

RabbitMQ Cluster

- [Clustering Guide — RabbitMQ](#)
- [RabbitMQ Learning III: RabbitMQ Clustering and Load Balancing](#)
- [How to Set Up the RabbitMQ Cluster on Ubuntu/Debian Linux](#)
- [Clustering Guide \(vmware.com\)](#)
- [RabbitMQ ???? \(with HAProxy\)](#)
- [RabbitMQ?????? | guaosi???](#)

For Windows only

- [??? Windwos ??? RabbitMQ Cluster](#)

A few things to RabbitMQ Cluster

- Classic Queues ????? Cluster ???? node????????????? node ?????????? Queues ??????? nodes???????? [Quorum Queues?](#)
- Cluster ???? node ?????? peer?????????????????????
- Cluster ??? node ???? cookie ??????cookie ????
`/var/lib/rabbitmq/.erlang.cookie` ?
- ?? Cluster ?? ? Node ?????????????? 3?5?7????????????????????? node ?????????? Cluster ??????????????????
- ?? Node ?????????????????? 1 ? Node ?????????????????????????????? 2 ?Node ??????????????????????????????
- Cluster ?????????? LAN?????? WAN????????? Cluster ??? Node ?????????????????????????????? Node ?????????? 60 ??Cluster ???? Network Partition ??????? split-brain (??) ?? ?????????????? Cluster ??????????????????????[Clustering and Network Partitions](#)
- ?? Cluster ??????????????????????Queues?Exchanges?Routing Key?????????????????????
- Node Plugin ??????????

?????

1. tpeeaprmq98 (node01)
2. tpeeaprmq981 (node02)
3. tpeeaprmq982 (node03)

/etc/hosts:

Verify the cluster status

```
[root@tpeeaprmq98 ~]# rabbitmqctl cluster_status
Cluster status of node rabbit@tpeeaprmq98 ...
Basics

Cluster name: rabbit@tpeeaprmq98

Disk Nodes

rabbit@tpeeaprmq98

Running Nodes

rabbit@tpeeaprmq98

Versions

rabbit@tpeeaprmq98: RabbitMQ 3.10.7 on Erlang 25.0.4

Maintenance status

Node: rabbit@tpeeaprmq98, status: not under maintenance

Alarms

(none)

Network Partitions

(none)

Listeners

Node: rabbit@tpeeaprmq98, interface: [::], port: 15672, protocol: http, purpose: HTTP API
Node: rabbit@tpeeaprmq98, interface: [::], port: 1883, protocol: mqtt, purpose: MQTT
Node: rabbit@tpeeaprmq98, interface: [::], port: 25672, protocol: clustering, purpose: inter-
node and CLI tool communication
```

Node: rabbit@tpeeaprmq98, interface: [::], port: 15690, protocol: amqp, purpose: AMQP 0-9-1 and AMQP 1.0

Feature flags

Flag: classic_mirrored_queue_version, state: enabled

Flag: drop_unroutable_metric, state: disabled

Flag: empty_basic_get_metric, state: disabled

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@tpeeaprmq981 ~]# rabbitmqctl cluster_status
```

Cluster status of node rabbit@tpeeaprmq981 ...

Basics

Cluster name: rabbit@tpeeaprmq981

Disk Nodes

rabbit@tpeeaprmq981

Running Nodes

rabbit@tpeeaprmq981

Versions

rabbit@tpeeaprmq981: RabbitMQ 3.10.7 on Erlang 25.0.4

Maintenance status

Node: rabbit@tpeeaprmq981, status: not under maintenance

Alarms

(none)

Network Partitions

(none)

Listeners

Node: rabbit@tpeeaprmq981, interface: [::], port: 15672, protocol: http, purpose: HTTP API

Node: rabbit@tpeeaprmq981, interface: [::], port: 1883, protocol: mqtt, purpose: MQTT

Node: rabbit@tpeeaprmq981, interface: [::], port: 25672, protocol: clustering, purpose: inter-node and CLI tool communication

Node: rabbit@tpeeaprmq981, interface: [::], port: 15690, protocol: amqp, purpose: AMQP 0-9-1 and AMQP 1.0

Feature flags

Flag: classic_mirrored_queue_version, state: enabled

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@tpeeaprmq982 ~]# rabbitmqctl cluster_status
```

```
Cluster status of node rabbit@tpeeaprmq982 ...
```

```
Basics
```

```
Cluster name: rabbit@tpeeaprmq982
```

```
Disk Nodes
```

```
rabbit@tpeeaprmq982
```

```
Running Nodes
```

```
rabbit@tpeeaprmq982
```

