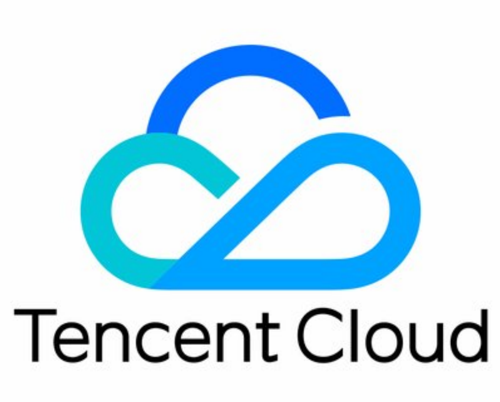
TDMQ for Apache Pulsar

SDK Documentation

Product Documentation



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SDK Documentation

SDK Overview

Last updated：2024-10-12 11:54:30

TDMQ for Apache Pulsar supports TCP protocol (Pulsar Community Edition) and HTTP protocol. The following are the supported multi-language SDKs:

Note:

In order to be more consistent with the Pulsar open-source community, we have stopped feature updates for the Tencent Cloud SDK since April 30, 2021. We recommend that you use the Apache Pulsar SDK for TDMQ for Apache Pulsar.

Protocol type	SDK language
TCP protocol (Pulsar Community Edition)	Go SDK
	Java SDK
	C++ SDK
	Python SDK
	Node.js SDK

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Apache Pulsar TCP Protocol
Spring Boot Starter

Last updated：2024-12-02 17:10:17

Overview

This document describes how to use Spring Boot Starter to send and receive messages and helps you better understand the message sending and receiving processes.

Prerequisites

You have created the required resources.
You have installed JDK 1.8 or later
You have installed Maven 2.5 or later
You have downloaded the demo

Directions

Step 1. Add dependencies

Import Pulsar Starter dependencies to the project.

```
<dependency>
    <groupId>io.github.majusko</groupId>
    <artifactId>pulsar-java-spring-boot-starter</artifactId>
    <version>1.0.7</version>
</dependency>
<!-- https://mvnrepository.com/artifact/io.projectreactor/reactor-core -->
<dependency>
    <groupId>io.projectreactor</groupId>
    <artifactId>reactor-core</artifactId>
    <version>3.4.11</version>
</dependency>
```

Step 2. Prepare configurations

Add the Pulsar configuration information to the application.yml configuration file.

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```
server:
  port: 8081
pulsar:
  # Namespace name
  namespace: namespace_java
  # Service access URL
  service-url: http://pulsar-w7eognxxx.tdmq.ap-gz.public.tencenttdmq.com:8080
  # Authorization role secret key
  token-auth-value: eyJrZXlJZC....
  # Cluster name
  tenant: pulsar-w7eognxxx
```

Parameter	Description
namespace	Namespace name, which can be copied on the Namespace page in the console.
service-url	Cluster access address, which can be viewed and copied on the Cluster page in the console.
token-auth-value	Role token, which can be copied in the **Token** column on the Role Management page.
tenant	Cluster ID, which can be obtained on the Cluster page in the console.

Step 3. Produce messages

Configure the producer in ProducerConfiguration.java.

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```
package com.tencent.cloud.tdmq.pulsar.config;

import io.github.majusko.pulsar.producer.ProducerFactory;
import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;


/**
 * Producer-related configurations
 * 1. The topic should be created in the console in advance.
 * 2. The message type should implement the Serializable API.
 * 3. A topic cannot bind to different data types.
 */
@Configuration
public class ProducerConfiguration {

    @Bean
    public ProducerFactory producerFactory() {
        return new ProducerFactory()
                // Producer for topic1
                .addProducer("topic1")
                // Producer for topic2
                .addProducer("topic2");
    }
}
```

Compile and run the message production program MyProducer.java.

```
   package com.tencent.cloud.tdmq.pulsar.service;

import io.github.majusko.pulsar.producer.PulsarTemplate;
import org.apache.pulsar.client.api.MessageId;
import org.apache.pulsar.client.api.PulsarClientException;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Service;

import java.nio.charset.StandardCharsets;
import java.util.concurrent.CompletableFuture;

@Service
public class MyProducer {

    /**
     * 1. The topic for sending messages should be a topic that has already been de
     * 2. The PulsarTemplate type should match the type of the messages being sent.
```

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```
     * 3. When sending messages to a specific topic, the message type should corres
     */

    @Autowired
    private PulsarTemplate<byte[]> defaultProducer;

    public void syncSendMessage() throws PulsarClientException {
        defaultProducer.send("topic1", "Hello pulsar client.".getBytes(StandardChar
    }

    public void asyncSendMessage() {
        String msg = "Hello pulsar client.";
        CompletableFuture<MessageId> completableFuture = defaultProducer.sendAsync(
        // Use asynchronous callbacks to determine whether the message was sent suc
        completableFuture.whenComplete(((messageId, throwable) -> {
            if( null != throwable ) {
                System.out.println("delivery failed, value: " + msg );
                // Add logic for delayed retries here.
            } else {
                System.out.println("delivered msg " + messageId + ", value:" + msg)
            }
        }));
    }

    /**
     * Sequential messages should be implemented using sequential-type topics, whic
     */
    public void sendOrderMessage() throws PulsarClientException {
        for (int i = 0; i < 5; i++) {
            defaultProducer.send("topic2", ("Hello pulsar client, this is a order m
        }
    }
}
```

Note:

The topic that sends messages is the one declared in the producer configuration.

The type of `PulsarTemplate` must be the same as that of the sent message.

When you send a message to the specified topic, the message type must be the same as that bound to the topic in the producer factory configuration.

Step 4. Consume messages

Compile and run the message consumption program MyConsumer.java.

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```
package com.tencent.cloud.tdmq.pulsar.service;

import io.github.majusko.pulsar.annotation.PulsarConsumer;
import io.github.majusko.pulsar.constant.Serialization;
import org.apache.pulsar.client.api.SubscriptionType;
import org.springframework.stereotype.Service;

/**
 * Consumer configurations
 */
@Service
public class MyConsumer {

    @PulsarConsumer(topic = "topic1",  // Subscription topic name
            subscriptionName = "sub_topic1", // Subscription name
            serialization = Serialization.JSON, // Serialization method
            subscriptionType = SubscriptionType.Shared, // Subscription mode, which
            consumerName = "firstTopicConsumer", // Consumer name
            maxRedeliverCount = 3, // Maximum retry count
            deadLetterTopic = "sub_topic1-DLQ" // Dead letter topic name
    )
    public void firstTopicConsume(byte[] msg) {
        // TODO process your message
        System.out.println("Received a new message. content: [" + new String(msg) +
        // If the consumption fails, throw an exception so that the message will en
    }


    /**
     * Sequential messages can be handled using sequential-type topics, which suppo
     */
    @PulsarConsumer(topic = "topic2", subscriptionName = "sub_topic2")
    public void orderTopicConsumer(byte[] msg) {
        // TODO process your message
        System.out.println("Received a order message. content: [" + new String(msg)
    }


    /**
     * Listen to the dead letter topic and process dead letter messages.
     */
    @PulsarConsumer(topic = "sub_topic1-DLQ", subscriptionName = "dead_sub")
    public void deadTopicConsumer(byte[] msg) {
        // TODO process your message
        System.out.println("Received a dead message. content: [" + new String(msg)
    }
}
```

