

Overview

This document describes API for FX2 USB microcontroller firmware functions at TE0300, TE0320 and TE0630 modules.

Using API commands provides an easy way to create a communication interface with module parts.

API commands it's binary data, which is sent/received by FX2 USB microcontroller. Manual contains a program example written on Python language, which illustrates API usage.

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1 Requirements

1.1 General requirements

For using TE03xx API host computer should meet the following requirements:

- Operating system: Microsoft Windows 2000, Microsoft Windows XP, Microsoft Windows Vista, Microsoft Windows 7
- USB driver: Dedicated USB driver for your board
- Interface: USB host

See your board user manual for dedicated driver installation instructions.

1.2 Examples requirements

In order to use the examples from this manual host computer should meet the following requirements:

- Python 2.7 or higher

See Appendix A. Python Installation for details.

2 Driver functions description

In order to provide a user interface for driver functions, dynamic link library "TE0300DLL.dll" has been used. User programs should load this library and initialize board connection to get access to API functions.

TE0300DLL.dll library exports functions:

- TE0300_ScanCards
- TE0300_Open
- TE0300_Close
- TE0300_SendCommand
- TE0300_GetData
- TE0300_SetData

Functions return standard Windows error codes. Codes from 0 to 999 listed in Appendix D. Windows error codes 0-999, full list can be found in [Microsoft MSDN documentation](#).

2.1 TE0300_ScanCards

Function scans for available USB devices.

```
int TE0300_ScanCards()
```

@param None

@return Number of available USB devices

2.2 TE0300_Open

Function connects to selected USB device, creates and returns device handle.

```
int TE0300_Open(unsigned int * pHandle, int CardNo)
```

@param pHandle Pointer to devices handle
 @param CardNo Number of USB devices to connect
 @return Error if not 0

2.3 TE0300_Close

Function closes USB device handle.

```
int TE0300_Close(unsigned int* pHandle)
```

@param pHandle Pointer to device handle
 @return Error if not 0

2.4 TE0300_SendCommand

Function sends 64 bytes packet to USB endpoint 1.

```
int TE0300_SendCommand(unsigned int handle, unsigned char* pCmd, int CmdLen, unsigned char* pReply, int* pReplLen, int timeout)
```

@param handle Device handle.
 @param pCmd Pointer to command send buffer (64 bytes).
 @param CmdLen Length of command.
 @param pReply Pointer to command receive buffer (64 bytes).
 @param pReplLen Pointer to length of reply.
 @param timeout Function timeout value in ms.
 @return Error if not 0

Thereafter timeout function ends and returns error code.

2.5 TE0300_GetData

Function receives data from USB endpoints 2, 4, 6.

```
int TE0300_GetData(unsigned int handle, unsigned char* pData, int* pLen, unsigned int pipeNumber, int timeout)
```

@param handle Device handle.
 @param pData Pointer to receive buffer.
 @param pLen Pointer to number of requested bytes (return number of received bytes).
 @param pipeNumber endpoint number (use PI_PipeNumber enumerator).
 @param timeout Function timeout value in ms.

@return Error if not 0

Thereafter timeout function ends and returns error code.

2.6 TE0300_SetData

Function sends data to USB endpoint 8.

```
int TE0300_SetData(unsigned int handle, unsigned char*
pData, int len, unsigned int pipeNumber)
```

@param handle Device handle.

@param pData Pointer to transmit buffer.

@param len Number of bytes to transmit.

@param pipeNumber endpoint number (use PI_PipeNumber enumerator, PI_EP8 only).

@return Error if not 0

3 API Functions description

The commands described below, are binary data packets sent/received by FX2 microcontroller through Endpoint 1. Endpoint 1 accepts 64 bytes packets with predefined structure.

Table 1 lists API functions accepted by FX2 microcontroller firmware.

ID	Name	Description
0x00	READ_VERSION	Return 4 bytes representing FX2 firmware version
0x45	ECHO	Return packet back
0xA0	INITIALIZE	Initialize FX2 to initial state
0xA1	READ_STATUS	Return 5 bytes of FX2 status
0xA4	RESET_FIFO	Reset selected FX2 FIFO
0xA5	FLASH_READ	Read data from SPI Flash
0xA6	FLASH_WRITE	Write data to SPI Flash
0xA7	FLASH_ERASE	Erase entire SPI Flash
0xF7	SECTOR_ERASE	Erase sector from SPI Flash
0xA8	EEPROM_READ	Read data from I ² C EEPROM
0xA9	EEPROM_WRITE	Write data to I ² C EEPROM
0xAC	FIFO_STATUS	Return FIFO status for all endpoints
0xAD	I2C_WRITE	Write data to I ² C interface
0xAE	I2C_READ	Read data from I ² C Interface
0xAF	POWER	Control FPGA power supply
0xAA	FLASH_WRITE_COMMAND	Write SPI Flash command
0xB0	SET_INTERRUPT	Set parameters for interrupt handler
0xB1	GET_INTERRUPT	Return interrupt statistic information

Table 1: FX2 API Functions list

3.1 READ_VERSION

Command returns 4 bytes representing FX2 firmware version.

Byte	Value	Description
1	0x00	READ_VERSION command ID
2...64	-	Not used

Table 2: READ_VERSION Command packet layout

Byte	Description
1	FX2 Firmware version major number
2	FX2 Firmware version minor number
3	Device major number
4	Device minor number
5...64	Not used

Table 3: READ_VERSION Reply packet layout

3.2 ECHO

Command return packet back to endpoint.

3.3 INITIALIZE

Command runs FX2 initialization process.

Byte	Value	Description
1	0xA0	INITIALIZE command ID
2...64	-	Not used

Table 4: INITIALIZE Command packet layout

Reply packet doesn't contain any usable information.

3.4 READ_STATUS

Command returns 5 bytes representing FX2 status.

Byte	Value	Description
1	0xA1	READ_STATUS command ID
2...64	-	Not used

Table 5: READ_STATUS Command packet layout

Byte	Description
1	FIFO Error
2	Current mode
3	Flash busy
4	FPGA program
5	Booting
6...64	Not used

Table 6: READ_STATUS Reply packet layout

3.5 RESET_FIFO

Command resets FIFO of selected endpoint.

Byte	Value	Description
1	0xA4	RESET_FIFO command ID
2	0/2/4/6/8	Endpoint number
3...64	-	Not used

Table 7: RESET_FIFO Command packet layout

Reply packet doesn't contain any usable information.

3.6 FLASH_READ

Command reads data (from 1 to 64 bytes) from requested SPI Flash address.

Byte	Value	Description
1	0xA5	FLASH_READ command ID
2	Sector	Flash sector to read (address [23:16])
3	AddrHigh	High part of address (address [15:8])
4	AddrLow	Low part of address (address [7:0])
5	size	Number of bytes to read (max 64)
6...64	-	Not used

Table 8: FLASH_READ Command packet layout

Reply packet contains requested data.

3.7 FLASH_WRITE

Command writes data (from 1 to 59 bytes) to requested SPI Flash address. Thereafter writes FX2 firmware read back data from Flash and returns in reply packet.

Byte	Value	Description
1	0xA6	FLASH_WRITE command ID
2	Sector	Flash sector to write (address [23:16])
3	AddrHigh	High part of address (address [15:8])
4	AddrLow	Low part of address (address [7:0])
5	size	Number of bytes to write (max 59)
6...size+5	data	Data to write (size bytes)
size+6...64	-	Not used

Table 9: FLASH_WRITE Command packet layout

Byte	Description
1...size	Readback result
size+1...64	Not used

Table 10: FLASH_WRITE Reply packet layout

Note: Write block should not cross sector limit.

3.8 FLASH_ERASE

Command starts entire flash erase process. Full flash erase may take up to 30 seconds for M25P32 SPI Flash chip¹. To control Flash busy status use READ_STATUS command.

¹ Check your SPI Flash datasheet for actual time.

Byte	Value	Description
1	0xA7	FLASH_ERASE command ID
2...64	-	Not used

Table 11: FLASH_ERASE Command packet layout

Reply packet doesn't contain any usable information.

3.9 SECTOR_ERASE

Command erases selected sector from SPI Flash.

Byte	Value	Description
1	0xF7	SECTOR_ERASE command ID
2	sector	Sector to erase
2...64	-	Not used

Table 12: SECTOR_ERASE Command packet layout

Reply packet doesn't contain any usable information.

3.10 EEPROM_READ

Command reads data (from 1 to 31 bytes) from requested EEPROM address.

Byte	Value	Description
1	0xA8	EEPROM_READ command ID
2	AddrHigh	High part of address (address [15:8])
3	AddrLow	Low part of address (address [7:0])
4	size	Number of bytes to read (max 64)
5...64	-	Not used

Table 13: EEPROM_READ Command packet layout

Reply packet contains requested data.

3.11 EEPROM_WRITE

Command writes data (from 1 to 31 bytes) to requested EEPROM address. Thereafter write FX2 firmware read back data from EEPROM and returns in reply packet.

Byte	Value	Description
1	0xA9	EEPROM_WRITE command ID
2	AddrHigh	High part of address (address [15:8])
3	AddrLow	Low part of address (address [7:0])
4	size	Number of bytes to write (max 60)
5...size+4	data	Data to write (size bytes)
size+5...64	-	Not used

Table 14: EEPROM_WRITE Command packet layout

Byte	Description
1...size	Readback result
size+1...64	Not used

Table 15: EEPROM_WRITE Reply packet layout

3.12 FIFO_STATUS

Command returns FIFO status for all used endpoints. Status is value of EP2CS, EP4CS, EP6CS and EP8CS FX2 registers. See [FX2 documentation](#) for detailed information.

Byte	Value	Description
1	0xAC	FIFO_STATUS command ID
2...64	-	Not used

Table 16: FIFO_STATUS Command packet layout

Byte	Description
1	FX2 EP2CS Register value
2	FX2 EP4CS Register value
3	FX2 EP6CS Register value
4	FX2 EP8CS Register value
5...64	Not used

Table 17: FIFO_STATUS Reply packet layout

3.13 I2C_WRITE

Command writes data (from 1 to 32 bytes) to requested I²C address.

Byte	Value	Description
1	0xAD	I2C_WRITE command ID
2	Address	I ² C address
3	size	Number of bytes to write (max 32)
4...size+3	data	Data to write (size bytes)
size+4...64	-	Not used

Table 18: I2C_WRITE Command packet layout

Reply packet doesn't contain any usable information.

Read chapter Communicate with Microblaze processor for description of I²C commands used to communicate with Microblaze processor in TE reference projects.

3.14 I2C_READ

Command reads data (from 1 to 32 bytes) from requested I²C address.

Byte	Value	Description
1	0xAE	I2C_READ command ID
2	Address	I ² C address
3	size	Number of bytes to read (max 32)
4...64	-	Not used

Table 19: I2C_READ Command packet layout

Reply packet contains requested data.

3.15 POWER

Command controls FPGA power supply sources.

