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# 4D in the World of Wireless

NWPORTAL  
WWW.NWPORTAL.COM



As a consultant, Scott Luse, president of NWPortal, has specialized in 4D technologies ever since 4D version 1.0. Starting with version 1.0 to develop a database

management solution for a welding supply store, Luse has since worked with various versions of 4D to create applications ranging from a solution for bug tracking during software development cycles to computer hardware inventory management at the world's largest aerospace company, The Boeing Company.

With the advent of wireless communications, Luse and his consulting team saw the opportunity to use 4D technologies to expand their business into what was becoming a lucrative market. This opportunity would necessarily involve Wireless Markup Language (WML), a subset of Extensible Markup Language (XML) used to specify content and user interface for Wireless Application Protocol (WAP) devices. WAP devices are those that use a secure specification that enables users to access information through handheld wireless devices, including cell phones and PDAs. "As a small consulting business, we're always looking for new ways to apply 4D technology in emerging fields of commerce," said Luse. "With the onset of WML and mobile devices, we saw a great need for information management on a personal level rather than a corporate level. "After recognizing this need, Luse's inspiration for NWPortal was later solidified after reading a 4D Tech Note. "After reading the 4D Tech Note on WML and researching the potential of WAP and Pocket PC mobile devices,"

notes Luse, "it was clear that a 4D Web server could support many mobile devices, without any special training involved."

Luse's endeavor into the world of wireless has resulted in NWPortal, a company that provides free, Web-based e-mail for PC and mobile device users, including Wireless Application Protocol (WAP) and Windows CE 3.0 Pocket PC platforms. Registered members receive free, Web-based wireless e-mail, a free WAP page with a hit counter, and a personal notebook, which stores Web links and provides users with the ability to navigate quickly within their mobile browsers.

### 4D'S INTEGRATED WEB SERVING

Luse has utilized 4D technologies at virtually every step in the development of NWPortal, powering the site with 4D and the 4D Internet Commands plug-in. 4D's relational database features provide NWPortal with the ability to store information within tables including member names, e-mail addresses, notebook items, mobile directory, news articles, banners, and e-mail interfaces (PC browsers). Each time a new member registers at NWPortal, a new record is created. "If a member receives e-mail, the 4D Internet Commands are used to transfer the information to the e-mail table within the database from Firegate, our Linux mail server," explains Luse. "When a member interacts with e-mail or notebook information via a Web page, he or she is actually interacting with our 4D database." Furthermore, when a member enters the Web server, various tasks are completed with just one method. "When a

4D's integrated Web server is responsible for publishing databases for various Internet browsers, such as those for PC, Pocket PC, WAP phone, and more.



### In Focus

- 4D's integrated Web server
- 4D Internet Commands plug-in
- 4D actions and variables manage the database information seen by the Web browser
- BLOB technology tracks data

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member enters the Web server on a PC, their member information and associated e-mail and notebook information are loaded, graphic interface preferences are set, and complex Web page HTML code is generated on the fly—all in one method," said Luse. As for other data such as mobile directory additions, WAP page hits, banner impressions, notebook entries, and interface usage, the database manages these with queries and comparison operators.

As far as e-mail is concerned, a simple method using the 4D Internet Commands plug-in is used to add SMTP and POP3 e-mail services to the Web server. To ensure that mobile, WAP devices correctly receive the messages, 4D String commands are used to check for illegal WML characters and document character lengths. In addition, security is guaranteed by integrating the Internet Command module with the 4D SYSTEM DOCUMENT commands, making communication with the mail server safe and efficient. According to Luse, "The power of 4D ACTION, a custom HTML-based 4D tag, is the key to NWPortal. Sending information to a Web page that was generated inside 4D eliminated the need to use any software tool other than 4D."

4D's integrated Web server is responsible for publishing databases for various Internet browsers such as those for PC, Pocket PC, WAP Phone, and Smart "Stinger" Phone (Microsoft Mobile Explorer), as well as interactive Web TV which is currently in the beta stage of development. 4D methods are used to create dynamic Web page HTML and WML code within the database, and 4D Web server tools then send the code to the proper mobile devices. Ultimately, the database information that is seen by a Web browser is managed using 4D actions and 4D variables. The same Web server is able to support various platforms with the 4D On Web Connection method, which is automatically called by 4D each time a browser begins connecting to the Web server. Notes Luse, "Several database methods automatically perform various background tasks such as tracking the frequency of banner impressions, personal WAP page hits, frequent notebook entries, and directory additions or submissions."

#### **GIVING PEOPLE THE INFORMATION THEY NEED**

The ability to track Web site usage is significant for both the members and sponsors of NWPortal. For members who are seeking more information on certain aspects of wireless communication, NWPortal's ability to track their site usage allows them to present more user-focused information on the site, whether the users are veterans of the wireless world or thinking about purchasing a wireless device for the first time. Binary Large Object (BLOB) technology, which involves a collection of binary data stored as a single entity in database management systems, plays a

critical role in tracking data. "Tracking devices that connect to NWPortal are important resources for understanding how to serve our members with new technology," said Luse. "Using 4D BLOB technology allows our administrator and sponsors to view Web graphs of tracking data generated on the fly."

For sponsors, NWPortal is an invaluable marketing tool, which can use statistics gathered on the site for user-specific, promotional use. "The purpose of the Web server is to advocate a brand of mobile products, provide an avenue for product marketing, and gather statistics on mobile platform usage," continues Luse. "Using 4D provided the proper tools for developing a Web server as well as the ability to gather data on platform usage. NWPortal tracks the use and popularity of each mobile device based on server activity, or hits, per device." Some features available to sponsors include the abilities to display a brand of products within the PC e-mail interface, send e-mail newsletters to members, and see which types of devices visit NWPortal.

For Luse, cost and reliability were primary reasons for choosing 4D. "Software tool cost is a big issue with our small company," said Luse. "The aggressive pricing structure of 4D made it easy to develop our product without a large investment of funds. We were not required to seek investment capital during any phase of development due to the high productivity features of 4D." For Scott Luse and the entire NWPortal team, 4D technologies have not only provided them with versatile tools to create an impact on the world of wireless, but they have also provided them with a cost-effective way to develop their innovative products and services.

#### **FOR MORE INFORMATION, PLEASE CONTACT:**

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