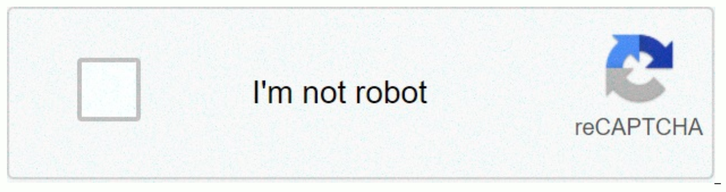

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Ambari security guide

If you plan to configure ssl for Ambari or to enable wire encryption for HDP, you must configure the Truststore for Ambari and add certificates. Ambari Server should not be working when you do this. Make these changes before you start Ambari for the first time, or take down the server before you run the Configuration Command. On the Ambari Server, create a new key store that will contain the Ambari Server.keytool -import -import -file <path_to_the_Ambari_Server's_SSL_Certificate>-alias ambari-server -keystore ambari-server-truststoreWhen prompted to 'Trust this certificate?' type yes. Configure the ambari server to use this new trust store:ambari-server setup-security Using python /usr/bin/python2.6 Security configuration options... === Choose one of the following options: [1] Enable HTTPS for Ambari server. [2] Encrypt passwords stored in the ambari.properties file. [3] Configuration Ambari kerberos JAAS configuration. [4] Setup truststore. [5] Import certificate for truststore. =-if that8-688 (1-5): *4* Do you want to set up a reliable store [y/n] (y)? *y* TrustStore type [jks/jceks/pkcs12] (jks): *jks* Path to TrustStore file : *<path to= the= ambari-server-truststore= keystore=>* Password for TrustStore: Re-enter password: Ambari Server 'setup-security' successfully completed. Once configured, the Ambari Server must be restarted for the change to take effect.ambari-server restart The following table details the properties and values that you need to know to configure LDAP authentication. Note you will set bindAnonymously to fake (the default), you need to make sure that you have an LDAP Manager name and password configured. If you are going to use SSL, you need to make sure that you have already configured your certificate and keys. LDAP properties of the Ambari Server There are many advanced security options in Ambari. In this Apache Ambari article, we'll see one of the most widely used Ambari Security for strong authentication. So let's discuss information about setting up Ambari and Hadoop for strong authentication with Kerberos in detail. So let's start the Ambari Security Tutorial using Kerberos.Ambari Security Guide | Kerberos SecurityExplore the key features of Apache Ambari1. What is Ambari Security? As we discussed earlier, Ambari and Hadoop have many advanced security options for strong authentication, they are: Configuring Ambari and Hadoop for Kerberos.For LDAP or active directory authentication. Ambari setting for non-root. Optional: Encrypt the database and LDAP passwords. Configure SSL for Ambari: Optional.Optional: Set up two-way SSL between Ambari Server and Ambari Agents.Configure ciphers and protocols for Ambari Server: Optional.So, let's discuss information a configuração de Ambari e Hadoop para forte autenticação com</path> </path_to_the_Ambari_Server's_SSL_Certificate> </path_to_the_Ambari_Server's_SSL_Certificate> in detail.2. Configuring Ambari and Hadoop for KerberosIn in order to understand Ambari and Hadoop Kerberos well, we will break it at different points, such as:Configuring Ambari and Hadoop for KerberosKerberos Authentication Overview.Enabling Kerberos Security.i. Hadoop Kerberos authenticationThe basis for secure access in Hadoop is to authenticate and strongly establish the identity of a user. Especially for strong authentication and identity propagation for users and services, Hadoop uses Kerberos. In definition, Kerberos is a third-party authentication mechanism, where users and services rely on a third-party Kerberos server to authenticate each other. The Kerberos server itself is known as The Key Distribution Center (KDC). There are 3 parts of Kerberos Security in a high-level database: A database of users and services (known as principals) It knows about their respective Kerberos passwords. An authentication server (AS) issues a Ticket Grant Ticket (TGT) and performs initial authentication. A Ticket Granting Server (TGS) issues subsequent service tickets based on the initial TGT. As a process, a user director requests authentication from the Authentication Server. It then gives a TGT that is encrypted using the Kerberos password of the user director, which is known only by the user's principal and the AS. Also, using your Kerberos password, the primary user decrypts the TGT locally. And to obtain TGS service tickets, the primary user can use the TGT until the ticket expires. However, service tickets are tickets that allow a director to access multiple services. Keytab is a special file that we use each time to decrypt the TGT. Basically, it consists of the authentication credentials of the resource principle. In addition, with it, a set of hosts, users, and services controlled by the Kerberos server is called reino.a. Terminologies in The Ambari SecurityTermDescriptionKey Distribution Center or KDCKDC is the trusted source for authentication in a Kerberos-enabled environment. Kerberos KDC ServerKey Distribution Center (KDC) served as a machine, or server by Kerberos KDC Server.Kerberos ClientKerberos Client is a component that authenticates any machine in the cluster, against the KDC. Principal Principal is the unique name of a user or service that simply authenticates against the KDC. The KeytabA file that involves one or more directors, as well as their keys, is keytab. Realmthe Kerberos Kingdom network involves a KDC and a number of Clients.KDC Admin AccountTo create principles and generate key guides in KDC, an administrative account used by Ambari.ii. Enabling Kerberos SecurityAmbari provides a wizard to help enable Kerberos in the cluster, whether you choose the configuration or Kerberos manual. Installing jce. Running the Kerberos Security Assistant.The important point to keep in the to enable kerberos are your prerequisites:Java Cryptography Extension (JCE)Ambari Server host. Also, make sure you don't have any technical preview services or features enabled or run before enabling Kerberos if we're running HDP 2.5. We remove the technical preview service or disable the technical preview feature. A. By installing JCE – Ambari SecurityAs a prerequisite, we must deploy the Java Cryptography Extension (JCE) security policy files to the Ambari Server and all hosts in the cluster before enabling Kerberos in the cluster. Also, make sure that we distribute and install JCE on all hosts in the cluster, including Ambari Server, if we are using Oracle JDK. Also, remember to restart the Ambari Server after installing jce. However, Open JDK distributions come with unlimited JCE strength, so we don't need JCE installation while we use open JDK.b. Running the Kerberos Security Assistant – Ambari SecurityAmbari offers several options to enable Kerberos, such as:O Existing MIT KDC. Existing active directory. Manage Kerberos directors and keytabs manually. The Kerberos Wizard requests information related to kdc, kdc administrative account, and service principles, and Ambari, choosing existing mit kdc or existing Active Directory principals. Services are restarted to authenticate against the KDC and will also be configured for Kerberos and service components. Basically, it's the automated configuration option in Ambari Security. In addition, you need to create the main ones, generate and distribute keytabs, while choosing to manage Kerberos principles and keytabs manually; including you running the Ambari Server Kerberos configuration. Ambari won't do it automatically. This is the manual configuration option in Ambari Security. So all this was at Ambari Security. I hope you like our explanation. You can also take a look at