

EMA Radar™ for Application Delivery Controllers and Load Balancers: Q4 2011

Report Summary

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Executive Summary

Long before VMware made the term “virtualization” a common, almost ubiquitous term, early Load Balancers (LBs) were busy abstracting away client requests from the physical server, creating a set of “virtualized Web services.” Web server load balancing evolved as a way to ensure that inbound requests over IP-based networks did not overwhelm the backend servers hosting Web sites and Web-based applications. The first generation of network-based load balancer solutions were application neutral – their primary function was to ensure that traffic reached its final destination and that the traffic was evenly distributed across multiple servers. A Web page request comes in-bound from an external client and instead of that request going directly to the Web server; the load balancer receives and redirects the request to the most appropriate server based on whichever load balancing algorithm is being implemented. The Web server then returns the information to the load balancer, which then sends it back to the requesting client. An added benefit to implementing a load balancer is that it cuts down on the time it takes to service a request, thereby improving Web server response time. An Application Delivery Controller (ADC) is for the most part considered the next generation load balancer. Load balancing remains a core component of today’s ADCs, but their functionality has expanded to include other features such as application acceleration, compression, caching, SSL offload, and application layer security, to name a few. In some cases, vendors continue to offer load balancers as a separate product for customers who just want the core functionality and make the additional features available in an a la carte fashion, either as separate appliances or as add-on modules. For the purpose of this report the collective technology spanning this spectrum of evolved features will be referred to as ADC/LB.

The first generation of network-based load balancer solutions were application neutral – their primary function was to ensure that traffic reached its final destination and that the traffic was evenly distributed across multiple servers.

In this ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) Radar Report, 12 current providers of ADC/LB solutions are reviewed and compared according to a broad range of measures regarding both product strength and overall cost efficiency.

Introduction and Methodology

In the development of this EMA Radar Report, EMA engaged 12 providers of ADC/LB solutions in a detailed analysis of the scope and capabilities of their offerings. The solution providers represent a mix of vendors, ranging from small, privately held, pure-play vendors to very large IT technology providers. ADC/LB solutions were traditionally sold as hardware appliances, but have since expanded to other form factors such as virtual machines. This EMA Radar Report covers ADC/LB solutions from the following vendors:

- A10 Networks
- ActivNetworks
- Array Networks
- Barracuda Networks
- Brocade Communications Systems
- Cisco Systems
- Citrix Systems
- Coyote Point Systems
- F5 Networks
- KEMP Technologies
- Radware
- Riverbed Technology (Zeus)



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In order to participate in the study, a vendor must have a product that supports the core load balancing features for TCP/IP based networks. Full-blown ADC/LB solutions support additional features such as complex server health monitoring, performance improvement, and security. An extensive questionnaire was developed and presented to solution providers for their input, covering details regarding: architecture, integration, functionality, deployment, administration, cost, and vendor strength. EMA supplemented responses with dialog, product demonstrations and reviews to ensure that each solution was represented fully, honestly and fairly. EMA also interviewed end-user customers of the solutions being reviewed as well as channel partners – in some cases several per solution provider – in order to validate vendor claims. Finally, and importantly, EMA leveraged ongoing industry dialogs and extensive existing knowledge of the ADC/LB market to evaluate, consider, and validate each vendor's strengths and limitations in a manner that is focused on providing balanced, consistent insights across all vendors and solutions. It is important to note that this study was conducted at a specific point in time and the results cover only the products that were shipping at that time. The pace of innovation and competition in the ADC/LB sector is significant, and since the research was conducted, many vendors covered here have added new devices or features that are not fully reflected in this report.

For more information on EMA's Radar Report methodology, please see Appendix A.

Improving Web Application Performance

ADC/LBs are all about high availability and performance for Web-based application servers. Mobility, virtualization, and cloud are fueling the demand for Web-based applications and thereby increasing the traffic to those servers. Consequently, it is reasonable to assume that IT solutions that can make the business case for ensuring both availability and performance of these types of applications will remain front and center for the next several years and beyond.

The early load balancers were purpose-built directly into the application software or the server operating system. As IP-based network traffic rapidly increased, these solutions did not scale. The next generation decoupled the load balancer from the application and server hardware resulting in purpose built, network-based hardware appliances. These appliances were application neutral and resided on their own dedicated hardware, so they no longer needed to vie with other applications for server resources. This provided greater independence, scalability, and better health monitoring. As these solutions evolved their position in the network made them ideal candidates for adding additional functionality such as application firewalls, SSL/TLS encryption offload, and performance enhancements thereby creating the next generation load balancer or ADC. The term ADC came about as vendors looked for a way to differentiate this next generation load balancer from its predecessors. However, in our discussion with practitioners, the term load balancer is still the primary terminology used to refer to this technology. A few ADC/LB customers referred to them simply as “vendor x's” box or by the product model name or number, and some had no idea what the term ADC even meant.

Application delivery and application performance are hot topics. The good news for this market is that there appears to be no shortage of potential applications for this technology. The need to scale Web facing applications, the backend legacy applications that often support Web-facing applications, poorly designed Web pages, poorly designed Web applications, mobility, cloud, datacenter consolidation, high availability, traffic spikes (and the list goes on), all are various factors that can create performance issues that this technology can mitigate. The ADC/LB acts as the great equalizer that can flatten out

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all these various factors and help to deliver consistent levels of performance in the face of all these potential pitfalls. The ADC/LB is the ultimate device that unites IT disciplines while bringing order to chaos, so it is no wonder that these products have found a home in IT shops big and small across all vertical markets.

