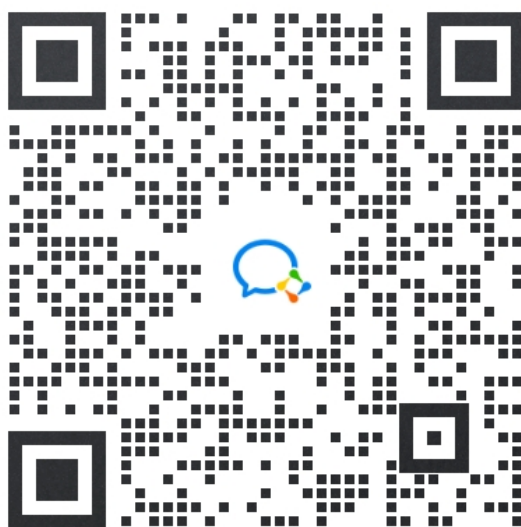


6.2 单机多节点搭建集群

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1. Ubuntu

1.1 搭建RabbitMQ单节点

1. 安装RabbitMQ

参考前面课件: [RabbitMQ单机安装]

如果已经安装过了, 此步可忽略

2. 确认RabbitMQ运行没问题

```
1 root@hcscs-ecs-2618:~# rabbitmqctl status      #查看RabbitMQ状态
2 Status of node rabbit@hcscs-ecs-2618 ...      #节点名称，下面会用到
3 Runtime
4
5 OS PID: 83170
6 OS: Linux
7 Uptime (seconds): 2511652
8 Is under maintenance?: false
9 RabbitMQ version: 3.13.1
10 RabbitMQ release series support status: supported
11 Node name: rabbit@hcscs-ecs-2618
12 Erlang configuration: Erlang/OTP 26 [erts-14.2.3] [source] [64-bit] [smp:2:2]
    [ds:2:2:10] [async-threads:1] [jit:ns]
13 Crypto library: OpenSSL 3.0.2 15 Mar 2022
14 Erlang processes: 405 used, 1048576 limit
15 Scheduler run queue: 1
16 Cluster heartbeat timeout (net_ticktime): 60
17
18 Plugins
19
20 //... 中间省略
21
22 Totals
23
24 Connection count: 0
25 Queue count: 6
26 Virtual host count: 2
27
28 Listeners
29
30 Interface: [::], port: 15672, protocol: http, purpose: HTTP API
31 Interface: [::], port: 25672, protocol: clustering, purpose: inter-node and
    CLI tool communication
32 Interface: [::], port: 5672, protocol: amqp, purpose: AMQP 0-9-1 and AMQP 1.0
33
```

端口号介绍:

- **25672**这是Erlang分布式节点通信的默认端口, Erlang是RabbitMQ的底层通信协议.
- **15672**这是 Web管理界面的默认端口, 通过这个端口可以访问RabbitMQ的Web管理控制台, 用于查看和管理消息队列.

- **5672**这是 AMQP (Advanced Message Queuing Protocol) 协议的默认端口, 用于客户端与 RabbitMQ服务器之间的通信.

3. 再启动两个节点

现在已经安装的RabbitMQ端口号是5672, 15672

再启动两个RabbitMQ服务, 节点名称和端口号分别设置为

Node name	AMQP协议端口号	Web管理界面端口
rabbit2	5673	15673
rabbit3	5674	15674

启动命令如下

```
1 RABBITMQ_NODE_PORT=5673 RABBITMQ_SERVER_START_ARGS="-rabbitmq_management  
  listener [{port,15673}]" RABBITMQ_NODENAME=rabbit2 rabbitmq-server -detached  
2  
3 RABBITMQ_NODE_PORT=5674 RABBITMQ_SERVER_START_ARGS="-rabbitmq_management  
  listener [{port,15674}]" RABBITMQ_NODENAME=rabbit3 rabbitmq-server -detached
```

执行结果:

```
1 root@hcss-ecs-2618:~# RABBITMQ_NODE_PORT=5673 RABBITMQ_SERVER_START_ARGS="-  
  rabbitmq_management listener [{port,15673}]" RABBITMQ_NODENAME=rabbit2  
  rabbitmq-server -detached  
2 root@hcss-ecs-2618:~# RABBITMQ_NODE_PORT=5674 RABBITMQ_SERVER_START_ARGS="-  
  rabbitmq_management listener [{port,15674}]" RABBITMQ_NODENAME=rabbit3  
  rabbitmq-server -detached  
3 root@hcss-ecs-2618:~#
```

