TelecityGroup

where content meets connectivity

Managed Services

Load Balancing & Application Acceleration

Why load balance?

Performance enhancement, security and scalability for your applications

TelecityGroup's Load Balancing service allows you to share the load on your web and application servers between several different machines. It allows you to enjoy high application performance whatever the network traffic and is essential for business-critical applications such as production web servers or centralised enterprise applications. TelecityGroup's service solves complex traffic routing to ensure that your customers, employees, and partners get the information they need, when they need it.

How does load balancing work?

TelecityGroup's Load Balancing service is based on industry-leading technology. We set up a virtual IP (VIP) address that is linked to multiple servers holding mirrored data. The service then automatically distributes incoming traffic among all of these servers, sending requests to the least loaded server in the dedicated cluster. If one of your servers experiences a problem, then it is taken out of the cluster and future traffic is diverted until it comes back online. By sharing the traffic load between multiple machines, it also reduces the need for high-end servers. In addition to basic load balancing, TelecityGroup's service also provides application acceleration capabilities, including TCP optimisation, compression and caching.

What technology options are available?

Our consultants will help you choose the best solution for your specific requirements. For existing TelecityGroup customers, we can carry out performance testing and analysis to identify any bottlenecks in the system and demonstrate how load balancing can help. Our consultants will help you calculate the return on investment (ROI) and total cost of ownership (TCO) of your solution. We offer load balancing as a dedicated or shared service to match the requirements and resources of all companies.

- Dedicated service: uses the Citrix Netscaler platform and is available as a single dedicated appliance or as a high-availability pair for total redundancy. This can handle a high volume of network traffic and gives you access to the full range of application acceleration features on the Netscaler platform;
- Shared service: uses a dedicated pair of high performance appliances as a shared platform, and is suitable for basic load balancing for customers with under 10 Mpbs of network traffic.

What equipment do I require?

All you need is a minimum of two mirrored servers to enjoy the benefits of load balancing. We can easily add new servers to your cluster if your traffic requirements increase, without having to take your servers down or change configuration. Our extremely scalable service already supports customers with up to 20 servers.

Related products

If you are interested in having a fully-redundant set up using a dedicated pair of Netscaler appliances, then you will need a fully-redundant network such as TelecityGroup's IPMH. This ensures that there is no single point of failure throughout your entire infrastructure.

Why TelecityGroup?

TelecityGroup's fully-managed Load Balancing service offers the highest levels of support to keep your application performance consistently high. We use best-of-breed technology and have an experienced professional services team to ensure that you get the right service for your needs.

Key features

Advanced L4-7 Load Balancing
The ability to distribute traffic across a number of servers using multiple metrics such as Least Connections, Response Time or Round Robin. For applications that are stateful, session persistence can be maintained by tracking variables such as client source IP address, session cookies or URLs.

TCP Multiplexing
Increases website performance by consolidating the many short-lived client connections into a small number of persistent server connections. This allows the server to spend more CPU time processing work requests than starting and stopping connections. This technology is compatible with most applications and can provide significant increases in performance.

TCP Client Connection Keep-Alive
To avoid congestion, TCP slowly ramps up the size of data packets between a client and server until the maximum network capability is reached. With short-lived HTTP connections this optimum is rarely achieved before communication is complete. To grow to and maintain the maximum packet size, and therefore network efficiency for subsequent requests, the load balancer keeps the connection active by sending regular keep-alive packets.

TCP Buffering
Allows the web server to rapidly offload data to the load balancer over the high speed local network. It then forwards the data at a rate which the client's slow connection can manage. This frees up server resources quickly so that they can get on with new tasks.

L7 Content Switching
It may be necessary to load balance incoming requests based on their content, such as sending www.xyz.com/uk to a different server than www.xyz.com/fr. Such a load balancing decision requires inspection of the request payload.

Cache Redirection
The load balancer interprets HTTP header information regarding the cache-ability of an object based on a defined policy. This can be used to redirect suitable requests to a caching server.

SSL Offload
Utilising inbuilt hardware the load balancer can perform the HTTPS encryption and decryption thus removing the burden from the web server. Additional management benefits are gained by having a single repository for SSL certificates.

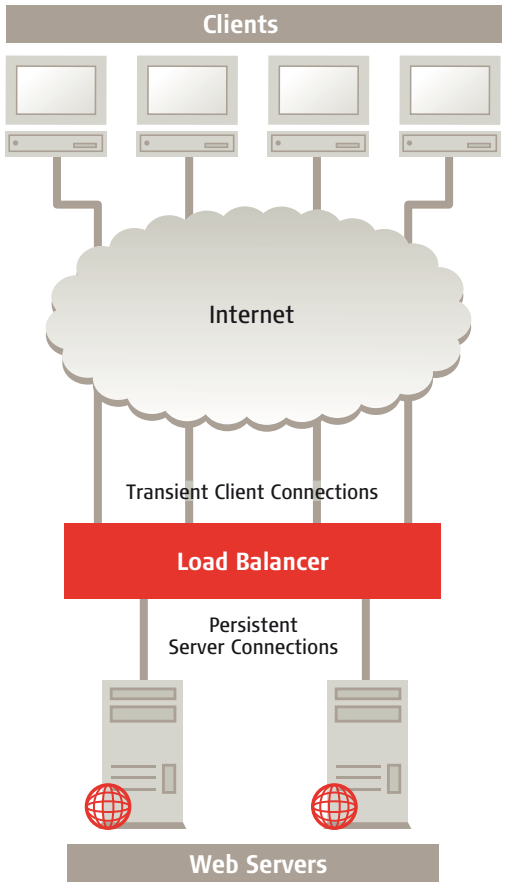
Application firewalling
The load balancer offers application firewalling, which is a key requirement for PCI compliance. Citrix Application Firewall protects web applications from the growing number of application-layer attacks, including buffer overflow exploits, SQL injection attempts, cross-site scripting attacks and more. In addition to proven attack defences, Citrix Application Firewall provides identity theft protection by securing confidential corporate information and sensitive customer data.

