

Vendor Landscape: Application Delivery Controllers

The alphabet of application performance starts with ADC.

Introduction

Application delivery controllers (ADCs) only vaguely resemble the load balancers they started as. With a wide array of features coming from each vendor, it is important to evaluate the market before choosing a solution.

This Research Is Designed For:

Enterprises seeking an application delivery controller solution.

Their ADC use case may include:

- **Implementing an ADC solution** in the data center.
- **Enhancing reliability** of applications for both internal and external use.
- **Improving security** on corporate websites.

This Research Will Help You:

- ✓ Understand what's new in the ADC market.
- ✓ Evaluate ADC vendors and products for your enterprise needs.
- ✓ Determine which products are most appropriate for particular use cases and scenarios.

Executive Summary

Info-Tech evaluated nine competitors in the Application Delivery Controller market, including the following notable performers:

Champions:

- **F5** is a robust solution with the most throughput and the largest feature set.
- **Citrix** is a strong vendor with a flexible appliance.
- **Riverbed** is fully virtualized, and can be deployed almost anywhere.

Value Award:

- **Fortinet** offers a robust device at an entry level price, and the most value per dollar spent of any other vendor in this report.

Trend Setter Award:

- **A10** offers a 150 Gbps throughput appliance at 1 RU in size, providing the most efficient appliance on the market.

Info-Tech Insight



1. Avoid doubling up on features:

Features from other network optimization appliances, like SSL Acceleration and IPv6 migration, are also available with ADCs. Be aware of paying twice for the same function.

2. Flexibility is key:

Business growth is inevitable. Look for solutions that can match growth with minimal disruption to internal IT systems.

3. Don't pay for what you don't need:

Set up evaluations of solutions and carefully determine needs. A flexible solution will be able to meet throughput needs as the business grows without over-paying.

Market Overview

How it got here

- Before the ADC, server traffic load became too great for single servers to handle. The need for several servers, connected together as one, became a necessity to keep business applications running optimally.
- To facilitate this need, a new market formed, and load balancers were introduced to businesses with servers that were running at capacity.
- As the market grew, it became necessary to differentiate solutions on more than just throughput. The ability to cache content as it passes through the appliance, compress information for faster delivery, and offload server processes became differentiating features, then turned into standards as feature adoption grew.
- As the functionality changed, so too did the name, and application delivery controllers became the new standard for load balancing.

Where it's going

- Virtual and software appliances are quickly becoming standard, with most major vendors offering soft ADCs that match the functionality and throughput of physical appliances.
- Security has remained a large concern of ADC vendors; 2048-bit SSL offload/acceleration has become the new standard, with 4096-bit being adopted by more and more vendors.
- SDN is trending across all network devices and ADCs are no different as vendors take advantage of SDN functionality to further improve the scalability and programmability of ADCs.

As the market evolves, capabilities that were once cutting edge become default and new functionality becomes differentiating. Global server load balancing has become a Table Stakes capability and should no longer be used to differentiate solutions. Instead focus on appliance clustering and multi-tenancy to get the best fit for your requirements.

Application delivery controllers vendor selection / knock-out criteria: market share, mind share, and platform coverage

- ADCs have become more than load balancing and content compression. Inclusion in this Vendor Landscape required advanced features for securing servers from outside threats and offloading server functionality to decrease server load.
- For this Vendor Landscape, Info-Tech focused on those vendors that offer broad capabilities across multiple platforms and that have a strong market presence and/or reputational presence among mid- and large-sized enterprises.

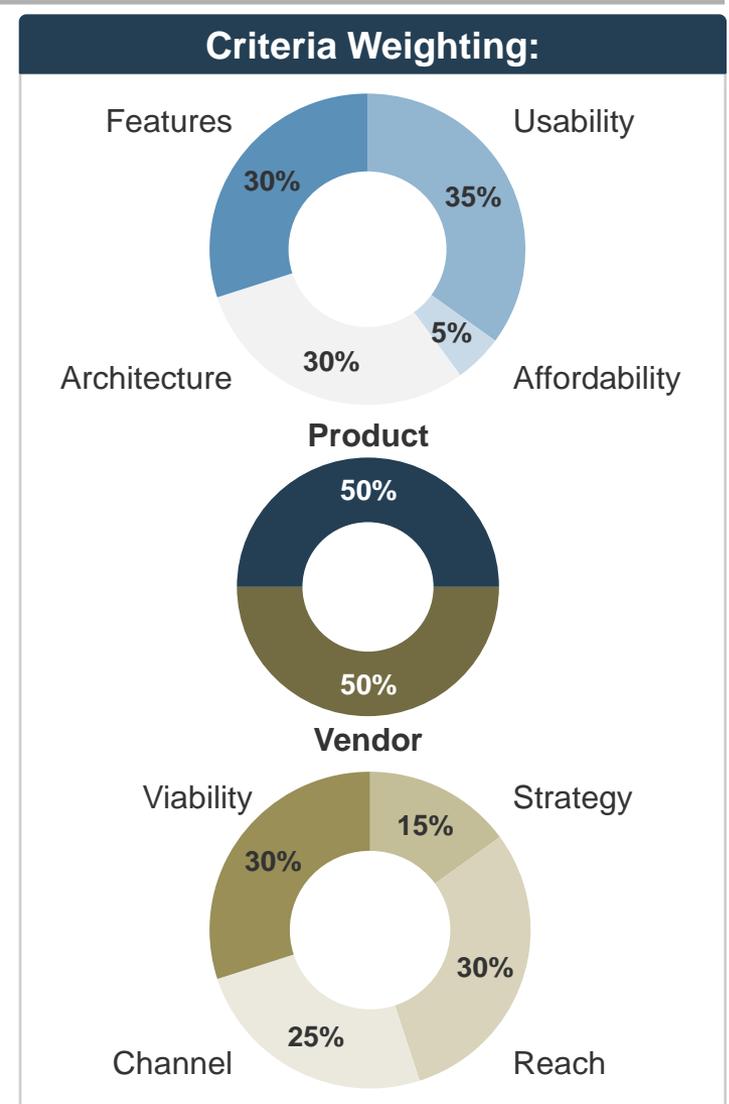
Included in this Vendor Landscape:

- **A10 Networks.** A10 focuses on Application Networking by providing organizations with the tools to accelerate, optimize, and secure their applications.
- **Array Networks.** A networking vendor with a focus on ADCs, secure access gateways, and WAN optimization controllers.
- **Barracuda Networks.** Recently rebranded, Barracuda's Load Balancer ADC still has security at the forefront of development.
- **Brocade.** A devoted networking vendor that assists in the transition to a virtualized enterprise.
- **Citrix Systems.** Offers a strong appliance with a renewed focus on creating a scalable solution.
- **Fortinet.** Offers a high-end appliance to the mid-market ADC space.
- **F5 Networks.** Offers a scalable product with additional feature modules that can be added as requirements evolve.
- **Radware.** Offers an appliance suited to natively fit virtualized and hybrid data centers.
- **Riverbed Technology.** Leads the way in virtual appliances optimized to work in a virtual environment.

Application delivery controllers criteria & weighting factors

Product Evaluation Criteria	
Features	The solution provides basic and advanced feature/functionality.
Usability	The end user and administrative interfaces are intuitive and offer streamlined workflow.
Affordability	Implementing and operating the solution is affordable given the technology.
Architecture	The solution provides high throughput and high scalability.

Vendor Evaluation Criteria	
Viability	Vendor is profitable, knowledgeable, and will be around for the long term.
Strategy	Vendor is committed to the space and has a future product and portfolio roadmap.
Reach	Vendor offers global coverage and is able to sell and provide post-sales support.
Channel	Vendor channel strategy is appropriate and the channels themselves are strong.



The Info-Tech Application Delivery Controllers Vendor Landscape

The Zones of the Landscape

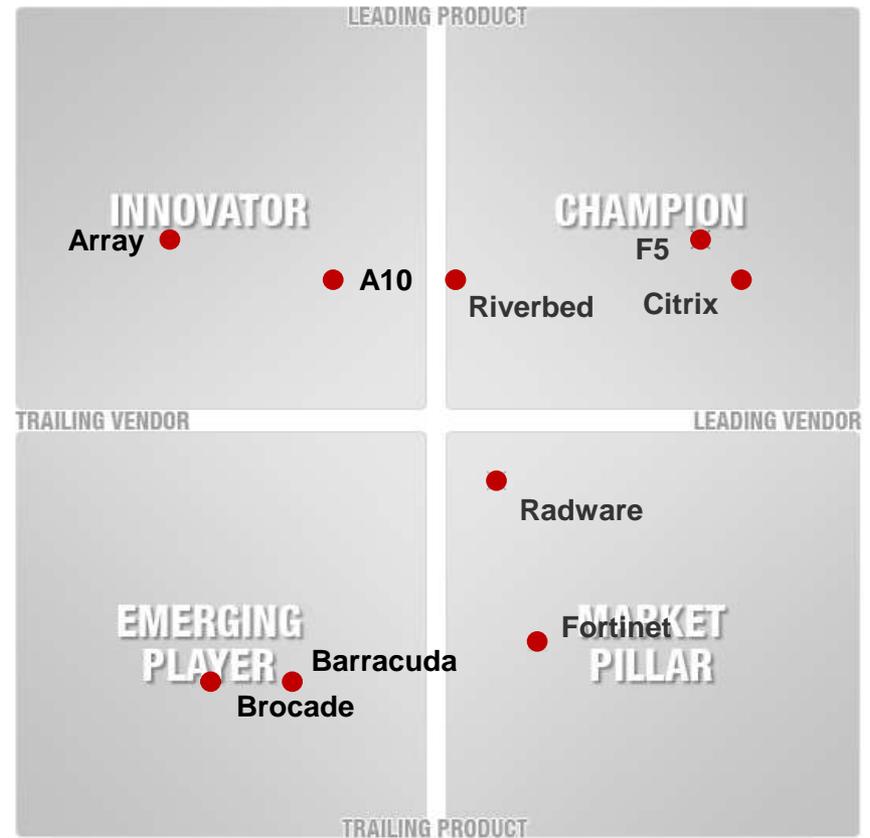
Champions receive high scores for most evaluation criteria and offer excellent value. They have a strong market presence and are usually the trend setters for the industry.

Market Pillars are established players with very strong vendor credentials, but with more average product scores.

Innovators have demonstrated innovative product strengths that act as their competitive advantage in appealing to niche segments of the market.

Emerging Players are comparatively newer vendors who are starting to gain a foothold in the marketplace. They balance product and vendor attributes, though score lower relative to market Champions.

The Info-Tech Application Delivery Controllers Vendor Landscape:



For an explanation of how the Info-Tech Vendor Landscape is created, see [Information Presentation – Vendor Landscape](#) in the Appendix.

Balance individual strengths to find the best fit for your enterprise

	Product					Vendor				
	Overall	Features	Usability	Afford.	Arch.	Overall	Viability	Strategy	Reach	Channel
A10 Networks										
Array Networks										
Barracuda Networks										
Brocade*										
Citrix Systems										
Fortinet										
F5 Networks										
Radware										
Riverbed Technology										

*The vendor declined to provide pricing and publicly available pricing could not be found.

For an explanation of how the Info-Tech Harvey Balls are calculated, see [Information Presentation – Criteria Scores \(Harvey Balls\)](#) in the Appendix.

