



**A COST-EFFECTIVE MIGRATION  
SOLUTION FOR OS HOST  
INTERFACES**

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## INTRODUCTION

IP networking has become a universal infrastructure underlying virtually all intra-enterprise data communications. This IP revolution has been accompanied by the appearance of new and more flexible kinds of equipment offerings which make it possible to migrate and/or extend existing mission-specific distributed networks that still work reasonably well, yet are increasingly costly to maintain.

Datatek Applications' product family exemplifies this theme, by facilitating the migration of legacy BNS-2000 networks to an IP infrastructure with newer, more flexible/scalable, and more easily maintained devices. A key member of this product family is the ***Universal Mediation Interface (UMI)*** Module, a new BNS-2000 module that provides an IP-BNS gateway function. In this document, we'll see how the ***UMI*** can be used to achieve a quick payback in the migration of fiber interfaces between OS hosts running *COSMOS* and *MARCH* applications and BNS-2000 nodes.



## THE PROBLEM: HOST INTERFACES FOR *COSMOS* AND *MARCH* OPERATIONS SYSTEMS

*COSMOS* and *MARCH* are OS applications that run on Ahmdahl mainframes. They have fiber interfaces to BNS-2000 nodes, which allow them to access remote Network Elements (NE) as well as providing the pathway for access by their users. These mainframes are expensive to maintain, and certain components, such as front ends, are gradually being discontinued. However, these applications must continue to work reliably, so any migration strategy must minimize service interruptions, besides providing a payback in the form of reduced maintenance expense.

## UMI OVERVIEW

The *UMI* is a Datatek migration device that acts as a common (sharable) “mediation” resource between BNS and IP network infrastructures, allowing any BNS endpoint to establish a session with any TCP/IP endpoint, and vice versa, subject to access controls based on Closed- User Groups (CUGs).<sup>1</sup> Its use is transparent to the BNS network, which actually manages it as if it were a SAM-504 (to eliminate the requirement to upgrade BNS controller software). From the IP network it appears to be a device with a single IP address and multiple TCP ports.

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<sup>1</sup> An earlier solution document, *BNS-2000/IP Network Integration Strategies* provides a more detailed description of the *UMI* as well as other related Datatek migration products. This and other referenced documents are available from Datatek’s web site, [www.datatekcorp.com](http://www.datatekcorp.com). Use the “*Solutions*” link for solution documents; use the “*Documentation*” link for all other documents, such as individual product *User Manuals*.



## MIGRATION STRATEGY

This migration strategy takes advantage of certain attributes of *COSMOS* and *MARCH*, which make it possible to avoid using their fiber interfaces. *MARCH* has integrated support for IP connectivity via LCS60, a legacy device that functions similar to the *UMI*. The LCS60 interface can be used with a *UMI*. *COSMOS* does not have this interface, but its users access it on an inbound basis only. This means that by using a generic IP interface (i.e., LAN interface), *UNIX* can redirect received telnet connection requests to the *COSMOS* application. Therefore, users of either or both of these OS's may now migrate their fiber interfaces – eliminating CommKit® and CPM boards, as well as the distance-limited fiber – to a pure IP solution, as shown in the following diagram:

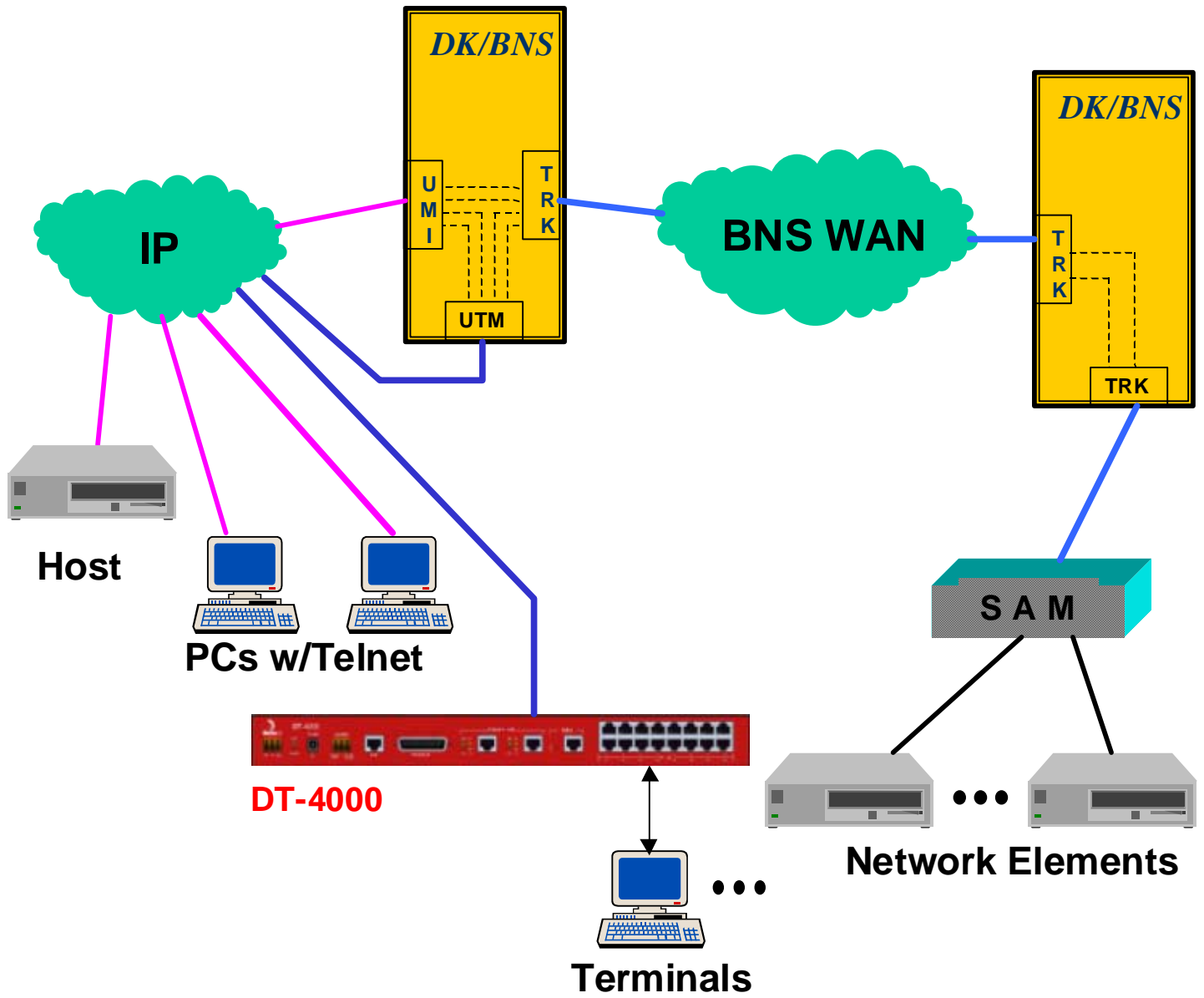
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A Cost-Effective Migration Solution For OS Host Interfaces



In the preceding diagram, “native” IP interfaces are shown in magenta. The **UMI** in the BNS node on the left side allows the *MARCH* application on the host to access the NE’s via the BNS network. It does so by establishing a TCP connection to an IP address assigned to the **UMI** and TCP port number which is mapped to the BNS address of a NE port (as part of **UMI** and BNS node configuration). The same **UMI** also allows users on terminals connected to endpoints anywhere on the BNS network to access the *MARCH* application. This is accomplished again by a combination of **UMI** and BNS node configuration, which gives a calling user either an immediate connection to *MARCH* or a second prompt for an IP destination address, upon “dialing” the appropriate BNS destination address.

The PCs, which are for the *COSMOS* users, are also “native” devices on the IP network. Since *COSMOS* does not have an integrated IP interface, the PC users will simply telnet to the host. *UNIX* on the host is configured to automatically redirect incoming telnet calls to the *COSMOS* application.

While the focus of this document is intended to be on the migration of the host fiber interface, the diagram also shows another aspect of the complete migration solution as it has been implemented for at least one network operator. The terminals in the diagram now connect to the BNS node via a **DT-4000** and a **Universal Trunk Module (UTM)**. The **DT-4000** operates as a SAM replacement, but instead of requiring a dedicated line for the SAM trunk, it supports the emulation of the SAM trunk over an IP infrastructure. The **UTM** provides the nodal termination of the trunk-over-IP protocol. With this approach, the terminals continue to operate as BNS endpoints (from both user and administrative perspectives), but dedicated trunking facilities have been eliminated in favor of using the IP infrastructure. As a later step in the migration process, individual **DT-4000** ports can be re-configured to allow operation of these same terminals as “native” IP devices.<sup>2</sup>

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<sup>2</sup> Another solution document, *Migration Strategies for BNS-2000 Networks*, goes through the sequence of migration steps, which are appropriate for a typical BNS-2000-based Operations System Data Network in much greater detail.



## CONCLUSIONS

There are many examples of legacy BNS networks, or portions thereof, that can now be migrated to more modern networking infrastructures affording a significant reduction in maintenance costs, by taking advantage of Datatek's migration products. This document described the use of the ***Universal Mediation Interface (UMI)*** to facilitate the migration of OS host fiber interfaces to BNS-2000 nodes, where high maintenance cost or the possibility of discontinued mainframe front-end equipment has become a problem. A typical installation of the *MARCH* OS has paid for itself in as little as 60 days from maintenance cost reduction alone, due to this migration.

