



NDIS - Version: 1  
22 September 2021

# NDIS 5 Windows-Network-Driver- Development



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 5 days Course

## Description:

The students gain a thorough knowledge about the windows network device driver architecture and the associated programming models. Miniports, Protocol drivers, a short overview over the TDI interface, as well as socket helper applications are covered. In addition to this they learn concepts and backgrounds of NDIS device driver development using the DDK and the NDIS libraries and lots of practical tips and tricks including the usage of NDIS WinDbg debugger extensions.

## Intended audience:

Windows device driver developers, who want to gain understanding of the different layers of the Windows NDIS environment and the corresponding driver models as well as the associated interfaces from the miniport at the bottom up to the application.

## Prerequisites:

Very good knowledge of the programming languages C and/or C++  
Basic knowledge of Windows system programming and system administration  
Knowledge of system and device driver development on other operating systems (e.g. Unix) is an advantage  
Good knowledge of Microsoft development environments (Developer Studio)  
Basic knowledge of driver and hardware related software development  
Basic knowledge of Windows device driver development (Training course I) is absolutely necessary

## Objectives:

## Topics:

° Overview

° Reference model ISO/OSI layers

° Windows networking architecture and programming models

° Connectionless, connection oriented, WAN

° NDIS Miniport Model

° Miniport interface to hardware or WDM driver underneath (lower edge)

° Miniport interface to protocol drivers (upper edge)

° Miniports upper edge functions MiniportXxx

° Network OIDs

° NDIS library functions for miniports

° NDIS Packet and buffer handling

° NDIS protocol drivers

° Protocol driver binding to underlying adapters

° Receiving and transmitting data in a connectionless protocol driver

° TDI upper edge interface for protocol drivers

° TDI IOCTLs for transport drivers

° Notify Objects

° Property sheets and device configuration

° Supporting a protocol interface to user mode applications

° Windows socket helper DLL

° NDIS intermediate drivers overview

° Bindings of NDIS intermediate drivers