The Info-Tech Application Delivery Controllers Value Index

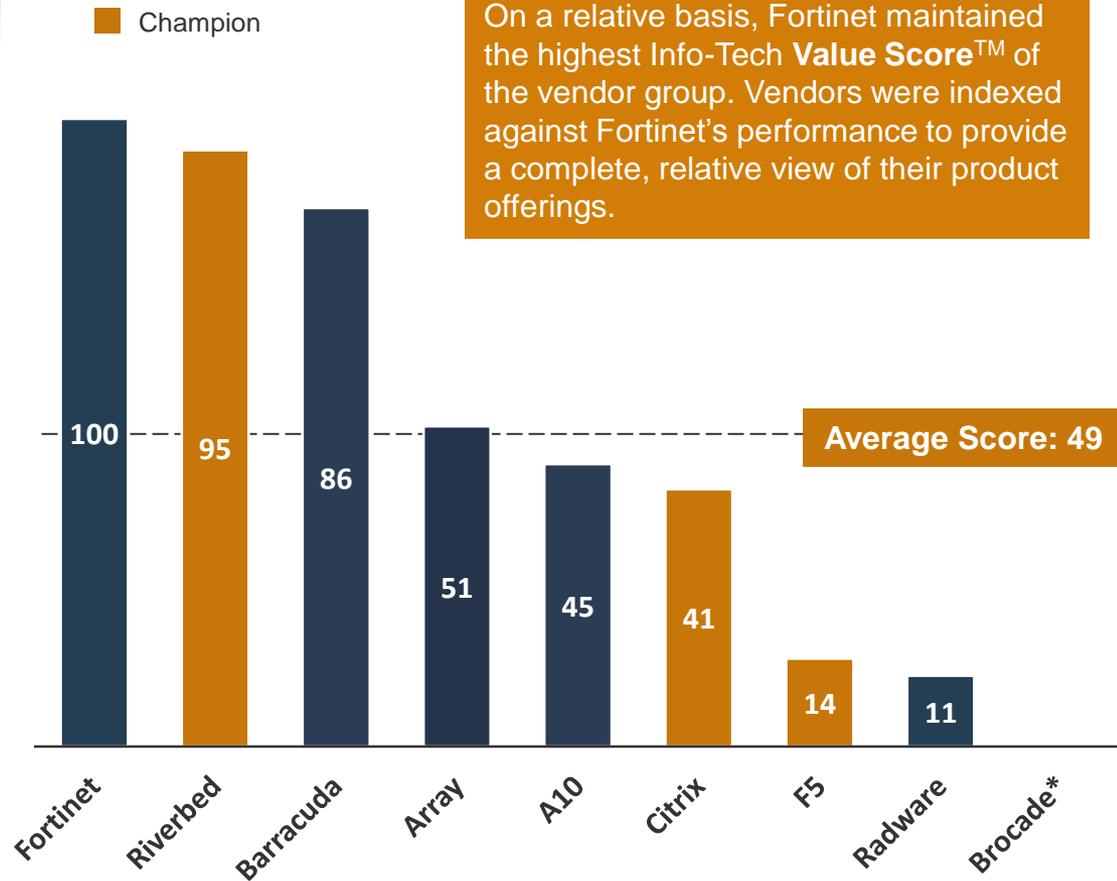
What is a Value Score?

The Value Score indexes each vendor's product offering and business strength **relative to their price point**. It **does not** indicate vendor ranking.

Vendors that score high offer more **bang-for-the-buck** (e.g. features, usability, stability, etc.) than the average vendor, while the inverse is true for those that score lower.

Price-conscious enterprises may wish to give the Value Score more consideration than those who are more focused on specific vendor/product attributes.

*The vendor declined to provide pricing and publicly available pricing could not be found.



For an explanation of how Price is determined, see [Information Presentation – Price Evaluation](#) in the Appendix.

For an explanation of how the Info-Tech Value Index is calculated, see [Information Presentation – Value Index](#) in the Appendix.

Table Stakes represent the minimum standard; without these, a product doesn't even get reviewed

The Table Stakes

Feature	What it is:
Virtual Server Load balancing	Able to load balance between virtual servers.
IPv6 Support	Ability to support and migrate to IPv6 connections.
Global Server Load Balancing	Ability to balance loads over servers in different locations.
DDoS Protection	Includes protection against malicious DDoS attacks while allowing legitimate traffic through.
Application Acceleration	Can increase performance on the application level.

What Does This Mean?

The products assessed in this Vendor Landscape™ meet, at the very least, the requirements outlined as Table Stakes.

Many of the vendors go above and beyond the outlined Table Stakes, some even do so in multiple categories. This section aims to highlight the products' capabilities **in excess** of the criteria listed here.

Advanced Features are the capabilities that allow for granular market differentiation

Scoring Methodology

Info-Tech scored each vendor's features offering as a summation of their individual scores across the listed advanced features. Vendors were given one point for each feature the product inherently provided. Some categories were scored on a more granular scale with vendors receiving half points.

Advanced Features

Feature	What we looked for:
Web Application Firewall	Able to control an application or service's input, output, and accessibility to the network.
Custom Scripting	Allows for custom programming of features or rules to alter behavior of appliance.
SSL Acceleration	Able to take on part of the load from 2048-bit SSL Encryption/Decryption.
Appliance Clustering	Allows for the management of several devices as if they were a single unit.
SDN Ready	Contains an open API that allows for programmability alongside the network.
Application Template	Templates for the optimization of specific applications are available for quick deployment.
Advanced Security	Includes DNS Application Firewall, SSL Intercept, and Session Protection.
Multi-Tenency	The ADC can be partitioned to create separate virtual ADCs for each application.

For an explanation of how Advanced Features are determined, see [Information Presentation – Feature Ranks \(Stoplights\)](#) in the Appendix.

Each vendor offers a different feature set; concentrate on what your organization needs

	Evaluated Features							
	Web Application Firewall	Custom Scripting	SSL Acceleration	Appliance Clustering	SDN Ready	Application Template	Advanced Security	Multi-Tenancy
A10 Networks	●	●	●	●	●	●	●	●
Array Networks	●	●	●	●	●	●	●	●
Barracuda Networks	●	●	●	●	●	●	●	●
Brocade	●	●	●	●	●	●	●	●
Citrix Systems	●	●	●	●	●	●	●	●
Fortinet	●	●	●	●	●	●	●	●
F5 Networks	●	●	●	●	●	●	●	●
Radware	●	●	●	●	●	●	●	●
Riverbed Technology	●	●	●	●	●	●	●	●

Legend ● =Feature fully present ● =Feature partially present/pending ● =Feature Absent

For an explanation of how Advanced Features are determined, see [Information Presentation – Feature Ranks \(Stoplights\)](#) in the Appendix.

Large enterprises need more power than smaller organizations

These vendors offer the most throughput in a single appliance than any of the others.

1 Throughput

2

3

Why Scenarios?

In reviewing the products included in each Vendor Landscape™, certain use cases come to the forefront. Whether those use cases are defined by applicability in certain locations, relevance for certain industries, or as strengths in delivering a specific capability, Info-Tech recognizes those use cases as Scenarios, and calls attention to them where they exist.

Exemplary Performers



F5's VIPRION chassis supports 640 Gbps of throughput, 10 million L4 CPS and 288 million L4 concurrent connections.



A10 offers the Thunder 6430 with 150 Gbps of throughput in a 1 RU appliance. Array Networks and Citrix both offer 120 Gbps in a single appliance.



Riverbed's Stingray virtual appliance can be licensed for unlimited throughput. Only organizations with the hardware to support it can take advantage of this option, however.

For an explanation of how Scenarios are determined, see [Information Presentation – Scenarios](#) in the Appendix.

2048-bit encryption acceleration is standard; 4096-bit is better

These vendors have taken SSL acceleration to the next level by offering 4096-bit SSL acceleration.

1

2 Encryption

3

Why Scenarios?

In reviewing the products included in each Vendor Landscape™, certain use cases come to the forefront. Whether those use cases are defined by applicability in certain locations, relevance for certain industries, or as strengths in delivering a specific capability, Info-Tech recognizes those use cases as Scenarios, and calls attention to them where they exist.

Exemplary Performers



FORTINET

riverbed



For an explanation of how Scenarios are determined, see [Information Presentation – Scenarios](#) in the Appendix.

Some vendors offer more scale than others

Growing organizations need room to expand capacity. These vendors offer the ability to cluster up to 32 separate appliances into one.

1

2

3 Scalability

Why Scenarios?

In reviewing the products included in each Vendor Landscape™, certain use cases come to the forefront. Whether those use cases are defined by applicability in certain locations, relevance for certain industries, or as strengths in delivering a specific capability, Info-Tech recognizes those use cases as Scenarios, and calls attention to them where they exist.

Exemplary Performers



For an explanation of how Scenarios are determined, see [Information Presentation – Scenarios](#) in the Appendix.

F5 dominates the ADC market with BIG-IP and continues to lead the way in innovation

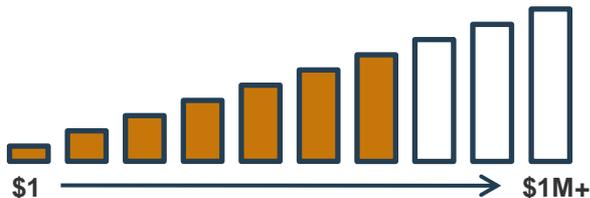


Champion

Product: Big-IP
Employees: 3,355
Headquarters: Seattle, WA
Website: f5.com
Founded: 1996
Presence: NASDAQ: FFIV



3 year TCO for this solution falls into pricing tier 7, between \$100,000 and \$250,000



Pricing provided by vendor

Overview

- F5 is the market leader in the ADC space and dominates in terms of mindshare. F5 takes the philosophy that the ADC is not just a product, but a platform that continually evolves to better deliver applications.

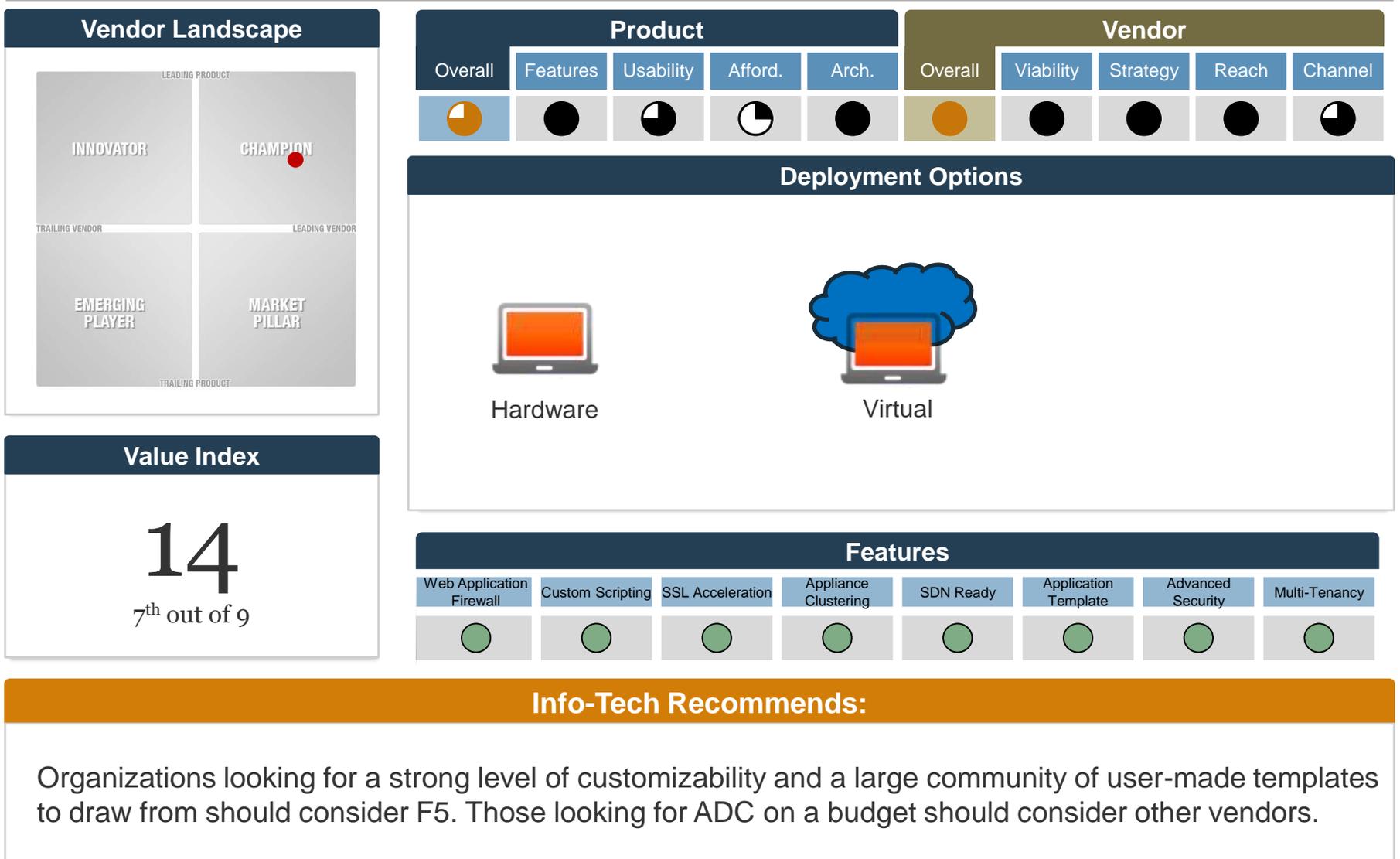
Strengths

- F5 offers a large amount of customization through iRules, iCall, iControl, and iApps. Since its implementation, F5 has built a large customer-based community of developers that offer their code to other customers.
- F5's VIPRION 8-blade chassis is capable of supporting up to 640Gbps of throughput, 10 million Layer 4 CPS, and 288 million Layer 4 concurrent connections.

