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**#1 Load Balancer**  
in price/performance

# KEMP Exchange Overview

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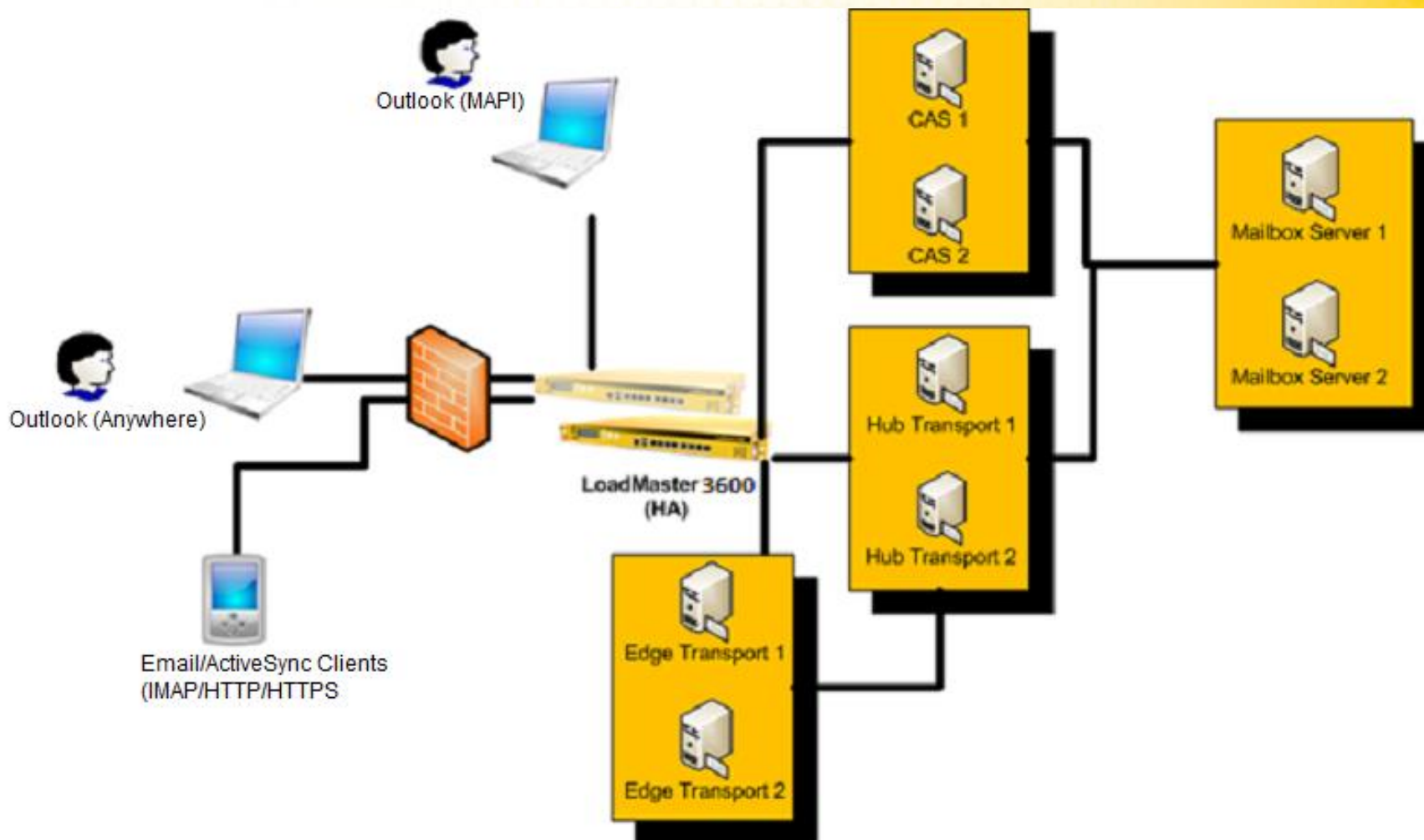
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# Agenda

