This patch involves creating a master and region observer that provides basic quota support to namespaces in terms of (1) number of tables and (2) number of regions.

Adding the following properties to hbase-site.xml can enable the quota support:

<property>

<name>hbase.coprocessor.region.classes</name>

<value>org.apache.hadoop.hbase.namespace.NamespaceController</value>

</property>

<property>

<name>hbase.coprocessor.master.classes</name>

<value>org.apache.hadoop.hbase.namespace.NamespaceController</value>

</property>

We define the state of a namespace to be the number of tables and regions it is currently holding. The maximum number of tables and regions that a namespace can contain is defined as its quota. Please note that there is no restriction on the number of regions that a given table can hold. The users can associate quota related to a given namespace by setting namespace properties. Also, namespace quotas can be changed anytime using the alter command.

The main java classes involved in the quota implementation are:

**NamespaceAuditor.java**

This class is both a master and region observer. Whenever a table is created or a region is split, this class runs an audit and updates the state of the namespace (which is stored in zk). This class also makes sure that the count of the number of tables and regions is always less than or equal to the quota defined in the namespace.

**NamespaceTableAndRegionInfo.java**

This is a helper class that captures the state of the namespace in terms of the number of tables and the regions.

**ZKNamespaceStateManager.java**

This class provides information about the current state of a given namespace. It maintains an internal cache that is always updated with any changes made to a namespace.

The following sequence diagram gives an overview of the interaction between the above mentioned java classes:

