



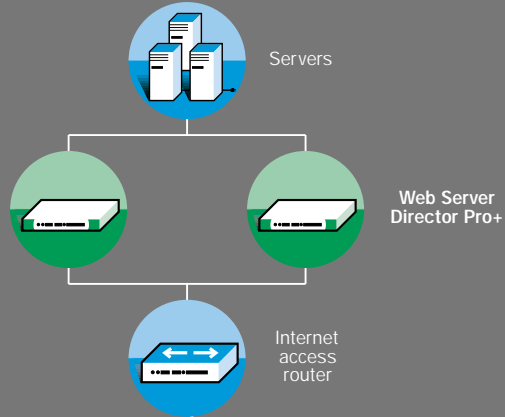
# Web Server Director

Local and Global Traffic Management

# The Global Solution

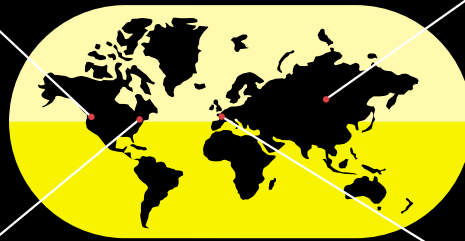
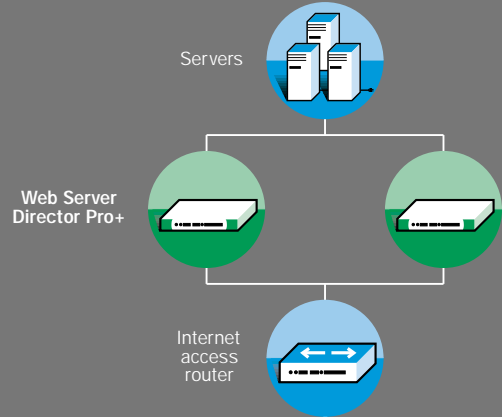
## West Coast data center

This data center with WSD Pro+ shares the traffic load of clients which the main site has redirected. It also sends local load and availability updates to the main site.



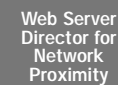
## Asian data center

This data center with WSD Pro+ shares the traffic load of clients which the main site has redirected. It also sends local load and availability updates to the main site.



## East Coast data center

**Main site:** Initial entry point for all users. This site collects the proximity information and availability of the remote sites in the network. The incoming client will be directed to the most available and closest site.



## European data center

This data center acts as a backup for the main site as well as shares the global load. In case the main site fails this data center will turn into the entry point.

Eliminating network uncertainty and ensuring the best possible user experience despite inevitable system failures is crucial to a successful business in today's e-business economy.

With Radware's award winning Web Server Director™ (WSD) family of application switches, you ensure that your company's IP applications will not be paralyzed by the inherent uncertainties on the web. Whether your content is located on single or multiple data centers, clients are assured superior service and high availability.

## Local Solutions

### Certainty for Dynamic Networks With Non-Stop Service

#### — Application Health Monitoring

First and foremost, WSD's robust health monitoring mechanism guarantees a positive user experience. WSD will monitor the health of the resources on all layers: IP, TCP, UDP, application and content. In the event of a failure, the user is transparently redirected to an operational server. This guarantees that users always receive the information that they expect to see.

#### — Full Transaction Assurance

To ensure service uptime, WSD monitors the full path from the web server to backend servers assuring that the entire data path is a healthy one. If one faulty link exists, WSD will not direct users to the unhealthy path, thus transparently providing clients guaranteed service.

#### — Full Network Assurance and Redundancy

WSD's configuration provides full fault tolerance between devices to assure maximal availability. Both units check each other through the network to verify full network availability for the managed application. The units work either in active-standby mode or active-active mode thereby maximizing your investment, as both redundant units are utilized. In both cases all information may be mirrored, providing transparent redundancy and full fault tolerance while granting users with the best service from click to content at all times.

#### — Smooth Operation Through Graceful Shutdown

When carrying out a server upgrade or system maintenance, WSD guarantees a smooth server shutdown in order to avoid service interruption. Once a server is selected, WSD will allow no new users to be sent to that server. It will however, allow current users to complete their sessions uninterrupted on the server that will be taken offline. This feature guarantees quality service without any interruption, as well as simple manageability of the server farm.

#### — Smart Server Recovery

When bringing a rebooted server back to service, it is essential to avoid malfunctions caused by a sudden surge of traffic to the new server. As a result, while initiating a new server to the farm WSD gradually introduces clients to the server until reaching full capacity. This mechanism ensures that users receive uninterrupted service not only when the server is down, but also during its boot time and application initiation.