Byte	Value	Description
1	0xAF	POWER command ID
2	power	0 = Power OFF state, 1 = Power ON state
3...64	-	Not used

Table 20: POWER Command packet layout

Byte	Description
1	0 = Power OFF state, 1 = Power ON state
2...64	Not used

Table 21: POWER Reply packet layout

3.16 FLASH_WRITE_COMMAND

Command sends instruction to SPI Flash. See [SPI Flash datasheet](#) for detailed commands description.

Byte	Value	Description
1	0xAA	FLASH_WRITE_COMMAND command ID
2	write length	Write command length
3	read length	Read command length
4...write length+3	command	Write command
write length+4...64	-	Not used

Table 22: FLASH_WRITE_COMMAND Command packet layout

Byte	Description
1...read length	SPI Data-Out sequence
read length+1...64	Not used

Table 23: FLASH_WRITE_COMMAND Reply packet layout

3.17 SET_INTERRUPT

Command sets address and number of bytes to read from I²C bus when interrupt request is received.

Byte	Value	Description
1	0xB0	SET_INTERRUPT command ID
2	address	I ² C address
3	size	Data size
4...64	-	Not used

Table 24: SET_INTERRUPT Command packet layout

Reply packet doesn't contain any usable information.

3.18 GET_INTERRUPT

Command pulls FX2 for number of received interrupts and received data (number of bytes set by SET_INTERRUPT command).

Byte	Value	Description
1	0xB1	GET_INTERRUPT command ID
2...64	-	Not used

Table 25: GET_INTERRUPT Command packet layout

Byte	Description
1	Interrupt number
2...size+1	Interrupt data
size+2...64	Not used

Table 26: GET_INTERRUPT Reply packet layout

4 Communicate with Microblaze processor

In reference projects I²C bus used to communicate between FX2 microcontroller and FPGA Microblaze processor. To send command to Microblaze processor API function I2C_WRITE should be called with Microblaze I²C address and command.

Byte	Code	Description
1	0xAD	API command I2C write
2	0x3F	Microblaze address on I2C bus
3	0x0C	12 bytes to send
4	0x00	Not used
5	0x00	Not used
6	0x00	Not used
7	0x00...0x05	Command

Table 27: Packet structure for API call

Command	Code	Description
FX22MB_REG0_NOP	0x00	No operation.
FX22MB_REG0_GETVERSION	0x01	Return version
FX22MB_REG0_START_TX	0x02	Start TX test
FX22MB_REG0_START_RX	0x03	Start RX test
FX22MB_REG0_STOP	0x04	Stop test
FX22MB_REG0_PING	0x05	Return "pong" 0x706F6E67 value

Table 28: I2C commands codes

5 API Usage example program

As an example, consider a simple program which reads FX2 microcontroller firmware version.

This chapter will describe individual parts, full program source code can be found in Appendix B. Example program source code.

At the first program defines modules to import

```
import sys
from ctypes import *
```

Module "sys" contains "exit" function. Module "ctypes" contain functions and types definitions used to work with DLL.

Next code part defines constant values for API functions.

```
# FX2 Commands definition
CMD_FX2_READ_VERSION = b'\x00'
```

```
CMD_FX2_INITIALIZE           = b'\xA0'
CMD_FX2_READ_STATUS         = b'\xA1'
CMD_FX2_WRITE_REGISTER      = b'\xA2'
CMD_FX2_READ_REGISTER       = b'\xA3'
CMD_FX2_RESET_FIFO_STATUS   = b'\xA4'
CMD_FX2_FLASH_READ          = b'\xA5'
CMD_FX2_FLASH_WRITE         = b'\xA6'
CMD_FX2_FLASH_ERASE         = b'\xA7'
CMD_FX2_EEPROM_READ         = b'\xA8'
CMD_FX2_EEPROM_WRITE        = b'\xA9'
CMD_FX2_GET_FIFO_STATUS     = b'\xAC'
CMD_FX2_I2C_WRITE           = b'\xAD'
CMD_FX2_I2C_READ            = b'\xAE'
CMD_FX2_POWER_ON            = b'\xAF'
CMD_FX2_FLASH_WRITE_COMMAND = b'\xAA'
CMD_FX2_SET_INTERRUPT       = b'\xB0'
CMD_FX2_GET_INTERRUPT       = b'\xB1'
```

Each constant defines 8-bit value.

```
print "FX2 API Example"
```

Print start message.

```
# Load dll
fx2dll = windll.LoadLibrary("TE0300DLL.dll")
# Scan for cards
cards = fx2dll.TE0300_ScanCards()
print "Found %d card(s)" % cards
if cards == 0:
    print "ERROR: No cards to connect"
    raw_input('Press Enter...')
    sys.exit()
```

At this point program loads TE0300DLL.dll. This DLL file should be located in the same folder as an example program. If program can't find or load DLL, it prints an error message and exits. To prevent window from closing after program exit, used function "raw_input", which will wait for user input.

```
# connecting to card 1
m_handle = c_int(0)
if fx2dll.TE0300_Open(byref(m_handle), 0) != 0:
    print "ERROR: Failed to connect card"
```

```
    raw_input('Press Enter...')
    sys.exit()

print "Connected to card 1"
```

Next step is call of driver function "TE0300_Open", which creates driver handler. In this example function connects to first board. To pass handler argument by reference used "byref" function.

```
# Print FX2 firmware version
# prepare arguments to pass API function
cmd = create_string_buffer(64)
reply = create_string_buffer(64)
cmd[0] = CMD_FX2_READ_VERSION
cmd_length = c_int(64)
reply_length = c_int(64)
timeout_ms = c_int(1000)
SendCommand = fx2dll.TE0300_SendCommand
SendCommand.restype = c_int
```

Prior to calling API function, program should prepare all arguments:

```
# prepare arguments to pass API function
cmd = create_string_buffer(64)
reply = create_string_buffer(64)
cmd[0] = CMD_FX2_READ_VERSION
cmd_length = c_int(64)
reply_length = c_int(64)
timeout_ms = c_int(1000)
SendCommand = fx2dll.TE0300_SendCommand
SendCommand.restype = c_int
```

To work with external functions imported from DLL all arguments should be defined with types from "ctypes" package.

Function "create_string_buffer" returns zero-filled string with requested length. Note that in contrast to usual python strings, strings created by this function can be changed.

For convenience program defines alias for fx2dll.TE0300_SendCommand function and specify return value type.

Next step is the call of API function.

```
if SendCommand(m_handle, cmd, cmd_length, byref(reply),
byref(reply_length), timeout_ms) != 0:
    print "ERROR: Can't call API function
TE0300_SendCommand"
    raw_input('Press Enter...')
```

```
sys.exit()
```

Result of this function returned in "reply" and "reply_length" arguments passed by reference.

```
if reply_length.value >= 4:
    print "FX2 Firmware version %d.%d " % (ord(reply[0]),
ord(reply[1]))
    print "Device version %d.%d" % (ord(reply[2]),
ord(reply[3]))
else:
    print "ERROR: Unexpected command result:
TE0300_SendCommand"
    raw_input('Press Enter...')
    sys.exit()
```

Program checks reply size and if it matches 4 bytes print version information. To convert binary data to integer "ord" function is used.

```
fx2dll.TE0300_Close(byref(m_handle))
print "Test finished"
raw_input('Press Enter...')
```

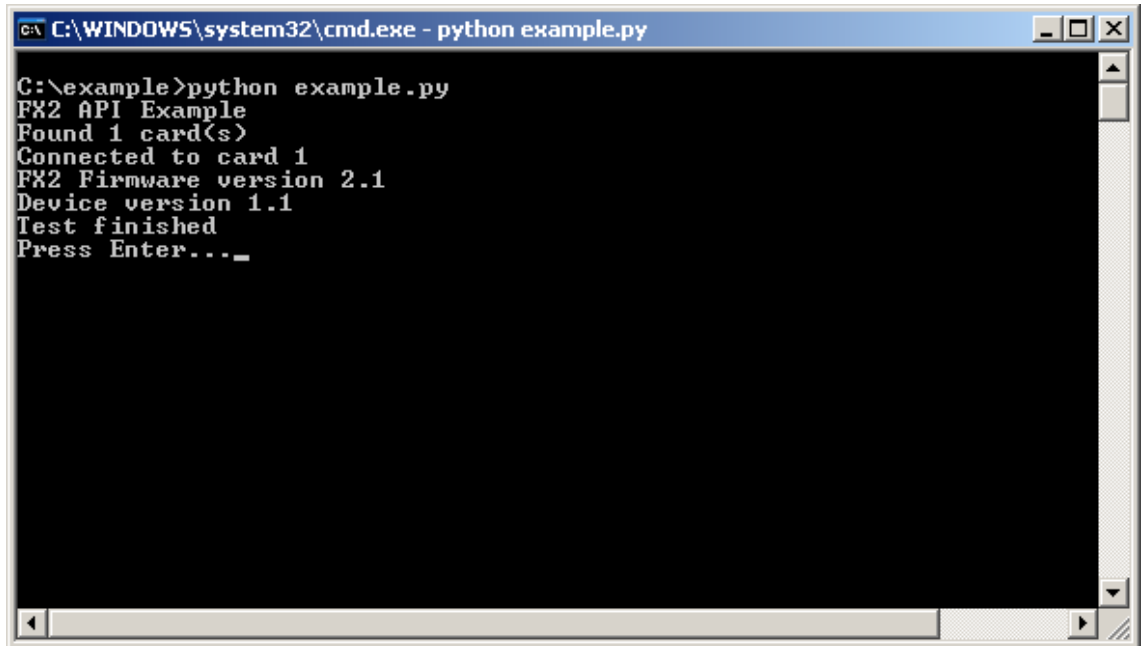
Last part of example program is closing driver connection and printing final message.

To use this program:

- Copy source code from Appendix B. Example program source code to file called "example.py".
- Copy "TE0300DLL.dll" to the same folder.
- Run program by double clicking in explorer or type "python example.py" into Windows command line interface².

Program result window should look like Figure 1.

² To run program using Windows command line interface, current directory should be changed to program directory first.



```
C:\WINDOWS\system32\cmd.exe - python example.py

C:\example>python example.py
FX2 API Example
Found 1 card(s)
Connected to card 1
FX2 Firmware version 2.1
Device version 1.1
Test finished
Press Enter..._
```

Figure 1: example.py program result window

6 Related Materials and References

- Cypress EZ-USB FX2 Controller datasheet
<http://www.cypress.com/?mpn=CY7C68013A-56LTXC>
- STMicroelectronics M25P32 Serial Flash Memory datasheet
<http://www.st.com/stonline/stappl/productcatalog/app?page=productSelector>
- Python download page
<http://python.org/download/>
- Python documentation page
<http://www.python.org/doc/>
- Microsoft Windows Error codes
<http://msdn.microsoft.com/en-us/library/windows/desktop/ms681382%28v=vs.85%29.aspx>

7 Glossary of Abbreviations and Acronyms



A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or similar, which if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.



