Magic Quadrant for Enterprise Application Servers, 2Q05

Innovation in technology and in business models continues to keep the enterprise application server market competitive and expanding, despite growing commoditization of basic J2EE application servers. New players continue to emerge to offer alternatives and to aim at the leaders' weaknesses.

Users consider an application server as system software that underlies the runtime execution of their business applications, and that provides business application developers with the tools and libraries that enrich the programming of applications beyond the "bare" language compiler. Users buying prebuilt business applications may not have a direct experience with the application server, although in most cases the server is bundled with the application. Understanding the power and the limitations of the application server, such as the characteristics of the underlying operating system (OS) and hardware, enriches the user's ability to predict the behavior, performance, costs and agility of his or her business applications.

There are many categories of technology that play the role of an application server – for example, Java 2 Platform, Enterprise Edition (J2EE) containers, Web servers, transaction-processing monitors (TPMs), object request brokers and portals. There are multiple categories of application servers that are distinguished by their envisioned application model – for example, online transaction processing (OLTP), distributed objects and business components.

In the Magic Quadrant for Enterprise Application Servers, 2Q05, we present technology providers that offer a variety of application servers – from basic to advanced.

A basic application server is system software that:

1. Deploys as a long-running server-OS task (OS "daemon")

2. Supports embedding of software components (remotely addressable custom software modules)
   - Programmable (enables custom programming of embeddable software modules)
   - Contains and manages multiple, separately addressable software modules
   - Supports inbound programmatic accessibility to the individual components from outside of its own address space

3. Provides resource utilization and optimization on behalf of its embedded software components, including at least memory allocation and internal task scheduling

4. Offers component designers a defined programming model and an application programming interface (API) library for access to each of at least these key subsystems:
   - File system
   - Internal interoperability (between components within this application server)

An enterprise application server (EAS) is a basic application server that:

1. Provides additional resource utilization and optimization, including at least:
   - Internal threading
   - Object and connection pooling
   - Context caching

2. Supports distributed deployment:
   - Transparent (to components) use of multiple hardware servers for one instance of the application server
   - Load balancing

3. Offers defined built-in programming model (and an API library) for access to each of at least these additional key subsystems:
   - Database management system
   - Transaction management
   - Authorization and authentication
   - Outbound interoperability (from the application server address space to software in other, like and unlike, environments)

Gartner

Leading application servers often have additional programming models and subsystems, such as those for messaging and queuing, publish and subscribe, distributed shared memory, advanced clustering for availability, integration adapters, business process management, rules engines, management, multichannel access and hardware grid. These are important but not definitional.

Advanced application servers allow plug-in replacement of subsystems and support ultra-high-end OLTP features. These, too, are important but not definitional.

User requirements for products in this market are continuously changing. Formerly optional features become essential (support of Simple Object Access Protocol and messaging), formerly obscure innovations become important commercial differentiators (grid orientation, microkernel-style plug-in). Some features, regulated by standards bodies and available from the majority of competitors become near-commodity. Other features remain guarded vendor differentiators. Evaluation criteria for the application server market change every time we revisit the market to reflect its current state of the art and its emerging priorities.
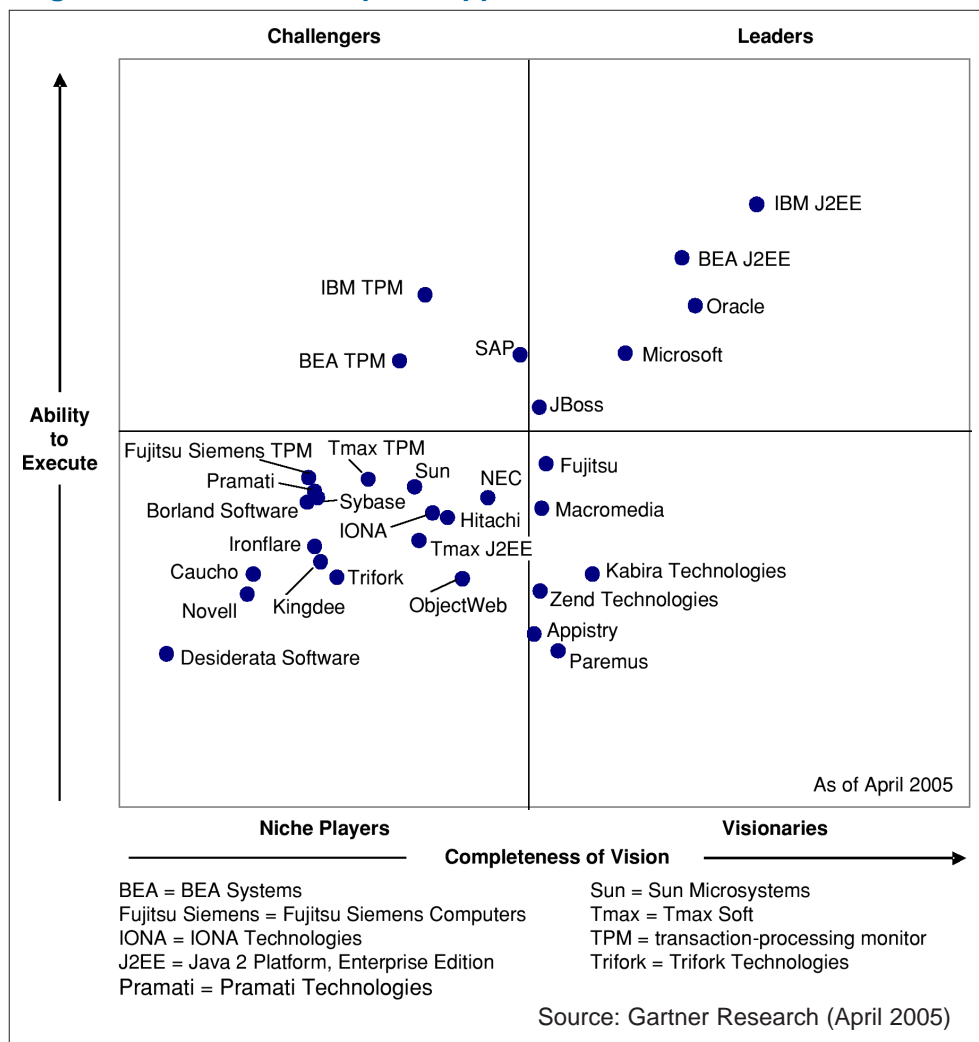
EAS Magic Quadrant

