

METHOD AND APPARATUS FOR GENERATING INI FILE, COMPUTER DEVICE, AND MEDIUM

[0001] This application claims priority to Chinese Patent Application No. 202111140709.8,
5 titled "METHOD AND APPARATUS FOR GENERATING INI FILE, COMPUTER
DEVICE, AND MEDIUM ", filed on September 28, 2021 with the China National Intellectual
Property Administration, which is incorporated herein by reference in its entirety.

FIELD

10 **[0002]** The embodiments of the present disclosure relate to the field of communication
technology, for example, a method and apparatus for generating an ini file, a computer device
and a medium.

BACKGROUND

15 **[0003]** An ini file is an abbreviation of an initialization file. The ini file is a file that is used
to set parameters for an operating system or program initialization. Content of the ini file is
generally some variables and values or database link statements or the like. The ini file
consists of a section, a key and a value. For example, in an ini file of [Ecu Version],
Version=WISEC10-P201-V174, [Ecu Version] is the section, Version is the key, and
20 WISEC10-P201-V174 is the value.

[0004] Since a structure of the ini file is simple and easy to generate, users who are familiar
with a program system can easily forge the ini file to configure a system or terminal at will. In
the conventional technology, effective management of the ini file is lacking, which easily
results in the tampering of system information and data. As a result, data security for clients
25 when generating and using ini files cannot be guaranteed.

SUMMARY

[0005] A method and apparatus for generating an ini file, a computer device and a medium
are provided according to the embodiments of the present disclosure, to improve the security

of the ini file and the security of configuration information.

[0006] In a first aspect, a method for generating an ini file is provided according to an embodiment of the present disclosure. The method for generating an ini file includes: determining ini file configuration parameter information of a current flashed ini file and a timestamp for ini file configuration of the current flashed ini file; determining, based on the ini file configuration parameter information and the timestamp for ini file configuration, ini file authentication information corresponding to the current flashed ini file; and generating a target ini file including the ini file authentication information.

[0007] Furthermore, the ini file configuration parameter information includes ECU version authentication information, variable name authentication information and variable quantity authentication information. The determining, based on the ini file configuration parameter information and the timestamp for ini file configuration, ini file authentication information corresponding to the current flashed ini file includes: determining, based on the ECU version authentication information, the variable name authentication information, the variable quantity authentication information and the timestamp for ini file configuration, the ini file authentication information corresponding to the current flashed ini file.

[0008] Furthermore, the ini file authentication information includes ten authentication bytes, the ECU version authentication information includes one authentication byte, the variable name authentication information includes one authentication byte, the variable quantity authentication information includes one authentication byte, and the timestamp for ini file configuration includes seven authentication bytes.

[0009] Furthermore, each of the ECU version authentication information, the variable name authentication information, the variable quantity authentication information and the timestamp for ini file configuration is configured as a hexadecimal number.

[0010] Furthermore, the determining a timestamp for ini file configuration of the current flashed ini file includes: determining an initial time of valid usage and an end time of valid usage of the current flashed ini file; and determining, based on the initial time of valid usage and the end time of valid usage, the timestamp for ini file configuration.

[0011] Furthermore, the method for generating an ini file further includes: acquiring a current usage time of a to-be-flashed ini file, an initial time of valid usage and an end time of

valid usage of the to-be-flashed ini file; determining, in a case that the current usage time is between the initial time of valid usage and the end time of valid usage, that the to-be-flashed ini file passes an ini file authentication; and terminating, in a case that the current usage time is not between the initial time of valid usage and the end time of valid usage, a flashing
5 process of the to-be-flashed ini file.

[0012] Furthermore, the method for generating an ini file further including: storing the target ini file in a memory.

[0013] In a second aspect, an apparatus for generating an ini file is provided according to an embodiment of the present disclosure. The apparatus for generating an ini file includes: an
10 information generation module, configured to determine ini file configuration parameter information of a current flashed ini file and a timestamp for ini file configuration of the current flashed ini file; and a file generation module, configured to: determine, based on the ini file configuration parameter information and the timestamp for ini file configuration, ini file authentication information corresponding to the current flashed ini file; and generate a
15 target ini file including the ini file authentication information.

[0014] In a third aspect, a computer device is provided according to an embodiment of the present disclosure. The computer device includes: one or more processors; and a storage apparatus configured to store multiple programs. At least one of the multiple programs when executed by the one or more processors, causes the one or more processors to implement the
20 method for generating an ini file according to the embodiments in the first aspect of the present disclosure.

