

The APSolute Answer for Large-Scale Oracle Applications

Date
Name
Title
Contact Info



APSolute Application Delivery

Agenda

- Introducing Radware
- Oracle Enterprise Application Server 10g Architecture
- Application Delivery Challenges
- APSSolute Solutions and Benefits
- Case Study
- Q&A

Introducing Radware

Introducing Radware

- We are an **Application Delivery** vendor
 - We provide our customers with:
 - full **availability**
 - maximum **performance**
 - complete **security**
- For their **mission critical applications**
- Our solutions **align network behavior** with **business processes** to drive productivity up and infrastructure costs down.
 - We are a certified partner member in the **OraclePartner** program, providing products that enhance Oracle's large-scale customer applications.

Company Background

- **Founded in '97**, Public company since Sept. '99 (NASDAQ: RDWR)
- **Selling in over 40 countries**, more than 130 resellers & distributors world wide
- \$77M total sales for 2005 and **profitable**
- **Consistent Revenue Growth**
- **\$170M in cash – debt free**



Leading Customers

More than 4,000 customers across many industry sectors

* Sample List



SONY



TOSHIBA



Oracle Customers

- Radware has sold AFE solutions to:
 - more than 40 Oracle users
 - In 11 countries
 - Australia, Austria, Canada, China, Germany, Israel, Italy, Japan, Korea, Spain, Switzerland, US
 - Across 15 vertical markets
 - Banking, Business Services, Communications, Education, Financial, Government, Healthcare, Insurance, Lodging, Pharmaceutical, Sports, Technology, Transportation and Utilities

Track Record of Technology Innovation



- Patents

* Sample List

- **Triangle redirection** method for the global load balancing (*Issued June 19, 2001*)
- Efficient management and optimization of multiple links in our **LinkProof** product (*Issued December 16, 2003*)
- A method for determining **network proximity** and utilizing network proximity for load balancing decisions, in our WSD product (*Issued April 6, 2004*)
- **BGP Route Optimization** (*Issued April 2005*)

Two Strategic Markets

“Web ***application security*** and ***application delivery markets*** have developed separately but are ripe for consolidation. Integrating products from these two markets will bring benefits in significant performance, management and cost savings.”

Management Update: Application Delivery and Web Application Firewalls are Ready to Converge. June 2005, Gartner

Industry Analysts Recognize Radware

Gartner Places Radware in the **Challenger** Quadrant in Enterprise Security Magic Quadrant

- *“The Web-enabled application delivery and Web application firewall markets will converge...
Radware is furthest along in developing both areas of functionality”*

The Magic Quadrant is copyrighted 2004 by Gartner, Inc. and is reused with permission. The Magic Quadrant is a graphical representation of a marketplace at and for a specific time period. It depicts Gartner's analysis of how certain vendors measure against criteria for that marketplace, as defined by Gartner. Gartner does not endorse any vendor, product or service depicted in the Magic Quadrant, and does not advise technology users to select only those vendors placed in the "Leaders" quadrant. The Magic Quadrant is intended solely as a research tool, and is not meant to be a specific guide to action. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

Oracle Enterprise Application Server 10g

Architecture

Oracle Enterprise Application Server 10g Architecture Tiers

- Application Tier:
 - APPHOST Servers (HTTP/HTTPS)
 - Webcache
 - Oracle HTTP Server (OHS)
- Identity Management Tier
 - IDMHOST Servers (HTTP/HTTPS)
 - Oracle HTTP Server (OHS)
 - Single Sign-On (SSO)
 - Delegated Administration Service (DAS)
- Data Tier
 - OIDHOST Servers (LDAP/LDAPS)
 - Oracle Internet Directory (OID)
 - INFRADBHOST and APPDBHOST Servers
 - Metadata Repository (MR) Real Application Clusters (RAC)

Oracle Enterprise Application Server 10g Architecture

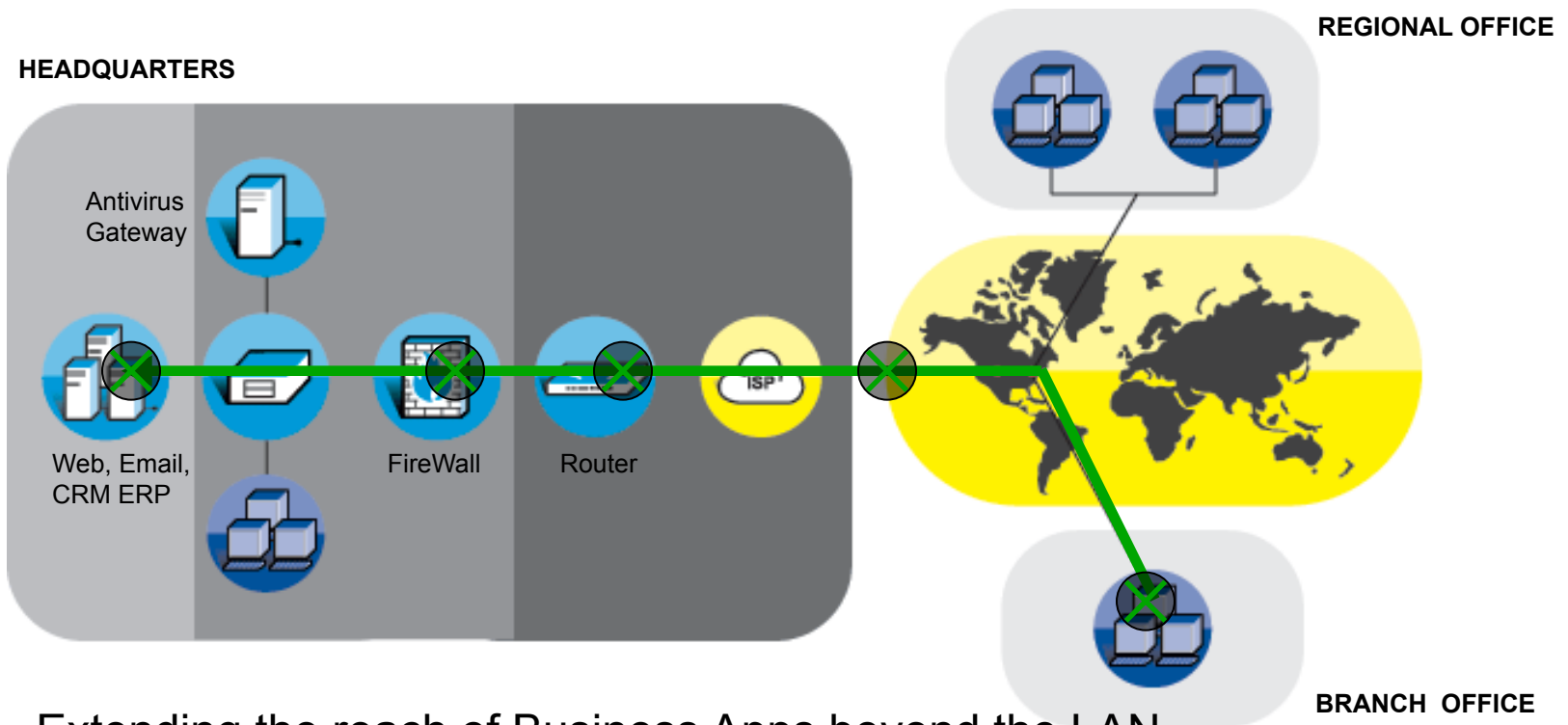
Virtual IPs

Protocol	Virtual IP Address	Servers
HTTPS	portal.mycompany.com:443	APPHOSTs
	login.mycompany.com:443	IDMHOSTs
HTTP	portal.mycompany.com:7777	APPHOSTs
	login.mycompany.com:7777	IDMHOSTs
	portal.mycompany.com:9401	APPHOSTs
LDAP	oid.mycompany.com:389	OIDHOSTs
LDAPS	oid.mycompany.com:636	OIDHOSTs

