

Cisco Data Center Solution for Oracle Applications

Optimize Application Performance and Minimize Risk with the Cisco ACE Application Control Engine and Cisco Catalyst 6500 Series Firewall Services Module

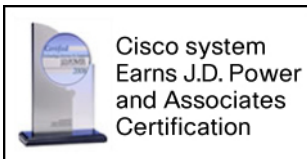
HIGHLIGHTS

Business Benefits

- Optimize Performance
- Minimize Risk
- Maximize Availability
- Reduce Total Cost of Ownership

Why Cisco?

- Complete integrated network architecture: application and Ethernet switching, security, WAN optimization, network management
- Market leading products: Cisco ACE Module, Cisco Catalyst 6500 Series FWSM, Cisco Catalyst 6500 Series Switches
- Global lifecycle services leader: certified by J.D. Power & Associates Certified Technology Service & Support Program



Overview

The Cisco® Data Center Solution for Oracle Applications, a Cisco and Oracle jointly tested and validated solution, optimizes performance and minimizes risks of Oracle E-Business Suite and Fusion Middleware application deployments with application and Ethernet switching and access control. Including the Cisco ACE Application Control Engine Module, Cisco Catalyst® 6500 Series Switches, and Cisco Catalyst 6500 Series Firewall Services Module (FWSM), all deployed at the front end of the data center, the solution maximizes availability, performance, and security, while minimizing the cost of ownership of Oracle applications.

Part of the Cisco Solutions for Oracle Deployments (Figure 1), a comprehensive network architecture to optimize Oracle deployments, this solution is complementary to two others:

- Cisco WAN Optimization Solution for Oracle Applications: Optimizes Oracle application performance over the WAN to remote offices and includes Cisco Wide Area Application Services (WAAS) Software
- Cisco Data Center Solution for Oracle Databases: Optimizes Oracle database deployments and includes the Cisco MDS 9000 Series Multilayer SAN Switches

This comprehensive network architecture can also be applied to Siebel CRM, PeopleSoft, and JD Edwards deployments with similar benefits.

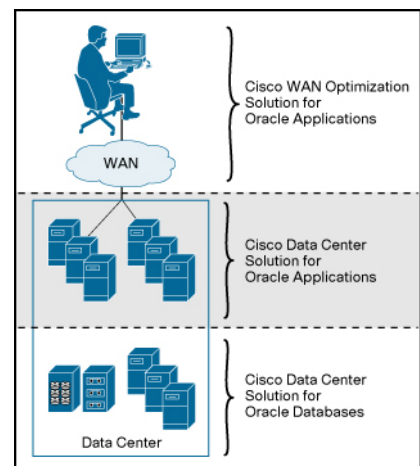
The Challenge

To meet a collection of business and IT challenges, the data center application infrastructure, at the server, storage, and network levels, must provide increased availability, performance, and security to mission-critical applications while reducing the cost of management.

Application and data center consolidation, in combination with increased user population and geographic spread, intensifies these challenges, as do growing power and cooling costs and insufficient server and storage utilization.

To address these challenges, Cisco and Oracle have teamed to provide the Cisco Data Center Solution for Oracle Applications, a validated data center network architecture to optimize Oracle applications for availability, performance, security, and cost.

Figure 1: Cisco Solutions for Oracle Deployments



Business Benefits

The Cisco Data Center Solution for Oracle Applications provides the following benefits to Oracle customers through best-in-class network technologies:

Application switch virtualization for low cost of ownership: From virtualization, offloading, and bandwidth-reduction features of Cisco application switching and firewall access control

- ✓ Up to 70 percent faster application deployment through virtual device provisioning
- ✓ Up to 85 percent reduction in application switching power and cooling expenses (See Figure 2)
- ✓ Up to 80 percent reduction in application server processor utilization through server offloading
- ✓ Reduced IT team interdependencies from application switch role-based administration

Application availability, performance, and security: Provided by next-generation application switching, firewall access control, and Ethernet switching

