



Operations Manual

金蝶Apusic分布式消息队列 V2.0.6_for_rabbitmq

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1 Preface

This document is the operations manual for Kingdee Apusic Distributed Message Queue for RabbitMQ (Apusic Distributed Message Queue, abbreviated as: ADMQ for RabbitMQ). It aims to provide middleware operations personnel with standardized operation guidelines for ADMQ for RabbitMQ, covering core scenarios such as installation and deployment, configuration optimization, daily operations, troubleshooting, and security hardening, ensuring stable, efficient, and secure operation of ADMQ for RabbitMQ services.

1.1 Target Audience

This document is applicable to IT information business leaders, R&D managers, software project managers, software architects, and operations engineers.

1.2 Related Documents

For more information about ADMQ for RabbitMQ products, please refer to the following ADMQ for RabbitMQ product documentation set:

No.	Document	Description
1	Kingdee Apusic Distributed Message Queue for RabbitMQ Quick Start Guide	Briefly introduces how to get started with ADMQ for RabbitMQ.
2	Kingdee Apusic Distributed Message Queue for RabbitMQ Installation Guide	Details how to install ADMQ for RabbitMQ on various operating systems, as well as service start/stop operations.
3	Kingdee Apusic Distributed Message Queue for RabbitMQ Message Engine User Guide	Details the usage, configuration, management, and supporting tools of the ADMQ for RabbitMQ message engine.
4	Kingdee Apusic Distributed Message Queue for RabbitMQ Management Console User Guide	Details the usage and operation instructions of the ADMQ for RabbitMQ management console.
5	Kingdee Apusic Distributed Message Queue for RabbitMQ Developer Guide	Details the development of ADMQ for RabbitMQ client applications using various programming languages.
6	Kingdee Apusic Distributed Message Queue for RabbitMQ Migration Guide	Details the migration from RabbitMQ to ADMQ for RabbitMQ.

7	Kingdee Apusic Distributed Message Queue for RabbitMQ Operations Manual	Details monitoring, operations, security hardening, and other operational aspects of ADMQ for RabbitMQ.
8	Kingdee Apusic Distributed Message Queue for RabbitMQ Performance Optimization Guide	Details performance tuning for ADMQ for RabbitMQ.

1.3 Technical Support

ADMQ for RabbitMQ provides comprehensive technical support services. You can obtain technical support through the following channels:

- Website: www.apusic.com
- Phone: 400-855-5800
- Email: support@apusic.com
- Kingdee Cloud Community: <https://vip.kingdee.com/?productId=73&productLineId=14&lang=zh-CN>

When contacting technical support, please provide the following information:

1. Your name
2. Company information and contact details
3. Operating system and its version
4. Product version number
5. Detailed information such as error logs and screenshots

2 Daily Operations

2.1 Service Management

2.1.1 Start Service

```
# Start RabbitMQ service
bin/admq-daemon start rabbitmq server

# Start application (bin/admq rabbitmq admin ctl)
bin/admq rabbitmq admin ctl start_app
```

2.1.2 Stop Service

```
# Stop application
bin/admq rabbitmq admin ctl stop_app

# Stop RabbitMQ service
bin/admq-daemon stop rabbitmq server
```

2.1.3 View Service Status

```
# View service status
bin/admq rabbitmq admin status

# View node status
bin/admq rabbitmq admin ctl status

# View cluster status
bin/admq rabbitmq admin ctl cluster_status
```

2.1.4 Restart Service

```
# Restart service
bin/admq-daemon restart rabbitmq server
```

2.2 Log Management

2.2.1 Log Locations

Log Type	Path	Description
Service Log	./log/rabbitmq/ rabbit@hostname.log	RabbitMQ main log
Startup Log	./log/rabbitmq/ rabbit@hostname-sasl.log	SASL log
Management Console Log	./logs/	Management console runtime log

2.3 Monitoring Checks

2.3.1 Daily Check List

Check Item	Check Command	Normal Standard
Node Status	bin/admq rabbitmq admin ctl status	Node running normally
Cluster Status	bin/admq rabbitmq admin ctl cluster_status	All nodes online
Memory Usage	bin/admq rabbitmq admin ctl status	Below vm_memory_high_watermark
Disk Space	df -h	Above disk_free_limit
Connection Count	bin/admq rabbitmq admin ctl list_connections	Within normal range
Queue Backlog	bin/admq rabbitmq admin ctl list_queues messages	No abnormal backlog
Consumer Count	bin/admq rabbitmq admin ctl list_queues consumers	Consumers online normally