Ambari Web UI3. Conclusion: Ambari SecurityHence, in this Ambari Security Tutorial, we discuss the meaning of security in Apache Ambari. In addition, we saw the configuration of Ambari and Hadoop for Kerberos. In addition, we discuss terminologies in Kerberos Ambari Security. Tell us about your experience of reading Apache Ambari Security. I hope it helps! The Solr setting with Ambari also allows you to customize many standard parameters, which are described below. In the Ambari ui, each configuration group is a separate section that is collapsed by default. Click the group name in the ui to expand the section to view or modify the settings. This section provides configuration options for a sample collection when you start Solr for the first time. Solr configset One configuration files to use to create the collection of samples. At a minimum, this directory should include a Solr configuration file called solrconfig.xml and a schema (which can be named managed schema or schema.xml). The default is _default, _default, provides a minimal Solr configuration for you to customize as needed. The Available Configsets section provides more details about the available configsets and how to make your own if desired. Create sample collection This option will create a collection of samples the first time Solr starts. By default, this option is true. Sample collection name The name of the sample collection to create. The default is collection1, but this can be changed to any name you prefer. Replica number Replicas are physical copies of a fragment, and this sets the number of replicas to create when creating the sample collection. The default is 1, which means that 1 copy of the collection will be placed on each node. Number of fragments Fragments are logical partitions of the Solr index, distributed throughout the cluster. This setting defines how many fragments to split an index. The default is 2, which means that the collection will be divided into 2

nodes of the cluster. This section allows SolrCloud and sets the ZooKeeper chroot. Enable SolrCloud mode This option starts Solr in SolrCloud mode. This option cannot be changed as running Solr in Standalone mode when installed with HDP Search is not supported. ZooKeeper directory for Solr files The root directory for Solr configuration files in ZooKeeper (the chroot). The default is /solr, but can be modified before startup. The root directory should never be changed after startup. This option separates Solr files in ZooKeeper from files to any other application or system that shares the same ZooKeeper instance. This section provides configuration options for customizing ports, jvm mount size, and where files and indexes are stored. Solr Configuration Directory Solr most specific configuration files will be stored in ZooKeeper. However, there are a small number of files, such as registry properties or JAAS files, that must be stored on the server and cannot be shared via ZooKeeper. This property sets the directory path to store these file types. Home directory solr A directory path to Solr's home directory, which stores critical information about Solr at the instance level and metadata about the cores it hosts. For more information about this concept, see the section in the Apache Solr Solr Home Reference Guide. Solr registry directory The directory path to store solr registry files. Cell size solr for the JVM Sets the minimum heap (-Xms) and maximum heap (-Xmx) sizes for the Solr JVM. The default is 512Mb. This is almost guaranteed to be too small for production systems, so you should modify this as your system grows and you add users and content. Solr PID Directory The directory path to store a that contains the process id (pid) of the Solr service. Porta Solr Allows you to modify the door on which Solr works. The default is 8983. Solr Service Registration Directory The directory path to store Solr service records. Solr Solr key A password that must be provided to stop solr. This prevents Solr from being accidentally paraded. Solr stop wait The amount of solr time will wait for a graceful shutdown or a full boot. By default, this is set to 180 seconds. If Solr didn't stop in that time, Solr will be stopped by force. If you haven't finished the startup at this point, the startup will leave. solr .xml The solr .xml standard file that is included in all Solr facilities. It is the base configuration file that controls the entire installation instead of individual collections. solr.in.sh template The solr.in.sh file that is included in all Solr installations. This allows you to customize other system properties not covered here. Several of the properties available in the Ambari configuration are also available in solr.in.sh. Be careful not to edit properties in both places to avoid unexpected behavior. This section allows configuration options to run Solr on HDFS. Delete write.lock files on HDFS Solr attempts to protect your indexes by blocking them from accidental writes. In normal operation, the lock files are cleaned without any manual intervention. In the event of an improper shutdown or other difficult stop for Solr, these lock files can be left behind and prevent Solr from restarting. This option allows Ambari to automatically remove all lock files found in any collection on any node at startup. It is recommended to enable this option. HDFS directory for Solr indexes The path of the HDFS directory where solr indexes should be stored. This is set to /solr by default, but can be modified to any other path. If the path does not exist, it is created. Enable solr support in HDFS This option defines whether Solr should be configured to store its indexes in HDFS. It is recommended to do this and leave this option as true. This will modify solr's starting commands and configuration files to enable the appropriate parameters (which are described in more detail in the HdFS-Specific Changes section). This section provides a template log4j.properties file to customize solr's logging capabilities. This section provides a way to customize the metrics sent by HDP Search to the Ambari Metrics System for aggregation by the Metric System. HDP Search metrics come from Solr, which includes a metrics and instrumentation API for solr performance-oriented detailed metrics. Solr metrics are grouped into metric records, which are metrics related to each other because they describe similar aspects of a Solr implementation. Much more information about Solr's metrics capabilities is available in the Metric Reporting section of the Reference Guide Mr. Solr. There is nothing in Solr that you should configure to enable metrics, functionality is available by default. The configuration options here allow you to determine whether metrics will be saved saved the Ambari Metrics System, and which records (groups) will be stored. Some of the records that you can enable are required to populate the default graphcharts. Other records, however, are stored only in the Ambari Metrics System and are not available as charts by default. These are the configuration options: Solr Core Metrics Allows you to store metrics related to Solr Cores. These are divided into metrics for each core and include data about indexing and query requests for each collection. Available data includes meters for index fusion events; counters for the number of documents added, deleted, updated; counters for requests, intervals, and errors; timers for requests; and gauges for index merges. Additional data about Solr query caches is also available. The data in this record is used in the standard Solr Colors graphana panel. While all data is sent to the Ambari Metrics System, only 5 request handlers are