Gartner

Research

Publication Date: 25 July 2008 **ID Number: G00158570**

Magic Quadrant for Application Delivery Controllers

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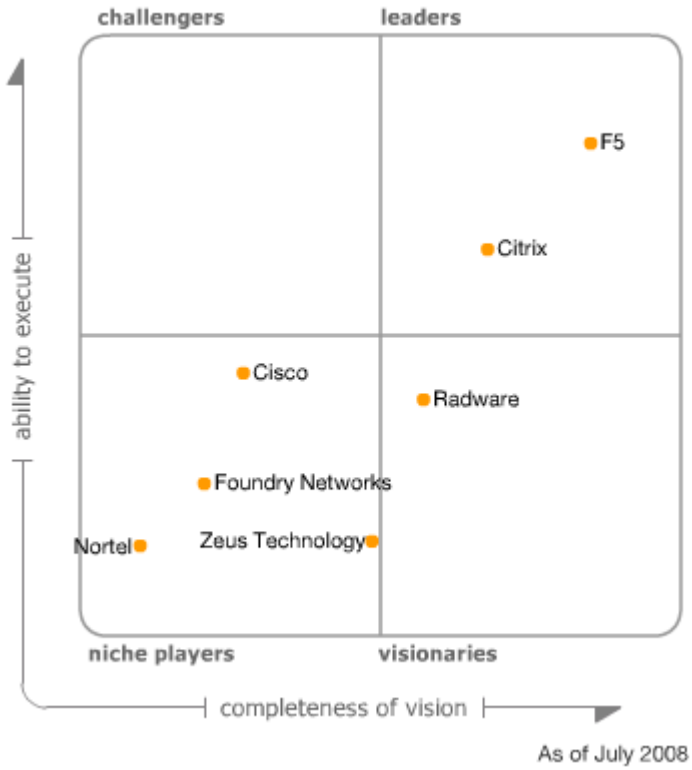
The market for products to improve the delivery of application software over networks remains dynamic and innovative. Vendors focused on solving enterprises' most-pressing application problems have become the top players.

WHAT YOU NEED TO KNOW

The key criterion in the Magic Quadrant for Application Delivery Controllers focuses on a vendor's capability to resolve important application challenges in the enterprise. Vendors at the forefront of these changes will emerge as more-viable and stronger.

MAGIC QUADRANT

Figure 1. Magic Quadrant for Application Delivery Controllers



Source: Gartner (July 2008)

Market Overview

The market for network-based solutions to optimize the delivery of applications across the network continues to develop rapidly, and our expectations increase with each revision of the Magic Quadrant. As a result, the Magic Quadrant axis depicts a noticeable shift up and to the right with each revision. Consequently, vendors must progress to maintain their positions in the new Magic Quadrant.

New applications of the application delivery controller (ADC) technology continue to emerge, reflecting the significant innovation in the market. These technologies apply across a growing base of enterprise applications that may or may not use the Internet at all, or have little or no roots in Internet and browser-based technologies. Although the market emerged from load-balancing solutions to improve the availability and reliability of Web sites, the time has long

passed since load balancing and Secure Sockets Layer (SSL) termination for basic HTML traffic were viable by themselves. Browser-based applications often are a major impetus to investing in these technologies; however, many enterprise applications that appear to be browser-based actually employ thick clients that run in the browser, that don't run over HTTP(S) or have the capability to bypass standard browser capabilities, such as compression.

The emergence of Ajax and other rich-client interfaces further complicates the environment. As a result, there's a need for solutions with broader payload parsing, as well as inspection and optimization techniques, including client-resident software.

ADCs reside in the data center, typically ahead of frontline Web servers. They're deployed asymmetrically (only at the data center end) and are designed to improve the availability, performance and security of Web-based or IP-based applications. ADCs enhance the performance of Web-based and related applications for end users by providing a suite of services at the network and application layers. These services may include:

- Layer 4 through Layer 7 redirection and load balancing and failover
- TCP connection multiplexing
- Server offload (for example, SSL termination and TCP connection management)
- Data compression
- Network-address translation
- Network-level security functions, distributed denial-of-service protection and server cloaking
- Compression
- Caching

A more-advanced class of ADCs, advanced platform ADCs (AP ADCs), operate on a per-transaction basis and achieve *application fluency.* These devices become actively involved in delivering the application and providing sophisticated capabilities, including:

- Application layer proxy, which is often bidirectional and stateful
- Content transformation
- Adaptive compression
- Selective caching of dynamic content
- HTML or other application protocol optimizations
- Web application firewall
- XML validation and transformation
- Rules and programmatic interfaces

AP ADCs provide simplified deployment and extensibility, and are being deployed between the Web server tier and the application or services tier (for service-oriented architecture [SOA] servers).

Most AP ADCs incorporate rule-based extensibility that enables the customer to customize the behavior of the AP ADC. For example, a rule might enable the AP ADC to examine the response portion of an e-commerce transaction, and strip off all but the last four digits of credit card numbers. In some cases, organizations are using these capabilities as an alternative to modifying Web applications.

Many AP ADCs incorporate a programmatic control interface (open application programming interfaces — APIs) that enables them to be controlled by external systems, including application servers, data center management and provisioning applications, and network and system management applications. This capability may be used for regular, periodic reconfigurations (such as end-of-month closing) or may be driven by external events (such as taking an instance of an application offline for maintenance). In some cases, the APIs link the AP ADC to server virtualization systems and data center provisioning frameworks to deliver the promise of real-time infrastructure.

In the past, application delivery services from vendors such as Akamai and Netli were included in this analysis. However, application delivery services have evolved to the point where they're much more complementary, rather than competitive, to the equipment offerings analyzed herein. We expect that application delivery services will emerge as a separate category.

Market Definition/Description

ADCs provide a set of functions to optimize enterprise application environments. The market evolved from the load-balancing systems that were specifically developed to ensure the availability and scalability of Web sites. Enterprises use ADCs to optimize reliability, end-user performance, data center resource use and security for a variety of enterprise applications.

Inclusion and Exclusion Criteria

Criteria for inclusion in the Magic Quadrant for Application Delivery Controllers include:

- The vendor has released products for general availability, and has demonstrated its commitment to this market.
- The vendor is focused on delivering solutions to the enterprise market, and demonstrates relevance to Gartner clients.
- The vendor must have achieved at least 2% market revenue share in the overall ADC market, or in the AP ADC market, in 2007.

Added

None

Dropped

Akamai was removed because we believe that its service-based offerings are more complementary with, rather than a replacement approach to, ADC technology. Akamai's Web Application Accelerator and IP Application Accelerator represent interesting approaches to accelerating applications across the Internet, especially to users outside the enterprise's control.

Array Networks was removed because it failed to meet our newly introduced revenue/market share requirements.

Crescendo Networks was removed because it also failed to meet our newly introduced revenue/market share requirements.

Coyote Point was removed because it missed the revenue requirements, and, for the most part, targets midmarket solutions. However, it remains an attractive vendor for smaller organizations that are looking for a cost-effective, integrated ADC solution.

Juniper Networks was dropped because of its announcement that it would discontinue its DX product line.

NetContinuum was dropped because it was acquired by Barracuda Networks in 2007, and because its revenue doesn't meet our requirements. Barracuda also targets midmarket opportunities.

Evaluation Criteria

Ability to Execute

We analyze the vendor's capabilities across broad business functions (see below). Vendors that have expanded their products across a wider range of protocols and applications, have improved service and support capabilities, and have focused on improving enterprise applications will be more highly rated in the Magic Quadrant analysis.

Product/Service evaluates the capabilities of the products or solutions offered to the market. Key items to be considered for the application delivery market are how well the products address enterprise application needs, the breadth of the products (in terms of different functions), and scale — from entry-level products to high-end products. We also look at the level of integration, flexibility and innovation that the vendor demonstrates in its products. We include products that provide load balancing, SSL termination, connection management, compression, protocol manipulation, global redirection, some aspects of security enforcement and other related technologies, including Ajax and other rich-client technologies. A key aspect that demonstrates continued execution in this area is how the vendor expands the types of applications that are optimized. Although we don't expect vendors to have every technology option in their products, we do expect them to offer a comprehensive and flexible solution for enterprises that clearly demonstrates a focus on enhancing enterprise applications.

