AG35 Series QuecOpen FTP Service User Guide

Automotive Module Series

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About the Document

Revision History

Version	Date	Author	Description
1.0	2020-09-17	Kemp LI	Initial

Contents

Figure Index

1 Introduction

Quectel AG35 series modules support QuecOpen® solution. This document guides you how to start, verify and use the FTP service of these modules.

2 FTP Service

2.1. Overview

FTP (File Transfer Protocol) is a TCP-based protocol that uses a client/server mode. Through the protocol, you can upload or download files on the FTP server.

The FTP service of Quectel AG35 series QuecOpen modules is a built-in service provided by BusyBox. It is not started by default. For information on how to start the FTP service, see the following chapter.

Execute the following command in the shell command line of the module to view the FTP usage help information, as shown in the following figure.

```
ftpd
```

```
/ # ftpd
BusyBox v1.24.1 (2020-04-17 07:28:04 UTC) multi-call binary.

Usage: ftpd [-wvS] [-t N] [-T N] [DIR]

Anonymous FTP server

ftpd should be used as an inetd service.
ftpd's line for inetd.conf:
        21 stream tcp nowait root ftpd ftpd /files/to/serve
It also can be ran from tcpsvd:
        tcpsvd -vE 0.0.0.0 21 ftpd /files/to/serve

        -w      Allow upload
        -v      Log errors to stderr. -vv: verbose log
        -S      Log errors to syslog. -SS: verbose log
        -t,-T   Idle and absolute timeouts
        DIR     Change root to this directory
```

Figure 1: FTP Usage Help Information

2.2. Startup Methods

The AG35 series QuecOpen modules support three methods to start FTP service: through shell command line, init.d service, or inetd service. You can choose any of them according to the actual situation. This chapter introduces these three methods and their startup steps.

2.2.1. Startup Through Shell Command Line

Start the FTP service through the following shell command line.

```
tcpsvd -vE 0.0.0.0 21 ftpd -w /data
```

0.0.0.0 Indicates IP address.
21 Indicates FTP port.
-w Indicates that FTP has the permission to upload a file.
/data Indicates FTP directory.

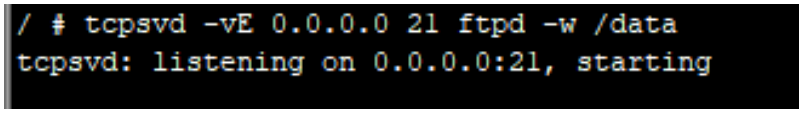

Figure 2: Start FTP Service Through Shell Command Line

2.2.2. Startup Through init.d Service

To start the FTP service through the init.d service, the module needs to integrate the FTP service startup script *start_ftpd_le*. The startup script is not integrated in the module by default, so you need to upload it to the directory */etc/init.d* of the module (or to the directory *ql-ol-rootfs/etc/init.d* in SDK package) before you can start the FTP service through the init.d service.

1. Upload the startup script *start_ftpd_le* to the directory */etc/init.d* (or to the directory *ql-ol-rootfs/etc/init.d* in SDK package). An example of the file content is as follows:

```
#! /bin/sh
#
# Copyright (c) 2009-2020 @ Quectel Wireless Solutions Co., Ltd.  All Rights Reserved.
#
# FTP Server     init.d script to start the busybox FTP daemon

DAEMON=/bin/tcpsvd
IP=0.0.0.0
PORT=21
PATH=/data
```

```
set -e

case "$1" in
  start)
        echo -n "Starting Busybox FTP Server: "
        /sbin/start-stop-daemon -S -b -a $DAEMON -- -vE $IP $PORT /sbin/ftpd -w $PATH
        echo "done"
        ;;
  stop)
        echo -n "Stopping Busybox FTP Server: "
        /sbin/start-stop-daemon -K -x $DAEMON
        echo "done"
        ;;
  restart)
        $0 stop
        $0 start
        ;;
  *)
        echo "Usage $0 { start | stop | restart}" >&2
        exit 1
        ;;
esac

exit 0
```

2. Execute the following command in shell environment of the module to set the script file permissions to be readable, writable and executable.

```
chmod 777 /etc/init.d/start_ftpd_le
```

3. To start the FTP service, execute the following command in shell environment of the module.

```
/etc/init.d/start_ftpd_le start
```

4. To stop the FTP service, execute the following command in shell environment of the module.

```
/etc/init.d/start_ftpd_le stop
```

```
/ # /etc/init.d/start_ftpd_le start
Starting Busybox FTP Server: done
/ # /etc/init.d/start_ftpd_le stop
Stopping Busybox FTP Server: stopped /bin/tcpsvd (pid 4854)
done
```

Figure 3: Start or Stop FTP Service Through init.d Service

2.2.3. Startup Through inetd Service

To start the FTP service with *inetd* service, follow the steps bellow:

1. Modify the */etc/init.d/inetd.busybox* file in the module. An example of the file content is as follows:

```
#!/bin/sh
#
# start/stop inetd super server.

INETD_DAEMON=/sbin/inetd

if ! [ -x $INETD_DAEMON ]; then
	exit 0
fi

case "$1" in
	start)
	echo -n "Starting internet superserver:"
	echo -n " inetd" ; start-stop-daemon -S -x $INETD_DAEMON > /dev/null
	echo "."
	;;
	stop)
	echo -n "Stopping internet superserver:"
	echo -n " inetd" ; start-stop-daemon -K -x $INETD_DAEMON > /dev/null
	echo "."
	;;
	restart)
	echo -n "Restarting internet superserver:"
	echo -n " inetd "
	killall -HUP inetd
	echo "."
	;;
	*)
	echo "Usage: /etc/init.d/inetd {start|stop|restart}"
	exit 1
	;;
esac

exit 0
```