chosen to display in the Grafana panel in the Query section: /select, /query, /get, /export, and /navigate. Indexing data is also displayed in the Grafana panel in the Indexing section. Enable Solr metrics Allows you to enable the collection of metrics by the Ambari Metric System. Solr Jetty metrics allow you to store metrics related to Solr Jetty processes, such as Jetty threads and pools, connection and request timers, and gauges for HTTP class responses. None of these metrics are displayed in the standard graphane charts. Solr JVM statistics allow you to store metrics related to Solr JVM processes, such as buffer pools, garbage collection, heap and non-heap memory pools, thread states, and other Java-level information about solr installation. None of these metrics are displayed in the standard graphane charts. Solr Metrics configuration directory The directory where the metrics configuration file is found. The default is /opt/lucidworks-hdpsearch/metrics/conf. Solr Metrics log directory The directory where the metrics records will be stored. The default is /opt/lucidworks-hdpsearch/metrics/log. Directory solr Metrics PID The directory where the metrics process ID will be stored. The default is /opt/lucidworks-hdpsearch/metrics/var. Solr Metrics delay The amount of time to wait after Solr startup before sending metrics to the Ambari Metrics System. The default is 500 milliseconds (0.5 seconds). Solr Metrics Period The frequency to send metrics to the Ambari Metric System. HDP search by default will gather metrics every 5000 milliseconds (5 seconds). Node Solr statistics allow you to store metrics related to Solr Nodes, such as the number of collections, settings stored in ZooKeeper the number of cores currently loaded. None of these metrics are displayed in the standard graphane charts. Solr Metrics log4j A model log4j.json file for the metrics service. If you need to make any customizations to the metric collection record for this This is the place to do it. solr_metrics_properties A template properties file to further customize the Solr metrics collection. Sets up a security.json file for Solr that will be uploaded to ZooKeeper and used. Note that if a security.json file is already in place, this will not replace it. This screen can only be used for an initial configuration of security options. After this file has been configured in place, the Solr Authentication and Authorization APIs should be used instead of this configuration screen. This section provides configuration options for enabling SSL encryption on Solr. More information about SSL and Solr is available in the Apache Solr Reference Guide Enableing SSL section. Enabling SSL support enables you to enable SSL encryption for communication with and between Solr nodes. The pattern is false. SSL key store file The path to the key store. The default is /etc/solr-ssl.keystore.jks, so you'll need to modify this for the path to your key store. SSL key store password The password to access the key store. SSL key storage type The type of key storage used for the keystore file. Need client authentication If true, the client must authenticate to access the system. The pattern is false. If you don't need clients to authenticate, you can alternately use Want client authentication, which is less restrictive. Note that if you need client authentication to be true, the alternative option must be false. SSL truststore File The path to the trust store. The default is /etc/solr-ssl.keystore.jks, so you'll need to modify this for the path to your truststore. File SSL truststore The password to access the trust store. SSL truststore type The type truststore used for the truststore file. Want client authentication If true, the client can authenticate, but is not required to do so to access the system. The pattern is false. If you need clients to authenticate, you can alternately use precise client authentication, which is more restrictive with access. Note that if You want client authentication to be true, the alternative option must be false. Page 2 Lucidworks Hadoop Job Jar allows you to index HDFS content for Solr. This section describes job jar and how to use it. Job Jar is a type of connector, allowing you to index many different types of content stored in HDFS. It uses MapReduce to take advantage of the scale qualities of Apache Hadoop while indexing content to Solr. It can be run from anywhere. Job Jar makes use of ingested mappers to analyze documents and prepare them to be added to a Solr index. The selection of the ingested mapper is one of the arguments provided to the job when it is Details of the available ingeneration mappers are included below. The job pot performs a series of MapReduce-enabled jobs to convert raw content into documents for indexing to Solr. You must use the working bottle with a user who has permissions to write to hadoop.tmp.dir. The /tmp directory in HDFS should also be written. The Hadoop working jug works in three steps designed to bring raw content and production results to Solr. These steps are: Create one or more SequenceFiles from the raw content. This is done in two ways: If source files are available in a shared Hadoop file system, prepare a list of source files and their locations as a SequenceFile. The raw content of each file is not processed until step 2. If the source files are not available, prepare a list of source files and raw content. This process is done sequentially and can take a significant amount of time if there is a large number of documents and/or if they are too large. Perform a mapreduce job to extract text and metadata from the raw content. This process uses inggerição mappers to analyze documents and prepare them to be added to a Solr index. The Ingest Mappers section below provides a list of available mappers. Apache Tika can also be used for additional document analysis and metadata extraction. Perform a mapreduce job to send content extracted from HDFS to Solr using the SolrJ client. This implementation works with SolrJ's CloudServer Java client, which is aware of where Solr is working via Zookeeper. Incremental indexing, where only changes to a document or directory are processed in successive runs of work jars, is not supported. All three steps will be completed each time the work bottle runs, regardless of whether the original content has changed. The first step of the process converts the input content into a SequenceFile. To do this, all the contents of this file must be read in memory before it can be written as an LW document in the SequenceFile. Thus, you should be careful to ensure that the system does not load a file larger than the size of the Java mount of the process into memory. Ingest mapper in the work bottle analyze documents and prepare them for indexing to Solr. There are several mappers available to ingest: CSVIngestMapper DirectoryIngestMapper GrokIngestMapper RegexIngestMapper SequenceFileIngestMapper SolrXMLIngestMapper XMLIngestMapper WarcIngestMapper ZipIngestMapper The ingested mapper is added to the working arguments using the -cls parameter. However, many mappers require additional arguments. See the Ingest Mapper Arguments wiki page for each mapper for the required and optional arguments. The working bottle allows you to index many different types of content stored in HDFS for Solr. It uses MapReduce to take advantage of the scale qualities of Apache Hadoop while indexing content to Solr. To use the bottle you will need to start a job on your Hadoop cluster (using the hadoop jug command). Additional parameters (arguments) will be required. These arguments define the location of your data, how to analyze its content, and the location of