.0 available .....	13
2.36	23 August, 2010: release 0.21.0 available .....	13
2.37	26 February, 2010: release 0.20.2 available .....	13
2.38	14 September, 2009: release 0.20.1 available .....	13
2.39	23 July, 2009: release 0.19.2 available .....	14
2.40	22 April, 2009: release 0.20.0 available .....	14
2.41	24 February, 2009: release 0.19.1 available .....	14
2.42	29 January, 2009: release 0.18.3 available .....	14
2.43	21 November, 2008: release 0.19.0 available .....	14
2.44	3 November, 2008: release 0.18.2 available .....	14
2.45	17 September, 2008: release 0.18.1 available .....	15
2.46	22 August, 2008: release 0.18.0 available .....	15
2.47	19 August, 2008: release 0.17.2 available .....	15
2.48	23 June, 2008: release 0.17.1 available .....	15
2.49	20 May, 2008: release 0.17.0 available .....	15
2.50	5 May, 2008: release 0.16.4 available .....	15
2.51	16 April, 2008: release 0.16.3 available .....	15

2.52	2 April, 2008: release 0.16.2 available .....	15
2.53	13 March, 2008: release 0.16.1 available .....	16
2.54	7 February, 2008: release 0.16.0 available .....	16
2.55	18 January, 2008: release 0.15.3 available .....	16
2.56	2 January, 2008: release 0.15.2 available .....	16
2.57	27 November, 2007: release 0.15.1 available .....	16
2.58	26 November, 2007: release 0.14.4 available .....	16
2.59	29 October 2007: release 0.15.0 available .....	16
2.60	19 October, 2007: release 0.14.3 available .....	17
2.61	4 September, 2007: release 0.14.1 available .....	17

## 1. Download

- **1.2.X** - current stable version, 1.2 release
- **2.2.X** - current stable 2.x version
- **2.3.X** - current 2.x version
- **0.23.X** - similar to 2.X.X but missing NN HA.

Releases may be downloaded from Apache mirrors.

[Download a release now!](#)

On the mirror, all recent releases are available.

Third parties may distribute products that include Apache Hadoop and derived works, under the Apache License. Some of these are listed on the [Distributions wiki page](#).

## 2. News

### 2.1. 20 February, 2014: Release 2.3.0 available

Apache Hadoop 2.3.0 contains a number of significant enhancements such as:

- Support for Heterogeneous Storage hierarchy in HDFS.
- In-memory cache for HDFS data with centralized administration and management.
- Simplified distribution of MapReduce binaries via HDFS in YARN Distributed Cache.

Please see the [Hadoop 2.3.0 Release Notes](#) for details.

### 2.2. 11 December, 2013: Release 0.23.10 available

A point release for the 0.23.X line. Bug fixes to continue stabilization.

Please see the [Hadoop 0.23.10 Release Notes](#) for details.

### 2.3. 15 October, 2013: Release 2.2.0 available

Apache Hadoop 2.2.0 is the **GA** release of Apache Hadoop 2.x.

Users are encouraged to immediately move to 2.2.0 since this release is significantly more stable and is guaranteed to remain compatible in terms of both APIs and protocols.

To recap, this release has a number of significant highlights compared to Hadoop 1.x:

- YARN - A general purpose resource management system for Hadoop to allow

MapReduce and other other data processing frameworks and services

- High Availability for HDFS
- HDFS Federation
- HDFS Snapshots
- NFSv3 access to data in HDFS
- Support for running Hadoop on Microsoft Windows
- Binary Compatibility for MapReduce applications built on hadoop-1.x
- Substantial amount of integration testing with rest of projects in the ecosystem

A couple of important points to note while upgrading to hadoop-2.2.0:

- HDFS - The HDFS community decided to push the symlinks feature out to a future 2.3.0 release and is currently disabled.
- YARN/MapReduce - Users need to change ShuffleHandler service name from mapreduce.shuffle to mapreduce\_shuffle.

Please see the [Hadoop 2.2.0 Release Notes](#) for details.

#### **2.4. 23 September, 2013: Release 2.1.1-beta available**

Apache Hadoop 2.1.1-beta is a bug-fix version of the beta release of Apache Hadoop 2.x.

Please see the [Hadoop 2.1.1-beta Release Notes](#) for details.

#### **2.5. 25 August, 2013: Release 2.1.0-beta available**

Apache Hadoop 2.1.0-beta is the **beta** release of Apache Hadoop 2.x.