Overall Viability includes an assessment of the organization's financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue to invest in the product, offer the product and advance the state of the art in the organization's portfolio of products.

Sales Execution/Pricing looks at the vendor's capability to get the product into the market efficiently. In this market, we look for specialist capabilities — that is, a vendor and associated channels that can understand and deliver solutions for optimizing a range of data center applications. Having strong field sales and engineering to supplement specialist channels will help vendors in this area. As product complexity grows, a comprehensive professional service offering has emerged as an important factor. Another factor involves partnerships with leading application providers or system integrators (SIs) that provide bundled solutions to the enterprise. In this emerging market, to date, pricing is a secondary decision criterion, although, as the market matures and expands to include small and midsize businesses, customer pricing will become more important.

Market Responsiveness and Track Record focuses on the vendor's capability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the provider's history of responsiveness.

Marketing Execution measures the clarity, quality, creativity and efficacy of programs that are designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification of the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience looks at a vendor's capability to deal with post-sales issues. Because of the specialized nature of the application delivery market, and the impact of product bugs on an enterprise's capability to conduct critical business functions, vendors are expected to escalate and respond to issues in a timely fashion with dedicated and specialized resources, and to have detailed expertise in many specific application environments. Another consideration is a vendor's capability to deal with increasing global demands. Additional support tools and programs are indications of a maturing approach to the market.

Operations looks at the organization's capability to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Bottom Line: Ability to Execute reflects the market conditions and, to a large degree, it is our analysis and interpretation of what we hear from the market. Our focus is assessing how a vendor participates in the day-to-day activities of the market.

Table 1. Ability to Execute Evaluation Criteria

Evaluation Criteria	Weighting
Product/Service	high
Overall Viability (Business Unit, Financial, Strategy, Organization)	low
Sales Execution/Pricing	standard
Market Responsiveness and Track Record	standard
Marketing Execution	standard
Customer Experience	standard
Operations	standard

Source: Gartner (July 2008)

Completeness of Vision

These criteria have been fine-tuned to reflect the expanding use of these technologies in the enterprise.

Market Understanding looks at the technology provider's capability to understand buyers' needs and to translate those needs into products and services. Vendors that show the highest degree of vision listen to and understand buyers' wants and needs, and can shape or enhance those wants and needs with their added vision. As an example of the expectations in this category, we look at how vendors have enhanced their portfolios to address new application environments.

Marketing Strategy examines the messages and methods that the vendor uses to disseminate these messages. Are the messages clear and differentiated? Are they consistently communicated throughout the organization, and externally through the Web site, advertising, customer programs and positioning statements?

Product Strategy looks at a vendor's product road map and architecture, which we map against our view of enterprise requirements. We expect product direction to focus on optimizing enterprise application performance and security. Specific technologies may include connection management, security enforcement, application enhancements, and emerging solutions for enterprise WAN deployment and related technologies. The timely incorporation of new application architectures (such as SOA, Web services, Ajax and SIP) also contributes to this score.

Business Model assesses a vendor's approach to the market. Does the vendor have an approach that enables it to scale the elements of its business (for example, development, sales/distribution and manufacturing) cost-effectively, from startup to maturity? Does the vendor understand how to leverage key assets to grow profitably? Can it gain additional revenue by charging separately for optional, high-value features? Other key attributes in this market would be reflected in how the vendor uses partnerships to increase sales. The capability to build strong partnerships with a broad range of application vendors and associated SIs would demonstrate leadership.

Innovation measures a vendor's capability to move the market into new solution areas, and to define and deliver new technologies. In the application delivery market, innovation is key to meet rapidly expanding requirements, and to keep ahead of new (and often more-agile) competition.

Bottom Line: Completeness of Vision distills a vendor's view of the future, the direction of the market and the vendor's role in shaping that market. We expect the vendor's vision to be compatible with our view of the market's evolution. A vendor's vision of the evolution of the data center and the expanding role of ADCs in an SOA are important criteria. In contrast to how we measure Ability to Execute criteria, more of the rating for vision is based on direct vendor interactions, and on our analysis of the vendor's view of the future.