Challenges

- F5 offers the highest priced appliance evaluated by InfoTech, but offers features as modules that can be purchased separately to keep costs lower.

BIG-IP is a powerful product tailored to enterprise class organizations



Citrix continues to innovate for fast, flexible deployments

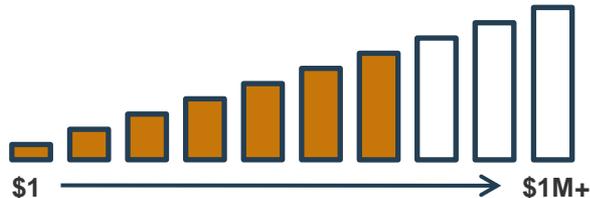


Champion

Product: NetScaler
Employees: 9,220
Headquarters: Santa Clara, CA
Website: citrix.com
Founded: 1989
Presence: NASDAQ: CTXS



3 year TCO for this solution falls into pricing tier 7, between \$100,000 and \$250,000



Pricing provided by vendor

Overview

- Citrix is dedicated to the networking space through its NetScaler product line. With the removal of ACE from the ADC market, Citrix has become Cisco's recommended vendor for ADCs.

Strengths

- Citrix's TriScale Technology allows organizations to Scale Up to increase network elasticity, Scale Out to expand capacity, and Scale In to simplify application delivery support through consolidation of ADC instances.
- AppExpert Visual Policy Builder allows for the creation of custom policies without coding by using a GUI and drop-down menus.

Challenges

- Citrix does not currently support Session Protection.

Citrix offers a flexible solution for enterprises with constantly changing network environments



Product					Vendor				
Overall	Features	Usability	Afford.	Arch.	Overall	Viability	Strategy	Reach	Channel

Deployment Options

Hardware

Virtual

Software



Features

Web Application Firewall	Custom Scripting	SSL Acceleration	Appliance Clustering	SDN Ready	Application Template	Advanced Security	Multi-Tenancy

Info-Tech Recommends:

Organizations experiencing rapid growth would be hard pressed to find fault with Citrix.

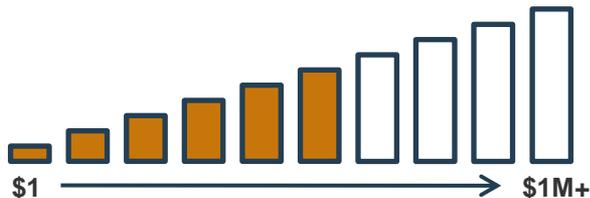
Riverbed offers one of the most robust virtual appliances on the market



Champion

Product: Stingray
Employees: 1,595
Headquarters: San Francisco, CA
Website: riverbed.com
Founded: 2002
Presence: NASDAQ: RVBD

3 year TCO for this solution falls into pricing tier 6, between \$50,000 and \$100,000



Pricing provided by vendor

Overview

- Riverbed leads the way in the virtual ADC market with its Stingray Services Controller and ADC-as-a-Service offering. It sets out to prove that software is more agile and has better ROI on commodity hardware.

Strengths

- Riverbed's "micro" ADC delivers an ADC instance per application through high-density multi-tenancy and isolation.
- Stingray can be deployed on almost any application platform (servers, virtual, cloud) thanks to its software form factor.
- Riverbed has recently released their Stingray Services Controller (SSC), allowing customers to purchase their ADC-as-a-Service.

Challenges

- Riverbed comes at a relatively high price, but customers claim the product is worth the high price tag for the functionality and benefits Stingray offers.
- Riverbed lacks a hardware appliance and has no plans in the future to offer one, but does offer a more advanced virtual appliance than the majority of its competitors.

Because of its software form factor, Stingray can be deployed virtually anywhere

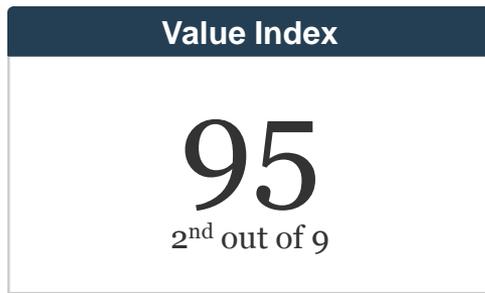


Product					Vendor				
Overall	Features	Usability	Afford.	Arch.	Overall	Viability	Strategy	Reach	Channel

Deployment Options

Virtual

Software



Features

Web Application Firewall	Custom Scripting	SSL Acceleration	Appliance Clustering	SDN Ready	Application Template	Advanced Security	Multi-Tenancy

Info-Tech Recommends:

Organizations looking to implement a high quality software or virtual appliance will find Riverbed a solid vendor. Those looking for a hardware appliance should look elsewhere.

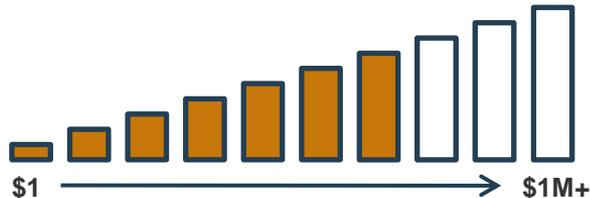
Radware offers a strong product, but falls into the upper range of cost compared to other vendors in this report

Market Pillar

Product: Alteon
Employees: 800+
Headquarters: Mahwah, NJ
Website: radware.com
Founded: 1997
Presence: NASDAQ: RDWR



3 year TCO for this solution falls into pricing tier 7, between \$100,000 and \$250,000



Pricing provided by vendor

Overview

- Radware is dedicated to securing and optimizing the delivery of networks and applications. Radware appliances are generally implemented into virtual and cloud data centers.

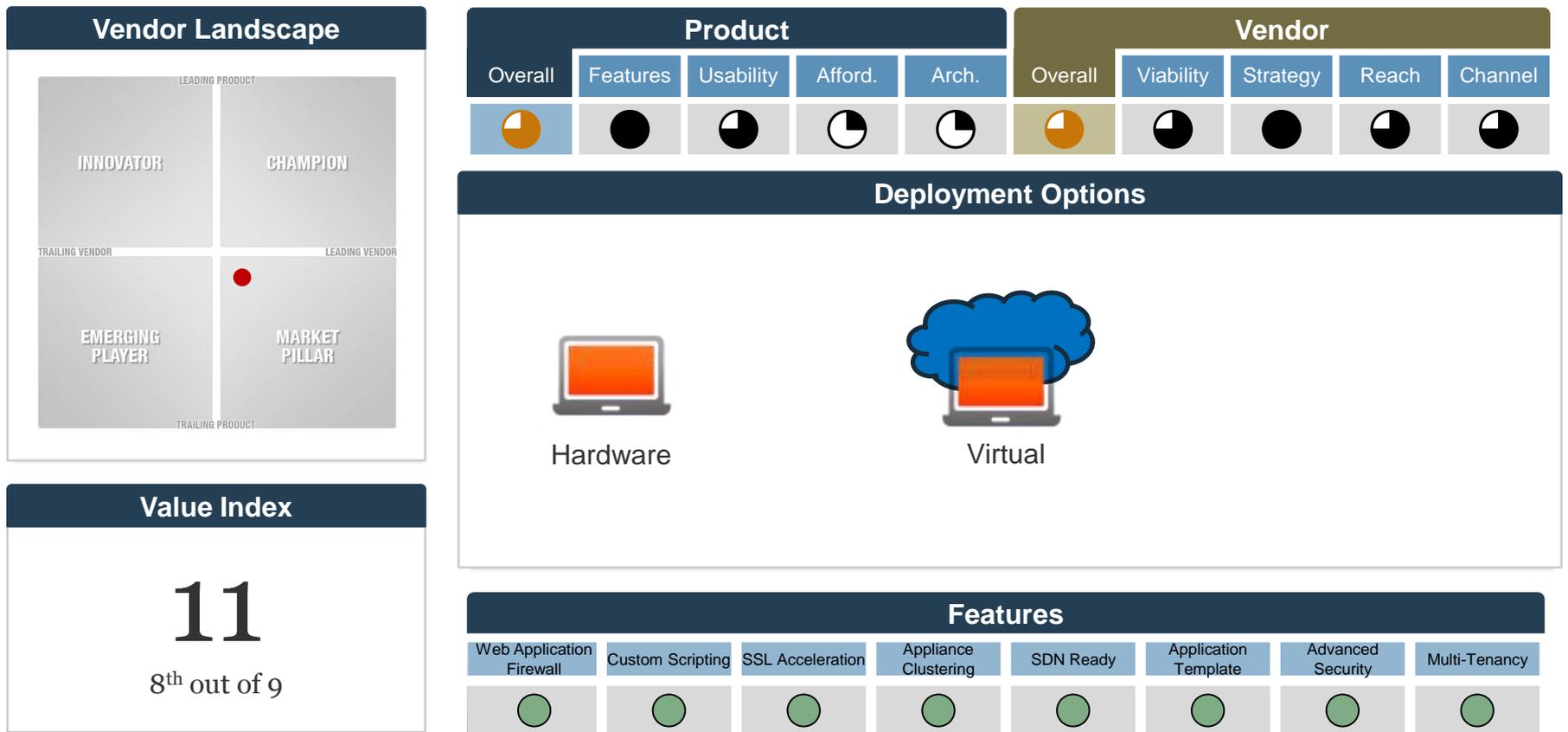
Strengths

- Radware's FastView provides Web Performance Optimization by learning usage patterns of a site and dynamically applying best practice coding techniques.
- Alteon can be managed using on-board Web UI, CLI, as well as centralized management, allowing customers to manage Alteon using their preferred method.

Challenges

- Radware does not allow for the clustering of appliances to ease management of multiple devices.
- Alteon lacks DNS Application Firewall, Session Protection, and SSL Intercept.

Alteon can fit into almost any scenario, providing flexibility in deployment and management



Info-Tech Recommends:

Smaller organizations will find Radware to be too expensive to shortlist, but organizations that can afford Alteon will find it a robust solution.

Fortinet offers an excellent entry-level product for medium-sized organizations with room to grow

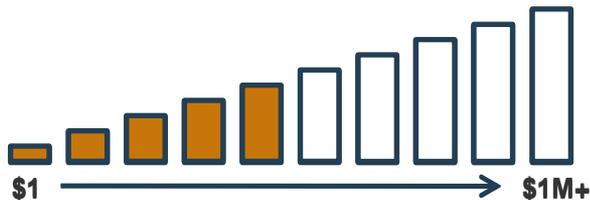


Market Pillar

Product: FortiADC
Employees: 2,200
Headquarters: Sunnyvale, California
Website: fortinet.com
Founded: 2000
Presence: NASDAQ: FTNT



3 year TCO for this solution falls into pricing tier 5, between \$25,000 and \$50,000



Pricing provided by vendor

Overview

- Fortinet entered the ADC market in mid-2010 with their FortiBalancer appliance. The recent acquisition of Coyote Point in March 2013 has added functionality as well as a large ADC customer base.

