Blockchain as a Service

Quick Start

Quick Start

Hyperledger Fabric

Ant Blockchain

Quick Experience for Free

We provide a contract test blockchain for free to help you quickly experience our blockchain service. To apply for your own blockservice, please follow Create a consortium.

> Notice: The test contract blockchain is for test only. Do not upload business code or business data.

Prerequisites

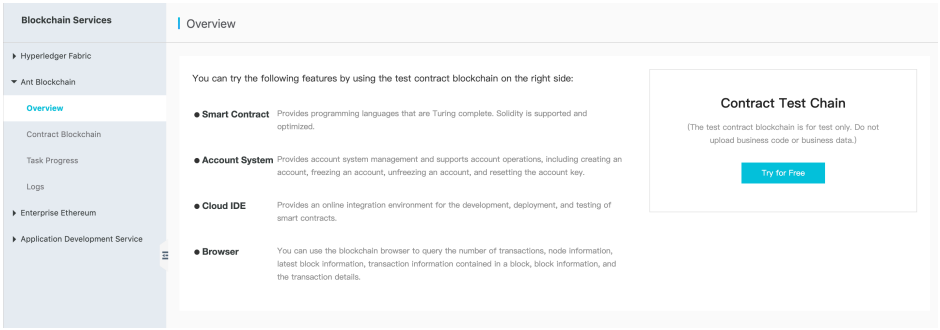
You have already activated Alibaba Cloud BaaS and logged on to Alibaba Cloud.

- If you are using an Alibaba Cloud account, click here to log on .
- If you are using a RAM user, click here to log on.

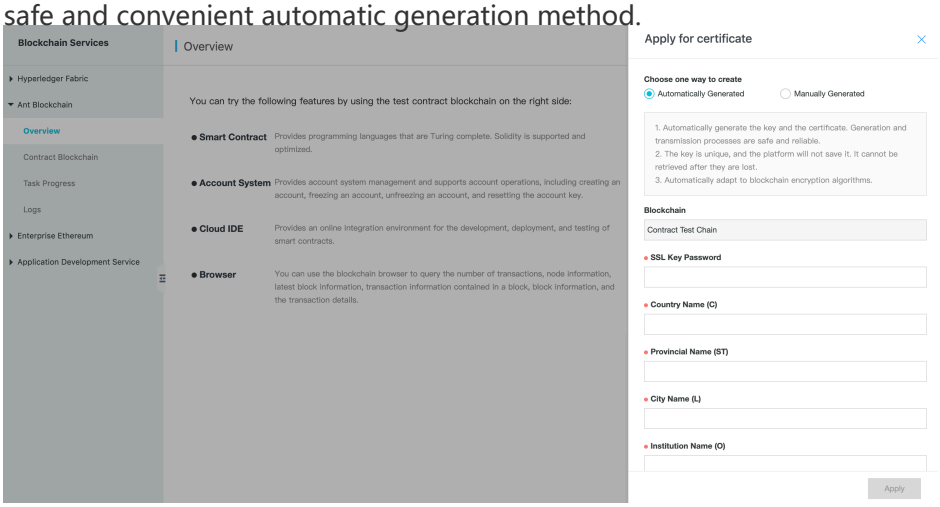
Apply for the blockchain

Log on to the Alibaba Cloud BaaS console. Click **Overview** under **Ant Blockchain** in the left navigation pane.

Click **Try for Free**, then fill the pop-up list to apply for the certificates.



We provide **Automatic/Manual** ways to generate the certificate. It is recommended to use a safe and convenient automatic generation method.

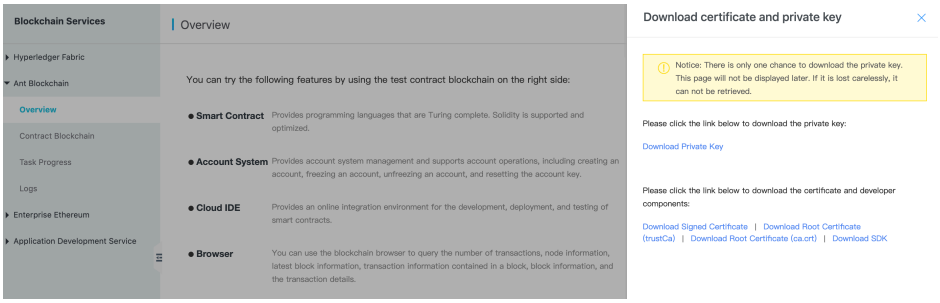


If you choose **Automatically Generated**, the following steps need to be completed.