4. 验证RabbitMQ启动成功

在云服务器开通 15673, 15674端口号

分别测试:<http://124.71.229.73:15672/> <http://124.71.229.73:15673/> <http://124.71.229.73:15674/>

http://124.71.229.73:15672



Username: *

Password: *

Login

⚠ 不安全 http://124.71.229.73:15673/#/



Username: *

Password: *

Login

⚠ 不安全 http://124.71.229.73:15674/#/



Username: *

Password: *

Login

1.2 搭建集群

1. 停止服务并重置

停止目的是为了重置

```
1 rabbitmqctl -n rabbit2 stop_app
2 rabbitmqctl -n rabbit2 reset
3
4 rabbitmqctl -n rabbit3 stop_app
5 rabbitmqctl -n rabbit3 reset
```

运行结果

```
1 root@hcss-ecs-2618:~# rabbitmqctl -n rabbit2 stop_app
2 Stopping rabbit application on node rabbit2@hcss-ecs-2618 ...
3 root@hcss-ecs-2618:~# rabbitmqctl -n rabbit2 reset
4 Resetting node rabbit2@hcss-ecs-2618 ...
5 root@hcss-ecs-2618:~# rabbitmqctl -n rabbit3 stop_app
6 Stopping rabbit application on node rabbit3@hcss-ecs-2618 ...
7 root@hcss-ecs-2618:~# rabbitmqctl -n rabbit3 reset
8 Resetting node rabbit3@hcss-ecs-2618 ...
9 root@hcss-ecs-2618:~#
10
```

2. 把rabbit2, rabbit3添加到集群

rabbit@hcss-ecs-2618 是主节点的node Name, 可以通过 `rabbitmqctl status` 查询

```
1 root@hcss-ecs-2618:~# rabbitmqctl -n rabbit2 join_cluster rabbit@hcss-ecs-2618
2 Clustering node rabbit2@hcss-ecs-2618 with rabbit@hcss-ecs-2618
3 root@hcss-ecs-2618:~# rabbitmqctl -n rabbit3 join_cluster rabbit@hcss-ecs-2618
4 Clustering node rabbit3@hcss-ecs-2618 with rabbit@hcss-ecs-2618
5 root@hcss-ecs-2618:~#
```

3. 重启rabbit2,rabbit3

```
1 root@hcss-ecs-2618:~# rabbitmqctl -n rabbit2 start_app
2 Starting node rabbit2@hcss-ecs-2618 ...
3 root@hcss-ecs-2618:~# rabbitmqctl -n rabbit3 start_app
4 Starting node rabbit3@hcss-ecs-2618 ...
5 root@hcss-ecs-2618:~#
6
```