A CAUTION notice denotes a risk. It calls attention to an operating procedure, practice, or similar, which if not correctly performed or adhered to, could result in a fault. (an undesired condition that can lead to an error) Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

API	application programming interface
B2B	board-to-board
DSP	digital signal processing; digital signal processor
EDK	Embedded Development Kit
IOB	input / output blocks; I/O blocks
IP	intellectual property
ISP	In-System Programmability
PB	push button
SDK	Software Development Kit
TE	Trenz Electronic
XPS	Xilinx Platform Studio

8 Legal Notices

8.1 Document Warranty

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9 Environmental protection

To confront directly with the responsibility toward the environment, the global community and eventually also oneself. Such a resolution should be an integral part not only of everybody's life. Also enterprises shall be conscious of their social responsibility and contribute to the preservation of our common living space. That is why Trenz Electronic invests in the protection of our Environment.

9.1 REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) compliance statement

Trenz Electronic is a manufacturer and a distributor of electronic products. It is therefore a so called downstream user in the sense of [REACH](#). The products we supply to you are solely non-chemical products (goods). Moreover and under normal and reasonably foreseeable circumstances of application, the goods supplied to you shall not release any substance. For that, Trenz Electronic is obliged to neither register nor to provide safety data sheet.

According to present knowledge and to best of our knowledge, no [SVHC \(Substances of Very High Concern\) on the Candidate List](#) are contained in our products.

Furthermore, we will immediately and unsolicited inform our customers in compliance with REACH - Article 33 if any substance present in our goods (above a concentration of 0,1 % weight by weight) will be classified as SVHC by the [European Chemicals Agency \(ECHA\)](#).

9.2 RoHS (Restriction of Hazardous Substances) compliance statement

Trenz Electronic GmbH herewith declares that all its products are developed, manufactured and distributed RoHS compliant.

9.3 WEEE (Waste Electrical and Electronic Equipment)

Information for users within the European Union in accordance with Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE).

Users of electrical and electronic equipment in private households are required not to dispose of waste electrical and electronic equipment as unsorted

municipal waste but to collect such waste electrical and electronic equipment separately. By the 13 August 2005, Member States shall have ensured that systems are set up allowing final holders and distributors to return waste electrical and electronic equipment at least free of charge. Member States shall ensure availability and accessibility of the necessary collection facilities. Separate collection is the precondition to ensure specific treatment and recycling of waste electrical and electronic equipment and is necessary to achieve the chosen level of protection of human health and environment in the European Union. Consumers have to actively contribute to the success of such collection and return of waste electrical and electronic equipment.

Presence of hazardous substances in electrical and electronic equipment results in potential effects on the environment and human health. The symbol consisting of the crossed-out wheeled bin indicates separate collection for waste electrical and electronic equipment.



Appendix A. Python Installation

- Download Python 2.7 or higher from official download page <http://python.org/download/>
- Run installation
- Invoke **Control Panel**
- Click the **System** icon
- Click on the **Advanced system settings**
- Click **Advanced** tab
- Click the **Environment Variables** button
- In the second box labelled **System variables**, scroll down to the variable called **Path** and double click on it
- **Do not delete what is already there!** Add "C:\Python27;"³ to the end of variable value.
- Press **OK**
- To test click **Start - Run** and type "python". You should see interpreter prompt. Press **Ctrl+Z** to exit interpreter.

³ Use path to your Python installation

Appendix B. Example program source code

```
import sys
from ctypes import *
# FX2 Commands definition
CMD_FX2_READ_VERSION           = b'\x00'
CMD_FX2_INITIALIZE             = b'\xA0'
CMD_FX2_READ_STATUS            = b'\xA1'
CMD_FX2_WRITE_REGISTER         = b'\xA2'
CMD_FX2_READ_REGISTER          = b'\xA3'
CMD_FX2_RESET_FIFO_STATUS      = b'\xA4'
CMD_FX2_FLASH_READ             = b'\xA5'
CMD_FX2_FLASH_WRITE            = b'\xA6'
CMD_FX2_FLASH_ERASE            = b'\xA7'
CMD_FX2_EEPROM_READ            = b'\xA8'
CMD_FX2_EEPROM_WRITE           = b'\xA9'
CMD_FX2_GET_FIFO_STATUS        = b'\xAC'
CMD_FX2_I2C_WRITE              = b'\xAD'
CMD_FX2_I2C_READ               = b'\xAE'
CMD_FX2_POWER_ON               = b'\xAF'
CMD_FX2_FLASH_WRITE_COMMAND    = b'\xAA'
CMD_FX2_SET_INTERRUPT          = b'\xB0'
CMD_FX2_GET_INTERRUPT          = b'\xB1'

print "FX2 API Example"
# Load dll
fx2dll = windll.LoadLibrary("TE0300DLL.dll")
# Scan for cards
cards = fx2dll.TE0300_ScanCards()
print "Found %d card(s)" % cards
if cards == 0:
    print "ERROR: No cards to connect"
    raw_input('Press Enter...')
    sys.exit()
# connecting to card 1
m_handle = c_int(0)
if fx2dll.TE0300_Open(byref(m_handle), 0) != 0:
```

```
        print "ERROR: Failed to connect card"
        raw_input('Press Enter...')
        sys.exit()
print "Connected to card 1"
# Print FX2 firmware version
# prepare arguments to pass API function
cmd = create_string_buffer(64)
reply = create_string_buffer(64)
cmd[0] = CMD_FX2_READ_VERSION
cmd_length = c_int(64)
reply_length = c_int(64)
timeout_ms = c_int(1000)
SendCommand = fx2dll.TE0300_SendCommand
SendCommand.restype = c_int
# Call API
if SendCommand(m_handle, cmd, cmd_length, byref(reply),
byref(reply_length), timeout_ms) != 0:
    print "ERROR: Can't call API function
TE0300_SendCommand"
    raw_input('Press Enter...')
    sys.exit()
if reply_length.value >= 4:
    print "FX2 Firmware version %d.%d " % (ord(reply[0]),
ord(reply[1]))
    print "Device version %d.%d" % (ord(reply[2]),
ord(reply[3]))
else:
    print "ERROR: Unexpected command result:
TE0300_SendCommand"
    raw_input('Press Enter...')
    sys.exit()
fx2dll.TE0300_Close(byref(m_handle))
print "Test finished"
raw_input('Press Enter...')
```

Appendix D. Windows error codes 0-999

Name	Value	Description
ERROR_SUCCESS	0 (0x0)	The operation completed successfully.
ERROR_INVALID_FUNCTION	1 (0x1)	Incorrect function.
ERROR_FILE_NOT_FOUND	2 (0x2)	The system cannot find the file specified.
ERROR_PATH_NOT_FOUND	3 (0x3)	The system cannot find the path specified.
ERROR_TOO_MANY_OPEN_FILES	4 (0x4)	The system cannot open the file.
ERROR_ACCESS_DENIED	5 (0x5)	Access is denied.
ERROR_INVALID_HANDLE	6 (0x6)	The handle is invalid.
ERROR_ARENA_TRASHED	7 (0x7)	The storage control blocks were destroyed.
ERROR_NOT_ENOUGH_MEMORY	8 (0x8)	Not enough storage is available to process this command.
ERROR_INVALID_BLOCK	9 (0x9)	The storage control block address is invalid.
ERROR_BAD_ENVIRONMENT	10 (0xA)	The environment is incorrect.
ERROR_BAD_FORMAT	11 (0xB)	An attempt was made to load a program with an incorrect format.
ERROR_INVALID_ACCESS	12 (0xC)	The access code is invalid.
ERROR_INVALID_DATA	13 (0xD)	The data is invalid.
ERROR_OUTOFMEMORY	14 (0xE)	Not enough storage is available to complete this operation.
ERROR_INVALID_DRIVE	15 (0xF)	The system cannot find the drive specified.
ERROR_CURRENT_DIRECTORY	16 (0x10)	The directory cannot be removed.
ERROR_NOT_SAME_DEVICE	17 (0x11)	The system cannot move the file to a different disk drive.
ERROR_NO_MORE_FILES	18 (0x12)	There are no more files.
ERROR_WRITE_PROTECT	19 (0x13)	The media is write protected.
ERROR_BAD_UNIT	20 (0x14)	The system cannot find the device specified.
ERROR_NOT_READY	21 (0x15)	The device is not ready.
ERROR_BAD_COMMAND	22 (0x16)	The device does not recognize the command.
ERROR_CRC	23 (0x17)	Data error (cyclic redundancy check).
ERROR_BAD_LENGTH	24 (0x18)	The program issued a command but the command length is incorrect.
ERROR_SEEK	25 (0x19)	The drive cannot locate a specific area or track on the disk.
ERROR_NOT_DOS_DISK	26 (0x1A)	The specified disk or diskette cannot be accessed.
ERROR_SECTOR_NOT_FOUND	27 (0x1B)	The drive cannot find the sector requested.
ERROR_OUT_OF_PAPER	28 (0x1C)	The printer is out of paper.
ERROR_WRITE_FAULT	29 (0x1D)	The system cannot write to the specified device.
ERROR_READ_FAULT	30 (0x1E)	The system cannot read from the specified device.
ERROR_GEN_FAILURE	31 (0x1F)	A device attached to the system is not functioning.
ERROR_SHARING_VIOLATION	32 (0x20)	The process cannot access the file because it is being used by another process.
ERROR_LOCK_VIOLATION	33 (0x21)	The process cannot access the file because another process has locked a portion of the file.
ERROR_WRONG_DISK	34 (0x22)	The wrong diskette is in the drive. Insert %2 (Volume Serial Number: %3) into drive %1.
ERROR_SHARING_BUFFER_EXCEEDED	36 (0x24)	Too many files opened for sharing.
ERROR_HANDLE_EOF	38 (0x26)	Reached the end of the file.
ERROR_HANDLE_DISK_FULL	39 (0x27)	The disk is full.
ERROR_NOT_SUPPORTED	50 (0x32)	The request is not supported.
ERROR_REM_NOT_LIST	51 (0x33)	Windows cannot find the network path. Verify that the network path is correct and the destination computer is not busy or turned off. If Windows still cannot find the network path
ERROR_DUP_NAME	52 (0x34)	You were not connected because a duplicate name exists on the network. If joining a domain