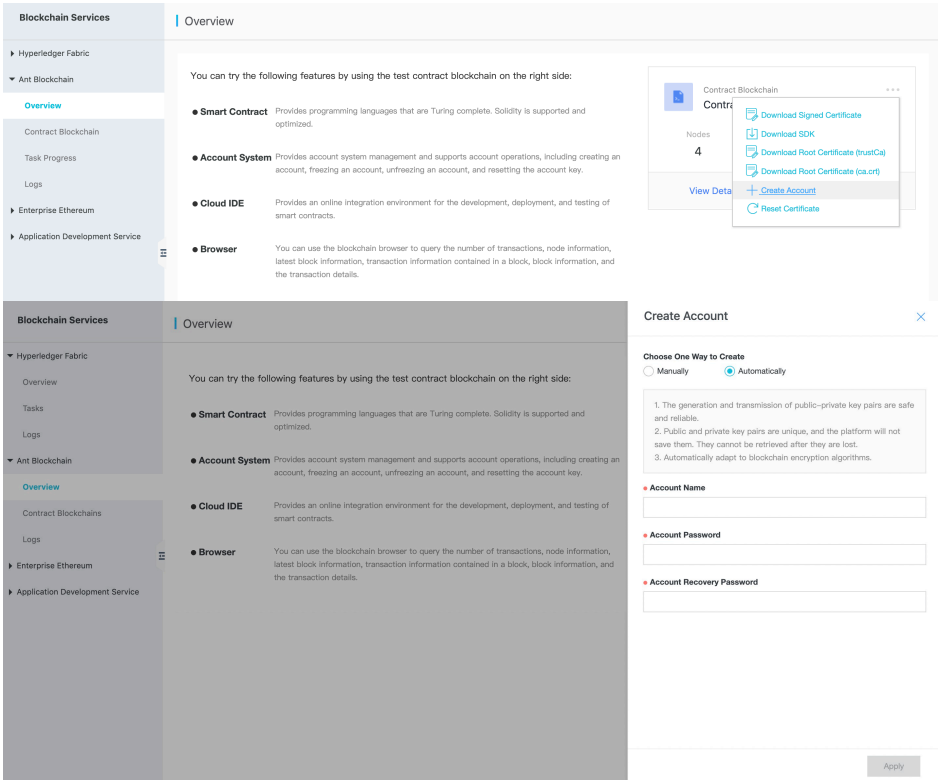
- Fill in the application information and click **Apply**.

  Download private key and certificate.

  Notice: There is only one chance to download the private key.

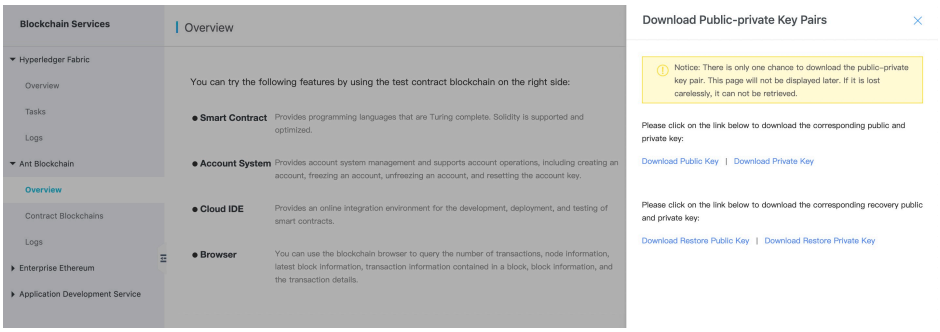


Click **Create Account**, choose **Automatically**, and then fill in the application information, click **Apply**.



