

Magic Quadrant for WAN Optimization Controllers

29 April 2013 ID:G00231910

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[VIEW SUMMARY](#)

The WAN optimization market continues to mature with increasing feature standardization, though with differences in real-world performance. Current innovation is on form factors and platforms with WAN optimization migrating toward powerful branch office platforms or to an optimized WAN cloud.

Market Definition/Description

This document was revised on 1 May 2013. The document you are viewing is the corrected version. For more information, see the [Corrections](#) page on gartner.com.

A WAN optimization controller (WOC) is customer premises equipment (appliance or virtual appliance) that is typically connected to the LAN side of WAN routers, or it is software integrated with client devices, such as servers or routers. WOCs are deployed symmetrically — in data centers and remote locations — and improve the performance of applications that are accessed across a WAN. They address application performance problems caused by bandwidth constraints and latency or protocol limitations, such as TCP and Messaging API (MAPI). The primary function of WOCs is to improve the response times of business-critical applications over WAN links, but they can also help to maximize return on the investment in WAN bandwidth and sometimes avoid the need for costly bandwidth upgrades. To achieve these objectives, WOCs use a combination of techniques, including:

- Ensuring fair access for mission-critical applications during periods of congestion by prioritizing business-critical traffic, through quality of service (QoS) policing and traffic shaping
 - Minimizing the effects of network latency using methods such as protocol- and application-specific optimization
 - Reducing the bandwidth required to transfer WAN traffic by compressing and caching it
- WAN optimization can also be embedded in carrier services to avoid on-premises deployment of physical appliances.

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Magic Quadrant

Figure 1. Magic Quadrant for WAN Optimization Controllers



Source: Gartner (April 2013)

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Vendor Strengths and Cautions

Array Networks-Certeon

Founded in 2004, Certeon was a private company backed by Sigma Partners, RRE Ventures and Globespan Capital Partners. As of March 2013, the assets of Certeon were acquired by Array Networks, and future product development and support have transitioned to Array Networks. Certeon software-based WAN optimization products include the aCelera Virtual Appliance, aCelera for Windows Server and aCelera Mobile. Prior to acquiring Certeon, Array Networks offered an OEM version of aCelera in both hardware and software formats. Certeon aCelera, now offered and supported by Array Networks, is a good choice for price-sensitive enterprises mainly seeking lower-scale WAN optimization.

Strengths

- The aCelera Virtual Appliance is available on VMware ESX/ESXi, Microsoft Hyper-V, Citrix XenServer and Windows Server 2008, and as a small footprint mobile client for Windows XP and Windows 7.
- aCelera is integrated into VMware vSphere 5 and VMware vCloud APIs, enabling management and provisioning via VMware vCenter (formerly VirtualCenter), as well as accelerating movement of VMware virtual machines (VMs) between data centers.
- Array Networks-Certeon provides a storage backup solution that is enabled via Dell OEM and a resale agreement based on Dell EqualLogic PS Series Internet Small Computer System Interface (iSCSI) storage area network (SAN) arrays.

Cautions

- The transfer of Certeon's intellectual property (IP), customer lists and support obligations to Array Networks represents some transition risks. Current customers should ensure they will continue to receive appropriate levels of support and assurances of continued product and feature development through the transition period.
- aCelera supports common functionality, such as compression, deduplication, HTTP, TCP, Common Internet File System (CIFS) and MAPI optimization. However, there is no support of User Datagram Protocol (UDP), video content or asymmetric Web browser optimization.
- Certeon had moved slowly with its partnering strategy, with few partners in the U.S. and limited partnering outside of the U.S. While it does support online sales, which reduces the need for partners in the sales process, enterprises should not expect extensive support capabilities outside of the U.S.

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Aryaka

Aryaka is a virtual network operator (VNO) and is one of the primary innovators pushing WAN optimization into a business-class WAN service. The Aryaka offering is not a traditional managed device service; it provides WAN optimization embedded within Aryaka's network. By deploying WAN optimization within a network overlay model, the Aryaka WAN Optimization as-a-Service solution often eliminates the need for on-premises appliances and can optimize both corporate network traffic and externally hosted applications within software as a service (SaaS) and infrastructure as a service (IaaS) deployments. Aryaka is well-suited for globally distributed organizations that can take advantage of Aryaka's bundled suite of services and global footprint of points of presence (POPs), as well as those looking to optimize traffic to external cloud services.

Strengths

- Aryaka offers a simplified deployment model that includes a highly redundant and business-class network overlay with integrated WAN optimization services that largely eliminates the need for on-premises hardware and eliminates upfront capital expense for WAN optimization appliances. For locations where local loop bandwidth is limited, Aryaka provides a simple on-premises caching appliance.
- The Aryaka network solutions reduce the cost of deploying a business-class global WAN.
- The Aryaka model provides for strong WAN and application visibility, as well as a fully managed global WAN that removes significant operational burdens from the enterprise.

Cautions

- Aryaka's footprint is missing some locations (specific POPs close to major SaaS and IaaS data centers) to ensure overall global performance to some regions and cloud providers. Be sure to test applications to ensure adequate performance.
- While Aryaka has strong network-based optimizations, as well as some application-specific optimizations, the solution does not cover all application environments or features of the leading appliance-based solutions. Specific gaps are around virtual desktop infrastructure (VDI), storage replication and Server Message Block 3 (SMB3)/Network File System (NFS) acceleration.
- Aryaka is best-suited to global deployments due to its highly distributed footprint. Those looking for more regional deployments need to closely check their branch locations against Aryaka's footprint to assess the potential benefit.

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Blue Coat Systems

Blue Coat Systems' WOC appliance software, MACH5, runs on the vendor's range of ProxySG appliances, which can also support Blue Coat's Proxy Edition secure Web gateway (SWG) software or can be used with Blue Coat's cloud-based SWG service. Blue Coat also offers a virtual appliance of the MACH5, software-based WOC (SoftWOC) client, and the PacketShaper visibility, control and compression appliances. Consider Blue Coat for branch-office-to-data-center optimization, particularly when access to SaaS providers, video delivery, and detailed visibility and traffic management are a priority.

Strengths

- Blue Coat supports one of the industry's widest ranges of application-specific acceleration solutions, as well as a strong video solution with many streaming protocols, and offers support for dynamic browser-based applications.
- The company also provides a strong solution for SaaS applications via its direct-to-the-Internet capabilities, combined with its cloud-based SWG service and asymmetric Web acceleration.

- Blue Coat PacketShaper offers very detailed application traffic visibility and traffic management that also provides visibility of Web applications and native mobile and mobile browser applications.
- Blue Coat has a good vision around integration of WAN optimization, security and cloud-based applications.
- Blue Coat offers a broad range of appliance price points and performance levels.

Cautions

- There is still no product integration of ProxySG and PacketShaper. While integration is planned for 2013, it is not expected to be a functional integration, and enterprises should continue to seek more details on this. Blue Coat also plans to integrate CachePulse policies into the core ProxySG/MACH5.
- Feature support of the mobile client — Blue Coat ProxyClient — is still limited; however, Blue Coat has good focus on asymmetric optimization for video and cloud/Web content.
- While Blue Coat offers performance levels (up to 10 Gbps planned for 2013) that are attractive for data-center-to-data-center optimizations, storage-specific protocol optimizations are still not available.

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Circadence

Circadence's product range consists of the MVO appliances (physical and virtual), MVO SharePoint Optimization and MVO mobile client. Circadence has developed extensive capabilities to optimize mobile traffic (3G and 4G) that depends on a novel approach using a proprietary protocol between devices to reduce loss, manage QoS and improve link utilization. Consider Circadence when mobility plays a critical role in your business and when support for a broad array of client devices is required. Also evaluate Circadence for branch-to-data-center optimization, especially when link quality is problematic.

Strengths

- Circadence has a broad portfolio, including physical and virtual appliances, SoftWOCs for a large variety of OSs, and an API to integrate Circadence software with third-party applications.
- Circadence continues to innovate on the mobility front, particularly with enhanced congestion control, dynamic network recognition (circuit versus packet) and Wi-Fi/cellular handoff.
- Circadence supports the broadest array of client OSs, including Linux, Windows 7 and 8, and small-footprint clients (1.5MB) for Android, iOS and Microsoft Windows mobile.
- Circadence has shown scalability in very large deployments.

Cautions

- Circadence lacks data-center-to-data-center-specific capabilities.
- Circadence lacks video stream splitting and video caching and streaming capabilities, and application-specific acceleration and deduplication capabilities.
- The company has limited visibility in the general market, especially outside of the U.S., although efforts are underway to improve this situation. However, enterprises should not expect extensive support capabilities outside of the U.S.

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Cisco

Cisco has a broad portfolio of WOC offerings (physical and virtual appliances, router-based service modules and limited-function embedded router software). While the portfolio is broad, feature delivery often lags the competition. Cisco has made its Wide Area Application Services (WAAS) family easier to deploy and manage, and it has made progress integrating network and application performance management capabilities. Consider WAAS for mainstream WOC deployments and where an increasingly integrated router footprint provides benefits.