[0015] In a fourth aspect, a computer readable storage medium is provided according to an embodiment of the present disclosure. The computer readable storage medium stores a computer program. The computer program, when executed by a processor, implements the
25 method for generating an ini file according to the embodiments in the first aspect of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] For clearer illustration of the technical solutions according to embodiments of the
30 present disclosure or conventional techniques, the drawings to be applied in embodiments of

the present disclosure or conventional technologies are briefly described hereinafter. Apparently, the drawings in the following descriptions show only some embodiments of the present disclosure and other drawings may be obtained by those ordinary skilled in the art based on the provided drawings without creative efforts.

5 **[0017]** Figure 1 is a flowchart of a method for generating an ini file according to a first embodiment of the present disclosure;

[0018] Figure 2 is a flowchart of a method for generating an ini file according to a second embodiment of the present disclosure;

10 **[0019]** Figure 3 is a structure diagram of an apparatus for generating an ini file according to a third embodiment of the present disclosure; and

[0020] Figure 4 is a schematic hardware structure diagram of a computer device according to a fourth embodiment of the present disclosure.

DETAILED DESCRIPTION OF EMBODIMENTS

15 **[0021]** When flashing variables in an electronic control unit (ECU), a format of the used ini file is usually as follows:

Initial Byte	Field	Type of Data	Description and Requirements
0	ECU software version	STRING	ASCII, maximum 20 Bytes
20	Variable information	WORD	Key, value

20 **[0022]** The above ini file is easy to generate and crack, thereby causing the tampering of program system information and data. In order to solve the existing technical problems, a method and apparatus for generating an ini file, a computer device and a medium are provided according to the embodiments of the present disclosure, to improve the security of the ini file and the security of configuration information.

[0023] Embodiment 1

25 **[0024]** Figure 1 is a flowchart of a method for generating an ini file according to a first embodiment of the present disclosure, which may be applicable to a case where the encryption authentication of ini file is managed effectively. The method for generating an ini

file may be implemented by the apparatus for generating an ini file. The apparatus for generating an ini file may be implemented in the form of software and/or hardware. The method for generating the ini file specifically includes steps S110 to S120 as follows.

[0025] S110, determine ini file configuration parameter information of a current flashed ini file and a timestamp for ini file configuration of the current flashed ini file.

[0026] The ini file configuration parameter information includes ECU version authentication information, variable name authentication information and variable quantity authentication information.

[0027] Specifically, the determining, based on the ini file configuration parameter information and the timestamp for ini file configuration, ini file authentication information corresponding to the current flashed ini file includes: determining, based on the ECU version authentication information, the variable name authentication information, the variable quantity authentication information and the timestamp for ini file configuration, the ini file authentication information corresponding to the current flashed ini file.

[0028] Based on the above, each of the ECU version authentication information, the variable name authentication information, the variable quantity authentication information and the timestamp for ini file configuration is configured as a hexadecimal number.

[0029] In this embodiment, special characters are removed from ECU version information of the current flashed ini file, and remaining parts of the ECU version information are converted into a hexadecimal number. After summing all the characters in the hexadecimal number, only the lowest two digits of the hexadecimal number are reserved as the ECU version authentication information. The ECU version information may be generated by the ECU itself, or may be preset in the program system by those skilled in the art, which is not limited in this embodiment.

[0030] All variables of the current flashed ini file are acquired, and characters corresponding to the initials of all variable names are converted into hexadecimal numbers. After summing all the characters in the hexadecimal numbers, only the lowest two digits of the hexadecimal number are reserved as the variable name authentication information.

[0031] Based on the above, the quantity of all variables of the current flashed ini file is acquired, the quantity of variables is converted into a hexadecimal number, and only the

lowest two digits of the hexadecimal number are reserved as the variable quantity authentication information. The quantity of variables of the current flashed ini file depends on the ini file. In this embodiment, the quantity of variables is not explained exhaustively, which depends on the specific quantity of variables that can be read.

5 **[0032]** Furthermore, the determining a timestamp for ini file configuration of the current flashed ini file includes: determining an initial time of valid usage and an end time of valid usage of the current flashed ini file; and determining, based on the initial time of valid usage and the end time of valid usage, the timestamp for ini file configuration.

10 **[0033]** The timestamp for ini file configuration specifies a valid usage time of the ini file including the initial time of valid usage and the end time of valid usage.

