

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

```
Node: rabbit@tpeeaprmq98, status: not under maintenance
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```
Node: rabbit@tpeeaprmq981, status: not under maintenance
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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
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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
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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
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Feature flags

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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 26 September 2022 13:28:29 by Admin

Updated 11 April 2023 15:46:31 by Admin