Item 80
git_comments:

1. Ensure that FileSystem class level initialization happens with correct CL See https://github.com/druid-io/druid/issues/1714

git_commits:

1. **summary:** fix for "java.io.IOException: No FileSystem for scheme: hdfs" error
   message: fix for "java.io.IOException: No FileSystem for scheme: hdfs" error aka workaround for https://issues.apache.org/jira/browse/HDFS-8750

github_issues:

github_issues_comments:

github_pulls:

github_pulls_comments:

github_pulls_reviews:

jira_issues:

1. **summary:** FIleSystem does not honor Configuration.getClassLoader() while loading FileSystem implementations
   description: In FileSystem.loadFileSystems(), at https://github.com/apache/hadoop/blob/trunk/hadoop-common-project/hadoop-common/src/main/java/org/apache/hadoop/fs/FileSystem.java#L2652 a "scheme" -> "FileSystem implementation" map is created from the jars available on classpath. It uses Thread.currentThread().getClassLoader() via ServiceLoader.load(FileSystem.class) Instead, loadFileSystems() should take Configuration as an argument and should first check if a classloader is configured in configuration.getClassLoader(), if yes then ServiceLoader.load(FileSystem.class, configuration.getClassLoader()) should be used.

jira_issues_comments:

1. Why the classes are different in your case, ideally both the ways should give same class. It looks like class versions are different for the same name which might be because of wrong version of jars in both the class paths. Can you share your use case if the different classes are desired.
2. Druid (http://druid.io/) provides pluggable "deep storage" to store source of truth about its indexes. In side druid configuration, you can specify the specific module you would like to use. When I specify druid-hdfs-storage, Druid will dynamically download everything related to druid-hdfs-storage (that would include hadoop client jars too) via an URLClassLoader . Druid would put that classloader inside hadoop configuration (https://github.com/druid-io/druid/blob/8795792dba9aa35874d951c28d3c809fab88df43/extensions/hdfs-storage/src/main/java/io/druid/storage/hdfs/HdfsStorageDruidModule.java#L86) with the expectation that hadoop is going to use same.
3. BTW, I understand that this is a corner case and Druid community is also working to improve the way pluggable extensions are managed so that there are less of these weird scenarios. However, I feel like it would be nice to fix this case in hadoop code as well, as Configuration.setClassloader(..) advertises same in its javadoc.
4. OK seems reasonable to try first with class loader from {{conf}}. Patch attached currently does null check on the class loader {{config.getClassLoader() == null}}, which gives a non null always. We should verify {{ServiceLoader<FileSystem> }} from conf class path and try with current thread class loader as fallback If you want to update the patch and follow up the changes, please feel free to assign the JIRA to you.
5. Thanks Kanaka. I updated the patch to actually become more like override the "scheme name -> impl" map if there is same in the config classloader. this should cover all the cases included when something is there in thread context classloader but not in config classloader. I don't mind taking a shot of fixing it

myself, will assign the jira to myself. However, I will definitely need some help from seasoned contributors to get it finished all the way.

6. Thanks for the updated patch [~himanshug]. LGTM +1 (Non Binding)

7. -1 the existing codepath handles the {{config}} parameter being null. This patch assumes it is non null. This is exactly the kind of thing a good test would throw up, which is why we have that "tests unless its impossible to write a test" policy. # add test for the null and non-null operations. {{TestFileSystemInitialization}} would be the class to add the tests too. # fix the patch to handle both cases