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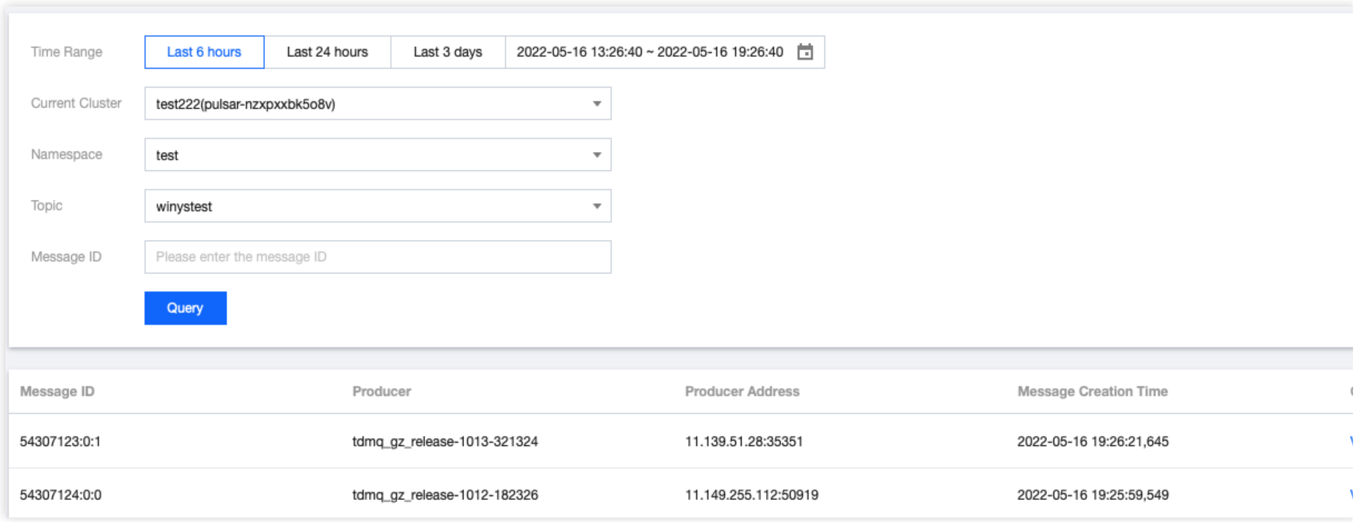
Note：

The above configurations demonstrate the simple use of Pulsar based on the Spring Boot Starter approach. For more details, see Demo, Starter Github, or Starter Gitee.

Step 5. Query messages

Log in to the console and enter the **Message Query** page to view the message trace after running the demo.



The message trace is as follows:

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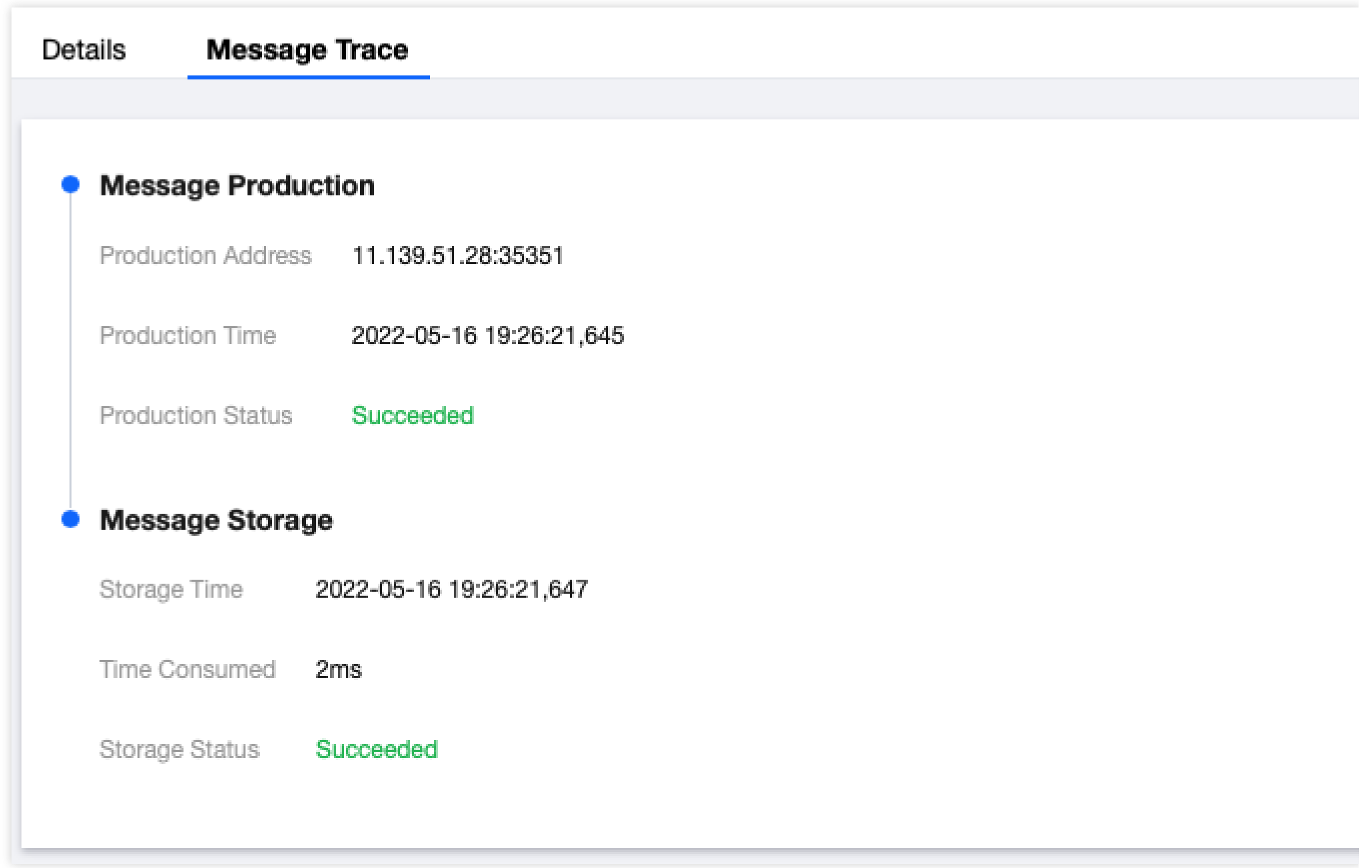
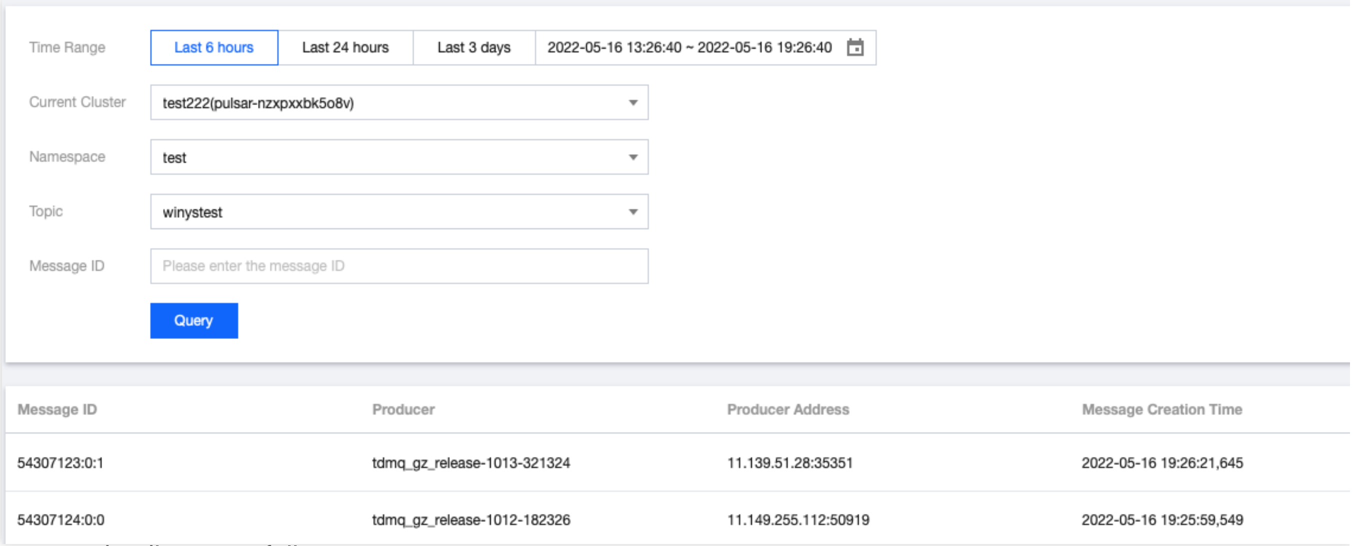


Note:

The above is a simple configuration for using TDMQ for Apache Pulsar through Spring Boot Starter. For more information, see Demo or Spring Boot Starter for Apache Pulsar.

Step 6: Viewing Consumption Details

Go to the Message Query page to view the message details.



