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FAQ

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Document conventions

Style	Description	Example
Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	**Danger:** Resetting will result in the loss of user configuration data.
Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	**Warning:** Restarting will cause business interruption. About 10 minutes are required to restart an instance.
Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	**Notice:** If the weight is set to 0, the server no longer receives new requests.
Note	A note indicates supplemental instructions, best practices, tips, and other content.	**Note:** You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click **Settings**> **Network**> **Set network type**.
Bold	Bold formatting is used for buttons , menus, page names, and other UI elements.	Click **OK**.
`Courier font`	Courier font is used for commands	Run the `cd /d C:/window` command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	This format is used for an optional value, where only one item can be selected.	`ipconfig [-all|-t]`
{} or {a|b}	This format is used for a required value, where only one item can be selected.	`switch {active|stand}`

Table of Contents

1.Device connection

This topic lists common questions about device connection in Link IoT Edge and provides answers to them.

What can I do if the gateway appears offline in the IoT Platform console after I start the gateway device for the first time?

Run the following command on the gateway device to check whether the device can connect to the Alibaba Cloud Message Queuing Telemetry Transport (MQTT) server:

```
ping iot-as-mqtt.your_Region_ID.aliyuncs.com
```

- If the ping from the device to the Alibaba Cloud MQTT server fails, check the firewall configuration of your intranet. If a firewall is enabled on your intranet, the firewall may block the device from connecting to the Alibaba Cloud MQTT server. In this case, switch to a network where no firewall is configured.
- If the ping from the device to the Alibaba Cloud MQTT server succeeds, make sure that the ProductKey, DeviceName, and DeviceSecret parameters are correctly set for the device and the **Singapore** region is selected for the device in the IoT Platform console.

What can I do if I fail to set the property value of a sub-device though the sub-device properly connects to the gateway and reports property data?

Make sure that the property value to be set for the sub-device is the same as the corresponding value in the IoT Platform console. In addition, make sure that the value is in the format specified in the Thing Specification Language (TSL) model that is defined for the sub-device in IoT Platform.

What can I do if a sub-device properly connects to the gateway but its service fails to be called?

Make sure that the property value used to call the service is the same as the corresponding value in the IoT Platform console. In addition, make sure that the value is in the format specified in the TSL model that is defined for the sub-device in IoT Platform.

2.Sub-device access

This topic lists common questions about sub-device access in Link IoT Edge and provides answers to them.

What can I do if the gateway fails to access a simulated Modbus sub-device running on a Windows host?

Disable the firewall on the Windows host. Alternatively, configure the firewall to allow the gateway to access the simulated Modbus sub-device through the specific port of the sub-device.

3.Link IoT Edge installation

This topic lists common questions about Link IoT Edge installation and provides answers to them.

Why does the link-iot-edge.sh script fail to be run on a host running Windows 7 or Windows 10?

The Bash environment required by the *link-iot-edge.sh* script is unavailable on the host. We recommend that you install Git Bash on the host. For more information about how to build a runtime environment for Link IoT Edge on a Windows host, see Install Link IoT Edge on Windows.

Can Link IoT Edge run in a Kubernetes cluster?

Yes, Link IoT Edge can run in a Kubernetes cluster.

4.Sub-device disconnection

This topic describes how to fix the sub-device disconnection issue.

Sub-device disconnection

Devices connected to a gateway are called sub-devices. If a sub-device is not in the online or active state, follow these steps to fix the issue:

Step 1: Make sure that you use the commands generated by the IoT Platform console to install and start Link IoT Edge

The commands generated by the IoT Platform console free you from manual installation operations, thereby eliminating errors caused by manual operations.

For more information, see Install and start Link IoT Edge in Build an environment.