Oracle Enterprise Large Scale Application Server

Challenges

Challenges - Application Availability

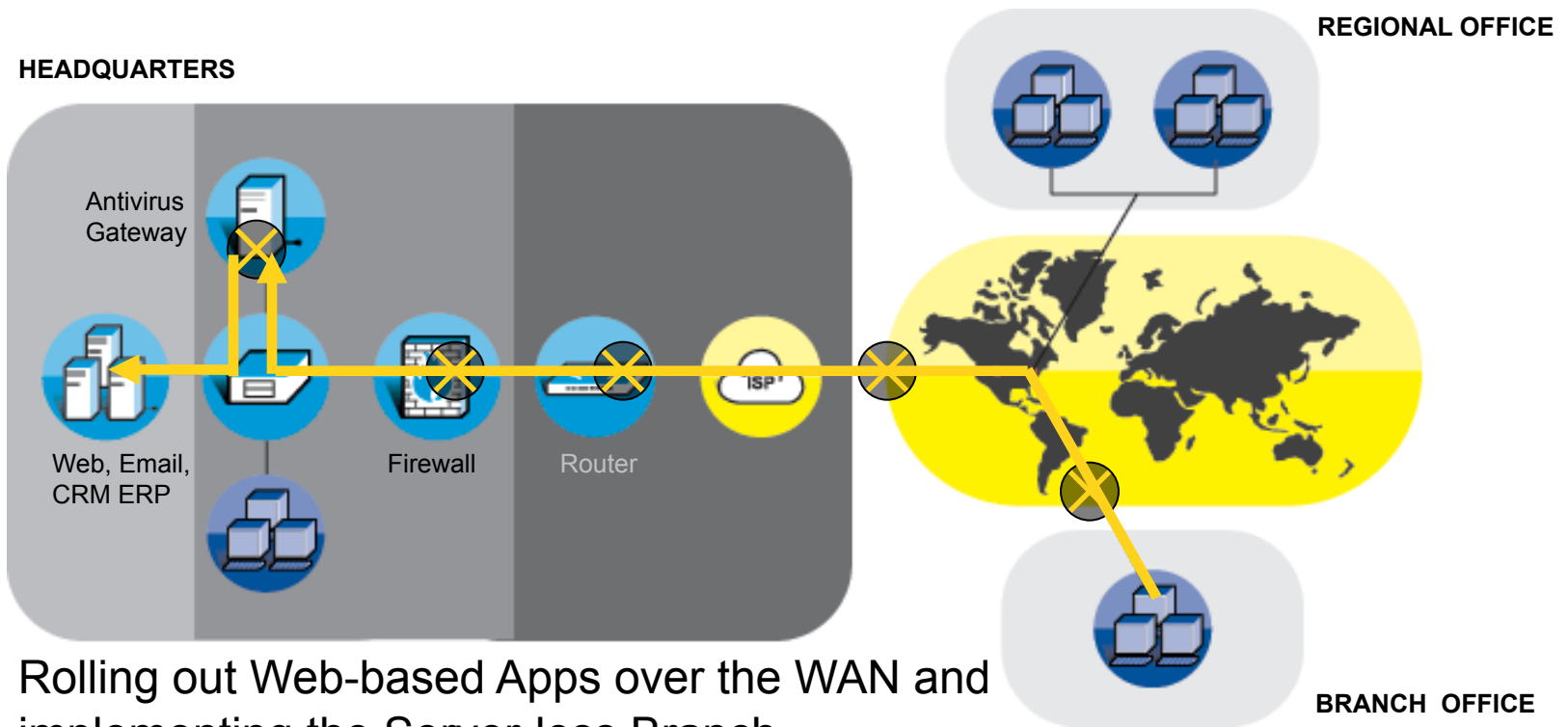


Extending the reach of Business Apps beyond the LAN to the WAN: remote users, branch locations, partners...

- Multiple failure points
- For transaction completion the entire path must be available

Through 2010, the distance data must travel to meet new business processes will grow faster than Moore's law (0.8 probability) *Gartner Oct 05*

Challenges – Application Performance

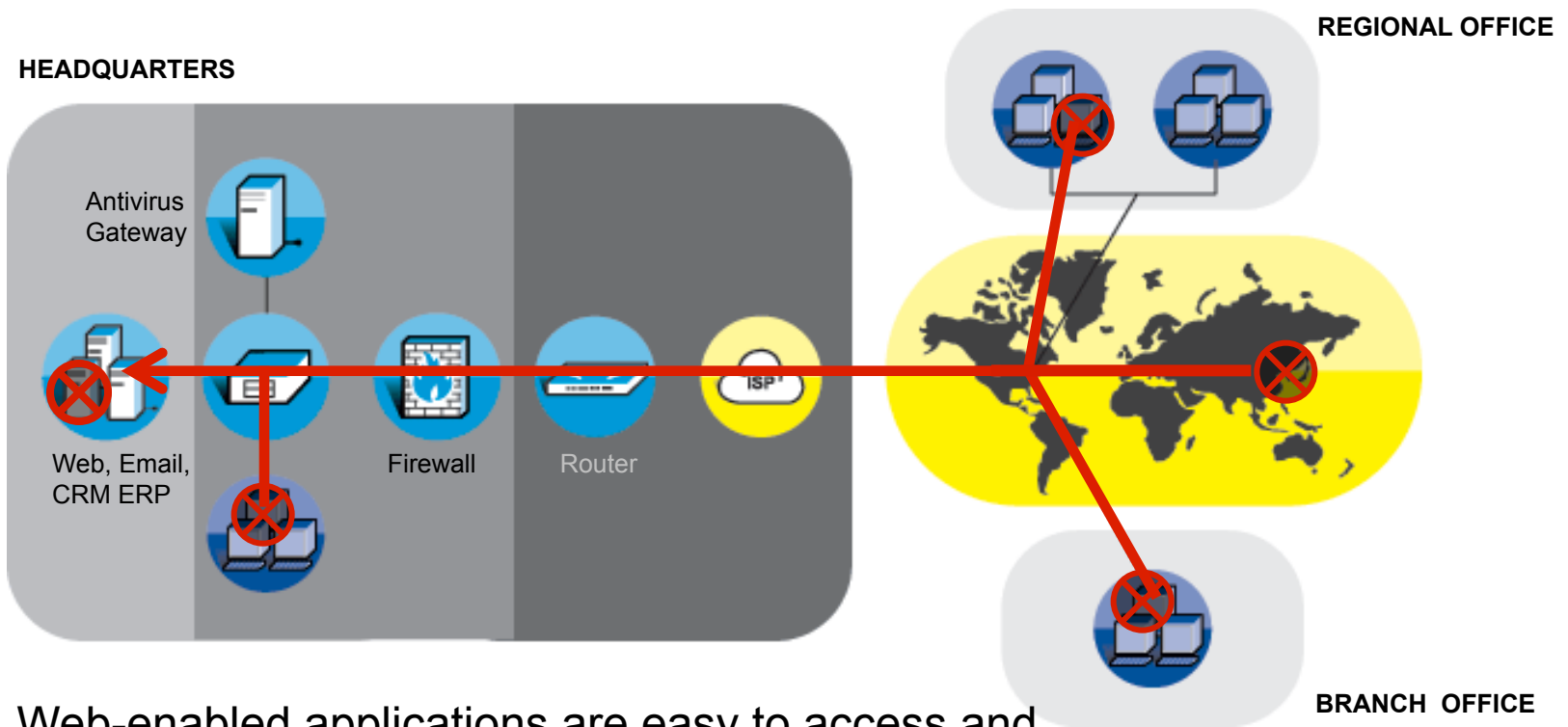


Rolling out Web-based Apps over the WAN and implementing the Server-less Branch

- “Chatty” protocols over lengthy transaction paths → Latency
- No application awareness → No prioritization
- Multimedia-rich content → Increased bandwidth requirements

* Through year-end 2007, more than 50 percent of newly designed business processes will suffer from **end-user performance problems** (0.8 probability). *Gartner October 05*

Challenges - Application Security



Web-enabled applications are easy to access and hence more vulnerable to security threats

- Security threats may originate internally, externally or flow from branches
- Securing the network with a firewall is not enough. We need to secure the applications from worms, application level exploits and DoS attacks

