

Network + Interop

The Road to Five Nines in the Web-Enabled Data Center

Craig Stouffer

VP Marketing

Redline Networks

cstouffer@RedlineNetworks.com

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“Redline Networks – Powering the New Data Center”



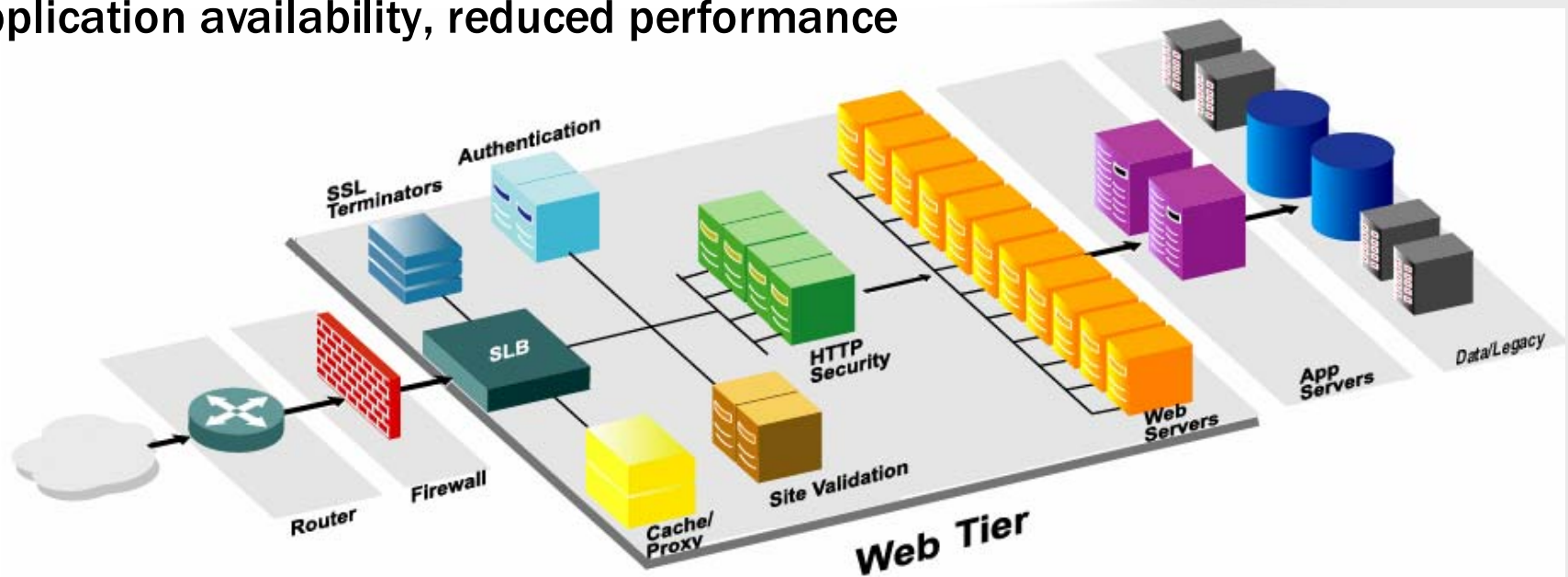
Transition to the Web-Enabled Data Center

- **Business critical applications being re-architected from client/server to web-enabled, centralized applications**
- **Mainstream business critical applications are Web-enabled: Siebel, SAP, PeopleSoft, iNotes, Outlook, custom applications**
- **Web enablement causes new data center pain points**
- **Pain points extend beyond performance pain to include “Application Availability”**