Step 2: Make sure that all services are in the active state

Run the following command in a shell multiple times to check whether all services remain in the active state:

```
/linkedge/gateway/build/script/iot_gateway_status.sh
```

- If the output is as follows, all services are in the active state.

```
[redacted]:/linkedge/gateway/build/script# ./iot_gateway_status.sh

------------------------------------------------------------
                Link IoT Edge Service Status
------------------------------------------------------------

[  +  ]  Service irot-service is active, pid is 13709 13709
[  +  ]  Service keychain-service is active, pid is 13710 13710
[  +  ]  Service config-manager is active, pid is 13711 13711
[  +  ]  Service logger is active, pid is 13716 13716
[  +  ]  Service redis-server is active, pid is 13719 13719
[  +  ]  Service cloud-proxy is active, pid is 13720 13720
[  +  ]  Service fota is active, pid is 13726 13726
[  +  ]  Service RemoteTerminalDaemon is active, pid is 13728 13728
[  +  ]  Service credential is active, pid is 13732 13732
[  +  ]  Service message-router is active, pid is 13735 13735
[  +  ]  Service gw-cascade is active, pid is 13736 13736
[  +  ]  Service dimu is active, pid is 13744 13744
[  +  ]  Service id2teed is active, pid is 13749 13752 13749 13752
[  +  ]  Service fc-base is active, pid is 13785 13785
[  +  ]  Service scene is active, pid is 13794 13794
[  +  ]  Service service-monitor is active, pid is 13797 13797
[  +  ]  Service ModbusDebugger is active, pid is 13799 13800 13799 13800
[  +  ]  Service ModbusDebuggerProxy is active, pid is 13800 13800
[  +  ]  Service task-dispatcher is active, pid is 13801 13801
[  +  ]  Service nginx is active, pid is 13844 13848 13849 13844 13848 13849
[  +  ]  Service high-availability is active, pid is 13822 13822
```

- If the output indicates that some services are in the inactive state, run the following command as the root user to restart Link IoT Edge:

  ```
  sudo /linkedge/gateway/build/script/iot_gateway_start.sh
  ```

  Run the **/linkedge/gateway/build/script/iot_gateway_status.sh** command again to check whether all services are in the active state. If a service is still in the inactive state, follow these steps to start it:

i. View logs in the userlog directory and logs of the service.
   - The path of the userlog directory is */linkedge/run/logger/userlog*.
   - Logs of the service are stored in */linkedge/run/logger/<service_name>*, where <service_name> indicates the name of the service.

ii. Manually start the service and view logs of the service.

If the logger service fails to start, run the **ifconfig** command to check whether the loopback interface is in the up state.

```
ifconfig lo
```

If the loopback interface is not in the up state, run the following command to change its status to up:

```
sudo ifconfig lo up
```

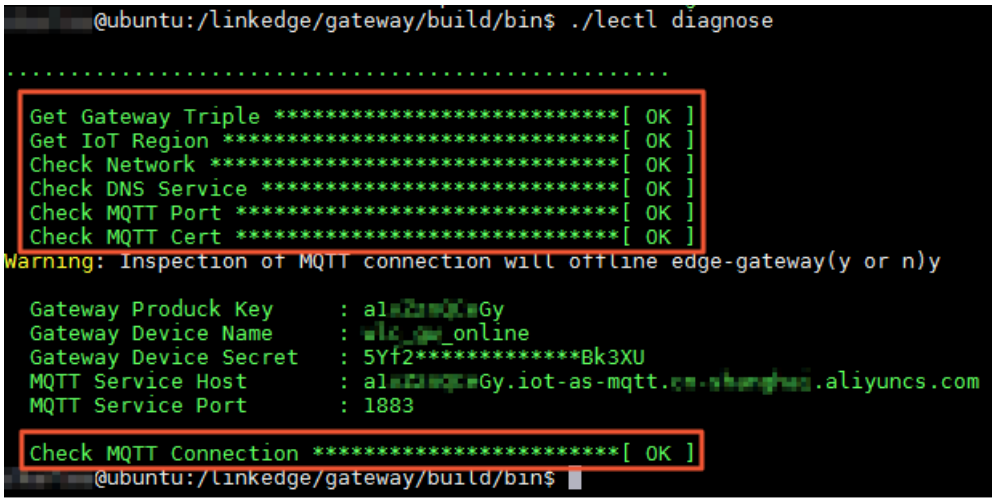
If any service remains in the inactive state after you complete the preceding operations, analyze the cause based on the logs of the service.

Step 3: Make sure that the gateway is online

Log on to the IoT Platform console and check whether the gateway is online. If the gateway is offline, run the following command to diagnose the cause:

```
cd /linkedge/gateway/build/bin/ && ./lectl diagnose
```

In normal cases, OK is displayed next to each operation in the command output, as shown in the following figure.