Name	Value	Description
ERROR_BAD_NETPATH	53 (0x35)	The network path was not found.
ERROR_NETWORK_BUSY	54 (0x36)	The network is busy.
ERROR_DEV_NOT_EXIST	55 (0x37)	The specified network resource or device is no longer available.
ERROR_TOO_MANY_CMDS	56 (0x38)	The network BIOS command limit has been reached.
ERROR_ADAP_HDW_ERR	57 (0x39)	A network adapter hardware error occurred.
ERROR_BAD_NET_RESP	58 (0x3A)	The specified server cannot perform the requested operation.
ERROR_UNEXP_NET_ERR	59 (0x3B)	An unexpected network error occurred.
ERROR_BAD_REM_ADAP	60 (0x3C)	The remote adapter is not compatible.
ERROR_PRINTQ_FULL	61 (0x3D)	The printer queue is full.
ERROR_NO_SPOOL_SPACE	62 (0x3E)	Space to store the file waiting to be printed is not available on the server.
ERROR_PRINT_CANCELLED	63 (0x3F)	Your file waiting to be printed was deleted.
ERROR_NETNAME_DELETED	64 (0x40)	The specified network name is no longer available.
ERROR_NETWORK_ACCESS_DENIED	65 (0x41)	Network access is denied.
ERROR_BAD_DEV_TYPE	66 (0x42)	The network resource type is not correct.
ERROR_BAD_NET_NAME	67 (0x43)	The network name cannot be found.
ERROR_TOO_MANY_NAMES	68 (0x44)	The name limit for the local computer network adapter card was exceeded.
ERROR_TOO_MANY_SESS	69 (0x45)	The network BIOS session limit was exceeded.
ERROR_SHARING_PAUSED	70 (0x46)	The remote server has been paused or is in the process of being started.
ERROR_REQ_NOT_ACCEP	71 (0x47)	No more connections can be made to this remote computer at this time because there are already as many connections as the computer can accept.
ERROR_REDIR_PAUSED	72 (0x48)	The specified printer or disk device has been paused.
ERROR_FILE_EXISTS	80 (0x50)	The file exists.
ERROR_CANNOT_MAKE	82 (0x52)	The directory or file cannot be created.
ERROR_FAIL_I24	83 (0x53)	Fail on INT 24.
ERROR_OUT_OF_STRUCTURES	84 (0x54)	Storage to process this request is not available.
ERROR_ALREADY_ASSIGNED	85 (0x55)	The local device name is already in use.
ERROR_INVALID_PASSWORD	86 (0x56)	The specified network password is not correct.
ERROR_INVALID_PARAMETER	87 (0x57)	The parameter is incorrect.
ERROR_NET_WRITE_FAULT	88 (0x58)	A write fault occurred on the network.
ERROR_NO_PROC_SLOTS	89 (0x59)	The system cannot start another process at this time.
ERROR_TOO_MANY_SEMAPHORES	100 (0x64)	Cannot create another system semaphore.
ERROR_EXCL_SEM_ALREADY_OWNED	101 (0x65)	The exclusive semaphore is owned by another process.
ERROR_SEM_IS_SET	102 (0x66)	The semaphore is set and cannot be closed.
ERROR_TOO_MANY_SEM_REQUESTS	103 (0x67)	The semaphore cannot be set again.
ERROR_INVALID_AT_INTERRUPT_TIME	104 (0x68)	Cannot request exclusive semaphores at interrupt time.
ERROR_SEM_OWNER_DIED	105 (0x69)	The previous ownership of this semaphore has ended.
ERROR_SEM_USER_LIMIT	106 (0x6A)	Insert the diskette for drive %1.
ERROR_DISK_CHANGE	107 (0x6B)	The program stopped because an alternate diskette was not inserted.
ERROR_DRIVE_LOCKED	108 (0x6C)	The disk is in use or locked by another process.
ERROR_BROKEN_PIPE	109 (0x6D)	The pipe has been ended.
ERROR_OPEN_FAILED	110 (0x6E)	The system cannot open the device or file specified.
ERROR_BUFFER_OVERFLOW	111 (0x6F)	The file name is too long.
ERROR_DISK_FULL	112 (0x70)	There is not enough space on the disk.
ERROR_NO_MORE_SEARCH_HANDLES	113 (0x71)	No more internal file identifiers available.
ERROR_INVALID_TARGET_HANDLE	114 (0x72)	The target internal file identifier is incorrect.
ERROR_INVALID_CATEGORY	117 (0x75)	The IOCTL call made by the application program is not correct.
ERROR_INVALID_VERIFY_SWITCH	118 (0x76)	The verify-on-write switch parameter value is not correct.

Name	Value	Description
ERROR_BAD_DRIVER_LEVEL	119 (0x77)	The system does not support the command requested.
ERROR_CALL_NOT_IMPLEMENTED	120 (0x78)	This function is not supported on this system.
ERROR_SEM_TIMEOUT	121 (0x79)	The semaphore timeout period has expired.
ERROR_INSUFFICIENT_BUFFER	122 (0x7A)	The data area passed to a system call is too small.
ERROR_INVALID_NAME	123 (0x7B)	The filename
ERROR_INVALID_LEVEL	124 (0x7C)	The system call level is not correct.
ERROR_NO_VOLUME_LABEL	125 (0x7D)	The disk has no volume label.
ERROR_MOD_NOT_FOUND	126 (0x7E)	The specified module could not be found.
ERROR_PROC_NOT_FOUND	127 (0x7F)	The specified procedure could not be found.
ERROR_WAIT_NO_CHILDREN	128 (0x80)	There are no child processes to wait for.
ERROR_CHILD_NOT_COMPLETE	129 (0x81)	The %1 application cannot be run in Win32 mode.
ERROR_DIRECT_ACCESS_HANDLE	130 (0x82)	Attempt to use a file handle to an open disk partition for an operation other than raw disk I/O.
ERROR_NEGATIVE_SEEK	131 (0x83)	An attempt was made to move the file pointer before the beginning of the file.
ERROR_SEEK_ON_DEVICE	132 (0x84)	The file pointer cannot be set on the specified device or file.
ERROR_IS_JOIN_TARGET	133 (0x85)	A JOIN or SUBST command cannot be used for a drive that contains previously joined drives.
ERROR_IS_JOINED	134 (0x86)	An attempt was made to use a JOIN or SUBST command on a drive that has already been joined.
ERROR_IS_SUBSTED	135 (0x87)	An attempt was made to use a JOIN or SUBST command on a drive that has already been substituted.
ERROR_NOT_JOINED	136 (0x88)	The system tried to delete the JOIN of a drive that is not joined.
ERROR_NOT_SUBSTED	137 (0x89)	The system tried to delete the substitution of a drive that is not substituted.
ERROR_JOIN_TO_JOIN	138 (0x8A)	The system tried to join a drive to a directory on a joined drive.
ERROR_SUBST_TO_SUBST	139 (0x8B)	The system tried to substitute a drive to a directory on a substituted drive.
ERROR_JOIN_TO_SUBST	140 (0x8C)	The system tried to join a drive to a directory on a substituted drive.
ERROR_SUBST_TO_JOIN	141 (0x8D)	The system tried to SUBST a drive to a directory on a joined drive.
ERROR_BUSY_DRIVE	142 (0x8E)	The system cannot perform a JOIN or SUBST at this time.
ERROR_SAME_DRIVE	143 (0x8F)	The system cannot join or substitute a drive to or for a directory on the same drive.
ERROR_DIR_NOT_ROOT	144 (0x90)	The directory is not a subdirectory of the root directory.
ERROR_DIR_NOT_EMPTY	145 (0x91)	The directory is not empty.
ERROR_IS_SUBST_PATH	146 (0x92)	The path specified is being used in a substitute.
ERROR_IS_JOIN_PATH	147 (0x93)	Not enough resources are available to process this command.
ERROR_PATH_BUSY	148 (0x94)	The path specified cannot be used at this time.
ERROR_IS_SUBST_TARGET	149 (0x95)	An attempt was made to join or substitute a drive for which a directory on the drive is the target of a previous substitute.
ERROR_SYSTEM_TRACE	150 (0x96)	System trace information was not specified in your CONFIG.SYS file
ERROR_INVALID_EVENT_COUNT	151 (0x97)	The number of specified semaphore events for DosMuxSemWait is not correct.
ERROR_TOO_MANY_MUXWAITERS	152 (0x98)	DosMuxSemWait did not execute; too many semaphores are already set.
ERROR_INVALID_LIST_FORMAT	153 (0x99)	The DosMuxSemWait list is not correct.
ERROR_LABEL_TOO_LONG	154 (0x9A)	The volume label you entered exceeds the label character limit of the target file system.
ERROR_TOO_MANY_TCBS	155 (0x9B)	Cannot create another thread.
ERROR_SIGNAL_REFUSED	156 (0x9C)	The recipient process has refused the signal.
ERROR_DISCARDED	157 (0x9D)	The segment is already discarded and cannot be locked.
ERROR_NOT_LOCKED	158 (0x9E)	The segment is already unlocked.
ERROR_BAD_THREADID_ADDR	159 (0x9F)	The address for the thread ID is not correct.
ERROR_BAD_ARGUMENTS	160 (0xA0)	One or more arguments are not correct.

Name	Value	Description
ERROR_BAD_PATHNAME	161 (0xA1)	The specified path is invalid.
ERROR_SIGNAL_PENDING	162 (0xA2)	A signal is already pending.
ERROR_MAX_THRDS_REACHED	164 (0xA4)	No more threads can be created in the system.
ERROR_LOCK_FAILED	167 (0xA7)	Unable to lock a region of a file.
ERROR_BUSY	170 (0xAA)	The requested resource is in use.
ERROR_DEVICE_SUPPORT_IN_PROGRESS	171 (0xAB)	The device's command support detection is in progress.
ERROR_CANCEL_VIOLATION	173 (0xAD)	A lock request was not outstanding for the supplied cancel region.
ERROR_ATOMIC_LOCKS_NOT_SUPPORTED	174 (0xAE)	The file system does not support atomic changes to the lock type.
ERROR_INVALID_SEGMENT_NUMBER	180 (0xB4)	The system detected a segment number that was not correct.
ERROR_INVALID_ORDINAL	182 (0xB6)	The operating system cannot run %1.
ERROR_ALREADY_EXISTS	183 (0xB7)	Cannot create a file when that file already exists.
ERROR_INVALID_FLAG_NUMBER	186 (0xBA)	The flag passed is not correct.
ERROR_SEM_NOT_FOUND	187 (0xBB)	The specified system semaphore name was not found.
ERROR_INVALID_STARTING_CODESEG	188 (0xBC)	The operating system cannot run %1.
ERROR_INVALID_STACKSEG	189 (0xBD)	The operating system cannot run %1.
ERROR_INVALID_MODULETYPE	190 (0xBE)	The operating system cannot run %1.
ERROR_INVALID_EXE_SIGNATURE	191 (0xBF)	Cannot run %1 in Win32 mode.
ERROR_EXE_MARKED_INVALID	192 (0xC0)	The operating system cannot run %1.
ERROR_BAD_EXE_FORMAT	193 (0xC1)	%1 is not a valid Win32 application.
ERROR_ITERATED_DATA_EXCEEDS_64k	194 (0xC2)	The operating system cannot run %1.
ERROR_INVALID_MINALLOCSIZE	195 (0xC3)	The operating system cannot run %1.
ERROR_DYNLINK_FROM_INVALID_RING	196 (0xC4)	The operating system cannot run this application program.
ERROR_IOPL_NOT_ENABLED	197 (0xC5)	The operating system is not presently configured to run this application.
ERROR_INVALID_SEGDPL	198 (0xC6)	The operating system cannot run %1.
ERROR_AUTODATASEG_EXCEEDS_64k	199 (0xC7)	The operating system cannot run this application program.
ERROR_RING2SEG_MUST_BE_MOVABLE	200 (0xC8)	The code segment cannot be greater than or equal to 64K.
ERROR_RELOC_CHAIN_XEEDS_SEGLIM	201 (0xC9)	The operating system cannot run %1.
ERROR_INFLOOP_IN_RELOC_CHAIN	202 (0xCA)	The operating system cannot run %1.
ERROR_ENVVAR_NOT_FOUND	203 (0xCB)	The system could not find the environment option that was entered.
ERROR_NO_SIGNAL_SENT	205 (0xCD)	No process in the command subtree has a signal handler.
ERROR_FILENAME_EXCED_RANGE	206 (0xCE)	The filename or extension is too long.
ERROR_RING2_STACK_IN_USE	207 (0xCF)	The ring 2 stack is in use.
ERROR_META_EXPANSION_TOO_LONG	208 (0xD0)	The global filename characters
ERROR_INVALID_SIGNAL_NUMBER	209 (0xD1)	The signal being posted is not correct.
ERROR_THREAD_1_INACTIVE	210 (0xD2)	The signal handler cannot be set.
ERROR_LOCKED	212 (0xD4)	The segment is locked and cannot be reallocated.
ERROR_TOO_MANY_MODULES	214 (0xD6)	Too many dynamic-link modules are attached to this program or dynamic-link module.
ERROR_NESTING_NOT_ALLOWED	215 (0xD7)	Cannot nest calls to LoadModule.
ERROR_EXE_MACHINE_TYPE_MISMATCH	216 (0xD8)	The version of %1 is not compatible with the version you're running. Check your computer's system information to see whether you need a x86 (32-bit) or x64 (64-bit) version of the program
ERROR_EXE_CANNOT_MODIFY_SIGNED_BINARY	217 (0xD9)	The image file %1 is signed
ERROR_EXE_CANNOT_MODIFY_STRONG_SIGNED_BINARY	218 (0xDA)	The image file %1 is strong signed
ERROR_FILE_CHECKED_OUT	220 (0xDC)	This file is checked out or locked for editing by another user.
ERROR_CHECKOUT_REQUIRED	221 (0xDD)	The file must be checked out before saving changes.
ERROR_BAD_FILE_TYPE	222 (0xDE)	The file type being saved or retrieved has been blocked.

