



## Customizable

Intrinsyc Software's CerfCube can be used as is, or customized and integrated into an overall enterprise solution. Expansion boards for the CerfCube 405EP can be readily developed and connected to its exposed address and data bus. Intrinsyc provides end-to-end solutions and product development, including concept design, prototyping, pre-production and production. Intrinsyc is an expert in device design with over a hundred design wins and numerous Fortune 500 customers.

## Benefits

- Ideal platform for creating specialized, intelligent devices
- Rich feature set in a compact design
- Expedites time-to-market with pre-loaded software, licensable designs and customized services
- Reduces development costs and improves ROI
- Flexible design makes it easy to integrate off-the-shelf peripheral components
- Backed by Intrinsyc Software's years of product development expertise in getting customers' solutions to market quickly

## CerfCube 405EP for Linux

High-Performance Low-Cost Reference Design for Developing Internet Devices

### Overview

Intrinsyc's Cerf™Cube 405EP is a high-performance reference design platform that is a perfect starting point for developing embedded Internet devices and networking equipment. The CerfCube 405EP comes preloaded with Linux software allowing OEMs and developers to begin development immediately, getting to market faster and with significantly less cost.

### Features

The CerfCube 405EP includes an IBM PowerPC 405EP Embedded Processor, significant Flash memory and fast SDRAM. Peripheral support includes one 10/100 Ethernet (expandable to two), two serial ports, and flexible digital I/O. This allows data to be handled by dedicated hardware units leaving the CPU core free to do other processing. JTAG is supported for board testing and Flash programming. The CerfCube 405EP also comes equipped with a mini-PCI connector that can be used to add Wi-Fi, Bluetooth, 56Kbps modem, additional Ethernet and any other function available on a standard mini-PCI card.

### Applications

The CerfCube 405EP is ideal for server appliances, data collection devices, scanners, office automation products, and Internet-enabling machines. It is suited for network routers and concentrators, wireless networking access points, LAN solutions and edge-of-network applications such as DSL routers and cable modems, and any application requiring the movement of significant amounts of data over a LAN.



## Locations

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## ❖ Specifications

- Processor - IBM PPC 405EP 32-bit processor @ 266MHz
- Memory - 32 MB FLASH; 32MB SDRAM (133 MHz); 2 EEPROMS - 1 write protected, 1 unlimited read/write
- Flexible Flash Programming - Individual files can be written to the Flash with Linux commands, Kernel and file-system images can be downloaded over Ethernet to Flash by the bootloader, and the Flash may also be programmed using the on-board JTAG connector
- Data Connectivity - One 10/100 Ethernet on RJ45 Jack, plus one additional 10/100 Ethernet available on miniaturized connector; one full RS232 on DB-9M, one 2-wire serial on header
- Mini-PCI Slot - Type III, supports standard mini-PCI cards used in laptops
- Expansion Connector - allows additional hardware to be developed and added without a main board redesign, for example the addition of USB host or a customized I/O board is facilitated by an exposed address and data bus " I/O - up to 23 general purpose digital inputs/outputs available for data acquisition and control
- Battery Backed Real-Time Clock
- Size - 3" x 3" x 3" (76.2mm x 76.2mm x 76.2 mm)
- Power - 5VDC regulated

## ❖ Optional configurations

In larger quantities the CerfCube 405EP can be configured with the following options:

- Processor - IBM PPC 405EP 32-bit processor @ 133 MHz or @ 200 MHz
- Memory - 16, 32, 64, or 128MB FLASH; 16, 32, or 64MB SDRAM

## ❖ Optional daughter boards

An optional Daughter Board is available for the CerfCube 405EP intended for programmers and developers. The Daughter Board provides a full IBM RISCWatch interface and a second 10/100 Ethernet (RJ45) connector.

Additionally, it includes a Flash device which contains a known-good boot image that may be used to recover any board whose boot image has been corrupted, without a need for JTAG.

## ❖ Software

CerfCube ships with I-Linux Distribution, which includes:

- Linux Kernel 2.4.20
- PowerPC cross platform development tool chain
- PPC Boot - a public domain bootloader enhanced by Intrinsyc with 405EP support
- Embedded I-Linux Distribution - based on Debian PowerPC

## ❖ Each CerfCube kit contains:

- CPU board with 32MB Flash and 32MB of RAM
- Power supply, cabling and ESD wrist-strap
- One Click-Wrap developer end-user license and documentation
- License agreement and warranty card
- Basic support
- Software and Hardware User Guide
- Getting Started Guide

## ❖ Other products available from Intrinsyc Software

- Cerf™ Devices - CerfCube, CerfBoard, CerfPod, Cerf IO, CerfComm
- µDevices - µPDA



For more information, visit Intrinsyc Software's website at [www.intrinsyc.com](http://www.intrinsyc.com)  
All specifications are subject to change without notice.