If the gateway is offline, the possible causes are as follows:

- The certificate of the gateway device fails to be obtained.

  Workaround: Run the `cd /linkedge/gateway/build/bin/ && ./lectl config set -g $your_productkey $your_devicename $your_devicesecret` command to import the certificate of the gateway device.

- The network is abnormal.

Workaround: Stop the firewall from blocking the connection and disable the HTTP proxy and iptables on the gateway device.

- The certificate of the gateway device is incorrect.

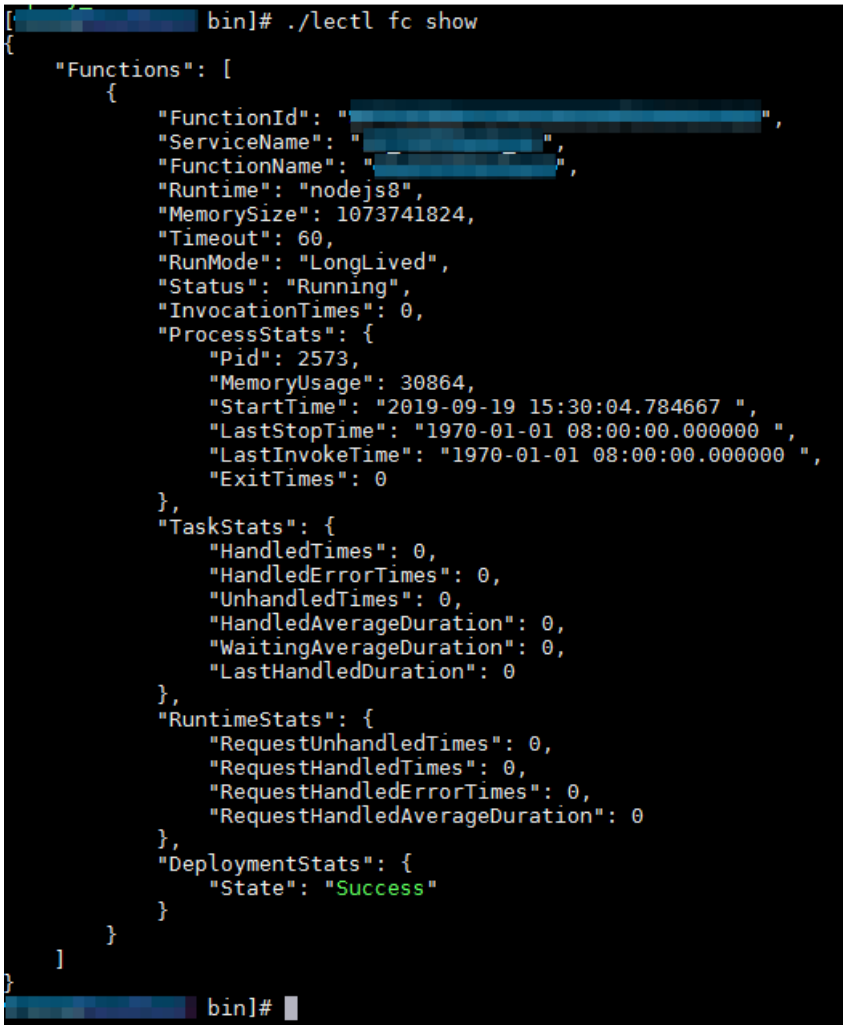
  Workaround: Run the `./lectl config set -g` command to import the correct certificate of the gateway device.

Step 4: Make sure that the driver runs properly after the edge instance is deployed

Run the following command multiple times to view the driver status:

```
cd /linkedge/gateway/build/bin && ./lectl fc show
```

The following output indicates that the driver is running properly.



In the output, FunctionName indicates the driver name and StartTime indicates the time when the driver started.

- If the value of StartTime in the output keeps changing, the driver keeps exiting and starting. In this case, analyze logs of the driver to locate the cause.
- If the value of State in the output is not Success, make sure that:

- The driver is packed into a .zip package, and the binary or index file of the driver is located in the top-level directory of the .zip package.
- The main file of the driver is executable if the driver is programmed in C.
- The unzip tool is installed in the runtime environment of Link IoT Edge.

Step 5: Make sure that the driver properly communicates with the sub-device

View logs about communication between the driver and sub-device.