The message details are as follows:

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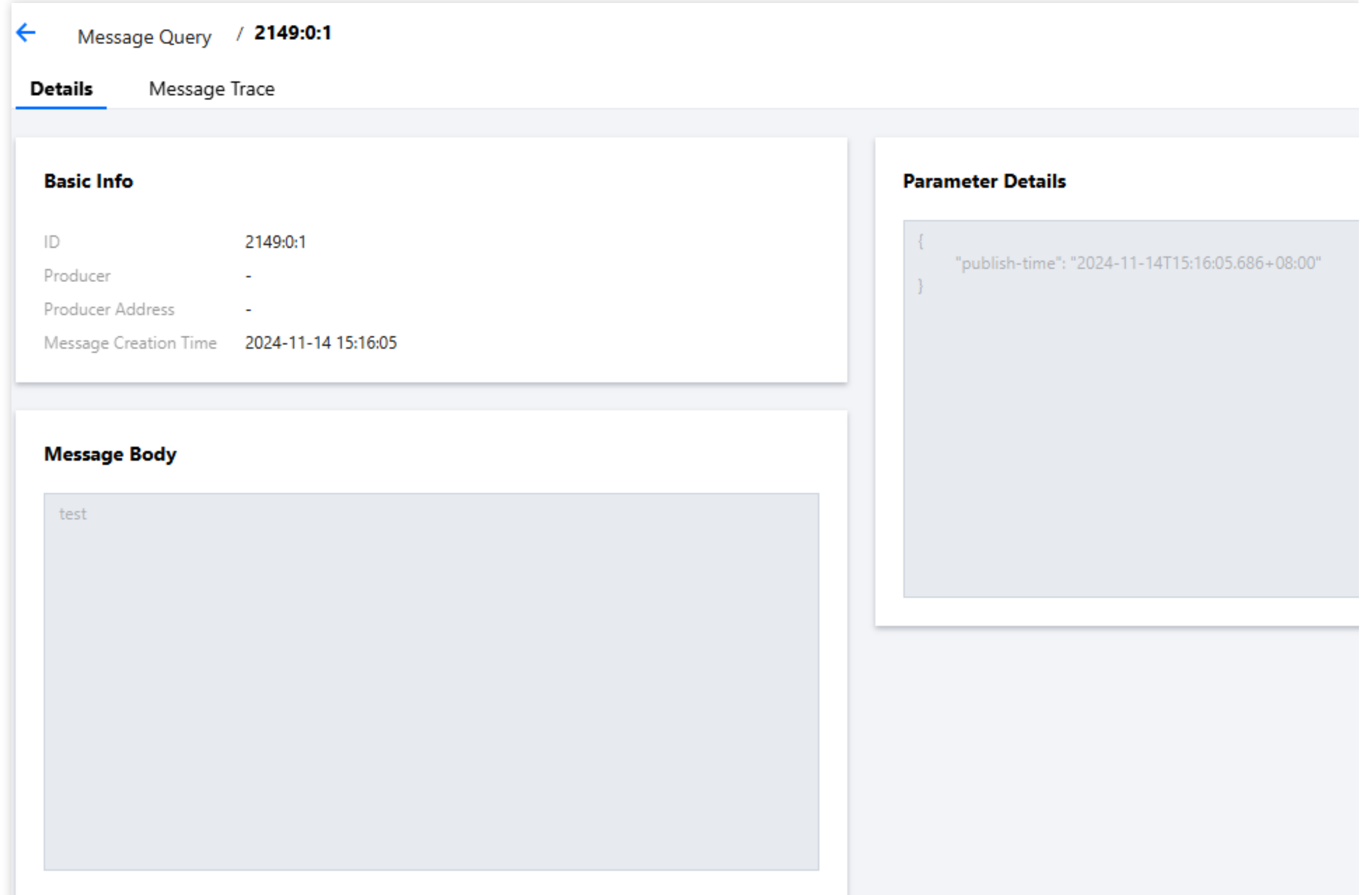

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SDK for Java

Last updated：2024-12-02 17:10:17

Scenarios

This document describes how to use open-source SDK to send and receive messages by using the SDK for Java as an example and helps you better understand the message sending and receiving processes.

Prerequisites

You have created the required resources.
You have installed JDK 1.8 or later
You have installed Maven 2.5 or later
You have downloaded the demo

Directions

Step 1: Installing Java Dependencies

1. Introduce dependencies in a Java project and add the following dependencies to the `pom.xml` file. This document uses a Maven project as an example.

```
<dependency>
        <groupId>org.apache.pulsar</groupId>
        <artifactId>pulsar-client</artifactId>
        <version>2.7.2</version>
</dependency>
```

Note:
SDK 2.7.2 or later is recommended.
SDK 2.7.4 or later is recommended if you use the batch message sending and receiving feature (`BatchReceive`) of the client.

Step 2: Modifying Configuration Parameters

Modify the parameters in Constant.java.

```
package com.tencent.cloud.tdmq.pulsar;
```

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```
import org.apache.pulsar.client.api.AuthenticationFactory;
import org.apache.pulsar.client.api.PulsarClient;
import org.apache.pulsar.client.api.PulsarClientException;


public class Constant {


    /**
     * Service access address, located on the [Cluster Management] page access addr
     */
    private static final String SERVICE_URL = "http://pulsar-xxx.tdmq-pulsar.ap-sh.

    /**
     * Authorized role token of the namespace to be used, located on the [Role Mana
     */
    private static final String AUTHENTICATION = "eyJrZXlJZC......";


    /**
     * Initialize Pulsar client
     *
     * @return Pulsar client
     */
    public static PulsarClient initPulsarClient() throws PulsarClientException {
        // One Pulsar client corresponds to one client connection
        // In principle, one process corresponds to one client. Try to avoid repeat
        // For practice tutorials on clients and producers/consumers, refer to the
        PulsarClient pulsarClient = PulsarClient.builder()
                // Service access address
                .serviceUrl(SERVICE_URL)
                // Authorize the role token
                .authentication(AuthenticationFactory.token(AUTHENTICATION)).build(
        System.out.println(">> pulsar client created.");
        return pulsarClient;
    }
}
```

```
    PulsarClient pulsarClient = PulsarClient.builder()
                   // Service access address
                   .serviceUrl(SERVICE_URL)
                   // Role token
                   .authentication(AuthenticationFactory.token(AUTHENTICATION)).bui
```

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Parameter	Description
SERVICE_URL	Cluster access address, which can be viewed and copied on the Cluster page in the console.
AUTHENTICATION	The secret key for the role, which can be copied from the Role Management.

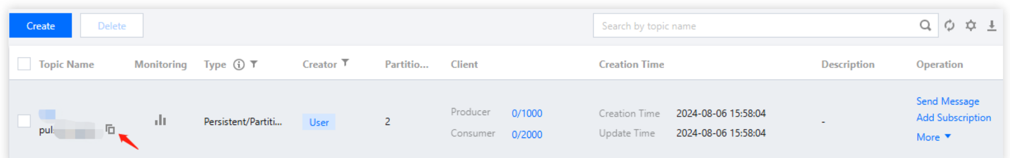
Step 3: Producing Messages

Create, compile, and run SimpleProducer.java.

```
package com.tencent.cloud.tdmq.pulsar.simple;

import com.tencent.cloud.tdmq.pulsar.Constant;
import org.apache.pulsar.client.api.MessageId;
import org.apache.pulsar.client.api.Producer;
import org.apache.pulsar.client.api.PulsarClient;
import org.apache.pulsar.client.api.PulsarClientException;

import java.nio.charset.StandardCharsets;

/**
 * Synchronously send messages
 */
public class SimpleProducer {

    public static void main(String[] args) throws PulsarClientException, Interrupte

        // Initialize Pulsar client
        PulsarClient pulsarClient = Constant.initPulsarClient();
        // Construct a producer
        Producer<byte[]> producer = pulsarClient.newProducer()
                // Complete path of the topic in the format of `persistent://cluste
                .topic("persistent://pulsar-xxx/sdk_java/topic1").create();
        System.out.println(">> pulsar producer created.");
        for (int i = 0; i < 10; i++) {
            String value = "my-sync-message-" + i;
```

```
            // Send the message
            MessageId msgId = producer.newMessage().key("key" + i).value(value.getB
            System.out.println("deliver msg " + msgId + ",value:" + value);

            Thread.sleep(500);
        }
        // Disable the producer
        producer.close();
        // Close the client
        pulsarClient.close();
    }
}
```

Topic: Enter the name of the created topic. Enter the full path, namely `persistent://clusterid/namespace/Topic` . The `clusterid/namespace/topic` portion can be directly copied from the **Topic** page in the console.



Step 4: Consuming Messages

Create, compile, and run SimpleConsumer.java.

