Simplify Label Printing for High Reliability, Performance and Value

® **Zebra**

Consider two competing distribution centers that use thermal printers to create shipping labels. Both distribution centers use the same enterprise resource planning (ERP) system, similar networks and the same thermal printers. The key difference between the two distribution centers is the solution that sends print jobs to the printers and the software that manages the printers.

At distribution center A, an efficient solution quickly converts extensible markup language (XML) data into optimized printer commands, and immediately sends the data to the required printer. In comparison, the solution at distribution center B converts the compact XML data stream into a larger graphic for each label. Then, an application must transmit each graphic through the corporate network. Finally, each printer must convert the non-optimized graphic print commands back into a printable label.

As a print job starts at distribution center A, the printer detects a "low media" condition and issues an alert message via e-mail. A technician receives the alert and proceeds to drop off new supplies at the printer. Before doing so, she takes a moment to remotely view the printer's internal odometer status. The technician notices that the printer is due for a preventative maintenance procedure-the printhead needs cleaning. She takes the necessary supplies and printhead cleaning materials with her. With the new supplies on-hand and the printhead clean, the printer continues to create high-quality labels during a critical production run.

At distribution center B, several dozen labels fail to print. The production crew does not notice the problem until the improperly labeled containers pile up at the inspection dock. The IT administrator cannot quickly determine the cause of the failure. After manually checking the ERP server logs and each printer, the administrator discovers that one of the printers has run out of media, while others lack proper maintenance. Unfortunately, the hours of downtime threaten the same-day shipping status of orders, costing the company extra charges to rush the shipment.

Thermal Printing is More Than Just Specifications

Warehouses and distribution centers depend on maximum efficiency and reliability from every application, worker and piece of equipment. When it comes to thermal printers, most operations managers and IT professionals focus on basic specifications including connectivity options, label types and price. However, decision makers must also consider how the software that drives the print task affects printer uptime, throughput and total cost of ownership (TCO).

The pages that follow reveal the impact of inefficient solutions on thermal printing operations and show how an optimized, integrated printing solution delivers improved reliability, efficiency and cost value.

Traditional Middleware Adds Complexity and Cost

In the typical production environment, the interface between the ERP server and thermal printer often adds unnecessary overhead. Software solutions serve as the "glue" between the printer design data stored on the ERP server, and the print queue. Traditional ERP thermal printing solutions require several conversion steps that generate inefficient, graphics-intensive printing commands, adding unneeded complexity.

When it comes to reliability and performance, thermal printing applications are no different than other enterprise applications. Each additional processing step and file format change can insert potential failure points or reduce throughput. Traditional middleware relies on data stored on each printer to execute commands, increasing the chance of failure directly proportional to the number of printers. In a production environment, having to debug multiple files and printers requires significant IT administrative time, which decreases productivity and increases operating expenses (OPEX).

Escalating costs further, many middleware systems require incremental per-printer licensing fees, which scale upwards as new printers come online. Escalating licensing fees make it difficult to keep costs under control, especially when it comes time to expand warehouses and distribution centers with new bar code and radio frequency identification (RFID) label printers.

Streamlined Thermal Printing Delivers Superior Value

Thermal printers create specialized outputs including bar code and RFID labels, tags, wristbands and receipts. In fact, each task calls for specialized features not required in common document printers. Because thermal printers support unique capabilities such as bar codes, RFID tag encoding, and real-time clock fields, some mainstream printer software systems cannot generate optimized commands.

Zebra Enterprise Connector Solution enables IT teams to quickly bring Oracle® BI Publisher thermal bar code printing operations into full production. Design. Deploy. Manage.

For the IT professional, rolling out thermal printer infrastructure to production should be an easy task built around a robust, streamlined label printing application. For the operations manager, departmental efficiency and improved OPEX call for an integrated, thermal printing solution that delivers high performance with reliability—while reducing per-printer TCO.

The Zebra Enterprise Connector Solution

Exclusively from Zebra Technologies Corp., the Enterprise Connector Solution for Oracle® BI Publisher delivers seamless integration between Oracle BI Publisher and Zebra® printers for a versatile, easily managed, cost-effective printing platform. Designed to streamline thermal printer tasks, the Enterprise Connector Solution for Oracle BI Publisher transforms open-standard XML into optimized Zebra Programming Language (ZPL®) commands-eliminating the need for complex, inefficient middleware.

