

### Iredell Memorial Hospital

## Iredell Memorial Hospital: Patient Care ASNA Visual RPG Application Deployed, Stat!



Modern health care relies on advanced and complex technologies. However, a 50 year-old medical institution, Iredell Memorial Hospital (IMH) in Statesville, N.C., has built its reputation not with cutting edge high-tech but rather with compassionate, personalized health care.

Behind the scenes, IMH employs a host of modern technologies. In addition to its diagnostic, treatment and rehabilitative state-of-the-art equipment, IMH uses an iSeries/400 to manage the data generated and used by IMH's 90+ physicians. Scott Philemon is one of IMH's four programmer/analysts and is the resident iSeries/400 guru. He has written many green-screen applications and green-bar reports, and has tweaked and tuned IMH's "canned" medical care software package. However, despite his best efforts, the limits of the green-screen technology impeded the IHM medical staff's access to important patient information. Philemon solved the problem by using ASNA Visual RPG (AVR) to create an Internet/browser-based application.

### Point and click

"Our medical staff was frustrated by our old system's ability to present information in a meaningful way. They needed something they could easily navigate with point-and-click functionality. And, perhaps most importantly, our medical staff needed to be able to inquire and post information from virtually anywhere, including their homes," explained Philemon.

Between other projects, Philemon had been evaluating development tools he could use to build the new system. IBM's WebSphere/ Java and Lansa's products were early contenders. With a thumbnail budget presented, the IBM WebSphere/Java solution was quickly ruled out. According to Philemon, "It required an additional iSeries/400, was too complex, and too expensive." Beyond those issues, Philemon didn't want to commit to the endless stream of consultants and specialists that the WebSphere/Java solution would have required. He needed something he could use to build and maintain his application that didn't require

months of study and experimentation. The Lansa product came a little closer to what Philemon was looking for, but its complexity seemed to make what he considered a relatively simple problem harder.

With his frustration level nearing the red zone, relief came in the form of a free one-day seminar in Philemon's area. "I attended the ASNA seminar mostly out of curiosity. I wasn't all that familiar with AVR and it was an eye-opening day for me. I realized, while watching the hands-on presentation and demos, that this was a product that could improve productivity very quickly," recalled Philemon.

### Enter AVR

AVR is built around an RPG core. AVR's flagship syntax is called Caviar, which is "a blend of the best parts of RPG and CL," according to ASNA. This expressive language is easy for RPG programmers to master and retains all of a programmer's investment in RPG operation codes. Philemon said, "Before this project, I was basically a green-screen programmer with just enough Visual Basic experience to be dangerous. I sat down with the AVR tutorials and got busy. In short order, I confirmed my thoughts from the one-day seminar. AVR was indeed the tool for me and IMH." Philemon rolled up his sleeves and built a quick proof-of-concept prototype. He quickly got his AVR project approved.

AVR is capable of building traditional fat Windows clients or more modern browser-based applications. In either case, the applications connect directly to the iSeries/400, providing sub-second data-access response times. One of the foremost requirements of Philemon's new application was an improved user interface. That's an area in which traditional fat Windows really excel; besides the full complement of Windows user interface widgets built into AVR, there are literally hundreds of third-party user interface components to help programmers build user interfaces.

### AT A GLANCE

#### Customer Profile

For 50 years Iredell Memorial Hospital (IMH) in Statesville, N.C., has built its reputation not with cutting edge high-tech but rather with compassionate, personalized health care.

#### Situation

IMH needed to replace their iSeries/400 green screen application used by 90+ physicians and their medical staff needed to be able to inquire and post information from virtually anywhere, including their homes.

#### Solution

They attended an ASNA Visual RPG one day introduction seminar and selected AVR as their language of choice to create an Internet/browser based application.

#### Benefits

- The first part of the application was deployed and in use in only four weeks.
- Medical staff connects anywhere in the hospital or through a local ISP to the IMH Citrix-based intranet.
- Doctors can inquire and post information from virtually anywhere a Web browser is available.