- Introductions
- Exchange and Sizing
- Edge Security Pack
- Geo Load Balancing
- Load Balancing other Technologies
- Latest Firmware Enhancements
- Latest Hardware Enhancements

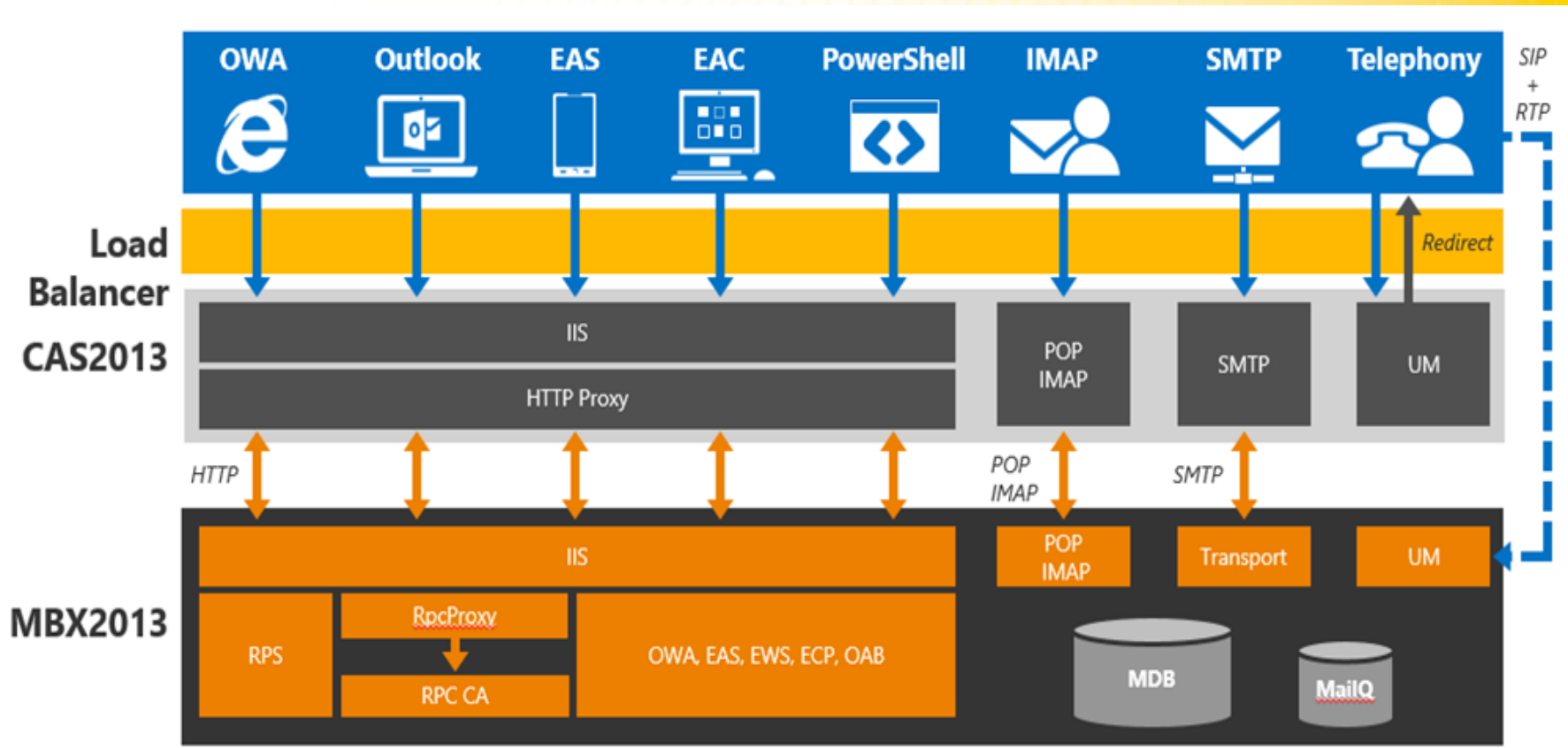
# Exchange 2010 Roles



# Exchange 2010

- Two Layer 7 VS's needed at a minimum, 1 for port 443 and a "\*" wildcard VS for RPC/MAPI, OAB, and Public Folder Access
- We can also support the HTTP to HTTPS redirect for OWA
- The "\*" wildcard VS can be substituted with a VS for port 135 with the high ports added as Extra ports for more stringent Security when opening ports in a externally facing Firewall
- Persistence to the same CAS is the Key in avoiding MAPI re-authentication prompts
- Templates are available for Ex2010

# Exchange 2013 Roles





# Exchange 2013

- Even though L4 is now avail, most customers still setting up at L7
- Only one VS on port 443 at a minimum is needed with simple health checking. ex: set up health checking on the HTTPS protocol and point to /OWA or /microsoft-server-activesync
- adding an HTTP-HTTPS Redirect VS is also common
- We can also support Sub-VSs which would allow you to perform more specific Health Checking on each individual Service
- Templates are available for Ex2013

# LoadMaster sizing made easy

LoadMaster Sizing Guide for Microsoft Exchange 2010 (Beta v0.8)

Using 2048bit SSL Key

Total Mailboxes

10,000

% Concurrent Connections

100%

% HTTPS services

70%

Avg # of Msgs/Day/Mailbox

150

Avg. Message Size (KB)