* “75% of the hacks are the application level” (Gartner)

Oracle Enterprise Application Server 10g

Needs

Availability Needs

- **Business Need** – Business continuity; transaction completion
- **Network Requirement** – fault tolerance, redundancy, automatic failure bypassing
- **User Demand** – Anytime, anywhere accessibility to applications needed to get the job done

Performance Needs

- **Business Need** – Drive productivity, extract greater value from IT infrastructure
- **Network Requirement** – Optimize local & global servers' usage, off load intensive CPU operations to a purpose built device, align bandwidth usage with business priorities, compress heavy graphics & text
- **User Demand** – Fast, responsive applications

Security Needs

- **Business Need** – Ensure business continuity even under attack, secure intellectual property
- **Network Requirement** – Protect network resources from DoS attacks, protect critical applications from exploits, protect end users from worm's infections
- **User Demand** – Secure access without performance penalty

Attackers are after your data:

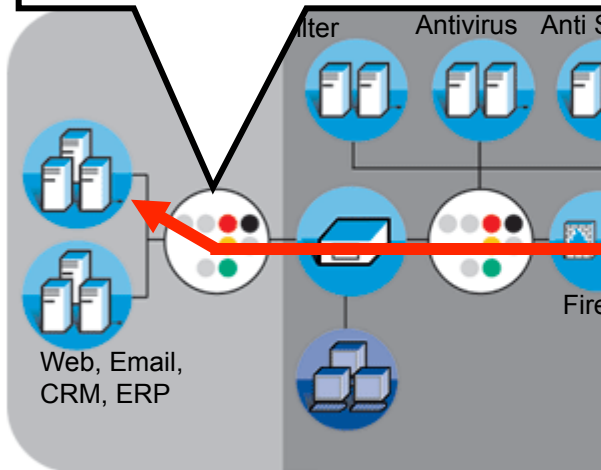
“databases are becoming more vulnerable to the outside world as Web-facing apps demand faster access to information and databases move closer to the network perimeter, opening them to network-based attacks”

InformationWeek – 6 March 2006

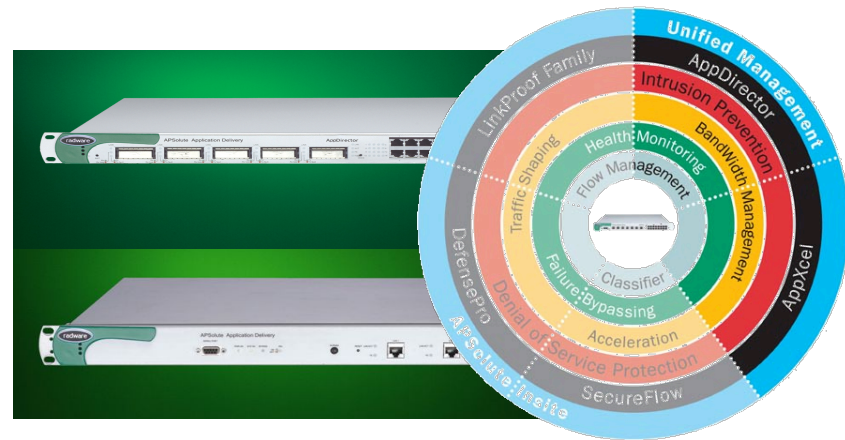
APolute Solutions

Application Front End

Optimize data center resources
ensure reliable, fast, secure
application delivery



*Complete business
continuity, transparent
disaster recovery and
application optimization*



