



a Rogue Wave Company



FROM GREEN SCREEN TO WEB:
RAPID MODERNIZATION FOR IBM i



For many organizations running IBM i, the “green screen” is the common interface to back-end data, business logic, and services. In today’s browser-based world of rich user experiences, the demand for web-enabled technologies is very strong and IBM i developers are under increasing pressure to expose data and deliver interfaces closer to what users see elsewhere and further from their traditional skillsets.

[PHP](#) is a popular platform for developing web applications, running on over 80 percent of web servers around the world, and is the language of choice for many modernization projects. It offers an approachable, flexible programming environment that IBM i developers find natural and an extensive community of experts, tools, and extensions that simplify application development. PHP is also the ideal platform to modernize manual, paper-based processes, as there are many development, deployment, and management tools out there to support most business logic needs.

This paper identifies the top reasons why PHP is chosen for many IBM i modernization projects. It’s a given that IBM i itself is well-suited to today’s data, performance, and user demands, even exceeding alternative solutions, so this paper focuses on updating the application framework itself, not the underlying system.

To learn how real organizations modernized their IBM i systems, visit [IBM i Customer Success Stories](#).

A FAST RAMP TO PHP PRODUCTIVITY

Beyond a community that numbers in the millions and has lasted for over twenty years, PHP has many characteristics that appeal to web developers and those who have devoted their careers to IBM i development.

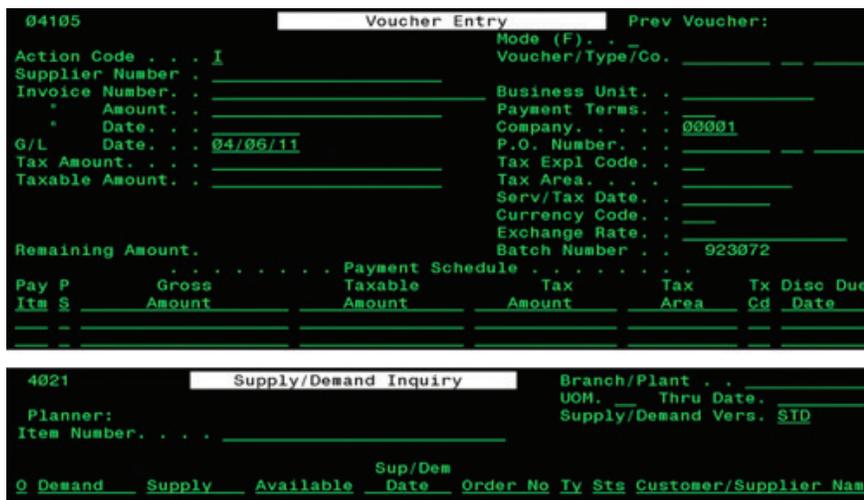
For these developers, the learning curve for PHP isn't too steep, as the language supports a number of different programming models, including procedural programming, that they're already familiar with. RPG developers, for example, find the language more accessible than a language such as Java or C++, as PHP applications can be written using functions, data types, and loops without needing object-oriented programming constructs. There is room for other backgrounds as well, as PHP supports everything from developers with no background in coding at all, with inline code, to those comfortable with advanced object-oriented techniques. This flexibility provides a growth path for any developer, letting them gradually move into different programming models within one environment.

For IT directors and CIOs, PHP reduces organizational risk for one simple reason: PHP is open source and it's everywhere. As one of the [most popular programming languages](#) in the world, there are millions of developers, a multitude of tools, and a myriad of reusable components to support development and IT teams. Since PHP is fundamentally portable, the same code created for a different environment can run natively on IBM i, allowing developers to select the right solutions from a vast community of people and components.

PHP RUNS NATIVELY ON IBM i

Aside from full backing and support directly from IBM, PHP runs natively on IBM i, meaning no additional servers or software are required. The infrastructure, data, and business logic that's already in place is accessible immediately upon installation, with no changes to the software and databases that already exist.

For example, PHP can be used to refresh the green screen interface to thirty years of business data stored in DB2, transforming the user experience without changing the infrastructure. The underlying programs and subprocedures, whether written in RPG or COBOL, are accessible to PHP scripts and therefore accessible by the user through a standard web browser. Additionally, IBM ensures systems are backward compatible for RPG and COBOL, allowing programs written years ago to compile on the most current systems.



This means that instead of forcing developers to re-write thirty years of features and enhancements, or rely on simple screen scraping, they can focus on adding new features to the system and additional value to the organization under a modern interface that serves securely to any device that supports a web browser.

Leveraging existing business logic in RPG and COBOL along with PHP helps IBM i installations reduce business risk. The business process doesn't need to change dramatically while the user interface evolves from green screen to the browser. Reducing the impact to the user community improves the bottom line and ensures a smooth transition.

LOWER COST, FLEXIBILITY, AND UBIQUITY WITH OPEN SOURCE

The benefits of open source are well known, offering community-driven flexibility, interoperability, and transparency to organizations that most commercial packages can't compete with. There are thousands of open source applications written in PHP, with all the code available to developers for reuse or customization, and most of them run on IBM i with no modifications.

Many enterprises already adopt PHP-based applications for little to no cost, such as SugarCRM, Magento, and WordPress, giving those that run IBM i the opportunity to explore new technologies and solutions with minimal risk or need for polyglot developers. This makes PHP a worthwhile investment, as the portability of skills and commonality of tools creates efficiencies across the organization.

The statistics tell the story, with the majority of enterprise organizations using open source and [four out of five developers](#) using open source development tools. As Forrester Research VP and Principal Analyst Jeffrey Hammond states, "We are now seeing open source tech compete with open source tech; it's no longer open-source software vs. proprietary."

IBM AND ZEND

IBM selected Zend Server as the PHP application server of choice for IBM i environments, leveraging the Zend contribution to PHP.

Zend Server is an application platform for PHP that runs natively on IBM Power Systems servers, coming preloaded with an IBM i toolkit that makes it easy to deploy modern web and mobile applications. Zend Server includes a certified PHP distribution, access to the Zend Studio IDE, and powerful debugging and performance tuning with Z-Ray.

The combination of IBM and Zend offers numerous benefits to organizations looking for a reliable, long-term foundation for their business-critical applications:

- **Productivity** – The IBM/Zend solution supports rapid application deployment with Zend Server and real-time insights into code quality and performance with Z-Ray, allowing developers to create, test, and maintain applications with minimal overhead.
- **Continuous delivery** – Zend Server supports rapid development cycles with simple customizations and feedback to deliver continuous integration, release automation, infrastructure automation, and application management.
- **Security** – With deep visibility into code performance and transaction monitoring, system administrators have the tools to ensure applications are secure.
- **Compliance** – Zend Server enables audit trails and notifications for most actions, letting organizations record and track data for compliance to standards such as PCI DSS and HIPPA.
- **Training** – Zend provides the only [training course specific to IBM i](#), providing IBM Power systems developers and administrators with the knowledge necessary to deliver PHP applications effectively.

For more information on IBM i and Zend, visit [IBM i solutions at zend.com](#).



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