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	standard
Marketing Strategy	low
Sales Strategy	no rating
Offering (Product) Strategy	standard
Business Model	standard
Vertical/Industry Strategy	no rating
Innovation	standard
Geographic Strategy	no rating

Source: Gartner (July 2008)

Leaders

A leader has exhibited the ability to shape the market by introducing additional capabilities in its product offerings, and by raising awareness of the importance of these features. Key capabilities for a leader revolve around the AP ADC capabilities that focus on enterprise application capabilities. We expect a leader to have strong or growing market share, especially in the AP ADCs, and to have solutions that resonate with an increasing number of enterprises. Expertise in complex data center application deployment also is a necessity to be a leader in the Magic Quadrant for Application Delivery Controllers.

Challengers

A challenger in this market would be a follower from a product or innovation perspective, but it has also demonstrated the capability to take its products into the market and show their relevance to a wide audience.

Visionaries

Visionaries are vendors that have provided key elements of innovation, and can be illustrative of the future of the market. However, they lack the capability to influence a large portion of the market; they haven't expanded their sales and support capabilities on a global basis; or they don't have the funding to execute with the same capabilities as a vendor in the Leaders quadrant. Examples of innovation would be the capability to deal with XML traffic, or an early developer of client capabilities.

Niche Players

Niche players provide a more-limited set of capabilities, and haven't demonstrated enough vision or focused execution to warrant a stronger position in our analysis.

Vendor Strengths and Cautions

Cisco

Strengths

- Installed base of Content Services Switch/Content Switching Module (CSS/CSM).
- Broad product portfolio related to the ADC market.
- Cisco's overall market presence and brand.
- Cisco has demonstrated and staked out a vision for virtualized ADC capabilities before the rest of the ADC market. These features will be especially useful in shared environments, particularly service providers and hosted facilities.

Cautions

- Cisco has developed several application reference implementations with software vendors (for example, Data Center Assurance Program for applications); however, according to Gartner clients, this hasn't resulted in the necessary field expertise in complex data center application deployments. This severely limits Cisco's capability to advise and support its customer base in this market.
- A poor track record in all aspects of application networking (see "Cisco Application Networking Services: Enterprises Must Demand Continued Execution"), coupled with a lack of feature consistency across disparate products. Cisco only recently introduced a single model for AP ADC (Application Control Engine [ACE] 4710), lagging the market by more than three years. Cisco's market share in AP ADCs is 5%, and in the past year, it has ranged between 4% and 5.7%. The ACE module is only a basic server load balancer, and it took Cisco the better part of a year to get it enterprise-ready.
- AP capabilities are limited to the ACE 4710. Cisco has few references for this new product, thereby indicating that it isn't mature.

- Current virtualization capabilities are incomplete on the ACE 4710 because they don't provide protection and isolation of advanced features among virtualized environments, thereby limiting the appliance's usefulness in enterprise deployments.

Citrix

Strengths

- Solid AP ADC with excellent performance, combined with leading client code.
- Broad product line, including highly scalable multisystem clusters.
- Easy-to-use rule engine (AppExpert) makes complex tasks achievable without extensive programming.
- Global presence (channel partners and direct partners) for sales and support.
- Aggressive marketing, highly regarded support and strong reference accounts, including large public Internet sites, as well as large corporate intranet applications.
- Excellent understanding of the market and its needs, today and from now on.

Cautions

- Citrix must demonstrate that its channel can sell an application networking product with the complexity of NetScaler. Three years after the acquisition of NetScaler, Citrix hasn't demonstrated any significant leverage with its core channels.
- Citrix must continue to demonstrate that NetScaler's software and merchant silicon-focused design can keep up with competitors that add custom silicon to boost performance, particularly for deep packet examination.
- Citrix must continue to invest in the broad capabilities of the NetScaler platform, and ensure that it isn't only perceived as a Citrix XenApp/XenDesktop optimization engine.

