



HBase allocates all regions to one RegionServer after restart



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After a complete restart of the HBase service, the HBase master allocates all regions to one RegionServer. You will see the below example line in the HBase master logs:

```
vm1.log:2025-03-26 20:16:47,152 INFO [vm1:16000.activeMasterManager]
master.ServerManager: Finished waiting for region servers count to settle; checked in 1,
slept for 4513 ms, expecting minimum of 1, maximum of 2147483647, master is running
```

Environment

Apache HBase

Cause

This HBase behavior is explained in the following Apache HBase defect: <https://issues.apache.org/jira/browse/HBASE-6389> 

Resolution

If you start HBase master services and then start only one RegionServer, HBase will start assigning regions to that server after `hbase.master.wait.on.regionserver.timeout`. This will create a huge bottleneck in Zookeeper and RegionServer, causing various OOM (out of memory) errors or slow HBase start.

By default this value (**`hbase.master.wait.on.regionserver.mintostart`**) is set to 1. This implies HBase will wait for a minimum of one RegionServer before it starts allocating regions. You can set this parameter to a higher number such as 3 or 5 (or higher based on your cluster size). Ideally set this to 10-15% of cluster RegionServers.

For this to be ensured you need to ensure you start the master and RegionServer in quick succession, or start the RegionServer instances first and then start the HBase master. This will ensure all RegionServers checks in as soon as the master is available and ready for region assignments.

Behavior if we first start the RegionServers and then the HBase master.

This ensures all RegionServer instances are available for the master to assign regions. A log entry similar to the following will be logged in this case:

```
vm1.log:2025-03-27 08:45:12,581 INFO [vm1:16000.activeMasterManager]
master.ServerManager: Finished waiting for region servers count to settle; checked in 18,
slept for 24696 ms, expecting minimum of 1, maximum of 2147483647, master is running
```