Strengths

- With the WAAS team now integrated into Cisco's Integrated Services Router (ISR) team, we expect continued integration of WAN optimization capabilities into the ISR platform. We can now see a path in which Cisco's WAN optimization will be logically integrated in WAN deployments.
- Cisco's partnerships with Citrix and VMware to deliver an optimized VDI solution is helping Cisco demonstrate new capabilities.
- The current physical integration of WAAS into the ISR provides a more cost-effective solution, especially when considering ongoing maintenance, because there is no additional SMARTnet maintenance fee for the integrated module.

Cautions

- Cisco has a track record of being slow to release new WAAS features, and while deployment and management of Cisco WAAS is improved, it still lags behind the leading competition.
- Cisco's integrated WAAS solutions (both hardware modules and WAAS Express software) are relatively limited in the number of TCP sessions, and WAAS Express has limited application-specific optimizations, so enterprises must assess their usage requirements before pursuing this path.
- WAAS performance tends to be more variable than with other vendors, so it is important to test WAAS under production environments to ensure it meets expectations.
- Cisco's WAAS Mobile product is an independent product, with no integration into the rest of the WAAS portfolio and no integration into other client software solutions from Cisco.
- Data-center-to-data-center solutions are limited because WAAS neither supports high-performance solid-state drive (SSD) options nor supports specific features for storage replication.

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Citrix

Citrix's WOC product range comprises the Branch Repeater/CloudBridge and Branch Repeater with Windows Server appliances for branch offices, Repeater/CloudBridge appliances for data centers and larger sites, and the Citrix Repeater Plug-in SoftWOC client. Integration into the NetScaler SDX platform enables multiple Repeater instances to be consolidated on a single platform to support high bandwidth needs. Consider Citrix for branch-office-to-data-center optimization, particularly when optimization of the Citrix Independent Computing Architecture (ICA) is important or when a Windows-based appliance is preferred.

Strengths

- Citrix has a strong cloud-focused offering, especially with cloud bridging work with Amazon — CloudBridge and Branch Repeater as Amazon Machine Image (AMI).
- Integration into the NetScaler SDX platform enables multiple Repeater instances to be consolidated on a single platform to support high bandwidth needs.
- Citrix has a strong offering for hosted virtual desktop (HVD) application visibility and QoS for TCP and UDP.
- Branch Repeater Virtual Edition is free for locations using XenDesktop Platinum Edition.

Cautions

- Citrix has been slow to deliver video stream splitting and caching/streaming; improved video support is targeted for 2013.
- The offering for data-center-to-data-center solutions is limited, with support only for TCP, no storage-specific protocol optimizations and limited bandwidth per flow. Citrix has targeted the first half of 2013 for NetApp-specific storage optimizations.
- Sales coverage from Citrix and its channel partners has been inconsistent.

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Exinda

Exinda continues to add performance enhancements to its portfolio. It now delivers a strong platform that combines solid WAN optimization capabilities with leading application and user characterization for fine-grained bandwidth management into a single platform. Exinda is focused predominantly on midmarket accounts and has carved out a strong position within the education segment due to its bandwidth management abilities. Midmarket organizations should consider Exinda for its integrated capabilities and easy-to-deploy platform.

Strengths

- Strong visibility that allows Exinda to provide granularity for both applications and users is Exinda's key differentiator.
- Exinda can link identity (via Active Directory integration) to application identification and acceleration policy, providing personalized, dynamic policy-based acceleration.
- Exinda offers a very cost-effective WAN optimization solution that can meet the needs of many organizations, especially in the midmarket and public sector. By combining WAN optimization, bandwidth management and management/reporting into a common integrated suite, Exinda offers a simple-to-consume solution.
- Exinda can be deployed as a hardware appliance, as well as in a virtual form factor, on all major hypervisor platforms.

Cautions

- Exinda is still adding to its supported protocols and applications. Noticeable current gaps are for MAPI and SMB3. Exinda does not yet have any specific cloud optimization features.

- Exinda is a relatively small company in the market, and enterprises should ensure they have adequate local support from Exinda and an experienced local channel that can also provide service.

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F5

F5's WOC features are available under the vendor's Traffic Management Operating System (TMOS) architecture supported on its BIG-IP platforms via the BIG-IP's WAN Optimization Manager module, or as stand-alone appliances or as a virtual edition. Asymmetric browser optimization is available via F5's WebAccelerator, which is also available as a module on BIG-IP platforms or stand-alone appliances. A new Application Acceleration Manager (AAM) module merging WebAccelerator and WAN Optimization Manager was expected to be available in the next release in early 2013.

Evaluate F5 when high-performance data-center-to-data-center optimization is important or when its asymmetrical acceleration provides good-enough performance.