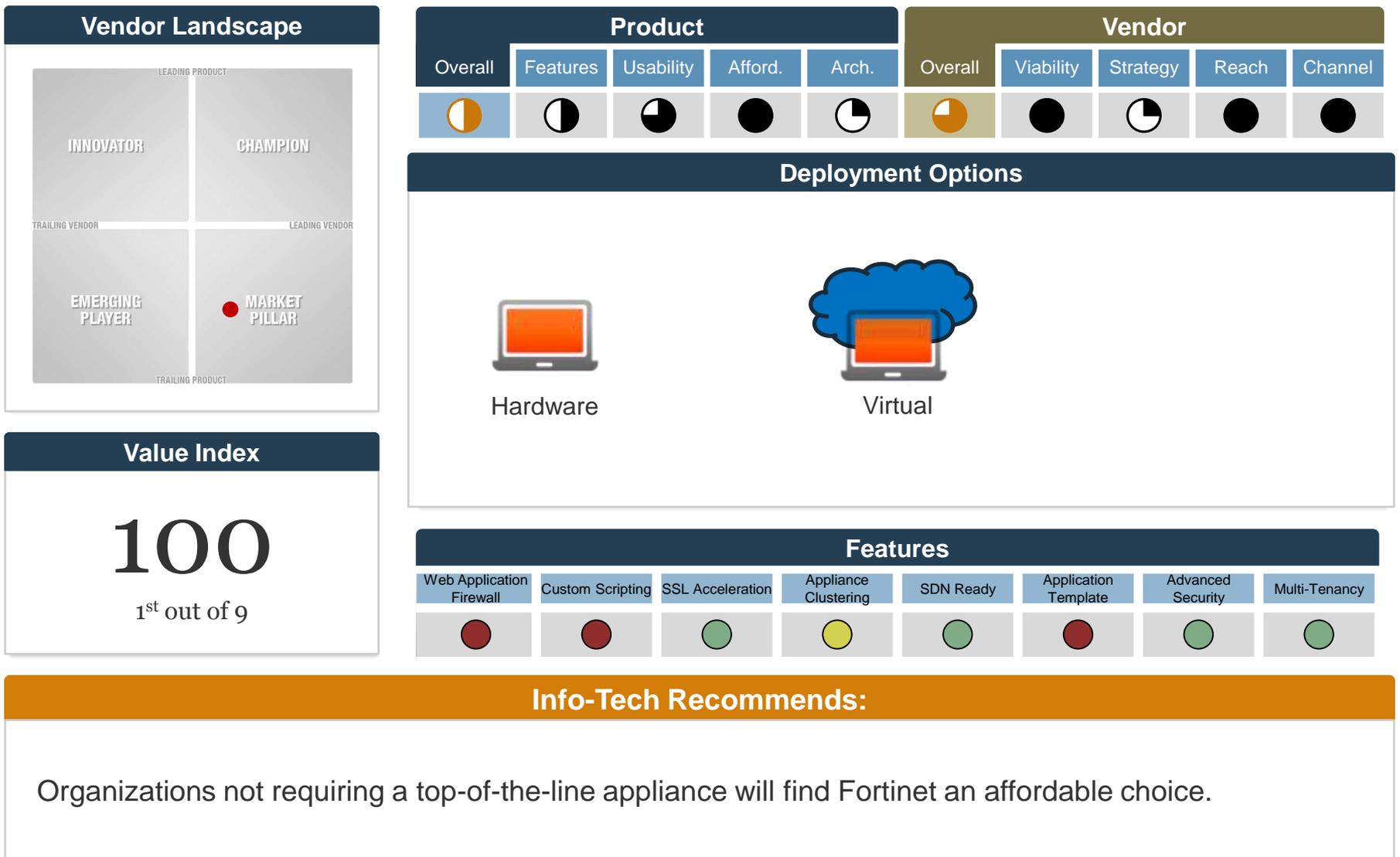
Strengths

- The Fortinet REST API allows organizations to integrate any Fortinet ADC into the data center environment while allowing for custom integration with other Fortinet products.
- Relative to other vendors in this space, Fortinet offers a low cost product with a strong feature set and mid-level throughput.
- FortiADC can be managed using either a GUI or CLI instruction set, offering users the use of their preferred management method. In the future, FortiADC will be manageable from FortiManager, Fortinet's centralized management console.

Challenges

- Fortinet lacks the high level of mindshare that many of its competitors have achieved. The acquisition of Coyote Point may begin changing this, however.
- Customers of Fortinet looking for QoS, Firewall, and Software Compression are locked into purchasing a specific model of ADC.

Fortinet offers a moderately powerful appliance at an affordable price



A10 offers a robust ADC, but must mature as a vendor before becoming a champion

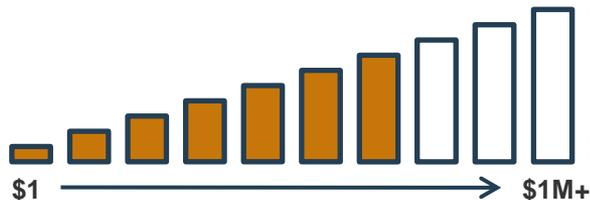


Innovator

Product: Thunder Series
Employees: 600
Headquarters: San Jose, CA
Website: a10networks.com
Founded: Q4 2004
Presence: Privately Held



3 year TCO for this solution falls into pricing tier 7, between \$100,000 and \$250,000



Pricing provided by vendor

Overview

- A10 Networks' newest line of devices, the Thunder Series ADC, offers organizations high throughput with a small footprint and an increased focus on security functionality, such as DDoS protection and Web and DNS Application Firewall.

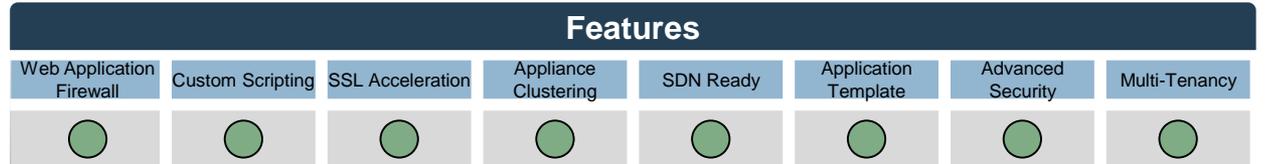
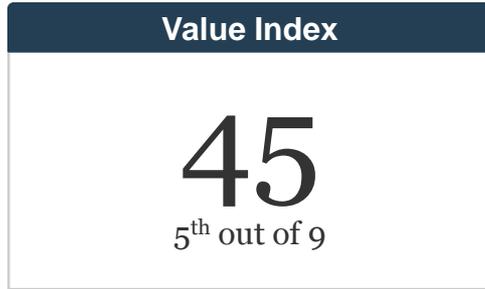
Strengths

- A10 offers incredible throughput in a small package with their 1 RU appliance capable of 150 Gbps of throughput.
- A10 is currently reporting significant growth in customers, revenue, partners, and as a company.
- Customers report a strong level of customer service from A10.
- A10 offers a simplified licensing model that includes all ADC functionality at one price. The only exceptions to this rule are the S models, which include dedicated SSL hardware.

Challenges

- A10 lacks the channel strength of some of its more established competitors.

A10's Thunder Series ADC is an affordable solution that offers a wealth of features



Info-Tech Recommends:

Organizations requiring a large amount of throughput with a small footprint will find A10 a promising vendor.

Array offers a feature-rich appliance priced for mid-sized organizations

Innovator

Product: APV Series ADC
Employees: 300+
Headquarters: Milpitas, CA
Website: arraynetworks.com
Founded: 2000
Presence: Privately Held



3 year TCO for this solution falls into pricing tier 6, between \$50,000 and \$100,000



Pricing provided by vendor

Overview

- Array is a provider of Application Delivery Networking solutions, including ADCs, WAN optimization controllers, and secure access gateways. Its ADC business is focused on supporting enterprise apps and providing scalable traffic management.

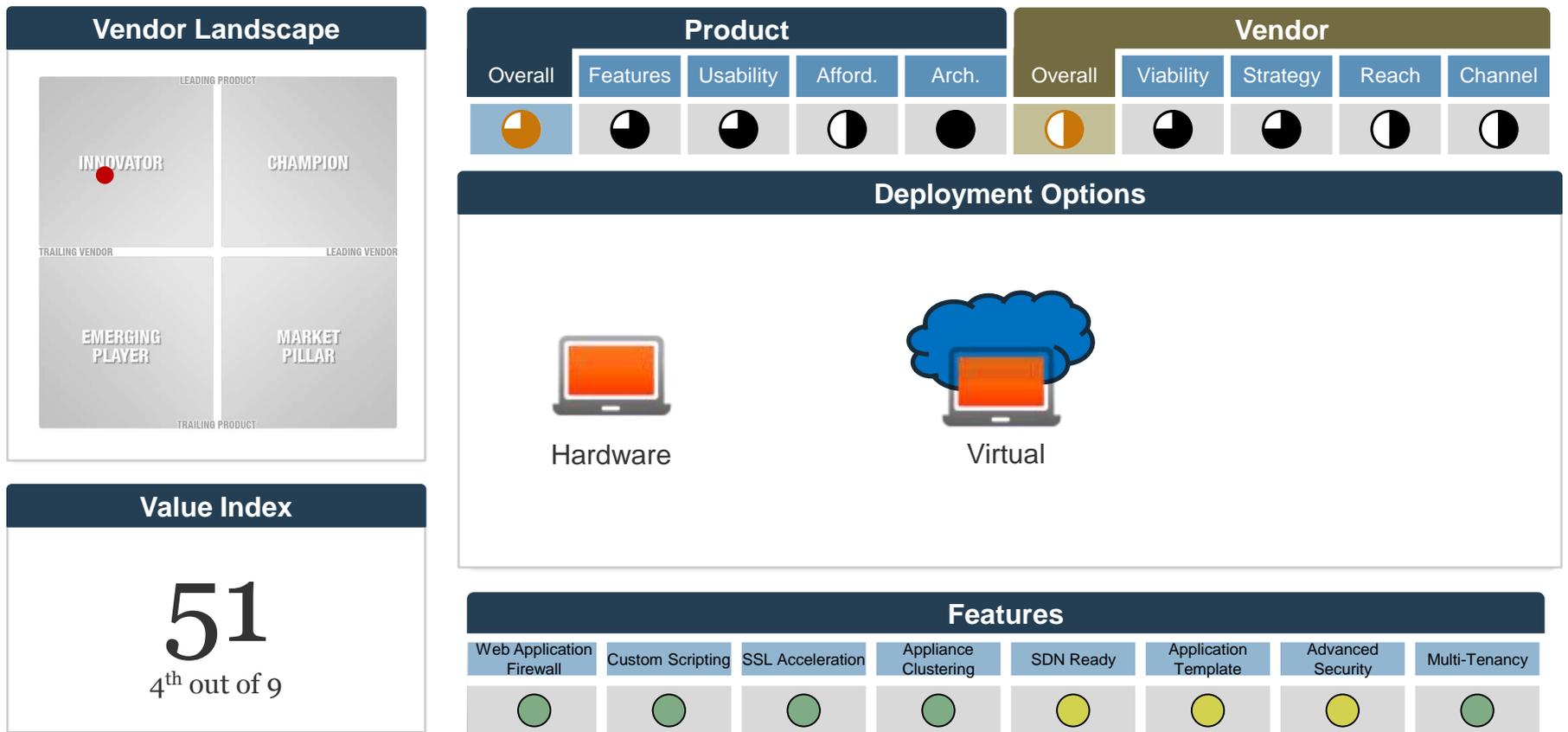
Strengths

- Array offers a highly scalable solution ranging from 1.5 Gbps to 120 Gbps, giving businesses a single platform capable of solving challenges or offering services in a wide range of environments.
- Array continues to lead the way in SSL acceleration, offering a midrange appliance capable of 25,000 SSL transactions per second that is ideal for enterprises needing to support new, more demanding security standards.

