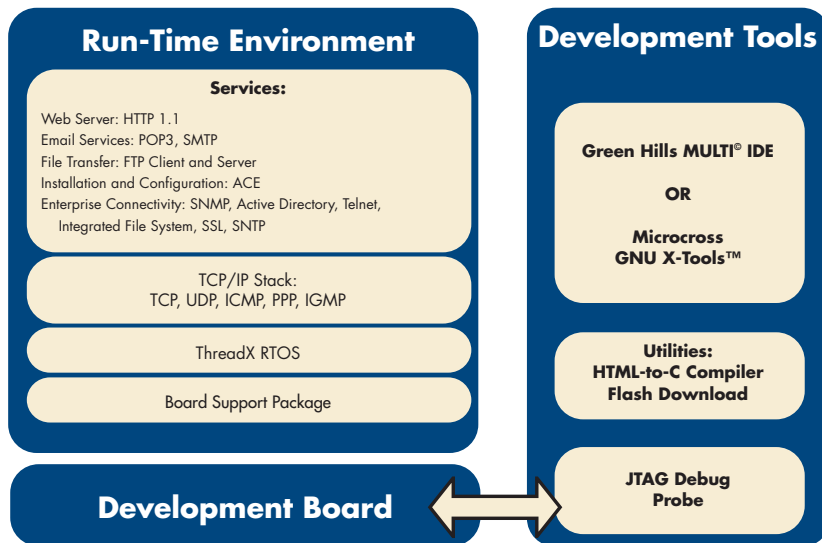


NET+Works 6.3

NET+Works® 6.x Software for Embedded Networking

Development Tools and Networking Software



Royalty-free and complete embedded development platform for NetSilicon® NET+ARM processors, Digi Connect® embedded modules and ConnectCore™ core modules.



Features/Benefits

- Software debugger
- Wi-Fi driver with WPA for Broadcom BCM4306 chipset
- Stack bypass filtering
- Development tools:
Green Hills MULTI® IDE or Microcross GNU X-Tools™
- JTAG or software debugger
- Run-time software
 - Source code drivers
 - ThreadX® RTOS
 - TCP/IP stack and networking applications
 - Royalty-free environment
 - NET+ARM processor, Digi Connect module or ConnectCore core module development board
- Ready-to-use integrated tools and run-time software minimize development time and accelerate time-to-market
- Reference development platform reduces design risk
- Sample applications and superior networking documentation
- Common NET+Works platform allows your applications to seamlessly migrate across all processors and modules

Overview

NET+Works is a complete development environment for Ethernet/Internet enabling embedded devices. It is specifically optimized for our NetSilicon 32-bit NET+ARM processors, Digi Connect embedded modules, and ConnectCore core modules. NET+Works includes development tools, JTAG or software debugger, a development board, a royalty-free Real-Time Operating System (RTOS), and networking software in an easy-to-use, integrated solution. It reduces design risk and speeds your time to market. These elements simplify and accelerate development of your system.

With NET+Works, you can start with the sample application programs provided and create a custom software application with the built-in APIs and integrated development tools. You can evaluate your application's performance on the development board and design target hardware using the development board as a reference.

NET+Works keeps you current with evolving networking technologies. Now you will be prepared if you need features like security, device discovery, Advanced Web Server, Wi-Fi, new drivers or new RFCs. To help you we offer services including online help, phone support, design reviews and sample applications.

Please contact us at 1-877-OEM-DIGI or 952-912-3444 for additional information or to discuss your specific application requirements.



www.digi.com

Making
DEVICE NETWORKING
easy™

NET+Works Development Tools

Choose your tools. NET+Works includes either the comprehensive Green Hills Software MULTI Integrated Development Environment or Microcross GNU X-Tools.



GREEN HILLS SOFTWARE

The Green Hills Software MULTI Integrated Development Environment is one of the most powerful and comprehensive development systems available. Its debug features alone can save you months of development time. Use the intuitive graphical environment to get easy access to integrated features, including:

- Project builder
- Source level debugger
- C run-time libraries
- Version control system and a compiler which generates highly efficient, tight executables



MICROCROSS

For open standard fans, we offer low-cost Microcross GNU X-Tools. They include:

- Command line GDB debugger
- Visual GDB source level debugger (Insight)
- C run-time libraries
- GCC compiler, assembler and linker

UTILITIES

- HTML compiler
- MIB compiler
- FTP client for PC-based download of Flash images
- NET+OS programmer for device discovery

DEBUGGERS

Our higher performance kits include the Ethernet-based MAJIC debugger developed by Embedded Performance Incorporated. It features fast programming download, target Flash programming, hardware and software breakpoint control, and independent source and instruction level stepping.

Our value-priced basic kits include the IEEE 1284 based Raven debugger developed by Macraigor. It features programming download, target Flash programming, hardware and software breakpoint control, and independent source and instruction level stepping.

NET+Works 6.3 introduces a software debugger which uses one of the serial ports for minimally intrusive debugging.