Strengths

- The company's WOC offering is driven by its vision of integrated application delivery services that are available on a range of data center platforms with a strong integration between WOC and application delivery controller (ADC), and with a strong focus on security and virtual machine live migration.
- BIG-IP TMOS application control plane architecture binds application control and visibility, providing complete life cycle management.
- F5 offers a high-throughput device for data-center-to-data-center links (up to 20 Gbps), for a wide range of protocols.
- The BIG-IP Edge Client and Edge Gateway provide optimizations, although somewhat limited in scope, for mobile users with Windows, Mac, Linux, Android and Apple iOS devices.

Cautions

- F5 lacks focus on the WAN optimization business and manages it as an add-on to its BIG-IP ADC business. As a result, it has limited visibility and success in the WOC market.
- A continued lack of a low-cost, small branch office platform and branch capabilities, including branch office box (BOB) features, limits applications, even though a virtual appliance is available.
- There is limited application-specific optimization and no UDP, VDI or video delivery support. However, HTTP optimization is supported by WebAccelerator, and HTTP Live Streaming (HLS) support was planned for early 2013. F5 also has expanded its asymmetric acceleration with image optimization, content reordering and SPDY support.
- Data-center-to-data-center solutions still do not support EMC E-Lab qualification for Symmetrix Remote Data Facility (SRDF) for BIG-IP WAN optimization platforms.

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FatPipe Networks

FatPipe Networks offers a range of WAN appliances across a range of functional areas, such as WAN path selection and load balancing, bandwidth management, VPN termination, geographic load balancing and WAN optimization. Features generally can be combined on top of a common hardware architecture. FatPipe is a relatively recent entrant to the WAN optimization market and has a basic set of WAN optimization features, including compression and network-based optimizations. Consider FatPipe for WAN optimization when it will be beneficial to combine basic WAN optimization with other WAN capabilities, such as WAN load balancing and path optimization.

Strengths

- FatPipe is one of the leading vendors for WAN link load balancing and related capabilities, and we often see it on shortlists for these capabilities. Combining WAN optimization on top of this platform can provide a tightly integrated solution.
- FatPipe can deliver very cost-effective WAN solutions through its ability to combine a number of low-cost WAN circuits, and it can provide high-availability, path selection and basic optimization on a cost-effective platform.

Cautions

- FatPipe has only limited WAN optimization capabilities at this time, so FatPipe is likely not the best choice if ultimate performance optimization is required for specific applications.
- FatPipe is a relatively small company, so enterprises need to determine if FatPipe has the local sales and support resources required to support a distributed WAN environment.

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Ipanema Technologies

Ipanema's WOC capabilities are delivered through the vendor's ip|engine appliances, which are available both as physical and virtual appliances and can operate in symmetrical and asymmetrical configurations. Ipanema also offers SoftWOCs, and its products are available as managed services from major global managed service providers. Ipanema integrates dynamic path selection support for hybrid WANs. Consider Ipanema for branch-to-data-center or cloud/SaaS WAN optimization, particularly when sophisticated application-based point-to-multipoint or any-to-any QoS-based (for example, unified communications and collaboration) and Internet/VPN hybrid WANs are important.

Strengths

- Ipanema has strong relationships with service providers, such as BT and Orange Business Services (a subsidiary of the France Telecom group). It has been expanding services and distribution via system integrators and by selling directly to large enterprises.
- Ipanema's ability to leverage asymmetrical and symmetrical deployment models in a single network can significantly speed deployment and reduce the price of the overall network. When coupled with the low-cost nano|engine, Ipanema delivers unmatched scalability for combined application visibility, control and SLAs, proven in both large and hybrid network deployments.
- The Salsa management platform has proven scalability and robustness in very large multitenant managed service deployments.
- Despite being a privately held company with limited resources, Ipanema is profitable and has a good vision for the long-term future of the business.

Cautions

- The product lacks HTTPS/SSL-specific optimizations as well as stream splitting for live video and caching/streaming for video on demand.
- EMEA is still by far the largest region for Ipanema, with more than 80% of its revenue coming from there. However, North American and Asia/Pacific revenue is growing as the company builds out its network of distributors and value-added resellers (VARs).
- Ipanema has yet to deliver on its vision of WAN optimization as a service for the midmarket via its AppsWork offering through Ingram Micro.

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Riverbed Technology

Riverbed continues to innovate, pushing both the capabilities and solution scope with, for example: the acquisition of Opnet Technologies; the integration with VMware vCenter and vCloud Director; and the go-to-market partnership with Juniper Networks. Riverbed also has integrated Steelhead on blade systems such as Cisco Services Ready Engine (SRE), and on HP branch office switches, as well as introduced low-end appliances for small branch offices and very high-end platforms. Riverbed's WOC capabilities are delivered through its Steelhead appliances and virtual appliances (Virtual Steelhead, Cloud Steelhead and the Steelhead Mobile client software) and via Cloud Accelerator (the partnership with Akamai). Riverbed should be on all enterprise shortlists for a broad range of acceleration requirements (branch-to-data-center, data-center-to-data-center and mobile user applications) and when multiple deployment models are required.