Name	Value	Description
ERROR_FILE_TOO_LARGE	223 (0xDF)	The file size exceeds the limit allowed and cannot be saved.
ERROR_FORMS_AUTH_REQUIRED	224 (0xE0)	Access Denied. Before opening files in this location
ERROR_VIRUS_INFECTED	225 (0xE1)	Operation did not complete successfully because the file contains a virus or potentially unwanted software.
ERROR_VIRUS_DELETED	226 (0xE2)	This file contains a virus or potentially unwanted software and cannot be opened. Due to the nature of this virus or potentially unwanted software
ERROR_PIPE_LOCAL	229 (0xE5)	The pipe is local.
ERROR_BAD_PIPE	230 (0xE6)	The pipe state is invalid.
ERROR_PIPE_BUSY	231 (0xE7)	All pipe instances are busy.
ERROR_NO_DATA	232 (0xE8)	The pipe is being closed.
ERROR_PIPE_NOT_CONNECTED	233 (0xE9)	No process is on the other end of the pipe.
ERROR_MORE_DATA	234 (0xEA)	More data is available.
ERROR_VC_DISCONNECTED	240 (0xF0)	The session was canceled.
ERROR_INVALID_EA_NAME	254 (0xFE)	The specified extended attribute name was invalid.
ERROR_EA_LIST_INCONSISTENT	255 (0xFF)	The extended attributes are inconsistent.
WAIT_TIMEOUT	258 (0x102)	The wait operation timed out.
ERROR_NO_MORE_ITEMS	259 (0x103)	No more data is available.
ERROR_CANNOT_COPY	266 (0x10A)	The copy functions cannot be used.
ERROR_DIRECTORY	267 (0x10B)	The directory name is invalid.
ERROR_EAS_DIDNT_FIT	275 (0x113)	The extended attributes did not fit in the buffer.
ERROR_EA_FILE_CORRUPT	276 (0x114)	The extended attribute file on the mounted file system is corrupt.
ERROR_EA_TABLE_FULL	277 (0x115)	The extended attribute table file is full.
ERROR_INVALID_EA_HANDLE	278 (0x116)	The specified extended attribute handle is invalid.
ERROR_EAS_NOT_SUPPORTED	282 (0x11A)	The mounted file system does not support extended attributes.
ERROR_NOT_OWNER	288 (0x120)	Attempt to release mutex not owned by caller.
ERROR_TOO_MANY_POSTS	298 (0x12A)	Too many posts were made to a semaphore.
ERROR_PARTIAL_COPY	299 (0x12B)	Only part of a ReadProcessMemory or WriteProcessMemory request was completed.
ERROR_OPLOCK_NOT_GRANTED	300 (0x12C)	The oplock request is denied.
ERROR_INVALID_OPLOCK_PROTOCOL	301 (0x12D)	An invalid oplock acknowledgment was received by the system.
ERROR_DISK_TOO_FRAGMENTED	302 (0x12E)	The volume is too fragmented to complete this operation.
ERROR_DELETE_PENDING	303 (0x12F)	The file cannot be opened because it is in the process of being deleted.
ERROR_INCOMPATIBLE_WITH_GLOBAL_SHORT_NAME_REGISTRY_SETTING	304 (0x130)	Short name settings may not be changed on this volume due to the global registry setting.
ERROR_SHORT_NAMES_NOT_ENABLED_ON_VOLUME	305 (0x131)	Short names are not enabled on this volume.
ERROR_SECURITY_STREAM_IS_INCONSISTENT	306 (0x132)	The security stream for the given volume is in an inconsistent state. Please run CHKDSK on the volume.
ERROR_INVALID_LOCK_RANGE	307 (0x133)	A requested file lock operation cannot be processed due to an invalid byte range.
ERROR_IMAGE_SUBSYSTEM_NOT_PRESENT	308 (0x134)	The subsystem needed to support the image type is not present.
ERROR_NOTIFICATION_GUID_ALREADY_DEFINED	309 (0x135)	The specified file already has a notification GUID associated with it.
ERROR_INVALID_EXCEPTION_HANDLER	310 (0x136)	An invalid exception handler routine has been detected.
ERROR_DUPLICATE_PRIVILEGES	311 (0x137)	Duplicate privileges were specified for the token.
ERROR_NO_RANGES_PROCESSED	312 (0x138)	No ranges for the specified operation were able to be processed.
ERROR_NOT_ALLOWED_ON_SYSTEM_FILE	313 (0x139)	Operation is not allowed on a file system internal file.
ERROR_DISK_RESOURCES_EXHAUSTED	314 (0x13A)	The physical resources of this disk have been exhausted.

Name	Value	Description
ERROR_INVALID_TOKEN	315 (0x13B)	The token representing the data is invalid.
ERROR_DEVICE_FEATURE_NOT_SUPPORTED	316 (0x13C)	The device does not support the command feature.
ERROR_MR_MID_NOT_FOUND	317 (0x13D)	The system cannot find message text for message number 0x%1 in the message file for %2.
ERROR_SCOPE_NOT_FOUND	318 (0x13E)	The scope specified was not found.
ERROR_UNDEFINED_SCOPE	319 (0x13F)	The Central Access Policy specified is not defined on the target machine.
ERROR_INVALID_CAP	320 (0x140)	The Central Access Policy obtained from Active Directory is invalid.
ERROR_DEVICE_UNREACHABLE	321 (0x141)	The device is unreachable.
ERROR_DEVICE_NO_RESOURCES	322 (0x142)	The target device has insufficient resources to complete the operation.
ERROR_DATA_CHECKSUM_ERROR	323 (0x143)	A data integrity checksum error occurred. Data in the file stream is corrupt.
ERROR_INTERMIXED_SECURE_EA_OPERATION	324 (0x144)	An attempt was made to modify both a SECURE and normal Extended Attribute (EA) in the same operation.
ERROR_SPECIFIED_COPY_READ	325 (0x145)	Data was read from the specified copy.
ERROR_REPAIR_DEFERRED	326 (0x146)	Repair for the requested range should be deferred.
ERROR_OFFSET_ALIGNMENT_VIOLATION	327 (0x147)	The command specified a data offset that does not align to the device's granularity/alignment.
ERROR_INVALID_FIELD_IN_PARAMETER_LIST	328 (0x148)	The command specified an invalid field in its parameter list.
ERROR_OPERATION_IN_PROGRESS	329 (0x149)	An operation is currently in progress with the device.
ERROR_BAD_DEVICE_PATH	330 (0x14A)	An attempt was made to send down the command via an invalid path to the target device.
ERROR_TOO_MANY_DESCRIPTOR	331 (0x14B)	The command specified a number of descriptors that exceeded the maximum supported by the device.
ERROR_SCRUB_DATA_DISABLED	332 (0x14C)	Scrub is disabled on the specified file.
ERROR_FAIL_NOACTION_REBOOT	350 (0x15E)	No action was taken as a system reboot is required.
ERROR_FAIL_SHUTDOWN	351 (0x15F)	The shutdown operation failed.
ERROR_FAIL_RESTART	352 (0x160)	The restart operation failed.
ERROR_MAX_SESSIONS_REACHED	353 (0x161)	The maximum number of sessions has been reached.
ERROR_THREAD_MODE_ALREADY_BACKGROUND	400 (0x190)	The thread is already in background processing mode.
ERROR_THREAD_MODE_NOT_BACKGROUND	401 (0x191)	The thread is not in background processing mode.
ERROR_PROCESS_MODE_ALREADY_BACKGROUND	402 (0x192)	The process is already in background processing mode.
ERROR_PROCESS_MODE_NOT_BACKGROUND	403 (0x193)	The process is not in background processing mode.
ERROR_INVALID_ADDRESS	487 (0x1E7)	Attempt to access invalid address.
ERROR_USER_PROFILE_LOAD	500 (0x1F4)	User profile cannot be loaded.
ERROR_ARITHMETIC_OVERFLOW	534 (0x216)	Arithmetic result exceeded 32 bits.
ERROR_PIPE_CONNECTED	535 (0x217)	There is a process on other end of the pipe.
ERROR_PIPE_LISTENING	536 (0x218)	Waiting for a process to open the other end of the pipe.
ERROR_VERIFIER_STOP	537 (0x219)	Application verifier has found an error in the current process.
ERROR_ABIOS_ERROR	538 (0x21A)	An error occurred in the ABIOS subsystem.
ERROR_WX86_WARNING	539 (0x21B)	A warning occurred in the WX86 subsystem.
ERROR_WX86_ERROR	540 (0x21C)	An error occurred in the WX86 subsystem.
ERROR_TIMER_NOT_CANCELED	541 (0x21D)	An attempt was made to cancel or set a timer that has an associated APC and the subject thread is not the thread that originally set the timer with an associated APC routine.
ERROR_UNWIND	542 (0x21E)	Unwind exception code.
ERROR_BAD_STACK	543 (0x21F)	An invalid or unaligned stack was encountered during an unwind operation.