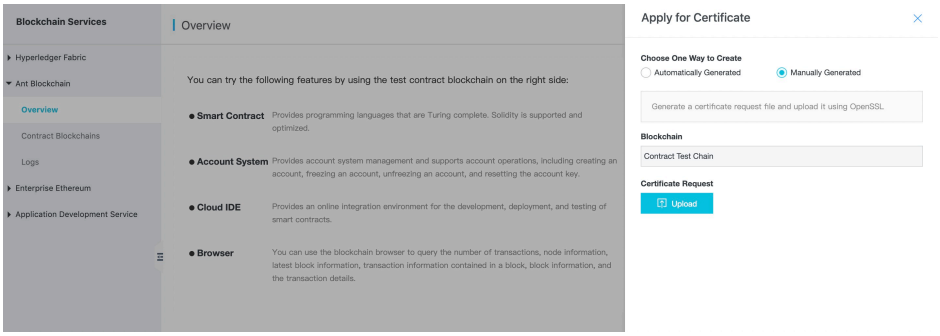
Download public-private key pairs.

Notice: There is only one chance to download the private key.

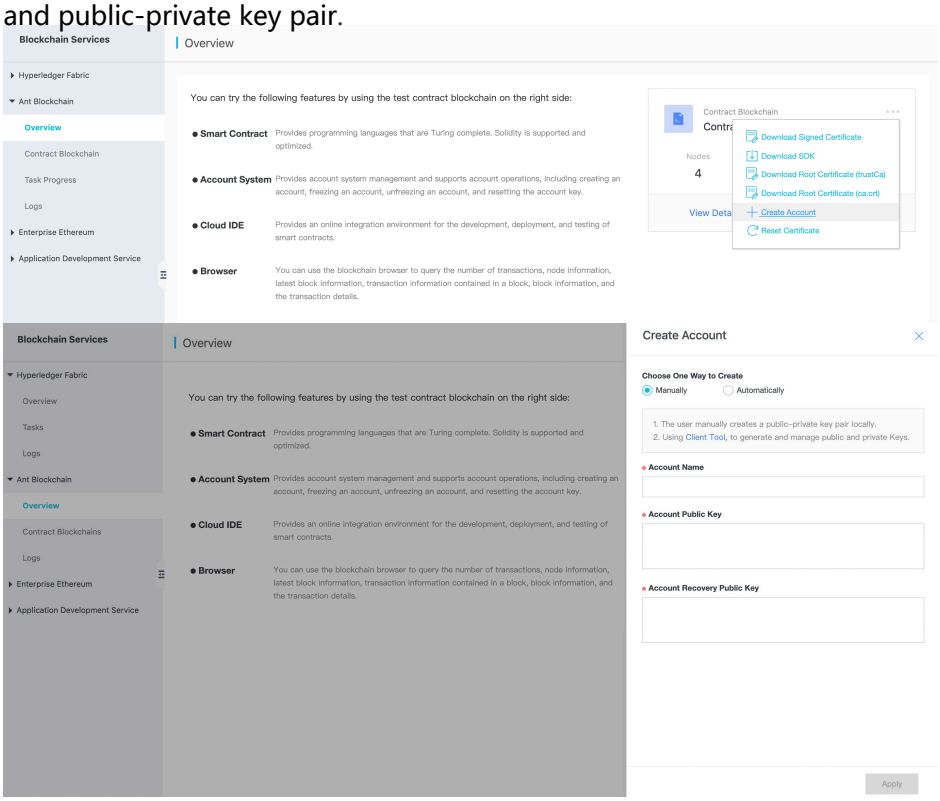


If you choose **Manually Generated**, the following steps need to be completed.

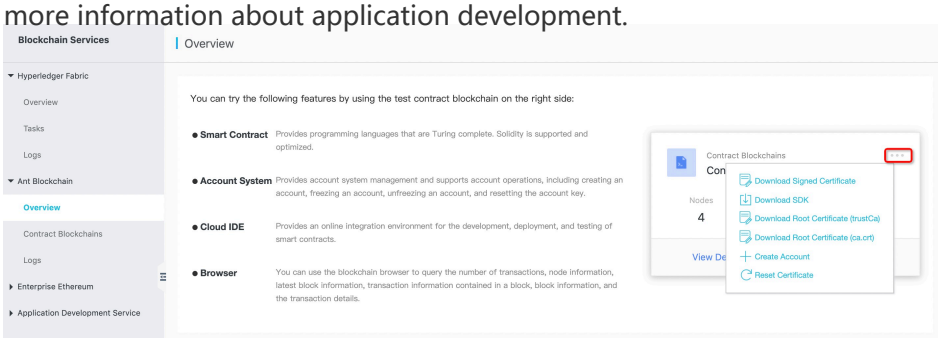
- Upload the locally generated certificate request file client.csr and click **Apply**. For the specific steps of locally generating the private key client.key and the certificateclient.csr, see Locally generate certificate and public-private key pair.