The Market and the Players

The ADC/LB market is a mature, but active global market in excess of \$1.7 billion in terms of total annual product sales, based on EMA research and estimates. The majority of vendors are U.S.-based, with only ActivNetworks lacking U.S.-based headquarters in terms of vendors reviewed in this report. The market has undergone a number of acquisitions and continues to thrive. The early players to the market were Cisco, F5, and Radware – companies that began shipping products in 1997. The next wave of players that came along in the following year would become acquisition targets: Alteon (Nortel 2000; Radware 2009), Foundry Networks (Brocade 2008), NetContinuum (Barracuda 2007), and Netscaler (Citrix 2005). Over the next ten years a number of players would jump into the market, including Coyote Point (1998), Array Networks (2001), KEMP (2003), Zeus (2005), ActivNetworks (2006), and A10 Networks (2007). Most recently, Crescendo Networks, an ADC/LB vendor founded in 2002 and based in Tel Aviv, was liquidated and F5 acquired the assets and some personnel. During the time in which this research was underway, Riverbed Technology acquired Zeus. Seven of the twelve vendors covered here are public and the remainder are private, but profitable. Only half of the vendors are pure play ADC/LB solution providers; for the remaining vendors, ADC/LB play a supporting or complementary role to their core product offerings. The majority of vendors sell these products through indirect channels. In terms of the buying audience, typically the networking team funds the purchase, but what is interesting about ADCs/LBs is that they represent a technology that bridges IT teams, requiring cross-collaboration at the least between the networking, application, and Web server groups, and in some cases security teams as well.

The “V” Factor

The predominant form factor for most of the growth within this technology sector has been a dedicated hardware platform, because like WAN optimization controllers, in order to get the absolute best performance it was necessary to create custom ASICs tied to a hardened/optimized operating platform. The majority of ADC/LB revenue is still generated from hardware platforms (Figure 1).

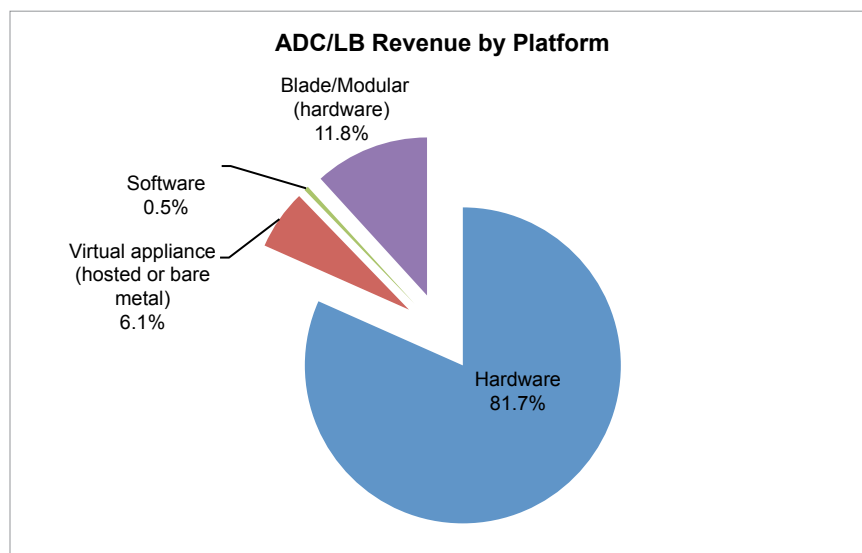


Figure 1: ADC/LB Revenue by Platform



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However, the rise of server virtualization – the “V” factor – is having a ripple effect throughout IT, and the historically hardware-centric ADC/LB solution providers are finding that they must adapt and embrace virtualization or be left out of the growing market opportunities requiring virtualized infrastructure – most importantly cloud computing. There is reluctance on the one hand out of fear of cannibalizing the existing product lines, but at the same time there are legitimate concerns about scale and reliability. The carefully engineered, hardened ADC/LB appliance platforms have proven to be highly reliable, which is critical in the environments for which ADC/LBs are typically deployed. Consequently, some vendors have been slower than others to roll out a virtual appliance that runs on one of the standard hypervisors (i.e., VMware ESX or Microsoft HyperV). Other vendors are taking a different approach; for example, Radware, in addition to offering a VMware-supported virtual appliance, has designed a hybrid solution that takes a dedicated hardware appliance (thereby gaining the benefits of that platform) and built its own hypervisor that can run multiple ADC/LB virtual appliances on a single physical box. Zeus (now Riverbed), in contrast, is the only pure software ADC/LB vendor with both a software and virtual appliance version of their product. The Zeus/Riverbed software solution is targeted at SIs, VARs, and IT shops that want to “build their own” ADC/LB and wish to adjust their hardware configuration to meet their deployment needs. The downside of this approach is that the hardware is under a separate maintenance contract, so troubleshooting and configuration can be more time consuming. Today the hardware model continues to dominate the market, but virtualization is at the heart of cloud computing models as well as at the core of data center consolidation, and cost reduction efforts that lean towards commodity hardware platforms.

