Performance Enhancements for SSD Based MapR-DB Deployments

For DB workloads on high-end servers, MapR has made several performance enhancements. For MapR-DB deployments on clusters with SSDs, two fileserver instances are configured on nodes with at least two SPs. On servers with SSDs, this feature is automatically enabled with a fresh install or upgrade.

Required Ports

Ensure that ports 5661 and 6661, as mentioned here (../ReferenceGuide/MapRPorts.html#PortsUsedbyMapR), are open and available for this feature. To verify that these ports are open, run the following command from a remote machine:

```
/opt/mapr/server/mrconfig -i -h <ip> -p <port number> info threads
```

An error indicates that the port is not open.

Note: If you installed or upgraded to MapR 5.1 Enterprise Edition before opening the required ports, you can still enable this feature by opening the ports and **restarting Warden** on the node.

Determine Whether the Feature is Enabled

To determine whether this feature is enabled, run the following command:

```
/opt/mapr/server/mrconfig info instances
```

Your output will look similar to the following if this feature enabled. This output shows that two fileserver instances are running on ports 5660 and 5661.

```
# /opt/mapr/server/mrconfig info instances
2
5660 5661
```

Your output will look similar to the following if the feature is not enabled. It shows that one fileserver instance is running on port 5660.

```
# /opt/mapr/server/mrconfig info instances
1
5660
```

Disabling and Enabling the Feature

In certain cases, due to the nature of the workload, you may have to disable this feature. **To disable:**

1. Run the `maprcli config save (../ReferenceGuide/config-save.html#configsave)` command and set the value for the `multimfs.numsps.perinstance` parameter to a value greater than the number of SPs on any node in the cluster.

   For example:

   ```
   maprcli config save -values {multimfs.numsps.perinstance:500}
   ```

   Note: The default value for this parameter is `0`. Changing this parameter can cause INSTANCE_MISMATCH_ALARM (../ReferenceGuide/NodeAlarms-InstanceMismatchAlarm.html#concept_qns_xnk_3v) to be raised.

2. Restart fileserver for the configuration changes to take effect and also clear any INSTANCE_MISMATCH_ALARM (../ReferenceGuide/NodeAlarms-InstanceMismatchAlarm.html#concept_qns_xnk_3v). To restart, run the following command:

```
maprcli node services -nodes <node name> -fileserver restar
t
```

If you reset the value for `multimfs.numsps.perinstance` to `0` or a low number (a number less than the number of SPs on the node), when Warden is restarted, this feature will be re-enabled and the SPs will be reassigned to 2 MFS instances.

Note: Changing this parameter can cause INSTANCE_MISMATCH_ALARM (../ReferenceGuide/NodeAlarms-InstanceMismatchAlarm.html#concept_qns_xnk_3v) to be raised. Restart Warden to ensure that the number of instances run as configured.

Changes to Log Files

Additional log files are created in `$MAPR_HOME/logs` when this feature enabled. Please make a note of the following:

- There will be two sets of log files, one per instance: `mfs.log-<N>` and `mfs.log.<instanceID>-<N>`, where `<N>` is greater than 0. For example:
    - `mfs.log-3` for the primary instance
    - `mfs.log.1-3` for the second instance
- The RPC and security trace information is in these files: `mfs.err` and `mfs-1.err`.