Stored on the host server, the Enterprise Connector Solution for Oracle BI Publisher uses a fixed, single-license model to reduce reoccurring TCO costs. Now, operations can add an unlimited number of Zebra printers without additional per-printer licensing fees. Customers realize maximum value benefits through the full ZebraLink™ Enterprise Connector Solution, which includes ZebraDesigner™ for XML (label design), Enterprise Connector Transformation Engine, and ZebraNet™ Bridge Enterprise (printer management), along with the latest Zebra printers.

Exceptional Reliability and Throughput

The value of reliability is different for each company. At one company, an offline printer may only cause a small inconvenience and some additional IT support. At another, the inability to print bar codes may force a production line shutdown costing thousands of dollars in lost productivity, missed shipments and a poor relationship with the customer.

Because the Enterprise Connector Transformation Engine can reside on the host server, IT administrators only need to install and configure the software once. The result is a single source of interaction-instead of multiple data sets running on multiple printers, creating multiple failure points. The result is better reliability, improved uptime and reduced IT administration overhead.

Getting the most performance from thermal printers requires a solution that precisely renders a bar code or RFID design into the printer's internal command language. The Enterprise Connector Solution for Oracle BI Publisher leverages the native bar code, text and graphic printing capabilities of Zebra printers to create highly efficient and compact command streams-significantly increasing print task throughput.
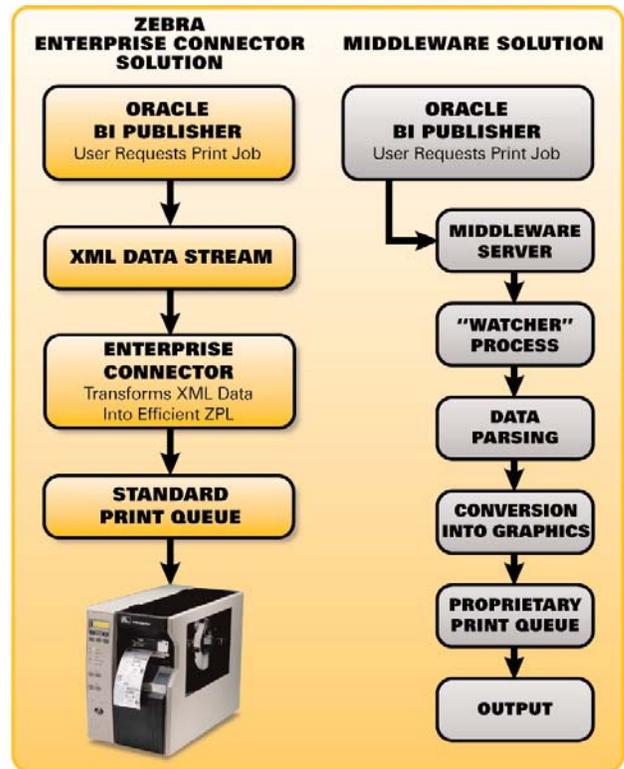
Easy to Install, Use and Maintain

The Enterprise Connector Solution for Oracle BI Publisher removes the hassles from thermal printer software installation, usage and management—no complex files, and no need to learn specific printer languages. IT administrators simply install ZebraDesigner for XML on a Windows® PC, design the label templates, and then upload them to the server-based ZebraLink Enterprise Connector environment. As users process transactions, Enterprise Connector efficiently transforms business data into printable content.

For every new or batch transaction requiring label printing, the Enterprise Connector quickly converts the design data into efficient, optimized ZPL commands, and then sends them to the print queue for distribution to the desired printer. With the full Enterprise Connector Solution in place, administrators can realize the full benefits of remote printer management through ZebraNet Bridge Enterprise..

Design. Deploy. Manage. Print.

IT professionals and operations managers deserve the best from their thermal printer infrastructure. The Enterprise Connector Solution for Oracle BI Publisher delivers the most optimal and cost-effective thermal printing value available today. With the full ZebraLink suite of design, transformation and printer management solutions, businesses can achieve simple, quick rollout to distribution centers, the supply chain and warehouses. The result is expandability to an unlimited number of printers without added expenses, exceptional reliability, and improved operational efficiency.

Zebra Technologies Corporation improves customers' business performance through products and solutions that identify, track, and manage assets, transactions, and people. In more than 100 countries around the world, more than 90 percent of Fortune 500 companies use innovative and reliable Zebra printers, supplies, RFID products, and software to increase productivity, improve quality, lower costs, and deliver better customer service. Information about Zebra and Zebra-brand products can be found at www.zebra.com.

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