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CICS Revitalized with HostBridge

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Management Summary

Boats are different than cars. (Stick with us on this one.) Most boat owners own a boat that they purchased used; those that bought new still own a used boat because, after the first season, it is deemed to be "used". While most drivers may keep a car for two-to-four years (and never feel true ownership, if it is leased), most boat owners have a long-term relationship with their craft. It was chosen with care and, usually, it continues to deliver satisfaction, sometimes for decades. Trading it in for a new one may be every owner's fantasy, but the reality is that it costs a lot more to replace it, may be of lesser quality, and then you have to start all over again making it into what you really want. Accordingly, a vast aftermarket exists for boat owners who want modern capabilities and performance for their boat, but not a new hull. New sails, new electronics, new engines, and a host of new conveniences, make it possible to leverage the things you love about your old boat, while optimizing it with modern day functionality. If you value money, it is almost always the most cost-effective way to go.

So it is with information technology. **The cost of replacing something that is working and serviceable only starts with the cost of the new solution.** Replacing an established, working system with a one is often fraught with risk of failure and cost overrun.

Despite the blare of the new and the glitzy, there are 14,000 enterprises running CICS applications, mostly on S/390 mainframes, handling about 30 billion transactions a day by 30 million end users. CICS still is, undoubtedly, the biggest processor of electronic transactions. In many cases, the applications have been modernized to give the appearance of an Internet interface, mostly using terminal-emulation transcoding programs known as "screen scrapers." Such programs map data, using row and column coordinates from earlier 3270 green screen format to a more friendly GUI presentation. This was the best upgrade available at the time and made that older application more usable. But screen scrapers were the wrong solution for the enterprise over the longer term because they required a lot of maintenance – every time there was a change in the underlying CICS applications. And, in most cases, the screen scrapers scaled poorly as demands on them grew. **As Internet traffic drives processing in ways that were and are unpredictable, and as the marketplace drives enterprises to make frequent improvements to their applications, many enterprises using CICS are again facing a "buy a new boat" decision.**

But don't buy that new boat yet, as glossy and shiny as it may seem. A new piece of middleware called HostBridge from HostBridge Technology may be the aftermarket solution that brings new life and continuing economies of scale to thousands of critical CICS applications. Read on for the details.

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HostBridge to the Rescue

HostBridge, from HostBridge Technology in Stillwater, OK, is "middleware" that allows two or more pieces of software to communicate with each other. In this case, it lets application programs (typically those presented to a user through his or her web browser) connect with CICS's transaction and data management engines.

- HostBridge presents the CICS data via XML[1] to applications that are XML compliant.
- New applications can be written using XML to add end-user scalability, new functions, and future adaptability to CICS applications.
- Existing CICS applications do not need to be modified to work with HostBridge.
- Existing terminal emulation and screen-scraping solutions can run concurrently with HostBridge.

This is accomplished via the 3270 bridge built into the latest version of CICS (TS 1.3 or later). HostBridge uses the 3270 bridge to tap into the CICS data stream (before it is presented to TCS[2] or BMS[3] and, thus, before it is formatted). It makes the underlying data directly accessible as XML to middle-tier applications. It is language neutral, with only XML and HTTP interfaces, and can be evoked by contemporary programming vehicles including Java, Enterprise Java Beans, Java Server Pages and Active Server Pages.

This is good news for everybody who runs CICS, for it makes CICS data, and particularly the 80% of CICS data that is unstructured, much more easily accessible for the increasing number of applications using it or wanting to use it. The capabilities of the CICS 3270 Bridge allow simultaneous use of CICS applications by 3720 terminals (real or emulated on PCs with screen scrapers) and by HostBridge.

Process automation for CICS applications can be invoked from the middle-tier application layer, if desired, using any development environment, such as WebSphere, that supports HTTP and XML. HostBridge operates with all IBM host-based HTTP servers: the CICS HTTP Listener, OS/390 HTTP Server, and OS/390 WebSphere. At present, IBM offers only screen scraping via Host-on-Demand and CICS Transaction Gateway for 3270 Application Integration.

HostBridge can be used with middle tier application servers from IBM, BEA, WebMethods and SliverStream. It is well integrated with SilverStream's xCommerce, where its use obviates the need to use xCommerce's transcoding-based Enterprise Enabler for CICS/BMS applications.

And More Possibilities with Linux

In many ways, the challenge is to get core enterprise data (buried in and controlled by CICS) to end-users inside and external to the enterprise. Typically this means having the data presented to a web server, which, in turn, presents it to the user. While HostBridge is neutral in its relationship with a web server (that is, it doesn't care where the web server is located), efficient and effective operation is part of the enterprise's challenge.

Because many thousand of virtual web servers have been demonstrated to run well under Linux on S/390 and zSeries mainframes, the possibility of an all (or mostly) mainframe solution deserves serious scrutiny. This brings the web server physically closer to the CICS data (likely increasing overall performance) and will, in future releases of zOS, be able to take advantage of memory-to-memory transfers of data between traditional applications (like CICS) and Linux applications (like web servers). And, of course, there is no more

[1] XML stands for Extensible Markup Language, which is a format deployed by many contemporary applications, including browsers.

[2] Terminal Control Services, a CICS facility.

[3] Basic Mapping Support, a CICS facility.

reliable, available and scaleable platform than S/390 and zSeries mainframes.

Not withstanding the fact that Linux and CICS may be running on the same server, a significant communication gap will still exist between the applications running within those environments. This leads us to believe that **HostBridge may become the "Linux connector for CICS" or the "CICS connector for Linux**", depending on your point of view.

Conclusion

Last year, we introduced the concept of teraproductivity[SM], or making big things very productive. It's easy to do most anything on a small scale. It's not without challenges, but doable. When the scale increases to very large proportions, as they tend to with mission-critical information systems at large enterprises, it requires a significant effort to scale effectively without disruption and without breaking the budget.

HostBridge delivers tera-productivity to users and programmers of CICS applications and data. It makes big things possible, without having to abandon ship and start all over again.

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