Challenges

- Array lacks the depth of application developer relationships and user community support provided by the market leader, an area it will need to shore up should it wish to sell and support applications deeper within enterprise customers.
- Although Array has added web application firewall (WAF) capability to its ADCs, functionality is not yet as robust as that offered by the market leaders. Array WAF functionality and performance may be sufficient for smaller deployments, but may not be well suited to larger, more complex deployments.

Array Networks has created an outstanding solution at a competitive price



Info-Tech Recommends:

Small organizations will find Array's price tag to be on the steep side, but for mid-sized to large enterprises, Array offers a robust appliance at a much lower cost than the competition.

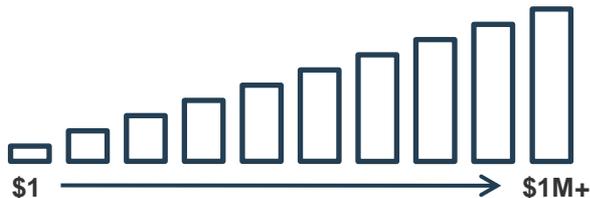
Brocade's ADX is a standard ADC that doesn't stand out in the market

Emerging Player

Product: ADX Series
Employees: 4,500
Headquarters: San Jose, CA
Website: brocade.com
Founded: 1995
Presence: NASDAQ: BRCD



The vendor declined to provide pricing, and publicly available pricing could not be found



Overview

- Brocade is a networking production company with a focus on transitioning organizations to a virtualized world through consolidation, network convergence, virtualization, and cloud computing.

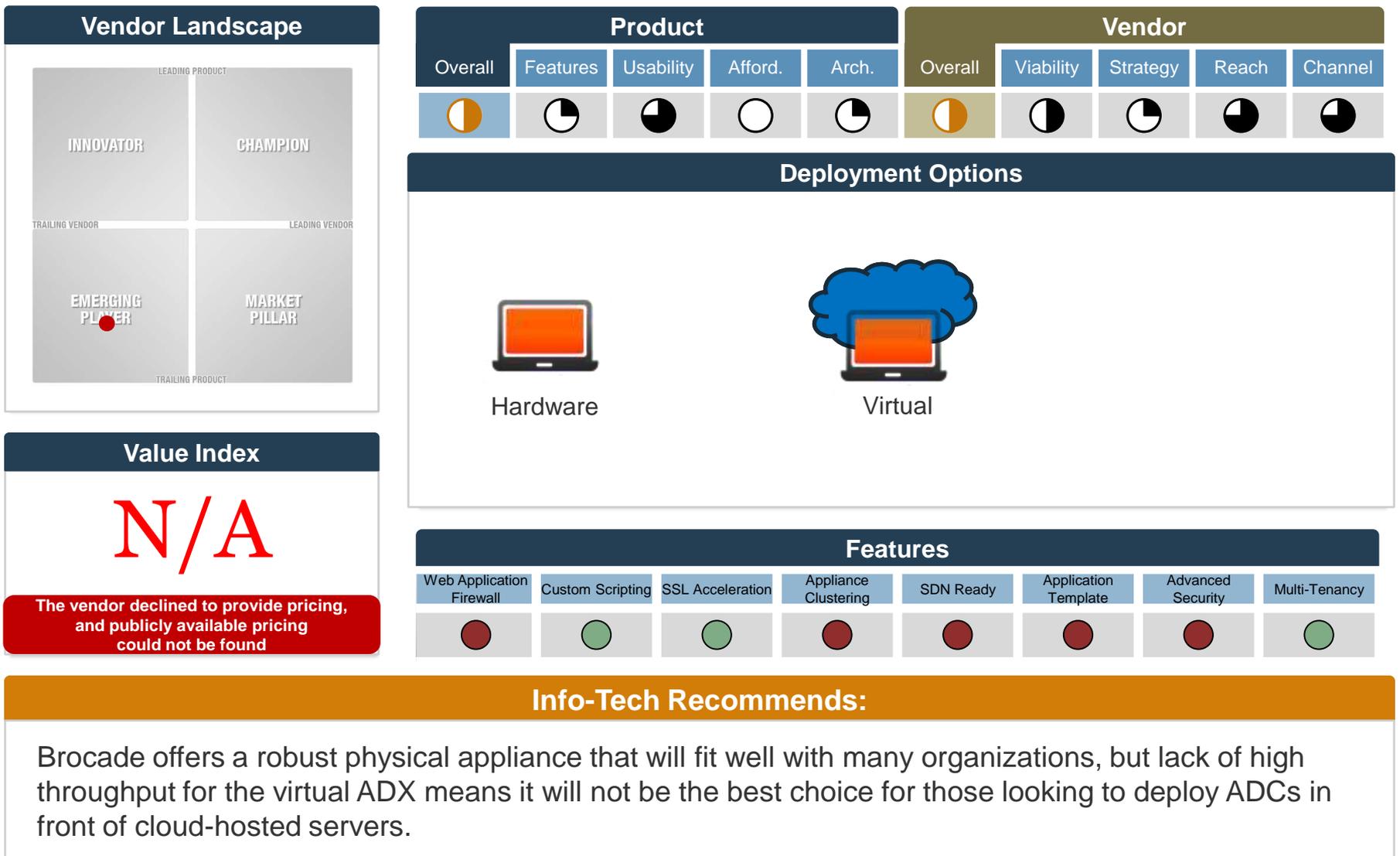
Strengths

- Brocade has built a visually pleasing user interface that is easily navigable. Users have also reported Brocade's CLI is easily learned with prior knowledge of Cisco's CLI.
- Brocade's Capacity on Demand allows ADX series switches to be quickly and easily upgraded through the use of software keys without taking the platform offline.

Challenges

- ADX lacks Web and DNS Application Firewalls, SSL Intercept, and Session Protection.
- Brocade's virtual appliance is only available with 1 Gbps of throughput, placing it much lower than the majority of Brocade's competitors.

Brocade now offers a virtual appliance, but it doesn't measure up to many competitors



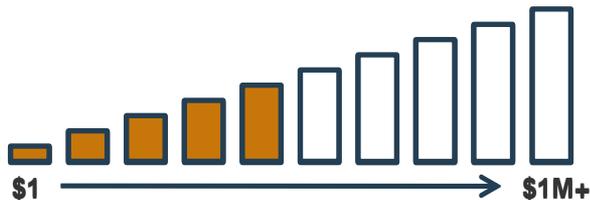
Barracuda brings a feature rich ADC to small organizations

Emerging Player

Product: Load Balancer ADC
Employees: 1,100
Headquarters: Campbell, CA
Website: barracuda.com
Founded: 2003
Presence: NASDAQ: CUDA



3 year TCO for this solution falls into pricing tier 5, between \$25,000 and \$50,000



Pricing provided by vendor

Overview

- Barracuda focuses on delivering solutions for security, storage, and application delivery. It recently integrated functionality from its Web Application Firewall to its Load Balancer to create the new, security-focused Barracuda Load Balancer ADC.

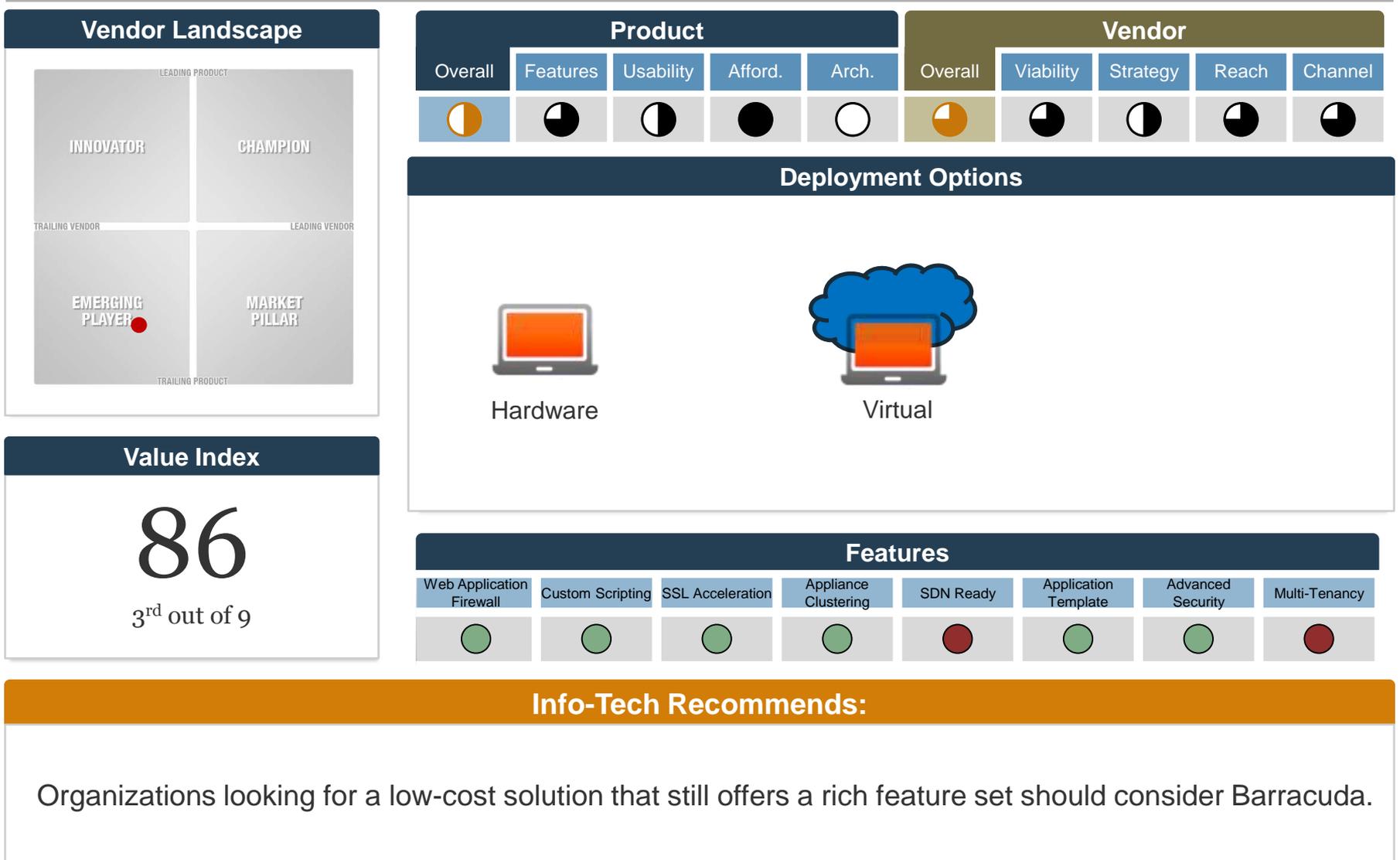
Strengths

- Barracuda offers basic ADC functionality for organizations with minimal needs, but still offers higher end appliances for organizations to grow into.
- Barracuda has seen an increase demand from customers for layer 7 application security and has begun focusing development on fulfilling that demand.
- Barracuda hosts and consistently maintains an IP Reputation Database to block threats across multiple, different Barracuda products.

Challenges

- Barracuda lacks devices capable of the same high level throughput that many other vendor's devices are capable of.