101

Hours/day

9

Busy Hour Multiplier

2

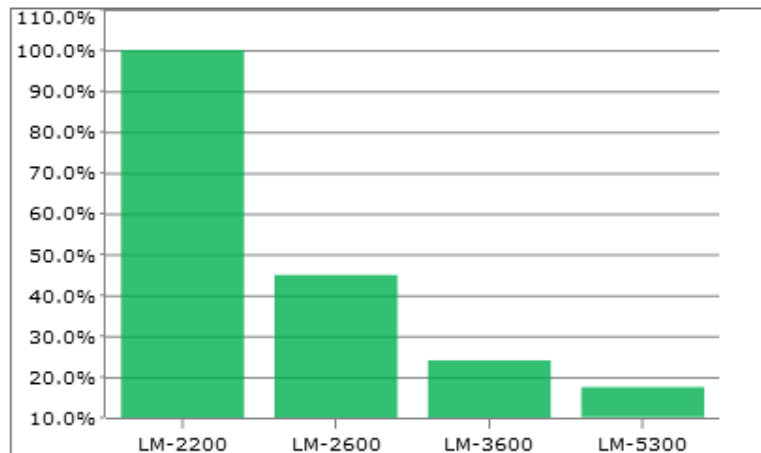
Select SSL Key Length

2048bit

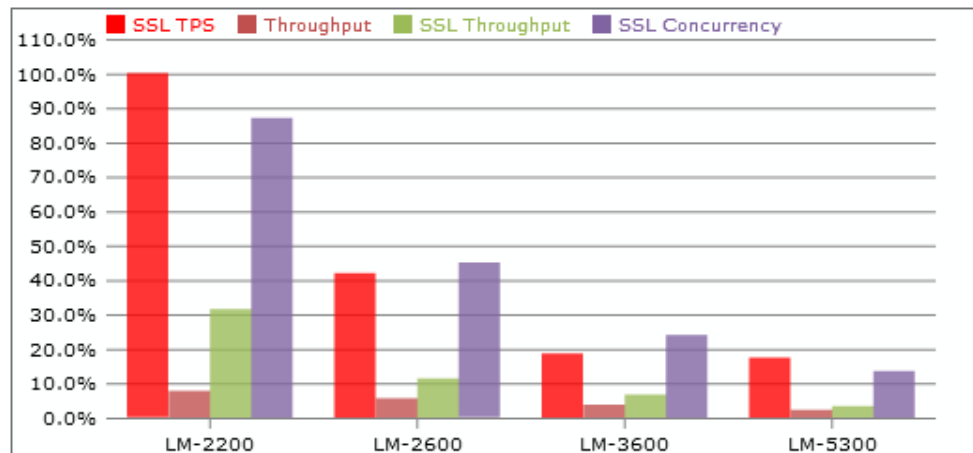
## Utilized Capacity

Model	SSL TPS	Throughput	SSL Throughput	SSL Concurrency	Notes