```
package com.tencent.cloud.tdmq.pulsar.simple;

import com.tencent.cloud.tdmq.pulsar.Constant;
import org.apache.pulsar.client.api.Consumer;
import org.apache.pulsar.client.api.Message;
import org.apache.pulsar.client.api.MessageId;
import org.apache.pulsar.client.api.PulsarClient;
import org.apache.pulsar.client.api.PulsarClientException;
import org.apache.pulsar.client.api.SubscriptionInitialPosition;
import org.apache.pulsar.client.api.SubscriptionType;

/**
 * Consumer
 */
public class SimpleConsumer {


    public static void main(String[] args) throws PulsarClientException {
        // Initialize Pulsar client
```

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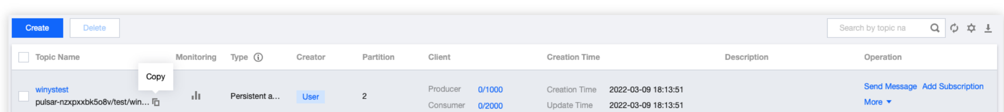
```
        PulsarClient pulsarClient = Constant.initPulsarClient();
        // Construct a consumer
        Consumer<byte[]> consumer = pulsarClient.newConsumer()
                // Complete path of the topic in the format of `persistent://cluste
                .topic("persistent://pulsar-xxx/sdk_java/topic1")
                // You need to create a subscription on the topic details page in t
                .subscriptionName("sub1_topic1")
                // Declare the exclusive mode as the consumption mode
                .subscriptionType(SubscriptionType.Exclusive)
                // Configure consumption starting at the earliest offset; otherwise
                .subscriptionInitialPosition(SubscriptionInitialPosition.Earliest).
        System.out.println(">> pulsar consumer created.");
        for (int i = 0; i < 10; i++) {
            // Receive a message corresponding to the current offset
            Message<byte[]> msg = consumer.receive();
            MessageId msgId = msg.getMessageId();
            String value = new String(msg.getValue());
            System.out.println("receive msg " + msgId + ",value:" + value);
            // Messages must be acknowledged after being received, otherwise the of
            consumer.acknowledge(msg);
        }
        // Close the consumer
        consumer.close();
        // Close the client
        pulsarClient.close();
    }
}
```

You need to enter the complete path of the topic name, i.e., `persistent://clusterid/namespace/Topic` , where the `clusterid/namespace/topic` part can be copied directly from the Topic page in the console.



You need to enter the subscription name in the subscriptionName parameter, which can be viewed on the Consumption Management page.

Step 5: Viewing Consumption Details

Go to the Message Query page to view message details.

Note:

Message trace query supports only a single message. If the Batch feature is enabled on the producer side, only the first message in the Batch can be queried in the message query.

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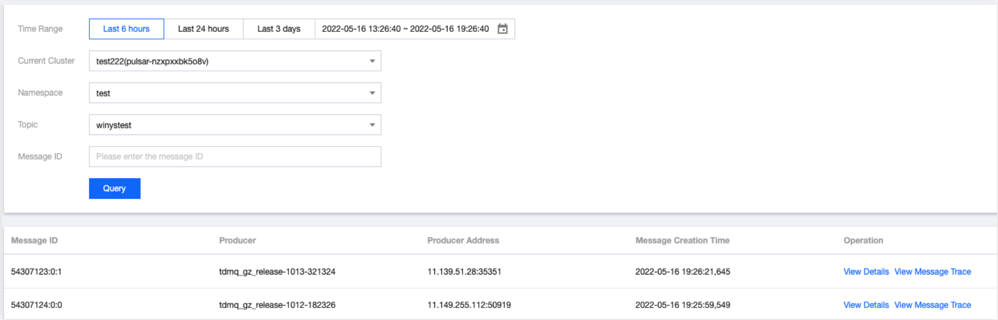
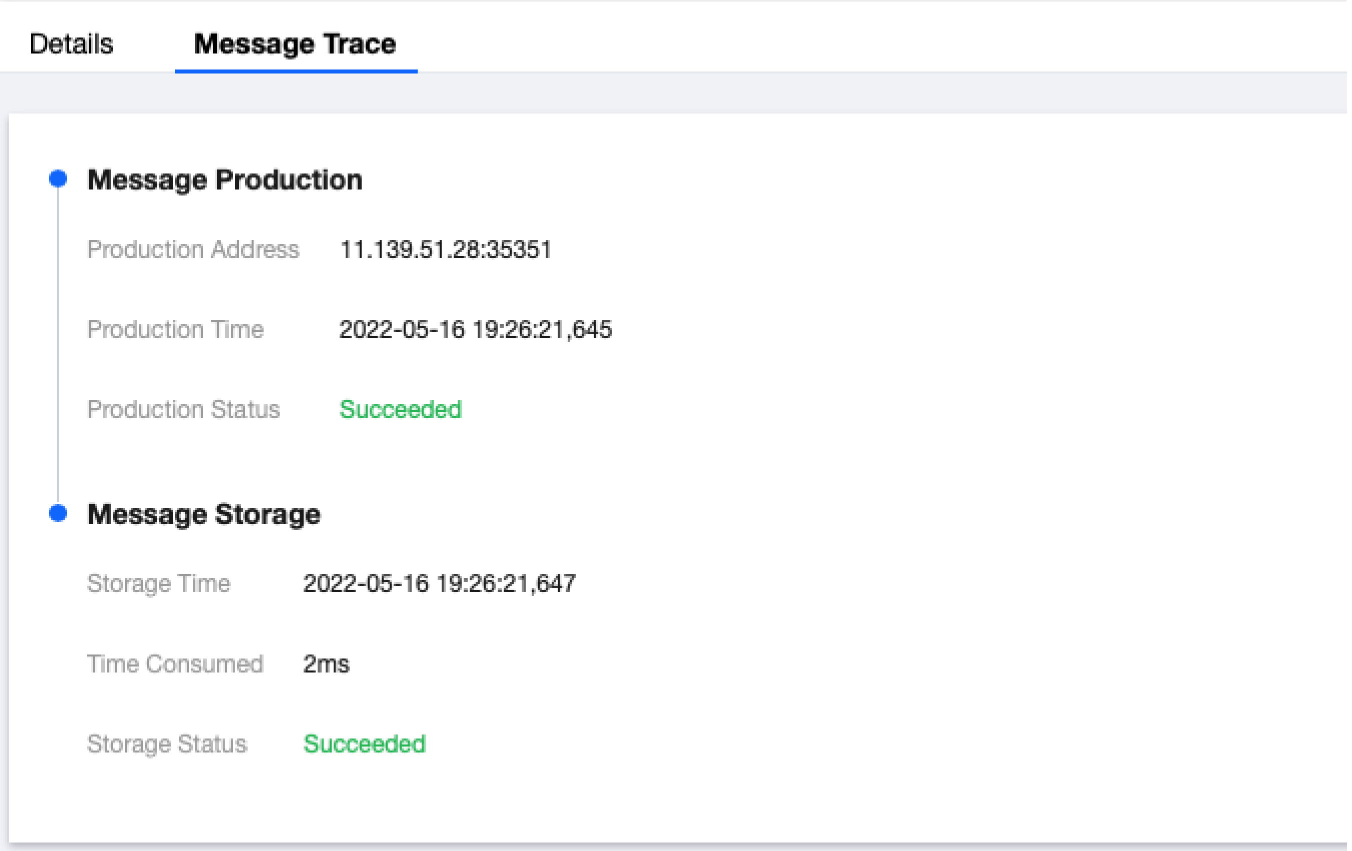


The message trace is as follows:



Note:

The above provides a brief introduction to message publishing and subscribing methods. For more operations, see Demo or Pulsar Official Documentation.

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SDK for Go

Last updated：2024-12-02 17:10:17

Overview

This document describes how to use open-source SDK to send and receive messages by using the SDK for Go as an example and helps you better understand the message sending and receiving processes.

Prerequisites

You have created the required resources as instructed in Resource Creation and Preparation.

You have installed Go.

You have downloaded the demo at here.

Note：

It is recommended to use version 0.9.0 or later.

Directions

1. Import the `pulsar-client-go` library in the client environment.

1.1 Run the following command in the client environment to download the dependency package of the Pulsar client.