Name	Value	Description
ERROR_INVALID_UNWIND_TARGET	544 (0x220)	An invalid unwind target was encountered during an unwind operation.
ERROR_INVALID_PORT_ATTRIBUTES	545 (0x221)	Invalid Object Attributes specified to NtCreatePort or invalid Port Attributes specified to NtConnectPort.
ERROR_PORT_MESSAGE_TOO_LONG	546 (0x222)	Length of message passed to NtRequestPort or NtRequestWaitReplyPort was longer than the maximum message allowed by the port.
ERROR_INVALID_QUOTA_LOWER	547 (0x223)	An attempt was made to lower a quota limit below the current usage.
ERROR_DEVICE_ALREADY_ATTACHED	548 (0x224)	An attempt was made to attach to a device that was already attached to another device.
ERROR_INSTRUCTION_MISALIGNMENT	549 (0x225)	An attempt was made to execute an instruction at an unaligned address and the host system does not support unaligned instruction references.
ERROR_PROFILING_NOT_STARTED	550 (0x226)	Profiling not started.
ERROR_PROFILING_NOT_STOPPED	551 (0x227)	Profiling not stopped.
ERROR_COULD_NOT_INTERPRET	552 (0x228)	The passed ACL did not contain the minimum required information.
ERROR_PROFILING_AT_LIMIT	553 (0x229)	The number of active profiling objects is at the maximum and no more may be started.
ERROR_CANT_WAIT	554 (0x22A)	Used to indicate that an operation cannot continue without blocking for I/O.
ERROR_CANT_TERMINATE_SELF	555 (0x22B)	Indicates that a thread attempted to terminate itself by default (called NtTerminateThread with NULL) and it was the last thread in the current process.
ERROR_UNEXPECTED_MM_CREATE_ERR	556 (0x22C)	If an MM error is returned which is not defined in the standard FsRtl filter
ERROR_UNEXPECTED_MM_MAP_ERROR	557 (0x22D)	If an MM error is returned which is not defined in the standard FsRtl filter
ERROR_UNEXPECTED_MM_EXTEND_ERR	558 (0x22E)	If an MM error is returned which is not defined in the standard FsRtl filter
ERROR_BAD_FUNCTION_TABLE	559 (0x22F)	A malformed function table was encountered during an unwind operation.
ERROR_NO_GUID_TRANSLATION	560 (0x230)	Indicates that an attempt was made to assign protection to a file system file or directory and one of the SIDs in the security descriptor could not be translated into a GUID that could be stored by the file system. This causes the protection attempt to fail
ERROR_INVALID_LDT_SIZE	561 (0x231)	Indicates that an attempt was made to grow an LDT by setting its size
ERROR_INVALID_LDT_OFFSET	563 (0x233)	Indicates that the starting value for the LDT information was not an integral multiple of the selector size.
ERROR_INVALID_LDT_DESCRIPTOR	564 (0x234)	Indicates that the user supplied an invalid descriptor when trying to set up Ldt descriptors.
ERROR_TOO_MANY_THREADS	565 (0x235)	Indicates a process has too many threads to perform the requested action. For example
ERROR_THREAD_NOT_IN_PROCESS	566 (0x236)	An attempt was made to operate on a thread within a specific process
ERROR_PAGEFILE_QUOTA_EXCEEDED	567 (0x237)	Page file quota was exceeded.
ERROR_LOGON_SERVER_CONFLICT	568 (0x238)	The Netlogon service cannot start because another Netlogon service running in the domain conflicts with the specified role.
ERROR_SYNCHRONIZATION_REQUIRED	569 (0x239)	The SAM database on a Windows Server is significantly out of synchronization with the copy on the Domain Controller. A complete synchronization is required.
ERROR_NET_OPEN_FAILED	570 (0x23A)	The NtCreateFile API failed. This error should never be returned to an application
ERROR_IO_PRIVILEGE_FAILED	571 (0x23B)	{Privilege Failed} The I/O permissions for the process could not be changed.
ERROR_CONTROL_C_EXIT	572 (0x23C)	{Application Exit by CTRL+C} The application terminated as a result of a CTRL+C.
ERROR_MISSING_SYSTEMFILE	573 (0x23D)	{Missing System File} The required system file %hs is bad or missing.
ERROR_UNHANDLED_EXCEPTION	574 (0x23E)	{Application Error} The exception %s (0x%08lx) occurred in the application at location 0x%08lx.
ERROR_APP_INIT_FAILURE	575 (0x23F)	{Application Error} The application failed to initialize correctly (0x%lx). Click OK to close the application.
ERROR_PAGEFILE_CREATE_FAILED	576 (0x240)	{Unable to Create Paging File} The creation of the paging file %hs failed (%lx). The requested size was %ld.

Name	Value	Description
ERROR_INVALID_IMAGE_HASH	577 (0x241)	Windows cannot verify the digital signature for this file. A recent hardware or software change might have installed a file that is signed incorrectly or damaged
ERROR_NO_PAGEFILE	578 (0x242)	{No Paging File Specified} No paging file was specified in the system configuration.
ERROR_ILLEGAL_FLOAT_CONTEXT	579 (0x243)	{EXCEPTION} A real-mode application issued a floating-point instruction and floating-point hardware is not present.
ERROR_NO_EVENT_PAIR	580 (0x244)	An event pair synchronization operation was performed using the thread specific client/server event pair object
ERROR_DOMAIN_CTRLR_CONFIG_ERROR	581 (0x245)	A Windows Server has an incorrect configuration.
ERROR_ILLEGAL_CHARACTER	582 (0x246)	An illegal character was encountered. For a multi-byte character set this includes a lead byte without a succeeding trail byte. For the Unicode character set this includes the characters 0xFFFF and 0xFFFE.
ERROR_UNDEFINED_CHARACTER	583 (0x247)	The Unicode character is not defined in the Unicode character set installed on the system.
ERROR_FLOPPY_VOLUME	584 (0x248)	The paging file cannot be created on a floppy diskette.
ERROR_BIOS_FAILED_TO_CONNECT_INTERRUPT	585 (0x249)	The system BIOS failed to connect a system interrupt to the device or bus for which the device is connected.
ERROR_BACKUP_CONTROLLER	586 (0x24A)	This operation is only allowed for the Primary Domain Controller of the domain.
ERROR_MUTANT_LIMIT_EXCEEDED	587 (0x24B)	An attempt was made to acquire a mutant such that its maximum count would have been exceeded.
ERROR_FS_DRIVER_REQUIRED	588 (0x24C)	A volume has been accessed for which a file system driver is required that has not yet been loaded.
ERROR_CANNOT_LOAD_REGISTRY_FILE	589 (0x24D)	{Registry File Failure} The registry cannot load the hive (file): %hs or its log or alternate. It is corrupt
ERROR_DEBUG_ATTACH_FAILED	590 (0x24E)	{Unexpected Failure in DebugActiveProcess} An unexpected failure occurred while processing a DebugActiveProcess API request. You may choose OK to terminate the process
ERROR_SYSTEM_PROCESS_TERMINATED	591 (0x24F)	{Fatal System Error} The %hs system process terminated unexpectedly with a status of 0x%08x (0x%08x 0x%08x). The system has been shut down.
ERROR_DATA_NOT_ACCEPTED	592 (0x250)	{Data Not Accepted} The TDI client could not handle the data received during an indication.
ERROR_VDM_HARD_ERROR	593 (0x251)	NTVDM encountered a hard error.
ERROR_DRIVER_CANCEL_TIMEOUT	594 (0x252)	{Cancel Timeout} The driver %hs failed to complete a canceled I/O request in the allotted time.
ERROR_REPLY_MESSAGE_MISMATCH	595 (0x253)	{Reply Message Mismatch} An attempt was made to reply to an LPC message
ERROR_LOST_WRITEBEHIND_DATA	596 (0x254)	{Delayed Write Failed} Windows was unable to save all the data for the file %hs. The data has been lost. This error may be caused by a failure of your computer hardware or network connection. Please try to save this file elsewhere.
ERROR_CLIENT_SERVER_PARAMETERS_INVALID	597 (0x255)	The parameter(s) passed to the server in the client/server shared memory window were invalid. Too much data may have been put in the shared memory window.
ERROR_NOT_TINY_STREAM	598 (0x256)	The stream is not a tiny stream.
ERROR_STACK_OVERFLOW_READ	599 (0x257)	The request must be handled by the stack overflow code.
ERROR_CONVERT_TO_LARGE	600 (0x258)	Internal OFS status codes indicating how an allocation operation is handled. Either it is retried after the containing node is moved or the extent stream is converted to a large stream.
ERROR_FOUND_OUT_OF_SCOPE	601 (0x259)	The attempt to find the object found an object matching by ID on the volume but it is out of the scope of the handle used for the operation.
ERROR_ALLOCATE_BUCKET	602 (0x25A)	The bucket array must be grown. Retry transaction after doing so.
ERROR_MARSHALL_OVERFLOW	603 (0x25B)	The user/kernel marshalling buffer has overflowed.
ERROR_INVALID_VARIANT	604 (0x25C)	The supplied variant structure contains invalid data.
ERROR_BAD_COMPRESSION_BUFFER	605 (0x25D)	The specified buffer contains ill-formed data.