2.3.2 Health Check Script

```
#!/bin/bash

# Node health check
bin/admq rabbitmq admin diagnostics health_check

# Memory check
bin/admq rabbitmq admin diagnostics memory_breakdown

# Alert queue check
bin/admq rabbitmq admin ctl list_queues name messages consumers |
awk '$2 > 10000 {print "WARNING: Queue \"$1\" has \"$2\" messages"}'

# Connection count check
CONN_COUNT=$(bin/admq rabbitmq admin ctl list_connections | wc -l)
if [ $CONN_COUNT -gt 1000 ]; then
    echo "WARNING: Connection count $CONN_COUNT exceeds threshold"
fi
```

3 Configuration Management

3.1 Configuration Files

3.1.1 rabbitmq.conf

Main configuration file, located at `./config/rabbitmq.conf`.

```
# Network configuration
listeners.tcp.default = 5672
listeners.ssl.default = 5671

# Memory configuration
vm_memory_high_watermark.relative = 0.4
vm_memory_high_watermark_paging_ratio = 0.5

# Disk configuration
disk_free_limit.relative = 2.0

# Heartbeat configuration
heartbeat = 60

# Channel configuration
channel_max = 2047

# Queue configuration
queue_master_locator = min-masters
```

3.2 Dynamic Configuration

```
# View runtime parameters
bin/admq rabbitmq admin ctl list_parameters

# Set runtime parameters
bin/admq rabbitmq admin ctl set_parameter federation-upstream my-
```

```
upstream '{"uri":"amqp://remote-host"}'

# Clear runtime parameters
bin/admq rabbitmq admin ctl clear_parameter federation-upstream my-
upstream

# View policies
bin/admq rabbitmq admin ctl list_policies

# Set policy
bin/admq rabbitmq admin ctl set_policy ha-all "^" '{"ha-
mode":"all"}' --priority 0 --apply-to queues

# Clear policy
bin/admq rabbitmq admin ctl clear_policy ha-all
```

4 Troubleshooting

4.1 Common Issues and Solutions

4.1.1 Service Failed to Start

Symptom	Possible Cause	Solution
Port occupied	Port 5672/15672 occupied by another process	Find and stop the occupying process, or change listener port
Erlang Cookie mismatch	Cluster node Cookie mismatch	Synchronize .erlang.cookie file
Insufficient memory	System memory insufficient	Increase memory or lower vm_memory_high_watermark
Insufficient disk space	Disk space below disk_free_limit	Clean up disk space or adjust disk_free_limit
Configuration error	rabbitmq.conf format error	Check configuration file syntax

4.1.2 Message Consumption Anomalies

Symptom	Possible Cause	Solution
Message backlog	Consumer processing too slow or consumer offline	Increase consumer count or optimize consumption logic
Message loss	Persistence not enabled or manual acknowledgment not used	Enable message persistence and manual acknowledgment
Duplicate consumption	Redelivery after consumer acknowledgment timeout	Optimize consumer processing logic to ensure timely acknowledgment
Consumption delay	Network latency or consumer performance issues	Check network conditions, optimize consumer code

4.1.3 Cluster Anomalies

Symptom	Possible Cause	Solution
Node offline	Network failure or service anomaly	Check network connectivity, restart service

Split-brain	Network partition causing cluster split	Use bin/admq rabbitmq admin ctl forget_cluster_node to clean up
Mirrored queue out of sync	Network latency or node failure	Check network conditions, wait for automatic synchronization
Queue unavailable	Queue node offline	Use mirrored queues or Quorum Queue

