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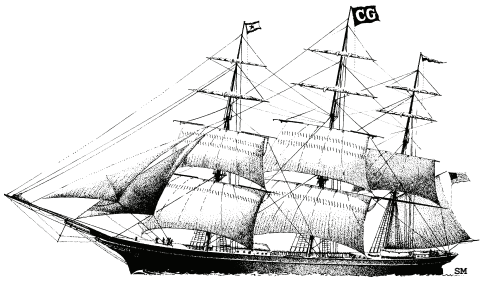

Navigating Information Technology Horizons℠

Published Since 1993 Report #TCG2006109R December 21, 2006

DataSynapse Builds in Flexibility at the Application Layer

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Management Summary

Organizational and operational flexibility is essential for business survival in competitive times. This flexibility can be built in at many levels. Where you need it depends of what is driving the change to which your organization must respond.

- ***Do you need to respond to rapid growth – in the markets you serve or some part of them?*** That kind of change may demand a change in the amount of infrastructure dedicated to certain operations. That is a challenge of *scale*.
- ***Is it the growth of impatience that must be addressed?*** This is often a competitive risk – if your competitors can do something faster than you can, you are disadvantaged. In this case, it is the performance of your technology infrastructure that must be optimized. This is a challenge of infrastructure *optimization.*
- ***Perhaps your industry is changing rapidly, due to an influx of new players or to a change in the regulatory environment.*** This may be reflected, in your IT infrastructure, in a change in applications, and in the way the applications interact. This is a challenge of *complexity.*
- ***Perhaps your organization is suffering, instead, from a change in users - perhaps due to a merger or acquisition, a corporate decision to address new markets, or adoption of a new distribution channel strategy***. This will involve application integration and data federation. It is a challenge of *heterogeneity*.
- ***Perhaps the change is more subtle – a change in what you user community does.*** More interactive capacity needed at the enterprise edge. More analytics here, there, and everywhere. More collaboration and collaborative spaces. This is a challenge of *enrichment.*

All these different kinds of challenges exhibit themselves most painfully – and can be addressed most effectively – at the application layer. One way to address them is through application virtualization that delegates the details of scheduling, provisioning, and deploying applications to a management application. This kind of delegation of authority has been the basis of human organizations for many centuries – almost back to the beginning of time. It has an equally long heritage in software, in relation to the decades during which software has been written.

A company named DataSynapse, based in New York City, offers application virtualization software to address many of the problems listed above at the application tier. For more details on how they do it, read on.

IN THIS ISSUE

Business Thrives at the Application Layer

Business drives application use, but it is how these applications are deployed and managed that can let a business hum – or consign it to a doleful plight of constraint and frustration. Application management involves many tasks. The manual sizing and deployment of applications is tedious and prone to error. The use of Web Services and applications as a service only adds more to be managed. The need for proper testing, particularly as interdependencies between applications start to proliferate, is greater than ever – but the need for rapid time-to value demands that a repeatable virtualization paradigm be used to optimize this process.

This virtualization can come as virtual containers (virtual machines) or as a virtualized process. Virtual machines emulate the operating system particulars (or, with Java Virtual Machines, the run-time environment) behind a generic façade, to make them easier to deploy. This emulation layer imposes a performance penalty, and if the operating system includes a licensing cost, the many licenses required may add to the overhead of this strategy.

DataSynapse offers a more abstemious strategy, virtualizing the applications (without, of course, touching the code), and automating their provision according to business rules. Daemons are installed on the servers[1]. They enable rapid scale-out and scale-back, and provide an easy route to application testing and development (for those optimization and enrichment needs), patching and upgrade.

The DataSynapse functionality comes in two flavors. *GridServer* focuses on the prioritization, scheduling, and load balancing of application workloads; the software "service enables" compute-intensive applications so that application services are distributed across GridServer's runtime service oriented architecture. *FabricServer* focuses on managing application platforms – application servers like BEA *WebLogic* and IBM *WebSphere* in addition to ISV applications – including configuration, deployment, activation, and failover. Together, the two products enable a flexible architecture that can support an enterprise as its needs change.

The clients of the DataSynapse environment can be traditional end users or Web-tier presentation servers. They can also be other applications or, in SOA parlance, application services. By optimizing the use of both hardware and application resources and reducing the hesitation and opportunities for error in change management, DataSynapse makes predicting the cost of IT change and scale more accurate.

GridServer

DataSynapse's *GridServer* can manage and optimize a heterogeneous environment of hardware platforms and applications, and is managed as a single element. This fan-in singularity addresses the challenges of heterogeneity, complexity, and scale enumerated on page 1 of this bulletin. For parallelizable application workloads, GridServer's application service virtualization can deploy a workload in multiple instances to speed time to completion, optimizing the business process. GridServer supports all server platforms and *.Net, Java* and *C++* environments. DataSynapse partnerships with third party ISVs like SunGard and SAS enhance the usefulness of GridServer.

[1] These servers can be heterogeneous – *Windows*, *UNIX* flavors, and/ or the IBM *System z* mainframe. All applications then benefit from a consistent discipline and management.

FabricServer

DataSynapse's *FabricServer* ships with support for IBM *WebSphere*, BEA *Web Logic*, and *JBoss*. It includes a software development kit that may be used to work with other development environments. It does not address the database tier, but, as an abutter, can interact with it by use of stored procedures.

FabricServer works with what you have. It automates the configuration and deployment of application instances. Multiple instances are concatenated to look like one instance – but one that can shrink or grow in response to changes in demand, freeing up physical infrastructure for other uses. FabricServer also allows you safely to run multiple versions of the same application when that suits the needs of your business. FabricServer customers have found this version control to be very valuable. In a new version due out in the first quarter of 2007, a new audit capability will enrich the product and support license auditing.

Its configuration management encompasses runtime management and dependency management as well as application deployment. Application expansion can be either scheduled, or triggered by demand. FabricServer manages the whole gamut lifecycle processes - start, stop, failover, kill, and clean up. It integrates with system management frameworks, Web Service management products, and load balancers. FabricServer reporting – and GridServer reporting – can be exported to role-based dashboards.

This utility approach to applications provides many benefits. The one-click easy creation of test-and-development application servers allows application enrichment alternatives to be tested. The role of FabricServer as a central repository of all changes lets patches and upgrades become part of standard operating procedure. However, it is the higher hardware utilization and the reduction in management costs that are the big hard-cost reducers in most environments.

DataSynapse's partnerships - with a focus on FabricServer - include BEA *Web Logic,* IBM *WebSphere*, EMC Documentum, Informatica, Cognos, and Business Objects.

Both are Useful

Together, DataSynapse's GridServer and FabricServer address all the challenges to the enterprise application tier. In addition, if enterprise business processes involve complex interactions with data in a coherent way, DataSynapse's partnership with Tangosol[2] adds an additional level of resilience and manageability at the cache level that can address the challenge of enrichment.

Conclusion

Performance at the application layer is crucial to IT operations. DataSynapse offers two products that address the principal challenges at this layer. Whether your challenge is one of scale, optimization, heterogeneity, enrichment, or complexity, or perhaps all of the above, DataSynapse provides tools to address your problems.

[2] For more about Tangosol, see **The Clipper Group Navigator** dated December 17, 2004, entitled *Real-Time Enterprise IT Building Blocks – Tangosol's Coherence Clustered Data Caching*, available at http://www.clipper.com/research/TCG2004098.pdf.

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