## Ensuring the Best Service with Application Switching

### — Server Resource Optimization Through Load Balancing

WSD performs sophisticated load balancing algorithms that dynamically distribute the load among multiple local and remote servers. These include cyclic, least amount of users, least amount of traffic, Native Windows NT and customized agent support. In addition to these algorithms, WSD can also assign a configurable performance weight to each server, resulting in an enhanced performance of the server farm.

### — Application Switching

WSD executes traffic redirection decisions based on IP addresses, application type and content. This enables administrators to allocate different server resources for different types of applications. The application switch can support various applications on different protocols including TCP, UDP, IP, Telnet, Rshell, TFTP, streaming, passive FTP, HTTP, e-mail, DNS, VOIP and more. Radware has designed special support features for applications that operate on dynamic ports and require synchronization.

### — Web Switching

WSD fully supports URL switching, redirecting traffic based on the URL and the HTTP information. Each URL can be redirected to a server or load balanced across multiple servers, providing optimized web switching performance. Based on the information contained in the text of the URL itself, WSD can maintain client persistence, thereby enabling content personalization.

### — Content Switching

Content switching allows administrators to allocate different server resources based on the transaction's content. For instance, CGI scripts may reside on a separate group of servers, and when a request for that content is made, the session is redirected to one of those servers. WSD's content switching capabilities can maintain client persistence with extensive support for SSL ID and cookies, ensuring optimal traffic management and content personalization for those applications.

## Easy Management

WSD can be managed by CLI, Telnet, Web based application or HPOV plug in as well as by Radware's ConfigWare, a stand alone full GUI Java based utility. This independent platform management system makes it easier for you to remotely connect and manage the device. Its' intuitive layout with easy to use menus include helpful wizards, taking users step by step through configurations and backup configurations. ConfigWare provides statistics that help you better understand the traffic needs of your network as well as manage your server resources more effectively.

## Simple Network Installation

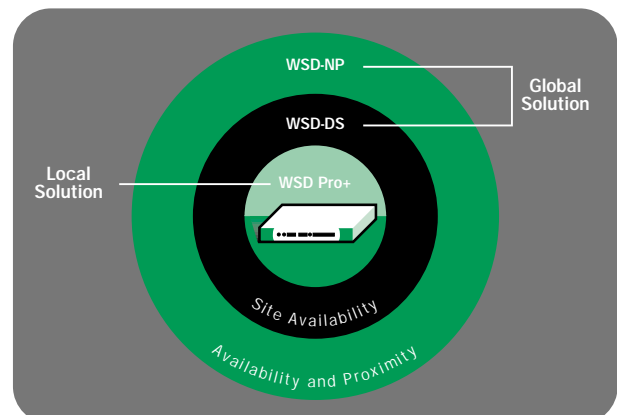
WSD can be easily integrated into any network with virtually no changes to your present network. This eliminates a substantial amount of work as well as cost. Radware's versatile configuration can be installed as a bridge, router or in the one arm (lollipop) configuration ensuring a simple and fast installation.

## Application Security

WSD has filtering capabilities and protection against DoS attacks such as SYN flood. With SYN-Flood Protection you can assign a maximum connections threshold to each server protecting it against hostile, resource-intensive SYN attacks. In addition, WSD access control, based on addresses, protocols and applications will ensure secure access to your network.

## Robust Application Switching Performance

Radware offers a rich feature set and intelligent load balancing while bringing wire speed connectivity to your network with minimal latency. Radware's application switch platform with multi-layered switching technology and Gigabit connectivity increases speeds and assures you even faster responses.



## Global Solutions



Many companies today are moving towards multiple sites in order to provide the best service possible, ensure site redundancy and bring content closer to users. If you are expanding your network to multiple locations, you need to be assured that your clients are directed to the site that can provide the best quality service in the most consistent manner. Radware's global solutions guarantee service availability and performance by intelligently directing client traffic to the optimal site. The end result is simple: faster, more efficient and reliable global service for end users.

Radware's WSD family offers two global solutions: WSD-NP (Network Proximity) and WSD-DS (Distributed Sites). WSD-NP was specifically designed for Internet applications running on several data centers. WSD-DS was created for Intranet applications where user location is known, thus having no need for proximity detection.

### Guaranteed Global Service Through Advanced Decision Making Algorithms

WSD global solution offers two types of decision logic:

WSD-DS directs clients to the data center that is the most available. Availability is determined by load, relative strength of server farms and bandwidth available to a site. WSD-NP takes into account not only site availability, but also the network proximity between the end user and each of the sites.