- Click **Create Account**, choose **Manually**, and then fill the Account Name, Account Public Key, and Account Recovery Public Key. For the specific steps of locally genrating the key pairs, see **Locally generate certificate and public-private key pair**.



Click the more button the top right of the test blockchain to download certificates, development components or reset certificates. You can refer to **Development Guides** for more information about application development.



Locally generate certificate and public-private key pair

Use OpenSSL

Note: You do not need to manually install OpenSSL on a macOS system.

Install OpenSSL

Install OpenSSL on the Windows operating system as follows:

Go to OpenSSL download page (English), find version 1.0.2o (recommended), and download the installation package. Or, you can click the following download link:

- 32-bit OpenSSL installation package (direct download)
- 64-bit OpenSSL installation package (direct download)

Open the command line tool and go to the bin directory of the OpenSSL installation path.

Prepare the environment variables and enter set OPENSSL_CONF=openssl.cfg on the command line.

Generate certificate requests

Generate private keys and certificate requests by using OpenSSL.

Note: You must remember the password of the private key and save the private key file properly.

```
openssl req -newkey rsa:2048 -keyout key_pkcs10.pem -out csr.pem    Generatinga 2048 bit RSA private key
.....+++    .....+++    writingnew private key to 'key_pkcs10.pem'    EnterPEM pass
phrase:    Verifying- Enter PEM pass phrase:    -----
```

While this command is being executed, you are required to enter the following information:

Country name (2-letter code): Use the International Standards Organization (ISO) format and enter the 2-letter country code. For example, enter CN for China.

State or province name (full name): The province. For example, Zhejiang.

Locality name (for example, city): The city. For example, Hangzhou.

Organization name (for example, company): The organizational unit. For example, Pinyin of a

company name.

Organizational unit name (for example, section): For example, IT Dept.

Common name (for example, domain name of your website): The domain name of the website encrypted with SSL.

> This is a domain name that uses SSL certificate. For example, pay.xxxx.com. Different URLs are defined here as different website domain names. For example: xxxx.com, www.xxxx.com, and pay.xxxx.com are identified as three different website domain names. The website domain name here must be the same as the SMTP/POP3 server name set by the mail client software.

Email address: Optional, the email address.

Challenge password: Optional.

Optional company name: Optional.

Use local key service

For your convenience, the BaaS platform provides a Java version of local key service.

Start local key service

The Java runtime environment must be version 1.7 or later.

Download the key generation tool. Click here to download.

Run the command java -jar baas-crypto-tool-1.0.0.jar --server.port=8080 to start the key service.

Generate certificate requests

After you start the key service, in the browser, enter http://localhost:8080/api/crypto/generateTlsKey?algo=rsa&isPkcs8=true&password=${password} to generate the tlskey.zip file. Unzip the file to obtain client.csr and client.key. client.key is used to connect to the blockchain, and client.csr needs to be signed by the BaaS platform.

Note: Replace ${password} in the link with your own password.

Generate public and private key pairs

After you start the key service, in the browser, enter http://localhost:8080/api/crypto/generateUserKey? algo=ec&isPkcs8=true&password=${password} to generate the userkey.zip file. Unzip the file to obtain user.key and pub.txt. user.key is the private key of the user, and pub.txt is the public key of the user.

You can run this command twice to generate two public private key pairs. One is the key pair of the account and the other one is the recovery key pair.