If the communication between the driver and sub-device is abnormal, the possible causes are as follows:

- The driver assigned to the edge instance for managing the sub-device is incorrectly configured in the IoT Platform console.

  Workaround: Log on to the IoT Platform console, go to the **Instance Details** page, and then click the **Devices & Drivers** tab. Modify the driver configuration, and then redeploy the edge instance.

- The communication link between the driver and sub-device is abnormal.

  Workaround: Verify the physical connection and cancel network blocking on the firewall.

Step 6: Make sure that the correct certificate information is configured for registering each sub-device

Run the following command to obtain the certificate information, including ProductKey and DeviceName, about all sub-devices under your Alibaba Cloud account:

```
cd /linkedge/gateway/build/bin && ./lectl config get -d
```

The output is as follows.

In the output, value Used of State indicates that the certificate of the sub-device has been used for registration, and value Unused indicates not. Check the certificate of the sub-device whose value of State is Unused and make sure that the sub-device uses the correct certificate.

Step 7: Submit a ticket to apply for technical support

If some sub-devices are still offline after you complete the preceding steps, submit a ticket to report the issue and apply for technical support. When submitting a ticket, you must provide sub-device information and operational logs. For more information, see Submit a ticket.

Appendix

- Log file directories

Log files of each module of Link IoT Edge are stored in */linkedge/run/logger*, as shown in the following figure.

```
charles@ubuntu:/linkedge/run/logger$ pwd
/linkedge/run/logger
charles@ubuntu:/linkedge/run/logger$ ls -al
total 96
drwxr-xr-x 20 root root  4096 Jan 30 11:30 .
drwxr-xr-x  9 root root  4096 Jan 30 11:30 ..
drwxr-xr-x  2 root root  4096 Jan 30 19:39 cloud-proxy
drwxr-xr-x  2 root root 12288 Jan 30 11:22 config-manager
drwxr-xr-x  2 root root  4096 Jan 30 11:22 credential
drwxr-xr-x  2 root root  4096 Jan 30 19:32 c_runtime
drwxr-xr-x  2 root root  4096 Jan 30 11:22 data-manager
drwxr-xr-x  2 root root  4096 Jan 30 11:22 dimu
drwxr-xr-x  5 root root  4096 Jan 30 19:56 fc-base
drwxr-xr-x  2 root root  4096 Jan 30 11:22 fota
drwxr-xr-x  2 root root  4096 Jan 30 11:22 gateway-monitor
drwxr-xr-x  2 root root  4096 Jan 30 11:22 ifttt
drwxr-xr-x  2 root root  4096 Jan 25 15:37 irot-service
drwxr-xr-x  2 root root  4096 Jan 25 15:42 keychain-service
drwxr-xr-x  2 root root  4096 Jan 30 16:55 message-router
drwxr-xr-x  2 root root  4096 Jan 30 11:22 remote_access_daemon
drwxr-xr-x  2 root root  4096 Jan 30 11:22 service_monitor
drwxr-xr-x  2 root root  4096 Jan 30 16:59 task-dispatcher
drwxr-xr-x  2 root root  4096 Jan 30 19:59 userlog
drwxr-xr-x  2 root root 12288 Jan 30 20:05 watch-dog
charles@ubuntu:/linkedge/run/logger$ cd fc-base/
charles@ubuntu:/linkedge/run/logger/fc-base$ ls -al
total 49264
drwxr-xr-x  5 root root    4096 Jan 30 19:56 .
drwxr-xr-x 20 root root    4096 Jan 30 11:30 ..
drwxr-xr-x  2 root root    4096 Jan 30 11:30 DeviceSimulator
drwxr-xr-x  2 root root    4096 Jan 30 11:30 Light
-rw-r--r--  1 root root     525 Jan 28 11:41 log_2019-01-28-11-41-59-1.txt
-rw-r--r--  1 root root    1090 Jan 29 16:09 log_2019-01-29-16-07-56-1.txt
-rw-r--r--  1 root root    1090 Jan 29 19:43 log_2019-01-29-16-26-45-1.txt
```

> **Note**
>
> - Log files of each driver are stored in a separate directory named after the driver name in the *fc-base/* directory. For example, log files of the Light driver are stored in the *fc-base/Light* directory.
> - Error log files in the *userlog* directory record errors such as operation process errors and configuration errors. Generally, these errors cannot be automatically fixed.