Focus of This Research

This EMA Radar Report is intended to assemble a clear picture of the technology vendors offering ADC/LB solutions, how they differ in terms of product approach, and what their core strengths and areas for improvement are, so that IT practitioners engaged in research can identify the best solution for their needs.



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Criteria

In all EMA Radar Reports, EMA evaluates solutions based on five key areas (Figure 2): Deployment and Administration, Architecture and Integration, Functionality, Cost Advantage, and Vendor Strength. The last category, perhaps the only one that's not self-explanatory, is focused on the market and industry presence, vision, and financial stability of the vendor.

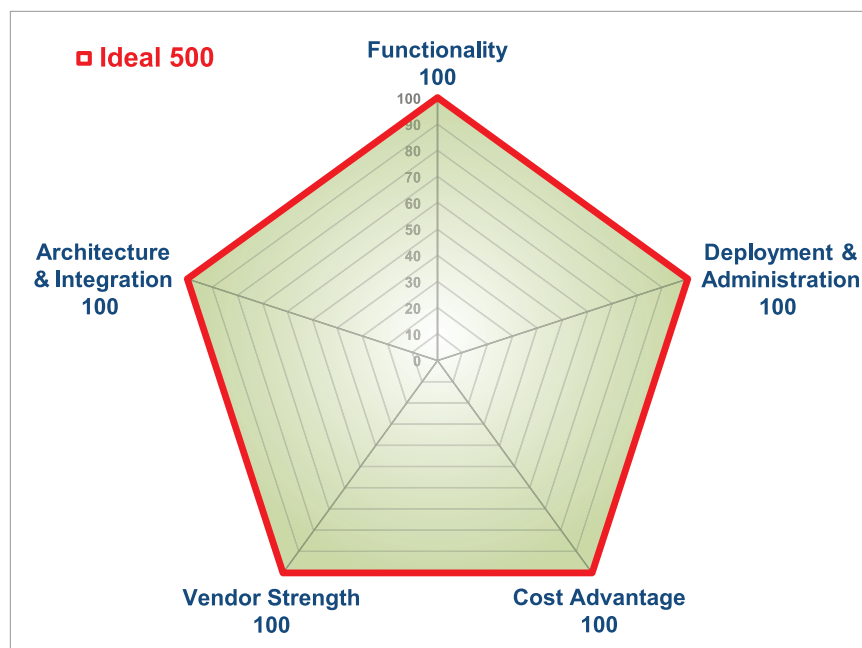


Figure 2: Ideal vendor Radar chart

Deployment and Administration

One of the major selling features of ADCs/LBs is that they are typically easy to install and are low-touch devices that require very minimal daily administration. With that said, there are always relative differences between various vendor solutions. In this category, we assessed several important areas:

Ease of Deployment: This includes a number of measures meant to indicate how easy or complex a solution is to install into the production environment and how quickly it is to get up and running. As such, this section addressed three key areas: installation, training, and deployment time. Higher marks were given for shorter deployment times, the ability to use internal staff to setup and deploy solutions, fewer staff for pre- and post-deployment, and shorter training times required for operators to reach basic and advanced levels of competence in the solution.

Support and Services: In this section, vendors were measured on the breadth and depth of maintenance programs, technical support options, and professional services offerings as well as the need for customers to engage those services in order to fully deploy the solution.

- *Maintenance:* This area investigated the variety of maintenance offerings such as the out-of-the-box warranty and whether or not the purchase price included maintenance. Top marks were given to those with the longer standard warranties, broader support for the standard warranty, and if maintenance was included in the purchase price.

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- *Technical Support:* This area investigated the variety of customer support offerings, such as the ability to deliver the same support services both domestically and internationally, the number of support options, whether or not all the programs offer live phone support, guaranteed response times for the highest support levels, online support, company sponsored community Web sites, and whether or not the vendor provided dedicated support engineer assignments. Highest ratings in this category were given to those with the broadest support offerings and those with comparable support for both domestic and international customers.
- *Professional Services:* Some of the ADC/LB solution providers reviewed here recommend and/or otherwise expect professional services to install and fully deploy their products, while others require virtually none. Some companies have dedicated professional services organization while others do not. In this category, we gave the highest rankings to solutions that could be deployed with minimal efforts or cost and for those with dedicated professional support staff.

Cost Advantage

The cost advantage portion of our analysis looked at the more traditional/direct cost aspects of procuring ADC/LB solutions. In this case, we reviewed typical licensing fees, maintenance fees, and the flexibility that solution providers offered in terms of licensing models. Lower licensing costs, lower maintenance costs, and greater flexibility in licensing options were scored favorably in the rankings.

Architecture & Integration

Following are the criteria that were used in this EMA Radar Report for evaluating the alternatives and methods for architecting an ADC/LB solution:

Design: In this section, vendors were measured on the flexibility of their product models in terms of form factor, ability to roll-out simultaneous upgrades on all form factors, and sharing a common operating platform. The solutions that provided the broadest set of product deployment options, kept upgrades in synch across platforms, and had a common operating platform received the highest marks.