Barracuda offers a low-cost/high-value appliance for smaller organizations

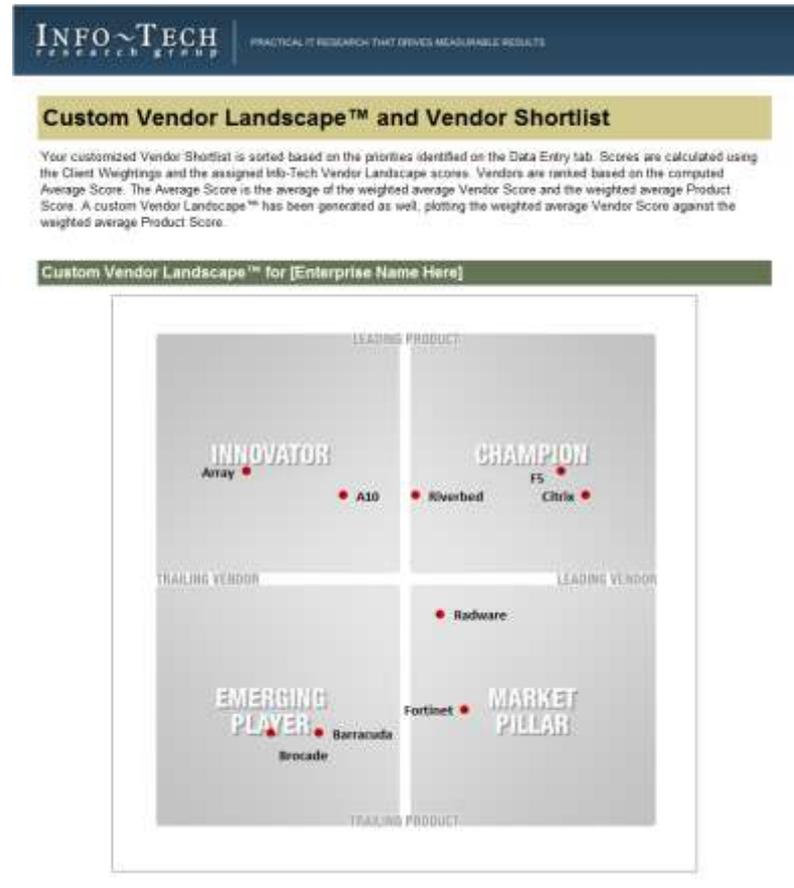


Identify leading candidates with the *Application Delivery Controller Vendor Shortlist Tool*

The Info-Tech [Application Delivery Controller Vendor Shortlist Tool](#) is designed to generate a customized shortlist of vendors based on *your* key priorities.

This tool offers the ability to modify:

- Overall Vendor vs. Product Weightings
- Individual product criteria weightings:
 - ✓ Features
 - ✓ Usability
 - ✓ Affordability
 - ✓ Architecture
- Individual vendor criteria weightings:
 - ✓ Viability
 - ✓ Strategy
 - ✓ Reach
 - ✓ Channel



Appendix

1. Vendor Landscape Methodology: Overview
2. Vendor Landscape Methodology: Product Selection & Information Gathering
3. Vendor Landscape Methodology: Scoring
4. Vendor Landscape Methodology: Information Presentation
5. Vendor Landscape Methodology: Fact Check & Publication
6. Product Pricing Scenario

Vendor Landscape Methodology: Overview

Info-Tech's Vendor Landscapes are research materials that review a particular IT market space, evaluating the strengths and abilities of both the products available in that space, as well as the vendors of those products. These materials are created by a team of dedicated analysts operating under the direction of a senior subject matter expert over a period of six weeks.

Evaluations weigh selected vendors and their products (collectively "solutions") on the following eight criteria to determine overall standing:

- **Features:** The presence of advanced and market-differentiating capabilities.
- **Usability:** The intuitiveness, power, and integrated nature of administrative consoles and client software components.
- **Affordability:** The three-year total cost of ownership of the solution.
- **Architecture:** The degree of integration with the vendor's other tools, flexibility of deployment, and breadth of platform applicability.
- **Viability:** The stability of the company as measured by its history in the market, the size of its client base, and its financial performance.
- **Strategy:** The commitment to both the market-space, as well as to the various sized clients (small, mid-sized, and enterprise clients).
- **Reach:** The ability of the vendor to support its products on a global scale.
- **Channel:** The measure of the size of the vendor's channel partner program, as well as any channel strengthening strategies.

Evaluated solutions are plotted on a standard two by two matrix:

- **Champions:** Both the product and the vendor receive scores that are above the average score for the evaluated group.
- **Innovators:** The product receives a score that is above the average score for the evaluated group, but the vendor receives a score that is below the average score for the evaluated group.
- **Market Pillars:** The product receives a score that is below the average score for the evaluated group, but the vendor receives a score that is above the average score for the evaluated group.
- **Emerging Players:** Both the product and the vendor receive scores that are below the average score for the evaluated group.

Info-Tech's Vendor Landscapes are researched and produced according to a strictly adhered to process that includes the following steps:

- Vendor/product selection
- Information gathering
- Vendor/product scoring
- Information presentation
- Fact checking
- Publication

This document outlines how each of these steps is conducted.

Vendor Landscape Methodology: Vendor/Product Selection & Information Gathering

Info-Tech works closely with its client base to solicit guidance in terms of understanding the vendors with whom clients wish to work and the products that they wish evaluated; this demand pool forms the basis of the vendor selection process for Vendor Landscapes. Balancing this demand, Info-Tech also relies upon the deep subject matter expertise and market awareness of its Senior, Lead, and Principle Research Analysts to ensure that appropriate solutions are included in the evaluation. As an aspect of that expertise and awareness, Info-Tech's analysts may, at their discretion, determine the specific capabilities that are required of the products under evaluation, and include in the Vendor Landscape only those solutions that meet all specified requirements.

Information on vendors and products is gathered in a number of ways via a number of channels.

Initially, a request package is submitted to vendors to solicit information on a broad range of topics. The request package includes:

- A detailed survey.
- A pricing scenario (see Vendor Landscape Methodology: Price Evaluation and Pricing Scenario, below).
- A request for reference clients.
- A request for a briefing and, where applicable, guided product demonstration.

These request packages are distributed approximately twelve weeks prior to the initiation of the actual research project to allow vendors ample time to consolidate the required information and schedule appropriate resources.

During the course of the research project, briefings and demonstrations are scheduled (generally for one hour each session, though more time is scheduled as required) to allow the analyst team to discuss the information provided in the survey, validate vendor claims, and gain direct exposure to the evaluated products. Additionally, an end-user survey is circulated to Info-Tech's client base and vendor-supplied reference accounts are interviewed to solicit their feedback on their experiences with the evaluated solutions and with the vendors of those solutions.

These materials are supplemented by a thorough review of all product briefs, technical manuals, and publicly available marketing materials about the product, as well as about the vendor itself.

Refusal by a vendor to supply completed surveys or submit to participation in briefings and demonstrations does not eliminate a vendor from inclusion in the evaluation. Where analyst and client input has determined that a vendor belongs in a particular evaluation, it will be evaluated as best as possible based on publicly available materials only. As these materials are not as comprehensive as a survey, briefing, and demonstration, the possibility exists that the evaluation may not be as thorough or accurate. Since Info-Tech includes vendors regardless of vendor participation, it is always in the vendor's best interest to participate fully.

All information is recorded and catalogued, as required, to facilitate scoring and for future reference.

Vendor Landscape Methodology: Scoring

Once all information has been gathered and evaluated for all vendors and products, the analyst team moves to scoring. All scoring is performed at the same time so as to ensure as much consistency as possible. Each criterion is scored on a ten point scale, though the manner of scoring for criteria differs slightly:

- Features is scored via **Cumulative Scoring**
- Affordability is scored via **Scalar Scoring**
- All other criteria are scored via **Base5 Scoring**

In Cumulative Scoring, a single point is assigned to each evaluated feature that is regarded as being fully present, partial points to each feature that is partially present, and zero points to features that are deemed to be absent or unsatisfactory. The assigned points are summed and normalized to a value out of ten. For example, if a particular Vendor Landscape evaluates eight specific features in the Feature Criteria, the summed score out of eight for each evaluated product would be multiplied by 1.25 to yield a value out of ten.

In Scalar Scoring, a score of ten is assigned to the lowest cost solution, and a score of one is assigned to the highest cost solution. All other solutions are assigned a mathematically determined score based on their proximity to / distance from these two endpoints. For example, in an evaluation of three solutions, where the middle cost solution is closer to the low end of the pricing scale it will receive a higher score, and where it is closer to the high end of the pricing scale it will receive a lower score; depending on proximity to the high or low price it is entirely possible that it could receive either ten points (if it is very close to the lowest price) or one point (if it is very close to the highest price). Where pricing cannot be determined (vendor does not supply price and public sources do not exist), a score of 0 is automatically assigned.

In Base5 scoring a number of sub-criteria are specified for each criterion (for example, Longevity, Market Presence, and Financials are sub-criteria of the Viability criterion), and each one is scored on the following scale:

- 5 - The product/vendor is exemplary in this area (nothing could be done to improve the status).
- 4 - The product/vendor is good in this area (small changes could be made that would move things to the next level).
- 3 - The product/vendor is adequate in this area (small changes would make it good, more significant changes required to be exemplary).
- 2 - The product/vendor is poor in this area (this is a notable weakness and significant work is required).
- 1 - The product/vendor is terrible/fails in this area (this is a glaring oversight and a serious impediment to adoption).

The assigned points are summed and normalized to a value out of ten as explained in Cumulative Scoring above.

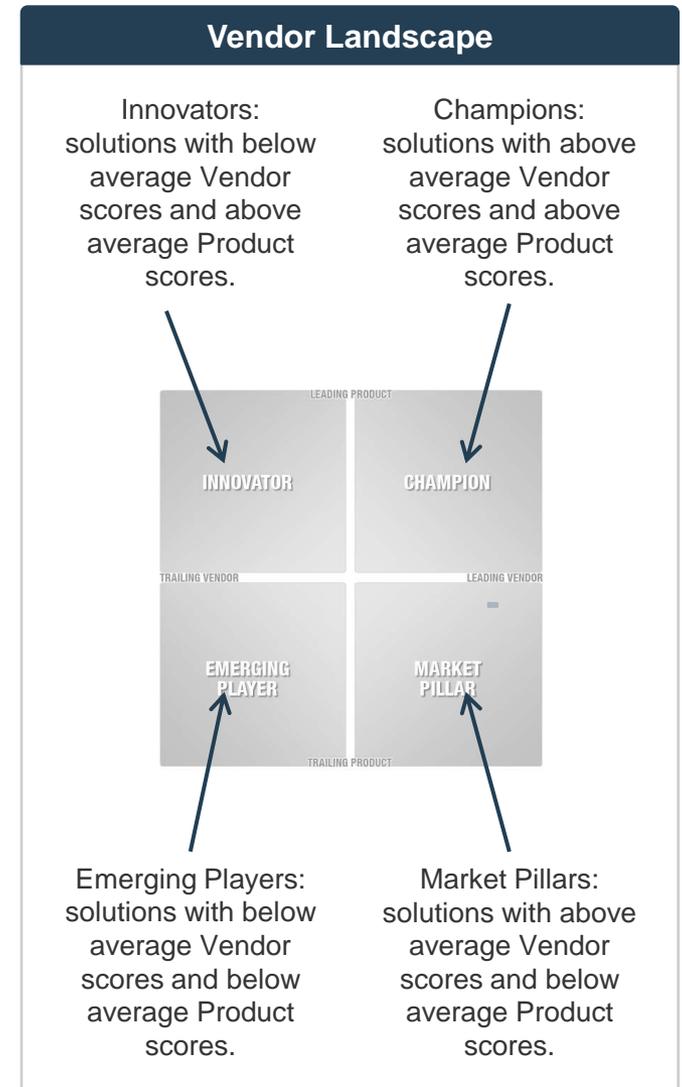
Scores out of ten, known as Raw scores, are transposed as-is into Info-Tech's Vendor Landscape Shortlist Tool, which automatically determines Vendor Landscape positioning (see Vendor Landscape Methodology: Information Presentation - Vendor Landscape, below), Criteria Score (see Vendor Landscape Methodology: Information Presentation - Criteria Score, below), and Value Index (see Vendor Landscape Methodology: Information Presentation - Value Index, below).

Vendor Landscape Methodology: Information Presentation – Vendor Landscape

Info-Tech's Vendor Landscape is a two-by-two matrix that plots solutions based on the combination of Product score and Vendor score. Placement is not determined by absolute score, but instead by relative score. Relative scores are used to ensure a consistent view of information and to minimize dispersion in nascent markets, while enhancing dispersion in commodity markets to allow for quick visual analysis by clients.

