

Product Brief

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IPS XPS from Zoran Corporation provides compatibility with Microsoft's XPS Document format as defined by the XML Paper Specification (formerly code-named "Metro"). The interpreter is integrated with Zoran's powerful and flexible foundation technology—IPS—enabling OEMs to develop embedded controllers and host print drivers for color and monochrome

printers and MFPs that directly consume jobs in the XPS Document format. A host rendering component provides support for devices which consume raster data. Graphics-rich XPS Document files were introduced with Windows Vista and can be created and viewed on multiple operating system platforms.

Benefits

- Enables an XPS Document container to be sent directly to the printer without application interaction
- Same interpreter can be used both in host print driver and embedded controller for greatest fidelity across product lines
- Source code availability provides independence and design flexibility and facilitates value-added customization
- Integrated with Zoran's OneImage™ common display list technology to support multi-bit and contone monochrome and color output devices

Key Features

- Full compatibility with Microsoft XML Paper Specification (XPS)
- Native transparent rendering model to support XPS opacity
- Support for all XPS image formats including JPEG, PNG, TIFF and HD Photo (formerly known as WMPhoto)
- Supports Monotype Imaging UFST 4.2 (TrueType, CFF, MicroType and Asian Compression for TrueType) fonts, FreeType 2 fonts and UTF-8 encoding
- Extensible Print Ticket and XML namespace support
- Can be combined with the other languages in IPS—IPS PS3, IPS PDFt, IPS FIVE and IPS XLC—for complete print functionality with minimal ROM and RAM overhead

Description

The XPS Document Format

The XPS Document format is a paginated representation of electronic paper described in an XML-based format. The XPS Document format is an open, cross-platform document format that allows customers to effortlessly create, share, print and archive paginated documents. This format supports a powerful imaging model that enables end-users to create graphics-rich documents that can be shared and viewed on many platforms.

Scalable Software Design

IPS XPS implements an extensible graphics kernel and is designed for maximum portability to operate with virtually any CPU architecture, memory configuration and I/O interface.

Zoran provides complete source code for the IPS XPS interpreter and a full set of engineering documentation to allow OEMs to customize the interpreter for specific market requirements.

The interpreter is integrated into Zoran's powerful and flexible foundation technology—IPS—to offer a total solution for high performance print and multifunction peripheral controllers and host print drivers. With its layered architecture and application programming interface (API), IPS reduces time-to-market and development costs.

Transparent Imaging Model

The image processing model of IPS XPS is based on Zoran's innovative OneImage common display list technology, extended for

the rendering rules of the XPS Document format. Sharing rendering components across interpreters for XPS and legacy page description languages (PDLs) improves compatibility and reduces the required memory footprint to add support for direct XPS Document printing.

Windows Rendering Support

IPS XPS can be delivered as an OEM-configurable Windows Dynamically Linked Library (DLL) or a filter suitable for use in an XPSDrv filter pipeline. Both components are COM compliant. This predefined configuration can be used by OEMs to implement XPS-to-raster rendering services that are not provided by Microsoft in Windows Vista. Using the same XPS interpreter implementation in host raster print drivers and in embedded controllers ensures superior document compatibility across all products in an OEM's printer and MFP product line.

Extensible Print Ticket and Namespace Support

Standard Windows Print Ticket fields are supported in the IPS XPS interpreter. OEMs can extend the default set of Print Ticket fields to support enhancements or added-value options in their products.

The XML Paper Specification provides support for XPS producers and consumers to extend the basic XPS format by defining custom namespaces. The interfaces and source code access in IPS XPS make it possible for OEMs to add their own operators to improve performance and/or image quality.

XPS Document Interpreter

Product Brief

Description (continued)

Zoran Engineering Support Services

Zoran offers Source Code Maintenance and Engineering Support Programs that can shorten development cycles and ensure that the latest XPS language features are available as new operating system versions are released. The IPS XPS source code license includes technical support, software integration training and source code maintenance for the first year of development. The Source Code Maintenance Program provides extended source code maintenance and technical consulting, including informative technical bulletins and software patches and updates.

Zoran's Engineering Support Program provides direct software integration assistance and design recommendations to optimize the quality, feature set and performance of the interface between the XPS-compatible interpreter and the controller or print driver. OEMs can also work with a Zoran-authorized development partner. These companies have experience in Zoran's IPS integration and can offer fixed-cost, turnkey controller development or consulting for a range of controller and driver configurations and print engines.

Specifications

Print Resolutions

- Up to 1800 dpi

Output Color Models

- 1,2,4 and 8-bit pixel depths
- Monochrome, RGB, CMY and CMYK by plane
- Monochrome, CMY and CMYK by band
- RGB by pixel (8-bit only)

Memory Requirements

- Minimum: 128 MB (600 dpi, 1-bit color)
- Recommended: 256 MB (600 dpi, 1-bit color, transparency)

Paper Size

- Executive, letter, legal, ledger, A3, A4, B4, B5, envelope, others

Duplex Printing Support

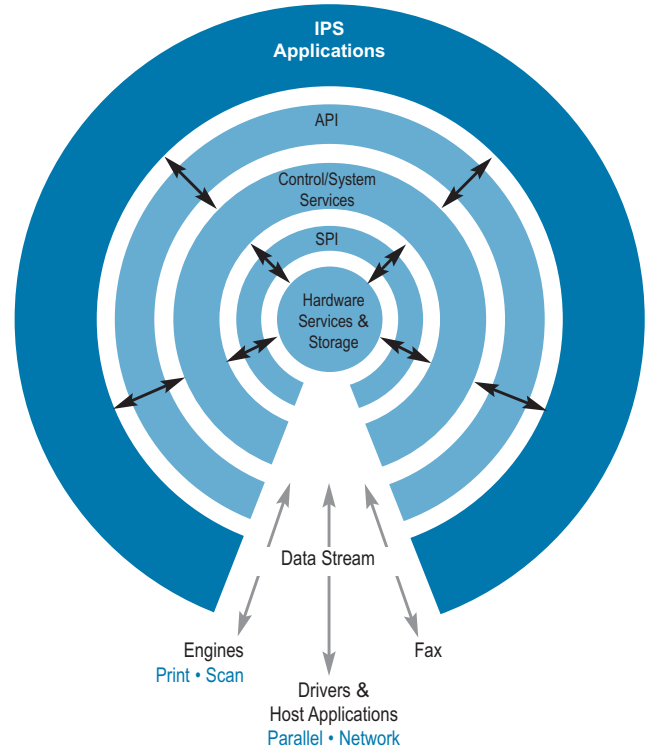
N-up Printing Support

Quality Assurance

- QualityLogic ATS, CET, XPS FTS and HD Photo FTS

IPS Architecture

This diagram illustrates the layered components of Zoran's embedded foundation software technology—IPS.



Zoran's IPS Applications

- IPS PS3
- IPS PDFt
- IPS FIVE
- IPS XLC
- IPS XPS

(API) Application Programming Interface

Control Services

Control Program Interface • State Manager • Custom Control
Fax Channel • Net Administration • PJJ • Remote Control Panel

System Services

Queue Manager • Memory Manager • File System • Time
Color Management • Image Processing • Image Nodes • Image Flow
Image Store • Input/Output • Output Drivers • Connectivity • Compression

(SPI) System Programming Interface

Hardware Services

Basic • Tasker messaging • RTOS Kernel Interface
Front Panel • Compress • Image Processing • Custom

Storage

RAM • ROM • NVRam • Flash • Disk

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