8. \\ \\ | (x) *{color:red}-1 overall{color}* | \\ \\ || Vote || Subsystem || Runtime || Comment || | {color:blue}0{color} | pre-patch | 17m 19s | Pre-patch trunk compilation is healthy. || {color:green}+1{color} | @author | 0m 0s | The patch does not contain any @author tags. || {color:red}-1{color} | tests included | 0m 0s | The patch doesn't appear to include any new or modified tests. Please justify why no new tests are needed for this patch. Also please list what manual steps were performed to verify this patch. || {color:green}+1{color} | javac | 8m 5s | There were no new javac warning messages. || {color:green}+1{color} | javadoc | 10m 11s | There were no new javadoc warning messages. || {color:green}+1{color} | release audit | 0m 22s | The applied patch does not increase the total number of release audit warnings. || {color:red}-1{color} | checkstyle | 1m 13s | The applied patch generated 2 new checkstyle issues (total was 140, now 141). || {color:green}+1{color} | whitespace | 0m 0s | The patch has no lines that end in whitespace. || {color:green}+1{color} | install | 1m 20s | mvn install still works. || {color:green}+1{color} | eclipse:eclipse | 0m 34s | The patch built with eclipse:eclipse. || {color:green}+1{color} | findbugs | 1m 55s | The patch does not introduce any new Findbugs (version 3.0.0) warnings. || {color:red}-1{color} | common tests | 21m 53s | Tests failed in hadoop-common. || || | 62m 56s || \\ \\ || Reason || Tests || | Failed unit tests | hadoop.fs.TestFileSystemCaching | \\ \\ || Subsystem || Report/Notes || | Patch URL | http://issues.apache.org/jira/secure/attachment/12745093/HDFS-8750.002.patch || Optional Tests | javadoc javac unit findbugs checkstyle || git revision | trunk / fbd88f10 || checkstyle | https://builds.apache.org/job/PreCommit-HDFS-Build/11732/artifact/patchprocess/diffcheckstylehadoop-common.txt || hadoop-common test log | https://builds.apache.org/job/PreCommit-HDFS-Build/11732/artifact/patchprocess/testrun_hadoop-common.txt || Test Results | https://builds.apache.org/job/PreCommit-HDFS-Build/11732/testReport/ || Java | 1.7.0_55 || uname | Linux asf904.gq1.ygridcore.net 3.13.0-36-lowlatency #63-Ubuntu SMP PREEMPT Wed Sep 3 21:56:12 UTC 2014 x86_64 x86_64 x86_64 GNU/Linux || Console output | https://builds.apache.org/job/PreCommit-HDFS-Build/11732/console | This message was automatically generated.

9. [~stevel@apache.org] Thanks for the review. It is my fault. When I prepared the patch and tried to run build it failed for some other reason unrelated to this patch and needed for me to setup my dev machine appropriately to be able to do hadoop builds. I "thought" it was a "simple" change and went ahead with it. I will fix my dev env to be able to do the build and update the patch soon.

10. Don't worry about it: it's what the review process is for. If there is one one lesson all of us working on Hadoop eventually learn, there are no "simple" changes -a one-liner may not add a major new feature, but it is at much risk of breaking things as the bigger patches. Hence the obsession with tests

11. Is this a compatible change? It seems like changing the classloader that is in use might break some people who were relying on the existing one being used.

12. \\ \\ | (x) *{color:red}-1 overall{color}* | \\ \\ || Vote || Subsystem || Runtime || Comment || | {color:blue}0{color} | pre-patch | 17m 3s | Pre-patch trunk compilation is healthy. || {color:green}+1{color} | @author | 0m 0s | The patch does not contain any @author tags. || {color:red}-1{color} | tests included | 0m 0s | The patch doesn't appear to include any new or modified tests. Please justify why no new tests are needed for this patch. Also please list what manual steps were performed to verify this patch. || {color:green}+1{color} | javac | 7m 52s | There were no new javac warning messages. || {color:green}+1{color} | javadoc | 9m 48s | There were no new javadoc warning messages. || {color:green}+1{color} | release audit | 0m 24s | The applied patch does not increase the total number of release audit warnings. || {color:red}-1{color} | checkstyle | 1m 11s | The applied patch generated 2 new checkstyle issues (total was 140, now 141). || {color:green}+1{color} | whitespace | 0m 0s | The patch has no lines that end in whitespace. || {color:green}+1{color} | install | 1m 20s | mvn install still works. || {color:green}+1{color} | eclipse:eclipse | 0m 33s | The patch built with eclipse:eclipse. || {color:green}+1{color} | findbugs | 1m 52s | The patch does not introduce any new Findbugs (version 3.0.0) warnings. || {color:green}+1{color} | common tests | 22m 57s | Tests passed in hadoop-common. || || | 63m 8s || \\ \\ || Subsystem || Report/Notes || | Patch URL | http://issues.apache.org/jira/secure/attachment/12749102/HDFS-8750.003.patch || Optional Tests |