LM-2200	782.8%	7.8%	31.5%	87.0%	Exceeds Capacity
LM-2600	42.0%	5.6%	11.4%	45.0%	OK
LM-3600	18.6%	3.8%	6.7%	24.0%	OK
LM-5300	17.4%	2.3%	3.4%	13.5%	OK

## Max. Utilized Capacity by Model



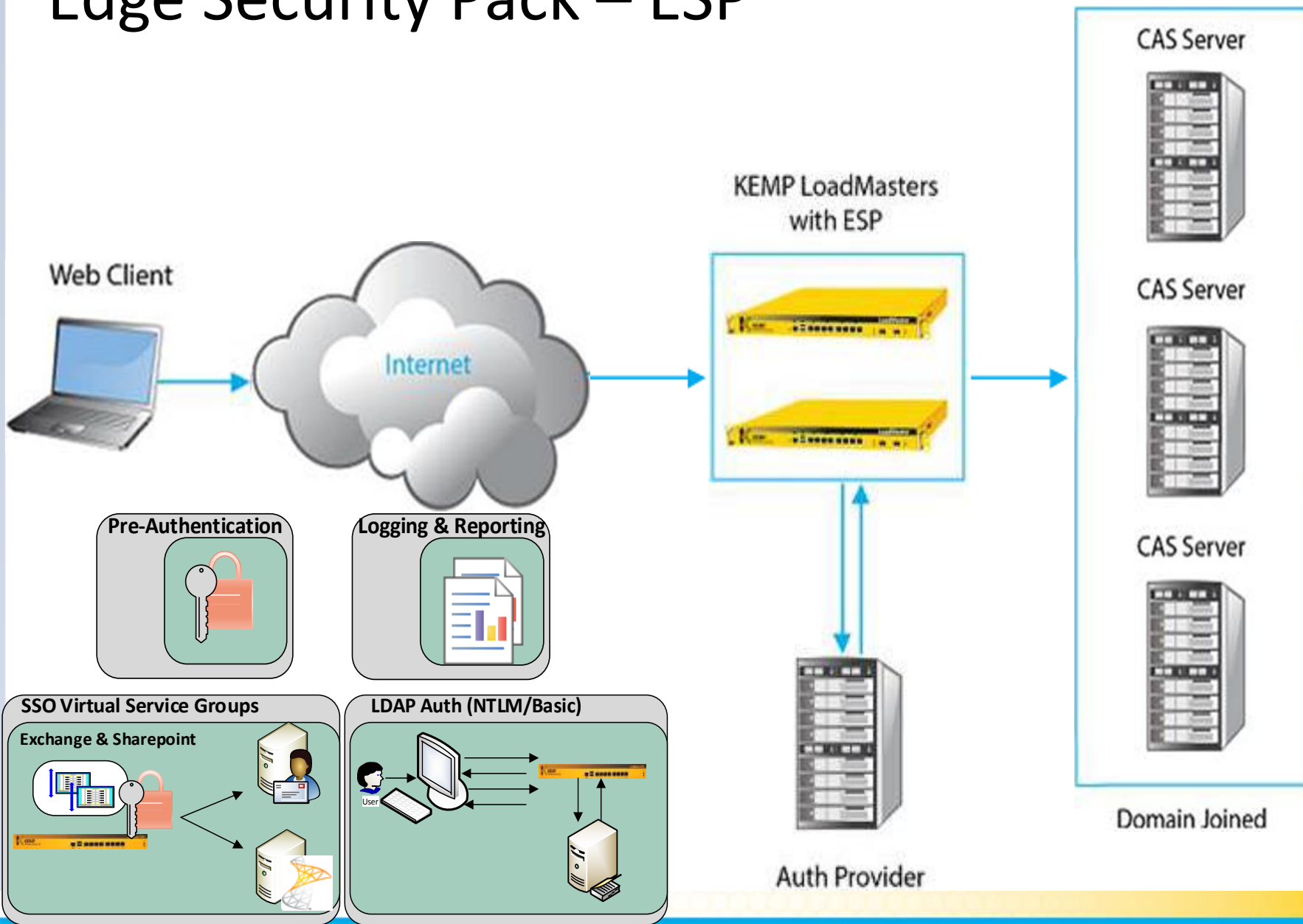
## Utilized Capacity by Spec.