Scalability: The ability for each ADC/LB solution to handle activity volume was measured by looking at metrics for each vendor's (single, non-clustered) highest capacity device. The following primary metrics were used (NOTE – EMA did not independently verify the vendor-reported metrics used in this analysis):

- Maximum concurrent connections (number of multiple TCP connections established between two end hosts) where all connections are active and simultaneously transferring.
- Maximum concurrent full-proxy connections.
- Maximum network throughput rate (Mbps/Gbps).

The ability of the solution to be deployed in various clustered configurations was also considered as part of scalability scoring.

Integration and Third-Party Interoperability: This set of measures looked at the opportunity for practitioners to customize the ADC/LB solution via APIs and how well-integrated the solutions were with third-party vendors. The highest marks were rewarded for vendors with a well-documented API, a broad scope/range of third-party technology partners, and with products that had undergone the greatest number and broadest range of types of certification testing.

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Functionality

Product Features – EMA evaluated solutions versus a long list of all the possible features and functionality found on ADC/LB solutions. The list included core load balancing features as well as some of the more advanced features such as application firewall, data compression, traffic shaping, as well as support for VPNs, and support for high availability. The highest marks were awarded to vendors with the broadest set of feature and functionality support.

Management – The ability to effectively manage a solution helps keep things running smoothly. Evaluation criteria here focused on what type of administrative and monitoring tools were made available as part of the solution including the presence of self-monitoring features and metrics. Highest marks went to the solutions with the most complete offering.

Customization – For some customers, it is important to be able to create their own server health checks or otherwise customize the ADC/LB solution for their deployment environments and priorities. Vendors were asked if their solution provided support for custom scripting and detailed customization. Highest marks went to vendors who offered and supported all types of customization.

Cloud Ready, Enabled – Cloud is a hot topic and all ADC/LB providers have been working on solutions that can be deployed in cloud environments. Vendors were asked if the company had any specific solutions targeted at cloud computing and to provide examples of cloud providers deploying the vendor's ADC/LB in any or all the following ways:

- Hardware solutions deployed by cloud providers to optimize their customers' experiences.
- Software or virtual appliance solutions deployed by cloud providers to optimize their customers' experiences.
- Solution that have been certified to run in a cloud provider's environment (e.g., Amazon EC2) purely at the option of the cloud provider's customer directly.
- ADC/LB solutions offered by cloud providers as a value-add service option to their customers.

Vendors with the best examples of solutions in the cloud environment received the highest marks.

Virtualization – This category looked at whether or not ADC/LB products had been certified for installation as a VM (application or virtual appliance) on the many hypervisors that are available in the industry today. Vendors with the broadest support for third-party hypervisors, such as Citrix Xen, VMware ESX, and Microsoft HyperV scored the highest in this category.

Vendor Strength

This final section examined the total vendor package. It looked at factors such as financial viability, brand, vision, channel partnerships, market commitment, and customer references. The large technology vendors clearly operate from the strongest advantage in the areas of financial strength, R&D spending and market credibility. Public pure-play companies are the most transparent. Large technology vendors have the advantage of an established brand and most likely are already on approved vendor lists, making the procurement process simpler. Private companies provide the least visibility. Smaller vendors tend to lack the brand recognition and, especially in this market, tend to rely on third-party channels such as VARs and SIs or OEM partners to sell their products. On the flip side, since channels typically sell multiple solutions from competing vendors, the smaller players have been forced to (and commonly succeed at) developing a deeper working relationship with the channel.

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EMA Radar Map for ADC/LB

The ADC/LB Radar bubble chart shown in Figure 3 shows how the twelve solutions studied in this report ranked in comparison to each other, in terms of Cost Efficiency (x axis) and Product Strength (y axis). The size of the “bubble” indicates relative measures of Vendor Strength.