#### Products

- AVR.NET
- DataGate
- IBM iSeries
- OS/400
- DB2/400
- Visual Studio .NET

"The fancy user interface of the fat Windows client was appealing to me. But, we didn't just need a good user interface; we also needed an application that was drop-dead simple to deploy. A browser-based application imposes a slightly more restrictive user interface, but the complete lack of deployment and version control problems offered by a browser-based app quickly the tipped the scales for us," explained Philemon.

With virtually no experience building Internet/browser-based applications, Philemon set his plans in motion. His first step was to attend ASNA's five-day Internet/intranet AVR development class. He recalled the class, "I quickly mastered how to get iSeries/400 data to and from a Web page with AVR. The class gave me the foundation and introduced me to the technologies I needed. I quickly learned the basics of creating a Web app with AVR and brought back the prototype pieces I needed to get started."

But like many budding Web developers, Philemon encountered a few troublesome issues. Learning the nooks and crannies of HTML and DHTML presented unique and at times, frustrating challenges. In retrospect, Philemon thinks he could have accelerated his project results had he also taken dedicated classes in HTML and DHTML. "I had zero experience with Web languages such as HTML and DHTML," he said. However, as Philemon learned at the ASNA Web class, there are literally thousands of Web sites that offer free, and very good, training materials for these and many other Web development technologies. He used the Web extensively to research and learn what he didn't know. (He found [www.w3schools.com](http://www.w3schools.com) especially helpful.)

### Up and running

Despite his HTML frustrations, things went smoothly for Philemon as he developed the application. He explained, "The AVR coding to get information from the iSeries/400 to the Web page went especially well. Caviar's RPG roots made it an easy language for me to adopt."

In only four weeks, Philemon had the first part of the application deployed and in use. "All I had to do to deploy my Web app was install my app and my pages from my development PC to our Windows 2000 Server. It was a snap to deploy this application. With the deployment problem forever banished, I was once again reminded that

the user interface trade-offs imposed by HTML were well worth the cost of no-hassle deployment."

With his new app deployed, the IMH medical staff could connect anywhere in the hospital or through a local ISP to the IMH Citrix-based intranet. This enabled doctors to inquire and post information from virtually anywhere a Web browser is available.

With the first phase of the application now in place, IMH's medical staff can view or print patient documents and lab results. They can also search patient records by name or account number. And, because the app is presented in a browser, its point-and-click capabilities keep users happy.

On Philemon's to do list is to make the application even more pervasive by adding point-of-care accessibility. In the future, Philemon's users will be able to use his application with either a PDA or a wireless tablet device at the patient's side.

### A proud programmer

From start to finish, Philemon created his first Web application by himself. As you might imagine, he is quite proud of the results. He accomplished in weeks what many vendors had told him would take months maybe even years. In addition, Philemon and the IMH programming team can maintain and modify the application over time without any outside help.

Ever the humble southerner, Philemon deflected the credit for his hard work and dedication, "Without AVR, I couldn't have written this application AVR provided a minimal learning curve and offered the flexibility I needed to create a great Web apps."

Philemon's efforts have contributed well to the mission of IMH. By making patient data more quickly and effectively available, the IMH staff has even more time to focus on competent, compassionate patient care.

### About ASNA

Established in 1982, San Antonio-based ASNA develops and markets unique software products that evolve IBM AS/400 and iSeries/i5 systems. Aligned with Microsoft's .NET initiative, ASNA is the only company to offer a thoroughly conceived, standards-based extension and

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migration path that solves its customers' business challenges. For more information about ASNA: <http://www.asna.com/>.

Most recently, ASNA joined Microsoft in founding the Midrange Alliance Program, a strategic initiative to help enterprises worldwide reduce the risks and high cost of maintaining, extending and migrating aging IBM midrange systems. The alliance establishes the technical foundation for these enterprises to efficiently move to .NET and includes ASNA products as cornerstone enabling technologies. For more on the Midrange Alliance Program: <http://www.microsoft.com/midrange/>.