Chapter 2. Configuring Ports

The tables below specify which ports must be opened for which ecosystem components to communicate with each other. Make sure the appropriate ports are opened before you install HDP.

Accumulo Ports

The following table lists the default ports used by the various Accumulo services. (**Note:** Neither of these services are used in a standard HDP installation.)

Table 2.1. Accumulo Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
Master	Master nodes (Active master and any standby)	9999		The Master thrift server	Yes (client API needs)	`master.port.client` in accumulo-site.xml
TabletServer	Slave nodes	9997		The TabletServer thrift server	Yes (client API needs)	`tserver.port.client` in accumulo-site.xml
Garbage Collector	GC nodes (Active GC and any standby)	50091		The GarbageCollector thrift server	No	`gc.port.client` in accumulo-site.xml
Monitor	Monitor nodes (Active Monitor and any standby)	50095	HTTP(S)	Metrics/Monitoring of an Accumulo instance	Yes	`monitor.port.client` in accumulo-site.xml
Monitor log aggregation	Monitor nodes (Active Monitor and any standby)	4560		Log4j socket which accepts logs forwarded from other Accumulo services	No	`monitor.port.log4j` in accumulo-site.xml
Tracer	Tracer nodes	12234		The Tracer thrift server	Yes (if enabled)	`trace.port.client` in accumulo-site.xml
Thrift Proxy (optional)	Proxy nodes	42424		The Thrift Proxy server	Yes (if enabled)	port in `proxy.properties`
TabletServer Replication Service	Slave nodes	10002		TabletServer Thrift service supporting multi-instance Accumulo replication	No	`replication.receipt.service.port` in accumulo-site.xml
Master Replication Service	Master nodes (Active master and any standby)	10001		Master Thrift service supporting multi-instance Accumulo replication	No	`master.replication.coordinator.port` in accumulo-site.xml

Flume Ports

The following table lists the default ports used by the various Flume services. (**Note:** Neither of these services are used in a standard HDP installation.)

Table 2.2. Flume Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
Flume	Flume Agent	41414	TCP	Flume performance metrics in JSON format	Yes (client API needs)	`master.port.client` in accumulo-site.xml
Flume	HDFS Sink	8020	TCP	Communication from Flume into the Hadoop cluster's NameNode	Yes (client API needs)	`tserver.port.client` in accumulo-site.xml
Flume	HDFS Sink	9000	TCP	Communication from Flume into the Hadoop cluster's NameNode	No	`gc.port.client` in accumulo-site.xml
Flume	HDFS Sink	50010	TCP	Communication from Flume into the Hadoop cluster's HDFS DataNode	No	

Flume	HDFS Sink	50020	TCP	Communication from Flume into the Hadoop cluster's HDFS DataNode	No	
Flume	HBase Sink	2181	TCP	Communication from Flume into the Hadoop cluster's Zookeeper	No	
Flume	HBase Sink	60020	TCP	Communication from Flume into the Hadoop cluster's HBase Regionserver	No	
Flume	All Other Sources and Sinks	Variable	Variable	Ports and protocols used by Flume sources and sinks	No	Refer to the flume configuration file(s) for ports actually in use. Ports in use are specificed using the port keyword in the Flume configuration file. By default Flume configuration files are located in /etc/flume/conf on Linux and c:\hdp\flume-1.4.0.x.y.z\conf on Windows

HDFS Ports

The following table lists the default ports used by the various HDFS services.

Table 2.3. HDFS Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
NameNode WebUI	Master Nodes (NameNode and any back-up NameNodes)	50070	http	Web UI to look at current status of HDFS, explore file system	Yes (Typically admins, Dev/Support teams)	`dfs.http.address`
		50470	https	Secure http service		`dfs.https.address`
NameNode metadata service		8020/9000	IPC	File system metadata operations	Yes (All clients who directly need to interact with the HDFS)	Embedded in URI specified by `fs.defaultFS`
DataNode	All Slave Nodes	50075	http	DataNode WebUI to access the status, logs etc.	Yes (Typically admins, Dev/Support teams)	`dfs.datanode.http.address`
		50475	https	Secure http service		`dfs.datanode.https.address`
		50010		Data transfer		`dfs.datanode.address`
		50020	IPC	Metadata operations	No	`dfs.datanode.ipc.address`
Secondary NameNode	Secondary NameNode and any backup Secondanry NameNode	50090	http	Checkpoint for NameNode metadata	No	`dfs.secondary.http.address`

MapReduce Ports: The following table lists the default ports used by the various MapReduce services.