NET-WORKS RUN-TIME SOFTWARE

NET+Works software provides building blocks to help you create your custom applications. You create your application with calls to our documented APIs for:

- Board Support Package
- ThreadX® RTOS kernel
- Basic Internet Protocols (TCP/IP stack)
- Higher level protocols and services

BOARD SUPPORT PACKAGE

The NET+Works Board Support Package (BSP) is a collection of ARM object code and C source-code drivers and a boot-loader. The BSP initializes hardware, software and provides Power On Self Test (POST).

The BSP contains a set of predefined APIs for incorporating device peripheral functionality into your application. The BSP contains the appropriate drivers for your NET+ARM processor or Digi Connect/ConnectCore module development board including:

- Ethernet
- Serial
- HDLC
- SPI
- I²C
- Parallel IEEE 1284
- Flash
- NVRAM
- Cache
- USB host (including keyboard, mouse, mass storage)
- USB device
- LCD
- PCI/CardBus
- RTC
- PWM



THREADX RTOS KERNEL

The RTOS is based on a high-speed picokernel architecture. All APIs for the ThreadX kernel are documented through online help. ThreadX helps you manage complex event synchronization and memory via:

- Threads
- Queues
- Application timers
- Semaphores
- Event flags



BASIC INTERNET PROTOCOLS

- TCP/IP, UDP/IP
- ICMP
- ARP
- RARP
- IGMPv2 Multicasting
- BOOTP
- DHCP
- PPP

HIGHER LEVEL NETWORKING PROTOCOLS & SERVICES

- FTP server and client
- LDAP v3
- TCP and UDP Sockets API
- Advanced Web Server
- HTTP v1.1
- Email (POP3, SMTP and ESMTP)
- SNMP v3
- MIBII for remote management
- SNTp
- DNS
- Telnet
- SLP v2
- SSL

Stack Bypass Filtering

NET+Works is used extensively in Industrial Ethernet applications. Many of these require deterministic response to certain types of packets. Our stack bypass API lets you filter on these packets or any other you might identify for exceptional handling.

SECURITY

Network security is serious business. NET+Works covers solutions for both wired and wireless including:

- Secure SSL/TLS enabled network communication
- Full HTTPS support for secure web-based transactions
- ESMTTP (Plain, login, MD5, CRAMDM5)
- Secure HTTP realms (basic and MDS authentication)

All security features are fully integrated into NET+Works.

INTEGRATED FILE SYSTEM

NET+Works includes a robust, flexible embedded file system that is integrated with the HTTP server, FTP server and client, SMTP and the ANSI C library. File system features include:

- Standard file API (fopen(), fread(), fwrite(), fclose(),...)
- Support for Flash and RAM data types, with Flash wear leveling
- Support for files of any length
- Shared files among Flash sector boundary
- Date and time stamp for files and directories
- 32 levels of user-defined permission

Note: Additional software support for FAT32 file systems is available through our software partner HCC Embedded.

ADDRESS CONFIGURATION

NET+Works also makes device networking easy by providing services such as Address Configuration Executive (ACE) which lets you acquire IP parameters at startup from multiple prioritized sources including:

- Static
- BOOTP
- RARP
- Ping-ARP
- Auto-IP
- DHCP

WI-FI & WPA

- Embedded 802.11b in Digi Connect® Wi-EM and Digi Connect® Wi-ME
- Wi-Fi drivers for NS9750 processor supporting off-the-shelf CardBus and PCI/miniPCI cards containing Broadcom 802.11a/b/g AirForce chipsets
- 64/128-bit Wired Equivalent Privacy (WEP) encryption
- Wi-Fi Protected Access (WPA) authentication: Pre-Shared Key (PSK) for SOHO and PEAP with MS_CHAP for enterprise
- Common WPA authentication with standardized APIs supports migration between Digi Connect modules and processors

FOR MORE INFORMATION

Contact your Digi sales representative for the price and delivery of the following additional products:

- Software upgrades
- Additional MULTI seats
- Development boards
- Raven debuggers
- Board layout design review
- Applications engineering support

Please see our website for additional support options. We offer a variety of standard and optional support programs to suit your support needs.



ADVANCED WEB SERVER

Use the Allegro Advanced Web Server (AWS) to create web pages. It is highly configurable and offers full support for HTML (2.0, 3.2, and 4.0), multiple web object sources, object compression, efficient memory utilization and advanced security. Other features include:

- Dynamic data content
- Web development tools
- 8 possible realms with controlled username/password access
- Optional connectivity to the local file system
- Common Gateway Interface (CGI) capability
- File upload capability
- Run-time-adjustable options
 - Number of simultaneous connections
 - Persistence timeout
 - Username/password timeout
 - Availability of service on non standard ports
 - HTTP Error pages

STARTER KITS

There is a starter kit for the NS9360 which includes a development board, a software debugger and the full NET+OS run-time environment.
(Part # NSDEV9360-GSK63)



GNU Basic Kit includes GNU compiler, target board, Raven debugger, the full NET+Works run-time environment and online support.

Complete Kits include your choice of GNU or MULTI development tools, target board, software or JTAG debugger, the full NET+Works run-time environment, direct applications engineering support, board layout design review and online support.

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