javadoc javac unit findbugs checkstyle | | git revision | trunk / 8572a5a | | checkstyle | https://builds.apache.org/job/PreCommit-HDFS-Build/11921/artifact/patchprocess/diffcheckstylehadoop-common.txt | | hadoop-common test log | https://builds.apache.org/job/PreCommit-HDFS-Build/11921/artifact/patchprocess/testrun_hadoop-common.txt | | Test Results | https://builds.apache.org/job/PreCommit-HDFS-Build/11921/testReport/ | | Java | 1.7.0_55 | | uname | Linux asf903.gq1.ygridcore.net 3.13.0-36-lowlatency #63-Ubuntu SMP PREEMPT Wed Sep 3 21:56:12 UTC 2014 x86_64 x86_64 x86_64 GNU/Linux | | Console output | https://builds.apache.org/job/PreCommit-HDFS-Build/11921/console | This message was automatically generated.

13. \\ \\ | (x) *{color:red}-1 overall{color}* | \\ \\ || Vote || Subsystem || Runtime || Comment || | {color:blue}0{color} | pre-patch | 16m 58s | Pre-patch trunk compilation is healthy. | | {color:green}+1{color} | @author | 0m 0s | The patch does not contain any @author tags. | | {color:red}-1{color} | tests included | 0m 0s | The patch doesn't appear to include any new or modified tests. Please justify why no new tests are needed for this patch. Also please list what manual steps were performed to verify this patch. | | {color:green}+1{color} | javac | 7m 44s | There were no new javac warning messages. | | {color:green}+1{color} | javadoc | 9m 50s | There were no new javadoc warning messages. | | {color:green}+1{color} | release audit | 0m 23s | The applied patch does not increase the total number of release audit warnings. | | {color:red}-1{color} | checkstyle | 1m 12s | The applied patch generated 1 new checkstyle issues (total was 140, now 140). | | {color:green}+1{color} | whitespace | 0m 0s | The patch has no lines that end in whitespace. | | {color:green}+1{color} | install | 1m 22s | mvn install still works. | | {color:green}+1{color} | eclipse:eclipse | 0m 35s | The patch built with eclipse:eclipse. | | {color:green}+1{color} | findbugs | 1m 56s | The patch does not introduce any new Findbugs (version 3.0.0) warnings. | | {color:red}-1{color} | common tests | 24m 12s | Tests failed in hadoop-common. | | | | 64m 15s | | \\ \\ || Reason || Tests || | Failed unit tests | hadoop.ha.TestZKFailoverController | | | hadoop.net.TestNetUtils | | | hadoop.security.ssl.TestReloadingX509TrustManager | \\ \\ || Subsystem || Report/Notes || | Patch URL | http://issues.apache.org/jira/secure/attachment/12749311/HDFS-8750.004.patch | | Optional Tests | javadoc javac unit findbugs checkstyle | | git revision | trunk / 8f73bdd | | checkstyle | https://builds.apache.org/job/PreCommit-HDFS-Build/11937/artifact/patchprocess/diffcheckstylehadoop-common.txt | | hadoop-common test log | https://builds.apache.org/job/PreCommit-HDFS-Build/11937/artifact/patchprocess/testrun_hadoop-common.txt | | Test Results | https://builds.apache.org/job/PreCommit-HDFS-Build/11937/testReport/ | | Java | 1.7.0_55 | | uname | Linux asf903.gq1.ygridcore.net 3.13.0-36-lowlatency #63-Ubuntu SMP PREEMPT Wed Sep 3 21:56:12 UTC 2014 x86_64 x86_64 x86_64 GNU/Linux | | Console output | https://builds.apache.org/job/PreCommit-HDFS-Build/11937/console | This message was automatically generated.

14. [~stevel@apache.org] HDFS-8750.004.patch should work, I couldn't figure out the unit testing for this given that static variable "FILE_SYSTEMS_LOADED" only lets loading happen once, so if any other unit test might end up calling the initialization and it will never be called again then. [~cmccabe] yes, it might be backwards incompatible. I am not sure what is the right way to deal with that (may be include this only in a new major release of hadoop?). Or, probably add a new configuration property , say "fs.use.config.cl", and load using config classloader only if that property is set to true. By default property value would be false to keep things backward compatible.

