Editor’s Note: This issue of NOTISes features how Vanderbilt and McGill run GTO over the network. You can read about how McGill accesses GTO on the LAN on page 6.

Implementing GTO through the LAN at Vanderbilt University

by Marshall Breeding

NOTIS originally designed its Generic Transfer and Overlay product (GTO) to work in conjunction with dedicated utility terminals. The terminals are connected with serial cables to a dedicated GTO PC gateway that manages the transfer of records into a library's main database. Under GTO's original design, a staff person initiates the transfer from dedicated bibliographic utility terminals in the library.

These terminals connect to the utility and a serial cable leading to the NOTIS GTO PC. Library staff transmit selected records from the utility to the GTO PC.

The GTO PC converts the records and uploads them to the mainframe where the NOTIS online software processes the records, adds them to the bibliographic file, and dynamically updates the

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merged headings and standard number indexes. Figure 1 shows GTO's conventional configuration.

Figure 1—Conventional GTO configuration

Network-Based Configurations

By using several hardware and software components, Vanderbilt allows any authorized microcomputer workstation on their network to have simultaneous access to NOTIS and OCLC and to be able to update the database with GTO. The relevant components include:

- an IRMALAN/EP gateway attached to the NOTIS mainframe and its complimentary client software on each workstation
- a Novell Asynchronous Communications Server (NACS), accessed through a network communications driver included in OCLC's Passport Version 2.0 communications software
- a Novell NetWare print queue serviced through a Castelle LANPress server

The network environment at Vanderbilt consists of a group of Novell NetWare 3.11 Ethernet LANs interconnected through a campus-wide broadband Ethernet. This configuration provides a more flexible environment for cataloging than one where dedicated utility terminals are used.

Vanderbilt library staff involved in any aspect of the cataloging process can use GTO from the convenience of their own microcomputer workstation rather than having to schedule time on a shared OCLC terminal. The multi-purpose workstation used at Vanderbilt enables a more efficient workflow that reduces the number of times each piece must be handled in the cataloging process.

The network-based configuration of this workstation allows for a wide number of library staff to take advantage of this convenience without any additional cabling beyond that needed for their standard network connection. The staff person's microcomputer, working with DOS or Microsoft Windows in a NetWare environment, has only a single Ethernet connection that provides for all of its network and communications needs.

The network configuration of the workstations in the library is illustrated by Figure 2.

Figure 2—Network configurations of library workstations

The network performs a number of functions for each library staff workstation including:

- accessing software programs available on a NetWare file server
- storing data files on NetWare file servers
- printing on laser printers through NetWare print queues
- connecting to NOTIS
- connecting to OCLC's PRISM service
- exporting records through GTO
- accessing any local or Internet-based TCP/IP services, including accessing a local VAX/VMS system used for electronic mail, as well as accessing the Internet using FTP, Telnet, TN3270, WAIS, Gopher, or Archie clients

In a cataloging situation, a staff person can simultaneously access NOTIS and OCLC and instantly toggle between the two screens on a DOS-based system, or view the screens through overlapping windows on a Microsoft Windows system. The following paragraphs provide further details on how the workstations are configured.

Access to NOTIS

On the DOS system, the DCA IRMALAN Client for DOS provides the communications
session with NOTIS as well as managing the task-switching between NOTIS and OCLC. This software can maintain a communications session with the mainframe and toggle between the communications session and another DOS application.

On a Windows-based system, the DCA IRMALAN Client for Windows accesses NOTIS, and Windows performs its usual task switching and memory management functions. In both cases, the IRMALAN client software accesses a DCA IRMALAN/EP gateway that connects to a 3720 front end processor via a V 35 SDLC direct attachment cable.

The 3720 is channel-attached to the IBM 4381 mainframe that runs Acorn, Vanderbilt’s NOTIS system. The IRMALAN/EP gateway supports DOS and Windows clients through the IPX protocols and Apple Macintosh clients through AppleTalk.

Access to OCLC

Once a staff person logs onto NOTIS, a session can be established with OCLC. On a workstation running under DOS, the process of loading the software to access both NOTIS and OCLC is automated through the system’s AUTOEXEC.BAT file or through Novell Menu options.

On stations operating under Microsoft Windows, icons are available for each of these services. In either case, the OCLC Passport Version 2.0 software provides communications with the PRISM system.

Vanderbilt’s current arrangement involves a pair of OCLC communications controllers that have each of their asynchronous ports connected to a Novell Asynchronous Communications controller (NACS). NACS allows devices that communicate with asynchronous serial protocols, such as those used by modems and the OCLC communications controller, to be accessed on a NetWare LAN.

To connect to the NACS, the workstation must have communications software that supports the Network Asynchronous Services Interface (NASI). Beginning with Version 2.0, OCLC’s Passport software includes drivers for various network protocols, including TCP/IP, Int 14, and NASI.

