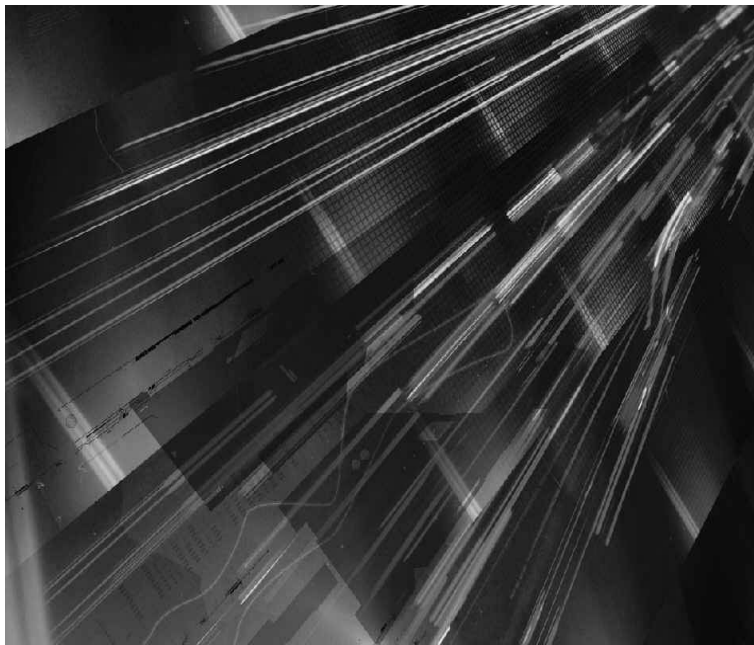

Enterprise Output Management For Higher Education

Enterprise Output Management Series





With the unprecedented budget pressure that universities and colleges face today, Information Services departments are doing something that many organizations put off for years: They are studying the way they operate.

IS staff members are scrutinizing their departments and workflows to find every potential avenue for cutting costs. At the same time, they are also evaluating the software they use. They are trying to determine whether the software they use provides the value they need.

To make that decision, they have to keep in mind the demands on their staffs to provide computing services for their schools' business side—including the bursar's office and the admissions staff—and the demand to continue to move the school forward in educational software.

Meeting the needs of all the groups they serve requires the IT department to support applications on mainframes, UNIX hosts, and Windows servers. That means the IT department also has to support the reports and other output those applications generate for production on printers throughout the university. Often the output generated by mainframe applications can't be printed on the same network printers that UNIX and Windows applications use; universities find themselves maintaining redundant network infrastructure and printers to satisfy their print resource need.

The Seven Key Questions

As the leader in providing print management software to universities and colleges—along with companies in all business segments—we at LRS suggest that you and your IT staff study the campus computing and printing environment for answers to these key questions:

1. Can we share print resources across all MVS, Unix, and NT Applications?
2. How can we maximize the use of current print resources?
3. Can print utility software help us improve service to university departments and the student population?
4. How much could we save by converting our pre-printed forms for transcripts, degree audits and purchase orders to electronic forms printable on any PCL printer?
5. Can we protect sensitive University information contained in documents such as payroll reports, grades, and degree audits during transmission to network printers?
6. Can we view mainframe documents online, including our electronic forms of transcripts and purchase orders?
7. Can we customize an overall output management solution without buying components from several different vendors?

Proven Solutions



How did we come up with those questions? We hear them as we help our customers at universities and colleges find solutions for their printing needs. At LRS, we understand education because we've worked with universities and colleges for years. Our Enterprise Output Management (EOM) solutions have been in use by college or universities since we introduced VPS, our first product, in 1982.

We have a solid record of helping educational institutions achieve their goals, listening to understand their needs, and providing proven solutions. So let us help answer those questions.

Can we share print resources across all MVS, Unix, and NT Applications?