Relative scores are calculated as follows:

1. Raw scores are transposed into the Info-Tech Vendor Landscape Shortlist Tool (for information on how Raw scores are determined, see Vendor Landscape Methodology: Scoring, above).
2. Each individual criterion Raw score is multiplied by the pre-assigned weighting factor for the Vendor Landscape in question. Weighting factors are determined prior to the evaluation process to eliminate any possibility of bias. Weighting factors are expressed as a percentage such that the sum of the weighting factors for the Vendor criteria (Viability, Strategy, Reach, Channel) is 100% and the sum of the Product criteria (Features, Usability, Affordability, Architecture) is 100%.
3. A sum-product of the weighted Vendor criteria scores and of the weighted Product criteria scores is calculated to yield an overall Vendor score and an overall Product score.
4. Overall Vendor scores are then normalized to a 20 point scale by calculating the arithmetic mean and standard deviation of the pool of Vendor scores. Vendors for whom their overall Vendor score is higher than the arithmetic mean will receive a normalized Vendor score of 11-20 (exact value determined by how much higher than the arithmetic mean their overall Vendor score is), while vendors for whom their overall Vendor score is lower than the arithmetic mean will receive a normalized Vendor score of between one and ten (exact value determined by how much lower than the arithmetic mean their overall Vendor score is).
5. Overall Product score is normalized to a 20 point scale according to the same process.
6. Normalized scores are plotted on the matrix, with Vendor score being used as the x-axis, and Product score being used as the y-axis.

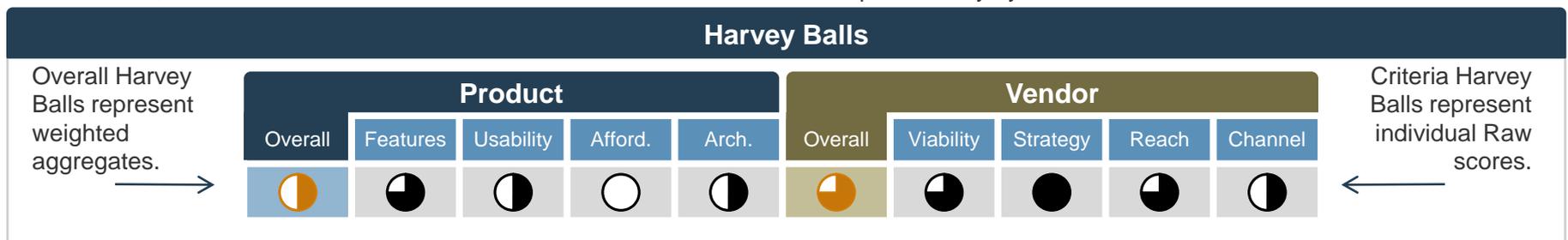


Vendor Landscape Methodology: Information Presentation – Criteria Scores (Harvey Balls)

Info-Tech's Criteria Scores are visual representations of the absolute score assigned to each individual criterion, as well as of the calculated overall Vendor and Product scores. The visual representation used is Harvey Balls.

Harvey Balls are calculated as follows:

1. Raw scores are transposed into the Info-Tech Vendor Landscape Shortlist Tool (for information on how Raw scores are determined, see Vendor Landscape Methodology: Scoring, above).
2. Each individual criterion Raw score is multiplied by a pre-assigned weighting factor for the Vendor Landscape in question. Weighting factors are determined prior to the evaluation process, based on the expertise of the Senior or Lead Research Analyst, to eliminate any possibility of bias. Weighting factors are expressed as a percentage, such that the sum of the weighting factors for the Vendor criteria (Viability, Strategy, Reach, Channel) is 100%, and the sum of the Product criteria (Features, Usability, Affordability, Architecture) is 100%.
3. A sum-product of the weighted Vendor criteria scores and of the weighted Product criteria scores is calculated to yield an overall Vendor score and an overall Product score.
4. Both overall Vendor score / overall Product score, as well as individual criterion Raw scores are converted from a scale of one to ten to Harvey Ball scores on a scale of zero to four, where exceptional performance results in a score of four and poor performance results in a score of zero.
5. Harvey Ball scores are converted to Harvey Balls as follows:
 - A score of four becomes a full Harvey Ball.
 - A score of three becomes a three-quarter full Harvey Ball.
 - A score of two becomes a half full Harvey Ball.
 - A score of one becomes a one-quarter full Harvey Ball.
 - A score of zero becomes an empty Harvey Ball.
6. Harvey Balls are plotted by solution in a chart where rows represent individual solutions and columns represent overall Vendor / overall Product, as well as individual criteria. Solutions are ordered in the chart alphabetically by vendor name.



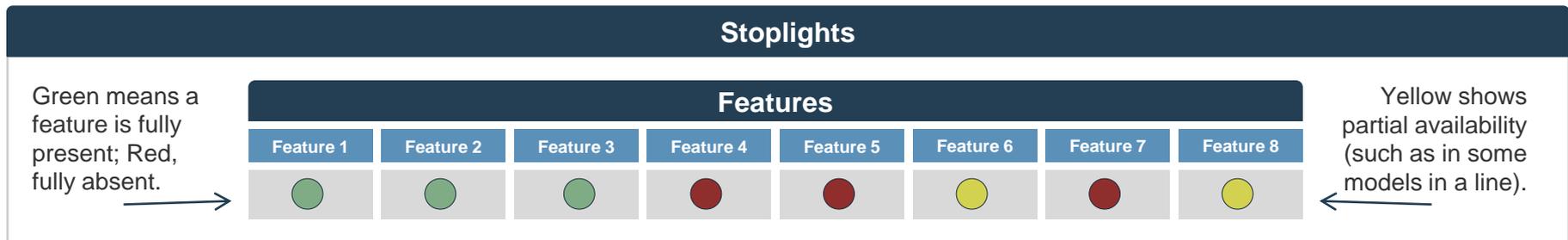
Vendor Landscape Methodology: Information Presentation – Feature Ranks (Stoplights)

Info-Tech's Feature Ranks are visual representations of the presence/availability of individual features that collectively comprise the Features' criterion. The visual representation used is stoplights.

Stoplights are determined as follows:

1. A single point is assigned to each evaluated feature that is regarded as being fully present, partial points to each feature that is partially present, and zero points to features that are deemed to be fully absent or unsatisfactory.
 - Fully present means all aspects and capabilities of the feature as described are in evidence.
 - Fully absent means all aspects and capabilities of the feature as described are missing or lacking.
 - Partially present means some, but not all, aspects and capabilities of the feature as described are in evidence, **OR** all aspects and capabilities of the feature as described are in evidence, but only for some models in a line.
2. Feature scores are converted to stoplights as follows:
 - Full points become a green light.
 - Partial points become a yellow light.
 - Zero points become a red light.
3. Stoplights are plotted by solution in a chart where rows represent individual solutions and columns represent individual features. Solutions are ordered in the chart alphabetically by vendor name.

For example, a set of applications is being reviewed and a feature of *"Integration with Mobile Devices"* that is defined as *"availability of dedicated mobile device applications for iOS, Android, and BlackBerry devices"* is specified. Solution A provides such apps for all listed platforms and scores "green," solution B provides apps for iOS and Android only and scores "yellow," while solution C provides mobile device functionality through browser extensions, has no dedicated apps, and so scores "red."



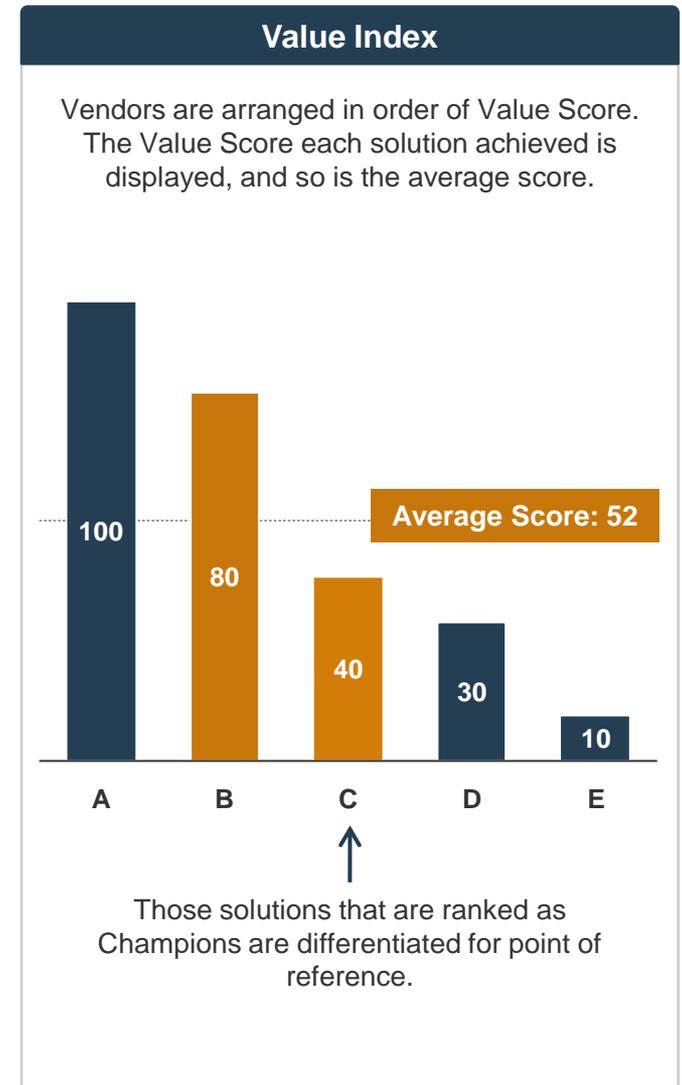
Vendor Landscape Methodology: Information Presentation – Value Index

Info-Tech's Value Index is an indexed ranking of solution value per dollar as determined by the Raw scores assigned to each criteria (for information on how Raw scores are determined, see Vendor Landscape Methodology: Scoring, above).

Value scores are calculated as follows:

1. The Affordability criterion is removed from the overall Product score and the remaining Product score criteria (Features, Usability, Architecture) are reweighted so as to retain the same weightings relative to one another, while still summing to 100%. For example, if all four Product criteria were assigned base weightings of 25%, for the determination of the Value score, Features, Usability, and Architecture would be reweighted to 33.3% each to retain the same relative weightings while still summing to 100%.
2. A sum-product of the weighted Vendor criteria scores and of the reweighted Product criteria scores is calculated to yield an overall Vendor score and a reweighted overall Product score.
3. The overall Vendor score and the reweighted overall Product score are then summed, and this sum is multiplied by the Affordability Raw score to yield an interim Value score for each solution.
4. All interim Value scores are then indexed to the highest performing solution by dividing each interim Value score by the highest interim Value score. This results in a Value score of 100 for the top solution and an indexed Value score relative to the 100 for each alternate solution.
5. Solutions are plotted according to Value score, with the highest score plotted first, and all remaining scores plotted in descending numerical order.

Where pricing is not provided by the vendor and public sources of information cannot be found, an Affordability Raw score of zero is assigned. Since multiplication by zero results in a product of zero, those solutions for which pricing cannot be determined receive a Value score of zero. Since Info-Tech assigns a score of zero where pricing is not available, it is always in the vendor's best interest to provide accurate and up to date pricing. In the event that insufficient pricing is available to accurately calculate a Value Index Info-Tech will omit it from the Vendor Landscape.



