

REAL TIME OPERATING SYSTEM PROGRAMMING-II: Real time Linux, Windows CE and OSEK

Lesson-9:

WCE Serial Communication, Network, device-to-device socket and Communication Functions

1. Windows CE Serial Communication functions

Create File

- CreateFile— Creates the port for communication. Returns a Handle for serial COM1 port.
- The arguments: TEXT (“COM1”),
GENERIC_READ |
GENERIC_WRITE, 0, NULL,
OPEN_EXISTING, 0, and NULL

Read File

- **Read File**— reads from the port for communication. Returns an integer
- Arguments: Handle returned on creation, pointer to character, pointer to 8-bit number of bytes read, NULL

Write file

- WriteFile Write file to the port for communication

Transmit Communication Char

- TransmitCommChar — Send character into queue for port transmission
- Returns a boolean for successful or unsuccessful transmission .
- The arguments: Handle returned on creation and character for transmission

Set Communication Mask

- **SetCommMask**— To set communication mask.
- Arguments: Handle returned on creation and 32-bit for event mask to specify clear to send, break, data set ready, error, receive line signal detect, character received, a receive event flag received, transmit buffer empty

Set Communication State

- SetCommState to set communication state.
- Arguments: Handle for file and long pointer to device control block (DCB)
- DCB defines 32-bits for DCB length, baud rate, binary flag, parity flag, and 24 other flags

Get Communication Mask

- GetCommState to get communication state.
- Arguments: Handle returned on creation and long pointer for 32-bit event mask

Wait Communication Event

- **WaitCommEvent** — To wait for event.
- Arguments: Handle for file, long pointer for 32-bit event mask and NULL (for long pointer for overlap)

2. WNet API Network Connection functions

Network Connection functions

- WNetAdd-Connection— Maps the network (remote) resource.
- Returns a 32 bit code for no error or error.
- Arguments: Handle, three long pointers for *network resource* and string for password and user names and one 32-bit value for the flags.
- The *network resource*— a structure, which contains long pointers for remote name and local name

Network Connection functions

- WNetConnection-Dialog to dialog on disconnection.
- Arguments: Handle and 32-bit for resource type. Resource type may be printer or disk or any other available
- WNetDisconnectDialog

Network Connection functions

- WNetCancel-Connection
- Disconnects the network (remote) connection added earlier.
- Returns a 32-bit code for no error or error.
- Arguments: used are one long pointer for name (local or remote), 32-bit value for the flags, boolean to specify forced disconnection when files or devices are open and not closed

Network Connection functions

- WNetGet-Connection
- WNetGetUser
- WNetGetUniversalName
- SetCommState .

3. Winsock APIs for sockets programming

Winsock APIs

- SOCKET socket
- bind
- accept
- connect
- listen
- send
- recv
- shutdown
- closesocket

Summary

We learnt

- Windows Serial communication
- Network functions
- WinSock APIs

End of Lesson-9 of chapter 12 on
**WCE Serial Communication, Network,
device-to-device socket and
Communication Functions**