your Solr instance for indexing. The working bottle work three types of arguments. These should be defined in the proper order, as shown below: the main class system and mapper-specific arguments key value pair arguments these are discussed in more detail in the Job Jar Arguments section below. The working bottle can run from any location, but requires a Hadoop client if used on a server where Hadoop (bin/hadoop) is not installed. A properly configured client allows the working bottle to be submitted to Hadoop to perform the work. The specific customer you need will vary depending on the Hadoop distribution provider. Talk to your vendor for more information on how to download and set up a customer for your distribution. The work bottle arguments allow you to define the content type in HDFS, choose the appropriate mappers for that content, and set other working parameters as needed. There are three main sections for the working jar arguments: the main class system and mapper-specific arguments key value pair arguments Arguments must be provided in the above order. The available arguments and parameters are described in the following sections. The main class must be specified. For all available mappers, it is always set to com.lucidworks.hadoop.ingest.IngestJob. System-specific or Mapper-specific arguments, defined with a default of -Dargument=value, are provided after the class name. In many cases, the arguments you choose depend on the mapper you choose. The ingingir mapper will be set later in the sequence of arguments. The order of system-level or mapper-specific arguments does not matter, but they must be behind the class name and before the key value pair arguments. For arguments available in the system, see System Arguments. To ingest mapper arguments, see Ingest Mapper Arguments. Other arguments not described in the documentation of this repo (such as hadoop system-specific arguments) can be provided as needed and will be added to the Hadoop configuration. These arguments must be defined with the -Dargument=value syntax. The key value pair arguments apply to the ingestion work in general. These arguments are expressed as argument value. These are the last arguments provided before the bottle name is defined. For more information, see Arguments from key value pairs. This is a simple job request to index a CSV file that demonstrates the order of arguments: bin/hadoop jar /path/to/solr-hadoop-job-4.0.0.jar (1) com.lucidworks.hadoop.ingest.Ingest.IngestJob (2) -Dlww.commit.on.close=true -DcsvDelimiter=| (3) -cls com.lucidworks.hadoop.ingest.CSVIngestMapper -c gettingstarted -i /data/CSV -of -s (4) We can summarize the appropriate order as follows: 1 The Hadoop command to perform a job. This includes the path to the work pot (as needed). 2 The main class of ingestion. 3 Mapper arguments, which vary depending on the Mapper class chosen, in the format of -Dargument=value. 4 Key value Key value that include the inggert mapper, solr collection name, and other parameters, in the -argument value format. These are two simple examples to demonstrate how to construct the working pitcher arguments for some content scenarios. To index CSV files, you can use the following arguments: bin/hadoop jar /opt/lucidworks-hdpsearch/job/solr-hadoop-job-4.0.0.jar\(1) com.lucidworks.hadoop.ingest.IngestLb\(2) -Dlww.commit.on.close=true\(3) -DcsvDelimiter=| \ (4) -cls com.lucidworks.hadoop.ingest.CSVIngestMapper \ (5) -c gettingstarted \ (6) -i /data/CSV \ (7) -of com.lucidworks.hadoop.io.LWMapRedOutputFormat \ (8) -s (9) To explain in more detail, Here is a break of each parameter: 1 Use the hadoop binary with the bottle command and provide the path to the solr-hadoop-job-4.0.0.jar. 2 Define the main class that is always com.lucidworks.hadoop.ingest.IngestJob. 3 Hand over the documents when you're done. 4 Set the bounding character to a tube (|). 5 Define the mapper class, in this case -cls com.lucidworks.hadoop.ingest.CSVIngestMapper. 6 Name the collection in Solr to index the documents. 7 Set the name and path of the files to be indexed. Again, this path should be for the location of the files in HDFS. 8 Set the output format, which is always com.lucidworks.hadoop.io.LWMapRedOutputFormat. 9 Provide Solr's location. We're not using SolrCloud, so Solr is found at: bin/hadoop jar /opt/lucidworks-hdpsearch/job/solr-hadoop-job-4.0.0.jar \(1) com.lucidworks.hadoop.ingestJob\(2) -Dlww.commit.on.close=close=true (3) -cls com.lucidworks.hadoop.ingest..DirectoryIngestMapper\ (4) -c myCollection\ (5) -i /data/files \(6) -of com.lucidworks.hadoop.io.LWMapRedOutputFormat\ (7) -zk 10.0.1.7:2181,10.0.1.8:2181,10.0.1.9:2181/solr (8) In this example, we have defined the job very similarly to the previous example. To pass through it line by line: 1 Use the hadoop binary with the bottle command and provide the path to the solr-hadoop-job-4.0.0.jar. 2 Define the main class that is always com.lucidworks.hadoop.ingest.IngestJob. 3 Hand over the documents when you're done. 4 Use the Ingest Directory mapper class, which allows the working bottle to traverse a file directory for indexing. 5 Name the myCollection collection as the collection in Solr where the documents will be indexed. 6 Point the working bottle to the input directory (/data/files). 7 Set the output format, which is always com.lucidworks.hadoop.io.LWMapRedOutputFormat. 8 Provide the location of ZooKeeper, because in this case we are using SolrCloud. This uses the -zk parameter to define the ZooKeeper connection sequence. Host:port locations must be separated by cígulas, followed by the root directory. In this case, the ZooKeeper root is /solr, but another may have been set during Solr startup. The Lucidworks Lucidworks Hive Serum Lucidworks reading and writing data to and from Solr using Apache Hive. Solr data can be presented as a table of hives to be joined to other tables and hive data. In addition, hive data can be inserted into Solr with an INSERT statement. This section describes the hive Serde and how to use it. The Serde Hive bottle can be found at /opt/lucidworks-hdpsearch/hive/solr-hive-serde-4.0.0.jar. Index Hive table data for Solr. Read the Solr index data in a hive table. Kerberos supports to ensure communication between Hive and Solr. Starting with SerDe v2.2.4, integration with Lucidworks Fusion is supported. Fusion index pipelines can be used to index data to Fusion. Fusion query pipelines can be used to query the Fusion Solr instance for data to be inserted into a Hive table. For serdo hive to work with Solr, the SerDe bottle must be added to the Hive class using the hive.aux.jars.path capability. There are several options for this, described below. It is considered a best practice to use a single directory for all auxiliary vials that you may want to add to the Hive, so you only need to define a single path. However, you should then copy all the vials that you want to use for this path. The following options all assume that you have created such a directory in /usr/hive/auxlib; if you use another path, update the path in the examples accordingly. If you use hive with Ambari (as with Hortonworks HDP distribution), go to the menu:Hive[Configs > Advanced], and scroll to the menu:Advanced hive-env[colme-env template]. Find the section where the HIVE_AUX_JARS_PATH is set and add the path to each line that begins with the export. What you want will end up looking like: # Folder containing extra libraries required for compilation/execution of hives can be controlled by: if [${HIVE_AUX_JARS_PATH} !