

Panel

Application Servers: One Size Fits All ... Not?

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ABSTRACT

In the beginning there was machine language, followed by assembly language, formula translation, and eventually procedural programming, to organize the chaos. And then objects were introduced, to hide information. Soon Client/Server and multi-tier applications were conceived to separate data concerns from business logic concerns and user interface concerns. Later, these objects were distributed geographically to optimize hardware resources. And now, we have application servers, to simplify scaling up a system for large volumes, improved response times, impeccable reliability, and high availability. Application servers house the business logic, operating on data from a different server, and responding to requests from any source. But these Application Servers come in all shapes, flavors, and sizes. What is a developer to do? This panel will explore issues comparing application server technologies and questions about their appropriate use in different contexts.

Categories & Subject Descriptors:

C.5.5 [Computer System Implementation]: Servers

C.2.4 [Computer-Communication Networks]: Distributed Systems

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1. Gail E. Harris, gail.harris@instantiated.ca

Gail Harris (moderator) is currently Principal of Solutions Delivery and Emerging Technology at Instantiated Software Inc., an independent consulting firm. While at Instantiated, Gail has been the project manager for several custom software development projects at a prestigious Human Resource Consulting firm, and is currently managing a project for a pension fund to replace their legacy pension administration system. Prior to joining Instantiated, Gail was a Lead Consultant with Deloitte Consulting, DRT Systems, and several other consulting firms, where she designed software applications and managed their development and installation. Gail's interests include application architecture, software design, requirements analysis, artificial intelligence, software engineering practices, and project management.

2. Jeromy Carrière, jeromyc@microsoft.com

Jeromy Carrière is a Senior Architect Evangelist on Microsoft's .NET Adoption Team. Jeromy helps spread the word about architecting systems on .NET to architects in Microsoft's financial, retail, government and healthcare customers. Prior to joining Microsoft, Jeromy was the Chief Technology Officer of Kinitos Inc., where he was responsible for guiding the development of a .NET-based distributed application server platform. Before his time at Kinitos, Jeromy was a Chief Architect on the AOL Systems Infrastructure team - the team responsible for development of the bulk of AOL's online technologies - where he was involved in the development of several next-generation products and services. Jeromy joined AOL/Time Warner through the acquisition in 2000 of Quack.com, where was a co-founder and Chief Architect. Quack.com produced a highly scalable, reliable and flexible voice portal platform that today underpins AOL-by-Phone and AOL Voicemail. Jeromy had previously worked at Nortel and Carnegie Mellon University (at the Software Engineering Institute) in a variety of engineering leadership roles - including co-initiating and leading the SEI's program in software architecture reconstruction. Jeromy has a Bachelor's of Mathematics in Computer Science from the University of Waterloo.

Enterprises today must recognize and accommodate a diversity of requirements in their systems. These requirements appear at many levels: from the choice of hardware platforms through the delivery of application-supporting enterprise services, such as identity management and content management. This diversity presents a rich opportunity for software vendors, but also presents significant challenges: how do we accommodate the small business, the medium-sized business and the global enterprise, in manufacturing, entertainment, financial services, retail and government (to name but a few)? How do we enable and facilitate enterprise schematization, a must-have for any effective integrated application delivery process? At the lowest level, the response is that one size does fit all. We place our bets on a programming model and a supporting infrastructure that realizes that programming model at run-time. We argue that this model and infrastructure provide the most cohesive, productive, and performant choice in the marketplace.

Unfortunately, when we begin to focus on addressing the business processes and capabilities of an enterprise, within a vertical domain, we discover that we don't even know how to measure fit. It's this understanding that we, as an industry, must strive to achieve. Our solutions need to feel tailor-made, but be sewn from consistent patterns at every level, from object lifecycle management and messaging to business frameworks and process definition. There's

one occasion where one size must fit all, however: standards for interoperability. Every vendor today recognizes that interoperability is the key to our successful co-existence. No system is green-field, no environment is legacy-free, no enterprise runs on homogeneous infrastructure. To operate in today's IT climate, standards-based interoperation is a set-in-stone requirement in every domain.

