

# 02\_RabbitMQ集群+SpringBoot

Java

消息队列

SpringBoot + RabbitMQ 集群

时间：2023年1月1日12:31:54

目录：

- 部署RabbitMQ集群（3节点）
- SpringBoot集成RabbitMQ集群

官方文档：

- <https://www.rabbitmq.com/clustering.html#ram-nodes>

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## 一、启动三个rabbitMQ服务

```
docker run --cpus=3 --memory=2GB -d --hostname my-rabbit-host-1 --name my-rabbit-1 -e
RABBITMQ_DEFAULT_USER=admin -e RABBITMQ_DEFAULT_PASS=Rabbitmq12345 -e
RABBITMQ_ERLANG_COOKIE='rabbitcookie' -p 15672:15672 -p 25672:25672 -p 5672:5672 -p 4369:4369 --add-host
my-rabbit-host-1:192.168.204.112 --add-host my-rabbit-host-2:192.168.204.113 --add-host my-rabbit-host-3:
192.168.204.114 rabbitmq:3.11.5-management
```

```
docker run --cpus=3 --memory=2GB -d --hostname my-rabbit-host-2 --name my-rabbit-2 -e
RABBITMQ_DEFAULT_USER=admin -e RABBITMQ_DEFAULT_PASS=Rabbitmq12345 -e
RABBITMQ_ERLANG_COOKIE='rabbitcookie' -p 15672:15672 -p 25672:25672 -p 5672:5672 -p 4369:4369 --add-host
my-rabbit-host-1:192.168.204.112 --add-host my-rabbit-host-2:192.168.204.113 --add-host my-rabbit-host-3:
192.168.204.114 rabbitmq:3.11.5-management
```

```
docker run --cpus=3 --memory=2GB -d --hostname my-rabbit-host-3 --name my-rabbit-3 -e
RABBITMQ_DEFAULT_USER=admin -e RABBITMQ_DEFAULT_PASS=Rabbitmq12345 -e
RABBITMQ_ERLANG_COOKIE='rabbitcookie' -p 15672:15672 -p 25672:25672 -p 5672:5672 -p 4369:4369 --add-host
my-rabbit-host-1:192.168.204.112 --add-host my-rabbit-host-2:192.168.204.113 --add-host my-rabbit-host-3:
192.168.204.114 rabbitmq:3.11.5-management
```

```
cat << EOF >> /etc/hosts
192.168.204.112 my-rabbit-host-1
192.168.204.113 my-rabbit-host-2
```

192.168.204.114 my-rabbit-host-3  
EOF

## 二、配置三个服务

```
[root@jenkins ~]# docker exec -ti my-rabbit-1 bash
root@my-rabbit-host-1:/# rabbitmqctl stop_app
Stopping rabbit application on node rabbit@my-rabbit-host-1 ...
root@my-rabbit-host-1:/# rabbitmqctl reset
Resetting node rabbit@my-rabbit-host-1 ...
root@my-rabbit-host-1:/# rabbitmqctl start_app
Starting node rabbit@my-rabbit-host-1 ...
root@my-rabbit-host-1:/# exit
exit
[root@jenkins ~]#
```

my-rabbit-1

```
docker exec -ti my-rabbit-1 bash
rabbitmqctl stop_app
rabbitmqctl reset
rabbitmqctl start_app
exit
```

```
docker exec -ti my-rabbit-2 bash
rabbitmqctl stop_app
rabbitmqctl reset
### 关于--ram, 请参考官方文档: https://www.rabbitmq.com/clustering.html#ram-nodes
### rabbitmqctl join_cluster --ram rabbit@my-rabbit-host-1
rabbitmqctl join_cluster rabbit@my-rabbit-host-1
rabbitmqctl start_app
exit
```

```
docker exec -ti my-rabbit-3 bash
rabbitmqctl stop_app
rabbitmqctl reset
### 关于--ram, 请参考官方文档: https://www.rabbitmq.com/clustering.html#ram-nodes
### rabbitmqctl join_cluster --ram rabbit@my-rabbit-host-1
rabbitmqctl join_cluster rabbit@my-rabbit-host-1
rabbitmqctl start_app
exit
```

```
[root@rabbitmq ~]# docker exec -ti my-rabbit-3 bash
root@my-rabbit-host-3:/# cat << EOF >> /etc/hosts
> 192.168.204.112 my-rabbit-host-1
> 192.168.204.113 my-rabbit-host-2
> 192.168.204.114 my-rabbit-host-3
> EOF
root@my-rabbit-host-3:/#
root@my-rabbit-host-3:/# rabbitmqctl stop_app
RABBITMQ_ERLANG_COOKIE env variable support is deprecated and will be REMOVED in a future version. Use the $HOME/.erlang.cookie file or the --erlang-cookie switch instead.
Stopping rabbit application on node rabbit@my-rabbit-host-3 ...
root@my-rabbit-host-3:/# rabbitmqctl reset
RABBITMQ_ERLANG_COOKIE env variable support is deprecated and will be REMOVED in a future version. Use the $HOME/.erlang.cookie file or the --erlang-cookie switch instead.
Resetting node rabbit@my-rabbit-host-3 ...
root@my-rabbit-host-3:/# rabbitmqctl join_cluster --ram rabbit@my-rabbit-host-1
RABBITMQ_ERLANG_COOKIE env variable support is deprecated and will be REMOVED in a future version. Use the $HOME/.erlang.cookie file or the --erlang-cookie switch instead.
Clustering node rabbit@my-rabbit-host-3 with rabbit@my-rabbit-host-1
root@my-rabbit-host-3:/# rabbitmqctl start_app
RABBITMQ_ERLANG_COOKIE env variable support is deprecated and will be REMOVED in a future version. Use the $HOME/.erlang.cookie file or the --erlang-cookie switch instead.
Starting node rabbit@my-rabbit-host-3 ...
root@my-rabbit-host-3:/# exit
exit
[root@rabbitmq ~]#
```