Strengths

- Riverbed offers the broadest set of capabilities in the industry, including features for large branch networks, data center replication and storage networking protocols, and single remote users, combined with unmatched ease of installation and management and best-in-class presales and postsales support.
- Riverbed offers among the broadest support for application-specific optimizations in the industry, including TCP, UDP, HTTP, VDI and dynamic browser-based applications such as SharePoint, as well as comprehensive support of business applications, such as CRM and ERP.
- Riverbed has a solid near-term road map, including a more fully featured offering for video and UDP optimizations, combined with a solid track record of high initial software quality.

Cautions

- Although Riverbed has added QoS features and visibility, it needs more focus on traffic management and visibility.
- While Riverbed's Granite edge virtual server can provide highly differentiated capabilities for demanding workloads, it has not yet achieved a high degree of visibility in the broad market.
- Riverbed still needs to improve support of video delivery.
- Its discounting policies can be inconsistent on large deals, sometimes resulting in much-higher prices compared with other WOC vendors.

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Sangfor

Sangfor was founded in 2000 with an initial focus on security. It offers WAN optimization via the Sangfor WANO. Its market focus so far has been on the Chinese market, but Sangfor is increasing focus outside of China and establishing offices in several Asian countries, where it is taking advantage of its established security channel partners. The Sangfor WANO is a good choice for price-sensitive enterprises in Asia mainly seeking lower-scale WAN optimization.

Strengths

- Sangfor was established in the Chinese market with a national support organization. It now is focusing on moving its market presence into the wider Asian market, building on its existing security presence.
- Sangfor WANO supports a good range of commonly used functionalities, such as compression, and caching, as well as TCP, UDP, HTTP/HTTPS, MAPI/encrypted MAPI (EMAPI), CIFS, ICA and QoS features. But there is currently no dedicated video-on-demand or video streaming support.

Cautions

- Sangfor has a limited range of appliances (3 Mbps to 150 Mbps) targeted at mainly the lower end of the market scalability, as well as limited application-specific acceleration beyond the mentioned protocol-specific acceleration.
- As Sangfor is expanding outside of China, enterprises should be cautious of the experience of its partners, as the WANO may be a new solution area for these partners.
- Sangfor has few service provider partners and mainly Chinese providers, such as China Spacenet and CPC.

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Silver Peak

Silver Peak's WOC capabilities are delivered through the vendor's physical NX appliances and VX/VRX virtual appliances. Silver Peak has aggressively championed virtual appliance and flexible deployment models to increase its solution portfolio. Consider Silver Peak for all data center replication projects and where its cost-effective virtual WOC solution meets your application profile.

Strengths

- Silver Peak maintained its focus in data center storage replication, where it's strong and backed up by segment-leading products with top-tier performance, and good strategic alliances with data center infrastructure companies, such as EMC, Hitachi and Dell.
- Silver Peak has pioneered the virtual marketplace with the first self-service marketplace, offering free trials as well as purchases of its entire vWOC product family.
- Silver Peak has combined products, pricing, packaging and tailored deployment models to allow storage administrators to easily deploy WAN optimization specifically for remote replication workloads without a requirement to reconfigure the routed network.
- The company has a large portfolio of appliances, with flexibility on deployment options (hardware and virtual appliances) and pricing (subscription, perpetual, pay as you grow and free).
- Silver Peak optimizes all IP traffic. Specific enhancements and certifications for SRDF, Brocade FCIP and EMC VPLEX are available.

Cautions

- Silver Peak is still lacking in capabilities for home office and mobile users (no SoftWOC) as well as lacking application-specific optimizations (such as latency mitigation for MAPI and Citrix ICA/HVD).
- Virtual appliances are not a good fit for many emerging markets where Silver Peak wants to expand.
- The company lacks an offering for video on demand that incorporates stream splitting and remote-office file caching/streaming to offload the network and the origin server.
- Despite a small, but growing, list of channel partners, there is no significant service provider offering.

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Virtela

Virtela is an innovative service provider that offers a range of managed network services, including transport, security, WAN optimization and mobile device management. For the purposes of this Magic Quadrant, we consider only Virtela's WAN optimization service embedded within the Virtela Enterprise Services Cloud network nodes (which may leverage some on-premises devices for bandwidth-limited locations). Virtela's services are also available as private-labeled services from a number of managed service providers and network service providers. Consider Virtela when you want to outsource your entire WAN, including the upper-layer services.