AppDirector + AppXcel

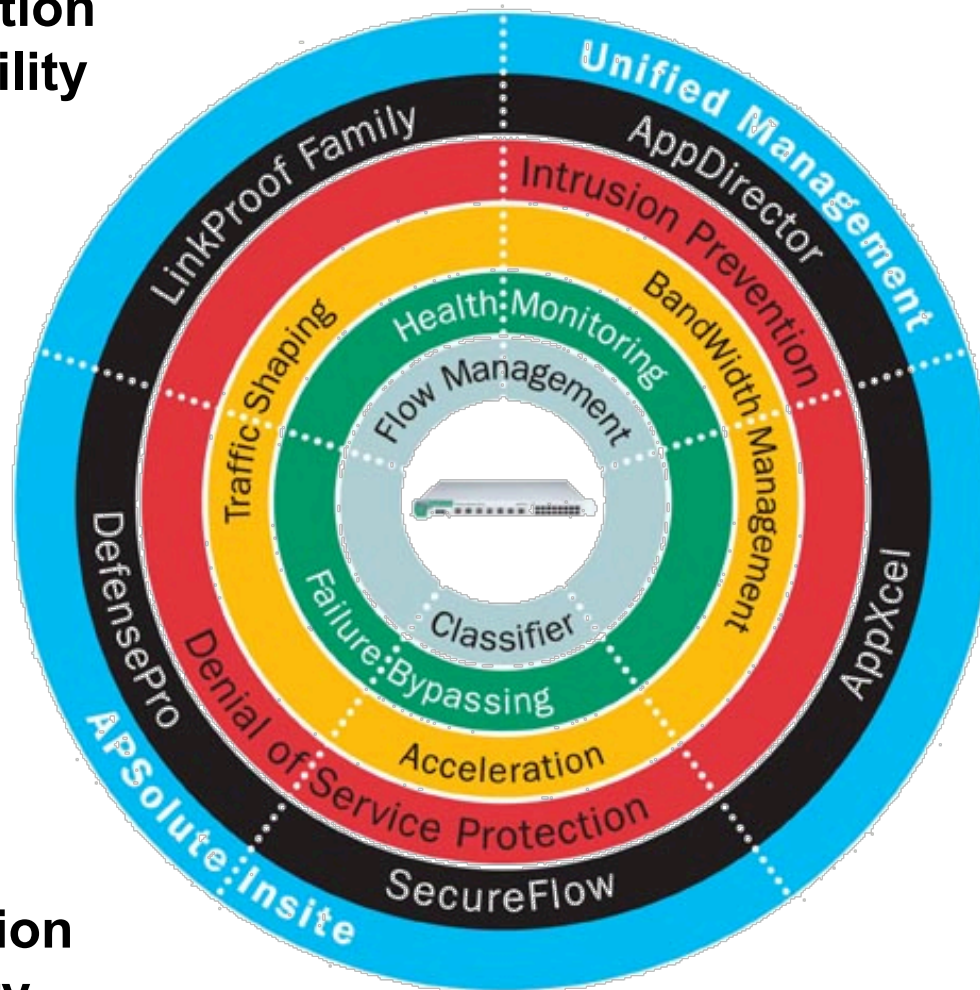
Availability,
Guaranteed

Performance,
Accelerated

Complete Application Delivery Solution

**Application
Availability**

**Application
Security**



**Application
Performance**

Radware Products are Certified by Oracle

- Oracle Compatibility Testing
 - Radware's WSD and CT100 products are validated for use on Oracle's 9i and 10g platforms
 - Radware's next generation AppDirector and AppXcel products are scheduled to 11i validation testing
- Oracle Enterprise Technology Center (ETC)
 - Radware equipment is now available at the Oracle ETC in Atlanta for developing, demonstrating, and testing Oracle products and solutions

Application Availability: Reliable Delivery

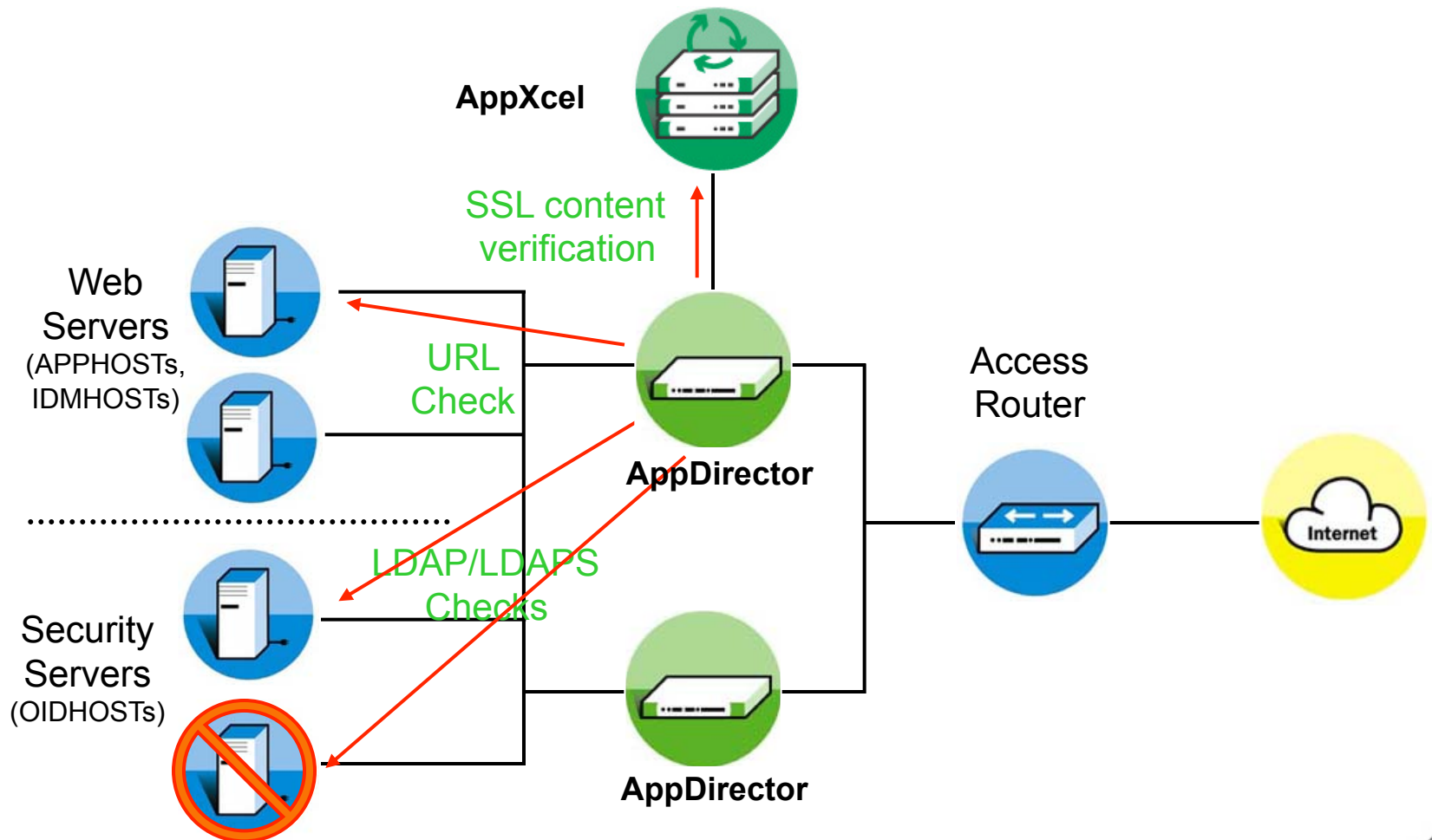


High Availability Solutions

- Advanced Health Monitoring
- Failure Bypassing
- Local & Global Traffic Redirection
- Redundancy
- Disaster Recovery