重启, 加入集群OK

## 三、查看集群状态

```
rabbitmqctl cluster_status
```

## 查看rabbitMQ集群节点(状态)

## RabbitMQ 管理面板 (查看集群信息)

```
docker exec -ti my-rabbit-1 bash
rabbitmqctl list_policies -p /
rabbitmqctl set_policy -p / ha "^" '{ "ha-mode": "all", "ha-sync-mode": "automatic" }'
rabbitmqctl list_policies -p /
```

```
root@nexus ~)#
[root@nexus ~]#
root@nexus ~)# docker exec -ti my-rabbit-1 bash
root@my-rabbit-host-1:/# rabbitmqctl list_policies -p /
RABBITMQ_ERLANG_COOKIE env variable support is deprecated and will be REMOVED in a future version. Use the $HOME/.erlang.cookie file or the --erlang-cookie switch instead.
Listing policies for vhost "/" ...

root@my-rabbit-host-1:/# rabbitmqctl set_policy -p / ha "" '{"ha-mode":"all","ha-sync-mode":"automatic"}'
RABBITMQ_ERLANG_COOKIE env variable support is deprecated and will be REMOVED in a future version. Use the $HOME/.erlang.cookie file or the --erlang-cookie switch instead.
Setting policy "ha" for pattern "" to '{"ha-mode":"all","ha-sync-mode":"automatic"}' with priority "0" for vhost "/" ...
root@my-rabbit-host-1:/# rabbitmqctl list_policies -p /
RABBITMQ_ERLANG_COOKIE env variable support is deprecated and will be REMOVED in a future version. Use the $HOME/.erlang.cookie file or the --erlang-cookie switch instead.
Listing policies for vhost "/" ...
vhost name pattern apply-to definition priority
/ ha ^ all '{"ha-mode":"all","ha-sync-mode":"automatic"}' 0
root@my-rabbit-host-1:/#
```

## 配置RabbitMQ-HA策略

HA镜像模式

模拟mater掉线

 RabbitMQ 3.11.5 Erlang 25.2

Refreshed 2023-01-01 13:30:12 Refresh every 5 seconds

Virtual host All

Cluster rabbit@my-rabbit-host-1

User admin Log out

Overview Connections Channels Exchanges Queues Admin

### Exchanges

All exchanges (7)

Pagination

Page 1 of 1 Filter: Regexp

Displaying 7 items, page size up to: 100

Name	Type	Features	Message rate in	Message rate out
(AMQP default)	direct	ha		
amq.direct	direct	ha		
amq.fanout	fanout	ha		
amq.headers	headers	ha		
amq.match	headers	ha		
amq.rabbitmq.trace	topic	ha		
amq.topic	topic	ha		

Add a new exchange

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 RabbitMQ 3.11.5 Erlang 25.2