4. 查看集群状态

```
1 rabbitmqctl cluster_status -n rabbit
```

运行结果

```
1 root@hcss-ecs-2618:~# rabbitmqctl cluster_status -n rabbit
2 Cluster status of node rabbit@hcss-ecs-2618 ...
3 Basics
4
5 Cluster name: rabbit@hcss-ecs-2618
6 Total CPU cores available cluster-wide: 6
7
8 Disk Nodes
9
10 rabbit2@hcss-ecs-2618
11 rabbit3@hcss-ecs-2618
12 rabbit@hcss-ecs-2618
13
14 Running Nodes
```

```
15
16 rabbit2@hcscs-ecs-2618
17 rabbit3@hcscs-ecs-2618
18 rabbit@hcscs-ecs-2618
19
20 Versions
21
22 rabbit@hcscs-ecs-2618: RabbitMQ 3.13.2 on Erlang 26.2.5
23 rabbit2@hcscs-ecs-2618: RabbitMQ 3.13.2 on Erlang 26.2.5
24 rabbit3@hcscs-ecs-2618: RabbitMQ 3.13.2 on Erlang 26.2.5
25
26 CPU Cores
27
28 Node: rabbit@hcscs-ecs-2618, available CPU cores: 2
29 Node: rabbit2@hcscs-ecs-2618, available CPU cores: 2
30 Node: rabbit3@hcscs-ecs-2618, available CPU cores: 2
31
32 Maintenance status
33
34 Node: rabbit@hcscs-ecs-2618, status: not under maintenance
35 Node: rabbit2@hcscs-ecs-2618, status: not under maintenance
36 Node: rabbit3@hcscs-ecs-2618, status: not under maintenance
37
38 Alarms
39
40 (none)
41
42 Network Partitions
43
44 (none)
45
46 Listeners
47
48 Node: rabbit@hcscs-ecs-2618, interface: [::], port: 15672, protocol: http,
  purpose: HTTP API
49 Node: rabbit@hcscs-ecs-2618, interface: [::], port: 25672, protocol:
  clustering, purpose: inter-node and CLI tool communication
50 Node: rabbit@hcscs-ecs-2618, interface: [::], port: 5672, protocol: amqp,
  purpose: AMQP 0-9-1 and AMQP 1.0
51 Node: rabbit2@hcscs-ecs-2618, interface: [::], port: 15673, protocol: http,
  purpose: HTTP API
52 Node: rabbit2@hcscs-ecs-2618, interface: [::], port: 25673, protocol:
  clustering, purpose: inter-node and CLI tool communication
53 Node: rabbit2@hcscs-ecs-2618, interface: [::], port: 5673, protocol: amqp,
  purpose: AMQP 0-9-1 and AMQP 1.0
54 Node: rabbit3@hcscs-ecs-2618, interface: [::], port: 15674, protocol: http,
  purpose: HTTP API
```

```
55 Node: rabbit3@hcss-ecs-2618, interface: [::], port: 25674, protocol:
    clustering, purpose: inter-node and CLI tool communication
56 Node: rabbit3@hcss-ecs-2618, interface: [::], port: 5674, protocol: amqp,
    purpose: AMQP 0-9-1 and AMQP 1.0
57
58 Feature flags
59
60 Flag: classic_mirrored_queue_version, state: enabled
61 Flag: classic_queue_type_delivery_support, state: enabled
62 Flag: detailed_queues_endpoint, state: disabled
63 Flag: direct_exchange_routing_v2, state: enabled
64 Flag: drop_unroutable_metric, state: enabled
65 Flag: empty_basic_get_metric, state: enabled
66 Flag: feature_flags_v2, state: enabled
67 Flag: implicit_default_bindings, state: enabled
68 Flag: khepri_db, state: disabled
69 Flag: listener_records_in_ets, state: enabled
70 Flag: maintenance_mode_status, state: enabled
71 Flag: message_containers, state: enabled
72 Flag: quorum_queue, state: enabled
73 Flag: quorum_queue_non_voters, state: enabled
74 Flag: restart_streams, state: enabled
75 Flag: stream_filtering, state: enabled
76 Flag: stream_queue, state: enabled
77 Flag: stream_sac_coordinator_unblock_group, state: enabled
78 Flag: stream_single_active_consumer, state: enabled
79 Flag: stream_update_config_command, state: enabled
80 Flag: tracking_records_in_ets, state: enabled
81 Flag: user_limits, state: enabled
82 Flag: virtual_host_metadata, state: enabled
83 root@hcss-ecs-2618:~#
84
85
```

通过主节点(rabbit)管理界面, 可以看到集群其他节点

⚠ All stable feature flags must be enabled after completing an upgrade. [\[Learn more\]](#)

Overview Connections Channels Exchanges Queues and Streams Admin

Overview

Totals

Queued messages

last minute

 ?

Currently idle

Message rates

last minute

 ?

Currently idle

Global counts ?

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

Nodes									
Name	File descriptors ?	Socket descriptors ?	Erlang processes	Memory ?	Disk space	Uptime	Info	Reset stats	+/-
rabbit2@hcscs-ecs-2618	39 65535 available	0 58892 available	381 1048576 available	133 MiB 713 MiB high watermark	19 GiB 48 MiB low watermark	19m 14s	basic disc 1 rss	This node All nodes	
rabbit3@hcscs-ecs-2618	39 65535 available	0 58892 available	379 1048576 available	133 MiB 713 MiB high watermark	19 GiB 48 MiB low watermark	17m 34s	basic disc 1 rss	This node All nodes	
rabbit@hcscs-ecs-2618	47 32768 available	0 29401 available	388 1048576 available	137 MiB 713 MiB high watermark	19 GiB 48 MiB low watermark	37m 27s	basic disc 1 rss	This node All nodes	

2. CentOS

2.1 搭建RabbitMQ单节点

1. 安装RabbitMQ

参考前面课件: [RabbitMQ单机安装]