Advanced Health Monitoring

- Comprehensive set of predefined application specific health checks
- Ensure complete transaction path availability
- Real time failure bypassing



Advanced Health Monitoring

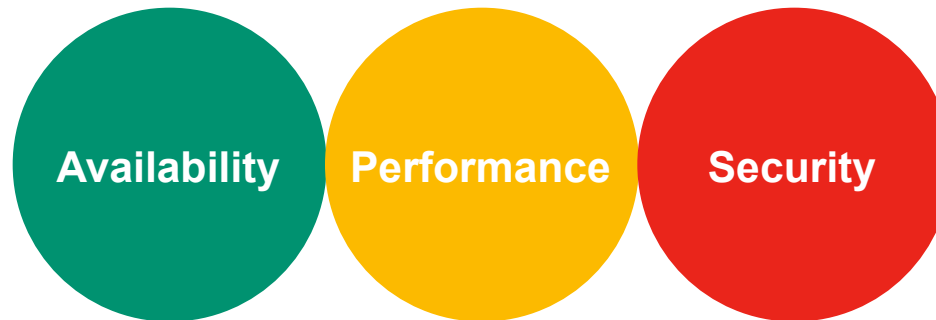
- **Benefits**

- Simple configuration
- Flexible degree of granularity
 - Checks can be mandatory or optional
 - Health can be based on Check success or failure
 - Multiple checks of multiple devices can be used
- Script-free configuration
 - No re-learning curve
 - Check and Binding parameters are stored in forms (GUI)
 - User prompted only for relevant parameters (GUI)

Benefits of High Availability Applications

- Ensured application delivery
- Guaranteed business continuity
- Improved productivity

