# Reimplement of rsgroup feature

HBASE-22514 Reimplement rsgroup feature and move it into core of HBase

## Motivation

The RSGroup feature is used by more and more users these days. In the current implementation, users can only use shell to change the configurations of RSGroup, and now some users want to change it by coding. But the current implementation is not suitable to open to users, as it uses coprocessor endpoint to communicate with client, and has its own 'Admin' interface which is not good.
So here we plan to move the RSGroup feature into core of HBase. At least, users should be able to change its configurations through the general Admin interface.
And when implementing HBASE-22514, we found that feature itself is a bit confused, so we changed the title of this doc to 'Reimplement' the RSGroup feature.

## Plan

1. Move the code in hbase-rsgroup module to hbase-server module.
    a. Move RSGroupInfoManager to hbase-server. And this will start by default. If no rsgroup config, all regionservers are in one rsgroup(the default group).
    b. Move RSGroupBasedBalancer to hbase-server. And this is the default balancer. We still support pluggable balancer. But the user's pluggable balancer will only worked in one RSGroup internal.
    c. Deprecate the coprocesser RSGroupAdminEndpoint. Move the RSGroup Admin call to MasterService. The RSGroupAdminEndpoint should be kept for a while since we need to be compatible with old client.
    d. Move the RSGroupAdminClient to Admin/AsyncAdmin interface. This is OK as RSGroupAdminClient is IA.Private.
2. Change the way for storing rsgroup for namespace/table.
    a. Store the rsgroup name of a table in the table configurations, just like what we have done for namespace. If not configured, make the table into the default rsgroup.
    b. There is an extra advantage is that, while changing the rsgroup config for a table, by default we will reopen all the regions of the table, which means the regions will be on the new rsgroup automatically.
    c. Only store the regionservers of a rsgroup in the hbase:rsgroup table.

d. Need an upgrade when starting up, where we will load the old style configs from hbase:rsgroup, and store the rsgroup config of a table into the table config, and update the stuff stored in hbase:rsgroup.

3. Use proc-v2 to implement the rsgroup modification operations.