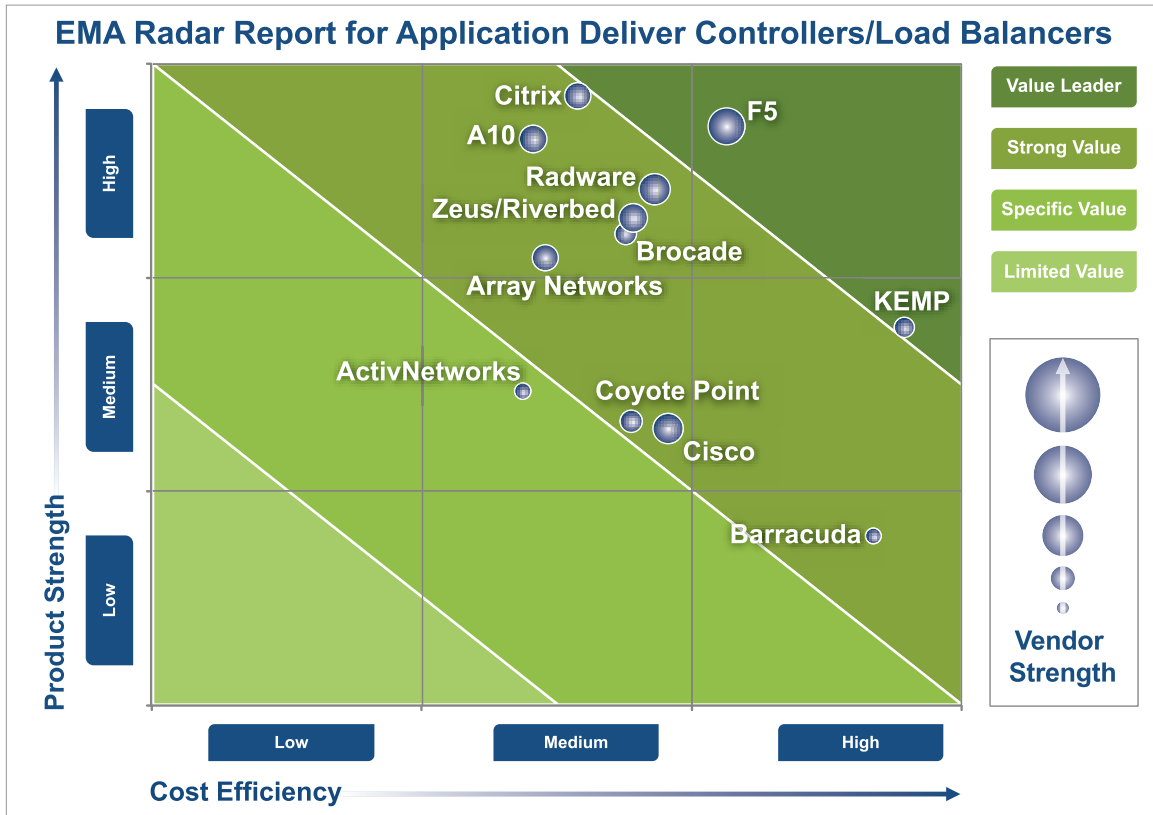


Figure 3: EMA Radar Map for ADC/LB

As can be seen in Figure 3, the vast majority of solutions reviewed in this report have clustered in the “Strong Value” band. Two vendors, F5 Networks and Kemp Technologies landed in the “Value Leader” category. The relative lack of results landing in the “Selective Value” and “Limited Value” categories reflects two overall characteristics of this research. First, this is a relatively mature marketplace, and there are few (if any) vendors coming into it that are truly “niche” players trying to focus on any single aspect of requirements. Second, the EMA Radar process is somewhat self-selective. We focus on covering the major market players and invite all others to contribute/participate on an optional basis. Those vendors who are early stage or offer ADC/LB capabilities as a non-primary product choose not to participate or contribute. Consequently, EMA believes that the list of participants represents the strongest solutions providers in this space.



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General Findings

The good news for customers is that there are plenty of ADC/LB choices on the market that are designed to fit a range of budgets and deployment environments. The bad news is that with such a range of choices and options it can be a somewhat daunting task to know where to start. And after wading through all the survey data and holding numerous conversations with customers, it is clear that unless a customer's budget is limited to a sub-\$5k price point there are still many options to choose from. Pretty much every vendor offers one or several entry-level platforms. The important thing for customers to understand is that if they do start with an entry-level solution it might have inherent product limitations, such as lacking support for more advanced features (e.g., global load balancing.) Also, it is necessary to understand the upgrade path, such as whether or not a particular product model can be expanded, either through the addition of modules or by clustering, and in doing so if they all have to be the same model to work together. The products tended to fall into two types of configuration designs: a-la-cart or all-inclusive. The all-inclusive models usually mean there are no additional licensing costs while a-la-carte is more of a Chinese menu design in which features and functions have distinct and separate pricing. While this can make product comparisons difficult, it does provide a range of choices since no two deployment environments are completely alike. Each and every customer has a unique set of needs, criteria and in-house expertise which will ultimately affect which solution will work best in their environment. There is really no right or wrong approach – it is more a matter of matching the technology, vendor, and feature set to specific business and technical requirements.

As much as it would be nice to consider this the answer to all IT ills, it is not enough to simply throw an ADC/LB at an application performance problem. Depending on the exact business problem that needs to be solved, some solutions will be a better fit than others. For example, if the challenge is legacy custom applications that were not written and designed for Internet deployment (a so called “crappy app”) there will likely be a need for custom tweaks to the ADC/LB to get the best possible performance. This brings up two points in considering an ADC/LB solution: First, how customizable is the ADC/LB? Are modifications easy to make and does it require learning a new scripting language? If so, does (or can) the team have the in-house expertise to support that type of deployment? Also, as is often the case with something that is homegrown, there is no outside expertise regarding the design and quirks of these types of applications, so a greater degree of hand holding from the ADC/LB vendor may be required to get things running smoothly. This is just one of many examples we came across in working on this study. It was very clear the IT departments that had the best handle on the business problem they needed to solve and all the technology and organizational piece parts that came into play, and then built a core list of ADC/LB requirements from that knowledge were the most satisfied with their ADC/LB solutions. Others, through trial and error, found that some solutions just did not meet all of their needs and had moved away from one solution in favor of another. It was obvious that in seeking an ADC/LB, practitioners need to do their homework and not let price be the sole determining factor.

Also, this study confirmed that ADC/LB products are still primarily considered network devices. The networking team often conducted the initial research and testing, and was almost always directly involved in deployment and ongoing maintenance however, conversations with customers revealed that this is the sort of technology that bridges IT disciplines, because in order for these solutions to be truly effective, they require input from the application team, the Web server team, and sometimes the security team.