```
go get -u "github.com/apache/pulsar-client-go/pulsar"
```

1.2 After the installation is completed, use the following code to import the client into your Go project file.

```
import "github.com/apache/pulsar-client-go/pulsar"
```

2. Create a Pulsar client.

```
// Create a Pulsar client
client, err := pulsar.NewClient(pulsar.ClientOptions{
    // Service access address
    URL: serviceUrl,
    // Authorize the role token
    Authentication:    pulsar.NewAuthenticationToken(authentication),
    OperationTimeout:  30 * time.Second,
    ConnectionTimeout: 30 * time.Second,
})
```

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```
if err != nil{
    log.Fatalf("Could not instantiate Pulsar client: %v", err)
}

defer client.Close()
```

Parameter	Description
serviceUrl	Cluster access address, which can be viewed and copied on the Cluster Management page in the
Authentication	Role token, which can be copied in the **Token** column on the Role Management page.

3. Create a producer.

```
// Create a producer with the client
producer, err := client.CreateProducer(pulsar.ProducerOptions{
    // Complete path of the topic in the format of `persistent://cluster (tenant)
    Topic: "persistent://pulsar-mmqwr5xx9n7g/sdk_go/topic1",
})

if err != nil{
    log.Fatal(err)
}
defer producer.Close()
```

Note:

You need to enter the complete path of the topic name, i.e., `persistent://clusterid/namespace/Topic` , where the `clusterid/namespace/topic` part can be copied directly from the Topic Management page in the console.

4. Send a message.

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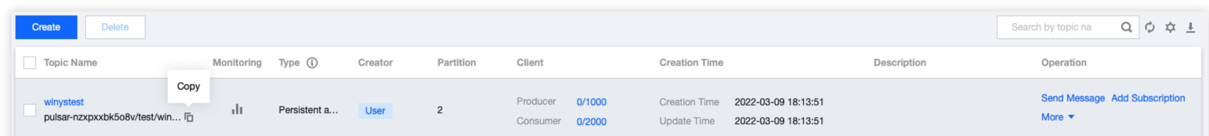
```
// Send the message
_, err = producer.Send(context.Background(), &pulsar.ProducerMessage{
    // Message content
    Payload: []byte("hello go client, this is a message."),
    // Business key
    Key: "yourKey",
    // Business parameter
    Properties: map[string]string{"key": "value"},
})
```

5. Create a consumer.

```
// Create a consumer with the client
consumer, err := client.Subscribe(pulsar.ConsumerOptions{
    // Complete path of the topic in the format of `persistent://cluster (tenant)
    Topic:            "persistent://pulsar-mmqwr5xx9n7g/sdk_go/topic1",
    // Subscription name
    SubscriptionName: "topic1_sub",
    // Subscription mode
    Type:             pulsar.Shared,
})
if err != nil{
    log.Fatal(err)
}
defer consumer.Close()
```

Note:

You need to enter the complete path of the topic name, i.e., `persistent://clusterid/namespace/Topic`, where the `clusterid/namespace/topic` part can be copied directly from the Topic Management page in the console.



You need to enter the subscription name in the `subscriptionName` parameter, which can be viewed on the **Consumption Management** page.

6. Consume a message.

```
// Obtain the message
msg, err := consumer.Receive(context.Background())
if err != nil{
    log.Fatal(err)
}
// Simulate business processing
```

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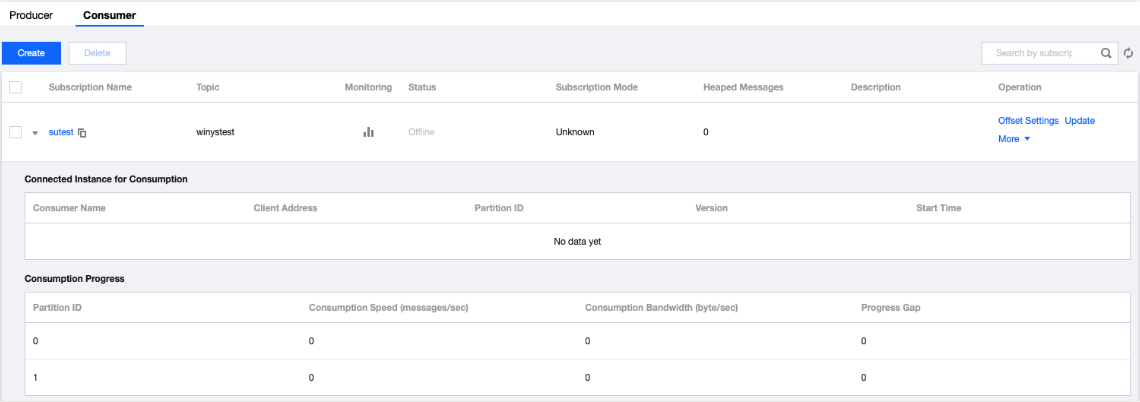
```
    fmt.Printf("Received message msgId: %#v -- content: '%s'\\n",
               msg.ID(), string(msg.Payload()))

    // If the consumption is successful, return `ack`; otherwise, return `nack` or `Re
    consumer.Ack(msg)
```

7. Log in to the TDMQ for Apache Pulsar console, click **Topic** > **Topic Name** to enter the consumption management page, and click the triangle below a subscription name to view the production and consumption records.



Note:

The above is a brief introduction to the way of publishing and subscribing to messages. For more operations, see Demo or Pulsar Go client.

Customizing Log File Output

Use Cases

As many users don't customize the logging library when using the Pulsar SDK for Go, logs are output to `os.Stderr` by default, as shown below:

```
// It's recommended to make this a global instance called `log`.
func New() *Logger {
    return &Logger{
        Out:          os.Stderr, // Default output address
        Formatter:    new(TextFormatter),
        Hooks:        make(LevelHooks),
        Level:        InfoLevel,
        ExitFunc:     os.Exit,
        ReportCaller: false,
    }
}
```

Generally, log information is output to `os.Stderr`. If you don't specify a custom logging library, the SDK for Go logs and business logs will be mixed, making it difficult for troubleshooting.

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Solution

With the `logger` API exposed on the client by the SDK for Go, you can customize the log output format and location and use logging libraries such as `logrus` and `zap`. Related parameters are as follows:

1. Implement the `log.Logger` API provided by the Pulsar SDK for Go by customizing `log lib`.

```
// ClientOptions is used to construct a Pulsar Client instance.
type ClientOptions struct {
    // Configure the logger used by the client.
    // By default, a wrapped logrus.StandardLogger will be used, namely,
    // log.NewLoggerWithLogrus(logrus.StandardLogger())
    // FIXME: use `logger` as internal field name instead of `log` as it's more idi
    Logger log.Logger
}
```

When using the SDK for Go, you can customize the `logger` API to customize `log lib` so that you can redirect logs to a specified location. Taking `logrus` as an example, the demo below shows you how to customize `log lib` to output the SDK for Go logs to a specified file.

```
package main

import(
    "fmt"
    "io"
    "os"

    "github.com/apache/pulsar-client-go/pulsar/log"
    "github.com/sirupsen/logrus"

)

// logrusWrapper implements Logger interface
// based on underlying logrus.FieldLogger
type logrusWrapper struct {
    l logrus.FieldLogger
}

// NewLoggerWithLogrus creates a new logger which wraps
// the given logrus.Logger
func NewLoggerWithLogrus(logger *logrus.Logger, outputPath string) log.Logger {
    writer1 := os.Stdout
    writer2, err := os.OpenFile(outputPath, os.O_WRONLY|os.O_CREATE, 0755)
    if err != nil{
        logrus.Error("create file log.txt failed: %v", err)
    }
    logger.SetOutput(io.MultiWriter(writer1, writer2))
```