Organizations of all sizes in all industries pursue the goal of routing output from any source in the enterprise to any destination—any printer or plotter or email server or even any web browser. LRS EOM Solutions give you the capability to manage output produced by all kinds of computer software. Send output from any source to any destination in your enterprise, whether that destination is an output device, file server, email server, or online archive.

Whether your school uses off-the-shelf ERP applications like SAP R/3 or the custom applications your in-house developers have created, LRS solutions carry the burden of managing the output they generate. Regardless of the platform where the output originates, LRS output management solutions offer vital functionality.

How can we maximize the use of current print resources?

Your school already has hundreds, if not thousands, of printers installed in numerous locations throughout your campus or campuses. Can output utility software help you get more use out of them?

Yes. Wherever you need to send output, regardless of the platform that generated it, LRS products can get it there.

Our suite of mainframe products can send output directly to any VTAM-addressable device. It supports an unlimited number of output devices in a single address space and allows you to add devices without IPLs, JES definitions, or restarting VPS. Since scheduling a “window” of downtime is not required, our products make it easy to add resources whenever they are needed.

One way to get more use of less expensive network printers is to eliminate SNA infrastructure in place solely for printing. LRS products allow you to send output to any location or device that is connected to the mainframe via TCP/IP, helping you migrate away from SNA. Our solution routes reports from the JES spool directly to TCP/IP-connected printers equipped with network interface adapters that support TCP/IP. Our exclusive Bi-directional Internet Printing (BIP) support provides SNA-equivalent control and error recovery. BIP support enables the user to automatically restart printing after an error at the appropriate page in a print job; display printer status information on the OS/390 console; and stop printing a job and delete it from the JES spool simply by pressing the output device's CANCEL key.



Can print utility software help us improve service to university departments and the student population?

The service provided by any university IS department is apparent to most end users when a big job is printing—and is painfully obvious when the job is not printing because of some error. LRS software offers dynamic error recovery along with assured delivery of print jobs all the way to the printer's output bin.

Error Recovery—All too often, when a printer jams, runs out of toner, or has some other error condition, the report that was being printed is lost and has to be rerun. Output management solutions from LRS offer the capability for printing to recover after an error is corrected and resume automatically. Even better, LRS solutions offer different levels of error recovery to meet the specific needs of your computing environment and the technology you've already implemented.

Assured Delivery—When users select a print command and don't see their report in the usual time, which usually means within minutes, they get frustrated and call the help desk to ask why the report isn't printing. Because printer status information is available in LRS solutions, end users can track the progress of their reports through the computing environment. Users can tell if their report is waiting in a print queue, printing, on hold because of an error condition, or printed.

How much could we save by converting our pre-printed forms for transcripts, degree audits and purchase orders to electronic forms printable on any PCL printer?

The savings your school could realize from converting pre-printed forms to electronic forms depends on the amount you currently spend on buying, storing, and using pre-printed forms. One of our customers saved more than \$40,000 annually per form; the customer was also able to utilize office space formerly used exclusively for storing forms.

The LRS solution for utilizing electronic forms works on the mainframe, where it checks the data stream for the presence of AFP data. Whenever it detects such AFP information as FORMDEF, PAGEDEF, or any AFPDS records, the software automatically converts the AFP document to PCL.

This automatic detection and conversion of AFP documents enables you to process AFP and non-AFP output seamlessly. You can route both types of documents to any printer in your enterprise that is PCL5 compatible. You don't need to route output based on which printer is loaded with what type of pre-printed form or schedule print jobs in advance so operators can make sure the right form is loaded on the printer. Also, when one PCL printer is off line, you can switch printing to another easily.

Because LRS offers a complete software solution, it doesn't force you to buy new printers or IPDS emulation cards. The LRS solution supports any PCL5-compatible printer you already own. PCL5 was introduced in 1990, so chances are good that the majority of your laser printers are PCL5 compatible.

