

The Power of iSeries APIs

By Vaughn Dragland

More and more, the iSeries is becoming an “open system.” As this trend continues, there is a greater need to be able to monitor and control access to your iSeries’ data by outside systems and routines. You must now be able to collect, display and report on statistics, work with external transactions, and read and write to external file structures.

For example, what if you wanted to...

- Publish pages on the Internet from your iSeries?
- Extract system values, job information, and job queues?
- Use encryption to store sensitive information?
- Enable your iSeries to exchange information with PCs using SSL (Secure Sockets Layer)?
- Access remote data queues?
- Use and manage validation lists, dynamic indices, and user spaces?

The answer to these and many other complex challenging business systems



IBM eServer iSeries

requirements was originally unleashed by IBM in V1, in the form of OS/400 built-in functions and C library functions, collectively known as “iSeries APIs”. These remained relatively obscure until IBM released a dizzying array of new and improved APIs last summer in the latest implementation of OS/400: V5R2. We now have a very powerful complement of robust routines in our iSeries kitbag, for solving the most difficult of programming problems.

There are a number of date and time functions, a robust set of record I/O functions, a fairly complete set of complex mathematical functions, and numerous string and memory manipulation functions. For example, one particularly handy function is “MEMCPY”, which copies a specified number of bytes from one variable (or memory location) to another variable (or memory location), without regard for data types!

For the most part, the iSeries APIs are encapsulations of MI instructions, which provide a risk-free interface to the iSeries underlying machine instruction set without having to worry about getting left behind when IBM makes future changes to the micro-code. In keeping with the iSeries philosophy of insulating the micro-code from high level programs, the functional interface and operation will always remain the same since these APIs use approved standard interfaces to the base architecture. It’s interesting that when a compiler encounters a call to a built-in function, it replaces the call with the actual machine instruction(s) that the API encapsulates.

To take advantage of these APIs you need to know where to find them. To make life easier, IBM has provided a great tool called the “API Finder” within the iSeries Information Center, where you can find APIs by category, all APIs, new APIs, descriptive name, or even partial name. Try searching on “New APIs” to uncover gems like these:

- APIs dealing with the hashed files necessary for clustering multiple iSeries machines together
- APIs that work with the Integrated File System
- APIs for system and performance management tools
- APIs for the PACE runtime environment for UNIX programs
- APIs for enhanced security and encryption
- APIs for Sockets quality of service
- APIs for debugging tools
- APIs for work management
- APIs for TCP/IP management
- APIs that provide low-level access to DB2 and IFS

Find out more about the awesome power of iSeries APIs by attending the next TUG Meeting of Members this March 19th, featuring the venerable **Jim Sloan**, our 7:00PM speaker. (See “The Agenda” on page 8 of this issue, for more details.)



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