Users are encouraged to immediately move to 2.1.0-beta since this release is significantly more stable and has completely whetted set of APIs and wire-protocols for future compatibility.

In addition, this release has a number of other significant highlights:

- HDFS Snapshots
- Support for running Hadoop on Microsoft Windows
- YARN API stabilization
- Binary Compatibility for MapReduce applications built on hadoop-1.x
- Substantial amount of integration testing with rest of projects in the ecosystem

Please see the [Hadoop 2.1.0-beta Release Notes](#) for details.

#### **2.6. 23 August, 2013: Release 2.0.6-alpha available**

This release delivers a number of critical bug-fixes for hadoop-2.x uncovered during integration testing of previous release.

Please see the [Hadoop 2.0.6-alpha Release Notes](#) for details.

### **2.7. 1 Aug, 2013: Release 1.2.1 (stable) available**

A point release for the 1.2 line. This release is now considered stable.

Please see the [Hadoop 1.2.1 Release Notes](#) for the list of 18 bug fixes and patches since the previous release 1.2.0.

### **2.8. 8 July, 2013: Release 0.23.9 available**

A point release for the 0.23.X line. Bug fixes to continue stabilization.

Please see the [Hadoop 0.23.9 Release Notes](#) for details.

### **2.9. 6 June, 2013: Release 2.0.5-alpha available**

This release delivers a number of critical bug-fixes for hadoop-2.x uncovered during integration testing of previous release.

Please see the [Hadoop 2.0.5-alpha Release Notes](#) for details.

### **2.10. 5 June, 2013: Release 0.23.8 available**

A point release for the 0.23.X line. Bug fixes to continue stabilization.

Please see the [Hadoop 0.23.8 Release Notes](#) for details.

### **2.11. 13 May, 2013: Release 1.2.0 available**

This is a beta release for version 1.2.

This release delivers over 200 enhancements and bug-fixes, compared to the previous 1.1.2 release. Major enhancements include:

- DistCp v2 backported
- Web services for JobTracker
- WebHDFS enhancements
- Extensions of task placement and replica placement policy interfaces
- Offline Image Viewer backported
- Namenode more robust in case of edit log corruption

- Add NodeGroups level to NetworkTopology
- Add "unset" to Configuration API

Please see the [Hadoop 1.2.0 Release Notes](#) for more details.

## **2.12. 25 April, 2013: Release 2.0.4-alpha available**

This release delivers a number of critical bug-fixes for hadoop-2.x uncovered during integration testing.

Please see the [Hadoop 2.0.4-alpha Release Notes](#) for details.

## **2.13. 18 April, 2013: Release 0.23.7 available**

A point release for the 0.23.X line. Bug fixes to continue stabilization.

Please see the [Hadoop 0.23.7 Release Notes](#) for details.

## **2.14. 15 February, 2013: Release 1.1.2 available**

Point release for the 1.1.X line. Bug fixes and improvements, as documented in the [Hadoop 1.1.2 Release Notes](#).

## **2.15. 14 February, 2013: Release 2.0.3-alpha available**

This is the latest (alpha) version in the hadoop-2.x series.

This release delivers significant major features and stability over previous releases in hadoop-2.x series:

- QJM for HDFS HA for NameNode
- Multi-resource scheduling (CPU and memory) for YARN
- YARN ResourceManager Restart
- Significant stability at scale for YARN (over 30,000 nodes and 14 million applications so far, at time of release)

This release, like previous releases in hadoop-2.x series is still considered *alpha* primarily since some of APIs aren't fully-baked and we expect some churn in future. Furthermore, please note that there are some API changes from previous hadoop-2.0.2-alpha release and applications will need to recompile against hadoop-2.0.3-alpha.

Please see the [Hadoop 2.0.3-alpha Release Notes](#) for details.

## **2.16. 7 February, 2013: Release 0.23.6 available**

A point release for the 0.23.X line. Bug fixes to continue stabilization.

Please see the [Hadoop 0.23.6 Release Notes](#) for details.

### **2.17. 1 December, 2012: Release 1.1.1 available**

Point release for the 1.1.X line. Bug fixes and improvements, as documented in the [Hadoop 1.1.1 Release Notes](#).

### **2.18. 28 November, 2012: Release 0.23.5 available**

A point release for the 0.23.X line. Bug fixes to continue stabilization.

Please see the [Hadoop 0.23.5 Release Notes](#) for details.