Strengths

- Virtela provides a comprehensive product offering for enterprise branch and cloud-based (including Amazon Elastic Compute Cloud [EC2], Rackspace Cloud, HP Cloud and IBM Cloud) application delivery.
- Virtela offers strong performance SLAs: If a customer's applications do not run faster, Virtela pays the customer 250% of the service charge.
- Virtela's offering provides the ability to rapidly deploy services (in minutes) for cloud-based services in 190 countries worldwide.
- Virtela supports WAN optimization from multiple WOCs for cloud-based deployments.

Cautions

- Virtela is not highly visible in the market and lacks brand recognition.
- Virtela has been selective in its choice of channel partners and still has fewer channel partners than leading vendors.
- Virtela is dependent on WOC vendors for their optimization technology.

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Vendors Added or Dropped

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

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Added

Array Networks-Certeon, Aryaka, Exinda, Sangfor and Virtela were added to this Magic Quadrant. OneAccess has announced WAN optimization for its router products, but it does not meet our revenue requirements for inclusion in this Magic Quadrant.

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Dropped

No vendors were dropped.

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Inclusion and Exclusion Criteria

To help organizations with their WAN optimization needs, Gartner has assessed vendors that offer generic, multifunction WOC products, rather than those that only offer single application- or protocol-specific capabilities for Web caching, HTTP compression or remotely mounted file systems, or single functions, such as QoS.

While WOC technology is maturing, significant variations remain between different implementations, so we are focusing on evaluating the different feature-sets available. Therefore, we have included only vendors that were substantially the original developer of their WOC products (either directly or through acquisition). We have excluded vendors that source the bulk of their technology under OEM or resale agreements.

As this market develops, we expect vendors that offer a combination of techniques, both generic and application- or protocol-specific, to be the most successful. To be included in the 2013 Magic Quadrant, vendors' products must include capabilities in each of the four broad categories of WAN acceleration techniques:

- Traffic management capabilities, such as WAN QoS classification, enforcement or traffic shaping
- Bandwidth reduction capabilities, including compression, caching and/or data deduplication
- Generic protocol acceleration (for TCP or HTTP, for example)
- Application- or higher-level protocol-specific optimization features, such as acceleration of the CIFS file-sharing protocol

Due to the wide geographical reach of the networks that will benefit most from this technology, included vendors need to have or are investing in global installation and support capability. As this Magic Quadrant is intended to inform enterprise purchasing decisions, we have included only vendors that have a specific focus on enterprise customers (that is, vendors that can support large and global installations).

In addition to the other inclusion criteria, we are including only vendors that achieved worldwide 2012 WOC product revenue exceeding \$10 million, as measured by our market share methodology.

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Evaluation Criteria

Ability to Execute

Gartner analysts evaluate technology providers on the quality and efficacy of the processes, systems, methods or procedures that enable IT provider performance to be competitive, efficient and effective, and to positively impact revenue, retention and reputation. Ultimately, technology providers are judged on their ability and success in capitalizing on their vision.

Product/Service

This includes core goods and services offered by the technology provider that serve the defined market. These include current product and service capabilities, quality, feature sets and skills, whether offered natively or through OEM agreements and partnerships, as defined in the Market Definition/Description section and detailed in the subcriteria. For the WOC market, this criterion evaluates both the capabilities of the product (as fully released and generally available as of 15 October 2012) and the underlying hardware and software platform(s) on which the vendor's products are based, the breadth of the product range, and products' suitability for supporting additional features in future.

Overall Viability (Business Unit, Financial, Strategy, Organization)

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

Sales Execution/Pricing

This includes the technology providers' capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales support and the overall effectiveness of the sales channel. For the WOC market, the sales execution subcriterion is rated higher than the pricing subcriterion.

Marketing Execution

This criterion is defined as the clarity, quality, creativity and efficacy of programs designed to deliver the organization's message in order to influence the market, promote the brand and business, increase awareness of products, and establish a positive positioning of the vendors solutions. A key to vendor success is how well the key differentiated messages are received in the market. This mind share can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience

This includes relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups and SLAs. For the WOC market, the vendor's global installation and support capabilities are key components of the customer experience. This can extend to considerations such as products' ease of use, ancillary tools, customer support programs (and their quality), availability of user groups and SLAs. Also considered are the quality of customer references and Gartner clients' experience of the vendor.

The following evaluation criteria have not been used:

- Market responsiveness and track record is evaluated under Marketing Execution.
- Operations is covered under Overall Viability.

Evaluation Criteria	Weighting
Product/Service	High
Overall Viability (Business Unit, Financial, Strategy, Organization)	Standard
Sales Execution/Pricing	Standard
Market Responsiveness and Track Record	No Rating
Marketing Execution	High
Customer Experience	High
Operations	No Rating

Table 1. Ability to Execute Evaluation Criteria

Source: Gartner (April 2013)

Completeness of Vision

Gartner analysts evaluate technology providers on their ability to convincingly articulate logical statements about current and future market direction, innovation, customer needs, and competitive forces and how well they map to Gartner's position. Ultimately, technology providers are rated on their understanding of how market forces can be exploited to create opportunity for the provider.