=]; then if [f ${HIVE_AUX_JARS_PATH}]; then export HIVE_AUX_JARS_PATH=${HIVE_AUX_JARS_PATH},/usr/hive/auxlib elif [-d /usr/hdp/current/hive-webhcat/share/hcatalog]; then export HIVE_AUX_JARS_PATH=/usr/hdp/current/hive-webhcat/share/hcatalog/hive-hcatalog-core.jar,/usr/hive/auxlib fi elif [-d /usr/hdp/current/hive-webhcat/share/hcatalog]; then export HIVE_AUX_JARS_PATH=/usr/hdp/current/hive-webhcat/share/hcatalog/hive-hcatalog-core.jar,/usr/hive/auxlib fi If you are not using Ambari or similar cluster management tool, you can add the location of the vial to the hive/conf/hive location.xml: <property> <name>hive.aux.jars.path</name> <value>/usr/hive/auxlib</value> </property> Another option is to launch the Hive with the path defined with the auxpath variable: hive --auxpath /usr/hive/auxlib other approaches that can be used. Keep in mind, however, that the bottle should be loaded into the classpath, adding it with the ADD JAR function is not enough. Indexing data to Solr or Fusion requires creating an external hive table. An external table allows the data in the table to be used (read (read another system or application outside the Hive. For integration with Solr, the external table allows you to read and write to the Hive. To create an external table for Solr, you can use a command similar to the one below. The available properties are described after the example. hive> CREATE external desktop solr (id wire, field1_s string, field2_i int) (1) STORED BY 'com.lucidworks.hadoop.hive.LWStorageHandler' (2) LOCATION '/tmp/solr' (3) TBLPROPERTIES('solr.server.url' = ' , (4) 'solr.collection' = 'collection1', 'solr.query' = '*:*'); 1 In this example, we create an external table called solr, and define a set of fields and types for the data that we will store in the table. See the Defining Fields for Solr section below for best practices when naming fields. 2 This defines a custom storage handler (STORED BY 'com.lucidworks.hadoop.hive.LWStorageHandler'), which is one of the classes included with the Hive SerDe vial. 3 LOCATION indicates the location in HDFS where the table data will be stored. In this example, we chose to use /tmp/solr. 4 In the TBLPROPERTIES section, we have defined several parameters for Solr so that the data can be indexed to the correct installation and collection solr. See the Properties section of the table below for details on these parameters. If the table needs to be removed later, you can use the DROP TABLE command in Hive. This will remove the metadata stored in the table in Hive, but will not modify the underlying data (in this case, the Solr index). When defining the field names for the Hive table, keep in mind that the field types used to define the table in Hive are not sent to Solr when indexing data from a hive table. Field names are sent, but not field types. Field types must match or be compatible, however, for queries to complete correctly. The reason this may be a problem is due to a solr feature called schema guessing. This is Solr's default mode, and when it's enabled, Solr looks at the received data and makes a better guess at the field type. It may happen that Solr's guess in the correct type may be different from the type defined in Hive, and if this happens, you will receive a ClassCastException in response to queries. To avoid this problem, you can use a Solr feature called dynamic fields. These direct Solr to use specific field types based on a prefix or suffix found in an input field name, which replaces Solr guessing in the type. Solr includes by default dynamic field rules for almost all types it supports, so you only need to use the same suffix in your field names in your Hive tables for the correct type to be set. To illustrate note the field names in the example of the table above: CREATE external table solr (id wire, field1_s string, field2_i int) In this example, we define the id field as a string, field1_s as a string, string, field2_i as an integer. In solr's default schema, there is a dynamic field rule that any field with a suffix _s must be a sequence. Similarly, there is another rule that any field with a _i as a suffix must be an integer. This allows us to ensure that the field types match. An alternative to this is to completely disable Solr field guessing, but this would require you to create all of your fields in Solr before indexing any hive content. For more information about these features and options, see the following sections of the Apache Solr Reference Guide: Sembiló Mode Dynamic Field Types Included with Solr The following parameters can be set in setting table properties: solr.zkhost The location of the zookeeper quorum if you use LucidWorks in SolrCloud mode. If this property is set along with the solr.server.url property, the solr.server.url property will take priority. solr.server.url The location of the Solr instance if it is not using LucidWorks in SolrCloud mode. If this property is set together with the solr.zkhost property, this property will take precedence. solr.collection The Solr collection for this table. If not set, an exception is thrown. solr.query The specific solr query to run to read this table. If not set, a *:*. This property is not required when loading data into a table, but is required when defining the table so that the Hive can read the table later. lww.commit.on.close If true, inserts will be automatically committed when the connection is closed. Truth is the pattern. lww.jaas.file Used only when indexing or reading from a Kerberos-protected Solr cluster. This property sets the path for a JAAS file that contains a keytab location and service director for a user who is authorized to read and write to Solr and Hive. The JAAS configuration file must be copied to the same path on each node where a Node Manager is running (that is, each node where the map/reduction tasks are performed). Here is a sample section of a JAAS file: Client { (1) com.sun.security.auth.module.Krb5LoginModule required useKeyTab=true keyTab=/data/solr-indexer.keytab (2) storeKey=true useTicketCache=true debug=true principal=solr-indexer@SOLRSERVER.COM; (3) }; 1 The name of this section of the JAAS file. This name will be used with the lww.jaas.appname parameter. 2 The location of the keytab file. 3 The main name of the service. This should be a different director than the one used for Solr, but it should have access to both Solr and the Hive. lww.jaas.appname Used only when indexing or reading from a Solr cluster protected with Kerberos. This property provides the section name in the JAAS file that includes the correct service principal and keytab path. once the table is configured, any sintactly correct Hive query can query the index. For example, to select three fields called id, id, and field2_i of the solr table, you would use a query such as: hive > ID SELECT, field1_s, field2_i FROM solr; Replace the table name as appropriate to use this example with your data. To join table data, you can make a request such as: HIVe> ID SELECT, field1_s, field2_i DE solr left JOIN to the right of some table where left.id = right.id; And finally, to insert the data into a table, just use the Solr table as the destination for the INSERT Hive statement, such as: hive> INSERT IN súmia selection, field1_s, field2_i DE some table; Solr includes a small number of sample documents for use when starting out. One is a CSV file containing book metadata. This file is found in the Solr installation, at $SOLR_HOME/example/exampledocs/books.csv. Using sample books.csv file, we can see a detailed example of creating a table, loading data for it, and indexing that data to Solr. CREATE desktop books (id STRING, cat STRING, title STRING, price FLOAT, in_stock BOOLEAN, STRING author, STRING series, SEQ INT, STRING GENRE) LINE FORMAT DELIMITED FIELDS UNTIED BY ''; (1) LOAD LOCAL DATA INPATH '/solr/example/exampledocs/books.csv' OVERWRITE INTO TABLE books; (2) CREATE EXTERNAL TABLE SOLR (STRING ID, cat_s STRING, title_s STRING, price_f FLOAT, in_stock_b BOOLEAN, author_s STRING, series_s STRING, seq_i INT, genre_s STRING) (3) STORED BY 'com.lucidworks.hadoop.hive.LWStorage 'zknode1:2181,zknode2:2181,zknode3:2181/solr', 'solr.collection' = 'gettingstarted', 'solr.query', 'solr.query', ':*', (6) 'l ww.jaas.file' = '//data/jaas-client.conf'); (7) INSERT TABLE OVERSCRIPT SOLR SELECT b.