- Log files in the userlog directory

- Logs of the device info manager unit (dimu) module

  [CloudOffline][Succeeded]: Device cloud ID: [%s]
  Indicates that a sub-device is disconnected from IoT Platform. The cloud ID of the sub-device is in the productkey_devicename format. The cloud ID of a sub-device indicates the ID of the sub-device in IoT Platform.
  [CloudOffline][Failed]: Device cloud ID: [%s]
  Indicates that a sub-device fails to be disconnected from IoT Platform.
  [LocalOffline][Failed]: Device local ID: [], Cloud ID is illegal: %s
  Indicates that a sub-device fails to be disconnected from the gateway because the cloud ID is incorrect.
  [LocalOffline][Failed]: Device local ID: [], can not find specified Cloud ID: %s
  Indicates that a sub-device fails to be disconnected from the gateway because no cloud ID is specified.
  [LocalOffline][Succeeded]: Device cloud ID: [%s]
  Indicates that a sub-device is disconnected from the gateway.
  [Authorization][Failed]: Unable to authorize device %s with Product Key %s : error code: %d.
  Indicates that a sub-device fails to be registered due to the specific error.
  [LocalOnline][Succeeded]: Device cloud ID: [%s]
  Indicates that a sub-device is connected to the gateway.
  [CloudOnline][Failed]: Device cloud ID: [%s], is a local device
  Indicates that a sub-device fails to be connected to IoT Platform because the sub-device is a local one.
  [CloudOnline][Succeeded]: Device cloud ID: [%s]
  Indicates that a sub-device is connected to IoT Platform.
  [CloudOnline][Failed]: Device cloud ID: [%s]
  Indicates that a sub-device fails to be connected to IoT Platform.

- Logs of the cloud-proxy module

  [gateway_connect_cloud]gateway online! productkey=%s, devicename=%s
  Indicates that the gateway goes online.
  [gateway_connect_cloud]gateway offline! productkey=%s, devicename=%s
  Indicates that the gateway is offline because the network is disconnected.

5.Fun

Fun is used as a development tool for Function Compute. This topic lists common questions about Fun and provides answers to them.

What can I do if the error "xcrum: error: invalid active developer path" is returned when I install NVM on a computer running Mac OS X?

When you run the installation script of Node Version Manager (NVM) on a computer running Mac OS X, you may receive the following error message:

```
xcrum: error: invalid active developer path (/Library/Developer/CommandLineTools), missing xcrum at: /Library/Developer/CommandLineTools/usr/bin/xcrum
```

The error message indicates that no command line tool is installed on the computer. You can run the following command to install Xcode:

```
xcode-select --install
```

6.Message and traffic statistics

Currently, Link IoT Edge services are free of charge. However, you are charged for the messages and traffic consumed when you use Link IoT Edge services. This topic lists common questions about message and traffic statistics in Link IoT Edge and provides answers to them.

- Messages in this topic refer to Message Queuing Telemetry Transport (MQTT) messages in Alibaba Cloud IoT Platform. For more information about message billing, see Messaging fees.
- Traffic refers to data traffic, for example, 2G, 3G, 4G, or LTE traffic, consumed over carriers' networks.

How are MQTT heartbeat packets billed?

IoT Platform only counts MQTT heartbeat packets in traffic statistics, not in message statistics.

Size of an MQTT heartbeat packet	Reporting frequency	Daily average traffic	Monthly average traffic
2 bytes	Once every 120 seconds	2 × (24 × 60 × 60)/120 = 1440 bytes	1440 × 30 = 43,200 bytes

How is traffic consumed when I deploy an edge instance?

When you deploy an edge instance, traffic is mainly consumed during resource download. For example, when you download the driver, device and driver configurations, code of Function Compute functions, and Thing Specification Language (TSL) model definitions of products, HTTP traffic is consumed. After you complete the download, these resources do not consume more traffic.

The following table lists the sizes of official drivers provided by IoT Platform. The sizes of other edge instance resources vary based on actual situations.

Official driver	Size
WebSocket driver in C	5 MB
Modbus driver in C	3.5 MB
Modbus driver in Python	49.9 KB
OPC UA driver in Python	17.7 KB

How is traffic consumed during sub-device property reporting, event reporting, and service call?

