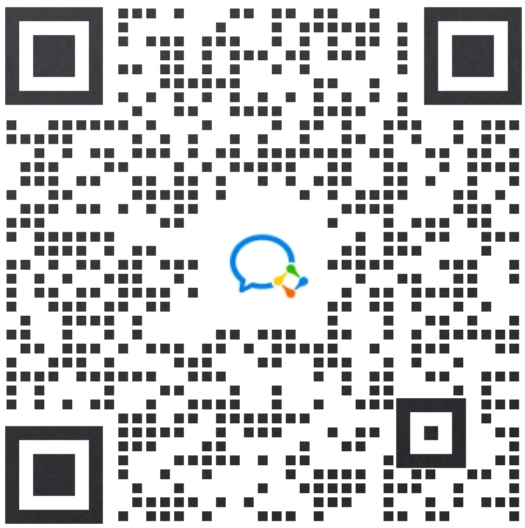
6.1 多机多节点搭建集群

版权说明



1. 安装RabbitMQ

在3台机器上, 分别安装RabbitMQ, 安装步骤参考 2.1 RabbitMQ安装

安装后确认每个服务器节点都是可用的

```
root@iZ2vc7a1n9gvhfp589oav7Z:~# rabbitmqctl status   #确认节点状态
Status of node rabbit@iZ2vc7a1n9gvhfp589oav7Z ...   #节点名称
Runtime
```

```
4
5 OS PID: 691019
6 OS: Linux
7 Uptime (seconds): 363321
8 Is under maintenance?: false
9 RabbitMQ version: 3.9.13
10 Node name: rabbit@iZ2vc7a1n9gvhfp589oav7Z
11 Erlang configuration: Erlang/OTP 24 [erts-12.2.1] [source] [64-bit] [smp:2:2]
   [ds:2:2:10] [async-threads:1] [jit]
12 Erlang processes: 374 used, 1048576 limit
13 Scheduler run queue: 1
14 Cluster heartbeat timeout (net_ticktime): 60
15
```

安装后, 节点信息如下:

服务器	IP	开放端口	节点名称
节点1	10.0.0.232	5672,15672	rabbit@iZ2vc7a1n9gvhfp589oav8Z
节点2	10.0.0.233	5672,15672	rabbit@iZ2vc7a1n9gvhfp589oav6Z
节点3	10.0.0.234	5672,15672	rabbit@iZ2vc7a1n9gvhfp589oav7Z

2. 配置hosts文件

配置**每个节点**的hosts文件, 让各个节点都能互相识别对方

```
1 vim /etc/hosts
```

格式为: IP 主机名称

比如我的集群配置如下:

```
1 #rabbitmq
2 10.0.0.232 iZ2vc7a1n9gvhfp589oav8Z
3 10.0.0.233 iZ2vc7a1n9gvhfp589oav6Z
4 10.0.0.234 iZ2vc7a1n9gvhfp589oav7Z
```

> 注意, 这里的主机名称不是随便写的, 需要查看3台服务器的主机名是什么

> 查看方式:
>
> ```
> root@iZ2vc7a1n9gvhfp589oav6Z:~# more /etc/hostname    #查看主机名
> iZ2vc7a1n9gvhfp589oav6Z
> ```
>
> 也可以通过修改该文件, 修改主机名, 修改之后需要reboot重启虚拟机
>
> **谨慎修改主机名:** 如果是刚初始化的服务器, 可以修改主机名, 如果服务器上已经装了很多东西, 就没必要修改主机名了.

3. 配置Erlang Cookie

RabbitMQ 节点和 CLI 工具(如rabbitmqctl) 使用Cookie来进行身份验证, 确认它们之间是否被允许相互通信. 为了使两个节点可以通信, 它们必须具有相同的共享密钥, 称为 `Erlang Cookie` . Cookie是一个字符串, 通常存储在本地文件中. 每个集群节点必须具有相同的Cookie.

Cookie 文件的位置:

RabbitMQ启动时, erlang 虚拟机会自动创建该文件, 通常位于 `/var/lib/rabbitmq/.erlang.cookie` 和 `$HOME/.erlang.cookie` .