4.2 Troubleshooting Commands

```
# View node details
bin/admq rabbitmq admin ctl status

# View cluster status
bin/admq rabbitmq admin ctl cluster_status

# View connection details
bin/admq rabbitmq admin ctl list_connections peer_host peer_port
state channels

# View channel details
bin/admq rabbitmq admin ctl list_channels connection pid
consumer_count messages_unacknowledged

# View queue details
bin/admq rabbitmq admin ctl list_queues name pid slave_pids
synchronised_slave_pids messages consumers memory

# View consumer details
bin/admq rabbitmq admin ctl list_consumers queue_name channel_pid
ack_required prefetch_count

# View memory usage details
bin/admq rabbitmq admin diagnostics memory_breakdown

# View process information
```

```
bin/admq rabbitmq admin diagnostics processes
```

```
# View network connections
```

```
bin/admq rabbitmq admin diagnostics connections
```

```
# Collect diagnostic information
```

```
bin/admq rabbitmq admin diagnostics gather_auth_context
```

```
bin/admq rabbitmq admin diagnostics quorum_status "queue_name"
```

5 Backup and Recovery

5.1 Configuration Backup

```
# Export configuration definitions
bin/admq rabbitmq admin ctl export_definitions
/backup/definitions.json

# Import configuration definitions
bin/admq rabbitmq admin ctl import_definitions
/backup/definitions.json
```

5.2 Data Backup

5.2.1 Mnesia Database Backup

```
# Backup Mnesia database
bin/admq rabbitmq admin ctl eval
'rabbit_mnesia:backup("/backup/mnesia.backup").'

# Restore Mnesia database
bin/admq rabbitmq admin ctl eval
'rabbit_mnesia:restore("/backup/mnesia.backup").'
```

6 Security Hardening

6.1 Network Security

6.1.1 Firewall Configuration

```
# Open necessary ports
firewall-cmd --permanent --add-port=5672/tcp      # AMQP
firewall-cmd --permanent --add-port=5671/tcp      # AMQP over SSL
firewall-cmd --permanent --add-port=15672/tcp      # Management HTTP
firewall-cmd --permanent --add-port=15671/tcp      # Management HTTPS
firewall-cmd --permanent --add-port=25672/tcp      # Erlang
Distribution
firewall-cmd --reload
```

6.1.2 SSL/TLS Configuration

```
# rabbitmq.conf
listeners.ssl.default = 5671
ssl_options.cacertfile = /path/to/ca_certificate.pem
ssl_options.certfile = /path/to/server_certificate.pem
ssl_options.keyfile = /path/to/server_key.pem
ssl_options.verify = verify_peer
ssl_options.fail_if_no_peer_cert = false
ssl_options.versions.1 = tlsv1.2
ssl_options.versions.2 = tlsv1.3
```

6.2 Access Control

6.2.1 Modify Default User

```
# Change guest user password
bin/admq rabbitmq admin ctl change_password guest newpassword
```

```
# Delete default guest user (recommended)
bin/admq rabbitmq admin ctl delete_user guest

# Create new admin user
bin/admq rabbitmq admin ctl add_user admin strongpassword
bin/admq rabbitmq admin ctl set_user_tags admin administrator
bin/admq rabbitmq admin ctl set_permissions -p / admin ".*" ".*"
".*" "
```

6.2.2 Principle of Least Privilege

```
# Assign minimum permissions to business users
bin/admq rabbitmq admin ctl add_user app_user apppassword
bin/admq rabbitmq admin ctl set_user_tags app_user none
bin/admq rabbitmq admin ctl set_permissions -p /app_vhost app_user
"^app-.*" "^app-.*" "^app-.*"
```

7 Performance Monitoring

7.0.1 Monitoring Metrics

Metric	Description
rabbitmq_connections	Number of connections
rabbitmq_channels	Number of channels
rabbitmq_queues	Number of queues
rabbitmq_queue_messages_ready	Number of ready messages
rabbitmq_queue_messages_unacked	Number of unacknowledged messages
rabbitmq_queue_messages	Total number of messages
rabbitmq_node_mem_used	Memory usage
rabbitmq_node_disk_free	Free disk space
rabbitmq_node_cpu_user	CPU user utilization

8 Operations Best Practices

1. **Regular Checks:** Establish daily inspection mechanisms to identify potential issues early
2. **Monitoring & Alerting:** Configure comprehensive monitoring and alerting systems
3. **Backup Strategy:** Develop regular backup strategies to ensure data security
4. **Documentation:** Record all operations and changes
5. **Capacity Planning:** Regularly evaluate cluster capacity, scale up in advance
6. **Security Updates:** Apply security patches promptly
7. **Disaster Recovery Drills:** Conduct regular fault recovery drills

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4008-555-800

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