[0034] In this embodiment, each of the initial time of valid usage and the end time of valid usage of the current flashed ini file is considered as a value, which is then converted into a hexadecimal number to generate the timestamp for ini file configuration.

15 **[0035]** In one embodiment, the ini file authentication information includes ten authentication bytes. The ECU version authentication information includes one authentication byte, the variable name authentication information includes one authentication byte, the variable quantity authentication information includes one authentication byte, and the timestamp for ini file configuration includes seven authentication bytes.

20 **[0036]** S120, determine, based on the ini file configuration parameter information and the timestamp for ini file configuration, ini file authentication information corresponding to the current flashed ini file; and generate a target ini file including the ini file authentication information.

25 **[0037]** It may be understood that four items of the above ECU version authentication information, the variable name authentication information, the variable quantity authentication information and the timestamp for ini file configuration constitute the ini file authentication information corresponding to the current flashed ini file, which realizes the function of encrypting the ini file and makes the ini file more secure.

30 **[0038]** When generating the ini file, the ini file authentication information of the current flashed ini file is added to obtain the target ini file including the ini file authentication information, thereby effectively preventing the client from maliciously tampering with the

flashing data and content of the ini file and ensuring the information security of the program system and the terminal.

[0039] On the basis of the above embodiments, the method for generating an ini file further includes: acquiring a current usage time of a to-be-flashed ini file, an initial time of valid
5 usage and an end time of valid usage of the to-be-flashed ini file; determining, in a case that the current usage time is between the initial time of valid usage and the end time of valid usage, that the to-be-flashed ini file passes an ini file authentication; and terminating, in a case that the current usage time is not between the initial time of valid usage and the end time of valid usage, a flashing process of the to-be-flashed ini file.

[0040] Based on the above, before reading the to-be-flashed ini file, the current usage time of the to-be-flashed ini file is determined. The timestamp for ini file configuration in the ini
10 file authentication information corresponding to the to-be-flashed ini file is obtained, i.e., the initial time of valid usage and the end time of valid usage corresponding to the to-be-flashed ini file are obtained.

[0041] In a case that the current usage time is between the initial time of valid usage and the end time of valid usage, it is considered that the to-be-flashed ini file passes the ini file authentication, that is, the to-be-flashed ini file is within a valid time period. In a case that the
15 current usage time is not between the initial time of valid usage and the end time of valid usage, it is considered that the to-be-flashed ini file does not pass the ini file authentication, that is, the to-be-flashed ini file is not within the valid time period. As a result, the flashing process of the to-be-flashed ini file is terminated to ensure the valid use of ini files and the
20 security of the configuration information.

[0042] In an embodiment, the method for generating the ini file further includes: storing the target ini file in a memory.

[0043] It may be understood that the target ini file including the ini file authentication
25 information is stored in the memory of the program system. When it is necessary to query the generation information and the valid usage time of the to-be-flashed ini file, the query may be performed through the ini file including the ini file authentication information stored in the memory of the program system. The generation information of the ini file and the content of
30 the corresponding ini file authentication information may be traced via the ini file authentication information of the to-be-flashed ini file, which is convenient for querying a

storage history of the ini file and improving the security of the .ini file.

[0044] In the technical solution according to the embodiment of the present disclosure, the ini file configuration parameter information of the current flashed ini file and the timestamp for ini file configuration of the current flashed ini file are determined, the ini file authentication information corresponding to the current flashed ini file is determined based on the ini file configuration parameter information and the timestamp for ini file configuration, and the target ini file including the ini file authentication information is generated. The solution in the present disclosure solves the problems in the conventional technology that system information and data are tampered easily due to lacking of effective management for ini files and the data security at clients when generating and using ini files cannot be guaranteed. The solution in the present disclosure can improve the security of ini files and the security of the configuration information.

[0045] Embodiment 2

[0046] Figure 2 is a flowchart of a method for generating an ini file according to a second embodiment of the present disclosure. The embodiment 2 is an optimized embodiment on the basis of the above embodiment 1.

[0047] Correspondingly, the method in this embodiment specifically includes steps S210 to S250 as follows.

[0048] S210, determine ECU version authentication information, variable name authentication information, and variable quantity authentication information of a current flashed ini file.

