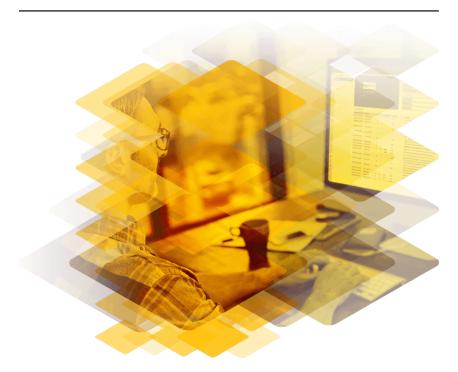# Active/Passive vs. Active/Active - Kemp

5-6 minutes

Thanks to the 24/7 availability of the internet, businesses need networks that are designed to assure high availability (H/A). The two most popular methods adopted by network managers today to achieve this are to use clustering to deal with failover (Active/Passive Mode) and load balancing.

Alternatively, Active/Active mode is employed to provide for database or session replication and to support redundancy. Load balancers can be placed in the network to direct server requests according to server performance and the method of traffic distribution chosen, such as round robin for example. In certain cases, network managers prefer to place tload balancers outside the cluster to provide for increased horizontal scalability.

As the amount of commerce businesses do over the internet increases, it becomes even more important to cluster servers and at the same time, deploy load balancers to take advantage of the inherent fault tolerance that they offer. First of all, it is good practice to analyze the critical services that you have in your network. These can include:

- database servers

- e-commerce services

- mail system

Active passive configuration and advantages

Next, you should turn your attention to your load balancers. An Active/Passive configuration will offer you many advantages, so consider buying a pair of load balancers and configuring them in H/A mode. When this is done, the primary load balancer distributes the network traffic to the most suitable server, while the second load balancer operates in listening mode to constantly monitor the performance of the primary load balancer and is ready at any time to step in and take over the load balancing duties should the primary load balancer fail.

By operating load balancers in Active/Passive mode, the ability to maintain uninterrupted service for your customers is achievable. Another advantage that this configuration presents is the ability to deal with either planned or unplanned service outages. As businesses today require 24/7 internet service for customers or staff, suffering any outage at all is costly for the business in terms of lost revenue as well as damage to the business's image.

Active/Active configuration and advantages

In Active/Active mode, two or more servers aggregate the network traffic load, and working as a team, they distribute it to the network servers. The load balancers can also remember information requests from users and keep this information in cache. Should they return looking for the same information, the user will be locked onto the load balancer that previously served them. The information is provided again from the cache without the network server having to respond. This process reduces network traffic load.

The one potential disadvantage of setting up your load balancers in Active/Active mode is that you are running them at near full capacity. What this would mean is that unless you have a spare load balancer to commission and make operational within the network, in the event of a load balancer failure, your network servers would appear to run slow or user sessions would time out.

Fit for Flight

In much the same way an aircraft can be switched over to autopilot, your network - with its server clusters and network load balancers - is "fit for flight." However, as you probably never consider being a passenger on an aircraft with no crew, the role of the network administrator is vital too. Your network administrator needs to have a complete view of network status, application performance and load balancer throughput at all times. Leading load balancers provide advanced statistics conveniently displayed on an easy to understand dashboard. The network administrator can drill down to look at a potential or actual problem in great detail and decide what remedial tactics to employ.

A vital feature that is found in the Kemp LoadMasters is that, when configured in H/A Active/Passive mode, you have the ability to use stateful failover to ensure minimum service disruption. The passive load balancer is constantly monitoring the user sessions as well as the performance of the active device. Should the primary device fail, the passive back up load balancer kicks in, taking the sessions from the active load balancer and seamlessly continuing to

serve the users. While expensive load balancers such as F5 and Radware provide this type of support, it is not often found in the more economic versions. However, Kemp's LoadMasters offer this feature across both the virtual as well as physical load balancers.