2. Add the following line to the */etc/inetd.conf* configuration file.

```
21 stream     tcp     nowait    root    ftpd    ftpd -w /data
```

21 Indicates the FTP port.
/data Indicates the FTP directory.

An example of the configuration file content is as follows:

```
# /etc/inetd.conf:    see inetd(8) for further informations.
#
# Internet server configuration database
#
# If you want to disable an entry so it doesn't get touched during
# package updates, just comment it out with a single '#' character.
#
# <service_name> <sock_type> <proto> <flags> <user> <server_path> <args>
#
#:INTERNAL: Internal services
21              stream      tcp      nowait    root    ftpd    ftpd -w /data
```

3. To start the FTP service, execute the following command in the shell environment.

```
/etc/init.d/inetd.busybox start
```

4. To stop the FTP service, execute the following command in the shell environment.

```
/etc/init.d/inetd.busybox stop
```

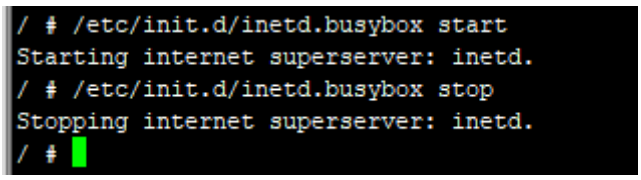

Figure 4: Start or Stop FTP Service Through inetd Service

2.3. FTP Service Verification and Use

Perform the following steps to verify the FTP service connection if you want to use the service.

1. Connect the FTP client to the FTP server.

   After starting the FTP service, connect the FTP client to the FTP server.
   In Linux operating system, password is not required and you can connect the FTP client to the server simply by pressing the Enter key, as shown in the figure below. You can use the FTP service only after the connection has been successfully established.

```
ol@ubuntu:~$ ftp 192.168.225.1
Connected to 192.168.225.1.
220 Operation successful
Name (192.168.225.1:ol):
230 Operation successful
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
200 Operation successful
150 Directory listing
total 728
-rw-r--r--    1 0        0              10 Jan  1  1970 LOGs.txt
drwxr-xr-x    2 0        0             160 Apr 17  2020 audio
-rw-r--r--    1 0        0               0 Jan  1 00:00 audio_service_init_c
leted
drwxr-xr-x    2 0        0             160 Apr 17  2020 configs
drwxr-xr-x    2 0        0             160 Apr 17  2020 db
```

Figure 5: Client Connects to FTP Server

2. After the FTP service is successfully connected, access the FTP service through a browser.

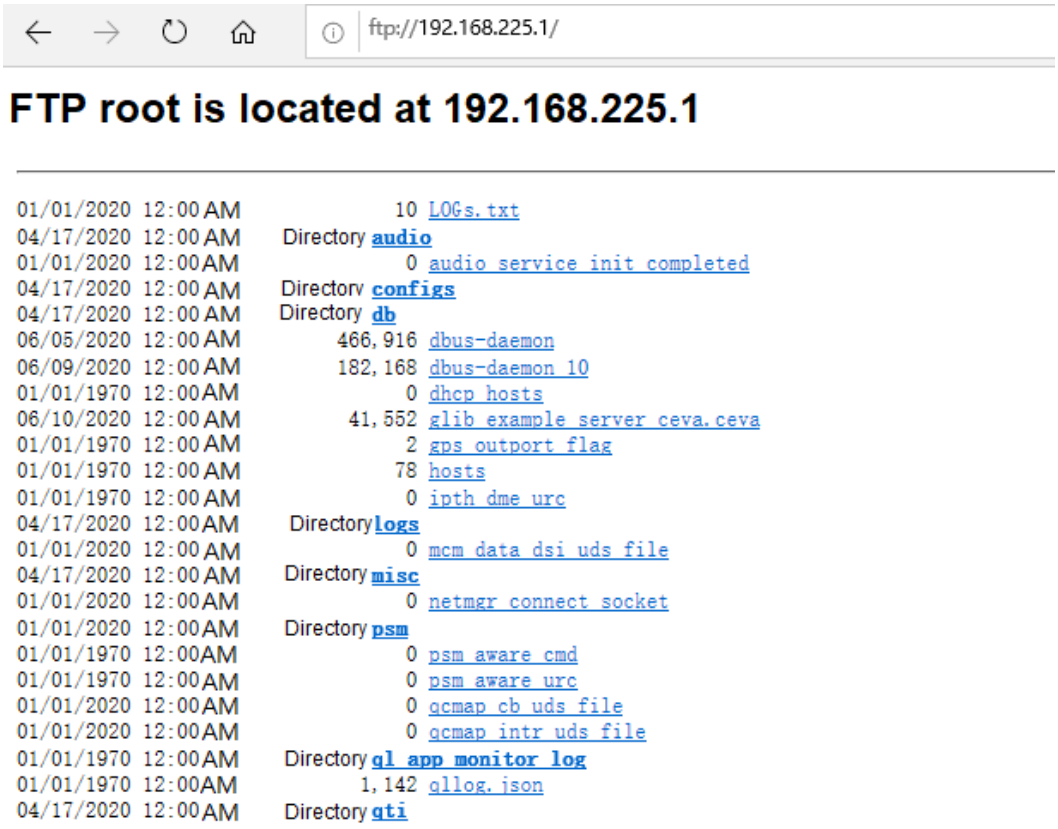

Figure 6: Access FTP Server Through A Browser

3 Appendix A Reference

Table 1: Terms and Abbreviations

Abbreviation	Description
FTP	File Transfer Protocol
IP	Internet Protocol
SDK	Software Development Kit
TCP	Transmission Control Protocol