Today's Resulting "Web-Enabled Data Center" Mess

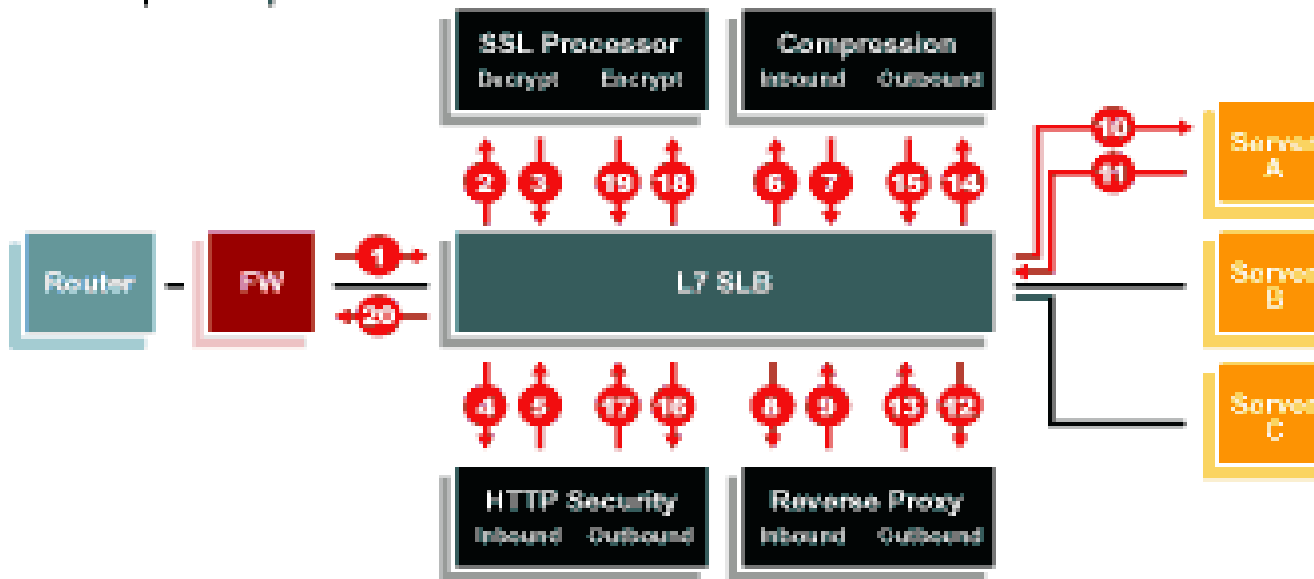
- "Old World" architecture has SLB at the center of the Web Tier
- Resulting ad-hoc 'Web Tier' build-out is a mess of point products
- More boxes = more points for failure, complex management, reduced application availability, reduced performance



Why SLB at the Web Tier Center Doesn't Work

- With only 4 functions, each packet is processed 20 times
- Inefficiency forces enterprises to buy more servers, application servers, SSL licenses, consulting, ... to address declining performance
- Which leads to more systems and more data center failure points

→ [1] → Denotes path of packet



Five Steps to 5 Nines in the “New” Data Center

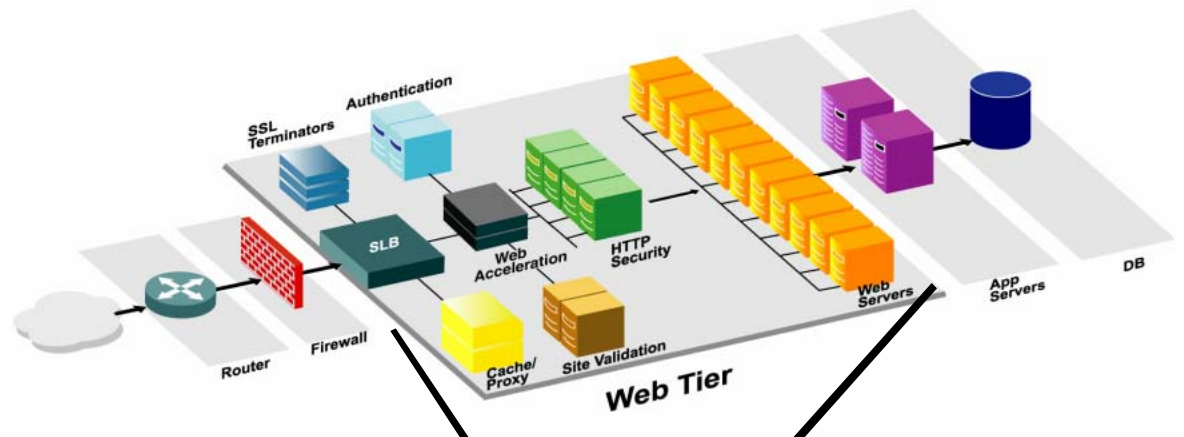
- **Collapse the web tier**
- **Increase web tier resiliency: self-healing mesh topology**
- **Route around failures in surrounding equipment**
- **Improve time to resolution with valuable root-cause-analysis**
- **Leverage server offload and acceleration: application scalability results in fewer server and application errors**