During sub-device property reporting, event reporting, and service call, the volume of the traffic consumed depends on the number of reported properties and events, property and event reporting frequency, and number of service calls.

When you develop a driver, pay attention to the following items:

- Define an appropriate TSL model for sub-devices. For example, set the Identifier parameter to a value in an appropriate length for each property and merge or split property values appropriately.
- Set an appropriate frequency for reporting properties and events based on business requirements.
- Specify whether to report full or incremental property and event data based on business

requirements.

- Make sure that the Identifier parameter is defined in the IoT Platform console for each property to be reported. For more information about how to define a property in the IoT Platform console, see Add a TSL feature.
- Determine whether a long property value can be compressed and specify an appropriate encoding method, for example, Base64 or hexdump, to encode the value.

The traffic consumed for sub-device property reporting, event reporting, and service call can be calculated using the following methods:

- Property reporting

```
Request: /sys/$your_ProductKey/$your_DeviceName/thing/event/property/post {"id":"1945","version":"1.0","method":"thing.event.property.post","params":{"int32_rw":{"time":1565700807453,"value":0},"int32_r":{"time":1565700807453,"value":0},"float_rw":{"time":1565700807453,"value":0},"float_r":{"time":1565700807453,"value":0},"double_rw":{"time":1565700807453,"value":0},"double_r":{"time":1565700807453,"value":0},"enum_rw":{"time":1565700807453,"value":0},"enum_r":{"time":1565700807453,"value":0},"bool_rw":{"time":1565700807453,"value":0},"bool_r":{"time":1565700807453,"value":0},"string_rw":{"time":1565700807453,"value":""},"string_r":{"time":1565700807453,"value":"MlRVZq"},"date_rw":{"time":1565700807453,"value":""},"date_r":{"time":1565700807453,"value":"1565700807457"}}}
Response: /sys/$your_ProductKey/$your_DeviceName/thing/event/property/post_reply
{"code":200,"data":{"date_rw":"6311:tsl parse: date type must be a string of long(UTC ms) -> date_rw"},"id":"1945","message":"success","method":"thing.event.property.post","version":"1.0"}
```

- Event reporting:

```
Request: /sys/$your_ProductKey/$your_DeviceName/thing/event/event_int32/post
{"params":{"time":1565700809121,"value":{"int32_rw":0}},"id":"1955","version":"1.0","method":"thing.event.event_int32.post"}
Response: /sys/$your_ProductKey/$your_DeviceName/thing/event/event_int32/post_reply
{"code":200,"data":{},"id":"1955","message":"success","method":"thing.event.event_int32.post","version":"1.0"}
```

- Service call

```
Request: /sys/$your_ProductKey/$your_DeviceName/thing/service/property/set
{"method":"thing.service.property.set","id":"1115850974","params":{"string_rw":"hello world"},"version":"1.0.0"}
Response: /sys/$your_ProductKey/$your_DeviceName/thing/service/property/set_reply
{"id":"1115850974","code":200,"data":{}}
```

How is traffic consumed by the CloudMonitor service?

By default, the CloudMonitor service is disabled. You can enable it in the IoT Platform console as required. For more information about how to enable it, see Monitor resources. After you enable the CloudMonitor service for an edge instance in the IoT Platform console, monitoring information is uploaded to the IoT Platform console through HTTP or HTTPS. During the upload, traffic is consumed but MQTT messages are not generated.

The CloudMonitor service consumes much traffic. We recommend that you enable the CloudMonitor service over a Wi-Fi or cabled network.

Monitoring item	HTTP packet size of a single monitoring item	Reporting frequency	Daily average traffic	Monthly average traffic
Host monitoring	12.04 KB	Once every 15 seconds	12.04 × (60 × 60 × 24)/15 = 69,350.4 KB ≈ 70 MB	70 × 30 = 2,100 MB
Scene orchestration (four monitoring items)	300 bytes	Once every 60 seconds	4 × 300 × (60 × 60 × 24)/60 = 1,728,000 bytes = 1,728 KB	1,728 × 30 = 51,840 KB ≈ 52 MB
Edge application (four monitoring items)	300 bytes	Once every 60 seconds	4 × 300 × (60 × 60 × 24)/60 = 1,728,000 bytes = 1,728 KB	1,728 × 30 = 51,840 KB ≈ 52 MB
Driver (four monitoring items)	300 bytes	Once every 60 seconds	4 × 300 × (60 × 60 × 24)/60 = 1,728,000 bytes = 1,728 KB	1,728 × 30 = 51,840 KB ≈ 52 MB
Streaming data (four monitoring items)	300 bytes	Once every 60 seconds	4 × 300 × (60 × 60 × 24)/60 = 1,728,000 bytes = 1,728 KB	1,728 × 30 = 51,840 KB ≈ 52 MB

How is traffic consumed during remote access?