Name	Value	Description
ERROR_AUDIT_FAILED	606 (0x25E)	{Audit Failed} An attempt to generate a security audit failed.
ERROR_TIMER_RESOLUTION_NOT_SET	607 (0x25F)	The timer resolution was not previously set by the current process.
ERROR_INSUFFICIENT_LOGON_INFO	608 (0x260)	There is insufficient account information to log you on.
ERROR_BAD_DLL_ENTRYPOINT	609 (0x261)	{Invalid DLL Entry point} The dynamic link library %hs is not written correctly. The stack pointer has been left in an inconsistent state. The entry point should be declared as WINAPI or STDCALL. Select YES to fail the DLL load. Select NO to continue execution. Selecting NO may cause the application to operate incorrectly.
ERROR_BAD_SERVICE_ENTRYPOINT	610 (0x262)	{Invalid Service Callback Entry point} The %hs service is not written correctly. The stack pointer has been left in an inconsistent state. The callback entry point should be declared as WINAPI or STDCALL. Selecting OK will cause the service to continue operation. However
ERROR_IP_ADDRESS_CONFLICT1	611 (0x263)	There is an IP address conflict with another system on the network
ERROR_NO_CALLBACK_ACTIVE	614 (0x266)	A callback return system service cannot be executed when no callback is active.
ERROR_PWD_TOO_SHORT	615 (0x267)	The password provided is too short to meet the policy of your user account. Please choose a longer password.
ERROR_PWD_TOO_RECENT	616 (0x268)	The policy of your user account does not allow you to change passwords too frequently. This is done to prevent users from changing back to a familiar
ERROR_PWD_HISTORY_CONFLICT	617 (0x269)	You have attempted to change your password to one that you have used in the past. The policy of your user account does not allow this. Please select a password that you have not previously used.
ERROR_UNSUPPORTED_COMPRESSION	618 (0x26A)	The specified compression format is unsupported.
ERROR_INVALID_HW_PROFILE	619 (0x26B)	The specified hardware profile configuration is invalid.
ERROR_INVALID_PLUGPLAY_DEVICE_PATH	620 (0x26C)	The specified Plug and Play registry device path is invalid.
ERROR_QUOTA_LIST_INCONSISTENT	621 (0x26D)	The specified quota list is internally inconsistent with its descriptor.
ERROR_EVALUATION_EXPIRATION	622 (0x26E)	{Windows Evaluation Notification} The evaluation period for this installation of Windows has expired. This system will shutdown in 1 hour. To restore access to this installation of Windows
ERROR_ILLEGAL_DLL_RELOCATION	623 (0x26F)	{Illegal System DLL Relocation} The system DLL %hs was relocated in memory. The application will not run properly. The relocation occurred because the DLL %hs occupied an address range reserved for Windows system DLLs. The vendor supplying the DLL should be contacted for a new DLL.
ERROR_DLL_INIT_FAILED_LOGOFF	624 (0x270)	{DLL Initialization Failed} The application failed to initialize because the window station is shutting down.
ERROR_VALIDATE_CONTINUE	625 (0x271)	The validation process needs to continue on to the next step.
ERROR_NO_MORE_MATCHES	626 (0x272)	There are no more matches for the current index enumeration.
ERROR_RANGE_LIST_CONFLICT	627 (0x273)	The range could not be added to the range list because of a conflict.
ERROR_SERVER_SID_MISMATCH	628 (0x274)	The server process is running under a SID different than that required by client.
ERROR_CANT_ENABLE_DENY_ONLY	629 (0x275)	A group marked use for deny only cannot be enabled.
ERROR_FLOAT_MULTIPLE_FAULTS	630 (0x276)	{EXCEPTION} Multiple floating point faults.
ERROR_FLOAT_MULTIPLE_TRAPS	631 (0x277)	{EXCEPTION} Multiple floating point traps.
ERROR_NOINTERFACE	632 (0x278)	The requested interface is not supported.
ERROR_DRIVER_FAILED_SLEEP	633 (0x279)	{System Standby Failed} The driver %hs does not support standby mode. Updating this driver may allow the system to go to standby mode.
ERROR_CORRUPT_SYSTEM_FILE	634 (0x27A)	The system file %1 has become corrupt and has been replaced.
ERROR_COMMITMENT_MINIMUM	635 (0x27B)	{Virtual Memory Minimum Too Low} Your system is low on virtual memory. Windows is increasing the size of your virtual memory paging file. During this process
ERROR_PNP_RESTART_ENUMERATION	636 (0x27C)	A device was removed so enumeration must be restarted.
ERROR_SYSTEM_IMAGE_BAD_SIGNATURE	637 (0x27D)	{Fatal System Error} The system image %s is not properly signed. The file has been replaced with the signed file. The system has been shut down.
ERROR_PNP_REBOOT_REQUIRED	638 (0x27E)	Device will not start without a reboot.

Name	Value	Description
ERROR_INSUFFICIENT_POWER	639 (0x27F)	There is not enough power to complete the requested operation.
ERROR_MULTIPLE_FAULT_VIOLATION	640 (0x280)	ERROR_MULTIPLE_FAULT_VIOLATION
ERROR_PORT_NOT_SET	642 (0x282)	An attempt to remove a processes DebugPort was made
ERROR_DS_VERSION_CHECK_FAILURE	643 (0x283)	This version of Windows is not compatible with the behavior version of directory forest
ERROR_RANGE_NOT_FOUND	644 (0x284)	The specified range could not be found in the range list.
ERROR_NOT_SAFE_MODE_DRIVER	646 (0x286)	The driver was not loaded because the system is booting into safe mode.
ERROR_FAILED_DRIVER_ENTRY	647 (0x287)	The driver was not loaded because it failed its initialization call.
ERROR_DEVICE_ENUMERATION_ERROR	648 (0x288)	The "%hs" encountered an error while applying power or reading the device configuration. This may be caused by a failure of your hardware or by a poor connection.
ERROR_MOUNT_POINT_NOT_RESOLVED	649 (0x289)	The create operation failed because the name contained at least one mount point which resolves to a volume to which the specified device object is not attached.
ERROR_INVALID_DEVICE_OBJECT_PARAMETER	650 (0x28A)	The device object parameter is either not a valid device object or is not attached to the volume specified by the file name.
ERROR_MCA_OCCURED	651 (0x28B)	A Machine Check Error has occurred. Please check the system event log for additional information.
ERROR_DRIVER_DATABASE_ERROR	652 (0x28C)	There was error [%2] processing the driver database.
ERROR_SYSTEM_HIVE_TOO_LARGE	653 (0x28D)	System hive size has exceeded its limit.
ERROR_DRIVER_FAILED_PRIOR_UNLOAD	654 (0x28E)	The driver could not be loaded because a previous version of the driver is still in memory.
ERROR_VOLSnap_PREPARE_HIBERNATE	655 (0x28F)	{Volume Shadow Copy Service} Please wait while the Volume Shadow Copy Service prepares volume %hs for hibernation.
ERROR_HIBERNATION_FAILURE	656 (0x290)	The system has failed to hibernate (The error code is %hs). Hibernation will be disabled until the system is restarted.
ERROR_FILE_SYSTEM_LIMITATION	665 (0x299)	The requested operation could not be completed due to a file system limitation
ERROR_ACPI_ERROR	669 (0x29D)	An error occurred in the ACPI subsystem.
ERROR_WOW_ASSERTION	670 (0x29E)	WOW Assertion Error.
ERROR_PNP_BAD_MPS_TABLE	671 (0x29F)	A device is missing in the system BIOS MPS table. This device will not be used. Please contact your system vendor for system BIOS update.
ERROR_PNP_TRANSLATION_FAILED	672 (0x2A0)	A translator failed to translate resources.
ERROR_PNP_IRQ_TRANSLATION_FAILED	673 (0x2A1)	A IRQ translator failed to translate resources.
ERROR_PNP_INVALID_ID	674 (0x2A2)	Driver %2 returned invalid ID for a child device (%3).
ERROR_WAKE_SYSTEM_DEBUGGER	675 (0x2A3)	{Kernel Debugger Awakened} the system debugger was awakened by an interrupt.
ERROR_HANDLES_CLOSED	676 (0x2A4)	{Handles Closed} Handles to objects have been automatically closed as a result of the requested operation.
ERROR_EXTRANEIOUS_INFORMATION	677 (0x2A5)	{Too Much Information} The specified access control list (ACL) contained more information than was expected.
ERROR_RXACT_COMMIT_NECESSARY	678 (0x2A6)	This warning level status indicates that the transaction state already exists for the registry sub-tree
ERROR_MEDIA_CHECK	679 (0x2A7)	{Media Changed} The media may have changed.
ERROR_GUID_SUBSTITUTION_MADE	680 (0x2A8)	{GUID Substitution} During the translation of a global identifier (GUID) to a Windows security ID (SID)
ERROR_STOPPED_ON_SYMLINK	681 (0x2A9)	The create operation stopped after reaching a symbolic link
ERROR_PLUGPLAY_QUERY_VETOED	683 (0x2AB)	The Plug and Play query operation was not successful.
ERROR_UNWIND_CONSOLIDATE	684 (0x2AC)	A frame consolidation has been executed.
ERROR_REGISTRY_HIVE_RECOVERED	685 (0x2AD)	{Registry Hive Recovered} Registry hive (file): %hs was corrupted and it has been recovered. Some data might have been lost.

Name	Value	Description
ERROR_DLL_MIGHT_BE_INSECURE	686 (0x2AE)	The application is attempting to run executable code from the module %hs. This may be insecure. An alternative
ERROR_DBG_REPLY_LATER	689 (0x2B1)	Debugger will reply later.
ERROR_DBG_UNABLE_TO_PROVIDE_HANDLE	690 (0x2B2)	Debugger cannot provide handle.
ERROR_DBG_TERMINATE_THREAD	691 (0x2B3)	Debugger terminated thread.
ERROR_DBG_TERMINATE_PROCESS	692 (0x2B4)	Debugger terminated process.
ERROR_DBG_CONTROL_C	693 (0x2B5)	Debugger got control C.
ERROR_DBG_PRINTEXCEPTION_C	694 (0x2B6)	Debugger printed exception on control C.
ERROR_DBG_RIPEXCEPTION	695 (0x2B7)	Debugger received RIP exception.
ERROR_DBG_CONTROL_BREAK	696 (0x2B8)	Debugger received control break.
ERROR_DBG_COMMAND_EXCEPTION	697 (0x2B9)	Debugger command communication exception.
ERROR_OBJECT_NAME_EXISTS	698 (0x2BA)	{Object Exists} An attempt was made to create an object and the object name already existed.
ERROR_THREAD_WAS_SUSPENDED	699 (0x2BB)	{Thread Suspended} A thread termination occurred while the thread was suspended. The thread was resumed
ERROR_IMAGE_NOT_AT_BASE	700 (0x2BC)	{Image Relocated} An image file could not be mapped at the address specified in the image file. Local fixups must be performed on this image.
ERROR_RXACT_STATE_CREATED	701 (0x2BD)	This informational level status indicates that a specified registry sub-tree transaction state did not yet exist and had to be created.
ERROR_SEGMENT_NOTIFICATION	702 (0x2BE)	{Segment Load} A virtual DOS machine (VDM) is loading
ERROR_BAD_CURRENT_DIRECTORY	703 (0x2BF)	{Invalid Current Directory} The process cannot switch to the startup current directory %hs. Select OK to set current directory to %hs
ERROR_FT_READ_RECOVERY_FROM_BACKUP	704 (0x2C0)	{Redundant Read} To satisfy a read request
ERROR_FT_WRITE_RECOVERY	705 (0x2C1)	{Redundant Write} To satisfy a write request
ERROR_IMAGE_MACHINE_TYPE_MISMATCH	706 (0x2C2)	{Machine Type Mismatch} The image file %hs is valid
ERROR_RECEIVE_PARTIAL	707 (0x2C3)	{Partial Data Received} The network transport returned partial data to its client. The remaining data will be sent later.
ERROR_RECEIVE_EXPEDITED	708 (0x2C4)	{Expedited Data Received} The network transport returned data to its client that was marked as expedited by the remote system.
ERROR_RECEIVE_PARTIAL_EXPEDITED	709 (0x2C5)	{Partial Expedited Data Received} The network transport returned partial data to its client and this data was marked as expedited by the remote system. The remaining data will be sent later.
ERROR_EVENT_DONE	710 (0x2C6)	{TDI Event Done} The TDI indication has completed successfully.
ERROR_EVENT_PENDING	711 (0x2C7)	{TDI Event Pending} The TDI indication has entered the pending state.
ERROR_CHECKING_FILE_SYSTEM	712 (0x2C8)	Checking file system on %wZ
ERROR_WAS_UNLOCKED	715 (0x2CB)	{Page Unlocked} The page protection of a locked page was changed to 'No Access' and the page was unlocked from memory and from the process.
ERROR_SERVICE_NOTIFICATION	716 (0x2CC)	%hs
ERROR_LOG_HARD_ERROR	718 (0x2CE)	Application popup: %1 : %2
ERROR_NO_YIELD_PERFORMED	721 (0x2D1)	A yield execution was performed and no thread was available to run.
ERROR_TIMER_RESUME_IGNORED	722 (0x2D2)	The resumable flag to a timer API was ignored.
ERROR_ARBITRATION_UNHANDLED	723 (0x2D3)	The arbiter has deferred arbitration of these resources to its parent
ERROR_MP_PROCESSOR_MISMATCH	725 (0x2D5)	The CPUs in this multiprocessor system are not all the same revision level. To use all processors the operating system restricts itself to the features of the