如果已经安装过了, 此步可忽略

2. 确认RabbitMQ运行没问题

```
1 [root@VM-24-3-centos ~]# rabbitmqctl status #查看RabbitMQ状态
2 Status of node rabbit@VM-24-3-centos ... #节点名称, 后面会使用
3 Runtime
4
5 OS PID: 999
6 OS: Linux
7 Uptime (seconds): 587245
8 Is under maintenance?: false
9 RabbitMQ version: 3.8.30
10 Node name: rabbit@VM-24-3-centos
11 Erlang configuration: Erlang/OTP 23 [erts-11.2.2.10] [source] [64-bit]
    [smp:2:2] [ds:2:2:10] [async-threads:1] [hipe]
12 Erlang processes: 369 used, 1048576 limit
13 Scheduler run queue: 1
14 Cluster heartbeat timeout (net_ticktime): 60
15
16 //... 中间省略
17
18 Totals
```



```
19
20 Connection count: 0
21 Queue count: 0
22 Virtual host count: 1
23
24 Listeners
25
26 Interface: [::], port: 15672, protocol: http, purpose: HTTP API
27 Interface: [::], port: 25672, protocol: clustering, purpose: inter-node and
  CLI tool communication
28 Interface: [::], port: 5672, protocol: amqp, purpose: AMQP 0-9-1 and AMQP 1.0
29 [root@VM-24-3-centos ~]#
30
```

3. 再启动两个节点

现在已经安装的RabbitMQ端口号是5672, 15672

再启动两个RabbitMQ服务, 节点名称和端口号分别设置为

Node name	AMQP协议端口号	Web管理界面端口
rabbit2	5673	15673
rabbit3	5674	15674

启动命令如下

```
1 RABBITMQ_NODE_PORT=5673 RABBITMQ_SERVER_START_ARGS="--rabbitmq_management
  listener [{port,15673}]" RABBITMQ_NODENAME=rabbit2 rabbitmq-server -detached
2
3 RABBITMQ_NODE_PORT=5674 RABBITMQ_SERVER_START_ARGS="--rabbitmq_management
  listener [{port,15674}]" RABBITMQ_NODENAME=rabbit3 rabbitmq-server -detached
```

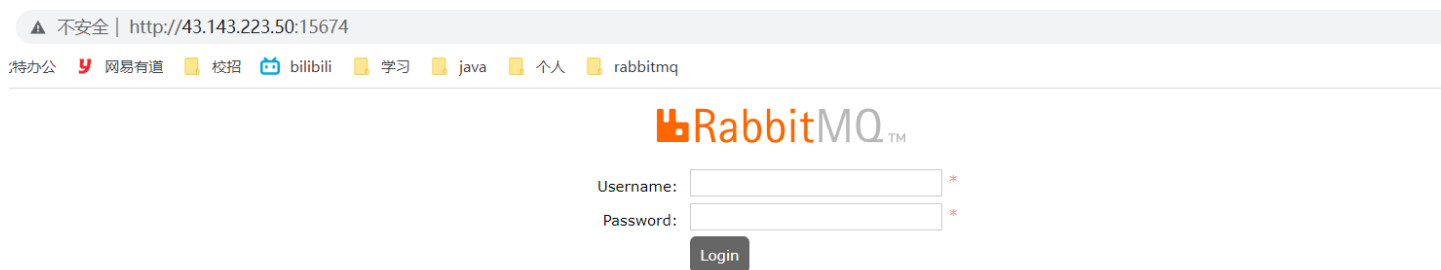
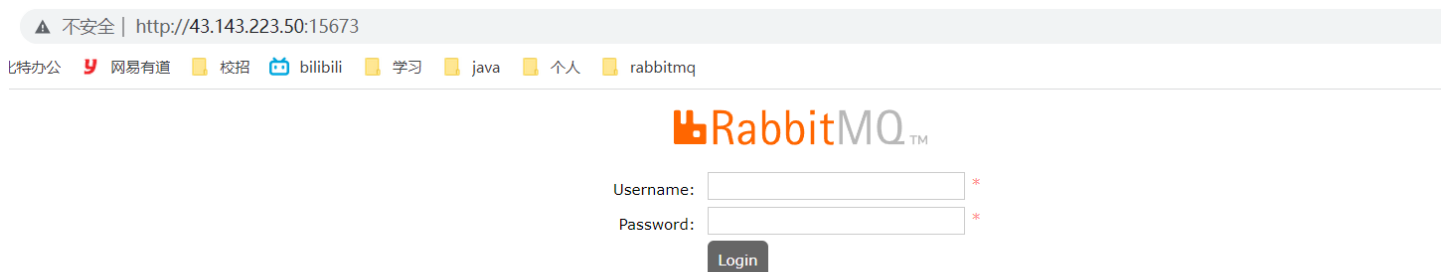
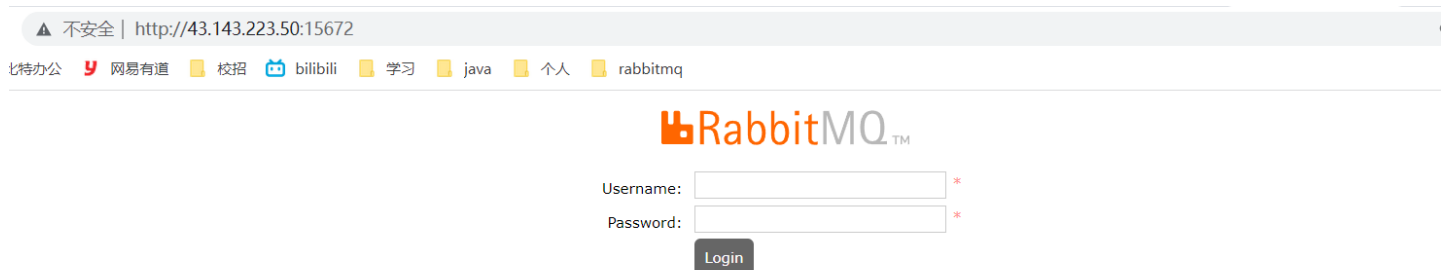
执行结果:

```
1 [root@VM-24-3-centos ~]# RABBITMQ_NODE_PORT=5673 RABBITMQ_SERVER_START_ARGS="--
  rabbitmq_management listener [{port,15673}]" RABBITMQ_NODENAME=rabbit2
  rabbitmq-server -detached
2 [root@VM-24-3-centos ~]# RABBITMQ_NODE_PORT=5674 RABBITMQ_SERVER_START_ARGS="--
  rabbitmq_management listener [{port,15674}]" RABBITMQ_NODENAME=rabbit3
  rabbitmq-server -detached
3 [root@VM-24-3-centos ~]#
```