Market Understanding

This criterion is defined as the ability of the technology provider to understand buyers' needs and to translate these needs into products and services. Vendors that show the highest degree of vision listen and understand buyers' wants and needs, and can shape or enhance those wants with their added vision. For the WOC market, we expect to see a consistent track record of feature enhancements, together with a sound product road map.

Marketing Strategy

Marketing strategy involves a clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

Sales Strategy

This criterion entails the strategy for selling products that uses the appropriate network of direct and indirect sales, marketing, service, and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base. For the WOC market, as well as a well-developed global distribution strategy, we expect each vendor's vision to address the increasing importance of managed WOC services.

Business Model

This model involves the soundness and logic of a technology provider's underlying business proposition.

Innovation

Innovation describes direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes. WOC vendors with a track record of early introduction of new features and capabilities will be highly rated. As well as feature innovation in the four broad categories defined in the inclusion criteria, we expect to see innovation in the scope of product availability (for instance, breadth of product range, including data center, branch and remote access products), in high-availability options, and in manageability and maintainability.

Geographic Strategy

This criterion entails the technology provider's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries, as appropriate for that geography and market. For the WOC market, we expect to see a sales and support strategy that recognizes the global nature of many user organizations' WOC needs.

The following evaluation criteria have not been used:

- Offering (product) strategy is covered under Market Understanding and Innovation. Vertical/industry Strategy has not sufficiently emerged to warrant rating.

Evaluation Criteria	Weighting
Market Understanding	High
Marketing Strategy	Standard
Sales Strategy	Standard
Offering (Product) Strategy	No Rating
Business Model	Standard
Vertical/Industry Strategy	No Rating
Innovation	High
Geographic Strategy	Standard

Table 2. Completeness of Vision Evaluation Criteria

Source: Gartner (April 2013)

Quadrant Descriptions

Leaders

Leaders exhibit an ability to shape the market by introducing additional capabilities in their product offerings and by raising awareness of the importance of these features. We expect a Leader to grow the market as a whole and to have solutions that resonate with an increasing number of enterprises. Leaders in the WOC market must have a broad feature set, including QoS, generic compression, protocol acceleration and file system acceleration, with the majority of features proved in substantial real-world implementations. They also need to be able to offer sales and support on a global basis.

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Challengers

A Challenger in this market is a follower from a product or innovation perspective, but it has demonstrated the ability to take its products into the market and to show its relevance to a wide audience. Challengers may have less-complete feature sets than Leaders, or they may have new products that are as yet unproven in substantial real-world implementations.

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Visionaries

Visionaries need to address the whole market and must exhibit strong market understanding and innovation. They can be pointers to the market's future. However, they currently lack the ability to influence a large portion of the market and have yet to expand their sales and support capabilities globally. In addition, they may have new products that are as yet unproven in substantial real-world implementations, or they may lack the funds to execute with the same capabilities as a vendor in the Leaders quadrant.

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Niche Players

Niche Players provide a more limited set of capabilities, and they have not demonstrated enough vision or focused execution to warrant a stronger position in our analysis. They may be indicative of emerging requirements and features. Niche Players may have yet to expand their sales and support capabilities globally. Additionally, they may have new products that are as yet unproved in substantial real-world implementations, or they may lack the funds to execute with the same capabilities as a vendor in the Leaders quadrant.

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Context

The WOC market is still a dynamic one, with new solutions to support various cloud solutions for SaaS and IaaS deployments and broader support for virtual WOC solutions. Enterprises should look beyond traditional appliance models as their application environments become more distributed. We still observe a range of capabilities and optimization effectiveness, so enterprises should continue to do proof of concepts on real-world traffic to test the effectiveness of possible solutions.

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Market Overview

WAN optimization is about improving the performance of business applications over WAN connections. This means matching the allocation of WAN resources to business needs and deploying the optimization techniques that deliver measurable business benefits. The majority of WOCs are purchased by North American companies (with Europe coming second) because these companies have the greatest number of global branch offices. These WOCs are deployed to support an increasingly global WAN footprint.

Most networks carry a variety of traffic types of differing characteristics and importance. Many organizations are striving to manage this traffic to optimize the response times of critical applications and reduce costs, given that bandwidth continues to represent a significant proportion of operating expenditure for wide-area data networks. But the cost of bandwidth isn't the only consideration — as resources are increasingly centralized, minimizing the effect of latency on application response times is becoming a critical requirement. In addition, virtualization and new application environments, such as cloud computing and Web services, can put an unexpected strain on the WAN.