3. John Crupi, john.crupi@sun.com

John Crupi is a Distinguished Engineer and the Chief Java Architect of the Sun Software Services. He has over 17 years of experience in distributed object computing and remains focused on creating reusable, scalable J2EE architectures and bringing patterns to the next level. John is co-author of Core J2EE Patterns.

The goal of J2EE is not to build applications which utilize every type of J2EE component, but rather to provide the technologies to build highly scalable business applications. The J2EE technologies which best fit the application requirements must be determined by the architects and designers. The two main abstractions in a J2EE application server are the web container and the ejb container. Many applications have been built which have the richness of business logic and an object model, and run in a web container. Many other applications take advantage of the transaction and resource pooling support in the ejb container. So, what is the best choice? The question depends on the requirements. However, we have found that the best service we can provide the J2EE architect and designer is to understand the J2EE patterns and how to best design for each abstraction and how to refactor to other J2EE technologies.

4. David Leibs, david.leibs@oracle.com

David Leibs has 25 years experience in creating innovative application development environments. He was in charge of shipping the first commercial release of Smalltalk-80 for Xerox Parc. He was one of the first six members of ParcPlace Systems where he was architect, systems designer, and implementer. He invented and implemented the direct manipulation, graphical construction interface known as VisualWorks. At Neometron, a company he founded with Adele Goldberg, he researched collaboration and project management using model based Virtual Communities. These internet based communities allow people to collaborate across both space and time using the internet. Currently at Oracle, he is the Architect for the J2EE container (OC4J). His interests include Dynamic Languages, Networks, 3D graphics, Agent-based architecture, Collaboration, and Distributed Cognition.

5. Fred Nagy, fred.nagy@solutionsincontext.ca

Fred Nagy is President of Solutions in Context Inc., an e-Business Management Consulting firm that helps their clients define and deploy practical releases of system solutions to evolve the organization's interfaces and touch-points to satisfy business goals and objectives. Fred has twenty-six years of IT experience and over twenty years of consulting experience. He has eighteen years systems development management experience including prior consulting management positions with Deloitte/DRT Systems (now part of CGI) and Xpedior (an e-Business Integrator). He is a Certified Management Consultant (CMC) and is a graduate of the University of Waterloo Co-op Math Program with a focus in Computer Science. For the past ten years, Fred has been working on integrated service delivery initiatives including end to end process integration (Business and I&IT), defining and implementing business systems (integrated manual and automated processes, defining business requirements and rules) and defining and implementing IT infrastructure (OLTP, client/server, e-business infrastructure, IT Service Management, infrastructure workflow, directory services, security and messaging).

Business transactions can span varying periods of time (milliseconds, weeks...). They often require support from many participants, system transactions, physical locations and back-end systems. Application Servers have a role to play in supporting Application Services that provide presentation logic, data verification, message packaging and validation, transaction workflow coordination, request adjudication... What the Application Server needs to do depends on who it works for, who it works with (people, process and technology) and how the overall end to end solution is designed. Application Services can co-exist on one shared facility or be deployed across the world. Regardless, effective and elegant solutions require designs based on heterogeneity – there are always at least three different environments working together (yours, theirs and the application services that connect you).

6. Martin Nally, nally@us.ibm.com

Martin Nally is an IBM Distinguished Engineer who joined IBM as professional hire in 1990 after working at Unisys and Ashton-Tate. He was the lead architect and developer for VisualAge/Smalltalk, IBM's Smalltalk-based development environment and run-time for client-server applications, and one of the lead architects for VisualAge/Java. Lately he served as the lead architect and development manager for IBM's WebSphere Studio family of application development tools. He is now the lead architect for application development tools for the AIM division of IBM's Software Group.