

Introducing Cisco Application-Oriented Networking—A CIO Brief



Introduction

Cisco® Application-Oriented Networking (AON) changes how applications are deployed, integrated, and managed by delivering common application infrastructure functions as network-based services. By relocating these repeatable functions—such as application security, messaging, logging, and event capture—into the network and onto Cisco Systems® routers and switches, Cisco AON helps to dramatically lower the cost and complexity of deploying applications and maintaining application infrastructure.

Today, CIOs face the reality that myriad business and technical issues severely limit how technology can be applied to meet business needs. In the application infrastructure realm, businesses cannot easily monitor critical business processes that span multiple middleware; nor can they can apply consistent application security policies unless applications are all deployed on the same application platform. These are the types of application infrastructure challenges that Cisco AON helps remedy.

Cisco AON's potential benefits to the CIO are far-reaching. Here are a few examples:

- **Simpler, lower-cost application infrastructure**—Cisco AON's biggest impact is derived from stripping away much of the complexity and redundancy that is inherent in most application infrastructures. Many of today's IT infrastructures were, for various justified reasons, built rapidly to meet the pressing business problems of the day. One result is that common utility functions—such as application security, logging, message routing, and event capture—are handled differently in different platforms and systems. Despite numerous consolidation efforts, most companies cannot standardize on a single platform because of existing equipment, interoperability problems, or political reasons. By moving these common functions into the network, the world of application development and deployment becomes simpler and less costly to manage.

“Relocating application services in the network is probably one of the most fundamental changes in IT that has occurred in my lifetime.”

—John Chambers,
CEO, Cisco Systems

- **Pervasive business visibility**—Cisco AON provides an event fabric that can “see” and understand any application message that traverses the network. Because Cisco AON is embedded directly into the network, it has the ability to intercept important business transactions transparently without placing a burden on the applications themselves. Specifically, Cisco AON removes the need to augment applications with expensive and complex agents, probes, or proxies. Cisco AON’s event-capture fabric can feed specific events to any application, dashboard, or systems management console and supports many critical business initiatives such as compliance, business intelligence, business activity monitoring, and application performance management.
- **Support for existing infrastructure investments**—Cisco AON is designed to support strategic investments already made in business applications, middleware, and other systems. Typically, these systems cannot easily be extended across data centers, application domains, or networks without complex and expensive custom development; but as a network-embedded platform, Cisco AON can. The Cisco AON team has announced partnerships with leading application infrastructure vendors including SAP, IBM, and TIBCO. Companies do not need yet another middleware platform that adds to infrastructure complexity. Instead, Cisco AON complements and extends the benefits of these systems by offloading some critical functions into the network, where they can be performed more efficiently.
- **Ubiquitous presence**—By embedding application infrastructure directly into the network, Cisco AON extends the benefits of application infrastructure from the enterprise core out to the periphery of the enterprise. For instance, Cisco AON facilitates deployments of radio frequency identification (RFID) infrastructure in a router form factor, designed for companies deploying RFID technology at the edge of their enterprises. Cisco AON lowers the capital and operating expenses of RFID when compared with installing, servicing, and supporting RFID software on Linux servers in loading docks or retail outlets.

Why Should My Company Consider Cisco for Applications?

Simply stated, Cisco believes that the experience gained from more than 20 years of providing intelligent networking solutions is directly relevant to the challenges of applications today. Cisco sees applications at an inflection point, similar to the state of packet networking in the mid-1980s. Enterprise networks had experienced phenomenal growth but also relied on many different network standards, including Systems Network Architecture (SNA), Internetwork Packet Exchange (IPX), AppleTalk, DECnet, and Token Ring. Although they might have been efficient, they were, by nature, fragmented enough to make interoperability complex and impractical. Then, Cisco helped enable multiprotocol networking by first interconnecting disparate proprietary corporate systems and networks, and then promoted IP as an open networking standard, which helped fuel the Internet revolution.

Similarly today, proprietary and disconnected application-related silos or islands are rampant (packaged applications, custom applications, databases, middleware, integration brokers, and Web services, for example). This fragmentation has resulted in a significant and growing burden on the resources designed to support and manage them. Cisco Systems—by introducing Cisco AON—is taking the same approach to interconnect these into a greater application network. This means first acting as the multiprotocol network that helps



tie these disparate application islands together; and then helping to promote open standards (XML, Web services) to create a second revolution, this time around service-oriented architecture (SOA).

To accomplish this, Cisco AON technology embeds intelligence in the network fabric that allows it to understand application messages and apply policies such as message routing, transformation, and security, plus visibility to them. Cisco AON is integrated into the network fabric as hardware blades that fit directly into existing Cisco routers and switches. In addition, Cisco AON provides software tools for creating policies and managing a network of Cisco AON blades.

Adopting Cisco AON

CIOs and IT professionals conceptually understand the challenges that enterprises face in deploying, integrating, and maintaining applications today as well as the benefits that a pervasive application-oriented network that hosts common application utilities could provide.

Their bigger challenge comes in developing and executing a pragmatic path for adopting Cisco AON technology. Although conceptually simple, broad-scale implementation of Cisco AON can be a challenging endeavor given IT's short-term return-on-investment (ROI) requirements and constant business pressure. To that end, Cisco AON provides several paths designed to fit any customer's technology adoption path and business needs:

- **Strategic adoption**—The strategic adoption of Cisco AON by standardizing application messaging infrastructure on the Cisco AON platform, often in conjunction with a move toward SOA, can provide major economic benefits. These can be calculated in the millions of dollars, depending on the size and scope of the deployment. For companies strategically shifting their IT infrastructures and adopting SOA, Cisco AON remedies many of the hidden impediments of using conventional approaches. The network is the ideal neutral location to enforce identity and governance policies, to locate and bind to heterogeneous services regardless of location, and to provide value-added services such as reliable messaging and auditing, all without introducing new IT overhead costs.
- **Project-based adoption**—Even for an organization that fully grasps the transformative potential of Cisco AON, redesigning the application infrastructure may not be realistic in the short run because of the time and resource commitment involved. Fortunately, several deployment strategies can help an organization get started with Cisco AON, gain experience with the platform, and pave the way for a broader deployment later on. Several applications require intelligence in remote branch offices, warehouses, and other non-data center environments. Tactical Cisco AON deployment examples include:
 - **Radio frequency ID (RFID)**—By incorporating RFID infrastructure functions into the network, Cisco AON lowers the cost and complexity of deploying RFID software on servers at the enterprise edge.
 - **Financial Information Exchange (FIX)**—Supporting packet-level and message-level monitoring of FIX transactions using Cisco AON blades reduces the cost of deploying specialized listeners, probes, proxies, or agents that increase hardware and software costs.

- **Application security gateway**—Using Cisco AON for application-to-application security (XML firewalls, Web services security, and application threat protection) requires no installation or management of additional hardware.

Cisco AON answers many of the contemporary challenges faced by IT departments and is representative of a new generation of application infrastructure designed to allow companies to shift to a new computing model around SOA. Regardless of the adoption level, Cisco AON gives CIOs a powerful tool to help address traditional IT challenges, support the creation of an agile enterprise, and turn IT into a provider of strategic value to the business.

For More Information

For more information about Cisco AON, visit www.cisco.com/go/aon or contact your local account representative.



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