Step #1: The “Web Tier” is Collapsing

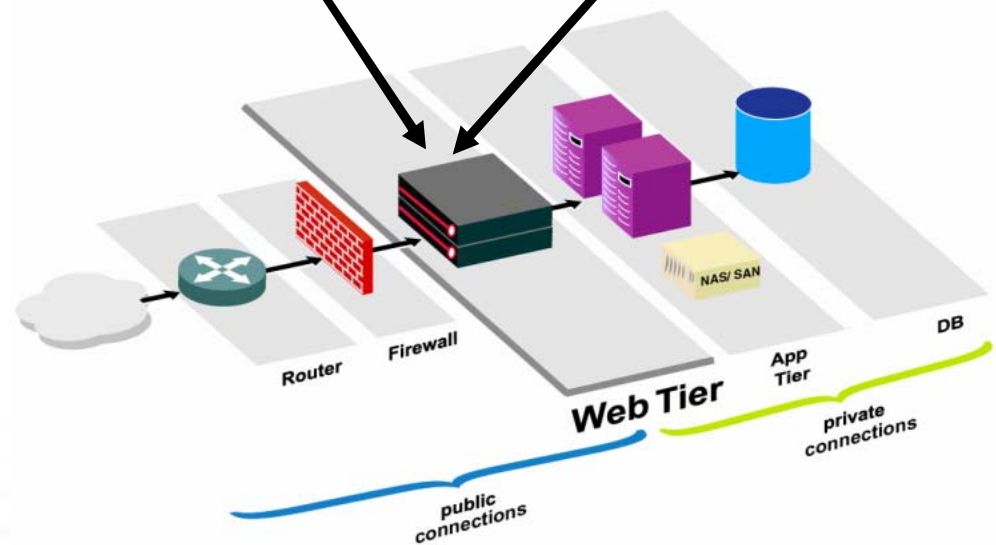
Old Solution:

- SLB at the center
- For resiliency, each box must be duplicated
- Unmanageable

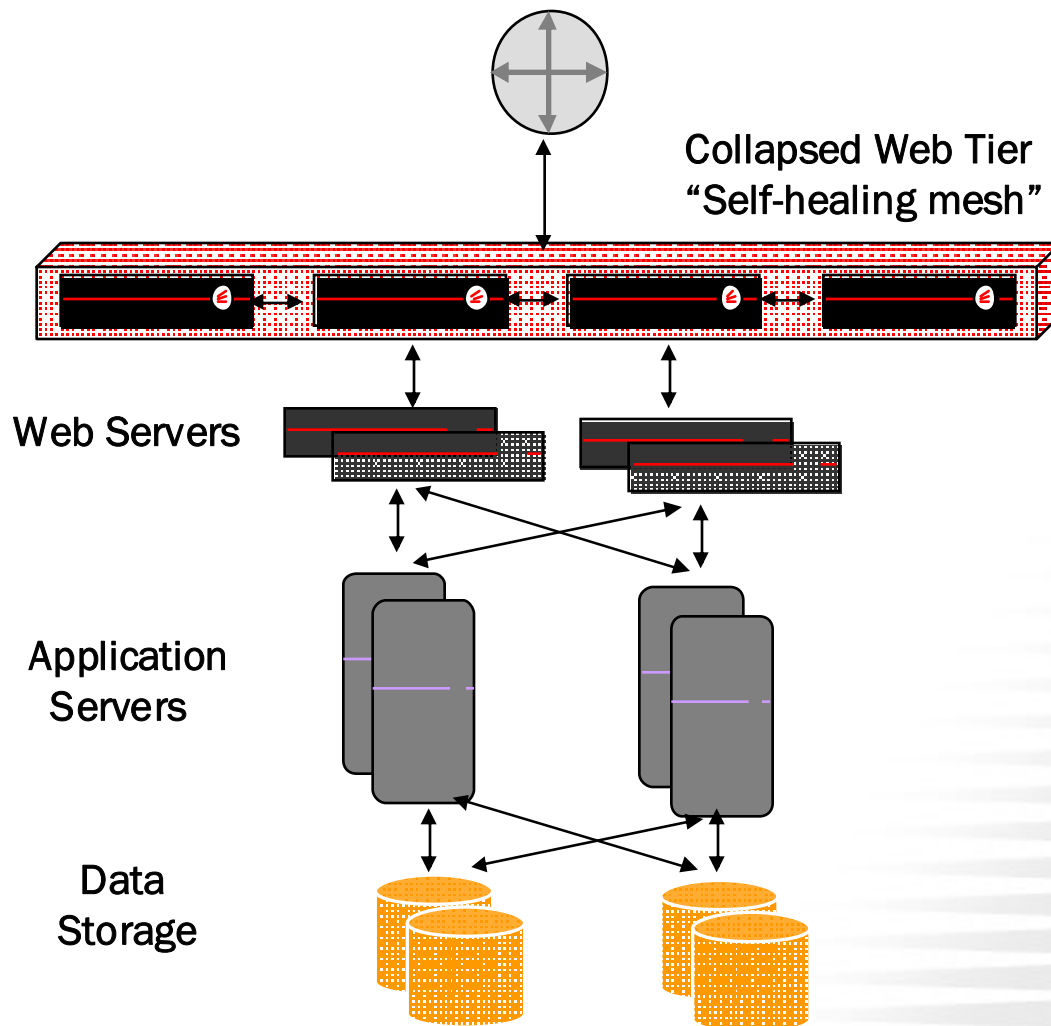


New Solution:

- A platform approach
- Implosion vs. Explosion of the Web Tier
- Dramatically improved reliability, performance, scalability, security
- For Web applications, stand-alone L4-L7 SLBs become obsolete



Step #2: Availability with “Self-Healing Mesh”



- The new Application Front End (“AFE”) to the Web-enabled data center
- “Self-heals” in the event of a system failure
- Systems operate as single, logical unit
- All systems actively process traffic
- User session continues transparently on failure



Three More Steps to 5 Nines

- **Address external failures in servers, applications**
 - Request Retry or route-around failed units
 - Monitor, track, validate every request; (health checking isn't good enough)
- **Improve time to resolution with root-cause-analysis**
 - Provide useful data for Everyone: Application manager, Network Mgr, others
- **Application Acceleration**
 - SSL offload, connection multiplexing, request buffering, even caching
 - Offloaded servers now function better
 - Reduces problems like 'Server Internal Errors'