Using the NASI driver, Passport can access the ports on the communication controller through the NACS via the Ethernet, without needing a direct serial cable.

Access to GTO

A multi-purpose workstation requires the ability to export records from the OCLC session to NOTIS via GTO. Vanderbilt accomplishes this process by using a NetWare print queue in conjunction with a LANPress print server.

All authorized GTO users have an entry in their NetWare login script that redirects a non-existent LPT3 device to a NetWare print queue. The OCLC Passport software is then configured to use this non-existent LPT3 device for exporting records.

The GTO print queue is serviced by the Castelle LANPress which connects with a serial cable to one of the ports on the HOSTESS adapter of the GTO PC. Presently, everyone that uses GTO on the network exports records into the same NetWare queue, and the LANPress channels all the records into a single port of the GTO HOSTESS adapter.

The LANPress could also be configured to address another two ports on the HOSTESS adapter when it becomes necessary to include users associated with different processing units.

Figure 3 is a diagram of how library services can be set up in a network.

![Network diagram for library-related services](image)

All software used by these workstations loads from a Novell NetWare file server rather than from the hard drive attached to the system. Having the software on the file server allows the network administrators to configure each workstation remotely and makes the process of updating software a simpler process.

The security and administration features built into NetWare allow the network supervisor to easily control which network users can access an application. Configuration details, such as what VTAM address a particular user should be given...
in NOTIS, can be set up remotely. The ability to manage network features without visiting each workstation individually is an important feature.

Using the System

How a DOS workstation operates when its configured in this way is generally fairly simple. The initial sequence that sets up the communications sessions is automated. When the system is powered on or reset, the system first prompts the user for his or her network password.

Next, the IRMALAN for DOS client software and the OCLC Passport software each load automatically. The user presses both shift keys at once (Shift-Shift) to toggle back and forth between NOTIS and OCLC. In most cases the staff member will log into NOTIS, press Shift-Shift to get to the OCLC session, and press Alt-A to call up the proper OCLC login script. Once properly logged into both systems, the staff person need only press Shift-Shift to instantly toggle between them.

The general process of transferring a record from OCLC using this networked multi-purpose workstation is as follows.

1. The staff member has a title that needs to be added to the local database.
2. He or she first searches NOTIS to ensure a bibliographic record doesn't exist for the title.
3. If an existing record is not found, pressing Shift-Shift brings OCLC to the forefront, and the staff person can locate the desired record.
4. The XPO command on PRISM exports that record to the network.
5. The GTO machine receives the record from the NetWare print queue and uploads it to NOTIS.

Within the usual 10-20 second interval, the record will be available on NOTIS. The staff person can press Shift-Shift to return to the NOTIS session, find the newly transferred or overlaid record, and perform any necessary changes or updates that may be required according to local cataloging conventions.

The Configuration of the GTO PC

In its networked environment, the GTO PC Vanderbilt uses is an IBM PC/2 Model 30 286 with an 8-port HOSTESS adapter. Only two of its ports are used. Port 2 connects to the Castelle LANPress and Port 1 connects to the 7171.

Although one could attach the first port of the HOSTESS adapter directly to the 7171, Vanderbilt uses a terminal server arrangement for the connection since the GTO PC is located some distance away from the 7171.

Each port of the 7171 connects to DECserver 200 ports, which are configured to allow connections to NOTIS from other terminal servers on the campus network. Port 1 of the HOSTESS adapter connects to a port of a DECserver which in turn connects to the Ethernet and establishes a virtual connection between the 7171 and the HOSTESS adapter.

The path traveled by a record from OCLC to NOTIS may seem complex, but the process is totally transparent to the cataloger. When a staff person enters the XPO command, a record in MARC communications format passes out of the cataloger’s microcomputer through the Ethernet cable onto the network. The record is then placed in the GTO NetWare print queue and passed to the Castelle LANPress, which then feeds into the HOSTESS adapter of the GTO PC.

The record then goes into the NOTIS.QUE file of the GTO PC. The record is immediately processed by the GTO PC software and uploaded out Port 1 of the HOSTESS adapter to the local DECserver port and onto the Ethernet, where it travels to the DECserver attached to the 7171. The 7171 receives the record and the mainframe-based NOTIS GTO programs process the record and update the indexes.

GTO's Availability and Reliability on the Network

GTO is available practically all of the time. Because of the network configuration used, Vanderbilt finds that it is unnecessary to restart the GTO PC on a daily basis.

The only restrictions on availability are imposed by the batch updates of indexes done prior to 7:00 a.m. each weekday morning and by OCLC not offering access to PRISM on Sundays.

Vanderbilt University finds that running GTO on the network is much more stable and reliable than their former configuration.