Quick start

This guide describes how to apply for a blockchain in Ant Blockchain. You need to complete the following steps:

1. Create a consortium
2. Create a blockchain
3. Apply for blockchain permission
4. Develop applications

Prerequisites

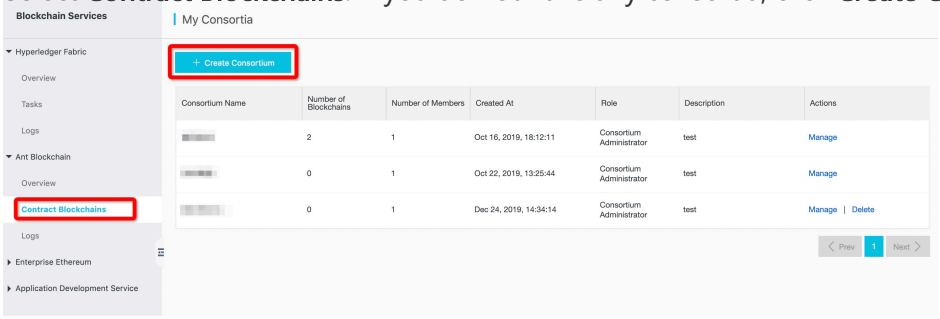
You have activated Alibaba Cloud BaaS and logged on to Alibaba Cloud.

If you use an Alibaba Cloud account, click here to log on.

Create a consortium

Log on to the Alibaba Cloud BaaS console.

Select **Contract Blockchains**. If you do not have any consortia, click **Create Consortium**.

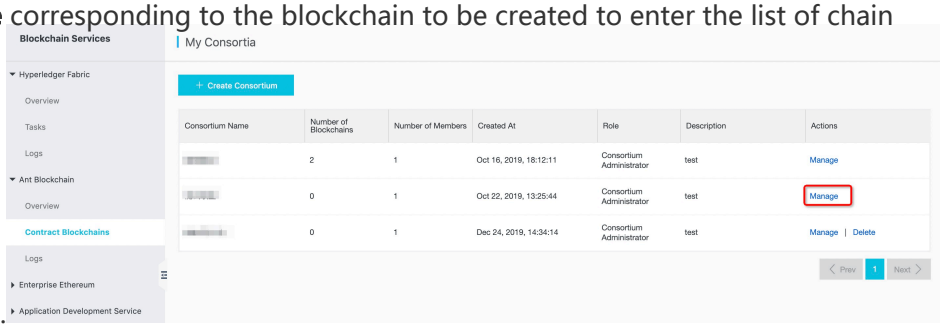


After the consortium is created, you can create a blockchain.

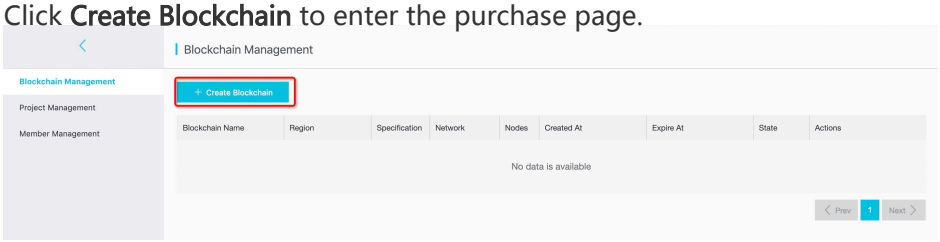
Create a blockchain

On the **Contract Blockchains** page complete the following steps to create a blockchain:

1. Click **Manage** corresponding to the blockchain to be created to enter the list of chain management.



Click **Create Blockchain** to enter the purchase page.



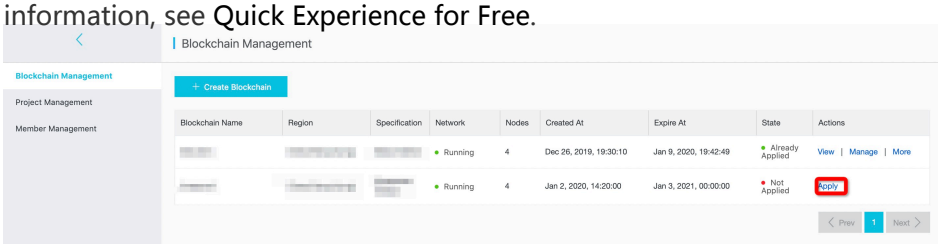
On the purchase page, select the consortium, and the purchased blockchain will be configured in your selected consortium. Then select the duration of the blockchain according to your needs and click **Buy Now** (see Purchase Guide).