Vendor Landscape Methodology:

Information Presentation – Price Evaluation: Small Enterprise

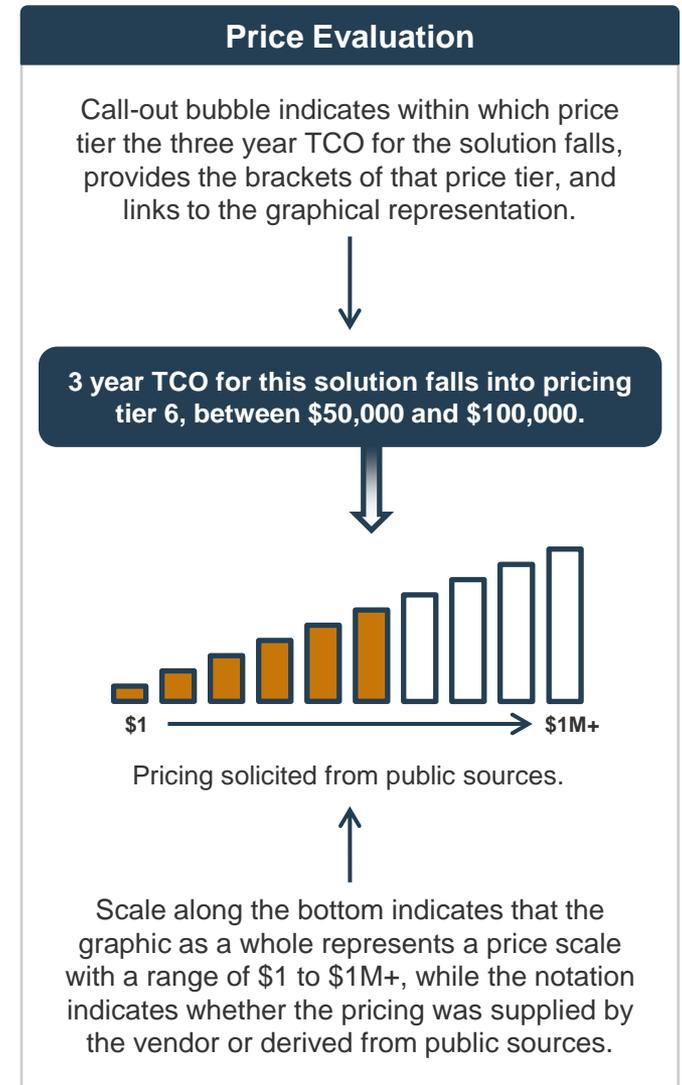
Info-Tech's Price Evaluation is a tiered representation of the three year Total Cost of Ownership (TCO) of a proposed solution. Info-Tech uses this method of communicating pricing information to provide high-level budgetary guidance to its end-user clients while respecting the privacy of the vendors with whom it works. The solution TCO is calculated and then represented as belonging to one of ten pricing tiers.

Pricing tiers are as follows:

1. Between \$1 and \$2,500
2. Between \$2,500 and \$5,000
3. Between \$5,000 and \$10,000
4. Between \$10,000 and \$25,000
5. Between \$25,000 and \$50,000
6. Between \$50,000 and \$100,000
7. Between \$100,000 and \$250,000
8. Between \$250,000 and \$500,000
9. Between \$500,000 and \$1,000,000
10. Greater than \$1,000,000

Where pricing is not provided, Info-Tech makes use of publicly available sources of information to determine a price. As these sources are not official price lists, the possibility exists that they may be inaccurate or outdated, and so the source of the pricing information is provided. Since Info-Tech publishes pricing information regardless of vendor participation, it is always in the vendor's best interest to supply accurate and up to date information.

Info-Tech's Price Evaluations are based on pre-defined pricing scenarios (see Product Pricing Scenario, below) to ensure a comparison that is as close as possible between evaluated solutions. Pricing scenarios describe a sample business and solicit guidance as to the appropriate product/service mix required to deliver the specified functionality, the list price for those tools/services, as well as three full years of maintenance and support.



Vendor Landscape Methodology: Information Presentation – Scenarios

Info-Tech's Scenarios highlight specific use cases for the evaluated solution to provide as complete (when taken in conjunction with the individual written review, Vendor Landscape, Criteria Scores, Feature Ranks, and Value Index) a basis for comparison by end-user clients as possible.

Scenarios are designed to reflect tiered capability in a particular set of circumstances. Determination of the Scenarios in question is at the discretion of the analyst team assigned to the research project. Where possible, Scenarios are designed to be mutually exclusive and collectively exhaustive, or at the very least, hierarchical such that the tiers within the Scenario represent a progressively greater or broader capability.

Scenario ranking is determined as follows:

1. The analyst team determines an appropriate use case.
For example:
 - Clients that have multinational presence and require vendors to provide four hour onsite support.
2. The analyst team establishes the various tiers of capability.
For example:
 - Presence in Americas
 - Presence in EMEA
 - Presence in APAC
3. The analyst team reviews all evaluated solutions and determines which ones meet which tiers of capability.
For example:
 - Presence in Americas – Vendor A, Vendor C, Vendor E
 - Presence in EMEA – Vendor A, Vendor B, Vendor C
 - Presence in APAC – Vendor B, Vendor D, Vendor E
4. Solutions are plotted on a grid alphabetically by vendor by tier. Where one vendor is deemed to be stronger in a tier than other vendors in the same tier, they may be plotted non-alphabetically.
For example:
 - Vendor C is able to provide four hour onsite support to 12 countries in EMEA while Vendors A and B are only able to provide four hour onsite support to eight countries in EMEA; Vendor C would be plotted first, followed by Vendor A, then Vendor B.

Analysts may also elect to list only the most Exemplary Performers for a given use-case. One to three vendors will appear for each of these purchasing scenarios with a brief explanation as to why we selected them as top-of-class.

Vendor Landscape Methodology: Information Presentation – Vendor Awards

At the conclusion of all analyses, Info-Tech presents awards to exceptional solutions in three distinct categories. Award presentation is discretionary; not all awards are extended subsequent to each Vendor landscape and it is entirely possible, though unlikely, that no awards may be presented.

Awards categories are as follows:

- **Champion Awards** are presented to those solutions, and only those solutions, that land in the Champion zone of the Info-Tech Vendor Landscape (see Vendor Landscape Methodology: Information Presentation - Vendor Landscape, above). If no solutions land in the Champion zone, no Champion Awards are presented. Similarly, if multiple solutions land in the Champion zone, multiple Champion Awards are presented.
- **Trend Setter Awards** are presented to those solutions, and only those solutions, that are deemed to include the most original/inventive product/service, or the most original/inventive feature/capability of a product/service. If no solution is deemed to be markedly or sufficiently original/inventive, either as a product/service on the whole or by feature/capability specifically, no Trend Setter Award is presented. Only one Trend Setter Award is available for each Vendor Landscape.
- **Best Overall Value Awards** are presented to those solutions, and only those solutions, that are ranked highest on the Info-Tech Value Index (see Vendor Landscape Methodology: Information Presentation – Value Index, above). If insufficient pricing information is made available for the evaluated solutions, such that a Value Index cannot be calculated, no Best Overall Value Award will be presented. Only one Best Overall Value Award is available for each Vendor Landscape.

Vendor Awards



Info-Tech's **Champion Award** is presented to solutions in the Champion zone of the Vendor Landscape.



Info-Tech's **Trend Setter Award** is presented to the most original/inventive solution evaluated.



Info-Tech's **Best Overall Value Award** is presented to the solution with the highest Value Index score.

Vendor Landscape Methodology: Fact Check & Publication

Info-Tech takes the factual accuracy of its Vendor Landscapes, and indeed of all of its published content, very seriously. To ensure the utmost accuracy in its Vendor Landscapes, we invite all vendors of evaluated solutions (whether the vendor elected to provide a survey and/or participate in a briefing or not) to participate in a process of Fact Check.

Once the research project is complete and the materials are deemed to be in a publication ready state, excerpts of the material specific to each vendor's solution are provided to the vendor. Info-Tech only provides material specific to the individual vendor's solution for review encompassing the following:

- All written review materials of the vendor and the vendor's product that comprise the evaluated solution.
- Info-Tech's Criteria Scores / Harvey Balls detailing the individual and overall Vendor / Product scores assigned.
- Info-Tech's Feature Rank / Stoplights detailing the individual feature scores of the evaluated product.
- Info-Tech's Raw Pricing for the vendor either as received from the vendor or as collected from publicly available sources.
- Info-Tech's Scenario ranking for all considered scenarios for the evaluated solution.

Info-Tech does not provide the following:

- Info-Tech's Vendor Landscape placement of the evaluated solution.
- Info-Tech's Value Score for the evaluated solution.
- End-user feedback gathered during the research project.
- Info-Tech's overall recommendation in regard to the evaluated solution.

Info-Tech provides a one-week window for each vendor to provide written feedback. Feedback must be corroborated (be provided with supporting evidence), and where it does, feedback that addresses factual errors or omissions is adopted fully, while feedback that addresses opinions is taken under consideration. The assigned analyst team makes all appropriate edits and supplies an edited copy of the materials to the vendor within one week for final review.

Should a vendor still have concerns or objections at that time, they are invited to a conversation, initially via email, but as required and deemed appropriate by Info-Tech, subsequently via telephone, to ensure common understanding of the concerns. Where concerns relate to ongoing factual errors or omissions they are corrected under the supervision of Info-Tech's Vendor Relations personnel. Where concerns relate to ongoing differences of opinion they are again taken under consideration with neither explicit nor implicit indication of adoption.

Publication of materials is scheduled to occur within the six weeks immediately following the completion of the research project, but does not occur until the Fact Check process has come to conclusion, and under no circumstances are "pre-publication" copies of any materials made available to any client.

Product Pricing Scenario

A mid-sized chemical organization with a corporate head office located in Hamburg, Germany, with five regional offices located in Canada, USA, Italy, Malaysia, and Brazil. There are also 14 branch offices spread across six continents. The company employs 3,000 full-time employees. It is looking at completing an ADC refresh and restructure.

The head office maintains a **50Mbps** symmetrical internet connection, and each regional office maintains a **10Mbps** symmetrical internet connection. Each branch office has a **full T1/E1** connection. There are ADC devices at each regional office, but not at the branch offices. Each office is part of an MPLS VPN.

There is a 50Mbps MPLS VPN at Hamburg HQ, 10Mbps MPLS VPN at regional offices, and T1/E1 MPLS VPN connections at remaining branch offices.

The corporate office breakdown is as follows:

Hamburg, Germany HQ

- Employing 1,500 people, the Hamburg office holds the core data center for the organization, and the majority of the IT staff. The IT department consists of 45 FTE.

North Bay, ON, Canada Regional Office

- Employing 250 people, including 5 FT dedicated IT staff. This location also contains the DR facility.

Lansing, MI, USA Regional Office

- Employing 200 people, including 5 FT dedicated IT staff. This location also contains the backup/disaster recovery facility.

Torino, Italy Regional Office

- Employing 250 people including 5 FT dedicated IT staff.

Kuala Lumpur, Malaysia Regional Office

- Employing 100 people, including 3 FT dedicated IT staff.

Brasilia, Brazil Regional Office

- Employing 100 people, including 3 FT dedicated IT staff.

Product Pricing Scenario, continued

14 branch offices employing an additional 600 people (30-50 each site) in:

- Abilene, TX
- Brisbane, Australia
- Budapest, Hungary
- Cincinnati, OH
- Doha, Qatar
- Kiev, Ukraine
- Manila, Philippines
- Montevideo, Uruguay
- Port Elizabeth, South Africa
- Reynosa, Mexico
- Setubal, Portugal
- Surrey, BC, Canada
- St. Cloud, MN
- Twin Falls, ID

General Network Overview

Internal core network is currently 10Gbps and 1Gbps for some servers and at the edge.

- The head office maintains a 50Mbps symmetrical internet connection, and each regional office maintains a 10Mbps symmetrical internet connection. Each branch office has a full T1/E1 connection. There are ADC devices at each regional office, but not at the branch offices. Each office is part of an MPLS VPN.
- 50Mbps MPLS VPN at Hamburg HQ, 10Mbps MPLS VPN at regional offices, T1/E1 MPLS VPN connections at remaining branch offices.

List pricing is provided for:

- 2 x 1Gbps hardware ADCs with load balancing and Layer 4-7 acceleration
- 5 x 1Gbps virtual ADCs with load balancing and Layer 4-7 acceleration
- Centralized management/administration for ADC infrastructure
- 3 year support and maintenance costs for the products
- Any additional direct capital or operational costs for 3 years