Overview Connections Channels Exchanges Queues Admin

### Overview

Totals

Queued messages last minute



Message rates last minute



Global counts

Connections: 0 Channels: 0 Exchanges: 8 Queues: 2 Consumers: 0

Nodes

Name	File descriptors ?	Socket descriptors ?	Erlang processes	Memory ?	Disk space	Uptime	Info	Reset stats	+/-
rabbit@my-rabbit-host-1	Node not running								
rabbit@my-rabbit-host-2	45 1048576 available	0 943629 available	407 1048576 available	131 MiB 1.5 GiB high watermark 37 GiB low watermark	14m 54s	basic RAM 2 rss	This node All nodes		
rabbit@my-rabbit-host-3	39 1048576 available	0 943629 available	402 1048576 available	133 MiB 1.5 GiB high watermark 41 GiB low watermark	13m 41s	basic RAM 2 rss	This node All nodes		

Churn statistics

Ports and contexts

Export definitions

Import definitions

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RabbitMQ™

RabbitMQ 3.11.5 Erlang 25.2

Refreshed 2023-01-01 13:33:28 Refresh every 5 seconds

Virtual host All

Cluster rabbit@my-rabbit-host-2

User admin Log out

OverviewConnectionsChannelsExchangesQueuesAdmin

Queues

All queues (2)

模拟Master掉线（镜像HA下MQ中数据不会丢失）

Page 1 of 1 Filter: Regex

Displaying 2 items, page size up to: 100

Overview					Messages			Message rates		
Name	Node	Type	Features	State	Ready	Unacked	Total	Incoming	deliver / get	ack
fanout_email_queue	rabbit@my-rabbit-host-3	classic	ha	idle	200	0	200			
fanout_sms_queue	rabbit@my-rabbit-host-3	classic	ha	idle	200	0	200			

Add a new queue

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## 五、集群移除节点+新添加节点

注意事项：

- 不用关心集群中哪个节点是master，添加新节点进入集群时，选择一个集群中正常的节点即可。
- 正常情况，容器重启后会自动加入集群，但是，当容器被删除后重新创建后，则不会自动添加到集群，需要手动移除节点后重新添加。

```
rabbitmqctl cluster_status
```

```
rabbitmqctl forget_cluster_node rabbit@my-rabbit-host-1
```

```
docker exec -ti my-rabbit-1 bash
```

```
rabbitmqctl stop_app
```

```
rabbitmqctl reset
```

```
### rabbitmqctl join_cluster --ram rabbit@my-rabbit-host-2
```

```
rabbitmqctl join_cluster rabbit@my-rabbit-host-2
```

```
rabbitmqctl start_app
```

```
exit
```

RabbitMQ™

RabbitMQ 3.11.5 Erlang 25.2

Refreshed 2023-01-01 15:06:04 Refresh every 5 seconds

Virtual host All

Cluster rabbit@my-rabbit-host-3

User admin Log out

OverviewConnectionsChannelsExchangesQueuesAdmin

Overview

Totals

Queued messages last minute

Currently idle

Message rates last minute

Currently idle

Global counts

Connections: 0Channels: 0Exchanges: 7Queues: 0Consumers: 0

Nodes

Name	File descriptors	Socket descriptors	Erlang processes	Memory	Disk space	Uptime	Info	Reset state
rabbit@my-rabbit-host-1	99 1048576 available	0 943629 available	396 1048576 available	142 MiB 1.5 GiB high watermark 1 MiB low watermark	35 GiB	1m 1s	basic disc 2 pss	This node All nodes
rabbit@my-rabbit-host-2	39 1048576 available	0 943629 available	396 1048576 available	132 MiB 1.5 GiB high watermark 1 MiB low watermark	37 GiB	3m 40s	basic disc 2 pss	This node All nodes
rabbit@my-rabbit-host-3	40 1048576 available	0 943629 available	400 1048576 available	131 MiB 1.5 GiB high watermark 1 MiB low watermark	41 GiB	3m 25s	basic disc 2 pss	This node All nodes

Churn statistics

Ports and contexts

Export definitions

Import definitions

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模拟场景：  
1. Docker部署RabbitMQ  
2. Host1节点Docker容器被删除  
3. host2/3 手动移除host1  
4. host1启动新容器，重新加入集群

## 六、SpringBoot+RabbitMQ集群

推荐阅读: <https://blog.csdn.net/fengyuyeguirenenen/article/details/124749122>

### 1. 配置文件

- 移除host+port, 添加addresses

spring:

# datasource:

# type: com.alibaba.druid.pool.DruidDataSource

# driver-class-name: com.mysql.cj.jdbc.Driver

# url: jdbc:mysql://192.168.204.112:23306/dev\_test?

autoReconnect=true&useServerPreparedStmts=true&cachePrepStmts=true&rewriteBatchedStatements=true&allowMultiQueries=true

### 2. 其余内容和单节点RabbitMQ一致 (请参考【[01\\_RabbitMQ+SpringBoot](#)】)