[0049] In one embodiment, the ECU version authentication information includes one authentication byte. As an example, the ECU version number is WISE63-P920-V102. After removing the special characters, the ECU version number is WISE63P920V102. Then, all the characters are added to obtain a sum 61B, an overflow part of the sum is not considered, only the lowest two digits of the hexadecimal number are reserved, that is, the last two bytes 1B are reserved, and 1B is used as the ECU version authentication information with one authentication byte.

[0050] The variable name authentication information includes one authentication byte. Assuming that the ini file has three variables: ACComp_tiTrqDes_C , ACComp_tiTrqDyn_C

and ACComp_tiTrqResv_C, the characters corresponding to the initials AAA of all variable names are converted into hexadecimal numbers, which are added to obtain a sum C3, an overflow part of the sum is not considered. The C3 is used as the variable name authentication information with one authentication byte.

5 **[0051]** The variable quantity authentication information includes one authentication byte. For example, there are 312 variables in the ini file. The number 312 is converted to a hexadecimal number 138. An overflow part of the hexadecimal number is not considered, only the lowest two digits of the hexadecimal number are reserved, then 38 is used as the variable quantity authentication information with one authentication byte.

10 **[0052]** S220, determine an initial time of valid usage and an end time of valid usage of the current flashed ini file, and determine a timestamp for ini file configuration based on the initial time of valid usage and the end time of valid usage.

15 **[0053]** In one embodiment, the timestamp for ini file configuration includes seven authentication bytes. For example, in a case that the valid usage time of the ini file is set to be from August 1, 2021 to December 1, 2021, a value 2021080120211201 is taken, the value is converted into a hexadecimal number 72E2962A0B701. A length of the timestamp for ini file configuration should be seven bytes. In a case that a length of the hexadecimal number is less than seven bytes, the high bit is filled with 0, then 072E2962A0B701 is the timestamp for ini file configuration with seven authentication bytes.

20 **[0054]** S230, determine ini file authentication information corresponding to the current flashed ini file based on the ECU version authentication information, the variable name authentication information, the variable quantity authentication information and the timestamp for ini file configuration.

25 **[0055]** In this embodiment, the ini file authentication information includes ten authentication bytes. The ECU version authentication information includes one authentication byte; the variable name authentication information includes one authentication byte; the variable quantity authentication information includes one authentication byte; and the timestamp for ini file configuration includes seven authentication bytes.

30 **[0056]** On the basis of the above, the four items of the above ECU version authentication information, the variable name authentication information, the variable quantity

authentication information and the timestamp for ini file configuration constitute the ini file authentication information corresponding to the current flashed ini file, that is, the ini file authentication information is 1B C3 38 07 2E 29 62 A0 B7 01 with a total of ten authentication bytes.

5 **[0057]** S240, generate a target ini file including the ini file authentication information.

[0058] Specifically, when generating the ini file, the ini file authentication information of the current flashed ini file is added to obtain the target ini file including the ini file authentication information.

[0059] S250, store the target ini file in a memory.

10 **[0060]** Specifically, the generated ini file with the ini file authentication information, i.e., the target ini file, is recorded. The ini file and the ini file authentication information are stored in the memory of the program system. In this way, the generation information of the ini file corresponding to the ini file authentication information can be queried based on the ini file authentication information subsequently.

15 **[0061]** In another embodiment, a current usage time of a to-be-flashed ini file, an initial time of valid usage and an end time of valid usage corresponding to the to-be-flashed ini file are obtained. In a case that the current usage time is between the initial time of valid usage and the end time of valid usage, it is then considered that the to-be-flashed ini file passes the ini file authentication. In a case that the current usage time is not between the initial time of
20 valid usage and the end time of valid usage, a flashing process of the to-be-flashed ini file is terminated.

[0062] In the technical solutions according to the embodiment of the present disclosure, the ini file authentication information is added when generating the ini file and the ini file authentication information includes ten authentication bytes, that is, ten authentication bytes
25 are added to the ini file, therefore the encryption of the ini file is achieved, which makes the ini file more secure, thereby effectively preventing the client from maliciously tampering with the flashing data and content of the ini file and ensuring the information security of the system and terminal. In addition, the generation information and corresponding content of the ini file can be traced, which is convenient to query a historical record of the ini files. Furthermore,
30 the timestamp for ini file configuration is included in the ini file authentication information,

which specifies the valid usage time of the ini file.

[0063] Embodiment 3

[0064] Figure 3 is a structure diagram of an apparatus for generating an ini file according to a third embodiment of the present disclosure. This embodiment is applicable to the case where the encryption authentication of ini file is managed effectively.