Table 2.4. MapReduce Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
MapReduce		10020	http	MapReduce JobHistory server address		`mapreduce.jobhistory.address`
MapReduce		19888	http	MapReduce JobHistory webapp address		`mapreduce.jobhistory.webapp.address`

		13562	http	MapReduce Shuffle Port		mapreduce.shuffle.port
MapReduce		13562	http	MapReduce Shuffle Port		`mapreduce.shuffle.port`

YARN Ports: The following table lists the default ports used by the various YARN services.

Table 2.5. YARN Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
Resource Manager WebUI	Master Nodes (Resource Manager and any back-up Resource Manager node)	8088	http	Web UI for Resource Manager	Yes	`yarn.resourcemanager.webapp.address`
Resource Manager	Master Nodes (Resource Manager Node)	8050	IPC	For application submissions	Yes (All clients who need to submit the YARN applications including Hive, Hive server, Pig)	Embedded in URI specified by `yarn.resourcemanager.address`
Resource Manager	Master Nodes (Resource Manager Node)	8025	http	For application submissions	Yes (All clients who need to submit the YARN applications including Hive, Hive server, Pig)	`yarn.resourcemanager.resource-tracker.address`
Scheduler	Master Nodes (Resource Manager Node)	8030	http	Scheduler Address	Yes (Typically admins, Dev/Support teams)	`yarn.resourcemanager.scheduler.address`
Resource Manager	Master Nodes (Resource Manager Node)	8141	http	Scheduler Address	Yes (Typically admins, Dev/Support teams)	`yarn.resourcemanager.admin.address`
NodeManager	Master Nodes (NodeManager) and Slave Nodes	45454	http	NodeManager Address	Yes (Typically admins, Dev/Support teams)	`yarn.nodemanager.address`
Timeline Server	Master Nodes	10200	http	Timeline Server Address	Yes (Typically admins, Dev/Support teams)	`yarn.timeline-service.address`
Timeline Server	Master Nodes	8188	http	Timeline Server Webapp Address	Yes (Typically admins, Dev/Support teams)	`yarn.timeline-service.webapp.address`
Timeline Server	Master Nodes	8190	https	Timeline Server Webapp https Address	Yes (Typically admins, Dev/Support teams)	`yarn.timeline-service.webapp.https.address`
Job History Service	Master Nodes	19888	https	Job History Service	Yes (Typically admins, Dev/Support teams)	`yarn.log.server.url`

Hive Ports

The following table lists the default ports used by the various Hive services. (**Note:** Neither of these services are used in a standard HDP installation.)

Table 2.6. Hive Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
Hive Server	Hive Server machine (Usually a utility machine)	10000		Service for programatically (Thrift/JDBC) connecting to Hive	Yes (Clients who need to connect to Hive either programatically or through UI SQL tools that use JDBC)	ENV Variable HIVE_PORT
Hive Web UI	Hive Server machine (Usually a utility machine)	9999	http	Web UI to explore Hive schemas	Yes	`hive.hwi.listen.port`

Hive Metastore		9933	http		Yes (Clients that run Hive, Pig and potentially M/R jobs that use HCatalog)	`hive.metastore.uris`

HBase Ports

The following table lists the default ports used by the various HBase services.

