Memory Allocation for Nodes

When you run `configure.sh` on a node, warden allocates memory for the operating system, `mfs` service, MapR Hadoop services, and applications using the settings in the `warden.conf` and `warden.<servicename>.conf` file.

Warden allocates memory to the following components in the following order:

1. Operating system
2. `mfs` service
3. MapR Hadoop services
4. Jobs and Applications, such as MapReduce v1 or YARN applications
5. If NodeManager is not installed on the node, the remaining available memory is allocated to the MapR file system. If NodeManager is installed on the node, the remaining available memory is allocated to run YARN applications.

In general, you should not modify the settings in the warden files. However, if you modify the values in `warden.conf` or a `warden.<servicename>.conf` file, you must restart warden. Otherwise, updated parameters will not be used to allocate resources

Memory for the OS, `mfs` Service, and Hadoop Services

The warden allocates memory to the operating system, `mfs` service, and MapR Hadoop services based on the following parameters:

Parameter	Default			Description
	OS	`mfs` service	Hadoop Service(s)	
service.command.<os|mfs|servicename>.heapsize.percent	10	varies	varies	Defines the heap size percentage.
service.command. <os|mfs|servicename>.heapsize.max	4000	85	5000	Defines the maximum heap size in MB.
service.command. <os|mfs|servicename>.heapsize.min	256	512	256	Defines the minimum heap size in MB.

The memory settings for the operating system, `mfs` service, and Hadoop services such as TaskTracker and JobTracker, are configured in the warden.conf file. The warden.conf file is located in `/opt/mapr/conf`. Other services such as NodeManager and ResourceManager have their own `warden.<servicename>.conf` file within `/opt/mapr/conf/conf.d`. For more information about the warden files, see `warden.conf` and `warden.<servicename>.conf`.

Note: Warden only allocates resources for MapR Hadoop services associated with roles that are installed on the node.

Memory for the `mfs` service

By default, Warden adds up the total memory consumed by all services and the OS and then gives 85% of what is left to the `mfs` service. If you do not intend to use MapR-DB, you can set the `-noDB` option in `configure.sh` to specify that 20% of the memory available should be allocated to mfs service.

Memory for Jobs and Applications

Warden allocates memory to MapReduce v1 jobs and applications based on the services installed on the node and also the `mr1.memory.percent` value in `warden.conf`. For more information, see Resource Allocation for Jobs and Applications.