Unlike software and hardware solutions that convert AFP documents to a raster image printable on PCL printers, our software provides true print stream conversion. It converts AFPDS to PCL



commands—compact escape sequence codes that are embedded in the print job. Only true image data, the page segments such as logos and signatures, are raster images after VPS/PCL converts an AFP document.

By converting AFPDS to PCL commands, the LRS solution produces smaller files than solutions that convert AFPDS to raster images. Smaller files make more efficient use of your network bandwidth.

Can we protect sensitive University information contained in documents such as payroll reports, grades, and degree audits during transmission to network printers?

A print job in transit across public shared networks or your internal network is the most vulnerable type of network traffic. That's because it has been organized and formatted for people to read and understand—in many cases, an intercepted print job needs no further manipulation to reveal sensitive, confidential, or mission-critical information.

Any university faces the possibility of a breach in security; universities making use of the Internet and other shared TCP/IP networks are especially vulnerable. Along with all the safeguards you have already implemented to protect your networks, including firewalls, intrusion detectors, and virtual private networks, you need to consider security for the output that applications send to network printers.

Providing security for the output streaming from applications to network printers is the purpose of Secured Output Distribution software from LRS. This suite of products can encrypt application output for secure transmission over TCP/IP networks to printers capable of decrypting the data stream. The products also work together to provide a secure platform-to-platform file transfer or output delivery solution.

Can we view mainframe documents online, including our electronic forms of transcripts and purchase orders?

Online viewing can reduce the demand for printed copies of reports and such documents as student transcripts and university purchase orders. Reduced demand for printed copies can reduce the amount of paper, toner, and other printing supplies you use, and it can reduce the amount of labor involved in manual distribution of paper reports. The result can be lower overall IS cost.

Along with the potential hard-dollar savings, online viewing can provide the immeasurable benefit of faster access to information. The online viewing options provided by LRS solutions make reports available online almost as soon as they are processed. Flexible viewing options mean that online reports are viewable nearly everywhere within the university.

LRS offers online viewing options which include report delivery via email and report viewing via standard web browser for platform independence, as well as Windows-based report viewing. Long-term archiving of reports and short term retention are also options on the mainframe and the network.



Can we customize an overall output management solution without buying components from several different vendors?

LRS, the world's leading supplier of Enterprise Output Management solutions, has developed a line of products that offer a full range of functionality. Our range of products enables you to choose the functionality you need on the computing platforms you use, so you can custom configure a software solution for managing your university output effectively, regardless of your specific computing platforms. Our EOM products deliver robust functionality on mainframes, Windows servers, and UNIX hosts.

You decide the platforms for EOM solutions and LRS will provide the functionality.

LRS software also enables your university to implement centralized control of output management or distributed control. This flexibility enhances the your ability to configure precisely the EOM solution you need.

Summary

Most organizations need to evaluate their print management software; today's budget pressures give university IS departments the perfect opportunity for that evaluation. IS staff members need to decide whether their current software provides the value the university needs.

Enterprise Output Management solutions from LRS can help universities improve efficiency and lower costs. Whether your school needs to share print resources across applications, implement electronic forms, or add the security of encrypting print jobs for network transmission, LRS offers a software solution. The range of functionality we offer with our Enterprise Output Management products enables you to customize a solution for your school without buying products from multiple vendors.

The LRS commitment to providing output management solutions for universities and colleges dates back to 1982. We understand the concerns of higher education and we continue to develop solutions.

Learn More

For more information about LRS solutions for higher education, send an email inquiry to Knelson@LRS.com.



About LRS

Levi, Ray & Shoup, Inc., is the industry leader in Enterprise Output Management products—our software runs on more than 5,000 Enterprise systems worldwide. Founded in 1979, LRS is now an information technology firm of 500 employees offering a variety of products and services. We developed the first software that enabled the MVS mainframe to distribute output to printers outside the data center, and today our Enterprise Output Management family of software products provides output distribution, data stream conversion, monitoring/control, and viewing/archiving throughout an enterprise.

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