HTTP/HTTPS Compression
Many web browsers are capable of receiving GZIP compressed web pages. Such compression can provide performance benefits and bandwidth savings of up to 70%.

Advanced Compression
Compression can be implemented in scenarios between applications which do not utilise a web browser to provide performance and bandwidth savings.

HTTP Caching
By storing frequently requested items the load balancer is able to significantly reduce the number of requests to the back end server. It is also possible to cache dynamic objects by setting very short expiry times.

Load balancing with TCP multiplexing



Technical details

Platform choice		
	Dedicated	Shared
Advanced L4-7 load balancing	✓	L4 only
TCP multiplexing	✓	✓
TCP client connection keep-alive	✓	✓
TCP buffering	✓	✓
L7 content switching	✓	✗
SSL offload	✓	✓
Application firewalling	✓	✗
HTTP/HTTPS compression	✓	✗
Advanced compression	✓	✗
HTTP caching	✓	✗

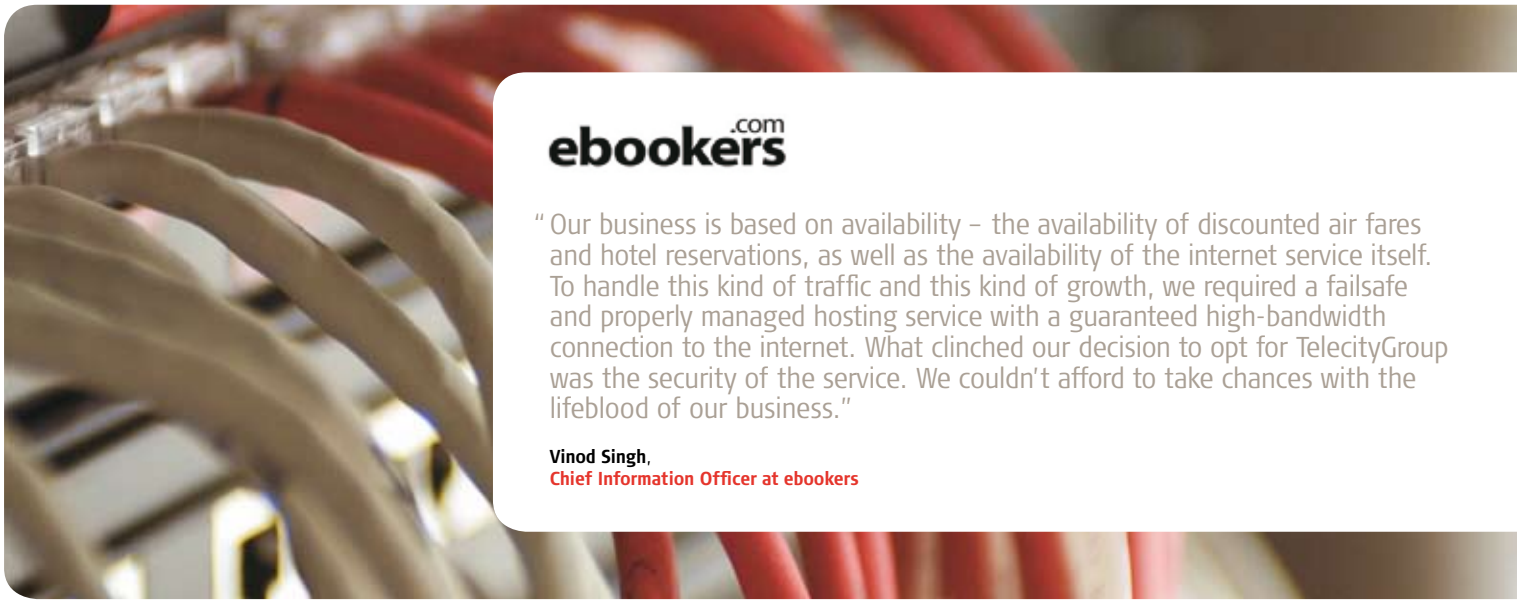
Support

TelecityGroup optimises the performance of the load balancing appliances to ensure they continue to operate effectively. This includes:

- Preventative maintenance including upgrades, error log review and performance analysis.
- Load balancer configuration is reviewed periodically to identify possible improvements.

TelecityGroup also ensures that any alerts or client requests are dealt with in a timely manner and any system failures are resolved quickly.

- Notification of monitoring alerts: 15 minutes
- Response to customer requests: 15 minutes
- Hardware failure fix: Within 4 hours
- Software upgrades and patches: As required



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"Our business is based on availability – the availability of discounted air fares and hotel reservations, as well as the availability of the internet service itself. To handle this kind of traffic and this kind of growth, we required a failsafe and properly managed hosting service with a guaranteed high-bandwidth connection to the internet. What clinched our decision to opt for TelecityGroup was the security of the service. We couldn't afford to take chances with the lifeblood of our business."

Vinod Singh,
Chief Information Officer at ebookers

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