- ✓ Data center-class network session persistence and high availability for mission-critical applications
- ✓ Industry-leading 64-Gbps application

switching throughput to handle more work with less equipment

- ✓ Up to 300 percent improvement in Web-based Oracle application response time
- ✓ Protection from application-layer attacks: Fraud and data and identity theft

Investment protection: Increased certainty of success from joint testing and documentation of simulated customer deployments with Cisco, Oracle, and third-party products

- ✓ Contains core components of tested and documented Cisco data center architecture, a proven multilayer approach that delivers a highly-available and robust network infrastructure for all application deployments

To sustain such benefits, Cisco and Oracle product teams collaborate on solution testing and documentation and regularly discuss new joint solutions; interaction is supported by a global partnership wherein Cisco is an Oracle Global Platform Partner and Oracle is a Cisco strategic software partner.

The Solution

The Cisco Data Center Solution for Oracle Applications includes specific configurations and best practices for the Cisco ACE Module, Cisco Catalyst 6500 Series Switches and FWSM, and Oracle E-Business Suite 11i application and Fusion Middleware. (Figure 3)

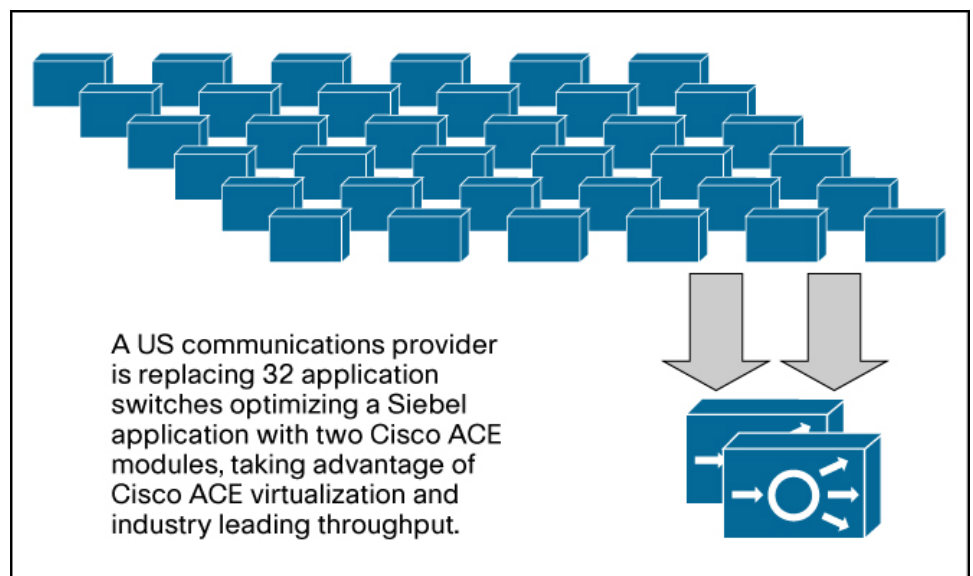


Figure 2: Application Switch Consolidation

Network appliance virtualization: More work with less equipment

- ✓ The Cisco ACE Module and Cisco Catalyst 6500 Series FWSM allow up to 250 logical application switching and firewall virtual devices on a single set of physical devices, which yields up to 70 percent reduction in Oracle application deployment times, up to 85 percent reduction in power and cooling expenses by handling more work with less equipment, and lower capital and management costs.
- ✓ The Cisco ACE Module and Cisco Catalyst 6500 Series FWSM, through the Cisco Application Networking Manager (ANM), that streamlines management of virtualized environments, provide unique role-based system administration for each virtual device, which allows Oracle server administrators to be granted specific application switching and access control administration rights such as service activation and suspension of Oracle applications and reduces interdependencies between the network and server administration teams.
- ✓ The Cisco ACE Module provides guaranteed application switching service levels per virtual device based on application needs, which meets specific application service-level agreements (SLAs) without risk of affecting the service levels of other application environments.