### **2.19. 15 October, 2012: Release 0.23.4 available**

A point release for the 0.23.X line. Most notably this release now includes support for upgrading a 1.X HDFS cluster with append/synch enabled.

Please see the [Hadoop 0.23.4 Release Notes](#) for details.

### **2.20. 13 October, 2012: Release 1.1.0 available**

This is a beta release for version 1.1.

This release has approximately 135 enhancements and bug fixes compared to Hadoop-1.0.4, including:

- Many performance improvements in HDFS, backported from trunk
- Improvements in Security to use SPNEGO instead of Kerberized SSL for HTTP transactions
- Lower default minimum heartbeat for task trackers from 3 sec to 300msec to increase job throughput on small clusters
- Port of Gridmix v3
- Set MALLOC\_ARENA\_MAX in hadoop-config.sh to resolve problems with glibc in RHEL-6
- Splittable bzip2 files
- Of course it also has the same security fix as release 1.0.4.

Please see the [Hadoop 1.1.0 Release Notes](#) for details.

### **2.21. 12 October, 2012: Release 1.0.4 available**



This is a Security Patch release for version 1.0.

There are four bug fixes and feature enhancements in this minor release:

- Security issue CVE-2012-4449: Hadoop tokens use a 20-bit secret
- HADOOP-7154 - set MALLOC\_ARENA\_MAX in hadoop-config.sh to resolve problems with glibc in RHEL-6
- HDFS-3652 - FSEditLog failure removes the wrong edit stream when storage dirs have same name
- MAPREDUCE-4399 - Fix (up to 3x) performance regression in shuffle

Please see the [Hadoop 1.0.4 Release Notes](#) for details.

## **2.22. 9 October, 2012: Release 2.0.2-alpha available**

This is the second (alpha) version in the hadoop-2.x series.

This delivers significant enhancements to HDFS HA. Also it has a significantly more stable version of YARN which, at the time of release, has already been deployed on a 2000 node cluster.

Please see the [Hadoop 2.0.2-alpha Release Notes](#) for details.

## **2.23. 17 September, 2012: Release 0.23.3 available**

This release contains YARN and MRv2 but does not have Name Node High Availability

Please see the [Hadoop 0.23.3 Release Notes](#) for details.

## **2.24. 26 July, 2012: Release 2.0.1-alpha available**

This release contains important security fixes over hadoop-2.0.0-alpha.

Please see the [Hadoop 2.0.1-alpha Release Notes](#) for details.

## **2.25. 23 May, 2012: Release 2.0.0-alpha available**

This is the first (alpha) version in the hadoop-2.x series.

This delivers significant major features over the currently stable hadoop-1.x series including:

- HDFS HA for NameNode (manual failover)
- YARN aka NextGen MapReduce
- HDFS Federation
- Performance

- Wire-compatibility for both HDFS and YARN/MapReduce (using protobufs)

Please see the [Hadoop 2.0.0-alpha Release Notes](#) for details.

### **2.26. 16 May, 2012: Release 1.0.3 available**

This is a bug fix release for version 1.0.

Bug fixes and feature enhancements in this minor release include:

- 4 patches in support of non-Oracle JDKs
- several patches to clean up error handling and log messages
- various production issue fixes

Please see the [Hadoop 1.0.3 Release Notes](#) for details.

### **2.27. 3 Apr, 2012: Release 1.0.2 available**

This is a bug fix release for version 1.0.

Bug fixes and feature enhancements in this minor release include:

- Snappy compressor/decompressor is available
- Occasional deadlock in metrics serving thread fixed
- 64-bit secure datanodes failed to start, now fixed
- Changed package names for 64-bit rpm/debs to use ".x86\_64." instead of ".amd64."

Please see the [Hadoop 1.0.2 Release Notes](#) for details.

### **2.28. 10 Mar, 2012: Release 1.0.1 available**

This is a bug fix release for version 1.0. This release is now considered stable, replacing the long-standing 0.20.203.

Bug fixes in this minor release include:

- Added hadoop-client and hadoop-minicloud artifacts for ease of client install and testing
- Support run-as-user in non-secure mode
- Better compatibility with Ganglia, HBase, and Sqoop

Please see the [Hadoop 1.0.1 Release Notes](#) for details.

### **2.29. 27 Feb, 2012: release 0.23.1 available**

This is the second alpha version of the hadoop-0.23 major release after the first alpha 0.23.0.