3.1 停止所有节点的服务

```
systemctl stop rabbitmq-server
```

3.2 配置 Erlang Cookie

只需将一个节点上的 `.erlang.cookie` 文件分别拷贝到另外两个节点上就可以

比如把node3节点的文件, 分别拷贝到node1和node2对应的机器上

在node3上进行如下操作:

```
#拷贝node3节点的文件到node1
scp /var/lib/rabbitmq/.erlang.cookie
root@iZ2vc7a1n9gvhfp589oav8Z:/var/lib/rabbitmq/

#拷贝node3节点的文件到node2
scp /var/lib/rabbitmq/.erlang.cookie
root@iZ2vc7a1n9gvhfp589oav6Z:/var/lib/rabbitmq/
```

执行结果:

```
root@iZ2vc7a1n9gvhfp589oav7Z:~# scp /var/lib/rabbitmq/.erlang.cookie root@iZ2vc7a1n9gvhfp589oav8Z:/var/lib/rabbitmq/
The authenticity of host 'iz2vc7a1n9gvhfp589oav8z (10.0.0.232)' can't be established.
ED25519 key fingerprint is SHA256:YGEG3FjpDUxHuGMy/GPviQZXftaGaNLrLcWQyP0QLPE.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'iz2vc7a1n9gvhfp589oav8z' (ED25519) to the list of known hosts.
root@iz2vc7a1n9gvhfp589oav8z's password:    #输入密码
.erlang.cookie                                100%   57   108.5KB/s   00:00
root@iZ2vc7a1n9gvhfp589oav7Z:~# scp /var/lib/rabbitmq/.erlang.cookie root@iZ2vc7a1n9gvhfp589oav6Z:/var/lib/rabbitmq/
root@iz2vc7a1n9gvhfp589oav6z's password:            #输入密码
.erlang.cookie                                100%   57   117.8KB/s   00:00
root@iZ2vc7a1n9gvhfp589oav7Z:~#

```

3.3 启动节点

以后端的方式启动三台RabbitMQ, 启动命令:

```
rabbitmq-server -detached
```

> - `rabbitmq-server` 是启动RabbitMQ服务的命令。
> - `-detached` 或者 `--detached` 参数表示在后台作为服务运行

4. 构建集群

为了将集群中的三个节点连接起来, 需要告诉另外两个节点加入另一个节点, 比如node1和node2加入node3节点.

加入node3之前, 必须重置两个新加入的成员, 也就是node1和node2

分别在要加入的两个机器上, 执行下面的操作命令:

```
#1. 关闭RabbitMQ服务
rabbitmqctl stop_app

#2. 重置当前节点
rabbitmqctl reset

#3.加入节点 后面跟的是node3节点
rabbitmqctl join_cluster rabbit@iZ2vc7a1n9gvhfp589oav7Z

#4. 启动服务
rabbitmqctl start_app

```

 重置节点会删除该节点上以前存在的所有资源和数据

执行结果:

```
root@iZ2vc7a1n9gvhfp589oav6Z:~# rabbitmqctl stop_app    #关闭RabbitMQ服务
Stopping rabbit application on node rabbit@iZ2vc7a1n9gvhfp589oav6Z ...
root@iZ2vc7a1n9gvhfp589oav6Z:~# rabbitmqctl reset   #重置当前节点
Resetting node rabbit@iZ2vc7a1n9gvhfp589oav6Z ...
root@iZ2vc7a1n9gvhfp589oav6Z:~# rabbitmqctl join_cluster
rabbit@iZ2vc7a1n9gvhfp589oav7Z  #加入节点
Clustering node rabbit@iZ2vc7a1n9gvhfp589oav6Z with
rabbit@iZ2vc7a1n9gvhfp589oav7Z

19:10:00.839 [warn]  Feature flags: the previous instance of this node must
have failed to write the `feature_flags` file at
`/var/lib/rabbitmq/mnesia/rabbit@iZ2vc7a1n9gvhfp589oav6Z-feature_flags`:

19:10:00.839 [warn]  Feature flags:   - list of previously disabled feature
flags now marked as such: [:maintenance_mode_status]

19:10:01.146 [error] Failed to create a tracked connection table for node
:rabbit@iZ2vc7a1n9gvhfp589oav6Z: {:node_not_running,
:rabbit@iZ2vc7a1n9gvhfp589oav6Z}

19:10:01.146 [error] Failed to create a per-vhost tracked connection table for
node :rabbit@iZ2vc7a1n9gvhfp589oav6Z: {:node_not_running,
:rabbit@iZ2vc7a1n9gvhfp589oav6Z}

19:10:01.147 [error] Failed to create a per-user tracked connection table for
node :rabbit@iZ2vc7a1n9gvhfp589oav6Z: {:node_not_running,
:rabbit@iZ2vc7a1n9gvhfp589oav6Z}
```

```
root@iZ2vc7a1n9gvhfp589oav6Z:~# rabbitmqctl start_app  #启动服务
Starting node rabbit@iZ2vc7a1n9gvhfp589oav6Z ...
root@iZ2vc7a1n9gvhfp589oav6Z:
```