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Other Study Highlights:

- *Ease of Deployment* – This is an area where vendor such as Barracuda Networks, KEMP Technologies and Coyote Point have differentiated themselves. These solutions are also targeted at smaller deployments. These solutions are designed to be inexpensive, easy to install and require little or no training. This is especially important for small to mid-size organizations that have limited IT staff, budget and skill sets. For larger organizations, this can also be appealing when deploying at remote branches that have little or no on-site IT staff. Also, in some cases individual business units in larger organizations have their own discrete IT budgets, and these solutions tend to fall in price bands that would might not require higher-level signoff for purchase.
- *Product warranty* – The majority of vendors offer a 90-day hardware warranty, but a few vendors, such as Brocade, only offer a 60-day hardware warranty. Zeus/Riverbed, since it is pure software, only has a 30-day warranty. Coyote Point offers a standard 90-day warranty on their entry-level model, but a full year warranty on all other models. KEMP Technologies and Barracuda Networks offer a full year hardware warranty on all their hardware models.
- *Form Factors* – As mentioned previously, this market has been and continues to be hardware-based first and foremost, but that being said it is important to note there are different form factors. The most popular deployment method is the hardware appliance, but other hardware form factors such as blade or chassis models exist as well. The chassis designs are high capacity models that can be expanded with the addition of modules or cards – F5 Networks, Brocade, and Radware all offer these form factors. Cisco offers a blade or card that is designed to plug into their networking products, thereby leveraging a common backplane. Software versions come in two flavors: virtual appliances or (in the case of Zeus/Riverbed) software that can be installed on UNIX, Linux, or Solaris hardware platforms. Radware offers a hybrid platform that is made up of a dedicated hardware appliance running its own proprietary hypervisor with multiple virtual appliances, which are targeted at cloud providers and/or service providers who require support for multi-tenancy deployments.
- *Most Common Compliant* – “Lack of reporting” was a lament we heard frequently from customers. The position that these solutions occupy in the data center allows them to collect a wide range of data that is useful to the operations team. Understandably the focus is on the ADC/LB feature and functionality, but a true point of differentiation would be to either build or team up with a third-party network management vendor and generate comprehensive reporting on application performance, network traffic, etc. Some progress can be acknowledged in this area, such as the Citrix Systems’ AppFlow initiative; however, these are generally the first small steps down a much longer road.

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Distribution of Results

The results shown in Figure 3 illustrate a large cluster of vendors with very high product strength. This cluster is made up mostly of well-known IT vendors who have made a name for themselves specifically in the ADC/LB market (such as F5 Networks and Radware) or in the broader high-tech arena (such as Citrix, Brocade, and Riverbed). This speaks to the maturity of the market and the evolution of the products themselves – they have largely moved beyond basic load balancing functionality to take on a richer set of features that can meet the demands of today’s ever changing, complex, IP-based computing environments. Other vendors that do not offer the same feature breadth and depth are focused more intently on other priorities, such as total solutions cost (KEMP, Barracuda, Coyote Point), or load balancing as a complementary solution to their core product line (such as networking in the case of Cisco) or security (Barracuda). As a result many of these products do not need to compete on a feature-by-feature basis. A few migrate towards the extreme edges of the distribution. For examples, KEMP Technologies is not as well known as many of the other providers, but enjoys a cost advantage due to their pricing structure while still offering a relatively strong set of product capabilities. Smaller, non-U.S.-based players such as ActivNetworks tend to cater to the needs of a core set of customers (in this case both telco as well as enterprise) and also thus avoid the need to compete with the primary field on a feature-by-feature basis.



Value Leaders

Value Leaders are those vendors who have assembled the best combinations of product strength and cost efficiency. Two ADC/LB vendors emerged as value leaders as a result of this analysis:

F5 Networks – F5 is far and away the market sales leader with over \$800 million in annual revenue. The company has a very strong established brand and reputation with their BIG-IP product line. F5 has built a solution that is known to be reliable, scalable and that will not fail in the data center. Vendors compare themselves to F5, making F5 the undisputed team to beat in the ADC/LB field and every practitioner we talked to during this study was familiar with the BIG-IP product offering. F5 combines scale, feature set, and reliability to set the standard by which all other solutions are measured and this was proven in both the survey results as well as backed up with conversations from customers of ADC/LBs across the board – not just F5 customers.

KEMP Technologies – KEMP is a small, private, pure-play ADC/LB vendor that entered the market in 2003. Since KEMP’s pricing is readily available on the Web site, a quick glance indicates that this is KEMP’s primary area of differentiation. The price point is ideal for small and medium-size businesses as well as larger organization at the departmental or division level with their own discretionary IT budget to purchase a device. What is most notable is KEMP’s ability to pack as many features as they have into their LM family of products, given the price points at which they sell.

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Strong Value

The majority of the solutions reviewed in this EMA Radar fall into the Strong Value category, most with strong rankings in product strength, sometimes providing a tradeoff in cost efficiency. Solutions are listed below in order of their product strength ratings, beginning with the highest.

Citrix Systems – Citrix specializes in application delivery, mostly by means of their well-known desktop hosting solutions. Since Citrix specializes in central hosting servicing multiple external end users, ADC/LBs are a natural extension of their product offering and figure front and center in their broader application delivery story aimed at workplace access anywhere, anytime, from any device. Citrix’s NetScaler product line originally came about through acquisition, but it is now a core part of their broader solutions. The company has put considerable R&D into the products and directly integrated them into both their virtualization and cloud stacks. Further, Citrix has taken the “all in one” and “pay as you grow” approaches to licensing, thus simplifying the procurement process, providing a smooth growth path, and bringing their full feature set to bear for every customer.