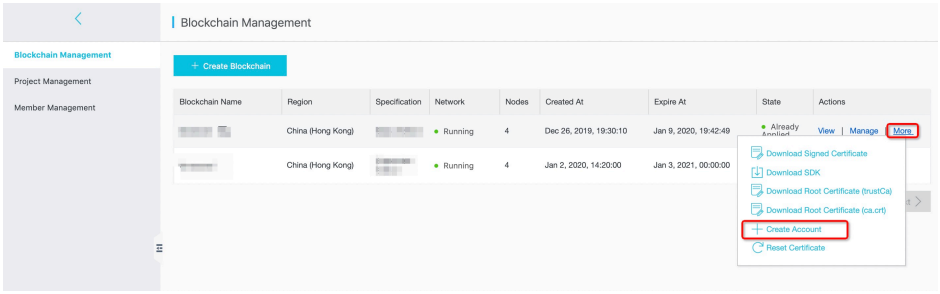
For more operations, see Manage consortium blockchains.

Apply for blockchain permission

After the blockchain is created, you can then apply for blockchain permissions to prepare for blockchain development.

On the blockchain list page, click **Apply** to apply for certificates and account. For more information, see Quick Experience for Free.





Then download certificates and development components to start develop blockchain applications.

Develop applications

You can refer to Development Guides for more information about application development.

Enterprse Ethereum - Quroum

Quick start

Alibaba Cloud BaaS provides a quick mode to create and deploy secure Enterprise Ethereum - Quorum networks. You only need to specify required information, and Alibaba Cloud BaaS will automatically perform operations to create a complete Quorum network.

> Note: After you are getting more familiar with Quorum technology, you can customize and extend your blockchain network by inviting new members. These new members can deploy their Quorum nodes on cloud platforms (like AWS, Azure, etc.) or in on-premise environment. Alibaba Cloud BaaS can help you build up a cross-cloud, cross-region consortium blockchain network easily.

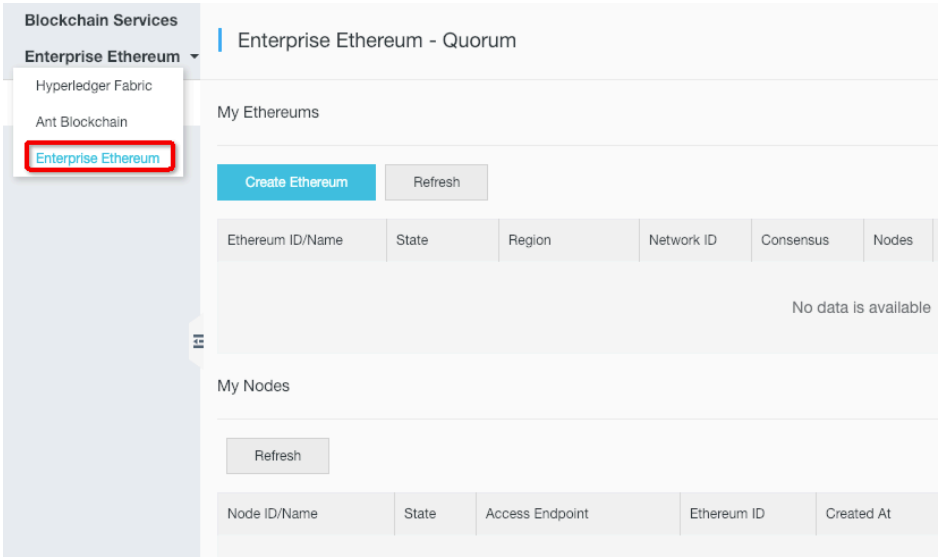
Create Enterprise Ethereum - Quorum

Log on to Alibaba Cloud.

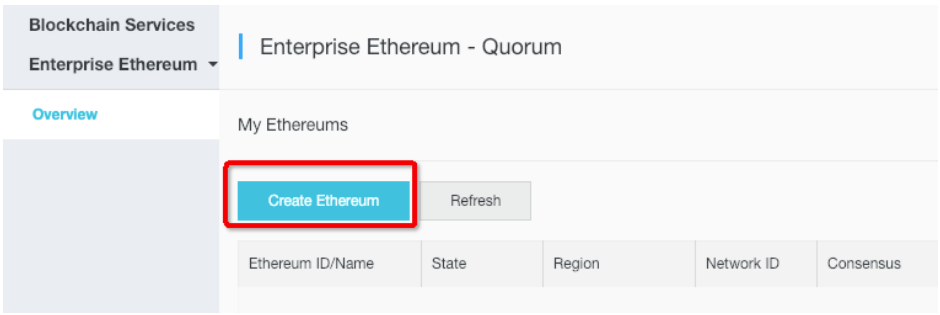
- If you are using an Alibaba Cloud account, click here to log on .