This release has significant improvements compared to 0.23.0 but should still be considered as alpha-quality and not for production use.

hadoop-0.23.1 contains several major advances from 0.23.0:

- Lots of bug fixes and improvements in both HDFS and MapReduce
- Major performance work to make this release either match or exceed performance of Hadoop-1 in most aspects of both HDFS and MapReduce.
- Several downstream projects like HBase, Pig, Oozie, Hive etc. are better integrated with this release

See the [Hadoop 0.23.1 Release Notes](#) for details.

### **2.30. 27 December, 2011: release 1.0.0 available**

After six years of gestation, Hadoop reaches 1.0.0! This release is from the 0.20-security code line, and includes support for:

- security
- HBase (append/hsynch/hflush, and security)
- webhdfs (with full support for security)
- performance enhanced access to local files for HBase
- other performance enhancements, bug fixes, and features

Please see the complete [Hadoop 1.0.0 Release Notes](#) for details.

### **2.31. 10 December, 2011: release 0.22.0 available**

This release contains many bug fixes and optimizations compared to its predecessor 0.21.0. See the [Hadoop 0.22.0 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#)

Notes:

The following features are not supported in Hadoop 0.22.0.

- Security.
- Latest optimizations of the MapReduce framework introduced in the Hadoop 0.20.security line of releases.
- Disk-fail-in-place.
- JMX-based metrics v2.

Hadoop 0.22.0 features

- HBase support with hflush and hsync.

- New implementation of file append.
- Symbolic links.
- BackupNode and CheckpointNode.
- Hierarchical job queues.
- Job limits per queue/pool.
- Dynamically stop/start job queues.
- Advances in new mapreduce API: Input/Output formats, ChainMapper/Reducer.
- TaskTracker blacklisting.
- DistributedCache sharing.

### **2.32. 11 Nov, 2011: release 0.23.0 available**

This is the alpha version of the hadoop-0.23 major release. This is the first release we've made off Apache Hadoop trunk in a long while. This release is alpha-quality and not yet ready for serious use.

hadoop-0.23 contains several major advances:

- HDFS Federation
- NextGen MapReduce (YARN)

It also has several major performance improvements to both HDFS and MapReduce.

See the [Hadoop 0.23.0 Release Notes](#) for details.

### **2.33. 17 Oct, 2011: release 0.20.205.0 available**

This release contains improvements, new features, bug fixes and optimizations. This release includes rpms and debs, all duly checksummed and securely signed.

See the [Hadoop 0.20.205.0 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#).

Notes:

- This release includes a merge of append/hsynch/hflush capabilities from 0.20-append branch, to support HBase in secure mode.
- This release includes the new webhdfs file system, but webhdfs write calls currently fail in secure mode.

### **2.34. 5 Sep, 2011: release 0.20.204.0 available**

This release contains improvements, new features, bug fixes and optimizations. This release includes rpms and debs for the first time.

See the [Hadoop 0.20.204.0 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#).

Notes:

- The RPMs don't work with security turned on. (HADOOP-7599)
- The NameNode's edit log needs to be merged into the image via
  - put the NameNode into safe mode
  - run dfsadmin savenamespace command
  - perform a normal upgrade

### **2.35. 11 May, 2011: release 0.20.203.0 available**

This release contains many improvements, new features, bug fixes and optimizations. It is stable and has been deployed in large (4,500 machine) production clusters.

See the [Hadoop 0.20.203.0 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

### **2.36. 23 August, 2010: release 0.21.0 available**

This release contains many improvements, new features, bug fixes and optimizations. It has not undergone testing at scale and should not be considered stable or suitable for production. This release is being classified as a minor release, which means that it should be API compatible with 0.20.2.

See the [Hadoop 0.21.0 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

### **2.37. 26 February, 2010: release 0.20.2 available**

This release contains several critical bug fixes.

See the [Hadoop 0.20.2 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

### **2.38. 14 September, 2009: release 0.20.1 available**

This release contains several critical bug fixes.

See the [Hadoop 0.20.1 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

### **2.39. 23 July, 2009: release 0.19.2 available**

This release contains several critical bug fixes.

See the [Hadoop 0.19.2 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

### **2.40. 22 April, 2009: release 0.20.0 available**

This release contains many improvements, new features, bug fixes and optimizations.

See the [Hadoop 0.20.0 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

### **2.41. 24 February, 2009: release 0.19.1 available**

This release contains many critical bug fixes, including **some data loss issues**. The release also introduces an **incompatible change** by disabling the file append API ([HADOOP-5224](#)) until it can be stabilized.