A10 Networks – A10 came about as the next-generation ADC/LB brainchild of one of the original Foundry Networks co-founders. A10 implemented an all-inclusive pricing and licensing model as a primary point of differentiation versus others’ a-la-carte approach to pricing and licensing. A10 showed solid product strength by demonstrating exceptional scale and breadth of features that were also easy to maintain and manage. The company also goes to great lengths to be approachable and easy to work with for both customer and channel partners, and the reference customers EMA contacted all spoke very highly about the quality of their relationships with the vendor.

Radware – Radware is based in Israel, but does also have a headquarters located in the U.S. Radware is one of the very earliest entrants in this market, along with Cisco Systems and F5 Networks. The addition of the Alteon product line in 2009 (acquired from Nortel Networks) effectively doubled Radware’s ADC/LB product offerings. Radware continues to sell and support both the legacy and Alteon solutions. The Radware Alteon product line demonstrated highly competitive feature sets and were called out by their customers as being extremely solid and high performing. Further, Radware has embraced virtualization technologies directly within their product architecture, introducing a hybrid solution that provides the multi-tenancy of a hypervisor approach on a dedicated hardware platform. Finally, Radware has a broad set of third-party technology partnerships and certifications that gave them one of the strongest third-party integration stories.

Brocade Communication Systems – Brocade is a \$2 billion data and storage network hardware infrastructure manufacturer, so ADC/LBs are a logical fit in their overall product portfolio. Brocade’s foundation is in the area of Fibre Channel storage area networking; it was not until the acquisition of Foundry in 2008 that they jumped into the Ethernet business. Brocade has a very strong OEM channel, originally built around their storage networking products, which they expanded following the Foundry acquisition to include their Ethernet products. Consequently, several large IT vendors (such as IBM and HP) offer ADC/LB solutions based on Brocade products. While ADCs/LBs do not represent a major line item from an overall revenue perspective, the company offers a solid solution that competes favorably with the other top tier players and offers one of the highest levels of scalability we found.



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Array Networks – Array Networks, based in Milpitas, CA, was founded in 2000 under the name ClickArray, and later renamed to Array Networks in 2001. The company derives its revenue from a mix of ADC solutions as well as its Universal Access Controller and remote desktop solutions. From a straight features perspective, Array Networks stacks up very well against the other solutions reviewed in this report. Also, Array’s cloud strategy and story is stronger than most others. The company is not as broadly known in North America as others, but there is a clear reason for this. The company spent many years perfecting its highly cost efficient product design, achieving proven market success in Asia, and is now retraining it’s focus on delivering the same capabilities and price advantages to the North American market.

Zeus/Riverbed – In July 2011, Riverbed Technology acquired the only pure-play software ADC/LB vendor in the market – Zeus Technology.¹ While ADC/LB technology is not Riverbed’s core business (it is universally known for its Steelhead family of WAN optimization controllers) it is very complimentary and strategic to Riverbed’s move towards becoming more fully integrated into the application delivery IT stack. What makes the Zeus/Riverbed solution unique is that it is the only all-software ADC solution. The solution is offered as either software or as a virtual machine. This provides an ideal “build it yourself” option for a range of customers from SPs, to VARs, to SIs, to progressive IT shops. The solutions showed strong product strength despite being a software-based solution, and by far had the most diverse support for industry hypervisors. Since the solution requires selection of hardware, scalability is highly dependent on deployment details, but on the plus side this means that there is also virtually no limit to the solution’s scale on the high end.

Cisco Systems – Cisco was one of the first vendors in the early load balancer market with the Cisco LocalDirector, a product that has since been replaced with the ACE product line. The ACE products come in two form factors, hardware appliances or as a blade that that plugs into the Cisco Catalyst 6500 Series Switches and Cisco 7600 Series Routers. Despite Cisco’s relatively more focused product offering, the company has achieved second place in overall market share. Cisco’s solution is very popular among IT departments who want a common backplane and limit the number of networking platforms they have to support. The Virtual Partitioning features also make the solution very popular with service providers who seek multi-tenant capabilities as well as with enterprise IT who like the ability to segment and optimize application delivery controls on an application-by-application basis.

Coyote Point – Coyote Point is a small, private, pure-play ADC/LB vendor and was one of the early entrants in the market. Coyote Point has really focused on ease of deployment and this came through in customer conversations as a major selling feature. The combination of the price point and ease of use make it a good fit for their target audience of medium-size companies, who might otherwise have assumed that this technology was out of their reach.

Barracuda Networks – The strong suit for Barracuda is its combination of security and load balancing solutions. These combination products are popular with small to midsize companies or even branch offices of larger organizations that do not have big budgets or large on-site IT staff. Barracuda has a very strong appeal and is a good fit for its target audience, but these solutions are not designed for large-scale data center or cloud deployments that require multi-tenancy support.

¹ For more details regarding the acquisition please refer to the EMA report titled [Riverbed Expands Application Performance Portfolio with Load Balancing Acquisition](#).