Name	Value	Description
		least capable processor in the system. Should problems occur with this system
ERROR_HIBERNATED	726 (0x2D6)	The system was put into hibernation.
ERROR_RESUME_HIBERNATION	727 (0x2D7)	The system was resumed from hibernation.
ERROR_FIRMWARE_UPDATED	728 (0x2D8)	Windows has detected that the system firmware (BIOS) was updated [previous firmware date = %2
ERROR_DRIVERS_LEAKING_LOCKED_PAGES	729 (0x2D9)	A device driver is leaking locked I/O pages causing system degradation. The system has automatically enabled tracking code in order to try and catch the culprit.
ERROR_WAKE_SYSTEM	730 (0x2DA)	The system has awoken
ERROR_REPARSE	741 (0x2E5)	A reparse should be performed by the Object Manager since the name of the file resulted in a symbolic link.
ERROR_OPLOCK_BREAK_IN_PROGRESS	742 (0x2E6)	An open/create operation completed while an oplock break is underway.
ERROR_VOLUME_MOUNTED	743 (0x2E7)	A new volume has been mounted by a file system.
ERROR_RXACT_COMMITTED	744 (0x2E8)	This success level status indicates that the transaction state already exists for the registry sub-tree
ERROR_NOTIFY_CLEANUP	745 (0x2E9)	This indicates that a notify change request has been completed due to closing the handle which made the notify change request.
ERROR_PRIMARY_TRANSPORT_CONNECT_FAILED	746 (0x2EA)	{Connect Failure on Primary Transport} An attempt was made to connect to the remote server %hs on the primary transport
ERROR_PAGE_FAULT_TRANSITION	747 (0x2EB)	Page fault was a transition fault.
ERROR_PAGE_FAULT_DEMAND_ZERO	748 (0x2EC)	Page fault was a demand zero fault.
ERROR_PAGE_FAULT_COPY_ON_WRITE	749 (0x2ED)	Page fault was a demand zero fault.
ERROR_PAGE_FAULT_GUARD_PAGE	750 (0x2EE)	Page fault was a demand zero fault.
ERROR_PAGE_FAULT_PAGING_FILE	751 (0x2EF)	Page fault was satisfied by reading from a secondary storage device.
ERROR_CACHE_PAGE_LOCKED	752 (0x2F0)	Cached page was locked during operation.
ERROR_CRASH_DUMP	753 (0x2F1)	Crash dump exists in paging file.
ERROR_BUFFER_ALL_ZEROS	754 (0x2F2)	Specified buffer contains all zeros.
ERROR_REPARSE_OBJECT	755 (0x2F3)	A reparse should be performed by the Object Manager since the name of the file resulted in a symbolic link.
ERROR_RESOURCE_REQUIREMENTS_CHANGED	756 (0x2F4)	The device has succeeded a query-stop and its resource requirements have changed.
ERROR_TRANSLATION_COMPLETE	757 (0x2F5)	The translator has translated these resources into the global space and no further translations should be performed.
ERROR_NOTHING_TO_TERMINATE	758 (0x2F6)	A process being terminated has no threads to terminate.
ERROR_PROCESS_NOT_IN_JOB	759 (0x2F7)	The specified process is not part of a job.
ERROR_PROCESS_IN_JOB	760 (0x2F8)	The specified process is part of a job.
ERROR_VOLSNAP_HIBERNATE_READY	761 (0x2F9)	{Volume Shadow Copy Service} The system is now ready for hibernation.
ERROR_FSFILTER_OP_COMPLETED_SUCCESSFULLY	762 (0x2FA)	A file system or file system filter driver has successfully completed an FsFilter operation.
ERROR_INTERRUPT_VECTOR_ALREADY_CONNECTED	763 (0x2FB)	The specified interrupt vector was already connected.
ERROR_INTERRUPT_STILL_CONNECTED	764 (0x2FC)	The specified interrupt vector is still connected.
ERROR_WAIT_FOR_OPLOCK	765 (0x2FD)	An operation is blocked waiting for an oplock.
ERROR_DBG_EXCEPTION_HANDLED	766 (0x2FE)	Debugger handled exception
ERROR_COMPRESSION_DISABLED	769 (0x301)	Compression is disabled for this volume.

Name	Value	Description
ERROR_CANTFETCHBACKWARDS	770 (0x302)	The data provider cannot fetch backwards through a result set.
ERROR_CANTSCROLLBACKWARDS	771 (0x303)	The data provider cannot scroll backwards through a result set.
ERROR_ROWSNOTRELEASED	772 (0x304)	The data provider requires that previously fetched data is released before asking for more data.
ERROR_BAD_ACCESSOR_FLAGS	773 (0x305)	The data provider was not able to interpret the flags set for a column binding in an accessor.
ERROR_ERRORS_ENCOUNTERED	774 (0x306)	One or more errors occurred while processing the request.
ERROR_NOT_CAPABLE	775 (0x307)	The implementation is not capable of performing the request.
ERROR_REQUEST_OUT_OF_SEQUENCE	776 (0x308)	The client of a component requested an operation which is not valid given the state of the component instance.
ERROR_VERSION_PARSE_ERROR	777 (0x309)	A version number could not be parsed.
ERROR_BADSTARTPOSITION	778 (0x30A)	The iterator's start position is invalid.
ERROR_MEMORY_HARDWARE	779 (0x30B)	The hardware has reported an uncorrectable memory error.
ERROR_DISK_REPAIR_DISABLED	780 (0x30C)	The attempted operation required self healing to be enabled.
ERROR_INSUFFICIENT_RESOURCE_FOR_SPECIFIED_SHARED_SECTION_SIZE	781 (0x30D)	The Desktop heap encountered an error while allocating session memory. There is more information in the system event log.
ERROR_SYSTEM_POWERSTATE_TRANSITION	782 (0x30E)	The system power state is transitioning from %2 to %3.
ERROR_SYSTEM_POWERSTATE_COMPLEX_TRANSITION	783 (0x30F)	The system power state is transitioning from %2 to %3 but could enter %4.
ERROR_MCA_EXCEPTION	784 (0x310)	A thread is getting dispatched with MCA EXCEPTION because of MCA.
ERROR_ACCESS_AUDIT_BY_POLICY	785 (0x311)	Access to %1 is monitored by policy rule %2.
ERROR_ACCESS_DISABLED_NO_SAFER_UI_BY_POLICY	786 (0x312)	Access to %1 has been restricted by your Administrator by policy rule %2.
ERROR_ABANDON_HIBERFILE	787 (0x313)	A valid hibernation file has been invalidated and should be abandoned.
ERROR_LOST_WRITEBEHIND_DATA_NETWORK_DISCONNECTED	788 (0x314)	{Delayed Write Failed} Windows was unable to save all the data for the file %hs; the data has been lost. This error may be caused by network connectivity issues. Please try to save this file elsewhere.
ERROR_LOST_WRITEBEHIND_DATA_NETWORK_SERVER_ERROR	789 (0x315)	{Delayed Write Failed} Windows was unable to save all the data for the file %hs; the data has been lost. This error was returned by the server on which the file exists. Please try to save this file elsewhere.
ERROR_LOST_WRITEBEHIND_DATA_LOCAL_DISK_ERROR	790 (0x316)	{Delayed Write Failed} Windows was unable to save all the data for the file %hs; the data has been lost. This error may be caused if the device has been removed or the media is write-protected.
ERROR_BAD_MCFG_TABLE	791 (0x317)	The resources required for this device conflict with the MCFG table.
ERROR_DISK_REPAIR_REDIRECTED	792 (0x318)	The volume repair could not be performed while it is online. Please schedule to take the volume offline so that it can be repaired.
ERROR_DISK_REPAIR_UNSUCCESSFUL	793 (0x319)	The volume repair was not successful.
ERROR_CORRUPT_LOG_OVERFULL	794 (0x31A)	One of the volume corruption logs is full. Further corruptions that may be detected won't be logged.
ERROR_CORRUPT_LOG_CORRUPTED	795 (0x31B)	One of the volume corruption logs is internally corrupted and needs to be recreated. The volume may contain undetected corruptions and must be scanned.
ERROR_CORRUPT_LOG_UNAVAILABLE	796 (0x31C)	One of the volume corruption logs is unavailable for being operated on.
ERROR_CORRUPT_LOG_DELETED_FULL	797 (0x31D)	One of the volume corruption logs was deleted while still having corruption records in them. The volume contains detected corruptions and must be scanned.
ERROR_CORRUPT_LOG_CLEARED	798 (0x31E)	One of the volume corruption logs was cleared by chkdsk and no longer contains real corruptions.
ERROR_ORPHAN_NAME_EXHAUSTED	799 (0x31F)	Orphaned files exist on the volume but could not be recovered because no more new names could be created in the recovery directory. Files must be moved from the recovery directory.
ERROR_OPLOCK_SWITCHED_TO_NEW_HANDLE	800 (0x320)	The oplock that was associated with this handle is now associated with a different handle.

Name	Value	Description
ERROR_CANNOT_GRANT_REQUESTED_OPLOCK	801 (0x321)	An oplock of the requested level cannot be granted. An oplock of a lower level may be available.
ERROR_CANNOT_BREAK_OPLOCK	802 (0x322)	The operation did not complete successfully because it would cause an oplock to be broken. The caller has requested that existing oplocks not be broken.
ERROR_OPLOCK_HANDLE_CLOSED	803 (0x323)	The handle with which this oplock was associated has been closed. The oplock is now broken.
ERROR_NO_ACE_CONDITION	804 (0x324)	The specified access control entry (ACE) does not contain a condition.
ERROR_INVALID_ACE_CONDITION	805 (0x325)	The specified access control entry (ACE) contains an invalid condition.
ERROR_FILE_HANDLE_REVOKED	806 (0x326)	Access to the specified file handle has been revoked.
ERROR_EA_ACCESS_DENIED	994 (0x3E2)	Access to the extended attribute was denied.
ERROR_OPERATION_ABORTED	995 (0x3E3)	The I/O operation has been aborted because of either a thread exit or an application request.
ERROR_IO_INCOMPLETE	996 (0x3E4)	Overlapped I/O event is not in a signaled state.
ERROR_IO_PENDING	997 (0x3E5)	Overlapped I/O operation is in progress.
ERROR_NOACCESS	998 (0x3E6)	Invalid access to memory location.
ERROR_SWAPERROR	999 (0x3E7)	Error performing inpage operation.

Document Change History

ver.	date	author	description
0.01	25-10-2011	AIK	Initial Release.
0.02	26-10-2011	AIK	Added program example and description.
0.03	01-11-2011	AIK	Syntax fixes
0.04	07-11-2011	AIK	Add note to FLASH_WRITE
0.05	14-12-2011	AIK	Added error codes appendix
0.06	03-05-2012	AIK	Fixed TYPO in TE0300_GetData() definition
1.00	06-05-2012	AIK	Rename API functions parameters and types
1.01	07-05-2012	AIK	Minor formatting changes