See the [Hadoop 0.19.1 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

### **2.42. 29 January, 2009: release 0.18.3 available**

This release contains many critical bug fixes.

See the [Hadoop 0.18.3 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

### **2.43. 21 November, 2008: release 0.19.0 available**

This release contains many improvements, new features, bug fixes and optimizations.

See the [Hadoop 0.19.0 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

### **2.44. 3 November, 2008: release 0.18.2 available**

This release contains several critical bug fixes.

See the [Hadoop 0.18.2 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

#### **2.45. 17 September, 2008: release 0.18.1 available**

This release contains several critical bug fixes.

See the [Hadoop 0.18.1 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

#### **2.46. 22 August, 2008: release 0.18.0 available**

This release contains many improvements, new features, bug fixes and optimizations.

See the [Hadoop 0.18.0 Release Notes](#) for details. Alternatively, you can look at the complete [change log for this release](#) or the [Jira issue log for all releases](#).

#### **2.47. 19 August, 2008: release 0.17.2 available**

This release contains several critical bug fixes.

See the Hadoop 0.17.2 Notes for details.

#### **2.48. 23 June, 2008: release 0.17.1 available**

This release contains many improvements, new features, bug fixes and optimizations.

See the Hadoop 0.17.1 Notes for details.

#### **2.49. 20 May, 2008: release 0.17.0 available**

This release contains many improvements, new features, bug fixes and optimizations.

See the Hadoop 0.17.0 Release Notes for details.

#### **2.50. 5 May, 2008: release 0.16.4 available**

This release fixes 4 critical bugs in release 0.16.3.

#### **2.51. 16 April, 2008: release 0.16.3 available**

This release fixes critical bugs in release 0.16.2.

#### **2.52. 2 April, 2008: release 0.16.2 available**

This release fixes critical bugs in release 0.16.1.

**Note:**

HBase has been removed from this release. HBase releases are now maintained at <http://hadoop.apache.org/hbase/>

**2.53. 13 March, 2008: release 0.16.1 available**

This release fixes critical bugs in release 0.16.0.

**Note:**

HBase releases are now maintained at <http://hadoop.apache.org/hbase/>

**2.54. 7 February, 2008: release 0.16.0 available**

This release contains many improvements, new features, bug fixes and optimizations.

See the release notes (above) for details.

**Note:**

When upgrading an existing HDFS filesystem to a 0.16.x release from an earlier release, you should first start HDFS with 'bin/start-dfs.sh -upgrade'. See the [Hadoop Upgrade](#) page for details.

**2.55. 18 January, 2008: release 0.15.3 available**

This release fixes critical bugs in release 0.15.3.

**2.56. 2 January, 2008: release 0.15.2 available**

This release fixes critical bugs in release 0.15.1.

**2.57. 27 November, 2007: release 0.15.1 available**

This release fixes critical bugs in release 0.15.0.

**2.58. 26 November, 2007: release 0.14.4 available**

This release fixes critical bugs in release 0.14.3.

**2.59. 29 October 2007: release 0.15.0 available**

This release contains many improvements, new features, bug fixes and optimizations.



Notably, this contains the first working version of [HBase](#).

See the release notes (above) for details.

**Note:**

When upgrading an existing HDFS filesystem to a 0.15.x release from an earlier release, you should first start HDFS with 'bin/start-dfs.sh -upgrade'. See the [Hadoop Upgrade](#) page for details.

## **2.60. 19 October, 2007: release 0.14.3 available**

This release fixes critical bugs in release 0.14.2.

## **2.61. 4 September, 2007: release 0.14.1 available**

New features in release 0.14 include:

- Better checksums in HDFS. Checksums are no longer stored in parallel HDFS files, but are stored directly by datanodes alongside blocks. This is more efficient for the namenode and also improves data integrity.
- Pipes: A C++ API for MapReduce
- Eclipse Plugin, including HDFS browsing, job monitoring, etc.
- File modification times in HDFS.

There are many other improvements, bug fixes, optimizations and new features. Performance and reliability are better than ever.

**Note:**

When upgrading an existing HDFS filesystem to a 0.14.x release from a 0.13.x or earlier release, you should first start HDFS with 'bin/start-dfs.sh -upgrade'. See the [Hadoop 0.14 Upgrade](#) page for details.