Santa Clara University Case Study: Add Application Front End


> Speed

> Scalability

> Security


> Flexibility

> Management




Improve Throughput

IMPROVED THROUGHPUT
 Saved \$48,000 per year
 Bandwidth decreased 70%



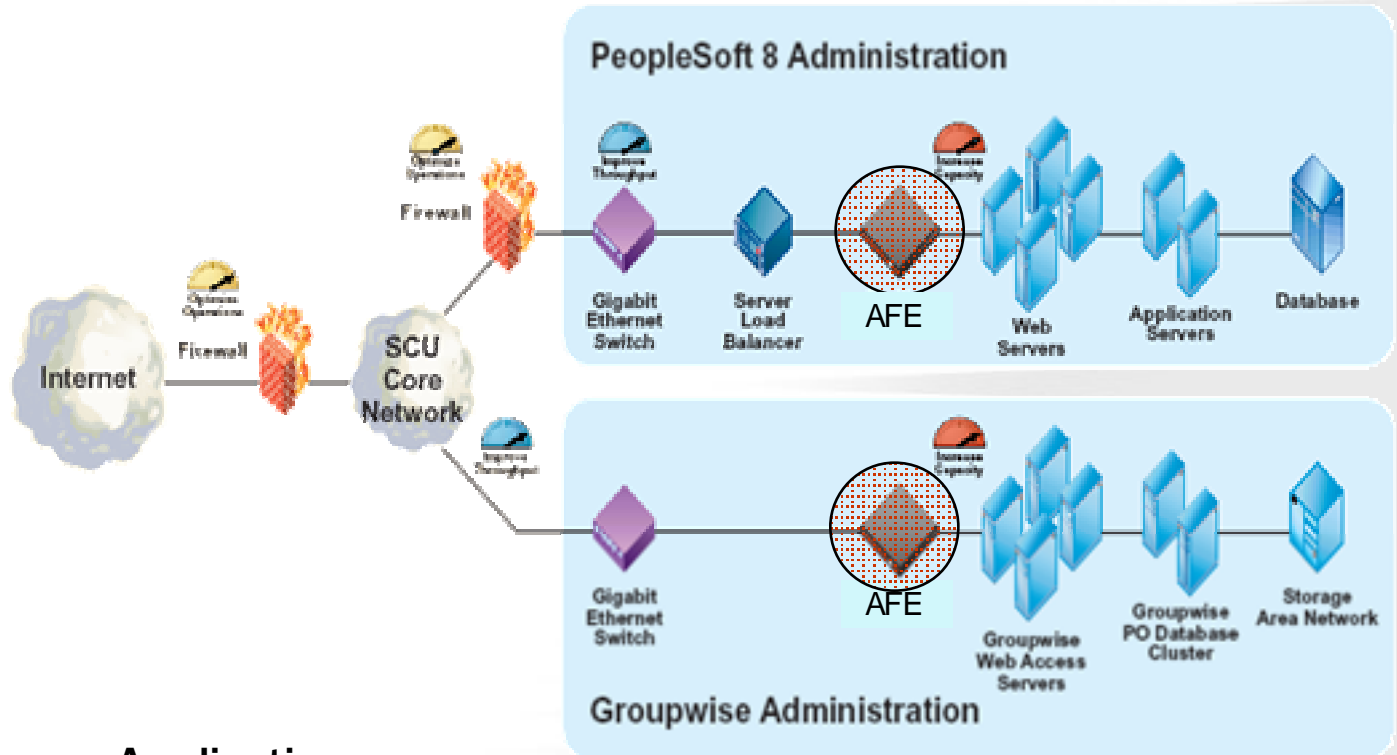
Increase Capacity

INCREASED CAPACITY
 Improved PeopleSoft 8 and Groupwise performance under peak load



Optimize Operations

OPTIMIZED OPERATIONS
 Redeployed web servers
 Extended life of firewall



- **Applications**

- iNotes, Groupwise, Internal Portal, Custom intranet, extranet

- **Deployment**

- No changes to infrastructure or wiring
- No changes to client or applications



Case Study: “AFE” Helps Microsoft’s Siebel Deployment

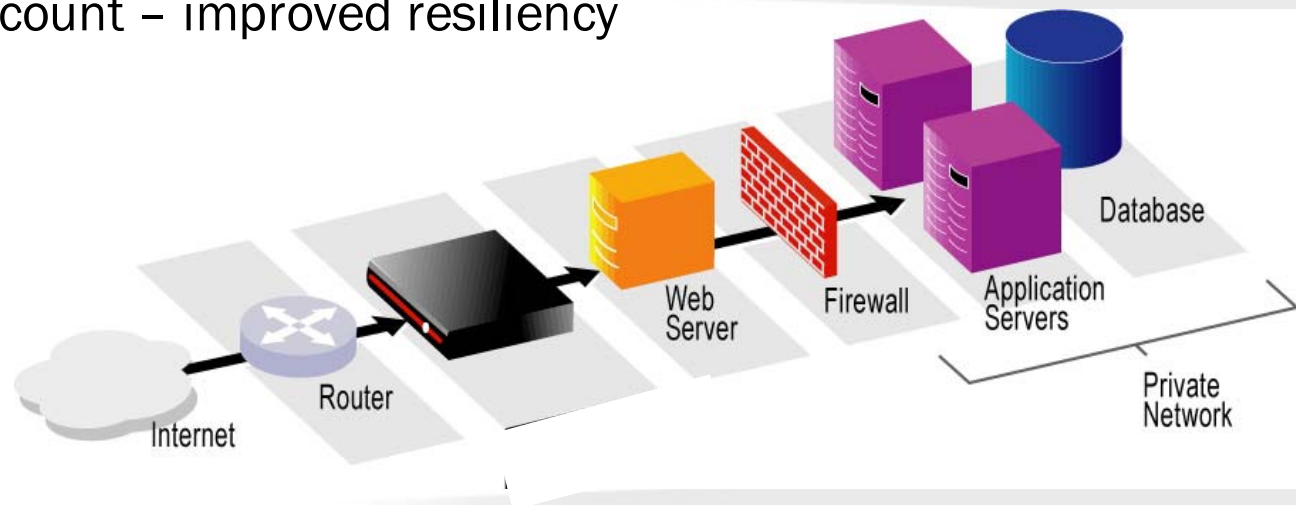
- **Microsoft Partner Access**

- Secure Siebel Extranet
- Performance was too slow for partners accessing site

- **“AFE” Siebel Sales**

- 200% capacity increase
- 60% bandwidth reduction and 59% faster access
- Reduced box count – improved resiliency

Microsoft



Conclusion: Lessons Learned

- **Web-enabling applications provides tremendous benefits**
- **But, projects can be challenging**
- **Be concerned about performance and application availability**
- **Talk to others who have done it, create awareness of potential issues**
- **Utilize consolidated web tier as part of best practices roll-out**





Thank You

For more information on web-enabled data center
and case studies, please visit:

www.newdatacenter.org
www.redlinenetworks.com
