

Point-of-Sale Systems Benefit from Standard Hardware Interface



A leading manufacturer of POS hardware and software for the hospitality industry wanted a standardized way to interface the POS hardware of its line of workstations to a wide range of proprietary and off-the-shelf applications, for the benefit of its customers and distributors.

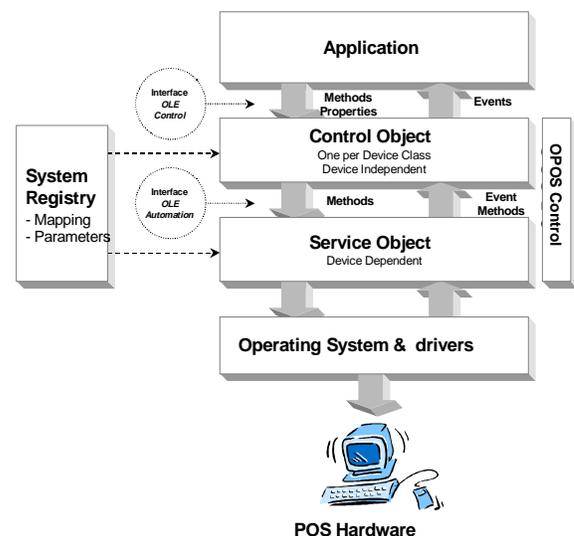
PowerVision Corporation, using the industry standard specification for OLE for Retail POS (OPOS), developed a complete solution for the POS manufacturer consisting of OPOS controls, configuration and diagnostic tools, and automated installation.

The Need for an Open Solution

In the point-of-sale industry, POS systems have historically required specialized support for POS hardware drivers, limiting their interoperability with devices that are exclusively supported by the software manufacturer. Microsoft, in cooperation with industry leaders such as Epson and NCR, developed the OPOS standard: a specification that describes a two-layer architecture using ActiveX and component object model (COM) technology for interfacing POS systems with POS devices.

The POS manufacturer wanted to make its hardware available to a wider range of clients and distributors by adopting this standard. At the same time, they needed to minimize the issues involved in supporting the distribution of this technology to the end users.

PowerVision was selected to design and develop an implementation of this standard. The OPOS controls had to be easily installed and configured. In addition, the controls would ideally provide a logging capability to help diagnose and resolve interoperability issues between software and hardware systems.



Business Area:

- Retail Systems Automation

Key Technologies:

- Visual C++
- Visual Basic
- ActiveX / COM
- OPOS
- DDE

PowerVision's Role:

- Design
- Implementation

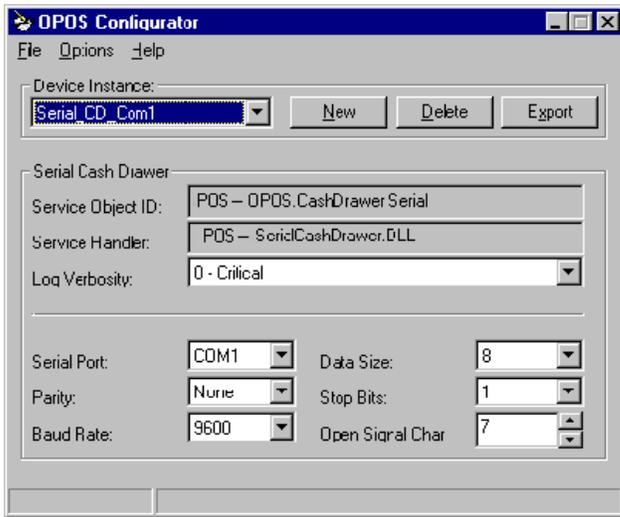
The Ability to Deliver

PowerVision designed and implemented the top layer of the OPOS control model, known as the Control Object, as an ActiveX control; and the bottom layer, known as the Service Object, as an in-process server. Both sets of components were built to be fully compliant with the latest release of the OPOS specifications.

PowerVision Solution—Point-of-Sale Systems Benefit from Standard Hardware Interface

The Service Objects were designed to provide extensive logging capabilities. In addition to supporting conventional file-based logging, each Service Object is able to write messages to a console window in real time, which helps to resolve timing

and synchronization issues between the hardware and POS software. Using the direct data passthrough mechanism of the OPOS specification, each control also supports sending event log messages to the host application, which allows OPOS control messages to be integrated with the native logging format of the POS system that instantiates the OPOS control. The level of detail of logging messages can be controlled individually for each device instance, and for each logging method within each device instance, for maximum flexibility in troubleshooting.



To facilitate a smooth deployment, PowerVision created support tools that assist in configuring and testing the OPOS controls once installed on the target POS workstation. The OPOS Configurator is a graphical tool that enables the user to create and manage new device instances of the installed OPOS Controls. The tool is *device aware* in that it allows the user to

set properties of each instance that are specific to the underlying hardware. The likelihood of human error is greatly reduced by eliminating the need for users to search for and enter values directly in the Windows Registry.

For testing and troubleshooting each device instance, the OPOS Test utility provides a GUI representation of each method, property, and event associated with each supported device class in the OPOS distribution.

Finally, the POS manufacturer wanted to simplify the process of deployment in large installation sites, which could have dozens of identical POS terminals with identical OPOS device configurations. To that end, PowerVision developed an installation program that can be optionally automated. Using “SmartSetup”, an installer can step through a single installation session while recording each decision, including the creation of specific device instances, and then later replay those decisions in an unattended mode on all subsequent workstations.

The OPOS drivers provide a standard interface to the workstation devices and related peripherals. The controls were developed using Visual C++ and the Microsoft Foundation Classes (MFC), and the support tools were developed in Visual Basic. The controls have been tested and certified to work with several proprietary and off-the-shelf POS systems, and the POS manufacturer is quite pleased with the thoroughness and quality of the product. Their hardware can now be used with any point-of-sale applications that support the OPOS standard.