4. 验证RabbitMQ启动成功

在云服务器开通 15673, 15674端口号

分别测试:<http://43.143.223.50:15672/> <http://43.143.223.50:15673/> <http://43.143.223.50:15674/>



2.2 搭建集群

1. 停止服务并重置

停止目的是为了重置

```
1 rabbitmqctl -n rabbit2 stop_app
2 rabbitmqctl -n rabbit2 reset
3
4 rabbitmqctl -n rabbit3 stop_app
5 rabbitmqctl -n rabbit3 reset
```

运行结果

```
1 [root@VM-24-3-centos rabbitmq]# rabbitmqctl -n rabbit2 stop_app
2 Stopping rabbit application on node rabbit3@VM-24-3-centos ...
3 [root@VM-24-3-centos rabbitmq]# rabbitmqctl -n rabbit2 reset
4 Resetting node rabbit3@VM-24-3-centos ...
5 [root@VM-24-3-centos rabbitmq]#
6 [root@VM-24-3-centos rabbitmq]# rabbitmqctl -n rabbit3 stop_app
7 Stopping rabbit application on node rabbit4@VM-24-3-centos ...
8 [root@VM-24-3-centos rabbitmq]# rabbitmqctl -n rabbit3 reset
9 Resetting node rabbit4@VM-24-3-centos ...
10 [root@VM-24-3-centos rabbitmq]#
```

2. 把rabbit2, rabbit3添加到集群

rabbit@VM-24-3-centos 是主节点的node Name, 可以通过 `rabbitmqctl status` 查询

```
1 [root@VM-24-3-centos rabbitmq]# rabbitmqctl -n rabbit2 join_cluster rabbit@VM-
24-3-centos
2 Clustering node rabbit3@VM-24-3-centos with rabbit@VM-24-3-centos
3 [root@VM-24-3-centos rabbitmq]#
4
5 [root@VM-24-3-centos rabbitmq]# rabbitmqctl -n rabbit3 join_cluster rabbit@VM-
24-3-centos
6 Clustering node rabbit4@VM-24-3-centos with rabbit@VM-24-3-centos
7 [root@VM-24-3-centos rabbitmq]#
```

3. 重启rabbit2,rabbit3

```
1 [root@VM-24-3-centos rabbitmq]# rabbitmqctl -n rabbit2 start_app
2 Starting node rabbit3@VM-24-3-centos ...
3 [root@VM-24-3-centos rabbitmq]# rabbitmqctl -n rabbit3 start_app
4 Starting node rabbit4@VM-24-3-centos ...
5 [root@VM-24-3-centos rabbitmq]#
6
```

