# GemFire Monitoring Guidelines

GemFire exposes a wealth of metrics via JMX. This document outlines the specific metrics that should be monitored by the operator.

For each metric, 2 levels are SMOKE and FIRE. The meanings are as follows:

SMOKE - indicates an impending problem

* the application is still available
* someone should investigate within 24 hours

FIRE

* Failure has occurred or is imminent
* Response needs to be immediate. People should be woken up.

# Assumptions

* It’s crucial to monitor all of the system resources on any system. This includes memory, disk space, file descriptors and network connectivity. Although GemFire does expose information about these things, they are typically monitored at a platform level (e.g. by a standard JVM monitoring solution). This document is focused on GemFire specific monitoring.
* Please note that the limits below are suggested starting points. They will need to be tuned to the individual system based on experience.

# Metrics Table

|  |  |  |  |
| --- | --- | --- | --- |
| **JMX Path** | **Metric** | **SMOKE** | **FIRE** |
| GemFire/Distributed/System | JVMPauses | increases by more than 1 in a day | increases by more than 1 in 5 minutes |
| Member Count | decreases by 1 without a known reason | decreases by more than 1 without a known reason |
| GemFire/Distributed/Region/<region>  (one for each partitioned/overflow region) | NumBucketsWithoutRedundancy |  | > 0 |
| TotalEntriesOnlyOnDisk | > 10% of SystemRegionEntryCount | > 25% of SystemRegionEntryCount |
| GemFire/Member/<member>  (one for each data node or locator) | JVMPauses | increases by more than 1 in a day | increases by more than 1 in 5 minutes |
| GemFire/Member/CacheServer/<port>/<member>  (one for each data node) | TotalConnectionsTimedOut | increases by more than 1 per hour | increases by more than 1 in 5 minutes |
| TotalFailedConnectionAttempts |  | increases by 1 or more |
| GemFire/Member/GatewaySender/\*/\* | connected |  | false (without a reason) |
| eventQueueSize | > 1,000 | > 100,000 |