- If you are using a RAM user, click here to log on.

Log on to the Alibaba Cloud BaaS console. Click the top left navigation panel and choose the entry **Enterprise Ethereum**.



Click**Create Ethereum**.

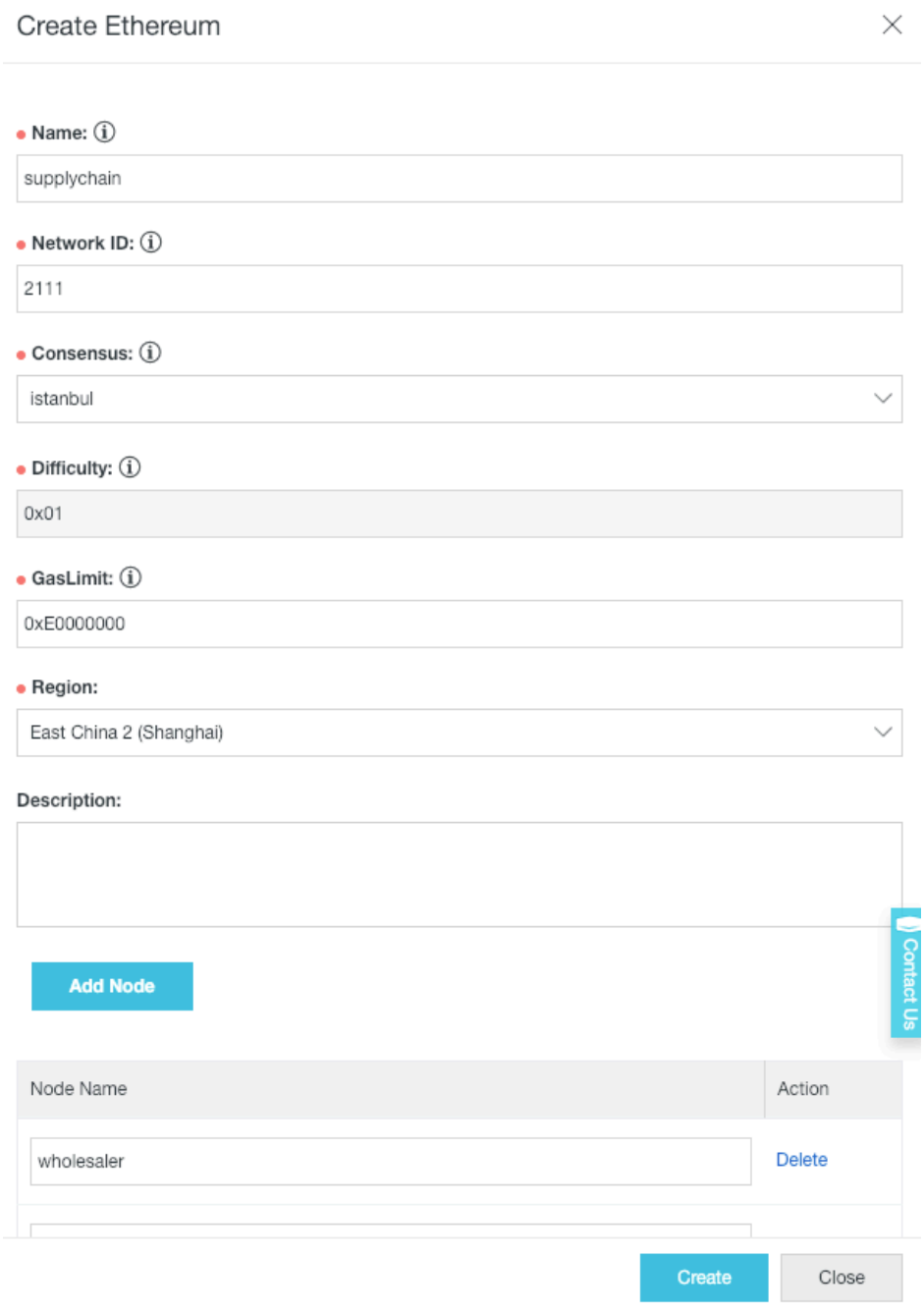


Specify the following information.