* FROM books b; 1 Define the tablebooks and provide the field names and field types that will compose the table. 2 Upload the data from the .csv files. 3 Create an external table called solr and provide the field names and field types that will compose the table. These will be the same field names as in your local Hive table, so we can index all the same data for Solr. 4 Set the custom storage handler provided by solr-hive-serde-4.0.0.jar. 5 Set the storage location in HDFS. 6 The query to run on Solr to read Solr records for use in Hive. 7 Set the location of Solr (or ZooKeeper if you use SolrCloud), collection in Solr to index the data, and query to use when reading the table. This example also refers to a JAAS configuration file that will be used to authenticate to the Kerberized Solr cluster. If you use Apache Pig to do large-scale data processing, you can use Pig scripts when indexing content to Solr. For example, you can use Pig to do large-scale preprocessing and then produce the resulting datasets for Solr so that you can more effectively query that data. This section describes the Pig Functions and how to use them. A single .jar provides functions for content before being indexed to Solr. This vial is found at: /opt/lucidworks-hdpsearch/pig/solr-pig-functions-4.0.0.jar The appropriate Pig function bottle must be stored in HDFS to be used by your Pig script. Can be located anywhere in HDFS; you will provide the path to the appropriate vial when invoking your script. Functions to allow Pig scripts to index data to Solr or Fusion. Supports Kerberos for authentication. Starting with v2.2.4, integration with Lucidworks Fusion is supported, allowing the use of Fusion pipelines for further data transformation prior to indexing. Solr 5.x and higher Pig versions 0.12 to 0.16 Hadoop 3.x Fusion 2.4.x and higher The Pig functions included in the solr-pig-4.0.0 functions.jar are three Undefined User Functions (UDF) and two Store functions. These functions are: with/lucidworks/hadoop/pig/SolrStoreFunc.class with/lucidworks/hadoop/pig/FusionIndexPipelinesStoreFunc.class com/lucidworks/hadoop/pig/EpochToCal .class com/lucidworks/hadoop/pig/Extract.class com/lucidworks/hadoop/pig/Histogram.class There are two approaches to using Pig functions: REGISTER them in the script or load them with the Pig command line request. If you use REGISTER, pig function vials must be placed in HDFS for use by your Pig script. Can be located anywhere in HDFS; you can provide the path in your script or use a variable and set the variable with property definition -p. The example below uses the second approach, loading the vials with the -Dpig.additional.jars system property when starting the script. With this approach, vials can be located anywhere on the machine where the script will run. There are some parameters required for your script to produce data for Solr for indexing. These parameters can be set in the script itself or transformed into variables that are defined each time the script is executed. The example of the pig script below shows an example of using these parameters with variables. solr.zkhost The ZooKeeper connection string if using Solr in SolrCloud mode. This should be in the form of server:port,server:port,server:port/chroot. If you are not using SolrCloud, use the solr.server.url parameter. solr.server.url The location of the Solr instance when solr is running in standalone mode. This should be in the form of :port/solr. solr.collection The name of the Solr collection where documents will be indexed. When a Solr cluster is protected with Kerberos for internal communication, pig scripts must include the full path to a JAAS file that includes the service director and path to a keytab file that will be used to index the script output to Solr. Two parameters provide the information the script needs to access the JAAS file: lww.jaas.file path to the JAAS file that includes a section for the service director who will write to the Solr indexes. For example, to use this in a Pig script: set lww.jaas.file '/path/to/login.conf'; The JAAS configuration file must be copied to the same path on each node where a Node Manager is running (that is, each node where the map/reduction tasks are performed). lww.jaas.appname The section name in the JAAS file that includes the correct service principal and keytab path. For example, to use this property in a Pig script: set lww.jaas.appname 'Client'; Here is a sample section of a JAAS file: Client { (1) com.sun.security.auth.module.Krb5LoginModule required useKeyTab=true keyTab=/data/solr-indexer.keytab (2) storeKey=true useTicketCache=true debug=true principal=solr-indexer@SOLRSERVER.COM; (3) }; 1 The name of this section of the JAAS file. This name will be used with the lww.jaas.appname parameter. 2 The location of the keytab file. 3 The main name of the service. This should be a different director than the one used for Solr, but must have access to both Solr and Pig. When SSL is activated in a Solr cluster, pig scripts must include the full paths to the key store and truststore with their respective passwords. set lww.keystore '/path/to/solr-ssl.keystore.jks' set lww.keystore.password 'secret' set lww.truststore '/path/to/solr-ssl.truststore.jks' set lww.truststore.password 'secret' Paths (and secret settings) must be the same on all hosts/YARN/MapReduce. The following pig script will take a simple CSV file and index it to Solr. set solr.zkhost '$zkHost'; set solr.collection '$collection'; (1) A = load '$csv' using PigStorage('') as (id_s:chararray,city_s:chararray,country_s:chararray,code_s:chararray,code2_s:chararray,latitude_s:chararray,longitude_s:chararray,flag_s:chararray); (2) -dump A; B = FOREACH A GENERATE $0 as id, 'city_s', $1, 'country_s', $2, 'code_s', $3, $3, code2_s $4, $4, 'latitude_s', $5, 'longitude_s', $6, 'flag_s', $7; (3) ok = store B in 'SOLR' using com.lucidworks.hadoop.pig.SolrStoreFunc(); (4) This relatively simple script is doing several things that help you understand how Solr Pig works. 1 This and the line above set parameters required by SolrStoreFunc to know where Solr is. SolrStoreFunc needs the solr.zkhost and solr.collection properties, and these lines are mapping the zkhost and collection parameters that we will pass when invoking Pig for the required properties. 2 Load the CSV file, the path, and the name we'll pass with the csv parameter. We also define the field names for each column in the CSV file and its types. 3 For each item in the CSV file, generate an ID from the first field ($0), and then set each field name and value in name, value pairs. 