RABBITMQ – Important Metrics and How to Query

**EXCHANGE PERFORMANCE**

Metrics to watch:

* Messages published in: Messages published to an exchange (count and a rate per second)
  + rabbitmq\_messages\_published\_total{exchange="your\_exchange\_name", vhost="your\_vhost\_name"} ***- count***
  + rate(rabbitmq\_messages\_published\_total{exchange="your\_exchange\_name", vhost="your\_vhost\_name"}[1m]) ***- rate per second***
* Messages published out: Messages that have left an exchange (count and a rate per second)
  + rabbitmq\_messages\_published\_out\_total{exchange="your\_exchange\_name", vhost="your\_vhost\_name"} ***- count***
  + rate(rabbitmq\_messages\_published\_out\_total{exchange="your\_exchange\_name", vhost="your\_vhost\_name"}[1m]) ***- rate per second***

Metrics to Alert On:

* Message unroutable: The cluster was not able to deliver a message to a destination. \*
  + rabbitmq\_messages\_unroutable\_total{vhost="your\_vhost\_name"} ***- count***
  + rate(rabbitmq\_messages\_unroutable\_total{vhost="your\_vhost\_name"}[1m]) ***- rate per second***

**NODES:**

Metrics to Alert On:

* File descriptors used: A node’s File Descriptor usage is reaching its maximum value. \*
  + rabbitmq\_fd\_used{node="your\_node\_name"}
* File descriptors used as sockets: Count of file descriptors used as network sockets by RabbitMQ processes \*
  + rabbitmq\_socket\_descriptors{node="your\_node\_name"}
* CPU Used: Amount of CPU being used
  + 100 - (avg by(instance) (irate(node\_cpu\_seconds\_total{mode="idle"}[5m])) \* 100)
* Memory Used \*\*\* - Amount of memory being used
  + rabbitmq\_overview\_memory\_used
* Disk Space used – Amount of disk space being used
  + rabbitmq\_disk\_free
* Node Not Distributed: A node lost communication with the cluster.
  + rabbitmq\_node\_status{node="your\_node\_name", status\_type="nodedown"}
* Node Down: A node is down.
  + rabbitmq\_node\_status{node="your\_node\_name", status\_type="node"}

**CONNECTION PERFORMANCE:**

Metrics to Watch:

* Data Rates: Number of octets sent/received within a TCP connection per second
  + rate(rabbitmq\_socket\_octets\_received\_bytes\_total{node="your\_node\_name"}[1m])

Metrics to Alert On:

* Connections: Important indicator of the load on the server. If the number of connections is too high, it may indicate that you need to scale up your infrastructure..\*\*
  + rabbitmq\_connections{vhost="your\_vhost\_name"}
* Channels: Important metric to monitor. A high channel count can put additional load on the server and may indicate that you need to optimize your application code. \*
  + rabbitmq\_channels{vhost="your\_vhost\_name"}

**QUEUE PERFORMANCE:**

Metrics to watch:

* Queue depth: Count of all messages in the queue
  + rabbitmq\_queue\_messages{vhost="your\_vhost\_name", name="your\_queue\_name"}
* Messages unacknowledged: Count of messages a queue has delivered without receiving acknowledgment from a consumer
  + sum(rabbitmq\_queue\_messages\_unacknowledged{node="your\_node\_name", vhost="your\_vhost\_name", queue="your\_queue\_name"})
* Messages ready: Count of messages available to consumer
  + sum(rabbitmq\_queue\_messages\_ready{node="your\_node\_name", vhost="your\_vhost\_name", queue="your\_queue\_name"})
* Message rates: Messages that move in or out of a queue per second, whether unacknowledged, delivered, acknowledged, or redelivered
  + rate(rabbitmq\_messages\_published\_total{vhost="your\_vhost\_name"}[5m])
  + rate(rabbitmq\_messages\_delivered\_total{vhost="your\_vhost\_name"}[5m])
* Messages persistent: Count of messages written to disk
  + sum(rabbitmq\_queue\_messages\_persistent{node="your\_node\_name", vhost="your\_vhost\_name"})
* Message bytes persistent: Sum in bytes of messages written to disk
  + sum(rabbitmq\_queue\_bytes\_persistent{node="your\_node\_name", vhost="your\_vhost\_name"})
* Message bytes RAM: Sum in bytes of messages stored in memory
  + sum(rabbitmq\_queue\_bytes\_ram{node="your\_node\_name", vhost="your\_vhost\_name"})
* Number of consumers: Count of consumers for a given queue
  + rabbitmq\_queue\_consumers{node="your\_node\_name", vhost="your\_vhost\_name", queue="your\_queue\_name"}

Metrics to Alert On:

* Number of consumers: Count of consumers for a given queue.
  + rabbitmq\_queue\_consumers{node="your\_node\_name", vhost="your\_vhost\_name", queue="your\_queue\_name"}
* Consumer Utilization: Proportion of time that the queue can deliver messages to consumers
  + sum(rabbitmq\_queue\_deliver\_get\_no\_ack\_details{node="your\_node\_name", vhost="your\_vhost\_name", queue="your\_queue\_name"} \* on(queue, vhost) group\_left(node) rabbitmq\_queue\_deliver\_get\_no\_ack\_total{node="your\_node\_name"}) by (node)
  + sum(rabbitmq\_queue\_deliver\_get\_no\_ack\_total{node="your\_node\_name", vhost="your\_vhost\_name", queue="your\_queue\_name"}) by (node)

**OTHER:**

* Memory High Watermark: A threshold of 1 indicates that the memory high watermark is reached, blocking message publishing.
  + rabbitmq\_memory\_high\_watermark\_reached{node="your\_node\_name"}
* Disk High Watermark: A threshold of 1 indicates that the disk high watermark is reached, blocking message publishing.
  + rabbitmq\_disk\_high\_watermark\_reached{node="your\_node\_name"}
* Erlang Processes: A sharp increase in the number of processes may be a warning of a traffic increase.
  + rabbitmq\_process\_count{node="your\_node\_name"}

References:

<https://grafana.com/blog/2021/06/01/monitor-and-alert-on-essential-rabbitmq-cluster-metrics-with-the-new-grafana-cloud-integration/>

<https://www.datadoghq.com/blog/rabbitmq-monitoring/>

<https://docs.vmware.com/en/vRealize-Operations/8.10/com.vmware.vcom.config.doc/GUID-6CE5089D-7FBD-45D2-B75D-18DC5F020CAD.html>

<https://support.huaweicloud.com/intl/en-us/usermanual-rabbitmq/rabbitmq-ug-180524001.html>

<https://sematext.com/blog/rabbitmq-monitoring/>

<https://techdocs.broadcom.com/us/en/ca-enterprise-software/it-operations-management/dx-apm-agents/SaaS/infrastructure-agent/Rabbit-MQ-Infrastructure-Monitoring/Rabbit-MQ-Monitoring-Metrics.html>

List of all metircs - <https://github.com/rabbitmq/rabbitmq-prometheus/blob/master/metrics.md>