

Treck IPv4/v6 Dual Stack

product information

High performance embedded systems are the key technologies fueling innovative, high-growth applications of today's fast-growing markets. These include digital wireless, broadband access, digital audio, high-resolution imaging and digital motor control. A key reason for embedding pre-designed functions is to reduce the time it takes to get complex systems to market while speeding their proliferation. The ability to rapidly design, test, debug and manufacture a device is crucial to the continued success of the electronics industry.

The embedded systems market is integrating computing and networking platforms capable of adapting to a range of specific applications. Whether you are a silicon manufacturer or OEM, you need a top of the line networking stack to reduce your capital expenditure risk and meet the stringent requirements of the market.

Treck's networking protocols are specifically designed for embedded systems. We have created fast, efficient and reliable plug and play communication protocols so you can concentrate on your core competency and build designs that meet your "time to market" needs. Treck's Treck IPv4/v6 dual stack is an ideal solution for embedded systems designers.

Modular Design

The Treck protocol suite can be configured to only include certain modules. When a module is not utilized, it is not just deactivated, it is removed entirely to save valuable storage space in the often limited capacity of an embedded device.

True Zero Copy

Treck products are zero copy from the application all the way through the driver, including TCP, this increases processing speed.

Written Specifically for Embedded Systems

Treck is written from the ground up, not derived from publicly available Unix stacks. Berkeley 4.4 compatibility, small size and high performance are key elements of our design.

Can Run with or without RTOS

The stack is designed to easily integrate into an RTOS or Kernel. It can also run without an RTOS as its own task.

ROMable

Some program variables never change their value at run-time, but instead are assigned a hardcoded value at compile-time. These variables could be put into ROM, if the code was written in such a way to identify them to the compiler. We add the "const" keyword in front of such variables to indicate they never change their value so the compiler can locate them in ROM instead of in RAM. This conserves RAM.

Treck IPv6 is a high performance next-generation protocol stack designed from the ground up specifically for embedded systems. To ensure product interoperability, Treck IPv6 features a dual-mode (IPv4/ IPv6) stack. This feature allows you to "switch" IPv6 functionality on or off depending on your needs.

Included protocols:

- ICMPv6
- IPv6
- TCP
- UDP
- ICMPv4
- IPv4
- ARP
- Ethernet
- RIP Listener
- Ping Application

Optional Protocols

- IGMP
- DHCP
- FTP
- TFTP
- NAT
- SNMP
- Telnet
- Mobile IP
- IPsec
- DNS Resolver
- HTTP
- POP3
- SMTP
- PPP



Mobile



Network

Treck Inc.

Treck IPv4/v6 Dual Stack

product features

Features

- Dual mode stack (IPv4 / IPv6) with the compile-time option to disable either IPv6 or IPv4, resulting in reduced codespace
- Plug-and-play auto-configuration, including:
 - auto-discovery of default routers
 - auto-recovery when a default router becomes unreachable
 - auto-discovery of network parameters such as hop limit (TTL) and link
 - prefix discovery and stateless address auto-configuration
- Generic IPv6 Tunnels
- Built-in support for IPv6 multicast
- IPv6-over-IPv4 tunneling support:
 - automatic and configured tunnels
 - bi-directional configured tunnels
 - default configured gateway tunnel
- Supports Ethernet, PPP, and null link-layers.
- Backwards-compatible IPv6 4.4BSD socket API extensions, compliant with RFC-2553
- Full integration with Treck IPsec
- Core IPv6 Router functionality including:
 - IPv6 forwarding
 - Configuration of IPv6 static routes
- IPv6 Address Resolution independent of link type
- IPv6 Host functionality
- Built-in support for IPv6 private address spaces
- Compile-time macros for disabling specific IPv6 functionality, resulting in reduced codespace:
 - Duplicate Address Detection
 - Prefix Discovery with Stateless Address Auto-Configuration
 - Multicast Listener Discovery
 - Neighbor Unreachability Detection

Supported Microprocessors

- Any 16, 32, or 64 bit microprocessor

Supported RFCs

- 1981 Path MTU Discovery for IP version 6
- 2185 Routing Aspects Of IPv6 Transition
- 2373 IP Version 6 Addressing Architecture
- 2374 IPv6 Aggregatable Global Unicast Address Format
- 2375 IPv6 Multicast Address Assignments
- 2460 Internet Protocol, Version 6 (IPv6) Specification
- 2461 Neighbor Discovery for IP Version 6 (IPv6)
- 2462 IPv6 Stateless Address Auto-configuration
- 2463 Internet Control Message Protocol (ICMPv6)
- 2464 Transmission of IPv6 Packets over Ethernet
- 2472 IP Version 6 over PPP
- 2473 Generic Packet Tunneling in IPv6 Specification
- 2474 Definition of the Differentiated Services Field (DSField) in the IPv4 & IPv6 Headers
- 2526 Reserved IPv6 Subnet Anycast Addresses
- 2553 Basic Socket Interface Extensions for IPv6
- 2710 Multicast Listener Discovery (MLD) for IPv6
- 2711 IPv6 Router Alert Option
- 2893 Transition Mechanisms - IPv6 Hosts & Routers
- 3056 Connection of IPv6 Domains via IPv4 Clouds

For more information, please visit www.treck.com.



Mobile



Network

Treck Inc.