Different types of traffic and IT architecture present both difficulties and opportunities for improving the response times of essential applications. For example:

- Traffic that isn't time-sensitive, such as email, backups and personal Web access, can swamp WAN links, leading to slow response times for business-critical applications.
- Applications that make extensive use of dynamic content, such as Microsoft SharePoint, can swamp WAN links, while delivering poor end-user response times.

- Global centralization of branch office servers and data centers can expose latency-sensitive protocols, again leading to slow response times.
- File transfers, OS patch distribution and similar applications, such as the delivery of training videos, can quickly saturate WANs.
- Repeated transmission of the same, or similar, files, objects or data patterns can create opportunities for data compression and caching.
- Dynamic multipoint unified communications and collaboration video sessions can saturate edge network nodes without passing through the data center, making visibility and control very difficult to achieve.

Because optimizing overall application response times is a requirement for many organizations, this Magic Quadrant reviews vendors that address the common need to make more efficient and effective use of wide-area connections, regardless of the type of traffic or application. The predominant need is still to optimize the connection between users (both in remote branch locations and single remote users) and centralized IT resources. However, we are also seeing the need to optimize connections between data centers (vendors such as Silver Peak, Riverbed and F5 tackle that issue). We are also seeing early signs of the need to optimize traffic to mobile devices, including tablets and smartphones, as well as access to externally hosted applications (cloud). In some cases, access to cloud-based applications makes use of direct access to the Internet from the branch office to reduce latency and offload the intranet backbone. This approach often integrates a cloud-based SWG service.

The development of the application acceleration market has been driven by customer demand for highly integrated solutions that employ a wide range of techniques to optimize network traffic and that offer scalability and fault tolerance. Vendors in this space initially addressed either the traffic shaping/QoS market, or the compression/caching market. These two segments have now largely merged, with most products supporting both sets of capabilities. Increasingly, the combination of application visibility/QoS and latency mitigation is required to achieve acceptable application performance. We therefore see a need for application identification/control and both generic and application-specific optimizations to mitigate the impact of network latency on remote application performance.

Some vendors are now increasingly merging their enterprise content delivery network (ECDN) and WOC products, or are adding ECDN features to their WOC products. ECDN offers the capability to deliver live and on-demand streaming of media content, by splitting unicast streams and by prepositioning content in the cache. This increases the scalability of media servers and helps to improve the response times for semi-static content, such as business procedures and software upgrades. Portions of the ECDN market are now merging into the WOC market.

In addition, the following WOC product trends are emerging:

- In branch offices, the capabilities of WOCs will evolve to the point that they can support serverless branch operations, also described as BOBs. Customers often need to maintain one or two key applications in the branch. BOBs are now leveraging hypervisor or OS capabilities to host one or more applications on the BOB hardware.
- An alternative offered by some vendors is to install a virtualized WOC in a server at the branch. That server can then run the virtualized WOC along with other virtualized appliances. An advantage is the availability of a standard virtualization environment at the branch, and easier replacement of the hardware if there's a failure. However, integration of the branch server can be complex, and hardware bypass network interface cards (NICs) for fail-to-wire operation may not be available for a particular hypervisor. Virtual WOCs are also being loaded into clouds and used to accelerate cloud-based applications.
- There is increasing interest in SoftWOC clients for mobile devices, such as smartphones and tablets, but availability and adoption are limited.
- Alternative delivery models, such as cloud-based or cloud/premises-based hybrid solutions, are generating interest in managed service providers such as Aryaka and Virtela and in the Riverbed/Akamai joint offering.
- There remains a focus on security — including the acceleration of encrypted protocols such as HTTPS and the security of data stored on WOC systems — as well as secure access to off-premises applications. Ensure that your vendor provides timely support for new versions of applications and protocols and that data in flight and at rest is protected by strong encryption. Some vendors can decrypt HVD traffic to provide QoS for interactive versus print and file transfer traffic. In some cases,

cross-session compression/deduplication and caching are performed. Other vendors provide QoS only for the encrypted streams, in some cases with guaranteed in-order delivery of packets.

- As basic acceleration capabilities mature, we are seeing a resurgence of interest in visibility and control, both as a means to demonstrate WOC effectiveness, and as a bandwidth/response-time planning tool. Providing advanced traffic management capabilities for application and user performance measurement and SLA reporting are key emerging requirements for WOC equipment.

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EVALUATION CRITERIA DEFINITIONS

Ability to Execute

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

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

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

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

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

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

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

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen and understand buyers' wants and needs, and can shape or enhance those with their added vision.

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

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

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

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

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

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

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

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