

Embedded Internet Communications Protocols



InterNiche Technologies, Inc. has developed a comprehensive suite of software modules that enable embedded system developers to add value to their products in the area of communications, networking, and product management while investing a minimum of time or expense. InterNiche software is developed from the ground up to address the needs of embedded systems.

Communications Protocol NicheStack

NicheStack™ is a fully compliant suite of protocols for Internet, Intranet and LAN connectivity. InterNiche's Portable TCP/IP stack is a complete SDK for developers of embedded systems that require high throughput and easy porting to any environment. It includes ANSI "C" sources for the TCP/IP family of protocols, a "sockets" API, and full technical documentation.

- DHCP Client
- Fragmentation and re-assembly
- Optimized checksum routines
- IP Routing-Routes set via ICMP, SNMP, IGP, etc.
- Support for NAT Routing
- Loop back test driver included
- Multi Homed IP support
- TCP
- IP
- DHCP client
- ARP
- UDP
- TFTP
- ICMP
- SLIP

NicheLite

The NicheLite™ TCP/IP stack is a full featured subset of our NicheStack™ TCP/IP.

Portable PPP (Point to Point Protocol)

PPP, or Point-to-point Protocol is a suite of protocols that operate with the InterNiche TCP/IP stack to allow embedded products to communicate over a serial line. The InterNiche PPP layer can function as a client or a server, supports all standard PPP authentication protocols, and DHCP over PPP.

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Portable FTP Server

FTP Client & Server adds the File Transfer Protocol Client & Server functions to InterNiche's TCP/IP product. FTP capability allows the end user to upgrade firmware and copy large data blocks from the embedded system efficiently, easily and with standard tools.

NichePOP3

NichePOP3™ is a complete drop in module that adds the ability to retrieve email from a POP3 email server on an embedded system. NichePOP3 can be accessed from an embedded Browser such as NicheView or from a customer mail application.



Portable TELNET Server

TELNET enables an embedded system to provide network accessibility for remote configuration and monitoring through the TELNET Server.

Operating System Components

NicheTask™

NicheTask™ is a software module that has extremely small memory requirements and is an excellent fit for embedded systems developers that need a multitasking scheduler rather than an RTOS.

NicheFile™

NicheFile™ enables embedded systems developers to add read/write capability to RAM, flash or disk.

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Web, Management and Configuration Tools

NicheView™

NicheView™ is a deeply embedded World Wide Web Browser based on patent pending technology. NicheView provides a generic interface for input events (such as keystrokes, clicks, etc.) and output streams which pass text blocks, images and other content to device drivers. NicheView supports Frames, Animated GIF support, color, JPEG files, Table and Forms. It also includes a development environment which implements an LCD-like display in a Windows™ 95/98/NT PC window.

This provides both a reference implementation of the Browser, and allow development of the HTML applications.



WebPort™

WebPort™ is an embedded web server, which allows an embedded device to be configured and monitored by end users with any World Wide Web browser, eliminating the need for the manufacture to provide a variety of GUIs for Windows™ UNIX, Macintosh, etc. All the GUI graphics, controls, and text is self-contained in the device's firmware.

Portable SNMP

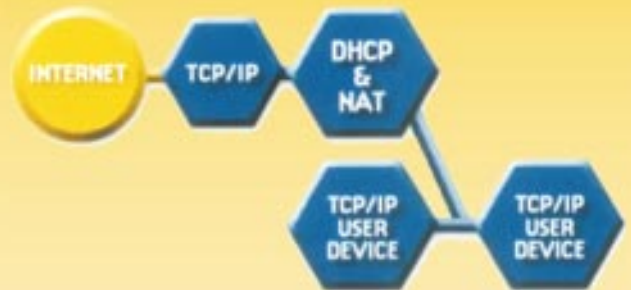
SNMP is a fully compliant V1/V3 agent supporting management by all of the popular SNMP management tools and workstations.

Portable Email Alerter

Email Alerter adds notification functionality to embedded systems designs. Email Alerter is a set of routines that allows the end user to send predetermined messages from the embedded system to a local or remote designated email address. The Email Alerter can be used for embedded messages for trouble reporting for a variety of predetermined conditions like as well as to "phone home" to register itself when a product is initially installed.

Protable DHCP

InterNiche's Protable DHCP Server is a complete drop-in software module that allows an embedded system to assign temporary or permanent IP addresses to clients.



Specialized Routing Software

NATRouter

NATRouter is an Internet Protocol technology designed to overcome problems that businesses experience with IP networking and maintaining IP addresses. By utilizing private IP addresses, NATRouter saves money and ensures ease of future network growth. When combined with InterNiche's DHCP server, the NATRouter can automatically configure and connect up to 64,000 devices to the Internet sharing a single IP address.

DNS Server

The Domain Name System is a distributed Internet directory service. InterNiche has implemented the Domain Name Server capability as an option to NicheStack™, its TCP/IP stack. This implementation provides the applications using the stack with the ability to map domain names to IP addresses.

Routing Information Protocol (RIPv1 and v2)

InterNiche's Portable RIP is a complete module for developers of embedded systems that adds RIP functionality to their embedded design. RIP eliminates the need to manually create routing tables by enabling the embedded system to dynamically gather and supply gateway IP addresses that are needed for routing. RIP is an Interior Gateway Protocol (IGP). It can be used with InterNiche's TCP/IP stack or any other TCP/IP stack.

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