

NicheStack IPv4™ is a complete TCP/IP protocol stack designed from the ground up for connected device implementations.

NicheStack IPv4 Highlights

- Zero data copy for ultra fast performance
- Standard Sockets Interface
- Raw Socket Support
- Non-blocking versions of all functions
- Versatile MSS and window options
- Connections limited only by memory availability
- Optional optimized assembly language checksum routines
- "Predictive" header processing for speed
- Nagle Algorithm (Slow Start)
- VJ Smoothed Round Trip Timing
- Delayed ACKs
- BSD style "Keepalive" option
- Complete debugging and optimization module
- No "GPL Contamination"

NicheStack IPv4 - The Standard For Device Networking

NicheStack IPv4 is a complete TCP/IP protocol stack designed from the ground up for connected device implementations. NicheStack IPv4 combines small size, extreme portability and high performance without compromising RFC compliance. Supporting a wide variety of physical interfaces, the IP layer can be configured as a standard client machine, an IP router, or a multi-homed server. InterNiche's FTP, Telnet, DNS, DHCP and IGMPv1 components are included, providing a comprehensive device networking package. NicheStack IPv4 is an economical and solid protocol platform for InterNiche's optional PPP implementation, its HTTP, DNS and DHCP servers, Email, SNMP, and routing products where they are required.

NicheStack IPv4 has a well deserved reputation for high throughput and has extremely small memory requirement for its feature set. A minimal Boot Client (ARP, IP, ICMP, UDP, DHCP and TFTP) can be as small as 12.8 KB. A full featured TCP/IP with a sockets API has a typical total ROM and RAM requirements below 30 KB on a 32-bit processor.

NicheStack's TCP layer uses "mbufs" and the BSD 4.4 Sockets API which are familiar to experienced TCP programmers. All socket operations can be made in a non-blocking mode, including connect(). The "mbuf" data, including headers, is in contiguous buffers to simplify memory management and avoid data copies. Tunable parameters such as MSS (Maximum Segment Size) and the TCP window can be left to runtime logic or be customized for your application.

NicheStack IPv4's mature IP layer includes:

- Support for NAT Routing
- Fragmentation and re-assembly
- IP Routing: Routes set via ICMP, SNMP, IGMP, etc.
- Loop back test driver
- Optimized checksum routines
- Multi Homed IP support
- Support for Auto-IP Assignment

NicheStack IPv4 is distributed as full ANSI "C" source code and also includes NicheTool, the most comprehensive debug and system optimization tool available in any commercially TCP/IP stack. Menu driven and customizable by development engineers for any added components, this very useful utility greatly assists the process of optimizing NicheStack IPv4 for the memory usage and performance characteristics of the application.

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InterNiche Device Networking Products

InterNiche is the premier specialist provider of internet protocol software stacks and networking expertise specifically targeted at connected device implementation. InterNiche offers a broad range of TCP/IP protocol suites, optimized for maximum performance and minimum memory footprint on the highly integrated VLSI at the heart of today's device designs.

All InterNiche device networking products are engineered for rapid, seamless integration with best-in-class development environments for the leading VLSI architectures. The combination of rapid integration and low overhead specifically addresses the challenges faced by device development teams by offering maximum networking performance and manageability within a low cost system implementation.

InterNiche provides a tasking API that is adaptable to almost any RTOS environment, so that the development team can easily interface to the necessary functions and incur no additional overhead. Throughput is maximized through effective usage of zero-copy buffers and availability of assembler optimizations for critical code sections.

A modular approach to the entire suite of protocol products maintains a development team's capability to profile stack features to match specific device requirements. With configuration flexibility and the tools to identify and eliminate integration problems development teams find that system integration using InterNiche products is smooth and predictable.

InterNiche products are supplied as portable ANSI C source code packages under royalty-free license terms. All products include full technical documentation and a first 12 months of highly responsive support service, which includes access to technical experts via email, web, Fax, and telephone.

For further information on any of these products or services please call, email or visit our web site.

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The Specialist Provider of Software and Expertise for Device Networking

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