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Specific Value

ActivNetworks – ActivNetworks is a small, private, pure-play ADC/LB company based in France. Its offerings are much less visible in the North America market than most of the other vendors covered in this study; however, it has a strong installed base in EMEA. ActivNetworks offers the BoostEdge products, which have been bundled to address similar but different markets – enterprise IT and telecom operators. One feature set worthy of special mention is the solution’s capabilities for optimizing video, PDF, and rich images – capabilities that are in high demand by telecom operators for reducing load on transmission networks but which are also of increasing interest to enterprise infrastructure operators.

Awards

There are several participants in this EMA Radar Report that were deemed worthy of special recognition for specific areas of strength and/or unique areas of innovation. Following are the award winners for the 2011 EMA ADC/LB Radar Report:



Best Virtualization Approach

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Best Virtualization Approach: Zeus/Riverbed

The Zeus/Riverbed Technology solution had, hands down, the widest range of virtualization platforms supported within this study. Beyond their virtual appliance offering, the software-only option also easily lends itself to use in just about any environment conceivable. Additionally, in this area, the fact that Zeus/Riverbed supports Xen was an essential factor for one of its cloud provider customers, reflecting the fact that many cloud providers have standardized on Xen as a preferred hypervisor.



Best Cloud Integration Approach

EMA Radar™ for ADCs/LBs: Q4-2011

Best Cloud Integration Approach: Citrix Systems

Citrix Systems is first and foremost a vendor whose products are targeted at application delivery. NetScaler plays a key role in the broader Citrix cloud enablement solution and is tightly integrated with other cloud-oriented Citrix products. Citrix Systems is thus unique from the other solutions providers covered here, in that its ADC technology has become an integral element of full-stack cloud solutions for both applications hosting (XenApp) as well as virtual desktop infrastructure (XenDesktop). All other solution providers were focused on application optimization strategies driven from the bottom up, whereas the Citrix strategy is very much driven from the top down.



Customer Kudos

EMA Radar™ for ADCs/LBs: Q4-2011

Customer Kudos: A10 Networks

This award goes to the vendor whose customers were overall and consistently the most pleased with both the product and their dealings with the vendor. Based on our conversation with customers and channel partners, A10 Networks has gone out of their way not only to make its products easy to deploy, all the customers and channel partners cited a responsiveness to customer needs that was above and beyond what they typically expected from a technology vendor. A10 also made special efforts in their product design and support offerings to make updates and patching simple, which makes the products easy to maintain and manage.



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Appendix A: EMA Radar Report Methodology

EMA has produced a report specially targeted at presenting and explaining EMA Radar Reports in general: *How to Use the EMA Radar Report*, EMA, April 2010. The goal is to use a combined approach for quantitatively and qualitatively evaluating providers of solutions in a particular IT management functional area and presenting their relative differences in a clear, graphical format. Also included is a detailed discussion of individual criteria and how each participating solution provider rated versus those criteria.

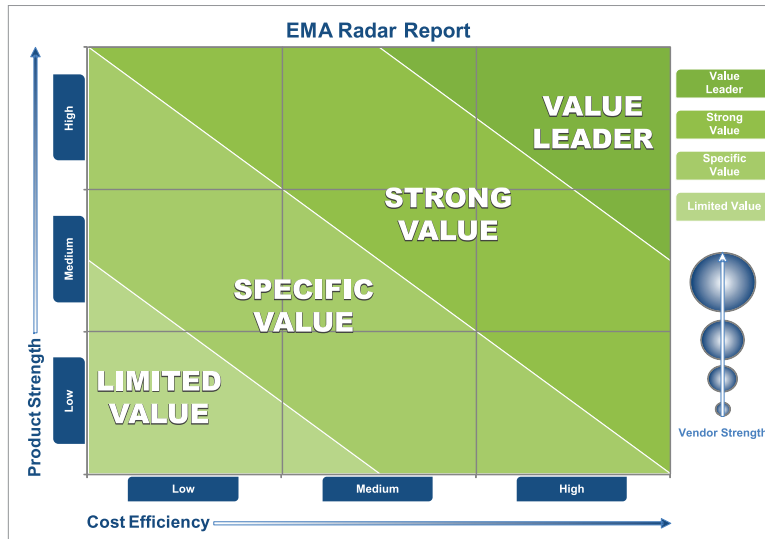


Figure 4: The EMA Radar is optimized to show how vendor solutions cluster in terms of two primary axes: Vendor Strength (architecture, integration, functionality) and Cost Efficiency (ease of administration, deployment, support & services, costs advantage)

Quoting from *How to Use the EMA Radar Report*, “No analysis of this type can tell you which vendor is best for you. The data collected for an EMA Radar Report can certainly be used to make that determination, but it must be applied to the specifics of your current environment, level of maturity, and goals and priorities. Since the authors of any given Radar Report do not have your unique specifics, the EMA Radar Report can only be a starting place and a guideline. It can inform you of the market and short-cut your process to developing a short list.”



Figure 5: Radars for each vendor solution are included in the full report and show a five-axis contrast between the average profile and the vendor in question.



About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help its clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals and IT vendors at www.enterprisemanagement.com or blogs.enterprisemanagement.com. You can also follow EMA on [Twitter](#) or [Facebook](#).

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