FDDI to Fast Ethernet Integration
Risk-Free Solution for Integrating Itanium II with FDDI
Introduction
Historically, FDDI has been one of the most robust network technologies, and the resiliency of this technology leads to its use in many mission critical applications. However, the availability of Fast Ethernet and Gigabit Ethernet provides a lower cost alternative that has displaced FDDI in many applications.

With the introduction of Itanium II, many mission critical applications that have been traditionally running on systems connected to FDDI networks will likely be migrated. Such a migration requires a solid contingency plan that will allow FDDI and Ethernet technologies to peacefully coexist.

Network Hardware Implementation
With the adoption of Ethernet-based technologies and the presence of existing FDDI networks, system managers are challenged with the task to successfully migrate their FDDI mission critical applications. The dependency on multiple network hardware platforms from different vendors adds an intolerable risk to what should be a simple integration of technologies.

By utilizing a gateway device, system managers can implement a risk-free integration of their existing systems and new network infrastructure. An FDDI gateway becomes instantly available to all existing FDDI connected network devices along with Ethernet-based network devices and should not be dependent on prerequisite power or hardware requirements.

Hardware, Software, Technology, and Version Independent
Through the evolution of many disparate hardware architectures, operating systems, and network interfaces, Ethernet technology has remained consistent for over 10 years and is likely to remain consistent for the foreseeable future. Since most new and existing system architectures support IEEE 802.3 Ethernet technology, it is well suited to be the common denominator for application integration.

Newer system architectures such as Itanium II already provide for Ethernet adapter support as part of the baseline network interface technology. Since Ethernet is already certified at the system level, connection to FDDI via a gateway lends itself well to system, network, and application integration. Once the Ethernet-based network interface is certified at the system level (i.e. system hardware architecture and operating system) the use of a Fast Ethernet to FDDI gateway eliminates the requirement for FDDI to be system certified since it is at the network layer of the system architecture.

Switched FDDI has traditionally been a preferred way to achieve the most reliable connection of OpenVMS cluster nodes. With a FDDI gateway, the FDDI infrastructure used as the "Cluster I/O subsystem" can stay in place indefinitely or as a backup interconnect for the Ethernet-based infrastructure. This capability also allows the gateway to provide both cluster node connectivity and access to local and wide area network Internet connectivity.

Connection to an Operational Network
The dual ring and switched FDDI technologies allow for real-time "Hot Insertion" of an FDDI device without scheduling downtime or imposing any risk to a mission critical environment. Seamless integration can be achieved by simply connecting the Dual Attached Station (DAS) FDDI port of an FDDI gateway to an existing DAS FDDI ring or an available port on an FDDI core switch. Likewise, a connection can be made to a Fast Ethernet adapter or switch port in the same manner. The result is a built-in contingency plan where the FDDI network and applications remain intact while Ethernet-based networks are evolving, especially when FDDI is the preferred technology for mission critical applications.

FDDI Connection to Rings or Switches
Whether an existing FDDI network consists of a traditional FDDI ring or an FDDI switch, a gateway can be connected without disruption as a "station on the ring" or to an FDDI switch port. Inherent benefits also include employing FDDI technologies such as Dual Homing to switch ports or concentrators, and Full Duplex FDDI.
Fast Ethernet Connection to Systems or Networks
Full Duplex Fast Ethernet connections can be easily established between core switches with Fast Ethernet ports and systems ranging from Itanium II to virtually any legacy system. Adding the ability to switch Ethernet traffic to an FDDI network without imposing any additional requirements or contingencies results in seamlessly integrating the newest system technologies with legacy networks. In addition, cost-effective speed translation and flow control is inherent with Ethernet-based technology. Finally, since both FDDI and Fast Ethernet are 100Mbs technologies, there is no speed mismatch that would require buffering.

Built in Contingency Plan
With an FDDI Gateway, both FDDI and Ethernet-based networks can coexist for temporary or permanent use. As a temporary solution, this will allow the established FDDI network to remain in place while the new system and network architecture is being implemented. As a permanent solution, a gateway can provide a permanent, path between a high-performance, low-cost Ethernet-based network and a robust mission critical FDDI network.

Summary
With the adoption of Ethernet-based technologies and many vendors discontinuing support of FDDI, systems managers are challenged with the task to successfully migrate their FDDI mission critical applications. Digital Networks has addressed this challenge with the FDDI Gateway, a bounded, plug-and-play solution that provides integration of, and coexistence between the two technologies. The FDDI Gateway enables system managers to connect their existing FDDI networks to their Ethernet-based networks without risk or disruption.

Digital Networks had its roots established fifteen years ago as the Network Product Group within Digital Equipment Corporation (DEC), where it was the market leader in providing Fault Tolerant networking solutions for business critical environments. Fault tolerant Ethernet-based solutions are essential to strengthen today's requirements for networking infrastructures that support business critical environments needing non-stop operation and instant fail-over. With Digital Network's FDDI Gateway, the integration of FDDI and Ethernet-based networks is simple, risk-free, and hardware, software, and version independent. As a interim solution, this will allow the existing FDDI network to remain in place while new systems and network architectures are being implemented. As a permanent solution, the gateway can provide a permanent path between an existing FDDI network and a high-performance, low-cost Ethernet-based network. Digital Networks helps today's companies keep their vital network infrastructure up and running with solutions that are simple and affordable, ensuring continuous availability of critical applications for enhanced business success.