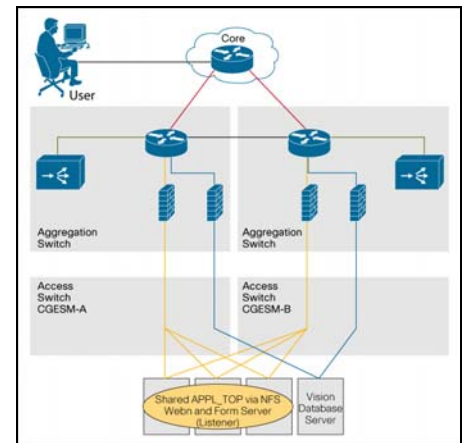
High-performance application switching: Efficiently delivers greater application scalability

- ✓ The Cisco ACE Module efficiently distributes traffic to Oracle application servers with session persistence, monitors the state of application and database servers, and redirects traffic from failed servers and restores traffic to reinstated servers, which yields data center-class availability and scalability of Oracle applications.
- ✓ The Cisco ACE Module delivers redundant application switching of Oracle application traffic with throughput up to 64 Gbps in a single Ethernet switch and up to 345,000 connections setups and teardowns per

second, which provides data center-class Oracle application performance.

- ✓ The Cisco ACE Module mitigates processor-intensive Secure Sockets Layer (SSL) encryption and decryption and handles TCP optimization and session affinity, which recovers up to 80 percent of processor usage, consolidates devices in the data center, and allows servers to focus on hosting the Oracle application business logic.

Figure 3: Cisco Data Center Solution for Oracle Application architecture



Application security: Protection from application attacks

- ✓ The Cisco ACE Module provides bidirectional deep inspection to block Structured Query Language (SQL) injection, cross-site scripting, command injection, cookie and session poisoning, application reconnaissance, Lightweight Directory Access Protocol (LDAP) injection, buffer overflows, directory traversals, attack obfuscation, application platform exploits, parameter tampering and zero-day attacks, which prevents application layer attacks including fraud and data and identity theft.
- ✓ The Cisco Catalyst 6500 Series FWSM controls access to Oracle applications from outside connections, which thwarts unauthorized entry within the data center.
- ✓ The Cisco ACE Module provides isolation of virtual devices which prohibits unauthorized changes to the application switch or firewall access control

For More Information

Cisco product and solution literature

www.cisco.com/go/ace
www.cisco.com/go/fwsm
www.cisco.com/go/catalyst6500
www.cisco.com/go/srnd

Oracle product literature

www.oracle.com

Cisco and Oracle partnership

www.cisco.com/go/oracle
www.oracle.com/goto/cisco

To contact a Cisco salesperson or to obtain additional information, please email:

solutionsfororacle@external.cisco.com

Application acceleration and bandwidth optimization: Better end-user performance with less WAN

- ✓ The Cisco ACE Module includes compression and caching technologies, *which improves* Web-based application response times by up to 300 percent

Solution Flexibility

The Cisco Data Center Solution for Oracle Applications offers flexibility in deployment with the option to deploy any of the Cisco ACE family of products in transparent or one-arm mode and with or without Cisco Catalyst 6500 Series FWSM. Additional Cisco integrated network service options such as intrusion prevention systems, intrusion detection systems, and network analysis devices can be added but are not tested in this solution. See Table 1 for the test results.

The description of such deployment options are covered in "Integrating Oracle E-Business Suite 11i in the Cisco Data Center," available at www.cisco.com/go/oracle and www.oracle.com/goto/cisco.

Application	Oracle E-Business Suite 11i Version 10.5.2 with Vision database data
Oracle user interface	Web browser accessing Web server through the Forms Listener Servlet using HTTP and HTTPS transport of Forms Server traffic
Servers	HP blade servers with VMware virtualization
Testing tool	Mercury LoadRunner
Application switching	Cisco Application Control Engine Module
Firewall	Cisco Catalyst 6500 Series FWSM
Ethernet switching	Cisco Catalyst 6513 Switch with Cisco Catalyst 6500 Series Supervisor Engine 720 and native Cisco IOS® Software
Storage switching	Cisco MDS 9216 Multilayer Fabric Switch

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