

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:

```
10.14.2.51    tpeeaprmq98
10.4.1.33    tpeeaprmq981
10.4.1.34    tpeeaprmq982
```

?? RabbitMQ

?????????? RabbitMQ ??????

?? Cookie ???

?? node ??????? Erlang cookie ?????

???? RabbitMQ ???cookie ????????????????????????????????????? 0600 ???? Cluster ???
node ??????? cookit ??

```
scp /var/lib/rabbitmq/.erlang.cookie root@tpeeaprmq981:/var/lib/rabbitmq/
scp /var/lib/rabbitmq/.erlang.cookie root@tpeeaprmq982:/var/lib/rabbitmq/
```

cookie ???

```
????? /var/lib/rabbitmq/.erlang.cookie ?
```

```
rabbitmq-diagnostics erlang_cookie_sources
```

?? Cluster

Detach the service of all nodes

???? Cluster ????? node ??????? Cluster?

```
# On Node01
rabbitmq-server -detached

# On Node02
rabbitmq-server -detached

# On Node03
```

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
Node: rabbit@tpeeaprmq98, interface: [::], port: 1883, protocol: mqtt, purpose: MQTT
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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
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
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

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 ".*"
```

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