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```
    return &logrusWrapper{
        l: logger,
    }
}

func (l *logrusWrapper) SubLogger(fs log.Fields) log.Logger {
    return &logrusWrapper{
        l: l.l.WithFields(logrus.Fields(fs)),
    }
}

func (l *logrusWrapper) WithFields(fs log.Fields) log.Entry {
    return logrusEntry{
        e: l.l.WithFields(logrus.Fields(fs)),
    }
}

func (l *logrusWrapper) WithField(name string, value interface{}) log.Entry {
    return logrusEntry{
        e: l.l.WithField(name, value),
    }
}

func (l *logrusWrapper) WithError(err error) log.Entry {
    return logrusEntry{
        e: l.l.WithError(err),
    }
}

func (l *logrusWrapper) Debug(args ...interface{}) {
    l.l.Debug(args...)
}

func (l *logrusWrapper) Info(args ...interface{}) {
    l.l.Info(args...)
}

func (l *logrusWrapper) Warn(args ...interface{}) {
    l.l.Warn(args...)
}

func (l *logrusWrapper) Error(args ...interface{}) {
    l.l.Error(args...)
}

func (l *logrusWrapper) Debugf(format string, args ...interface{}) {
    l.l.Debugf(format, args...)
```

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```
}

func (l *logrusWrapper) Infof(format string, args ...interface{}) {
    l.l.Infof(format, args...)
}

func (l *logrusWrapper) Warnf(format string, args ...interface{}) {
    l.l.Warnf(format, args...)
}

func (l *logrusWrapper) Errorf(format string, args ...interface{}) {
    l.l.Errorf(format, args...)
}

type logrusEntry struct {
    e logrus.FieldLogger
}

func (l logrusEntry) WithFields(fs log.Fields) log.Entry {
    return logrusEntry{
        e: l.e.WithFields(logrus.Fields(fs)),
    }
}

func (l logrusEntry) WithField(name string, value interface{}) log.Entry {
    return logrusEntry{
        e: l.e.WithField(name, value),
    }
}

func (l logrusEntry) Debug(args ...interface{}) {
    l.e.Debug(args...)
}

func (l logrusEntry) Info(args ...interface{}) {
    l.e.Info(args...)
}

func (l logrusEntry) Warn(args ...interface{}) {
    l.e.Warn(args...)
}

func (l logrusEntry) Error(args ...interface{}) {
    l.e.Error(args...)
}

func (l logrusEntry) Debugf(format string, args ...interface{}) {
```

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```
    l.e.Debugf(format, args...)
}

func (l logrusEntry) Infof(format string, args ...interface{}) {
    l.e.Infof(format, args...)
}

func (l logrusEntry) Warnf(format string, args ...interface{}) {
    l.e.Warnf(format, args...)
}

func (l logrusEntry) Errorf(format string, args ...interface{}) {
    l.e.Errorf(format, args...)
}
```

2. Specify a custom `log lib` when creating the client.

```
client, err := pulsar.NewClient(pulsar.ClientOptions{
    URL:    "pulsar://localhost:6650",
    Logger: NewLoggerWithLogrus(log.StandardLogger(), "test.log"),
})
```

The above demo shows you how to redirect the log file of the Pulsar SDK for Go to the `test.log` file in the current path. You can redirect the log file to a specified location as needed.

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SDK for C++

Last updated：2024-06-28 11:33:56

Overview

This document describes how to use open-source SDK to send and receive messages by using the SDK for C++ as an example and helps you better understand the message sending and receiving processes.

Prerequisites

You have created the required resources.
You have installed GCC
You have downloaded the demo

Directions

1. Prepare the environment.
1.1 Install the Pulsar C++ client in the client environment as instructed in Pulsar C++ client.
1.2 Introduce the files and dynamic libraries that are related to the Pulsar C++ client to the project.
2. Create a client.

```
// Client configuration information
ClientConfiguration config;
// Set the role token
AuthenticationPtr auth = pulsar::AuthToken::createWithToken(AUTHENTICATION);
config.setAuth(auth);
// Create a client
Client client(SERVICE_URL, config);
```

Parameter	Description
SERVICE_URL	Cluster access address, which can be viewed and copied on the Cluster page in the consol

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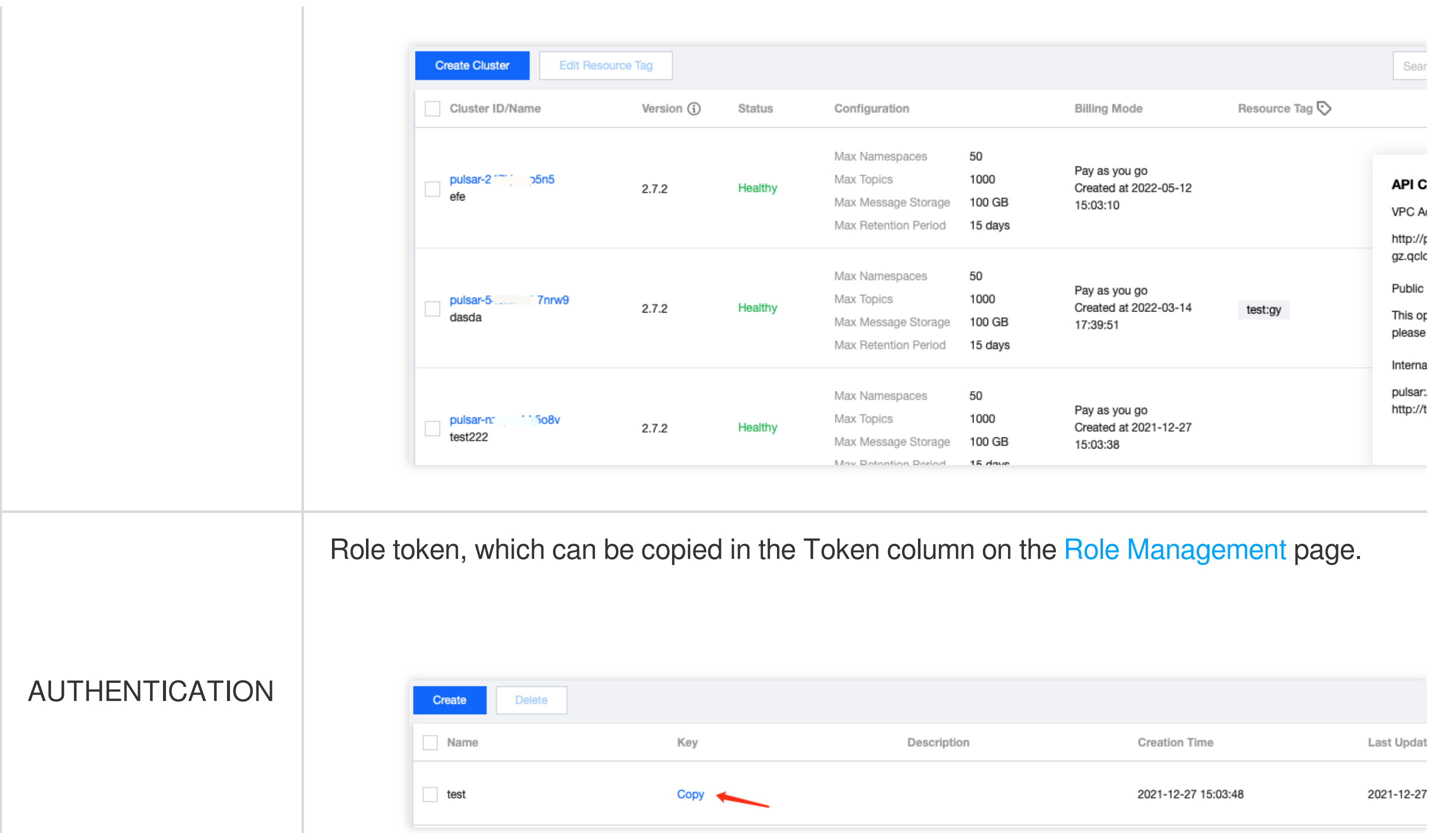

AUTHENTICATION	Role token, which can be copied in the Token column on the Role Management page.

3. Create a producer.