Reset

# Edge Security Pack – ESP

Example: Exchange Workload Servers

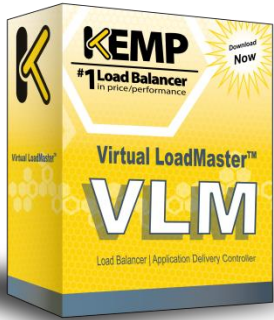




# Edge Security Pack – ESP

- ESP does -
  - - Proxies and caches authentication to LDAP
  - - Provides security layer for Virtual Services
  - - Provide SSO to Exchange services
  - - New L7 Functionality to SMTP
  - - Enhanced Logging
  - - Persistent, linear logging
- ESP does not -
  - - Authentication endpoint! We still rely on LDAP
  - - 1st iteration only intended for OWA/ECP

# Global Site Load Balancing

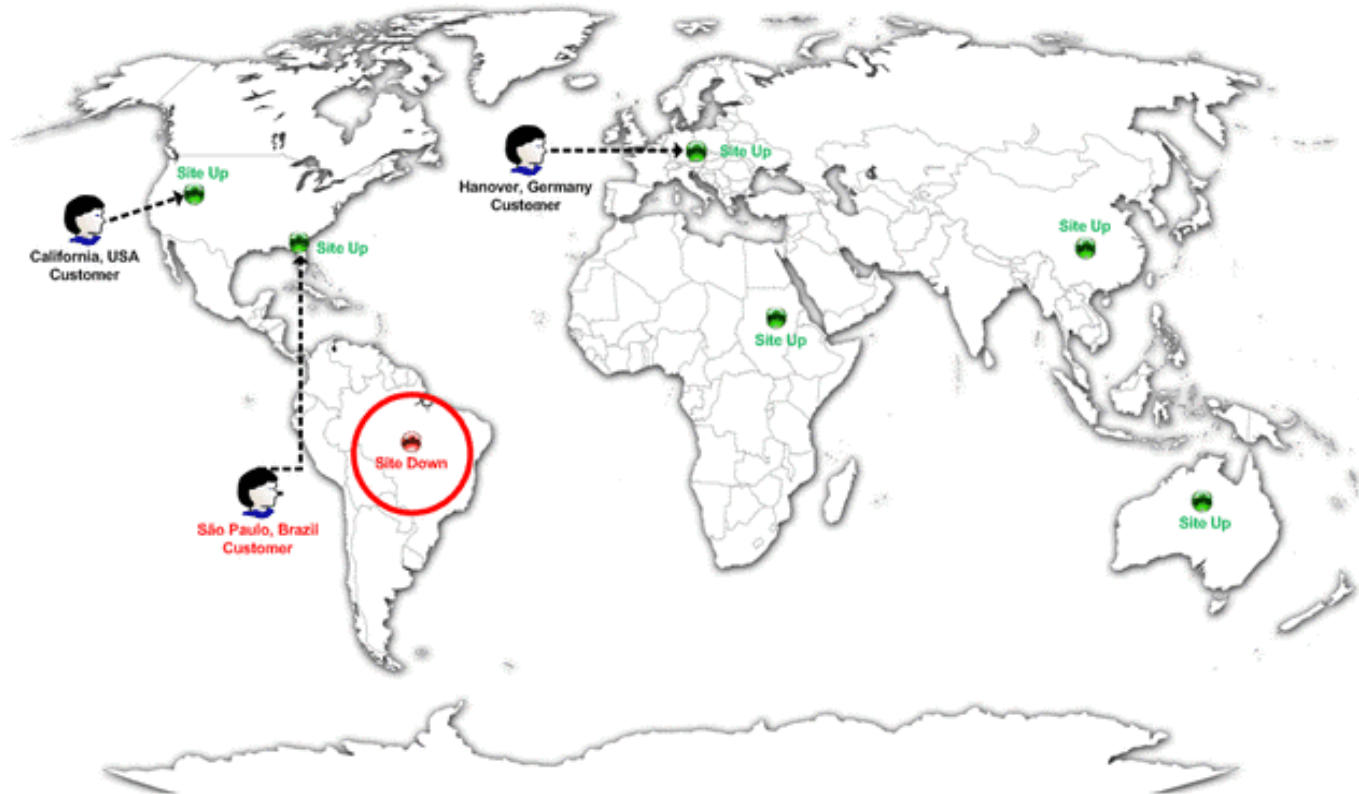


Facilitates site resiliency and simplifies datacenter failovers



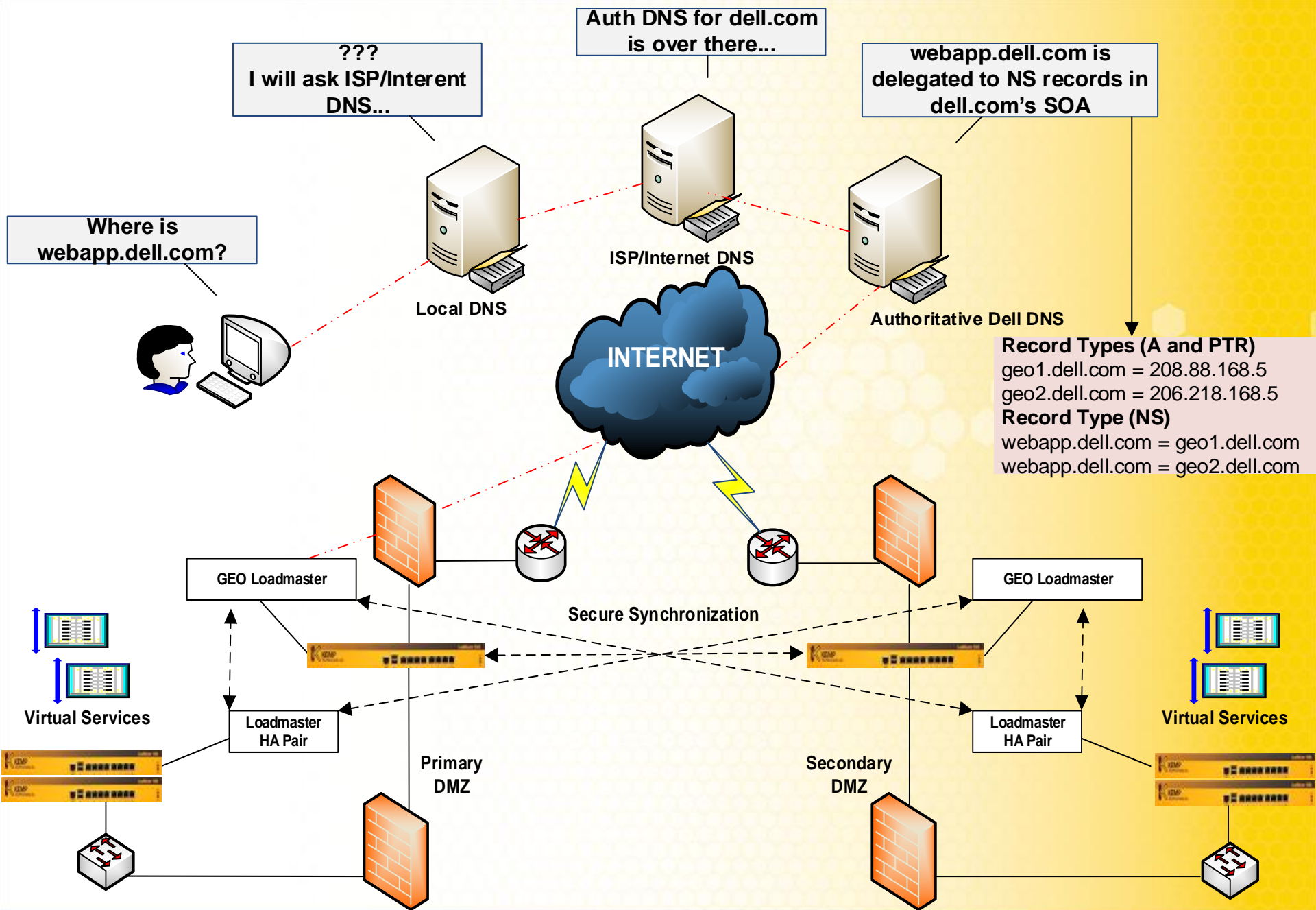
## Scheduling Methods

- *Closest*
- *Geo-targeted*
- *Fastest*
- *Round Robin*
- *Active/Standby*



# Geo Load Balancing

- An Extension of DNS
- Configure the necessary Health Checking
- Configure the required FQDNs
