USB Remote NDIS stack

General Description

Remote NDIS (RNDIS) is a specification for network devices on dynamic Plug and Play I/O buses such as USB and InfiniBand. Remote NDIS eliminates the need for device manufacturers to write an NDIS miniport device driver by defining a bus-independent message set and a description of how this message set operates over a various I/O buses. Since this Remote NDIS interface is standardized, one set of host drivers can support any number of bus-attached networking devices. This significantly reduces the development burden on device manufacturers, improves the overall stability of the system since no new drivers are required, and improves the end-user experience since there are no drivers to install to support a new bus-connected network device. Remote NDIS has become a standard component of modern Windows operating systems, including Windows 2000 and Windows XP. However, to implement the peripheral side of Remote NDIS, a special library needs to be embedded into the network device firmware. Jungo provides this component.

Jungo provides a complete, small footprint, high quality USB Remote NDIS stack, including Application Programming Interfaces (APIs) and services that enable device manufacturers to quickly incorporate USB Remote NDIS support in their USB peripheral devices. Jungo is committed to constantly maintaining compliance and up-to-date features of its USB Remote NDIS stack.

Product Features

- The code is mostly OS independent. Jungo's RNDIS stack is built for embedded Linux, but its OS dependency is mostly confined to one file
- Hardware independent: Supports any USB based hardware. All it requires is the implementation of a USB controller driver, using the provided APIs.

Product Benefits

Faster time to market; Shorter development cycle; Easier learning curve

- Eliminates substantial development time and costs
- High quality
- Small footprint
- Intuitive API, as C code, enables easy USB RNDIS incorporation
- Easy porting to different operating systems
- Deployed in real world applications (e.g residential gateways)
- Source code available
- Technical support, provided by the engineers who developed the stack

Technical Specifications

- Supports low/full/high speed devices
- Supports Control, Bulk and Interrupt data transfers
- Multiple interfaces devices support
- Linux Kernel versions 2.2 and 2.4
- Programming language: ANSI C
- Can be used on any architecture with an ANSI C compiler
- Specifically tested on MIPS little/big endian, ARM, StrongARM and X86.

Chipset support

Includes USB Controller Drivers for specific HW platforms:
- IDT 79RP35x
- Conexant CX82xxx
- Intel IXP425, IXP22x, SA-1110
- Samsung 8947
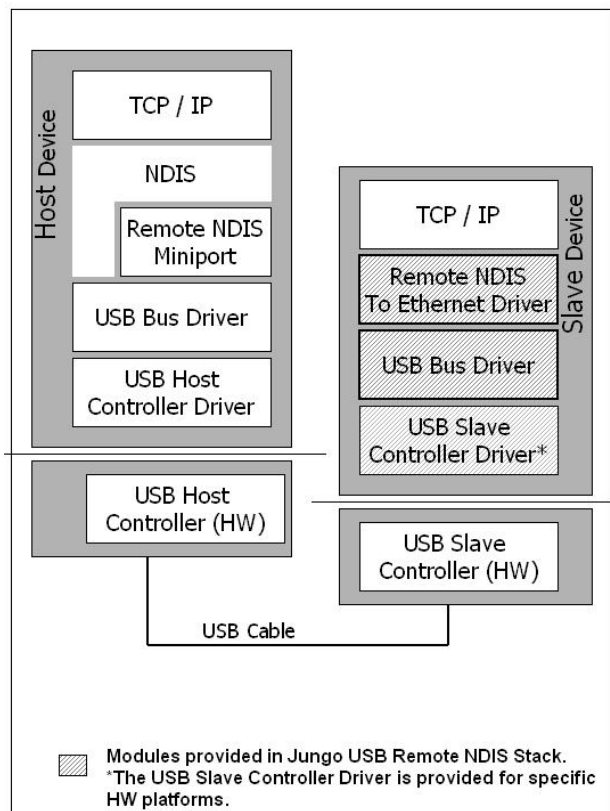- HW Abstraction Layer for easy adaptation to new HW.

Driver footprint

Varies slightly between different Architectures.
The following was measured on Intel's IXP425
- RAM footprint - 71KB (55KB code size + 16KB allocated memory)
- ROM footprint - 19KB (gzipped, 47KB uncompressed)

Architecture Diagram

Code Quality

- ANSI C code - compact and portable
- Single source code tree for all platforms
- Consistent coding conventions

Supported Industry Standards

Designed to comply with:

- Remote NDIS Specification, revision 1.0
- NDIS specification, version 5.0
- Universal Serial Bus specification, version 1.1

References:

http://www.jungo.com/components_rndis.html

http://www.microsoft.com/hwdev/tech/network/rmNDIS.asp

About Jungo Ltd.

Jungo Software Technologies is a leading supplier of residential gateway software solutions, driver development tools and hardware access applications. Jungo offers integrated reference designs with several of the most influential global silicon vendors, enabling its customers to simplify device development cycles, improve performance and accelerate time to market. Jungo is a privately held company with corporate offices in San Jose, California, sales and support offices in Taiwan and an R&D center in Israel. Founded in 1998, Jungo's investors include TeleSoft Partners, Infineon Ventures and Intel Communications Fund. Find out more at http://www.jungo.com