4 Upload the documents to Solr using SolrStoreFunc. Although we don't need to set solr's location here, the function will use the zkhost and collection properties we'll pass when we invoke our pig script. When using SolrStoreFunc, the document ID be the first field. When we want to run this script, we invoke Pig and define several parameters that we reference in the script with the -p option, such as in this command: ./bin/pig -Dpig.additional.jars=/path/to/solr-pig-functions-4.0.0.jar -p csv=/path/to/my/csv/airports.dat -p zkHost=zknode1:2181,zknode2:2181,zknode3:2181/solr -p collection=myCollection ~/myScripts/index-csv.pig The parameters to be approved are: csv The path and the name of the CSV file we want to process. zkhost The ZooKeeper connection sequence for a SolrCloud cluster, in the form of zkhost1:port,zkhost2:port,zkhost3:port/chroot. In the script, we mapped this to the solr.zkhost property, which is required by SolrStoreFunc to know where to send the output documents. Collection The Solr collection to index. In the script, we mapped this to the solr.collection property, which is required by SolrStoreFunc to know the Solr collection that documents should be indexed. The zkhost parameter above is only used if you are indexing to a SolrCloud cluster, which uses ZooKeeper to route indexing and query requests. If, however, you are not using SolrCloud, you can use the solrUrl parameter, which takes the location of a standalone solr instance, in the form of :port/solr. In the script, you would change the line that maps solr.zkhost to the zkhost property to map solr.server.url to the solrUrl property. For example: 'set solr.server.url '$solrUrl';' Spark RDD provides a set of tools for reading Solr data and indexing Spark objects in Solr using SolrJ (a Java client for Solr). Lucidworks provided an SDK to create a custom apache spark application to simplify the integration of Spark and Solr. /opt/lucidworks-hdpsearch/spark-solr/ Before using this repository, you should update it on your local machine with a simple git traction request. mvn clean package -DskipTests This will build 2 vials in the target directory: spark-solr-${VERSION}.jar spark-solr-${VERSION}-shaded.jar ${VERSION} will be something like 3.5.6-SNAPSHOT, for development builds. The first .jar is what you would like to use if you were using spark-solr in your own design. The second is what you would use to send one of the included sample applications to Spark. cd $SPARK_HOME ./bin/spark-shell --jars spark-solr-3.5.5-shaded.jar The shaded bottle can be downloaded from Central Maven or constructed from the respective branch val options = Map (collection -> {solr_collection_name}, zkhost -> {zk_connect_string}) val df = spark.read.format(solr) .options(options) .load import com.lucidworks.spark.rdd.SelectSolrRDD val solrRDD = new SelectSolrRDD(zkHost, collectionName, sc) SelectSolrRDD is an RDD of SolrDocument import com.lucidworks.sparkd.rdD.SolrRDJavaD; import org.apache.spark.api.java.JavaRDD; SolrJavaRDD = (zkHost, coleção, jsc.sc()); Resultados<SolrDocument> JavaRDDRDD = </SolrDocument> </SolrDocument> Send objects from a Spark (Streaming or DataFrames) to Solr. Read the results of a Solr query as a Spark RDD or DataFrame. Stream Solr documents using /export handler (only works for export fields that have docValues enabled). Read large solr result sets using cursors or with /export handler. Data location. If Spark workers and Solr processes are co-located on the same nodes, the partitions are placed on the nodes where the replicas are located. Cursors are used by default to remove documents from Solr. By default, the number of tasks aswes will be the number of fragments available for collection. If the Spark cluster has more executor slots available than the number of fragments, then you can increase parallelism by reading from Solr by dividing each fragment into sub-tracks using a split field. A good candidate for the split field is the version field that is attached to each document by the fragment leader during indexing. See the splits section to enable and configure intra fragment splitting. Cursors will not work if the index changes during query time. Restrict your query to a static index using additional solr parameters using solr.params. If the fields being queried have docValues enabled, then the streaming API can be used to remove solr documents in a true streaming way. This method is 8-10x faster than cursors. The option request_handler enable the streaming API via DataFrame. Objects can be sent to Solr via Spark Streaming or DataFrames. The schema is inferred from the DataFrame, and any fields that do not exist in the Solr schema will be added via schema API. See ManagedexSchemaFactory. See index parameters for configuration and tuning. Solr DataSource supports a number of optional parameters that allow you to optimize performance when reading Solr data. The only parameters required for DataSource are zkhost and collection. Probably the most obvious option is to specify a Solr query that limits the rows that you want to load in Spark. For example, if we wanted to upload documents that mentioned solr, we would do: Usage: option (query, body_t:solr) If you do not specify the query option, all rows are read using the match all documents query (*:*). You can use the fields option to specify a subset of fields to retrieve for each document in its results: Usage: Option (fields,id,author_s favorited_b,...) By default, all fields stored for each document are taken from Solr. You can also specify a pseudonym for a field using solr field syntax, for example, author:author_s. If you want to invoke a function query, such as rord(), then you provide a pseudonym, for example, ord_user:ord(user_id). If the return type of the function query is something different from int or long, then you need to specify the return type after the function query, such as: such as: If you request Solr function queries, then the library must use the /select handler to make the request, because export-through/export function queries are not supported by Solr. You can use the filters option to define filter queries in the Solr query: Usage: Option (filters,firstName:Sam,Last Name:Powell) You can use the rows option to specify the number of rows to retrieve from Solr per request; don't confuse this with max_rows (see below). Behind the scenes, the implementation uses deep paging cursors or response streaming and streaming API, so it's usually safe to specify a large number of rows. To be clear, this is not the maximum number of lines to read from Solr. All matching lines in the back-reins have been read. The line parameter is the page size. By default, the implementation uses 1000 rows, but if your documents are smaller, you can increase this to 10000. Using a very large value can press the Solr JVM garbage collector. Usage: Option (lines,10000) Default: 1000 Limits the result set to a maximum number of rows; only applies when using the /select handler. The library will issue the query from a single task and allow Solr to do distributed query processing. In addition, paging is not performed, that is, the stop lines are set to max_rows when querying. Consequently, this option should not be used for large values max_rows, instead you should only retrieve all rows using multiple Spark tasks and then re-sort with Spark if necessary. Usage: Option (max_rows, 100) Defalut: None set the Solr request handler for queries. This option can be used to export Solr results via /export handler that transmits Solr data. See export result sets for more information. The handler /export needs the fields to be explicitly specified. Please use the fields option or specify the fields in the query. Usage: Default (request_handler, /export) option: /select If the Spark cluster has more executor slots available than the number of fragments, then you can increase parallelism by reading from Solr by dividing each fragment into sub-tracks using a split field. The sub-range division allows you to search solr faster, increasing the number of tasks in Solr. This should only be used if there are sufficient compute resources in the Spark cluster. Shard ing is disabled by default. Enable fragment splitting in the default _version_ field. Usage: Option (splits, true) The above option is equivalent to the option (split_field, _version_) The field to be split can be changed using split_field option. Usage: Option (split_field, id) Default: _version_ Behind the scenes, the datasource tries to divide the fragment into uniform-sized divisions using filter queries. You can also split into a string-based keyword field, but it must have enough variance in the values to allow creating enough divisions to be useful. In other words, if your Spark Spark can handle 10 splits per fragment, but there are only 3 unique values in a keyword field, so you will only have 3 splits. Keep in mind that this is just a hint for the split calculator and you may end up with a slightly different number than was requested. Usage: Option (splits_per_shard, 30) Default: The default value is automatically calculated based on the number of documents to query Solr This option is enabled by default and flattens solr multivalued fields. Usage: Option (flatten_multivalued, false) The dv option will fetch docValues that are indexed but not stored using function queries. It should be used for Solr versions less than 5.5.0. Usage: Option (dv, true) The skip_non_dv option instructs the solr data source to skip all fields that are not docValues. Usage: Option (skip_non_dv, True) The sample_seed allows you to read a random sample of Solr documents using the specified seed. This option can be useful if you only need to explore the data before performing the operations on the full set of results. By default, if this option is provided, a sample size of 10% is read from Solr, but you can use the sample_pct option to control the sample size. Usage: option (sample_seed, 5150) The sample_pct allows you to set the size of a random sample of Solr documents; use a value between 0 and 1. Usage: option (sample_pct, 0.05) The solr.params option can be used to specify any arbitrary Solr parameters in the form of a Solr query. Do not use this to pass parameters that are covered by other options, such as fl (use the fields option) or sort. This option is strictly intended for parameters that are NOT covered by other options. Usage: Option (solr.params, fq=userId:[10 TO 1000]) If specified, the soft_commit_secs option will be set via SolrConfig API during indexing Usage: option (soft_commit_secs, 10) commit_within param sets commitWithin on indexing requests processed by SolrClient. This value should be in milliseconds. See commitWithin Use: option (commit_within, 5000) The batch_size option determines the number of documents that are sent to Solr through an HTTP call during indexing. Set this option higher if the documents are small and memory is available. Usage: Option (batch_size, 10000) If the documents are missing the single key (derived from the Solr schema), the gen_uniq_key option generates a unique value for each document before indexing to Solr. Instead of this option, the UUIDUpdateProcessorFactory can be used to generate UUID values for documents that are missing the Use exclusive key field: option (gen_uniq_key, true) This option can be used to specify the field type for fields written in Solr. Only works if field names are not yet defined Solr Use scheme: option(solr_field_types, rating:string,title:text_en Set this option as time in order to see time series collections, partitioned according to some time period Usage: option (partition_by, time) This is from the X DAYS/HOURS/MINUTES form. This should be the length of time with which partitions are created. Usage: option (time_period, 1MINUTES) This pattern can be inferred from time_period. But this option can be used to explicitly specify. Usage: Option (datetime_pattern, yyyy_MM_dd_HH_mm) This option is used to specify the field name in indexed documents where the timestamp is found. Usage: Option (timestamp_field_name, ts) Used to specify the time zone. Usage: Option (timezone_id, IST) This option is used to specify the maximum number of partitions that should be allowed at a time. Usage: Solr (max_active_partitions, 100) option can provide the number of matching documents almost instantly, so why is the call count on a DataFrame supported

by such a slow Solr query? The reason is that Spark likes to read all the lines before performing any operation on a DataFrame. So when you ask SparkSQL to count the lines in a DataFrame, the spark-solr has to read all the corresponding Solr documents and then count the lines in the RDD. If you are just exploring a Solr collection from Spark and need to know the number of matching rows for a query, you can use the SolrQuerySupport.getNumDocsFromSolr utility function. The lines option defines the page size, but all matching rows are read from Solr for each query. So if your query matches many documents in Solr, then Spark is reading all 10 docs per request. Use the option sample_seed to limit the size of the results returned from Solr. com.lucidworks.spark.SparkApp provides a simple framework for implementing Spark applications in Java. The class prevents you from having to duplicate the boiler code needed to run a Spark application, giving you more time to focus on your application's business logic. To take advantage of this framework, you need to develop a concrete class that implements RDDProcessor or extends the StreamProcessor depending on the type of application you are developing. Implement the com.lucidworks.spark.SparkApp$RDDProcessor interface for building a Spark application that operates on a JavaRDD, such as one taken from a Solr query (see SolrQueryProcessor as an example). Extend the abstract class with.lucidworks.spark.SparkApp$StreamProcessor to create a Spark streaming application. See com.lucidworks.spark.example.streaming.oneusagov.OneUsaGovStreamProcessor or com.lucidworks.spark.example.streaming.TwitterToSolrStreamProcessor for examples of how to write a StreamProcessor. For information on Solr's safety, see: Protecting Solr. The Kerberos config be set via system param java.security.auth.login.config on extraJavaOptions for executor and driver. The SparkApp framework (in spark-solr) allows you to pass the path to a JAAS authentication configuration file using the Option. For example, if you need to authenticate using the main Kerberos solr, you need to create a JAAS configuration file called jaas-client.conf that defines the location of your Kerberos key file, such as: Client { com.sun.security.auth.module.Krb5LoginModule required useKeyTab=true keyTab=/keytabs/solr.keytabKey store=true useTicketCache=true debug=true=solr;}; To use this setting to authenticate to Solr, just pass the path to jaas-client.conf created above using the -solrJaasAuthConfig option, such as: spark-submit -master yarn-server\--class com.lucidworks.spark.SparkApp \ $SPARK_SOLR_PROJECT/target/spark-solr-${VERSION}-shaded.jar \ hdfs-to-solr -zkHost $ZK -spark-hdf Ss\-hdfsPath /user/spark/testdata/syn_sample_50k\-solrJaasAuthConfig=/path/to/jaas-client.conf Basic Auth can be configured via basicauth system properties or solr.httpclient.config. These system properties must be set on driver and executor JVMs ./bin/spark-shell --master site[*] --jars ~/Git/spark-solr/target/spark-solr-3.0.1-SNAPSHOT -shaded.jar --conf 'spark.driver.extraJavaOptions=-Dbasicauth=solr:SolrRocks' Using solr.httpclient.config ./bin/spark-shell --master site[*] --jars ~/Git/spark-solr/target/spark-solr-3.0.1-SNAPSHOT-shaded.jar --conf 'spark.driver.extraJavaOptions=-Dsolr.httpclient.config=/Users/kiran/spark/spark-2.1.0-bin-hadoop2.7/auth.txt' httpBasicAuthUser=solr httpBasicAuthPassword=SolrRocks httpBasicAuthPassword=SolrRocks

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