Both solutions are designed to direct the user to the best available site, providing optimal service for the application the WSD is managing.

WSD-NP has a unique and accurate patent pending proximity detection mechanism that tests and recognizes which data center is the closest to each user. It measures client-site proximity as defined by round trip delay and router hop metrics. Once the proximity measurements are concluded, the information is reported back to the main site using Radware's propriety Proximity Report Protocol (PRP).

In order to make a decision based on availability, WSD global solutions – both DS and NP - collect real time load information from each of the data centers using the Load Report Protocol (LRP). In the event of a failure, WSD-DS will start directing clients to another data center only when the local servers have reached their capacity threshold.

Using this unique decision making mechanism, WSD global solutions ensure that for each application the end user is always directed to the site that will provide the best service. All that your users see is faster, higher quality service.

#### — Sophisticated Multiple Global Redirection Methods

Once the best available site is chosen, the client is redirected transparently using one of three redirection methods: HTTP redirection, Radware's patent pending Triangulation™ Method and DNS redirection. A user can also choose a combination of these methods for multi-stage traffic redirection. The redirection options ensure that users will get the service from the best site, transparently and smoothly.

#### — Complete Redundancy 24x7

Providing multi-level redundancy, WSD offers both redundancy and fault tolerance between servers, WSD units and sites. A number of WSD units can be installed on different sites to provide full site redundancy. If an entire site fails, an alternate site will automatically provide the service, ensuring full service availability. The end result is peace of mind knowing that users will always benefit from a quality level of service.

#### — Unlimited Scalability

WSD's global solutions provide unlimited scalability and investment protection. The flexibility in growing your server farms, the number of data centers, as well as the possibility of upgrading your WSD for local farms into a global solution, ensures that all of your current network investments will be maximized in the future.

#### — Fully Integrated Solution: Global and Local Solution in One Unit

The WSD family offers a completely integrated solution, providing the necessary requirements for a global load balancing solution in one unit. Instead of using two separate boxes, WSD provides an economical, high performance solution in a single unit. Each unit can be upgraded from a local to global solution.

# Product Specifications



## Web Server Director • Local and Global Traffic Management

RISC Processor	MPC 750 266 MHz (Power PC)
Backplane speed	9.6 Gbps
10/100 ports	8
Gigabit Ethernet ports	2
L2 Switching	Wire Speed
RAM	64 Mb (128 Mb)
VLANs	64
Real Servers	10,000
VIP (Virtual IP)	512/3,000
IP Routing Interfaces	2,000
Routing table entries	128,000
Simultaneous Clients	500,000
Simultaneous Sessions	Unlimited
Routing Protocols	OSPF, RIP, RIP II

### Network Management

Command Line Interface  
HP OpenView for Sun Solaris  
Web  
SNMP  
Telnet  
Full GUI

### Standards

10BASE-T/100BASE-TX (IEEE 802.3, 802.3u), 1000BASE-SX (IEEE 802.3z), SNMP (1213 MIB-II, 1643 Ethernet, 1493 Bridge), IP, OSPF, RIPv1, RIPv2, TFTP, BootP, Telnet

### 1000BASE-SX Ports

Full-duplex Gigabit Ethernet SC fiber connectors

### 1000BASE-SX Operating Distance

Shortwave (850 nm) 62.5 micron MM fiber .2 to 275 meters 50 micron MM fiber .2 to 550 meters

### 10BASE-T/100BASE-TX Ports

10/100 full or half-duplex (auto-negotiation) with RJ-45 connections for UTP ports

### RS-232C Console

DB-9 serial connection, female DCE interface for out-of-band management

### Dimensions

Width: 432mm  
Depth: 475mm  
Height: 44mm (Standard 19" EIA rack or standalone)  
Weight: 3.5 kg

### Environmental

Operating Temperature: 0-40°C  
Humidity (non-condensing) 5% to 95%

### Power

Auto-range supply: 100-250V 50-60Hz

### Certifications

CE, UL, CUL, FCC, VCCI

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### Radware Inc.

575 Corporate Drive, Lobby 2  
Mahwah, NJ 07430  
Tel: +1-201-512-9771  
Fax: +1-201-512-9774  
U.S. Toll Free: 1-888-234-5763  
email: info@radware.com

### Radware Ltd.

22 Raoul Wallenberg Street  
Tel Aviv 69710, Israel  
Tel: +972-3-766 8666  
Fax: +972-3-766 8655  
email: info@radware.co.il