[0065] As shown in Figure 3, the apparatus for generating an ini file includes an information generation module 310 and a file generation module 320.

[0066] The information generation module 310 is configured to determine ini file configuration parameter information of a current flashed ini file and a timestamp for ini file configuration of the current flashed ini file.

[0067] The file generation module 320 is configured to: determine, based on the ini file configuration parameter information and the timestamp for ini file configuration, ini file authentication information corresponding to the current flashed ini file; and generate a target ini file including the ini file authentication information.

[0068] In the apparatus for generating an ini file according to the embodiment, the ini file configuration parameter information of the current flashed ini file and the timestamp for ini file configuration of the current flashed ini file are determined, the ini file authentication information corresponding to the current flashed ini file is determined based on the ini file configuration parameter information and the timestamp for ini file configuration, and the target ini file including the ini file authentication information is generated. The solution in the present disclosure solves the problems in the conventional technology that system information and data are tampered easily due to lacking of effective management for ini files and the data security at clients when generating and using ini files cannot be guaranteed. The solution in the present disclosure can improve the security of ini files and the security of the configuration information.

[0069] On the basis of the above embodiments, the ini file configuration parameter information includes ECU version authentication information, variable name authentication information and variable quantity authentication information. The determining, based on the ini file configuration parameter information and the timestamp for ini file configuration, ini file authentication information corresponding to the current flashed ini file includes:

determining, based on the ECU version authentication information, the variable name authentication information, the variable quantity authentication information and the timestamp for ini file configuration, the ini file authentication information corresponding to the current flashed ini file.

5 **[0070]** On the basis of the above embodiments, the ini file authentication information includes ten authentication bytes. The ECU version authentication information includes one authentication byte, the variable name authentication information includes one authentication byte, the variable quantity authentication information includes one authentication byte, and the timestamp for ini file configuration includes seven authentication bytes.

10 **[0071]** On the basis of the above embodiments, each of the ECU version authentication information, the variable name authentication information, the variable quantity authentication information and the timestamp for ini file configuration is configured as a hexadecimal number.

15 **[0072]** On the basis of the above embodiments, the determining a timestamp for ini file configuration of the current flashed ini file includes: determining an initial time of valid usage and an end time of valid usage of the current flashed ini file; and determining, based on the initial time of valid usage and the end time of valid usage, the timestamp for ini file configuration.

20 **[0073]** On the basis of the above embodiments, the apparatus for generating an ini file further includes: a time acquiring module, configured to acquire a current usage time of a to-be-flashed ini file, an initial time of valid usage and an end time of valid usage of the to-be-flashed ini file; a flashing determination module, configured to determine, in a case that the current usage time is between the initial time of valid usage and the end time of valid usage, that the to-be-flashed ini file passes an ini file authentication; and terminate, in a case
25 that the current usage time is not between the initial time of valid usage and the end time of valid usage, a flashing process of the to-be-flashed ini file.

[0074] On the basis of the above embodiments, the apparatus for generating an ini file further includes a file storage module, configured to store the target ini file in a memory.

30 **[0075]** The apparatus for generating an ini file provided by each of the above embodiments may implement the method for generating an ini file provided by any embodiment of the

present disclosure, which has corresponding functional modules and beneficial effects for implementing the method for generating an ini file.

[0076] Embodiment 4

[0077] Figure 4 is a schematic structure diagram of a computer device according to a fourth
5 embodiment of the present disclosure. As shown in Figure 4, the computer device includes a processor 410, a memory 420, an input apparatus 430, and an output apparatus 440. The quantity of the processor 410 in the computer device may be one or more. As an example, one processor 410 is shown in Figure 4. The processor 410, the memory 420, the input apparatus 430, and the output apparatus 440 in the computer device may be connected by a bus or other
10 means. As an example, the connections are implemented via the bus as shown in Figure 4.

[0078] The memory 420, as a computer-readable storage medium, may be used to store software programs, computer-executable programs and modules, such as the program instructions/modules corresponding to the method for generating the ini file in the
15 embodiments of the present disclosure (for example, the information generation module 310 and the file generation module 320 in the apparatus for generating the ini file). The processor 410 implements various functional applications and data processing of the computer device by executing the software programs, instructions and modules stored in the memory 420, that is, realizes the above method for generating the ini file.