5. 查看集群状态

查看集群状态

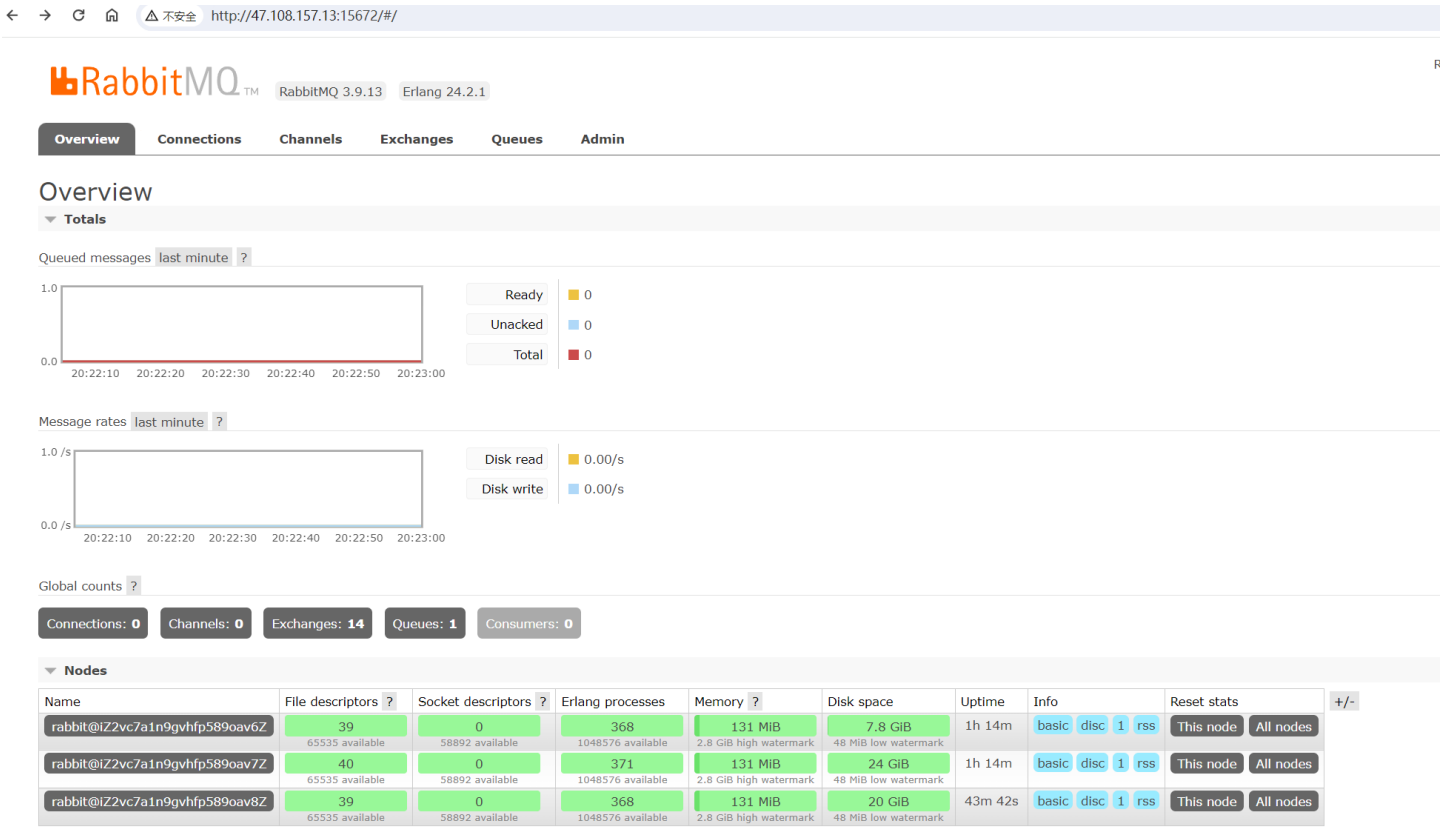
```
rabbitmqctl cluster_status
```

执行结果:

```
root@iZ2vc7a1n9gvhfp589oav7Z:~# rabbitmqctl cluster_status   #查看集群状态
Cluster status of node rabbit@iZ2vc7a1n9gvhfp589oav7Z ...
Basics

Cluster name: rabbit@iZ2vc7a1n9gvhfp589oav7Z

Disk Nodes

rabbit@iZ2vc7a1n9gvhfp589oav6Z
rabbit@iZ2vc7a1n9gvhfp589oav7Z
rabbit@iZ2vc7a1n9gvhfp589oav8Z

Running Nodes

rabbit@iZ2vc7a1n9gvhfp589oav6Z
rabbit@iZ2vc7a1n9gvhfp589oav7Z
rabbit@iZ2vc7a1n9gvhfp589oav8Z

Versions

rabbit@iZ2vc7a1n9gvhfp589oav6Z: RabbitMQ 3.9.13 on Erlang 24.2.1
rabbit@iZ2vc7a1n9gvhfp589oav7Z: RabbitMQ 3.9.13 on Erlang 24.2.1
rabbit@iZ2vc7a1n9gvhfp589oav8Z: RabbitMQ 3.9.13 on Erlang 24.2.1

Maintenance status

Node: rabbit@iZ2vc7a1n9gvhfp589oav6Z, status: not under maintenance
Node: rabbit@iZ2vc7a1n9gvhfp589oav7Z, status: not under maintenance
Node: rabbit@iZ2vc7a1n9gvhfp589oav8Z, status: not under maintenance

```

```
Alarms

(none)

Network Partitions

(none)

Listeners

Node: rabbit@iZ2vc7a1n9gvhfp589oav6Z, interface: [::], port: 25672, protocol: clustering, purpose: inter-node and CLI tool communication
Node: rabbit@iZ2vc7a1n9gvhfp589oav6Z, interface: [::], port: 5672, protocol: amqp, purpose: AMQP 0-9-1 and AMQP 1.0