By default, the remote access feature is disabled. You can enable this feature in the IoT Platform console as required. After you enable the remote access feature, about 3.5 MB traffic is consumed for heartbeat maintenance every month. MQTT messages are not generated during remote access.

When you use the remote access feature to perform operations, for example, run shell commands and upload or download files, on a remote console, traffic is also consumed. We recommend that you use the remote access feature over a Wi-Fi or cabled network.

Size of a WebSocket packet	Reporting frequency	Daily average traffic	Monthly average traffic
ping-pong 20 bytes	Once every 15 seconds	20 × (24 × 60 × 60)/15 = 115,200 bytes	115,200 × 30 = 3,456,000 bytes ≈ 3.5 MB

How is traffic consumed when I use Log Service?

By default, Log Service is disabled. You can enable Log Service for an edge instance in the IoT Platform console as required. After you enable Log Service, traffic is consumed for uploading log files through HTTP. The traffic volume is related to the log level, log recording frequency, and log content length. We recommend that you use Log Service over a Wi-Fi or cabled network.

MQTT messages are not generated when you use Log Service.

7.Edge application

This topic lists common questions about edge applications and provides answers to them.

How do the containers of edge applications communicate with each other?

After you deploy an edge application to a gateway, the edge application uses its application name as the network alias, which is equivalent to the domain name, of its container. Other edge applications can use the application name to access the container of the edge application.

For example, you can create an edge application named mysql8 based on a Docker image of the MySQL 8.0 database and deploy the edge application to a gateway. Then, other edge applications can use mysql8 as the IP address of the MySQL database to access the MySQL database.

How do I enable an edge application running in a container to access the host where the container resides?

When you configure container information for the edge application, set Privilege Mode to Yes or click + Add Device Mapping to add a device mapping.

How do I enable persistent data storage for a container image-based edge application?

When you configure container information for the edge application, click **+ Add Volume Mapping** to add a mapping between a directory in the container and a directory on the host where the container resides. This ensures that no historical data of the edge application will get lost after you upgrade the edge application.

Why are logs of a C program not printed though the program is running properly?

Generally, this issue is caused by the cache mode of the standard output. To fix this issue, we recommend that you add the following code to the beginning of the code of the main function:

```
if (setvbuf(stdout, NULL, _IOLBF, 0))
 {
   perror("setvbuf failed!") ;
   exit(EXIT_FAILURE);
 }
```

What are the differences between Function Compute of Alibaba Cloud and that of Link IoT Edge?

- Different modes of code hosting: The code of Function Compute of Alibaba Cloud runs on ECS instances of Alibaba Cloud, while the code of Function Compute of Link IoT Edge runs on the gateway device of Link IoT Edge.
- Different access objects: Function Compute of Alibaba Cloud accesses cloud services through Alibaba Cloud service SDKs built in the runtime environment of functions. Function Compute of Link IoT Edge accesses sub-devices of IoT Platform gateways through specific SDKs built in the runtime

environment of functions to obtain sub-device data, and then processes and stores the data.

8.Link IoT Edge usage

This topic lists common questions about Link IoT Edge usage and provides answers to them.

If I want to use the resumable download feature, do I need to make extra development in addition to specifying QoS when configuring a message route?

No, extra development is not required. For more information about the resumable download feature, see Resume data transmission from a breakpoint.

How do I enable an ECS instance to receive data that a sub-device reports to IoT Platform through the gateway?

Use the data forwarding feature provided by Rules Engine in IoT Platform to forward device data to a specific topic you defined. Configure your ECS instance to call the specific API operation of IoT Platform to subscribe to the topic and obtain required data. For more information, see Data Forwarding.