Versions

rabbit@tpeeaprmq982: RabbitMQ 3.10.7 on Erlang 25.0.4

Maintenance status

Node: rabbit@tpeeaprmq982, status: not under maintenance

Alarms

(none)

Network Partitions

(none)

Listeners

Node: rabbit@tpeeaprmq982, interface: [::], port: 15672, protocol: http, purpose: HTTP API

Node: rabbit@tpeeaprmq982, interface: [::], port: 1883, protocol: mqtt, purpose: MQTT

Node: rabbit@tpeeaprmq982, interface: [::], port: 25672, protocol: clustering, purpose: inter-node and CLI tool communication

Node: rabbit@tpeeaprmq982, interface: [::], port: 15690, protocol: amqp, purpose: AMQP 0-9-1 and AMQP 1.0

Feature flags

Flag: classic_mirrored_queue_version, state: enabled

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

Creating a Cluster

? node02 ? node03 ??? node01?

```
# On Node02
rabbitmqctl stop_app
rabbitmqctl reset
rabbitmqctl join_cluster rabbit@tpeeaprmq98
rabbitmqctl start_app

# On Node03
rabbitmqctl stop_app
rabbitmqctl reset
rabbitmqctl join_cluster rabbit@tpeeaprmq98
rabbitmqctl start_app
```

?? cluster ??????????????????

```
[root@tpeeaprmq981 ~]# rabbitmqctl join_cluster rabbit@tpeeaprmq98
Clustering node rabbit@tpeeaprmq981 with rabbit@tpeeaprmq98

15:10:18.438 [warning] Feature flags: the previous instance of this node must have failed to
write the `feature_flags` file at `/var/lib/rabbitmq/mnesia/rabbit@tpeeaprmq981-
feature_flags`:

15:10:18.438 [warning] Feature flags: - list of previously disabled feature flags now marked
as such: [:maintenance_mode_status]

15:10:18.561 [warning] Feature flags: the previous instance of this node must have failed to
write the `feature_flags` file at `/var/lib/rabbitmq/mnesia/rabbit@tpeeaprmq981-
feature_flags`:

15:10:18.561 [warning] Feature flags: - list of previously enabled feature flags now marked
as such: [:maintenance_mode_status]

15:10:18.598 [error] Failed to create a tracked connection table for node
:rabbit@tpeeaprmq981: {:node_not_running, :rabbit@tpeeaprmq981}

15:10:18.598 [error] Failed to create a per-vhost tracked connection table for node
:rabbit@tpeeaprmq981: {:node_not_running, :rabbit@tpeeaprmq981}

15:10:18.599 [error] Failed to create a per-user tracked connection table for node
:rabbit@tpeeaprmq981: {:node_not_running, :rabbit@tpeeaprmq981}
```

Verify the cluster status

?? node ? Cluster ??????????? Cluster name ?????????? node name?

```
[root@tpeeaprmq98 ~]# rabbitmqctl cluster_status
```

```
Cluster status of node rabbit@tpeeaprmq98 ...
```

Basics

```
Cluster name: rabbit@tpeeaprmq98
```

Disk Nodes

```
rabbit@tpeeaprmq98
```

```
rabbit@tpeeaprmq981
```

```
rabbit@tpeeaprmq982
```

Running Nodes

```
rabbit@tpeeaprmq98
```

```
rabbit@tpeeaprmq981
```

```
rabbit@tpeeaprmq982
```