The EAS Magic Quadrant (see Figure 1) considers vendors' products and strategies in the context of larger, business-critical enterprise software projects that increasingly require support for multimodal transaction processing – classic OLTP extended to support service orientation, agility

of deployment and change, productivity, integration with external applications and events.

Gartner tracks 28 unique vendors as competitors and influencers in the EAS market. We evaluate the vendors that develop and sell application server technology directly. In this Magic Quadrant, we have not included vendors (for example, HP and webMethods) that distribute others' application servers, or vendors (for example, SeeBeyond) that include application servers in their other products but do not target a stand-alone application server market.

- **Leaders:** Leaders command the attention of the users and prospects in their market, control the

Figure 1
Magic Quadrant for Enterprise Application Servers, 2Q05

Figure 1 Magic Quadrant for Enterprise Application Servers, 2Q05

BEA = BEA Systems
Fujitsu Siemens = Fujitsu Siemens Computers
IONA = IONA Technologies
J2EE = Java 2 Platform, Enterprise Edition
Pramati = Pramati Technologies

Sun = Sun Microsystems
Tmax = Tmax Soft
TPM = transaction-processing monitor
Trifork = Trifork Technologies

Source: Gartner Research (April 2005)

majority of market business activity and are the primary influencers of the market evolution. Leaders are not always the best choice for a user's project, but typically they are among the safe choices.

- **Visionaries:** Unlike the previous version of this Magic Quadrant, most of the vendors in this Visionaries quadrant are relatively small innovators, invested in addressing limitations of the dominating application server styles.

- **Challengers:** Typically more conservative by nature or just late to market, these platforms follow behind the leading-edge industry innovations, but they excel in their dependable execution.

- **Niche Players:** These technology providers operate well in a vertical or a geographic segment of the EAS market or serve the original equipment manufacturer market segment. Niche players are often specialists in their respective areas and may represent the optimum choice for some projects by offering the specialized expertise, more-relevant support practices, flexible terms and conditions, and greater dedication to the market segment and its customers. In a mature market, smaller specialists building on a proven set of patterns and standards can attain low levels of risk, despite their size. Many niche players in the current EAS market demonstrate this phenomenon.

Market Dynamics

New license revenue is no longer the singular measure of success and influence in the EAS market. To reflect this change, we lifted the limitation to only include vendors with new license revenue of more than $10 million. As a result, we've included almost twice as many vendors this year compared to 2Q04. This accounts for an increasingly even playing field in the application server market for mainstream, moderately demanding software projects.

Smaller vendors – bound by their geographies or vertical specialization – represent more-notable alternatives to the horizontal and global giants than in 2004. In part, this is an effect of increasing commoditization of the core application server functionality – the tribute to the successful standardization of the enterprise Java programming model of J2EE. As enterprise Java matures, some innovators develop and offer alternative programming models. These vendors are also part of the new group

in the application server field. Some of their experimental technologies influence the leading users and vendors, and are bound to spur mainstream adoption. As the application server market matures, the niche players will become more prominent, the new breed of innovators will attempt to redefine the market, and a solid set of leaders and challengers will dominate application server adoption by the risk-averse mainstream users.

