



Value Proposition:

- Enables third-party I/O card vendors to maintain a single copy of driver source code that will work on any platform and OS
- Decouples OS from I/O hardware- and bus-dependent code
- Provides maximal I/O connectivity for platforms
- Provides larger market for I/O card vendors
- Reduces time-to-market
- Provides fault isolation to limit spread of a problem and facilitates rapid debug in the multi-vendor system
- Reduces development and support costs
- Provides end-users more timely and cost-effective I/O
- Improves I/O quality and reliability

Features:

- Independent of Operating System, Platform, Interconnect
- Provides system design as well as interfaces
- Vendor can provide hardware-dependent base driver with environment-provided class driver, or entire device driver
- Enables optimal performance and resource use thru mechanisms like copy-avoidance and memory pooling
- Supports both existing and next-generation OSs
- Coexists with current, non-UDI drivers
- Resource use and system policy "owned" by OS
- Provides facilities for:
 - Enhanced system availability
 - System management
 - Error recovery
 - Diagnostics
- Designed to integrate with IEEE 1275 Open Boot Protocol

Status:

- Proof-of-concept prototype completed on 6 OS platforms
- Specification and White Paper available

Additional Info:

Web Page: <http://www.sco.com/UDI>

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Project UDI: Uniform Driver Interface

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Description:

A device driver is a collection of routines that associate the generic I/O functionality provided by an operating system with specific I/O hardware. The writing of device drivers comprises a large portion of the engineering effort needed to create or port an OS or I/O card product to a new platform or interconnect. When an I/O card is designed for a common interconnect such as PCI, new or modified device drivers may be required for each platform/OS combination. This can multiply by many fold the time and expense of developing and supporting a device. Standard, open driver interface definitions are a key ingredient in leveraging third-party driver development.

By specifying a Uniform Driver Interface, we intend to allow a single device driver to support an I/O card across the platforms and operating systems appropriate for its interconnect. This will accelerate the availability, and lower the costs, of I/O solutions, increasing the competitiveness of supporting systems.

The UDI environment is a relatively autonomous, low-level I/O subsystem. It completely surrounds conforming device driver modules, providing them with a consistent interface to and from the host operating system and among cooperating drivers. Great care has been taken to isolate drivers from the "impedance matching" required for an I/O card to perform well on a given OS or platform. The driver is always invoked by procedure calls and interacts with the embedding OS and hardware via environment calls, providing the driver with full isolation from the details of its environment while retaining sufficient flexibility and performance in the OS.

Work-in-Progress:

- Complete the multi-vendor definition of specification
- Identify vendor-neutral organization for spec maintenance and branding tests
- Isolate, test and productize generic portion of UDI code (provide to platform vendors and branding test org.)
- Coordinate product schedules and roll-out

Spec Completion Schedule:

- Jun 1999 - Public review completed
- **Sep 1999 - 1.0 Specification available; submit for standardization**

Key Dependencies:

- Critical mass of platform vendors to attract card vendors
- "Flagship" platform and cards to initiate deployment

Participants:

- Initiated by multi-vendor work group
- Active Participants: Adaptec, Compaq, Digital, Hewlett-Packard, IBM, Intel, Interphase, Lockheed-Martin, Lynx Real-Time Systems, SBS Technologies, SCO, Sun
- Currently being introduced to multiple vendors and forums