15. | (x) *{color:red}-1 overall{color}* | \\ \\ || Vote || Subsystem || Runtime || Comment || | {color:blue}0{color} | {color:blue} reexec {color} | {color:blue} 0m 0s {color} | {color:blue} Docker mode activated. {color} | | {color:green}+1{color} | {color:green} @author {color} | {color:green} 0m 0s {color} | {color:green} The patch does not contain any @author tags. {color} | | {color:red}-1{color} | {color:red} test4tests {color} | {color:red} 0m 0s {color} | {color:red} The patch doesn't appear to include any new or modified tests. Please justify why no new tests are needed for this patch. Also please list what manual steps were performed to verify this patch. {color} | | {color:green}+1{color} | {color:green} mvninstall {color} | {color:green} 10m 56s {color} | {color:green} trunk passed {color} | | {color:green}+1{color} | {color:green} compile {color} | {color:green} 14m 31s {color} | {color:green} trunk passed with JDK v1.8.0_66 {color} | | {color:green}+1{color} | {color:green} compile {color} | {color:green} 12m 30s {color} | {color:green} trunk passed with JDK v1.7.0_85 {color} | | {color:green}+1{color} | {color:green} checkstyle {color} | {color:green} 0m 22s {color} | {color:green} trunk passed {color} | | {color:green}+1{color} | {color:green} mvnsite {color} | {color:green} 1m 26s {color} | {color:green} trunk passed {color} | | {color:green}+1{color} | {color:green} mvneclipse {color} | {color:green} 0m 18s {color} | {color:green} trunk passed {color} | | {color:red}-1{color} | {color:red} findbugs {color} | {color:red} 2m 32s {color} | {color:red} hadoop-common-project/hadoop-