Application Performance: Fast Delivery



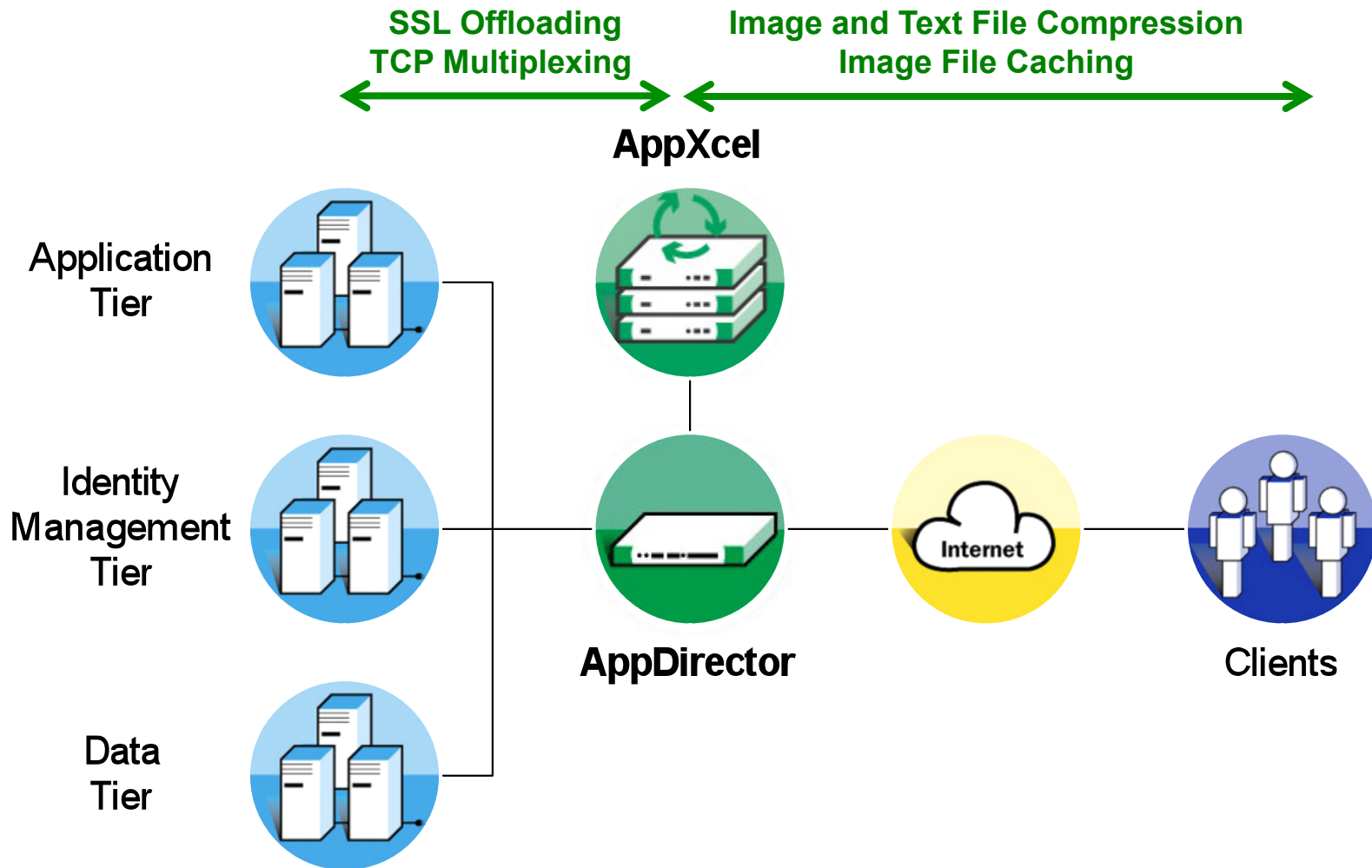
Application Performance Solutions

- Local & Global Traffic management
- Network proximity
- Bandwidth management
- Connection pooling / TCP multiplexing
- SSL offloading
- Caching
- Image compression
- Web compression
- TCP Optimization





AppXcel

Improving Application Performance

- Optimize servers' operation by offloading CPU intensive tasks
- Conserve bandwidth and compensate for WAN latency



HTTP Compression

	HTML file size (Kbytes)	Total JPEG size	Total page size	Page size (after compression)	Ratio
	63K	0	161.1K	107.1K	34%
	36K	18K	91K	52K	43%
	49K	16K	77.8K	28.8K	63%
	50K	7K	90K	44.1K	51%

- Compression reduces the average page size by 50% for all GZip enabled browsers
- Accelerate response time by a factor of 2
- **Cached content** is stored compressed; No CPU overhead
- Optional hardware compression card

Benefits of High Performance Applications

- Accelerated application delivery to anyone anywhere
- Ensure timely delivery of real time applications
- Aligned bandwidth utilization with business priorities
- Guarantee optimal business application performance
- Extract greater value from your IT infrastructure

Application Security: Secure Delivery



Secure Application Solutions

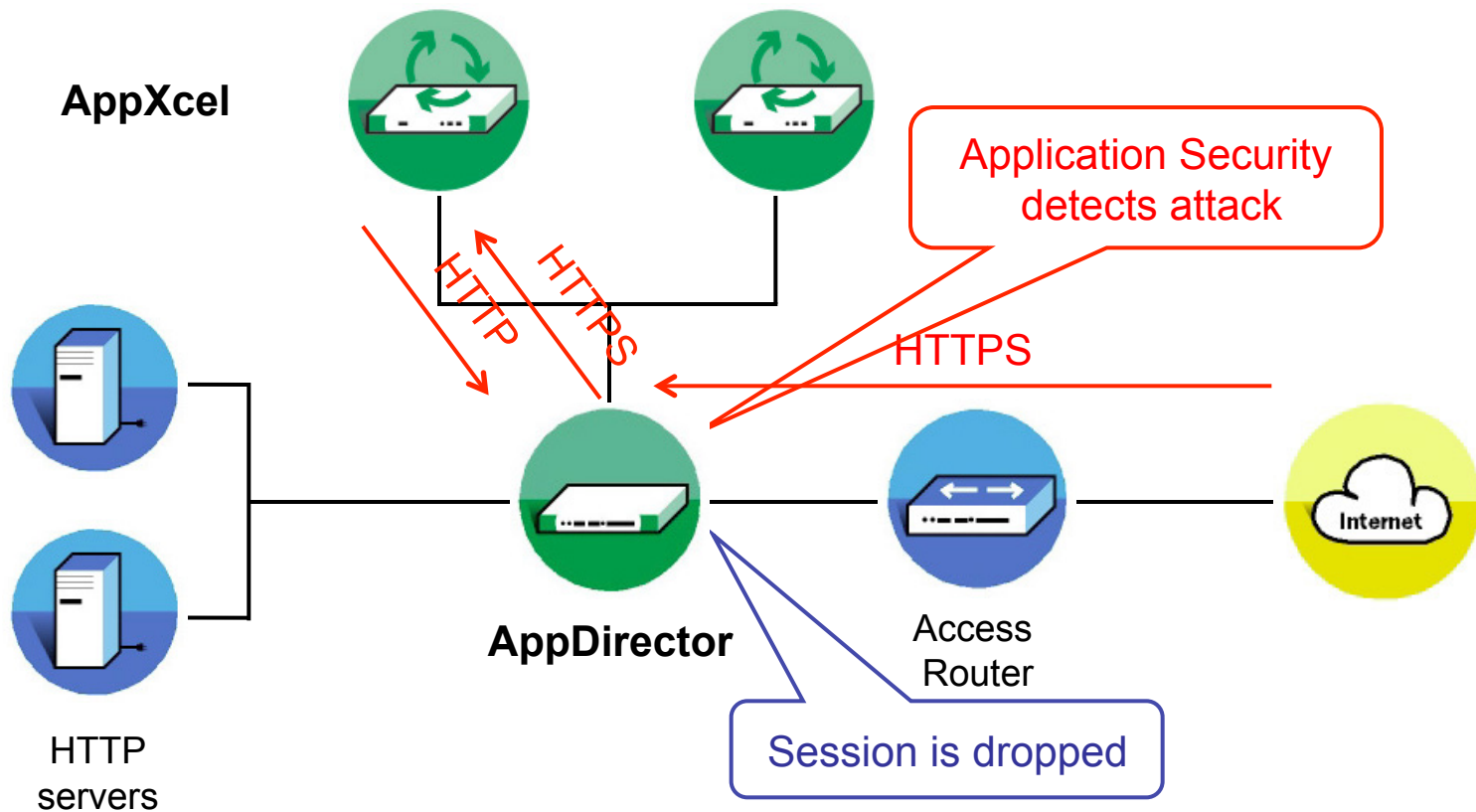
- Intrusion prevention
- DoS & DDOS protection
- SSL Traffic Inspection
- Protocol Anomaly detection
- Behavior-based protection