[0079] The memory 420 may mainly include a program storage area and a data storage area.
20 The program storage area may store an operating system and an application program required by at least one function; the data storage area may store data created according to the use of the terminal, and the like. In addition, the memory 420 may include a high-speed random access memory, and may also include a non-volatile memory, such as at least one magnetic disk storage device, flash memory device, or other non-volatile solid-state storage devices. In
25 some examples, the memory 420 may further include memory located remotely from the processor 410, and these remote memories may be connected to the computer device through a network. Examples of the aforementioned networks include, but are not limited to, the Internet, intranets, local area networks, mobile communication networks, and combinations thereof.

[0080] The input apparatus 430 may be used to receive inputted numbers or character
30 information, and generate key signal input related to user settings and function control of the

computer device. The output apparatus 440 may include a display device such as a display screen.

[0081] Embodiment 5

[0082] A storage medium including computer-executable instructions is further provided
5 according to a fifth embodiment of the present disclosure. The computer-executable
instructions, when executed by a computer processor, are used to implement a method for
generating an ini file. The method for generating the ini file includes: determining ini file
configuration parameter information of a current flashed ini file and a timestamp for ini file
configuration of the current flashed ini file; determining, based on the ini file configuration
10 parameter information and the timestamp for ini file configuration, ini file authentication
information corresponding to the current flashed ini file; and generating a target ini file
including the ini file authentication information.

CLAIMS

1. A method for generating an ini file, comprising:

determining ini file configuration parameter information of a current flashed ini file and
5 a timestamp for ini file configuration of the current flashed ini file;

determining, based on the ini file configuration parameter information and the timestamp
for ini file configuration, ini file authentication information corresponding to the current
flashed ini file; and generating a target ini file comprising the ini file authentication
information.

2. The method for generating an ini file according to claim 1, wherein the ini file
10 configuration parameter information comprises ECU version authentication information,
variable name authentication information and variable quantity authentication information;

the determining, based on the ini file configuration parameter information and the
timestamp for ini file configuration, ini file authentication information corresponding to the
15 current flashed ini file comprises:

determining, based on the ECU version authentication information, the variable
name authentication information, the variable quantity authentication information and the
timestamp for ini file configuration, the ini file authentication information corresponding to
the current flashed ini file.

3. The method for generating an ini file according to claim 2, wherein the ini file
20 authentication information comprises ten authentication bytes;

the ECU version authentication information comprises one authentication byte, the
variable name authentication information comprises one authentication byte, the variable
quantity authentication information comprises one authentication byte, and the timestamp for
25 ini file configuration comprises seven authentication bytes.

4. The method for generating an ini file according to claim 2, wherein each of the ECU
version authentication information, the variable name authentication information, the variable
quantity authentication information and the timestamp for ini file configuration is configured
as a hexadecimal number.

5. The method for generating an ini file according to claim 1, wherein the determining a
30 timestamp for ini file configuration of the current flashed ini file comprises:

determining an initial time of valid usage and an end time of valid usage of the current

flashed ini file; and determining, based on the initial time of valid usage and the end time of valid usage, the timestamp for ini file configuration.

6. The method for generating an ini file according to claim 5, further comprising:

acquiring a current usage time of a to-be-flashed ini file, an initial time of valid usage
5 and an end time of valid usage of the to-be-flashed ini file;

determining, in a case that the current usage time is between the initial time of valid usage and the end time of valid usage, that the to-be-flashed ini file passes an ini file authentication; and terminating, in a case that the current usage time is not between the initial time of valid usage and the end time of valid usage, a flashing process of the to-be-flashed ini
10 file.

7. The method for generating an ini file according to claim 1, further comprising:

storing the target ini file in a memory.

8. An apparatus for generating an ini file, comprising:

an information generation module, configured to determine ini file configuration
15 parameter information of a current flashed ini file and a timestamp for ini file configuration of the current flashed ini file; and

a file generation module, configured to: determine, based on the ini file configuration parameter information and the timestamp for ini file configuration, ini file authentication information corresponding to the current flashed ini file; and generate a target ini file
20 comprising the ini file authentication information.

9. A computer device, comprising:

one or more processors;

a storage apparatus, configured to store one or more programs;

wherein, the one or more programs, when executed by the one or more processors, cause
25 the one or more processors to implement the method for generating an ini file according to any one of claims 1 to 7.

10. A computer readable storage medium storing a computer program, wherein the computer program, when executed by a processor, implements the method for generating an ini file according to any one of claims 1 to 7.