- Can work as standalone with no other Kemp Products
- Can be configured to talk to another Geo LB in an Active/Active environment (being in 2 different sites)
- Can be configured to talk to other Kemp LMs where deeper Health Checking is done so we can know before a DNS request is resolved whether the Application is up or not
- Can also be setup in the same site as HA





# Examples of “Balanceable” Applications

- Lync
- SharePoint
- Active Directory Federation Services
- Remote Desktop Services
- Custom Load-Balancer-Aware Web Applications



# Enhancements in Latest Firmware Versions

- SNMP V3 Support
- Improved L7 and SSL Offloading
- CPU Temp Monitoring
- Radius Authentication
- Improved caching/compression
- New persistence methods
- Per VS server stats
- Jumbo frames support
- Configurable MTU size
- KVM/Xen Para-virtualization support
- Slow-Start control
- RESTful API
- Sub VSs
- New and Improved WUI Graphics
- Support for Oracle VirtualBox VLM
- Exchange Quick Start Wizard
- Automated Licensing
- Geo Feature Pack



# Latest in Virtual Load Masters

## The LoadMaster Family of Virtual Load Balancers & Application Delivery Controllers



Model Number	VLM-100	VLM-200	VLM-1000	VLM-2000	VLM-5000	VLM-Azure
	Free Download	Free Download	Free Download	Free Download	Free Download	Request Free LoadMaster for Azure
Price	Get Quote	Get Quote	Get Quote	Get Quote	Get Quote	Free
1st Year Basic Telephone Support	Included	Included	Included	Included	Included	Not Included - Online Support only
<b>Performance</b>						
Max Balancer Throughput (Mbps)	100*	200*	Unrestricted <sup>1</sup>	2000*	5000*	100*
SSL Transactions Per/Second (TPS)	100*	200*	249 <sup>1</sup>	1000*	10000*	100*
Max Servers Supported / Virtual Clusters	1000/500	1000/1000	1000/1000	1000/1000	1000/1000	1000/500