Versions

```
rabbit@tpeeaprmq98: RabbitMQ 3.10.7 on Erlang 25.0.4
```

```
rabbit@tpeeaprmq981: RabbitMQ 3.10.7 on Erlang 25.0.4
```

```
rabbit@tpeeaprmq982: RabbitMQ 3.10.7 on Erlang 25.0.4
```

Maintenance status

```
Node: rabbit@tpeeaprmq98, status: not under maintenance
```

```
Node: rabbit@tpeeaprmq981, status: not under maintenance
```

```
Node: rabbit@tpeeaprmq982, status: not under maintenance
```

Alarms

```
(none)
```

Network Partitions

(none)

Listeners

Node: rabbit@tpeeaprmq98, interface: [::], port: 15672, protocol: http, purpose: HTTP API
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Node: rabbit@tpeeaprmq98, interface: [::], port: 15690, protocol: amqp, purpose: AMQP 0-9-1
and AMQP 1.0
Node: rabbit@tpeeaprmq981, interface: [::], port: 15672, protocol: http, purpose: HTTP API
Node: rabbit@tpeeaprmq981, interface: [::], port: 1883, protocol: mqtt, purpose: MQTT
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and AMQP 1.0
Node: rabbit@tpeeaprmq982, interface: [::], port: 15672, protocol: http, purpose: HTTP API
Node: rabbit@tpeeaprmq982, interface: [::], port: 1883, protocol: mqtt, purpose: MQTT
Node: rabbit@tpeeaprmq982, interface: [::], port: 25672, protocol: clustering, purpose: inter-
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Feature flags

Flag: classic_mirrored_queue_version, state: enabled
Flag: drop_unroutable_metric, state: enabled
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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

Node ??

?? Cluster???? Cluster ??????????

```
systemctl disable rabbitmq-server
```

?? Node

```
# Recommend using systemd
systemctl stop rabbitmq-server
systemctl start rabbitmq-server

# Using rabbitmqctl + systemd
rabbitmqctl stop
systemctl start rabbitmq-server

# Using rabbitmqctl
# Stop the node
rabbitmqctl stop
# Start the node
rabbitmq-server -detached
# Verify if the node is awaiting schema table sync
rabbitmq-diagnostics check_running

# Forcing node boot
rabbitmqctl force_boot
```

??? Node

“ NOTE: ??? Cluster ?????????Queues?Exchange ?????????????? Node?

```
# Find out the path of Erlang Cookie file
rabbitmq-diagnostics erlang_cookie_sources
# Copy Cookie from one node of the cluster
scp /var/lib/rabbitmq/.erlang.cookie root@<new-node>:/var/lib/rabbitmq/

# Join a new node into the cluster rabbit@tpeeaprmq98
rabbitmqctl stop_app
rabbitmqctl reset
rabbitmqctl join_cluster <cluster-name>
rabbitmqctl start_app
# Alternatively, you can join it as RAM node by following command
rabbitmqctl join_cluster <cluster-name> --ram
```

?? Node

“ NOTE: Node ?? Cluster ???? Node ???????Queues?Exchange
???????????????

```
# node
# node
rabbitmqctl stop_app
rabbitmqctl reset
rabbitmqctl start_app
rabbitmqctl cluster_status

# node
# Cluster node
rabbitmqctl forget_cluster_node <node-name>
```

Rebalance the queues across node

?? quorum queue ??? node ?????????????????? node????????????? **Leader node?????**
Follower node?

Queue ??????? Leader node ??????? Leader node ?????????????? Follower nodes
????????????? Leader node?

?? quorum queue ? Leader node ?????????????? node ?????????????????????? node?

- After restarting a node
- After joining a node

“ NOTE: ?? queue ??? Leader node ??? Web-UI ???

queue ? Leader Node ? Channel Node ??????????????????

```
rabbitmq-queues rebalance all
rabbitmq-queues rebalance "all" --vhost-pattern "itp_server" --queue-pattern ".*"
```

Revision #41

Created 2022-09-26 13:28:29 CST by A-Lang (Admin)

Updated 2023-04-11 15:46:31 CST by A-Lang (Admin)