Parameter	Description
Name	We recommend that you enter a business-related name that is easy to identify.
Network ID	The network id of Ethereum network, which can’ t be modified after creation.
Consensus	Istanbul BFT (Byzantine Fault Tolerance) Consensus: A PBFT-inspired consensus algorithm with transaction finality, by AMIS.
GasLimit	Gas limit can be applied to both individual transactions and blocks, block-gas-limit. For individual transactions, the gas limit represents the maximum amount of gas you indicate you are willing to pay for a contract execution transaction. The block gas limit represents the maximum

	cumulative gas used for all the transactions in a block. With the launch of Homestead, the block gas limit floor will increase from 3,141,592 gas to 4,712,388 gas (~50% increase).
Region	The region where your organization is located. We recommend that you select the region where your business application system is located.
Description	Enter the organization description.

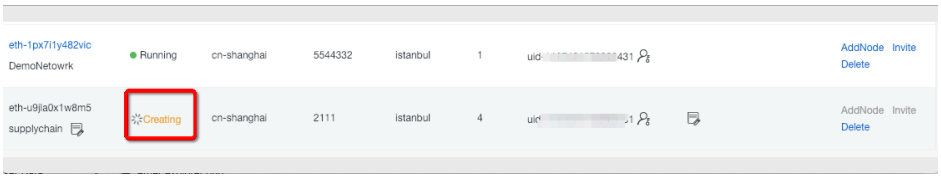
Click the "Add Node" button to add Ethereum network node as you need.



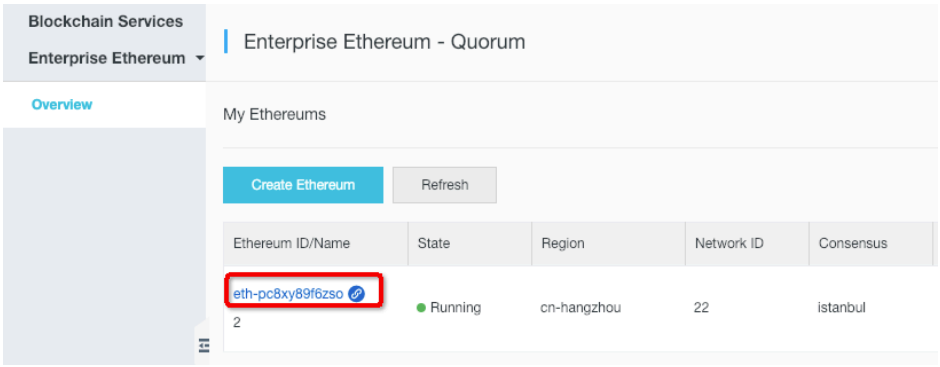
Click **Create**。

On the **Overview** page, you can see the network and node that you created. The network and node are in the **Creating** status.

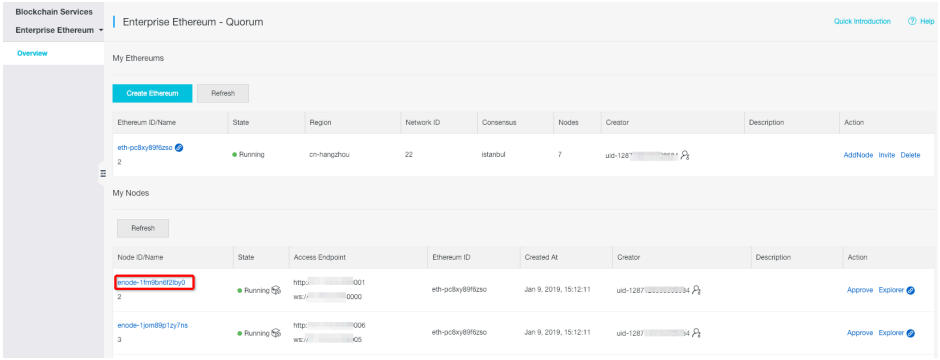
It may take 15~40 minutes for the system to configure and create the resources.



After you have created one network, you can click the name of the network in **My Ethereums** to view the status of the networks.



In **My Nodes**, click the name of a node to view the details.



Node details are included in tabs such as **Configuration**, **Node Information**, **Security** , and **Logs**.