# Latest in hardware Load Balancers

## The LoadMaster Family of Hardware Load Balancers & Application Delivery Controllers



Model Number	LM-2200	LM-2400	LM-2600	LM-3600	LM-5300	LM-5305-FIPS	LM-R320
	<a href="#">Trial Download</a>	<a href="#">Trial Download</a>	<a href="#">Trial Download</a>	<a href="#">Trial Download</a>	<a href="#">Trial Download</a>	<a href="#">Trial Download</a>	<a href="#">Trial Download</a>
Price* (1st year support included)	<a href="#">Get Quote</a>	<a href="#">Get Quote</a>	<a href="#">Get Quote</a>	<a href="#">Get Quote</a>	<a href="#">Get Quote</a>	<a href="#">Get Quote</a>	<a href="#">Get Quote</a>
Performance							
Max Balancer Throughput	950Mbps	1.2 Gbps	1.7 Gbps	3.4 Gbps	8.8 Gbps	3.6 Gbps	7 Gbps
SSL Transactions Per/Second (TPS)	200*	1,000*	2,000	5,000	9,300	1,100 (2K Key)	8,000
Integrated SSL ASIC			✓	✓	✓	✓	
FIPS 140-2, Level 2 HSM						✓	

The 140 series of Federal Information Processing Standards (FIPS) are US government computer security standards that specify requirements for cryptography modules which include both hardware and software components used by the Feds.

# Latest Technical Innovations (LoadMaster R320)

- L4 Throughput up to 7Gbps
- L7 Throughput up to 6.5Gbps
- 96,000 L7 http Requests Per Second
- 200,000 concurrent L7 connections
- 8,000 SSL TPS
- 6x 1GbE & 2x 10Gb SFP+ ports

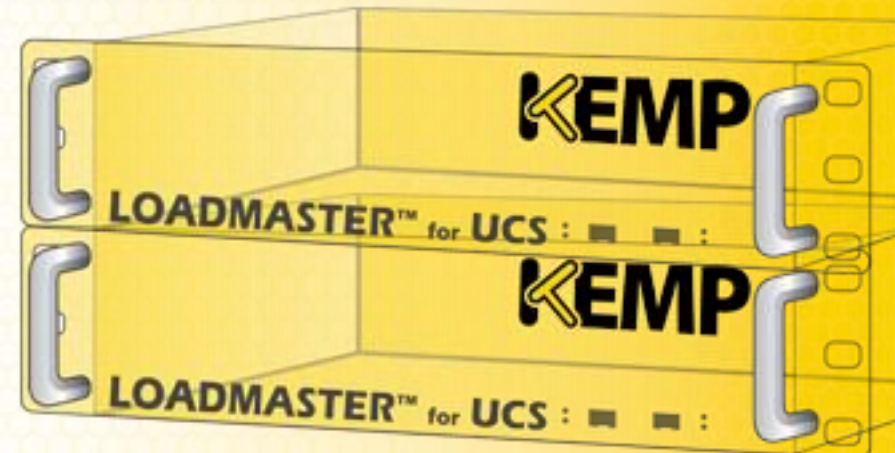


*“KEMP will leverage Dell’s high-quality global field service and depot capabilities to provide our customers enhanced response time, and service and support globally,”*  
Peter Melerud, EVP of Product Management at KEMP Technologies.



# Latest Technical Innovations (LoadMaster for Cisco UCS)

- Supports Cisco UCS B/C-Series Blades
- High Performance L4/L7 Server Load Balancing
- Layer 7 Content Switching
- Active/Standby, with Stateful Failover
- IP and Layer 7 Persistence
- Server Hardware and Application Health Checking
- Compression, Cache
- Intrusion Prevention Systems (IPS)





# Contacting Sales or Support

- Send an email to [sales@kemptechnologies.com](mailto:sales@kemptechnologies.com)
- Send an email to [nasupport@kemptechnologies.com](mailto:nasupport@kemptechnologies.com)
- Go to <http://kemptechnologies.com/load-balancing-support/kemp-support>
  - Call in numbers and an online Support request form
- Online Documentation and Release notes  
<http://kemptechnologies.com/loadmaster-documentation>