F5

Strengths

- Offers the most feature-rich AP ADC, combined with excellent performance and programmability via iRules and a broad product line.
- Strong focus on applications, including long-term relationships with major application vendors, including Microsoft, Oracle and SAP.
- Strong balance sheet and cohesive management team with a solid track record for delivering the right products at the right time.
- Strong underlying platform that makes it easy to deploy basic services, and enables extensibility to add features.
- Supports an increasingly loyal and large group of active developers that tune their application environments specifically with F5's infrastructure.

Cautions

- The Big-IP Product Family is so feature-rich that it can be intimidating to some customers, and F5's highly extensible platform requires a highly skilled staff to get the most out of the product.
- F5 must improve its marketing to differentiate itself from the competition, and to drive greater use of its advanced features among its installed base.
- F5's advanced features are attractive, but licensing options create an expensive solution.
- F5 must deliver a competitive response to rivals that offer a "pay as you grow" strategy for entry-level systems.

Foundry Networks

Strengths

- Reliable, high-performance, low-cost ADC platform. We often see Foundry front-ending standard software infrastructure components, and in hosting environments where a standard set of reliable, low-cost features is a key requirement.
- Foundry has added a basic set of application performance optimization features, and has increased its attention and focus on the application delivery market.
- Good technical support of product and network-level integration.

Cautions

- Little extensibility in the platform limits deployment to standard deployment models.
- Predominant focus is on load balancing, rather than on application optimization features.
- Limited expertise regarding the nuances of complex enterprise application environments.
- A somewhat confusing array of product offerings in this market.

Nortel

Strengths

- The Application Accelerator product offers a competitive set of optimization features, including adaptive compression, delta encoding and client cache features.
- Still has a reasonable installed base of Alteon gear to sell into, and to upgrade.

Cautions

- Little expertise in data center application environments.
- Nortel has lost any remaining focus and market awareness; consequently, it continues to lose market share.
- In most cases, the requirement to couple the Application Accelerator with an Application Switch creates a complex, two-box solution.

Radware

Strengths

- Clear vision of the market and the evolution of its product offering. The combination of the AppDirector and AppXcel products provides a strong feature set covering availability, performance and security.
- New hardware platform, OnDemand Switch, provides significant flexibility in adapting to growing customer requirements for more performance and features.
- Radware's business smart networks provide some unique transaction and business-level features for enterprises attempting to integrate more business-centric decision capabilities into the ADC.
- A renewed focus on software quality and support has enabled Radware to leave prior operational issues behind.

Cautions

- Although improving, Radware's North American presence is still a weakness.
- Deployment is complicated due to a lack of integration of the AppDirector and AppXcel software offerings (and underlying hardware platforms).
- Radware must enable its customers and channels to exploit open APIs to increase the extensibility of its offerings to compete more-effectively in this market.

Zeus Technology

Strengths

- Highly scalable clustering via software and off-the-shelf hardware.
- Broadening technology base and vision, including programmability via Java extensions.
- Early relationship with VMware gave Zeus a good understanding of dynamic data centers' challenges and opportunities.
- A strong management team of industry veterans, added during the past 12 months, lends credibility.
- OEM relationship with Sun Microsystems shows that Zeus understands that it needs strong partners to succeed.

Cautions

- Very limited visibility and distribution in the enterprise market.
- Limited partnerships and channels mean that Zeus is a riskier choice than many larger and more-established vendors.

RECOMMENDED READING

"Magic Quadrants and MarketScopes: How Gartner Evaluates Vendors Within a Market"

"Cisco Application Networking Services: Enterprises Must Demand Continued Execution"

Vendors Added or Dropped

We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor appearing in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. This may be a reflection of a change in the market and, therefore, changed evaluation criteria, or a change of focus by a vendor.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets, skills, etc., whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood of the individual business unit to continue investing in the product, to continue offering the product and to advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor’s capabilities in all pre-sales activities and the structure that supports them. This includes deal management, pricing and negotiation, pre-sales support and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements, etc.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen

and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the Web site, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling product that uses the appropriate network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature set as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including verticals.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.

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