Node: rabbit@iZ2vc7a1n9gvhfp589oav7Z, interface: [::], port: 15672, protocol: http, purpose: HTTP API
Node: rabbit@iZ2vc7a1n9gvhfp589oav7Z, interface: [::], port: 25672, protocol: clustering, purpose: inter-node and CLI tool communication
Node: rabbit@iZ2vc7a1n9gvhfp589oav7Z, interface: [::], port: 5672, protocol: amqp, purpose: AMQP 0-9-1 and AMQP 1.0
Node: rabbit@iZ2vc7a1n9gvhfp589oav8Z, interface: [::], port: 25672, protocol: clustering, purpose: inter-node and CLI tool communication
Node: rabbit@iZ2vc7a1n9gvhfp589oav8Z, interface: [::], port: 5672, protocol: amqp, purpose: AMQP 0-9-1 and AMQP 1.0

Feature flags

Flag: drop_unroutable_metric, state: enabled
Flag: empty_basic_get_metric, state: enabled
Flag: implicit_default_bindings, state: enabled
Flag: maintenance_mode_status, state: enabled
Flag: quorum_queue, state: enabled
Flag: stream_queue, state: enabled
Flag: user_limits, state: enabled
Flag: virtual_host_metadata, state: enabled
root@iZ2vc7a1n9gvhfp589oav7Z:~#
```

管理平台, 也可以看到集群的信息

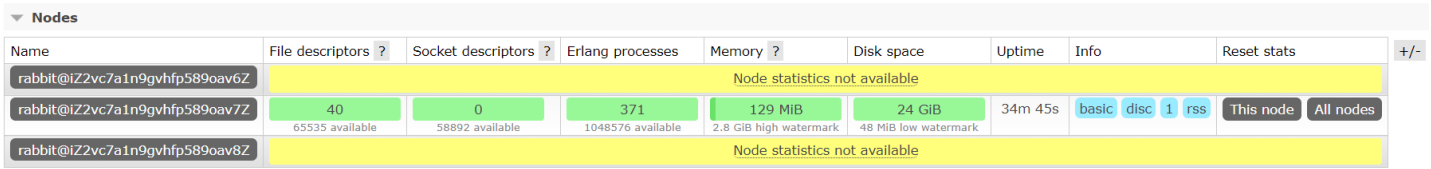


6. 常见问题

6.1 Node statistics not available

cluster搭建起来后, 如果在管理界面中, Nodes部分看到"Node statistics not available", 说明在该节点上web管理插件还未启用.

界面如下所示:



解决办法:

启动 `rabbitmq_management` 插件即可

在显示提示信息的节点上运行 `rabbitmq-plugins enable rabbitmq_management`

```
1 rabbitmq-plugins enable rabbitmq_management
```