There are five categories of application servers in the current market:

- The J2EE-based application servers – commercial (BEA Systems, Borland Software, Caucho, Desiderata Software, Fujitsu, Hitachi, IBM, Ironflare, Kingdee, Macromedia, NEC, Novell, Oracle, Pramati, SAP, Sun Microsystems, Sybase, Tmax Soft and Trifork Technologies) and open source (Caucho, JBoss, ObjectWeb)

- The previous-generation OLTP application servers (BEA, Fujitsu Siemens Computers, IBM and Tmax Soft)

- The Common Object Request Broker Architecture (CORBA) application servers (Borland, IONA Technologies)

- Microsoft

- Vendors with new innovative programming models. Some of these innovators target increased productivity for the mainstream business application development projects (Macromedia and Zend Technologies). Others (Appistry, Kabira Technologies and Paremus) pursue new models for high-end performance and availability at lower costs.

We included the "previous generation" application servers – mainframe OLTP monitors, distributed TPMs and CORBA object transaction monitors – because these technologies continue to influence the modern enterprise computing market through their large installed bases, their exceptional levels of quality of service or their preferred use in certain vertical industries. As the new breed of J2EE application servers approaches the level of maturity of the older technologies, the OLTP monitors and the leading J2EE platforms increasingly compete for high-end enterprise projects. Notably, the leading vendors in the OLTP monitor market (IBM and BEA) are also leaders in the J2EE EAS market segment. These vendors

(and Tmax Soft) appear twice in the Magic Quadrant to reflect the major distinctions between the business and technology strategies in these two segments of the EAS market.

We include Microsoft, even though it does not offer a product called an "application server." Nevertheless, it competes, with increasing effectiveness in the EAS market. Microsoft's "application server" is the assembly of Microsoft .NET Framework, Microsoft COM+ and other API libraries, Microsoft IIS, Microsoft MSMQ and other technologies bundled with the Windows server OS.

Criteria for Inclusion in the Magic Quadrant

The Magic Quadrant evaluates vendors' completeness of vision and ability to execute in a given market. The vendor evaluation criteria we use to develop a new version of the Magic Quadrant depend on current industry conditions. Often, the evaluation criteria and their weightings change from one version of the Magic Quadrant to the next (as is the case with this version of the EAS Magic Quadrant). For this reason, a direct comparison of vendor positions between previous and current renditions of the Magic Quadrant may be misleading, and we do not recommend that comparison.

Completeness of Vision: The fundamental indication of the completeness of vision is the degree to which a vendor anticipates and influences the prevailing market trends. In the EAS market, notable trends include:

- Service-oriented software architecture
- Event-driven software architecture
- Advanced Web services interoperability and quality of service
- Integrated composite applications and composite services assembly
- Mainframe-style ultra-high-end OLTP features
- New programming models (improving productivity or supporting new advanced high-end application architecture)
- Internally "plugable" (microkernel-style) architecture of the application server
- Support of enterprise service bus as a universal infrastructure backbone for business components
- Open-source software engineering and distribution processes

Distinguished vision also requires company commitment to innovation in the EAS market, viable business outlook, degree of industry influence, effective participation in industry-influencing standards and other organizations.

Ability to Execute: The fundamental indication of a vendor's ability to execute is in its attained industry and market presence and reputation, the record of its business and technical execution and the degree to which it has delivered the essential core functionality expected from a competitive product. We consider the following EAS product characteristics as fundamental requirements for well-executing vendors.

- Enterprise-level quality of service (availability, integrity, scalability and performance)
- Heterogeneous interoperability and standards compliance
- Technical stability and maturity of the core product
- Multiple platform coverage
- Breadth of application server add-ons from the vendor or its partners

Successfully executing vendors will also demonstrate corporate commitment to the EAS market, overall business viability of the company, a partner "ecosystem," sufficient market "mind share," competitive and flexible pricing and licensing, quality installed base, effective technical and account support, and wide geographic presence.

Bottom Line: For projects that require selecting an enterprise application server, use this Magic Quadrant for starting a long list of potential technology providers. Develop your shortlist by further considering specific project and enterprise circumstances, such as the nature of the project, available skills, prevailing vertical practices, providers' geography and your long-term technology plans. Collect information from multiple sources before settling on a decision.

Appendix A: Acronym Key

API	application programming interface
ASP	application service provider
ECM	enterprise content management
IM	instant messaging
LMS	learning management system
SCORM	Sharable Content Object Reference Model