Table 2.7. HBase Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
HMaster	Master Nodes (HBase Master Node and any back-up HBase Master node)	60000			Yes	`hbase.master.port`
HMaster Info Web UI	Master Nodes (HBase master Node and back up HBase Master node if any)	60010	http	The port for the HBaseMaster web UI. Set to -1 if you do not want the info server to run.	Yes	`hbase.master.info.port`
Region Server	All Slave Nodes	60020			Yes (Typically admins, dev/support teams)	`hbase.regionserver.port`
Region Server	All Slave Nodes	60030	http		Yes (Typically admins, dev/support teams)	`hbase.regionserver.info.port`
HBase REST Server (optional)	All REST Servers	8080	http	The port used by HBase Rest Servers. REST servers are optional, and not installed by default	Yes	`hbase.rest.port`
HBase REST Server Web UI (optional)	All REST Servers	8085	http	The port used by HBase Rest Servers web UI. REST servers are optional, and not installed by default	Yes (Typically admins, dev/support teams)	`hbase.rest.info.port`
HBase Thrift Server (optional)	All Thrift Servers	9090		The port used by HBase Thrift Servers. Thrift servers are optional, and not installed by default	Yes	
HBase Thrift Server Web UI (optional)	All Thrift Servers	9095		The port used by HBase Thrift Servers web UI. Thrift servers are optional, and not installed by default	Yes (Typically admins, dev/support teams)	`hbase.thrift.info.port`

Oozie Ports: The following table lists the default ports used by Oozie.

Table 2.8. Oozie Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
Oozie	Oozie Server	11000	TCP	The port Oozie server runs.	Yes	OOZIE_HTTP_PORT in oozie_env.sh
Oozie	Oozie Server	11001	TCP	The admin port Oozie server runs.	No	OOZIE_ADMIN_PORT in oozie_env.sh
Oozie	Oozie Server	11443	TCP	The port Oozie server runs when using HTTPS.	Yes	OOZIE_HTTPS_PORT in oozie_env.sh

Sqoop Ports: The following table lists the default ports used by Sqoop.

Table 2.9. Sqoop Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
Sqoop	Metastore	16000	TCP	Connection between	No	`sqoop.metastore.server.port`

				Sqoop and the metastore		
Sqoop	JDBC Listener	Varies, depends on target database. For example, if moving data from MySQL, TCP port 3306 must be open.	TCP	Outbound port from the Hadoop cluster to the database. Varies depending on Database	No	

Storm Ports

The following table lists the default ports used by Storm.

Table 2.10. Storm Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
Zookeeper Port		2181		Port used by localhost to talk to ZooKeeper.		`storm.zookeeper.port`
DRPC Port		3772				`drpc.port`
DRPC Invocations Port		3773				`drpc.invocations.port`
Nimbus Thrift Port		6627				`nimbus.thrift.port`
Supervisor Slots Ports		6700, 6701, 6702, 7603		Defines the amount of workers that can be run on this machine. Each worker is assigned a port to use for communication.		`supervisor.slots.ports`
Logviewer Port		8000				`logviewer.port`
UI Port		8080				`ui.port`
Ambari Port		8744				`ambari.port`

ZooKeeper Ports

Table 2.11. ZooKeeper Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
ZooKeeper Server	All ZooKeeper Nodes	2888		Port used by ZooKeeper peers to talk to each other. See here for more information.	No	`hbase.zookeeper.peerport`
ZooKeeper Server	All ZooKeeper Nodes	3888		Port used by ZooKeeper peers to talk to each other.See here for more information.	No	`hbase.zookeeper.leaderport`
ZooKeeper Server	All ZooKeeper Nodes	2181		Property from ZooKeeper's config `zoo.cfg`. The port at which the clients will connect.	No	`hbase.zookeeper.property.clientPort`

MySQL Ports: The following table lists the default ports used by the various MySQL services.

Table 2.12. MySQL Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
MySQL	MySQL database server	3306				

Kerberos Ports: The following table lists the default port used by the designated Kerberos KDC.

Table 2.13. Kerberos Ports

Service	Servers	Default Ports Used	Protocol	Description	Need End User Access?	Configuration Parameters
KDC	Kerberos KDC server	88		Port used by the designated KDC		