```
// Producer configurations
ProducerConfiguration producerConf;
producerConf.setBlockIfQueueFull(true);
producerConf.setSendTimeout(5000);
// Producer
Producer producer;
// Create a producer
Result result = client.createProducer(
    // Complete path of the topic in the format of `persistent://cluster (tenant) I
    "persistent://pulsar-xxx/sdk_cpp/topic1",
    producerConf,
    producer);
if (result != ResultOk) {
    std::cout << "Error creating producer: " << result << std::endl;
    return -1;
}
```

Note:

You need to enter the complete path of the topic name, i.e., `persistent://clusterid/namespace/Topic` , where the `clusterid/namespace/topic` part can be copied directly from the **Topic** page in the console.

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4. Send the message.

```
// Message content
std::string content = "hello cpp client, this is a msg";
// Create a message object
Message msg = MessageBuilder().setContent(content)
    .setPartitionKey("mykey")  // Business key
    .setProperty("x", "1")   // Set message parameters
    .build();
// Send the message
Result result = producer.send(msg);
if (result != ResultOk) {
    // The message failed to be sent
    std::cout << "The message " << content << " could not be sent, received code
} else {
    // The message was successfully sent
    std::cout << "The message " << content << " sent successfully" << std::endl;
}
```

5. Create a consumer.

```
// Consumer configuration information
ConsumerConfiguration consumerConfiguration;
consumerConfiguration.setSubscriptionInitialPosition(pulsar::InitialPositionEarl
// Consumer
Consumer consumer;
// Subscribe to a topic
Result result = client.subscribe(
    // Complete path of the topic in the format of `persistent://cluster (tenant
    "persistent://pulsar-xxx/sdk_cpp/topic1",
    // Subscription name
    "sub_topic1",
    consumerConfiguration,
    consumer);

if (result != ResultOk) {
    std::cout << "Failed to subscribe: " << result << std::endl;
    return -1;
}
```

Note:

You need to enter the complete path of the topic name, i.e., `persistent://clusterid/namespace/Topic` , where the `clusterid/namespace/topic` part can be copied directly from the **Topic** page in the console.

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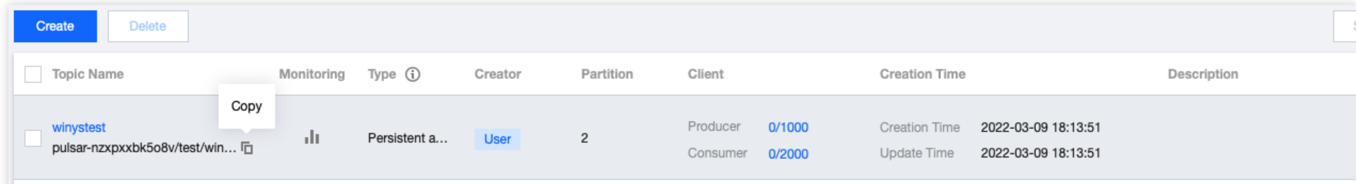
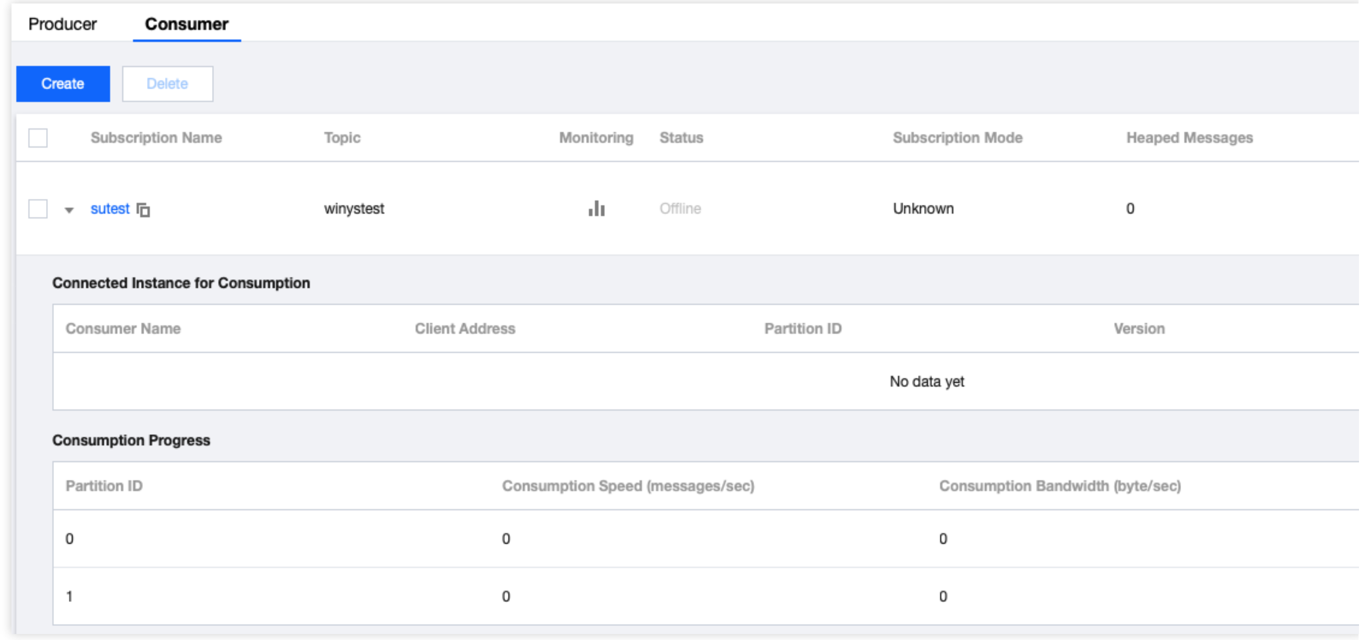


You need to enter the subscription name in the `subscriptionName` parameter, which can be viewed on the **Consumption Management** page.

6. Consume the message.

```
Message msg;
// Obtain the message
consumer.receive(msg);
// Simulate the business processing logic
std::cout << "Received: " << msg << "  with payload '" << msg.getDataAsString()
// Return `ack` as the acknowledgement
consumer.acknowledge(msg);
// Return `nack` if the consumption fails, and the message will be delivered aga
// consumer.negativeAcknowledge(msg);
```

7. Log in to the TDMQ for Apache Pulsar console, click **Topic** > **Topic Name** to enter the **Consumption Management** page, and click the triangle below a subscription name to view the production and consumption records.



Note:

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The above is a brief introduction to the way of publishing and subscribing to messages. For more operations, see Demo or Pulsar C++ client.

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SDK for Python

Last updated：2024-06-28 11:33:56

Overview

This document describes how to use open-source SDK to send and receive messages by using the SDK for Python as an example and helps you better understand the message sending and receiving processes.

Prerequisites

You have created or prepared the required resources as instructed in Resource Creation and Preparation.

You have installed Python. For the download address, click here.

You have installed pip. For the download address, click here.

You have downloaded the demo. For the download address, click here.

Directions

1. Prepare the environment.

Install the `pulsar-client` library in the client environment as instructed in Pulsar Python client.

```
pip install 'pulsar-client==3.1.0'
```

2. Create a client.