Benefits of an Integrated Security Solution

- A secure, single point of entry to a data center:
 - Provides protection to the downstream applications infrastructure
 - No additional hardware or operational costs
- If dictated by traffic growth or organizational demands, protection can be migrated to DefensePro, Radware's specially designed security switch

Securing Encrypted Transactions

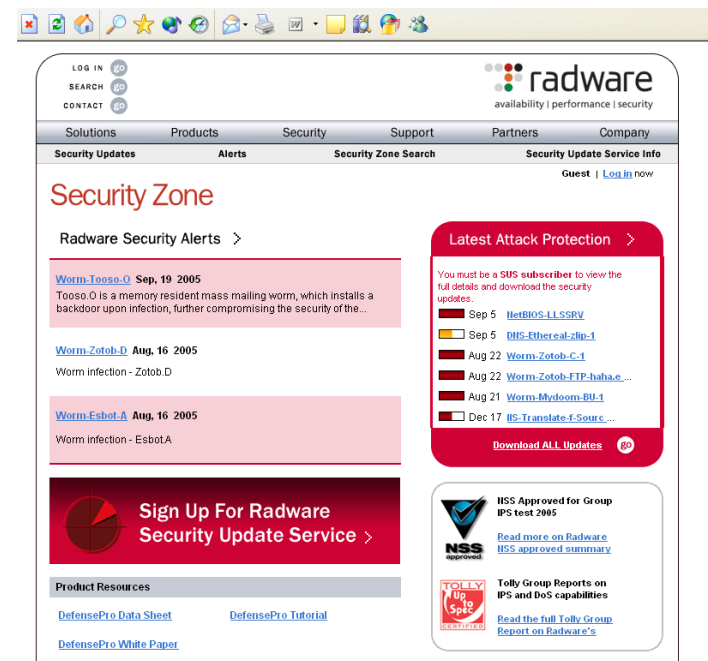
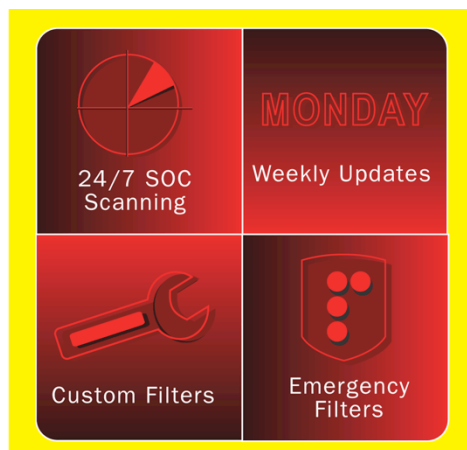
- Real-time protection from SSL based attacks without compromising performance



- Applicable also when using backend encryption

Security Update Service

- Real time update
 - 24/7 operational SoC in IL and US
- Security Zone
 - Security Alerts
 - Weekly Updates
 - Emergency Updates
 - Security Resources



Competitive Advantages

- The Radware integrated application security solution provides “best of breed” protection:
 - Rate-based Protection
 - Statistical, threshold-based
 - Adaptive Behavior-based Protection
 - Self-learning, self-adjusting, and self-correcting
 - Content-based Protection
 - Signatures and rules
 - Bandwidth Management and Access Control
 - Rate and rule-based

Benefits of Secured Applications

- Protecting business application from emerging worms and viruses
- Mitigating DoS attacks for non-stop business operation
- Securing intellectual properties and valuable assets
- Ensuring application delivery even under attack

Radware vs. The Competition

- **Other vendors have certified solutions**
- **However, only Radware offers:**
 - Application delivery up to 5 times faster
 - Graphical and text compression providing greater than 60% bandwidth savings
 - Real-time health checking for links, routers, servers and applications
 - Patented, real-time latency statistics to point traffic to the fastest, available server or application
 - Dynamic triangulation switching between servers and sites to improve delivery and resiliency
 - Bandwidth shaping and management to assure mission critical processes
 - Unique classifier and flow management capabilities to better control traffic flow
 - Fully integrated IPS security to proactively block threats without impacting performance
 - Unique, dashboard with drill down capabilities to monitor real-time application performance to address potential bottlenecks before they occur
 - Seamless fail-over allows server shut down during peak hours to eliminate network disruption
 - Automated alerting and reporting to deliver information when management needs it
 - Purpose-built, ASIC, multi-tier application switch to enable Layer 4 – 7 application switching at router speeds
 - Scalable and backward compatible platforms to eliminate expensive fork lift upgrades
 - High MTBF of over 11 years to provides your users with 99.9999% reliable access to their applications

The Oracle Application-Smart Module

- Configuring an Oracle installation is complex:
 - 7 server farms
 - 2-3 VIPs
 - Up to 8 hours to complete
- The Oracle Application-Smart Module can cut this time in half!
- Works with first time installations and upgrades
- Provides step-by-step instructions for an Oracle Installation
- Uses Oracle terminology
- Uniquely Radware

Case Study

Questions and Answers



www.radware.com