4. 查看集群状态


```
1 rabbitmqctl cluster_status -n rabbit
```

运行结果

```
1 [root@VM-24-3-centos rabbitmq]# rabbitmqctl cluster_status -n rabbit
2 Cluster status of node rabbit@VM-24-3-centos ...
3 Basics
4
5 Cluster name: rabbit@VM-24-3-centos
6
7 Disk Nodes
8
9 rabbit3@VM-24-3-centos
10 rabbit2@VM-24-3-centos
11 rabbit@VM-24-3-centos
12
13 Running Nodes
14
15 rabbit3@VM-24-3-centos
16 rabbit2@VM-24-3-centos
17 rabbit@VM-24-3-centos
18
19 Versions
20
21 rabbit3@VM-24-3-centos: RabbitMQ 3.8.30 on Erlang 23.3.4.11
22 rabbit4@VM-24-3-centos: RabbitMQ 3.8.30 on Erlang 23.3.4.11
23 rabbit@VM-24-3-centos: RabbitMQ 3.8.30 on Erlang 23.3.4.11
24
25 Maintenance status
26
27 Node: rabbit3@VM-24-3-centos, status: not under maintenance
28 Node: rabbit4@VM-24-3-centos, status: not under maintenance
29 Node: rabbit@VM-24-3-centos, status: not under maintenance
30
31 Alarms
32
33 (none)
34
35 Network Partitions
36
37 (none)
38
39 Listeners
40
41 Node: rabbit3@VM-24-3-centos, interface: [::], port: 15673, protocol: http,
    purpose: HTTP API
42 Node: rabbit3@VM-24-3-centos, interface: [::], port: 25673, protocol:
    clustering, purpose: inter-node and CLI tool communication
43 Node: rabbit3@VM-24-3-centos, interface: [::], port: 5673, protocol: amqp,
    purpose: AMQP 0-9-1 and AMQP 1.0
```

```
44 Node: rabbit4@VM-24-3-centos, interface: [::], port: 15674, protocol: http,
    purpose: HTTP API
45 Node: rabbit4@VM-24-3-centos, interface: [::], port: 25674, protocol:
    clustering, purpose: inter-node and CLI tool communication
46 Node: rabbit4@VM-24-3-centos, interface: [::], port: 5674, protocol: amqp,
    purpose: AMQP 0-9-1 and AMQP 1.0
47 Node: rabbit@VM-24-3-centos, interface: [::], port: 15672, protocol: http,
    purpose: HTTP API
48 Node: rabbit@VM-24-3-centos, interface: [::], port: 25672, protocol:
    clustering, purpose: inter-node and CLI tool communication
49 Node: rabbit@VM-24-3-centos, interface: [::], port: 5672, protocol: amqp,
    purpose: AMQP 0-9-1 and AMQP 1.0
50
51 Feature flags
52
53 Flag: drop_unroutable_metric, state: enabled
54 Flag: empty_basic_get_metric, state: enabled
55 Flag: implicit_default_bindings, state: enabled
56 Flag: maintenance_mode_status, state: enabled
57 Flag: quorum_queue, state: enabled
58 Flag: user_limits, state: enabled
59 Flag: virtual_host_metadata, state: enabled
60 [root@VM-24-3-centos rabbitmq]#
61
```

通过主节点(rabbit)管理界面, 可以看到集群其他节点

 RabbitMQ 3.8.30 Erlang 23.3.4.11 Refreshed 2022-12-10 23:07:10

Overview Connections Channels Exchanges Queues Admin

Overview

▼ Totals

Queued messages last minute ?

Currently idle

Message rates last minute ?

Currently idle

Global counts ?

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

▼ Nodes

Name	File descriptors ?	Socket descriptors ?	Erlang processes	Memory ?	Disk space	Uptime	Info	Reset stats	+/-
rabbit3@VM-24-3-centos	100 100001 available	0 89911 available	368 1048576 available	86 MiB 799 MiB high watermark 30 GiB low watermark	30 GiB	1h 59m	basic disc 1 rss	This node All nodes	
rabbit2@VM-24-3-centos	100 100001 available	0 89911 available	368 1048576 available	86 MiB 799 MiB high watermark 30 GiB low watermark	30 GiB	1h 57m	basic disc 1 rss	This node All nodes	
rabbit@VM-24-3-centos	41 32768 available	0 29401 available	375 1048576 available	91 MiB 799 MiB high watermark 30 GiB low watermark	30 GiB	2h 15m	basic disc 1 rss	This node All nodes	