```
# Create a client
client = pulsar.Client(
    authentication=pulsar.AuthenticationToken(
        # Authorized role token
        AUTHENTICATION),
    # Service access address
    service_url=SERVICE_URL)
```

Parameter	Description
SERVICE_URL	Cluster access address, which can be viewed and copied on the Cluster page in the consol

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	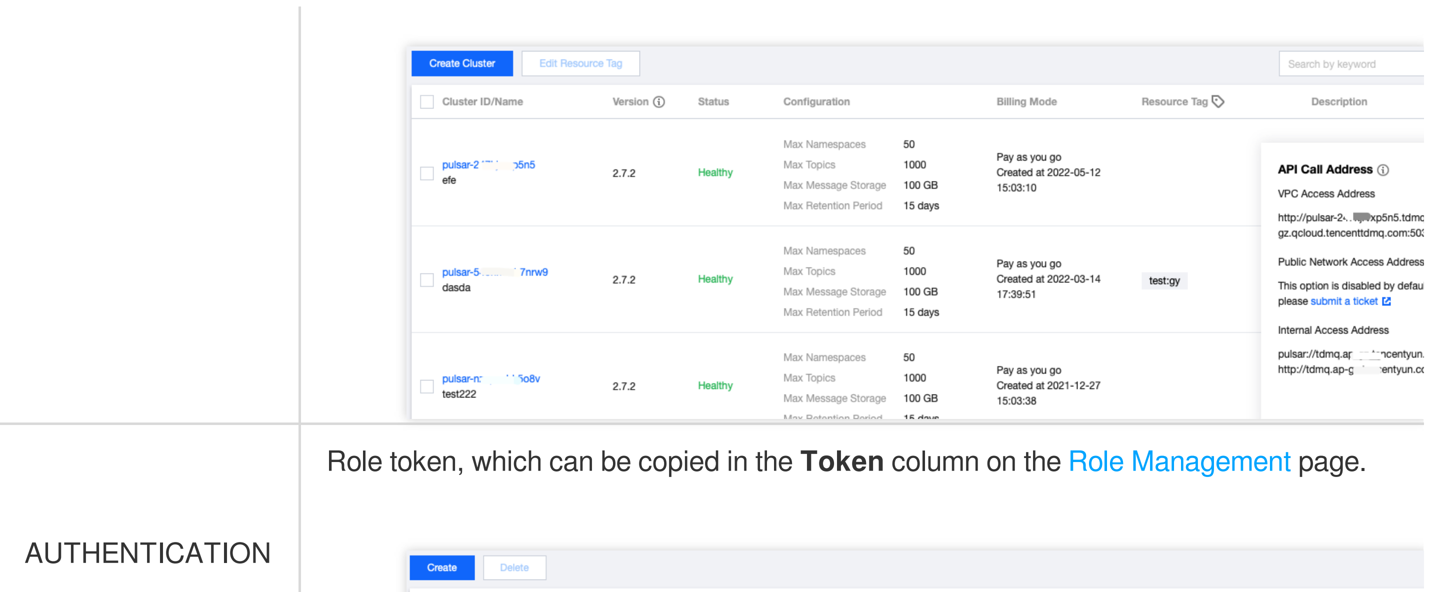
AUTHENTICATION	Role token, which can be copied in the **Token** column on the Role Management page.

3. Create a producer.

```
# Create a producer
producer = client.create_producer(
    # Complete path of the topic in the format of `persistent://cluster (tenant) I
    topic='pulsar-xxx/sdk_python/topic1'
)
```

Note:

You need to enter the complete path of the topic name, that is, `persistent://clusterid/namespace/Topic` , where the `clusterid/namespace/topic` part can be copied directly from the Topic page in the console.

4. Send the message.

```
# Send the message
producer.send(
    # Message content
    'Hello python client, this is a msg.'.encode('utf-8'),
    # Message parameter
    properties={'k': 'v'},
    # Business key
    partition_key='yourKey'
)
```

The message can also be sent in async mode.

```
# Send the callback in async mode
def send_callback(send_result, msg_id):
```

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```
    print('Message published: result:{}  msg_id:{}'.format(send_result, msg_id))

# Send the message
producer.send_async(
    # Message content
    'Hello python client, this is a async msg.'.encode('utf-8'),
    # Async callback
    callback=send_callback,
    # Message configuration
    properties={'k': 'v'},
    # Business key
    partition_key='yourKey'
)
```

5. Create a consumer.

```
# Subscribe to the message
consumer = client.subscribe(
    # Complete path of the topic in the format of `persistent://cluster (tenant) I
    topic='pulsar-xxx/sdk_python/topic1',
    # Subscription name
    subscription_name='sub_topic1'
)
```

Note:

You need to enter the complete path of the topic name, that is, `persistent://clusterid/namespace/Topic` , where the `clusterid/namespace/topic` part can be copied directly from the Topic page in the console.

You need to enter the subscription name for the `subscriptionName` parameter. The name can be viewed on the **Consumption Management** page.

6. Consume the message.

```
# Obtain the message
msg = consumer.receive()
try:
    # Simulate the business processing logic
    print("Received message '{}' id='{}'".format(msg.data(), msg.message_id()))
    # Return `ack` as the acknowledgement if the consumption is successful
    consumer.acknowledge(msg)
```

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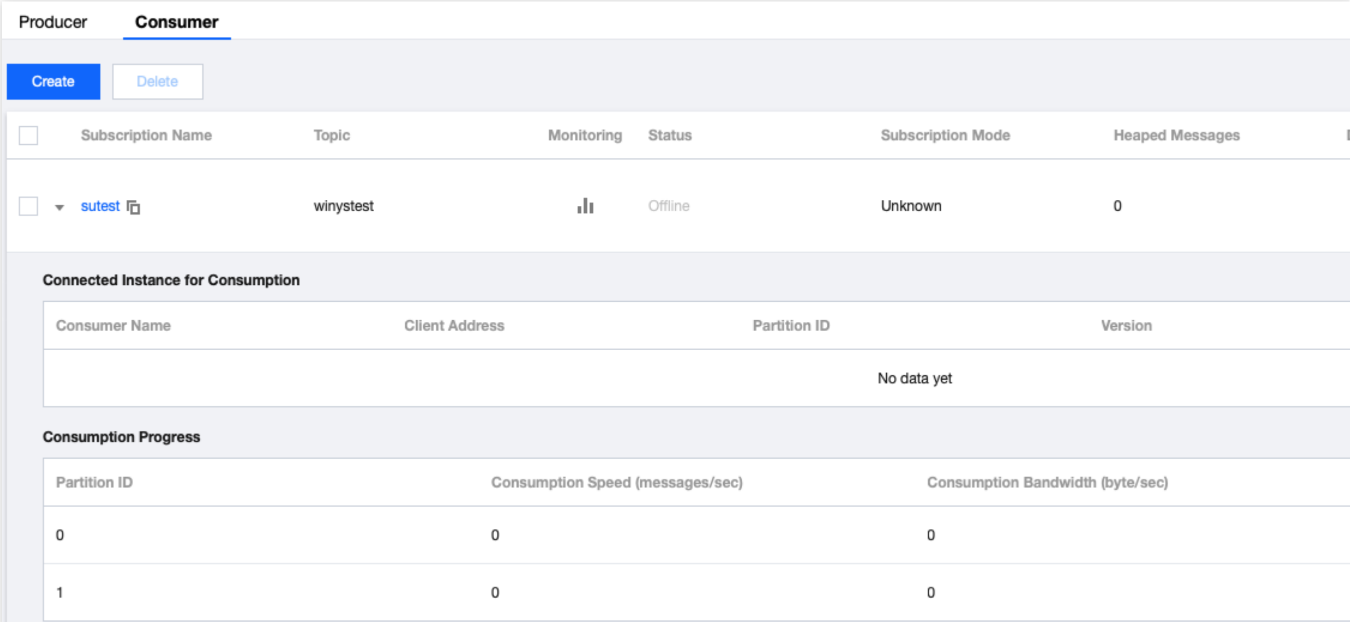
```
    except:
        # If the consumption fails, the message will be delivered again.
        consumer.negative_acknowledge(msg)
```

7. Log in to the TDMQ for Apache Pulsar console, click **Topic** > **Topic Name** to enter the consumption management page, and click the triangle below a subscription name to view the production and consumption records.



Note

Above is a brief introduction to message publishing and subscription. For more information, see Demo or Pulsar Python client.

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SDK for Node.js

Last updated：2024-08-08 11:10:24

Overview

TDMQ for Apache Pulsar 2.7.1 and above clusters already support Apache Pulsar SDK for Node.js. This document describes how to access the SDK.

Prerequisites

Get the access address
Copy the access address on the **Cluster Management** page in the TDMQ for Apache Pulsar console.
Get the token
Configure the role and permission as instructed in Role and Authentication and get the token of the role.

Directions

1. Install the Node.js client in your client environment as instructed in Pulsar Node.js client.

```
$ npm install pulsar-client
```

2. In the code for creating the Node.js client, configure the prepared access address and token.

```
    const Pulsar = require('pulsar-client');

    (async () => {
      const client = new Pulsar.Client({
        serviceUrl: 'http://*', // Replace with the access address (copied from the
        authentication:    Pulsar.NewAuthenticationToken("eyJh**"), // Replace with
      });

      await client.close();
    })();
```

For how to use various features of the Apache Pulsar SDK for Node.js, see Pulsar Node.js client.

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