common in trunk has 1 extant Findbugs warnings. {color} || {color:green}+1{color} | {color:green} javadoc {color} | {color:green} 1m 24s {color} | {color:green} trunk passed with JDK v1.8.0_66 {color} || {color:green}+1{color} | {color:green} javadoc {color} | {color:green} 1m 29s {color} | {color:green} trunk passed with JDK v1.7.0_85 {color} || {color:green}+1{color} | {color:green} mvninstall {color} | {color:green} 2m 8s {color} | {color:green} the patch passed {color} || {color:green}+1{color} | {color:green} compile {color} | {color:green} 15m 0s {color} | {color:green} the patch passed with JDK v1.8.0_66 {color} || {color:red}-1{color} | {color:red} javac {color} | {color:red} 22m 33s {color} | {color:red} root-jdk1.8.0_66 with JDK v1.8.0_66 generated 1 new issues (was 751, now 751). {color} || {color:green}+1{color} | {color:green} javac {color} | {color:green} 15m 0s {color} | {color:green} the patch passed {color} || {color:green}+1{color} | {color:green} compile {color} | {color:green} 13m 45s {color} | {color:green} the patch passed with JDK v1.7.0_85 {color} || {color:red}-1{color} | {color:red} javac {color} | {color:red} 36m 18s {color} | {color:red} root-jdk1.7.0_85 with JDK v1.7.0_85 generated 1 new issues (was 745, now 745). {color} || {color:green}+1{color} | {color:green} javac {color} | {color:green} 13m 45s {color} | {color:green} the patch passed {color} || {color:red}-1{color} | {color:red} checkstyle {color} | {color:red} 0m 23s {color} | {color:red} Patch generated 1 new checkstyle issues in hadoop-common-project/hadoop-common (total was 140, now 140). {color} || {color:green}+1{color} | {color:green} mvnsite {color} | {color:green} 1m 26s {color} | {color:green} the patch passed {color} || {color:green}+1{color} | {color:green} mvneclipse {color} | {color:green} 0m 18s {color} | {color:green} the patch passed {color} || {color:green}+1{color} | {color:green} whitespace {color} | {color:green} 0m 0s {color} | {color:green} Patch has no whitespace issues. {color} || {color:green}+1{color} | {color:green} findbugs {color} | {color:green} 2m 45s {color} | {color:green} the patch passed {color} || {color:green}+1{color} | {color:green} javadoc {color} | {color:green} 1m 29s {color} | {color:green} the patch passed with JDK v1.8.0_66 {color} || {color:green}+1{color} | {color:green} javadoc {color} | {color:green} 1m 31s {color} | {color:green} the patch passed with JDK v1.7.0_85 {color} || {color:red}-1{color} | {color:red} unit {color} | {color:red} 11m 6s {color} | {color:red} hadoop-common in the patch failed with JDK v1.8.0_66. {color} || {color:red}-1{color} | {color:red} unit {color} | {color:red} 9m 53s {color} | {color:red} hadoop-common in the patch failed with JDK v1.7.0_85. {color} || {color:green}+1{color} | {color:green} asflicense {color} | {color:green} 0m 30s {color} | {color:green} Patch does not generate ASF License warnings. {color} || {color:black}{color} | {color:black} {color} | {color:black} 107m 16s {color} | {color:black} {color} | \\ \\ || Reason || Tests || | JDK v1.8.0_66 Failed junit tests | hadoop.ipc.TestDecayRpcScheduler | | | hadoop.fs.permission.TestFsPermission | | | hadoop.ipc.TestRPC | | | hadoop.fs.shell.find.TestIname | | | hadoop.fs.shell.find.TestFind | | | hadoop.ha.TestZKFailoverController | | | hadoop.metrics2.impl.TestMetricsSystemImpl | | | hadoop.security.ssl.TestReloadingX509TrustManager | | | hadoop.fs.shell.find.TestPrint0 | | | hadoop.test.TestTimedOutTestsListener | | | hadoop.fs.shell.find.TestPrint | | JDK v1.7.0_85 Failed junit tests | hadoop.fs.permission.TestFsPermission | | | hadoop.fs.shell.find.TestName | | | hadoop.fs.shell.find.TestFind | | | hadoop.metrics2.impl.TestGangliaMetrics | | | hadoop.test.TestTimedOutTestsListener | \\ \\ || Subsystem || Report/Notes || | Docker | Image:yetus/hadoop:0ca8df7 | | JIRA Patch URL | https://issues.apache.org/jira/secure/attachment/12749311/HDFS-8750.004.patch | | JIRA Issue | HADOOP-12596 | | Optional Tests | asflicense compile javac javadoc mvninstall mvnsite unit findbugs checkstyle | | uname | Linux 5b4fb21b95cb 3.13.0-36-lowlatency #63-Ubuntu SMP PREEMPT Wed Sep 3 21:56:12 UTC 2014 x86_64 x86_64 x86_64 GNU/Linux | | Build tool | maven | | Personality | /testptch/hadoop/patchprocess/precommit/personality/provided.sh | | git revision | trunk / db4cab2 | | findbugs | v3.0.0 | | findbugs | https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/artifact/patchprocess/branch-findbugs-hadoop-common-project_hadoop-common-warnings.html | | javac | root-jdk1.8.0_66: https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/artifact/patchprocess/diff-compile-javac-root-jdk1.8.0_66.txt | | javac | root-jdk1.7.0_85: https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/artifact/patchprocess/diff-compile-javac-root-jdk1.7.0_85.txt | | checkstyle | https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/artifact/patchprocess/diff-checkstyle-hadoop-common-project_hadoop-common.txt | | unit | https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/artifact/patchprocess/patch-unit-hadoop-common-project_hadoop-common-jdk1.8.0_66.txt | | unit | https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/artifact/patchprocess/patch-unit-hadoop-common-project_hadoop-common-jdk1.7.0_85.txt | | unit test logs | https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/artifact/patchprocess/patch-unit-hadoop-common-project_hadoop-common-jdk1.8.0_66.txt https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/artifact/patchprocess/patch-unit-hadoop-common-project_hadoop-common-jdk1.7.0_85.txt | | JDK v1.7.0_85 Test Results |

https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/testReport/ | | modules | C: hadoop-common-project/hadoop-common U: hadoop-common-project/hadoop-common | | Max memory used | 76MB | | Powered by | Apache Yetus http://yetus.apache.org | | Console output | https://builds.apache.org/job/PreCommit-HADOOP-Build/8148/console | This message was automatically generated.